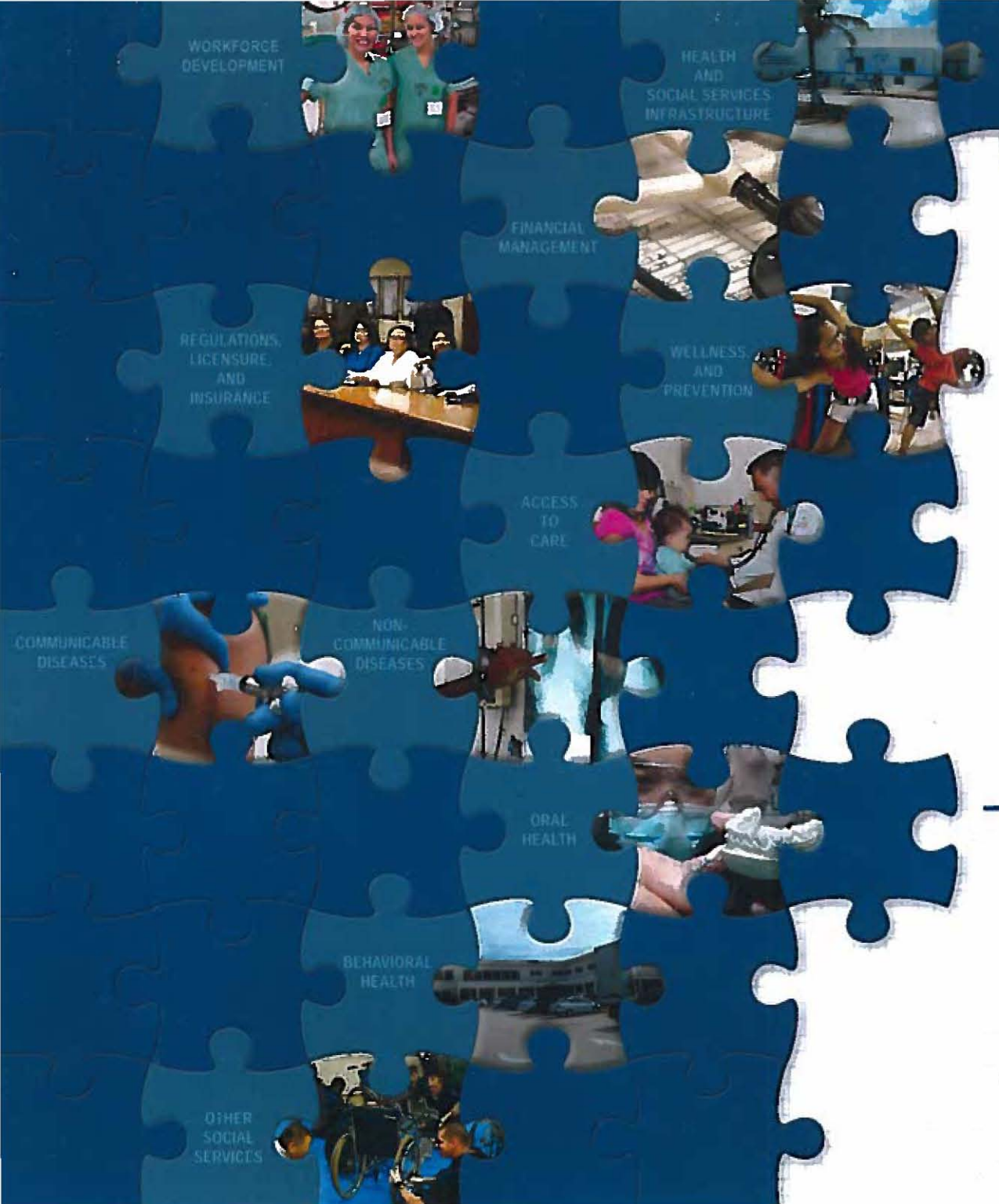

5 Year Health & Social Services Strategic Plan

Governor Eddie Baza Calvo
Territory of Guam

October 2012
Resource Document

Please see the next page.

5-Year Health & Social Services Strategic Plan

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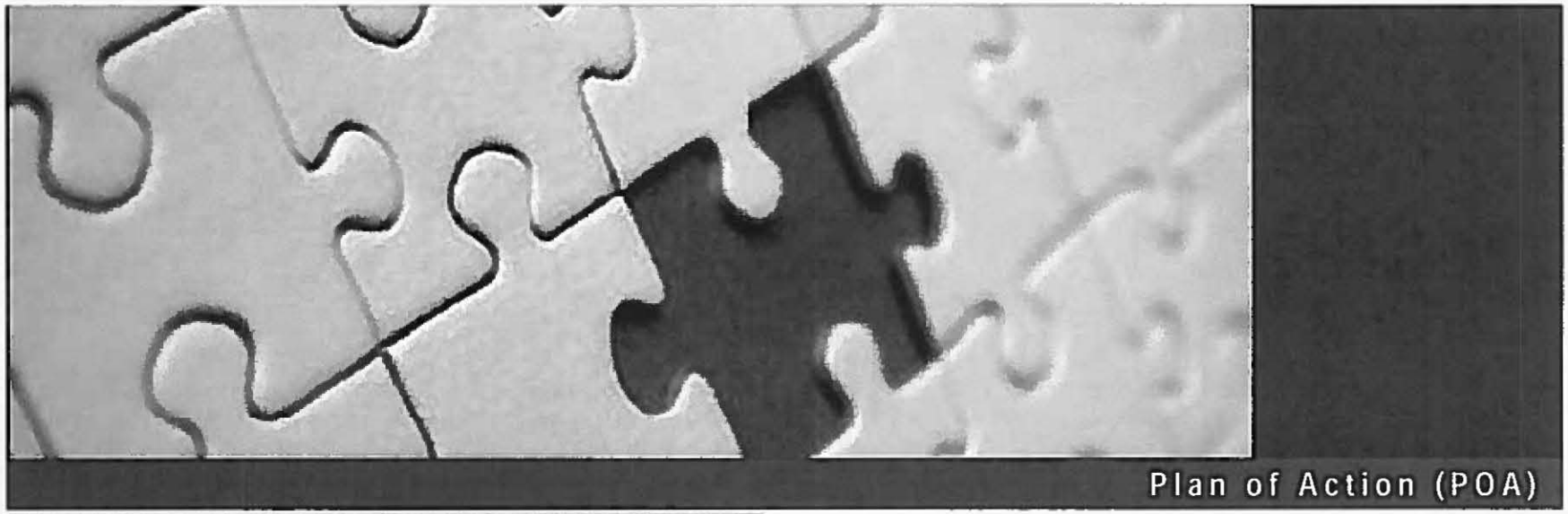

Plan of Action (POA)

Inside POA. . .

The Office of the Governor guided the development of this Five-Year Health and Social Services (HSS) Strategic Plan for the Territory of Guam. The Strategic Plan is designed to improve the provision of health and social services and their outcomes on Guam. This Strategic Plan provides a detailed look at health and social service issues on Guam today and the provides the policy guidance designed to guide the Government of Guam (GovGuam) agencies, federal agencies, and individuals to take charge of the future.

POA-1. Governor's Priority Areas

This Strategic Plan **Resource Document** contains an extensive Plan of Action (POA) designed to guide the provision of health and social services on Guam. This POA addresses each of the 11 Focus Areas covered by the Strategic Plan.

While the entire POA provides a comprehensive plan to address these Focus Areas, the Governor has identified six **Priority Areas** that are in need of immediate attention and improvement.

PRIORITY 1:	**Healthy Guam Lifestyles**
PRIORITY 2:	**Workforce Development**
PRIORITY 3:	**Fiscal Management**
PRIORITY 4:	**Enhancing Social Welfare**
PRIORITY 5:	**Access to Care**
PRIORITY 6:	**Addressing Communicable Diseases**

The six Priority Areas are addressed as part of the Governor's Strategic Plan; a 20-page guide that lays out the Governor's priorities and the actions needed to address each Priority Area. In the Governor's Strategic Plan, each Priority Area includes a description of the issue(s), background information on the issues addressed, and a set of objectives and actions to address each.

The following six pages repeat the actions proposed by the Governor for the six Priority Areas. For each Priority Area, actions are proposed for four groups:

- GovGuam Actions
- Federal Actions
- Non-Governmental Organization (NGO) Actions
- Individual and Family Actions

This approach recognizes that GovGuam cannot solve all of the health and social services issues on its own, and that it takes a coordinated approach by other agencies and organizations to succeed. The actions also recognize that individuals and families have a role in this process.

More detail can be found in the Governor's Strategic Plan, and a detailed implementation Plan of Action can be found in the remaining pages of this section.

PRIORITY 1
Healthy Guam Lifestyles

Objectives

- Guam will reduce healthcare costs for Guamanians by increasing awareness of the importance of leading and living healthy lifestyles, including the importance of physical activity and making informed decisions about nutritional choices.
- Guam will lead by example to encourage healthy lifestyles amongst people of all ages by hosting organized events and partnerships with other stakeholder groups to enhance education and knowledge on healthy lifestyle choices.
- Guam will increase participation in federally funded programs in order to maximize potential funding that is based on enrollment and utilization.

GovGuam Actions

- Promote and sponsor regular "Physical Activity and Nutrition Events." The purpose of these vents will be to educate the public and will incorporate fun activities such as team building exercises and games that can be played at home. Activities should require physical exertion but be enjoyable enough to not be seen as required exercise.
- Reach out to families of school aged children regarding the availability of free or reduced cost breakfast and lunch options at school.
- Develop additional data sources that allow for the measurement of trends to improve program planning and evaluation.

NGOs / Private Provider Actions

- Share data / information with GovGuam agencies relative to patient cases and / or new technologies to allow for measuring progress.
- Develop a public awareness campaign using PSAs and press releases to educate the public of healthy lifestyles, choices, and available resources.
- Participate in national programs that provide training to food service providers, medical professionals, and school physical activity programs.

Federal Actions

- Encourage continued healthy lifestyles education and promotion with culturally relevant resources and guidance.
- Continue to support funding of local government programs such as food nutrition assistance.
- Improve outreach to GovGuam agencies to increase the awareness of the need for increased participation in federal programs in order to increase financial award.

Individual and Family Actions

- Seek preventative care to decrease the likelihood of urgent medical conditions or the onset or disease.
- Recognize unhealthy behaviors such as smoking, drinking, and lack of physical activity and take action to eliminate these risks.
- Incorporate physical activity and healthier food options into both family and community events and fiestas.

PRIORITY 2
Workforce Development

Objectives

- Guam will facilitate the provision of quality healthcare by taking actions that support increases in the pool of qualified healthcare workers.
- Guam will seek to improve the quality of care through alternative methods, increased awareness, education, and training of all professionals in the healthcare industry.
- Guam will expand the learning opportunities that are required to obtain and maintain medical registration and licensure.

GovGuam Actions

- Initiate acceptance into the Nurse Licensure Compact Agreement to increase the number of nurses on Guam in the short term.
- Reevaluate the compensation of medical professionals in order to be competitive with mainland states and attract more qualified healthcare professionals to Guam.
- Collaborate with the Guam Medical Boards to lower the CME credits to enable quicker license applications turnarounds and enhance opportunities for licensure reciprocity with other states.

NGOs / Private Provider Actions

- Sponsor healthcare workforce mentoring programs that establish and promote relationships amongst Guam's healthcare students and health professionals.
- Make medical training more accessible to Guam's underserved populations through scholarships and assistance that require residency and retention on Guam.
- Expand the availability of training courses and CME opportunities for healthcare professionals, both through traditional methods (classrooms) and through the use of technology (webinar based training) using culturally relevant content.

Federal Actions

- Support and facilitate the Territory of Guam to be accepted in the Nurse Licensure Compact.
- Provide a federal trainer to assist in training Guam licensing boards on regulatory and statutory policies, and provide ongoing support.
- Continue to provide financial assistance and support for workforce development and assistance programs.

Individual and Family Actions

- Not applicable.

PRIORITY 3
Fiscal Management

Objectives

- Guam will facilitate an integrated financial management network enabling transparency and future investment that ultimately improves overall quality of healthcare on Guam.
- Guam will reduce the gap between operating expenditures and revenues generated by healthcare services and facilities.

GovGuam Actions

- Hire a qualified Chief Financial Officer (CFO) that provides fiscal management and accountability for DPHSS and DMHSA programs and resources.
- Implement a standard financial management system and procedures that is used by all GovGuam agencies, providing for greater fiscal accountability and transparency, and simplified reporting to federal agencies.
- Outsource revenue generating functions that can help alleviate the financial burden on GMH and other public health centers, including pharmacy operations, billing and accounts receivable, and IT support.

NGOs / Private Provider Actions

- Provide outsourcing capabilities to DPHSS, DMHSA, and GMH to the extent possible such as procurement review and evaluation, billing and collections.
- Integrate medical billing and coding into the current college and university course offerings.

Federal Actions

- Provide federal program management assistance, training, and education to Guam grant and program administrators, i.e. Compact Impact Aid Program.
- Continue to support and facilitate federal financial assistance to the Government of Guam.
- Provide GovGuam with model practices and procedures used for healthcare management by other states and agencies.

Individual and Family Actions

- Not applicable.

PRIORITY 4
Enhancing Social Welfare

Objectives

- Guam will improve the availability of accurate data on social disorders and services to facilitate program improvement and additional support.
- Guam will strive to improve the quality of life of all persons with a disability, mental and behavioral health condition, and the under served, such as families and children.
- Guam will enhance the overall healthcare system through inclusion and emphasis on improving both understanding and treatment of social health and welfare.

GovGuam Actions

- Work with the Substance Abuse and Mental Health Services Administration to participate in data collection and reporting of mental health conditions on Guam in order to identify measurable health targets.
- Utilize non-profit entities to increase awareness of mental health disorders and services available.
- Seek assistance from the Substance Abuse and Mental Health Services Administration to build on existing healthcare professional training opportunities.
- Build partnerships with NGOs and Private businesses to provide training and hire persons with disabilities.
- Continue to develop community-based treatment.

NGOs / Private Provider Actions

- Expand on existing University of Guam data surveillance efforts and inventories to include social health conditions, with assistance from CDC.
- Develop a social services awareness campaign utilizing various methods of outreach that are sensitive to people of all ages, ethnicity, and gender. This awareness program would provide information on how to recognize disabilities and violence as well as existing programs and available resources to help.
- Incorporate social welfare and mental health concerns into the overall health evaluation conducted by medical practitioners.
- Collaborate with GovGuam agencies to provide social services such as transportation and Caregiver Support Programs, and support the hiring of those with disabilities.

Federal Actions

- Enhance current mental healthcare facilitation and treatment training through the use of on-site trainers that reach large groups of healthcare professionals on Guam.
- Continue efforts to improve DMHSA facilities and services through grants supporting facility development, treatment, and staffing.
- Provide ongoing support for culturally sensitive awareness and education about mental health, disabilities, and other social services.

Individual and Family Actions

- Seek help and attention immediately when it is thought that a disability, mental illness, or family violence is occurring.
- Foster healthy lifestyles and personal relationships to prevent the need for social services.
- Share individual unique perspectives through community wellness groups and mentoring programs.

PRIORITY 5
Access to Care

Objectives

- Guam will improve quality and access to care by supplementing centralized sources of medical care with alternative delivery of care options.
- Guam will seek to increase enrollment in both public and private health insurance programs.
- Guam will provide public health information that is responsive and sensitive to cultural, linguistic, and other specialized needs of the population and are universally available to all Guam residents.

GovGuam Actions

- Implement a mobile health clinic program that would increase accessibility to routine and sick medical care and reduce the number of people that do not seek medical care because of their inability to travel to health centers.
- Establish a visiting nurse program that would provide in home services to each village on Guam.
- Establish a health hotline staffed by nurses and other qualified medical personnel. The hotline will be staffed by volunteer practitioners and nurses and monitored by DPHSS.
- Provide applicable program educational pamphlets to NGOs and Private Practitioners to encourage awareness of public programs and assistance and increase enrollment in programs that are supported through federal assistance.

NGOs / Private Provider Actions

- Support GovGuam's medical hotline by encouraging private practitioners to volunteer their services and / or facilities and equipment through community partnership events.
- Partner with DPHSS and DMHSA to plan "back-to-school" health education outreach efforts as part of the school registration process for parents and children.
- Provide information to parents of school-aged children regarding Medicaid-eligibility.

Federal Actions

- Support the enhancement of medical services and alternatives for accessing healthcare through applicable healthcare funding mechanisms that support capital improvements, such as facility upgrades and the procurement of new equipment.
- Recognize and mandate uncompensated nurse hotline staff support time as required training hours for Continuing Medical Education credits and community service hours.
- Assist GovGuam staff in understanding public health insurance guidelines and reimbursement requirements.

Individual and Family Actions

- Seek assistance for medical care expenses through local government programs.
- Visit your local family doctor's office for information about additional public healthcare services available to all Guamanians.
- To the extent possible, attain healthcare coverage to lower costs of medical expenditures.

PRIORITY 6
Addressing Communicable Diseases

Objectives

- Guam will expand on-island testing capabilities that allow a greater portion of the population affordable healthcare options.
- Guam will expand treatment capabilities that allow a greater portion of the population affordable healthcare options.
- Guam will continue and improve outreach efforts that educate communities about communicable diseases, how they are transmitted and how they can be prevented through vaccines and other healthy practices.

GovGuam Actions

- Work with Office of the Regional Health Administrator and CDC in Region IX to provide enhanced federal funding for identification (through a Level 2 Lab) and treatment (through adequate supplies (i.e., medicines) of communicable diseases (TB, STDs, etc.) that increase on a per capita basis.
- Obtain adequate funding and staff for the Tuberculosis Program to combat the increasing level of antibiotic-resistant strains of TB being detected on Guam, with priority items identified as state of the art radiographic (x-ray) equipment and TB isolation room(s).
- Improve vaccination rates among youth and school children through the use of use WIC clinics as a point of access to identify children in need of immunizations.

NGOs / Private Provider Actions

- Provide information on the importance of vaccinations for children, adolescents, and adults as part of employee health programs.
- Private practitioners, community organizations and educational institutions should sponsor and participate in community events that promote healthy lifestyles and make immunizations more available to the community.
- Distribute informational packets at community centers, educational institutions, libraries, and other public facilities regarding the availability of vaccinations and the educational materials that address methods of transmission of communicable diseases.

Federal Actions

- Coordinate military buildup that would increase the population and possibly introduce new diseases to Guam with Guam and local communities.
- Provide support to GovGuam that would enable improved treatment capabilities, particularly addressing the need for a Level 2 Lab and isolation rooms.
- Provide GovGuam educational materials currently used by CDC and other federal healthcare organizations and non-profit groups.

Individual and Family Actions

- Obtain immunization status of self and family from healthcare providers and keep personal immunization records updated and available.
- Learn the signs and symptoms of communicable diseases.
- Maintain proper hygiene to avoid illness and avoid contact with others when experiencing symptoms of a communicable disease.

The remainder of this section lays out a detailed Plan of Action (POA) for the future, addressing how key stakeholders can become engaged in the process of improving public health. Goals, objectives, and actions are organized by the 11 Focus Areas discussed in the Strategic Plan. These items were developed as a means for active involvement by GovGuam agencies, federal agencies, private providers, non-governmental organizations, businesses and other private organizations, as well as individuals looking to improve their own personal quality of life through health-conscious choices. Implementation of this POA will strengthen the health and social services system, the workforce that supports it, and the overall health and social welfare of the people of Guam.

The purpose of this Strategic Plan is to provide the guidance and resources needed for Guam to take charge of the future of public health conditions and improve the healthcare and social service systems on the island and throughout the region. This Strategic Plan is intended to be a resource and tool to guide public health policies and regulations, infrastructure improvements, and the overall health of the people of Guam.

The Strategic Plan's Resource Document lays the foundation for understanding the various components that affect public health, social welfare, and quality of life. For each component discussed, the existing conditions and trends are assessed, issues are identified, and existing plans and programs that are already in place to address these issues are summarized. Additional information on wellness, prevention, and educational resources is also provided as appropriate.

This Strategic Plan is designed to be consistent with the primary goals of the US Department of Health & Human Services national strategy for improving health outcomes, titled "Healthy People 2020." A primary goal of this national strategy is to help individuals of all ages increase their life expectancy and improve their overall quality of life. While life expectancy can be easily measured with statistics, quality of life is a more subjective measurement and varies from person to person. While more subjective and difficult to measure, quality of life is an important part of any overall strategy for the improvement of health and social outcomes and determinations of capacity and service needs to achieve them.

POA-2. Workforce Development (WD)

Goal WD-1

To recruit, retain, train, and nurture trained comprehensive health, medical and social service workforce to meet all immediate (1-2 years), intermediate (3-5 years) and long term (6-10 years) personnel needs.

Goal WD-2

To promote local participation and diversity within the healthcare sector workforce that improves access to care and results in an overall improvement in quality of care.

Goal WD-3

To develop, expand, and maintain a comprehensive and highly skilled workforce trained on-island and through external ("capacity-building through collaboration") partners in other geographical locations.

Objectives and Actions

Number	Objective	Number	Action
WD-A	To expand and improve on previous efforts at developing a viable plan for improving workforce development and management.	WD-A1	The Governor will use this Strategic Plan as a starting point to identify baseline conditions and benchmark goals that identify workforce development weaknesses on Guam, establish benchmarking goals for healthcare workforce, and monitor the progress of the working group relative to addressing the issues.
		WD-A3	The workforce development planning process should be expanded to produce a strategic planning and implementation document focused on workforce development and updated every five years. This expansion should include involvement from organizations involved in both business and workforce development and recruitment, including Guam Chamber of Commerce (CoC), Guam Department of Education (DoEd), Guam Department of Labor (DOL), Guam Department of Administration (DOA) and other key agencies including education institutions involved in workforce development.
WD-B	To enhance and expand Guam's health and social services workforce.	WD-B1	DOL will be assigned the lead role by the Governor in working with existing resources for advertising vacancies, ensuring vacancies are filled, and streamlining the recruitment process. (UOG,GCC, GMA, GMH, PIHOA, DOA, CoC, and others)
		WD-B2	DPHSS will develop a communications strategy focused on the addition of new medical professionals, in consultation with GNA, GMHA and other key stakeholders. The process should include public service announcements to both UOG and GCC, establishing a clearinghouse for communications (including a contact person), and having stories published in local and stateside newspapers.
		WD-B3	To decrease shortage of public healthcare and social service workers, reduce the wage disparity that currently occurs between private and public practitioners. As an initial step, ensure all staff is paid to a minimum of the 25th percentile of MIP rates.

Number	Objective	Number	Action
		WD-B4	Government of Guam, in collaboration with Guam DOA, should review and update job descriptions required as part of the Joint Commission accreditation and Medicare. Provision of updated job descriptions should also be used to conduct performance, job classification, and salary reviews in collaboration with Guam DOA.
		WD-B5	DOA, in collaboration with DPHSS and DMHSA, will ensure all employment opportunities are listed on their website for all DPHSS and DMHSA positions with a designation of internal candidates and external candidates may apply.
		WD-B6	DOA, DPHSS, DMHSA will ensure their respective websites are active and accessible by both internal employees and external prospects and customers.
		WD-B7	DOL shall apply for BRAC federal monies to assist displaced workers on-island and incoming human resources. These monies may be used to set up transition centers whereby citizens may utilize computers and qualified DOL employees to search and prepare for jobs on-island. This money also assists in certain skills trainings.
WD-C	To enhance resources available for the training and education of existing and future health and social services workforce.	WD-C1	DOL will work with UOG and GCC to improve training resources that reduce the need to go off-island for licensure requirements, particularly continuing education. ▪ Training resources should be expanded beyond those currently offered for medical assistants, billers and billing managers, and LPNs and RNs. ▪ Work with UOG and GCC to provide facilities and resources to establish distance training opportunities that would allow students and professionals to participate in educational and training opportunities offered at other locations stateside.
		WD-C2	DOA, in collaboration with DPHSS, will establish an internal training schedule on basic office and management skills with the option to train on advanced levels. These trainings should focus on computer software applications (Microsoft Office Suite, other computer software utilized for various areas within DPHSS), management/supervisory trainings, dealing with difficult patients trainings, and other similar trainings.
		WD-C3	DPHSS shall work with CDC to investigate if short-term health management training programs available to non-US participants from low and middle income countries could be made available to Guam staff members. http://www.cdc.gov/globalhealth/smdp/overview.htm
		WD-C4	UOG shall work with the Department of Environmental Health to develop training courses to train environmental workers and inspectors as well as establish a certificate program for Environmental Health professions that will assist Guam grow the workforce for the Environmental Health field.
WD-D	To develop external collaborations that enable Guam to fulfill workforce needs in the areas of health, medical and social services that cannot be totally met through internal resources and methods (capacity-building through collaboration).	WD-D1	The Governor, in collaboration with the President of UOG will develop strategic alliances to fulfill this objective. This should include Guam's CoC, Guam DOL, PIHOA, University of Hawaii (and other resources in HI, including Kaiser), the University of California Medical system, the health services in the Philippines, and a medical representative from the Department of Commerce's Organized Trade Missions.

Number	Objective	Number	Action
		WD-D2	Given the geographical location of Guam and the distance and immigration challenges of the Western Pacific a regional strategy needs to be integrated within the overall workforce strategy for Guam. The DPHSS and GMH will partner and work closely with PIHOA in their efforts to educate, train and recruit a skilled medical and health workforce to Guam and Western Pacific region.
		WD-D3	An independent authority selected by the Governor, will host a strategic job fair that is coordinated with all GovGuam agencies and selected stakeholders and engage external partners such as FSM, CNMI, PIHOA, Hawaii, and California
WD-E	To delineate a sound methodology with an independent resource to identify and determine workforce needs on an annual basis in the fields of medical, health and social services.	WD-E1	DPHSS will utilize the workforce data process established in WD-A to conduct an annual assessment of workforce needs and refine strategies to address them. This assessment should be done in consultation and collaboration with other relevant entities, such as the GMA, UOG, GMH, GNA, and PIHOA. Results of the assessment and recommendations for action steps will be provided in a written report to be provided to the Governor and Legislature annually.
		WD-E2	Guam DOL in collaboration with DPHSS and DOA shall apply for BRAC federal workforce monies to hire an independent resource to conduct an in-depth workforce gap analysis across the three major industries for which constraints exist including healthcare and social services, information technology/network administrators services and construction trades, This analysis should identify the gaps in workforce and where skills upgrades are appropriate for internal promotion. In the scope of the grant application, there should be a component for GovGuam to request information on how to assess workforce needs in the future.
WD-F	To develop a strategy for increasing the development and recruitment of specialty care physicians to Guam.	WD-F1	The DPHSS will establish and maintain alliances with medical associations dedicated to specialty care (American Cardiology Association, American Lung Association, American Nephrology Association, etc.) with the objective of determining approaches to attracting needed medical specialists to work in Guam. GMHA will play a key role in this action. These relationships and communications should also be dedicated to identifying potential ways in which medical specialists can relocate to Guam (including to potentially provide services to the Western Pacific working in conjunction with the Pacific Health Sector if possible)
WD-G	To improve the on-island capabilities and capacity of trained medical staff, support personnel and necessary infrastructure in order to adequately serve the health needs of Guam and Compact Impact patients.	WD-G1	When financial resources permit, increase the staff and overall capacity of the Division of Public Health, including new or upgraded facilities and equipment, in order to effectively operate its programs and projects that range from the provision of health, nursing, and dental services to Health Professional credentialing and licensing, Medical Records and Vital Statistics Management, Emergency Medical Services Planning and Licensing, among others.
		WD-G2	Establish partnerships with UOG program leaders and researchers to encourage and increase the retention of trained medical professionals on Guam.
WD-H	Support employee professional development and upward mobility.	WD-H1	Participate in state-wide, region-wide, and national policy organizations that focus on workforce development and knowledge sharing opportunities

POA-3. Financial Management (FM)

Goal FM-1

To develop a performance measurement approach to the management of public health and social service programs, consistent with federal financial reporting standards and requirements.

Goal FM-2

To achieve parity with general US standards for financial management education, training and practices in the health, medical and social service fields.

Goal FM-3

To adopt and sustain sound methods of financial management and reporting of all health programs.

Objectives and Actions

Number	Objective	Number	Action
FM-A	To substantially upgrade existing standards for financial management in the medical, health and social service fields in a manner that is consistent with general US standards.	FM-A1	GovGuam will engage OPA to conduct an audit on DPHSS and DMHSA financial management practices, revenue streams, and expenditures.
		FM-A2	At the DPHSS department level, establish and monitor fiscal performance metrics for all health and social services that are funded through both federal and Guam resources. These metrics should be used to evaluate grant performance (ensure funds are being spent appropriately and at an appropriate schedule, matching is being accomplished / documented, and real time reporting is made available to DPHSS management).
FM-B	To substantially enhance education and training resources in Guam that improves professional financial management skills.	FM-B1	The Governor will identify qualified community and business stakeholders to form a financial task force composed of qualified financial analysts that provide objective third party support to improve financial management and in preparation for financial audits..
		FM-B2	The task force identified in Action FM-B1 will make recommendations to the Governor for improvements in the education and training of financial professionals from with existing educational entities in Guam, such as UOG and GCC. These recommendations will be made to the Governor within three months of the creation of the task force.
		FM-B3	Improve relationships with business partners, stakeholders, and policy makers by engaging all parties and encouraging active roles in the planning process.
FM-C	Achieve and sustain financial viability for the uninterrupted operation of Guam Memorial Hospital.	FM-C1	The Governor and GMHA will continue to explore additional funding options and revenue generating mechanisms and assess the financial progress made to date.
		FM-C2	GMHA, in conjunction with DPHSS, will recruit and hire qualified billing staff to coordinate timely collection of payments. If adequate personnel cannot be hired in a timely manner, consideration will be given to outsourcing billing and collections.
		FM-C3	GMHA will expand GMH's revenue generating operations, including pharmacy, outpatient services, and care centers that are Medicare-reimbursable.

Number	Objective	Number	Action
FM-D	To enter into collaborations with entities external to Guam when internal entities do not sufficiently possess the resources to conduct sufficient educational and training needs in the area of financial management.	FM-D1	The task force, in conjunction with UOG and GCC, will explore and develop collaborations with external financial management training/educational entities and/or entities that contain such expertise, such as the California Medical Association, Hawaii Medical Association, California Hospital Association, Hawaii Hospital Association, University of Hawaii, University of California, etc. train, educate and retain qualified personnel.
		FM-D2	The Governor will make a written request to the Federal Regional Council (FRC) to establish an advisory task force of five federal employees with comprehensive knowledge of federal accounting and compliance to provide ongoing advice for a period of two years. The purpose of this action will be to enable Guam to substantially upgrade its management practices when it comes to the management of federal funds and grants.

POA-4. Health and Social Services Infrastructure (HI)

Goal HI-1

To ensure that entities, facilities, and resources (both public and private) that provide health, medical, and social services on Guam are efficient and sufficient to meet the present and future needs of the population of Guam.

Goal HI-2

To provide public health services that are responsive to cultural, linguistic, and other specialized needs of the population and are universally available and affordable to all Guam residents.

Goal HI-3

To maintain and continuously update modern practices in the public health sector that is based on evidence and data surveillance specific to health patterns and challenges detected on Guam.

Objectives and Actions

Number	Objective	Number	Action
HI-A	To develop a standard methodology from which periodic assessments are made of health infrastructure needs.	HI-A1	DPHSS will conduct an annual assessment to identify infrastructure needs in Guam. Partners in developing and implementing this survey include UOG, GMH, GMHA, GNA, and GCHCs. The results and recommendations obtained from the survey will be provided to the Governor and Legislature.
		HI-A2	Establish Quality Assurance metrics for all hospital departments and activities of all health department personnel to ensure they meet the reporting requirements of the Joint Commission.
HI-B	To make the development and use of health information technology a top priority to those that deliver services and the public that uses those services.	HI-B1	The Governor will task the Bureau of Information Technology (BIT) and Department of Administration (DOA) to set up a working group with DPHSS, GMH, and UOG to conduct a baseline assessment of uses of health information technology on Guam and compare them to other present and emerging uses in comparable localities. This task force will present a written summary of findings and recommendations for improvement that address DPHSS information technology as a whole.
		HI-B2	Secure federal funding through CMS Medicaid and Medicare Transformation Grant that provides innovative methods to improve effectiveness and efficiency in providing medical assistance through health technologies for developing and improving Guam's Health Information Technology infrastructure and resources.
		HI-B3	Submit application materials for participation in the federal Health Information Security and Privacy program.
HI-C	To achieve a comprehensive, distributed electronic medical and social services records system for Guam.	HI-C1	The Guam NGO and/or UOG should conduct an assessment of capabilities and practical possibilities for achieving this objective and to provide a recommended plan and timeline to the Governor and Legislature

Number	Objective	Number	Action
		HI-C2	Implement the use of standardized electronic health records, with priority given to patients using Medicaid, Medicare, and MIP, and in accordance with the Health Electronic Records Incentive timeline.
HI-D	To increase the public's ability to obtain health and social service information from the Internet.	HI-D1	DPHSS will design a plan in conjunction with GDOE to increase health literacy in the public school system through enhanced use of health information technologies. A specialty site will be developed and maintained jointly between DPHSS and GDOE regarding health issues and practices and current initiatives. It is also to be used as an educational tool in grades K-12.
		HI-D2	GovGuam shall work with the Mayors' Council of Guam to ensure a computer with internet connectivity is available in the Village Center to provide access to DPHSS websites and other general health and social service informational websites.
		HI-D3	DPHSS shall create a webpage attached to their website that provides access to general health and social service resources and educational materials.
HI-E	To enhance Guam's ability to utilize both telemedicine and medical expertise in other locations in the Western Pacific to enhance the level of care provided in Guam.	HI-E1	DPHSS will identify new and emerging trends and technologies for applications of telemedicine to Guam through potential partnerships with other entities in other geographical locations, such as the Hawaii Hospital Association, California Hospital Association, Kaiser, the Dept. of Veteran's Affairs and the U.S. Military. GMH and the GMA will work with DPHSS to identify ongoing possibilities and partnerships to enhance the delivery of medical care in Guam through these resources.
		HI-E2	The Governor of Guam should send letters of request to heads of state to discuss potential partnerships and collaborations to enhance the delivery of cost-effective and quality medical care in the Western Pacific.
HI-F	Develop Guam-based laboratory facilities to provide a broader range of testing capabilities for Guam and the region.	HI-F1	The DPHSS and Governor should work closely with the Centers for Disease Control and Prevention (CDC) and PIHOA to continue to advocate for the need to increase lab and technical capabilities and to pursue a potential collaboration with CDC if possible.
		HI-F2	The Governor should make a request in writing to the Secretary of Defense to recommend the development of advanced laboratory capabilities in Guam to serve both the military and civilian populations.
		HI-F3	The existing capacity of on-Island testing and lack of facilities illustrates significant gaps in testing capacity and lack of redundancy among the four existing laboratories: Guam Public Health Lab (GPHL), Army/Navy Base Hospital Lab (ANBHL), Diagnostic Laboratory Services, Guam (DLSG), and the Guam Memorial Hospital Lab (GMHL) relative to testing, human resources, and operational space. GovGuam shall seek federal funds to construct a Center for Disease Control (CDC) Laboratory to service Guam and the surrounding region.
		HI-F4	GovGuam shall develop a Memorandum of Understanding with DPHSS, GMH, US Naval Hospital, local health providers, and the governments of the Commonwealth of the Northern Mariana Islands (CMNI), the Federated States of Micronesia (FSM), Republic of Marshall Islands, and Republic of Palau supporting use of the new lab for tests not otherwise available in the region.

Number	Objective	Number	Action
HI-G	To work with the leaders of the Chief Executives Summit (CES) to continue to pursue the development of a "Western Pacific Health Sector (WPHS)."	HI-G1	The Office of the Governor will take the lead role in developing added definition to the delineation of the Western Pacific Health Sector working in conjunction with the Micronesian Chief Executives Summit (MCES). Included among the priority items would be how to pursue common cost purchasing of medical supplies and medicines and how to increase medical capacities within each of the principals in the MCES.
HI-H	To expand the treatment capabilities and services made available to the public.	HI-H1	GMHA will strive to increase the number of acute care hospital beds so that Guam has available adequate capacity to be on par with the standard for the hospital industry at a minimum (US ratio is 2.7 beds per 1,000 population; Pacific region is 2.1 beds per 1,000 population). This shall be a total capacity calculation of beds available to the public based on GMHA and private facility capabilities.
		HI-H2	Hire an additional 10 IT staff to support DPHSS. Obtain commitment from the Governor's Office to retain the Systems Administrator until all major IT requirements are complete. The Administration requires a Systems Administrator for the DPHSS to replace the current "on loan" arrangement.
HI-I	Achieve and sustain financial viability for the uninterrupted operation of Guam Memorial Hospital.	HI-I1	GMHA will retain an independent auditor to perform a streamlining assessment to assess the condition and capacity of current equipment, identify specific weaknesses and prioritize needs.
		HI-I2	GMHA will work to maintain the Joint Commission accreditation by identifying standards for achieving and maintaining accreditation and identifying issues that have resulted in revocation of accreditation and/or problems identified in accreditation audit.
HI-J	Achieve a reduction in non-emergency visits to GMH.	HI-J1	Promote the concept of "medical homes", where patients have a constant primary care physician that they can visit rather than seeking care in community health centers or GMH in non-emergency situations.
		HI-J2	DPHSS shall develop educational materials for Guam Community Health Center users that provide information on how to seek care or medical advice when facilities are not open.
		HI-J3	DPHSS, GMH, and UOG shall work together to evaluate the ability to create an on-call Nurse's Helpline to provide telephone triage to Guam residents during hours when the Guam Community Health Centers are closed. Appropriate media notice and promotion shall occur to highlight the availability of this service.
		HI-J4	GMH shall provide direct counseling to patients with frequent Emergency Room visit patterns (typically defined as more than 3-5 Emergency Room visits per year. As part of treatments, GMH shall provide information on treatment options.
		HI-J5	GMH and DPHSS shall evaluate the ability to provide an Urgent Care Center on or near the GMH site. This center shall provide triage to patients and provide a less expensive option to the use of the Emergency Room.

POA-5. Regulations, Licensure, and Insurance (RE)

Goal RE-1

To create and maintain a regulatory environment that protects and improves the well-being of the people of Guam.

Goal RE-2

To define the regulatory environment as being composed of several relevant categories, including those of medical insurance for citizens, liability insurance for those who deliver medical care, liability insurance for hospitals, regulations as they pertain to the insurance industry, regulations that pertain to economic and private competition in the medical delivery systems, etc.

Objectives and Actions

Number	Objective	Number	Action
RE-A	To seek exemptions or modifications from Federal guidelines (particularly those that exist under CMS) that are designed for application to the fifty states, but have less validity and efficacy when applied to a distant locality such as Guam.	RE-A1	Federal regulations that are deemed to work against an ability to deliver cost-effective medical care on Guam and the overall improvement of health outcomes will be identified. (Governor's office, Guam Legislature, or UOG) and used to seek modifications of federal regulations that impede the cost-effective delivery of medical care on Guam (Congressional action may be required).
		RE-A2	The Governor and/or Lt. Governor of Guam will engage in a proactive awareness-building and educational role with the HHS and Congress regarding the unique challenges indigenous to the Western Pacific in the delivery of medical care, thereby requiring more of a Western Pacific regional approach that Federal regulations tend to prohibit rather than facilitate. This approach will be taken with both CMS and HHS in Region IX in San Francisco and in Washington, DC.
RE-B	To minimize exposure to environmental pollutants and contaminants that may impair public health through compliance monitoring with applicable regulations and guidelines.	RE-B1	Collaborate with the Guam EPA to ensure that all areas of Guam are within EPA standards for air quality, water quality, solid waste management, and all applicable environmental health regulations. Identification of nonattainment areas will result in the Governor publicly enforcing compliance and supporting the Guam EPA who will address problems according to current regulations and methodologies for improvement.
		RE-B2	Improve water quality in coastal regions that are currently identified as medium to low quality through implementation of the Guam Safe Drinking Water Act.
RE-C	To increase the proportion of population who are covered by health insurance policies.	RE-C1	In the event that federal legislation is amended or not in place, introduce guiding legislation that requires employers to provide health insurance to their employees who work a minimum of 24 hours per week for a minimum of six consecutive weeks. Employers will be required to contribute a minimum of 50% of premium costs for coverage. Exceptions shall include employers offering seasonal employment, sole proprietors with no employees, and employers whose employees are paid solely by commission.

Number	Objective	Number	Action
RE-D	To update and maintain the most accurate understanding of the health status of Guam residents and respond appropriately based on current issues and health conditions.	RE-D1	Introduce guiding legislation that identifies the Five Year HSS Plan as the official healthcare planning document for Guam. Legislation requirements will include a schedule for regular updates (every five years) based on the most current health trends and conditions on Guam and in the Pacific Health region. Plan updates will address the most economical and efficient system of care, including quality of care, types of medical services, healthcare facilities, and medical equipment.
RE-E	To improve the process of obtaining and maintaining medical licensure.	**RE-E1**	Introduce enabling legislation that establishes temporary reciprocity for military spouses with medical licenses. The legislation will recognize an active medical license from all US states for a period of six months, allowing time for processing and issuance of a Guam medical license.
RE-F	To update Guam's current food and drug laws and regulation.	**RE-F1**	The Department of Environmental Health and the Governor should work with the Legislature to introduce and pass updated food and drug laws and regulation to address concerns over imported foods. (See Strategy WP-F2)

POA-6. Access to Care (AC)

Goal AC-1

To ensure that all residents of Guam receive full access to affordable, comprehensive, high-quality medical care services, including preventative, diagnostic, and treatment.

Goal AC-2

To eliminate the environmental, socioeconomic, and cultural barriers that limit access to, utilization of, and quality of public health services on Guam and in the Pacific Region.

Objectives and Actions

Number	Objective	Number	Action
AC-A	To ensure that all children have access to health services based on need, not ability to pay.	AC-A1	Disseminate information about free and reduced cost health screenings and clinic services to the public via PSAs, community meetings, announcements at community centers and through use of media outreach.
		AC-A2	Maintain annual funding to continue the provision of free medical screenings and seek other funding sources (federal, corporate donations, etc.) to cover shortfalls.
		AC-A3	Distribute educational materials and provide health screenings at locations that are visible to and easily accessible to the public such as organized health fairs, local shopping centers, pharmacies, and major community events.
AC-B	To increase the proportion of persons who have a specific source of ongoing primary medical care ("medical home" concept).	AC-B1	The Director of DPHSS will implement an annual public awareness campaign of the importance of having a "medical home" with a primary care provider. The campaign will be implemented through existing mechanisms including the GDOE, CHCs, GMH, GCC, and UOG and through the generation of news stories on TV, radio and in Guam newspapers.
AC-C	To enhance the Village as a source of health and social service support.	AC-C1	See Actions under Objection HI-E.
		AC-C2	Working with the Mayors' Council of Guam, UOG and health and social service NGO's, provide health and social service reference materials as part of a small information kiosk in each Village Center. The materials should provide information on wellness and prevention and sources of assistance.
		AC-C3	DPHSS shall apply for federal grant funding to develop and operate a mobile health and social service clinic. This "clinic on wheels" will be used to bring services to the Village Centers on a scheduled basis to provide information, preventative care and counseling, and testing services.
AC-D	To increase the proportion of persons who are trained in emergency response and have the necessary equipment needed for a pre-hospital emergency situation (police, fire fighters, ambulance service, etc.).	AC-D1	DPHSS will host emergency response training workshops in order to recruit additional skilled and qualified personnel.

Number	Objective	Number	Action
AC-E	To increase the proportion of population who are able to afford healthcare services	AC-E1	Promote the concept of Consumer Driven healthcare. Encourage employers to offer Health Savings Accounts and Health Reimbursement Accounts. Increase awareness of Flexible Spending Accounts amongst patients and employee groups.
AC-F	Reduce the cost of healthcare, particularly for health and social services that promote wellness and focus on prevention of disease.	AC-F1	Institute a pay-for-performance model that offers financial incentives awarded by the federal government and health insurers to physicians, hospitals, medical groups, and other health and social service providers based on established standards of care for quality and efficiency. Performance will be measured and enforced through national organizations such as the Joint Commission and NCQA.
AC-G	Reduce constraints to physically accessing health and social service facilities.	AC-G1	Work with DPW to enhance public transportation options to Community Health Care Clinics and GMH.

POA-7. Wellness & Prevention (WP)

Goal WP-1

To expand the concept of healthcare to encompass both prevention of disease and the adoption of healthy lifestyles, making wellness and prevention top priorities in both the public and private sectors in order to maximize health outcomes for the people of Guam before health impairments occur.

Goal WP-2

To increase public awareness of the direct correlation between both diet and exercise and health outcomes.

Goal WP-3

To approach and address public health at a holistic level, taking into consideration the treatment of disease conditions as well as prevention and overall wellness promotion.

Objectives & Actions

Number	Objective	Number	Action
WP-A	To expand the concept of healthcare to encompass both prevention through medical screenings as well as through the adoption of a healthy lifestyle.	WP-A1	The importance of Wellness and Prevention as a means of avoiding illness and health impairment will be a major focus of the strategic health planning process.
		WP-A2	The DPHSS will take official action to incorporate wellness and prevention concepts into its adopted definition of public health and public health services.
WP-B	To improve the equitable distribution of healthcare services by improving access to those who are currently underserved.	WP-B1	Increase awareness of Guam's public community health centers and the medical services offered at these facilities. A recent survey of women indicated a lack of knowledge of these services among community members. Information about these facilities and the wellness and prevention services available will be provided in conjunction with all applications for WIC, TANF and other similar programs, through announcements distributed by educational facilities, and in conjunction with all public health awareness programs.
WP-C	To substantially and substantively increase both health literacy awareness and practices of diet and exercise throughout the Guam Public School System.	WP-C1	DPHSS and GDOE will conduct an assessment of health education and physical education practices within the Guam Public School System to determine if they satisfy national standards. This assessment will focus on programs and practices of the school system, but will also include a scientific survey of student and family awareness and practices with a primary focus on diet and exercise.
		WP-C2	GDOE will send a report of findings and recommendations to the Governor and Guam Legislature in order to identify needs, reassess current school practices, and determine and enact new practices to improve health awareness and curriculum requirements in the public school system.

Number	Objective	Number	Action
		WP-C3	DPHSS and GDOE will conduct an assessment of current educational instructions/classes and public awareness programs to increase health literacy, particularly in terms of wellness and prevention (diet, exercise, safety, etc.) Upon completion, determine areas and methods from which enhanced education and public awareness efforts should take place to maximize health literacy within the public school system, to parents and the general public
WP-D	To increase the availability of healthier food and beverage choices in public services venues and throughout the community.	WP-D1	Eliminate vending machines with sugary beverages such as sodas and non-healthful snacks throughout public schools and facilities. Non-nutritious snacks should be replaced with healthier options, including fresh fruit and vegetables, bottled water, juices, etc. Key public venues include schools, child care centers, community recreational facilities, public government facilities, public health facilities, and detention centers. Guidance from the Dietary Guidelines for Americans and the Pacific Food Pyramid should be incorporated into the selection of new food and beverage choices offered.
WP-E	To increase public awareness of the fundamentals of a good diet and improve the nutrition of Guam residents.	WP-E1	Promote awareness of the Pacific Food Pyramid guidance through the widespread distribution of educational materials and inclusion of materials as a mandatory component of education curriculum used in public schools.
WP-F	To reduce the consumption of imported foods and increase the consumption of locally grown and farmed foods, including fresh fish and fruits and vegetables.	WP-F1	Develop and implement a culturally sensitive campaign to "return to tradition", encouraging reduced preparation and consumption of processed foods and meats, a decrease in process of frying foods, and increase in preparation of foods prepared using traditional methods, without the addition of oils, butters, mayonnaise, sugar, salt, and of deep-frying foods.
		WP-F2	Governor and Department of Environmental Health should seek legislative support to update Guam's current food and drug laws and regulation to promote local foods resources.
WP-G	To increase the number of women who breastfeed.	WP-G1	Reduce social and structural barriers to breastfeeding through the provision of breastfeeding support programs that include interventions at hospitals and workplaces (setting up breastfeeding facilities, providing onsite child care paired with a flexible work environment that allows "breastfeeding breaks", provisions of paid maternity leaves).
		WP-G2	Establish educational outreach as part of prenatal care to teach about the importance and effectiveness of breastfeeding as well as other topics for new parents.
		WP-G3	DPHSS, as part of services offered at Guam Community Health Centers, shall monitor the prevalence and maintenance of breastfeeding. DPHSS shall work with private providers, through the GMA, to collect sample data on breastfeeding prevalence with new mothers receiving care in the private sector. Information from this survey shall be used to update the efforts described under Actions WP-G1 and WP-G2.

Number	Action
WP-H1	Mandate minimum physical education requirements in schools in accordance with the CDC's Healthy People 2020 physical activity objectives. Curriculum guidance provided by the National Association of Sports and Physical Education will be followed to ensure that all youth meet the minimum physical activity recommendations.
WP-H2	Take part and sign up for the federal *Let's Move* program that is oriented toward assisting local elected officials who are working to build healthier communities.
WP-H3	Encourage extracurricular physical activity in both youth and adults through after school and community programs that encourage participation of both children and their parents. Maximize opportunities to access such events through the provision of and expansion of public transportation options for such events.
WP-H4	Use the Pacific Games, held every four years (with the next occurrence to be held in held in New Caledonia from August 27-September 10, 2011 followed by the 2015 games in Port Moresby, Papua New Guinea), as an opportunity to promote physical fitness and emphasize the importance of physical exercise to health outcomes.
WP-I1	Incorporate health planning strategies into the land use planning process with a focus on improving recreational infrastructure that supports bicycling and walking, improved access to public transportation, disbursement of parks and recreation areas throughout communities, and development of mixed-uses that combine residential, commercial, and institutional uses within a distance that discourages the reliance on motorized transportation.
WP-J1	DPHSS will develop and implement a public relations campaign to increase public awareness of the pivotal importance of receiving prenatal care for both the mother and the child. (GMH, UOG, GCC, GDOE, DHSS, etc.)
WP-J2	DPHSS will assign a contact person to serve as a clearinghouse for information on prenatal care for those who need information. (GCC)
WP-K1	The Governor will seek funding for the Division of Environmental Health programs that are currently underfunded and unfunded.

Number	Objective
WP-H	To encourage increased level of physical activity amo youth and adults.
WP-I	To create safe communities that encourage and su physical activity.
WP-J	Increase the proportion of pregnant women who prenatal care in the first trimester of pregnancy.
WP-K	To reduce the presence of indoor hazardous substa and minimize the potential for human interaction with and other harmful substances.

POA-8. Communicable Diseases (CD)

Goal CD-1

Surveillance (identify) – to establish a state-of-the-art surveillance system for communicable diseases (CD). This critical "early warning" system is pivotal to the protection of public health resulting from a spread of communicable diseases.

Goal CD-2

Response (treatment and control of spread) – to establish and maintain effective response capabilities to protect the public upon an outbreak of communicable disease.

Goal CD-3

Awareness (education) – to create full public awareness of what a communicable disease is and develop a response strategy identifying actions public health officials, public agencies, medical providers, and the public would need to take should an outbreak occur.

Goal CD-4

To reduce the morbidity and mortality rates of all communicable diseases, particularly those that pose the greatest threat to the public.

Objectives and Actions

Number	Objective	Number	Action
CD-A	DPHSS will seek and obtain compliance with all critical surveillance needs for Guam as identified by the CDC, WHO, PIHOA and other Western Pacific partners (including the Philippines).	CD-A1	DPHSS will request in writing to both the CDC and the WHO their recommendations for how to update and maintain an effective surveillance system consistent with the needs and directions of both entities. The results of this request will be used by DPHSS to conduct an assessment of current capabilities and practices in Guam and identify areas of need for improvement and compatibility with CDC and WHO needs.
		CD-A2	DPHSS will provide a written report to the Governor and Guam Legislature of its findings and recommendations for legal, regulatory or administrative actions. The report should also include a five-year plan for how to maximize surveillance capabilities consistent with CDC and WHO guidelines for use in policy-making and administrative actions in Guam.
		CD-A3	DPHSS will make a request in writing to PIHOA and the State Director of Public Health in Hawaii requesting their input regarding how to best establish and maintain an effective regional surveillance system for communicable disease in the Western Pacific. This information will be used to design a regional approach to surveillance issues and practices consistent with the standards and practices of the CDC and WHO.
		CD-A4	Work with CDC / Office of State Tribal and Local Territory Support (OSTLTS) to expand its current data surveillance efforts (currently focused on cancer) to include communicable diseases, as included in the benchmarking effort for this Strategic Plan.

Number	Objective	Number	Action
		CD-A5	DPHSS will continue to issue weekly and annual reports on Notifiable Diseases, identifying which diseases are of elevated concern and issue notices when outbreaks occur.
		CD-A6	Using the benchmarking of communicable diseases contained in this Strategic Plan, DPHSS shall make this data available to the public through the DPHSS website.
CD-B	To achieve and maintain maximum effectiveness for responses to outbreaks of communicable disease that can threaten public health outcomes in Guam.	CD-B1	DPHSS will develop a disaster preparedness plan that addresses the necessary measures to be taken to prevent a deleterious spread of a communicable disease Upon completion and approval, a public awareness will be completed via presentation at community events in public locations. Partners will include GMA, GDOE, GMHA, and private medical practices.
		CD-B2	DPHSS will work with GDOE to develop a better disease surveillance system at schools. This will include education of school district employees, working with parents to encourage keeping sick children at home, and providing staff with current information on potential outbreaks and what to look for in the children they work with (identification).
CD-C	To increase public knowledge and awareness of communicable diseases: what they are, how to prevent them, and how to contain them.	CD-C1	The Governor of Guam will proclaim "Communicable Disease Day" once a year on a date to be determined by the Governor. The proclamation will include a statement by the Governor of the importance of public awareness and practices regarding communicable diseases. DPHSS will work with the GDOE to establish an annual "Communicable Disease Day" with the Guam Public School System, using a model currently in place by several public school systems across the country. This day will focus on awareness-building and knowledge among students in both elementary and secondary schools, as well as with teachers, parents and the general public.
		CD-C2	Flyers and other easy to read materials will be provided to the public and posted in schools, medical facilities, community centers, and other public places that heighten awareness about communicable diseases, what they are and how they spread. The top 10 diseases of concern will be highlighted and directions on how to identify, prevent, and find more information will be provided.
		CD-C3	The Director of DPHSS will develop and implement additional initiatives on "Communicable Disease Day" to increase public awareness and knowledge. These initiatives may include such items as requesting that all providers of medical services participate in the day by placing information materials (to be provided by DPHSS) in their offices and facilities regarding communicable disease, as well as participating in local TV, radio and print interviews and new stories.
CD-D	DPHSS will develop an integrated plan for the implementation of a coordinated strategy for addressing communicable diseases in Guam.	CD-D1	DPHSS will develop and implement a benchmark plan for addressing the three prime components of communicable disease – surveillance, response and public awareness. This plan will be updated as needed, but will be required to be done at least every 5 years and submitted to the Governor and the Legislature.
		CD-D2	DPHSS will provide copies of its Health Strategic Plan to the Office of the Regional Health Administrator at the HHS in Region IX, the CDC and WHO for their awareness and use.

Number	Objective	Number	Action
		CD-D3	Seek additional funding sources and partner with appropriate organizations to fund currently unfunded mandates and programs as well as sustain and improve programs that are currently underfunded or require renewal.
		CD-D4	Obtain adequate funding and staff for the Tuberculosis Program to combat the increasing level of antibiotic-resistant strains of TB being detected on Guam. Effectiveness of this program also requires an improvement to Health Infrastructure, with priority items identified as state of the art radiographic (x-ray) equipment and TB isolation room(s).
		CD-D5	Work with Office of the Regional Health Administrator and CDC in Region IX to provide enhanced federal funding for surveillance and treatment of communicable diseases that increase on a per capita basis (TB, STDs, etc.) related to workers immigrating to Guam as part of the military buildup.
		CD-D6	As a requirement of all workforce housing locations, require all potential residents to be screened for critical communicable diseases (as defined by DPHSS but to include TB and HIV/AIDS). Workers shall be retested annually as a condition of employment.
		CD-D7	Develop a communications strategy to alert the people of Guam about sudden outbreaks, the detection of new strains of diseases, and other health concerns as they occur. The communications strategy should utilize multi-lingual public service announcements in audio and visual formats.
		CD-D8	Work with the WHO, CDC, and HHS to identify priority diseases of concern and issue mandatory vaccination requirements for workers under the H2B program prior to entering Guam.
CD-E	To increase the proportion of young children who receive all recommended vaccines.	CD-E1	Through awareness/health education programs, promotion at Community Health Centers, free immunization programs (and easier access to these programs within each Village), increase the number of youth who receive vaccinations by 10% per year until at least the 90% vaccination rate level is achieved. See also the Actions under Objective AC-E.
CD-F	To increase the proportion of adults who are vaccinated annually against influenza.	CD-F1	Through awareness/health education programs, promotion at Community Health Centers, work locations (>50 employees), free immunization programs (and easier access to these programs within each Village), increase the number of adults who receive vaccinations by 10% per year. Additional vaccinations, including for pneumococcal disease and hepatitis, will be available depending on individual needs. See also the Actions under Objective AC-E.

POA-9. Non-Communicable Diseases (NCD)

Goal NCD-1

To reduce overall Non-Communicable Disease morbidity and mortality rates among all age groups, ethnicities, genders, and locations on Guam.

Objectives and Actions

Number	Objective	Number	Action
NCD-A	To make the issue of NCDs a top priority and major initiative for GovGuam and the general population.	NCD-A1	The Governor will take the lead on building awareness on NCDs by hosting a one day summit on the subject of NCDs and will include leaders from the medical, public health community, educational, insurance, cultural and business communities on Guam and invite representatives from CDC, HHS, US Navy, and PIHOA. This summit will be held in conjunction with the Micronesian Chief Executives Summit.
		NCD-A2	The Governor will proclaim NCDs as a major crisis and threat (referencing a similar proclamation made by PIHOA in 2010) to the well-being and the future of the people of Guam in all realms – health, economics, medical care, etc.
NCD-B	To reduce the number of new NCDs cases diagnosed annually and reduce the number of existing cases through proper treatment and improved access to care.	NCD-B1	A public-private partnership will be formed to launch an educational and awareness campaign that alerts people to the risk factors associated with NCDs. This campaign should be conducted in alignment with the goals and objectives identified in Wellness and Prevention and should be coordinated in order to maximize resource utilization efficiencies.
NCD-C	To reduce the cancer morbidity and mortality rate among all Guam residents.	NCD-C1	Maintain the UOG Cancer Registry and make raw data available and accessible via the internet for use by analysts, researchers and other experts involved in the development of cancer control requirements.
		NCD-C2	GMHA will work to improve its infrastructure and personnel to be able to provide all medical service components needed in cancer detection and treatment.
NCD-D	To reduce the potential for and the incidence of NCDs among youth.	NCD-D1	Educate youth about risk factors associated with common NCDs such as diabetes, cancer, and heart disease through increasing health literacy education curriculum in coordination with Wellness and Prevention programs, such as physical education requirements and the promotion of healthy eating habits.
NCD-E	To increase people's awareness and understanding of their own health risk through appropriate services that can prevent fully developing NCDs and other health conditions.	NCD-E1	Develop and distribute educational materials that focus on early warning signs and symptoms of common NCDs such as diabetes, heart disease, and cancer.
		NCD-E2	Distribute brochures to increase public awareness of free and reduced cost screenings services that are available through community health centers, including blood glucose monitoring, blood pressure testing, blood cholesterol checks, physical examinations, vision examinations, and other basic health screening services.

Number	Objective	Number	Action
NCD-F	To increase the proportion of patients currently diagnosed with an NCD who are taking steps to improve their overall health.	NCD-F1	DPHSS will work with DOE to incorporate Dietary Guidelines for Americans and the Pacific Food Pyramid and the role of nutrition in combatting chronic disease into education requirements in schools.
		NCD-F2	Educate patients about the importance of physical activity and participation in national activity days.
NCD-G	Utilize all available resources to share knowledge and resources focused on the prevention and reduction of NCDs.	NCD-G1	The Governor should make a request to the Chairman of the Federal Regional Council and the Regional Director of the U.S. Department of Health & Human Services to co-host a bi-annual conference every two years in Guam that will focus on health issues in Guam and other U.S. affiliated governments in the Western Pacific. This conference could be hosted by the Governor, the Micronesian Chief Executives Summit, FRC, HHS, the Department of Interior, PIHOA and any other appropriate partners. The focus would be on health issues and the delivery of medical care in Guam and the Western Pacific.
NCD-H	Reduce the disease and economic burden of diabetes and improve the quality of life for all persons who have, or are at risk, for diabetes	NCD-H1	The Governor will make a formal request to the Director of CDC and HHS for expert assistance in developing a plan to contain the increase in cases of diabetes and an eventual reduction of occurrence. This plan will be developed in coordination with public and private health leaders in Guam and with the educational community in public schools. Added assistance should also be requested from other relevant entities, such as the American Diabetes Association.
		NCD-H2	Develop and implement a NCD Control Plan based on key elements delineated in the Health People 2020 Plan. Methodologies will be developed to pursue these elements and objectives consistent with the culture and capabilities of the people of Guam.

POA-10. Oral Health (OH)

Goal OH-1

To produce maximum outcomes for oral health among the population of Guam.

Goal OH-2

Prevent and control oral and craniofacial diseases, conditions, and injuries and improve access to dental care, including for preventive services.

Goal OH-3

Increase awareness of the importance of and relationship between oral health to overall health conditions.

Objectives and Actions

Number	Objective	Number	Action
OH-A	To have 80% of the population identify a "dental home" from which they receive annual dental check-ups and maintenance services.	OH-A1	Expand medical services currently offered in public health facilities, including long-term care, to include preventative services, such as regular dental screenings and cleanings. Major dental work required would be referred out to selected providers who can provide services at a reduced or subsidized cost to qualified patients.
OH-B	To increase awareness of the correlation between dental health and overall health.	OH-B1	Oral Health Day on Guam will be established, coordinated and modeled on World Oral Health Day, organized by the World Dental Federation and celebrated on the 12th of September each year. New programs or initiatives should be added or enhanced regarding oral health in the public school as needed that will be developed in a teamwork manner among GDOE, DPHSS and GDA. This program could be expanded to include parents and other family members.
OH-C	To improve the capability of gathering dental statistics on an annual basis.	OH-C1	Conduct an island-wide assessment of dental health on Guam every five years by the DPHSS and in conjunction with UOG and GCC (based on a survey methodology).
		OH-C2	The data that is collected as a result of Action OH-C1 will be used by DPHSS to present an annual report to the Governor and Legislature on the "State of Oral Health in Guam." This report will also include recommendations for action steps and improvements and will be modeled after the Surgeon General Report on Oral Health.

POA-11. Behavioral Health (BH)

Goal BH-1

Reduce the occurrence of violent acts on Guam.

Goal BH-2

Reduce the occurrence of substance abuse, alcohol consumption, and other unhealthy behaviors, amongst the Guam community, including both adults and underage youth.

Goal BH-3

Provide a wide range of mental health services to support the needs of the people of Guam.

Goal BH-4

To increase public awareness of the direct correlation between personal and family behavior and personal and family health.

Goal BH-5

Reduce the occurrence of accidental deaths.

Objectives and Actions

Number	Objective	Number	Action
BH-A	Reduce the occurrence of underage drinking, drinking among the general population and substance abuse.	BH-A1	Support and continue Guam's One Nation Alcohol Prevention Social Marketing Campaign, launched in March 2010. Expand the program throughout the Pacific Region by inviting the islands of Palau, Federated States of Micronesia, Commonwealth of the Northern Mariana Islands, the Republic of the Marshall Islands, and American Samoa to join and participate in the campaign. The campaign will utilize popular media outlets such as the internet and streaming videos in addition to more traditional media resources.
		BH-A2	Assess current alcohol awareness and prevention methods on Guam to strengthen successful programs and transform weaker programs. Produce annual reports to accompany requests for additional funding and training from SAMHSA.
		BH-A3	Continue and ramp up substance abuse and alcohol education programs to reduce the occurrence of underage drinking and combat the abuse of alcohol throughout the general population.

Number	Objective	Number	Action
BH-B	To substantially reduce the proportion of Guamanians that use tobacco or betelnut, with targeted annual percentage achievements.	BH-B1	Seek continued funding of PEACEGuam program that targets at-risk populations for the purpose of promoting an alcohol-free, tobacco-free, drug free, and overall healthy future for Guam.
		BH-B2	Strengthen and expand Public Law 28-80 and Public Law 30-83 that prohibit smoking indoors to include restaurants, bars, and clubs, as well as other indoor locations that currently expose people to second-hand smoke.
BH-C	To increase public awareness and understanding of mental and behavioral health as medical conditions.	BH-C1	Provide easy to understand educational materials that address underlying medical conditions and the medical nature of behavioral health as a public health concern. These educational materials will be distributed by public and private providers to reinforce the medical nature of behavioral and mental health disorders.
		BH-C2	Publicize a directory of resources available for treatment and counseling related to behavioral and mental health conditions. This directory will be available to the public and announced through mainstream social media resources.
BH-D	To prevent and reduce acts of violence in the community and in homes.	BH-D1	Establish and adopt a unified data surveillance system that uses one official definition of violence and takes into consideration attempted violence, including suicide attempts. This will be conducted in collaboration with the Guam Police Department who will serve as the primary data source, with assistance from approved medical examiners.
		BH-D2	Integrate safety planning into both the public health planning and general community planning processes. Priority elements will include improving the safety of public streets and public areas.
		BH-D3	Develop an anti-graffiti and anti-vandalism campaign that engages non-profit organizations who provide volunteers to clean up graffiti and discourage additional damage.
		BH-D4	Eliminate the number of vacant buildings located within the community through on-site inspections and removal of vacated and dilapidated buildings.
BH-E	Significantly reduce suicides and suicide attempts.	BH-E1	The DPHSS, through its PEACEGuam and Live Healthy Guam programs will work in conjunction with established entities such as non-profit organizations and health groups to raise awareness about mental health disorders such as anxiety, depression, eating disorders, and others that have been identified as significant risk factors that may lead up to acts of violence against oneself or others.
		BH-E2	The DPHSS, through its PEACEGuam and Live Healthy Guam programs, will work in conjunction with established entities such as non-profit organizations and educational facilities to educate youth about factors that may result in mental health conditions such as the use of illicit drugs, consumption of alcohol, and use of tobacco.
		BH-E3	The DPHSS will work closely with SAMHSA/CMHS to increase the number of professionals certified as ASIST trainers (Applied Suicide Intervention Skills Training) from two people to five people on Guam and from 15 people in the Pacific Region to 50 people.

Number	Objective	Number	Action
		BH-E4	Increase the number of trainers that support mental health programs that provide guidance to victims of violence and those at-risk of suicide through an expansion of existing collaborations and partnerships. Currently, partnerships exist between Department of Youth Affairs, Guam Army National Guard, the University of Guam – I Pinangon Campus Suicide Prevention Program, Youth For Youth LIVE! Guam and Sanctuary, Inc.
BH-F	To build and expand Guam's capacity and infrastructure for preventing and combatting alcohol and substance abuse through early intervention	BH-F1	Continue and expand Guam's Tobacco Control Program to provide a greater presence in educational facilities and other places youth frequent, such as recreation centers.
		BH-F2	Continue and strengthen Guam's relationship with the Substance Abuse and Mental Health Service Administration/Center for Mental Health Services. Guam DMHSA representatives will work closely with SAMHSA to utilize existing resources, knowledge, and training opportunities to strengthen and expand local capabilities and skills.
		BH-F3	Seek continued and additional funding for the operation of programs and facilities that provide mental health services to the public at no or reduced cost. Guam will continue to pursue funding through HUD's Community Development Block Grant program and the Strategic Prevention Framework State Incentive Grant and will identify additional funding sources.
BH-G	Promote safety and personal responsibility as a means to reduce accidental deaths on Guam.	BH-G1	GovGuam shall work to reduce accidental deaths from vehicle accidents by: ▪ Enhanced training requirements for all heavy vehicle drivers, including refresher training after two years ▪ Educational outreach, including public service announcements, designed to inform the public on common accident causes ▪ Review of accident data to identify high accident areas and 1) evaluate engineering design to determine physical corrections needed, and 2) enhanced enforcement at these locations ▪ Review of all future roadway changes (use or design), including those associated with the military buildup, to ensure engineering design is optimized to promote safe usage
		BH-G2	GovGuam shall work with US Coast Guard on enhancing marine / waterway safety. ▪ Enhanced signage (in multiple languages) identifying water safety issues and areas ▪ Provision of life vests at high-use public beaches and marinas that are available as free loaners

Number	Objective	Number	Action
BH-H	To provide mental and behavioral health services to the Guam community.	BH-H1	Continue the Focus on Life – Guam Youth Suicide Prevention program, currently funded through September 2011. Focus On Life is founded on a three year grant from the Substance Abuse and Mental Health Services Administration (SAMHSA) that will expire in September 2011; additional federal funding is required to continue providing critical suicide prevention to Guam youth. A status report identifying progress, successes, and challenges will be produced and submitted as a component of additional funding requests.
		BH-H2	Assess and utilize knowledge gained and data collected through the Focus on Life program to implement outcome and performance measures and conduct annual analyses to assure the quality and effectiveness of mental health/development disabilities/substance abuse services.
		BH-H3	Improve and expand mental health services provided, with a focus on suicide prevention through the empowerment of youth to develop and nurture healthy relationships; the provision of conflict management skills; providing assistance to youth in understanding and accepting their sexual orientation; the prevention of physical and sexual violence, and the prevention and control of tobacco, alcohol, and drug use.
		BH-H4	Develop and communicate guidance for use by mental health professionals and crisis intervention organizations regarding the importance of addressing education and employment in all treatment plans.

POA-12. Other Health & Social Services (OHSS)

Goal OHSS-1

To improve the lives of all people who require assistance in the maintenance of their physical and mental health and in their pursuit of a better quality of life.

Goal OHSS-2

To provide adequate shelter and services to homeless individuals and families seeking assistance.

Objectives and Actions

Number	Objective	Number	Action
OHSS-A	To maximize opportunities for those with disabilities to lead a full and productive life.	OHSS-A1	Improve functionality of programs that assist employment of disabled. Identify achievable targets for percentage of public workforce comprised of individuals with disabilities.
		OHSS-A2	Work with local businesses and business organizations to encourage hiring of persons with disabilities.
		OHSS-A3	DPHSS and NGOs will pursue grant funding that allows offsets for wages to employers in exchange for training.
		OHSS-A4	GovGuam shall work to consolidate workforce training programs for the disabled within a single department (DOL).
		OHSS-A5	GovGuam should collaborate with the National Council on Disability in obtaining funding and guidance through The National Institute on Disability and Rehabilitation Center to establish a National Center for Parents with Disabilities and Their Families location on Guam. The National Institute on Disability and Rehabilitation Center has funded such centers since 1990, with regular competition for awards every three to five years. The center would provide additional technical assistance to improve outcomes for families with parents with disabilities in the child welfare and family court systems.
		OHSS-A6	As part of building permit applications and inspections and future occupancy permits, monitor compliance with ADA requirements.
OHSS-B	To improve the ability to understand and treat patients with disabilities.	OHSS-B1	Collaborate with UOG to increase opportunities for and provide training for healthcare, law enforcement, judicial, and educational providers on effective communication methods regarding individuals with disabilities and those with limited English proficiency
		OHSS-B2	Make use of the US Department of Labor's Office of Disability Employment Policy's series of free video vignettes, which aim to help all youth, including those with disabilities, develop and strengthen six essential skills needed to succeed in today's workforce: communication, networking, enthusiasm and attitude, teamwork, problem-solving and critical thinking, and professionalism.
		OHSS-B3	Provide information, referral and care coordination to individuals that call the Office on Aging in need assistance with activities of daily living.

Number	Objective	Number	Action
OHSS-C	To improve the quality of life of the elderly through both prevention and maintenance of health through preventative care.	OHSS-C1	Participate in the federal Program of All-Inclusive Care for the Elderly (PACE). Encourage seniors to enroll in PACE and other programs whose purpose is to reduce the cost of medical care for persons aged 55 and over.
		OHSS-C2	Engage and educate local businesses that have the capability of contributing resources and who can create educational campaigns that promote awareness and increase sense of ambition amongst the elderly.
		OHSS-C3	Promote and encourage the utilization of the 2001 National Family Caregiver Support Program implemented on Guam. This program provides information to elders and their caregivers, assistance to caregivers, counseling, and training to caregivers.
OHSS-D	To prevent and eliminate homelessness by addressing the broad conditions and underlying factors that foster homelessness.	OHSS-D1	Engage the Guam Interagency Council for Coordinating Homelessness Programs to coordinate the development of the 10-Year plan to End Chronic Homelessness (initiated in 2009) that will include the identification of existing issues that lead to homelessness.
		OHSS-D2	Develop and implement a media campaign that educates the public about the cost of homelessness as well as the potential health effects of homelessness.
		OHSS-D3	Address the underlying issues that contribute to homelessness, including domestic violence, alcoholism, substance abuse, mental illness, the shortage of affordable housing, and the shortage of special needs housing with supportive services. This action must be coordinated with Behavioral Health strategies.
OHSS-E	To establish an emergency response plan to serve the homeless population and those at-risk for becoming homeless and provide services when emergency situations that have the potential to cause extensive housing damage to arise.	OHSS-E1	Work with nonprofit organizations that can provide a Housing Liaison to assist in placement of people in housing during emergency situations or temporary evacuations.
OHSS-F	To increase the availability of affordable housing.	OHSS-F1	Amend time limitations on maximum duration of stay in affordable housing so as to encourage residential permanency and improve resident's sense of home ownership.
OHSS-G	To improve the quality and capacity of mental health services provided.	OHSS-G1	Establish guidance that ensures continuity of care and supports for consumers, local providers, and public facilities to ensure transition from emergency/crisis services to an ongoing provider.
		OHSS-G2	Establish cooperative relationships and protocols for continuity of care at all levels, including hospitals, primary care physicians, clinics, networks, and other community and public agencies essential to effective crisis response.
OHSS-H	To establish an authority on mental health services that can function in collaboration with the Government of Guam.	OHSS-H1	Re-establish the Mental Health Planning Council that functions as an independent government entity empowered to seek funding sources, approve and distribute funding, approve mental health planning documents, organize and manage mental health services, and recommends legislative actions required to pursue objectives related to the improvement of adult mental health.
		OHSS-H2	Solicit SAMHSA technical assistance for consistency with federal and other previously established goals and objectives that involve customer-driven approaches and evidence based practices to reduce mental health problems in the community.

Number	Objective	Number	Action
		OHSS-H3	**Prepare a comprehensive training plan for crisis intervention and stabilization techniques that include development, implementation, and maintenance of ongoing training. Existing SAMHSA resources will be used and expanded upon.**
OHSS-I	To strengthen the coordination of senior services through improved leadership of the Senior Services.	OHSS-I1	Appoint a Director of Council for Seniors Citizens, which has been vacant since 2003
		OHSS-I2	Expand the functions of the existing Council's responsibilities in coordination with DPHSS objectives for improving the provision of health and social services.
		OHSS-I3	Strengthen strategic alliances to coordinate current senior services, such as transportation services, with other health and social services entities.

POA-13. Acronyms Used

ADA	Americans with Disabilities Act
BIT	Bureau of Information Technology
BSP	Bureau of Statistics & Plans
CMS	Center for Medicare & Medicaid Services
	CoC Chamber of Commerce
DOA	Guam Department of Administration
DPHSS	Guam Department of Public Health and Social Services
GCC	Guam Community College
GCCM	Guam Chamber of Commerce
GCHCs	Guam Community Health Centers
GCR	Guam Congressional Representative
GDOE	Guam Department of Education
GDSC	Guam Division of Senior Citizens
GGO	Guam Governor's Office
GFD	Guam Fire Department
GGARP	GovGuam Association of Retired Persons
GL	Guam Legislature
GMA	Guam Medical Association
GMH	Guam Memorial Hospital
GMHA	Guam Memorial Hospital Authority
GNA	Guam Nurses Association
GPA	Guam Pharmacy Association
GPD	Guam Police Department
GPSS	Guam Public School System
HHS	United States Department of Health and Human Services
MCES	Micronesian Chief Executives Summit
NGO	Non-Governmental Organization
PACE	Program of All-Inclusive Care for the Elderly
PBS-Guam	Guam Educational Telecommunication Corporation
PIHOA	Pacific Island Health Officers Association
UOG	University of Guam

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Appendix A Providers Guide

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Acronyms

A

AAFB	Andersen Air Force Base
AABD	Aid to the Aged, Blind, or Disabled
AAHBP	Asian American Hepatitis B Program
AAHE	American Association for Health Education
AAPAR	American Association for Physical Activity and Recreation
AAPCHO	Association of Asian Pacific Community Health Organizations
ABI	Ankle-brachial index
AC	Access to Care
ACA	Affordable Care Act
ACF	Administration for Children and Families
ACHIEVE	Action Communities for Health, Innovation, and EnVironmental changE
ACS	American Community Survey
ACT	Governor's Advisory Consulting Team
ADA	Americans with Disabilities Act
AFB	Air Force Base
AFDC	Aid to Families with Dependent Children
AGUPA	Automated Guam Program Assistance
AHRQ	Agency for Healthcare Research and Quality
AIDS	Acquired Immunodeficiency Syndrome
ALF	Assisted Living Facility
ANBHL	Army/Navy Base Hospital Lab
AoA	Administration on Aging
AOD	Alcohol and Other Drugs
APA	American Psychological Association
API	Asians and Pacific Islanders
APNLC	American Pacific Nursing Leaders Council
APTD	Aid to the Permanently and Totally Disabled
ARRA	American Recovery and Reinvestment Act
ASFR	USDHHS's Office of the Assistant Secretary for Financial Resources
ASIST	Applied Suicide Intervention Skills Training
ATSDR	Agency for Toxic Substances and Disease Registry

B

BBA	Balanced Budget Act of 1997
BH	Behavioral Health
BHCF	Bureau of Health Care Financing
BIBLE	Building Incredibly Beautiful Lives Enthusiastically
BIT	Bureau of Information Technology
BMI	body mass index
BOSSA	Bureau of Social Services Administration
BPCS	Bureau of Primary Care Services
BPSS	Bureau of Professional Support Services
BRAC	Base Realignment and Closure
BSP	Bureau of Statistics and Plans

C

CAPD	Continuous Ambulatory Peritoneal Dialysis
Cardiac MIBI	Cardiac Methoxyisobutylisonitrile, referred to as a type of Cardiac scan - Cardiac MIBI scan
CASD	Child-Adolescent Services Division
CAT	Community Advocate Training Project
CBT	Capacity Building and Training Project
CCDBG	Child Care and Development Block Grant
CCDF	Child Care and Development Fund
CCDF	Child Care Development Fund
CCID	CDC Coordinating Center for Infectious Diseases
CD	Communicable Disease
CDC DVH	Centers for Disease Control Division of Viral Hepatitis
CDC OID	CDC Office of Infectious Diseases
CEDDERS	Center for Excellence in Developmental Disabilities Education, Research, and Service
CEED	Center for Early Education and Development
CES	Chief Executives Summit

CFO	Chief Financial Officer
CHC	Community Health Center
CHIP	Children's Health Insurance Program
CHIPRA	Children's Health Insurance Program Reauthorization Act
CHP	Chronic Diseases and Health Promotion
CIA	Central Intelligence Agency
CMS	Centers for Medicare and Medicaid Services
CNMI	Commonwealth of the Northern Mariana Islands
COBRA	Consolidated Omnibus Budget Reconciliation Act
COFA	Compact of Free Association
CPS	Child Protective Services
CSBG	Community Services Block Grant
CWS IVB-1	Child Welfare Services

D

DASH	Dietary Approaches to Stop Hypertension
DEH	Division of Environmental Health
DEP	Drug Education Program
DES	diethylstilbestrol
DFBMD	Division of Foodborne, Bacterial and Mycotic Diseases
DISID	Department of Integrated Services for Individuals with Disabilities
DLSG	Diagnostic Laboratory Services Guam
DMFT	Decayed, Missing, and Filled Teeth
DMHSA	Department of Mental Health and Substance Abuse
DNPAO	CDC's Division of Nutrition, Physical Activity, and Obesity
DOA-HR	Guam's Department of Administration-Human Resources Division
DoD	Department of Defense
DOH	US DHHS's Division of Health
DOI	United States Department of Interior
DPHSS	Department of Public Health and Social Services
DPW	Division of Public Welfare
DSC	Division of Senior Citizens
DSCH	Division of State and Community Health
DSS	Department of Social Services
DTaP	Diphtheria
DVD	Digital Video Disc
DVH	Division of Viral Hepatitis
DVM	Doctor of Veterinary Medicine

E

E Byrnes	Edward Byrne Memorial Grant Fund
EBT	electronic benefit transfer
ECG	Echocardiogram
ECSE	Early Childhood Special Education
EEG	Electroencephalograph
EEO	Equal Employment Opportunity
EHEC	Escherichia coli, enterohemorrhagic
EHR / EMR	Electronic Health Record / Electronic Medical Record
EKG	Electrocardiogram
EMD	Emergency Medicine Department
EMTALA	Emergency Medical Treatment and Active Labor Act
ENT	Ear, Nose, and Throat
EPA	United States Environmental Protection Agency
EPHI	Environmental public health indicators
EPHS	Environmental public health surveillance
EPSDT	Early Periodic Screening and Diagnostic Testing
ER	Emergency Room
ESRD	end stage renal disease

F

F&V	fruits and vegetables
FAS	Freely Associated States
FDA	Food and Drug Administration
FFMIA	Federal Financial Management Improvement Act
FHP	Family Health Planning
FM	Financial Management
FMAP	Federal Medical Assistance Percentage
FNS	Food and Nutrition Service

FNS USDA	Food and Nutrition Service: United States Department of Agriculture
FPL	federal poverty level
FRC	Federal Regional Council
FSA	Flexible Spending Account
FSM	Federated States of Micronesia
FY	fiscal year

G

GAAP	Generally Accepted Accounting Principles
GAPSD	Guam Advisory Panel for Students with Disabilities
GAS	group A streptococcus
GASB	Governmental Accounting Standards Board
GCA	Guam Code Annotated
GCC	Guam Community College
GCHC	Guam Community Health Centers
GDA	Guam Dental Association
GDOE	Guam Department of Education
GDOL	Guam Department of Labor
GEDA	Guam Economic Development Authority
GFD	Guam Fire Department
GMA	Guam Medical Association
GMH	Guam Memorial Hospital
GMHA	Guam Memorial Hospital Authority
GMHL	Guam Memorial Hospital Lab
GNA	Guam Nurses Association
GNGO	Guam Non-Governmental Organization
GovGuam	Government of Guam
GPA	Guam Psychological Association
GPD	Guam Police Department
GPHL	Guam Public Health Lab
GPSS	Guam Public School System
Guam CoC	Guam Chamber of Commerce
Guam DOA	Guam Department of Administration
Guam EPA	Guam Environmental Protection Agency
Guam SOA	Guam State Office on Aging
GUMA hinemlo'	Permanent Supportive Housing
GUMA IFIL	Guam Transitional Residential Program
GWIB	Guam Workforce Investment Board

H

H1N1	Swine (pig) Flu
H5N1	Avian (bird) Flu
HAB	HIV/AIDS Bureau
HAV	hepatitis A virus
HBsAg	hepatitis B surface antigen
HBV	hepatitis B virus
HHCC	Healing Hearts Crisis Center
HCEARA	Health Care and Education Affordability Reconciliation Act
HCH	Health Care for the Homeless
HCV	hepatitis C virus
HDA	Hawaii Dietetic Association
HFF	Healthy Futures Fund
HHS	Health and Human Services
HI	Health Infrastructure
HIPAA	Health Insurance Portability and Accountability Act
HIT	Health Information Technology
HITECH	Health Information Technology for Economic and Clinical Health Act
HIV	Human Immunodeficiency Virus
HIV / AIDS	Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome
HMO	Health Maintenance Organization
HPL	Hawaii Pathologists Laboratory
HPV	Human papillomavirus
HR	Human Resources
HRA	Health Reimbursement Account
HRH 2010	Human Resources for Health Plan 2010
HRSA	Health Resources and Services Administration
HSA	Health Savings Account

Please see the next page.

5

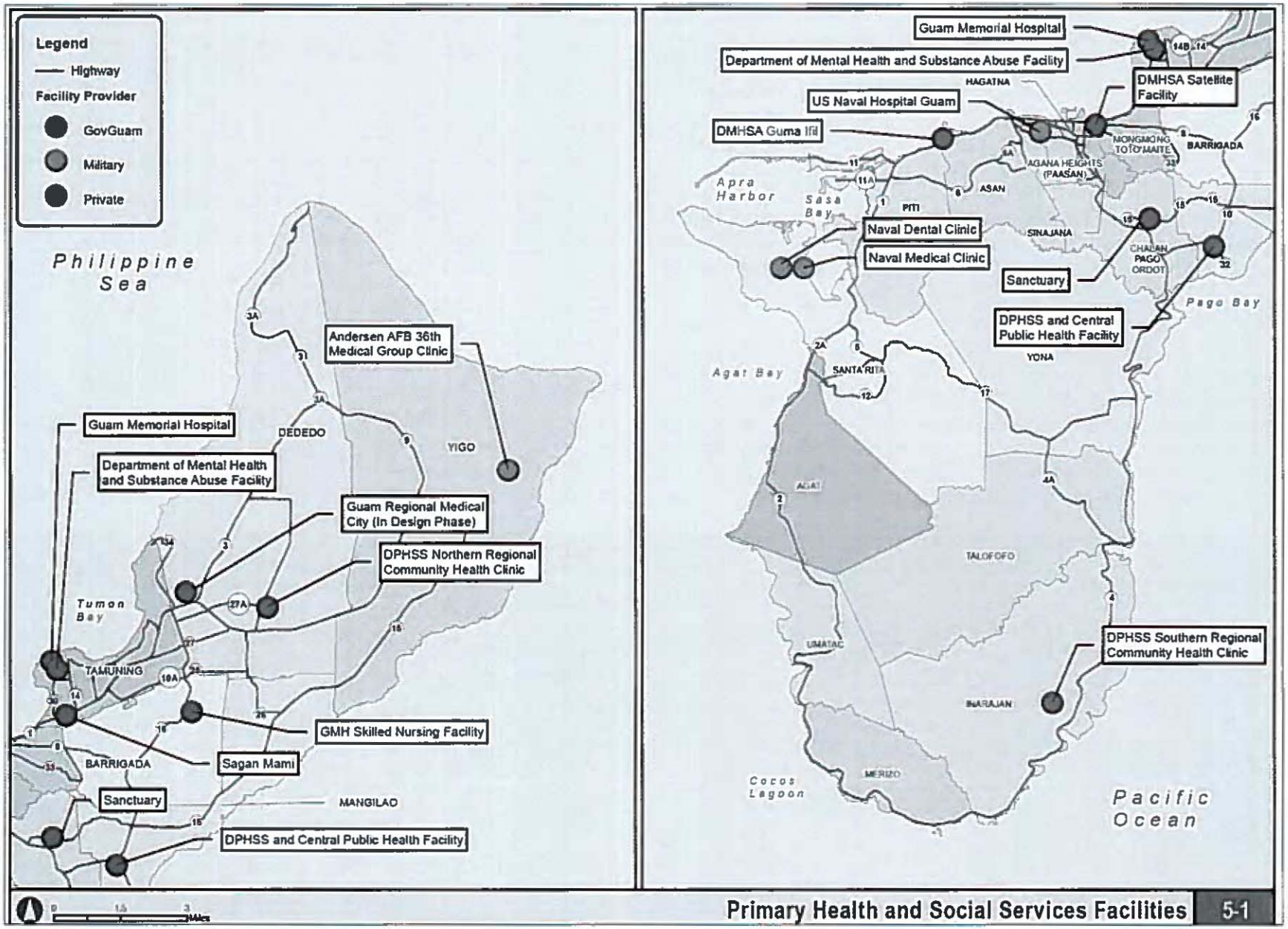
Health and Social Services Infrastructure

Inside Section 5 . . .

This section provides an overview of the facilities and major assets that make up the health and social services infrastructure on Guam. The health infrastructure consists of healthcare facilities, including public community clinics, public and private hospitals, and private health clinics; the facilities that support these healthcare centers; vehicles (ambulances); and technology such as computer systems used to record patient data, manage staff and supplies, share information, and communicate with health professionals outside of Guam.

The Department of Public Health and Social Services (DPHSS) is the government agency responsible for monitoring and maintaining health and social service concerns, issues, and related public infrastructure on Guam. Guam Memorial Hospital Authority (GMHA), a semi-autonomous authority, is the designated authority in charge of the only public hospital on the island. The Department of Mental Health and Substance Abuse (DMHSA) is responsible for health-related and social service programs such as providing comprehensive mental health, alcohol, and drug recovery.

Figure 5-1 illustrates the locations of the major public and military facilities that make up the backbone of Guam's health and social services infrastructure, as well as the location of the new private hospital (Guam Regional Medical City) that is currently in the design phase.



Primary Health and Social Services Facilities 5-1

5.1 Guam Memorial Hospital Authority

Guam Memorial Hospital

GMHA is a primary source of healthcare services on Guam and is also utilized by some of the neighboring islands in the Western Pacific. Guam Memorial Hospital (GMH) is the only provider on Guam dedicated to providing emergency and acute care services to the civilian population. As of 2011, the major units within the hospital that provide specific types of services are:

- Emergency Medicine Department
- Hemodialysis Unit (reported closed in 2012)
- Laboratory
- Operating Room
- Radiology Department
- Respiratory Care and Rehabilitative Services
- Special Services Department
- Labor and Delivery Unit
- Intensive / Critical Care Unit

The hospital is located at 850 Governor Carlos G. Camacho Road in the Village of Tamuning (see Figure 5-1). In July 2010, GMH finally earned full Joint Commission accreditation after losing accreditation in 1983 and striving to regain it over the years (Guam Memorial Hospital Authority, 2011). Accreditation by the Joint Commission, which evaluates hospitals based on national patient safety goals, medical staffing, healthcare quality, and other categories, symbolizes that a hospital meets or exceeds national performance standards and is committed to meeting safe, high quality, and best value healthcare (Ngirairikl, Feb. 2011). The accreditation does not include the off-site Skilled Nursing Facility, which has different accreditation guidelines as a long-term care facility.

Guam participated in National Hospital Week from May 8 to May 14, 2011. This year's theme was "Champions of Care" and was designed to recognize all those who are committed to improving the healthcare system on Guam and serving the community on a daily basis. Activities included an open house event, various events within different departments, and a 5k race.

Population Served

According to Guam's Bureau of Statistics and Plans estimates and projections, Guam's population increased by an average of approximately 3,000 people per year from 2000 to 2010. For further information on demographics, see Section 2, Health and Social Service Indicators. Not accounting for growth associated with the military buildup, it is projected that Guam's population will continue to grow by an average of around 3,000 people per year for the near future.

While the hospital's primary service market is the civilian residents of Guam, the secondary market comes from neighboring islands in the Western Pacific,

such as the Commonwealth of the Northern Mariana Islands (CNMI) and the Federated States of Micronesia (FSM). As a result, Guam is considered a regional hub for medical services. This can cause some issues when treating patients from other islands or tourists from other parts of the world who have different cultural medical habits and may not be familiar or comfortable with the services provided at GMH.

The military buildup is estimated to add an additional 47,000 people during the peak year of 2014, which will reduce to a total of 30,000 by 2020. See Section 2 for more information

Between the fiscal years of 2000 to 2010, an average of approximately 10% of patients treated at GMH has been from off-island. In fiscal year 2000, this number was 1,708, which accounted for 12% of patients served. During fiscal year 2010, this number was reduced to 1,181, which made up 10% of the patient load.

Inpatient Care

Inpatient care is defined as a patient who is hospitalized for 24 hours or more. At GMH, inpatient care consists of acute care units where patients are admitted. There are nine acute care units at GMH, as outlined below.

- Surgical (4th floor)
- Medical Surgical
- Medical Telemetry
- Progressive Care Unit (PCU)
- Intensive Care Unit / Critical Care Unit (ICU / CCU)
- Pediatrics
- Pediatric ICU (PICU)
- Obstetrics
- Medical Surgical Annex (Old Surgical) (3rd floor)

The hospital also has a Neonatal Intensive Care Unit (NICU) and Intermediate Newborn Unit that are not considered acute care units. The Old Surgical Unit is also referred to as the Medical Surgical Annex because it includes additional beds in the event there is an overflow of acute care patients than can be supported by the other units (GMHA, 2009).

Outpatient Care

Outpatient care describes a visit to a hospital or associated facility for diagnosis or treatment that takes less than 24 hours. Guam Memorial Hospital offers a variety of outpatient services, including the Emergency Medicine Department (EMD), Hemodialysis (reported closed in 2012), Laboratory, Operating Room (OR), Radiology, Respiratory Care and Rehabilitative Services, and Special Services.

Hospital Facilities / Assets

Off-Site Skilled Nursing Facility

GMHA established an off-site Skilled Nursing Facility in Barrigada Heights in 1996. This facility was developed for an overall capacity of 60 long-term care beds (Murphy, 2010). There are currently 40 licensed beds at the site used for long-term care of patients transferred from GMH. Licensed beds are those for which the hospital has a license to operate and use for certain types of treatments and patient criteria. There are an additional 20 non-licensed beds, which can be used for some types of temporary patient needs, but not for all procedures or acute care needs. The primary users of this facility are seniors requiring 24 hour access to care by registered nurses; however, it is also used by patients undergoing rehabilitation after surgery or from injuries, disabilities, or other illnesses (GMHA, 2011b).

The off-site Skilled Nursing Unit in Barrigada Heights provides an additional 60 beds used for long-term referrals from GMH.

Beds

Prior to fiscal year (FY) 2004, GMH had a licensed bed capacity of 192 acute care beds, which translated to a ratio of 1.2 beds per 1,000 population. This number was reduced in FY04 following the conversion of four-bed wards into

semi-private rooms. The reduction in beds resulted in a new total of 172 licensed acute care beds, thus reducing the ratio to 1.0 acute care beds per 1,000 population. In FY08, the Centers for Medicare and Medicaid Services (CMS) informed GMH during an inspection that the Neonatal Intensive Care Unit (NICU) (four beds) and the Intermediate Newborn Unit (ten beds) are not considered acute care units, and so their beds no longer counted towards the total. Thus, the total number of licensed beds was reduced again to 158, bringing the ratio to 0.9 acute care beds per 1,000 population. This ratio is representative of the ability and capacity of acute care medical services available on Guam. Comparatively, this is much lower than the 2008 ratios of Hawaii (2.4 beds per 1,000 population) and the US total (2.7 beds per 1,000 population) (Kaiser, 2008). Additionally, Guam's hospital bed capacity is less than half that of the US Census Pacific Division (composed of Alaska, California, Hawaii, Oregon, and Washington) hospitals, which have a ratio of 2.1 beds per 1,000 population (GMHA, 2009). This is of particular concern due to Guam's status as a regional hub for treatment of patients in the region. The current breakdown of bed capacity by GMH's acute care unit type is presented in Table 5-1.

Table 5-1. GMH Bed Capacity by Acute Care Unit

Acute Care Unit	Bed Capacity
Surgical (4th floor)	33
Medical Surgical	28
Medical Telemetry	20
Progressive Care Unit (PCU)	6
Intensive Care Unit / Critical Care Unit (ICU / CCU)	10
Pediatrics	22
Pediatric ICU	3
Obstetrics	20
Medical Surgical Annex (3RD floor)	16
TOTAL BEDS	**158**

Source: GMHA Administrative Manual, March 2011

The 2008 ratio of 0.9 acute care beds per 1,000 residents on Guam is much lower than comparable rates in the US (2.7 beds per 1,000 residents), Hawaii (2.4 beds per 1,000 residents), and the US Pacific census division (2.1 beds per 1,000 residents).

GMH does have 105 additional beds that are not considered acute care beds. These types of beds are used for activities such as operations, emergency rooms, childbirth, and other less lengthy procedures. These beds are shown by unit / department in Table 5-2.

Table 5-2. GMH Non-Acute Care Bed Capacity

Unit / Department	Bed Capacity
Inpatient Hemodialysis	9
Emergency Medical Department	18
Emergency Room Annex	8
Operating Room	10
Labor and Delivery	14
Nursery	32
Outpatient Hemodialysis	14
TOTAL BEDS	**105**

Source: GMHA Administrative Manual, March 2011

Some of the beds at GMH and the Skilled Nursing Facility are able to be used as certified airborne infection isolation rooms. Thirteen rooms at the hospital and four rooms at the nursing facility have such capabilities. In addition, GMH has the capability to utilize 49 beds as negative pressure beds. Negative pressure means that the rooms are equipped with a ventilation system that can be engaged to stop the airflow between the room and adjacent rooms or into the air system of the hospital. This is used to prevent cross-contamination by isolating a patient who may spread a sickness through respiratory means. These beds are within the Emergency Department, Emergency Department Annex, Telemetry Unit, Pediatrics Unit, Operating Room, and the Labor and Delivery Unit. The Skilled Nursing Facility has a potential negative pressure bed capacity of 20 (GMHA, 2011b).

GMH Medical Library

Located on the fourth floor of Guam Memorial Hospital, the GMH Medical Library was opened in February 2011 as a result of a grant from the Robert Wood Johnson Foundation. The library is intended to serve as an important tool in improving the quality of GMH through the provision of up-to-date text and electronic resources that are accessible by healthcare providers, patients, students, and the general public. At the time of opening, the library had approximately 200 books on-site that addressed topics such as consumer health, pregnancy, and childbirth, as well as subscriptions to national databases (Matthews, Feb. 2011).

Medical Equipment

The Hemodialysis Unit at GMH has a current license for 17 dialysis treatment stations. Treatments are provided by the Hemodialysis Unit for inpatient, outpatient, and transient patients. The Inpatient Unit has access to four stations available for acute patients who are admitted or for patients waiting for a room while in the EMD. A portable dialysis machine is also available for patients who are not stable or unable to be moved. The Outpatient Unit has access to 13 stations to serve chronically ill patients. One isolation room is also available. In the event that either unit becomes overloaded, treatment stations may be used from the other units' available stock. Furthermore, a Memorandum of Agreement exists between GMHA, the Guam Dialysis Center, and the American Dialysis Center to provide services for each other in the event that any of them are unable to provide adequate services for their patients (GMHA, 2009).

The Radiology Department at GMH performs regular diagnostic studies such as lung, abdomen, pelvis, upper and lower extremities, brain and spine, etc. utilizing x-ray and other equipment. The department also performs CT scans and ultrasound studies. Department staff is currently working to get the mammography, nuclear medicine, and MRI machines back in operation to provide a better array of important services for patients (GMHA, 2011).

The Special Services Department was formed in 2005 and is led by a group of hospitalists and healthcare professionals including registered nurses, technicians, and technologists. The purpose of the Department is to provide diagnostic procedures such as echocardiogram, electroencephalogram (EEG), electrocardiogram (EKG), cardiac stress tests, and cardiac MIBI, as well as neurology, cardiology, and orthopedic consultations. The Department also operates the "Heart Program", which has been successful in bringing new and improved cardiology services to Guam that ease the difficulties that have previously been associated with traveling off-island for cardiac care.

Issues and Opportunities

The current acute care bed capacity is insufficient to meet both the current and the anticipated increase in healthcare demands.

GMH has a significant deficit in the number of acute care hospital beds in relation to the number of people that the hospital serves. As of 2008, the ratio of beds per 1,000 people on Guam was less than half the ratio of hospitals throughout Hawaii, the US, and some of the other islands in the Western Pacific. Furthermore, this ratio only accounts for Guam's resident population, and does not take into account persons who are sent to the hospital from off-island. Guam's population is continuing to grow, and will experience a spike during the military buildup as well as a long-term increase over planned organic growth. This bed capacity deficiency must be addressed in order to support both current and future healthcare needs and provide quality healthcare for residents and visitors alike. Using the 2010 population estimates for Guam, a total of 361 (203 additional) acute care beds would be needed to reach a ratio of 2.0 beds for every 1,000 persons, and 488 (330 additional) beds would be needed to reach the US average.

The quality and continuity of acute care is dependent on public funding that is insufficient and does not keep up with increasing costs. There is also a financial hardship associated with the provision of medical care as a public service.

Healthcare costs are constantly rising, and in recent years, the costs of providing patient care have exceeded revenues. These revenues include the amount of money that the Government of Guam can afford plus the commitment that the Federal Government contributes to pay for those on Guam who cannot afford care (Medicare, etc.) and private insurance, and cash for services. GMHA is mandated to provide medical care to both citizens of Guam (Government of Guam law), the CNMI and Nationals of the Federated States of Micronesia (Federal Compact-Impact Agreement), regardless of their ability to pay for services. This gap between services provided and the ability or willingness to pay for such services has negatively impacted the public hospital's capacity and performance. In some cases, much needed staff and

physicians cannot be hired, while in other areas, necessary equipment and supplies cannot be adequately maintained or upgraded. The GMHA 2009 Strategic Plan has outlined one of its strategic goals as "Improving the Fiscal Performance of GMHA". The goal suggests that a solution to the financial woes of GMHA has three parts:

1. Improving cash flow;
2. Improving procurement procedures; and
3. Upgrading the MIS system throughout the hospital.

Guam Memorial Hospital has faced many financial hardships over the past several years. As of December 2010, GMHA owed $22 million for various utilities, doctors, and outside entities, including $14.5 million to vendors for medications, supplies, services, and equipment needed to keep the hospital running. Some vendors declared they would suspend services until payments were received. This announcement was accompanied by the proclamation by then-Governor Felix Camacho that GMH was in a state of emergency due to financial problems and debts. As a result, the Department of the Interior approved for GMH to use $1 million of its Compact Impact funding to cover some of the costs for the short-term. The money was not able to be used to pay existing debts, but was meant to make new orders necessary for continued operations (Unpingco, Dec. 6, 2010).

After it became public that GMHA fell short of money to pay its vendors for medical supplies and medications in 2010, thus running out of some supplies, the Joint Commission began to examine whether the hospital has the ability to adequately meet the needs of patients. Depending on the outcome of investigations and interviews, GMH could lose its accreditation (Ngirairikl, Feb. 2011).

In late January 2011 the Governor of Guam authorized and signed a $12 million loan for GMHA to pay for medicines, medical supplies, and vendor bills. Although by no means a permanent fix, this loan will help the hospital to continue operating and be able to pay for much needed supplies from vendors for the time being (Office of the Governor of Guam, Feb. 1, 2011).

By late February, GMH has made a total of $5.2 million in overdue vendor payments, $3.9 million of which was from the $12 million loan. The remaining amount was paid from GMH's revenues. Several of the vendors had already placed GMH on credit hold and would not sell them any more supplies until payments were received. As a result of these payments, and the layout of future payment plans and assurance of future payments, GMH was allowed to order new supplies from these vendors to support on-going hospital and patient needs. Not all vendors were paid in full, and additional payments are expected. The Interim Hospital Administrator has plans to reserve $1 million of funds in the event of emergencies to pay for supplies (Office of the Governor, Feb. 28, 2011).

The Government of Guam, headed by the Governor, is constantly seeking federal funding and grant opportunities to provide money to improve Guam's healthcare system. A meeting between the Governor, Lt. Governor, and Assistant Secretary of the Interior for Insular Areas in January 2011 provided a list of grants that Guam can apply for, grants that are pending, and contact information for Presidential administration officials who can assist in efforts to retrieve important data. This relationship will provide a better chance for Guam to receive federal grants, some of which can be used to support GMHA (Office of the Governor of Guam, Jan. 6, 2011).

The previous GMH leadership staff was recently replaced by the new Governor.

In February 2011, newly elected Governor Eddie Baza Calvo appointed new leadership to the management and operation of GMH, including an Interim Hospital Administrator, Chief Financial Officer, Medical Director, and a four-member Board of Trustees. This power was granted through invocation of the Governor's Organic Act authority. This decision was enacted in response to a series of financial and patient care problems and shortages, including several legal problems. The new management team and Board of Trustees were selected to examine financial shortfalls and determine fixes that will help the hospital to remain operational and provide quality care to patients for the future (Office of the Governor of Guam, Feb. 17, 2011).

GMH has many pieces of important medical equipment that are defective or awaiting parts to be usable.

A list provided by GMH in June 2011 identified several types of medical equipment that were in need of repairs or parts in order to be effective. The following is a list of key equipment items identified as defective and awaiting parts and/or repair.

- 1 magnetic resonance imaging (MRI) machine
- 3 of the 12 total 840-series ventilator systems
- 3 of the 18 total infant warmers
- 5 of the 24 total infant incubators
- 126 of the 160 total infusion pumps
- 3 of the 32 total kidney machines
- 4 of the 104 total vital signs monitors

5.2 DPHSS

Department of Public Health and Social Services and Central Public Health Facility

The DPHSS is Guam's designated governmental agency responsible for the provision of healthcare services on Guam. DPHSS is one of the major providers of social services to the island's residents. Many of the department's functions, including the Central Public Health Center, are housed at the main facility in Mangilao.

Division of Environmental Health

The Division of Environmental Health (DEH) is the branch of DPHSS responsible for ensuring public and consumer health and protection through preventive measures against unsanitary conditions. This is done through education, advocacy, and enforcement of regulations. DEH's major functions include: sanitation inspections of regulated facilities (four unannounced inspections per year required by law), plans and specifications of regulated facilities, processing center operations (permits, registrations), regulation of consumer commodities, and vector and animal control. DEH is located at the main DPHSS building in Mangilao. DEH is organizationally comprised of three bureaus and two sections:

- Bureau of Inspection and Enforcement
- Bureau of Professional Support Services
- Bureau of Animal and Vector Control
- Processing Center Section
- Administrative Support Services Section

Division of Public Health

The Division of Public Health (DPH) is DPHSS's largest division and its mission is to ensure the provision of direct and indirect healthcare services for individuals, families, high risk groups, and the community at the three public health facilities, in addition to the schools, home settings, and other community locations and in accordance with legal mandates and identified collective health needs of the population in an effective and efficient manner. DPH and its component offices are located at the DPHSS main facility in Mangilao. DPH is composed of several offices and programs:

- Chief Public Health Office
- Health Professional Licensing Office
- Dental Health Section
- Office of Vital Statistics
- Office of Planning and Evaluation
- Office of Epidemiology and Research and Cancer Registry
- Emergency Medical Services
- Emergency Medical Services for Children
- Guam Real Choice Program
- Bureau of Communicable Disease Control
- Foreign Quarantine and Enteric Disease Control Program
- Tuberculosis and Hansen's Disease Control Program
- STD / HIV Prevention Program
- Immunization Program
- Laboratory
- Public Health Preparedness and Response to Bioterrorism

- Bureau of Nutrition Services
- Breast and Cervical Cancer Early Detection Program
- Behavioral Risk Factor Survey System
- Comprehensive Cancer Control Program
- System-Based Diabetes Prevention and Control Program
- Health Education Program
- Medical Records Section
- Medical Social Services
- Pharmacy Services
- Sexual Violence Prevention and Education Program
- State-Based Tobacco Prevention and Control Program
- Guam Office of Minority Health
- Bureau of Primary Care Services

Diagnostics Laboratory

DPH operates a diagnostic laboratory used for a range of testing for communicable diseases, Maternal Child Health Program, Family Planning Program, and serves as a reference laboratory for the civilian and military clinics and hospital. Currently the laboratory is located at the DPHSS main building and is classified as a Biosafety Level 1 lab, meaning that it is capable of only testing for the most basic types of communicable disease pathogens. The Central Public Health Laboratory has been operating since the 1970s. It operates with 15 staff and administers testing in the areas of clinical chemistry, hematology, immunohematology, infectious disease serology, mycobacteriology culture and anti-mycobacteriology susceptibility testing, and outbreak investigations. The lab has experienced a loss of several critical staff positions, which does not allow it to conduct microbiology and food borne pathogen investigations. The lab is also a Clinical Laboratory Improvement and Amendment (CLIA) regulated facility, providing capacity as a reference laboratory to other US Affiliated Pacific Islands (USAPI) Laboratories.

Community Health Centers

The DPHSS operates two Community Health Centers (Northern and Southern) and a Central Public Health facility. The Bureau of Primary Care Services is a part of the Division of Public Health, and is the branch that runs the community health centers. The Northern and Southern Community Health Centers are Federally Qualified Health Centers and are multi-specialty primary care clinics that provide government-run facilities supplemental to GMH. A Federally Qualified Health Center designation means that these facilities accept Medicare patients for a variety of services. More information on the types of services covered by a Federally Qualified Health Center can be found at:

http://www.cms.gov/MLNProducts/downloads/fqhcfactsheet.pdf

Chief programs include administering to over 8,000 households for welfare benefits and program assistance, such as MIP and Medicaid; licensing of child care facilities and foster care homes; child protective services; administration of health and sanitary certificates; provision of immunization shots; issuance of birth and death certificates and marriage licenses; reporting of communicable diseases; provision of services for women, infants, and children; and administration of the Older Americans Act. There are three primary types of services provided at the centers, as listed below along with the types of activities they support.

- **Primary Care and Preventive Services:** Prenatal and Postpartum Care, Women's Health (OB/GYN Care), Well Baby Care, Child Health, Immunizations, Adolescent Health, Adult Care, Minor Surgery and Wound Repair, TB Test, Directly Observed TB Therapy, Early Periodic Screening and Diagnostic Testing for Children (EPSDT), Family Planning Services, Cancer Screening, Communicable Disease Screening and Treatment (HIV, TB, STD, etc.), Chronic Disease Care (Hypertension, Diabetes, Heart Disease, etc.)
- **Support Services:** Diagnostic Laboratory Services, Pharmacy Services, Chest X-Ray (SRCHC only), Vision Screening, Community Outreach Services, Health Education Services, Nutrition Health Services, Case Management, Eligibility Assistance, Home Visiting Services, Translation Services
- **Social Services:** Medical Social Services; Food Stamps; Medically Indigent Program; Medicaid Program; Women, Infant, and Children (WIC) Program

Central Public Health Clinic

The Central Public Health Clinic is located 123 Chalan Kareta in Mangilao. Its hours of operations are from 8:00 am to 5:00 pm Monday through Friday. It is closed on the weekends.

Northern Regional Community Health Center

The Northern Regional Community Health Clinic is located 520 W Santa Monica Drive in Dededo. Its hours of operation are from 7:30 am to 6:00 pm on Monday through Thursday and from 7:30 am to 1:30 pm on Friday and Saturday. It is closed on Sunday.

Southern Regional Community Health Center

The Southern Regional Community Health Center is located at 162 Apman Drive in Inarajan. It is open from 8:00 am to 5:00 pm on Monday through Thursday and 8:00 am to 12:00 pm on Friday. It is closed on Saturday and Sunday.

Division of Public Welfare

The Division of Public Welfare (DPW) is comprised of four Bureaus and the Chief Public Welfare Office, which is responsible for the administration and overall operations of the Division's federally and locally funded programs. The functions of the Chief Public Welfare Office include fiscal management and administrative support. The overall mission of the Division is to promote positive social conditions that contribute toward the attainment of the highest health and social well-being for the economically and socially disadvantaged populations on Guam by developing an efficient and effective delivery system of services to eligible clients on the island; by determining eligibility of applicants; by administering payments and various social services to remove social barriers that prevent a person from obtaining/maintaining the basic necessities of life (including safe and decent housing, medical care, nutritious foods and employment status). DOW's primary location is at the main DPHSS facility in Mangilao; however, some of its associated bureaus are located in other parts of Guam. Notably, the Bureau of Social Security Administration is in Hagatna. The Division is composed of four major bureaus:

- Bureau of Economic Security
- Bureau of Healthcare and Financing
- Bureau of Management Support
- Bureau of Social Services Administration

Division of Senior Services

The Division of Senior Citizens (DSC) is the principal advocate for senior citizens throughout the island. Activities are planned, developed, coordinated, implemented and administered as related to the purposes of the Older Americans Act. DSC provides many programs of care for the elderly, including two adult day care centers: one for the general population at Barrigada Heights and one for individuals with dementia in Dededo, as well as 12 senior center operations locations throughout the island. The DSC also includes the Bureau of Adult Protective Services, which operates Emergency Receiving Home services for the elderly who require emergency shelter care. The Emergency Receiving Home only provides temporary shelter for those in need. DSC is located in Mangilao near University of Guam, separately from the DPHSS main facility. The primary bureaus that make up DSC are:

- Bureau of Administrative Support
- Bureau of Adult Protective Services
- Bureau of Program Administration and Development
- Bureau of Community Support

Division and Office Locations

A large portion of the DPHSS divisions and services, including the Central Health Clinic and diagnostic laboratory, are housed at the main facility in Mangilao. This facility was built in 1968 and has become outdated and overcrowded for the amount of activities and staff that operate there. Several of the offices for various divisions operate out of trailers located behind the Central Clinic. Around 35% of DPHSS offices are located away from the main facility, including the Bureau of Management Support (in Mangilao), Division of Senior Citizens (in Mangilao), Bureau of Social Services Administration (in Hagatna), Emergency Medical Services (in Mangilao), and Health Professional Licensing Office (in Mangilao).

Issues and Opportunities

Trained medical staff are not utilized as efficiently as possible.

Exploring ways to use medical personnel, such as Physician Assistants, Nurse Practitioners (NPs), Registered Nurses (RNs), and Licensed Practical Nurses (LPNs), in more efficient roles would help balance the workload among personnel properly suited for the tasks. This group of personnel is not utilized efficiently. Staff shortages often mean that medically qualified personnel must perform mundane tasks that do not utilize their skills, when other staff could perform these tasks so that the medical staff could operate more efficiently. The duties and responsibilities of NPs and RNs at Central Public Health should be reassessed with priority being given to providing clinical care rather than supervision / administration (DPHSS Subgroup Task Force, Dec. 2010).

The current condition of the DPHSS main building is poor.

The physical plant that serves the existing building is in poor condition. The generator does not function at optimal efficiency when placed into service to provide the redundant energy source when the primary electrical supply is cut off due to system outages or severe weather conditions. No water storage is provided on the site and fire suppression is marginalized.

The current epidemiology lab is not adequate to support Guam.

The DPHSS building was originally constructed in 1973 and was used as a heavy-weather resistant healthcare facility to provide care to residents in the event the island was struck by a natural disaster or catastrophe. As such, it was constructed to a high level of structural integrity and does not contain windows. The existing functions of the lab are entirely contained within the DPHSS building, so any desired expansion will require the lab to be relocated, based on the already over-capacity status of the building.

The ability to test and confirm results in a short timeframe is imperative to containing and treating contagious diseases (i.e. tuberculosis, Dengue Fever, SARS, Influenza) from spreading amongst and between civilian, military, transient worker, and tourist populations. As Guam is a central hub for human movement between the Far East and United States, it is critical that a high quality of health is maintained within Guam Villages, military installations, and hotels serving the island as well as travelers destined for other countries, Hawaii, and/or the continental United States. The existing laboratory is antiquated and does not have the capability to analyze all of the samples they test. Many must be sent either to the Centers of Disease Control facility located in Hawaii or to the San Diego Medical Research Facility. Such an effort requires-an eight or fourteen, respectively, hour flight from Guam, extending the timing for lab results to a minimum 12 hours. Such a distance inhibits a timely response to determine test results and implement measures to maintain a healthy population of residents, visitors, and workers on Guam.

The military buildup will generate an escalation of temporary construction workers and dependents, many of whom are expected to come from off-island. The military and dependent population is estimated to increase from approximately 1,500 in 2010 to a peak of approximately 34,000 workers and dependents in 2014 and declining to approximately 9,000 workers and dependents in 2020. These off-island workers and dependents will be coming to the Island from a variety of countries that exhibit a wide range of healthcare services for their residents. The transfer of Marines from Japan, and other military personnel and dependents added during the buildup, will add approximately 20,000 more people between 2014 and 2020.

The escalation and changing composition of Guam suggests a need for an elevated status of the laboratory from its existing role as a Level 1 lab to a Level 2 (L2) lab, which would be able to have greater testing capabilities for more types of disease agents, and allow the lab to serve as one of three L2 labs that achieves the LABNET initiative of the Pacific Public Health Surveillance Network (PPHSN) in the investigation and identification of outbreak prone disease targets. These disease targets include typhoid, cholera, influenza, dengue, leptospirosis, and measles. Additional targets from PIHOA include chlamydia, syphilis, gonorrhea, human immunodeficiency virus (HIV), tuberculosis (TB), and bioterrorism (BT) agents.

Over $5 million in grant money was recently granted by the US department of Interior for capital improvement projects, including the construction of a new DPHSS Laboratory and Office ($3 million).

Source: Office of the Governor, July 26, 2011

5.3 DMHSA

Department of Mental Health and Substance Abuse Main Facility

The Department of Mental Health and Substance Abuse (DMHSA) is the Government of Guam agency that is responsible for addressing behavioral health services on Guam, including child and adult mental healthcare, drug and alcohol abuse, and treatment and rehabilitation of these issues. DMHSA has a wide range of different facilities around the island dedicated for certain types of assistance or treatment. Not only does this agency provide services directly, but it also works with private and non-profit providers, the military sector, the Department of Education, Child Welfare, Department of Youth Affairs, Juvenile Probation Department, and Department of Integrated Services for Individuals with Disabilities (DISID) to provide assistance. DMHSA also operates a Crisis Hotline that provides free crisis intervention for those in need via a staffed telephone answering service. The Crisis Hotline is open 24 hours per day, seven days per week.

DMHSA works with several non-profit groups around Guam and has many facilities in various parts of the island that provide a wide array of services for those with mental health issues or recovering from substance abuse.

DMHSA operates its primary facility adjacent to GMH in Tamuning. This facility offers a variety of services for both adults and children. For adults with serious mental illnesses and some other afflictions, there is an Adult Inpatient Unit and a Medication Clinic to help treat and rehabilitate them. The Medication Clinic also caters to less severely mentally ill individuals who are unable to care for their mental condition due to lack of resources, and individuals experiencing acute emergencies or crises. There is an outpatient adult counseling branch that specializes in individual, marriage, and family therapy counseling and provides consultations, referrals, and collaborations with other government agencies and the private sector.

For those adults that suffer from a serious mental illness and are in long-term care at DMHSA, day treatment services are offered to help them learn social and other skills so that they can work to rehabilitate and transition to home and community living.

Outpatient services are available for children, adolescents, and their families in areas including intake, emergency and crisis assessment and intervention, early mental health screening and identification, public education and awareness, and counseling and referral services. The Child Inpatient Unit provides acute care for children who are admitted via case management, care coordination, and counseling.

Day Treatment Facilities

DMHSA and its partners provide services from a number of facilities throughout Guam.

Rays of Hope

The Child-Adolescent Division of DMHSA has oversight of the Rays of Hope children's therapeutic day treatment facility in Tamuning; however. This facility was outsourced to the Latte Treatment Center in 2005. The facility

started operation in 2004 and provides day treatment services for children and adolescents with behavioral and emotional disabilities who are enrolled in Project I Famagu'on-ta. The facility was closed from June 2010 to March 2011 to complete safety renovations and repairs. The newly renovated facility has the capacity for 19 youths.

Rays of Hope is a community-based therapeutic intervention / behavioral management facility that provides educational instructions and personalized care. This includes assisting with social skill development, improving social interactions through skill building activities, developing leadership, and behavioral management, and improving self-esteem and school performance (DMHSA, 2011).

New Beginnings

The New Beginnings facility is located in Hagatna within the J & G Commercial Center. New Beginnings helps individuals suffering from substance abuse or addiction to begin the path of rehabilitation and working towards a new start at improving their life. The program offers varying levels of treatment which range in intensity and are based on an assessment that follows the American Society of Addiction Medicine Patient Placement Model. The general types of treatment available at New Beginnings are residential treatment, social detoxification, prevention / early intervention, intensive outpatient, outpatient, and aftercare (DMHSA, 2011).

Sagan Mami

Sagan Mami is jointly operated by DMHSA and Guma Mami. Funding for Sagan Mami comes from the Project for Assistance in Transition for Homelessness. This facility is a drop-in center for adults with serious mental illness where they can go to socialize and feel accepted into a community. Part of the process while at Sagan Mami is to work towards transition to other community venues so that the individual can feel accepted.

Residential Services

Latte Treatment Center

Although the Latte Treatment Center is not part of DMHSA, it works closely with the agency. Also known as Therapeutic Group Home, the center provides temporary housing for up to 10 youths at any given time who are not able to live at home with their families for a variety of reasons. It provides an alternative to youths who would otherwise be in the Department of Youth Affairs or sent to another facility, some of which are off-island. Latte Treatment Center is an interim housing location, and is not a long-term housing option (DMHSA, 2011).

Guma IFIL

Since 1990, Guma IFIL has provided an adult transitional residential program for individuals suffering from serious mental illness. These individuals are given 24-hour supervision by qualified staff. Through the program, residents receive training and skills to help them attain greater independence and self-sufficiency. They are provided with case management, psychiatric follow-up, day treatment services, and counseling (DMHSA, 2011).

Guma Hinemlo'

DMHSA and Guma Mami jointly operate Guma Hinemlo' (healing home). This permanent supportive housing program was developed for homeless adults who have a serious mental illness. DMHSA provides day treatment case management services and psychiatric consultation, while Guma Mami operates the facility. Residents are those who are clinically stable, but are not able to currently live independently and who have been transferred from other areas within DMHSA. They are provided with 24-hour daily monitoring, as well as transportation to supportive service locations (DMHSA, 2011).

Other Facilities

Healing Hearts Crisis Center

The Healing Hearts Crisis Center (HHCC), located in Tamuning, is a rape crisis center operated by DMHSA. It provides a place where individuals who have been victims of sexual assault can go to receive assistance and support. The programs and services provided at the center include:

- **Medical Legal Examination:** Access to registered nurses and medical doctors who have been trained to perform medical-legal examinations on children and adults who may have experienced a sexual assault. HHCC is equipped to perform the examination in a private, calming environment, away from the crisis setting of the hospital emergency room. The medical-legal exam may include treatment for sexually transmitted infections, HIV testing, emergency contraception and collection of forensic evidence.
- **Social Work Services:** HHCC offers crisis intervention, short-term case management to coordinate services, and referrals for counseling and other services that may be needed. HHCC may offer assistance with payment for counseling services as funding is available.
- **Multi-Disciplinary Team Interviews:** Its best that a person have only one interview to limit the trauma of reliving the assault. HHCC works with a team of agencies by providing a neutral location to interview the patient on a one-time basis to avoid repetitive questions at different agencies. HHCC has specially-trained staff to conduct these interviews while the team observes through a one-way mirror to collect information necessary for their purposes.
- **Community Outreach and Public Awareness:** Education and public awareness are the best ways to help women, children and men who have survived sexual assault and to prevent sexual assault. HHCC is involved with outreach programs for elementary, middle, and high schools and the community at large to talk about appropriate touching, when and how to say "NO," and personal safety.

Sanctuary

Sanctuary is a community-based organization that provides services for Guam's youth who are going through family conflicts. It is not a part of DMHSA, but it works closely with the agency to improve the quality of life for these individuals. The services that are provided by Sanctuary include temporary safe refuge for youths during family conflicts and abuse, a Crisis Hotline, supportive counseling for youths and their families, casework and counseling, outreach, and education and prevention programs.

Issues and Opportunities

DMHSA is currently under Federal receivership.

In March 2010 the US District Court of Guam appointed a Federal Management Team (FMT) to oversee DMHSA and DISID. This was in response to a lawsuit filed on behalf of a group of disabled individuals against the Government of Guam. The FMT is responsible for managing all DMHSA personnel and physical assets (such as property and facilities) and must work towards the goal of fostering a better relationship between these departments, the populations they serve, and the community at large. The FMT was charged with creating a Plan of Action for DMHSA and DISID, which was approved by the court in July 2010. A portion of that plan summarized some of the perceived issues with the departments:

> *"The Plan that follows will endeavor to overcome the current challenges which effectively deprive those within the "target population" of their right to live outside an institution, as a member of the community. At present, there exist a significant number of individuals that are institutionalized or at risk of institutionalization, which is directly attributable to a lack of community based services. True community integration, to which the subject Plan aspires, reflects the capacity of the Department to support and sustain a consumer physically, socially and psychologically. Toward that end, the FMT will orchestrate the provision of court-mandated services to members of the target population in the most integrated community based setting appropriate to their respective needs."*

The anticipated increase in military presence and the additional military buildup will foster a population increase on the island. As such, the FMT has been evaluating alternative approaches to engage both the Department of Defense (DoD) and Veterans Affairs (VA) as Guam proceeds with its planning to address mental health issues for military-involved persons that have an impact on the public mental health system.

The current DMHSA facility is inadequate.

The existing DMHSA facility does not meet current standards or needs and will not support the court imposed increase in staff required to satisfy the Federal receivership court order. DMHSA reported substandard air quality in the building, fire suppression risks, and mold problems. Since DMHSA provides the only mental health inpatient facility in the West Pacific, it must support a large and diverse population, including the military. Its limited space and poor upkeep have been problematic in effectively serving the entire population demographic.

The FMT Action Plan recommends the construction of a 39,000 square foot multipurpose day treatment center that will provide treatment, services, programs, training, and evaluation. Along with all of the other recommendations in the Plan of Action, which includes increased staffing levels, training, and reorganizing programs and housing services, the Government of Guam would save an estimated $6 million a year based on the combined 2010 budgets of DMHSA and DISID.

Instead of building a new facility, the Government of Guam would prefer to move the children's inpatient ward to a different facility outside the DMHSA main facility, and add additional beds and space to the main facility for adult inpatient care.

5.4 Guam Regional Medical City

Guam Regional Medical City is a private hospital development that is in the process of being designed and built on Guam. The Guam Healthcare and Hospital Development Foundation is the primary entity responsible for pursuing the creation of a private hospital on Guam. In late January 2011, the developers and investors for the project finalized the acquisition of properties in the Village of Dededo, totaling approximately 8.5 acres, where the Guam Regional Medical City will be located. The site is situated at the corner of Marine Corps Drive and Route 3, just north of the Micronesian Mall.

GUAM REGIONAL MEDICAL CITY

The first phase of development, currently planned to be completed and open to patients in January 2014, is slated to have a total of 130 acute care beds, 20 intensive care beds, 18 basinets, and six incubators, with design work incorporated that will allow for hospital expansion for a total of 350 beds. In addition, a Medical Arts Building will be located adjacent to the hospital building. This facility will be used as physician clinics and the spaces will be rented or purchased by physicians for their practice. The first phase, not including the price of land purchased, is estimated to cost $ 197,000,000. Initial design work for Phase 1 of Guam Regional Medical City began in April 2011, and groundbreaking for construction is planned for the end of 2011.

Recruiting for healthcare workers and hospital staff has already begun on a local level as well as reaching out to some off-island organizations in the US mainland. A program called "Bringing our Sons and Daughters Home" was launched in May 2011. The focus of this program is to reach out to those from Guam that are currently practicing outside of Guam to return to Guam and practice at the Medical City. Further enticement will be access to and training on state of the art equipment that was not previously available on Guam that patients currently have to travel off-island to receive.

As part of the Pre-Design Phase, the development team evaluated local and regional healthcare needs and incorporated these into the plans for what the completed project will offer (Sgro, January 2011).

Issues and Opportunities

The private hospital may attract medical professionals from GMH, DPHSS, and other local providers.

Guam Regional Medical City could have the potential to be more desirable for medical professionals and other staff currently working at GMH, DPHSS, and other local providers. This could include many considerations, such as better pay, more opportunities, and use of better medical equipment and services offered by the hospital. If this happens, it would add strain to understaffing that is currently experienced on Guam and could add to the problems already faced in attracting new qualified staff.

Patients who have better insurance may choose to seek treatment at the private hospital, leaving those who are unable to pay to go to GMH.

When Guam Regional Medical City is open, it will provide another option for people to seek health treatment. Since the hospital will be privately owned and operated, it will not be required to accept all patients regardless of their ability to pay, like GMH must. As a result, the new hospital may attract patients who have insurance and can pay for their treatment, as well as those who pay for their own treatment, and decide the private hospital can offer better services or equipment than GMH. If patients with insurance choose to go to Guam Regional Medical City, GMH could end up with a higher ratio of patients who cannot afford to pay and suffer even greater financial challenges annually with the loss of income and inability to collect payments.

5.5 US Naval Hospital Guam

US Naval Hospital Guam

Naval Hospital Guam is located in Agana Heights and serves as the regional hospital for military personnel and their families. Services that are provided at the hospital include family practice, OB-GYN, pediatrics, general surgery, anesthesia, internal medicine, psychiatry, psychology, occupational health and preventative medicine, emergency medicine, dental surgery, urology, otolaryngology, optometry, ophthalmology, acute care, physical therapy, dietician, health promotions, and social work services.

The hospital is staffed by 516 Active Duty and 201 civilians, contractors, reservists, and volunteers. The service population of the hospital includes over 26,000 beneficiaries. There were 111,000 outpatient visits in 2008, as well as 1,572 inpatients, 428 babies delivered, and 1,100 surgeries performed.

Staff at Naval Hospital Guam not only serve military personnel stationed on Guam, but have also been deployed overseas during times of conflict to provide medical support. Furthermore, staff members have an important interaction with the civilian community by volunteering thousands of community services hours for projects and associations around the island (US Naval Hospital Guam, 2011).

Although the primary population treated at this hospital is military personnel and dependents, civilians may be treated there in emergency situations. Through a mutual aide agreement, seriously ill or injured persons are taken to the closest emergency room facility if judged to be time-critical. In the same way, military personnel are also taken to GMH when circumstances warrant. Patients are then transferred to the appropriate hospital once stable and safe to transport (or stable enough for release).

Hospital Facilities / Assets

Beds

The Naval Hospital currently operates 55 patient care beds. With a service population of around 26,000 people, this equates to a ratio of 2.1 beds per 1,000 population

New Naval Hospital Facility

The Naval Hospital Guam is in the process of constructing a new state-of-the art medical facility on its grounds. Groundbreaking took place in January 2011 and the new hospital is scheduled to open in 2014 and replace the old facility which was built in 1954. Although the planning for this project was started and approved before the announcement of the military buildup on Guam, its construction will play an important role in serving the incoming military personnel and their families.

Design Plan for the new Naval Hospital

Once complete, the new facility will be 282,000 square feet and provide 42 inpatient beds, as well as six ICU beds (Matthews, Jan. 2011). It will also have four operating rooms and two cesarean-section rooms and utilize improved diagnostic and ancillary capabilities such as magnetic resonance imaging and computed tomography scanning suites. Other amenities available at the hospital will include emergency care, overnight rooms, specialty care clinics, surgery, and general medical care.

The new building will be LEED (Leadership in Energy and Environmental Design) silver certified, meaning it will have less of a negative environmental impact on the island (Norton, Jan. 2011).

Branch Clinics

The hospital operates a branch medical clinic and branch dental clinic at Naval Base Guam (see Figure 5-1). The construction of two new branch health clinics will take place in preparation for the military buildup. These clinics will be responsible for providing outpatient and dental care. One of these facilities will replace the current medical and dental clinics at Naval Base Guam and the other one will be located in Dededo near the Marine Corps base at North Finegayan. The branch clinic on Naval Base Guam is expected to be completed by mid-year 2013 and the Finegayan North clinic is expected to be completed by the fall of 2015 (Government Accountability Office, April 2011).

A new 6,000 square foot community-based Veterans Affairs clinic was officially opened in May 2011 adjacent to the Naval Hospital. The facility cost $5.4 million and provides twice the space as the previous clinic. The clinic offers improved access for patients and better technology and treatment capabilities. In addition, it utilizes telemedicine functions to provide enhanced specialty care through connections with other VA facilities.

Issues and Opportunities

No major issues were identified for the Naval Hospital.

5.6 Andersen AFB Clinic

Healthcare at Andersen AFB is provided by the 36th Medical Group Clinic (see Figure 5-1). The clinic is capable of meeting 90% of the average person's healthcare needs and provides a full range of services expected to be found from a small community outpatient doctor's office. Such services include obstetric, pediatric and adolescent, adult and geriatric medicine, preventive services, occupational medicine, mental health, family advocacy services, and minor surgical procedures. Supplemental on-site support services include pharmacy, routine X-ray, and laboratory services.

Professional staffing at the Andersen AFB Clinic includes an optometrist, a women's health nurse practitioner, a psychologist, social workers, and five primary care managers. Patients or situations that cannot be handled at the clinic are typically transferred to Naval Hospital Guam.

Issues and Opportunities

No major issues were identified for the Andersen AFB Clinic.

5.7 Emergency Services Transportation

Guam's emergency ambulance fleet is operated by the Guam Fire Department (GFD). The GFD's ability to respond to emergency situations has historically been impaired by a lack of operational ambulances; however, recent actions have improved the situation. As of early 2011, the GFD's fleet of emergency vehicles included 15 ambulances, many of which are not operational on a typical day. The GFD has consistently been unable to keep ambulances on the road as a result of repairs not being performed, poor maintenance, and a general lack of funding for upkeep, which has reduced the fleet to as few as two operational vehicles at times.

In February 2011, $200,000 was transferred from the Guam Department of Public Works' Public Safety Highway Bond to GFD through a Memorandum of Understanding to pay for much-needed repairs to Guam's ambulance fleet. This transfer of funds allowed for repairs to be made to eight ambulances, some of which were inoperable but unable to be funded for upkeep, with maintenance needs ranging from tire to engine repairs. Following the repairs, a total of ten ambulances were fully functional, increasing the ability of emergency responders to quickly and safely attend to patients and situations. Additional fleet improvements have resulted from a Department of Interior grant that allowed for the purchase or four ambulances as well as the recent announcement that GovGuam will lease four brand new ambulances from a private vendor. The government also has plans to purchase four to five new vehicles with other funding sources, adding up to a total of up to 13 new ambulances in the GFD's fleet, the most new ambulances the GFD has ever had in its fleet. The four vehicles that will be leased are currently set to be a part of the fleet for only one year. Once the lease expires, consideration to a lease extension and potentially leasing more of its fleet vehicles will be assessed.

In February 2011, GFD and Guam Community College began the process of entering into a partnership whereby students and faculty of the college's Automotive Department would assist in repairing ambulances so that they can be operable for the needed tasks associated with transportation and response to emergency situations. This partnership will benefit both parties by allowing students participating in the Certificate in Medium / Heavy Truck Diesel Technology to gain experience and by providing less costly repairs on the ambulance fleet. In instances where the repairs are beyond the capabilities of students, the programs teaching staff, all of whom are certified master technicians with 10 plus years of experience, will take over repairs. GFD will provide all necessary parts for repairs (Pacific News Center, Feb. 28, 2011).

Issues and Opportunities

The ambulance fleet on Guam is outdated.

Guam's current fleet of ambulance vehicles have outlived their timeframe and have become somewhat unreliable due to overuse and lack of necessary upkeep. There are many times when the number of ambulances in operation is below the needed amount to serve the entire island. Continued expansion of the fleet to provide an adequate number of reliable emergency vehicles will be needed in order to respond to emergencies in a timely manner as well as prepare for the increase in population associated with the pending military buildup.

5.8 Other Providers and Pharmacies

According to the 2008 Guam Statistical Yearbook, prepared by the Bureau of Statistics and Plans in 2009, there are 30 pharmacies and 77 clinics located on Guam. The total number of clinics includes specialized service clinics, but excludes eye and dental clinics. The clinics provide a range specialty services such as chiropractic, family practice, pediatrics, pregnancy and family planning, radiology, surgery, and several multiservice clinics.

Appendix A, Providers Guide, gives an overview of the primary facilities / providers on Guam.

Issues and Opportunities

Some private clinics have equipment or certified staff that GMH does not have.

Some clinics have the equipment and qualified medical staff to perform various procedures and tests that cannot be conducted Guam's public medical facilities. The primary purpose of the various clinics is to provide outpatient services to the residents of Guam and help to reduce the burden of less serious issues or visits from GMH. However, because the clinics are privately run, they are not mandated to treat all patients, regardless of ability to pay, similar to GMH. Therefore, private clinics and pharmacies may only be an option for those who can afford to pay for the services outside of the hospital and may take away revenue from the hospital that it needs to continue operating.

5.9 Information Technology (IT)

Telemedicine

Telemedicine is a rapidly evolving practice of transferring medical information and applying clinical medicine through interactive audiovisual media, such as internet or teleconferencing, for the purpose of consulting and sometimes performing remote medical procedures or examinations. The use of telemedicine can range from two health professionals simply discussing a case or patient's records over the phone, to complex interactions through satellite technology and videoconferencing equipment to conduct real-time consultation between health professionals in two different locations.

The ability to utilize telemedicine is especially useful in an area like Guam where visitors from around the world travel, and if needed, a doctor at GMH could potentially converse "face-to-face" with the patient's doctor in their home country. In addition, it can also connect medical staff at GMH to specialists around the world that could provide insight into cases that physical staff on Guam might not have (for example, in instances where a certain type of specialist is not present on Guam).

Public Law 29-92, the Telemedicine Act of 2008, was signed on Guam in the summer of 2008. This new law was meant to provide parameters and guidance for telemedicine consultation practices for the benefit of quality care for patients at GMH (News Report, 2008). GMH currently utilizes telemedicine practices within its Radiology Department. Department staff works with six radiologists based in the US mainland that read and interpret diagnostic studies that are performed within the Radiology Department of GMH. This is beneficial for GMH where there is a shortage of appropriate qualified staff for these kinds of analyses.

Electronic Health Records

GMHA has recently instituted a new Electronic Health Records (EHR) System. The new hardware and software were received in late May 2011 and the data migration to the new system is scheduled to begin the second week of July 2011. By the end of July, there is anticipated to be a service level agreement with Hawaii Health Information Exchange Regional Extension Center to be able to better communicate health information between Hawaii and Guam (GMHA, 2011a).

A new host-based web enabled system, called Public Health Professional (PHPro), has been developed by Data Management Systems that will consolidate the data requirements of DPHSS once it is fully completed. As of December 2010, the Division of Environmental Health had implemented the system, and several other DPHSS entities were scheduled to use it by January 2011. The Division of Senior Citizens is not among the entities that are a part of this effort. Also, the Division of Public Welfare was not approved for its full requested monetary budget to pay for implementation (DPHSS Subgroup Task Force, Dec. 2010).

Management Information Systems

Management Information Systems (MIS) are also an important technological tool when applied to healthcare management. An MIS provides necessary information to manage an organization effectively. It involves the utilization of three primary resources: information, technology, and people. MIS are distinct from regular information systems in that they are used to analyze other information systems applied in operational activities in the organization.

Currently, DPHSS has several separate information systems that operate simultaneously to ensure direct patient care and business operations are fully functional and capable of providing necessary services. These systems include those identified above. Additionally, DPHSS is anticipating implementation of additional IT systems including participation and use of Electronic Verification of Vital Statistics and State and Territorial Exchange of Vital Statistics, both of which are currently in use in various US states and other global locations. (DPHSS, 2010)

Some of the aforementioned systems require a management system that accurately captures and maintains data concurrently with one another. These systems all involve capturing, maintaining, and recalling confidential patient information; therefore, these systems require a combined management approach to ensure patient information is secure, reliable and is free from duplication and errors.

It is important that these smaller information systems are integrated with the backup system that supplies power when in-climate weather or other disasters occur, i.e. breach of information security through computer hacking. The generator that supplies this supportive power does not operate at optimal efficiency; therefore, there is a need to ensure a comprehensive management information system is established to enable quick identification of issues, access to issues, and fast solutions to issues to ensure the viability of patient information and business operations.

Issues and Opportunities

There is insufficient funding to pay for appropriate IT staff at the public facilities.

The use, reliance, and functionality of IT processes will become even more critical as Guam's population grows, particularly during the pending military buildup during which many people will come to Guam from other states and jurisdictions. As a component of the DPHSS Director's Office and Division of General Administration, computer systems and programming support staff positions are completely reliant on local funding, which has resulted in a shortfall of appropriate staff to assist with IT. Although the staffing requirement is shown to be 12, only one position for this branch is funded (as of December 2010). One additional Systems Administrator staff is on loan from the Governor's Office. Every division of DPHSS relies on the support of IT personnel for many of their daily activities.

The DPHSS Subgroup Task Force's December 2010 report, recommended that 10 IT staff be hired to support DPHSS within 60 days of the new Governor taking office in January 2011; however, critical IT positions remain unfunded as of September 2011.

The current MIS has been identified as a significant problem and source of weakness in the hospital's ability to provide adequate services. The GMHA Strategic Plan states:

> *"The root of the hospital's weaknesses is the challenge it faces in adequately processing large amounts of information. The hospital's MIS system faces challenges in meeting all of its information needs; a situation further complicated by the staff lacking the IT training necessary to take full advantage of the tools that are available."*

The DPHSS Subgroup Task Force recommends the implementation of new IT programs that will help manage information more efficiently.

Staff at DPHSS identified that there is a need for an upgrade of the IT system. The current eligibility system (Agupa) continues to encounter calculations issues, during and after batch runs for monthly benefits. Furthermore, the Agupa system does not have edits or flags to alert workers of errors in data entry, such as postdates beyond the current year, nor edits of certifications beyond maximum lifetime benefits months. The newer system (PHPro) would require an update and additional hardware to better assist the workers.

According to estimates provided by DPHSS, the system lease of PHPro will require approximately $4.5 million to provide for the necessary updates and hardware to operate properly. The PHPro system would be integrated which

would reduce the data entry to one time and the system will calculate and determine eligibility for all public programs, as compared to the current Agupa system, which requires data entry of the household's information for each program that the household is eligible for, which could require the workers to enter the same data at least three to four times increasing the probability for data entry errors.

In addition to staffing recommendations, the DPHSS Subgroup Task Force also recommended that several implementation actions take place within the first year of the new Administration. The first is to implement the Resource Patient and Management Electronic Health Record System and at a minimum, a first phase of the Health Information Exchange. The second one is to implement the automation of vital statistics information and ensure that the Electronic Verification of Vital Events and the State and Territorial Exchange of Vital Events remain as ongoing projects.

For the Division of Public Welfare, it was recommended that within 180 days the, the Division begin the process to implement HIPAA compliant Electronic Transactions, develop the Electronic Health Record, e-prescriptions, and participate in the Health Information Exchange, as well as within 120 days, restore the funds needed ($1,500,000) to implement the PHPro system (DPHSS Subgroup Task Force, Dec. 2010).

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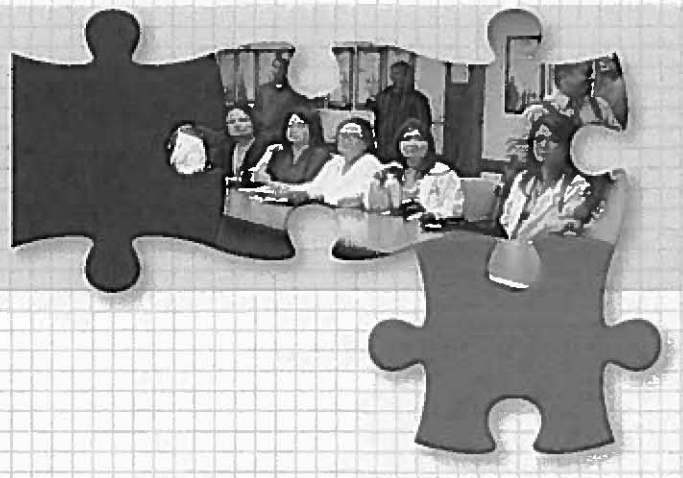

6.
Regulations, Licensure, and Insurance

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6

Regulations, Licensure, and Insurance

Inside Section 6 . . .

Healthcare on Guam is governed by both Federal and State regulations and policies as well as regional collaborations with other islands in the Asia Pacific Region. This Section addresses federal oversight as it applies to the provision of public health and social services on Guam. Public healthcare is strictly regulated by laws and policies, as well as licensure requirements in order to ensure the highest standards of care and the protection of the public.

6.1 Federal Agencies and Regulations

Federal Agencies

As a United States territory, many of the federal regulations and policies that govern public health and social services in the US apply to the provision of these services on Guam. The United States Department of Health and Human Services (HHS) is the US's designated agency that serves to protect the health of all Americans, including Guam, and provide "essential human services, especially for those who are least able to help themselves." (HHS website) It is the responsibility of HHS to work closely with state, territorial, and local governments and agencies to provide health services and programs to improve and protect the quality of life. The agency also enables collection of national health and other data for surveillance, research, and other purposes.

In addition to delivering services, the HHS administers programs whose purpose is to provide for equitable treatment of beneficiaries nationwide, and they enable the collection of national health and other data. This federal agency represents almost a quarter of all federal outlays and administers more grant funding than all other federal agencies combined.

HHS also has regional offices providing direct support to each of the ten regions throughout the US, its territories and possession. Guam is covered under Region IX of the HHS. Region IX covers American Samoa, Arizona, California, Guam, Hawaii, Nevada, northern Mariana Island, Federated States of Micronesia, Marshall Islands, and Palau. Region IX is administered out of its headquarters in San Francisco, California.

The Department's programs are administered by its operating divisions, who perform an array of tasks and services that cover the topics of research, public health services, food and drug safety, grants and other funding, and health insurance, among others.

Administration for Children and Families

The Administration for Children and Families (ACF) is responsible for federal programs that promote the economic and social well-being of families, children, individuals, and communities. ACF programs aim to achieve strong, healthy, supportive communities that have a positive impact on the quality of life and the development of children through partnerships with "front-line service providers, states, localities, and tribal communities, to identify and implement solutions that transcend traditional program boundaries." ACF is committed to working with vulnerable populations including people with developmental disabilities, refugees, and migrants, to address their needs, strengths, and abilities.

Administration on Aging

The Administration on Aging (AoA) is the federal agency within HHS responsible for advancing the concerns and interests of older people and their caregivers. AoA works to promote the development of a comprehensive and coordinated system of home and community-based long-term care that is responsive and sensitive to the needs and preferences of older people and their family caregivers.

Agency for Healthcare Research and Quality

The Agency for Healthcare Research and Quality's (AHRQ) mission is to improve the quality, safety, efficiency, and effectiveness of healthcare for all. AHRQ's mission is carried out through providing evidence based data and information to the providers and the general public.

Agency for Toxic Substances and Disease Registry

The Agency for Toxic Substances and Disease Registry (ATSDR) serves the public through the use of scientific practices, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and diseases related to toxic substances, such as mercury, arsenic, chromium, and many others.

Centers for Disease Control and Prevention

The Centers for Disease Control and Prevention's (CDC) efforts are focused on protecting health and promoting quality of life through the prevention and control of disease, injury, and disability. The overall goal of the many programs the CDC heads up is to reduce the health and economic consequences of the leading causes of death and disability, thereby ensuring a long, productive, healthy life for all people. One of CDC's many activities is data collection and analysis and the publication of disease surveillance reports.

Centers for Medicare and Medicaid Services

The Centers for Medicare and Medicaid Services (CMS) was created in response to the establishment of Medicare and Medicaid public health programs. CMS is involved with the administration and management of Medicare health plans, Medicare financial management, Medicare fee for service operations, Medicaid and children's health, provider survey and certification, and quality improvement.

Food and Drug Administration

The Food and Drug Administration (FDA) is responsible for the protection of public health by assuring the safety, effectiveness, and security of human and veterinary drugs, vaccines, and other biological products; medical devices; food supply; cosmetics; dietary supplements; and products that give off radiation. FDA partners with stakeholders to address critical public health needs and bridge scientific gaps. FDA's responsibilities extend to the 50 United States, the District of Columbia, Puerto Rico, Guam, the Virgin Islands, American Samoa, and other US territories and possessions.

Health Resources and Services Administration

Health Resources and Services Administration (HRSA) is the primary federal agency responsible for improving access to health and social services for people who are uninsured, isolated, or medically vulnerable. HRSA provides leadership and financial support to health care providers in every US state and territory. HRSA grantees provide health care to uninsured people, people living with HIV/AIDS, and pregnant women, mothers and children. HRSA oversees organ, bone marrow and cord blood donation. It supports programs that prepare against bioterrorism, compensates individuals harmed by vaccination, and maintains databases that protect against health care malpractice and health care waste, fraud and abuse

Indian Health Service

The Indian Health Service (IHS) is the principal federal health and social services provider and advocate for American Indians and Alaska Natives. The IHS provides a comprehensive health service delivery system for approximately 1.0 million American Indians and Alaska Natives who belong to 564 federally recognized tribes in 35 states.

National Institute of Health

The National Institute of Health (NIH) is the nation's medical research agency. NIH conducts extensive medical research, activities, and surveillance, and is the largest source of funding for medical research in the world.

Office of the Inspector General

HHS's Office of the Inspector General (OIG) serves to protect the integrity of HHS and programs and beneficiaries of health and welfare programs by fighting waste, fraud, and abuse in Medicare, Medicaid and more than 300 other HHS programs. OIG provides oversight to these and other HHS programs. Major components of OIG's responsibilities include auditing, investigating, and evaluating information and distributing resources that aid in policy and regulation compliance.

Substance Abuse and Mental Health Services Administration

The Substance Abuse and Mental Health Services Administration (SAMHSA) provides grants, contract awards, and leadership training services to all US states, territories, tribes, communities, and local organization. The four SAMHSA centers include the Center for Mental Health Services, Center for Substance Abuse Prevention, Center for Substance Abuse Treatment, and Center for Behavioral Health Statistics and Quality. SAMHSA representatives host on-site training workshops to Guam's Department of Health and Social Services (DPHSS) and Department of Mental Health and Substance Abuse (DMHSA). SAMHSA also publishes data and reports on behavioral health conditions on Guam.

Office of Preparedness and Emergency Operations

The Office of Preparedness and Emergency Operations (OPEO) is a component of the Office of the Assistant Secretary for Preparedness and Response (ASPR) and is the lead for interagency planning and response activities for HSS. The OPEO is responsible for developing operational plans, analytical products, and training exercises to ensure the preparedness of the federal government and the public to respond to domestic and international public health and medical threats and emergencies. OPEO is also responsible for ensuring that ASPR has the systems, logistical support, and procedures necessary to coordinate the Department's operational response to acts of terrorism and other public health and medical threats and emergencies.

Agency Coordination

In addition to HHS's operating divisions, a variety of federal agencies play a role in the protection of human health and social welfare. The following federal agencies play a range of roles, such as serving as a regulating body or program administrator, that affect Guam's overall health.

Department of Agriculture

The Department of Agriculture is the principal federal agency responsible for the administration of domestic food assistance programs as well as the Center of Nutrition Policy and Promotion. The DoAg Center of Nutrition Policy and Promotion employs scientific research of consumer nutrition needs based in methodological nutritional guidance, and nutrition policy coordination and education.

Department of Commerce, Economic Development Administration

The Department of Commerce, Economic Development Administration (EDA) is the lead federal agency responsible for the economic development agenda and promoting innovation and competition while preparing regional economies for success and growth. EDA partners with communities through program assistance grants to encourage job growth, business development and expansion, and public/private sector collaboration.

Department of Housing and Urban Development

The Department of Housing and Urban Development (HUD) is the principal federal agency responsible for establishing policy and providing financial assistance for affordable housing enabling a better quality of life and sustainable communities.

HUD's various programs assists communities with acquisition and construction of affordable homes in situations of disaster as well as economic hardship, which aides in rental assistance and transitional or permanent housing for the homeless and those suffering from mental disorders and other chronic conditions such as AIDS.

Department of Interior, Insular Affairs

The Department of Insular Affairs (OIA) is the federal agency that coordinates federal policy in the US territories: American Samoa, Guam, the US Virgin Islands, and the Commonwealth of the Northern Mariana Islands. OIA also administers and monitors federal assistance provided to these territories based on the Compacts of Free Association.

Department of Labor, Division of Workforce Investment

The Department of Labor, Division of Workforce Investment is better known as the Office of Workforce Investment (OWI). OWI is the lead federal agency responsible for the administration of various labor force development and assistance programs, policy guidance, oversight, and technical assistance to the One-Stop Career system and other youth-related employment training.

Environmental Protection Agency

The Environmental Protection Agency (EPA) is the principal federal agency charged with protection of the environment to establish sustainable communities while preserving and maximizing resource utilization.

EPA guides policy in the preservation of the environment and natural resources and administer and provide grants assistance to state and local governments in the areas of emergency management, energy efficiency, transportation, waste and cleanup, and air and radiation, water, and reducing pollution and toxics.

Veterans Affairs, Veterans Health Administration

The Veterans Affairs, Veterans Health Administration (VHA) is the federal agency in charge of the healthcare needs of millions of veterans in the VA health system. VHA is also the nation's largest provider of graduate medical education as well as a major contributor to medical research.

VHA administers and oversees various programs related to veterans and their survivors' health. Additionally, VHA coordinates with healthcare facilities in the provision of healthcare through telehealth—information technologies that promotes and supports healthcare over distances.

Federal Regional Council (FRC) Region IX

The Federal Regional Council (FRC) is a consortium of 18 separate federal Departments and Agencies representing nearly 30 different program offices in Region IX (Arizona, California, Hawaii, Nevada, and the Outer Pacific Islands) working in partnership to better serve the public. The goal of the FRC is to work in a coordinated manner to make federal programs more effective and efficient in Region IX. Members include:

- Department of Agriculture
- Department of Commerce
- Department of Education
- Department of Energy
- Department of Health and Human Services
- Department of Homeland Security
- Department of Housing and Urban Development
- Department of Interior
- Department of Justice
- Department of Labor
- Department of Transportation
- Department of Veteran Affairs
- Environmental Protection Agency
- Department of Federal Deposit Insurance Corporation
- General Services Administration
- Internal Revenue Service
- Small Business Administration
- Social Security Administration

The FRC meets monthly and has six committees focused on specific geographic areas and/or special populations throughout Region IX. The work of each committee is guided by Executive Orders or Administration Initiatives. The six entities are:

- Border Committee
- Faith-Based and Neighborhood Partnerships
- Tribal Affairs Committee
- Guam-CNMI Build Up Committee/Task Force
- Outer Pacific Committee
- Homelessness Committee (Regional Interagency Council on Homelessness)

Each year the FRC publishes a report cataloguing the assistance that each agency has provided to the Outer Pacific Islands the year before. The 2009 report is pending; however, highlights of 2008 assistance provided to Guam are identified as:

- Helping Guam manage grants and financial matters; Developing strategies, providing training and mentorship in best practices for grants and financial management as well as improving internal granting practices.
- Addressing health disparities in the Outer Pacific by developing strategies for improving access to healthcare throughout the area.
- Involvement in the deliberations and strategic development in preparation for the arrival of 8,000 Marines and dependents in 2014.

Federal Regulations

Health services on Guam and in the Pacific Island region are regulated under many of the same laws as the US. Regulation of healthcare services involves an extensive network of agencies and organizations as well as many applicable policies and regulations. Although states may adopt stricter standards than set forth by federal guidance, federal regulations serve as the minimum standard of compliance. Several few noteworthy regulations that guide public health on Guam are discussed below; however, this list is not intended be inclusive of all applicable policies and regulations.

American Reinvestment and Recovery Act

The American Recovery and Reinvestment Act was passed into law in February 2009 in response to the economic crisis and as a means to attaining three immediate goals:

- Creating new jobs and saving existing ones,
- Spurring economic activity and investing in long-term growth, and
- Fostering unprecedented levels of accountability and transparency in government spending.

In order to reach these goals, federal funds have been allotted to provide tax cuts and benefits for working families and business; federal funds for education and healthcare were increased; and funding was set aside for contracts, grants, and loans associated with the economic recovery of communities. ARRA addresses a broad range of topics as they relate to economic recovery. Funding and programs that result from ARRA are each managed by a designated agency based on the issue being addressed. HHS is responsible for the implementation and management of health and human service related ARRA programs. Among others, HHS Recovery Act programs include:

- Childcare and Development Fund
- Communities Putting Prevention to work Initiative
- Community Health Center Program
- Community Services Block Grant
- Health information Technology
- Health Professions Funding
- Medicaid and Prescription Drug Funding
- Senior Nutrition Programs
- State Health Information Technology Grants

ARRA funding and program support is available to all US states and territories, subject to reporting requirements. Additional detail on financial assistance and programs that have been supported through ARRA are discussed in Section 4, Financial Management.

Health Information Technology for Economic and Clinical Health (HITECH) Act

The Health Information Technology for Economic and Clinical Health (HITECH) Act grants HHS authority to establish programs dedicated to the improvement of healthcare quality, safety, and efficiency through the promotion of health information technology (HIT), including electronic health records (EHR) and private and secure electronic health information exchange (HIE). The HITECH Act designates and directs the Office of the National Coordinator for Health Information Technology to "support and promote meaningful use of certified EHR technology nationwide through the adoption of standards, implementation specifications, and certification criteria as well as the establishment of certification programs for HIT." This Act is a companion regulation to requirements set by the Centers for Medicare & Medicaid Services (CMS) that established qualifying criteria for provider participation and reimbursement eligibility under the Electronic Health Record Incentive Program.

Electronic Health Record Incentive Program

The Electronic Health Record Incentive Program is administered and coordinated by the Centers for Medicare and Medicaid Services providing incentive outlays to eligible professionals and healthcare facilities that adopt, implement, upgrade or demonstrate the use of quality, certified EHR technology.

Federal Medical Assistance Plan

The Federal Medical Assistance Plan consists of the US government's financial assistance to specific state administered health and social service programs. The Federal Medical Assistance Plan uses Federal Medical Assistance Percentage (FMAP) rates by state to determine funding matches allocated to certain medical and social service programs such as Medicaid, State Children's Health Insurance Program, Temporary Assistance for Needy Families, and Child Support Enforcement. FMAPs are calculated and updated by the Secretary of Health and Human Services on an annual basis pursuant to Section 1905(b) of the Social Security Act. The Guam Medical Assistance Plan is Guam's supplement to this federal assistance plan and is discussed below in the discussion of Government of Guam.

Health Insurance Portability and Accountability Act

The Health Insurance Portability and Accountability Act (HIPAA) is a federal regulation that ensures personal health information protection and identifies patient rights with respect to their health information and records. Under this federal regulation, all covered entities (healthcare providers, health plan companies and programs, and healthcare clearinghouses) must comply with specified requirements to protect the privacy and security of health

information as well as most provide individuals with specified rights with respect to information access. This regulation gives patients the right to:

- Request and obtain a copy of personal health records;
- Request corrections or changes to information in patient's file;
- Receive a formal notice of explanation how patient's personal information is being used and shared;
- Decide whether or not to grant permission on how personal health information can be used or shared;
- Obtain a report on when and why personal health information is shared; and
- File complaints with a provider, insurer, or the US Government when a privacy law is violated or there is suspicion of a violation.

The full HIPAA Security Rule and an explanation of how it affects various entities can be found on HHS's website at:
http://www.hhs.gov/ocr/privacy/hipaa/understanding/index.html

Patient Protection and Affordable Care Act

Public Law 111-148, Patient Protection and Affordable Care Act (Affordable Care Act) was passed by the US Congress and signed into law in early 2010. The overarching purpose of this Act is to expand health insurance coverage while reforming the healthcare delivery system as a means to improve the quality and value of healthcare services. The Act includes provisions aimed at eliminating disparities in healthcare, strengthening health services and access to healthcare, investing in expansion and improvement the healthcare workforce, and encouraging consumer and patient wellness in the community and in the workplace.

This Act will be phased in over the next five years, with most of the significant reforms not taking effect until 2014. Several provisions will be implemented in the near term as a means of improving access to care and overall health with a focus on vulnerable groups, such as children, young adults, and the elderly.

The full text of this health reform legislation can be found at:

http://www.healthreformgps.org/summary-of-the-legislation/

Health Care and Education Affordability Reconciliation Act

Public Law 111-152, The Health Care and Education Affordability Reconciliation Act was signed into law on March 30, 2010 to amend The Patient Protection and Affordable Care Act. The intent of this healthcare reform bill was to eliminate some "controversial and unpopular items" and put healthcare in a more progressive direction. The subjects of the bill include insurance coverage, Medicaid, Medicare, and healthcare revenues.

The major healthcare related changes and effects of this bill include:

- Increasing tax credits to those who purchase insurance,
- Closing Medicare Part D "donut hole" (the gap in coverage of pharmaceutical medications) by 2020,
- Modifying income limitations as they relate to tax credits and premiums assistance,
- Establishing a health Insurance Reform Implementation Fund within the HHS,
- Requiring doctors who treat Medicare patients to be reimbursed at the full rate,
- Initiating a Medicare tax on "the unearned incomes of families that earn more than $250,000 annually",
- Offering more generous subsidies to lower income groups,
- Increasing Medicaid payment rates to primary care doctors in order to match the higher Medicare payment rates (staring in 2013 and 2014), and
- Revising the hospital market basket reduction applicable to payments to inpatient hospitals, long-term care hospitals, inpatient rehabilitation facilities, psychiatric hospitals, and outpatient hospitals.

An easy to understand summary of this Act is available online at:

http://dpc.senate.gov/healthreformbill/healthbill61.pdf

The full text of this authorizing legislation can be accessed at:

http://www.house.gov/dicks/newsroom/hr4872_amndsub.pdf

Medicare and Medicaid

One of the over 300 programs administered by the HHS is the Medicare program, which is the nation's largest health insurer, handling more than one billion claims per year. The program is administered through the Centers for Medicare and Medicaid Services and provides insurance for people age 65 years or older, some disabled people under age 65, and people of all ages with End-State Renal Disease.

Medicaid is also guided by the CMS in order to provide health insurance to qualified low-income individuals and families. Medicaid is a state administered program with guidelines varying by state.

Medicare and Medicaid together provide healthcare insurance for one in four Americans. Medicare's program stipulations contain the Federal Medical Assistance Program, which enables the cost of Medicaid to be shared by federal and state government. Further information about Medicare and Medicaid programs available to Guam residents is discussed in Section 7, Access to Care.

Americans with Disabilities Act

The Americans with Disabilities Act (ADA) was signed into law in 1990 for the purpose of extending civil rights protection to people with disabilities. The main premise of ADA is the prohibition of discrimination of individuals based on disability status in employment, state and local government's services, public transportation, public accommodations, commercial facilities, and telecommunications.

ADA, as it relates to the healthcare industry, works together with the Health Care and Education Affordability Reconciliation Act (HIPAA) to provide for the protection of consumer/patient rights of nondiscrimination and health information privacy.

President Obama launched the "Year of Community Living," on June 22, 2009, in celebration of and to reaffirm the Administration's commitment to "vigorous enforcement of the civil rights for Americans with Disabilities and to ensuring the fullest inclusion of all people in the life of our nation." HHS will play a key role in carrying out the President's directive. Among other activities, ways to improve access to housing, community supports, and independent living arrangements are a major focus of this initiative.

Extensive information pertaining to ADA and its application to various sectors and aspects of life is available on the US Department of Justice's ADA home page: http://www.ada.gov/

Title 1 of the Rehabilitation Act of 1973

Title 1 of the Rehabilitation Act of 1973 (better known as the "Employment Opportunities for Individuals With Disabilities Act") established an opportunity and process for the private industry to assist in rehabilitation for eligible workforce. While some laborers may experience short- or long-term disability, this law enables the private industry to identify areas for which disabled persons may work, attain skills for other competitive opportunities in the labor force, and place disabled citizens in jobs. This act allows for the private industry to receive federal monies to create and facilitate an environment for disabled persons to grow, strengthen, and work.

The full text and amendments to the law can be accessed at:

http://www.access-board.gov/enforcement/rehab-act-text/intro.htm.

Older Americans Act of 1965

The Older Americans Act of 1965 was the first federal initiative that provided comprehensive services to older adults. This law established the National Aging Network consisting of the Administration on Aging. Furthermore, the law provides funding to state and local governments for the care of their elderly populations. The federal allocation is determined by the local population of those persons aged 60 and older. These monies are to provide various services to the local elderly including "nutrition and supportive home and community-based services, disease prevention/health promotion services, elder rights programs, the National Family Caregiver Support Program, and the Native American Caregiver Support Program."

Guam is a recipient of the National Family Caregiver Support Program.

For full text and programs, visit:
http://www.aoa.gov/aoaroot/aoa_programs/oaa/index.aspx

Emergency Medical Treatment and Active Labor Act

Guam Memorial Hospital is subject to the Emergency Medical Treatment and Active Labor Act, an Act of Congress passed in 1986 as part of the Consolidated Omnibus Budget Reconciliation Act (COBRA). The law requires

participating hospitals and ambulances to provide medical care to any person in need of emergency healthcare treatment regardless of citizenship, legal status, or ability to pay. Under this Act, participating hospitals include those that accept payment from HHS, Centers for Medicare and Medicaid Services under the Medicare program. Although this law is intended to provide medical services to those who are unable to pay by way of the hospital being reimbursed by the HHS, the cost of emergency care is not directly covered by the federal government, and is often referred to as an unfunded mandate. As a result, hospitals such as GMH are often overburdened with too many patients seeking care that cannot pay for the services rendered.

This requirement has played a significant role in the financial hardships that GMH has repeatedly experienced over the past several years. Estimates provided by the Centers for Medicare and Medicaid Services indicate that 55% of US emergency care goes uncompensated as a result of the implementation of this requirement to treat.

Workforce Investment Act

The Workforce Investment Act (Public Law 105-220) was enacted in 1998 for the purpose of providing "workforce investment activities, through statewide and local workforce investment systems, that increase the employment, retention, and earnings of participants, and increase occupational skill attainment by participants, and, as a result, improve the quality of the workforce, reduce welfare dependency, and enhance the productivity and competitiveness of the Nation." These activities are usually provided at a One-Stop Career Center established by this legislation. The entities that are eligible to provide such activities for a One-Stop Career Center include post-secondary education institutions eligible to receive federal funding, entities engaging in approved apprenticeship programs, and other public or private entities approved to provide such employment services and receive federal funding.

The full text of the act can be found at:

http://www.doleta.gov/usworkforce/wia/act.cfm

Service Contract Act

The purpose of the Service Contract Act of 1965 (Public Law 28-164) is to "conform the Guam Wage and Hour law to changes in the US Federal Fair Labor Standards Act regulations by amending Title 22 GCA AY108(b)." This law states that any entity (prime or subcontractor) providing work or services under a federal contract, especially a construction contract, must establish wages and hours in accordance of the Fair Labor Standards Act and comparable to the locality's wages and hours determinations as set by the US Department of Labor. Moreover, this Act identifies specific position classifications whereby wage minimums are determined in accordance of the aforementioned laws and enabling agencies.

For the full text of the law, please see:
http://www.dol.gov/compliance/laws/comp-sca.htm

6.2 Government of Guam

Department of Public Health and Social Services

Guam's DPHHS is the designated state agency for the administration and provision of healthcare services on Guam. The Guam Code Annotated (GCA) Title 10 Health and Safety (updated through Public Lawn 30-225) serves as the overarching regulatory document from which public health services and programs are planned and controlled. The Director's Office is responsible for providing direction, administrative leadership, and guidance to the various divisions within the Department. As stated in the GCA Title 10, the purpose of the Director's Office – General Administration is to "enforce and monitor Equal Employment Opportunities, safety, health programs and provide personnel services departmental wide." Several offices and groups are components of the DPHSS's Director's Office, including the Chief Public Health Office whose primary functions are to:

- direct and administer the overall operations of the Division of Public Health,
- establish Division goals and objectives,
- monitor compliance with standards, policies, regulations, and procedures for effective and efficient management of federally and locally funded programs and services,
- provide recommendations for policy development in the areas of healthcare services and its delivery system, and
- working toward the prevention and control of diseases and promoting health throughout the island Through organized community effort and applied scientific and technical knowledge.

DPHSS is organized into divisions (Division of Public Health, Division of Public Welfare, Division of Senior Citizens, and Division of Environmental Health, and the Health Professional Licensing Office). The major functions of each division office are described below.

Division of Public Health

DPHSS Division of Public Health is responsible for providing healthcare services all of Guam's residents, particularly those who are disadvantaged. Health and social services are rendered at both public facilities and in a home setting. Annual notifiable disease lists and reports are maintained and distributed by the Division of Public Health. Healthcare services are provided through the Bureau of Primary Care Services (BPCS), a component of this Division.

Division of Public Welfare

The Division of Public Welfare exists to promote positive social conditions that contribute to the maximum social well-being for the economically and socially disadvantaged populations on Guam. This division is responsible for determining eligibility of public program applicants, including those related to health and social services, housing, and employment. The Division of Public Welfare is responsible for the administration and management of public benefit programs such as:

- Women Infant Children (WIC): WIC is a federal program administered at the state level that provide nutrition supplementation, healthcare referrals, and nutrition education to low-income pregnant and postpartum women, infants, and children up to age five who are found to be at nutritional risk.
- Supplemental Nutrition Assistance Program (SNAP): SNAP is the cornerstone of the Federal food assistance programs that provides low income households financial subsidies to purchase food at authorized stores.
- Medically Indigent Program (MIP): MIP is Guam's public health program that offers health insurance to Guam residents who meet certain low income and residence requirements. MIP is also offered to populations of the Freely Associated States (FAS) through the Compact Impact Agreement.

Division of Environmental Health

DPHSS Division of Environmental Health's (DEH) purpose is to ensure public and consumer protection through the prevention of unsanitary conditions. DEH is responsible for ensuring compliance with environmental policies and regulations, animal control, regulation of health establishments, and enforcement of all environmental health regulations.

Division of Senior Citizens

The Division of Senior Citizens (DSC) serves as the primary advocate for senior citizens on Guam through enforcement of the Older Americans Act and is responsible for coordinating all activities on Guam related to this Act, as mandated by federal and Guam law.

Health Professional Licensing Office

The Health Professional Licensing Office (HPLO) provides administrative support to Guam's Medical Boards for the purpose of licensure approval and maintenance. HPLO provides support to:

- Guam Board of Allied Health Examiners
- Guam Board of Examiners for Dentistry
- Guam Board of Medical Examiners
- Guam Board of Nurse Examiners
- Guam Board of Examiners for Optometry
- Guam Board of Examiners for Pharmacy
- Guam Board of Barbering and Cosmetology

Department of Mental Health and Substance Abuse

The Department of Mental Health and Substance Abuse (DMHSA) was established as an official Department of the Government of Guam in 1983 through Public Law 17-21. DMHSA serves as Guam's only state entity for providing mental health services, either directly or through contract services, and for serving the regulatory role related to such matters. Prior to the formation of DMHSA, Guam Memorial Hospital was the sole public entity providing mental health services on Guam.

The overall mission of DMHSA is "enhancing and promoting the physical, mental and spiritual well-being of the people of Guam through caring communities empowered to support comprehensive mental health and substance abuse prevention and treatment programs that are culturally sensitive and consumer driven."

The department was created for the purpose of:

- providing comprehensive mental health, alcohol and drug programs and services to the people of Guam;
- continually improving, enhancing, and promoting the physical and mental well-being of the people of Guam who experience the life-disrupting effects of mental illness, alcoholism, and drug abuse or are at risk to suffer those effects and who need such assistance; and
- encouraging the development of privately-funded community-based mental health, drug and alcohol abuse programs, particularly those that employ qualified local residents.

DMHSA manages and administers several programs dealing with substance abuse, child mental health, adult mental health, prevention and training, nursing services, and professional support. These programs are discussed in greater detail in Section 12, Behavioral Health.

- Substance Abuse: The Substance Abuse program of DMHSA follows the American Society of Addiction Medicine Patient Placement's guidelines for the provision of Guam's continuum of care related to substance abuse intervention and addiction treatment.
- Child Mental Health: Child Mental Health programs provide integrated, community-based outpatient services for children-adolescents who are high risk and those with serious emotional disturbances and their families. Services offered include counseling; crisis intervention; outreach, prevention and education services; transitional placement services; and referral services.
- Adult Mental Health: The Adult Mental Health program offers intake and emergency services for the treatment of mental health conditions to adults and their families. Services offered include counseling, housing assistance, day treatment services, crisis hotline, and co-occurring substance abuse and mental disorders.
- Prevention and Training: DMHSA's Division of Clinical Services' Prevention and Training Branch offers training, technical assistance, and educational opportunities for program leaders, community leaders, and youth and adult volunteers dedicated to enhancing mental health and preventing and reducing alcohol, tobacco, and other drug use and related problems.

Applicable Regulations

Several regulations contained within the Guam Code Annotated exist to supplement and complement the federal regulations discussed earlier. Notable regulations that relate to and influence the provision of health and social services on Guam include the Guam Medical Assistance Plan and Medically Indigent Program.

Guam Medical Assistance Plan

The Guam Medical Assistance Plan, under Public Law 14-94, as amended by Public Law 14-101, was established through the Guam Code Annotated: Public Health, Health and Safety, Chapter 6 as a means of affording those enrolled in Medicaid whose premiums are being paid for the government of Guam an opportunity to enroll in a Prepaid Health Plan (PHP), a multi-specialty group practice or an individual practice association developed to provide medical services on a prepaid basis. The purpose of PHP enrollment and utilization is to provide a means of increasing affordability of comprehensive healthcare and related remedial and preventative services.

Medically Indigent Program

Guam's Medically Indigent Program (MIP), established by Public Law 17-83 in October 1983, provides financial assistance for healthcare costs to individuals who meet the necessary income, resources, and residency requirements. The DPHSS, Division of Public Welfare, Bureau of Health Care Financing is responsible for administration of the MIP program, as established by Public Law 18-31, revised by Public Law 27-30 (September 2003). Eligibility requirements restrict MIP enrollment to a person who is:

- Is a resident of Guam who has resided on Guam for a minimum of six months and been physically living on Guam within the last six months of the year.
- Is not eligible for any other public health insurance and has exhausted all other public welfare benefits
- Is eligible for receive temporary emergency medical or other special care as provided in Section 2905.3 of the law.
- Who meets 100% of the Federal Poverty Guidelines.
- Who is afflicted with certain health conditions such as tuberculosis, leprosy, lytico, end stage renal disease or insulin dependent diabetes mellitus, subject to certain income restrictions.

See also Section 7, Access to Care for additional details on public healthcare plans and programs, including MIP, available to residents of Guam.

6.3 Regional Governance

Compact of Free Association

As a result of the US's interests in Guam, the Federated States of Micronesia (FSM) and outlying islands, the US entered into agreement through the Compact of Free Association (Public Law 99-239 and Public Law 108-188, as amended) (COFA) as a means of establishing a relationship between the US, FSM, and Republic of the Marshall Islands (RMI). The COFA provides for US economic assistance (including assistance for US federal programs), defense, and other benefits in exchange for the US defense and other operating rights in the FSM, denial of access to FSM territory by other nations, and other related stipulations.

The Compact Impact Agreement authorizes unrestricted immigration into the United States, its territories, and possessions from these countries and allows immigrants to become employed and establish residence as non-immigrant aliens. In anticipation of possible adverse impacts to Guam's economy due to providing healthcare, education, job training and public assistance the people of a foreign nation not domiciled on Guam, the Agreement provided for an appropriation of funds to cover costs incurred by Guam resulting from increased demands on educational and social services by immigrants from the Freely Associated States (Marshall Islands, FSM, and Palau). It is through this agreement that Guam maintains responsibility for providing treatment and services to individuals who relocate to the island from the Compact States and US and will, as a result, be reimbursed by the US for incurred costs (subject to current funding caps). The original Agreement provides for the following stipulations regarding financial assistance related to public health issues:

- Under Article 1 Grant Assistance, Section 216 (a)(2), the US government agrees to provide a total annual grant of $5.369 million, $1.791 million of which is for health and medical programs, including referrals to hospital and treatment centers
- Article 2 Program Assistance, Section 221(b) states that "the Government of the United States, recognizing the special needs of the Marshall Islands and the Federated States of Micronesia particularly in the fields of education and healthcare, shall make available, as provided by the laws of the United States, the annual amount of $10 million which shall be allocated in accordance with the provisions of the separate agreement referred in Section 232." [US Department of the Interior Office of insular Affairs]

http://www.doi.gov/oia/compact/compact.html

Following its adoption, Compact Associated Funding contributed the largest amount of funding to the health sector in the region. Additional health service funding sources include a combination of funds associated with the original COFA, US federal funds, state funds, and user fees and insurance. Compact funding has since been phased down. The immediate effects of reduced funding resulted in a rationalizing of health services and reduction of overall quality and breadth of health services that could be provided. Primary among these reductions included fewer health personnel, shortages of drugs and equipment, and inadequate maintenance of equipment, programs, and facilities. These effects are still being experienced by the healthcare system on Guam and throughout the region.

The COFA has since been amended, referred to as Compact II, and now requires performance-based budgeting, planning, and reporting in order to qualify for financial assistance.

Micronesian Chief Executives' Summit: Memorandum of Understanding

The Micronesian Chief Executives' Summit was founded by CNMI and Guam governance in 2004 for the purpose of establishing sub-regional meetings "to establish closer ties, enhance existing ties, expand future discussion, and agree on initiatives for the benefit of the entire western Micronesian region." The Summit serves as an annual forum for leaders in the Micronesian region to discuss and address challenges and issues of mutual concern, such as health, education, and the environment, among others.

The 10th annual Summit held in 2008 resulted in regional support for the establishment of a "regional Health Sector that will work collaboratively with the US Federal government and regional partners", primarily as a means of addressing and dealing with the anticipated impacts of military buildup on

Guam. (MOU; Regional Health District, 10th Micronesian Chief Executives' Summit, 2008)

The MOU signed by CNMI, Guam, RMI, FSM, and the Republic of Palau established a regional partnership addressing health planning for the Western Pacific region. The various recommendations that resulted from the Summit and subsequently approved through an MOU are as follows:

- Policy recommendations include clarifying a role of preventive and primary care in the US Affiliated Pacific Islands (USAPI) as well as developing a strategy for NGOs, USAPI, and donors to engage in the health system and share in the maximization of resources and benefits.
- Data recommendations include the development of a standard data set for measuring and tracking health status and conditions that are culturally sensitive and diverse and setting a minimum standard for investment in the health information management systems.
- Finance recommendations suggested encouragement of the US to reimburse Medicaid/Medicare costs at an equitable level as those of the US as well as while proposing strategies for strengthening the healthcare financing system throughout the USAPI.
- Human Resources for Health recommendations submitted to continue efforts of reporting on progress to address healthcare workforce shortages including setting up a nursing school in FSM and developing a strategy for sharing human resources in cases of emergency.
- Laboratory recommendations commended the idea of establishing a Regional Level 2 Reference Laboratory in Micronesia and promoted efforts to ensure this becomes reality.
- Planning and evaluation action items suggested that regional health planning become high priority and that scarce resources are utilized effectively as well as to ensure the local health department capacity is strengthened through partnerships; continue to encourage the US Institute of Medicine for a new assessment of Pacific Public Health and encourage US agencies to fund the Pacific Emergency Health Initiative
- Continuity planning was recommended through the appointment of PIHOA to Health Committee Secretariat.

Guam eHealth Collaborative

The Guam eHealth Collaborative (GeHC) was formed in 2009 a collaborative composed of representatives from local healthcare related institutions and leaders in coordination with local government and military authorities committed to improving healthcare on Guam through electronic exchange of health information. The overarching purpose of this GeHC is to plan and promote Guam's adoption and use of EHRs and establish and implement its HIE (HHS, 2011c).

The adoption of electronic health records was initiated by the federal government on the basis of the Institute of Medicine's 1999estimate that "44,000 to 98,000 Americans die each year as a result of preventable medical errors" that "cost the Nation approximately $37.6 billion each year; about $17 billion of those costs are associated with preventable errors." In conjunction with this policy, the Office of the National Coordinator (ONC) for Health Information Technology (IT) within the Office of the Secretary of Health and Human Services was formed and charged with "developing, maintaining, and directing ...the implementation of a strategic plan to guide the nationwide implementation of interoperable health information technology in both the public and private healthcare sectors that will reduce medical errors, improve quality, and produce greater value for healthcare expenditures" (Kaiser Family Foundation, 2008).

As a result, Guam adopted Executive Order 2009-12: "Relative to Creating the Guam eHealth Collaborative" stating that "adoption of an island-wide health information infrastructure would improve healthcare quality, safety and efficiency by: 1) ensuring health information is available to healthcare providers at the point of care for all patients; 2) reducing medical errors and avoiding duplicative procedures; 3) improving coordination of care between hospitals, physicians, and other health professionals; and 4) providing consumers access to quality and cost information as well as their own health information to encourage greater participation in their healthcare decisions" (Guam Executive Order 2009-12, July 2009). Electronic health records and associated supporting infrastructure are discussed in greater detail in Section 5, Health and Social Services Infrastructure.

6.4 Licensure

The public health field is strictly regulated as a means of protecting the public and avoiding potential harm as a result of actions by an unqualified medical professional. All 50 states, the District of Columbia, and the US territories have a medical practice act that defines the practice of medicine and delegates the authority to enforce the law to a state medical board. It is the responsibility of the State Medical Board (Guam Board of Medical Examiners) to license physicians, investigate complaints, take disciplinary action in the case of violations, conduct evaluations of professionals, and facilitate rehabilitation as appropriate.

Licensure of Medical Professionals

The Health Professional Licensing Office is a component of DPHSS and provides administrative support to seven health related Boards:

- Guam Board of Allied Health Examiners (Allied Health Professionals are healthcare professionals distinct from medicine, dentistry, and nursing, and may include professionals such as technicians, trainers, epidemiologists, and paramedics)
- Guam Board of Examiners for Dentistry
- Guam Board of Medical Examiners
- Guam Board of Nurse Examiners
- Guam Board of Examiners for Optometry
- Guam Board of Examiners for Pharmacy
- Guam Board of Barbering and Cosmetology

Medical licensure requirements are identified in the GAR 25 – Professional and Vocational Regulations, Chapter 11 Guam Board of Medical Examiners. Requirements for full medical licensure on Guam are the same as for those in the US. The major requirements for medical licensure recognition of all licensed health and social service providers on Guam state that an applicant must:

- Possess the degree of Doctor of Medicine from a medical college or school identified in the World Health Organization's listing of approved medical schools
- Have successfully completed educational requirements necessary to become American board certified, or hold current American Board certification, in one of the specialties recognized by the American Board of Medical Specialties.
- Have passed the FLEX examination (if prior to 1986 when examination was discontinued) or be a Diplomat of the National Board of medical Examiners or be certified by an American Specialty Board
- Be physically, mentally, and professionally capable of practicing medicine in a manner acceptable to the Board and submit to associated testing if requested
- Have not been found guilty by a competent authority, US or foreign, for disciplinary action under the regulations of the Board

(Source: 25 GAR – Professional & Vocational Regulations: Chapter 11 Guam Board of Medical Examiners)

Telemedicine Licensing

Guam's Telemedicine Act of 2008 (Public Law 29-92) was passed in 2008 as a means of supporting and increasing the use of telemedicine for medical treatment on Guam by physicians located outside of Guam.

The original legislation was established as a means of allowing the use of telemedicine on Guam; however, strict licensing restrictions ultimately discouraged this practice. Amendments, made later in 2008, provide for a simplified and streamlined approach to remote medical consultation by removing several barriers to treatment, including the core provisions stating that a licensed physician who resides outside of Guam and within a State, Federal jurisdiction or country is not subject to Guam medical licensure requirements when providing consultation to a Guam licensed physician through telemedicine technology, subject to associated licensing requirements. The use of telemedicine in Guam's healthcare facilities is further discussed in Section 5, Health and Social Services Infrastructure.

Accreditation of Medical Facilities

The Joint Commission on Accreditation of Health Care Organizations (Joint Commission) is an independent not-for-profit organization that accredits and certifies healthcare organizations and programs throughout the US. The mission of this organization is "to continuously improve healthcare for the public, in collaboration with other stakeholders, by evaluating healthcare organizations and inspiring them to excel in providing safe and effective care of the highest quality and value" (Joint Commission website, 2011). Accreditation and certification serves as a recognition and symbol of quality that reflects an organization's commitment to meeting certain performance standards as identified by the Commission. The overall purpose of accreditation and certification is to ensure compliance with applicable licensure regulations and promote hospital reform based on management outcomes and patient care.

The Joint Commission has established National Patient Safety Goals in order to promote specific improvement in patient safety. Accreditation and certification applies to a variety of healthcare facilities and services, including Ambulatory Health Care, Behavioral Health Care, Hospice and Home Care, Hospitals, Laboratories, and others. Standards manuals are available for purchase through the Joint Commission's website, where additional information on the process and importance of accreditation is provided:

http://www.jointcommission.org/

Information on accreditation of Guam Memorial Hospital is covered in Section 5.1, Guam Memorial Hospital Authority.

6.5 Insurance

Health insurance exists for the purpose of protecting both patients and providers. At the patient level, public insurance programs exists as government subsidized programs whose overarching purpose is to improve access to care through the reduction or offsetting of costs. Patient insurance coverage and options are discussed in Section 7, Access to Care. The focus of this section is insurance at the provider level, in the form of medical malpractice insurance.

Medical Malpractice Reform Act of 1975

The Medical Malpractice Reform Act of 1975, 10 GCA pertains to:

- Health professionals, defined as "any person licensed or certified to practice the healing of arts within the territory of Guam, to include podiatry, pharmacy, nursing, as defined in S27000 of the Government Code of Guam.
- Health institutions, defined as "any health care facility or health maintenance organization operated primarily to provide the service of health professionals.

Under this law, malpractice includes any "tort or breach of contract based on healthcare or professional services rendered or which should have been rendered, by a health professional or healthcare institution to a patient." The purpose of Medical Malpractice regulations is to protect providers against unsubstantiated claims of harm to health resulting from a procedure or treatment rendered by the provider and limit liability when harm results from negligence by the provider. The Medical Malpractice Reform Act of 1975 requires the Government of Guam to provide for legislative guidance that support the goals of establishing guidelines and procedures should malpractice result and liability insurance that can be operated at a reasonable cost for the purpose of producing prompt, equitable compensation to those sustaining injuries from improper medical care. Malpractice claims are subject to mandatory arbitration as stipulated in GCA Chapter 10 Medical Malpractice-Mandatory Arbitration.

6.6 Sources

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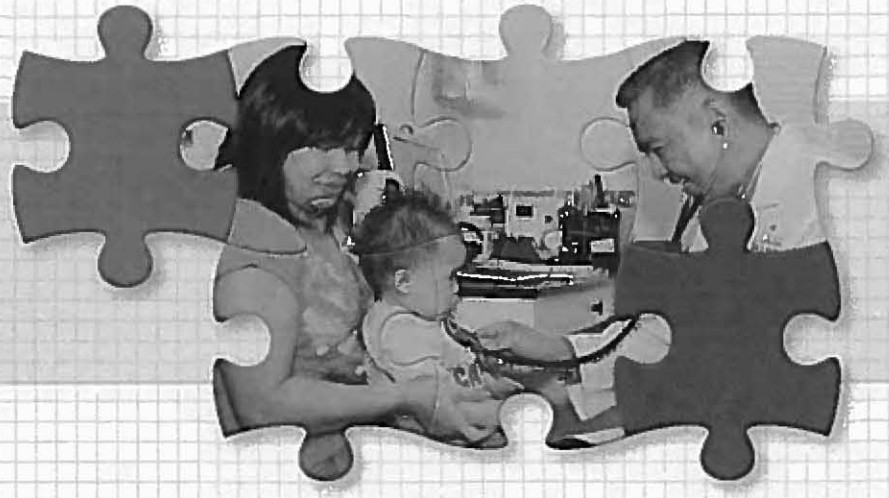

7.
Access to Care

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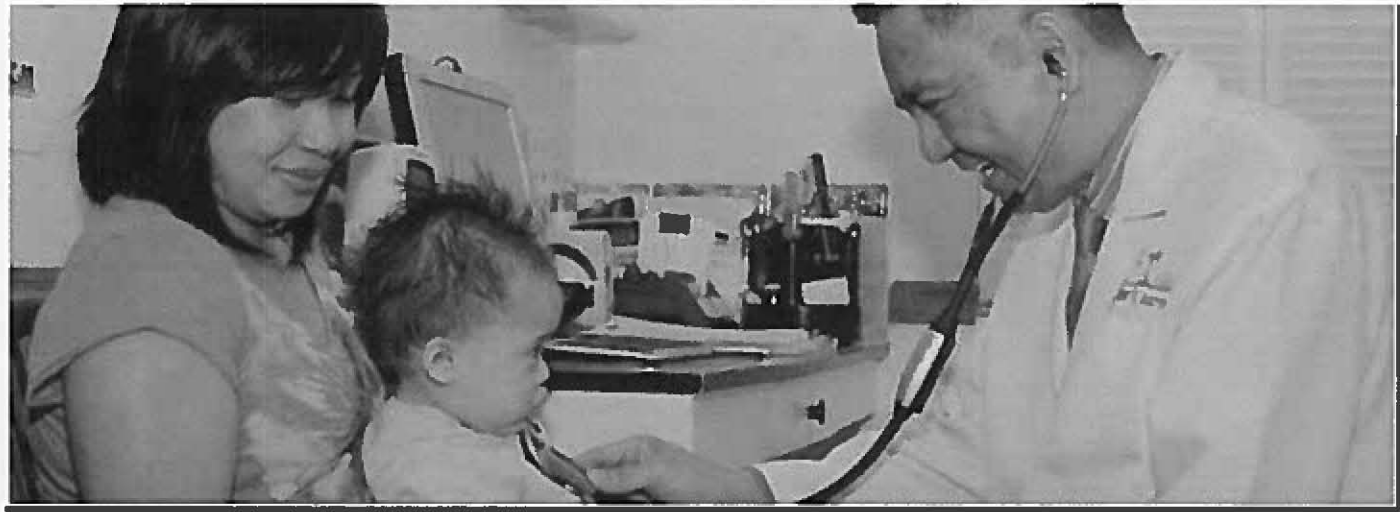


7

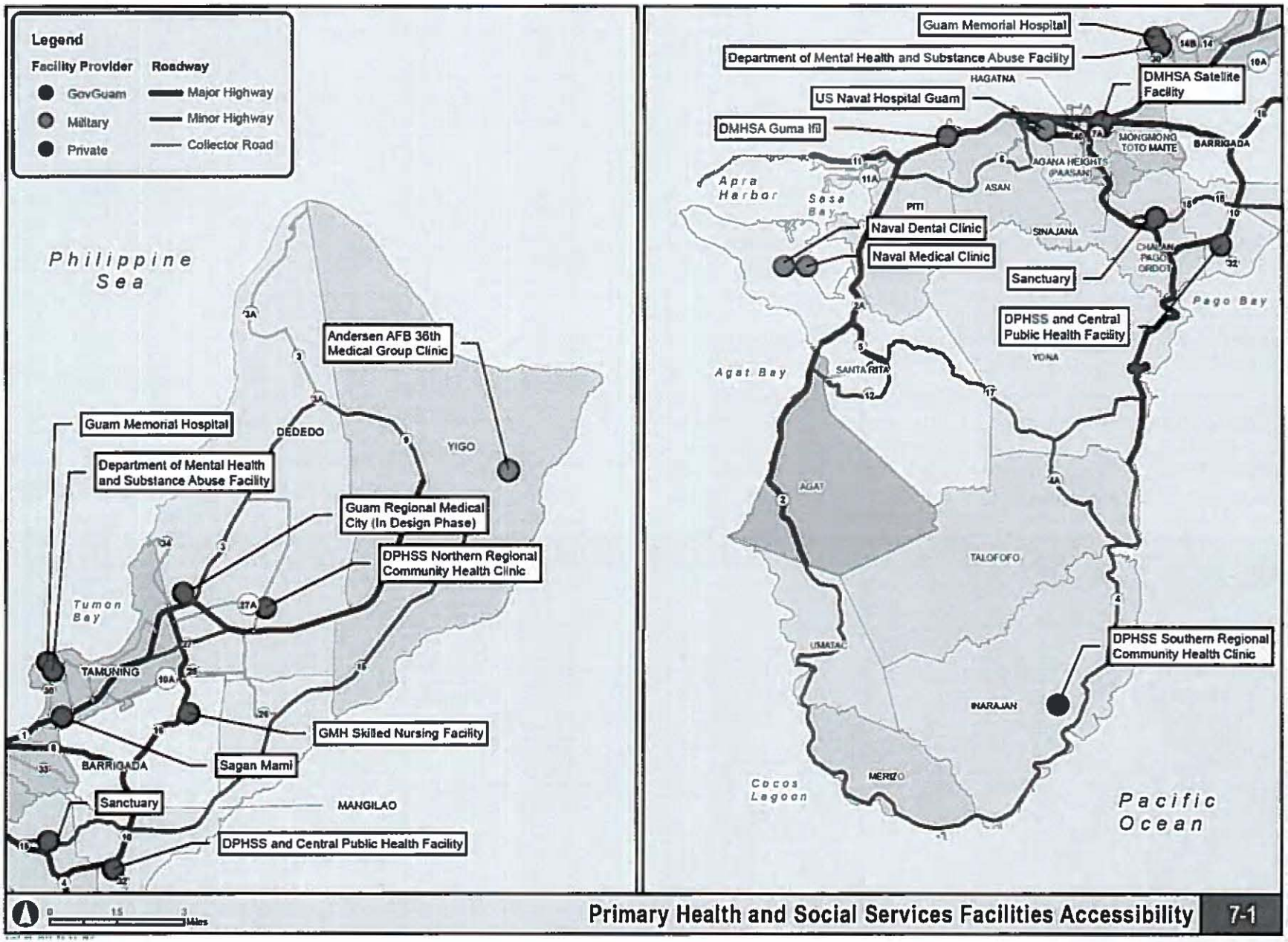
Access to Care

Inside Section 7 . . .

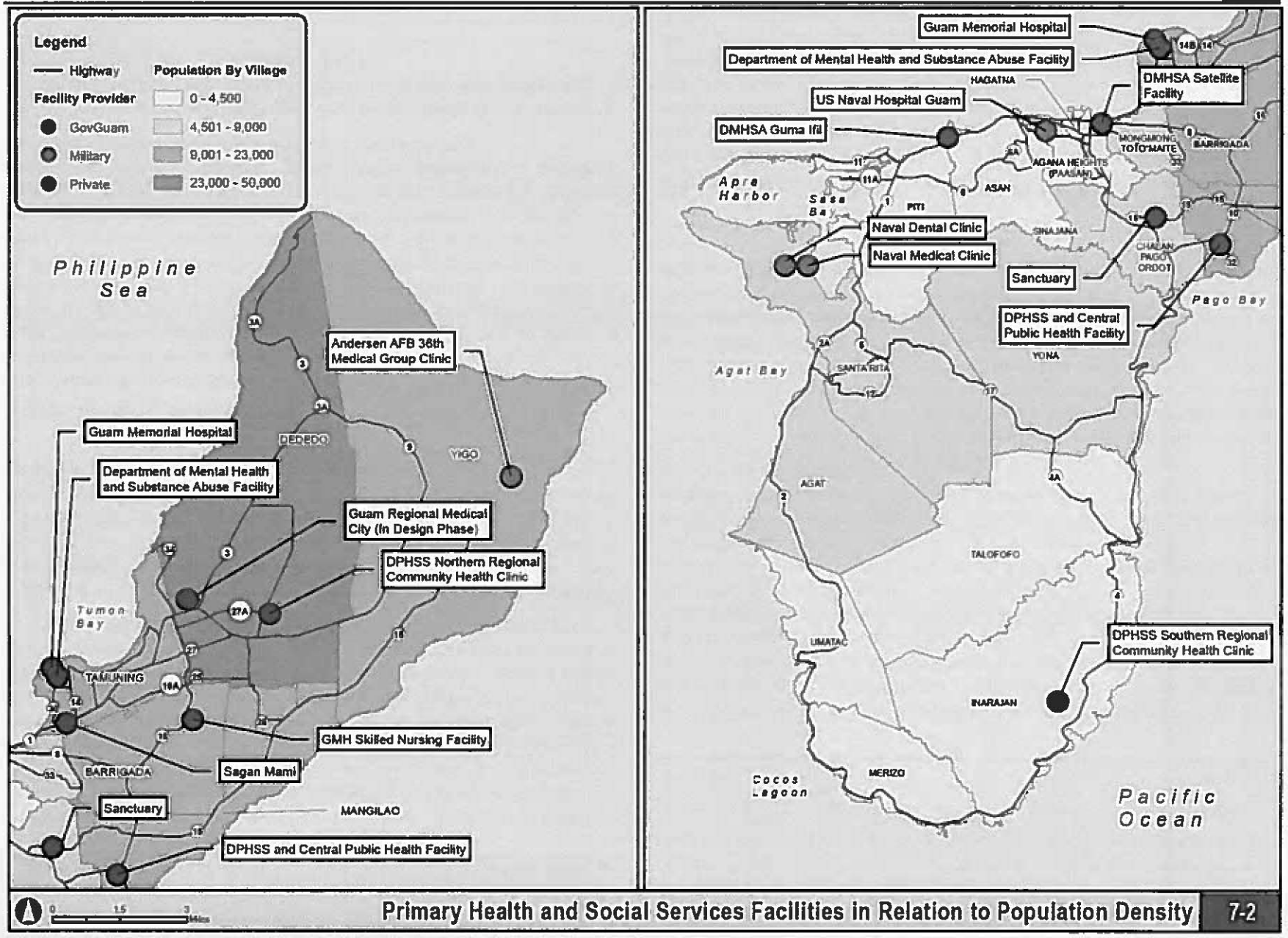
One of the key factors in promoting and ensuring good health is the access to appropriate healthcare and social services by the entire population. Access to care is influenced by the quantity, quality, and location of facilities; the provision of sufficient and appropriate treatment options; the availability of qualified professionals; and the costs associated with each.

The availability and accessibility of these components is essential to supporting and encouraging healthy living for all and provides many benefits such as:

- improving social, mental, and physical health;
- preventing, detecting, and treating diseases, disabilities, and other health conditions;
- increasing life expectancy; and
- improving overall quality of life.



Primary Health and Social Services Facilities Accessibility 7-1



Primary Health and Social Services Facilities in Relation to Population Density 7-2

7.1 Healthcare and Social Service Providers

The term healthcare and social service provider refers to either an individual or institution that provides preventative, diagnostic, treatment, or rehabilitative services for mental and physical health to individuals, families, or communities. An individual provider may be a caregiver, an allied health professional, a community health worker, social worker, or other trained medical professional. Institutions include private and public health clinics, hospitals, mental health clinics, resource centers, and other service delivery points. When assessing health and social service providers in relation to access to care, both individuals and institutions must be taken into consideration.

In addition to traditional providers and specially trained and licensed staff, support services are available through a variety of non-profit and community organizations. For additional information on healthcare providers, please see Section 5, Health and Social Services Infrastructure. Additionally, Appendix A, Providers Guide contains a complete list of all major providers on Guam for health and social services.

Guam Memorial Hospital

Guam Memorial Hospital (GMH) serves as Guam's primary provider of acute healthcare services and is currently Guam's only provider of emergency and acute care services available to civilian residents. According to the 2009 GMHA Strategic Plan, inpatient service beds are experiencing high occupancy rates. Services such as Intensive Care Unit / Critical Care Unit (ICU/CCU), Neonatal Intensive Care Unit (NICU), and Pediatrics are experiencing 50% and above occupancy rates while Medical/Surgical units are at 80% and above and the Medical/Telemetry Unit, and Intermediate Care Nursery are often near full capacity. Outpatient services at GMH include Emergency Medicine Department (EMD), Operating Room (OR), Hemodialysis, Radiology, Respiratory Care and Rehabilitative Services, and Laboratory.

GMH operates a 24-hour emergency room, the only public one on the island. The ambulance fleet that transports patients to the emergency room is managed by the Guam Fire Department (GFD).

Guam Memorial Hospital is currently the only civilian hospital on the island. It has 158 acute care unit beds and serves as a regional hub for health services to Guam as well as nearby Pacific Islands.

As of June 2011, GMH's medical staff consisted of 77 members. Medical professionals at GMH represent a broad spectrum of clinical specialties; however, several critical specialties are not represented, thus associated services cannot be provided. Notably, GMH does not have any Continuous Ambulatory Peritoneal Dialysis (CAPD) Nurses, clinical psychologists, physician assistants, or surgical assistants, among others. (Guam Statistical Yearbook 2008) Of the 77 medical staff, 52, or 67.5%, are Board certified. In addition to the medical staff that are employed by GMH, there are another 97 medical professionals that are privileged to practice at GMH, 83.5% of which are Board certified. Additional details on GMH's workforce are provided in Section 3, Workforce Development.

GMH is situated off of Marine Corps Drive, the primary road that connects between the northern part of Guam and extends south to Naval Base Guam (see Figure 7-1). In addition, its location in Tamuning is relatively close to the most populated areas of Guam, which are the Villages of Dededo and Yigo and is centrally located on Guam (see Figure 7-2). Under normal conditions, GMH is fairly easily accessible to residents living within the most populated areas of Guam. However, access from the southern portions of the island is more difficult due to the distance and the smaller, curvier roads that lead directly north.

Department of Public Health and Social Services

The Department of Public Health and Social Services (DPHSS) is one of the major public providers of healthcare and social services to the island's residents. Many of DPHSS's functions operate out of the main facility in Mangilao; however, there are several functions located separately from the main facility, such as the Division of Senior Citizens that is located near University of Guam. This dispersion of facilities could be problematic for individuals who need to visit multiple offices and may have to go to multiple locations to do so.

DPHSS provides direct care services from its main facility, three community health clinics, and a number of senior citizen care facilities. The DPHSS main facility is sits along Route 10 on the eastern side of the island (see Figure 7-1). It is located on the southern end of the major populated villages, and is near the midpoint of Guam (see Figure 7-2).

Also located at the main facility is the Central Public Health clinic, which provides various services and outpatient care for Guam's residents. The Public Health Center is open from 8:00 am to 5:00 pm Monday through Friday, and is closed on Saturday and Sunday.

Community Health Centers

The Southern and Northern Region Community Health Centers provide primary healthcare, acute outpatient care, and preventive services on Guam. The Guam Community Health Centers provide a full range of primary care services through their staff of family practitioners, pediatricians, internists, nurse practitioners, and other health professionals.

The Guam Community Health Centers' target populations include those who are low income, uninsured, and medically underserved, including:

- children below the age of 11;
- adolescents (including those confined in a correctional facility);
- females of childbearing age with health risk factors;
- pregnant women;
- the elderly;
- homeless and those living in emergency or transitional shelters; and
- citizens of the Commonwealth of the Northern Mariana Islands (CNMI), Federated States of Micronesia (FSM), the Marshall Islands, and immigrants.

DPHSS operates the Northern Regional Community Health Center in Dededo, the Southern Regional Community Health Center in Inarajan, and the Central Public Health facility in Mangilao.

Northern Regional Community Health Center

The Northern Regional Community Health Clinic is located at 520 W Santa Monica Drive in Dededo. This center's hours of operation are from 7:30 am to 6:00 pm Monday through Thursday, from 7:30 am to 1:30 pm on Friday and Saturday, and closed on Sunday. This is centrally located within the most densely populated area of Guam (see Figure 7-2). Due its centralized location among the largest populated region in Guam, it is often overcrowded and people experience long wait times. This limits the effectiveness of access for those seeking assistance.

Southern Regional Community Health Center

The Southern Regional Community Health Center is located at 162 Apman Drive in Inarajan. This center is open from 8:00 am to 5:00 pm Monday through Thursday, 8:00 am to 12:00 pm on Friday, and is closed on Saturday and Sunday. This facility was recently renovated and improved. It has chest X-ray equipment that is not available at the Northern Center. The Southern Center's location on the southeast portion of Guam is far away from the primary population node and is in one of the least populated villages (see Figure 7-2). It is only served by one major road, Route 4, which is somewhat far from other major connections (see Figure 7-1).

Central Public Health Clinic

The Central Public Health Clinic is located 123 Chalan Kareta in Mangilao. Its hours of operations are from 8:00 am to 5:00 pm Monday through Friday. It is closed on the weekends. The Central Public Health center offers direct patient care as well as preventative and wellness programs. This center is situated close to a major road (Figure 7-1) and is located in an area that is relatively dense in population.

Division of Senior Citizens

The Division of Senior Citizens (DSC) offers a variety of support services for Guam's senior citizens (persons aged 60 and above) The DSC conducts an in-home services program for senior citizens who are without a caretaker and in risk of being institutionalized due to limitations on their ability to conduct daily life functions independently. These services are also available to those older individuals who do have a caretaker and require extra assistance. DSC also operates two adult day care centers where seniors can visit and participate in social gatherings and events during the day. One facility that serves the general senior citizen population is in located in Barrigada Heights. The facility

in Dededo serves a target population of senior citizens with dementia. These facilities are well-situated relative to their primary population served.

The DSC also operates 12 senior center locations throughout the island. Of these, five are in the southern half of the island and seven are in the northern half. Each of the adult day care centers and senior centers are staffed by contract personnel, and are not public employees. One of the primary challenges that the DSC contends with when trying to attract more senior citizens is the lack of public transit and constrained accessibility for those who do not have personal transportation. DSC provides seniors with transportation services for access to medical and other appointments if they are unable to drive themselves. Transportation services are provided by two means, either door-to-door service or assisted services. Door-to-door transportation is defined as providing round-trip transportation from the elder person's home to either a senior citizen's center or an adult day care. Assisted transportation is the provision of an escort or other assistance for elderly who have physical or cognitive conditions, which impairs their ability to operate a vehicle.

Department of Mental Health and Substance Abuse

Guam's Department of Mental Health and Substance Abuse (DMHSA) provides comprehensive mental health, substance abuse (drugs and alcohol), and social services and programs to the people of Guam in order to improve, enhance, and promote their mental and physical well-being.

DMHSA works closely with non-profit organizations to provide care and access to mental health facilities for those in need. The main DMHSA facility is located near GMH in Tamuning (see Figure 7-2) and provides a variety of day treatment, inpatient, and other services for children and adults. The DMHSA facility is situated near the primary population centers on Guam and is easily accessible from Marine Corps Drive (see Figure 7-1).

DMHSA operates the only inpatient mental health facility in the West Pacific. As such, it also serves the military population on Guam. The Navy relies heavily on the facilities for its personnel who experience mental trauma. If the facility becomes overcrowded or there is an influx of new patients that it cannot handle, patients are typically sent off-island to seek treatment.

A suit filed against DMHSA resulted in the department being put under a Federal Management Team (FMT) to help improve service and provide better treatment options, more staff, and more physical space for patients. Although still in the planning stages, the FMT is proposing to build a new facility that will have more space to treat those with mental health issues. GovGuam would instead prefer to move the children's inpatient ward to a new location and expand the adult inpatient ward for more beds, which would allow greater access for patients during periods of increased occupancy. One problem for access is that the children's inpatient ward is not big enough and there is often a waiting list for children. Some are sent off-island because they cannot wait for an opening. Moving the ward separately from the main facility could allow for more space for children as well.

DMHSA' facilities include both public facilities and private facilities that are operated by a private contractor whose services are secured by DMHSA. Facilities are located throughout Guam as a means of providing maximum accessibility to the greatest number of citizens. Outlying facilities include an adult mental health transitional residential service in Asan; a drug and alcohol treatment center, a children's outpatient center (I Famagu'onta), and a prevention center (PEACE) in Hagatna.

The privatized services that are offered through DMHSA assistance include an adult mental health permanent supportive residential center in Mangilao; child mental health residential and outpatient services, drop-in services, employment support services, and a consumer enrichment center in Tamuning; Sanctuary (drug and alcohol services) in Chalan Pago; the Oasis Empowerment Center in Tamuning; and the Salvation Army in Mangilao.

Naval Hospital Guam

The Naval Hospital Guam in Agana Heights is the primary medical provider for military members and their families on Guam. The Naval Hospital also operates two branch clinics at Naval Base Guam. Those authorized to receive care at the Naval Hospital and clinics is limited to members of the military, service retirees, and their dependents. However, during emergencies, the Naval Hospital also serves as a first responder for Guam's civilians. If a civilian's life is in immediate danger or they have sustained an injury that requires immediate attention and their proximity is closer to the Naval Hospital than a civilian hospital, they may be transported to the Naval Hospital instead of GMH in order to receive immediate attention.

The hospital offers a broad range of medical services that include family practice, OB/GYN, pediatrics, general surgery, anesthesia, internal medicine,

psychiatry, psychology, occupational health and preventive medicine, emergency medicine, dental surgery, urology, otolaryngology, ophthalmology, optometry, physical therapy, nutrition, health promotions, and social work services.

The Naval Hospital is located near the center of Guam on the western side. It is adjacent to Marine Corps Drive; however, its entrance is off of Route 7 (see Figure 7-1). The hospital's central location provides better access as a first responder for emergencies coming from the southern half of the island. However, since the target population is Navy personnel at Naval Base Guam, the hospital is in a somewhat disconnected location from its patient base. Personnel living on-base have to leave the base to access the hospital.; however, the location is closer to the upcoming Marine Corps base that will be in Dededo.

The Navy is currently building a new Naval Hospital that will replace the current one, as well as two new upgraded branch clinics in response to the military buildup, one at Naval Base Guam, which will replace the two current ones, and one near the Marine Corps base at Finegayan. More information on these is available in Section 5, Infrastructure.

Andersen Clinic

The health clinic at Anderson Air Force Base (AFB) serves the military population stationed at this base in Yigo and their dependents. Outpatient services available to authorized personnel includes pediatric and adolescent care, prenatal (obstetric) care, adult and geriatric medicine, preventive and wellness services, occupational medicine, mental health services, family advocacy services, and minor surgical procedures.

Professional staffing at the Andersen Clinic includes an optometrist, a women's health nurse practitioner, a psychologist, social workers, and five primary care managers. Patients or situations that cannot be handled at the clinic may be transferred to Naval Hospital Guam or referred to another provider.

The clinic is located near the primary population center at Andersen AFB so that it efficiently serves the target population (see Figure 7-2).

Issues and Opportunities

There has been a decline of physician staff at GMH, resulting in a shortage, in recent years.

According to the 2008 Guam Statistical Yearbook, in 2005 GMH's medical staff included a total of 244 public physicians (including licensed military physicians working on a part-time basis), which translates into a ratio of 1.41 physicians per 1,000 population. As of 2007, the number of physicians had declined to 141, equal to a ratio of 0.81 physicians per 1,000 population. This decline in physicians was due in part to financial problems at GMH, particularly lower salaries, and vacant positions that could not be filled due to lack of funding, which resulted in new staff not being hired once someone leaves. As Guam's workforce continues to age and additional medical professional retire, the number of vacancies will expand if this issue is not addressed. GMH has a shortage of several healthcare specialists, some that have resulted due to a lack of funding leading to vacancies. There is a physician shortage especially in the area of orthopedics, neurosurgery, cardiac surgery, and urology.

The number of public physicians working at GMH declined by 42% from 2005 to 2007.

The healthcare facilities on Guam, particularly GMH, do not currently have all of the necessary equipment or services to support the full array of needs of the citizens.

The availability of health and social service procedures and tests that can be performed is hindered by a lack of functioning equipment in Guam's public healthcare infrastructure. Greater detail on the lack of functioning equipment is further discussed in Section 5, Health and Social Services Infrastructure; however, it should be noted that this shortage of equipment has an impact on access to care. For example, there is currently no organ transplant or organ harvesting program on Guam. The unavailability of this life-saving technique could lead to unnecessary loss of life that could have been prevented through

organ transplantation. The only means of organ transplantation for Guam residents currently requires a lengthy trip off-island to Hawaii. This service is available by means of a Memorandum of Understanding between GMH and St. Francis Hospital in Honolulu. Travel to Hawaii, which is approximately 3,800 miles away from Guam substantially increases a patient's cost of care for this service. . Additionally, Guam does not have a cardiac unit, and patients seeking major heart surgeries must travel off-island to receive this care.

The available of certain services on Guam is also hindered by financial feasibility of obtaining and operating such equipment, including the costs associated with the equipment itself as well as having trained staff to operate and maintain it. Strategic alliances such as the formal relationship between Hawaii's St. Francis Hospital and GMH increase access to care; however, the cost and distance of this particular example still poses constraints.

The location of GMH makes it difficult to access by certain communities.

Although GMH's location on the northern side of Guam is in the most densely populated area of Guam, access to the hospital by residents who live in the southern portion, particularly more remote areas, is often challenging. Some of the residential areas in southern Guam are remote with poor quality roads that are difficult for an ambulance to travel through in a timely manner. Furthermore, during rush hour the major roads connecting southern and northern Guam are congested, increasing the response time of an ambulance from GMH to the southern villages. The Southern Region Community Health Center provides some services for residents in the area; however, this facility does not provide acute inpatient care and certain emergency services needed at GMH.

Access to mental health services and facilities is more challenging for residents of southern Guam.

The majority of the facilities operated by, or in conjunction with, DMHSA are located in the central and northern portions of Guam. These facilities do not serve the same types of emergency situations that a hospital does, and so it is not as crucial to access them in the most rapid manner; however, for families or friends wishing to visit someone who is residing within one of the locations, or for those who must get medication from the main facility, people who live in the southern villages have no options but to travel north.

The Veterans Administration (VA) in Guam struggles with an increasing number of aging veterans that have needs for mental health and residential care.

The Veterans Administration (VA) located on Guam provides health and social services to veterans located on Guam, but does not have the capacity to meet patient demand. The VA is compensated by the federal government for services rendered; however, when veterans are referred to DMHSA due to a lack of service capacity at DMHSA, DMHSA bears the cost of services such as finding residential care. Although the VA is entitled to funding to support the required DMHSA benefits for the veterans, they do not provide those funds to DMHSA.

There is expected to be a large influx of military, transient worker, and permanent populations on healthcare infrastructure.

The military buildup will generate an escalation of off-island construction workers and dependents from approximately 9,800 additional workers and dependents in 2010, peaking at approximately 52,000 workers and dependents in 2014 and declining to approximately 8,900 workers and dependents in 2020. These off-island workers and dependents will be coming to the Island from a variety of countries that exhibit a wide range of healthcare services for their residents. This influx will create additional concerns regarding the already understaffed medical agencies and crowded healthcare facilities.

In addition, the steady state of the military buildup in 2020 will generate a direct DoD population of nearly 25,000 personnel, including military personnel/ dependents and civilian workers/dependents. The continued deployment and return/deployment (and interface with the local population) could enhance the risk of acquiring a communicable disease among the local population on the Island. In addition, a population of nearly 9,000 indirect and induced people will be added in support of the direct military buildup, creating a total steady state population of approximately 34,000. It is also anticipated that the expanded permanent and temporary populations will create an increasing level of demand in child care, substance/alcohol abuse, senior care, and teenage pregnancy services and programs.

The H2B visa is a nonimmigrant program that permits employers to hire foreign workers to temporarily come to the US to perform temporary nonagricultural services or labor on a one-time, seasonal, peak-load, or intermittent bases. The military buildup will consist of a large H2B population,

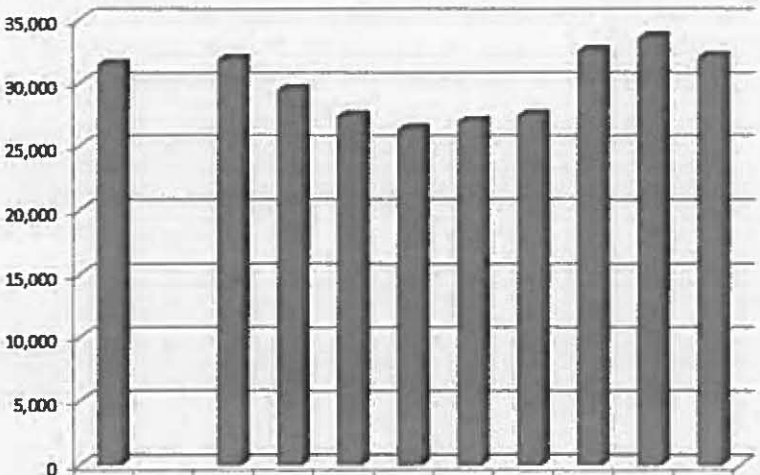
including construction workers who are subject to very stressful and intense environments. These conditions may result in an increase in need for mental health services; however, many H2 companies tend to send a migrant worker home than pay for their mental healthcare. This situation is likely to cause workers to neglect their mental health and not report problems experienced. This situation has already occurred on Guam and was identified through DMHSA court proceedings, resulting in various related offenses being charged.

The Emergency Room (ER) at GMH is often used as the first source of treatment for non-emergency situations.

GMH's ability to provide acute care is constrained by an abundance of patients who seek routine medical care in the emergency room (ER) rather than at a clinic or other provider. Patients with limited to no transportation may opt to see medical care for non-emergency conditions (such as the flu or sore throat) choose to call for an ambulance, which takes them to the ER, simply because they have no means of travelling to a health clinic. Once a patient arrives to the hospital by ambulance, they will be admitted to the ER, regardless of how serious the condition, thus requiring the attention of hospital staff and resources and adding to wait times of patients experiencing health emergencies that truly require immediate attention. Some unnecessary hospital visits are also the result of a patient lacking the knowledge of available resources for treatment of minor ailments, such as the public health centers.

Analysis of data provided from GMH for the fiscal years (FY) 2000 to 2010 identified that there is an average of 29,885 people that visit the ER each fiscal year. Of the average ER visits for the nine years (FY01 data was not available), an average of 4,243 patients were admitted to the hospital for further treatment, while the remaining 25,642 were classified as outpatient visits. This means that ER visits that resulted in outpatient visits account for 85.8% of the total average of ER visits for the nine years. Further breakdown of the data was not available for analysis as to the number of specific types of ER visits to determine how many could actually be classified as "non-emergency". Furthermore, the state of mind of the individual at the time of going to the ER may not be known to determine if they felt they had a justifiable reason for going to the ER, or if they only went because they did not know where else to go for treatment. Figure 7-1 illustrates the total number of ER visits for the years FY00 to FY10 (excluding FY01) separated by the number that resulted in hospital admissions and the number that resulted in outpatient visits.

Figure 7-1. GMH Emergency Room Visits, FY00-FY10



	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Outpatient Visits	27,558		26,912	25,126	23,499	22,257	22,575	23,046	28,506	29,176	27,764
Admissions	3,906		4,920	4,315	3,855	4,015	4,341	4,369	4,031	4,385	4,294

Source: Guam Memorial Hospital, June 2011

7.2 Insurance Coverage

The cost of care (both actual and anticipated) often serves as a major hindrance to individuals in need of medical attention from seeking proper treatment. The cost of medical care varies by type of service received, the type of facility visited, and the type of provider that renders the services. Health insurance, offered in the form of both private and public plans, provide a means of protecting patients from the high cost associated with healthcare services. Whether or not a person is covered by health insurance has a strong influence on their ability to pay for and seek medical care. Health insurance is available to Guam residents in the form of both private and public (government sponsored) coverage plans as discussed below.

Private Health Insurance

Private health insurance is often offered by employers to their employees or may be obtained separately by an individual or family. Currently, private health insurance options available to Guam residents are provided by four private health insurance companies:

- NetCare
- SelectCare - healthcare provider for GovGuam
- StayWell
- TakeCare

Cost of premiums, patient costs for service, and the types of service covered all vary by plan. Several types of plans and coverage amounts are offered by each insurance company. Currently, the private health coverage options available to Guam civilians are all offered through smaller health insurance companies. Larger companies, such as Blue Cross / Blue Shield, who can sometimes offer insurance coverage at a lower cost to patients due to economies of scale, are not available on Guam.

Public Health Insurance

Public health insurance are government sponsored plans that exists to protect the health of the underserved and are available to certain populations that meet selected qualifying criteria at a reduced or subsidized cost. Public healthcare plans on Guam currently include Medicaid (state/federal program for low income Americans), Medicare (federal program for elderly), CHIP (federal program for children), and MIP (Guam program for residents). TRICARE is also considered a public-sponsored health insurance plan and is the federal government's coverage for members of the military and their dependents.

Medicaid

Medicaid was established in 1965 to provide healthcare coverage to those who cannot otherwise afford healthcare because of income or other limiting factors such as disability, age, or health condition. Medicaid is an entitlement program; however, it is not only funded only by the federal government. On Guam, funding for Medicaid is provided as 50% from the federal government, and 50% matched locally by GovGuam. For US territories, the Federal Government sets an annual funding cap, or limit, to the amount of Medicaid money that it will pay for. As of 2010, Guam's funding cap was $17.84 million, which was slightly higher than three times greater than year 2000 funding levels of $5.41 million (note: these figures are not adjusted for inflation).

> Medicaid on Guam is funded 55% federally (up to the funding cap) and 45% locally.

Eligibility requirements vary by state / territory and are handled at the local level by the agency designated to handle Medicaid enrollment and processing. On Guam, this agency is DPHSS. Persons who may be eligible for Medicaid include the following:

- Low income pregnant women and children through age 18 – the income guideline for pregnant women and children under the age of 6 is 133% of the federal poverty guideline. Children ages 6 through 18 are eligible if their family incomes do not exceed 100% of the federal poverty guideline.
- Low income parents and other caretakers of children.
- People with certain disabilities.

- Children in foster care and youth between the ages of 18 and 21 who were in foster care.
- Certain Medicare beneficiaries with low incomes and limited resources and other Medicare beneficiaries whose income exceeds the level for full Medicaid eligibility may be eligible to receive limited Medicaid benefits to cover some Medicare cost-sharing expenses such as premiums, deductibles, and coinsurance.
- Medically needy programs provide Medicaid coverage to some individuals who have income or resources above the required limits set by their state but who have incurred or paid sufficient medical expenses to allow them to meet the "spend down" test.

The number of Guam Medicaid participants has steadily increased each year, with an overall increase of 30% between 2004 and 2010. The percentage of participants that are Compact Impact patients has also increased, from 17% of those served in 2004 to 20% in 2010 (DPHSS, 2011). The increase in Compact Impact patients signifies a growing regional dependence on medical care, where Freely Associated States (FAS) participants are traveling to Guam to seek medical care that they cannot in FAS. Medicaid enrollment data is provided in Table 7-1.

Table 7-1. Medicaid Participants on Guam

Fiscal Year	# of Participants	Total FAS Participants
2004	25,529	4,226
2005	27,424	4,706
2006	27,928	5,129
2007	28,711	4,940
2008	28,219	5,189
2009	30,473	5,816
2010	33,408	6,564

FAS = Freely Associated States (participants associated with Compact Impact)
Source: DPHSS, 2011 (unpublished)

Medicare

Medicare is the federal health insurance program for Americans age 65 and older and for certain disabled Americans. Medicare is funded by the federal government as an entitlement program; it is a social insurance program for individuals age 65 and over. It also covers many individuals with disabilities and individuals of all ages with end stage renal disease.

Medicare will pay for many healthcare expenses; however, as it applies to Guam, it operates as fee-for-service that may cover nursing home care, long-term care services in the home, or prescription medications.

In 2010 Guam had 11,841 Medicare Beneficiaries as compared to the 46,589,141 in the United States overall (Kaiser Family Foundation, 2010).

There are four parts of Medicare*:

- Part A – Hospital insurance for inpatient care
- Part B – Medical insurance for medically-necessary services; also covers some preventive services
- Part C – Medicare Advantage Plan; offered by private companies approved by Medicare
- Part D – Prescription drug coverage

*Not all Parts apply to Guam residents based on eligibility for other medical assistance programs.

Children's Health Insurance Program (CHIP)

CHIP was created by Congress in 1997 to provide low cost health insurance for children in families who earn too much income to qualify for regular Medicaid coverage but not enough to purchase private health insurance. CHIP is a state and federal partnership program that works closely with Medicaid to provide access to health insurance for children. On Guam, CHIP is administered as an expansion of the Medicaid program.

General CHIP eligibility criteria for uninsured children on Guam include:

- not eligible for Medicaid;
- under age 19; and
- at or below 100% of the federal poverty level (FPL).

Under CHIP, states and territories are allowed to impose premiums, deductibles, or fees for certain services; however, no copayments are allowed for pediatric preventive care, including immunizations.

On Guam, CHIP is an extension of Medicaid that offers additional coverage for low-income children and their families that are above the eligibility standards for Medicaid.

Medically Indigent Program (MIP)

MIP is a 100% locally funded healthcare program established by Public Law 17-83 to provide financial assistance with healthcare costs to individuals who meet the necessary income, resource, and residency requirements. DPHSS, Division of Public Welfare (DPW), Bureau of Healthcare Financing (BHCF) is responsible for administering the MIP.

Eligibility for participation in MIP is restricted to residents of Guam who have lived on Guam for at least six months and who have been physically living on Guam within the last six months of the year. As part of the Compact Impact Agreement, residents of the FAS are also eligible for MIP if they meet the same criteria. Additional requirements include one or more of the following:

- A resident whose income is at or below 100% of the FPL;
- A resident who is not eligible for Medicaid or Medicare coverage and has exhausted all benefits under Title XVIII, XIX of the Social Security Act; or State Children's Health Insurance Program under Title XXI of the Balanced Budget Act of 1997;
- A child in foster care, age 18 years and below; and
- Individuals eligible to receive temporary emergency medical or other special care as provided in Section 2905.3 of the law.

Income limitation for full MIP coverage follows the Federal Poverty Guidelines that is updated each fiscal year. Persons may still be eligible for partial MIP coverage if their gross income exceeds the gross income limitations. Partial MIP coverage is also available if an applicant does not meet the full criteria.

MIP enrollment has grown by 40% between 2004 and 2010, from 9,626 participants in 2004 to 13,624 participants in 2010. Just over half of all MIP participants are FAS participants that qualify as a result of the Compact Impact Agreement. The growth in number and percentage of FAS participants from 40% in 2004 to over half (53%) of all participants in 2010 is an indication of the increased regional demands on an already stressed healthcare system on Guam. MIP participant data is present in Table 7-2.

Table 7-2. MIP Participants Served on Guam

Fiscal Year	# of Participants	Total FAS Participants
2004	9,626	3,888
2005	11,481	5,075
2006	11,936	5,428
2007	11,369	5,643
2008	11,241	5,855
2009	12,012	6,346
2010	13,624	7,255

FAS = Freely Associated States (participants associated with Compact Impact)
Source: DPHSS, 2011 (unpublished)

MIP provides eligible individuals up to $175,000/year in round trip air transportation for off-island care when all criteria have been met.

TRICARE

TRICARE is the healthcare program serving active duty service members, National Guard and Reserve members, retirees, their families, survivors and certain former spouses worldwide. TRICARE includes both healthcare resources of the uniformed services and with networks of services offered by civilian healthcare professionals, institutions, pharmacies and suppliers. TRICARE serves approximately 9.6 million people worldwide.

Persons eligible for TRICARE include:

- Active duty service members and their families,
- Retired service members and their families,
- National Guard/Reserve members and their families, and
- Survivors.

Issues and Opportunities

GMH is mandated to provide medical services to all residents without any means of collecting payment.

Guam Memorial Hospital is mandated to serve and treat anyone who seeks medical care at the facility, regardless of their ability to pay for services. Oftentimes, those who are treated at the hospital cannot pay for their visit and GMHA does not have the authority to collect payment from those who are unable to pay. This responsibility to public health has resulted in the hospital losing a large amount of revenue that it cannot collect from patients who are unable to pay, leading to a debt of approximately $25 million as of 2010. The continuous state of debt has strained the hospital's ability to purchase new supplies from vendors who have not been paid, thus ability to provide certain medical treatments and tests.

Almost 17.9% ($1,849,198.52) of the total costs spent for MIP and 6.38% ($1,492,406.91) of the total costs spent for Medicaid on Guam in FY 2009 went towards off-island care.

DMHSA has been and continues to provide the military with care but is unable to bill and collect TRICARE because they don't have the capacity.

Military personnel, like civilians, wrestle with drug, alcohol, and childcare issues. DMHSA is in the process of forming a Memorandum of Understanding with the military to share staff and training. When active duty soldiers are deployed, it is difficult to keep the treatment regimen consistent, which erodes the patients' progress. In addition, when the deployment ends, depending on the mission, personnel may be suffering from a range of both physical (i.e. traumatic brain injuries (TBI) and/or mental conditions (i.e., post-traumatic stress disorder (PTSD). As such, the incoming III Marine Expeditionary Force that is part of the military buildup may be returning troops from active combat deployments that may have created specific behavioral issues such as PTSD and/or TBI. Such conditions may require additional training for DMHSA staff.

Guam's weak health infrastructure contributes to increased healthcare costs.

According to the Department of Public Health and Social Services 17.9% of the Medicaid costs went to off-island care, which indicates that there is a significant demand for medical services that are not available on Guam. This is partly due to the lack of certain services or specialists on Guam necessary to handle specific types of conditions, particularly cancer treatment. The lack of suitable specialists or services on Guam and thus having to send patients off-island adds additional costs to the Medicaid program on an already strained budget.

GovGuam in unable to adequately handle the financial strain imposed by public health costs.

GovGuam is currently responsible for a 50% match of federal of funds to cover Medicaid costs. Over the years, GovGuam has not been able to meet its matching funds and money has had to be returned to the federal government. Additionally, federal funds granted to Guam's Medicaid coverage, are unbalanced when compared to the rest of US (excluding other insular areas). The statutorily federally matched funding rate of 50% on Guam is equal to the lowest rate available for any US state under the program. Some states receive higher Federal matches. Additionally, mainland states are not subject to an annual limit or cap of funds they receive for Medicaid, while Guam does have a cap.

Since CHIP, as well as Medicaid and Medicare, are partially funded by the federal government, it is important that population and demographic factors are accurately taken into account in order for Guam to receive adequate funding. The US Census Bureau does not conduct annual population or demographic surveys for Guam like it does for the states through its American Community Survey (ACS). The only population and demographic data that the Census Bureau collects for Guam is during the decennial census counts. Therefore, federally funded program do not always have updated population and demographic information from which to apportion funding monies to Guam (Government Accountability Office, June 2009).

MIP Participants Contribute to the Strain on Community Health Centers and GMH and are offered limited care options.

Participants who receive MIP benefits are required to seek medical care at either the community health centers for primary care services. In cases where the centers cannot provide the needed services, DPHSS physicians refer MIP

participants to an outside provider. These requirements limit available options for participants to utilize a preferred doctor or physician in most cases. Between October 1, 2004 and September 30, 2009 GovGuam spent $61.7 million (92% of the total spent) for outside medical referrals. The remaining money spent totaled $5.6 million (8% of the total) at the Community Health Centers, which was absorbed by DPHSS's budget (Office of Public Accountability, 2010). Although the funds spent at the community health centers are absorbed into the budget, the monies spent on outside referrals equates to a much greater sum and must be apportioned out of local funding.

Outside referrals for MIP between October 1, 2004 and September 30, 2009 accounted for 92% ($61.7 million) of the total MIP money spent by DPHSS.

GovGuam continues to shoulder the cost of providing healthcare services to citizens of the freely associated states (FAS). FAS migrants are not covered US citizens, thus they do not qualify for any other her public healthcare program than MIP. FAS include Marshall Islands, Federated States of Micronesia, and Palau. Although most US citizens from Guam will qualify for Medicaid under the new Healthcare Reform Act, the locally funded Medically Indigent Program will not be dissolved in the future.

According to the Department of Public Health and Social Services (DPHSS), in fiscal year (FY) 2009, 17.9% of the MIP costs and 6.38% of the Medicaid costs went to off-island care, indicative of a significant demand for off-island services. This represents a lack of certain critical services or medical specialists needed on Guam to handle specific types of ailments, disorders, or diseases (DPHSS, 2009).

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8.
Wellness and Prevention

Please see the next page.

8

Wellness and Prevention

Inside Section 8 . . .

The maintenance of good health requires more than treating illnesses when they occur. It also means getting optimal nutrition, achieving and maintaining a healthy weight, exercising and staying fit, eliminating risky activities and behaviors (smoking, excessive drinking, etc.), and taking steps to prevent disease. Understanding the building blocks and relationships of the various factors that influence your overall health is the best way to take control of one's health and to ensure a healthy and rewarding life. Taking the appropriate steps to improve one's overall health through wellness and prevention strategies has the potential to prevent or reduce the potential for heart disease, diabetes, and many other chronic conditions.

This section provides an overview of some of the major components that wellness and prevention consists of, including nutrition, physical activity, how to achieve and maintain a healthy weight, prenatal/maternal/infant healthcare, and preventative care through diagnostic and clinical care.

8.1 Nutrition

Good nutrition plays an essential role in maintaining good health. Nutrition includes the nutrients and other substances in food; the action, interaction and balance of these food components as they relate to health and disease; and what happens when a person eats, digests and absorbs food, causing nutrients to be moved to cells and used. Food and nutrition has a strong relationship with various social, economic, psychological, and cultural factors and behaviors.

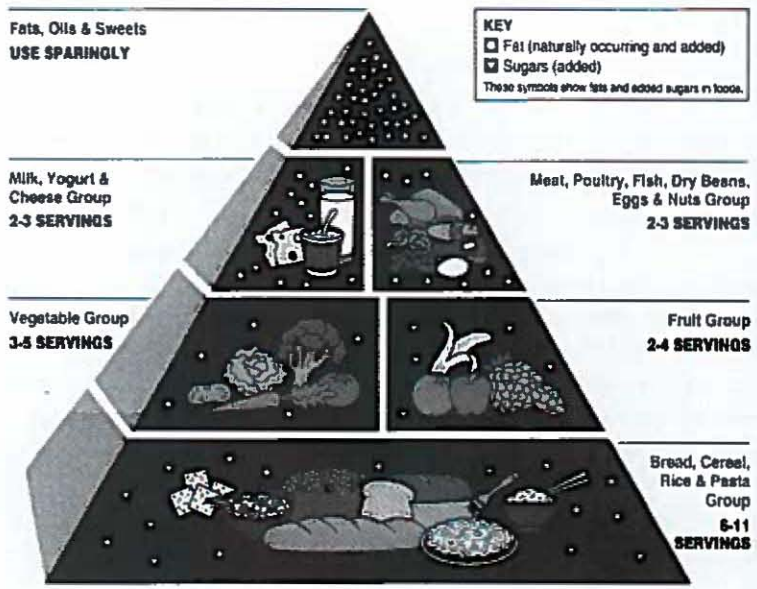
Nutrition and dietary factors have a significant impact on one's overall health and on the burden of preventable illnesses and premature deaths. Dietary factors have been associated with four of the leading causes of death in the US and Guam, and poor diet and lack of exercise have been identified as the second largest contributor to death.

Standard Food "Plates and Pyramids"

The USDA identifies major food groups that and provides diet and nutrition recommendations based on the Dietary Guidelines for Americans. The *Dietary Guidelines for Americans, 2010* is the most up-to-date version of the nutrition guidelines and provide recommendations that accommodate the many diverse food preferences, cultural traditions, and customs of Americans. The overarching concepts that provide the foundation for the *Dietary Guidelines for Americans* are to maintain calorie balance over time to achieve and sustain a healthy weight, and to focus on consumption of nutrient-dense foods and beverages.

The Guidelines are reviewed, updated if necessary, and published every five years, as mandated by Public law 101-445, Title III 7 USC 5301 et seq. As such, the resultant food guides, such as the Food Pyramid and the recently released Food Plates, have evolved since their inception in 1916. The first USDA food guide was established to provide dietary guidance based on food groups and focused on "protective foods". The food guide has evolved over time to address nutrient adequacy, number of servings, and address common nutritional deficiencies and dietary challenges being experienced at the time.

Figure 8-1. USDA Food Pyramid (2005)



(Source:: US Department of Agriculture, 2005)

Food Guide Pyramid

The Food Guide Pyramid was first introduced in 1992 for the purpose of providing a more holistic approach to diet, including goals for both nutrient adequacy and moderation. When introduced, the USDA MyPyramid Food Guidance System included a new graphic and slogan, clear and concise nutrition messages, and a variety of materials and tools to help motivate and educate consumers to follow a healthful diet.

The pyramid visually illustrates concepts of variety, moderation, and proportion and includes graphic presentation of added fats and sugars throughout the five food groups. The use of the pyramid was then adapted into the MyPyramid Food Guidance System with the slogan "Steps to a Healthier You." This new approach was introduced in conjunction with the 2005 Dietary Guidelines for Americans, continuing the pyramid approach but simplifying the illustration. The illustration uses color bands to represent the original four food groups and added a band for oils and fats and for the concept of physical activity.

Figure 8-2. USDA MyPyramid (2010)

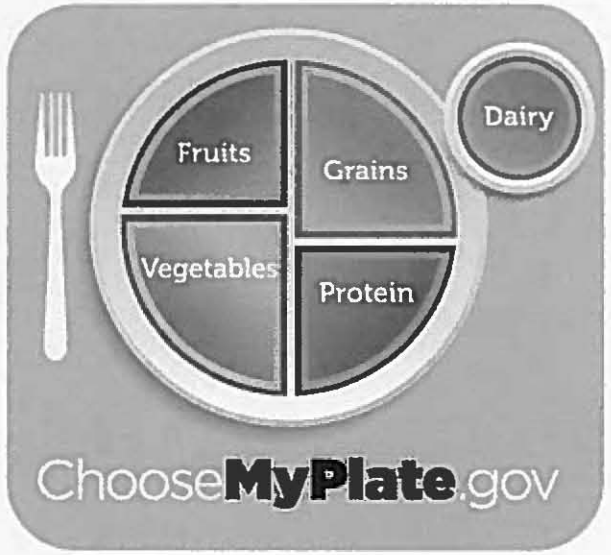
(Source:: US Department of Agriculture, 2010)

ChooseMyPlate.Gov

ChooseMyPlate.gov is the latest evolution of the USDA's dietary guidelines and was released in June 2011. Dietary guidance is now presented through a graphic representation of a balanced plate (shown in Figure 8-3), with each of the food groups and their relative portions represented. The intent of this approach is to present a more approachable and relatable food guide to the public. The main concepts this approach is founded on are balancing calories, healthy foods to increase, and unhealthy foods to reduce.

As part of its campaign to improve nutrition and educate the public about nutrition and food choices, the USDA publishes its Ten Tips Nutrition Education Series, as discussed below in Plans/Programs to Address Issues.

Figure 8-3. Choose MyPlate (2011)



(Source: US Department of Agriculture, 2011)

Major Food Groups

The major food groups and examples of foods included in them are:

- **Grains:** whole wheat bread, whole wheat pasta, bagels, cereals, oatmeal, brown rice, unsalted pretzels and popcorn
- **Fruits:** apples, apricots, bananas, oranges, grapefruit and grapefruit juice, melons, peaches, pineapples, strawberries, 100% juice
- **Vegetables:** broccoli, carrots, collards, green beans, green peas, lima beans, potatoes, spinach, squash, tomatoes
- **Dairy:** milk and milk-based products, soymilk, yogurt, cheese (preferably low-fat)
- **Protein:** lean meats, poultry, seafood, beans, processed soy products, nuts and seeds

Dietary Guidelines for Americans' key recommendations:

- Balance calories to manage weight (based on physical activity and energy expenditures).
- Reduce certain foods and food components such as sodium, fats, and sugars.
- Build healthy eating patterns.
- Increase consumption of certain healthy foods and nutrients such as vegetables, fruits, and whole grains.

(Source: USDA, Dietary Guidelines for Americans, 2010)

Pacific Food Pyramid

Although the USDA's approaches to providing dietary guidance to Americans through the food pyramids and the new food plate are intended to apply to a variety of cultures and communities across a range of geographies and to all populations in the US and territories; certain populations have different access to various types of foods (due to location) as well as different cultural beliefs and practices that dictate some food choices. As a result, the Hawaii Dietetic Association developed a food pyramid that is more appropriate for the Pacific, the Pacific Food Pyramid (see Figure 8-4). A separate approach specific to the Pacific was developed based on the traditions of Pacific populations as well as climatic factors.

The Pacific Food Pyramid supports a wider spectrum of healthy food choices for people from all cultures and identifies food categories based on their nutritional functions as opposed to around specific food products. The use of food categories based on their function is more suitable for the islands of the Pacific for a variety of reasons. For example, "Calcium Foods" (rather than "Milk") recognizes that people can meet their calcium needs with a wide range of foods and "Protein Foods" recognizes that traditional Pacific diets are not heavily dependent on red meat and consist of a variety of proteins.

Pacific Food Pyramid illustrated in Figure 8-4 recommends the following dietary components for Guam and Hawaii:

- Body Building Foods
  - Calcium Foods (Kalipuna): dairy foods (milk, yogurt, cheese), soybeans (and tofu) and other beans, leafy green vegetables, kalo (taro), limu, corn tortillas and tamales.
  - Protein Foods (Kumu'i'o): fish, meat (chicken, beef, and pork), tofu and other soy foods, beans, nuts, and eggs.
- Protective Foods (Ānuenue group — vegetables and fruit in every color of the rainbow)
  - Foods high in Vitamin A
  - Foods high in Vitamin C
  - Other fruits and vegetables
- Caution Foods (Akahele): fats, oils, salt, sugars, and sweets.
- Water (Wai)

Figure 8-4. Pacific Food Pyramid

(Source: Hawaii Dietetic Association, 2010)

Cultural preferences and traditions influence a person's nutrition, thus nutrition guidance needs to vary by geographic location and local environmental factors. The use of food categories instead of food groups are based on their function and are more suited to the islands of the Pacific.

Selecting Foods

Regardless of the food guidance followed, the recommended daily calorie count per person is approximately 2,000 calories. This calorie recommendation is displayed on Nutrition Facts Panels on all packaged foods; however, this level is simply a reference and optimal calorie intake differs for individuals based on age, gender, weight, and activity level. The amount of each food group and the number of calories consumed daily depends on the meal plan that works best for a person. Although the guidelines and nutrition labels were developed for application to the entire population, certain modifications and recommendations are also provided for specific audiences, including pregnant and breastfeeding women, preschoolers, kids, and those trying to lose weight, as discussed below. Caloric intake requirements are also discussed in the Weight Management section of this section.

General Population: Adults and Children

As previously discussed, the Choose MyPlate guidelines are intended for all populations in the US and territories. The general guidelines recommend a diet that includes a variety of foods from the grain group, vegetable group, fruit group, and protein foods group.

Although the amount of **grains** a person should consume depends on age, gender, and level of physical activity, the recommended daily allowances are between three and five ounces for women and between three and eight ounces for men. The recommended daily serving is lower for children, ranging from three to four ounces for boys and girls between 9 and 18 years old, 2 and one half ounces for four to eight year olds, and one and one half ounces for two and three year olds.

The health benefits of eating grains, particularly whole grains, have been identified as reducing risk of chronic diseases such as heart disease, diabetes, and cancer, and helping with weight management. Grains are also important sources of a variety of nutrients such as dietary fiber, B vitamins, and minerals.

The **vegetable** group consists of any vegetable or 100% vegetable juice. Vegetables are organized into five subgroups based on their nutrient content: dark green vegetables, red and orange vegetables, starchy vegetables, beans and peas, and other vegetables. The recommended daily consumption of vegetables depends on age, gender, and level of physical activity; however, it is generally recommended that women consume between two and two and one half cups of vegetables per day and males between two and one half and three cups per day. The health benefits of a diet rich in vegetables include a reduced risk of chronic diseases such as heart attack and stroke and possibly protecting against certain types of cancers. Diets rich in fiber may reduce the risk of heart disease, obesity and Type 2 diabetes, and eating potassium-rich vegetables and fruits may help lower blood pressure, decrease bone loss, and have other health benefits. Both fruits and vegetables contain nutrients that are vital for health and body maintenance.

The **fruit group** consists of any fruit such as apples, apricots, bananas, grapes, and melons, or 100% fruit juice. Fruits may be fresh, canned, frozen, or dried. The recommended daily serving of fruits varies from one and one half to two cups for men and women. Fruits included as part of an overall healthy diet are also likely to reduce the risk for some chronic diseases such as heart disease, stroke, and certain cancers. Fruits have many of the same health benefits as vegetables, including a high nutrient density, high fiber content, and rich in potassium and vitamins such as Vitamin C.

The **dairy group** consists of all fluid milk products and many foods made from mile as well as calcium-fortified foods such as soymilk. The recommended daily consumption is three cups for both men and women. The recommendation decreases to two and one half cups for 4-8 years olds and two cups for 2-3 year olds. The consumption of dairy products provides a variety of health benefits, most importantly building bones and teeth. Dairy products are the primary source of calcium in American diets and also provide Vitamin D, potassium, and other vitamins and minerals. It is important to make low-fat or fat-free selections from the dairy group in order to minimize foods with high saturated fat content that raise bad cholesterol (low-density protein (LDL)) levels in the blood.

Protein sources include various meats, poultry, seafood, beans and peas, eggs, processed soy products, nuts, and seeds. The daily recommendation of protein consumption varies by age, gender, and physical activity level. It is recommended that women over the age of 19 years old consume approximately five to five and one half ounce equivalents and men over the age of 19 consume between five and one half and six and one half ounces. Boys and girls between the ages of 9 and 18 should consume between 5 and 6 and one half ounces, which is reduced to four ounces for children between the ages of 4 and 8 and two ounces for two to three year olds.

It is important to select lean or low-fat choices from the protein group in order to obtain the full health benefits of protein while avoiding high levels saturated fat and cholesterol. Proteins serve as the building blocks for bones, muscles, skin, cartilage, blood, enzymes, hormones, and vitamins. Some of the most critical nutrients obtained through protein consumption and their functions include: B vitamins, which help the body release energy, assist in nervous system functions, aid in formation of red blood cell formation, and build tissues; iron, which carries oxygen in the blood; and magnesium, which is used in building bones and in releasing energy from muscles. The USDA also recommends eating at least eight ounces of seafood per week because it contains a range of nutrients, such as omega-3 fatty acids, that contribute to the prevention of heart disease.

Key Consumer Messages:

- Make at least half your grains whole grains.
- Make half your plate fruits and vegetables.
- Switch to fat-free or low-fat milk.

Pregnant and Breastfeeding Women

Nutritional needs of women who are pregnant or breastfeeding vary from the general female population and require higher levels of vitamins and nutrients in order to support the fetus or baby. Proper prenatal care is a critical component of proper nutrition during this stage of life and is addressed below in Maternal and Prenatal Care. During pregnancy, women require higher levels of vitamins and minerals as well as more calories but also need to avoid added sugars and fats. Although the recommended number of daily and weekly servings vary once an infant is born and the mother is breastfeeding, she will still require additional vitamins, nutrients, and calories that pass on to the child. Addition nutrition and dietary recommendations are discussed later in this Section in Prenatal/maternal/Infant Care.

PreSchoolers and Kids

Complete nutrition is critical for proper growth and development of young children, specifically preschoolers (ages two through five) and kids (ages six through 11). The USDA released a MyPyramid for Preschoolers and MyPyramid for Kids, customized for children in a more playful and fun format than the pyramid for the general population. These MyPyramids provide parents how to build a healthy meal for their child, as well as how to serve as a good food role model. Additional tips are offered on how to promote healthy eating habits, how to encourage children to try new foods, and how to include children in the food preparation activities. The nutrition guidelines for PreSchoolers and for Kids have yet to be updated to the new Choose MyPlate format; however, resources can be found online at

http://www.choosemyplate.gov/preschoolers/index.html

Weight Loss

As part of its Choose MyPlate dietary guidelines, the USDA provides steps to attaining and sustaining a healthy weight. The importance of healthy weight is discussed in greater detail below in Weight Management and Maintenance. An interactive tool is available on the program's website that uses age, gender, height, weight, and activity level to assist a user in determining the proper portion sizes and amounts as well as food recommendations by food group, whether they are trying to lose, gain, or maintain weight. Additional educational information regarding portion sizes, how to track food consumption, and which foods to avoid are among other tips and resources available.

Table 8-1. Comparison of Nutrition Plans

	MyPlate.gov	Pacific Food Pyramid
Origin	United States Department of Agriculture: applies to all Americans and can be slightly tailored to consider sex, age, height, weight, and physical activity level	Hawaii Dietetic Association (HDA)'s recommendations for the Pacific region, based on native foods, local climate, and cultures
Resources Offered	Tools to develop individualized eating plans, tips for following them, and tools for tracking progress	Information about food groups, serving sizes, sample menus, and recipes
Where to Go For More Information	www.ChooseMyPlate.gov	www2.hawaii.edu/~strauch/PlantTropics/PacificFoodPyramid.html

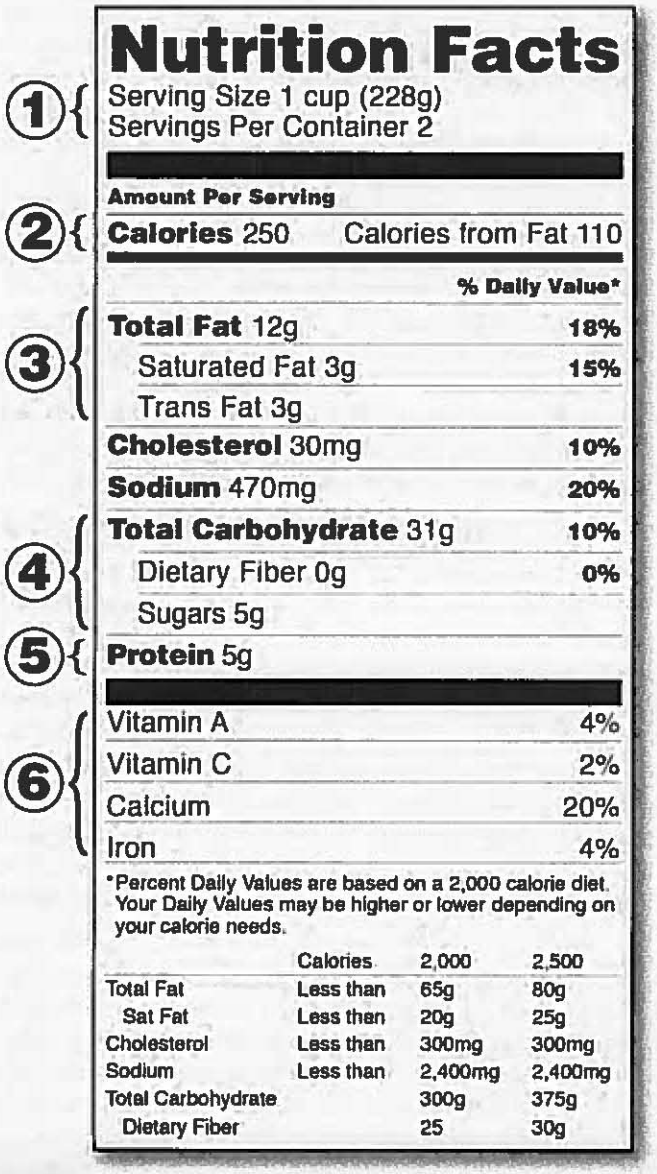
Eat a variety of foods, especially whole grains, fruits, and vegetables; minimize candy, soda and other empty calories; and watch how much you eat.

Nutrition Labels

The Food and Drug Administration (FDA) is responsible for assuring that foods sold in the US, including imported foods, are safe, wholesome and properly labeled. As part of these requirements, a Nutrition Facts Label along with an ingredients list must be placed on all food items. Certain food categories, such as those intended for medical purposes, do not require nutrition labeling; however, most packaged food products require such labeling and any food product that includes a health benefit claim (such as "promotes heart health") is subject to labeling requirements. The Federal Food, Drug, and Cosmetic Act (FD&C Act) and the Fair Packaging and Labeling Act are the Federal laws governing food products under FDA's jurisdiction.

Nutrition labels contain information such as serving size, calories, and nutrient content specific to the product. Recommended daily values by nutrient (fat, carbohydrate, fats, etc.) are displayed and are based on a 2,000 calories diet, which is the caloric intake requirement for the average person. The major nutritional components, as displayed in Figure 8-5, are serving size, calories per serving, total fat per serving, total carbohydrates per serving, totally protein per serving size, and nutrient content.

Figure 8-5. Example Nutrition Label



Nutrition Facts

1 Serving Size 1 cup (228g)
Servings Per Container 2

Amount Per Serving

2 **Calories** 250 Calories from Fat 110

	% Daily Value*
3 **Total Fat** 12g	18%
Saturated Fat 3g	15%
Trans Fat 3g	
Cholesterol 30mg	10%
Sodium 470mg	20%
4 **Total Carbohydrate** 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
5 **Protein** 5g	
6 Vitamin A	4%
Vitamin C	2%
Calcium	20%
Iron	4%

*Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25	30g

Serving Size: The first items listed on a Nutrition Label are the recommended serving size and the number of servings per container. Serving size is determined based on a balanced diet and standardized to an easy to understand measurements such as cups, pieces, ounces, etc. The serving size influences the nutrient amounts consumed; consuming more or less than the serving size listed will increase or decrease the nutrients consumed. Servings per container are also listed as a guide to determining a serving size and meal planning tool. The example provided in Figure 8-5 identifies the recommended servings size as one cup. Consuming two cups would double the intake of calories and all nutrients listed.

Calories: Calories (and calories from fat) is listed as a measure of how much energy will be obtained from one serving of the food. General calorie guidance provided by FDA identifies 40 calories per serving as a low calorie food, 100 calories per serving as moderate, and 400 calories per serving as a high calorie food. In the example provided, there are 250 calories per serving, 110 calories of which are from fat. Consuming two cups of this product would be equivalent to two servings and 500 calories.

Total Fat: The nutrients listed first on a food label are generally ones that Americans typically consume too much of. Total fat is the first nutrient listed, and consumption of fats should be limited. Total fat includes saturated fats and trans fats. The next two nutrients, cholesterol and sodium, should also be limited, as consumption of too much fat, saturated fat, trans fats, cholesterol, and sodium may increase a person's risk of certain chronic diseases such as high blood pressure and heart disease. The example provided in Figure 8-5 contains 12 grams of total fat, equivalent to 18% of the maximum fat that should be consumed in one day.

Total Carbohydrates: Carbohydrates are the body's main source of energy. Dietary fiber and sugars are the main components of carbohydrates that consumers should be aware of when selecting foods. Dietary fiber aids in the body's digestive process and may protect against certain disease. Although a percent daily value for sugar is not provided on a nutrition label, sugar consumption is generally too high amongst the general population. A daily reference value has yet to be established by the FDA for sugars. The consumption of sugars, particularly sugar sweetened products such as sodas and candy, should be limited. The nutrition label displayed in Figure 8-5 contains 0 grams of fiber, thus this food should be paired with other more nutritious foods such as a serving of vegetables or fruits.

Protein: Protein is needed by the body to build it is a critical building block of the body that help build muscles, blood, skin, hair, nails and internal organs. Although a daily recommendation for protein intake is not provided, it is an important element to consider when selecting foods; high protein foods should be selected for increased muscle gain, strength building, and healthy weight gain.

Vitamins and Minerals: The last group of nutrients provided on a nutrition label includes vitamins and minerals that are needed for overall health improvements and maintenance. Consuming enough of these nutrients can improve overall health and help reduce the risk of some diseases and conditions. For example, getting enough calcium may reduce the risk of osteoporosis, a condition that results in brittle bones as one ages. The example provided in Figure 8-5 provides 20% of the recommended daily value of calcium; however, it is not a good source of other vitamins and minerals such as Vitamins A and C, Folic Acid, Magnesium, Thiamin, and Riboflavin, among many others.

Existing Condition and Trends

Significant health problems are currently being faced as a result of poor nutrition. Although formerly the common belief was that certain diseases such as Type 2 diabetes, obesity, heart disease, stroke, and certain cancers, were caused be a single gene mutation, many researchers now believe that these problems are partly related to diet. The food a person eats serves a significant role in the body's function, and dysfunction. The average person's diet currently lacks the necessary balance of nutrients and often exceeds a recommended caloric input.

While quantifiable data tracking people's nutritional intake has not been consistently recorded and is not widely available, certain identifiable trends and concerns regarding diet have been identified through research and surveys. One such effort has been started by the CDC through the National Health and Nutrition Examination Survey (NHANES), a program to study and assess the health and nutritional status of adults and children in the United States. The survey was performed through the random selection of participants and includes interviews and physical examinations with each individual. The results of provide annual nutritional intake data for the years 2001 to 2004, reporting dietary intakes for each of the main food groups and subgroups of MyPyramid as well as several other food groups of interest. MyPyramid reflects recommendations for each food group depending on a person's calories requirement, which in turn is influenced by sex, age, and activity level, as discussed previously. Key findings of this study indicate that the American population is not currently meeting the recommended nutritional intake:

- MyPyramid recommendations for fruit intake range from 1 to 2.5 cups per day. Seventy-five percent (75%) of the population consumed less than 1.5 cups per day.
- MyPyramid intake recommendations for dark green and orange vegetables and legumes, collectively, range from .3 to 1.3 cups per day. The survey found that 75% of the population consumed only .35 cups per day.
- MyPyramid intake recommendations for whole grains range from 1.5 to 5 ounces per day; however, 95% of the population consumes a mere 2 ounces per day or less.
- Although recommendations for solid fat and added sugars are not provided, discretionary allowances are identified. The allowances range from 132 calories per day (for very young, inactive children) to 648 calories per day (for very active teenage and young adult men). 75% of the US population had a usual intake of more than 33 grams of solid fat (297 calories) per day and an equivalent percentage had a usual intake of more than 12 teaspoons of added sugars (192 calories) per day.

(Source: National Cancer Institute, December 2010)

Nutrition on Guam

Data and statistics related to nutrition for mortality and morbidity specific to the Guam population are limited largely because data on Pacific Islanders are often included with those of other Asians within national US statistics. When looking at the subpopulation of Pacific Islanders as a whole, both in the US and Guam, it has been observed that nutritional deficiencies are rare when there are adequate calories and when diet is based on whole foods found in nature and prepared without excess cooking. In fact, the recommended daily amounts of many vitamins and minerals can be met in only one meal. Despite the traditional sources of food for these island nations being root crops, native vegetables and leaves, fish, coconuts, and fruits, eating patterns have changed amongst different ethnic groups in recent years. Unhealthy diet, high

saturated fat, high salt intake, high calorie density, and low fiber have become very prevalent due to a shift in the availability of imported and processed foods.

A diet comparison of Chamorro living a traditional way of life in the Pacific on the island of Rota and Palau with those living in a cash economy in Guam and California was conducted by the World Health Organization (WHO) to review calorie intakes and their sources (WHO, WPR "Diet, Food Supply, and Obesity in the Pacific, 2003). Results of the comparison revealed that the total caloric intake was higher amongst groups living according to traditional cultural values. The most significant difference amongst these population groups revealed that the more economically advanced communities in California and Guam had a higher proportion of calories coming from fat than in the rural groups. This difference can be attributed to an increase in saturated fats while calories consumed from carbohydrates decreased from the rural to the urban setting. Protein intakes did not differ appreciably among the groups. The intake of meat and poultry was greater in California and Guam than more rural settings, whereas main protein sources in rural island areas was from fish and seafood that were freshly caught and prepared with minimal added ingredients such as fats.

The traditional diet of Micronesians has consisted of fish, taro, yams, breadfruit, tapioca, banana, coconuts, mangoes, papayas, and guavas, and leafy vegetables. Although traditionally people lived off the land and the sea, the prevalence of foreign and imported foods, including processed and packaged foods has increased. While traditional fat sources have been from coconuts, this increase in imported foods, such as flour, oil, margarine and butter, sugar, canned fish and meat, has become an addition, not a replacement of, the consumption of local foods and fats. The most commonly consumed imported foods providing fat were recently identified as oil, margarine, butter, meat and chicken, tinned meat and tinned fish.

(Source: WHO, WPR "Diet, Food Supply, and Obesity in the Pacific, 2003)

An additional effort to analyze food consumption on Guam was performed by the University of Guam and published in "Nutritional Analysis of a Fiesta of Guam." This analysis was initiated due to the prevalence and significance of food sharing as a central focus of social gatherings in the Chamorro culture. In modern Chamorro society, fiestas and other celebratory events, which include an abundance of food, are held almost every weekend amongst Guam populations. The main foods served at a fiesta are listed in Table 8-2.

Table 8-2. Common Main Food Dishes Served at a Fiesta on Guam

Category	Dish	Description
Agu'on (Starchy Foods)	Dinner Rolls	Commercially prepared white rolls
	Pancit	Fried noodles with meat and vegetables
	Red Rice	Cooked, unsalted un-enriched rice
	Tamles Gisu	Steamed masa harina (corn meal) prepared similarly to Red Rice
Totche (Fishes and Meats)	BBQ Chicken	Chicken marinated in soy sauce, vinegar, herbs, spices, and barbecued
	Fried Chicken	Seasoned, buttered, battered and then deep fried chicken
	Kelaguin Chicken	Finely shredded chicken mixed in a spicy sauce made with lemon (optional: coconut and scallions)
	Chicken Soup with Corn	Chicken, corn, and coconut milk soup
	Fish	Reef fish smothered with mayonnaise, onions, and tomatoes and cooked in tin foil
	Deer Fritada	Fresh deer meat and organs stewed in deer blood
	Pig Fritada	Fresh pig meat and organs stewed in pig blood
	Ham Leg	Leg of ham seasoned and roasted
	Fried Lumpia	Deep fried meat rolls
	Fried Mackerel	Seasoned and deep fried mackerel
	Kelaguin Mackerel	Mackerel mixed in a spicy sauce made with lemon (optional: coconut and scallions)
	Roasted Pig	Whole pig with skin, roasted
	Sa'sime' (Sashimi)	Raw tuna fish dipped in horseradish
	Shrimp patties	Shrimp and mixed vegetables in a flour mile and beer batter

Category	Dish	Description
	Kelaguin Skipjack	Skipjack tuna mixed in a spicy sauce made with lemon (optional: coconut and scallions)
	BBQ spareribs	Pork spareribs marinated in soy sauce, vinegar, herbs and spices & barbecued
	Steamboat	Beef chuck, blade, slow roasted
	Dried meat (Tinala' Katne)	Fresh beef seasoned and dried in the sun
Gollai (Vegetables)	Coleslaw	Shredded cabbage and carrots in a mayonnaise-based sauce
	Eggplant in Coconut Milk (Lechen Birenghenas)	Eggplant mixed in coconut milk and spicy sauce made with lemon, barbecued
	Kimchee	Pickled cucumber, cabbage, and horseradish in a spicy sauce
	Salad, Pasta	Pasta curly noodle, cucumber, black olive, tomato, carrots, deli ham, and deli turkey in vinaigrette sauce
	Salad, Potato	Potato, eggs, olives, relish, and pimientos in mayonnaise
Frute (Fruits)	Fruit Salad	Canned mixed fruits with Cool Whip®
Postre (Desserts)	Cassava Cake	Sticky cake made with cassava
	Chocolate cake	Classic chocolate cake
	Custard pie	Classic custard pie
Sides	Lemon Fina'dene	Spicy sauce made with lemon
	Soy Fina'dene	Spicy sauce made with soy sauce

(Source: University of Guam, Nutritional Analysis of a Fiesta on Guam)

A review of the variety, amount of food, and their associated nutritional value was analyzed and revealed that the amount of calories, total fat, and saturated fat consumed by each person (on average) for a fiesta meal was more than the recommend intakes for a whole day, yet the amount of carbohydrates and dietary fiber consumed by each person was less than the recommended intakes for a day. Individuals who attend a fiesta are presented with a nutritional imbalance; they were provided with foods high in calories, fat, and saturated fat and low in carbohydrate and dietary fiber. Overall, dishes served and consumed lacked diversity and nutritional balance. More than half were totche (fish and meat) and few were vegetable and fruit dishes.

Issues and Opportunities

People are choosing options that are convenient and quick over nutritious options.

Both the US and Guam populations have increasingly gained more access to processed foods and are increasingly eating more of these non-nutritional foods every year. Supermarkets are full of convenient packaged foods that appeal to taste buds and are visually appealing, yet fail to meet nutritional needs. Most of a food's natural nutrients are removed in the refining process, thus rendering these packaged, processed foods nutritionally deficient. Additionally, people are eating less variety of foods and both accessibility and consumption of fast foods has increased. The most significant nutrition problems in the US, and increasingly on Guam, revolve around fast paced lifestyles and convenience. "Ironically, while 17,000 new products are introduced each year, two-thirds of our calories come from just four foods: corn, soy, wheat, and rice." (*Source: University of Minnesota, November 2009*)

The WHO's Western Pacific Region issued a Nutritional Overview for Guam stating that the main nutritional problems on Guam are related to diet and sedentary lifestyle. Overweight is already apparent in elementary-school children. Improved health through nutrition is being sought through the recent establishment of dietary guidelines, which are being promoted through the Pacific Food Pyramid, as described previously and discussed in the Plans/Programs to Address Issues portion of this section.

Nutritional problems resulting from a change in the typical diet of people on Guam are becoming more and have resulted in anemia, riboflavin deficiencies, and calcium deficiencies. While nutritional deficiencies continue to exacerbate, heart disease, hypertension, diabetes, obesity, and other chronic diseases are on the rise. While the diets of Pacific Islanders vary from island to island,

traditional foods of Guam now contribute only minimally to daily intake, most of which consists of convenience foods or fast food.

Cultural traditions and practices have changed and been influenced by a change in economy.

Portions of the Guam population suffer from a lack of diversity in their diets, partly due to a shift away from cultural practices. Frequent gatherings revolving around food and drink are an important aspect of Chamorro culture, as discussed above. Traditional Chamorro society was one in which social ties and overall welfare was dependent upon a sustained social system of exchanged labor, food, and other resources among extended families. A change in economy and increased access to imported and processed foods has resulted in a change in this system. Traditionally, the food prepared at a fiesta was based upon what could be caught or picked fresh; however, many of the foods served during a modern fiesta are now the result of what is bought at a local market, much of which includes imported foods and ingredients. The practice of purchasing ingredients that were not previously used has also resulted in a change in preparation methods such as the increased use of oils and fats to deep fry foods that were previously roasted over a fire. (*Source: Iyechad 2001*)

The traditional diet of plant foods and seafood has changed.

Prior to European colonization, the typical Chamorro diet consisted primarily of seafood as the main source of protein and native plant foods. The previously discussed foods served at a Chamorro fiesta are illustrative of the islander's shift away from agriculture and increased reliance on imported goods. Today, less than one percent (1%) of the population farms for food. While local ingredients are still used to an extent, their use has diminished.

Methods of cooking have also changed, with many items being fried or modified to include less healthy recipes. For example, the coleslaw at many fiestas is now made with mayonnaise as opposed to the traditional Chamorro coleslaw that is made with vinegar. Simple modifications, such as the reduction of fats for frying and additional of fresh vegetables into dishes such as Red Rice, would result in lower calorie and fat content as well as higher dietary fiber and essential nutrient content.

Plans/Programs to Address Issues

Dietary Guidelines for Americans

The US Department of Agriculture (USDA) and US Department of Health and Human Services (HHS) jointly issue "The Dietary Guidelines for Americans", which is updated every five years, last updated in 2010. These guidelines serve as the cornerstone of federal nutrition policy and nutrition education activities. The guidelines are illustrated in the form of plate, and formerly in the form of a pyramid, to provide nutrition and food decision guidance for healthy Americans age two and older about food choices that promote health and prevent illness. The guidelines recommend a diet containing a variety of:

- grains (especially whole grains);
- vegetables and fruits;
- a diet low in saturated fat and cholesterol and moderate in total fat;
- moderate intake of sugars;
- and foods with less salt.

This program provides an easy to use benchmark for monitoring dietary patterns; however, individuals with chronic diseases or other health conditions may require adjustments to this guidance.

Key Recommendations for Specific Population Groups

- People over age 50: Consume vitamin B12 in its crystalline form (i.e., fortified foods or supplements).
- Women of childbearing age who may become pregnant: Eat foods high in heme-iron and/or consume iron-rich plant foods or iron-fortified foods with an enhancer of iron absorption, such as vitamin C-rich foods.
- Women of childbearing age who may become pregnant and those in the first trimester of pregnancy: Consume adequate synthetic folic acid daily (from fortified foods or supplements) in addition to food forms of folate from a varied diet.
- Older adults, people with dark skin, and people exposed to insufficient ultraviolet band radiation (i.e., sunlight): Consume extra vitamin D from vitamin D-fortified foods and/or supplements.

While these Guidelines are intended for application for the populations of the United States, including Guam, it is important to recognize the limitations that Guam's island location has on the availability of foods. Although food choices may be more limited, food choices should take into consideration a combination of nutritional content, caloric requirements and allowances, and the availability of local foods that have not been processed.

Ten Tips Nutrition Education Series

The USDA provides easy to follow nutrition and diet tips to both the general public and for use by professionals through its Ten Tips Nutrition Education Series. The current topics covered by the tip sheets are currently:

- Choose MyPlate
- Add More Vegetables to Your Day
- Focus on Fruits
- Make Half Your Grains Whole
- Got your Dairy Today?
- With Protein Foods, Variety is Key
- Build a Healthy Meal
- Healthy Eating for Vegetarians
- Smart Shopping for Veggies and Fruits
- Liven up Your Meals with Vegetables and Fruits
- Kid-Friendly Veggies and Fruits
- Be a healthy Role Model for Children
- Cut Back on Your Kid's Sweet Treats
- Salt and Sodium

Your food and physical activity choices each day affect your health -- how you feel today, tomorrow, and in the future.

- Make half your grains whole
- Vary your veggies
- Focus on fruit
- Get your calcium rich foods
- Go lean with protein
- Find your balance between food and physical activity
- Keep food safe to eat

(Source: USDA: Dietary Guidelines for Americans, 2010)

Fruits & Veggies – More Matters ™

The "Fruits and Veggies Matter" program has recently been launched to replace the CDC's "5 A Day for Better Health" program. The current program was initially designed as a simple and easy to follow strategy to improve the nutritional habits of Americans and target major chronic diseases. The program provides a broad benchmarking approach for monitoring dietary patterns on an individual basis and has recently increased its emphasis on the consumption of fruits and vegetables by launching its "Fruits & Veggies –

More Matters ™" campaign. Major components of the program include online tools, including a fruit and vegetable serving requirement calculator that takes into account a person's age, sex, and physical activity level. The website also features fruit and vegetable benefits, educational tools and tips, recipes, a Q&A section, publications, and more.

http://www.fruitsandveggiesmatter.gov/

Pacific Food Pyramid

While the concept of promoting a balanced diet is global, certain geographies and cultures do not fit within the USDA's guidelines due to a difference in local climates, crops, cultural traditions and beliefs, and other factors. The Pacific Food Pyramid was developed for this reason: to address the differences found on Guam and Hawaii. The USDA's food pyramid does not include most of these places' traditional foods and it promotes food groups that may not be as widely available in these island locations. For example, "Grains" that include foods such as breads, cereals, rice, and pasta, serves as the foundation of these pyramids. While these staple grains are readily available and able to be stored over the winter in northern temperate climates like the continental US, there are many other types of complex carbohydrate foods that are available fresh throughout the year in the tropical Pacific. The Pacific Food Pyramid identifies the staple items as roots (sweet potato, yam, cassava), starchy fruits (breadfruit, cooking bananas, hala), and starchy stems (sago palm, sugar). These traditional energy foods are generally healthier than refined grain foods such as white rice and white breads. This approach was developed by the Hawaii Dietetic Association (HDA) and used categories that are named for their nutritional functions as opposed to specific food products and supports a wider spectrum of health food choices for people from all cultures. The "Complex Carbohydrates," also known as the Energy Foods (Kopia Nohihi) category forms the base of the pyramid instead of Grains. The other parts of the diet include Body Building Foods, including Calcium and Protein Foods, Protective Foods, Caution Foods, and Water.

http://www2.hawaii.edu/~strauch/PlantTropics/PacificFoodPyramid.html

National Action Guide for the State Indicator Report on Fruits and Vegetables, 2009

The CDC's National Action Guide for the State Indicator Report on Fruits and Vegetables recommends strategies and policies intended to promote increased fruit and vegetable access, availability, and affordability through policy and environmental support across communities, schools, and the food system. The guide emphasizes the importance of fruits and vegetables and their influence on optimal child growth, weight management, and chronic disease prevention. Although data has not been collected for Guam through this effort, a high level of fruit and vegetable consumption is reported for Hawaii. This data collection and reporting is fairly new; however, the intention is that data can be used by states to track progress on a variety of health indicators in order to:

- Portray how states support the consumption of fruits and vegetable.
- Celebrate state successes
- Identify opportunities for improvement of fruit and vegetable consumption support through environmental, policy and/or systems approaches

http://www.fruitsandveggiesmatter.gov/health_professionals/statereport.html

Some of the health problems people in the Pacific face today, like diabetes, are the result of modern diets that are based heavily on refined grains. Switching back to more traditional foods is one strategy to get healthier.

Special Supplemental Nutrition Program for Women, Infants and Children (WIC)

The goal of the WIC program is to improve the health of low-income pregnant, breastfeeding and non-breastfeeding postpartum women, and infants and children up to five years old. WIC provides supplemental foods, nutrition education, and access to health services to qualified women and children. Participants receive vouchers that can be redeemed at retail food stores for specific foods that are rich sources of the nutrients frequently lacking in the diet of low-income mothers and children.

Program Contact:

Rich Proulx at 415705-1313 x251, or rich.proulx@fns.usda.gov.

National School Lunch Program and School Breakfast Program

The National School Lunch Program and School Breakfast Program provide cash reimbursements and commodity foods to help support non-profit food services in elementary and secondary schools, and in residential child care institutions. "Every school day, more than 26 million children in 94,000 schools across the country eat a lunch provided through the National School Lunch Program. More than half of these children receive the mean free or at a reduced price. The national School Lunch Program also offers the After School Snacks program. Meals and snacks provided must meet certain nutritional standards.

Child Nutrition Programs Block Grants

FNS has separate memorandums of understanding (MOUs) with American Samoa and CNMI under which FNS provides cash block grants for operation of nutrition assistance programs in lieu of the traditional Child Nutrition Programs. The block grants provide flexibility for the Territory and the Commonwealth to meet their nutrition needs within certain broad parameters established in the MOUs.

Program Contact:

Zita Viernes at 415-705-1336 x320, or zita.viernes@fns.usda.gov.

Supplemental Nutrition Assistance Program (SNAP)

The Supplemental Nutrition Assistance Program (SNAP), more commonly known by the term food stamps, issues monthly allotments of coupons that are redeemable at retail food stores, or provides benefits through electronic benefit transfer (EBT), which is used like a debit card to purchase certain foods. Eligibility and allotments are based on household size, income, assets, and other factors. The program is a federal program, under which Guam is considered a state. The Food Stamp Program has been replaced by a block grant program in Puerto Rico, the American Samoa, and the Northern Mariana Islands. These territories provide cash and coupons to participants rather than food stamps or food distribution.

Program Contact:

Dennis Stewart at 415-705-2333 x301, or dennis.stewart@fns.usda.gov

The Emergency Food Assistance Program (TEFAP)

The TEFAP provides commodity foods to states for distribution to households, soup kitchens, and food banks. First initiated in 1981, TEFAP was designed to reduce inventories and storage costs of surplus commodities through distribution to needy households. For CNMI, TEFAP is included in the cash block grant under the Child Nutrition MOU. TEFAP received American Recovery and Reinvestment Act (ARRA) stimulus funds in FY 2009

Program Contact: Stephen Pichel, Director of Field Operations at 415-705-1365 x517 or Stephen.Pichel@fns.usda.gov.

Additional Resources

My Foodapedia

USDA's Center for Nutrition and Policy Promotion provides My Foodapedia as an interactive web tool to assist individuals in determining the nutritional content and caloric intake per selected food item.

http://www.myfoodapedia.gov/Default.aspx

Hawaii Dietetic Association

The Hawaii Dietetic Association is Hawaii's largest organization of nutrition professionals that provides Hawaiian Style nutrition information on the web and provides culturally appropriate nutrition guidance for the people of Guam. The Hawaii Dietetic Association has developed the Pacific Food Pyramid and issues monthly nutrition facts and articles.

http://web.archive.org/web/20031202223424/http://nutritionhawaii.org/index.html

The Hawaii Health Food Guide can be accessed online at:

http://web.archive.org/web/20031203001213/http://nutritionhawaii.org/public/healthfood.html

Food Safety

FoodSafety.gov serves as a "gateway to federal food safety information", providing updated information on food safety laws as well as guidance on the proper handling and preparation of foods.

www.foodsafety.gov

The National Institute of Health's National Heart Lung and Blood Institute

The National Institute of Health's National Heart Lung and Blood Institute provides culturally appropriate informational booklets geared toward the promotion of healthy living and smart health choices. Many different health topics are covered, and the following are only a small sampling of booklets available:

- Be Heart Smart! Eat Foods Lower in Saturated Fat and Cholesterol, http://www.nhlbi.nih.gov/health/public/heart/other/chdblack/smart.htm
- Protect Your Heart! Prevent High Blood Pressure, http://www.nhlbi.nih.gov/health/public/heart/other/chdblack/protect.htm
- Spice Up Your Life! Eat Less Salt and Sodium, http://www.nhlbi.nih.gov/health/public/heart/other/chdblack/spice.htm

Choose MyPlate

The USDA's Choose MyPlate is the most recent approach to presenting food guidance to the public in a manner that most people can relate to: via the use of a plate divided into sections of food groups. The USDA also offers numerous online resources such as interactive tools, menu planning tips, and nutrition education and awareness tips and brochures through its website. Resources are available in several languages and for both the general population and certain subpopulations such as kids, pregnant women, and the elderly. The Ten Tips Nutrition Education Series (discussed in Plan/Programs to Address Issues) is also part of the USDA's dietary guidance and nutrition education campaign.

www.choosemyplate.gov

8.2 Physical Activity

In its 2008 Physical Activity Guidelines for Americans, the HHS uses the term physical activity to mean any bodily movement that enhances health and includes two categories: baseline activity and health-enhancing physical activity. Baseline activity refers to the light-intensity activities of daily life, such as standing, walking slowly, and lifting lightweight objects. Although the amount of baseline activity performed varies by person, this type of activity is not considered sufficient to count toward meeting the Physical Activity Guidelines. The term health-enhancing physical activity is used to include increased activity levels that produce health benefits, such as brisk walking, jumping rope, dancing, lifting weights, and doing yoga.

The overall focus of the Guidelines is on disease prevention. Regular physical activity is cited as one of the most proven and powerful methods of wellness promotion and disease prevention. It has been shown that people who are physically active are less likely to develop cardiovascular disease, diabetes, colon cancer, osteoporosis, and obesity. Exercise improves the body's immune system and can prevent or delay some of the physical deterioration generally attributed to aging. Regular physical activity has even proven to be an effective form of treatment for depression. Physical activity is recommended for persons, regardless of age or mobility.

Benefits of Physical Activity

- Control and manage your weight
- Reduce your risk of cardiovascular disease
- Reduce your risk of developing diabetes and metabolic syndrome
- Reduce your risk of developing some cancers
- Strengthen your bones and muscles
- Improve your mental health and mood
- Improve your ability to perform daily activities and prevent injury
- Increase your chances of a living longer
- Improve and strengthen your immune system

Recommendations on duration, frequency, and intensity of activity are provided by these guidelines with variations provided to reflect a person's age and health condition. These recommendations are summarized in Table 8-3. Children and young adolescents should perform at least one hour of physical activity daily. The majority of this activity should be aerobic, with vigorous physical activity performed at least three times per week. As part of their one hour daily routine, muscle-strengthening and bone-strengthening activities should be included at least three days per week.

Table 8-3. Physical Activity Recommendations (Weekly)

Population Group	Moderate Intensity	Vigorous Intensity
Children & Adolescents (Ages 6-17)	▪ 7 hours	• 3 days per week as part of 7 hour total
Adults (Ages 18-64)	▪ 2.5 hours to 5 hours	▪ 1.25 hours to 2.5 hours as part of total
Older Adults (Ages 65+)	▪ 2.5 hours to 5 hours	• 1.25 hours to 2.5 hours as part of total
Adults with	▪ 2.5 hours to 5 hours	▪ 1.25 hours to 2.5

Population Group	Moderate Intensity	Vigorous Intensity
Disabilities		hours as part of total
Children & Adolescents with Disabilities	▪ 7 hours	▪ 3 days per week as part of 7 hour total
Pregnant & Postpartum Women	▪ 2.5 hours	▪

In order to achieve substantial health benefits, adults should perform at least 2 hours and 30 minutes of moderate-intensity or 1 hour and 15 minutes of vigorous-intensity aerobic physical activity, or a combination of both, per week. For additional and more extensive benefits, weekly aerobic activity should be increased to 5 hours of moderate-intensity or 2 hours and 30 minutes of vigorous-intensity activity. It is also recommended that adults include moderate or high intensity muscle-strengthening activities that include all muscle groups on two or more days weekly. Although these same key guidelines apply to older adults, modifications are provided for those who cannot meet the full activity requirements presented for adults. When chronic conditions prevent older adults from meeting the recommended physical activity requirements of adults, they should strive to be as physically active as their abilities and conditions allow. It is recommended that older adults perform exercises that maintain or improve balance and strength as part of their exercise regimen.

Physical activity guidelines are also provided for population sub-groups, including women who are either pregnant or in their postpartum period, people with disabilities, and people with chronic medical conditions; however, individuals should check with a medical professional regarding the appropriate amount of physical exercise recommended for them based on their condition. Healthy women who are not already very active or doing vigorous activity should perform at least 2 hours and 30 minutes of moderate-intensity activity weekly during pregnancy and the postpartum period, with activities performed being spread throughout the week.

Medical condition permitting, adults with disabilities should perform a minimum of 1 hour and 30 minutes of moderate-intensity or 75 minutes of vigorous intensity aerobic activity, or combination of both, per week. It is recommended that aerobic activity is performed in episodes of at least ten minutes, preferably spread throughout the week. Muscle-strengthening exercises at a moderate or high intensity and that involve all major muscle groups on two or more days a week are also encouraged. Although certain conditions may limit the duration, frequency, and intensity of activity an individual can perform, it is highly recommended that inactivity is avoided. When it comes to weight management, people vary greatly in how much physical activity they need.

> "Physical activity is a leading example of how lifestyle choices have a profound effect on health. The choices we make about other lifestyle factors, such as diet, smoking, and alcohol use, also have important and independent effects on our health."
>
> *(Source: 2008 Physical Activity Guidelines for Americans)*

Existing Condition and Trends

The HHS's Healthy People 2020 Plan was released in 2010 and set objectives for increasing the level of physical activity in Americans over the decade from 2010 to 2020. Based on past planning efforts and the most recent data available, it has been reported that inactivity among American adults and youth remains relatively high and little progress has been made in meeting these objectives.

The problem of physical inactivity is rampant both in the United States and on Guam. The 2007 Guam Youth Risk Behavior Survey found identified physical activity amongst Guam high school students to be severely lacking. When Guam students were polled in 2007 as part of a CDC study regarding their physical activity levels during an average week:

- 69% did not meet recommended levels of physical activity
- 55% did not attend physical education classes
- 89% did not attend physical education classes daily

- 37% watched television 3 or more hours per day on an average school day
- 33% played video or computer games or used a computer for something that was not school work for 3 or more hours per day on an average school day

(Source: CDC, The Obesity Epidemic and Guam Students, 2010)

http://www.cdc.gov/healthyYouth/yrbs/pdf/obesity/gu_obesity_combo.pdf

Issues and Opportunities

Improvements in health education and activity are needed.

Health education in schools is currently insufficient and weak in its requirements. Efforts to improve physical health education and physical activity requirements have recently increased; however, the 2008 Guam School Health Profiles indicates major weaknesses in schools' requirements. The results report that although 73% offered health education courses, none actually require students to take two or more health education courses. Only half (55%) taught a required physical education course in all grades in the school. Approximately one third (36%) taught 12 key physical activity topics in a required course:

- Physical, psychological or social benefits
- Health-related fitness
- Phases of a workout
- How much physical activity is enough
- Developing an individualized physical activity plan
- Monitoring progress towards reaching goals
- Overcoming barriers to physical activity
- Decreasing sedentary activities
- Opportunities for physical activity in the community
- Preventing injury during physical activity
- Weather-related safety
- Dangers of using performance-enhancing drugs

All schools reported offering opportunities for all students to participate in intramural activities or physical activity clubs. Overall, it appears that the educational resources are in place and offered; however, the students are not utilizing these resources. (CDC, 2008)

The increase in availability of technology and the changes in surrounding environment are not conducive to active lifestyles.

Modern American society has been characterized as "obesogenic," with environments that promote increased food intake, increased intake of non-healthful foods, and physical inactivity. The environment we live in also tends to promote this lifestyle, with an increased dependence on automobiles and less walking and physical activity required to perform daily tasks. Policy and environmental change initiatives are the most effective tools available to help encourage change, and can help in promoting healthier nutrition and physical activity choices to combat obesity

Plans/Programs to Address Issues

Injury Prevention

In addition to physical activity guidelines, the HHS's Guidelines for Physical Activity identifies selected examples of injury prevention strategies. Table 8-4 below summarizes examples of various evidence-based injury prevention strategies compiled by injury prevention experts and contained within the Guidelines.

Table 8-4. Recommended Injury Prevention Measures

Activity/Sport	Proven Strategy	Promising/Potential Strategy
	▪ Breakaway bases ▪ Reduced impact balls ▪ Faceguards/protective eyewear	▪ Batting helmets ▪ Pitch count
Bicycling	Baseball / Softball	▪ Bike paths/lanes ▪ Retractable handle bars

Activity/Sport	Proven Strategy	Promising/Potential Strategy
Football	▪ Helmets and other personal protective equipment ▪ Ankle stabilizers/braces ▪ Minimizing cleat length ▪ Rule changes (no spearing, slipping, etc.) ▪ Playing field maintenance ▪ Preseason conditioning ▪ Cross-training ▪ Coach training and experience	▪ Limiting contact during practice
In-line skating / Skateboarding	▪ Wrist guards ▪ Knee and elbow pads	▪ Helmets
Playgrounds	▪ Shock-absorbing surfacing ▪ Height standards ▪ Maintenance standards	▪
Running / Jogging	▪ Altered training regimen	▪ Shock absorbing insoles
Soccer	▪ Anchored, padded goal posts ▪ Shin guards ▪ Neuromuscular training programs ▪ Strength training	

National Physical Activity Plan

The CDC's Division of Nutrition, Physical Activity, and Obesity (DNPAO) is working to reduce obesity and obesity-related conditions through state programs, technical assistance and training, leadership, surveillance and research, intervention development and evaluation, translation of practice-based evidence and research findings, and partnership development. The DNPAO has produced the US National Physical Activity Plan that includes a set of policies, programs, and initiatives that aim to increase physical activity throughout all segments of the American population.

http://cdc.gov/healthyyouth/physicalactivity/

Let's Move In School

The American Alliance for Health, Physical Education, Recreation and Dance sponsors the "Let's Move in School" program as a means to ensuring "that every school provides a comprehensive school physical activity program with quality physical education as the foundation so that youth will develop the knowledge, skills, and confidence to be physically active for a lifetime." The cornerstone of the program is the "Met's Move in School" event held during National Physical Education and Sport Week in May that schools can sign up to participate in.

http://www.aahperd.org/letsmoveinschool/

We Can! Ways to Enhance Children's Activity & Nutrition

The Four Institutes of the National Institute of Health, the National Health, Lung, and Blood Institute; the National Institute of Diabetes and Digestive and Kidney Disease; the Eunice Kennedy Shriver National Institute of Child Health and Human Development; and the National Cancer Institute, have come together to establish We Can! (Ways to Enhance Children's Activity & Nutrition). We Can! is a national movement designed to give parents, caregivers, and communities a way to help children ages 8 to 13 years old maintain a healthy weight. The program is geared toward providing parents and caregivers the tools, fun activities, and more to help them encourage healthy eating, increased physical activity, and reduced sitting time in front of electronics.

http://www.nhlbi.nih.gov/health/public/heart/obesity/wecan/index.htm

Additional Resources

There a variety of national organizations that help form alliances and partnerships amongst healthcare professionals and serve to provide information and resources to the public.

American Association for Health Education

The American Association for Health Education (AAHE) serves health educators and other professionals who promote the health of all people. AAHE specializes in ongoing professional development and continuing

education for health educators in schools, public health agencies, medical care settings, business and industry.

http://www.aahperd.org/aahe/index.cfm

American Association for Physical Activity and Recreation

The American Association for Physical Activity and Recreation (AAPAR) links professionals in education with community and agency-based programs to facilitate ongoing education for professionals providing physical activity, recreation, and fitness programs across the lifespan. AAPAR supports a broad spectrum of issues and populations including aquatics, adapted physical activity, outdoor recreation, facility design and management, fitness for older adults, and safety and risk management.

http://www.aahperd.org/aapar/index.cfm

National Association for Girls and Women in Sport

The National Association for Girls and Women in Sport (NAGWS) is the force behind Title IX and has advocated for girls and women for more than a century. NAGWS is the leading organization for equity issues in sports and provides information and programming for all administrators and teachers working with girls and women.

http://www.aahperd.org/nagws/index.cfm

National Association for Sport and Physical Education

The National Association for Sport and Physical Education (NASPE)'s mission is to enhance knowledge, improve professional practice, and increase support for high-quality physical education, sport, and physical activity programs. The NASPE recently released Make the Move: 2010-2011 National Implementation of the U.S. Physical Activity plan, an e-book that defines objectives and outcomes for participating organizations, including policies, practices, and initiatives, aimed at increasing physical activity in the population level.

8.3 Weight Management and Maintenance

Achieving and maintaining a healthy weight is long-term lifestyle approach that encompasses healthy eating, regular physical activity, and balancing your caloric intake. A first good step to determining whether or not a person is at their healthy weight is to calculate body mass index (BMI). BMI takes a person's height and weight into consideration and is a reliable indicator of one's body fat and health content for most people. BMI calculators are available online, such as the one located on the CDC's website (see end of section for web links to this tool and other useful sites). According to BMI guidelines, if your BMI is:

- Less than 18.5, you are underweight
- Between 18.5 and 24.9, you are at a normal or healthy weight range
- Between 25.0 and 29.9, you are overweight
- 30.0 or higher, you are obese

An individual should strive to have a BMI that would be considered to be within normal or healthy weight range. Overweight and obese are both labels for weight ranges that are greater than what is generally considered to be healthy for a particular height. The terms also identify ranges of weight that have been shown to increase the likelihood of developing certain diseases and other health problem. While BMI can be a good health screening tool, it is not a diagnostic of body fitness or health.

As a general rule, an individual gains weight when the number of calories burned are less than the number consumed by eating and drinking.

Existing Condition and Trends

Being overweight or obese has become common throughout the US and on Guam. In the year 2009, 59% of adults on Guam and 60.8% of adults in the US were reported as being overweight or obese. The prevalence of this condition is similar to Hawaii (56%) and Puerto Rico (62.9%).
(Source: Kaiser Health Foundation, 2010)

While not as prevalent, childhood obesity is also becoming increasingly problematic, with approximately one fifth of US children being reported as obese or overweight. Obesity amongst adults has doubled and childhood obesity has more than tripled over the past thirty years. The prevalence of obesity among children aged 6 to 11 years increased from 7% in 1980 to 20% in 2008. The prevalence of obesity among adolescents aged 12 to 19 years increased from 5.0 to 18%. (*Source: National Center for Health Statistics, Health: US, 2010*)

> Recent research by the Guam Cancer Research Center in 2008 reported that 37.6% of people on Guam are overweight and 23.8% are obese.
>
> *(Source: University of Guam Cancer Research Center, 2008.)*

Recent research conducted by the Guam Cancer Research Center in 2008 reported that 37.6% of the people on Guam are overweight and 23.8% are obese. This problem has been linked with a shift in Chamorro diet after WWII toward imported rice and canned foods as well as the importance of food and celebration as a part of the culture. The "U56 Pilot Project: Evaluation of Risk Factors for Chronic Disease Among Adults in Guam" collected data pertaining to demographics, personal and family medical history, anthropometric data (height, weight, BMI, waist circumference, blood pressure), diet intake (based on a 24 hour recall), and physical activity. When BMI and weight status were considered, significantly more Chamorros were considered obese compared to Filipinos (49% versus 20%). Two major influencing factors were identified as the intake of calories from beverages and the overall amount of calories consumed. Sweetened beverages ranked second amongst foods that accounted for calorie intake of Chamorro and third for Filipinos. Resulting recommendations to decrease dietary calories consumed include increasing consumption of vegetables, fruits, and dietary fiber and decreased consumption of white rice, sugar-sweetened beverages, and fatty processed meats.
(Source: University of Guam Cancer Research Center, 2008)

Issues and Opportunities

Obesity has increased as a result of a combination of physical inactivity and changing diets.

Obesity among Pacific Islanders has been reported to be among the highest in the world, regardless of the island. This prevalence of obesity has been partially attributed to a genetic predisposition and a cultural preference toward being heavy; however, there is a high prevalence of physical inactivity among this population. Fortunately attitudes toward obesity are slowly changing, and it is gradually being viewed as unhealthy. A change in obesity patterns is reliant upon a holistic approach to health, aimed at diet, exercise, and a change in lifestyle. As such, it is important the information provided in this section be considered together with the discussion in Physical Activity and Nutrition, as well as this section as a whole. The most recommended health improvement strategies related to obesity include the promotion of making affordable healthy food and beverages.

(Source: CDC MMRW, July 2009)

Plans/Programs to Address Issues

Recommended Community Strategies and Measurements to Prevent Obesity in the United States

In its July 2009 Morbidity and Mortality Weekly Report (MMWR), the CDC has issued recommended community strategies and measurements to prevent obesity in the US through its Measures Project. The Measures Project process was performed by health experts who completed a systematic review of the published scientific literature, resulting in the adoption of environmental and policy level strategies to promote healthy eating and active living and reduce the prevalence of obesity in the United States. The report also presents a suggested measurement for each strategy that communities can use to assess implementation and track progress over time.

Additional Resources

CDC's Body Mass Index Calculator

The CDC provides Body Mass Index calculators for both adults and for children and teens online based on height and weight for adults as well as age and gender for children and teens:

http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/english_bmi_calculator/bmi_calculator.html

http://apps.nccd.cdc.gov/dnpabmi/

Embrace Your Health! Lose Weight if You are Overweight

The National Institute of Health's National Heart Lung and Blood Institute provides culturally appropriate informational booklets geared toward the promotion of healthy living and smart health choices. Guidance on losing weight is one of the many topics covered by this resource.

http://www.nhlbi.nih.gov/health/public/heart/other/chdblack/embrace.htm

8.4 Prenatal / Maternal / Infant Health

The health of women before, during, and after pregnancy is an important factor in determining the health of their infants and children, who represent one of the most vulnerable populations. This focus on this section is on the proper care of infants and young children as well as maternal morbidity and mortality commonly associated with childbirth.

Stages of Care

Prenatal Care

Prenatal care is the healthcare required while pregnant, often provided by obstetricians, family physicians, midwives, and nurse-midwives. Prenatal care consists of the assessment of risk, monitoring health status and pregnancy progress of mother and fetus, implementing protective interventions, risk reduction, health education, and appropriate support and educational referrals. Improving the outcome of pregnancy for both mother and baby is the ultimate goal of prenatal care. Proper prenatal care can help keep the mother and her baby healthy. Babies of mothers who do not obtain prenatal care are three times more likely to be born at a low birth weight and five times more likely to die than those born to mothers who do get care. (HHS, Maternal and Child Health Bureau, 2005) The five most important things a soon-to-be mother can do before becoming pregnant are:

- Take 400 micrograms (400 mcg or 0.4 mg) of folic acid (also known as folate or Vitamin B9) every day for at least 3 months before getting pregnant to lower the risk of some birth defects of the brain and spine. Folic acid can be obtained from some food sources, but it is difficult to get enough from foods alone.
- Smoking and alcohol consumption should be stopped.
- Any preexisting medical conditions should be addressed and properly managed. Particular conditions that may need special attention include asthma, diabetes, depression, high blood pressure, obesity, thyroid disease, or epilepsy.
- All vaccinations should be brought up to date.
- Current medications, both over- the-counter and prescription medicines should be discussed with a doctor. These include dietary or herbal supplements. Some medicines are not safe during pregnancy; however, it may be dangerous to suddenly stop taking certain medications without the guidance and direction of a doctor.
- Contact with toxic substances or materials at work and at home should be avoided.

Prenatal care should begin by the end of the first trimester (three months) of pregnancy at the latest. One measure of the adequacy of prenatal care, as defined by the American College of Obstetrics and Gynecology, is at least 13 prenatal visits for a full-term pregnancy. The majority of pregnancies develop well without any complications. Known risk factors are mother's age, race and ethnicity, whether the pregnancy was planned or not, lack of a prenatal care payment source (insurance coverage as a major factor), and pre-existing and potentially developing adverse health and emotional conditions.

A variety of foods are recommended while pregnant; however, certain foods should also be avoided.

- A variety of healthy foods should be eaten and consist of fruits, vegetables, whole grains, calcium-rich foods, and foods low in saturated fat, as well as plenty of fluids, especially water.
- Special care should be taken to ensure adequate nutrient intake Getting enough iron is particularly important in the prevention of anemia, which is linked to preterm birth and low birth weight. A daily prenatal vitamin or iron supplement may also be needed, as directed by a doctor.
- Properly cleaning, storage, and preparation of foods is especially important during pregnancy. Fruits and vegetables should be washed before eating in order to avoid food-borne illnesses, including toxoplasmosis and listeria. Uncooked or undercooked meats or fish should not be eaten.
- Fish with increased amounts of mercury, including swordfish, king mackerel, shark, and tilefish, must be avoided.

Additional pregnancy "do's and don'ts" are identified by The National Women's Health Information Center at www.womenshealth.gov.

Pregnancy Complications

Common health complications that may result due to a lack of proper prenatal care complications during pregnancy, or developmental abnormalities problems include miscarriage, ectopic pregnancy. Miscarriage is the spontaneous loss of fetus before the 20th week of pregnancy. Miscarriages are commonly caused by a genetic problem or other problem with the way the embryo or fetus develops. Miscarriages are more common than most people realize. For every 10 pregnancies, 10 to 20% result in miscarriage, with 80% of these occurring in the first three months of pregnancy.

Infant and Young Child Care

Immunizations are a key step that is necessary to take to keep the population healthy and prevent certain communicable diseases. Obtaining an immunization through vaccines is essential for infants and young children in particular because these groups have undeveloped immune systems and are more susceptible to certain illnesses. Immunizations and vaccines are discussed in Section 10, Communicable Diseases.

Childhood Development and Health

Childhood is often divided into three broad stages, each based on the primary tasks of development for that period: early childhood, middle childhood, and adolescence.

- Early childhood (usually defined as birth to year 8) is a time of tremendous physical, cognitive, and socio-emotional development.
- Middle childhood (usually defined as ages 6 to 12) is a time when children develop skills for building healthy social relationships and learn roles that will lay ground work for a lifetime.
- Adolescence (generally defined as age twelve to eighteen years) is defined as a "culturally constructed period that generally begins as individuals reach sexual maturity and ends when the individual has established an identity as an adult within his or her social context." (*Source: State University, 2007*)

During early childhood, the human brain grows to 90% of its adult size by age three (HHS, Healthy People 2020, 2010). Early childhood represents the period when young children reach developmental milestones such as emotional regulation and attachment, language development, and motor skills development. All of these milestones can be significantly delayed when young children experience environmental stress and other negative risk factors. These stressors and factors can affect the brain and may seriously compromise a child's physical, social-emotional, and cognitive growth and development. Early and middle childhood sets the stage for health literacy, self-discipline, the ability to make good decisions about risky situations, eating habits, and conflict negotiation.

During early and middle childhood, people are typically at their healthiest, but this period is when children are at the most risk for developing conditions such as asthma, obesity, dental decay/cavities, problems associated with malnutrition, and developmental and behavioral disorders. While these conditions may not be fatal, they have been known to affect a child's education and overall health and well-being. Emerging issues associated with childhood have been identified by the CDC as the need for fostering knowledgeable and nurturing families, parents, and caregivers; creating supporting and safe environments in schools, communities, and homes; and increasing access to high-quality health care. (*Source: Healthy People, 2020*)

Recent social trends, including the increased prevalence of school violence, eating disorders, drug use, and depression, affect many upper elementary school students. Thus, there is more pressure on schools to recognize problems in eight-to eleven-year-olds, and to teach children the social and life skills that will help them continue to develop into healthy adolescents.

Existing Condition and Trends

Prenatal Care

The most recent data available (2006) reveal that Guam mothers are currently deficient in obtaining proper prenatal care during their first trimester of pregnancy. The Kaiser Foundation's State Health Facts show that only 63% of women on Guam begin prenatal care during their first trimester. This low rate is far behind that of the US (83%), Hawaii (82%), and Puerto Rico (75%). Additionally, Guam mothers experienced more preterm (birth of a baby less than 37 weeks of gestational age) births (17% of births) than the US (12%). Maternal deaths, infant mortality, and infant birth weight data also provide an indication of maternal and infant health. Births of low birth weight on Guam have been similar to that of the US (8% for both places); however, Guam has

experienced a slightly higher infant death rate (nine deaths per 1,000 live births) in comparison to the US (seven deaths per 1,000 live births) over the years 2004 to 2006.

(Source: Kaiser Health Foundation, 2010)

A 2008 study by Dr. Robert Haddock was conducted to determine the ethnic profile of new mothers on Guam, their use of prenatal care services, causes for the failure of some women to receive any prenatal care, and suggestions to improve participation in this important healthcare measure. This study was performed by conducting surveys with mothers who did not receive prenatal care.

The data developed consisted of prenatal care data for women delivering on Guam from 1970 through 2004 and was summarized by five-year periods. The overall results of the study revealed that the percent of those initiating prenatal care during the first trimester of their pregnancy and those who received no prenatal care at all increased during the periods studied. The data clearly illustrate that the population most likely to not receive any prenatal care is Micronesian mothers, with Chamorro mothers showing a similar but somewhat less dramatic trend. Although the Chamorro population of Guam is larger than the Micronesian population, Micronesian births with a history of no prenatal care exceed those of Chamorro births in absolute numbers as well as rate. Micronesian women accounted for only 9% of women of childbearing age on Guam in 2004 but accounted for 54% of deliveries with no prenatal care. The percentage of Micronesian mothers who received no prenatal care during pregnancy increased by more than four times (461%) during the study period. Lack of medical insurance and lack of transportation were the leading reasons given by survey respondents for not receiving prenatal care as discussed in the Issues and Opportunities portion of this section.

(Source: Haddock, et al., December 2008)

Infant and Child Health

The most recent child mortality estimates by the United Nations show that substantial progress has continued to be made in reducing child deaths. Data for the year 2009 show that the mortality rate for children under age five in developing countries dropped by a third (from 99 deaths per 1,000 live births to 66) since 1990 worldwide. Globally, the total number of under-five deaths declined from 12.4 million in 1990 to 8.1 million in 2009. The average annual rate of decline increased to 2.8% for the period 2000 to 2009, compared to 1.4% in the 1990s.

Additional factors that influence the health and development of infants and children include whether or not the mother breastfeeds her infant and the birth weight of infants. In a 2001 discharge survey of 923 post-partum patients at Guam Memorial Hospital, 183 (20%) were reported that they were exclusively breastfeeding their newborn and 493 (53%) indicated that they were mix-feeding their infants.

Child growth indicators were assessed as part of Project Health Start implemented among elementary-school children by the Department of Public Health and Social Service in collaboration with the University of Guam and found that the average weight-for-height was 25% higher than ideal and 21% of children had a weight-for-age above the 95th percentile.

Teen Pregnancy

Teen pregnancies present increased health risks for the baby and potentially the mother if not prepared and properly equipped with adequate prenatal healthcare services. Children born to teen mothers are more likely to suffer health, social, and emotion problems, and women who become pregnant during their teens are at increased risk for complications such as premature labor and negative socioeconomic consequences. Social and economic costs associated with unintended pregnancies can be measured by increased infant mortality and morbidity, reduced educational attainment and employment opportunity, greater welfare dependency, increased potential for child abuse and neglect, and increased healthcare expenses.

http://www.womenshealthchannel.com/teen-pregnancy/index.shtml

Although teen birth rates throughout the continental US and Guam have decreased over the past decade, teen pregnancy continues to be an important social and health issue. Teen birth rates are based on babies born to mothers between the ages of 15 and 19. According to The National Campaign to Prevent Teen Pregnancy, Guam's teen birth rate in 2002 was 65, much higher than the US rate of 43. Comparing 1991 statistics with that of 2002, teen birth rates have declined on Guam by 32% and 31% in the U.S. mainland.

Issues and Opportunities

Access to health services is problematic.

The most commonly reported reason for Guam women not obtaining prenatal care were not having access to transportation (24% of respondents) and not having health insurance (23%). Although Guam is a small island and has a public transportation system, the current system is limited in scope and routes are not readily accessible to many lower-income communities. Haddock, et al. cites the current roadway infrastructure, characterized by unpaved roads, as a barrier to transportation access since bus companies only traverse paved roads. Healthcare services were formerly provided to Guam's civilian communities via 17 village-based public health clinics providing prenatal, well-child and maternal care outpatient services as well as some cancer detection services, family planning information and home care supervision. In addition to the traditional public health services provided by the village clinics, these centers offered dental health and communicable disease control services as well as chronic disease care and some crippled children services. By the early 1970's, the introduction of new federal grants encouraged a policy of providing more comprehensive services in centralized locations, thus the Southern Region Community Health Center (SRCHC) located in the predominantly rural village of Inarajan was opened in 1971 and the Northern Region Community Health Center (NRCHC), located in the village of Dededo, the island's most populous village, opened in 1984. The opening of more centralized healthcare centers coincided with a significant decrease in public health nursing staff (from 48 nurses to serve a population of 84,996 in 1970 to only 23 nurses to serve a population of 168,564 in 2005) (a decline in service rates from 56.5 nurses per 100,000 population to 13.6 nurses per 100,000 population).

An effort to assure that public transportation is accessible within reasonable walking distance of every Guam household would significantly increase the accessibility to primary healthcare by pregnant women as well as the general population.

Many women believe they cannot afford prenatal care.

In addition to the 23% of survey respondents who reported not obtaining prenatal care due to not having health insurance, 14% identified being unable to afford a doctor appointment as a reason for not receiving care.

Despite the cost of care being a major reason for not obtaining proper care, many women were not aware of free prenatal care available from Guam public health clinics. Almost half (48.2%) of survey respondents indicated that they would prefer to receive prenatal care services at a public health clinic; however almost all indicated that they were not aware that these services were available without charge.

(Source: Haddock et al., December 2008)

It is recommended that targeted measures be taken to assure that basic prenatal care is accessible to mothers who do not have health insurance and have limited transportation resource and that efforts to increase knowledge of these services throughout the Guam community be strengthened.

There is currently a lack of support for new mothers.

Approximately 60% of women participate in Guam's paid workforce; (Guam's Island-Wide Breast Feeding Coalition, 2010) however; the current policies actually discourage maternal leave and family development. Despite the Family Medical Relief Act, that entitles all women up to 12 weeks of approved leave status after delivery, the Government of Guam currently only provides for a four-week maternity leave in the public sector. This lack of policy support has the power to influence a couple's decision to start a family when there is concern of losing or reducing their employment status.

Plans/Programs to Address Issues

In addition to the programs listed below, several nutrition programs that are focused on childhood health are discussed in 8.1 Nutrition.

Temporary Assistance for Needy Families (TANF)

The TANF program provides assistance and work opportunities to needy families by granting states the federal funds and flexibility to develop, implement, and administer their own welfare programs.

Program Contact: Tracy Donovan tracy.donovan@acf.hhs.gov

Child Care Development Fund (CCDF)

The Child Care Development Fund (CCDF) has made available $4.86 billion to states and territories in 2009. This program, authorized by the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA), assists low-income families, families receiving temporary public assistance, and those transitioning from public assistance in obtaining child care so they can work or attend training/ education.

The CCDF program has changed federally subsidized child care programs in states, allowing them to serve families through a single, integrated child care system. All child care funding is now combined under the Child Care and Development Block Grant (CCDBG) Act.

Program Contact:

Bob Garcia at 415-437-8439 or robert.garcia@acf.hhs.gov.

Guam's Island-wide Breast Feeding Coalition

The Island-wide Breast Feeding Coalition, which consists of public/private sector volunteers providing consultative and educational support for breast-feeding mothers and families, exists for the purpose of increasing the incidence and prevalence of breast-feeding on Guam. The coalition has established a breast-feeding hotline and a lactation room at the Guam Memorial Hospital. Informal training and activities are provided with the support of volunteers.

Child Welfare Services (CWS IVB-1)

The Child Welfare Services program helps state and territory public welfare agencies improve child welfare services with the goal of keeping families together. Services include preventive intervention, so if possible, children will not have to be removed from their homes; services to develop alternative placements like foster care or adoption if children cannot remain at home; and reunification so that children can return home if at all possible.

Program Contact:

Sally Flanzer at 415-437-8425 sally.flanzer@acf.hhs.gov

Additional Resources

The Cost of Raising a Child Calculator

With USDA's Cost of Raising a Child Calculator, you can estimate how much it will cost annually to raise a child. This may help you plan better for overall expenses including food or to purchase adequate life insurance. The online calculator is currently based on the USDA's "Expenditures on Children by Families" 2009 report.

http://www.cnpp.usda.gov/calculatorintro.htm

Centers for Disease Control and Prevention: National Center on Birth Defects and Developmental Disabilities

The CDC's National Center on Birth Defects and Development Disabilities (NCBDDD) was established by the Children's Health Act of 2000, passed by Congress and signed into law by President Clinton. The center currently consists of three divisions: the Decision of Birth Defects and Developmental Disabilities, the Division of Human Development and Disability, and the Division of Blood Disorders. The center's overall mission is to promote the health of babies, children and adults who enhance the potential for full, productive living.

Phone number: (888) 232-4636
http://www.cdc.gov/ncbddd/

American Pregnancy Association

The American Pregnancy Association is a national health organization committed to promoting reproductive and pregnancy wellness through education, research, advocacy, and community awareness.

Phone number: (972) 550-0140
http://www.americanpregnancy.org/

RESOLVE: The National Infertility Association

RESOLVE: The National Infertility Association is a non-profit organization with the "only established, nationwide network mandated to promote reproductive health and to ensure equal access to all family building options for men and women experiencing infertility or other reproductive disorders." RESOLVE was established for the purpose of improving the lives of women and men living with infertility. This online resource provides access to information online as well as identifies local resources such as workshops, healthcare providers that treat infertility, and support groups.

http://www.resolve.org/

8.5 Lifestyle Choices

Lifestyle choices, including smoking, the consumption of alcohol, and the use of drugs, refer to risk factors that may promote or impair health and can be controlled by an individual. Although eating a healthy diet and engaging in physical activity are within an individual's control, the term lifestyle choices is used here to address certain behaviors and actions that an individual may choose to engage in despite an increased risk for health impairment.

Alcohol Consumption

Excessive alcohol consumption is associated with a variety of potentially fatal health conditions, unintentional injuries (including car accidents), and violence. The detrimental effects of high levels of alcohol consumption present health risks of developing alcoholism, cardiovascular disease, malabsorption of nutrients (malnutrition), chronic pancreatitis, alcoholic liver disease, and some cancers.

The most recent data available reveals that alcohol consumption on Guam (41% of adults) is both lower than nationwide average of 54% and has remained relatively unchanged since 2001 (DMHSA, Guam Substance Abuse Epidemiological Profile, 2009). Both US and Guam estimates show that men tend to drink more than women; however, this disparity is more apparent on Guam, where males are nearly twice as likely as females to report recent alcohol consumption.

Although the overall prevalence of drinking among the Guam population remains lower than that of the US, the prevalence of heavy drinking and binge drinking are both higher on Guam than the US, particularly among males. Heavy drinking is defined as a person having two or more drinks per day and a female having more than one drink per day. Binge drinking is defined as having more than five drinks in one occasion.

Those aged 34 and below comprise the greatest proportion of heavy drinkers and binge drinkers. This is particularly disconcerting due to the potential health implications for such a young population. Until recently, the legal drinking age on Guam was 18 years; however, the minimum legal drinking age was increased to 21 in May 2010.

A DMHSA Youth Substance Abuse Survey conducted in 2008 by Qmark identified similar patterns of drinking among Guam's youth. The major findings of this survey reveal hat 43% of high school students polled have tried alcohol and 31% of these students have had an alcoholic drink within the past 30 days.

Alcohol consumption and drug use are both strongly correlated with acts of violence. Guam Police Department records indicate that 57% of the cases involving drunkenness also involved family violence, and approximately one third of suicides are associated with alcohol consumption.

(*Source: DMHSA, Qmark Youth Substance Abuse Survey, 2008*)

Smoking

Smoking among Guam adults has historically been high and remains high according to the most recent estimate of 27% of the adult population identifying themselves as a smoker (2008). With approximately one in four adults smoking on Guam, the prevalence of smoking for Guam adults is approximately 50% higher than the US (where 18% of adults are identified as a smoker). Current smokers are defined as person who had smoked at least 100 cigarettes and who reported being a smoker at the time of the interview.

An even greater disparity is presented when gender is accounted for. Male smoking prevalence on Guam is approximately 66% higher than the US average, and female smoking on Guam is higher than even male smoking in the US. The highest smoking rates on Guam, by age group, are among those age 35 to 44 years old (29%) and 45 to 54 years old (29%), whereas smokers in the US tend to be younger (22% are age 18 to 24 and 24% are age 25 to 34). Smoking is reported less frequently by those over the age of 55, potentially attributable to the "survival advantage of non-smokers" (Source: Epidemiological Profile Update 2008). Population profiles of smokers indicate that smoking corresponds to education level. This correlation holds true on Guam, as indicated in Table X. College graduates are significantly less likely to be a smoker than persons with a high school diploma or GED as their highest level of educational attainment.

Guam's Epidemiological Profile Update report indicates that attempts to quit smoking have increased significantly over the past several years, from just under 20% of smokers trying to quit for at least one day in the past year in 2003 to 65% of smokers attempting to quit in 2007. This increase in smoking cessation (attempts and successes) may be a result of the DMHSA cessation

program that was established in 2003 and the DPHSS quit lines (established in 2007). "Clearly, the data indicate the ongoing need for cessation services to support those who desire to quit using tobacco"

As part of its efforts to reduce smoking amongst youth, the DMHSA conducted two substance abuse surveys. A 2008 telephone survey was conducted in 2008 and sampled 400 youth aged 10 to 17 years of age.

The survey asked participants the same questions used in the Youth Risk Behavior Survey and revealed the following major findings:

- 13% of respondents reported ever having smoked a cigarette. This is much lower than the reported rates of lifetime smoking encountered in the GPSS Youth Risk Behavior Survey.
- Male respondents (16%) are more likely to have smoked a cigarette than are the female respondents (10%) polled.
- Chamorro students (21%) are the most likely ethnic segment to have tried smoking a cigarette.
- Overall, 4% of respondents reported using other forms of tobacco such as snuff, dip or chewing tobacco.
- Six percent (6%) reported chewing Pugua. Among Micronesian youth, 24% reported chewing
- Pugua regularly. Forty-four percent (44%) of Pugua chewers mix tobacco with their chew.
- The results show 77% of those polled agree that smoking a pack a day would pose a great physical risk.
- Majority (81%) strongly disapprove of someone their own age who smoked one or more packs of cigarettes a day.

Smoking presents great health risks and has been identified as a direct cause of four of the ten leading causes of death on Guam. Additionally, diabetes and septicemia, also among the top ten leading causes of death on Guam, are worsened by tobacco use. Lung, colon, liver and cervical cancer have also been linked to smoking.

Issues and Opportunities

Data on unhealthy behaviors is not as widely available, thus the problem may be underestimated.

Although the use of illicit drugs is strongly correlated with both behavioral and physical health, little data regarding drug use is available. The scarcity of data is not surprising given the potential legal consequences of such data and the fear a survey respondent would have over admitting to the use of illegal drugs. The most reliable set of data available is through the Guam Police Department records. Crime reports indicate that drug related arrest have gone down since 2003; however, this data likely underestimate the problem of drug use on Guam due to both the likelihood that many drug users avoid being arrested and the potential number of arrests that are made without being screened for drug use. The majority of drug cases (69%) involved the use of methamphetamine and heroin use was associated with the smallest proportion of cases (2%).

The use of illicit drugs oftentimes leads to the use of contaminated needles, which is a strong risk factor for sexually transmitted diseases. See Section 10, Communicable Diseases for greater detail.

8.6 Healthy Environments

In addition to the major components discussed above, several other factors related to a person's environment can have a significant impact on overall health. For many of these environmental factors, there are precautionary measures that can be taken to ensure optimal wellness and prevent the development of chronic diseases. These environments include our homes as well as our work and outside environments

> "In its broadest sense, environmental health comprises those aspects of human health, disease, and injury that are determined or influenced by factors in the environment. This includes not only the study of the direct pathological effects of various chemical, physical, and biological agents, but also the effects on health of the broad physical and social environment, which includes housing, urban development, land-use and transportation, industry, and agriculture."
>
> *(Source: US Department of Health and Human Services, Healthy People 2010)*

Safe Drinking Water

Water is essential to life and ensuring that a water source is safe, free of harmful bacteria, parasites, and viruses, is of utmost importance. While access to safe water may not be a significant concern in urban areas, more rural areas may not have reliable access to a safe source of water and may need to take steps to sanitize water themselves. The following tips will help ensure the safety of water:

- Ensure the proper setup of a catchment tank. It should have a good cover on it so that rats and other pests do not have access. It should also be made of nontoxic materials and should be located away from trees and plants that can act as a highway for pests.
- Boiling water at a rolling boil for at least one minute will kill any germs that may be in water.
- Chlorine bleach can be used to treat water to kill any germs. If a very small amount of bleach is used, it will kill the germs while remaining safe for human consumption. Household bleach, which typically contains between 5% and 6% chlorine without dyes or perfumes should be used according to label instructions.

Waste Management

Many people take the disposal of trash for granted and do not realize the importance of handling and disposing of waste properly. This includes both liquid and solid waste.

Liquid waste consists of water that has been used for cleaning, washing, or sewage, and is commonly referred to as wastewater or grey water. In an urban community, liquid waste goes down the drain, through underground pipes, and is sent to the local wastewater treatment plant; however, many rural communities do not have a treatment plant. As a result, residents need to determine the most appropriate method of disposal, which usually results contaminants being released into the environment.

Solid waste, commonly referred to simply as trash, also requires proper disposal. It is estimated that every person produces just over four pounds of trash daily (Source: US Environmental Protection Agency, 2011). Although communities may rely on trash being picked up by a local service to bring to the dump site, there are ways that each person can help in decreasing the amount of garbage that gets produced, thus reducing the amount of land required for dump sites and reducing the potential for environmental contamination. Every person should take steps to reduce, reuse, and recycle. Certain items can also be recycled: Glass, plastic, and aluminum items should be separated from trash for recycling via the method designated by each local community.

> "The connection between health and dwelling is one of the most important that exists"
>
> -Florence Nightingale

Pest Management

Pests, such as mosquitoes, cockroaches, ticks, and rodents, do not belong in the home and their presence can result in transmission of illnesses from pest to human. One such example is dengue fever, which is passed from mosquitoes to humans, and presents serious health complications. (See Section 9: Communicable Diseases for additional information and discussion on this topic.) Although Dengue fever is not currently a problem on Guam, various diseases, including Dengue, filariasis, Ross River virus, and Murray Valley encephalitis are diseases carried by insects that commonly occur in the Pacific Island region, some of which have been identified as "imported diseases", diseases that have spread to Guam as a result of infected individuals visiting from another island in the region. The best way to avoid these diseases is to maintain sanitary conditions in and around the home, thus discouraging pests from entering; however, household pests may also linger around a residence, increasing the potential for disease contraction. The following measures can be taken to control such pests as well as protect against insect bites.

- Wear long sleeves, long pants and socks. Light colored clothing is best because mosquitoes can be attracted to dark colors.
- Use protective insect nets.
- Stay inside at dusk and dawn when insects are most active
- Keep windows and door screen repaired and closed.
- Keep yards clear and clean, free of tall grass and waste.
- Drain water from containers without proper covers. Mosquitoes tend to lay their eggs on standing water.
- Fill in ditches, pits, or potholes.
- Protect against insects and rodents through proactive pest control using natural substance such as lemongrass leaves when possible. Seek professional assistance from a certified pest management company when needed.
- Repel insects through the application of store bought products, insecticides and pesticides.

Existing Condition and Trends

Although the influences of various environmental factors on health have been the subject of various studies and reports in recent years, very little data has been collected or made available to assess the existing condition or recent trends in this area, particularly as they relate the health of Guam communities. Studies of this nature have predominantly been conducted at the local level or through academic institutions, with examples being Portland's "Neighborhood Environment and Health Study conducted in 2009 and The Built Environment and Health research initiative at Columbia University in New York (ongoing).

The CDC has become more engaged in this study area and has produced several news bulletins and reports on the relationship between built environment and health ("Creating a Healthy Environment: The Impact of the Built Environment on Public Health"). Efforts to understand this health issue are relatively new, making it difficult to make an assessment of existing conditions both on Guam and throughout the US.

> "Every person has a stake in environmental public health, and as environments deteriorate, so does the physical and mental health of the people who live in them. There is a connection, for example, between the fact that the urban sprawl we live with daily makes no room for sidewalks or bike paths and the fact that we are an overweight, heart disease-ridden society."
>
> (Source: CDC, 2009)

"We live in a complex environment that often fails to support—and even undermines—healthful practices and behaviors. As a result, the more traditional focus on changing individual behaviors is not sufficient to improve the overall health of the population. Success will require the sustained engagement of multiple stakeholders... sharing responsibilities and resources, and collaborating to bring about change."

(Source: America's Health Insurance Plans: Innovations in Prevention, Wellness, and Risk Reduction")

Issues and Opportunities

Guam's built environment is not conducive to encouraging active lifestyles and healthy behaviors.

Decisions about land use, community design, and transportation planning have a direct effect on the rate of obesity; incidence of chronic diseases, such as cardiovascular disease, diabetes, and mental illness; and pedestrian injury and fatality. Additionally, environmental conditions such as poor air quality, deteriorated housing conditions, and ground and surface water contamination all are influenced by land-use planning and all have an effect on public health, especially disadvantaged populations, including minorities, children, and the elderly. While Guam may not currently be experiencing major health complications as a result of the form and layout of the built environment, it is important to be cognizant of how these factors affect public health before allowing growth to progress without proper planning. Additionally, all residents should be practicing appropriate methods of sanitation, including pest management and waste management.

The following major points should be considered when planning for the future and anticipated growth:

- The creation of green space promotes physical activity, social integration, and better mental health
- Adequate community infrastructure such as drinking water and sewage systems will assist in the prevention of infectious diseases through community infrastructure, such as drinking water and sewage systems
- Land use planning and zoning aids in the protection of persons from hazardous industrial exposures and injury risks
- Transportation planning has the potential to improve air quality, encourage physical activity, prevent injuries, and promote overall health and wellness
- Planning for the disbursement of parks and recreational facilities may contribute to increase physical activity and improvements in mental health
- Both land use and transportation planning can be improve accessibility to healthcare services
- Improvements to housing and a reduction in neighborhood segregation can reduce pockets of poverty and stress, and ultimately health of community members. Health problems such as asthma and stress are commonly associated with the presence of mold and elevated environmental toxins in homes.

"The costs associated with lifestyle-related health problems are enormous: they have been estimated to account for more than a third of the $2.4 trillion that the United States spends on health care annually. On a personal level, lifestyle-related illnesses cause needless pain, depression, reduced productivity, increased absenteeism from work, and the failure of children to reach their full potential"

(Source: America's Health Insurance Plans: Innovations in Prevention, Wellness, and Risk Reduction")

Plans/Programs to Address Issues

Comprehensive Master Plan

Guam's past and current master planning activities do not address healthy environmental lifestyles choices on the island. No formal plans have been implemented for the US; however, various planning efforts exploring the relationships between community design and lifestyle and public health have been conducted at the local and state level. Due to the anticipated rapid growth over the next five years, developing and implementing a plan to address healthcare concerns as they relate to a growth in population and urbanization should become a short-term priority for Guam.

Low-Income Home Energy Assistance Program (LIHEAP)

States, territories, and Indian tribes and tribal organizations that wish to assist low-income households in meeting the costs of home energy may apply for a LIHEAP block grant. Congress established the formula for distributing funds to states based on each state's share of home energy expenditures by low-income households.

Program Contact:

Emily Hughes at 415-437-8412 or emily.hughes@acf.hhs.gov.

Additional Resources

The following resources are available for additional information on healthy environments and how they may play a role in healthcare.

American Planning Association: Healthy Communities Through Collaboration

The American Planning Association, an independent, not-for-profit education organization that provides leadership in the development of vital communities, has partnered with the National Association of County and City Health Officials (NACCHO) to begin restoring and expanding understanding of the link between land use planning, community design, and public health practice. APA has produced several fact sheets and reports on this topic that can be accessed or ordered through its web site.

http://www.planning.org/research/healthy/index.htm

CDC's Healthy Communities Program: ACHIEVE Communities

CDC's ACHIEVE communities (Action Communities for Health, Innovation, and EnVironmental changE) was established for the purpose of developing and implementing policy, systems, and environmental change strategies that can help prevent or manage health risk factors for heart disease, stroke, diabetes, cancer, obesity, and arthritis. Through this program, the CDC provides funds to selected national organizations, which in turn provide technical support and funds to selected communities. Funded organizations will help to build healthy communities and eliminate health disparities by developing and disseminating tools, models, activities, and strategies for collaborating with a broad cross-section of partners. Specific activities have been directed toward reducing tobacco use and exposure, promoting physical activity and healthy eating, and improving access to consistent, high-quality preventive health services. CDC's Healthy Communities Program provides funding and technical assistance to selected national organizations in two categories: (1) community funding and (2) translation and dissemination.

http://www.cdc.gov/healthycommunitiesprogram/communities/achieve/index.htm

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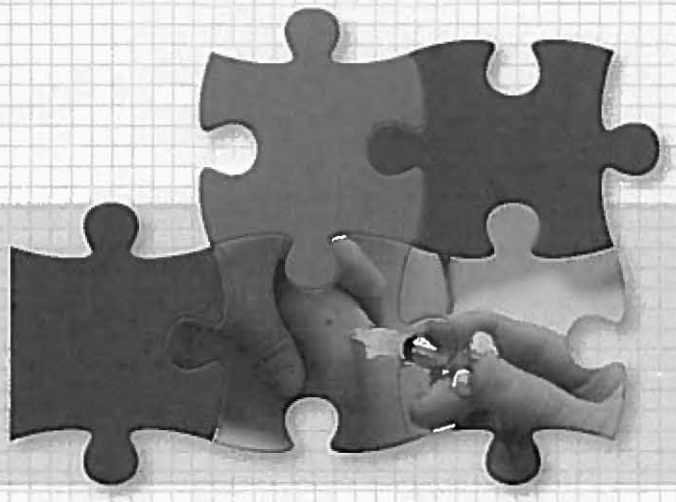


9.
Communicable Diseases

Please see the next page.

9 Communicable Diseases

Inside Section 9 . . .

Communicable diseases, also known as infectious diseases, are those that are contracted by being passed from one person to another, or from a non-human source (animal, insect, etc.) to a human. These diseases are caused by a variety of biological pathogens, such as viruses, bacteria, fungi, protozoa, multicellular parasites, and aberrant proteins known as prions. Generally, pathogens can be spread through contact between one infected person and a non-infected person; however, certain diseases can be transmitted through the air, by animals or insects, or through liquids, foods, or contaminated objects. Communicable diseases vary in severity and rarity. Some are common and easily preventable (through immunization) such as the flu, while others are less common yet may result in greater health impacts to those infected.

Communicable diseases occur as both acute and chronic conditions. An **acute** disease is characterized by a sudden onset of symptoms that are typically severe in nature but limited in duration. An example of an acute disease is chickenpox that, once resolved, results in pre-morbid health status. Chronic diseases are long lasting conditions that may worsen over time if not treated properly or in a timely manner. Although symptoms tend to be less severe than acute diseases, chronic diseases have a greater potential to lead to other health impairments, disability, or death. Hepatitis B and AIDS are both examples of chronic communicable diseases.

Occasionally, an epidemic outbreak of a specific disease can occur during which the disease spreads rapidly among individuals and infects a large number of persons. Epidemics are often confined to a region; however, with the increase of global travel, the potential for an outbreak to spread beyond its region of origin and spreading globally into a pandemic has increased greatly. In recent years, outbreaks that have been of great concern for Guam included the Asian incidence of severe acute respiratory syndrome (SARS) in 2002 and 2003, a spread of bird flu (H5N1) in the mid-2000s from Asia westward, an outbreak of H1N1 influenza strain (H1N1) in 2009, and various dengue fever, cholera, and hepatitis B epidemics.

Pandemic. When an infectious / communicable disease spreads through the human population worldwide.

Disease Surveillance

The Guam Department of Public Health and Social Services (DPHSS) monitors and records over 70 different communicable diseases and provides a profile report to the United States Department of Health and Human Service's Centers for Disease Control and Prevention (CDC). This list is not inclusive of all possible communicable diseases that may occur on Guam, but addresses the major ones that have the potential to pose a serious health risk during an outbreak or those that can affect a large number of people.

Each year the CDC compiles an annual "Summary of Notifiable Diseases" for the US. These reports contain the official statistics for the occurrence of notifiable infectious diseases in both tabular and graphical form for the entire US, including Guam. This data is compiled by the Notifiable Disease Surveillance System, operated by the CDC, in collaboration with the Council of State and Territorial Epidemiologists, based on reports sent to the CDC by each state and territory health department. The annual CDC reports also include a breakdown of the total number of cases for each disease reported by each state and territory, when available.

The diseases tracked and recorded by Guam's DPHSS and the CDC may vary somewhat based on regional influences and diseases more likely to be found within the Western Pacific region. Therefore, there are some diseases that are recorded by Guam, but not the CDC, and vice versa. The list of notifiable diseases tracked by each entity is revised periodically based on world events, declines or rises in morbidity and mortality, or emergence of new pathogens.

Methodology

For the purposes of this Five Year Strategic Health Plan, disease rates for all notifiable diseases recorded by CDC were collected and compared for Guam, the total US, Hawaii, and Puerto Rico. These locations were selected for comparison to Guam to establish a large population (US totals), a Pacific state (Hawaii), and for another US territory (Puerto Rico). By comparing Guam to these three other populations and analyzing various disease rates, a discussion was developed to determine how Guam fares among the "normal" and similar regions.

The CDC reports only identify the total number of reported cases for each geographic area, and not a rate at which infections occur. In order to make a valid comparison of the four areas identified, it is necessary to convert the CDC's total cases into an annual rate of infection. The rate of cases per 100,000 population was used for each of the four areas. To calculate this, the total number of cases for each disease was divided by the area's population and then multiplied by 100,000. For example, the total number of chickenpox reported in CDC's 2007 report for Guam was 239. That number was divided by Guam's population of 171,000 and then multiplied by 100,000. The resulting number identified a 2007 rate of chickenpox on Guam of 139.8 cases per 100,000 people living on Guam.

Incidence: A measurement of the number of new cases/individuals who have contracted a disease during a particular period of time. For instance, number of cases of mumps in a given year.

Prevalence: An expression of all individuals of a specific population who experienced a specified disease or condition within a particular period of time. For instance, the number of cases of mumps on a given day. The prevalence of disease provides an estimate of how common a condition is within a population over a period of time.

In this Strategic Plan, unless noted otherwise, data represents the incidence of a disease or issue.

To ensure as much accuracy and correlation between Guam and the other areas, the population numbers provided in the CDC reports were used to calculate the incidence rates. However, the CDC uses population numbers from the previous year for territories, thus the population figures may not match typical population tables. For example, the 2007 population was used in the 2008 report.

At the time this Strategic Plan was written, the latest CDC data was from 2008, whereas data was available for 2009 from Guam's DPHSS. For the purposes of having the most recent data, infection rates were calculated for Guam for the year 2009 based on total reported cases from DPHSS instead of CDC, and the population data was obtained from Guam's Bureau of Statistics and Plans, which differ somewhat from population numbers that CDC uses.

The diseases discussed in this Strategic Plan are those that were reported as the most commonly occurring diseases on Guam; however, this list is not intended to be inclusive of all possible diseases that can affect Guam. Table 9-1 includes a list of all diseases that were tracked and recorded by CDC in its annual Summary of Notifiable Diseases between 1999 and 2008, as well as all the additional diseases that DPHSS tracked and recorded as of 2009. The table is organized in descending order from the disease with the highest rate of occurrence on Guam in 2009 to the lowest rate, as compared to the rate of each disease in 2008 on Guam and 2008 in the US. The diseases that were chosen for discussion in this section of the Strategic Plan were those that were most prominent on Guam between the years of 1999 to 2008 and determined to have the greatest potential concern, as well as some less-prominent diseases and STDs that could be reduced through educational and proactive measures. Additionally, mumps was added to the discussion because of an outbreak in 2010.

Certain diseases that have been reported on Guam have been identified as 'imported diseases', meaning that they were reported by someone travelling through Guam or who recently moved to Guam, carrying the disease with them to Guam. Examples of these diseases include dengue fever and malaria. Although only a few cases have been reported for these diseases in particular, they are worth surveillance for future occurrences and potential outbreaks when the population increases dramatically or there is a notable change in immigration. The communicable diseases addressed in this Strategic Plan (identified by a ⓘ symbol Table 9-1) are:

- hepatitis,
- influenza,
- mumps,
- salmonellosis,
- sexually transmitted diseases,
  - chlamydia,
  - gonorrhea,
  - HIV/AIDS, and
  - syphilis
- shigellosis,
- tuberculosis, and
- varicella (chickenpox).

Table 9-1. Communicable Disease Morbidity Rates (Cases per 100,000 People)

	Total Resident Population	GUAM 2008 171,000	GUAM 2009 174,000	US 2008 301,621,000	Tracked by CDC
ⓘ	Chlamydia	394.8	367.4	401.3	Yes
	Conjunctivitis	241.4	256.9	0.0	N/A
	MRSA	144.8	193.0	0.0	N/A
ⓘ	Influenza + H1N1	25.9	189.0	0.0	N/A
	Streptococcal sore throat	271.3	182.3	0.0	N/A
ⓘ	Tuberculosis	51.7	57.2	4.3	Yes
ⓘ	Gonorrhea	62.6	34.2	111.6	Yes
ⓘ	Hepatitis B, viral, acute	11.5	32.0	1.3	Yes
ⓘ	Hepatitis C, viral, acute	5.7	27.5	0.3	Yes
	Clostridium difficile	7.5	21.3	0.0	N/A
	Herpes simplex, Type 2	4.0	19.1	0.0	N/A
ⓘ	Varicella (chickenpox) Total	54.6	17.9	10.1	Yes
	Food or fish poisoning	13.2	15.1	0.0	N/A
	HPV	4.0	12.3	0.0	N/A
	Streptococcal disease, invasive, group A	6.9	8.4	0.0	Yes
ⓘ	Shigellosis	11.5	7.3	7.5	Yes
ⓘ	Syphilis All stages	25.9	6.7	15.3	Yes
	Vancomycin resistant *Enterococcus*	8.6	6.7	0.0	N/A
ⓘ	Salmonellosis	13.2	6.2	16.9	Yes
	Campylobacteriosis	4.0	3.9	7.0	N/A
ⓘ	Hepatitis A, viral, acute	4.0	3.9	0.0	Yes
	Hansen disease (leprosy)	0.6	3.4	0.0	Yes
ⓘ	HIV	2.9	2.2	0.0	Yes
	Giardiasis	0.0	1.7	0.0	Yes
	Stevens-Johnson syndrome	0.0	1.7	0.0	N/A
	Scabies	6.3	1.1	0.0	N/A
ⓘ	AIDS	4.0	1.1	13.0	Yes
	Scarlet Fever	2.9	1.1	0.0	N/A
	Kawasaki syndrome	0.6	1.1	0.0	N/A
	Meningitis, unknown type	0.6	1.1	0.0	N/A
	Pertussis	0.0	1.1	0.0	Yes
	Vibrio parahaemolyticus	1.1	0.6	0.0	N/A
	Leptospirosis	0.6	0.6	0.0	Yes
	Ameblasis	0.6	0.6	0.0	N/A
	Vibrio vulnificus	0.6	0.6	0.0	N/A
	Hand, foot, and mouth	0.0	0.6	0.0	N/A
	Brucellosis	0.0	0.6	0.0	Yes
	Measles Total	0.0	0.6	0.0	Yes
	Meningococcal disease All serogroups	0.0	0.6	0.0	Yes
	Meningitis, aseptic	4.6	0.0	0.0	N/A
	Syphilis Primary and secondary	3.4	0.0	4.5	Yes
	Rheumatic fever (active) and poststreptococcal glomerulonephritis	1.7	0.0	0.0	N/A
ⓘ	Mumps	1.7	0.0	0.0	Yes

Total Resident Population	GUAM 2008 171,000	GUAM 2009 174,000	US 2008 301,621,000	Tracked by CDC
Haemophilus influenzae, invasive disease - All ages, serotypes	1.1	0.0	0.0	Yes
Mononucleosis	0.6	0.0	0.0	N/A
Rubella	0.6	0.0	0.0	Yes
Eosinophilic meningoencephalitis	N/A	0.0	0.0	N/A
Encephalitis, viral	N/A	0.0	0.0	N/A
Myocarditis	0.0	0.0	0.0	N/A
Strep. disease, other	0.0	0.0	0.0	N/A
Smallpox	0.0	0.0	0.0	N/A
Hemorrhagic fevers (all forms)	0.0	0.0	0.0	N/A
Granuloma inguinale	0.0	0.0	0.0	N/A
Acute flaccid paralysis	0.0	0.0	0.0	Yes
Anthrax	0.0	0.0	0.0	Yes
Total Botulism	0.0	0.0	0.0	Yes
Chancroid	0.0	0.0	0.0	Yes
Cholera	0.0	0.0	0.0	Yes
Coccidioidomycosis	0.0	0.0	2.5	Yes
Cryptosporidiosis	0.0	0.0	0.0	Yes
Cyclosporiasis	0.0	0.0	0.0	Yes
Dengue	0.0	0.0	0.0	N/A
Diphtheria	0.0	0.0	0.0	Yes

Total Resident Population	GUAM 2008 171,000	GUAM 2009 174,000	US 2008 301,621,000	Tracked by CDC
California serogroup encephalitis virus Total	0.0	0.0	0.0	Yes
California serogroup encephalitis virus Neuro-invasive	0.0	0.0	0.0	Yes
California serogroup encephalitis virus Nonneuro-invasive	0.0	0.0	0.0	Yes
Eastern equine encephalitis virus Total	0.0	0.0	0.0	Yes
Eastern equine encephalitis virus Neuro-invasive	0.0	0.0	0.0	Yes
Eastern equine encephalitis virus Nonneuro- invasive	0.0	0.0	0.0	Yes
Powassan virus Total	0.0	0.0	0.0	Yes
Powassan virus Neuro-invasive	0.0	0.0	0.0	Yes
Powassan virus Nonneuro-invasive	0.0	0.0	0.0	Yes
St. Louis encephalitis virus Total	0.0	0.0	0.0	Yes
St. Louis encephalitis virus Neuro-invasive	0.0	0.0	0.0	Yes
St. Louis encephalitis virus Nonneuro- invasive	0.0	0.0	0.0	Yes
Western equine	0.0	0.0	0.0	Yes
West Nile virus Total	0.0	0.0	0.4	Yes
West Nile virus Neuro-invasive	0.0	0.0	0.2	Yes
West Nile virus Nonneuro-invasive	0.0	0.0	0.2	Yes

Total Resident Population	GUAM 2008 171,000	GUAM 2009 174,000	US 2008 301,621,000	Tracked by CDC
Ehrlichiosis - Human granulocytic	N/A	0.0	0.0	Yes
Ehrlichiosis - Human monocytic	N/A	0.0	0.0	Yes
Ehrlichiosis - Human (other and unspecified)	N/A	0.0	0.0	Yes
Escherichia coli, enterohemorrhagic (EHEC) - O157:H7	0.0	0.0	0.0	Yes
Escherichia coli, enterohemorrhagic (EHEC) - Serogroup non-O157	0.0	0.0	0.0	Yes
Escherichia coli, enterohemorrhagic (EHEC) - Not serogrouped	0.0	0.0	0.0	Yes
Hemolytic uremic syndrome, postdiarrheal	0.0	0.0	0.1	Yes
Influenza-associated pediatric mortality	0.0	0.0	0.0	Yes
Legionellosis	0.0	0.0	0.0	Yes
Lyme disease Total	0.0	0.0	11.7	Yes
Lymphogranuloma venerum	0.0	0.0	0.0	N/A
Malaria	0.0	0.0	0.0	Yes
Measles Indigenous	0.0	0.0	0.0	Yes
Measles Imported	0.0	0.0	0.0	Yes
Meningitis, bacterial	0.0	0.0	0.0	N/A
Paravovirus B19	0.0	0.0	0.0	N/A
Plague	0.0	0.0	0.0	Yes
Poliomyelitis, paralytic	0.0	0.0	0.0	Yes

Total Resident Population	GUAM 2008 171,000	GUAM 2009 174,000	US 2008 301,621,000	Tracked by CDC
Rabies Animal	0.0	0.0	1.4	Yes
Rabies Human	0.0	0.0	0.0	Yes
Rubella Congenital syndrome	0.0	0.0	0.0	Yes
SARS-CoV	0.0	0.0	0.0	Yes
Streptococcus pneumoniae, invasive disease, drug-resistant All ages	0.0	0.0	1.1	Yes
Syphilis Congenital (age <1 yr)	0.0	0.0	0.1	Yes
Tetanus	0.0	0.0	0.0	Yes
Toxic-shock syndrome	0.0	0.0	0.0	Yes
Trichinosis	0.0	0.0	0.0	Yes
Tularemia	0.0	0.0	0.0	Yes
Typhoid fever	0.0	0.0	0.1	Yes
Typhus	N/A	0.0	0.0	N/A
Vancomycin-intermediate Staphylococcus aureus	0.0	0.0	0.0	Yes
Vancomycin-resistant Staphylococcus aureus	0.0	0.0	0.0	Yes
Vibriosis	0.0	0.0	0.0	Yes
Yellow fever	0.0	0.0	0.0	Yes
Foodborne Botulism		N/A	0.0	Yes
Infant Botulism		N/A	0.0	Yes
Other Botulism		N/A	0.0	Yes

Total Resident Population	GUAM 2008 171,000	GUAM 2009 174,000	US 2008 301,621,000	Tracked by CDC
Ehrlichiosis / Anaplasmosis - Ehrlichia chaffeensis		N/A	0.3	Yes
Ehrlichiosis / Anaplasmosis - Ehrlichia ewingii		N/A	0.0	Yes
Ehrlichiosis / Anaplasmosis - Anaplasma phagocytophilum		N/A	0.3	Yes
Ehrlichiosis / Anaplasmosis - Undetermined		N/A	0.0	Yes
Hantavirus pulmonary syndrome	N/A	N/A	0.0	Yes
Lyme disease Confirmed		N/A	9.6	Yes
Lyme disease Probable		N/A	2.1	Yes
Meningococcal disease Serogroup A, C, Y, and W-135		N/A	0.1	Yes
Meningococcal disease Serogroup B		N/A	0.1	Yes
Meningococcal disease Other serogroup		N/A	0.0	Yes
Meningococcal disease Serogroup unknown		N/A	0.2	Yes
Psittacosis	N/A	N/A	0.0	Yes
Q Fever Total	N/A	N/A	0.0	Yes
Q Fever Acute		N/A	0.0	Yes
Q Fever Chronic		N/A	0.0	Yes
Rocky Mountain spotted fever Confirmed		N/A	0.1	Yes
Rocky Mountain spotted fever Probable		N/A	0.8	Yes

Total Resident Population	GUAM 2008 171,000	GUAM 2009 174,000	US 2008 301,621,000	Tracked by CDC
Streptococcus pneumoniae, invasive disease, drug-resistant Age <5 yrs		N/A	0.2	Yes
Streptococcus pneumoniae, invasive disease, nondrug-resistant age <5 yrs		N/A	0.7	Yes
Trichinellosis		N/A	0.0	Yes
Varicella (chickenpox) Mortality		N/A	0.0	Yes
Listeriosis		N/A	0.0	Yes
Novel influenza A virus infections		N/A	0.0	Yes
Rocky Mountain spotted fever Total		N/A	0.0	Yes
Shiga toxin-producing E. Coli (STEC)		N/A	0.0	Yes
Streptococcal toxic-shock syndrome		N/A	0.0	Yes

Source: CDC Morbidity and Mortality Weekly Report: Annual Summary of Notifiable Diseases - US, 1999-2008; DPHSS Office of Epidemiology and Research, Annual Summary of Notifiable Diseases on Guam – 2009

Note: ⓘ indicates the diseases that were analyzed within the Health Plan

Immunizations and Vaccinations

Breakthroughs in the medical field over the past century have allowed for the development of a wide range of communicable disease vaccines. A vaccine is a biological preparation of a particular pathogen that consists of a weakened or dead pathogenic version of a disease that is injected or ingested into a person in order to stimulate the production of antibodies and develop immunity to that particular disease. Although not always 100% effective, the process of immunization is a cost effective and proven method for protecting against certain diseases. The use of vaccines is responsible for the eradication of smallpox worldwide during the 1960s and 1970s, as well as a drastic reduction in the number of reported cases of other diseases such as polio, rubella, measles, chickenpox, mumps, and typhoid fever (typhoid) over the past century. Common vaccines available today include those for diphtheria, tetanus, pertussis (whooping cough), haemophilus influenza B, hepatitis A and B, and meningococcal disease (meningitis) among others.

The development and use of vaccines has eradicated certain diseases from the world's population and has successfully protected against the spread of various diseases and their associated and avoidable deaths.

Not all vaccines result in permanent immunization against a disease. For example, vaccines for influenza need to be administered annually to protect against the strain of virus of concern for the upcoming year. In 2009, an outbreak of H1N1 influenza strain spread quickly throughout parts of the US and there were 337 reported cases of pandemic H1N1 on Guam. Children and young people were most susceptible to this particular strain of H1N1. The CDC has estimated that between April and November 2009, approximately 10,000 deaths resulted due to H1N1-related health complications, many of whom were children, teenagers, and young adults.

A vaccine was developed for the 2009 outbreak of H1N1 and has been successful in reducing the number of new cases transmitted to those who were inoculated. It is now recommended that all children be vaccinated for H1N1. Starting in 2010, the H1N1 strain was incorporated into the annual flu vaccine. Those who are at higher risk of contracting H1N1 are those who have asthma, neurological and neurodevelopmental conditions, chronic lung disease, heart disease, blood disorders, endocrine disorders, kidney or liver disorders, metabolic disorders, weakened immune systems, those receiving long-term aspirin therapy, and pregnant women.

Both the medical field and the diseases they treat are constantly evolving. The 2009 outbreak of H1N1 influenza has resulted in the recommendation that all children now be vaccinated against this flu strain.

Recommended Immunizations

The CDC has developed a recommended list of preventable diseases that all children in the US (states and territories) should be vaccinated for in order to reduce the spread of such diseases and reduce the potential for future outbreaks. Some vaccinations require multiple doses for younger children, but only a single dose for older children and adults. The recommended vaccinations are (see Appendix C for more information):

Recommended: Birth through 6 Years Old

Varicella	Chickenpox
DTaP	Diphtheria
Hib	Haemophilus influenza type b
HepA	Hepatitis A
HepB	Hepatitis B
Flu	Influenza (annual)
MMR	Measles
MMR	Mumps
DTaP	Pertussis (whooping cough)
IPV	Polio
PCV	Pneumococcal

- RV Rotovirus
- MMR Rubella
- DTaP Tetanus

Recommended: Age 7 through 18 Years Old

- Tdap Diphtheria
- HPV Human papillomavirus
- Flu Influenza (annual)
- MCV4 Meningococcal
- Tdap Pertussis (whooping cough)
- Tdap Tetanus

The Guam DPHSS provides vaccinations clinics throughout the year in order to protect children and adults against diseases. Oftentimes, the vaccinations are free, such as during the H1N1 outbreak in 2009 and early 2010.

Issues and Opportunities

Although each communicable disease has specific issues, four common themes were identified. These themes are described in the following paragraphs.

A lack of awareness and understanding limits disease prevention potential.

In order to effectively control and protect against large scale spread of communicable diseases, the public needs to be aware of the risks and methods of protection against such diseases and potential outbreaks.

Public health experts agree that it is only a matter of time before a worldwide influenza pandemic, such as the one that killed over 50 million people in 1918, occurs again. Recent outbreaks such as SARS and H1N1 have demonstrated the need for better communication on health issues and the need for people to be aware of risks and options available to protect themselves, including immunization. During the H1N1 outbreak in 2009 and 2010 (identified by the World Health Organization [WHO] as a global pandemic on June 11, 2009), the DPHSS offered immunization clinics free of charge, but it is up to an individual to take the initiative to get vaccinated (WHO, June 2009).

For more information on wellness and prevention, also see Section 8.

> Unless the appropriate prevention methods are implemented, it is only a matter of time before a worldwide influenza pandemic, such as the one that killed over 50 million people in 1918, occurs again.

Proper diagnosis and disease surveillance is limited to cases experienced by someone seeking medical attention.

Certain communicable diseases may be difficult to identify or diagnose due to their lack of specific symptoms. For example, flu symptoms are very common and generally those with symptoms assume they have the flu, when in fact it may be something less severe, such as a common cold. Medical testing can result in the correct identification of a disease; however, there are a variety of reasons why a person may resist visiting a doctor to have these tests completed, such as a general aversion to seeking medical attention if they do not feel their situation is dire, fear of getting tested, lack of accessible public transportation, concern over or inability to pay out-of-pocket expenses, or lack of health insurance.

Limited laboratory facilities on Guam (and the region as a whole) constrain proper diagnosis as well. Current laboratory facilities on Guam lack the ability to culture and test some specimens, resulting in tests being sent to Hawaii to confirm a diagnosis. Guam also lacks the ability to test for some air, food and water borne contaminants that impact human health. The ability to test and confirm results in a short timeframe is imperative to containing and treating potentially pandemic-type diseases (i.e. Dengue Fever, SARS, Influenza) from spreading within civilian, military, guest worker and tourist populations. As Guam is a central hub for human movement between the Far East and United States, it is critical that a high quality of health is maintained on Guam to help limit the spread of disease to Hawaii, the continental United States, and other countries.

Isolation of infected individuals, which can be difficult, is sometimes the only way to prevent a disease from spreading.

Depending on the specific disease and its current stage, individuals may need to be isolated from interacting with others in order to prevent spread of the disease. For example, people who have the flu should remain away from, or minimize contact with, healthy individuals in order to prevent it from spreading. Failure in doing this is common among children who are in the early stages of a disease and attend day care or school. They then unknowingly introduce the infected agent (such as germs) into these locations and to classmates, who then carry the infected agent into their homes.

> Those who have a high chance of interacting with infected individuals should get vaccinated to prevent becoming sick themselves.

For diseases that are not transmitted by casual interaction, such as sexually transmitted diseases (STDs), infected individuals should abstain from sexual interaction with others or take appropriate protections to avoid spreading the disease.

Guam is a regional hub for many activities in the Western Pacific, including transportation, trade, tourism, healthcare, and education. As such, it is easy to spread diseases among the population, both from visitors and from residents returning from travel outside of Guam. Coupled with its relatively compact area, an outbreak of a communicable disease could quickly spread across the island. Major events that happen on Guam can also have regional repercussions.

Although a simple and straightforward method of controlling the spread of communicable diseases would be to isolate those infected and provide appropriate treatment, this is rarely a realistic solution due to a variety of factors, including a person's potential reluctance for such isolation as well as the unlikelihood of being able to isolate an entire population of infected persons.

> As globalization continues to diversify our communities, the potential for the spread of communicable diseases will increase.

During the military buildup construction phase, this will be a greater issue due to the number of foreign workers who will be living and working in close quarters and proximity to each other. These immigrants may bring with them diseases or may become sick and not report their condition or seek medical treatment. Close living and working conditions will make it harder to contain the spread of communicable diseases.

Treatment possibilities may be limited by economic and other factors.

A vast number of communicable diseases now have vaccines that can prevent the disease from occurring in inoculated individuals and medicines that can cure an illness, ease the symptoms of an illness, and reduce the potential for the spread of the illness. For others, like hepatitis B, there is no cure, and treatment focuses on the reduction or suppression of symptoms. However, there are several factors that must be considered when evaluating the effectiveness of large scale immunizations or treatment.

- Inexpensive antibiotics have become so widespread and commonly available that they are sometimes overused and have become less effective. As a result of this and the ability of some organisms to evolve antibiotic resistance, some diseases have become more resistant to treatment using routine medications, thus posing greater health risks than they did previously.
- Due to recent global economic trends, many people and families have had to reduce spending and are on tighter budgets. In addition, a large number of people do not have health insurance to be able to help pay for treatment or certain vaccinations, which can be costly. Lack of personal resources is a key factor in people not getting all the vaccinations they should (for them or their children), or being properly treated for infections or diseases.

- Although proper treatment is generally effective in curing certain diseases, it does not immunize an individual from contracting the disease again. This is often the case with STDs. Thus, those who have overcome the disease once will still need to take steps to prevent reinfection.
- Access to care is a key issue relevant to treatment. Insurance, or lack thereof, plays a role in this aspect. A 2005 survey of Guam's residents indicated that 29.6% of the population did not have health insurance (DPHSS, 2007). A survey conducted for this Strategic Plan in 2010 reported that 15% did not have health insurance.

9.1 Viral Hepatitis

"Hepatitis" is inflammation of the liver and refers to a group of viral infections that affect the liver. There are five types of hepatitis, given the designations of A, B, C, D, or E. The most common types are hepatitis A, hepatitis B, and hepatitis C.

According to CDC data for the US between 2003 and 2008, the percent of persons ever infected with these three hepatitis types breaks down as follows:

- Hepatitis A 29.1% – 33.5%
- Hepatitis B 4.3% – 5.6 %
- Hepatitis C 1.3% – 1.9%

While the percent ever infected with hepatitis A is large, it is not a chronic disease and can be treated. The CDC also reports that the number of hepatitis A, B, and C cases has significantly dropped since the late 1990s.

It is believed the actual number of people living with hepatitis is far greater than the number of reported cases because a large portion of infected individuals are unaware of their condition. It is estimated that roughly 65% of those infected with hepatitis B and 75% of those infected with hepatitis C are unaware that they have such infections (Colvin and Mitchell, 2010). It is estimated that approximately 80,000 new infections occur each year worldwide.

Viral hepatitis is the leading cause of liver cancer and the most common reason for liver transplantation. It is predicted that between 2010 and 2020, approximately 150,000 people in the US will die as an outcome of liver cancer and end-stage liver disease resulting from chronic hepatitis B or C infections. In the US, an estimated 3.5 to 5.3 million people, equivalent to around 1% to 2% of the country's total population, are currently living with chronic hepatitis B or C infections. This is broken down to an estimated 800,000 to 1.4 million cases of chronic hepatitis B infections and 2.7 to 3.9 million cases of chronic hepatitis C infections. Hepatitis B and C are often asymptomatic, thus those infected with either disease may remain unaware of their condition until years later when they can potentially develop symptoms of cirrhosis or hepatocellular carcinoma.

Global Efforts to Combat Hepatitis

CDC Division of Viral Hepatitis

The CDC's Division of Viral Hepatitis (DVH) receives $17.6 million in funding to provide scientific and programmatic research for the prevention, control, and elimination of hepatitis infections in the US. The Division of Viral Hepatitis is a part of the National Center for HIV, Viral Hepatitis, STD and TB Prevention, and benefits from the collaboration and coordination of servicing similar populations for these diseases. (NASTAD, 2009) DVH performs many roles around the globe, roles include: researcher, monitor, developer, collaborator, aider, educator, and information exchange liaison. DVH provides technical and programmatic assistance to state and local governments and non-governmental organizations in the development and implementation of programs that educate and prevent the spread of the hepatitis viruses. Furthermore, DVH conducts surveillance studies and epidemiological reports to better inform and prepare national and international health leaders about outbreaks and infection rates with the goal of minimizing the spread of further infections and diseases associated with hepatitis such as liver disease. Through the various studies and reports generated by DVH's research function, the division also assists in the development of diagnoses that may further prevent the spread of the hepatitis virus. DVH's multi-faceted mission provides cutting-edge information and assistance to organizations around the globe.

World Hepatitis Alliance

The World Hepatitis Alliance was formed in 2008 as a non-profit, patient-led organization supporting people living around the world with hepatitis B and C. The Alliance's strategic goal is eliminating hepatitis worldwide by working with governments through education and awareness activities. The Alliance works as an advocate with the WHO to educate and promote the awareness of viral hepatitis in effort to diminish the stigma associated with hepatitis infections and prevent the spread of the virus. Additionally, the Alliance works with member groups to ensure an effective, suitable strategy is developed to build capacity and awareness of viral hepatitis. A great example of the Alliance's work is the annual awareness day known as World Hepatitis Day. This activity is designed to gather all stakeholders affected by viral hepatitis (governments, organizations, and individuals) in effort to create real policy change in the way of testing and treatment of the disease.

Additional Resources

Visit the following web resources for additional information on hepatitis.

American Liver Foundation
The American Liver Foundation exists to facilitate, advocate, and promote education, support, and research for the prevention, treatment, and cure of liver disease. The Foundation produces a wide variety of educational resources for the patients and their families as well as healthcare professionals.

www.liverfoundation.org

CDC Viral Hepatitis Site
The CDC's DVH provides scientific and programmatic foundation and leadership for the prevention and control of hepatitis. General information on hepatitis A, B, C, D, and E is available through the DVH both in the form of general information and educational materials for the general public as well as statistics and more technical information for healthcare professionals. All CDC Fact Sheets are available online free of charge; however, hard copies of various publications can also be ordered in limited quantities without charge.

www.cdc.gov/hepatitis

Hepatitis Foundation International
The Hepatitis Foundation International is dedicated to the eradication of viral hepatitis by providing people reliable information needed to make well-informed decisions regarding their personal health and the health of loved ones. The Foundation provides educational materials, provides community outreach and awareness, serves as advocates for hepatitis patients, and supports research into prevention, treatment, and cures for viral hepatitis. Efforts to reach their goal of eradicating hepatitis are accomplished through collaboration with patients, health educators, and medical professionals. The Foundation also offers a free hotline to anyone seeking information of assistance with this disease.

www.hepfi.org

World Hepatitis Alliance
The World Hepatitis Alliance is a not-for-profit international organization comprised of a coalition of advocacy groups worldwide. The World Hepatitis Alliance serves as a global voice for the hundreds of millions of people worldwide living with chronic hepatitis B or C. The Alliance collaborates with governments to improve awareness, prevention, care, support, and access to treatment and to ultimately eradicate these diseases.

www.worldhepatitisalliance.org/TheWHA.aspx

WHO Hepatitis Fact Sheets and Q&A
Hepatitis and its various forms are one of the many topics addressed by the WHO. Through its website, the WHO provides fact sheets, addresses frequently asked questions, and provides technical information on this group of viruses.

www.who.int/topics/hepatitis/en/

Hepatitis A

Hepatitis A is caused by infection with the hepatitis A virus (HAV) and has an incubation period of approximately 28 days. HAV infection does not result in chronic infection or chronic liver disease. Acute liver failure from hepatitis A is rare (overall case-fatality rate: 0.5%). The antibody produced in response to HAV infection persists for life and prevents reinfection. Most people with hepatitis A recover with no lasting liver damage and resulting fatalities are rare.

HAV replicates in the liver and is shed in high concentrations in feces anytime between two weeks before and one week after the onset of clinical illness. HAV infection is primarily transmitted by the fecal-oral route, by either person-to-person contact or consumption of contaminated food or water. Blood borne transmission of HAV is less common, but does occur. HAV may occasionally be detected in saliva in experimentally infected animals, but transmission by saliva has not been demonstrated.

Due to the circumstances in which it is transmitted, people living or traveling to areas with poor sanitation or hygiene are more likely to contract an HAV infection. In the US, nearly half of all reported hepatitis A cases have no specific risk factor identified. Among adults with identified risk factors, the majority of cases are among men who have sex with other men, persons who use illegal drugs, and international travelers (especially those traveling to developing countries).

Where do we Stand? Evaluating Trends

Current Trends

As shown on Table 9-2 and Figure 9-1, for much of the past decade, Guam experienced hepatitis A rates that were lower than the other geographic areas in the comparison group, with rates near or under 1 case per 100,000. Despite it's relatively healthier status in previous years, hepatitis A morbidity rates significantly increased on Guam starting in 2008 and continuing in 2009. This is most likely due to an influx of older cases that were unreported until 2008 and 2009. These previously unreported cases may have existed for several years, but due to new reporting measures were all accounted for at once, thus skewing the numbers. A slight increase in cases was also experienced by Hawaii at this time while morbidity rates in the US and Puerto Rico continued on a downward trend.

Moving Forward

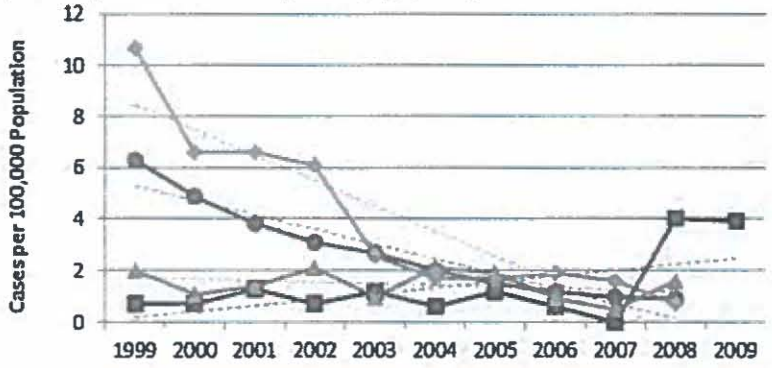
Guam Average	1.1 cases / 100,000 persons
Trending	↑
Guam 2009 Rate	3.9 cases / 100,000 persons
Goal	0.3 cases / 100,000 persons
5-Year Target	2.0 cases / 100,000 persons

In comparison to the goals established in the Healthy People 2020 plan, Guam has historically maintained a rate not too far off the goal established. Data for 2008 and 2009 show a significant uptick away from this goal.

Table 9-2. Average Hepatitis A Morbidity Rates, 1999-2008

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	1.1	2.7	1.5	4.0
Trend	↑	↓	↓	↓

Figure 9-1. Hepatitis A Morbidity Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	0.7	0.7	1.3	0.7	1.2	0.6	1.2	0.6	0.0	4.0	3.9
US	6.3	4.9	3.8	3.1	2.7	2.0	1.5	1.2	1.0	0.9	
Hawaii	2.0	1.1	1.4	2.1	1.0	2.1	1.9	0.9	0.5	1.6	
Puerto Rico	10.7	6.6	6.6	6.1	2.6	1.7	1.7	1.9	1.6	0.7	

Source: CDC, Morbidity and Mortality Weekly Report, Annual Summary of Notifiable Diseases for the United States, 1999 – 2008
DPHSS Office of Epidemiology and Research, "Annual Summary of Notifiable Diseases – Guam – 2009

Existing Condition and Trends

In 2007 there were an estimated 25,000 new infections in the United States as compared to 32,000 new cases of HAV infection in 2006. Approximately 11 to 22% of persons infected with HAV are hospitalized each year and approximately 100 cases of HAV result in death.

As Figure 9-1 displays, there has a relatively low morbidity rate of hepatitis A on Guam. Conditions on Guam are generally sanitary and do not promote the spread of HAV. Historically, the people of Guam have experienced significantly fewer exposures to hepatitis A relative to that experienced by the US, Hawaii, and Puerto Rico. Occurrence of this disease has not typically been associated with a particular age group or ethnicity on Guam.

Despite its relatively healthier status in previous years, hepatitis A morbidity rates significantly increased on Guam starting in 2008. An increase in cases was also experienced by Hawaii at this time while morbidity rates in the US and Puerto Rico continued on a downward trend. This significant increase in 2008 and continuation in 2009 was primarily among people of Chamorro ethnicity, who accounted for approximately 71% of cases. Travel alerts issued in 2008 identify the cause of this increase as an outbreak of hepatitis A in Chuuk (Micronesia), which prompted the Guam Health Committee to introduce Bill 351 mandating travelers who had been in an affected jurisdiction for more than one week and who wish to enter the island to obtain a clean bill of health from a certified and recognized medical provider within one week of their arrival on Guam. Those who do not provide proof of clearance resulted in quarantine or mandatory treatment. This outbreak on Chuuk was attributed to heavy rains on the island that resulted in the overflow of raw sewage and incomplete municipal water treatment, potentially impairing drinking water source. (The Travel Doctor, August 11 2008). While these elevated rates are not typical based on disease surveillance data, the importation of the disease from off-island may pose a threat to additional increases if proper precautionary measures are not taken soon enough in the future.

The average hepatitis A morbidity rates (cases per 100,000 people) for Guam, the US, Hawaii, and Puerto Rico from 1999 to 2008 are presented in Table 9-2. The annual rates during this period are shown in Figure 9-1.

Issues and Opportunities

Asymptomatic hepatitis is often unknowingly transmitted to others.

Due to a lack of symptom manifestation in infected individuals, unknowingly transmitting the virus to an uninfected individual is a significant issue that requires attention in order to prevent the spread of HAV. Symptoms generally correlate with the age of a person, and infected children or adolescents are less likely to, and often do not show symptoms. In areas of the world that are highly endemic of HAV, the majority of children may become infected during childhood, thus resulting in low infection rates in adults.

Vaccination rates among adults remain low.

Since transmission of HAV during sexual activity generally occurs through fecal-oral contact, measures typically used to prevent the transmission of other STDs (e.g., use of condoms) do not prevent HAV transmission. In addition, efforts to promote good personal hygiene have not been successful in interrupting outbreaks of hepatitis A.

Vaccination is the most effective means of preventing HAV transmission among persons at risk for infection. Hepatitis A vaccination is recommended for all children who are at least one year of age, for persons who are at increased risk for infection, for persons who are at increased risk for complications from hepatitis A, and for any person wishing to obtain immunity. Hepatitis A is one of the most frequently reported vaccine preventable diseases in the United States. In the US, while the percent of children vaccinated is slightly less than 50%, rates among adults are around 12% (CDC, National Immunization Survey, 2007).

Plans/Programs to Address Issues

Hepatitis A Vaccination

In 1995, a hepatitis A vaccine was developed and made available for public immunization purposes. The vaccine is recommended for all children at least one year of age, and requires two doses spaced at least six months apart. Since the vaccination is relatively new and was not a requirement when those currently in their adult years were born, the rate of immunization among adults is low.

Hepatitis B

Hepatitis B is caused by infection with the hepatitis B virus(HBV). The incubation period from the time of exposure to onset of symptoms is six weeks to six months. HBV is found in highest concentrations in blood and in lower concentrations in other body fluids (e.g., semen, vaginal secretions, and wound exudates). HBV infection can be self-limited or chronic.

Clinical case definitions of hepatitis B are identified as:

- Acute Hepatitis B – discrete onset of symptoms and jaundice or elevated serum aminotransferase.
- Chronic Hepatitis B - Persons with chronic HBV infection may be asymptomatic experiencing no evidence of disease, or persons may have a spectrum of diseases including cirrhosis or liver cancer.
- Perinatal Hepatitis B - Perinatal hepatitis B in the newborn may range from asymptomatic to fulminant hepatitis.

Existing Condition and Trends

Chronic HBV infections are a global occurrence, estimated to affect approximately 350 million persons and result in an estimated 620,000 HBV-related liver disease deaths each year. An estimated 800,000 to 1.4 million persons in the United States have a chronic HBV infection, resulting in approximately 5,000 deaths from the disease each year. It has been estimated that up to 10% of people living with HIV also have HBV infections (NASTAD, 2009).

Hepatitis B morbidity rates have been slowly declining in the US over the past decade, with the lowest morbidity rate ever recorded (a total of 4,519 cases or 1.5 cases per 100,000 population) in 2007. However, because many HBV infections are either asymptomatic or never reported, the actual number of new infections is believed to be approximately tenfold higher than recorded in annual reports. In 2007, an estimated 43,000 persons in the US were newly infected with HBV, a decrease from an estimated 46,000 cases in 2006. Rates are highest among adults; particularly males aged 25 to 44 years.

Because of its long incubation period of up to six months, conclusive identification of a source of infection is oftentimes difficult. However, outbreaks are often associated with long-term care facilities, particularly diabetic residents who are administered single-patient finger stick devices used on multiple patients, as well as the sharing of syringes and contaminated multi-use vials of medications.

Among persons with chronic HBV infection, the risk for premature death from cirrhosis or hepatocellular carcinoma is 15 to 25%. HBV is efficiently transmitted by percutaneous or mucous membrane exposure to infectious blood or body fluids that contain blood. Risk factors include, among others, use of needles for injection drugs, contact with infected blood or bodily fluids, being a hemodialysis patient, contact with an infected person, traveling to regions with intermediate or high rates of hepatitis B, as well as other risk factors associated with STDs.

> The significant fluctuations in recorded hepatitis cases on Guam have been attributed to a change in data sources in 2008, thus falsely indicating a sharp increase in cases.

Hepatitis B is the most commonly reported form of hepatitis infection that occurs on Guam. From 1999 to 2009, there were more reported cases of HBV than hepatitis A and C combined for each year except 2001, in which no cases were recorded for HBV. Although not as prevalent as other communicable diseases, the number of reported cases for HBV increased significantly in the middle and late 2000s due to a number of unreported, old cases being introduced in the data reports. While this reporting of old HBV cases seemingly caused a significant increase in reported cases in 2008, the cases were not new HBV cases.

Table 9-3 identifies the average morbidity rate of the four geographic areas from 1999 to 2008. Figure 9-2 shows the rates per 100,000 people on Guam for reported hepatitis B cases between 1999 to 2009, as compared to the rates of the US, Hawaii, and Puerto Rico from 1999 to 2008. The hepatitis B morbidity rate on Guam has been somewhat erratic, and has increased dramatically overall, while the morbidity rates on Hawaii, the US, and Puerto Rico have been steadily declining. The erratic pattern of hepatitis B morbidity has been attributed to inconsistencies in reporting cases; however, further assessment of related risk factors, including travel patterns, correlated human behaviors, and other potentially associated medical conditions, would be needed in order to evaluate and address underlying causes.

Where do we Stand? Evaluating Trends

Current Trends

Table 9-3 and Figure 9-2 show that hepatitis B rates on Guam have been much more sporadic than those for the US, Puerto Rico and Hawaii, but has spiked in the last three years and is now substantially higher than the other comparable jurisdictions. This is most likely due to an influx of older cases that were unreported until 2008 and 2009. These previously unreported cases may have existed for several years, but due to new reporting measures were all accounted for at once, thus skewing the numbers. As a result, Guam's average rate of 5.0 cases per 100,000 persons is higher than all of the other three geographies.

Moving Forward

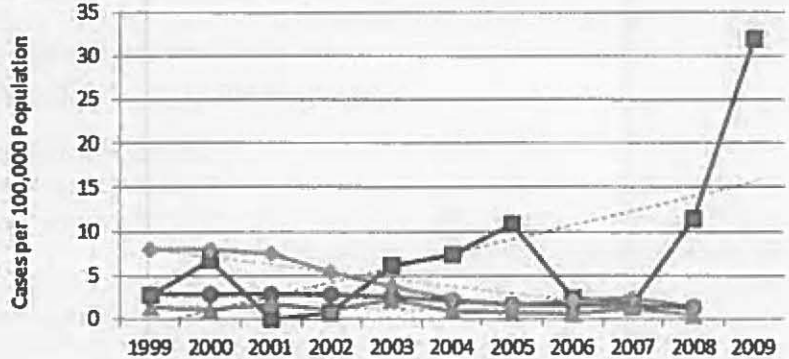
Guam Average	5.0 cases / 100,000 persons
Trending	↑
Guam 2009 Rate	32.0 cases / 100,000 persons
Goal	1.5 new cases in ages 19 and older / 100,000 persons
5-Year Target	5.0 cases / 100,000 persons

Guam's average rate of cases is not broken down by age groups, so it is difficult to tell how far away from the Healthy People 2020 goal it is. For all persons, Guam's rate is a little more than three times higher than the 2020 goal, and trending upwards due to a large amount of cases being reported in 2008 and 2009.

Table 9-3. Average Hepatitis B Morbidity Rates, 1999-2008

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	5.0	2.2	1.2	4.2
Trend	↑	↓	↓	↓

Figure 9-2. Hepatitis B Morbidity Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	2.7	6.7	0.0	0.7	6.2	7.4	10.8	2.4	1.8	11.5	32
US	2.8	2.9	2.8	2.8	2.6	2.1	1.7	1.6	1.5	1.3	
Hawaii	1.4	1.0	1.8	1.0	2.2	0.9	0.8	0.6	1.3	0.5	
Puerto Rico	7.9	8.0	7.5	5.4	3.7	2.3	1.6	2.1	2.4	1.3	

Source: CDC, Morbidity and Mortality Weekly Report, Annual Summary of Notifiable Diseases for the United States, 1999 – 2008
DPHSS Office of Epidemiology and Research, "Annual Summary of Notifiable Diseases – Guam – 2009

Issues and Opportunities

The asymptomatic nature of HBV infections has the potential to result in worsened health conditions and risks.

In adults, only approximately half of newly acquired HBV infections are symptomatic, and approximately 1% of reported cases results in acute liver failure and death. Risk for chronic infection is inversely related to age at infection: approximately 90% of infected infants and 30% of infected children aged five years or younger become chronically infected, compared with 2% to 6% of adults.

HBV can be transmitted without human contact, particularly in unsanitary conditions.

HBV can survive outside the body for at least seven days and still be capable of causing infection. The virus generally needs wet surfaces to remain alive and dry surfaces are much less likely to contain infectious viruses. This is a great concern for areas with low immunization rates or poor sanitary conditions. Although transmission of the virus from outside of the body is not a primary concern on Guam, any travelers to less developed areas of the world should be aware of HBV infection rates and take proper precautions to ensure safety.

Widespread vaccination against Hepatitis B has yet to occur.

Hepatitis B is preventable as a result of the development of its vaccine in 1981. Since 1991, infants have been routinely vaccinated against HBV. Although the cost-effectiveness of vaccination of at-risk adults has been demonstrated, implementation has not yet occurred, resulting in thousands of unnecessary infections each year. Chronic hepatitis B infection is a leading cause of liver disease and cancer in the United States, and effective treatments to clear the virus once infected remain elusive (NASTAD, 2009).

Asians and Pacific Islanders share a disproportionately high burden of disease.

Chronic hepatitis B virus infection is the most common cause of cirrhosis and liver cancer worldwide. In Asian and western Pacific countries where HBV is endemic, estimated prevalence of chronic HBV infection ranges from approximately 2% to 16%, and liver cancer is a leading cause of death. Although population-based prevalence data for Asians / Pacific Islanders living in the United States are lacking, they are believed to constitute a sizeable percentage of persons with chronic HBV infection in the United States, a country of low endemicity. The CDC estimates that at least half of individuals infected with hepatitis B in the US are of Asian or Pacific Islander descent.

In 2005, the Asian American Hepatitis B Program (AAHBP) conducted a seroprevalence study in New York City. The results of the study indicated that approximately 15% of participants, all of whom were of Asian descent, who had not been previously tested had chronic HBV infections. All of these participants identified were born outside of the US. Compared to the general US population rate of less than 1% living with chronic HBV infections, this is a huge disparity for people of Asian descent. Several of the countries from which participants originated from had endemic hepatitis B rates as high as 16%. Information for Asian ethnic group HBV infection prevalence across the US is limited; however, the B Free CEED group at NYU Langone Medical Center is currently working on methods for compiling and disseminating previous and current data trends for HBV prevalence for all Asian ethnic groups (B Free CEED, 2010; and CDC, May 12, 2006).

The WHO Western Pacific Region is home to approximately 28% of the global population, and yet maintains a disproportionate burden of the world's HBV-related morbidity and mortality figures. With an estimated 160 million cases of the 350 million chronic HBV infections worldwide, the Western Pacific Region accounts for nearly half of the global number of HBV infected people. In addition, HBV is responsible for almost 890 deaths per day in the Region, a mortality rate comparable to that of tuberculosis (WHO, Regional Office for the Western Pacific, 2007).

Plans/Programs to Address Issues

CDC's Global Efforts

The CDC has been working for many years on measures to protect against the spread of HBV in the US. The US rate of new HBV infections has declined by approximately 82% since 1991, when a national strategy to eliminate HBV infection was implemented. The decline has been greatest among children born since 1991, when routine vaccination of children was first recommended. High vaccination coverage rates, with subsequent declines in acute hepatitis B incidence, have been achieved among infants and adolescents. In contrast, vaccination coverage among the majority of high-risk adult groups has remained low and the majority of new infections occur in these high-risk groups.

STD clinics and other settings that provide services targeted to high-risk adults are ideal sites in which to provide hepatitis B vaccination to adults at risk for HBV infection. All unvaccinated adults seeking services in these settings should be assumed to be at risk for hepatitis B and should get vaccinated against the disease.

The CDC's national strategy to eliminate transmission of HBV infection includes:

- Prevention of perinatal infection through routine screening of all pregnant women for hepatitis B surface antigen (HBsAg) and immunoprophylaxis of infants born to HBsAg-positive mothers and infants born to mothers with unknown HBsAg status;
- Implementation of routine infant vaccination;
- Vaccination of previously unvaccinated children and adolescents through age 18 years; and
- Vaccination of previously unvaccinated adults at increased risk for infection.

Childhood immunization with three doses of the vaccine within the first 18 months has been proven to be the most effective strategy for prevention and control of hepatitis B. Infants receiving a hepatitis B vaccine are recommended to get one dose at birth, a second dose between one to two months old, and a third dose between six to eighteen months old. The CDC's Advisory Committee on Immunization Practices recommends that the following persons be vaccinated against hepatitis B:

- All infants, beginning at birth
- All children aged <19 years who have not been vaccinated previously
- Susceptible sex partners of HBsAg-positive persons
- Sexually active persons who are not in a long-term, mutually monogamous relationship (e.g., >1 sex partner during the previous 6 months)
- Persons seeking evaluation or treatment for a sexually transmitted disease
- Men who have sex with men
- Injection drug users
- Susceptible household contacts of HBsAg-positive persons.
- Healthcare and public safety workers at risk for exposure to blood or blood-contaminated body fluids
- Persons with end-stage renal disease, including pre-dialysis, hemodialysis, peritoneal dialysis, and home dialysis patients
- Residents and staff of facilities for developmentally disabled persons
- Travelers to regions with intermediate or high rates of endemic HBV infection
- Persons with chronic liver disease
- Persons with HIV infection
- All other persons seeking protection from HBV infection – acknowledgment of a specific risk factor is not a requirement for vaccination

All children attending public schools on Guam are required to be immunized for Hepatitis B.

In certain healthcare, evaluation, or treatment settings, a high proportion of clients have known risk factors for HBV infection. The Advisory Committee on Immunization Practices recommends universal vaccination of adults who receive care in those settings, including:

- Sexually transmitted disease treatment facilities
- HIV testing and treatment facilities
- Facilities providing drug-abuse treatment and prevention services
- Healthcare settings targeting services to injection drug users
- Correctional facilities
- Healthcare settings targeting services to men who have sex with men
- Chronic hemodialysis facilities and end-stage renal disease programs
- Institutions and nonresidential day care facilities for developmentally disabled persons

Screening and Management Guidelines

The CDC and the National Taskforce on Hepatitis B have issued guidelines to promote standardization for screening and treating HBV. The National Taskforce is specifically focused on serving the Asians and Pacific Islanders (API) communities, and its mission is to: support national, state, and local efforts to prevent hew hepatitis B infections through vaccination; to identify chronically infected individuals; and to offer appropriate treatment and cancer screening.

Their four goals consist of:

- Increase awareness and knowledge about hepatitis B among API
- Achieve universal vaccination of all API children birth to 18, as well as susceptible adults
- Identify individuals with chronic infection through hepatitis B screening of API adolescents and adults
- Provide appropriate treatment and screening for hepatocellular carcinoma among chronically-infected individuals

The CDC recommends routine testing for individuals born in Asia and other geographic regions with a 2% or higher prevalence of chronic hepatitis B virus infection, and for US-born individuals whose parents were born in regions with 8% or higher prevalence.

Western Pacific Regional Plan for Hepatitis B Control through Immunization (2007)

The World Health Organization's Western Pacific Region produced its Regional Plan for Hepatitis B Control Through Immunizations in 2007. Due to the disproportionate burden of HBV infections in this region relative to the region's population size, the WHO Western Pacific Region has identified the prevention and control of hepatitis B as an important regional public health priority. As a result of its efforts and in striving to build upon the achievements in immunization systems during the poliomyelitis eradication initiative, the region has adopted "hepatitis B control through universal childhood immunization as one of the pillars for strengthening immunization service delivery systems. The Western Pacific Region became the first WHO Region to set a time based goal of reducing chronic HBV infection rates to less than 2% among five-year old children by 2012." (WHO, 2007)

For countries to achieve that goal, the key programmatic strategies were identified as:

- Strengthen routine immunization services to achieve and sustain at least 85% coverage (preferably 90%) with three doses of hepatitis B vaccine by one year of age in each birth cohort. At least 80% coverage to be achieved in each district.
- Establish a system to deliver a timely scheduled birth dose (within 24 hours of birth), with the target to reach at least 80% of births at each sub-national level and at the national level.
- Institute catch-up immunization for older children, the first priority being children under five years of age, followed by those aged six to 15 years born before the start of vaccination, where resources allow and where infant immunization programs, including delivery of a timely birth dose, are relatively mature.
- Institute immunization requirements for high-risk population groups as the next priority after immunization of infants and younger children. However, immunization for health workers, among the high-risk population groups, can be taken as a priority along with infant immunization programs because of the operational ease of identifying and accessing this population group.
- Achieve predictable financing for hepatitis B vaccine for at least the next three years on a continuous rolling basis to avoid any disruptions in the program.
- Carry out advocacy and social mobilization activities. Include a hepatitis B control plan as an integral part of the multiyear plan for immunization programs.

Hepatitis C

Hepatitis C is caused by the hepatitis C virus (HCV) and can result in liver scarring, fibrosis or cirrhosis, liver failure, or liver cancer. Hepatitis C is the most common chronic viral infection that is passed through blood contact in the United States.

Transmission of the disease occurs through contact with infected blood and bodily fluids. Furthermore, the most common pathways of infection include the sharing of contaminated needles, syringes or other medical equipment

that punctures the skin. Transmission can also occur through sexual contact with an infected person, or may be passed on at birth.

Since HCV is transmitted via blood, the characteristics of the most at-risk population groups vary from those at risk for acquiring other types of hepatitis. Individuals identified as being having the greatest at risk for contracting HCV include:

- Current or former injection drug users,
- Recipients of clotting factor concentrates before 1987,
- Recipients of blood transfusions before July 1992,
- Long-term hemodialysis patients,
- Persons with known exposures to HCV,
- HIV-infected persons, and
- Infants born to infected mothers.

HCV infection becomes chronic in approximately 75 to 85% of cases, which can lead to additional complications later in life. Approximately 15 to 25% of persons clear the virus from their bodies without treatment and do not develop chronic infection; however, the reasons for this are not well understood.

Existing Condition and Trends

The CDC estimates that between three and five million people in the US are living with HCV infections; and of that number, approximately 3.2 million have chronic hepatitis C. With no vaccine to prevent infection, hepatitis C is now one of the leading causes for adult liver transplantation in the United States. Although transmission of hepatitis C has significantly decreased in the US over the past twenty years, the incidence of liver disease and liver cancer is rising, as persons who were initially infected decades ago began to develop complications related to their infection. An estimated 12,000 persons in the United States die from HCV-related illness per year. Causes of death include chronic liver disease, cirrhosis, and liver cancer. Without increased resources for counseling, testing, and medical referral services, the CDC predicts that deaths due to HCV will double by 2020 (NASTAD, 2009).

Approximately 25% of people with HIV / AIDS also have Hepatitis C.

Although not as prevalent as hepatitis B, the morbidity rates of HCV infections on Guam between the years of 2000 and 2009 have fluctuated a great deal. A decline in cases was experienced during the first few years of the decade, even resulting in zero reported cases for 2001 and 2002. The rate rose during the middle part of the decade and then declined again. Beginning in 2008, the rate began to rise and skyrocketed in 2009 by almost five fold. This increase is attributable to a change in data collection methods that resulted in the identification of "old cases" for the first time.

As aforementioned relative to the HBV infections, a discovery of "old" cases occurred explaining the significant hike in reported cases for 2008. The cases occurred as far back as the early 1980s, and the data was just recently identified and included to the dataset in effort to establish a complete data report for hepatitis cases occurring on Guam.

Table 9-4 identifies the average rate of the four geographic areas from 1999 to 2008. Figure 9-3 shows the rates per 100,000 people on Guam for reported hepatitis C cases between 1999 to 2009, as compared to the rates of the US, Hawaii, and Puerto Rico from 1999 to 2008.

Issues and Opportunities

A vaccine that protects against HCV infection does not yet exist.
Prior infection with HCV does not protect against later infection with the same or different genotypes of the virus. This is because persons infected with HCV typically have an ineffective immune response due to changes in the virus during infection. For the same reason, no effective pre- or post-exposure prophylaxis (i.e., immune globulin) is available. Although a vaccine for hepatitis C does not currently exist, research into the development of a vaccine is under way.

Several risky behaviors expose a person to hepatitis infections.
The most recent surveys of active injection drug users (IDUs) indicate that approximately one third of young (aged 18 to 30 years) IDUs are HCV-infected.

Where do we Stand? Evaluating Trends

Current Trends

Table 9-4 and Figure 9-3 show that for several years, Guam's hepatitis C rate was in line with the US, Hawaii, and Puerto Rico, but had some sporadic increases during 2003 to 2005, and more noticeably, in 2008 and 2009. This is most likely due to an influx of older cases that were unreported until 2008 and 2009. These previously unreported cases may have existed for several years, but due to new reporting measures were all accounted for at once, thus skewing the numbers. As a result, Guam's average rate of 2.3 cases per 100,000 persons is higher than all of the other three geographies.

Moving Forward

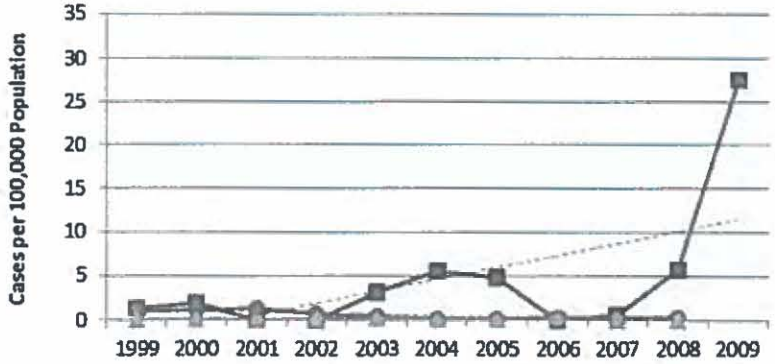
Guam Average	2.3 cases / 100,000 persons
Trending	↑
Guam 2009 Rate	27.5 cases / 100,000 persons
Goal	0.2 new cases / 100,000 persons
5-Year Target	

Guam's average rate of hepatitis C cases in recent years has been 10 times greater than the Healthy People 2020 goal. In addition, a recent influx of cases has (perhaps artificially) increased this rate to almost 140 times greater than the 2020 goal.

Table 9-4. Average Hepatitis C Morbidity Rates, 1999-2008

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	2.3	0.6	0.1	0.0
Trend	↑	↓	↓	↓

Figure 9-3. Hepatitis C Morbidity Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	1.3	2.0	0.0	0.0	3.1	5.5	4.8	0.0	0.6	5.7	27.5
US	1.1	1.2	1.4	0.7	0.4	0.2	0.2	0.3	0.3	0.3	
Hawaii	0.0	0.2	0.0	0.1	0.3	0.2	0.1	0.5	0.0	0.0	
Puerto Rico	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Source: CDC, Morbidity and Mortality Weekly Report, Annual Summary of Notifiable Diseases for the United States, 1999 - 2008
DPHSS Office of Epidemiology and Research, "Annual Summary of Notifiable Diseases – Guam – 2009

Older and former IDUs typically have a much higher rate (approximately 70 to 90%) of HCV infection, reflecting the increased risk of continued injection drug use. The high HCV prevalence among former IDUs is largely attributable to needle sharing during the 1970s and 1980s, before the risks of blood borne viruses were widely known and before educational initiatives were implemented.

Screening procedures in blood banks formerly did not test for certain diseases, thus resulting in further spread of the disease.
Now that more advanced screening tests for HCV are used in blood banks, the risk is considered to be less than one chance per two million units transfused. Before 1992, when blood screening for HCV became available, blood transfusion was a leading means of HCV transmission.

A lack of awareness and understanding of hepatitis infections exists among patients and healthcare workers alike.
According to the National Academy of Sciences report "Hepatitis and Liver Cancer: A National Strategy for Prevention and Control of Hepatitis B and C", upon reviewing evidence on the prevention and control of hepatitis B and hepatitis C, it was identified that there are underlying factors that impede current efforts to prevent and control these diseases. Three major factors were found to be:

- Lack of awareness and knowledge among healthcare and social service providers about chronic viral hepatitis.
- Lack of awareness and knowledge among persons who are at risk, the general public, and policy makers about chronic viral hepatitis.
- Lack of understanding of the seriousness and extent of chronic viral hepatitis as a public health problem, resulting in inadequate public resources being allocated to prevention, control, and surveillance programs.

This situation of a significant lack of understanding and awareness of the disease has resulted in several consequences as identified by this report:

- The full extent of the problem is unknown due to inadequate surveillance programs and underreporting of acute and chronic infections.
- Persons who are at risk are unaware that they are at risk or how to protect themselves from becoming infected.
- Persons who are at risk may not have access to proper preventative services.
- Individuals may be chronically infected and not know it.
- Many healthcare providers do not properly screen people for risk factors or are unaware of proper management procedures for infected persons.
- Many infected people do not have adequate access to testing, social support, and / or medical management services.

Plans/Programs to Address Issues

The CDC DVH published a roadmap to reducing chronic hepatitis C disease burden in 2001, titled the *National Hepatitis C Prevention Strategy*. However, this strategy has not been funded by Congress and has not come to fruition as a result. Although the DVH provides $5 million of funding to support the position of an Adult Viral Hepatitis Prevention Coordinator for 49 states, five cities, and the District of Columbia, the current funding identified is only enough to pay for the position and not for the actual provision of prevention services. In addition, this funding resource does not cover the Territory of Guam (NASTAD, 2009).

9.2 Influenza

Influenza, commonly referred to as simply "the flu", is a respiratory disease caused by various strains of the influenza virus. There are several different types of flu, most of which generally cause mild illness; however, more rare strains can result in severe illness, or can be fatal. The severity of the illness is often influenced by the health of the individual whereby those with weakened immune systems and the elderly are typically more susceptible to severe illness.

The primary mode of transmission of the flu is through droplets created when an infected person coughs, sneezes, or talks. Generally, the disease is obtained when these infected droplets land in the mouth or nose of an uninfected person. Less commonly, the flu can also be transmitted by touching a surface or object that has flu virus on it and then touching the mouth, nose, or eyes.

Individuals who are at greater risk for serious complications resulting from the flu include the elderly, young children, pregnant women, and people with certain health conditions or weakened immune systems.

Existing Condition and Trends

The flu is a common communicable disease found worldwide. Its prevalence varies from year to year based on the strain and effectiveness of vaccination programs. The spread of the disease is easily protected against through individual vaccinations. Not everyone chooses, or can get, a vaccination, resulting in great fluctuations of reported cases from year to year. Shortages, costs, and distribution issues also impact the ability of people to get vaccinations.

There are a variety of strains of the influenza virus and new strains are constantly evolving and spreading. As previously mentioned, the bird flu and H1N1 influenza are two strains that each spread rapidly, affecting populations that had not already developed a resistance to such flu variations. Globalization and increased travel has played a major factor in the spread and variation of influenza viruses.

Due to its location in the Western Pacific, Guam may serve as a strategic monitor to warn of the potential spread of Asian flu viruses to the US. In particular, in 2007, two reported cases of flu on Guam were determined to be avian flu, a variant strain of the flu that was a serious concern in Asia.

Rates of reported flu cases are difficult to track as a result of many people not seeking medical attention when sick with the flu. Because the symptoms of flu can vary in severity and milder cases can be mistaken for a common cold, people may be complacent about seeking medical treatment, thus resulting in an underreporting of cases and lack of surveillance data. It is for these reasons that the US does not record and publish morbidity data for the flu.

Guam does track reported influenza cases, which are published in the DPHSS Office of Epidemiology and Research's Annual Summary of Notifiable Diseases. Surveillance of the disease reveals that the rate of reported flu cases on Guam started experiencing a decline of over 70 cases per 100,000 people after 1999; however, rates remained fairly steady for the years 2000 to 2006. This decline may actually be a result of underreporting of cases as a result of people commonly not seeking medical attention as previously stated.

After remaining relatively stable for a decade, the rate of reported flu cases spiked in 2007 when the avian flu virus spread from Asia. In 2008, the number of cases reported normalized to that of previous years. The next spike in cases reported occurred in 2009, due primarily to a global pandemic of H1N1 influenza which was a particularly harsh and rapidly-spreading strain. There were 337 reported cases of pandemic influenza A H1N1 on Guam in 2009. The first known case on Guam was reported in an individual after travel from Texas illustrating the global connectivity and spread. The outbreak occurred concurrently with a second wave of seasonal flu, which compounded the resultant health effects. Two H1N1 infection related deaths were recorded on Guam during this year. Table 9-5 shows the average rate for Guam from 1999 to 2009, while annual morbidity rates experienced on Guam are displayed on Figure 9-4.

Issues and Opportunities

A person infected with the flu virus can be contagious before experiencing symptoms.

A person who is infected with the flu can become contagious even before they have symptoms. While most healthy adults can infect others starting one day before symptoms appear, and up to seven days after becoming ill, people with

Where do we Stand? Evaluating Trends

Current Trends

The CDC does not track and record influenza cases within the US, so no comparable data was available to compare Guam against the US, Hawaii, and Puerto Rico. Morbidity rates for influenza in Guam had been reasonably good for most of the last decade, becoming lower from a spike in 1999 to a relatively low rate until 2007. Since 2007, however, there was a substantial spike in 2008. This trend should be monitored carefully to determine if it will continue at this higher level.

Moving Forward

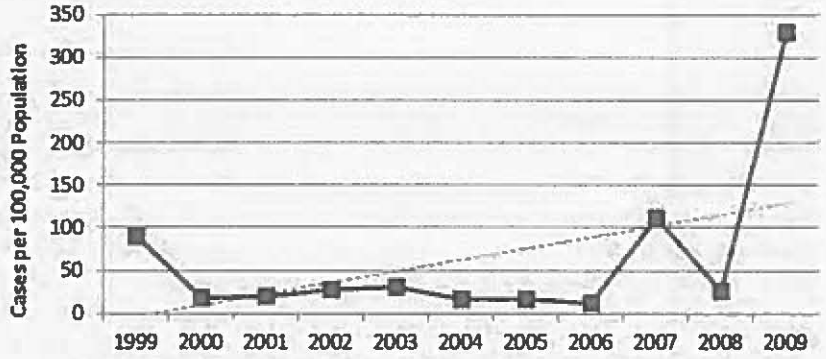
Guam Average	63.3 cases / 100,000 persons
Trending	↑
Guam 2009 Rate	328.7 cases / 100,000 persons
Goal	No goal established
5-Year Target	60.0 cases / 100,000 persons

Flu strains and seasons can vary from year to year, and new strains that appear that are not properly prepared for can have a large impact on new cases. Although the average rate of cases for the past decade on Guam is greater than the 5-year target identified as part of this Plan, this was largely influenced by a flu outbreak in 2009 that was an anomaly for the time period. The Healthy People 2020 plan did not establish a target goal for the number of cases for flu.

Table 9-5. Average Influenza Morbidity Rates, 1999-2009

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	63.3	--	--	--
Trend	↑	--	--	--

Figure 9-4. Influenza Morbidity Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	90.2	18.1	19.7	26.9	30	17.5	16	11.7	111.8	25.6	328.7

Source: DPHSS Office of Epidemiology and Research, "Annual Summary of Notifiable Diseases – Guam – 2009

weaker immune systems or those who have children possess the potential to pass the infection onto others during a longer time span.

Many cases of the flu go unreported due to the characteristic symptoms being similar to those experienced with other diseases such as the common cold.

Characteristic symptoms of the flu include fever, sore throat, cough, fatigue, and aches. Because these symptoms are fairly common to other diseases and conditions, many people experiencing a combination of these symptoms may falsely assume they have the flu. In some cases, it may be a less severe malady, such as a common cold, while other cases may be symptoms of something much more severe and proper or necessary treatment may not be sought. Seeking medical attention for the flu or from experiencing flu-like symptoms is commonly avoided, thus adding to the potential for the spread of this condition.

Annual vaccinations are needed to protect against new strains of the virus.

Every year has a "flu season" during which influenza infections are more prominent and widespread. Flu season can start as early as October and can last as late as May, and varies from year to year and by geographic location. Generally, seasonal flu activity peaks shortly after Fall begins on Guam. Different strains of flu require different types of vaccinations and medical treatment, thus highlighting the importance of seeking medical attention if symptoms present. In addition, quantities of certain vaccines may be limited, particularly when strains of new or rarer viruses are introduced.

A seasonal flu vaccine is available for people over the age of six months, and it is recommended by the CDC that everyone receive the vaccination each season. It is more important for individuals who are at risk, such as young children, pregnant women, the elderly, or persons with compromised immune systems to receive the vaccination early in the flu season. Other groups who should receive a vaccination are people who live in nursing homes and other long-term facilities, and people who live with or care for those with a high risk of the flu such as healthcare workers, caretakers, and teachers/day care center employees.

Certain people should not receive the flu vaccine without first consulting a physician, including those who:

- Have a severe allergy to chicken eggs,
- Have previously experienced a severe reaction to a flu vaccine,
- Developed Guillain-Barre syndrome within six weeks of previously getting a flu vaccine,
- Are younger than six months old, or
- Have a moderate or severe illness with a fever.

Plans/Programs to Address Issues

Guam's DPHSS sponsors and administers regular vaccination clinics that provide free or discounted flu vaccines to certain at-risk groups, as well as for the general public. These are generally offered at various times throughout the flu season on Guam.

Wellness and Education

The best way to be protected from catching the flu is to get a flu vaccination each flu season. The flu vaccine is available in two forms: a flu shot, administered via needle and approved for people six months and older; and a nasal-spray flu vaccine, administered into the nasal cavity and approved for healthy people ages two to 49 years old who are not pregnant. Seasonal flu vaccines often are designed to protect against several flu strains. The vaccines are designed each year to protect against the types of influenza that researchers believe will be most common that season, the most recent addition being the 2009 H1N1 flu vaccines. It is recommended that these vaccines should be administered beginning in September and continue throughout the flu season.

Additional Resources

The following resources provide additional information about the flu.

Guam DPHSS Pandemic Influenza Information

Guam's DPHSS provides facts and information about pandemic flu via their web site. Information provided includes how it starts and is spread, basic facts on the flu, and guidance on how to determine if an illness is the flu or a common cold. Educational materials, including fact sheets, brochures, and posters are available for download.

www.dphss.guam.gov/pandemic.htm

HHS: FLU.GOV

The website www.flu.gov provides comprehensive information on seasonal, H1N1, H5N1 (bird) and pandemic influenza for the general public, health and emergency preparedness professionals, policy makers, government and business leaders, school systems, and local communities. This online resource contains a "Myths and Facts" section, free posters and fact sheets for download, and a variety of detailed information on planning and preparing for the flu season.

www.flu.gov/

CDC — Influenza Topics

The CDC serves as an online source for detailed information on influenza, including seasonal and pandemic flus. Topics covered include flu basics, information for health professionals, prevention strategies, information on treatment, activity, and surveillance. Information tailored by demographic components is also provided, and includes cohorts such as people at high risk, people with asthma, people with diabetes, healthcare workers, the elderly and pregnant women. All CDC Fact Sheets are available online free of charge. Hard copies of various publications can also be ordered in limited quantities without charge.

www.cdc.gov/flu/

9.3 Mumps

Mumps, also known as epidemic parotitis, is a communicable disease caused by the mumps virus that produces painful swelling of the salivary glands. The virus is spread from person to person via respiratory droplets emitted when an infected person sneezes, coughs, or through direct contact with an item that has been contaminated with infected saliva. Although mumps can occur at any age, it is most common among children between ages 2 to 12 who have not been vaccinated. Most people who get mumps will develop a lifetime-immunity from getting it again after the infection runs its course; however, a small percentage of people may be prone to re-infection later in life.

Existing Condition and Trends

Mumps infection rates on Guam have varied drastically when compared to totals for the US and Puerto Rico. During the time period of 1999 to 2008, these two areas had very low rates of less than one infection per 100,000 people, except for the year 2006 when the US saw an increase in reported cases. Comparatively, Guam has had a wide range of morbidity rates over that same time period. The most notable was in 2000 when the infection rate rose by five times the rate of the previous year. Although the rate went up significantly, it only accounted for a total of 16 reported cases in 2000. Fifteen of these cases were in children younger than 14, while the remaining one case was in the 20 to 24 age group.

Table 9-6 shows the average rates per 100,000 people of reported mumps infections between 1999 and 2008 for Guam, the US total, Hawaii, and Puerto Rico. The increase in cases in 2000 added significantly to the larger average rate among Guam as compared to the other areas. Figure 9-5 illustrates the morbidity rate trends of mumps cases for the four areas from 1999 to 2008.

The year 2009 saw another period of no reported mumps cases on Guam, which was followed by a significant outbreak in 2010. The outbreak started in January 2010 and spread quickly among unvaccinated people, largely circulating within the elementary and middle schools population. Between the months of January and October, over 450 cases were reported to DPHSS, which is a rate of nearly 250 cases per 100,000 people. The number of cases in 2010 has not been officially released; therefore, reporting a rate for 2010 infections is currently not possible. In response to the outbreak, DPHSS with CDC provided a third dose of vaccination to students (two doses is the normal recommended vaccination schedule) in the most affected schools in efforts of reducing their chances of contracting the disease. DPHSS also offered free vaccination clinics for adults (Macaluso, Oct. 2010).

> Five new mumps cases are documented per day in Guam according to public health officials. In response to the recent outbreak, a measles, mumps, and rubella (MMR) vaccination campaign is underway.

The reason for the sudden and rapid spread of mumps has been identified as the close community and island geography of Guam coupled with the fact that the vaccination has a 10% fail rate (Walker, May 2010). There is no cure for mumps other than bed rest, hydration, and managing pain with medication. Furthermore, mumps is a self-limiting disease meaning the viral infection will run its course and die resulting in minimal, if any residual effects (WHO, 2007). Usually, individuals will not experience additional mumps infection during their lifetime. Death from mumps is highly improbable.

Issues and Opportunities

There are other complications that can be associated with mumps.

The primary manifestation of mumps is swelling of the salivary glands; however, there are other complications that can occur in some people. Children do not usually have more severe reactions, but older individuals who get mumps have a higher risk of complications, including: infection of other organ systems such as the nervous system; mild forms of meningitis; painful testicular swelling in males (which can sometimes result in infertility or subfertility); spontaneous abortion in pregnant females; and more rarely – pancreatitis; encephalitis; hearing loss; and inflammation of the ovaries in females (oophoritis).

Where do we Stand? Evaluating Trends

Current Trends

Guam's morbidity rate for mumps has fluctuated a great deal over recent years. As can be seen in Table 9-6 and Figure 9-5, this varies as compared to the US and Puerto Rico, while Hawaii had some variation similar to Guam. Overall, Guam's rate, similar to Hawaii's was trending downwards as well. Puerto Rico and the US both trended upwards, but at a minimal amount. Guam's average of 2.5 cases per 100,000 persons was twice that of Hawaii's, and much greater than the US and Puerto Rico. Although data was not currently available for the exact number, there was a large outbreak of mumps in 2010.

Moving Forward

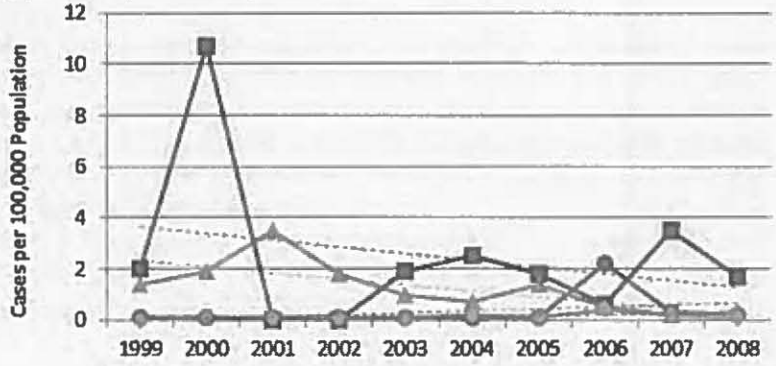
Guam Average	2.5 cases / 100,000 persons
Trending	↓
Guam 2009 Rate	Not available (1.7 cases / 100,000 person in 2008)
Goal	Less than 1 case / 100,000 persons
5-Year Target	1.0 case p/ 100,000 persons

Guam's average rate in recent years was 1.5 times greater than the goal set forth in the Healthy People 2020 plan; however was trending downwards in recent years. This does not account for a significant outbreak in 2010, which was an anomaly based on recent data trends.

Table 9-6. Average Mumps Morbidity Rates, 1999-2008

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	2.5	0.3	1.3	0.1
Trend	↓	↑	↓	↑

Figure 9-5. Mumps Morbidity Rates, 1999-2008



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Guam	2.0	10.7	0.0	0.0	1.9	2.5	1.8	0.6	3.5	1.7
US	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.2	0.3	0.2
Hawaii	1.4	1.9	3.5	1.8	1.0	0.7	1.4	0.5	0.2	0.3
Puerto Rico	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.4	0.2	0.1

Source: CDC, Morbidity and Mortality Weekly Report, Annual Summary of Notifiable Diseases for the United States, 1999 – 2008

There is no cure for mumps once the infection has started.
There is no specific treatment to cure mumps once it has been contracted. Those who are infected with the virus have to allow it to run its course. There are remedies that will help to reduce the discomfort associated with the swelling. Common methods for reducing pain are application of heat or ice to the affected area, warm salt water gargles, drinking extra fluids, eating soft foods, and administering acetaminophen / paracetamol (Tylenol) to reduce pain. Aspirin should not be used with children and teens (from 6 months to 18 years) because of its suggested link to causing Reye's syndrome, which can affect organs such as the brain and liver. In addition, fruit juices and acidic foods should be avoided as they stimulate the salivary glands.

Mumps can be spread from person to person before symptoms occur.
The timeframe from catching the mumps virus to when the onset of symptoms begins ranges from 14 to 25 days, but is typically between 16 to 18 days. The period in which a person is contagious can be up to six days before symptoms start until around nine days after symptoms start. For this reason, an infected person can transmit the disease before they even know they have it, and so anyone who has not previously had mumps and has been in contact or around someone with mumps should be cautious and ensure that they take measures to sanitize and reduce the chance of possibly spreading the disease until they are sure they do not have it.

The mumps vaccine does not guarantee lifelong immunity in all people.
The MMR vaccine, named for the diseases it protects against (measles, mumps, and rubella), will protect most people from contracting the three diseases over the course of their life. Some individuals will be fully immunized against mumps after one dose of MMR vaccine. The first dose is considered to be 97% effective. As a precaution, it is recommended that all children receive a second dose before entering school, to produce immunity in those who did not respond to the first dose. A very small percentage of people still remain unprotected after the second dose and may get mumps sometime in their life (Immunization Action Coalition, 2010). This is part of the cause that was associated with the mumps outbreak on Guam in 2010.

Plans/Programs to Address Issues

MMR Vaccine

The incidence rate of mumps has decreased in the years since a vaccine was first developed. The first mumps vaccine was developed in the late 1940s for the sole purpose of protecting against mumps. Today, the common vaccine is called the MMR vaccine and covers measles, mumps, and rubella. It was first licensed in the US in the early 1970s. The CDC recommends that all children between ages 12 to 15 months receive a first dose of vaccine, followed by a second dose around four to six years old (and before entering school). In the US, this vaccine is now being combined with the varicella (chickenpox) vaccine and now labeled as MMRV. Through the use of vaccinations, mumps has gone from an "inevitable" disease to one that is very rarely seen in large numbers. However, there are still some instances when a mumps outbreak occurs on a larger scale among populations that have not been vaccinated.

Wellness and Education

Since mumps can be treated by vaccine and has a high implementation currently, it is not a major concern among immunized populations. However, it is still important for people, in particular parents and teachers, to be aware of potential mumps outbreaks. Recent events have shown that even people immunized can get the disease, and during an outbreak they must be extra cautious. The CDC recommends that people take extra precautions to cover their nose and mouth during sneezing and coughing and wash hands thoroughly before touching any objects or surfaces. In addition, those infected with mumps should remain home from school or work for at least five days after the onset of symptoms to reduce the chances of spreading the disease. During the outbreak in 2010, extra vaccination clinics were conducted by DPHSS, and additional efforts were put into place on public outreach and education.

Additional Resources

The following resources provide additional information about mumps.

CDC Mumps Website

Like most common communicable diseases, the CDC hosts a web page dedicated to mumps. The site provides a general overview of the diseases, its symptoms, who it is most likely to affect, methods for lowering risk of contracting the disease, and information on the vaccine. In addition it has helpful information for travelers going to areas more common for mumps, clinical questions and answers, and a resources and other publications page.

http://www.cdc.gov/mumps/

Immunization Action Coalition

The Immunization Action Coalition maintains a website for a wide variety of communicable diseases that provides information on the diseases. This website's "Mumps" section provides a good overview of mumps and includes information on the disease, its associated vaccination, photos of how the disease affects infected children, stories on people who have been infected, a reference section, recommendations for safeguarding and handling infection, and useful links to other websites.

http://www.vaccineinformation.org/mumps/index.asp

9.4 Salmonellosis

Salmonellosis is an infection caused by the bacteria Salmonella that results in food poisoning and infection of the lining of the small intestine. Specific factors that increase an individual's risk of infection include:

- Eating improperly prepared or stored food, especially undercooked poultry and eggs,
- Being exposed to persons or family members with a recent infection,
- Keeping of pet iguanas or other lizards, turtles, or snakes (hands should always be washed thoroughly after handling),
- Having been in an institutional setting, and
- Having a weakened immune system.

Existing Condition and Trends

Outbreaks of salmonellosis are typically sporadic due to the factors that cause such infections. A historical review of outbreaks on Guam, in Hawaii, and in Puerto Rico indicates fluctuations in morbidity rates; however, trends experienced in the US have been relatively stabilized (primarily due to the large population base, which tends to moderate fluctuations). These patterns are likely the result of various sanitation issues, particularly in food processing and handling. It is commonly believed that the majority (more than 90%) of salmonella infections are of foodborne origin. Adequate inspection and testing of those handling food in a commercial setting (i.e., restaurant) is important for maintaining lower rates of illness from foodborne bacterial poisoning.

Table 9-7 identifies the average salmonellosis morbidity rate experienced by the four geographic areas from 1999 to 2008. Figure 9-6 shows the rates per 100,000 people on Guam for reported salmonellosis cases between 1999 to 2009, as compared to the rates of the US, Hawaii, and Puerto Rico from 1999 to 2008. As illustrated on Figure 9-6, Guam's incidence rate has been dropping over the last several years, and has a rate lower than the other comparative areas since 2007.

The age groups most vulnerable to infections from salmonellosis are the very young and the elderly, as well as those whose immune systems are weakened. Those who have experienced the highest rates of infection include children ages four years and younger, particularly infants younger than one year of age (with an average age-adjusted morbidity rate of 120 per 100,000 population in the US), followed by children ages one through four (with an average age-adjusted rate of 50 cases per 100,000 in the US).

This pattern is also evident in the morbidity trends observed on Guam, where infants and young children generally experienced the highest rates of infection during the ten-year period from 2000 to 2009; with the age group of less than one year old accounting for the most reported cases on both Guam and in the US. Although the rate for those younger than one year old varied from year to year, it ranged from 26% of all reported cases to 63% on Guam, depending on the year. The years of 2006 and 2008 saw the lowest reported percentage at 26%, while 2009 had the highest at 63% of cases. For the age range of one to four years old, the lowest percentage year was 9% in 2009, while the highest was 34% in 2004 and 2006.

Although the exact causes of increased infection rates in infants and young children are not yet clear, research and studies on this topic have identified a number of factors that could cause the infections. It is believed that exposure to salmonella from our environment is more common than instances of the infection; however, several other indicators that are thought to lead to increased risks of salmonellosis infection among young children and infants include:

- Consumption of concentrated liquid formula as opposed to breast milk,
- Exposure to reptiles,
- Riding in a contaminated shopping cart that was exposed to or in proximity to meat or poultry,
- Traveling to locations with increased rates of infection and sanitation conditions below what they are accustomed to, and
- Attending day care with a child experiencing diarrhea.

FD

(Source: Jones, 2006; Haddock, 1993)

Where do we Stand? Evaluating Trends

Current Trends

Although Guam's rate of salmonellosis is generally trending downwards as shown in Table 9-7 and Figure 9-6, there is no distinguishable downward trend. The rates vary every few years, which is different than Hawaii and Puerto Rico, which tend to go up and down almost every other year. The US, in contrast, was fairly steady for the timeframe. Guam had the second highest average rate (22.3 cases per 100,000 persons), falling only shortly behind Hawaii. Puerto Rico was slightly lower, and the US rate only about 70% of Guam's rate.

Moving Forward

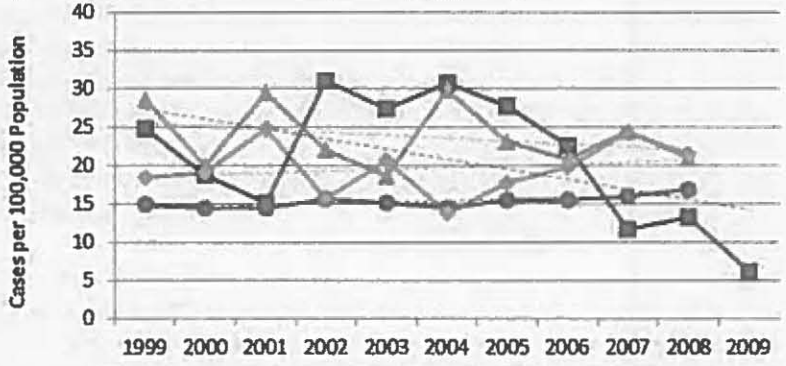
Guam Average	22.3 cases / 100,000 persons
Trending	↓
Guam 2009 Rate	6.2 cases / 100,000 persons
Goal	11.4 cases / 100,000 persons
5-Year Target	5.0 cases / 100,000 persons

Although Guam's average rate of salmonellosis in recent years has been almost double the goal set forth in the Healthy People 2020 plan, it has declined significantly over the years, reaching a rate in 2009 that is almost half the goal rate. If this trend continues, Guam will have no problem maintaining the 2020 goal.

Table 9-7. Average Salmonellosis Morbidity Rates, 1999-2008

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	22.3	15.3	23.8	19.6
Trend	↓	↑	↓	↑

Figure 9-6. Salmonellosis Morbidity Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	24.8	18.8	15.2	30.9	27.3	30.7	27.7	22.5	11.7	13.2	6.2
US	14.9	14.5	14.4	15.7	15.2	14.5	15.4	15.5	16.0	16.9	
Hawaii	28.5	20.0	29.4	22.1	18.5	29.8	23.0	20.8	24.4	21.0	
Puerto Rico	18.4	19.1	24.7	15.6	20.7	13.8	17.7	19.8	24.2	21.5	

Source: CDC, Morbidity and Mortality Weekly Report, Annual Summary of Notifiable Diseases for the United States, 1999 – 2008
DPHSS Office of Epidemiology and Research, "Annual Summary of Notifiable Diseases – Guam – 2009

Issues and Opportunities

Improper food handling, storage, and cooking all greatly increase a person's chances of developing salmonellosis.

Many salmonellosis infections are the result of ingestion of or exposure to contaminated food, such as: vegetables that do not undergo a preparation process that would get rid of the bacteria, unsanitary preparation surfaces, and not fully cooking meats, especially poultry. Recent major outbreaks in the US include one in 2008 thought to be caused by ingredients in fresh salsas (serrano and jalapeño peppers) and one in 2009 among peanut butter and peanut-based products. Proper handling and preparation of food is the best way to protect against salmonellosis infections, as well as properly sanitizing all food preparation equipment, materials, and surfaces to ensure any germs are removed.

Reptiles kept as pets may expose their handler to the salmonellosis bacteria.

Certain reptile species are known to carry salmonellosis bacteria that can be transferred to humans. Pet stores in the US are restricted by a Food and Drug Administration (FDA) ruling from selling turtles smaller than four inches as they are more likely to carry salmonella. Reptiles have become increasingly popular pets over the years and young children are often interested in playing with these family pets. It is important for parents to always ensure that hands are washed after handling reptiles. Moreover, parents should always supervise children when handling reptiles to prevent ingestion of reptile skin or fecal matter.

Soil may also expose humans to the Salmonella bacteria.

In years past specifically in the 1980s and 90s, Guam realized several cases of salmonellosis infections among infants and children. The reported cause seemingly originated in Guam's soil. Infants and children were exposed to such soil at playgrounds, sandboxes, and any soils tracked-in on footwear worn by adults and other children. The Salmonella bacterium was introduced into the soil through reptile and dog feces (Haddock & Nocon, 1993). A sure way to protect against a salmonellosis infection from soil contamination is to practice consistent hand washing behaviors after play and before consuming food and drink or touching a body orifice where the bacteria may enter the body.

Plans/Programs to Address Issues

FDA Monitoring

The FDA monitors food safety and salmonella infections throughout the US. In times when public health and safety are at risk, the FDA has the power to recall suspected foods to prevent additional cases of salmonellosis from occurring as a result of contaminated foods.

WHO Global Salmonella Surveillance

In 2000, the WHO launched the Global Salmonella Surveillance and Laboratory Support Project. This project is an international external quality assurance program for monitoring and identifying salmonella strains among various countries. It also promotes the enhancement of member countries' capacity to detect and respond to salmonella outbreaks and improve global surveillance. In 2004, 156 laboratories from 82 countries participated in the testing of various salmonella strains.

DPHSS Health Inspections

Guam Code Annotated (GCA) Title 10 is the enabling legislation for which the DPHSS's Division of Environmental Health (DEH) is regulated and performs their responsibilities to GovGuam. GCA Title 10 includes 25 mandates for which GovGuam regulates food, buildings, and licensing of professionals who work in health-related environments (Compiler of Laws, 2011). Currently, there are approximately 5 of the 25 mandates that are underfunded and 9 mandates that are unfunded that prohibit DEH from operating at an effective level. The mandates requiring immediate, full support include Sanitary Permit, Eating and Drinking Establishments, Food Establishments, and Institutional Facilities. These mandates enable GovGuam to inspect sites, issue permits, revoke permits, fine establishments for non-compliance, and authorize closure of habitual non-compliant establishments. As of November 2010, there were over 3,000 permitted health-regulated establishments on Guam (DPHSS, Issuance of Sanitary Permit, 2010). Guam law states that these establishments must be inspected quarterly and determined compliant to the sanitary permit issuance law. However, the DEH is currently experiencing a shortage in staff

to enable these quarterly inspections and the ongoing monitoring required to ensure the permitted, health-regulated establishments are compliant.

Wellness and Education

The WHO has identified that control of salmonellosis infections from poultry products is necessary in three key areas: public education, improvements to slaughter hygiene and technology, and control of infections in poultry. Controlling infections in poultry, specifically chickens, requires monitoring of chicks, chickens, and flocks, taking appropriate action during an outbreak, effective biosecurity, and maximizing the protective mechanisms for individual birds.

Additional Resources

The following resources provide additional information about salmonellosis.

CDC — Salmonella Information

The CDC provides general information, diagnosis and treatment, technical information, and prevention and is available to the public online. CDC also provides updates on outbreaks as they occur as well as published reports and publications on salmonellosis occurrences.

www.cdc.gov/salmonella/

CDC — Salmonella Infection and Animals

Because many salmonella infections occur as a result of contact with animals, the CDC also has a resource dedicated to providing information on what salmonellosis is, how it can be transmitted from various types of animals, and how one can protect oneself.

All CDC Fact Sheets are available online free of charge. Hard copies of various publications can also be ordered in limited quantities without charge.

www.cdc.gov/healthypets/diseases/salmonellosis.htm

9.5 Sexually Transmitted Diseases

Sexually transmitted diseases (STD) make up one of the most commonly diagnosed cases of communicable diseases in the US and on Guam. These types of diseases are spread from person to person through sexual intercourse/contact with an infected person; contact with an infected area (usually the genitals, anus, or mouth); or exposure to infected bodily fluids. STDs are not spread through indirect means such as airborne particulates or objects. They may be presented as bacterial, fungal, viral, parasitic, or protozoal. The most common types of STDs include chlamydia, gonorrhea, syphilis, herpes, and human papillomavirus (HPV).

Table 9-8 shows the 2007 rates for the key STDs reported on Guam as recorded. As shown, chlamydia and gonorrhea are the primary STDs based on morbidity rates. These two STDs are covered in more detail in this section based on their significance relative to the number of individuals affected. HIV/AIDS and syphilis are also addressed in more detail in this section based on the significance of the diseases and their potential impact on Guam. Despite herpes and HPV being some of the more common STDs, they are not regularly recorded by the CDC and thus were not included in the annual summary reports. These two diseases are not discussed in detail in this section due to lack of comparable data among the US, Hawaii, and Puerto Rico. Note: The STD statistics used in the remainder of this section might not match exactly the numbers presented on Table 9-8 as they are derived from a different source to allow them to be presented by ethnicity.

Although each type of STD generally has its own unique symptoms, sometimes infected individuals do not show any obvious symptoms (they are asymptomatic), thus are unaware that they have any disease. This lack of knowledge of infection can lead to an individual transmitting the disease inadvertently to another person.

Many STDs can be asymptomatic. Regularly scheduled physicals and check-ups with a doctor can help avoid many complications that can result when a disease is allowed to progress undetected and untreated.

Table 9-8. STD Morbidity Rates per 100,000 Population on Guam, As Compared to the US Total, 2007

Ethnicity	HIV	AIDS	Chlamydia	Gonorrhea	Herpes Simplex Type 2	HPV	Syphilis Total
Chamorro	8.2	4.1	391.2	71.1	2.7	8.2	2.7
Filipino	0.0	0.0	190.6	13.2	2.2	2.2	2.2
White	0.0	0.0	229.5	144.5	34.0	34.0	17.0
Micronesian[1]	0.0	8.1	1,577.6	244.0	0.0	0.0	252.1
Black	0.0	0.0	512.8	170.9	0.0	0.0	0.0
Asian	0.0	0.0	288.2	46.5	0.0	0.0	18.6
Other or unknown	0.0	0.0	1,037.0	160.0	N/A	193.1[2]	0.0
GUAM TOTAL	3.5	2.3	473.9	81.9	4.6	26.5	21.9
US TOTAL[3]	N/A	12.5	370.2	118.90	N/A	N/A	13.7

Source: Department of Public Health and Social Services, Office of Epidemiology and Research, Annual Summary of Notifiable Diseases Guam – 2007

Notes:

1 The term "Micronesian" as used in this report includes persons of Commonwealth of the Northern Mariana Islands, Federated State of Micronesia, Republic of Belau, or Republic of the Marshall Islands ethnicity. Persons from the FSM State of Chuuk accounted for 66.67% of the STD's reported among Micronesians living on Guam in 2007.

2 All 2007 HPV cases of unknown ethnicity were reported by military public health authorities.

3 Centers for Disease Control and Prevention. Summary of Notifiable Diseases - 2007

As a result of medical advancements and modern technology, there are treatments and immunizations for certain STDs, such as HPV. It should be noted that, although a person may at one time contract an STD and be treated and cured of it, this does not in and of itself immunize that individual from

acquiring the disease again. Prevention of contracting the disease again requires practicing safe sexual activity as well as a heightened awareness of signs and symptoms. Pregnant women with certain STDs can pass the disease on to their baby during vaginal birth, which can lead to additional complications and sometimes infant death.

All sexually active people are at risk for contracting an STD. Awareness, protection, and safe practices are key factors in reducing risk.

Although all sexually active people are at risk for contracting an STD, there are certain factors that increase one's risk level, which include inconsistent and improper usage of condoms, infants born to infected mothers, men who have sex with men, and uninfected individuals with an infected partner. Individuals who have multiple sex partners or enter into a new relationship also have an increased risk of becoming infected. Depending on the specific STD, those who come in contact with bodily fluids of infected persons (such as caregivers of infected persons) also have increased risk. Those with the lowest risk of getting an STD are people in a long-term monogamous relationship where both partners are known to be disease-free based on STD testing.

Guam has experienced a significant increase in reported cases of various STDs, particularly chlamydia, gonorrhea, and syphilis, over the past decade. This is due to many reasons, one of which is the large transient population, including tourists, immigrants, and service members that pass through Guam from around the world.

For the military, all new personnel assigned to Andersen Air Force Base (AFB) are briefed on STDs, as are service members on Naval ships who have liberty time on Guam. According to Andersen's Public Affairs Officer, 1.4% of the 1,750 active-duty personnel on Andersen AFB tested positive for an STD in 2005. *(Source: Weaver, 2006)*

The surest way to avoid transmission of STDs is to abstain from sexual contact, or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected. For sexually active individuals that are not in a long-term mutually monogamous relationship, latex condoms, when used consistently and correctly, can reduce the risk of contracting a STD.

Wellness and Education

There are a variety of programs available as a result of both private and public funding sources that have been established for STD education and prevention. In fiscal year 2009, the CDC allocated $117,077 to Guam's STD Prevention Funding, equivalent to roughly 0.1% of the US's total of $118,872,796. This allocation amounts to less than a dollar per capita on Guam. For comparison, Hawaii received $585,876, or 0.5%, of the total funding.
(Source: Kaiser Family Foundation, 2010)

Prutehi Hao! (Protect Yourself)

Prutehi Hao! is a community organization on Guam that manages the Guam DPHSS STD / HIV Program. This program has been active on Guam for more than 25 years and receives federal funding from the CDC and the Health Resource Services Administration of the US Department of Health and Human Services. Some of the services provided through this program include free and confidential STD and HIV testing, risk reduction counseling, health education, general educational and awareness resources for the public, and treatment including AIDS Drug Assistance Program.
(Source: Prutehi Hao!, 2010)

The DPHSS partnered with the CDC to launch the 2009 Prutehi Hao! "Got Lucky? Get Tested" program in October 2009 in order to promote safer sex practices and provide easier access to testing for diseases such as gonorrhea and chlamydia, which can be performed using self-collection kits.

www.prutehihao.org

There are many resources available to assist with the prevention, detection, and treatment of STDs. Prutehi Hao! (Protect Yourself) is one of many and provides several free and confidential services to enhance the community's knowledge of STDs and HIV.

www.prutehihao.org

Guam Department of Education

A large number of Guam schools already include required courses during grades 6, 7, or 8 that provide sexual education to students. Among US territories, a median of 76.4% of schools with grades 6, 7, or 8 had a required courses taught with at least one of eleven key HIV, STD, or pregnancy topics for the 2007-2008 school year. Compared to the rest of the US, a median of 51.8% of schools across states and 59.7% of schools across cities with grades 6, 7, or 8 had required courses with at least one of the eleven topics. The key focal point of many of these courses is discussion about HIV and AIDS, but pregnancy and other STDs are discussed, including how they are spread, prevention, safety, and consequences of unprotected sex. Other topics include the benefits and value of sexual abstinence, the effect that media, social and cultural norms, and family have on attitudes towards sexual behavior, the importance of communication, and compassion for those living with HIV or AIDS.

Table 9-9 shows the percentage of Guam schools that taught various HIV, STD, or pregnancy-related course topics in any of grades 6, 7, or 8 during the 2007-2008 school year.

Table 9-9. Percentage of Secondary Schools on Guam Teaching Specific HIV, STD, or Pregnancy Prevention Topics, 2007-2008 School Year

	Topical Area	Percent of Schools
1.	How to access valid and reliable information, products, and services related to HIV, other STDs, and pregnancy	100.0%
2.	The difference between HIV and AIDS	85.7%
3.	How HIV and other STDs are transmitted	85.7%
4.	How HIV and other STDs are diagnosed and treated	85.7%
5.	Health Consequences of HIV, other STDs, and pregnancy	85.7%
6.	The benefits of being sexually abstinent	85.7%
7.	How to prevent HIV, other STDs, and pregnancy	85.7%
8.	The influences of media, family, and social and cultural norms on sexual behavior	71.4%
9.	Communication and negotiation skills related to eliminating or reducing risk for HIV, other STDs, and pregnancy	71.4%
10.	Goal-setting and decision-making skills related to eliminating or reducing risk for HIV, other STDs, and pregnancy	71.4%
11.	Compassion for persons living with HIV or AIDS	71.4%
12.	All 11 HIV, STD, and pregnancy prevention topics	42.9%

Source: CDC, School Health Profiles: Characteristics of Health Programs Among Secondary Schools, 2008

CDC Division of Adolescent and School Health

The CDC's Division of Adolescent and School Health provides funding to the Guam Department of Education. This funding is used to conduct the Youth Risk Behavior Survey and to implement programs and policies whose purpose is to increase awareness and prevention of STDs and to reduce the risk of sexual activity and behavior among students that could lead to the spread of STDs, HIV infections, or unplanned pregnancies.

Additional Resources

CDC Division of STD Prevention

The CDC's Division of STD Prevention exists for the purpose of providing "national leadership, research, policy development, and scientific information to help people live safer, healthier lives by the prevention of STDs and their complications." The Division of STD Prevention assists health departments, healthcare providers, and non-government organizations through the provision of science-based information to assist in the development of public policy and planning. As part of this effort, the "Division of STD Prevention Strategic Plan 2008 – 2013" was released in 2008. All CDC Fact Sheets are available online free of charge. Hard copies of various publications can also be ordered in limited quantities without charge.

www.cdc.gov/std/dstdp/

Existing Conditions and Trends

Chlamydia

Chlamydia is a STD that is caused by the bacterium *Chlamydia trachomatis*. It is by far the most commonly occurring bacterial STD in both Guam and the US. Although this condition can be asymptomatic, it is generally characterized by:

- Burning sensation during urination,
- Discharge from, or pain or tenderness in the sex organs or rectum,
- In men, symptoms similar to gonorrhea,
- In women, painful sexual intercourse, and
- In women, symptoms of pelvic inflammatory disease and liver inflammation similar to hepatitis.

According to the CDC, chlamydia can be easily treated and cured with antibiotics. A single dose of azithromycin or a week of doxycycline (twice daily) are the most commonly used treatments.

Chlamydia is at times referred to as a "silent epidemic" because the infection often does not present any symptoms.

Chlamydia is currently the most prevalent communicable disease experienced in Guam, Hawaii, Puerto Rico, and the US that is required to be reported to the CDC. The disease has been on an upward trend in all four of the comparative geographic locations, but Guam has broken that trend in the last few years, and since 2007, has shown a decrease in morbidity rates. With the exception of 2008 (the last comparative date), Guam has consistently reported notably higher morbidity rates than the US as a whole. In comparison to individual states, in 2006, Guam was reported to have had the fifth-highest rate of chlamydia infections in the US (Weaver, 2006). Both the fluctuations in number of cases and the high rate of infection have attracted attention by health service providers; however, a clearly identified cause for the higher rates, and the recent downturn, has yet to be confirmed. Although not confirmed, leaders of Guam's STD prevention programs have attributed the increase in cases to Guam's transient population of tourists, immigrants, and service members.

Table 9-10 identifies the average rate of the four geographic areas from 1999 to 2008. Figure 9-7 shows the rates per 100,000 people on Guam for reported chlamydia cases between 1999 to 2009, as compared to the rates of the US, Hawaii, and Puerto Rico from 1999 to 2008. In addition to Guam's recent downward trend, another interesting aspect of this data is the significantly lower morbidity rates for Puerto Rico. This may be due to a lower endemic prevalence coupled with a smaller transient population.

According to the Annual Summary of Notifiable Disease reports released each year by Guam DPHSS's, Office of Epidemiology and Research, the annual summaries for the years of 2000 to 2009 identify that the age cohort that accounts for the majority of cases (approximately three quarters of all cases) is those age 15 to 29 years old. This same pattern has been experienced in the US as well. Disease assessments and studies have identified the age category of mid-teens to late twenties as the subpopulation most susceptible to contracting chlamydia, and therefore the target population for education and prevention efforts.

Where do we Stand? Evaluating Trends

Current Trends

Table 9-10 and Figure 9-7 show that Guam has had the highest rate of chlamydia compared to the US, Hawaii, and Puerto Rico in recent years. All four geographies have been trending upwards. Most notably, Guam's average rate of 401.2 cases per 100,000 persons was almost four times greater than Puerto Rico's. For the most part, all geographies' rates increased steadily; however, Guam's and Puerto Rico's began to show a noticeable decline starting in 2008.

Moving Forward

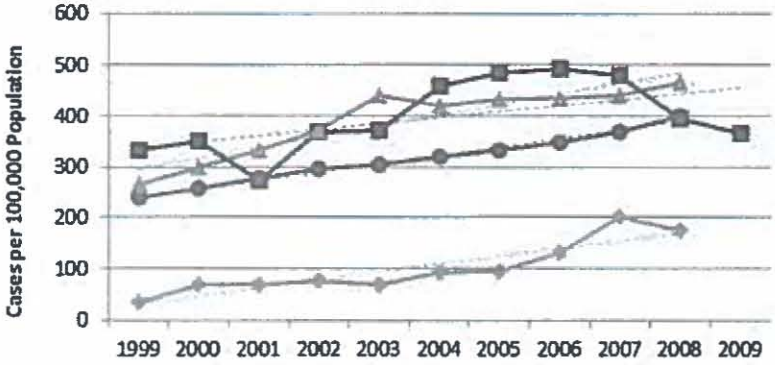
Guam Average	401.2 cases / 100,000 persons
Trending	↑
Guam 2009 Rate	367.4 cases / 100,000 persons
Goal	No goal established
5-Year Target	200.0 cases / 100,000 persons

The 5-year target set out for chlamydia trends in this Plan is half of what Guam's average has been in the past decade. However, a decline has been seen in recent years, which is a step in the right direction towards reaching this target. The 2009 rate is still far away from the 5-year target, and much work is still needed. The Healthy People 2020 plan did not establish goals for chlamydia rates.

Table 9-10. Average Chlamydia Morbidity Rates, 1999-2008

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	401.2	314.9	391.2	101.7
Trend	↑	↑	↑	↑

Figure 9-7. Chlamydia Morbidity Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	333.6	352.3	272.8	369.1	371.4	458.9	486.1	492.3	480.7	394.8	367.4
US	240.8	257.5	278.3	296.6	304.7	319.6	332.5	347.8	370.2	401.3	
Hawaii	267.1	299.3	332.6	373.0	441.6	421.9	434.6	435.1	440.4	466.3	
Puerto Rico	37.1	69.3	69.8	76.2	70.5	92.5	95.4	130.4	201.3	174.4	

Source: CDC, Morbidity and Mortality Weekly Report, Annual Summary of Notifiable Diseases for the United States, 1999 – 2008
DPHSS Office of Epidemiology and Research, "Annual Summary of Notifiable Diseases – Guam – 2009

The occurrence of chlamydia is most prevalent among those age 15 to 29 due to their increased levels of sexual activity with multiple partners paired with a decreased awareness of the potential dangers of unprotected sex.

Using 2007 data from the DPHSS, a breakdown of chlamydia cases by ethnicity was prepared (see Table 9-8). As shown on the table, Micronesians (including persons of CNMI, FSM, Republic of Palau, or Marshall Islands ethnicity), had a significantly higher rate of chlamydia (1,578.6 cases per 100,000 persons) then Chamorro (391.2 cases per 100,000 person) and the overall average for Guam (473.9 cases per 100,000 persons). As the Micronesian population is expected to make up a sizable portion of immigrants seeking work as part of the military buildup, screening, educational outreach, and treatment will become even more important given the sizable increase in the rate of infected individuals.

Gonorrhea

Gonorrhea is an STD that is caused by the bacterium *Neisseria gonarrhoeae*. It thrives and multiplies easily in the warm, moist areas of the reproductive tract, including the cervix, fallopian tubes, and uterus in women, and the urethra in men and women. It can also grow in the mouth, throat, eyes, and anus. Gonorrhea is one of the most commonly diagnosed STDs in Guam and the United States as a whole. It is spread and contracted through sexual intercourse and contact with the penis, vagina, mouth, or anus of an infected person. It can also be spread from a mother to her baby during vaginal birth.

The CDC estimates that over 700,000 people acquire new gonorrheal infections every year, only about half of which are reported to CDC. A national gonorrhea control program was implemented in the US in the mid-1970s, thus leading to a national decline in infections from 1975 to 1997.

In the past 10 years, the national rate has become somewhat stable, with scattered fluctuations yet ending at an overall decline for an average of 111.6 cases per 100,000 people. According to the CDC, the highest rates of gonorrhea infections in the US are reported by sexually active teenagers, young adults, and African Americans.

Gonorrheal infections tend to occur most amongst sexually active teenagers, young adults, and African Americans.

Gonorrhea rates on Guam have fluctuated greatly over the past decade, as shown on Figure 9-8. While 2008 and 2009 data show a decline from the peak in 2007, rates since 1999 have shown an upward trend in rates of infection. These large annual fluctuations in reported number of cases were also experienced on Hawaii, although they have had a stronger downward trend since peaking in 2003. Similar to the assessment of chlamydia by DPHSS, the fluctuations and spikes in number of cases are believed to be related to Guam's transient population of tourists, immigrants, and service members. This rationale is also applicable to the trends observed on Hawaii. Like chlamydia, the rates on Puerto Rico are significantly lower than the other areas compared.

Gonorrhea morbidity rates in the US have not been as erratic and have experienced a decline in rates over the period evaluated. There is much speculation as to the cause of this decline, some of which is centered around global and US economic conditions and people being more aware of using safety precautions or abstaining. Also, the advocacy from medical health professionals and advisors on the dangers of unsafe sex and media exposure on the spread of STDs is considered to have played a role in the decline. But, given the larger population base (which tends to soften data spikes), the US has experienced a notably higher rate of reported cases than the other geographic locations evaluated.

Table 9-11 identifies the average rate of the four jurisdictions from 1999 to 2008. Figure 9-8 shows the rates per 100,000 people on Guam for reported gonorrhea cases between 1999 to 2009, as compared to the rates of the US, Hawaii, and Puerto Rico from 1999 to 2008.

Where do we Stand? Evaluating Trends

Current Trends

Although the morbidity rate for Gonorrhea has seen an upwards trend between 1999 and 2008, it remains substantially lower than the U.S. average and is comparable to the statistics for Hawaii during this timeframe, as can be seen in Table 9-11 and Figure 9-8. The last two years have shown a tangible reduction in the reported rates for Guam. Guam's average of 52.4 cases per 100,000 persons for the timeframe was more than five times greater than Puerto Rico's, but was lower than Hawaii's and was less than half the US rate.

Moving Forward

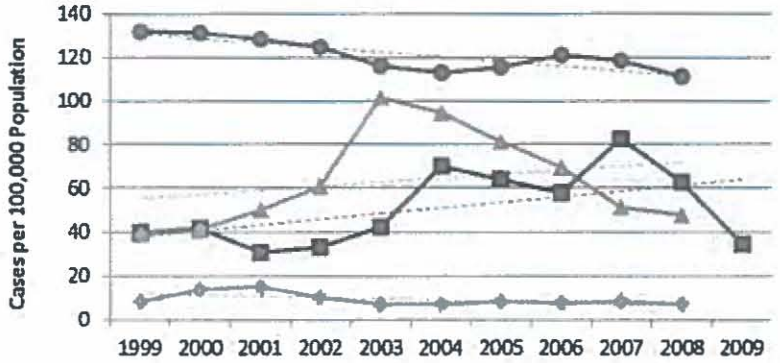
Guam Average	52.4 cases / 100,000 persons
Trending	↑
Guam 2009 Rate	34.2 cases / 100,000 persons
Goal	257 new cases / 100,000 females 198 new cases / 100,000 males
5-Year Target	

Guam's morbidity rates for gonorrhea are not presented as broken down between male and female, as are the goals within the Healthy People 2020 plan. However, Guam's rates in recent years have been well below the rates

Table 9-11. Average Gonorrhea Morbidity Rates, 1999-2008

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	52.4	121.4	63.7	9.3
Trend	↑	↓	↑	↓

Figure 9-8. Gonorrhea Morbidity Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	39.6	41.6	30.4	32.9	42.2	69.9	63.9	58.0	82.5	62.6	34.2
US	132.0	131.6	128.5	125.0	116.4	113.5	115.6	120.9	118.9	111.6	
Hawaii	39.1	40.8	49.8	61.1	101.8	94.8	81.1	69.4	51.3	47.5	
Puerto Rico	8.3	13.5	15.0	10.4	7.2	6.9	8.4	7.7	8.2	6.9	

Source: CDC, Morbidity and Mortality Weekly Report, Annual Summary of Notifiable Diseases for the United States, 1999 - 2008
DPHSS Office of Epidemiology and Research, "Annual Summary of Notifiable Diseases - Guam - 2009

When age cohorts are taken into consideration, a significant increase in new cases occurring with teens is apparent. Historically, gonorrhea cases have been dominant with persons in their twenties, both on Guam and in the US; however, recent data reveals a significant increase in younger groups, which is indicative of teens becoming more sexually active and transmitting the disease more frequently than older persons. This pattern is displayed by the shift in population most frequently diagnosed with gonorrhea on Guam over the past decade. The number of reported cases of gonorrhea teenagers aged 15 to 19 years old more than doubled over the past decade, increasing from 5 (or 9% of the total reported cases)in 1999 to 34 cases (or 20% of all cases) in 2009. During this same time period, the number of reported cases for persons in their twenties remained relatively stable, accounting for 26 cases (47%) in 1999 and 27 cases (44%) in 2009. In contrast, those age 30 and above have experienced a decline in number of cases over the same time period. There were 16 cases (29%) of gonorrhea reported amongst those in their thirties in 1999, which declined to 11 cases (18%) in 2009. Cases amongst all persons over the age of 30 accounted for 38% (21 cases) of reported cases on Guam in 1999 and decreased to approximately 28% (17 cases) in 2009.

In comparison to Guam, the trends and occurrences of gonorrhea amongst the US population remained more stable over the past decade, with the most at-risk population also being those in their teens and twenties. This trend, and the total number of reported cases in the US has remained fairly stable, with no remarkable improvement in preventing the spread of this disease based on the most recently available data.

Using 2007 data from DPHSS, a breakdown of gonorrhea cases by ethnicity was prepared (see Table 9-8). As shown on the table, Micronesians (including persons of CNMI, FSM, Republic of Palau, or Marshall Islands ethnicity), had a significantly higher rate of gonorrhea (244.0 cases per 100,000 persons) then Chamorro (71.1 cases per 100,000 person) and the overall average for Guam (81.9 cases per 100,000 persons).

HIV / AIDS

Human immunodeficiency virus (HIV) is a lentivirus that is passed from person to person through contact with infected blood, semen, pre-ejaculate, vaginal fluid, or breast milk. It is often considered an STD, but can also be passed from mother to child during birth or breast feeding, and from contaminated needles used for injection drugs or infected blood used for transfusions (although this cause has been largely eliminated in the developed world due to advancements in screening of blood products). HIV attacks the cells that defend the body from illness. If left untreated, it generally advances to acquired immunodeficiency syndrome (AIDS). At this stage, the immune system is badly damaged and infected individuals are very susceptible to infections that take advantage of the weakened immune systems.

The CDC and Prevention estimates that more than one million people are living with HIV in the United States. One in five of those people living with HIV is unaware of their infection. (Source: CDC, July 2010)

HIV and AIDS has become a global problem over the past couple of decades. Increased knowledge on the topic has been promoted in many undeveloped areas due to poverty, poor living conditions, and lack of sexual activity safe practices and preventative measures or equipment. The CIA Factbook estimates that as of 2010, 33 million people globally are infected with HIV / AIDS. The US is ranked as having the eighth highest infection rate, with an infected population of 1.2 million people.

Although the rates of HIV and AIDS on Guam are lower than some other types of STDs, these two diseases are of greater concern due to the severity of complications associated with them and the fact that there is currently no known cure. Relative to the US, Hawaii, and Puerto Rico, Guam has experienced significantly lower rates of morbidity. This is likely attributable to the first case on Guam not occurring until 1985. Guam was the first of the US affiliated Pacific Island jurisdictions to officially report a case of HIV and ranks as the fourth highest rate for HIV / AIDS cases in Oceania.

In 2008, the CDC estimated that Guam had a cumulative HIV / AIDS caseload of 185 reported cases, of which 96 persons were living with HIV, 34 persons were living with AIDS, and 55 persons had died as a result of having the diseases.

Table 9-12 identifies the average rate of the disease in the four geographic areas evaluated for 1999 to 2008. Figure 9-9 shows the rates per 100,000 people on Guam for reported AIDS cases between 1999 to 2009, as compared to the rates of the US, Hawaii, and Puerto Rico from 1999 to 2008.

Since the CDC does not include HIV in its Annual Summary of Notifiable Diseases, there is currently no similar data to compare Guam against the US, Hawaii, and Puerto Rico for reported cases. Thus, Table 9-13 and Figure 9-10 include only the HIV morbidity rates for Guam from 2000 to 2009.

It should be noted that many people who are HIV positive may not be aware that they are infected due to not being tested, thus reported cases are likely to underestimate the significance and prevalence of HIV.

Specifically on Guam, the age ranges with the highest number of new reported cases of HIV and AIDS are generally between 30 and 39 and 40 and 49 years of age. Due to the fairly low number of cases reported, this may be skewed somewhat, such as in years where only one case is reported, which would designate 100% of cases for that age range. For every year in which AIDS cases were reported and recorded between 2000 and 2009, excluding 2005, these two age groups accounted for 75 to 100% of the total cases. Zero cases were reported in these age ranges out of the three total cases in 2005. Two were reported among 50 to 64 year olds and one among 25 to 29 year olds. The age distribution for HIV infections were similar, with age ranges of 30 to 39 years old and 40 to 49 years old experiencing the majority of reported cases from 2000 to 2009, generally ranging from 66% to 100% of the totals.

The year 2005 presented atypical disease patterns with one out of seven new cases (14%) being reported for persons aged 40 to 49, while five of the cases (71%) were reported for ages 15 to 29. This is the only year that either HIV or AIDS reported cases were more prominent among younger age groups than older.

For the US as a whole, the CDC reports that approximately 45% of reported AIDs cases have occurred in the 25 to 39 age group and an additional 47% affected those aged 40 to 64. This general trend has occurred between the years 1999 and 2007; however, data for 2008 indicate a major shift in the demographic profile of those afflicted with AIDs. While those age 14 and below had typically accounted for less than 1% of reported AIDs cases, a dramatic change occurred in 2008, when youth aged 5 to 14 jumped from accounting for less than 0.5% of cases in 2007 and prior to accounting for approximately 14% of reported cases. A significant change also occurred in the age cohort from 15 to 24, which went from accounting for no more than 6% of cases in 2007 and years prior to accounting for nearly one third of cases. This significant change in occurrences of cases by age group is even more striking when taking age adjusted rates into consideration.

Where do we Stand? Evaluating Trends

Current Trends

AIDS morbidity data was not available for the year 2006, and so this year was not factored into averages and trends. As shown in Table 9-12 and Figure 9-9, Guam has had lower morbidity rates for AIDS than the US, Hawaii, and Puerto Rico. The rates for each of these geographies have been trending downwards between 1999 and 2008. Guam's rates have shown the most variability from year to year, even though they have consistently been the lowest. Guam's average rate of 3.7 cases per 100,000 persons was less than half of Hawaii's rate, less than 1/3 the US rate, and less than 1/6 Puerto Rico's rate.

Moving Forward

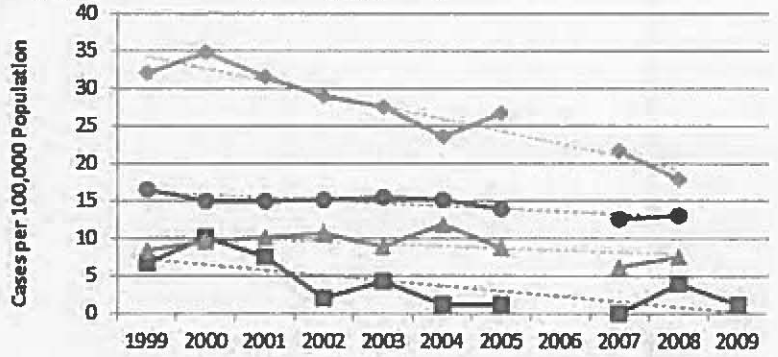
Guam Average	3.7 cases / 100,000 persons
Trending	↓
Guam 2009 Rate	1.1 cases / 100,000 persons
Goal	13 new cases / 100,000 adolescents and adults
5-Year Target	1.0 cases / 100,000 persons

Guam's average morbidity rate of AIDS cases over the past decade has been less than 1/3 of the goal established by the Healthy People 2020 plan. The rate has continued trending downwards over the years and is not likely to increase past the 2020 goal.

Table 9-12. Average AIDS Morbidity Rates, 1999-2008

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	3.7	13.2	8.2	24.5
Trend	↓	↓	↓	↓

Figure 9-9. AIDS Morbidity Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	6.7	10.1	7.6	2.0	4.3	1.2	1.2		0.0	4.0	1.1
US	16.5	14.9	14.9	15.2	15.4	15.2	14.0		12.5	13.0	
Hawaii	8.4	9.7	10.2	10.6	8.9	11.8	8.7		6.1	7.6	
Puerto Rico	32.1	34.7	31.5	28.9	27.6	23.6	26.6		21.6	17.9	

Source: CDC, Morbidity and Mortality Weekly Report, Annual Summary of Notifiable Diseases for the United States, 1999 – 2008
DPHSS Office of Epidemiology and Research, "Annual Summary of Notifiable Diseases – Guam – 2009

Where do we Stand? Evaluating Trends

Current Trends

The CDC does not track HIV cases and so there is no available data to compare Guam against the US, Hawaii, and Puerto Rico in terms of morbidity rates. The CDC does record the number of deaths from HIV-related diseases, but the number of deaths on Guam was insufficient to warrant recordation. DPHSS does track HIV morbidity rates on Guam, and so some insight is provided, but not as comparable to the other geographies. Table 9-13 and Figure 9-10 show that the HIV morbidity rate is has been trending downwards for the past decade. Other than an anomaly experienced during 2001, the rate has been fairly low.

Moving Forward

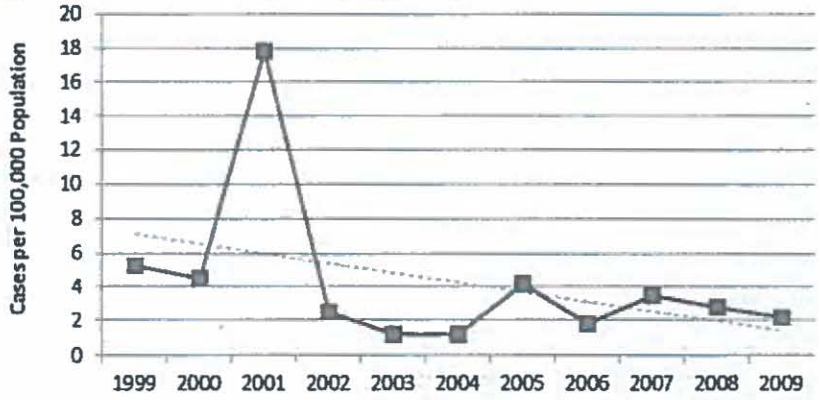
Guam Average	4.2 cases / 100,000 persons
Trending	↓
Guam 2009 Rate	2.2 cases / 100,000 persons
Goal	No goal established
5-Year Target	

The Healthy People 2020 plan did not establish goals for HIV rates.

Table 9-13. Guam Average HIV Morbidity Rates, 1999-2009

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	4.2	-	-	-
Trend	↓	-	-	-

Figure 9-10. HIV Morbidity Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	5.3	4.5	17.8	2.5	1.2	1.2	4.2	1.8	3.5	2.8	2.2

Source: DPHSS Office of Epidemiology and Research, "Annual Summary of Notifiable Diseases – Guam – 2009

According to Kaiser State Health Facts specific to Guam, the estimated cumulative AIDS diagnoses by Race/Ethnicity in 2008 were broken down as shown on Table 9-14.

Table 9-14. Cumulative AIDS Diagnoses by Race/Ethnicity through 2009

Race / Ethnicity	Guam	US	Hawaii	Puerto Rico
White	10	426,230[1]	1905	NA
Black / African American	4	466,829[1]	148	NA
Hispanic / Latino	0	223,671[1,2]	232	NA
Asian	57	8,369[1]	485	NA
Native Hawaiian / Other Pacific Islander	10	851[1]	380	NA
American Indian / Native Alaskan	0	3,702[1]	10	NA
Multiple Races	4	12,749[1]	91	NA

1. *US total includes persons from the Pacific Islands. Because column totals for estimated numbers were calculated independently of the values for the subpopulations, the values in each column may not sum to the column total.*
2. *Hispanics/Latinos can be of any race.*
3. *Includes Asian/Pacific Islander legacy cases.*

Source: The Kaiser Family Foundation. Estimated Cumulative AIDS Diagnoses: Through 2009

The racial / ethnic profile for people with AIDS diagnoses on Guam differs dramatically from the US in most categories. Notably, whites on Guam represent 12% of its cumulative AIDS cases, while the US figure is 38%. In addition, African Americans on Guam make up only 5% of the total, while the US rate is 41% of reported cases. Though there are no reported Latino cases on Guam, the rate is 19% for this subgroup in the US. The most striking difference in diagnosis by ethnicity between the US and Guam is in the Asian population. As of 2008, Asians comprised 68% of AIDS diagnoses on Guam, and only 8% of the US total (Kaiser Family Foundation, 2010).

Syphilis

Syphilis is an STD that is caused by the bacterium *Treponema pallidum*. It is spread between individuals through direct contact with a syphilis sore during vaginal, anal, or oral sex. Sores are primarily found on the external genitals, vagina, anus, or in the rectum; however, they can also occur on the lips and in the mouth. Contrary to common misperception, syphilis cannot be transmitted through contact with toilet seats, doorknobs, swimming pools or spas, bathtubs, eating utensils, or shared clothing.

Syphilis has four possible stages that it goes through in infected individuals.

- **Primary stage** – This is the first stage of a syphilis infection, which is accompanied by the appearance of a single sore, called a chancre, at the site where the infection entered the body. Chancres last about three to six weeks and heal on their own without treatment. If adequate treatment is not obtained, then the infection will advance to the next stage.
- **Secondary stage** – This second stage of infection is characterized by a skin rash, which typically does not itch, and mucous membrane in one or more areas of the body either as the chancre is healing or up to several weeks after it has healed. Secondary stage symptoms will subside without treatment; however, if treatment is not administered, the infection will progress to the next stages.
- **Latent stage** – This stage, also referred to as the hidden stage, occurs after the primary and secondary stage symptoms disappear. An untreated person will continue to have syphilis, but may not show signs or symptoms, and it can remain for years.
- **Late stage** – Approximately 15% of untreated syphilis carriers will develop the late stage, in which the disease may damage internal organs and body parts such as the brain, nerves, heart, liver, blood vessels, eyes, bones, and joints. These can lead to paralysis, gradual blindness, dementia, numbness, difficulty coordinating muscle movement, and sometimes death. Late stage symptoms can take 10 to 20 years to appear.

Where do we Stand? Evaluating Trends

Current Trends

Although Guam's syphilis rate has been sporadic over recent years, Table 9-15 and Figure 9-11 show that it had the second lowest average rate (12.1 cases per 100,000 persons), after Hawaii, which had about 1/3 the rate. The US had an average rate almost the same as Guam, just slightly higher, and Puerto Rico's rate was almost three times higher than Guam's. Guam's rate was trending upwards.

Moving Forward

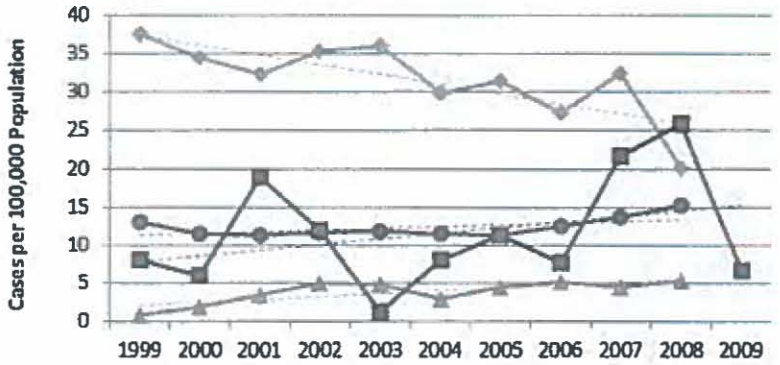
Guam Average	12.1 cases / 100,000 persons
Trending	↑
Guam 2009 Rate	6.7 cases / 100,000 persons
Goal	Among females, 1.4 new cases of primary and secondary syphilis per 100,000 population Among males, 6.8 new cases of primary and secondary syphilis per 100,000 population 9.1 new cases of congenital syphilis per 100,000 live births
5-Year Target	

Guam's rate is not categorized by male versus female, and so it is hard to tell if it is on par with the goals established in the Healthy People 2020 plan. Based on the average of the past decade, both male and female cases are most likely above the 2020 goal; however, the 2009 rate may be within the goals. The sporadic nature of Guam's annual rates makes it hard to predict future years.

Table 9-15. Average Syphilis Morbidity Rates, 1999-2008

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	12.1	12.4	3.83	31.6
Trend	↑	↑	↑	↓

Figure 9-11. Syphilis Morbidity Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	8.1	6.0	19.0	12.1	1.2	8.0	11.4	7.7	21.6	25.9	6.7
US	13.1	11.6	11.4	11.7	11.9	11.5	11.3	12.5	13.7	15.3	
Hawaii	0.9	1.9	3.4	4.9	4.8	2.9	4.5	5.2	4.5	5.3	
Puerto Rico	37.5	34.4	32.2	35.3	36.0	29.7	31.4	27.2	32.3	20.2	

Source: CDC, Morbidity and Mortality Weekly Report, Annual Summary of Notifiable Diseases for the United States, 1999 - 2008
DPHSS Office of Epidemiology and Research, "Annual Summary of Notifiable Diseases - Guam - 2009

For the years of 2000 to 2009, a shift in the age demographic most affected by syphilis has also occurred. During the early part of the decade, the majority of cases were reported for persons older than 30 years of age. The affected demographic shifted in 2003 when almost one third of reported cases were amongst those in their 20's. In recent years, the majority of cases have been experienced amongst those under the age of 30, including teenagers, but predominantly those in their 20s.

The patterns and trends experienced by the Guam population is not dissimilar to that experienced by the US population. The age group that accounted for the highest percentage of cases and has been those aged 25 to 39 (accounting for an average of 47% of cases for the years 1999 through 2008) followed by those are 40 to 64 (average of 32% of cases), and by those aged 15 through 24 (accounting for an average of 20% of all reported cases). When age adjustment is taken into consideration, the top three age categories for whom syphilis is most prevalent include those aged 25 through 39, followed by 15 to 24 year olds, and then 40 to 64 year olds. According to CDC data, cases amongst those aged 14 and below are rare; however, they do occur.

The ethnicity on Guam most affected by syphilis infections between the years of 2000 and 2009 has been Micronesians (referring to persons of Marshall Islands, Pohnpei, Kosrae, Chuuk, Yap, or Palau ethnicity). In 2000, this small demographic which only accounted for 5.5% of Guam's total population accounted for approximately 14% of the reported cases of syphilis on the island, while persons of Chamorro ethnicity, who comprised 49% of the population, accounted for approximately 71% of all reported cases. By 2007, these percentages had changed drastically, with Micronesians accounting for almost 82% of cases, and Chamorro people only accounting for approximately 5%. In 2009, 25% of cases were for Chamorro persons, while almost 67% were Micronesian.

Issues and Opportunities

Chlamydia

Untreated cases of chlamydia can lead to other severe health complications. Addressing a chlamydia infection at its beginning stages and receiving early antibiotic treatment has proved extremely successful in curing it and may prevent the development of long-term complications. If left untreated, infections could lead to a variety of complications. These complications are generally more severe in women and include:

- pelvic inflammatory disease,
- scarring of the fallopian tubes in 10 to 15% of women (which increases the likelihood of ectopic pregnancy, an abnormal pregnancy where a fertilized egg develops outside the womb posing severe dangers for both the fetus and the mother),
- premature labor and delivery in pregnant women,
- infantile chlamydial conjunctivitis (eye infection),
- chlamydial pneumonia, and
- infertility.

All sexually active adults should be regularly screened for infection, as symptoms do not always manifest. Individuals who overcome a chlamydia infection do not develop immunity, thus are subject to repeated infection.

There is a lack of awareness of symptoms and treatment of chlamydia. The prevalence and spread of chlamydia infections can be reduced through educational activities to make sexually active individuals aware of symptoms and treatments. Safe sexual practices, including consistent condom use, are key steps to reduce the contraction and spread of the bacteria. In addition, sexually active individuals should be regularly screened for chlamydia infections. Oftentimes, such screenings test for a variety of other STDs as well. Since infections have more severe potential complications for women, it is recommended that sexually active women age 25 and younger, women age 25 or older who have a new or multiple sex partners, and all pregnant women are screened for chlamydia annually.

It is recommended that sexually active females 25 years old and younger get tested for chlamydia every year. When detected at the right time, the infection is easy to cure, but if left untreated, it can impact a woman's ability to have children.

Many schools throughout the US and its territories have educational programs to inform students about the risks and problems associated with STDs such as chlamydia, while some also provide parents and families of students with health information on topical areas including HIV, STD, and pregnancy prevention.

Gonorrhea

Consistent and correct preventative measures are not always taken by those who are sexually active.

People entering into a new monogamous relationship should each be screened to ensure neither individual is a carrier. The consistent and correct usage of latex condoms will also reduce the chances of becoming infected during intercourse with someone who has gonorrhea; however, it will not guarantee prevention.

Many people do not seek treatment due to a variety of reasons, including shame.

Complications that arise from untreated gonorrheal infections can be serious for both men and women. In some cases, the infection can spread to the blood or joints, causing life-threatening complications. It can also increase the risk for an individual to more easily contract or transmit HIV. The risk to untreated men is that it can cause epididymitis, a painful condition in which the ducts that connect to the testicles can become damaged and may lead to infertility. The risk to untreated women is that gonorrhea is a common cause of pelvic inflammatory disease, which comes with its own set of problems that may be mild or severe, including abdominal pain and fever, internal abscesses, chronic pelvic pain, damaged fallopian tubes, increased risk of ectopic pregnancy, or infertility. In addition, infected pregnant women may pass the infection to their baby during vaginal delivery, which can cause blindness, joint infections, or blood infections in the child.

HIV / AIDS

Those who cannot afford proper medical care may never get screened for HIV and other STDs.

Pregnant women who do not have, or cannot afford, prenatal care may not be aware that they have an STD or be HIV positive, thus may unknowingly pass it on to their child. With certain treatments, transmission of diseases from mother to child can be greatly reduced or prevented during pregnancy and birth. To address these issues, Guam Memorial Hospital and DPHSS have partnered and have plans to implement rapid testing for HIV in the labor and delivery units in order to help infected mothers with possible treatments (Schumann, 2010).

HIV/AIDS infection is associated with a social stigma that may prevent some people from getting tested.

The stigma that HIV and AIDS targets homosexuals is typical. Although this group is one of the primary groups at risk for transmitting HIV in the US, it is not the only means of transmission. Findings by the Kaiser Family Foundation for 2008 show that on Guam, males account for 86.4% of the cumulative (since the first reported case) number of AIDS diagnoses. Compared to the US, this number is 79.7%. Females on Guam only account for 13.3% of AIDS diagnoses , and 20.3% in the US. On Guam, it is estimated that transmission of HIV via male to male sexual intercourse is approximately 58%, compared to roughly 43% in the US. (Kaiser Family Foundation, 2010).

There is currently no medical cure for HIV/AIDS.

Neither HIV nor AIDS currently has a known cure. Over the past several years, great strides have been made in treatments that can help infected persons to live comfortably and reduce their chances of developing AIDS if they are infected with HIV. However, these treatments are often expensive and may not be available to people in all areas. Families who have multiple cases of HIV or AIDS may face the additional strain of trying to manage their health if they cannot afford treatments or care for all members.

Syphilis

Syphilis cases may be wrongly identified as other diseases due to presentation of symptoms also associated with other diseases.

Syphilis is sometimes referred to as "the great imitator" because its symptoms are often identical to other diseases. The symptoms can sometimes take several years to manifest, although infected individuals can still transmit syphilis to others even if they do not know they are infected, as their sores may go unrecognized. If left untreated, syphilis generally manifests in several different stages, known as primary, secondary, latent, and late, as explained above.

Pregnant women may face additional concerns if they have syphilis, including higher risk of still birth, giving birth to a child who dies shortly after birth, or developmental problems for the baby.

Plans/Programs to Address Issues

Plans and programs that have been established for STDs in general address Chlamydia and Gonorrhea and are discussed previously in this section.

HIV / AIDS

HIV Prevention Plan

Guam's DPHSS developed a comprehensive HIV Prevention Plan in 2003 that identified intervention measures needed (and reflected CDC guidelines) for specific priority target populations. The Prevention Plan is a part of the Guam HIV Prevention Project, also published in 2003. Six target populations were identified as follows, listed in order of priority.

1. Men who have sex with men
2. High-risk heterosexuals
3. Mothers with / or at risk for HIV
4. Injection drug users
5. Youth at risk (under 25 years of age)
6. The general population

The Guahan Project

Established in 2003, the Guahan Project is a community-based organization on Guam that serves the purpose of educating Guam's youth and residents on the dangers of HIV and AIDS. The Guahan Project has been working with DPHSS and other Government of Guam entities to build capacity and expand alternate OraSure testing sites on Guam where people can be screened for HIV and AIDS infections. As Guam's only AIDS service organization, the Guahan Project strives to enable people with HIV or AIDS to live full, productive, happy, and healthy lives through the provision of direct services. The Project provides free educational workshops, training sessions, support groups, home and hospital visits, provision of personal care items, and capacity-building assistance for local and regional community-based organizations. The group also provides testing for other STDs, as well as support for other diseases or conditions including tuberculosis and cancer.

Syphilis

National Plan to Eliminate Syphilis

The National Plan to Eliminate Syphilis in the US was launched in October 1999 by the CDC, in collaboration with federal, state, and local governments and non-governmental partners. This Plan identifies key strategies that are required to successfully eliminate syphilis in the US. Some of these strategies include expanded surveillance, outbreak response activities, and laboratory services, rapid screening and treatment in and out of medical settings, enhanced health promotion, and strengthened community involvement and agency partnerships. This Plan has resulted in an increased investment in public STD clinic services, educational awareness, and reduction in the number of new cases; however, there is still much work to be done. The Plan was updated in 2006 with new statistics, results, and enhanced goals.

Global Elimination of Congenital Syphilis

The WHO released a similar Global Elimination of Congenital Syphilis: Rationale and Strategy for Action Plan in 2007 that has goals for reducing and eventually eradicating congenital syphilis at a global scale.

Wellness and Education

Methods of prevention and education about Chlamydia and Gonorrhea are typically presented as part of a comprehensive STD prevention effort, as discussed earlier in this section.

HIV / AIDS

The Guam Department of Education's Curriculum and Instruction provides resources, information, and learning tools for teachers and students on the risks and dangers of STDs and HIV / AIDS. Guam also has a law that DPHSS must provide HIV and STD counseling, testing, condoms, and other referral services for sexually active minors without parental consent (Schumann, 2010).

There are many advocacy programs in effect for AIDS awareness that have become a common occurrence over the past several years. The Red Ribbon Foundation was founded in the early 1990s to promote AIDS awareness and support for those living with HIV or AIDS. Since then, the Red Ribbon has become a symbol of support for persons living with HIV or AIDS that promotes awareness of the severity of the disease.

Although there is still a lack of a cure for HIV/AIDs, increased international attention has both reduced the "shame" and "stigma" associated with persons living with HIV/AIDs, and has benefitted the world's progress in reducing the impacts of this disease.

HIV and AIDS has gained additional attention through the establishment of regional and national HIV / AIDS Awareness Days. There are various days for different themes or demographic groups throughout the year. For example, May 19 is National Asian and Pacific Islander HIV / AIDS Awareness Day. In addition, June 27 is National HIV Testing Day and December 1 is World AIDS Day, in which countries around the world participate in activities to promote HIV and AIDS awareness.

Beginning in November 2010, Prutehi Hao! initiated a six-week hands-on video production workshop that provided 15 at-risk, runaway and troubled youth from Guam's drug court system and Sanctuary, Inc. with the opportunity to creatively and collaboratively learn about STDs and HIV / AIDS through the creation of informative public awareness films. The video aims to promote safe sex behaviors among Guam's at-risk youth population and increase their knowledge of STDs and HIV / AIDS through creative arts and collaboration. The launch of the Prutehi Hao! Public Service Announcement "So Safe So Smart" Campaign, including the release of the final music video, was on January 27, 2011.

Additional Resources

Chlamydia

The following resources provide additional information about chlamydia.

Prutehi Hao! Protect Yourself
Prutehi Hao! (Protect Yourself) is a Guam Public Health STD/HIV program that provides free and confidential services to the community. Services specific to chlamydia include the provision of easier access to testing for chlamydia, which can be performed using self-collection kits.

www.prutehihao.org

CDC Fact Sheets – Chlamydia
The CDC provides a wealth of information about chlamydia on its website, including general information, statistics, treatment methods, and other reports and references for additional information. The DC Fact Sheets on chlamydia provide an overview of what chlamydia is and how common it is, how one contracts the infection, potential complications, diagnostic information, treatment information, and methods of prevention. All CDC Fact Sheets are available online free of charge. Hard copies of various publications can also be ordered in limited quantities without charge.

www.cdc.gov/std/chlamydia/

CDC – SOCRATES Screening Software
The CDC has developed chlamydia screening software to help public health agencies and providers make better decisions on screening needs. SOCRATES (Screening Optimally for Chlamydia: Resource Allocation, Testing and Evaluation Software) takes inputs such as prevalence of infection in the population and testing and treatment protocols. "The intent of SOCRATES is to provide a tool that allows users to determine the most cost effective screening strategy to prevent pelvic inflammatory disease in women who display no symptoms of chlamydial infection."

http://www.cdc.gov/std/chlamydia/socrates/default.htm

inSPOT
inSPOT is an online resource that provides information and resources as well on various STDs, including chlamydia. This online resource provides tips and advice on how to seek treatment for STDs, tips for telling your partner, advice on coping with the infection, and an interactive database that allows users to locate their nearest STD testing center. Locations covered include Canada, the US, Guam, Northern Mariana Islands, American Samoa, and Puerto Rico.

inspot.org/

WHO Initiative for Vaccine Research – Chlamydia trachomatis
The mission of the World Health Organization's Initiative for Vaccine Research (IVR) is to "guide, provide vision, enable, support, and facilitate the development, clinical evaluation, and world-wide access to safe, effective and affordable vaccines against infectious diseases of public health importance, especially in developing countries." Information, including fact sheets, technical reports, prevalence data, and other links specific to chlamydia are available through the IVR's web site.

www.who.int/vaccine_research/diseases/chlamydia_trachomatis/en/

While the health effects and dangers of contracting an STD can be severe, going without treatment or understanding of one's condition can result in much greater health complications.

Gonorrhea

The following resources provide additional information about gonorrhea.

Prutehi Hao!
Prutehi Hao! is a Guam Public Health STD/HIV Program that provides free and confidential services to the community. Services specific to the detection and treatment of gonorrhea include the provision of easier access to testing for the infection, which can be performed using self-collection kits.

www.prutehihao.org

CDC Fact Sheet – Gonorrhea
The CDC provides a wealth of information about gonorrhea online, including general information, statistics, treatment methods, and other reports and references for additional information. The CDC Fact Sheets on gonorrhea provide an overview of gonorrhea, how common the infection is, how it is transmitted, signs and symptoms of having the infection, potential complications, diagnostic information, treatment information, and methods of prevention. All CDC Fact Sheets are available online free of charge. Hard copies of various publications can also be ordered in limited quantities without charge.

www.cdc.gov/STD/gonorrhea/STDFact-gonorrhea.htm

AVERT
AVERT is an international charity whose main focus is on the aversion of HIV/AIDS worldwide; however, the website also provides information on other STDs, including gonorrhea. This resource lists symptoms, transmission information, diagnostic and treatment information, and guidance on where to go for testing, among other useful resources.

www.avert.org/gonorrhea.htm

HIV / AIDS

The following resources provide additional information about HIV / AIDS.

Prutehi Hao!
Prutehi Hao! (Protect Yourself) is a Guam Public Health STD/HIV Program that provides free and confidential services to the community. Services offered include HIV and STD testing, personal and confidential counseling, referral services, and health education. The initial and main focus of the program is HIV/AIDs; however, the DPHSS partnered with the CDC to launch the 2009 Prutehi Hao! "Got Lucky? Get Tested" in October 2009 in order to promote safer sex practices and provide easier access to testing for a variety of STDs.

www.prutehihao.org

AVERT.org
AVERT is an international HIV and AIDS charity working to avert these disease worldwide through charity work, partnerships with local organizations, and working to improve treatment, care and support of people infected with, or affected by HIV/AIDS.

www.avert.org

Life Foundation
Life Foundation is a non-profit organization dedicated to stopping the spread of HIV and to assisting those currently living with HIV and AIDS. Services and programs offered include AIDS case management, school based AIDS education, the sterile needle exchange, peer support for positives, treatment education and peer-to-peer HIV prevention outreach. The mission of the Life Foundation is "to stop the spread of HIV and AIDS; to empower those affected by HIV/AIDS and maximize their quality of life; to provide leadership and advocacy in responding to the AIDS epidemic; and to apply the skills and

lessons learned from the AIDS epidemic to other related areas of public health or concern."

www.lifefoundation.org/

Pacific Islands AIDS Foundation
The Pacific Islands AIDS Foundation (PAIF) exists to provide "a united Pacific voice to enhance our collective response to HIV and AIDS". The Pacific Alliance on HIV and AIDS is a network of national civil society organizations and people living with HIV supported by regional non-governmental organizations. The organization offers a regional database of organizations in the Pacific Islands working with people living with HIV and AIDS as well as a wealth of information on the topic through its website.

www.pacificaids.org/

AIDS.gov
AIDS.gov is an official US Government website managed by the US Department of Health and Human Services that provides information to the general public as well as healthcare professionals. The website offers information pertaining to how to protect oneself from HIV/AIDS and generally expanding awareness of the disease as well as how and where a person can go for testing. Information on federal resources, including funding sources and targets, is also available.

www.aids.gov/

The website also lists HIV/AIDS Awareness Days and how a person can get involved in the strategy to reduce the HIV/AIDS epidemic.

www.aids.gov/awareness-days/

CDC Fact Sheet – The Role of STD Detection and Treatment in HIV Prevention
The CDC provides a wealth of information about STDs and HIV/AIDS online, including general information, statistics, treatment methods, and other reports and references for additional information. This particular Fact Sheet addresses how STDs affect the likelihood of developing HIV, the implications of HIV prevention, general STD and HIV information, and provides contact information to other useful resources.

www.cdc.gov/STD/hiv/default.htm

CDC National HIV and STD Testing Resources
An online STD and HIV testing site locator is available through the CDC and is searchable by zip code. Additionally, a variety of facts and figures, basic information, and guidance and recommendations are offered through this national program.

www.hivtest.org/

Kaiser Family Foundation
The Kaiser Family Foundation is a non-profit, private operating foundation focusing on the major healthcare issues facing the US and its territories, as well as the US role in global health policy. The foundation serves as a technical resource for policy and research and offers a clearinghouse of new information to the health policy community. The foundation develops and implements large-scale public health information campaigns around the world.

www.kff.org/hivaids/

World Health Organization
The World Health Organization serves as an international resource on many health topics, including HIV/AIDS. This resource provides information on the disease, recent news bulletins about HIV/AIDS, and a variety of technical information, statistics, and publications on the topic.

www.who.int/topics/hiv_aids/en/index.html

Syphilis

The following resources provide additional information about syphilis and how it can affect a person's life.

Syphilis – CDC Fact Sheet
The CDC provides a wealth of information about various STDs, including syphilis. The CDC Fact Sheet provides an overview of this disease, information about its prevalence, how it is transmitted and contracted, and signs and symptoms of syphilis. Additional health complications that a pregnant woman and her baby may face as a result of the disease are also discussed. Additional information and resources include how the disease is diagnosed and how it can be prevented.

All CDC Fact Sheets are available online free of charge; however, hard copies of various publications can also be ordered in limited quantities without charge.

www.cdc.gov/std/syphilis/

Together We Can SEE: Syphilis Elimination Effort
The Syphilis Elimination Effort (SEE) is a national initiative that brings together healthcare providers, policy makers, community leaders, and state and local public health agencies, to reduce syphilis rates in the United States. The organization's web site provides information on SEE as well as access to key epidemiological data, health communication resources, and quick links to additional information on the disease. The National Plan to Eliminate Syphilis from the United States in 2006 was implemented as part of this program.

www.cdc.gov/stopsyphilis/plan.htm

WHO Program: Eliminating Congenital Syphilis
The WHO's program on sexual and reproductive health addresses the burden of syphilis and its impact on pregnancy and has a focus on the elimination of congenital syphilis. Publications reporting on the rationale and strategy for action to eliminate syphilis and discussing the impact of syphilis are available through WHO.

www.who.int/reproductivehealth/topics/rtis/syphilis/en/index.html

9.6 Shigellosis

Shigellosis is a type of food-borne illness that is caused by bacteria of the genus *Shigella*. It is most commonly transmitted through water that has been polluted with human feces, through processes involving the fecal-oral route, and associated with the consumption of raw or undercooked seafood. Common routes of transmission include food that has come into contact with feces, poor sewage treatment, inadequate cleaning of hands after contact with feces, or other actions that result in contact with fecal matter near the mouth. In some cases, the infection can develop into dysentery, and in severe cases, cause death.

The most common symptom of Shigellosis is experiencing diarrhea. Because many different kinds of germs can cause diarrhea, seeking medical attention to establish the cause is extremely important in order to properly guide treatment. Proper diagnosis requires laboratory tests that identify *Shigella* in the stools of an infected person. The laboratory can also do special tests to determine which antibiotics, if any, would be best to treat the infection.

Existing Condition and Trends

Between 2000 and 2009, the overall US morbidity rate of shigellosis cases has remained fairly constant, with between five and ten cases per 100,000 people reported annually. In contrast, the morbidity rate on Guam has fluctuated dramatically during this same timeframe and incidence levels have been much greater than the US. The first half of the decade experienced rates beginning around 31 reported cases per 100,000 people, and then fell to around 25 per 100,000. Beginning in 2005, the rate declined sharply and leveled off around 11 cases per 100,000, and then dropping to 7.3 cases per 100,000 in 2009. Several outbreaks of shigellosis have occurred on Guam over the past several decades as a result of consumption of undercooked seafood.

Table 9-16 identifies the average rate within the four geographic areas from 1999 to 2008. Figure 9-12 displays the rates per 100,000 people on Guam for reported shigellosis cases between 1999 to 2009, as compared to the rates of the US, Hawaii, and Puerto Rico from 1999 to 2008.

Children, especially toddlers aged 2-4, are more likely to get shigellosis. Shigellosis is common in developing areas where there is sanitation, inadequate treatment of sewage and crowding. Lack of good personal hygiene is also typically at issue. Children in day-care centers, as well as the developmentally disabled and mentally retarded persons, are at an increased risk of developing shigellosis. Recent trends on Guam indicate that those in the age group of zero to 14 years accounted for between 56 and 80% of all reported cases during the years 2000 to 2009. These percentages varied from year to year, with the lowest percentage occurring in 2002 at 56.8%, and the highest occurring in 2003 at 80.5%. Children who become infected are likely to transfer the infection to other children as a result of extensive contact in close quarters, such as schools or daycare centers.

US data reporting shigellosis cases by age category show that children have persistently been the most susceptible to contracting this infection. Children aged one to four years old have consistently accounted for approximately one third of all reported cases, as have those ages five through 14. When taking into consideration age adjustment factors, youth aged one through four years have experienced the highest incidence rates, while also experiencing the greatest fluctuations in reported cases annually, varying from a low of 26 cases per 100,000 population in 2004 to a recent 175 cases per 100,000 in 2008. It should be noted that the 2008 data represents a significant spike in occurrences, much higher than the average rate of 35 over the past decade.

Disparities in shigellosis cases can be seen by ethnicity on Guam. Persons of Micronesian ethnicity (CNMI, FSM, Republic of Palau, or Republic of the Marshall Islands) on Guam account for only a small proportion of the total population of the island. In 2009, they accounted for approximately 7% of the overall population; however, this demographic group accounted for a large portion of the reported shigellosis cases on Guam between 2000 and 2009. In 2000, approximately 24% of reported cases were of persons of Micronesian ethnicity. Although the number of reported cases fluctuated throughout the decade, 2000 being the lowest, 61.5% of cases in 2009 are associated with Micronesians. The largest percent of Micronesian cases was in 2008 at 65% of the total.

Where do we Stand? Evaluating Trends

Current Trends

As shown in Table 9-16 and Figure 9-12, Guam's shigellosis morbidity rates have been much higher than the US, Hawaii, and Puerto Rico for the years between 1999 and 2008. The years 2000 through 2004 saw rates more than double what the other years had, which resulted in a downwards trend for the timeframe. However, because of this, Guam's average rate of 19.7 cases per 100,000 persons was almost three times higher than the US, almost five times higher than Hawaii, and almost 20 times higher than Puerto Rico.

Moving Forward

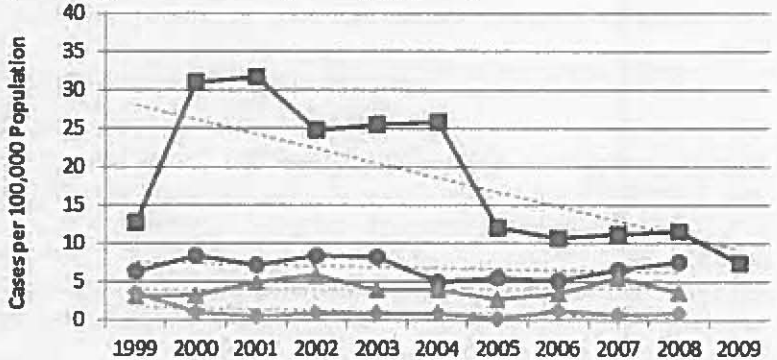
Guam Average	19.7 cases / 100,000 persons
Trending	↓
Guam 2009 Rate	7.3 cases / 100,000 persons
Goal	No goal established
5-Year Target	5.0 cases / 100,000 persons

Although the average rate of shigellosis on Guam was almost four times higher than the 5-year target established in this Plan, the rate has declined in the past several years and is continuing in a downwards trend. If this path is kept up, the 5-year target may be reached. The Healthy People 2020 plan did not establish a goal for shigellosis rates.

Table 9-16. Average Shigellosis Morbidity Rates, 1999-2008

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	19.7	6.8	4.0	1.0
Trend	↓	↓	↔	↓

Figure 9-12. Shigellosis Morbidity Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	12.8	30.9	31.6	24.8	25.5	25.8	12.0	10.7	11.1	11.5	7.3
US	6.4	8.4	7.2	8.4	8.2	5.0	5.5	5.2	6.6	7.5	
Hawaii	3.0	3.2	4.9	5.9	3.9	3.9	2.8	3.5	5.5	3.6	
Puerto Rico	3.6	1.0	0.5	0.8	0.9	0.9	0.2	1.1	0.6	0.8	

Source: CDC, Morbidity and Mortality Weekly Report, Annual Summary of Notifiable Diseases for the United States, 1999 – 2008
DPHSS Office of Epidemiology and Research, "Annual Summary of Notifiable Diseases – Guam – 2009

Issues and Opportunities

Exposure to bacteria can occur from both unsanitary conditions and from the outdoors.

Shigellosis can be spread through unsanitary conditions (particularly in food establishments or through the ingestion of food from an unsanitary kitchen) or can be contracted during exposure to the bacteria in the outdoors. Guam is known for its outdoor activities and has many places in jungle areas and waterways, rivers, and streams that are visited by residents and tourists. These areas can become contaminated with various bacteria, including the Shigella bacteria, and all visitors should be aware of potential risks. Precautionary measures such as not drinking water from the streams, and always washing thoroughly after visiting such areas should be taken.

There is currently no effective vaccine recommended by the WHO against shigellosis, although several candidate vaccines are under development. It has been found that measles immunization has a substantial impact of reducing the incidence and severity of diarrheal diseases such as shigellosis.

Plans/Programs to Address Issues

In 2005, the WHO released "Guidelines for the Control of Shigellosis, Including Epidemics due to *Shigella Dysenteriae* Type 1." The document is meant to serve as a guide for both developing and industrial countries to protect their citizens against shigellosis infections. Through this program, the WHO outlines a series of preventative measures that people should take if they are in a region that is known for, or could possibly contain, shigellosis bacterium. These preventative measures include:

- Health education,
- Hand washing with soap,
- Ensuring the availability of safe drinking water,
- Safely disposing of human waste,
- Breastfeeding of infants and young children,
- Safe handling and processing of food, and
- Control of flies.

Wellness and Education

While there is currently no vaccine available to prevent *shigellosis*, it is important to take the following simple steps to prevent an infection:

- Frequently wash hands with soap and water
- Keep infected individuals away from food
- Avoid cross-contamination of foods
- Cook all meat and poultry thoroughly
- Wash fruits and vegetables thoroughly
- Refrigerate food properly

Additional Resources

The following resources provide additional information about shigellosis.

The Nemours Foundation's Center for Children's Health Media, KidsHealth

KidsHealth is an online resource made available through the Nemours Foundation's Center for Children's Health Media. This resource translates technical medical details into easy to understand information for the public. It is the goal of KidsHealth to provide families with "perspective, advice, and comfort about a wide range of physical, emotional, and behavioral issues that affect children and teens." Shigellosis and how it affects children and teens is discussed in detail.

kidshealth.org/teen/infections/bacterial_viral/shigellosis.html#cat20538

CDC's National Center for Zoonotic, Vector-Borne, and Enteric Diseases: Shigellosis

The CDC's National Center for Zoonotic, Vector-Borne, and Enteric Diseases' Division of Foodborne, Bacterial and Mycotic Diseases (DFBMD) addresses general information, including an explanation of what shigellosis is, how it can be spread, treatment, prevention, and tips on preventing the spread of the infection. This online report provides both general information for the public as well as technical information for healthcare professionals.

www.cdc.gov/nczved/divisions/dfbmd/diseases/shigellosis/

9.7 Tuberculosis

Tuberculosis (TB) is a disease that is caused by the bacteria *Mycobacterium tuberculosis*. Although it most commonly affects the lungs, it can also affect other parts of the body such as the throat, brain, kidneys, or spine. TB is spread from person to person through the air. When an infected individual with TB disease of the lungs or throat coughs, sneezes, speaks, laughs, or sings, the germs are released into the air and can remain there for several hours depending on the environment. Someone who is either present or who enters into this environment is put at risk of contracting a TB infection. This initial contact is referred to as a latent infection because the person who intakes the germs has them in his or her body, but does not immediately become sick because the germs are not active. Once the germs become active and begin multiplying within the body, it is referred to as active TB disease. Those who have a latent infection cannot spread the infection. However, TB may remain dormant in one's body and develop in the future; therefore anyone who is exposed to an individual with TB should be tested for latent TB and / or treated, if discovered, to prevent an active infection from occurring.

Existing Condition and Trends

According to the WHO, approximately 5,000 people develop TB every day in the Western Pacific Region. This region accounted for roughly 1.4 million reported cases of all forms of TB in 2008, equivalent to 24% of the number of reported cases worldwide. The actual number of cases is most likely much higher than this since not all cases are properly diagnosed or reported (WHO Western Pacific Region, 2010).

Globally, the incidence of reported tuberculosis cases has been slowly declining. In 2004 the rate was 143 cases per 100,000 people, which fell to 139 cases per 100,000 people in 2008; however, TB is still considered to be one of the most dangerous infectious diseases globally. After HIV, tuberculosis is as the second highest infectious diseases killer worldwide (UN, 2010).

The occurrence of TB on Guam has recently received increased attention due to an alarming increase in the number of notified cases. As reported by the Tuberculosis Control Program, Profile for Guam, TB cases on the island had steadily decreased from a high of 78.7 per 100,000 population in 1996 to a low of 31.6 per 100,000 in 2006 due to the implementation of the Directly Observed Therapy Program. However, an alarming increase of 70% (to 53 per 100,000 population) of reported cases was noted in 2007. Although the number of cases on Guam decreased slightly in 2008, another spike was experienced in 2009 at 57.2 per 100,000 population. Most recently available data indicate that Guam's active TB incidence is six times that of Hawaii and 15 times higher than that of the US as a whole. (DPHSS, 2010)

Guam has recently experienced an alarming spike in the number of reported Tuberculosis cases. The prevalence of this disease on Guam is currently 6 times greater than experienced by the population of Hawaii and 15 times greater than that of the US as a whole.

The prevalence of tuberculosis infections on Guam is believed to be partly attributable to latent infections that were acquired many years prior to the new outbreak. It is known that age, as well as the presence of chronic diseases such as diabetes, weakens a person's immune system, thus reducing one's ability to fend off infections and illness. This can have the effect of allowing dormant or latent infections to become active. While this theory may hold true, a significant amount of new active cases (approximately 21% of total reported cases) were recently diagnosed in children younger than 15 years old (DPHSS, 2006). In 2007, this number rose to almost 34%. This trend has indicated that the spread of tuberculosis on Guam cannot be explained entirely by latent infections becoming active. It is thought to be partially as a result of economically disadvantaged households and related overcrowding (DPHSS, 2007).

The rate of infection for tuberculosis is generally higher among Native Hawaiians and other Pacific Islanders, including Chamorro, Micronesian, and Filipino ethnicities. The incidence rate for tuberculosis among all ethnic groups in the US was 4.6 per 100,000 persons in 2006 (down from 4.8 in 2005), whereas for "Native Hawaiians and other Pacific Islanders," it was 15.1 per 100,000 persons (up from 13.1 in 2005) (DPHSS, 2006).

The total US had a fairly steady annual rate of reported tuberculosis cases between the years of 2000 and 2008. The average annual rate of reported cases was 4.5 per 100,000 people and measured in a linear fashion from year to year. In contrast, Guam had an annual average rate of 36.7 reported cases per 100,000 people for the same time period and varied from year to year between the rates in the low 30s per 100,000 to the mid-50s per 100,000. Guam's highest reported rate of the decade was in 2009 at 57.2 reported cases per 100,000 people.

Table 9-17 identifies the average rate of the four geographic areas from 1999 to 2008. Figure 9-13 shows the rates per 100,000 people on Guam for reported tuberculosis cases between 1999 to 2009, as compared to the rates of the US, Hawaii, and Puerto Rico from 1999 to 2008.

Active TB cases are more prevalent in persons over 30 years old. This is likely due to dormant tuberculosis infection which has presented itself years after the initial infection. Between the years of 2000 to 2006, the percentage of reported infections for this age category on Guam was between 65 to 83% of all cases. In 2007, persons of ages zero to nine years old showed a spike in number of reported tuberculosis cases, accounting for approximately 30% of the cases. This dropped to around 24% in 2009, but was still much greater than in previous years.

Persons of Filipino ethnicity have typically accounted for the highest number of reported cases of tuberculosis on Guam. Although this ethnic group represents approximately one quarter of the island's total population, they accounted for over 49% of the total cases each year between 2000 and 2003, as high as 63% in 2000. In more recent years, the number of cases for this group has dropped down to approximately one third, with the lowest year being 20% in 2006. Most recently, a spike in cases was experienced in 2009, with Filipinos accounting for 40% of the island's TB cases. In correlation to the decline of Filipino cases, reported cases from Micronesian ethnicities rose, coming in at the low 30s in 2005 and 2006, and the low 20s in 2007 to 2009. Persons of Chamorro ethnicity have also ranked high, ranging from 26% of all reported cases in 2000 to peaking at 48%, in 2004, and varying from year to year for the other years of the decade.

Issues and Opportunities

Some of the primary factors that lead to the spread of tuberculosis are increased levels of travel, and inadequate housing that leads to overcrowding.

Recent changes in travel regulations have led to increased concern over the spread of this disease amongst the Guam community. Although Guam is remote from the continental US, it is located proximate to the Pacific Rim countries of Japan, the Philippines, the People's Republic of China, and Vietnam.

In 2010 Guam's DPHSS reported that the Island of Guam is currently experiencing the effects of a new wave of immigrants coming from the FSM and to a lesser extent from the Republic of the Marshall Islands (RMI) and Palau as a result of the Compact of Free Association of 1986 entered into by the US Federal Government and the above territories. The Compact of Free Association allows FSM, RMI, and Palau citizens the right to freely travel, reside, and work in the US and its insular areas without requiring a medical visa examination, which has historically served as a primary tool for detecting tuberculosis.

The increase in immigrant population will become a greater concern and a significant issue to consider during the military buildup construction phase. It is anticipated that this transition will require thousands of off-island temporary workers to be housed in close proximity at workforce housing facilities. In addition, many ethnic groups who move to Guam from other areas of the Western Pacific, such as from the Philippines or other Micronesian islands, often live in overcrowded or inadequate housing areas with more people, or in less sanitary conditions where they are more prone to easily spread tuberculosis amongst each other if a family member were to become infected.

Tuberculosis is often not diagnosed in a timely manner.

It is also believed that part of the reason why Guam's rate of tuberculosis is so high compared to the rest of the US is due to a lack of timely diagnosis. Those infected oftentimes do not see a doctor, and when they do, doctors may not diagnose it as tuberculosis. It has been suggested that healthcare providers on Guam do not maintain a high index of tuberculosis suspicion. As a result, Guam healthcare providers have been urged to "think TB" in any cases where patients show symptoms consistent with tuberculosis.

Where do we Stand? Evaluating Trends

Current Trends

Guam's tuberculosis rates are significantly greater than the rates of the US, Hawaii, and Puerto Rico. Table 9-17 and Figure 9-13 show that the US, Hawaii, and Puerto Rico had stable rates from year to year, while Guam had a good amount of variability, resulting in an upwards trend. Guam's average rate of 41.4 cases per 100,000 persons was almost four times greater than Hawaii's average, almost four times greater than the US, and more than 12 times greater than Puerto Rico's, all three of which were trending downwards.

Moving Forward

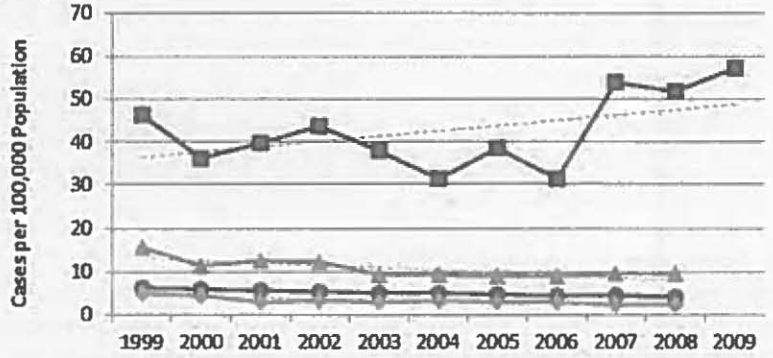
Guam Average	41.4 cases / 100,000 persons
Trending	↑
Guam 2009 Rate	57.2 cases / 100,000 persons
Goal	1 new case per 100,000 persons
5-Year Target	8.0 cases / per 100,000 persons

The Healthy People 2020 plan established a goal of one new TB case per 100,000 persons, which is vastly lower than Guam's average and current rates. Guam has continued an upwards trend in TB cases and is not likely to reach this goal by 2020.

Table 9-17. Average Tuberculosis Morbidity Rates, 1999-2008

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	41.4	5.2	10.7	3.3
Trend	↑	↓	↓	↓

Figure 9-13. Tuberculosis Morbidity Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	46.3	36.2	39.9	43.6	37.9	31.3	38.6	31.4	53.8	51.7	57.2
US	6.4	6.0	5.7	5.4	5.2	5.0	4.8	4.6	4.4	4.3	
Hawaii	15.5	11.5	12.5	12.2	9.4	9.2	8.9	9.0	9.5	9.7	
Puerto Rico	5.1	4.5	3.1	3.3	3.0	3.2	2.9	2.9	2.5	2.4	

Source: CDC, Morbidity and Mortality Weekly Report, Annual Summary of Notifiable Diseases for the United States, 1999 – 2008
DPHSS Office of Epidemiology and Research, "Annual Summary of Notifiable Diseases – Guam – 2009

There has been a recent increase in younger people being infected by tuberculosis.

In recent years, the rate of new infections in young people has been on the rise. Tuberculosis rates in general have increased significantly starting in 2007, and there has been an increase in the percentage of young people, primarily ages zero to nine years old, that have developed the disease. These demographic trends apply to both Guam and the US as a whole.

Some forms of tuberculosis are resistant to antibiotics.

Effective treatment for tuberculosis is sometimes difficult because the cellular structure of the bacteria often makes it resistant to antibiotics. Also, treatment takes a much longer period of time than other types of infections, usually six to 24 months to entirely remove mycobacteria from the body. Furthermore, people who have tuberculosis may have a latent form which can become active later in life, or once they recover from tuberculosis, it can reactivate at a later time.

Plans/Programs to Address Issues

Tuberculosis Control in the Western Pacific

The WHO releases an annual Tuberculosis Control in the Western Pacific Region Report (as well as a global report). The report highlights information on disease burden in the Western Pacific Region, case notifications in 2007, treatment outcomes for patients registered in 2006, progress towards the 2010 regional TB goal, multidrug-resistant TB, TB-HIV co-infection, laboratory services, TB policies for seven countries in the region with a high burden of TB, and a summary of the epidemiologic indicators in the Pacific Island countries and areas. The purpose of the report is to present updated information on current epidemiological TB situations and identify progress in TB control.

United Nations Millennium Development Goals

In 2000, the United Nations and world leaders created a series of eight Millennium Development Goals designed to reduce common global problems and encourage healthy development in the world's poorest countries by improving social and economic conditions. The timeframe set for achieving these goals is by the year 2015. Goal 6 deals with combating HIV / AIDS, Malaria, and other diseases, including tuberculosis.

One of the outcomes of Millennium Development Goal 6 was the creation of a new action plan by the WHO to halve TB deaths and prevalence by 2015 as compared to the rates in 1990 and eliminate it as a public health concern by 2050. The Stop TB Partnership and the WHO launched the *Global Plan to Stop TB 2006-2015* in 2006, and then an updated *Global Plan to Stop TB 2011-2015* in 2010. The program is aimed at reducing TB rates worldwide by introducing to all areas where TB is a major health concern equipment, knowledge, research, and techniques that will allow for rapid TB tests, faster treatment regimens, a fully effective vaccine, access to TB care, modernizing diagnostic laboratories, and adopting revolutionary TB tests that have recently become available. The WHO has identified a projected shortfall of $4.2 billion per year needed to support the programs and research that are part of Stop TB. This money will need to come from international donors and the developed countries of the United Nations (WHO, 2010).

Wellness and Education

The best way to prevent tuberculosis is proper sanitation, good nutrition, and appropriate testing as well as awareness of the risk factors associated with contracting this infection. Several diseases and medication can weaken a person's immune system, increasing one's likelihood of developing the disease:

- HIV/AIDS
- Diabetes
- End-stage kidney disease
- Cancer treatment (ex; chemotherapy)
- Use of drugs for the prevention of rejecting a transplanted organ
- Certain medications used to treat rheumatoid arthritis, Crohn's Disease, and psoriasis
- Malnutrition
- Advanced age

BCG, or bacille Calmette-Guerin, is a vaccine for tuberculosis disease that is used in developing countries with high rates of infection. According to the CDC, BCG is not generally recommended for use in the US because of the low risk of infection with *Mycobacterium tuberculosis*, the variable effectiveness of the vaccine against adult pulmonary TB, and the vaccine's potential

interference with tuberculin skin test reactivity. The BCG vaccine should be considered only for very select persons who meet specific criteria and in consultation with a TB expert." For people that take the vaccine, they will have a positive TB skin test for the rest of their life. The risk of developing TB is higher for people who live in or travel to countries with high rates of TB, including:

- Sub-Saharan Africa
- India
- China
- Mexico
- Micronesian and Southeast Asian islands
- Parts of the former Soviet Union

It is recommended that anyone who suspects they may have been exposed to, or in proximity to, an infected person get tested. Early detection of latent TB can greatly reduce one's risk for developing active TB.

If left untreated, each person with infectious TB will spread the germs to about 10 to 15 people every year.

- Someone in the world is newly infected with TB bacilli every second.
- Overall, one third of the world's population is currently infected with TB.
- 5% to 10% of people who are infected with TB become actively sick.

Additional Resources

The following resources provide additional information about tuberculosis.

National Tuberculosis Controllers Association

Guam is part of the National Tuberculosis Controllers Association (NTCA), creased in 1995 to bring together the leaders of TB control programs in all states and territories in additional to many local entities that organize their own control activities. The NTCA is supported by the CDC and offers technical information and a network of resources for medical professionals working to diagnose, treat, and prevent TB. Although most states host their own program website associated with this resource, a dedicated online resource does not currently exist for Guam. Regardless, general TB data and information is still applicable to this population.

tbcontrollers.org/

Tuberculosis - CDC Fact Sheet

The CDC provides a wealth of information about Tuberculosis on its website, including general information, statistics, treatment methods, and other reports and references for additional information. Factsheets, provider program materials, guidelines, and other publications are just a few examples of the resources available through the CDC. All CDC Fact Sheets are available online free of charge; however, hard copies of various publications can also be ordered in limited quantities without charge.

www.cdc.gov/TB/

Stop TB Partnership

The Stop TB Partnership was established to build upon the Stop TB Initiative launched by the WHO in 1998. The ultimate goal of this program is the elimination of TB as a public health problem and, ultimately, to obtain a world free of TB. The Partnership consists of a network of international organizations, countries, donors, organizations and individuals that have expressed an interest in working together to achieve this goal. Publications, fact sheets, videos, and photos are available through this organization.

www.stoptb.org/

9.8 Varicella (Chickenpox)

Varicella, more commonly known as chickenpox, is a highly contagious airborne disease that is caused by infection from the varicella zoster virus. It is characterized by a skin rash, starting on the torso and head and may spread to the extremities. It is spread from person to person when an infected individual coughs or sneezes and releases germs into the air that are breathed in by others, or through direct contact with secretions from the body rash. An infected person may be contagious from the first day that the rash appears all the way until all blisters have formed scabs, which may take up to ten days. Once a person has acquired and recovered from chickenpox, it is very rare that they will get it again due to antibodies that their bodies produce after exposure. Additionally, children whose mothers have had chickenpox or received the vaccination are unlikely to catch it before one year of age due to the development of protective antibodies and transfer from mother to child during pregnancy. Children under one year old whose mothers have not had chickenpox or the vaccine can get severe chickenpox

Chickenpox is typically known as a childhood disease and is generally not a great concern to parents of healthy children who obtain it. Although it is usually mild, the disease can have some powerful consequences. Out of every 1,000 people who have chickenpox, approximately 100 (10%) will require medical attention and only two will be hospitalized. Death as a result of chickenpox has become very rare since the introduction of a vaccine; however, it still occurs (Children's Hospital of Philadelphia, December 2010).

Existing Condition and Trends

Although it still affects large groups of children and youth, morbidity rates have steadily declined since vaccination was introduced in 1995 and rates have been relatively low in areas where adequate medical supplies and services are available. Despite the introduction of the vaccine and the decline in cases worldwide, morbidity rates on Guam have been strikingly high as well as very sporadic in nature. Surveillance data tracking cases of chickenpox between 2000 and 2008 reveal that the US population experienced an average of 9.55 cases per 100,000 population annually, with the lowest rate of cases of 7.3 per 100,000 occurring in 2003, and the highest being 16.3 per 100,000 in 2006. During this same time period, Guam experienced an average morbidity rate more than ten times greater than US (118.1 cases per 100,000 population, ranging from a low of 38.0 in 2001 to a high of 268.1 in 2005). It should be noted that the number of cases reported on Guam has declined since the 2005 outbreak and the lowest morbidity rate (18.0) of the decade occurred in 2009; however, comparable data for the US, Hawaii, and Puerto Rico has yet to be released.

Although only one third the average rate experienced on Guam, the Puerto Rican population also experienced an outbreak of chickenpox in the early part of the decade. Morbidity rates have since declined fairly steadily. Although no specific factors have officially been correlated with the elevated and fluctuating morbidity rates on Guam and Puerto Rico, the environments of these two locations are more conducive to highly contagious diseases such as chickenpox spreading more rapidly and extensively than the US. Such environmental factors include the close proximity of housing occupants to one another, poorer quality environmental conditions such as that of buildings and community infrastructure components, and general overcrowding in areas, decreasing the possibilities for prevention through isolation. Additionally, educational institutions for youth and daycare centers tend to be more overcrowded in these locations, thus promoting the spread of the disease. Frequent family and community gatherings both serve as an important aspect of traditional cultural practices on Guam and in Puerto Rico, thus increasing the opportunity for interaction with others, including infected individuals, and ultimately the likelihood of transmission from an infected individual to others. Conditions in the US and in Hawaii are not as conducive to widespread outbreaks, and supports the explanation of the difference in morbidity rates for these four geographic areas.

The average chickenpox morbidity rates experienced by Guam, the US, Hawaii, and Puerto Rico from 1999 to 2008 are identified in Table 9-18. Figure 9-14 shows the rates per 100,000 people on Guam for reported varicella cases between 1999 to 2009, as compared to the rates of the US, Hawaii, and Puerto Rico from 1999 to 2008.

Chickenpox has traditionally been associated with childhood due to the majority of cases occurring in children under the age of 14. This pattern is prominently displayed by surveillance data for the Guam population over the past decade who have generally accounted for approximately 84% of all cases, the majority of which were experienced by youth between the ages of five to nine.

Where do we Stand? Evaluating Trends

Current Trends

Guam has exhibited a large change in chickenpox morbidity rates between 1999 and 2008, seeing both dramatic increases and decreases over the years. Hawaii's rate was hardly noticeable and the US rate was consistently low. Puerto Rico's rates began declining in 2000 and tapered off at a steady level by 2003. Although Guam's rate has been declining the past decade, it had two peak years in 2000 and 2005. Guam's average of 132.2 cases per 100,000 persons was three times greater than Puerto Rico's almost 12 times greater than the US, and almost 147 times greater than Hawaii's.

Moving Forward

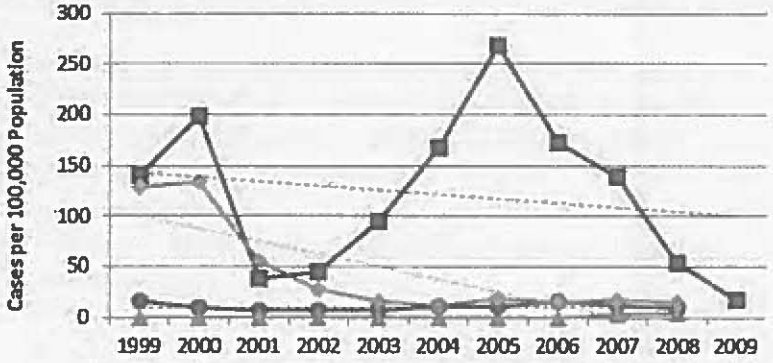
Guam Average	132.2 cases / 100,000 persons
Trending	↓
Guam 2009 Rate	18.0 cases / 100,000 persons
Goal	Less than 1.0 cases / 100,000 persons
5-Year Target	5.0 cases / 100,000 persons

The Healthy People 2020 plan goal for chickenpox is less than one case per 100,000 persons. Guam is nowhere near achieving this goal, but has seen a steep decline in cases in recent years, and depending on vaccination levels and other measures taken, could possible come close to this goal by 2020.

Table 9-18. Average Varicella (Chickenpox) Morbidity Rates, 1999-2008

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	132.2	11.2	0.9	44.4
Trend	↓	↔	↑	↔

Figure 9-14. Varicella (Chickenpox) Morbidity Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	140.9	199.3	38.0	45.6	95.0	167.5	268.1	172.8	139.8	54.6	18
US	16.9	10.0	8.0	8.1	7.3	11.3	11.0	16.3	13.4	10.1	
Hawaii	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	5.3	
Puerto Rico	129.0	133.7	55.5	28.9	16.2	11.5	19.6	15.7	18.5	15.2	

Source: CDC, Morbidity and Mortality Weekly Report, Annual Summary of Notifiable Diseases for the United States, 1999 – 2008
DPHSS Office of Epidemiology and Research, "Annual Summary of Notifiable Diseases – Guam – 2009

The low number of cases in teenagers and adults is attributable to the fact that after a person has contracted and recovered from chickenpox, a natural immunity that usually lasts for the rest of their life. Advancements and availability in vaccinations over the past few decades have also helped to reduce adult cases. The only years over the past decade that have been an exception to this trend were 2006 and 2009, as illustrated in Figure 9-14. A record low number of cases were reported in 2009 (which is the most recent surveillance data available).

A demographic profile of cases of chickenpox in Guam does not indicate that any particular ethnic group is more susceptible to the disease. Although the highest rates of chickenpox infections have typically been among Chamorro, Filipino, and Micronesian groups, these populations also account for proportionately larger numbers of people. Excluding the year 2003, during which time these three ethnicities accounted for approximately 69% of the total reported cases, between 80 to 90% of cases for the years 2000 to 2007 typically involved these three ethnic groups. These percentages declined to 74% in 2008 and 59% in 2009. Almost all of the remaining cases were reported as unknown ethnicity.

A significant decline in the number of reported chickenpox cases has been experienced since the introduction of the chickenpox vaccine in 1995 and is an excellent example of the effectiveness and importance of vaccinations as a means of preventing disease and promoting good health.

Issues and Opportunities

The chickenpox vaccine is currently not required by the Guam Department of Education for children entering the public school system.

A chickenpox vaccine has been available in the US since 1995 and has been widely used to help prevent the spread of this disease. However, one vaccination does not provide for lifetime protection from the disease and an additional inoculation is necessary two to five years after the initial dose, depending on an individual's age, to remain immunized.

Currently, the chickenpox vaccine is not required by the Guam Department of Education for children attending public schools. This lack of requirement likely plays a significant role in the number of chickenpox cases experienced on Guam as well as the spread of the disease throughout the island community's school-aged children.

The CDC recommends that individuals with the following circumstances should either not get a chickenpox vaccine, or should wait (CDC, 2008):

- Anyone who has ever had a life-threatening allergic reaction to a previous dose of chickenpox vaccine, or to the gelatin in the antibiotic neomycin.
- Someone who is moderately or severely ill at the scheduled time of the shot should wait until they recover.
- Pregnant women (in addition, women should not become pregnant until at least one month after receiving the vaccine).
- Anyone who has HIV / AIDS or another disease that affects the immune system.
- Anyone being treated with drugs that affect the immune system, including steroids, for two or more weeks.
- Anyone who has any type of cancer.
- Anyone undergoing cancer treatment with radiation or drugs.
- Anyone who recently had a transfusion or was given any blood products should ask their doctor when they can receive the vaccine.

Chickenpox is a highly transmittable disease that can spread rapidly through unvaccinated populations, such as children in day care centers and schools. Since it is spread through close contact with infected persons, children who have chickenpox should be kept home from day care or school to avoid passing the disease to others. Similarly, infected adults should not return to work until they have fully healed and all associated blisters have scabbed over.

Chickenpox is not generally considered to be a serious or life threatening disease by the general public.

There are many severe complications that are associated with chickenpox, although they do not appear in all cases. Chickenpox infections should not be

taken lightly, as in the most severe cases, death can be the result. Complications of improperly monitored and treated chickenpox or in persons with weaker immune systems include bacterial infection of the skin, swelling of the brain, and pneumonia. The risks for more severe complications from chickenpox are correlated with age, and adolescents and adults are generally more prone to have severe reactions than are infants and younger children.

Approximately 50 out of every 1,000 people (5%) infected with chickenpox will develop infected blisters. This is sometimes caused by bacterial infection from group A streptococcus (GAS). GAS can result in mild infections upon entering the bloodstream, and sometimes develop into necrotizing fasciitis (flesh-eating bacteria) which destroys muscles, fat, and skin tissues, or streptococcal toxic shock syndrome which causes a rapid drop in blood pressure and sometimes organ failure. Roughly 1,500 people in the US die every year from GAS, some of which are a result of complications developed from chickenpox (Children's Hospital of Philadelphia, 2010).

When the chickenpox vaccine was first introduced, some parents and even doctors were skeptical about immunizing children, and felt that chickenpox is not that serious of a disease. This is generally the case, but it can have severe complications in some persons. Many parents are still apprehensive about immunizing their children with yet another vaccine; especially one they may feel is not as serious as others. Because the severity of chickenpox is typically less at a younger age, parents have actually been known to seek out infected children so that their children can interact with and hopefully obtain the disease at an early age. This will also avoid having to be immunized. This practice is not advised and can lead to greater consequences than parents expect, including hospitalization or even death (in the most severe instances).

Plans/Programs to Address Issues

Vaccination

The chickenpox vaccine became widely available in the US in 1995, and has since had a great impact on the reduction of new chickenpox infections throughout the country. The CDC recommends that all children aged 12 to 15 months old receive their first dose of varicella vaccination. Following this, a second dose should be administered between ages four to six years old. Since the vaccine is fairly new in distribution, many adults still have not received it. Not only are all children recommended to receive varicella vaccinations, but also all adults who do not have evidence of immunity. Prior immunity to chickenpox can be evidenced by the following factors:

- Accurate documentation of two doses of varicella vaccination.
- Blood tests indicating immunity to varicella or laboratory confirmation of prior infection.
- Persons born in the US before 1980, excluding health-care workers, pregnant women, and immune-compromised persons (unless they meet one of the other criteria).
- Receipt from a healthcare provider of either a) a diagnosis of chickenpox or herpes zoster (shingles), or b) verification of a history of chickenpox or shingles.

Additional Resources

The following resources provide additional information about chickenpox.

CDC: Varicella Disease Q & A

The CDC provides basic information on varicella, including a description of the disease, how a person can get it, complications, and how to prevent contracting varicella. Information provided includes Questions and Answers on varicella and a strong emphasis is put on the importance of being vaccinated.

CDC: Varicella (Chickenpox) Vaccination

Because a chickenpox vaccination is the best and most common method of preventing chickenpox, the CDC provides a dedicated resource for both the public and medical professionals on the important facts about this disease. All CDC Fact Sheets are available online free of charge; however, hard copies of various publications can also be ordered in limited quantities without charge.

www.cdc.gov/vaccines/vpd-vac/varicella/default.htm

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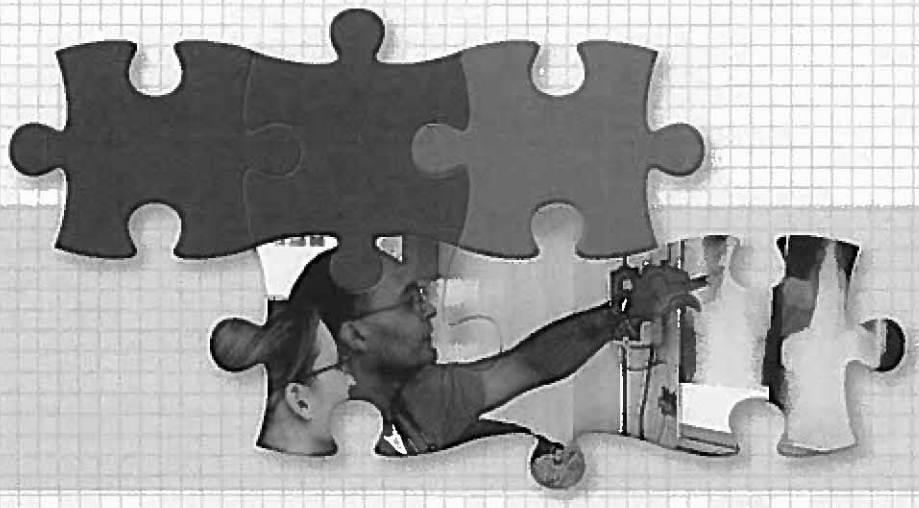


10.
Non-Communicable Diseases

Please see the next page.

10

Non-Communicable Diseases

Inside Section 10 . . .

A non-communicable disease (NCD) is a disease that is not contagious and is caused by something other than a pathogen, such as a person's lifestyle, environmental conditions and factors, or genetic traits. Heart disease, cancer, diabetes, diseases of the heart, stroke, chronic respiratory disease, liver disease, and kidney disease are the most common examples of NCDs. Half of all non-communicable diseases are a result of poor lifestyle choices such as improper diet, lack of exercise, poor stress management, or use of alcohol, tobacco, or drugs. Environmental factors that have the potential to increase one's chances of developing a chronic disease include tobacco smoke and other indoor pollutants, outdoor pollution, and exposure to occupational hazards. Morbidity rates and mortality associated with particular NCDs vary by geography as well as demographic characteristics.

Obstacles that reduce the availability, affordability, and dissemination of information and treatment of NCDs have been identified as both economic and social in nature. Economic and demographic barriers include poverty, poor education, illiteracy, lack of adequate sanitation and poor infrastructure. Cultural barriers include multiplicity of languages, as well as religious and cultural beliefs. Guam's population is comprised of several subgroups, such as Chamorro, Asian, and Pacific Islander, whose primary language is not English. When the majority of medical information, including treatment options and identification of where to seek treatment, is provided in a select few languages, a large proportion of the population may be left in the dark.

Additionally, personal beliefs stemming from cultural traditions and a reluctance to seek western medical care lead to conditions that could have been treated early worsening. This concern is elevated with respect to cancer among Guam's Chamorro population.

> It is customary practice for Micronesians to seek western medical care only when it is needed as opposed to preventative care, oftentimes leading to worsened conditions that could have been treated early on. This is a particular concern with respect to cancer among Guam's Chamorro population, since cancer is reported as the second leading cause of death among Chamorros.
>
> *Source: Pacific Health Dialog, April 2010*

Poor nutrition is common in low and middle income countries, whereas obesity is increasing in high income countries and in urban areas of low and middle income countries. These conditions are all major contributors to several chronic conditions and NCDs. Economic conditions play a role in the availability and accessibility of drugs and devices, and as a result impact both the potential to develop NCDs and opportunities for treatment. In many countries, there is still poor accessibility to appropriate medications. There is also a lack of resources for the diagnosis of chronic NCDs in low and middle income countries.

This chapter addresses the NCDs identified as having the greatest impact on Guam in terms of mortality and morbidity rates as well as the potential for these conditions to spread and lead to greater impairment of public health. Cancer, diabetes, diseases of the heart, cerebrovascular disease, chronic respiratory disease, and liver diseases have all ranked among the top ten causes of death fairly consistently over the past decade.

10.1 Cancer

Cancer is a generic term for a large group of diseases that can affect any part of the body and can affect any person. Although identifiable risk factors exist, cancerous tumors can also result without a clear medical understanding of the cause. A cancer is an abnormal growth of cells that have lost normal control mechanisms and are able to expand continuously, invade adjacent tissues, migrate to other parts of the body, and promote the growth of new blood vessels from which the cells derive nutrients. Cancerous cells can develop from any tissue in the body. As cells grow and multiply, a mass of cancerous tissue, referred to as a tumor, is formed. A cancerous tumor is synonymous with the term malignant tumor.

Cancer is more likely to progress in people with an immune system that is altered or impaired, as in people with AIDS, people receiving immunosuppressive drugs, people with certain autoimmune disorders, and older people, in whom the immune system works less well than in younger people.

There are three basic types of cancerous tissues: leukemias and lymphomas, carcinomas, and sarcomas.

- Leukemias and lymphomas are cancers of the blood, blood-forming tissues, and cells of the immune system. The presence of these cells causes harm to the body as these cells multiply and crowd out normal blood cells in the bone marrow and bloodstream. They cause expansion of lymph nodes, producing large masses in the armpit, groin, abdomen, or chest.
- Carcinomas are cancers of epithelial cells, which are cells that cover the surface of the body, produce hormones, and make up glands. Examples of carcinomas include cancers of the skin, lung, colon, stomach, breast, prostate, and thyroid gland. It is more common for carcinomas to occur in older people than younger.
- Sarcomas are cancers that arise from transformed cells in tissues that develop from mesodermal cells and include tumors of bone, cartilage, fat, muscle, vascular, and hematopoietic tissues. It is more common for sarcomas to occur in younger people than older.

Data Sources

The Guam Cancer Registry collects and reviews cancer data for the Guam population and publishes reports of their findings. For this Strategic Plan, Guam cancer statistics were provided by the Guam Cancer Research Center's Cancer Registry, which publishes the data in five year increments as discussed below and from unpublished data provided by the Cancer Research Center per special request. It should be noted that the published Cancer Registry data has been age-adjusted; however, the unpublished data are crude rates, not adjusted for age.

Existing Condition and Trends

Cancer (of all sites) is a leading cause of death worldwide and accounted for approximately 13% of all deaths in 2008. Various forms of cancer have consistently been among the top causes of morbidity and mortality, which have remained fairly constant over the past decade, including cancers of the lung, stomach, liver, breast, and colorectal cancer.

Cancer trends in the US and Guam over the past decade indicate slight progress toward reducing overall mortality rates, as depicted in Figure 10-2; however, the incidence of cancer has been on the rise (see Figure 10-1). Although significant progress in the battle against cancer is still needed amidst an increase in morbidity rates indicates better progress in treating and curing cancer than in the prevention of cases occurring.

As identified and illustrated in Tables 10-2 and 10-3 and Figures 10-1 and 10-2, Cancer morbidity and mortality trends experienced on Guam over the past decade differ appreciably from the US and Hawaii. Although the incidence of cancer has slightly increased over the past decade on Guam, associated mortality has trended downward. Cancer of all sites is the second leading cause of death on Guam behind heart disease and on the rise, accounting for just over 20% of all deaths on Guam in 2008. The age adjusted cancer morbidity rate on Guam recently reached 110 deaths per 100,000 population and an average of 316 new cases of cancer being diagnosed annually. Cancer morbidity and mortality data experienced on Guam are available in five year study periods, from 1998 to 2002 and 2003 to 2007. A comparison of these two five-year periods shows a 19% overall increase in new cancer cases diagnosed, from 1,333 to 1,580 cases, an average of 316 new cancer cases diagnosed annually for the most recent study period of 2003 to 2007.

Disparities in cancer morbidity and mortality on Guam occur by gender, by ethnicity, and across age cohorts.

Gender

A much sharper increase in cancer cases was experienced by Guam males, where age-adjusted morbidity rate increased by 22% from 323.85 to 394.1 per 100,000, than by females, whose morbidity rate remained relatively unchanged at 263.1 in 2003 and 263.6 in 2007., with only a slight 0.2% increase. Cancer deaths rose by 10%, from 653 to 720, overall. For Guam women, a sharp increase of 73% (from 67.97 to 117.4), and for men, a 100% increase in mortality rates, from 100.02 to 200.6, occurred. (University of Guam, 2009)

Ethnicity

A review of most recent cancer statistics reveal that Chamorros experienced the highest overall age-adjusted cancer mortality rate at 247.2 cases per 100,000 population, more than 25% higher than the overall US rate of 193.5. Caucasians follow at 204.6. Micronesians were lower than the US rate at 172.9, as were Asians and Filipinos, at 94.0 and 93.4, respectively. The Asian and Filipino rates were over 50% lower than the US rate.

Age

Cancer afflicted young children, adolescents, young and middle-aged adults, and elderly all at different rates. Cancer tends to affect older populations more so than younger, as can be seen with Guam's middle aged adults and elderly, who suffered the most. Some cancers, such as Leukemia and Non-Hodgkin's Lymphoma, are more common in children; however, in general, the incidence of cancer and cancer related deaths increases with age. Cancers that are more common for adults include breast cancer, prostate cancer, and lung cancer. Risk of developing cancer as age increases is believed to be a result of several factors, including greater likelihood of risk factors, such as smoking.

The most common cancer sites (62% of all new cases) and cancer deaths (63% involved lung and bronchus, prostate, breast, and colon rectum for the 2003 to 2007 study period. For children under the age of 15, the most common cancers were Non-Hodgkin lymphoma (6 cases) and leukemia (5 cases).

Cancers of significant concern to the Guam population are listed in Table 10-1, and are summarized on the proceeding pages.

Table 10-1. Cancer Incidence and Mortality of Guam Residents by Site, Guam: 2003-2007

Cancer Sites	Incidence Count (New Cases)	Percentage of Total Cancer Incidence	Mortality Counts (Deaths)	Percentage of Total Cancer Mortality
Lung	272	17.2%	206	28.6%
Prostate	223	14.1%	59	8.2%
Breast (Female)	202	12.8%	57	7.9%
Colorectal	165	10.4%	82	11.4%
Liver	66	4.2%	50	6.9%
Other Cancer Sites	652	41.3%	266	36.9%
All Sites	1,580	100.0%	720	100.0%

Source: University of Guam, Cancer Research Center of Guam, Guam Cancer Registry, 2009

Where do we Stand? Evaluating Trends

Current Trends

Table 10-2 and Figure 10-1 indicate that Guam's rate of incidence of all cancer types has been less than half that of Hawaii and US between 1999 and 2007. Guam has remained under 200 cases per 100,000 people for the past decade. The rate has remained relatively constant for most of the decade, with a slight upward trend for all years. There was a decline in 2000, also experienced by Hawaii, and another downward trending in 2009. Data was not available for Hawaii and the US to make a similar comparison for this year.

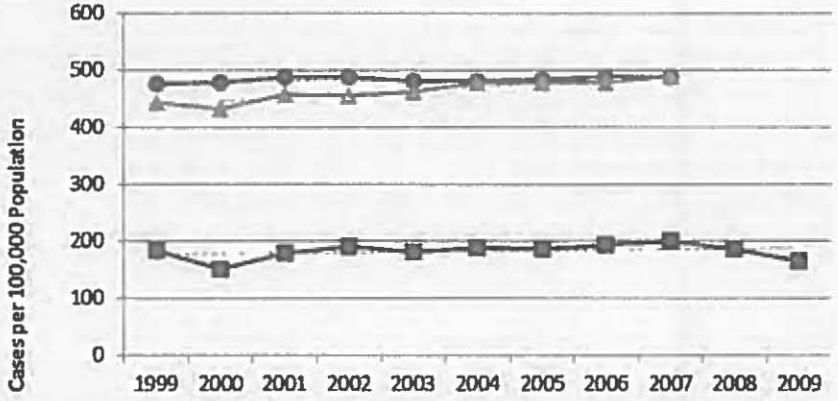
Moving Forward

Guam Average	183.1 cases / 100,000 persons
Trending	↑
Guam 2009 Rate	163.8 cases / 100,000 persons
Goal	N/A
5-Year Target	150.0 cases / 100,000 persons

Table 10-2. Average Incidence Rates of All Cancers, 1999-2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	183.1	482.8	463.9	-
Trend	↑	↑	↑	-

Figure 10-1. All Cancer Types, Incidence Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	182.2	151.2	177.5	190.6	180.3	187.2	185.7	193.5	199.5	186.5	163.8
US	474.9	477.6	486.6	487.0	480.1	481.2	483.2	487.5	487.3		
Hawaii	443.3	432.6	457.2	455.4	461.4	478.1	478.3	479.5	489.6		

Source: CDC National Program of Cancer Registries (NPCR) United States Cancer Statistics (USCS) http://apps.nccd.cdc.gov/uscs/; University of Guam Cancer Research Center, 1999-2009

Where do we Stand? Evaluating Trends

Current Trends

Similar to the incidence rates, Table 10-3 and Figure 10-2 show that the rates of mortality for all cancers on Guam were much lower than the rates for Hawaii and the US. For every year except 2002, Guam's rate was less than 100 deaths per 100,000 people and the average for the years 1999 to 2007 was slightly less than half of the US rate. Rates on Guam varied somewhat from year to year, but have been trending downwards for the past decade.

Moving Forward

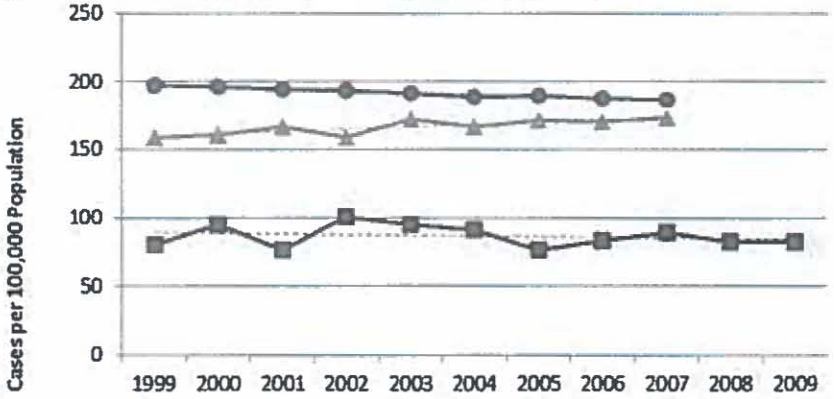
Guam Average	87.3 deaths / 100,000 persons
Trending	↓
Guam 2009 Rate	82.5 deaths / 100,000 persons
Goal	160.6 deaths / 100,000 persons
5-Year Target	75.0 deaths / 100,000 persons

In comparison to the goals established in the Healthy People 2020 plan, Guam has historically maintained a rate that is a little more than half of the goal that has been established, and the rate continues to trend downwards.

Table 10-3. Average Mortality Rates for All Cancers, 1999-2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (deaths per 100,000 persons)	87.3	191.7	166.4	-
Trend	↓	↓	↑	-

Figure 10-2. All Cancer Types, Mortality Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	80.0	95.0	76.4	100.6	94.7	90.9	75.9	83.0	88.8	81.9	82.5
US	197.0	196.0	194.3	193.7	191.9	189.1	189.2	187.7	186.8		
Hawaii	158.3	160.4	166.2	158.5	172.2	166.8	171.5	170.2	173.3		

Source: CDC National Program of Cancer Registries (NPCR) United States Cancer Statistics (USCS) http://apps.nccd.cdc.gov/uscs/; University of Guam Cancer Research Center, 1999-2009

Colorectal Cancer

Types and Symptoms

Colon-rectum-anus cancers affect the digestive tract, where the extraction of nutrients, electrolytes, and water occurs. The colon and rectum make up part of the digestive system: after extracting what the body can use in the colon, stool is passed on to the rectum before being dispelled). The anus is the orifice hole that is used to expel stool to the outside. The majority of colon and rectum cancers affect the tissue; however, around 10% of these are mucinous (protein contained in mucus). Minimizing the severity of symptoms, containing the spread of the cancer, and reducing potential fatality requires early detection and proper treatment, which have helped reduce the death rate of this cancer over the last two decades. This downward trend has been experienced in places such as the US, as can be seen on Figure 10-4; however, places suffering from healthcare shortages and other access to care issues have not benefited with a reduction in mortality. Despite improvements in detection and care, approximately one third of patients diagnosed will die from this cancer. It is estimated that approximately 782,000 people are diagnosed with colorectal cancer worldwide each year.

Colorectal (bowel) cancer is one of the most common types of cancer in both men and women (see Table 10-1). Approximately four fifths of these cancers are found in the colon (large intestine), and one fifth in the rectum.

Risk Factors

The exact causes of colorectal cancer are unknown, but research shows that people with certain risk factors are more likely to develop this disease. These cancers are more common in the elderly, with the median age at diagnosis being 70, and amongst males.

Colon-rectum-anus Cancers Risk Factors:

- Being over 50 years old – Colorectal
- Family history of colorectal cancer – Colorectal
- Ulcerative colitis or Crohn's disease – Colorectal
- Diet high in fat and low in calcium, folate, and fiber – Colorectal
- Being infected with human papillomavirus (HPV) – Anal
- Having many sexual partners – Anal
- Having anal intercourse (anal sex) – Anal
- Having anal fistulas (abnormal openings) – Anal
- Smoking cigarettes – Both

Existing Condition and Trends

The incidence of colorectal cancer has been on the decline in the US, Guam, and Hawaii over the past decade; however, the annual trends have varied across the three locations (see Figure 10-3). The incidence of colorectal cancer on Guam has fluctuated annually, hovering around 20 cases per 100,000 persons since 1999. The pattern of mortality rates on Guam has exhibited similar fluctuations; however, there has been an overall increase in death rate, from 5.9 to 13.8 deaths per 100,000 persons for the years 1999 and 2007 respectively. The overall incidence of colorectal cancer on both Hawaii and the US has declined, as depicted in Table 10-4 and Figure 10-3; however, associated mortality rates have been on the rise in Hawaii and declined in the US, as shown in Table 10-5 and Figure 10-4.

During the five-year period between 2003 and 2007, Chamorros experienced the highest age-adjusted rate of mortality due to colorectal cancers at 28.6 reported cases per 100,000 with Caucasians next at 22.6, both above the U.S. rate of 19. Lower than the U.S. rate were Filipinos at 15.3 and Asians who had the lowest rate at 12.5. (University of Guam Cancer Research Center, June 2009)

The higher rates of colorectal cancer morbidity as well as the increase in prevalence of this cancer among the groups most affected may be attributable to a change in diet as well as the high proportion of smokers on Guam. The traditional diet of Chamorros consists of local ingredients such as fresh fish and vegetables; however, a shift toward increased consumption of processed foods and a change in cooking methods to frying foods that were traditionally grilled can have a profound impact on one's overall health as well as contribute to the potential for developing these cancers. The change in nutrition and diet on Guam is discussed in more detail in Chapter 7: Wellness and Prevention.

Where do we Stand? Evaluating Trends

Current Trends

As shown on Table 10-4 and Figure 10-3, the incidence rates of colorectal cancer on Guam have been equal to less than half the rates of Hawaii and the US between the years 1999 to 2007, with an average of around 20 cases per 100,000 people. All three geographies have been trending downwards, with the other two slightly more than Guam. The rates on Guam have not been consistent from year to year, as they appear to fluctuate up and down every few years.

Moving Forward

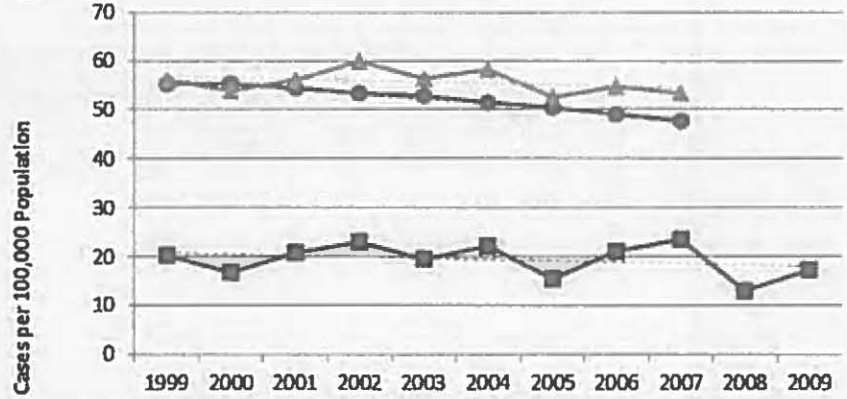
Guam Average	20.3 cases / 100,000 persons
Trending	↓
Guam 2009 Rate	17.4 cases / 100,000 persons
Goal	38.6 new invasive colorectal cancer cases / 100,000 persons
5-Year Target	17.0 cases / 100,000 persons

In comparison to the goals established in the Healthy People 2020 plan, Guam has historically maintained a rate that is a little more than half of the goal that has been established, and the rate continues to trend downwards.

Table 10-4. Average Colorectal Cancer, Incidence Rates, 1999-2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	20.3	52.3	55.7	-
Trend	↓	↓	↓	-

Figure 10-3. Colorectal Cancer Incidence Rates, 1999-2006



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	20.3	16.8	20.8	23.0	19.6	22.3	15.4	21.1	23.6	13.1	17.4
US	55.4	55.3	54.5	53.5	52.8	51.5	50.5	49.1	47.8		
Hawaii	56.2	53.8	56.2	59.8	56.3	58.2	52.6	54.6	53.4		

Source: CDC National Program of Cancer Registries (NPCR) United States Cancer Statistics (USCS) http://apps.nccd.cdc.gov/uscs/; University of Guam Cancer Research Center, 1999-2009

Where do we Stand? Evaluating Trends

Current Trends

Although the rates of colorectal mortality on Guam were closer to those of Hawaii and the US, they were still lower than each of these other two geographies. Table 10-5 and Figure 10-4 indicate that rates of mortality on Guam are trending upwards, but the average rate for the years 1999 to 2007 was 9.5 deaths per 100,000 people, half of the rate of the US, which is trending downwards.

Moving Forward

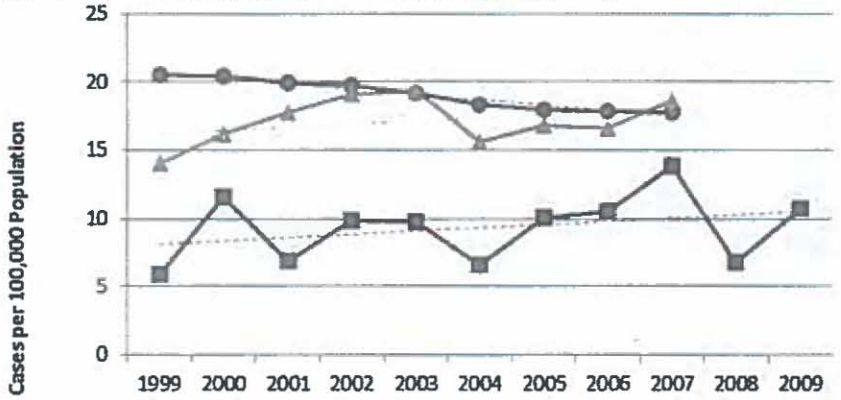
Guam Average	9.5 deaths / 100,000 persons
Trending	↑
Guam 2009 Rate	10.7 deaths / 100,000 persons
Goal	Colorectal cancer – 14.5 deaths / 100,000 persons
5-Year Target	10.0 deaths / 100,000 persons

Guam has maintained an average rate over the past decade that is around 2/3 of the goal established within the Healthy People 2020 plan; however, the rate of death has been trending upwards for the past decade.

Table 10-5. Average Colorectal Cancer, Mortality Rates, 1999-2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (deaths per 100,000 persons)	9.5	19.0	17.1	-
Trend	↑	↓	↑	-

Figure 10-4. Colorectal Cancer Mortality Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	5.9	11.6	6.9	9.9	9.8	6.6	10.1	10.5	13.8	6.8	10.7
US	20.5	20.4	19.9	19.7	19.2	18.3	17.9	17.8	17.7		
Hawaii	14.0	16.2	17.7	19.1	19.4	15.6	16.7	16.5	18.6		

Source: CDC National Program of Cancer Registries (NPCR) United States Cancer Statistics (USCS) http://apps.nccd.cdc.gov/uscs/; University of Guam Cancer Research Center, 1999-2009

Breast Cancer

Types and Symptoms

There are two main types of breast cancer: ductal carcinoma and lobular carcinoma. Ductal carcinoma starts in the tubes (ducts) that move milk from the breast to the nipple, and lobular carcinoma stats in parts of the breast that produce milk, called lobules. Most breast cancers are ductal carcinoma. Symptoms of breast cancer may appear as bone pain, breast pain or discomfort, skin ulcers, swelling of one arm, and weight loss. Initial evaluation includes an assessment of symptoms and risk factors and a physical exam. Although breast cancer is much more prevalent amongst females, males can also get breast cancer.

Risk Factors

Risk factors that increase the likelihood of developing breast cancer include both predisposition and behavioral elements. Risk factors that a person cannot influence include:

- Age and Gender: A person's risk of developing breast cancer increases with age. The majority of advanced breast cancer cases are identified in women over the age of 50. Women are also 100 times more likely than men to get breast cancer.
- Family History: A person's genetics play a role in the likelihood of developing cancer. A person is at a higher risk if they have a close relative who has had breast, uterine, ovarian, or colon cancer. About 20 to 30% of women with breast cancer have a family history of the disease.
- Genetics: A person's genetic makeup may predispose them to getting breast cancer. The most common gene defects are found in BRCA1 and BRCA2 genes, which normally produce proteins that protect a person from cancer. If a defective gene is passed on from a parent, the risk for breast cancer is increased to an 80% chance of getting breast cancer sometime in life.
- Menstrual Cycle: Women who begin menstruation before the age of 12 or who go through menopause after the age of 50 have an increased risk for breast cancer.

Preventable risk factors for breast cancer include initial childbirth after 30 years of age, alcohol use, childbirth characteristics, obesity, and radiation exposure. A review of cancer cases among Guam residents shows a high percentage of cancer cases that were identified through a late stage diagnosis, which may be a sign of lack of awareness causing a person to not get properly treated.

Existing Condition and Trends

The overall incidence of female breast cancer in the US, Guam, and Hawaii has trended slightly downward, as indicated in Table 10-6 and Figure 10-5. Compared to the US and Hawaii, the average breast cancer incidence rate on Guam (52.3) is less than half that experienced in the US (135.1) and Hawaii (140.7). Mortality rates on Guam are also much lower on Guam (13.8) than in the US (28.0) and Hawaii (21.3), as indicated in Table 10-7 and illustrated on Figure 10-6. Hawaii is the only one of the three whose breast cancer mortality rate has been on the rise over the past decade.

Breast cancer is the leading cause of cancer-related deaths amongst women on Guam. According to the University of Guam's Cancer Research Center, Chamorro women have experienced the highest age adjusted breast cancer mortality rate at 32.0 deaths per 100,000 population, followed by Caucasians (25.9), both above the US rate for all women (28.0). Under the US rate were Asian women at 16.1, Micronesians at 12.3 and Filipinas at 5.6. (University of Guam Cancer Research Center, June 2009) Approximately three percent (3%) of Guam women under the age of 35 were diagnosed with breast cancer during the five year period from 2003 to 2007.

As age progressed, the incidence of breast cancer increased. Fourteen percent (14%) of women between 35 and 44; 24% between 45 and 54; 28% between 55 and 64; and 31% 65+ years of age were diagnosed with cancer. Approximately two percent (2%) of women who died of breast cancer were under age 35; seven (7%) between 35 and 44; 23% between 45 and 54; 26% between 55 and 64; and 42% were 65+ years of age.

Where do we Stand? Evaluating Trends

Current Trends

Table 10-6 and Figure 10-5 indicate that Guam has a significantly lower incidence rate of breast cancer as compared to Hawaii and the US. Compared to Hawaii and the US, Guam, with an average of 52.3 cases per 100,000 females has had rates less than half those of the other two geographies. For the most part, incidence rates on Guam have been between 40 to 60 cases per 100,000 females and have been trending downwards for the past decade. The lowest rate was seen in 2009.

Moving Forward

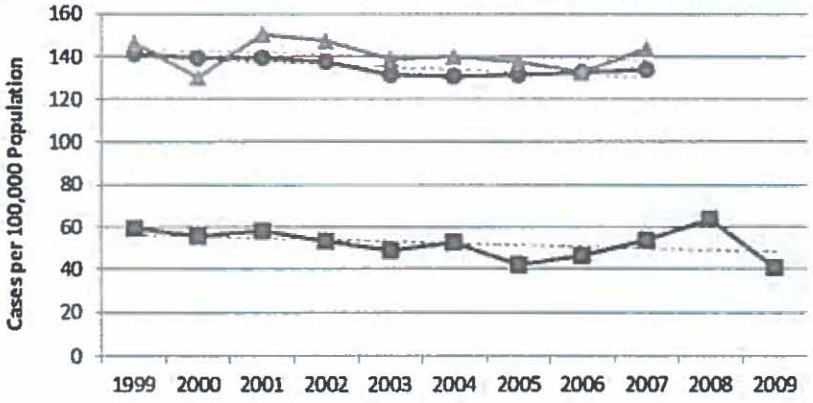
Guam Average	52.3 cases / 100,000 females
Trending	↓
Guam 2009 Rate	41.1 cases / 100,000 females
Goal	41 new cases of late stage female breast cancer / 100,000 females
5-Year Target	

Historically, average rate was around 25% higher than the Healthy People 2020 plan, but continues to trend downwards. In 2009, Guam's rate was almost equal to the Healthy People 2020 goal.

Table 10-6. Average Female Breast Cancer Incidence Rates, 1999-2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	52.3	135.1	140.7	-
Trend	↓	↓	↓	-

Figure 10-5. Female Breast Cancer Incidence Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	59.6	55.5	58.1	53.3	48.7	52.8	42.3	46.5	54.0	63.7	41.1
US	141.0	139.1	139.5	137.4	131.2	130.5	131.0	132.6	133.9		
Hawaii	145.9	130.2	150.5	147.6	138.9	140.1	137.3	132.3	143.5		

Source: CDC National Program of Cancer Registries (NPCR) United States Cancer Statistics (USCS) http://apps.nccd.cdc.gov/uscs/; University of Guam Cancer Research Center, 1999-2009

Where do we Stand? Evaluating Trends

Current Trends

Similar to the incidence rate for breast cancer, the mortality rates on Guam have been lower than Hawaii and the US between the years 1999 to 2007. Guam's average rate of 13.8 deaths per 100,000 females was about half that of the US rate and about 35% lower than Hawaii's rate. The mortality rate has been trending downwards on Guam, as well as the US, whereas it has been trending upwards in Hawaii.

Moving Forward

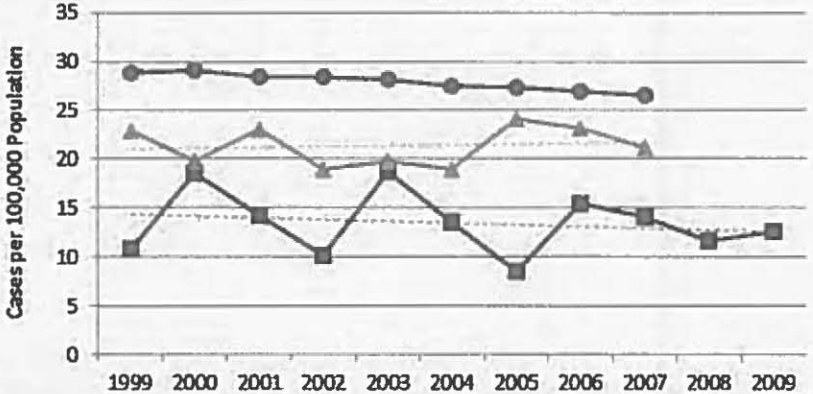
Guam Average	13.8 deaths / 100,000 females
Trending	↓
Guam 2009 Rate	12.6 deaths / 100,000 females
Goal	20.6 deaths / 100,000 females
5-Year Target	

Compared to the goal established for breast cancer deaths within the Healthy People 2020 plan, Guam's rate over the past decade has been equal to around 2/3, and continues to trend downwards.

Table 10-7. Average Female Breast Cancer Mortality Rates, 1999-2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (deaths per 100,000 persons)	13.8	28.0	21.3	-
Trend	↓	↓	↑	-

Figure 10-6. Female Breast Cancer Mortality Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	10.8	18.5	14.2	10.1	18.7	13.5	8.5	15.5	14.1	11.6	12.6
US	28.9	29.1	28.5	28.4	28.2	27.5	27.4	27.0	26.6		
Hawaii	22.9	19.8	23.0	18.9	19.8	18.9	24.1	23.1	21.1		

Source: CDC National Program of Cancer Registries (NPCR) United States Cancer Statistics (USCS) http://apps.nccd.cdc.gov/uscs/; University of Guam Cancer Research Center, 1999-2009

Leukemia

Types and Symptoms

Leukemia is cancer of the body's blood-forming tissues including bone marrow and the lymphatic system. The disease typically starts in the white blood cells causing the bone marrow, where blood cells are formed, to produce abnormal white blood cells and impairing their ability to fight infection. There are several types of leukemia, which are grouped based on how quickly the disease develops and worsens. **Chronic leukemia** is a slowly progressing cancer which may not display symptoms until conditions have progressed and worsens. In **acute leukemia**, the disease progresses quickly as cells are incapable of doing any of the work of normal white blood cells and the number of leukemia cells increases rapidly. Presentation of symptoms depends on whether the leukemia is chronic or acute and the type of leukemia. Although a person with chronic leukemia may not notice any symptoms, some may experience swollen lymph nodes or infections, typically starting out mildly and gradually increasing in severity. Common symptoms of acute leukemia include fever or night sweats, frequent infections, constant fatigues, unexplained weight loss, and pain in the joints or bones.

Risk Factors

Although the exact cause of leukemia is not known, risk factors have been identified for the various forms of this disease. Risk factors may vary by type of leukemia and include:

- Exposure to radiation
- Smoking
- Exposure to certain chemicals (benzene)
- Treatment with certain cancer fighting drugs (chemotherapy)
- Family history of leukemia

An accurate diagnosis of leukemia and the type of this disease requires a review of medical history as well as an examination of blood and bone marrow samples.

Existing Condition and Trends

Both the incidence and mortality rates of leukemia have been on the decline in the US, Hawaii, and Guam over the past decade; however, the number of case reported on Guam and Hawaii has fluctuated annually. Data presented in Table 10-8 and Figure 10-7 indicate progress toward the prevention and treatment of this cancer, which has recently reached its lowest mortality rate (Table 10-9 and Figure 10-8) on Guam over the past decade.

During the years 2003 to 2007 on Guam, Caucasians had the highest age-adjusted rate of death due to leukemia at 19.9 cases per 100,000 population and they were the only group with a mortality rate above the US rate (7.5 cases per 100,000 population). Chamorros at 6.5, Filipinos at 3.8, Micronesians at 2.1 and Asians at 1.8 were all below the US age-adjusted rate. (University of Guam Cancer Research Center, June 2009)

Although there has been an overall decline in the number of new cases diagnosed and mortality rates associated with Leukemia on Guam since 1999, dramatic fluctuations have occurred from year to year.

Where do we Stand? Evaluating Trends

Current Trends

As shown on Table 10-8 and Figure 10-7, the incidence rates for leukemia on Guam were lower than both the US and Hawaii. The variation in rates for Guam has been much more sporadic than for Hawaii and the US, but in general all three geographies have been trending downwards. Guam's average rate of 4.8 cases per 100,000 people between 1999 and 2007 was less than half that of Hawaii and the US, and in 2009 saw a significant decline in the incidence rate.

Moving Forward

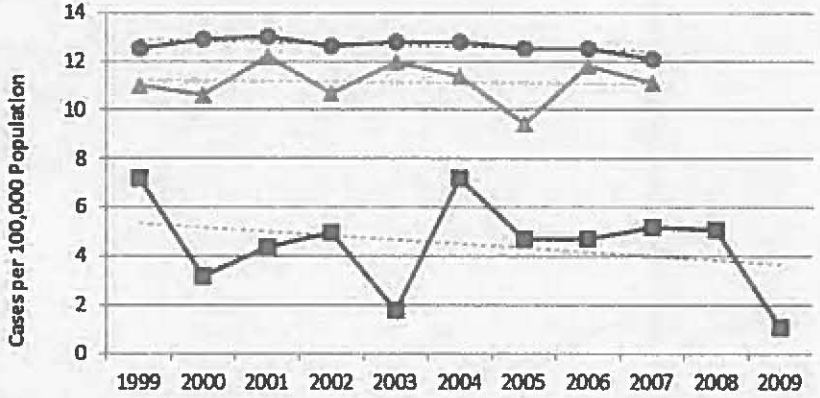
Guam Average	4.8 cases / 100,000 persons
Trending	↓
Guam 2009 Rate	1.1 cases / 100,000 persons
Goal	N/A
5-Year Target	1.0 cases / 100,000 persons

Although Guam's average rate of leukemia incidence over the past decade has been almost five times greater than the 5-year target established within this Plan, the rate continues to trend downwards. The rate in 2009 was almost equal to the 5-year target. The Healthy People 2020 plan did not identify a goal for leukemia incidence rates.

Table 10-8. Average Leukemia Incidence Rates, 1999-2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	4.8	12.6	11.1	-
Trend	↓	↓	↓	-

Figure 10-7. Leukemia Incidence Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	7.2	3.2	4.4	5.0	1.8	7.2	4.7	4.7	5.2	5.1	1.1
US	12.5	12.9	13.0	12.6	12.8	12.8	12.5	12.5	12.1		
Hawaii	11.0	10.6	12.2	10.7	12.0	11.4	9.4	11.8	11.1		

Source: CDC National Program of Cancer Registries (NPCR) United States Cancer Statistics (USCS) http://apps.nccd.cdc.gov/uscs/; University of Guam Cancer Research Center, 1999-2009

Where do we Stand? Evaluating Trends

Current Trends

As Table 10-9 and Figure 10-8 show, for the most part, Guam has had a lower rate of mortality from leukemia than Hawaii and the US. In 1999, Guam had a higher rate than Hawaii, but it dropped the following year and remained lower than Hawaii for the remaining years. The mortality rate on Guam has fluctuated much more than Hawaii or the US between the years of 1999 to 2007, but in general, all three were trending downwards. Of the three, Guam's downward trend was much more rapid than the other two. Guam's nine-year average of 3.0 deaths per 100,000 people was less than half of the US rate, and a little more than half of Hawaii's rate.

Moving Forward

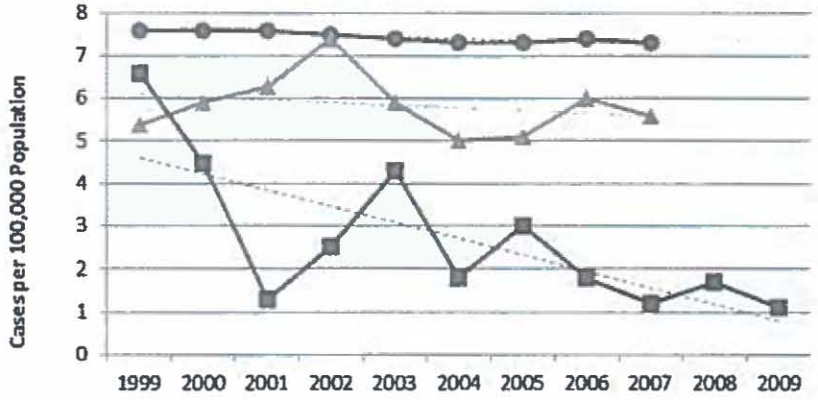
Guam Average	3.0 deaths / 100,000 persons
Trending	↓
Guam 2009 Rate	1.1 deaths / 100,000 persons
Goal	N/A
5-Year Target	1.0 deaths / 100,000 persons

Although Guam's average rate of leukemia mortality over the past decade has been three times greater than the 5-year target established within this Plan, the rate continues to trend downwards. The rate in 2009 was almost equal to the 5-year target. The Healthy People 2020 plan did not identify a goal for leukemia mortality rates.

Table 10-9. Average Leukemia Mortality Rates, 1999-2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (deaths per 100,000 person)	3.0	7.4	5.8	-
Trend	↓	↓	↓	-

Figure 10-8. Leukemia Mortality Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	6.6	4.5	1.3	2.5	4.3	1.8	3.0	1.8	1.2	1.7	1.1
US	7.6	7.6	7.6	7.5	7.4	7.3	7.3	7.4	7.3		
Hawaii	5.4	5.9	6.3	7.4	5.9	5.0	5.1	6.0	5.6		

Source: CDC National Program of Cancer Registries (NPCR) United States Cancer Statistics (USCS) http://apps.nccd.cdc.gov/uscs/; University of Guam Cancer Research Center, 1999-2009

Lung Cancer

Types and Symptoms

Cancers that begin and develop in the lungs are referred to as lung cancer. There are two major types of lung cancers: non-small cell and small cell lung cancer, whose names refer to how the cancers appear under a microscope. The majority (80%) of lung cancers are non-small cell. The remaining 20% are small cell lung cancers, which multiply rapidly and form large tumors that spread throughout the body. Each of these types of lung cancer grows and spreads in different manners and requires different forms of treatment, which must be determined on a case by case basis.

Risk Factors

The primary cause of lung cancer is smoking cigarettes. Smoking cigars and pipes as well as exposure to secondhand smoke also increase a person's risk of developing lung cancer. This relationship displays itself in Guam's high smoking rates among both adults (27.3%) and youth (21.3%), which are the highest in the US, and in the high number of lung cancer cases. Exposure to other environmental toxins such as radon and asbestos also increases a person's risk of developing lung cancer.

Existing Condition and Trends

Lung cancer continues to be problematic worldwide and ranks as the top cancer of concern in many countries, including on Guam. Although the incidence of lung and bronchus cancer on Guam, as shown in Table 10-10 and Figure 10-9, has remained relatively unchanged since 1999, the death rate, as shown in Table 10-11 and Figure 10-10, has been on the rise during this same period of time. Both lung cancer incidence (30.3) and mortality rates (23.5) on Guam are lower on Guam than in the US and Hawaii; however, the upward trend of mortality rates indicates significant cause for concern.

The number of cancer deaths increased by 27% between the two five year study periods from 162 to 206. Lung cancer is the leading cause of cancer deaths for both sexes and across all ethnic groups on Guam. Of the total number of diagnosed cases of lung cancer from 2003 to 2007, approximately 0.4% of Guam residents were diagnosed with lung cancer under the age of 35; 5.1% between 35 and 44; 12.1% between 45 and 54; 25.0% between 55 and 64; and 57.4% 65+ years of age. Approximately 3.9% of the Guam residents who died of lung cancer were under age 45; 16.5% between 45 and 54; 25.2% between 55 and 64; and 54.4% were 65+ years of age. (University of Guam Cancer Research Center, June 2009)

Where do we Stand? Evaluating Trends

Current Trends

Lung cancer is one of the more common cancers on Guam. Table 10-10 and Figure 10-9 show that Guam had much lower incidence rates for lung and bronchus cancer than Hawaii and the US. Rates on Guam have fluctuated up and down more than in Hawaii and the US (the US rate was nearly the same each year); however, the average rate of 30.3 cases per 100,000 people on Guam was less than half the US rate, and a little more than half the rate in Hawaii. From 1999 to 2009, Guam's trendline remained stable, not trending up or down, similar to the US, while Hawaii trended upwards.

Moving Forward

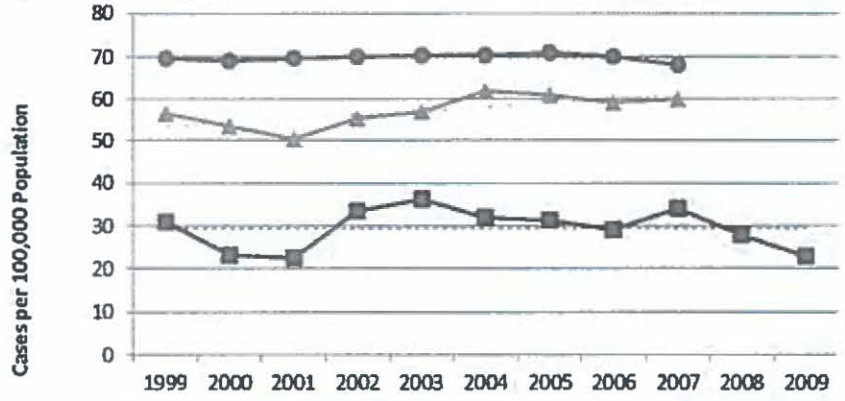
Guam Average	30.3 cases / 100,000 persons
Trending	↔
Guam 2009 Rate	23.0 cases / 100,000 persons
Goal	N/A
5-Year Target	20.0 cases / 100,000 persons

Guam's average rate for the past decade was 50% greater than the 5-year target established within this Plan. The rates do not appear to trend up or down for the past decade; however, the 2009 rate was only slightly greater than the 5-year target. The Healthy People 2020 plan did not identify a goal for lung and bronchus cancer incidence rates.

Table 10-10. Average Lung and Bronchus Cancer Incidence Rates, 1999-2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	30.3	69.8	57.3	-
Trend	↔	↔	↑	-

Figure 10-9. Lung and Bronchus Cancer Incidence Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	30.8	23.3	22.7	33.5	36.1	31.9	31.4	29.2	34.0	27.9	23.0
US	69.6	69.2	69.7	69.9	70.4	70.2	70.8	69.9	68.1		
Hawaii	56.7	53.7	50.5	55.5	57.1	61.8	61.0	59.2	60.1		

Source: CDC National Program of Cancer Registries (NPCR) United States Cancer Statistics (USCS) http://apps.nccd.cdc.gov/uscs/; University of Guam Cancer Research Center, 1999-2009

Where do we Stand? Evaluating Trends

Current Trends

Guam's mortality rate for lung and bronchus cancer has been noticeably lower than Hawaii and the US, as can be seen in Table 10-11 and Figure 10-10. The average rate of 23.5 deaths per 100,000 people from 1999 to 2007 is less than half the US rate, and a little more than half of Hawaii's rate. Rates on Guam have fluctuated up and down more than the other two geographies, but started to become more linear starting in 2005. While the US rate has a slight downwards trend and Hawaii has an upwards trend, Guam exhibited a hardly-noticeable upwards trend.

Moving Forward

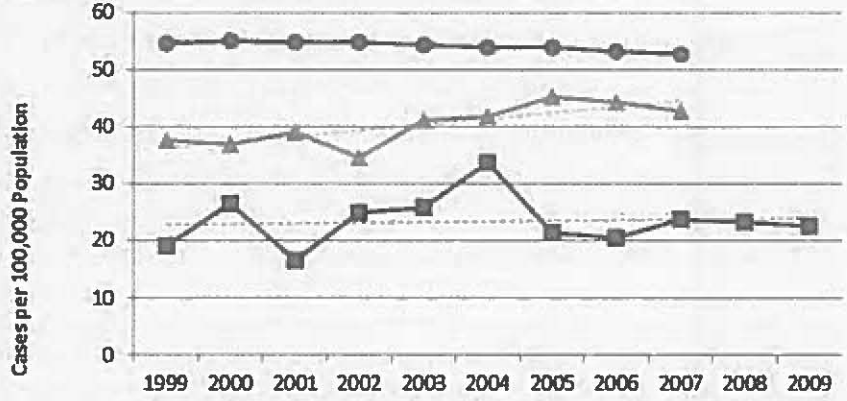
Guam Average	23.5 deaths / 100,000 persons
Trending	↑
Guam 2009 Rate	22.4 deaths / 100,000 persons
Goal	45.5 deaths / 100,000 persons
5-Year Target	20.0 deaths /100,000 persons

In comparison to the goals established in the Healthy People 2020 plan, Guam has historically had an average rate of around half the plan's goal rate. Although Guam's rate has been trending upwards slightly, it is not significant enough to go off-course from the goal rate if it continues at its current trend level. The Healthy People 2020 plan did not identify a goal for lung and bronchus cancer mortality rates.

Table 10-11. Average Lung and Bronchus Cancer Mortality Rates, 1999-2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (deaths per 100,000 persons)	23.5	54.1	40.3	-
Trend	↑	↓	↑	-

Figure 10-10. Lung and Bronchus Cancer Mortality Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	19.0	26.5	16.4	24.8	25.7	33.7	21.4	20.5	23.6	23.3	22.4
US	54.5	55.1	54.7	54.8	54.4	53.9	53.9	53.2	52.7		
Hawaii	37.5	37.0	39.0	34.5	41.0	41.8	45.2	44.3	42.7		

Source: CDC National Program of Cancer Registries (NPCR) United States Cancer Statistics (USCS) http://apps.nccd.cdc.gov/uscs/; University of Guam Cancer Research Center, 1999-2009

Non-Hodgkin's Lymphoma

Types and Symptoms

Cancer of the lymphoid system is often divided into non-Hodgkin's lymphomas (NHL) and Hodgkin's lymphoma (HL). The NHLs are a heterogeneous group of cancers of lymphocytes. NHLs form a wide spectrum of disease both clinically and biologically, ranging from slowly progressive or so-called indolent neoplasms (cancers) to rapidly growing destructive (progressive) tumors. Patients with slowly progressive or indolent disease often present with painless swelling of the lymph nodes, which may be isolated or widespread. Patients with more rapidly growing disease (intermediate and high-grade) may present with constitutional symptoms such as fever, drenching night sweats and/or weight loss. This diversity of clinical behavior is reflected in the wide range of histological appearances exhibited by NHLs.

Risk Factors

The cause of NHL remains unknown; however, certain risk factors have been identified as having the potential to increase a person's risk of developing this cancer. Known risk factors include:

- Age – the most common types of NHL occur in the elderly
- Gender – NHL is more common in men than women
- Race – the risk of developing NHL is higher amongst Caucasians than in African-Americans and Asian Americans
- Other Health Conditions – individuals with certain underlying health conditions, such as autoimmune disorders and weakened immune systems are more susceptible to NHL

Existing Condition and Trends

NHL is the most commonly occurring cancer in boys and girls under age 14, followed by leukemia and brain cancer. It is one of the fastest rising cancers in developing countries and has increased at an alarming rate, in stark contrast to the trends of most cancers. The increase in NHL is of particular concern due to the lack of understanding of cause and risk factors. The incidence of NHL has increased in the US, Hawaii, and Guam, with Guam's incidence rate peaking at 9.2 cases per 100,000 population in 2003, 50% higher than the average rate of 6.3 experienced between 1999 and 2007. As identified in Table 10-12 and Figure 10-11, the US (19.4) and Hawaii (16.8) both experienced rates of incidence two to three times that of Guam. Guam is the only one of the three that has experienced an overall increase in NHL mortality (see Table 10-13 and Figure 10-12) and whose mortality trends are similar to rates of incidence.

In Guam, of the 24 children (63%) diagnosed with cancer were Chamorro, four (17%) were Micronesian, and three (13%) were Filipino. Across ethnic groups, Caucasians had the highest age-adjusted mortality rate due to Non-Hodgkin's Lymphoma, at 17.6 per 100,000 population, and was the only group above the US rate of 76 cases per 100,000 population. Chamorros at 5.1, Filipinos at 3.8, Micronesians at 2.1 and Asians at 1.8 were all below the US rate (7.6). (University of Guam Cancer Research Center, June 2009)

Issues and Opportunities

A cancer needs assessment for Guam was conducted by Family Medicine residents and faculty physicians from the University of Hawaii's Department of Family Medicine Community Health in January 2003 in consultation with the Guam Cancer Registry. At that time, cancer was identified as the second leading cause of death on Guam and five priority issues to be addressed were identified.

1. Increase the capacity of DPHSS cancer prevention and control staff
2. Increase public awareness of cancer risk factors through public education
3. Expand the capacity of the Guam Cancer Registry.
4. Establish a Cancer Prevention and Control Program to coordinate control activities for cancer other than breast and cervical
5. Improve early detection and screening for priority cancers.

Following this study, the University of Hawaii received a National Comprehensive Cancer Control Planning (NCCCP) grant in June 2004 on behalf of five of the six United States Associated Pacific Island Nations (USAPIN). The USAPIN is made up of Guam, Samoa, the Commonwealth of the Northern Mariana Islands (CNMI), the Republic of the Marshall Islands, the Republic of Palau and the Federal States of Micronesia (FSM). This grant was funded by the CDC Division of Cancer Prevention and Control, which provided funding for the formation of a Comprehensive Cancer Control Coalition (GCCCC) to begin

Where do we Stand? Evaluating Trends

Current Trends

Table 10-12 and Figure 10-11 illustrate that Guam has a much lower rate of non-Hodgkin's lymphoma than Hawaii and the US. Between 1999 and 2007, Guam's average rate of 6.3 cases per 100,000 people was less than 1/3 the US rate and a little more than 1/3 Hawaii's rate. Guam showed the largest variation in rates from year to year, and although all three geographies were trending upwards, Guam's trend appears to be the most rapid increase.

Moving Forward

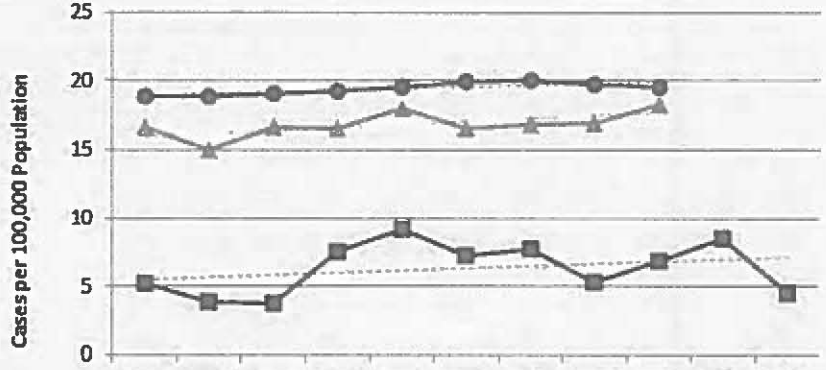
Guam Average	6.3 cases / 100,000 persons
Trending	↑
Guam 2009 Rate	4.5 cases / 100,000 persons
Goal	N/A
5-Year Target	4.0 cases / 100,000 persons

Guam's average rate for the past decade was a little more than 50% greater than the 5-year target established within this Plan. The rate for the past decade has been trending upwards; however, the 2009 rate was only slightly greater than the 5-year target. The Healthy People 2020 plan did not identify a goal for non-Hodgkin's lymphoma incidence rates.

Table 10-12. Average Non-Hodgkin's Lymphoma Incidence Rates, 1999-2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (cases per 100,000 persons)	6.3	19.4	16.8	-
Trend	↑	↑	↑	-

Figure 10-11. Non-Hodgkin's Lymphoma Incidence Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	5.2	3.9	3.8	7.5	9.2	7.2	7.7	5.3	6.9	8.5	4.5
US	18.9	18.9	19.1	19.3	19.5	19.9	20.0	19.7	19.5		
Hawaii	16.6	15.0	16.6	16.5	18.0	16.5	16.8	16.9	18.3		

Source: CDC National Program of Cancer Registries (NPCR) United States Cancer Statistics (USCS) http://apps.nccd.cdc.gov/uscs/; University of Guam Cancer Research Center, 1999-2009

Where do we Stand? Evaluating Trends

Current Trends

Similar to the incidence rates, Guam's mortality rate for non-Hodgkin's lymphoma is much lower than the rates of Hawaii and the US. However, as Table 10-13 and Figure 10-12 indicate, Guam is the only one of these three geographies that is trending upwards, although the trendline is increasing at a barely noticeable rate. The variation in rates on Guam was generally up and down from year to year, which is a big difference from the gradual annual decline shown by the US. However, Guam's average rate of 2.5 per 100,000 people from 1999 to 2007 was around 1/3 the US rate, and a little more than 1/3 Hawaii's rate.

Moving Forward

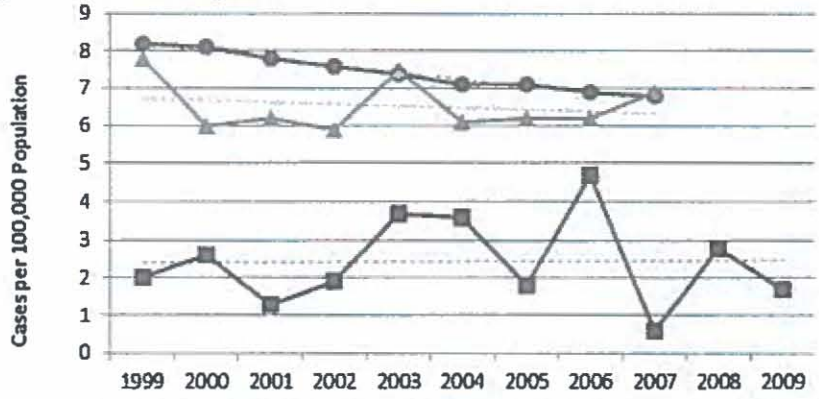
Guam Average	2.5 deaths / 100,000 persons
Trending	↑
Guam 2009 Rate	1.7 deaths / 100,000 persons
Goal	N/A
5-Year Target	2.0 deaths /100,000 persons

The average rate for non-Hodgkin's lymphoma deaths over the past decade has been 25% greater than the 5-year target established within this plan, and has been trending slightly upwards. However, the 2009 rate was below the 5-year target. The Healthy People 2020 plan did not identify a goal for non-Hodgkin's lymphoma mortality rates.

Table 10-13. Average Non-Hodgkin's Lymphoma Mortality Rates, 1999-2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (deaths per 100,000 persons)	2.5	7.4	6.5	-
Trend	↑	↓	↓	-

Figure 10-12. Non-Hodgkin's Lymphoma Mortality Rates, 1999-2009



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Guam	2.0	2.6	1.3	1.9	3.7	3.6	1.8	4.7	0.6	2.8	1.7
US	8.2	8.1	7.8	7.6	7.4	7.1	7.1	6.9	6.8		
Hawaii	7.8	6.0	6.2	5.9	7.5	6.1	6.2	6.2	6.9		

Source: CDC National Program of Cancer Registries (NPCR) United States Cancer Statistics (USCS) http://apps.nccd.cdc.gov/uscs/; University of Guam Cancer Research Center, 1999-2009

developing a comprehensive cancer control plan for the island. The Coalition is composed of public and private sector stakeholders and individuals whose collaborative work aims to identify methods that will both reduce the cancer burden and identify additional cancer services that are not currently offered on Guam. The GCCC's work groups are divided into seven work areas, each with a specific goal identified: 1) Prevention, 2) Screening and Early Detection, 3) Treatment, 4) Survivorship and Quality of Life, 5) Data and Research, 6) Financing and Insurance, and 7) Policy and Advocacy.

Prevention Goal: Prevent and Reduce Exposure to Cancer Risk Factors

Several cancer prevention programs currently exist throughout the Guam community. The GCCC has recommended that these programs be documented and evaluated to determine areas that need improvement, identify gaps, and strengthen current programs without duplication of services. In order to achieve this, the Guam Comprehensive Control Plan of 2007-2012 recommends "a formal and impartial resource/assets mapping. Within the context of prevention, the Plan also identifies the following focus areas, each with goals and strategies identified: Tobacco Prevention and Control, Betel nut, Alcohol, Nutrition and Physical Activity, Infectious Diseases, Environmental, Agrichemicals, and Cancer Education."

Screening and Early Detection Goal: Improve Access to and Utilization of Cancer Screening, Diagnosis, Treatment and Related Services

The GCCC identifies a greater emphasis on early detection and prevention of cancer through screening as a major factor that could ultimately reduce the rate of cancer on Guam. There is currently no standard guideline for cancer screenings on Guam. The standardization of guidelines as well as raising public awareness to empower individuals to actively seek screening for detectable cancers is recommended. (Guam Comprehensive Cancer Control Plan 2007-2012, October 2007.)

Progress toward improved screening and early detection has already begun. Implementation of the Guam Breast and Cervical Cancer Early Detection Program (GBCCEDP) through the Department of Public Health and Social Services in 2001 has resulted in an increase in the number of women who receive pap smears and mammograms through federal funding by providing screening services to qualified women at no cost. Guam's Comprehensive Cancer Control Plan identifies the detection of all cancers at their earliest stage as the main screening and early detection goal.

Treatment Goal: Advocate for Sustainable Funding for Cancer Programs

The ability to properly treat cancer cases on Guam is currently hindered by a lack of resources on the island. Guam currently has one full time oncologist and one oncologist who sees patients on a case-by-case basis. Radiation therapy is not available at this time and the only civilian inpatient medical facility on Guam is the Guam Memorial Hospital Authority. As a result, many residents are forced to seek treatment in Hawaii, the Philippines or the continental U.S. when services are not available on Guam, presenting a significant cost burden on patients. The primary goal of improving treatment is to assure that the patient is treated with the most appropriate therapy as close to home as possible.

Survivorship and Quality of Life Goal: Enhance Quality of Life for Cancer Survivors

It is the goal of this plan to ensure cancer survivors receive adequate care and support to maintain the best quality of life possible. Cancer support groups that are currently available to Guam residents include the Guam Cancer Support Group, and the Pacific Association for Radiation Survivors. In addition, the Guam Communications Network (GCN) was established in 1993 and has been involved in cancer education, research and advocacy since 1999. Currently, support programs include patient advocate and navigation services for Guam patients who are sent to Los Angeles for medical care, tobacco cessation, caregiver education and support, lay leader training to promote cancer awareness and annual screenings, speakers bureau and cancer education material development." The Chamorro Cancer Survivors Network was also founded by the GCN. Other GCN programs include diabetes education and management, senior care management and HIV/AIDS community capacity building.

Data and Research Goal: Increase Volume and Availability of Cancer Data

Since the production of the Guam Cancer Plan, additional work to gather and coordinate data has been conducted through the Guam State Epidemiological Workgroup (SEW), which was established under the Strategic Prevention

Framework State Incentive Grant (SPF-SIG). Additional data has been collected through the Behavioral Risk Factor Surveillance System, the Youth Tobacco Survey but not consistently. The Guam Cancer Registry was also established for the collection of extensive cancer data on Guam.

Financing and Insurance Goal: Improve Availability of Care by Reducing Barriers of Cost

The cost and availability of insurance coverage for screenings and treatment services are key concerns on Guam. Although the DPHSS operates a locally-funded Medically Indigent Program (MIP) designed to pay for medical expenses of low-income families, program funding has been reduced and many private physicians will not accept MIP patients because of late payments and claims consistently being denied. Additionally, limited access to treatment services remains a problem, thus forcing individuals to travel off-island to receive diagnostic or treatment services elsewhere. Travel off-island both adds to the cost of accessing medical care and raises issues of whether insurance will cover the cost of all services. A more detailed discussion about access to care can be found in Section 7: Access to Care.

Policy and Advocacy Goal: Promote Social and Policy Environment Conducive to Living Healthy Lifestyles

Policy initiatives that result in behavioral changes throughout the population are needed to support risk reduction, disease control and rehabilitation, and for the prevention and control of chronic diseases like cancer. The health impact of policy interventions on youth smoking has been documented as various policies have been implemented over the past decade. Example actions included educational programs, increased taxes on tobacco products, and the prohibition of smoking in most enclosed public places. Similar policy initiatives are needed to reduce exposure to cancer risk factors, promote healthy behaviors, and facilitate access to cancer services. This topic is addressed in greater detail in Section 8: Wellness and Prevention.

Plans/Programs to Address Issues

Guam Comprehensive Cancer Control Coalition

The Guam Comprehensive Cancer Control Coalition (GCCCC) was created for the purpose of addressing challenges presented by cancer. The vision of GCCC is stated as "the people of Guam will be cancer free, embracing a healthy lifestyle in a healthy environment" and its mission is "to reduce cancer incidence and mortality on Guam through collaboration of public and private stakeholders." Efforts of the GCCCC are focused on prevention, early detection, and treatment of cancer, and the sustainment of the best possible quality of life for all individuals. The work of the GCCCC represents a collaborative effort to allocate resources for prevention and control of cancer screening and early detection, for comprehensive cancer treatment, support services for quality of life programs, and for policy changes to strengthen and support programs to reduce risk factors such as tobacco use and promote healthy lifestyles. A primary

Guam Comprehensive Cancer Control Plan 2007-2012

The Guam Comprehensive Cancer Control Plan was produced through a collaborative effort conducted by the GCCCC Steering Committee with technical assistance from the University of Hawaii's Pacific Regional Cancer Control Program. The primary goals of the Cancer Control Plan are to:

- Prevent and reduce exposure to cancer risk factors.
- Improve access to and utilization of cancer screening, diagnosis, treatment, and related services.
- Enhance the quality of life for cancer survivors.
- Advocate for sustainable funding for cancer programs.
- Promote a social and policy environment that is conducive to healthy lifestyles.

Guam Cancer Registry

The Guam Cancer Registry (GCR) was established as an organization under Guam's Department of Public Health and Social Services (DPHSS) within the Office of Epidemiology and Research by Public Law 24-198. Additionally, several programs in cancer prevention and control are managed within the Bureau of Nutrition Services (BNS) and the Bureau of Professional Support Services (BPSS).

Pacific Regional Cancer Programs

The Cancer Council of the Pacific Islands (CCPI) serves as the Steering Committee for the Pacific Region Cancer Coalition (PRCC) and consists of members from each of the comprehensive cancer control coalitions throughout the Pacific Islands. There are three Pacific Cancer Programs that

report to this regional council: the Regional Comprehensive Cancer Control (RCCC), the Pacific Region Cancer Registry (PRCCR), and the Pacific Center for Excellence in the Elimination of Disparities (focused on breast and cervical cancers) (Pacific CEED). The priority populations of these programs are the peoples of the six USAPIN; Territory of Guam, the Territory of American Samoa, the Commonwealth of the Northern Marianas Islands (CNMI), the Republic of the Marshall Islands (RMI), the Republic of Palau, and the Federated States of Micronesia (FSM).

The CCPI developed the Regional Comprehensive Cancer Control Five Year Plan 2007-2012 that is focused on the following four primary goals:

- To prevent cancer from occurring
- To diagnose cancer in individuals as early as technically possible within the USAPIN region
- To improve the capacity to treat cancer effectively within the USAPIN Region
- To collect, analyze, and report accurate cancer-related data across the region

The program and its efforts to collect and make available reliable data on cancer incidence and mortality throughout the Pacific Islands is a relatively new effort that was initiated as a result of the CCPI's establishment. Although a major focus of this program is to collect, analyze, and report accurate cancer-related data, it is still too early in the program development stages to utilize such information in this Strategic Plan. The most current data available through this regional collaborative is from 2004; however, it is the objective of the CCC Plan that each jurisdiction establishes a quality assurance program for tracking cancer-related data by 2010. As such, regional data is not yet available for analysis and inclusion in this Plan.

Pacific Region Central Cancer Registry

The Regional Comprehensive Cancer Control Plan was developed through the University of Hawaii – Manao to provide a regional alliance between the Cancer Council of the Pacific Islands (CCPI) and the Pacific Comprehensive Cancer Control Coalition. The Plan is a long-term plan, designed to be coordinated with Pacific Island Health Officers Association (PIHOA) efforts to develop minimum standards for cancer care for the US Associated Pacific Island Nations (USAPIN). Primary components of this effort include education and assistance with implementation of the jurisdiction-specific CCC plans, developing regional policies regarding utilization of cancer data, providing access to regional expertise in cancer care, providing regional technical support for all parts of the comprehensive cancer plan, and developing regional cancer advocacy at the national level.

The five year planning effort involves determining the feasibility of developing systems to better coordinate cancer care, developing regional laboratory services for cancer diagnosis and regional cancer referral centers.

Pacific Cancer Registry

The Pacific Regional Central Cancer Registry (PRCCR) is a regional effort by the USAPIN. This purpose of the PCRCCR is "to assure that cancer cases are reported and abstracted with precision and accuracy across the region" in accordance with the CDC's National Program of Cancer Registries standards.

10.2 Diabetes

Diabetes is a group of diseases marked by high blood glucose (sugar) levels that result from defects in the body's ability to produce and/or use insulin. Types of diabetes include Type 1, previously known as insulin-dependent diabetes mellitus or juvenile diabetes; Type 2, also known as adult-onset diabetes; and Gestational Diabetes.

Diabetes can lead to serious complications such as impaired eyesight or blindness, kidney damage, cardiovascular disease, and lower limb amputations. Diabetes contributes to an elevated risk for heart disease, currently the leading cause of mortality on Guam. "The health burden from what is often a chronic and disabling condition is compounded by the economic costs of treatment and care of diabetes itself as well as its complications." (A Survey of Resources for Diabetes Control and Prevention on Guam") These complications can be avoided with proper treatment and by controlling blood glucose, blood pressure, and blood lipids. The risk for death among those with diabetes is approximately twice that of a person without diabetes of a similar age. (National Institute of Health, National Diabetes Statistics, 2007)

Type 1 diabetes is usually diagnosed in children and young adults whose bodies do not produce insulin, the hormone needed to convert sugar, starches, and other food into energy. Type 1 diabetes develops when the body's immune system destroys pancreatic beta cells, the only cells in the body that make insulin. To survive, people with Type 1 diabetes must rely on insulin being delivered by injection or a pump. Approximately 5 to 10% of diabetics have this form of diabetes. Risk factors for this type may be autoimmune, genetic, or environmental. There is currently no known means of prevention for this type of diabetes.

Type 2 diabetes is the most common form of this disease. Type 2 diabetes usually begins as insulin resistance, a disorder in which the cells do not use insulin properly. "As the need for insulin rises, the pancreas gradually loses its ability to produce it. Type 2 diabetes is associated with older age, obesity, family history of diabetes, history of gestational diabetes, impaired glucose metabolism, physical inactivity, and race/ethnicity." (Department of Health and Human Services Centers for Disease Control and Prevention, National Diabetes Fact Sheet, 2007) Millions of Americans have been diagnosed with Type 2 diabetes, and it is believed that many more are unaware they either have diabetes or are at high risk. If not well managed, health complications, such as hearing loss, eye complications, foot complications, stroke, neuropathy, and kidney disease, among others, may result.

Type 2 diabetes is more common in African Americans, Latinos, Native Americans, Asian Americans, Native Hawaiians, and other Pacific Islanders, as well as the aged population. (American Diabetes Association, Diabetes Basics: Type 2: December 9, 2010) While being overweight or obese increases diabetes risk for everyone, Asian Americans, Native Hawaiian, and Pacific Islanders do not have to be overweight to be at risk for diabetes and have an even greater risk for diabetes with increasing weight compared with other racial and ethnic groups."

Gestational diabetes is a form of glucose intolerance that occurs during pregnancy. This type of diabetes is more common among African Americans, Hispanic/Latino Americans, and American Indians. It is also more prevalent among obese women and women with a family history of diabetes. Gestational diabetes requires treatment during pregnancy in order to normalize maternal blood glucose levels to avoid complications in the infant. Women who develop gestational diabetes have a 40% to 60% chance of developing diabetes in the next five to ten years, and 5 to 10% are found to have diabetes, usually Type 2, immediately after pregnancy.

Source: Evaluation, DPHSS, Government of Guam, 2003 BRFSS

Existing Condition and Trends

It is estimated that 23.6 million children and adults, or eight percent (8%) of the population in the United States, have diabetes. On Guam, diabetes was the seventh leading cause of death listed on US death certificates in 2007. Diabetes was the fourth leading cause of deaths in 2005 (most recent year for which comprehensive data is available) and has been among the top ten leading causes of death since 1985.

Data obtained from 2007 Behavioral Risk Factor Surveillance Survey indicate that Guam's overall prevalence of diabetes is 101 cases per 1,000 adults. The majority of people with diabetes have Type 2 diabetes. Over 85% of self-reported diabetes cases in 2003 BRFSS data included those aged 40 and over. (Guam Department of Public Health and Social Services: Island of Guam Diabetes, 2010)

The data listed in Table 10-14 shows that the Chamorros are afflicted with diabetes more than other ethnic groups on Guam. Data to determine the prevalence of diabetes in the Micronesian population are not available at this time. The overall prevalence of diabetes on Guam has decreased slightly in recent years, from 14% of the population in 2007 to 12% in 2009; however, diabetes is still more prevalent in the Guam population than the US. The overall prevalence of diabetes in the US has recently increased from 9.3% in 2007 to 10.2% in 2009. Relative to Hawaii and Puerto Rico, the average diabetes related death rates experienced by Guam and the US are not as severe as that experienced in Puerto Rico, but not as low as those experienced in Hawaii. The average diabetes age-adjusted death rates for all four jurisdictions are presented in Table 10-15 and annual data is provided in Figure 10-13.

Table 10-14. Prevalence of Diabetes and Ethnicity: Guam 1996 – 2003

Ethnicity	Year					
	1996	1997	1999	2001	2002	2003
Chamorro	61.3	68.2	58.0	56.7	46.9	50.6
Filipino	22.6	9.1	18.0	10.4	20.3	15.2
White	3.2	13.6	4.0	6.0	3.1	5.5
Asian	3.3	0	0	0	7.8	11.4
Pacific Islander	7.6	4.5	8.0	10.5	9.4	6.9
Other	1.1	4.5	8.0	9.0	1.6	10.6

Source: Office of Planning and Evaluation, DPHSS, Government of Guam, 2003 BRFSS.

Issues and Opportunities

Various stakeholders have been involved in the data collection process through interviews conducted by the planning team/ACT. Key areas of concern discussed during the data collection process included: a lack of specialty service, accessibility of preventative and specialty services due to income constraints, and both quality and quantity of treatment options available.

There is a lack of providers who offer specialized diabetes prevention and treatment services on Guam.

Discussions during the data collection and stakeholder input stage of this planning effort identified a lack of providers offering services specialized for the prevention and treatment of diabetes on Guam. This weakness is echoed in the "A Survey for Diabetes Control and Prevention on Guam", a 2009 report produced by Health Partners, LLC on behalf of DPHSS that documents all programs and providers on Guam who offer services oriented toward the treatment and prevention of diabetes and related complications. The objective of this study was to survey existing resources for diabetes prevention and control on Guam and involved voluntary input from various agencies, institutions, establishments, and individual service providers.

Survey responses were received from 46 service providers, just over half of which were private sector commercial or for-profit entities (primarily private clinical practices), close to one third (29%) were local government, one tenth (11%) were private sector not-for-profit agencies or nongovernmental organizations (NGOs), and 2% consisted of faith-based groups and federal government agencies.

Results of this survey indicate that only 39% of the 46 survey respondents offer treatment services for diabetes and diabetes related complications. Of these 18 providers, 13 provide outpatient medical treatment for diabetes, five offer inpatient medical treatment, and seven offer a variety of treatment services for diabetes related complications. The survey also asked service providers who offer clinical services for diabetes additional questions regarding the specialization of staff providing treatment. The results indicate that only one provider has medical expert who specializes in diabetes on its staff, none have a diabetes nurse, two have a diabetes nutritionist, one has a diabetes educator, and three have a data person. These results indicate a severe scarcity in specially trained staff to support the prevention and control of diabetes on Guam. Additionally, while preventative, screening, diagnostic, and ancillary health services are available from over half of the providers surveyed, educational and treatment services are offered less frequently.

Where do we Stand? Evaluating Trends

Current Trends

There was a limited amount of comparable data for Guam regarding the number of deaths due to diabetes, and so the data in Table 10-15 and Figure 10-13 is based only on the years that data was available for Guam (1999, 2000, and 2004-2007). For the most part, Guam had a greater rate than the US (except for 2000 in which they were approximately the same), and a greater rate than Hawaii. For the total time period, Guam had a much lower average rate than Puerto Rico. Guam is shown to be trending upwards, as well as Hawaii, while the other two geographies are trending downwards.

Moving Forward

Guam Average	33.6 deaths / 100,000 persons
Trending	↑
Guam 2007 Rate	44.0 deaths / 100,000 persons
Goal	65.8 deaths / 100,000 persons
5-Year Target	25.0 deaths / 100,000 persons

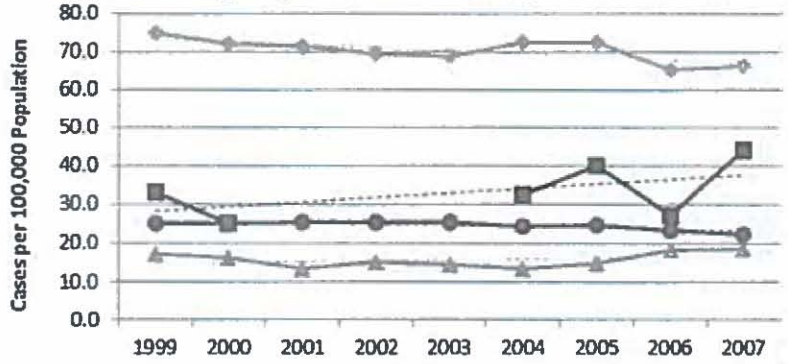
Based on the years that data was available for, Guam's average rate is well below the goal for diabetes deaths set forth in the Health People 2020 plan. Although the rate is trending upwards, the 2007 rate was only around 2/3 of the goal rate.

Table 10-15. Average Diabetes Age-Adjusted Death Rates, 1999 to 2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (deaths per 100,000 persons)	33.6	24.6	15.7	70.3
Trend	↑	↓	↑	↓

Note: Guam's average is based on 1999, 2000, 2004, 2005, 2006, 2007 data. Data is not available for 2001, 2002, 2003.

Figure 10-13. Diabetes Age-Adjusted Death Rates, 1999-2007



	1999	2000	2001	2002	2003	2004	2005	2006	2007
Guam	33.0	25.0				32.2	40.0	27.3	44.0
US	25.2	25.2	25.3	25.4	25.3	24.5	24.6	23.3	22.5
Hawaii	17.1	16.1	13.3	15.2	14.5	13.4	14.7	18.1	18.5
Puerto Rico	74.7	71.8	71.4	69.5	68.7	72.2	72.4	65.3	66.5

Source: CDC National Vital Statistics Reports, Deaths: Final Data for 1999-2007

Income restrictions serve as a barrier to those in need of care.

A major issue identified during the data collection process, both during stakeholder interviews and a review of existing programs, identified concerns over how accessible prevention and treatment services are to those with income restrictions. Health Partners, LLC's survey of services identified only six of the 46 providers surveyed that provide some form of financial assistance or service to diabetes patients, two of which provide limited donation grants with no repayment required The remaining four included three private health insurance agencies who patients purchase insurance coverage from and the Bureau of Health Financing, which provides financial assistance to needy families; all four provide insurance coverage for diabetes care. Results of the survey indicate that financial assistance offered covers the impoverished and those who can afford private insurance; however families who don't make the poverty cut-off but are economically disadvantaged end up being excluded from financial coverage for health services.

The quality and breadth of services available is inadequate.

The survey of diabetes care revealed a gap in treatment services available. Specifically, providers who offer diabetes care and treatment do not offer nutritional counseling, immunization, and intensive cessation counseling. A review of treatment services identified treatment options to be predominantly limited to an outpatient setting with limited options for inpatient services, specialized treatment for complex cases, or specialized treatment for diabetes related complications. In addition to the relative insufficiency in the number of providers and availability of treatment services, the quality of services provided also needs to be assessed. This survey was not designed to address this issue. Nonetheless, it is a vital one that should be looked at in the future. Indications from the corresponding patient survey point to a failure on Guam of service providers to fully comply with established clinical practice recommendations for the prevention and control of diabetes.

Plans/Programs to Address Issues

DPHSS Diabetes Prevention and Control Program/Diabetes Control Coalition

The Guam Diabetes Prevention and Control Program is an organization funded and operated by the DPHSS that provides general education on diabetes and offers prevention services and referrals to available resources for treatment, both on and off-island. The program also offers patient advocacy services, conducts lifestyles disease prevention screening and outreach, and produces educational materials translated in Chamorro, Tagalog, and other Pacific Island languages.

Physical Address:

123 Chalan Kareta
Mangilao, Guam 96913-6304
Website: livehealthyguam.com

Diabetes Control Coalition

As part of its effort to combat diabetes, the DPHSS Diabetes Prevention and Control Program has initiated partnerships with other community stakeholders to expand the island's diabetes prevention and control capacity. Part of this effort is the formation of a community Diabetes Control Coalition and production of a comprehensive strategic plan for diabetes control on Guam. The strategic planning approach included a survey of all existing resources focused on the prevention and control of diabetes on Guam conducted by Health Partners, LLC on behalf of DPHSS. The results of this survey are documented in "A Survey for Diabetes Control and Prevention on Guam" published in August 2009. One of the goals of this survey was to identify what diabetes prevention services are offered and which community groups are being targeted or left out. Tables 10-16 and 10-17 list the number and percentage of survey respondents that offer a particular service and the number and percentage of providers that serve particular ethnic sub-groups. Slightly more than half of respondents reported providing diabetes prevention services, with the most commonly offered service including brief advice for tobacco cessation (79%) and counseling on nutrition and exercise (54%).

Table 10-16. Number and Percentage of Service Providers and Nature of Diabetes-Related Services Provided

Service Offered	% of Respondents Offering Service
Screening/Diagnostic Services	27 (59%)
Ancillary/Support Services	24 (54%)
Preventative Services	24 (52%)
Treatment	18 (39%)
Educational Service	18 (39%)
Data Collection	10 (22%)
Financial Support	6 (13%)
Research	3 (6%)
Other Type of Service	7 (15%)

Source: A Survey for Diabetes Control and Prevention on Guam, 2009.

Table 10-17. Number and Percentage of Respondents Serving Ethnic Sub-Groups

	Chamorro	Other Pacific Islander	Filipino	Other Asian	Caucasian	Other
Yes	34 (74%)	32 (70%)	35 (76%)	29 (63%)	32 (70%)	24 (52%)
No	9 (19%)	11 (24%)	8 (17%)	14 (30%)	11 (24%)	19 (41%)
Not Applicable	3 (6%)	3 (6%)	3 (6%)	3 (6%)	3 (6%)	3 (6%)

Source: A Survey for Diabetes Control and Prevention on Guam, 2009.

Guam's Chronic Disease Program

The Chronic Disease Prevention and Control Program of the Guam Department of Public Health and Social Services collaborated closely with the Lieutenant Governor, public health nurses, government agencies, and private organizations to expand free health screening services to additional settings including those in depressed areas of the community and in worksites. Screening services offered include blood pressure, blood cholesterol, blood sugar, and body mass index, as well as one-on-one health education by registered nurses to explain the results and advise participants on steps to prevent the development of heart disease, diabetes, stroke, and other chronic diseases. Results of this program include the identification of over one hundred adults who were unaware that they had high blood pressure, identification of over one hundred adults who were unaware that they had high blood sugar, identification of almost one hundred adults with high or borderline high blood cholesterol levels, and referral of many participants to medical providers including ninety who are now receiving medical care for the identified conditions and 40 participants who made changes in diet or began a recommended physical activity.

Pacific Diabetes Education Program

The Pacific Diabetes Education Program (PDEP) exists as a means of providing educational materials and resources created especially for Native Hawaiians and Pacific Islanders. PDEP was funded by the Centers for Disease Control and Prevention as a five year project from 2005 to 2010 to improve the availability and dissemination of culturally and linguistically appropriate diabetes education materials. PDEP is a program of Papa Ola Lokahi, a community organization that focuses on Native Hawaiian health.

Additional Resources

Bilingual Multicultural Nutrition and Diabetic Handouts: The Nutrition Education for New Americans Project

Description: Handouts covering such topics as diabetes, child and maternal nutrition, health for older adults and suggestions for better health overall. The guidelines in these handouts are based on the old Food Guide Pyramid and the program that created the handouts no longer has funding so they will not be updated. The contact information on the handouts is not active; however, the materials may still be relevant.

10.3 Diseases of the Heart

Heart disease, or cardiopathy, is a general term for a variety of conditions affecting the heart, such as coronary artery disease, heart attack, congestive heart failure, and congenital heart disease. The term "heart disease" is commonly used interchangeably with cardiovascular disease, which refers to conditions that involve narrowed or blocked blood vessels that can lead to a heart attack, chest pain (angina) or stroke. Additional forms of heart disease may include infections and conditions that affect the heart's muscle, valves, or beating rhythm. Heart disease is currently the number one killer worldwide and is the leading cause of death in both the United States and Guam. Keys to prevention include healthy lifestyle choices, including lowering cholesterol, controlling high blood pressure, quitting smoking, maintaining and healthy weight, and exercising regularly. Common symptoms of heart disease include chest pain, shortness of breath, and pain or numbness of the extremities. The most prevalent forms of heart disease include:

- coronary heart disease,
- cardiomyopathy,
- ischemic heart disease,
- hypertensive heart disease,
- inflammatory heart disease, and
- valvular heart disease, among others.

Coronary heart disease refers to the failure of the coronary circulation to supply adequate circulation to cardiac muscle and surrounding tissue. Coronary heart disease is most commonly defined as greater than 50% narrowing (stenosis) of any of the arteries supplying blood (nutrients and oxygen) to the heart muscle and is equated with coronary artery disease, a disease of the artery caused by the accumulation of cholesterol and fatty acids, calcium, and other debris within the walls of the arteries that supply the myocardium (the middle and thickest layer of the heart wall). The condition can be due to other causes such as coronary vasospasm (a sudden constriction of blood vessels that reduce blood flow), cocaine use, vasculitis (inflammation), aortic stenosis, prior radiation therapy to the chest, and congenital coronary abnormalities, among others.

Coronary heart disease is the number one killer in the United states and worldwide. It afflicts nearly 16 million Americans, and is responsible for one in five deaths and approximately 610,000 deaths per year in the United States

Cardiovascular disease includes dysfunctional conditions of the heart, arteries, and veins that supply oxygen to vital life-sustaining areas of the body like the brain, the heart, and other vital organs and may include any of a number of specific diseases that affect the heart or blood vessels (veins and arteries). Although the term applies to any disease that affects the cardiovascular system, it is most commonly used to refer to conditions related to arterial disease.

Aneurysm, angina, atherosclerosis, stroke, congestive heart failure, and heart attack are common examples of cardiovascular diseases. Known causes of cardiovascular disease include diabetes mellitus, hypertension, , and hypercholesterolemia (high cholesterol levels in the blood), as well as environmental factors such as pollution levels and health-related behaviors, including the use of tobacco, lack of physical activity, and poor nutrition. Because this condition can prolong without detection until it is quite advanced, prevention of this condition is extremely important. The best prevention is through modification of risk factors, such as healthy eating, exercise, and abstaining from or quitting smoking. Treatment often involves surgery or a major procedure such as angiograms, bypass surgery, and angioplasty.

The word **cardiomyopathy** can be translated into "heart muscle disease" and refers to the deterioration of the function of the myocardium, which is the actual heart muscle. There are several types and forms of cardiomyopathies, the signs and symptoms of which may mimic those of any form of heart disease. Mild cardiomyopathy is often asymptomatic; however, chest pain, irregular heartbeats, and echocardiogram abnormalities are among the most common symptoms. Severe cases are typically associated with arrhythmias and even heart failure. Various forms of treatment are available depending upon the type of heart disease a person is experiencing, and may include medication, implanted pacemakers, defibrillation, and even heart transplant procedures. (Mayo Clinic, Disease and Conditions: Cardiomyopathy)

Ischemic heart disease (IHD), or myocardial ischemia, is a disease characterized by reduced blood supply (ischemia) to the heart muscle, usually resulting from coronary artery disease. The risk of developing IHD increases

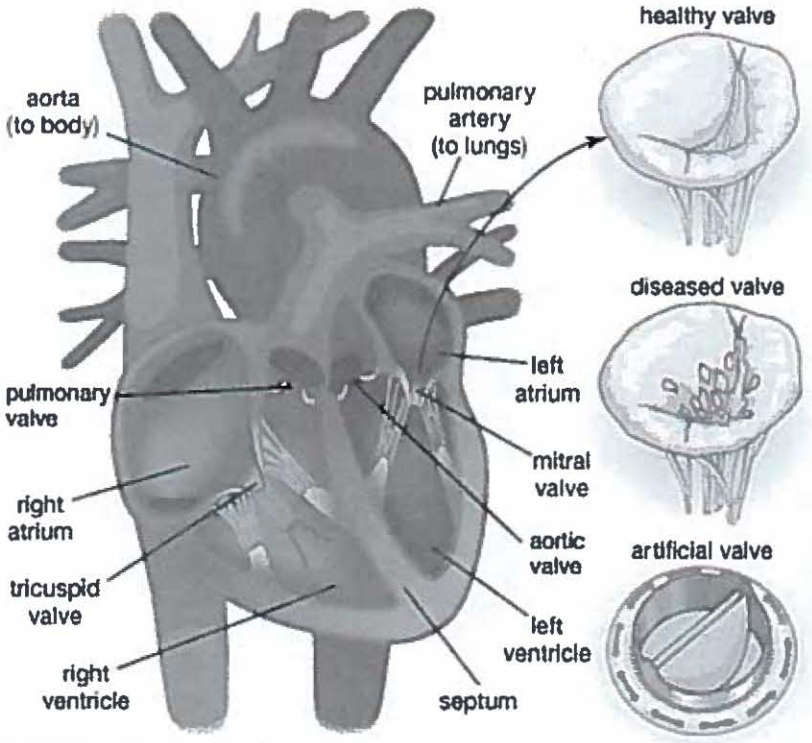
with age, smoking, high cholesterol, diabetes, and high blood pressure, and is more common among men and those who have close relatives with the condition. There are two forms of this type of heart disease: stable and unstable IHD. Symptoms of stable IHD include angina (chest pain) and decreased tolerance for exercise. Unstable IHD presents itself as chest pain or other symptoms at rest, or rapidly worsening angina. Ischaemic heart disease can only be diagnosed through proper medical testing, including electrocardiogram, blood tests, cardiac stress testing, or a coronary angiogram. Common forms of treatment include lifestyle modification, medication, angioplasty, or coronary bypass surgery. IHD is the leading cause of death for both men and women in the United States and other industrialized countries, including Guam.

Hypertensive heart disease refers to heart problems that result from chronic high blood pressure. As a person's blood pressure rises, the pressure in blood vessels increases, requiring the heart to pump blood against this elevated pressure, thus working harder. This continuous strain on the heart causes the heart muscle to thicken, thus requiring an increased supply of oxygen. Possible complications caused by hypertensive heart disease include angina, arrhythmias, heart attack or failure, stroke, and sudden death. Symptoms of hypertensive heart disease include fatigue, swelling of the feet, weight gain, nausea, shortness of breath, and others that can easily be overlooked as minor health effects. Hypertensive heart disease is the leading cause of illness and death from high blood pressure (National Institute of Health, 2010).

Inflammatory heart disease, also known as myocarditis, pericarditis, and endocarditis, describes any inflammation that occurs within the heart muscle, in the pericardium (the fluid sac that envelopes the heart), or in the endocardium (the inner lining or the heart). This condition may be induced by a variety of infections including viruses like sarcoidosis and immune diseases, metabolic disorders, or some tumors or cancers. Medical tests including electrocardiogram, blood tests, or Magnetic Resonance Imaging (MRI) must be used to detect this heart condition. Treatment of inflammatory heart disease varies depending upon condition, but may include administration of antibiotics or anti-inflammatory medications.

Valvular heart disease is characterized by damage to or a defect in one of the four heart valves: the mitral, aortic, tricuspid, or pulmonary (see Figure 10-14). The mitral and tricuspid valves control the flow of blood between the atria and the ventricles (the upper and lower chambers of the heart). The pulmonary valve controls the flow of blood from the heart to the lungs, and the aortic valve governs blood flow between the heart and the aorta, and thereby the blood vessels to the rest of the body. The mitral and aortic valves are the ones most frequently affected by valvular heart disease. In valvular heart disease, the valves become too narrow and hardened to open fully, or are unable to close completely. The severity of valvular heart disease varies. In mild cases there may be no symptoms, while in advanced cases, valvular heart disease may lead to congestive heart failure and other complications. Treatment depends upon the extent of the disease.

Figure 10-14. Four Valves of the Heart



Existing Condition and Trends

Heart disease has been the leading cause of death on Guam for the past decade, accounting for 32% (222 deaths) of all deaths on Guam in 2005. Although death rates associated with heart disease have been trending downward on Guam, the US, Hawaii, and Puerto Rico, as depicted in Figure 10-15, the annual disease death rates experienced on Guam fluctuated somewhat for a couple years, but for the most part experienced a downward trend and an average rate of 237.2 deaths per 100,000 (see Table 10-18). Guam's average death rate due to heart disease is a little higher than that of the US (229.5 deaths per 100,000 persons), and nearly 40% higher than that of Hawaii (171.3 deaths per 100,000 persons) and Puerto Rico (170.6 deaths per 100,000 persons).

Guam's age adjusted death rate associated with heart disease was 228.4 per 100,000 population in 2007, which is about 20% higher than for the US at 190.9 deaths per 100,000 population (Kaiser Foundation, 2009).

A recent study conducted by researchers at the Yale School of Medicine found that people treated after a heart attack at a hospital in a US territory, including Guam, see a 17% greater risk of dying within 30 days of the heart attack than those treated in a US mainland hospital. The theory for this difference is in the quality of care available within the territories.

Issues and Opportunities

An increase in smoking cessation would have a far-reaching effect on the health of Guam residents

Smokers on Guam tend to be more prone to heart disease than others.

Smoking and its detrimental impact on the heart has been identified by Guam's DPHSS as a major issue confronting the battle against heart disease. Recent data, available for the years 2001 to 2003, 2007, and 2008 (BRFSS data set), indicate that nearly one third of Guam's population are smokers (a smoker is defined as a person who had smoked at least 100 cigarettes and who reported being a smoker at the time of interview). Guam has the highest smoking rate in the nation with current smoking among adults on Guam (27.3% in 2008) significantly higher than the U.S. (18.2% in 2008). Smoking is more prevalent in males on Guam than females, with the male smoking rate being 66% higher than the U.S. national average and female smoking also being higher than U.S. males.

Source: DPHSS, Behavior Risk Factor Surveillance System, 2008

Significant attention has recently been given to tobacco use and tobacco cessation programs due to the effect smoking has on the heart and the prevalence of smoking on Guam. The latest statistics from Guam's DPHSS indicates that four of the top ten causes of death, diseases of the heart, malignant neoplasms (cancer), cerebrovascular disease (stroke) and chronic lung diseases, are directly linked to tobacco use. An additional two, diabetes and septicemia, are worsened by tobacco use. (*Guam Epidemiological Profile, 2008*) In order to combat these detrimental effects, programs and policies that encourage smoking cessation would provide an opportunity to address a variety of major health concerns at once. Existing plans and programs established for this purpose are discussed in the proceeding "Plans/Programs to Address Issues" section of this chapter.

Where do we Stand? Evaluating Trends

Current Trends

Table 10-18 and Figure 10-15 show that Guam typically has higher rates of death due to heart disease as compared to Hawaii, Puerto Rico, and the US. Guam had higher rates than Hawaii and Puerto Rico for all the years between 1999 and 2007, and a higher rate than the US for most of the years, except for 2000 when it was almost 50 deaths per 100,000 less, and in 1999 and 2006 when they were almost equivalent. While Hawaii, Puerto Rico, and the US have all gradually declined in mostly linear trends, Guam has also experienced a downwards trend in cases, but it has not been linear year by year. Of the four geographies, Guam had the highest average rate, which was 237.2 deaths per 100,000 people.

Moving Forward

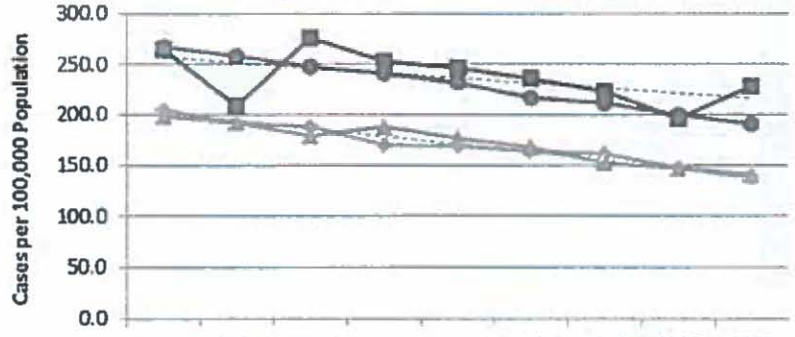
Guam Average	237.2 deaths / 100,000 persons
Trending	↓
Guam 2007 Rate	228.4 deaths / 100,000 persons
Goal	100.8 coronary heart disease deaths / 100,000 persons
5-Year Target	100.0 deaths / 100,000 persons

Guam's historic rate of heart disease deaths has been more than double the goal set forth in the Healthy People 2020 plan. The rate is trending downwards; however, at its current rate of decline, it will not reach the goal by the year 2020.

Table 10-18. Average Heart Disease Age-Adjusted Death Rates , 1999 to 2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (deaths per 100,000 persons)	237.2	229.5	171.3	170.6
Trend	↓	↓	↓	↓

Figure 10-15. Heart Disease Age-Adjusted Death Rates, 1999-2007



	1999	2000	2001	2002	2003	2004	2005	2006	2007
Guam	264.5	209.2	276.1	253.6	247.2	235.7	223.4	196.7	228.4
US	267.8	257.9	247.8	240.8	232.3	217.0	211.1	200.2	190.9
Hawaii	198.8	191.9	179.5	188.3	176.9	167.3	152.0	147.2	140.2
Puerto Rico	205.2	192.1	188.2	170.2	169.4	164.4	161.1	146.7	138.4

Source: CDC National Vital Statistics Reports, Deaths: Final Data for 1999-2007

Improved prevention and treatment of underlying causes could reduce the incidence of heart disease.

Increased access to medical screening and medications is needed to reduce heart disease on Guam.

Other contributing factors identified as having the potential to increase one's likelihood of developing heart disease include high blood pressure and high cholesterol. It is estimated that 22.1% of Guam's population has high blood pressure and 28.1% have high cholesterol. These health concerns have been identified by Guam's DPHSS as areas of concern that need to be addressed in order to reduce the incidence and prevalence of heart disease. Increased access to medical screening as well as to medications to combat these factors that lead to heart disease could significantly reduce the incidence of heart disease.

Plans/Programs to Address Issues

Several programs have been established by Guam's Department of Public Health and Social Services for the purpose of reducing the prevalence of heart disease and related deaths as well as address factors leading to development of diseases of the heart.

Chronic Disease Prevention and Control Program

The Guam DPHSS's Division of Public Health established the Chronic Disease Prevention and Control Program (CDPCP) as a means to "provide primary prevention strategies, through evidence-based practices, in an effort to increase awareness, knowledge, and understanding on heart disease, stroke, and diabetes, and its preventable and common risk factors such as high blood pressure, high blood sugar, high total cholesterol, being overweight or obese, having inadequate nutrition and physical inactivity, and tobacco use; and by increasing knowledge and understanding on various healthy behaviors that could lead to the prevention and control of these diseases." The purpose of the CDPCP is "to provide an island-wide focus for primary prevention, through lifestyle intervention activities that promote healthy behaviors through 2010." (Live Healthy Guam: Chronic Disease Prevention and Control Program web site at http://www.livehealthyguam.org/cdpcp.htm)

Tobacco Free Guam

The Tobacco Free Guam program exists for the purpose of encouraging smoking cessation in the Guam community. This program hosts a free telephone support line, the Tobacco Free Guam Quitline, which provides counseling, information, educational and support material, pharmacotherapy or Nicotine Replacement Therapy (NRT), follow-up support for callers who are ready to quit or are contemplating to quit smoking.

PEACE

The vision of Guam's PEACE program is to be "an island community empowered and committed to making healthy choices – "totally healthy, totally tobacco/alcohol/drug-free!" Its corresponding mission is to

- Raise awareness about the effects of alcohol, tobacco, and other drug abuse on Guam;
- Prevent/reduce alcohol, tobacco, and other drug use, including underage drinking
- Promote alcohol-free, tobacco-free, and other drug-free lifestyles;
- Reduce the harmful outcomes associated with alcohol, tobacco, and other drug use;
- Build Guam's capacity and infrastructure for establishing and sustaining evidence based substance abuse prevention early intervention programs that are effective"

10.4 Cerebrovascular Disease (Stroke)

Cerebrovascular disease is a group of diseases of the blood vessels and arteries that supply the brain. Cerebrovascular disease is typically caused by atherosclerosis (thickening and hardening of the walls of medium-sized and large arteries as a result of fat deposits on their inner lining) and can lead to a stroke. Hypertension is the most significant cause of this. A fall in blood pressure during sleep can then lead to a reduction in blood flow in the narrowed blood vessels causing ischemic stroke in the morning. Conversely, a sudden rise in blood pressure due to excitation during the daytime can cause tearing of the blood vessels resulting in intracranial hemorrhage. Cerebrovascular disease primarily affects people who are elderly or have a history of diabetes, smoking, or ischaemic heart disease.

Existing Condition and Trends

The mortality rate associated with cerebrovascular disease has consistently been at least 20% higher on Guam (67.8 per 100,000 persons average) than in the US (52.5), Hawaii (52.4), and Puerto Rico (46.4) during the years 1999 to 2007 (see Table 10-19). All four locations have experienced a decline in mortality rates, as illustrated on Figure 10-16. For the year which the most recent data is available (2007), Guam's mortality rate associated with stroke and other cerebrovascular diseases was 50.1 deaths per 100,000 persons, higher than that of the US (42.2). At this time, only seven states in the United States experienced a higher death rate due to cerebrovascular disease than Guam. Guam's DPHSS Office of Vital Statistics lists cerebrovascular disease as the third leading cause of death in its 2005 report of top ten causes of death on Guam. At that time, cerebrovascular disease accounted for 65 deaths, or 9.3% of all deaths that year.

Men have a higher death rate for every one of the top 10 leading causes of death on Guam:

- Men make half as many physician visits for prevention as women.
- A higher percentage of men have no health care coverage.
- Men have less healthy lifestyles including risk-taking.
- Almost twice as many men die of heart disease.
- 50% more men die of cancer.

Issues and Opportunities

Poor lifestyle choices have been identified as the most significant factors leading to stroke.

The most significant issues identified as causal factors leading up to stroke and other cerebrovascular diseases are high cholesterol, high blood pressure, and diabetes. As such, encouraging healthy lifestyle choices and seeking proper medical treatment and preventative care are the best ways of avoiding cerebrovascular disease. It is recommended that a person with any one of these conditions should:

- Have your cholesterol levels checked at least once every five years.
- Receive appropriate treatment and regular monitoring of blood pressure.
- Manage your diabetes. People with diabetes should closely monitor blood sugar levels.

Where do we Stand? Evaluating Trends

Current Trends

As shown on Table 10-19 and Figure 10-16, Guam has experienced higher rates of death cause by strokes than Hawaii, Puerto Rico, and the US. Each of the other three geographies have had roughly steady declines in rates between the years of 1999 to 2007. Guam, on the other hand, has had fluctuating rates from year to year, going up and down almost every other year. This fluctuation resulted in an anomaly in 2004 when Guam had the lowest rate of the four geographies. Guam's average rate of 67.8 deaths per 100,000 persons was around 25% higher than Hawaii and the US, and a little less than 50% higher than Puerto Rico

Moving Forward

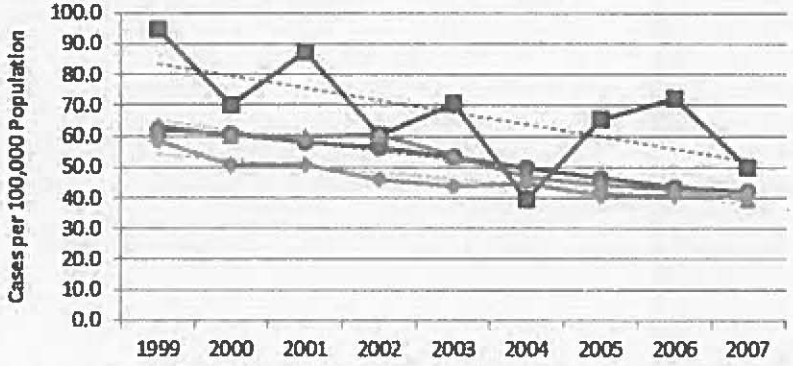
Guam Average	67.8 deaths / 100,000 persons
Trending	↓
Guam 2007 Rate	50.1 deaths / 100,000 persons
Goal	33.8 deaths / 100,000 persons
5-Year Target	33.8 deaths / 100,000 persons

Guam's average rate of deaths from strokes was approximately twice the goal set forth in the Healthy People 2020 plan. However, it has been declining over the years and if it continues along its current downward trend, it may reach the goal by the year 2020.

Table 10-19. Average Stroke Age-Adjusted Death Rates, 1999 to 2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (deaths per 100,000 persons)	67.8	52.5	52.4	46.4
Trend	↓	↓	↓	↓

Figure 10-16. Stroke Age-Adjusted Death Rates, 1999-2007



	1999	2000	2001	2002	2003	2004	2005	2006	2007
Guam	94.6	70.3	87.2	60.4	70.5	39.5	65.2	72.1	50.1
US	61.8	60.8	57.9	56.2	53.5	50.0	46.6	43.6	42.2
Hawaii	63.2	60.3	59.8	60.6	53.9	47.1	44.1	43.2	39.6
Puerto Rico	58.5	50.8	50.6	46.1	43.9	44.8	40.9	40.7	41.3

Source: CDC National Vital Statistics Reports, Deaths: Final Data for 1999-2007

Plans/Programs to Address Issues

Chronic Disease Prevention and Control Program

The Guam DPHSS's Division of Public Health established the Chronic Disease Prevention and Control Program (CDPCP) as a means to "provide primary prevention strategies, through evidence-based practices, in an effort to increase awareness, knowledge, and understanding on heart disease, stroke, and diabetes, and its preventable and common risk factors such as high blood pressure, high blood sugar, high total cholesterol, being overweight or obese, having inadequate nutrition and physical inactivity, and tobacco use; and by increasing knowledge and understanding on various healthy behaviors that could lead to the prevention and control of these diseases." The purpose of the CDPCP is "to provide an island-wide focus for primary prevention, through lifestyle intervention activities that promote healthy behaviors through 2010." (Live Healthy Guam: Chronic Disease Prevention and Control Program web site at http://www.livehealthyguam.org/cdpcp.htm)

Tobacco Free Guam

The Tobacco Free Guam program exists for the purpose of encouraging smoking cessation in the Guam community. This program hosts a free telephone support line, the Tobacco Free Guam Quitline, which provides counseling, information, educational and support material, pharmacotherapy or Nicotine Replacement Therapy (NRT), follow-up support for callers who are ready to quit or are contemplating to quit smoking.

10.5 Chronic Respiratory Disease

Chronic respiratory diseases are long lasting diseases associated with the airways and other structures of the lung. The most common forms of this disease are asthma and Chronic Obstructive Pulmonary Disease (COPD). According to the World Health Organization's most recent (2007) estimates, 210 million people have COPD, and millions of others have allergic rhinitis and other often under-diagnosed chronic respiratory diseases.

Asthma

Asthma is characterized by recurrent attacks of breathlessness and wheezing, which vary in severity and frequency from person to person. Symptoms may occur several times throughout a day or week in affected individuals or may become worse during physical activity or at night.

- 300 million people of all ages worldwide have asthma.
- The prevalence of asthma has increased following changes to a modern, urban lifestyle.
- Globally, 255 000 people die of asthma every year.
- Asthma deaths are related to lack of proper treatment.
- Treatment for asthma is not available to all people who have asthma.

Chronic Obstructive Pulmonary Disease (COPD)

COPD is a term used to describe a group of chronic lung diseases that cause limitations in lung airflow. Constraints in airflow are often a response to noxious agents including cigarette smoke, biomass fuels, and occupational agents. A person with COPD will find it hard to breathe and may begin coughing up mucus. Chronic bronchitis and emphysema are common COPDs. The most common symptoms of COPD are breathlessness, excessive sputum production, and a chronic cough. The most significant risk factors for COPD have been identified as tobacco smoking and breathing in irritants, such as pollution, dust or chemicals.

Existing Condition and Trends

The chronic respiratory disease death rate has declined on Guam over recent years from 42.5 deaths per 100,000 persons in 1999 to 23.2 deaths per 100,000 persons in 2007 (see Figure 10-17). Additionally, the death rate for chronic respiratory disease on Guam was significantly lower than the US for most years (which had 45.8 deaths per 100,000 persons in 1999 and 40.8 deaths per 100,000 persons in 2007) and lower than Puerto Rico for most years (41.5 deaths per 100,000 persons in 1999 and 27.9 deaths per 100,000 persons in 2007). The rates were greater than on Hawaii (23.6 deaths per 100,000 persons in 1999 and 19.3 deaths per 100,000 persons in 2007). The average rates are shown in Table 10-20. Despite the recent decline in chronic respiratory disease related deaths, there is still significant concern over the consequences of chronic respiratory diseases, and the likelihood of the death rate rising over the next few decades. According to WHO estimates:

- 300 million people suffer from asthma and 210 million people have COPD worldwide.
- 255,000 people died of asthma in 2005 and a staggering 3 million people died of COPD.
- Asthma is the most common chronic disease among children worldwide, regardless of level of development.
- Over 80% of asthma deaths occur in low and lower-middle income countries.
- COPD is predicted to become the third leading cause of death by 2030.

Source: World Health Organization, http://www.who.int/respiratory/copd/World_Health_Statistics_2008/en/index.html)

Deaths attributable to COPD have increased sharply in countries where data are available. According to WHO, COPD will move from fifth leading cause of death in 2002, to third worldwide in the year 2030. In high income countries, COPD is the major chronic disease for which deaths are increasing. In the US, death rates for COPD have doubled between 1970 and 2002. The prevalence of COPD increases considerably with age, particularly among smokers.

Significant differences in the prevalence of COPD and other respiratory diseases occur between countries. This has been attributed to a variety of factors, including difference in diagnostic methods, year of study, age of population, prevalence of main risk factors such as smoking, and even differences in the definition of this group of diseases. "In almost all countries, the poorest people are the most at risk for developing chronic respiratory diseases. The poorest people are also most likely to die prematurely from these diseases because of greater exposure to risks and decreased access to health services. For example, in children with asthma, poverty aggravates asthma and asthma aggravates poverty. People with asthma are less able to work or look after their families. Children with asthma are likely to miss a significant part of their education. Drug costs, emergency visits, hospitalization and inappropriate treatments are a huge financial drain on struggling health systems." (World Health Organization, Chronic Respiratory Disease Fact Sheet, June 2009)

- People with asthma are less able to work or look after their families.
- Children with asthma have limited physical exercise.
- Drug costs, emergency visits, and hospitalizations are a huge financial drain on struggling health systems and families.
- Tobacco use tends to be higher among poor people than among wealthier community members, thus worsening respiratory conditions.
- In low and middle-income countries, people are more exposed to indoor solid fuels used for cooking and heating and to unsafe occupational environments.

Issues and Opportunities

Better education and training of medical professionals is needed.

Asthma cannot be cured, but proper diagnosis, treatment and patient education can result in good asthma control and management. The training of health-care workers is often problematic. A lack of trained personnel in the health care industry as well as frequent staff turnover makes specialized education and training challenging. Prevention of these risk factors will have a significant impact on morbidity and mortality. Effective preventive measures exist; however, preventable chronic respiratory diseases and their risk factors often receive insufficient attention from the health-care community, government officials, patients and their families.

The prevalence and significance of chronic respiratory conditions are underestimated and given insufficient attention.

Reports identifying incidence of chronic respiratory diseases tend to vary by how this group of diseases is defined and which conditions are included. Additionally, it is believed that many chronic respiratory disease go unreported, thus its significance is believed to be underestimated. Overall, preventable chronic respiratory diseases tend to be under-recognized, under-diagnosed, under-treated and insufficiently prevented. According to the WHO, most of the information available on COPD prevalence has historically come from high income countries. Even in these countries, data greatly underestimate the total burden of COPD because the disease is usually not diagnosed until it is clinically apparent and moderately advanced and because of the varying definitions employed.

Plans/Programs to Address Issues

The Chronic Disease Prevention Program exists to provide a variety of education and diagnostic services geared toward the prevention of various chronic diseases and conditions on Guam. No other policies or programs specifically focused on chronic respiratory diseases on Guam have been identified at this time.

Where do we Stand? Evaluating Trends

Current Trends

Limited data was available for the rates of death on Guam comparable to Hawaii, Puerto Rico, and the US. The years in which data was not available (2003 and 2006) are not included in the calculations to determine trendlines and the average rate. Table 10-20 and Figure 10-17 show that all four geographies are trending downwards. However, Guam's downward trend is sporadic over the years, while the other three geographies are generally steady and consistent declines. Guam's average rate of 32.2 deaths per 100,000 persons was greater than Hawaii's, but less than Puerto Rico and the US.

Moving Forward

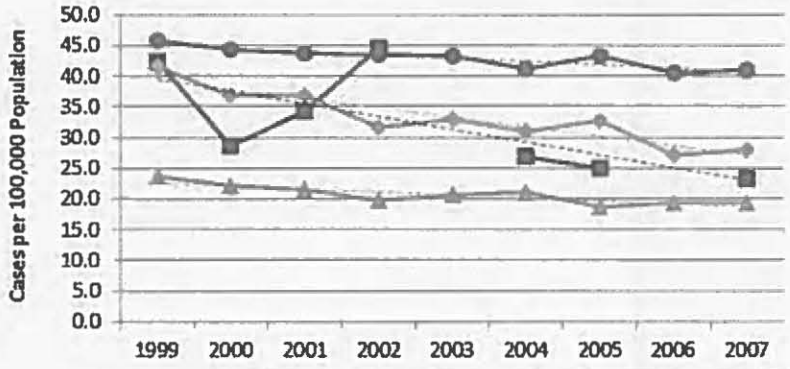
Guam Average	32.2 deaths / 100,000 persons
Trending	↓
Guam 2007 Rate	23.2 deaths / 100,000 persons
Goal	98.5 COPD deaths among adults / 100,000 persons 0.6 asthma deaths for people age 35 to 64 years old / 100,000 persons 2.3 asthma deaths for people over age 65 years old / 100,000 persons
5-Year Target	

The available data on chronic respiratory disease deaths was not broken down by the type of disease. Therefore, no distinction can be made regarding whether the deaths were from asthma, COPD, or another respiratory disease in order to determine the possibility of meeting the goals set forth in the Health People 2020 plan.

Table 10-20. Average Chronic Respiratory Disease Age-Adjusted Death Rates, 1999 to 2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (deaths per 100,000 persons)	32.2	42.9	20.7	33.2
Trend	↓	↓	↓	↓

Figure 10-17. Chronic Respiratory Disease Age-Adjusted Death Rates, 1999-2007



	1999	2000	2001	2002	2003	2004	2005	2006	2007
Guam	42.5	28.7	34.3	44.5		26.9	25.0		23.2
US	45.8	44.3	43.7	43.5	43.3	41.1	43.2	40.5	40.8
Hawaii	23.6	22.1	21.6	19.7	20.6	21.0	18.7	19.4	19.3
Puerto Rico	41.5	36.7	36.9	31.6	33.0	31.0	32.7	27.2	27.9

Source: CDC National Vital Statistics Reports, Deaths: Final Data for 1999-2007

10.6 Liver Disease

Liver disease, also called hepatic disease, is any disturbance of liver function that causes illness. The liver performs many critical functions within the body and, when impaired, can cause significant damage to the body. It is the largest solid organ in the body and is also considered a gland due to its secretion of bile. The liver is located in the upper right portion of the abdomen protected by the rib cage. When functioning normally, the hepatic artery supplies oxygen rich blood that is pumped from the heart, and the portal vein supplies nutrients from the intestine and the spleen. The liver also makes bile, a fluid that contains water, chemicals, and bile acids, among other substances, and assists in the digestion of fats.

Common liver diseases include hepatitis, non-alcoholic fatty liver disease, cirrhosis, cancer of the liver, and Gilberts syndrome.

Existing Condition and Trends

The death rate from alcohol liver disease has increased slightly on Guam, from 2.6 per 100,000 persons in 1999 to 3.1 per 100,000 persons in 2003 (Guam DPHSS, Office of Vital Statistics). Fibrosis and cirrhosis of the liver accounted for 15 deaths, or 2.2% of all deaths, on Guam in 2005, making this condition the ninth leading cause of death. Of those infected with hepatitis C, approximately 60-70% will develop chronic liver disease.

Issues and Opportunities

Regular / Excessive Alcohol Consumption

Alcohol consumption is the most common cause for liver disease and liver cirrhosis in North America and is a significant concern on Guam. Alcohol is directly toxic to liver cells and can cause liver inflammation, referred to as alcoholic hepatitis. Addressing behavioral health issues, particularly in the case of a substance or alcohol abuse problem, is required in order to have a positive impact on both the potential for and the prevalence of liver disease.

Exposure to Blood and Body Fluids

Exposure to other people's blood or bodily also increases the likelihood of developing liver problems. Exposure may occur as a result of the sharing of needles, blood transfusions received before 1992, exposure to unsanitary needles when receiving a tattoo or other injection, unprotected sex, and other unsafe practices. The use of injection drugs and sharing of dirty needles can also lead to hepatitis, which can progress to cirrhosis.

Plans / Programs to Address Issues

The Chronic Disease Prevention Program exists to provide a variety of education and diagnostic services geared toward the prevention of various chronic diseases and conditions on Guam. No other policies or programs specifically focused on liver disease on Guam have been identified at this time.

Where do we Stand? Evaluating Trends

Current Trends

Insufficient data was available for liver disease death rates on Guam to be able to make a determination of trends or an average rate that would be comparable to Hawaii, Puerto Rico, and the US. Table 10-21 and Figure 10-18 illustrate the available data.

Moving Forward

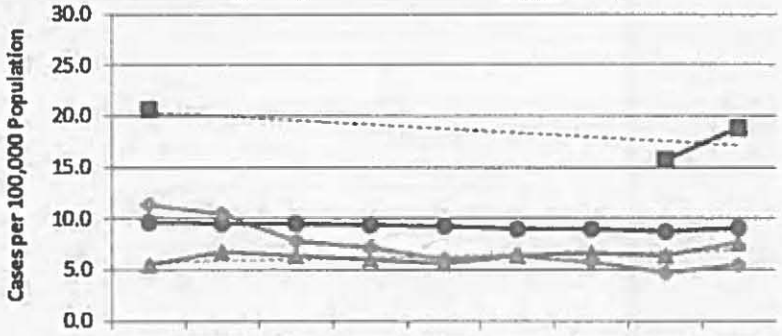
Guam Average	18.4 deaths / 100,000 persons
Trending	↓
Guam 2007 Rate	18.9 deaths / 100,000 persons
Goal	N/A
5-Year Target	10.0 deaths / 100,000 persons

Insufficient data was available for liver disease death rates on Guam to be able to make a determination as to possible future trends of the disease.

Table 10-21. Average Liver Disease Age-Adjusted Death Rates, 1999 to 2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (deaths per 100,000 persons)	18.4	9.3	6.4	7.3
Trend	↓	↓	↑	↓

Figure 10-18. Liver Disease Age-Adjusted Death Rates, 1999-2007



	1999	2000	2001	2002	2003	2004	2005	2006	2007
Guam	20.6							15.7	18.9
US	9.7	9.6	9.5	9.4	9.3	9.0	9.0	8.8	9.1
Hawaii	5.5	6.8	6.4	6.0	5.7	6.4	6.7	6.5	7.7
Puerto Rico	11.3	10.5	7.9	7.2	6.1	6.5	5.8	4.7	5.5

Source: CDC National Vital Statistics Reports, Deaths: Final Data for 1999-2007

10.7 Sources

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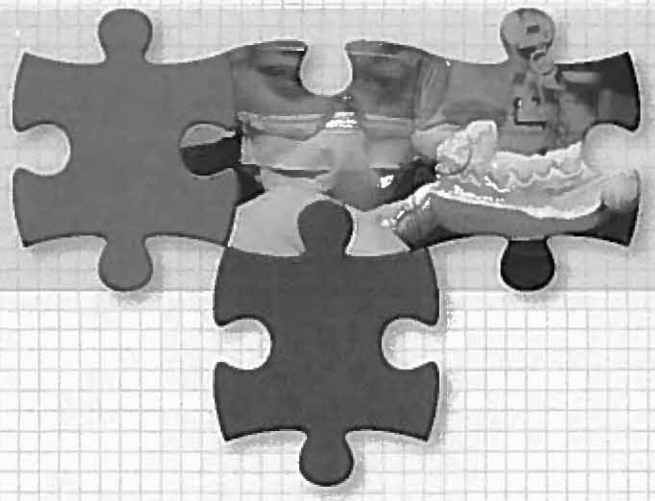

11.
Oral Health

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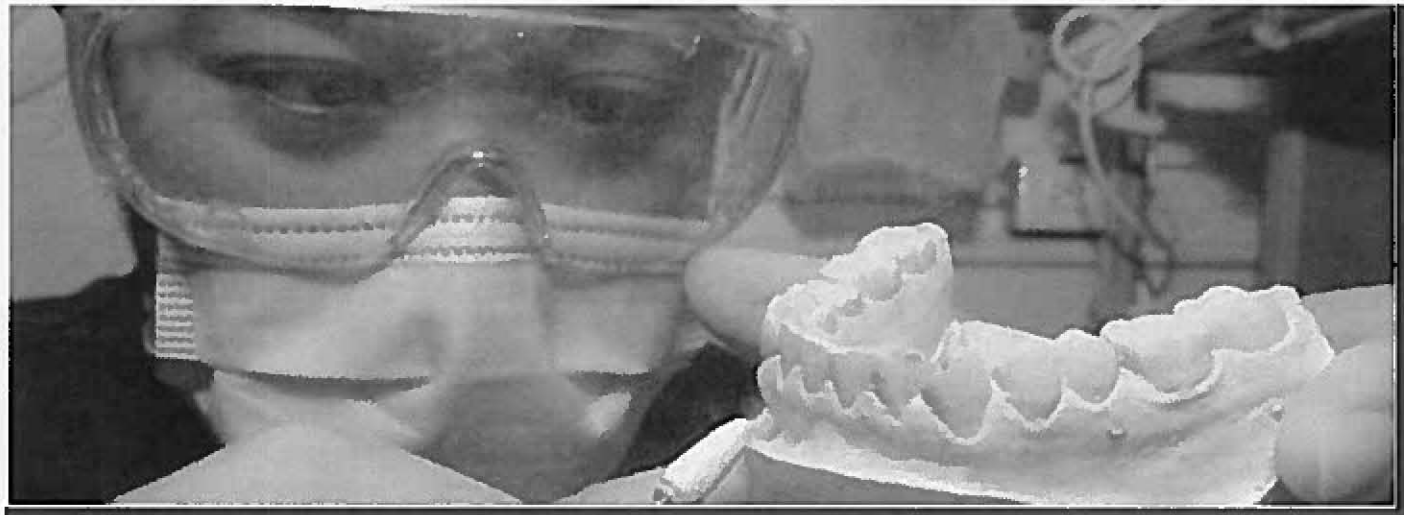

11 Oral Health

Inside Section 11 . . .

Good oral health encompasses much more than healthy teeth. It means being free of chronic oral-facial pain conditions, oral and pharyngeal (throat) cancers, oral soft tissue lesions, birth defects such as cleft lip and palate, and many other diseases and disorders that affect the oral, dental, and craniofacial tissues, collectively known as the craniofacial complex. Oral health is defined by the World Health Organization as:

> "A standard of the oral and related tissues which enables an individual to eat, speak and socialize without active disease, discomfort or embarrassment and which contributes to general well-being."

(Source: World Health Organization, 1982)

When discussing oral health, the essential components include teeth and the gums (gingiva) and their supporting tissues, as well as the hard and soft palate, mucosal lining of the mouth and throat, tongue, lips, salivary glands, the chewing muscles, and the upper and lower jaws. Equally important are the branches of the nervous, immune, and vascular systems that animate, protect, and nourish the oral tissues, as well as provide connections to the brain and the rest of the body.

(Source: Oral Health in America: A Report of the Surgeon General, 2000)

Oral health is an essential component of overall wellness throughout life. Poor oral health and untreated conditions can have a significant impact on overall quality of life by affecting the basic human needs for eating, drinking, and communicating. The definition of oral health has evolved from the most common conditions such as tooth decay (caries), tooth loss, and gum disease to include oral mucosal lesions, oropharyngeal cancers, oral manifestations of HIV/AIDS, necrotizing ulcerative stomatitis (noma), and orodental trauma.

Chronic disabling diseases such as temporomandibular joint disorder (TMJ), diabetes, and osteoporosis affect millions of Americans and compromise oral health and functioning.

11.1 Existing Condition and Trends

The first-ever report on oral health, *Oral Health in America: A Report of the Surgeon General*, was released in 2000, stating that "a silent epidemic of oral diseases is affecting our most vulnerable citizens – poor children, the elderly, and many members of racial and ethnic minority groups." *(Source: Oral Health in America, 2000)* Poor oral health has been linked with adverse general health outcomes, including heart disease, low birth weight, increased risk for lung disease, and diabetes. Early childhood tooth decay can lead to poor food choices, leading to poor nutrition and even have a detrimental impact on weight gain and cause a failure to thrive.

(Source: Oral Health Plan for New York State, 2005)

Oral diseases and conditions are experienced worldwide, particularly in under-privileged groups, poor populations, and in developed and developing countries. Dental caries (tooth decay), is the most common oral health condition worldwide, affecting 60 to 90% of schoolchildren and the vast majority of adults. The DMFT (Decayed, Missing, and Filled Teeth) Index, a commonly used indicator used in epidemiological studies of dental caries, quantifies dental health based on lifetime dentition experiences. DMFT describes the prevalence of dental caries in an individual and is meant to numerically express the caries prevalence by summing the number of teeth affected. The World Health Organization (WHO) publishes the Index as an indicator of global oral health and reports the Americas as a high oral disease incidence region with a 3.6, which is above the global average of 2.4. Following the Americas are Europe (2.6), Western Pacific Region (2.3), Eastern Mediterranean Region (2), and Africa and Southeast Asia Regions (both 1.6).

(Source: World Health Organization, Oral Health Country Profiles, 2006)

In children, oral disease remains five times more common than asthma and affects children's ability to concentrate and to learn as well as their speech development and self-esteem.

The most common oral health condition among children are dental decay (as the most prevalent) as well as defects such as cleft palate, oral lesions, and periodontal diseases. With over half of children across the US having cavities by the second grade and 78% of 17 year olds having at least one cavity or filling, dental caries (tooth decay) is the most common oral health issue affecting children as well as the most chronic childhood disease.

(Source: CDC, Trends in Oral Health Status: United States, 1988 - 1994 and 1999-2004; April 2007)

Although national and state data for many oral and craniofacial diseases and conditions are limited or nonexistent, the CDC collects data on oral health conditions to provide an indication of the burden of oral health diseases in America. The CDC's most recent review of oral health care in the United States provides summary data for study periods in increments of three years. As expressed in Table 11-1, there has been a decrease in the percentage of children who have untreated dental caries, from approximately 23% of children to 16%. Although not as substantial of an improvement, the percentage of adults with untreated dental caries also decreased, from approximately 27% during the 2001 to 2004 time period to 23% over the years 2005 to 2008.

Table 11-1. CDC Trends of the Burden of Oral Diseases in America

Morbidity	2001 – 2004	2005 – 2008
Ages 2-5 have untreated dental caries	19.5%	Not Available
Ages 6-19 have untreated dental caries	22.9%	16%
Ages 20-64 have untreated dental caries	26.8%	23%
Use of Healthcare	**2007**	**2009**
Ages 2-17 with a dental visit in the past year	77%	78%
Ages 18-64 with a dental visit in the past year	63%	62%
Ages 65 and over with a dental visit in the past year	58%	60%

(Source: Centers for Disease Control FastStats; http://www.cdc.gov/nchs/fastats/dental.htm)

Although data specific to the status of oral health on Guam is limited, a "Comparative Analysis of Oral Health Indicators Among Young Children in Hawaii, the Republic of Palau and Territory of Guam" was published for the years 1999-2000 (Pacific Health Dialog, Volume 10 No. 1, "Comparative Analysis of Oral Health Indicators Among Young Children in Hawaii, the Republic of Palau and Territory of Guam 2003). This study examined data sets of children ages 5 through 9 in Hawaii, Palau, and Guam and identified dental disease in early childhood as "truly endemic". The assessment found that children from all three areas experienced a much higher prevalence of dental disease than the continental US, and the oral health of children on Guam ranks the poorest among the three reviewed. Children in all locations were found to exhibit an excessively high prevalence of caries and unmet treatment needs rates. Although the data reported in this study is helpful in assessing the oral health status of Guam youth, it is difficult to make an accurate comparison of the four geographies due to the years for which data was available. Data presented for Guam represents conditions in the year 2000, 1999 for Hawaii and Palau, and 1987 for the US. Relative to Hawaii and Palau, Guam youth do appear to experience a higher rate of dental caries, as summarized in Table 11-2.

Table 11-2. Mean Dental Caries Prevalence Rate Among Youth

Age in Years	Guam (2000)	Hawaii (1999)	Palau (1999)
Mean Caries Among Primary Teeth (DFT)			
5 – 9	5.871	3.910	5.561
5 – 9 (Boys)	6.109	4.042	5.961
5 – 9 (Girls)	5.614	3.765	3.754
Mean Caries Among Secondary Teeth (DMFT)			
5 – 9	1.806	0.278	0.767
5 – 9 (Boys)	1.656	0.244	0.705
5 – 9 (Girls)	1.967	0.315	0.847

(Source: Pacific Health Dialog, Volume 10 No. 1, "Comparative Analysis of Oral Health Indicators Among Young Children in Hawaii, the Republic of Palau and Territory of Guam 2003)

A 2010 study conducted a review of oral health in US Pacific jurisdictions, including Guam, American Samoa, the Commonwealth of the Northern Mariana Islands (CNMI), the Republic of Palau, the Republic of the Marshall Islands and the Federate States of Micronesia (FSM). This study reports that oral health needs, especially among children, are currently severely unmet and worsening. The major problems identified include high rates of dental caries in both primary and permanent dentitions of children, of early childhood caries, and of untreated caries among children, as well as insufficient use of dietary fluoride and sealants for caries prevention.

(Source: Reginald Louie, et al., 2010)

The number and complexity of oral health conditions tend to increase with age. While dental caries continue to be experienced in adulthood, additional common conditions that arise include periodontal (gum) disease, viral infections, cancer, and various pain related issues. Though often left undetected and untreated, periodontal or gingival diseases occur in most adults. Severe periodontal disease (6 millimeters of periodontal detachment) affects 14% of adults aged 45 to 54 in the US. Symptoms of viral infections, such as herpes labialis (cold sores) and oral ulcers are also common in adulthood, affecting approximately 19% of adults 25 to 44 years of age.

(Source: CDC, Oral Health for Adults, 2006)

Craniofacial disorders and anomalies (deformities in the growth of the skull and facial bones) can cause severe pain and interfere with vital functions such as eating, swallowing, and speech. These conditions not only affect overall health, but also other socioeconomic conditions, and may lead to a loss of productivity resulting in reduced income and aggravating other health conditions.

Over 40% of poor adults (20 years and older) have at least one untreated decayed tooth compared to 16% of non-poor adults.

The most influential factor that promotes good oral health status is preventative care. Preventative care needed to maintain oral health requires regular dental checkups and professional teeth cleanings by a dentist. As indicated in Tables 11-3 and 11-4, the percent of adults who report having visited a dentist within the past year and those who have had their teeth professionally cleaned within the past year are direct correlates of one another. As of 2008, approximately 70% of Guam adults had seen a dentist and received dental cleanings over the past year. Although Guam's adults are slightly more likely to see a dentist than the US, both Hawaii and Puerto Rico appear to make dental care slightly more accessible to adults than Guam does. Issues affecting access to oral care are also discussed in Section 7, Access to Care.

Table 11-3. Percent of Adults Who Visited the Dentist or a Dental Clinic in 2008

	Guam	US	Hawaii	Puerto Rico
Percent	63.7	71.3	75.3	75.5

(Source: Guam Oral Health Facts, 2008. http://www.statehealthfacts.org/profileind.jsp?cat=2&sub=30&rgn=54)

Table 11-4. Percent of Adults Who Reported Having Their Teeth Cleaned in 2008

	Guam	US	Hawaii	Puerto Rico
Percent	60.8	68.4	73	75.1

(Source: Guam Oral Health Facts, 2008. http://www.statehealthfacts.org/profileind.jsp?cat=2&sub=30&rgn=54)

11.2 Issues and Opportunities

The current pattern of oral disease reflects distinct risk profiles across countries that vary by economic status, environmental factors, oral health systems and implementation of schemes to prevent oral disease. In several high-income countries with preventative oral-care programs, prevalence of dental caries in children and tooth loss among adults has dropped.

High costs of care result in a lack of preventative care and treatment.

The key factor influencing the majority of oral health concerns is believed to be the lack of prevention and proper treatment by a medical professional. Many countries do not support strong dental healthcare due to the high cost as well as a lack of awareness of its importance. Oral disease is the fourth most expensive disease to treat. In most low and middle income countries, investment in oral healthcare is low and resources are primarily allocated to emergency care and pain relief.

Even in countries with established healthcare systems, such as the U.S., access to oral healthcare may be impeded by income level, lack of insurance, transportation, or the ability to take time from work. Over 108 million children and adults lack dental insurance, which is over 2.5 times the number who lacks medical insurance. Reducing these barriers has significant potential for improving the status of oral health.

Economic status and conditions play a role in a community's oral health.

Income level is one indicator of poor dental health with poor children suffering from dental caries twice as much as affluent peers. One out of four children in America is born into poverty, and children living below the poverty line (measured at an income of $17,000 for a family of four) have more severe and untreated decay. Exacerbating the situation, the majority of poor children do not get treatment for dental caries, increasing the potential for further oral health complications later in life. Access to medical and dental insurance as well as overall medical care is essential for the maintenance of oral health; however, 25% of poor children have never seen a dentist before entering kindergarten. Uninsured children are 2.5 times less likely than insured children to receive dental care and are 3 times more likely to have dental needs than children with either public or private insurance.

(Source: US Department of Health and Human Services, 2000)

Access to fluoridated water supports optimal dental health.

Virtually all water contains some amount of fluoride; however, some must be added to a level of approximately 1 milligram fluoride per liter of water (mg/L) to optimally affect the protection and strengthening of teeth. Water fluoridation programs occur at the state level and vary by geographic characteristics. Despite the potential benefits of fluoridated water, roughly 65% states in the U.S. add fluoride to their water.

(Source: Community Water Fluoridation Status by State, March 2011)

Tobacco use is a risk factor for oral health conditions.

Tobacco use has been estimated to account for over 90% of cancers in the oral cavity and is associated with aggravated periodontal breakdown, poorer standards of oral hygiene and thus premature tooth loss, and presents a risk for oral cancer, periodontal disease, and congenital defects in children whose mothers smoke during pregnancy. Tobacco-related oral diseases have historically been more prevalent in higher income countries; however, with the growing consumption of tobacco in many low and middle income countries, the risk of periodontal disease, tooth loss and oral cavity cancer is likely to increase.

> Oral disease has a significant social and economic impact on the American population. The Surgeon General reports that more than 51 million school hours are missed each year due to dental related illness, with poor children experiencing nearly 12 times more restricted-activity days than children of higher incomes.

Poor oral health contributes to various chronic diseases.

Periodontal disease and tooth loss are linked to chronic diseases such as diabetes mellitus, and HIV/AIDS. People living with HIV/AIDS suffer from specific oral disease; HIV infection has a negative effect on oral health and quality of life due to symptoms of their underlying illness such as pain, dry

mouth and difficulty chewing, swallowing and tasting food. In the case of symptoms from another illness causing dry mouth and other related side effects, the importance of improved medical practices is needed to enable better oral health. Many who are receiving treatment for a chronic condition may not consider these side effects important relative to the underlying condition and are unaware of the methods to reduce or even prevent side effects. Although it is largely up to the provider to educate patients about potential oral health conditions that may arise, consumer awareness and education would help improve these problems. Proper treatment of chronic medical conditions requires an integrated and holistic approach in order to prevent further complications and educate patients about proper care and treatment.

(Source: World Health Organization: What is the Burden of Oral Disease? 2010. http://www.who.int/oral_health/disease_burden/global/en/index.html)

Poor behavioral health has the potential to impair oral health.

A correlative relationship exists between behavioral health and oral health. People with poor mental health, a disability, or generally apathetic attitude toward proper care increases risks for oral health problems in addition to other chronic illness. The elderly tend to have impaired oral health likely as a result of the inability to properly care for themselves independently as well as due to symptoms of chronic illness. Additionally, a misperception regarding the significance of oral health and its impact on overall health and quality of life is a common problem preventing proper prevention and care practices to be followed. The CDC notes that "the public, policymakers, and providers may consider oral health and the need for care to be less important than other health needs, pointing to the need to raise awareness and improve health literacy".

(Source: Oral Health in America: A Report of the Surgeon General, 2000)

11.3 Plans/Programs to Address Issues

The World Health Organization's Department of Chronic Diseases and Health Promotion (CHP) serves as the world leader in working toward the improvement of oral health and operates the WHO Global Oral Health Programme as part of this effort. The program exists for the purpose of developing and strengthening global policies in oral health promotion and oral disease prevention in coordination with other CHP programs and external partners through "effective control of risks to oral health, based on the common risk factors approach" based on a focus on modifiable risk behaviors related to diet, nutrition, tobacco use, excessive alcohol use, and hygiene, and stimulates development and implementation of community-oriented demonstration projects for oral health promotion and prevention of oral diseases, particularly in poor and disadvantaged groups and developing countries. Priority action areas for the improvement of oral health worldwide area:

- Effective use of fluoride
- Healthy diet and nutrition
- Tobacco control
- Oral health of children and youth through Health Promoting Schools
- Oral health improvement amongst the elderly
- Oral health, general health, and quality of life
- Oral health systems
- HIV/AIDS and oral health
- Oral health information systems, evidence for oral health policy and formulation of goals
- Research for oral health

(Source: World Health Organization, http://www.who.int/chp/en/)

The Government of Guam does not currently have an Oral Health Plan in place. Guam's Department of Public Health and Social Services DPHSS mandates the provision of oral health services through public healthcare under 10 GCA Chapter 3; P.L. 12-130 and 24-106; P.L. 19-10; Community Health Services/Dental Health Section, which states that its purpose is to: provide for the oral health of Guam's children by providing preventative dental services to those below the age of twelve years, basic dental treatment for eligible low income children and to provide emergency dental care for the relief of pain for senior citizens 55 years and older."

(Source: Government of Guam Department of Public Health and Social Services, Rules and Regulations, 2010, http://www.dphss.guam.gov/about/rules.htm)

11.4 Wellness and Education

The best way to prevent oral disease is to practice good oral health behaviors on both an individual and community level. Good oral health behaviors include: maintaining a balanced, nutritional diet free from excess sugar; visiting a dentist office at least twice a year; drinking fluoridated water when possible; brushing and flossing; not engaging in bad behaviors involving smoking and excessive alcohol consumption. Communities should promote good oral health behaviors by providing a sanitary, fluoridated water system to its citizenry, educating children in schools on the physical and social benefits of good oral health behaviors, providing access to dentists who can assist in the education and awareness of good oral health behaviors, conversely the consequences of engaging in bad oral behaviors. Finally, communities and people have to work together to combat oral diseases as it is a culturally-influenced problem.

Finally, individuals experiencing pain or discomfort in the oral or craniofacial cavities should seek the opinion of a dentist immediately to prevent further discomfort and potential, extensive destruction.

11.5 For More Information

Sanctuary, Inc.

Sanctuary, Inc. is a private, non-profit organization committed to assisting youth and families with various support groups relative to behavioral health. The services that Sanctuary, Inc. provides includes: counseling consultations, smoking cessation classes, education and awareness on alcohol and drug workshops.

www.sanctuaryguam.org

WHO's Global Oral Health Programme

Due to the transformation of healthcare in the way it is practiced, managed, and reported, the WHO developed a Global Oral Health Programme which promotes and provides strategies for increasing good oral behaviors practiced worldwide. The Global Oral Health Programme has adopted several priorities and strategies to assist countries and communities, including developing countries, with the education and prevention of oral health diseases.

The WHO's priorities are those associated with diseases that may be connected to common, preventable, risk factors related to lifestyles such as tobacco use, including oral health behaviors. The Global Oral Health Programme assist communities and countries by providing education and awareness strategies on how to encourage and increase good behaviors associated with oral health. These strategies include assisting individuals and community programs as well as those individuals under care in taking action for their own personal care to prevent disease and maintain a healthy lifestyle. These strategies include providing information on diet and nutrition to countries, communities, and individuals in need of guidance about diets. The WHO's programme also encourages communities to develop smoking cessation classes and counseling opportunities for those community members who wish to quit smoking.

WHO Collaborating Centres on Oral Health

WHO's Collaborating Centres on Oral Health assists communities in the execution of oral disease prevention and practicing good oral health behavior programs. Furthermore, the centers provide access to information of other communities' information and best practices. The centers also assist communities in identifying global existing partnerships to strengthen the effort on oral disease prevention nationally and internationally.

The centers also assist in community development and empowerment relative combating oral disease which draws on existing cultural values and materials in effort to facilitate and establish community support and ownership.

www.who.int/oral_health/en/

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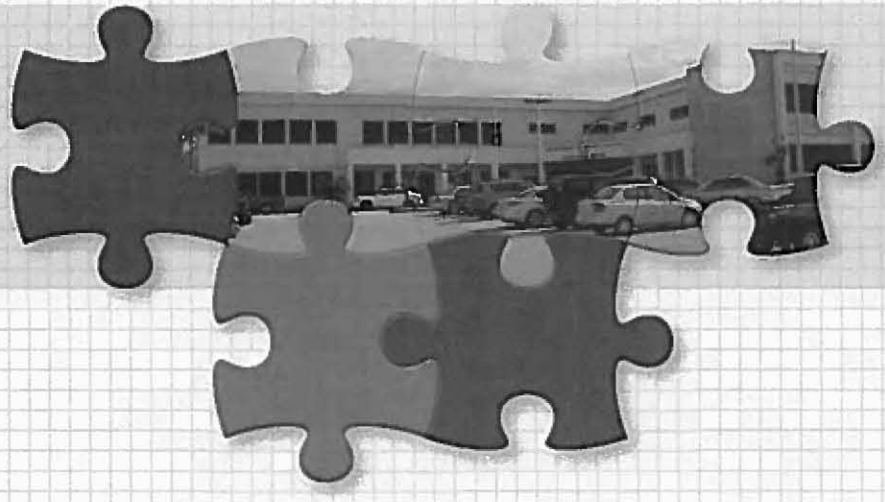

12.
Behavioral Health

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12

Behavioral Health

Inside Section 12...

Behavioral health as a general concept refers to the reciprocal relationship between human behavior and the well-being of the mind, body, and spirit. The term is used formally to describe the interdisciplinary field concerned with the development and integration of behavioral and biomedical science, knowledge, and techniques relevant to health and illness and the application of this knowledge and techniques to prevention, diagnosis, treatment, and rehabilitation. The study of behavioral health is concerned not only with the mental condition (or mental illness) of a person but also the actions that may potentially result from one's mental state.

Common behavioral health conditions include anxiety disorders, depression, eating disorders, suicide, substance abuse, and acts of violence. Although all of these have an impact on healthcare planning, this Plan addresses the following three topics in particular: suicide, domestic violence, and violence against children. These three major topics of concern were chosen to be addressed in this Plan due to both their prevalence throughout Guam and feedback from stakeholders regarding areas of concern that their community is facing.

The assessment of behavioral health takes a step further than mental health to include human actions that may result due to one's mental state. If left untreated, poor mental health may lead to poor behavioral health; however, because behavioral health is action based and not thought based, mental health often goes unaddressed until behavioral health declines. Behavioral

health is an integral aspect to the overall health of a community and to healthcare planning and can be addressed through treatment, education, and advocacy. The purpose of this chapter is to provide an overview of behavioral health and its impact on the Guam community.

Common underlying conditions may lead up to suicide and acts of violence.

Common themes amongst various behavioral health disorders include underlying mental health conditions and inclination to commit other behavioral health actions. The various components of behavioral health have a reciprocal relationship to one another. A person battling high stress levels, financial struggles, or other traumatic experiences is more likely to develop mental health disorders, such as depression. As mental health issues prolong, one's inclination to engage in destructive behaviors such as alcohol and substance abuse increases as does the likelihood of committing acts of violence against oneself or another person.

Although additional research and data are required to fully understand and address the issues of both suicide and acts of violence on Guam, a review of the available studies reveal the following insights to this healthcare concern both worldwide and as it applies to Guam. Untreated depression is documented as the number one cause for suicide, with over 90% of people who die by suicide having a mental illness at the time of their death (Suicide.org, 2010). A review of Guam suicide deaths reveal that local triggers are similar to those worldwide, with the most frequently occurring circumstances on Guam being family disputes as the top ranking event, followed by personal relationship problems, financial difficulty, military related stress, and mental conditions as the five leading circumstances. Other significant correlates of suicide attempts cited include history of mental illness, alcohol use, other drug use, and previous suicide attempts. Of the circumstances referenced, the one that stands out relative to other regions and countries is an association with the military. These same underlying mental and behavioral health conditions are just as likely to result in an act of violence being committed toward another person, whether it is toward a spouse, a child, or someone else.

The availability of data hinders our ability to fully understand the status of acts of violence.

A major hurdle to understanding behavioral health issues, including suicide, domestic violence, and violence against children is the lack of a clear and complete data set. Both suicides and acts of violence are presumed to be significantly underreported due to methods of recording events, multiple definitions and perceptions of the topic, and the personal and secret nature of suicide and acts of violence. Data sets are likely to be incomplete as a result of:

- Suicide is often viewed as an "individual problem" not a societal problem
- Legal complications and police investigation may cause families to conceal information and provide false details.
- Considerable underreporting and misclassification occurs in the data gathering process. Suicides are not included in hospital information systems, and are often listed under "injuries and accidents" or occasionally under "mental health problems".
- Victims of violence often feel shame and embarrassment of the situation
- Victims of violence may have a fear of greater harm if the violator becomes aware of report
- Victims of violence may be in denial that problems exist (stating "it was only one time. It won't happen again"
- Both people with mental and behavioral health problems may feel that they do not want to disrupt family life (i.e., hiding the problem from children), thus keep the problem to themselves.
- People with behavioral health disorders may not know where to turn for support, thus keeping the problem a secret.

A person is likely to keep mental health problems to themselves due to embarrassment.

Further complicating the ability to collect accurate data is the stigma and attitude of secrecy surrounding suicide and acts of violence. Legal

complications and police investigations can deter families from reporting a death as one of suicide, instead encouraging family members to provide false information. Additionally, without information from the suicide victim (such as a note), identification of a death as a suicide can be somewhat circumstantial and difficult to confirm with absolute certainty. Adding to the challenge in discerning which deaths are suicidal, families and friends may hesitate to admit that their loved one was suicidal due to embarrassment, legal concerns, and the stigma attached to suicide deaths.

Finally, not all suicides are reported to the police, thus would not be included in the final suicide count data. The same concerns apply to domestic violence and violence against children. The victim of violence may not report events due to embarrassment or insecurity. Additionally, an accurate report may be difficult when it is one person's word against another. This overall accuracy of available data makes it difficult to assess the magnitude of the problem, identify the characteristics and contributing factors, and address the underlying issues to identify and develop successful strategies and implement a successful prevention program.

> "Suicide on Guam is a taboo subject and is not openly discussed or acknowledged even among family members who have intimate knowledge of a suicide and related circumstances. Deaths by suicide are doggedly explained by surviving family members (who feel a great sense of shame and failure) as "terminal illnesses" and/or "accidents". This sense of imposed secrecy by family leaders among other members perpetuates the current problem and places great challenges in prevention and early intervention efforts."
>
> *(Source: Department of Mental Health and Substance Abuse. 2010)*

Although suicide and acts of violence are a significant concern worldwide, there is a lack of understanding of the issues and relationships that lead to suicide contemplation. Mental health/depression is widely documented as the leading cause of suicide as well as other behavioral health disorders, including acts of violence; however, a deeper understanding of the relationship between mental health and behavioral health is needed. Additionally, an understanding of what factors are causing elevated suicide death rates on Guam is required to effectively address the problem. Potential issues that may provide valuable insight into this healthcare problem include:

- Understanding the reasons for increased depression and relationship problems on Guam,
- Obtaining a more accurate data set on suicide deaths on Guam, including both adults and youth, and
- Conducting an evaluation of the current preventative measures in place and who is being served by those programs.

12.1 Suicide

Suicide is defined as the process of purposefully ending one's own life. Suicide attempts and deaths are one of the most common behavioral health concerns and causes of death across the world; however, they are one of the most preventable causes of death. The study of suicide, including potential causes of and prevention strategies is complex; however, there are certain factors that can be assessed to provide an understanding of this condition. The purpose of this section is to identify how the Guam community is affected by suicide, what the underlying issues and potential opportunities for improving the situation, and finally the resources that are currently available to combat this healthcare problem.

> "Suicide is an outcome of complex interactions among neurobiological, genetic, psychological, social, cultural, and environmental risk and protective factors. Multiple risk and protective factors interact in suicide prevention. Development of a national strategy can bring together multiple disciplines and perspectives to create an integrated system of interventions across multiple levels, such as the family, the individual, schools, the community, and the healthcare system."
>
> (Source: United States Department for Health and Human Services, 2010)

Existing Condition and Trends

Accounting for approximately one million deaths annually, suicide is the 16th leading cause of death worldwide. The most obvious measure of suicide and its toll on the population is a count of deaths; however, with 10-20 times as many suicide attempts occurring, a death count only provides a glimpse of the problem. Based on the most recent data available, Guam has been identified by the World Health Organization as a high suicide territory in a global perspective. (World Health Organization, 2010a) The mean annual rate of suicide deaths on Guam was 13.8 per 100,000 for the years 2000 to 2007, accounting for approximately 26 deaths per year. (Department of Mental Health and Substance Abuse, 2009a)

When considering comparable Asia-Pacific countries, the Guam Department of Mental Health and Substance Abuse (DMHSA) found that Philippines ranks the lowest with a rate of only 2.1 and South Korea being the worst off with a rate of 26.1, making Guam's rate of 13.8 appear to be a medium risk rate relative to comparable geographies. (Department of Mental Health and Substance Abuse, 2009a) Relative to the United States, Puerto Rico, and Hawaii, experiencing rates of 10.9, 7.3, and 9.8 respectively, Guam experiences a higher rate of suicide death by approximately 30%. Overall, suicide as the cause of death is more prevalent on Guam than in other countries, with suicide ranking as the 11th cause of death in the United States, 11th cause of death on Hawaii, and 12th in Puerto Rico, whereas suicide deaths are the fifth leading cause of death on Guam. Compared to other countries, the rate of suicide deaths is significantly elevated on Guam. (World Health Organization, 2010b)

Annual suicide rates on Guam are available for the eight year period of 2000 to 2007. Although the suicide rate has decreased slightly over this time period, the overall trend shows little change in suicide death rate. The most recent rate of 15.0 in 2007 indicates a growth in suicides and is cause for great concern given the anticipated increase in population over the next five years. [It should be noted that due to the relatively small amount of data and the low numbers due to small population, it is difficult to draw conclusions about suicide trends over time in Guam]. (Department of Mental Health and Substance Abuse, 2009a)

A variance worth noting regarding suicide death patterns on Guam versus global trends is the elevated ratio of male suicides versus females. These characteristics paired with increased stress resulting from military involvement indicate that the military population, including a large young population and many transient residents, may be more susceptible to suicidal thoughts and other health problems. Additional data that assesses the relationship between these factors would provide a deeper understanding into this healthcare concern. Given the anticipated population growth, including both military personnel as well as workers in support of infrastructure improvements, gaining a better understanding of this relationship is necessary to avoid exacerbation of the current situation.

Suicide affects all people; however, there are notable differences in suicidal patterns by gender, ethnicity, and age. A greater number of deaths result in the male population relative to females; however, women attempt suicide twice as often as men across all age groups. Guam's male population has fallen victim to suicide at a much higher rate than female population, with males nine times more likely to succeed in a suicide attempt than females. With regard to age group, those age 10-29 years have been the highest ranked suicide population, with the age 10-19 years category accounting for an average of 21% of suicide deaths and the 20-29 year old age category accounting for 38% of suicide deaths. In general, suicidal tendencies tend to be more prevalent among lower income groups, minority groups, and those with lower levels of education. (Department of Mental Health and Substance Abuse, 2009a)

A characteristic cited by the Guam DMHSA as common to those who attempt and/or commit suicide on Guam is ethnicity. The Chamorro account for the greatest percentage of suicide deaths; however, they also account for a proportionately higher percentage of the population. When considering both number of deaths with segment of the population a certain ethnic group accounts for, the Chuukese experience a significantly increased incidence of death by suicide than other ethnic groups. (Department of Mental Health and Substance Abuse, 2009a)

Characteristics and contributing factors leading to youth suicide deaths vary from those related to adult suicide events. Data obtained through the Guam Youth Risk Behavior Survey indicates that Guam's youth are a greater suicide risk population than the youth population of the U.S. The four indicators assessed included whether the responder had seriously considered attempting suicide, had made plans of how to attempt suicide, had followed through with an attempt, and whether an attempt had resulted in injury, poisoning, or overdose that required medical treatment. The results of this study reveal that nearly a quarter of the youth population (22%) has at a minimum contemplated a suicide attempt. Potential correlates of suicidal thoughts and suicide attempts among the Guam high school youth population that have been found to be statistically significantly more prevalent amongst Guam youth include: hit by boyfriend/girlfriend within the past year, felt sad for at least two weeks over the past year, currently a daily smoker, and currently a marijuana user. Additional correlates that may provide further insight into understanding suicide ideation include youth's exposure to physical and sexual violence, sexual orientation, sadness, and tobacco and illicit drug use.

Table 12-1 identifies the circumstance(s) that were associated with each suicide-related incident that was reported to the Guam Police Department in 2006 and 2007. This table shows that the leading factor for female suicides is family disputes, while the leading factor for males is problems with personal relationships.

Table 12-1. Circumstances Associated with Suicide-Related Incidents on Guam, 2006-2007

Circumstance	Male	Female	Total
Family Dispute	18	29	47 (41%)
Personal Relationship Problem	29	11	40 (35%)
Financial Difficulty	1	4	5 (4%)
Military-related	0	1	1 (1%)
Mental Condition	2	1	3 (3%)
School Failure	0	1	1 (1%)
Suicide in Family	1	0	1 (1%)
Grieving Loss of Significant Other	1	0	1 (1%)
Problems with the Law	1	0	1 (1%)
Other	7	7	14 (12%)

Source: DMHSA, A Profile of Suicide on Guam, January 2009

Data specific to suicide deaths and attempts amongst the adult population is less available than that focused on the youth and young adult population.

General characteristics identified regarding the adult population susceptible to contemplating or committing suicide reveal that those affected tend to be of lower income, be involved with other domestic violence issues, be struggling with alcohol or substance abuse, and tend to have a lower education level. Similar to the broader view of suicide death occurrences, mental health disorders are the most significant cause of suicide ideation and acts. Data that would allow a valid comparison of Guam adult suicides to that of other territories or countries does not appear to be readily available at this time.

Where do we Stand? Evaluating Trends

Current Trends

As shown on Table 12-2 and Figure 12-1 for much of the past decade suicide rates on Guam have remained high as compared to other geographic areas. These rates have alternated from comparatively very high (rates of 18.7 deaths per 100,000 people) to not as high (9.6 deaths per 100,000 people). Between 2006 and 2007 suicide rates were rising as suicide trends in the US, Puerto Rico and Hawaii remained more static.

Moving Forward

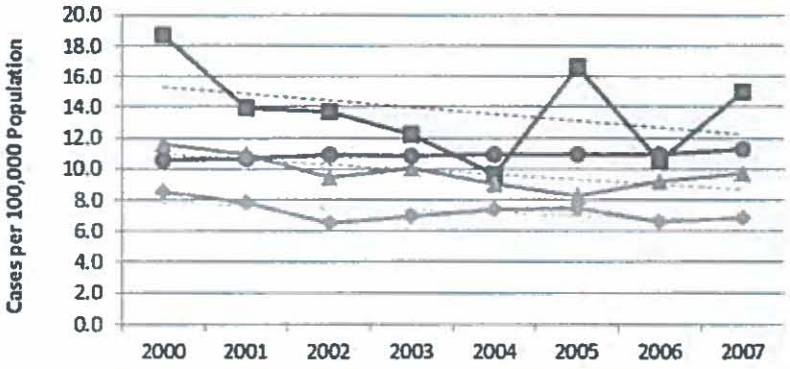
Guam Average	13.8 deaths / 100,000 persons
Trending	↓
Guam 2009 Rate	15.0 deaths / 100,000 persons
Goal	10.2 deaths / 100,000 persons
5-Year Target	

The sustained rate of 15 suicides per 100,000 persons from 2007 through 2009 is noticeably greater than the goals established in the Healthy People 2020 plan. The average suicide rate is closer to the goal, but is still greater than the goal; however, rates have been trending downwards in recent years.

Table 12-2. Average Rates of Suicide per 100,000 People, 1999-2007

	Guam	US	Hawaii	Puerto Rico
Average Rate (deaths per 100,000 persons)	13.8	10.9	9.8	7.3
Trend	↓	↑	↓	↓

Figure 12-1. Suicide Rates, 1999-2007



	2000	2001	2002	2003	2004	2005	2006	2007
Guam	18.7	13.9	13.7	12.2	9.6	16.6	10.5	15.0
US	10.6	10.7	10.9	10.8	10.9	10.9	10.9	11.3
Hawaii	11.6	10.9	9.5	10.1	9.0	8.3	9.2	9.7
Puerto Rico	8.5	7.8	6.5	7.0	7.4	7.5	6.6	6.9

Source: CDC National Vital Statistics Reports, Deaths: Final Data for 2000-2007; Guam data from DMHSA, A Profile of Suicide on Guam, January 2009

Where do we Stand? Evaluating Trends

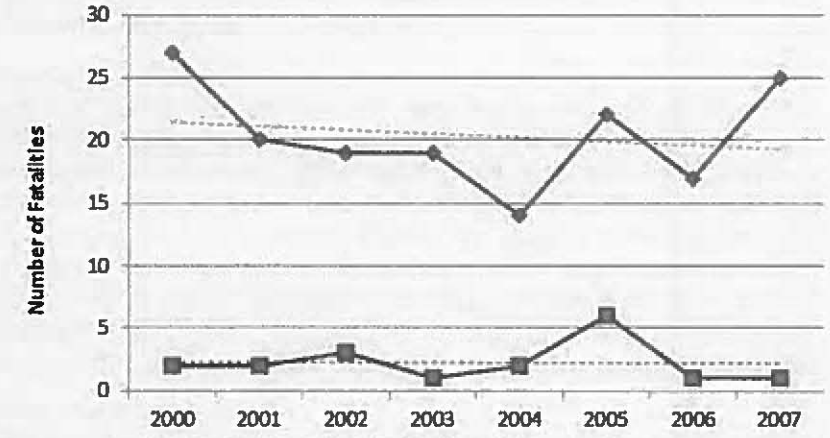
Current Trends

As shown on Figure 12-2 male suicide rates on Guam over the past decade have been significantly higher than female suicide rates, which have been relatively low. In the latest recorded year (2007), male suicide rates were 25 times higher than female rates. From 2000 to 2007, male suicide rates dipped and then resumed to peak levels. In this period, female rates peaked at 6 suicides per 100,000 persons in 2005, which was significantly less than the 22 suicides per 100,000 persons experienced by the male populace that year.

Moving Forward

While the female rate of suicide on Guam is much lower than the Healthy People 2020 Plan goal of 10.2 deaths per 100,000 people per year, the male rate exceeds this rate. The latest statistics indicate that the female rate of suicide is remaining low and static while the male suicide rate is rising.

Figure 12-2. Suicide Cases on Guam by Gender, 1999-2007



	2000	2001	2002	2003	2004	2005	2006	2007
Males	27	20	19	19	14	22	17	25
Females	2	2	3	1	2	6	1	1

Source: DMHSA, A Profile of Suicide on Guam, January 2009

Issues and Opportunities

Suicide data can be incomplete and somewhat subjective.

Data providing a count of deaths associated with suicide is made available primarily through death records and police department reports; however, it can be assumed that the actual number of suicides is higher than the number reported. The data presented and assessed in the Profile of Suicide on Guam completed by Guam's DMHSA is based on suicide deaths reported by the Guam Police Department (GPD) as opposed to health records. Thus, this specific data set may be slightly unreliable and actually under represent the number of suicide events. Due to the source of data, the decision of whether or not a death is marked as a suicide can be somewhat subjective, with the decision lying in the hands of the police officer filing the report, not the medical examiner. Additionally, if the immediate result of a suicide attempt is injury as opposed to death, the report recorded by the police department may not reflect the ultimate outcome of suicide; a suicide that is not immediately fatal may eventually lead to death yet not be recorded as such due to the timing of the police report.

Data sets are not complete unless they include both deaths and non-fatal injuries resulting from suicide attempts.

In addition to deaths caused by suicide, non-fatal self-inflicted injuries need to be accounted for when assessing the impact of suicide on healthcare. When assessing the magnitude of this problem, indirect effects of unsuccessful suicide attempts including hospital emergency room visits, hospital stays, and mental health treatment should be accounted for. Additionally, looking beyond the death count and assessing the impact suicide has on the mental health of a community may provide further insight into the most appropriate prevention strategies. A suicidal death has the potential to exacerbate potential mental health issues of friends and family members of the victim, such as by those who are unable to cope with the loss of a loved one.

Plans/Programs to Address Issues

Because suicidal deaths reported have been linked with major causes and correlates such as mental health disorders, family life/domestic relationship distress, and substance abuse, many prevention programs are geared toward addressing these underlying issues; however, many do not address suicide head on. Recent reports indicate that approximately 52% of the population is facing mental health issues; however, there is a lack of understanding of the relationship between this disorder and the suicide death rate.

Relative to the data and information available about causes and trends of suicidal deaths, a much greater volume of data is available regarding mental health and substance abuse. Existing programs focused on the prevention of suicide include both national and local programs. The following currently serve as resources to the Guam community for the purpose of increasing awareness and providing prevention strategies:

Suicide Prevention Resource Center

The Suicide Prevention Resource Center (SPRC) was created in 2002 to fulfill the suicide prevention goals that came out of research completed, and policies developed, by the U.S. Department of Health and Human Services, primarily the National Strategy for Suicide Prevention. The National Strategy for Suicide Prevention is the U.S.'s comprehensive and integrated approach to reducing the loss and suffering from suicide and suicidal behaviors across the life course. "It encompasses the promotion, coordination, and support of activities that will be implemented across the country as culturally appropriate, integrated programs for suicide prevention among Americans at national, regional, tribal, and community levels." (HHS: National Strategy for Suicide Prevention, 2001.)

The SPRC is a national program whose primary audiences are states, tribes, territories, government agencies, private and faith-based organizations, colleges and universities, suicide survivor and mental health consumer groups, and other groups and individuals seeking information, resources, and technical assistance in the area of suicide prevention. Services offered include the provision of data and technical information, provision of training and conferences, publication of reports and web materials, dissemination of best practices, outreach and communication and other mental health services. The SPRC is a national program and has representatives in all U.S. states and territories, including Guam.

http://www.sprc.org/about_sprc/index.asp

A SPRC representative is located at the Guam DMHSA in the Prevention and Training Branch. This person is responsible for taking the lead in the suicide planning efforts for the territory of Guam.

Recent programs and developments specific to Guam implemented include:

- The Purple Ribbon Campaign is conducted by the Maternal and Child Health program for the purpose of providing suicide education and awareness in schools
- The University of Guam was awarded funding from the Substance Abuse and Mental Health Services Administration for a campus suicide prevention program
- Plans to develop a Suicide Prevention Coalition with representatives from the private and public sector, survivors, and other stakeholders are in place [http://www.sprc.org/stateinformation/statepages/show.asp?stateID=64]
- A collaboration between the Maternal and Child Health program, the Office of Emergency Services, and Emergency Medical Services is in place to develop Guam's Suicide Prevention Plan

Focus on Life - Guam Youth Suicide Prevention Program

The Guam DMHSA recognized the significance of suicide deaths on Guam, and has responded by starting the Focus on Life – Guam Youth Suicide Prevention Program as a component of the Peace Project. Focus on Life is conducted through Guam's Garrett Lee Smith Memorial Act, a suicide prevention grant. The program began in 2008 and will run through 2011.

The goal of this program is to make progress toward the following five goals: 1) data collection, surveillance and analysis; 2) workforce capacity building; 3) comprehensive intervention planning; 4) developing evidence based policies, programs, and practices; and 5) evaluation and monitoring of programs.

Suicide attempts disaggregated by age confirm that the greatest numbers of attempts occur among youth and young adults, while suicide deaths are highest among those aged 20-29 years. This finding reinforces the need to target preventative services and interventions towards these younger age groups.

University of Guam, I Pinangon, Campus Suicide Prevention Program

The I Pinangon (translated as "awakening") was created through federal funds administered to the University of Guam by the U.S. Department of Health and Human Services division of Substance Abuse and Mental Health Services Administration. It is a suicide prevention program that operates in alignment with the National Strategy for Suicide Prevention. The primary goal of the program is to raise awareness of the problem of suicide in order to decrease Guam's currently high suicide incidence rate. The primary components of the program that are offered include psychological assessment and treatment services at the University.

University of Guam, I Pinangon Campus Suicide Prevention Program

Phone: 671-735-2888/9

I Pinangon Campus Suicide Prevention Program

Division of Social & Behavioral Sciences

College of Liberal Art & Social Sciences

UOG Station, Mangilao, Guam 96923

Email: i_pinangon@yahoo.com

Web Site: http://www.uogsuicideprevention.org

12.2 Domestic Violence

Domestic Violence can be defined as "a pattern of abusive behavior in any relationship that is used by one partner to gain or maintain power and control over another intimate partner. Domestic violence can be physical, sexual, emotional, economic, or psychological actions or threats of actions that influence another person. This includes any behaviors that intimidate, manipulate, humiliate, isolate, frighten, terrorize, coerce, threaten, blame, hurt, injure, or wound someone."

Domestic violence and violence against women is a an identifiable and significant healthcare issue that affects the health and well being of a significant portion of the world's population; however, empirical data on incidence, prevalence, and consequences is severely lacking. The National Institute of Justice and the Centers for Disease Control and Prevention for Policy Research have identified and acknowledged the data gap and are working to further the understanding against violence in the home, particularly violence against women.

"Research on violence against women has exploded in the past 20 years, particularly in the areas of intimate partner violence and sexual assault. Despite this outpouring of research, many gaps exist in our understanding of violence against women. For instance, reliable information on minority women's experiences with violence is still lacking. Few empirical data exist on the relationship between different forms of violence against women, such as victimization in childhood and subsequent victimization. Finally, empirical data on the consequences of violence against women, including their injury rates and use of medical services, are lacking."

(Source: United States Department of Justice: The Office on Violence Against Women, 2010)

Existing Condition and Trends

Statistical data reporting rates of domestic violence incidents are available for the United States as a whole and by state; however, statistical data specific to Guam is sparse. Data indicating the status of domestic violence in the U.S. indicates that acts of domestic violence is a common occurrence in U.S. households and accounts for nearly half (49%) of all violent crimes reported (almost 3.5 million reports). Annual rates of incidence indicate that an average of 1.3 million women and 835,000 men are physically assaulted by an intimate partner every year. A study reporting 1995-1996 occurrences shows that nearly 25% of women and 7.6% of men surveyed by the Office of Justice Programs have been raped and/or physically assaulted by a current or former spouse, cohabiting partner, or dating partner/acquaintance at some time in their life (U.S. Dep't of Justice, Extent, Nature, and Consequences of Intimate Partner Violence, July 2000)

Although data specific to Guam was not available through this report, the study did find that rates of intimate partner violence vary significantly among women of diverse racial backgrounds and that Asian/ Pacific Islander women and men tend to report lower rates of intimate partner violence than do women and men from other minority backgrounds, and African-American and American Indian/Alaska Native women and men report higher rates. When other socio-demographic and relationship variables are controlled, differences among minority groups diminish. The control factors are not identified. Overall, it is noted that more research and data collection is needed to determine the prevalence of intimate partner violence among various population groups.

The rates of domestic violence vary along several lines, including race, gender, economic and educational status, and geographical location. The following national trends have been reported.

- Gender trends: Women make up 75% of the victims of homicide by an intimate partner and overall, women are victims of intimate partner violence at a rate about five times that of males.
- Age trends: Domestic violence is most prominent among women aged 16 to 24.

Where do we Stand? Evaluating Trends

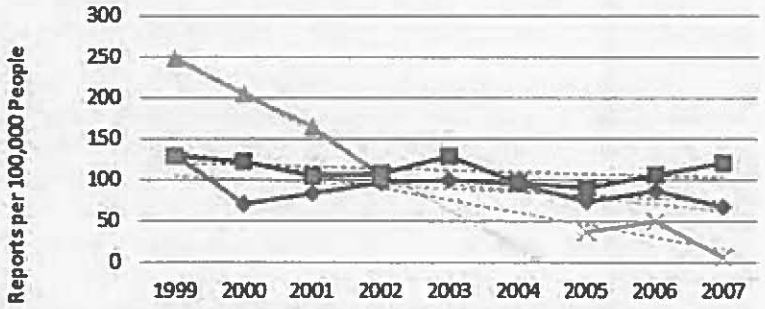
Current Trends

As shown in Figure 12-3, the majority of Guam's domestic violence rates have hovered between 100 and 150 incidents per 100,000 people per year. The exception has been rates of "family violence" in the period of 1999 to 2001, which were noticeably greater than the other forms of domestic violence and the rates of "rape by a family member" which were noticeably lower than the of domestic violence rates from 2005 to 2007. Overall, in all of the categories of domestic violence, between 1999 and 2007, rates have decreased. However, although overall incidents for the category "rape" have gone down the pattern of incident during this period has been fluctuated. "Physical assault" rates have significantly and consistently decreased as have rates for "rape by a family member".

Moving Forward

It is not clear what the Government of Guam's goal for domestic violence is over the upcoming years. Likely, the goal will be for all categories of domestic violence to see sustained decreases, especially in the comparatively high category "rape".

Figure 12-3. Domestic Violence Rates Compared to Crime Rates in Guam, 1999-2007



	1999	2000	2001	2002	2003	2004	2005	2006	2007
Physical Assault	130.4	71.1	84.0	96.9	99.0	95.1	74.2	86.0	67.5
Rape	129.1	122.7	104.8	106.8	128.4	96.9	89.6	105.3	119.9
Family Violence	247.7	204.1	163.6	104.9					
Rape by a Family Member							36.2	49.1	6.3
Sexual Assault	129.1		104.8	106.8					

Source: Guam Police Department Uniform Crime Reports 1999-2007

- Economic Trends: Poorer women experience significantly more domestic violence than higher income women.
- Marital status: For both men and women, divorced or separated persons were subjected to the highest rates of intimate partner victimization, followed by never- married persons.
- Reporting to police: The rates at which individuals report domestic violence to police vary along racial and gender lines. Hispanic and black women report domestic violence at the highest rate (approximately 65% to 67% of abuse is reported). For white females, only about 50% of the abuse is reported.

(Source: U.S. Department of Justice web site)

The precise incidence of domestic violence in America is difficult to determine for several reasons: it often goes unreported, even on surveys; there is no nationwide organization that gathers information from local police departments about the number of substantiated reports and calls; and there is disagreement about what should be included in the definition of domestic violence. This disagreement in definition results in a discrepancy in figures and trends reported as well as makes comparisons and tracking of progress difficult.

Issues and Opportunities

Counts of cases of violence underestimate the problem and are difficult to track.

The most widely referenced study on this topic, the National Crime Victims Survey completed by U.S. Department of Justice Bureau of Justice Statistics sheds some light on part of domestic violence. This report is based on FBI homicide data as well as data collected by the agency itself and defines domestic violence as "violent crimes by current or former spouses, boyfriends, and girlfriends. Violent crimes include lethal (homicide) and nonlethal (rape, sexual assault, robbery, aggravated assault, and simple assault) offenses." Emotional abuse, harassment or stalking are not mentioned. It should be noted that experts warn that "researchers using this database must address the problem of missing data, which typically is the result of the failure to file, inconsistent filing of reports to the FBI by local police agencies, or incomplete records about the characteristics of specific incidents of homicide (particularly, missing information about perpetrators), even when reports are filed." (Pampel, F., and K. Williams. Intimacy and Homicide: Compensating for Missing Data in the SHR)

Relationship struggles are a frequent cause for domestic violence to occur.

Factors that have been reported to increase the likelihood of a domestic violence act occurring are reported to include accessibility to firearms, couples facing financial struggles, and relationships that include separation. Of these factors, the most commonly cited is that the termination of a relationship poses an elevated risk for the occurrence of an act of domestic violence to occur. For example, the NVAW Survey found that married women who lived apart from their husbands were nearly four times more likely to report that their husbands had raped, physically assaulted, and/or stalked them than women who lived with their husbands (20% and 5.4% incidence rates reported respectively).

Plans/Programs to Address Issues

It is reported that the U.S. medical community treats millions of intimate partner rapes and physical assaults annually, the majority of which require medical treatment of an injury. Of the estimated 4.8 million intimate partner rapes and physical assaults perpetrated against women annually, 552,192 will result in some type of medical treatment to the victim. Of the estimated 2.9 million intimate partner physical assaults perpetrated against men annually, 124,999 will result in some type of medical treatment. Medical services provided include ambulance services, emergency room care, or physical therapy. It is believed that in order to better meet the needs of intimate partner violence victims; medical professionals should receive training on the physical consequences of intimate partner violence and appropriate medical intervention strategies. (Findings from the National Violence Against Women Survey: Extent, Nature, and Consequences of Intimate Partner Violence)

Although programs dealing with domestic violence exist, they are primarily focused on dealing with the event after it has occurred, not necessarily providing prevention strategies and addressing the cause of the problem. Additionally, programs and efforts are often hindered by a lack of resources to support the program, both financially and via standard policies and procedures geared toward fixing the problem and supporting victims of

abuse. Even where adequate funding exists, programs may face a shortfall of qualified social workers due to the potential unattractiveness of such a profession. Properly educated and trained workers can be hard to find sue to the low earning potential in the profession relative to the costs associated with obtaining the proper training and education.

The 2009 Domestic Violence Counts: A 24-HOUR Census of Domestic Violence Shelters and Services reports that there are approximately 1,980 identified local domestic violence programs in the United States and territories. A one-day survey was completed to provide a one day snapshot of these programs and the following was found. Approximately 65,321 victims of domestic violence may be treated by a local program on one day, with approximately half (32,524) finding refuge in emergency shelters or transitional housing and half (32,797) adults and children receiving non-residential assistance and services including counseling, legal advocacy, and children's support groups. In addition to those treated in person, 23,045 hotline calls were answered and 30,735 individuals in communities across the country attended training sessions. The number of "unmet requests for services" provides an indication of how well these programs are able to meet the demand for services. Nationwide, there were 9,280 unmet requests for service, translating into an 88% response rate nationwide. The response rate for programs in Guam was much lower, at 77%. Puerto Rico had a response rate equal to the national rate and Hawaii, with a 94% rate, is more successful with meeting the needs of the community. It should be noted that although these figures provide a snapshot of those victims seeking assistance, it does not provide a clear picture of how many people are affected by domestic violence due to the exclusion of both reported events that didn't seek formal assistance and those that go unreported every day.

Guam's existing support programs offer individual support or advocacy, transitional housing, group support or advocacy, emergency shelter, advocacy related to housing office/landlord, and job training/employment assistance. The programs surveyed on Guam report a critical shortage of funds and staff as a barrier to providing victim services such as transportation, childcare, language translation, mental health and substance abuse counseling, and legal representation. Program representatives report that a lack of staffing was a reason they could not serve all requests, that 67% of programs have less than 10 paid staff. In addition, it was reported that uncontrolled population increases have contributed to a diminished level of social welfare in the last decade. This is an issue likely to affect all of the behavioral health concerns and one that promises to only get worse.

The most common nationwide domestic violence related services provided by shelter are displayed in Table 12-3. Table 12-4 provides a comparison between Guam and the US regarding the percentage of participating programs that provide specific services.

Table 12-3. Domestic Violence Related Services Provided by Shelters (Nationwide)

Services Provided	Throughout the Year	During 24 Hour Profile
Individual Support/Advocacy	99%	90%
Group Support/Advocacy	92%	50%
Court Accompaniment/Advocacy	92%	56%
Emergency Shelter	89%	74%
Advocacy Related to Public Benefits/TANF/Welfare	88%	47%
Housing Office/Landlord Advocacy	86%	44%
Transportation	86%	52%
Child Welfare/Protective Services Advocacy	85%	30%
Mental Health Advocacy	85%	35%
Children's Support Advocacy	85%	57%
Advocacy – School System	83%	29%
Advocacy – Substance Abuse	80%	23%
Advocacy –Disability Issues	77%	16%
Advocacy – Immigration	77%	22%
Advocacy/Support – Teen Victims of Dating Violence	75%	16%
Medical Services/Accompaniment	73%	18%
Financial Skills/Budgeting	72%	26%
Media/Press Response or Outreach	65%	12%
Translation/Interpretation Services	65%	22%
Rural Outreach	64%	24%
Advocacy - Placement/Care for Animals	62%	7%
Advocacy – Technology Use (cyber-stalking)	59%	7%

Services Provided	Throughout the Year	During 24 Hour Profile
Job Training/Employment Assistance	51%	21%
Childcare/Daycare	46%	24%
Therapy/Counseling for Adults	45%	25%
Transitional Housing	39%	35%
Therapy/Counseling for Children	38%	15%
Legal Representation by an Attorney	24%	12%

Source: National Network to End Domestic Violence, Domestic Violence Counts 2009

Table 12-4. Percentage of Participating Programs Providing Specific Service

Service Offered	Percent (Guam)	Percent (US)
Individual Support or Advocacy	67%	90%
Transitional Housing	67%	35%
Group Support or Advocacy	33%	50%
Emergency Shelter (hotels and safe houses)	33%	74%
Advocacy Related to Housing Office/Landlord	33%	44%
Job Training/Employment Assistance	33%	21%

Note: Services Provided on "Census Day", September 15, 2009

Source: National Network to End Domestic Violence, Domestic Violence Counts 2009

24 Hour Snapshot of Domestic Violence Services Provided on Guam

- 18 Victims of domestic violence were served:
- 12 domestic violence victims found refuge in emergency shelters of transitional housing
- 6 adults and children received non-residential assistance and services (counseling, advocacy, etc.)
- 8 Requests for Assistance were unmet (due to lack of resources)
- 4 Hotline calls were answered
- 150 Individuals throughout Guam attended 5 training sessions

(Source: National Network to End Domestic Violence, Domestic Violence Counts 2009)

The following provides a list of existing island-wide domestic violence resources:

Alee Shelter: assists victims of domestic violence and spouse abuse or neglect. A safe and comfortable environment through a short term shelter is made available to women and their children. Additional support provided includes guidance and counseling on moving forward and one's future.

Crime Victim's Response Unit, Office of the Attorney General – Prosecution Division: provides direct services to victims of crime, including case information, referrals, emotional support, and court accompaniment if needed

Crisis Intervention Hotline Service: Catholic Social Services provides investigational support in response to abuse events reported and coordinates assistance with other agencies as necessary.

Erica's House: Erica's House is a support service made available to parents and children in need of visitation and exchange services. Services offered include the provision of a safe place to pick up and drop off children for exchange between parents, on-site staff or Child Protective Services (CPS) supervised visitation for families, and parenting classes. Services are offered for Court and CPS referred parents.

Guam Sagrada I & II: Catholic Social Services also provides emergency shelter, protective care and services to abused individuals who are 60 and older and to persons with disabilities (ages 18 and older).

> "It is a challenge every year to stay open to serve victims because of funding cuts. Often times our staff and volunteer pay for victim services out of their own pockets. Our program is the only one of its kind here on our island, and if we close our doors, victims would not get any help."
>
> *(Source: Domestic Violence Counts: A 24 Hour Census of Domestic Services Guam Summary)*

Guam Healing Hearts Rape Crisis Center: The Healing Hearts Crisis Center is operated by Guam DMHSA and offers crisis intervention, advocacy, support referral services, and clinical services associated with a medical-legal examination when an assault is reported to law enforcement.

Inafa'Maolek Conciliation: Trained mediators are provided through this program in order to assist in troubled marriages and family conflicts, small claims disputes, work-related conflicts, and victim-offender mediation involving delinquent and criminal behavior.

Sanctuary, Inc.: Sanctuary provides 24 hour accessibility to youths between the ages of 12 to 18 years who are experiencing family problem/ conflict. This includes counseling via Sanctuary Hotline, face-to-face emergency counseling, referral services, and temporary emergency shelter.

Victim Advocates Reaching Out (VARO): VARO provides a crisis hotline with trained volunteers who respond to victims of violent crimes and their families to provide crisis intervention, information, follow-up and referral.

12.3 Violence Against Children

Violence against children encompasses an array of actions that harm the well-being of a child and is formally defined by the United Nation's Committee on the Rights of the Child in two parts:

- Violence is defined as "all forms of physical or mental violence, injury or abuse, neglect or negligent treatment, maltreatment or exploitation, including sexual abuse" and "the intentional use of physical force or power, threatened or actual, against a child, by an individual or group, that either results in or has a high likelihood of resulting in actual or potential harm to the child's health, survival, development, or dignity"
- Child is defined as "every human being below the age of 18 years unless, under the law applicable to the child, majority is attained earlier."

Violence against children has no boundaries of culture, class, education, income, ethnic origin, or age.

Existing Condition and Trends

The occurrence of violence against children is a global problem. "Reports of infanticide, cruel and humiliating punishment, neglect and abandonment, sexual abuse and other forms of violence against children date back to ancient civilizations. Recently, documentation of the magnitude and impact of violence against children shows clearly that this is a global problem. It occurs in every country in the world in a variety of forms and settings and is often deeply rooted in cultural, economic, and social practices."

In an attempt to address this condition and its causes, the World Health Organization produced the following estimates on rates of child homicides:

- The rate of child homicides in 2002 was twice as high in low-income countries (2.58 per 100,000 population) than in high income countries (1.21 per 100,000 population).
- The highest child homicide rates have been observed amongst adolescents, particularly boys at a rate of 9.06 for boys and 3.28 for girls, aged 15 to 17 years, and among children aged 0 to 4 (1.99 for girls and 2.09 for boys).
- Boys appear to be at greater risk of physical violence than girls, while girls face greater risk of neglect and sexual violence.
- Children with disabilities, orphaned children, indigenous children, children from ethnic minorities and other marginalized groups, children living or working on the streets, children living in communities in which inequality, unemployment and poverty are highly concentrated, child refugees and other displaced children. Gender also plays a key role, as girls and boys are at different risk for different kinds of violence.
- Though some violence against children is perpetrated by strangers, the vast majority of violent acts are perpetrated by people who are part of the child victim's immediate environment, including family members, boyfriends or girlfriends, spouses and partners, teachers, schoolmates, and employers.
- An estimated 150 million girls and 73 million boys under the age of 18 have experienced some type of sexual violence involving physical contact.
- An estimated 218 million children were involved in child labor in 2004, with more than half (126 million) being engaged in hazardous work; 5.7 million in forced or bonded labor, 1.8 million in prostitution and pornography, and 1.2 million victims of trafficking

A variety of initiatives, ranging from international comparative studies to small-scale interview studies with children at the local, are currently being conducted to provide a clearer picture of the magnitude and pervasiveness of the problem of violence against children being committed across the world.

**It should be noted that due to lack of consistent data for each year, the above discussions may be based on various years for different topics.

Issues and Opportunities

The potential for an act of violence against children to occur results from a variety of complex combination of factors that influence the likelihood that violence will occur, recur, or cease. Reviews of this topic document five

different settings where violence against children occurs: within the home amongst family, in educational institutions, alternative care institutions and detention facilities, places of employment, and in their communities. The consequences of such violence can be devastating, further exacerbating the behavioral health problems youth are already facing. Acts of violence against children may lead to learning disabilities, mental illness, as well as suicide. Today's youth are tomorrow's leaders, thus violence against children is a major threat to global development.

The lack of a formal system and approach to capturing acts of violence against children provides an inaccurate perspective of the problem.

It is believed that only a small percentage of acts of violence against children are reported and investigated, and few perpetrators are held accountable. This is in large part due to the lack of no appointed system for recording or thoroughly investigating reports. Even where official statistics based on reports of violence against children exist, the true magnitude of the problem is dramatically underestimated for a variety of reasons.

- Young children who fall victim to such violence in their homes often lack the capacity or knowledge to file an official report
- Children and young adults are likely to fear reporting these acts due to fear of exacerbating the problem.
- A child may be fearful of police involvement or unaware of how to report an incident.
- A parent is likely to remain silent if the violence is inflicted by a spouse or other family member or a person of higher stature (employer, police officer, or other public figure).

Some forms of violence are actually acceptable in various communities and cultures.

Both a lack of protection of children and leniency of perpetrators contribute to growing problem.

Of significant concern is the lack of protection of children and the leniency in which perpetrators are dealt with after committing an act of violence against a child. At times influenced by cultural and family values, communities may even accept physical, sexual and psychological violence as an inevitable part of childhood. The majority of the world's laws still condone various forms of punishment that could be considered acts of violence, describing such an act as discipline.

Opportunities to improve the current problem of acts of violence being committed against children are difficult to identify due to the cultural disparities that exist. Based on UNICEF's review of the current condition on Guam, it appears that the root of this concern lies within the cultural view that children are undervalued within the community.

Both early exposure and prolonged exposure to violence to have a long lasting impact on the maturing brain of a child and can exacerbate behavioral health problems already being experienced. Potential implications of early exposure includes disruption of nervous and immune systems, resulting in social, emotional, and cognitive impairments as well as modified behaviors that may cause disease, injury, and social problems. Acts of violence against children have a reciprocal effect on the behavioral health of the world's youth. Those who have either directly experienced or observed acts of violence against others tend to be more susceptible to additional behavioral health problems including hyperactivity, poor self-esteem, physical and mental injuries, sexual/reproductive dysfunctions, and psychiatric problems such as alcohol and drug abuse, cognitive impairment, and depression and anxiety.

Violence is often perceived as a legal issue, not a health concern, thus leaving out important stakeholders.

Collaboration across stakeholder groups, from health and education to labor and justice, is needed at all levels, local, national, and international, to address the concern over violence against children. Developing a common understanding of the issue and laying the foundation for equal acceptance may serve as a building block to reducing this threat to our youth. Treating and addressing violence against children from both a medical perspective and within a legal framework may provide a better understanding of the causes and factors leading up to such acts. The current legal framework concerning violence against children on Guam allows for corporal punishment to occur in

the home as well as in schools. The Education Policy Board of Guam's published policy states that corporal punishment is legal in a school; however, it must be used only as a last resort, only by a principal, and only for children whose parents sign a notarized consent form. Corporal punishment is prohibited as a disciplinary measure in penal institutions but is not considered a crime by legal definition. (Ending Legalized Violence Against Children)

If its underlying causes are identified and addressed, violence against children is entirely preventable. Progress towards the elimination of violence against children cannot be measured without reliable data. To estimate the magnitude and nature of non-fatal violence against children accurately, surveys are required that explore the use of violence by parents and other adults, experiences of violence in childhood, and current health status and health-risk behaviors of children and adults.

Fatal violence against children can only be measured accurately through comprehensive death registration, investigation and reporting systems. Protecting young children from violence has vast potential for reducing all forms of violence in society, as well as reducing the long-term social and health consequences of violence against children.

Addressing underlying issues and implementing preventative measures has great potential.

The most commonly referenced form of successful prevention is the nurturing of a close family relationship and strong family values. Both the prevention and treatment of violence against children possible through a multi-faceted approach that considers the form of violence experienced, the environment in which violence is inflicted, and who the perpetrator is. Key principles identified by the UN General Assembly as recommendations include improving the legal framework that would allow for the protection of children and implementing evidence based policies, which would require additional data collection and surveillance.

Plans/Programs to Address Issues

UNICEF

UNICEF is the most widely known organization that exists for the purpose of building "a world where the rights of every child are realized." This worldwide organization is founded on the belief that "nurturing and caring for children are the cornerstones of human progress" and was founded to collaborate with others to overcome the obstacles that poverty, violence, disease and discrimination place in a child's path. UNICEF operates the Child Protection Programme that is geared toward fighting violence against children and the Adolescent Development and Child Health Programme geared toward promoting HIV awareness amongst youth, provides youth skills training.

12.4 Wellness and Education

Suicide

It is estimated that 90% of suicides that occur in the US are associated with mental illness, including alcohol and drug related disorders. Persons suffering major depression are eight times as likely to commit suicide and account for half of all suicide deaths that occur.

There are many warning signs of suicide, some subtle, others more obvious. Common symptoms and warning signs that someone at risk of or contemplating suicide include ideation (thinking or talking about suicide), substance use or abuse, feeling a lack of purpose or hopelessness, expressions of anger, anxiety, and dramatic mood changes. It is imperative that anyone contemplating suicide seek medical assistance from a doctor or mental health professional. Medications and therapy have proven to be most effective in combatting depression and suicide ideation.

The resources identified below in Additional Resources provide comprehensive information on how to learn more about suicide, what to do if a friend of family member seems suicidal, resources available to the public, and much more on this topics.

Domestic Violence

Domestic violence and abuse can occur in both physical and psychological forms. It can happen to anyone, yet the problem is too often overlooked, ignored, or denied. Being able to identify and acknowledge warning signs and symptoms of domestic violence is the first stop to putting an end to it.

Domestic abuse occurs when one partner in an intimate relationship or marriage tries to dominate, control, or instill fear in the other person. Domestic abuse that also includes violence is referred to as domestic violence. Both can occur in any type of relationship, within all age ranges, ethnic backgrounds, economic status, and educational attainment levels. Common signs of being in an abusive relationship include when one person starts to fear their partner, if the abuser belittles their partner, and if comments are made that try to control, belittle, or otherwise make a person feel cautious around the other. Emotional abuse is an often overlooked problem due to both a decrease in the victim's self-esteem and the feeling of not having "visible evidence" of the abuse.

Anyone who suspects they or someone they know is being abused, mentally or physically, should seek immediate help. Even for those not ready to take the step in reporting the abuse as a crime, there are many resources available that offer assistance in such situations. Several of these resources are identified below in Additional Resources.

Violence Against Children

Violence against children may exist in many forms: physical, emotional, or mental abuse. A key factor influencing some forms of violence against children involves cultural values. Recognizing and educating oneself on signs of violence against children is the best way to ensure violence against children is mitigated, stopped, and prevented. Unfortunately, violence against children is rarely reported due to ignorance or outsiders not desiring to meddle in others' business. However, if violence against children is suspected, then appropriate notification to the authorities for further investigation is paramount.

If violence is occurring against children, it is incumbent upon the individual who witnesses the violence to report it to the authorities immediately. Violence against children must thoroughly be investigated in effort to prevent the children at risk from further endangerment. However, if the witnessing individual does not want to go the step in reporting it to the authorities, then it is imperative that the witness tell someone who may provide help and assistance immediately. There are various resources whose charge is to help and prevent future violent acts against children.

12.5 For More Information

Suicide

Peace Project

Guam's DMHSA manages and operates the Peace Project, which is focused on creating a healthy future through the improvement of mental health and prevention of substance use and abuse. The Peace Project is comprised of the Prevention and Training Branch, under the Division of Clinical Services, Department of Mental Health and Substance Abuse. The program offers "Training, technical assistance, and educational opportunities for program managers, community leaders, and youth and adult volunteers on enhancing mental health and preventing and reducing alcohol, tobacco and other drug use and their related problems."

www.peaceguam.org

Life Works Guam: Applied Suicide Intervention Skills Training (ASIST) Suicide Prevention Program and Rainbows for All Children Guam

The LifeWorks Guam ASIST program exists to prevent suicide through increased education and awareness. The goals of this program are to: promote increased suicide awareness, prevention, and intervention education programs; promote leadership and advocacy on the topic of suicide; reduce suicide rates and decrease suicidal behaviors; and collaborate with other agencies. Support activities made available through this program include intervention skills training, activities for survivors and supporters, conferences, workshops, and training, and other awareness campaigning events.

Contact: Marie Virata Halloran

Phone: 671-632-0257

Suicide Prevention Hotlines

An additional resource exists in the form of free telephone hotlines, including:

Guam DMHSA Crisis Hotline (671-647-8833)

The crisis hotline serves as a resource that allows someone in the Guam community who is dealing with a crisis to make a phone call and reach out or assistance and someone to talk to. This line is a general crisis line, not specific to suicide only.

National Suicide Prevention Lifeline (1-800-273-TALK)

This resource is a 24- hour free and confidential hotline available to anyone in suicidal crisis or emotional distress and is staffed by trained those trained in crisis management and suicide prevention.

Boys Town Suicide and Crisis Line (1-800-448-1833)

This 24 hour/7 day a week, toll free telephone resource provides short-term crisis intervention and counseling and referrals to local community resources. Trained staff members are available to provide counseling on parent-child conflicts, marital and family issues, suicide, pregnancy, runaway youth, physical and sexual abuse, and other issues. Operates 24 hours, seven days a week

Covenant House Hotline (1-800-999-9999)

This crisis line is available to youth, teens, and families and gives callers locally based referrals throughout the United States. The hotline provides help for youth and parents regarding drugs, abuse, homelessness, runaway children, and message relays and operates 24 hours, seven days a week.

The Trevor Project, The Trevor HelpLine (1-800-850-8078)

The Trevor helpline is a free confidential call focused on aiding in suicide prevention in gay and questioning youth. The three major programs offered through this organization include the Trevor Lifelines, a free and confidential service that allows access to someone to talk to for crisis intervention; "Dear Trevor, an online question and answer forum for young people experiencing confusion or questioning sexual orientation and gender identity; and TreveorChat", a free, confidential, and secure online messaging service that provides live help (but is only intended to assist persons who are not at risk for suicide).

http://www.thetrevorproject.org

Domestic Violence

HelpGuide.org

HelpGuide.org is a non-profit resource that provides free online resources that are intended to provide free information to people struggling with life's challenges, including domestic violence. The purpose of the online resource is to help the user understand, prevent, and resolve many of life's challenges through free motivating, easy to view and understand focused information for those in need of self help. HelpGuide offers free resources on a range of health topics, many of which relate to mental health and violence issues, including addiction, anxiety, depression, stress, and grief and loss, among others.

http://www.helpguide.org/

The National Domestic Violence Hotline

The National Domestic Violence Hotline provides around the clock support via a free hotline that people can call for assistance with advocacy, safety planning, resources and hope. The hotline is free and available for anyone, whether the caller is a victim of domestic violence or a friend or family calling out of concern for someone else. The hotline was established in 1996 as a component of the Violence Against Women Act (VAWA) pass by Congress. The National Hotline's mission is to provide 24-hour assistance and support by advocacy, resources, and safety planning to victims and survivors of domestic violence. The National Domestic Violence Hotline may be accessed at (800)-799-SAFE (7233) or TTY (800)-787-3224.

www.thehotline.org

Violence Against Children

Victim Advocates Reaching Out (VARO)

Victim Advocates Reaching Out (VARO) is a non-profit, volunteer organization on Guam whose charge it is to assist with services to children and families experiencing domestic violence, sexual assault, and violent acts and traumatic events. VARO responds to all victims in these situations in effort to raise the value of women and children on the island as well as to lessen the incidence. VARO services include intervention, education and awareness.

www.varoguam.com

Erica's House

Erica's House is a Family Visitation Center established by the Family Violence Act of 1998. Erica's House operates by a contracted agreement between the Superior Court of Guam and the Soroptimist International of the Marianas and Soroptimist International of Guam; it offers a neutral venue for pick-up and drop-off exchange between parents and guardians, visitation for parents and family members; parenting classes and information pamphlets.

www.ericashouse.150m.com/index.html

Latte Treatment Centers, LLC

Latte Treatment Centers is a program designed for those who are concerned with mental or behavioral health issues. This center operates twenty-four hours daily and seven days weekly. The programs use management and therapy that effectively impacts behavior to prepare individuals to function normally within various settings such as school, work, and the home.

www.lattecenter.com

Live Healthy Guam

Live Healthy Guam is a program with DPHSS which provides a myriad of services to the people of Guam, specifically Live Healthy Guam provides sexual violence prevention and education services to those suspecting sexual violence is occurring or to those who are victims and survivors of sexual violence.

www.livehealthyguam.com

12.6 Sources

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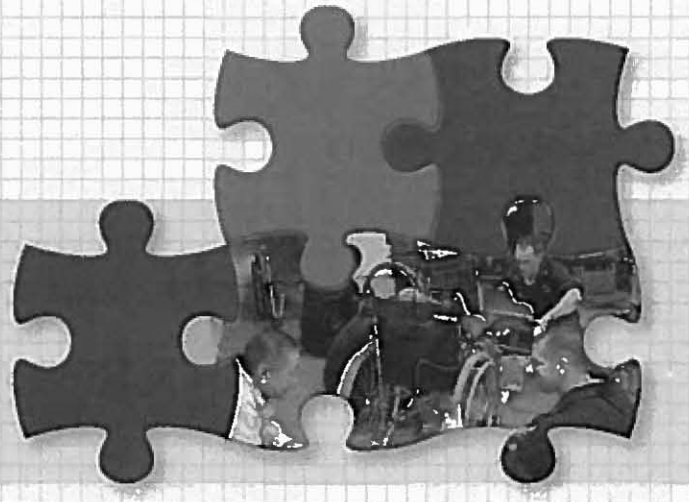


13.
Other Social Services

Please see the next page.

13

Other Social Services

Inside Section 13 . . .

This section addresses four broad areas of social services not addressed elsewhere in this Plan. In this section are discussions relative to persons with disabilities, homelessness and homeless services, long-term care, and senior services. These distinct areas of health and social services require a different level of understanding to assure the healthcare continuum on Guam is comprehensively planned. While these services not always considered as part of traditional healthcare services, they are unique requiring different components and elements to ensure the care of the people that fall within these areas are adequately cared for and their quality of life is enhanced.

Persons with disabilities are those individuals with physical, sensory, or intellectual impairment, medical conditions and illnesses. While some individuals may be born with disabilities, others may develop disabilities over the period of their life. Still others may have disabilities and may not be aware they have a disability. Additionally, another subcategory to consider when discussing other social services is the classification of persons who are homeless. Homelessness is defined as "an unaccompanied homeless individual with a disabling condition who has either been continuously homeless for a year or more, or has had at least four episodes of homelessness in the past three years." (Source: HUD, 2009). Homelessness may be caused by several factors; however, it affects the entire well-being of an individual including behavioral health, oral health, and overall health. This subset of the population has always been a difficult area to assess in

healthcare and social services because these individuals usually do not participate in government census activities nor do they possess healthcare insurance and other insurances. Homelessness is an indicator of overall community health and economic activity. It is important to grasp and include this area in planning to ensure all options are accounted for to enable better accommodations and treatment of the homeless population.

Long-term care and senior services complement each other. Long-term care refers to the care of those who require continuous care such as persons with disabilities of those over the age of 60 who require assisted care living facilities, skilled nursing facilities, and/or rehabilitation centers. Senior services are provided in both long-term care facilities, assisted living facilities, and in a residential setting for the elderly who require some degree of assistance with medical conditions or daily activities due to age.

13.1 Persons with Disabilities

The term persons with disabilities refer to "persons with physical, intellectual or sensory impairment, medical conditions, or mental illness. Such impairments, conditions or illnesses may be permanent or transitory in nature."

(Source: Standard Rules, 1993)

Persons with disabilities are an evolving concept that describes "the interaction between persons with impairments and attitudinal and environmental barriers that hinder full and effective participation in society on an equal basis with others. It is estimated that there are approximately 500 million persons with disabilities in the world today, the majority of which are in developing countries. The relationship between poverty and disability as well as factors such as war and destruction, unhealthy living conditions, or the absence of knowledge about disability, its causes, prevention and treatment" causes the number of persons with disabilities to increase every year.

(Source: Standard Rules, 1993)

Existing Condition and Trends

The United Nations estimates that approximately 10% of the world's population, or 650 million people, are living with a disability. According to 2005 US Census estimates, the prevalence of self-reported disabilities among civilian, non-institutionalized adults over the age of 18 was 21.8%. This is an increase of 2.5 percentage points since the 2000 Census data reported. This difference is also underreporting the change since the 2005 count was for those 18 years and older, whereas the 2000 census measured down to those aged 5 and older. Both calculations under-represent the total population of persons with disabilities because they:

- Do not include institutionalized persons, and
- Do not take into account underreporting by those not wishing to be noted as disabled (since count depended on self-reporting).

Rates of disability vary by demographic characteristics and tend to be higher among those with lower education attainment levels, people living in economically disadvantaged communities, and in the elderly.

Trends for those reporting a disability include:

- The proportion of persons reporting a disability increases with age (18 to 44 years: 11%; 45 to 64 years: 24%; and over 65 years, 52%)
- Across all age groups, rates of disability are significantly higher among women with 24% reporting a disability compared to 19% of men

The most commonly reported disability category was "difficulty in specified functional activities," a collection of seven subcomponent measures that affected 17.3% of adults. The most commonly reported subcomponent measures were difficulty walking three city blocks (10.3%) and climbing a flight of stairs (10.0%).

(Source: US Census Bureau, 2005)

The most recently published statistical regarding counts of disabled persons report that approximately 5% of Guam and other Pacific Island countries' population are disabled. This same population is considered to be among the poorest and most marginalized members of their communities. According to the World Bank, this demographic is often "uncounted, unheard, and their rights to development and equality are not upheld." (Source: UN Economic and Social Council, May 2002). Table 13.1 and Figure 13.1 indicate the prevalence of disabilities among persons ages 6 to 22 in Guam compare to the US, Hawaii and Puerto Rico.

Issues and Opportunities

Economically disadvantaged population groups are more prone to develop a disability resulting in financial hardship and potentially, poverty.

Factors leading up to becoming disabled vary according to characteristics of age, gender, race, ethnicity, and region and size of location of residence and may include both environmental and medical factors. However there is a strong reciprocal relationship between poverty and disability; lower income and impoverished persons are more prone to develop a disability due to improper medical care and other environmental factors that could cause injury. Disabled persons are susceptible to elevated economic hardship as a result of the high cost of treatment and care available and accessible.

Where do we Stand? Evaluating Trends

Current Trends

As is shown in Table 13.1 and Figure 13.1, the prevalence of disabilities among the age group 6-22 in Guam decreased significantly between the years of 1999 and 2005. Guam's highest prevalence rate was 298.4 in 1999. This rate was extremely low when compared to the prevalence rate of people with disabilities in this age group in Puerto Rico, the US and Hawaii. The prevalence of disabilities among person in this age group was 3 or 4 times higher in the other geographic locations in 1999. By 2005 rates for all regions decreased significantly, however Guam remained the location with the lowest prevalence rate and overall average prevalence rate.

Moving Forward

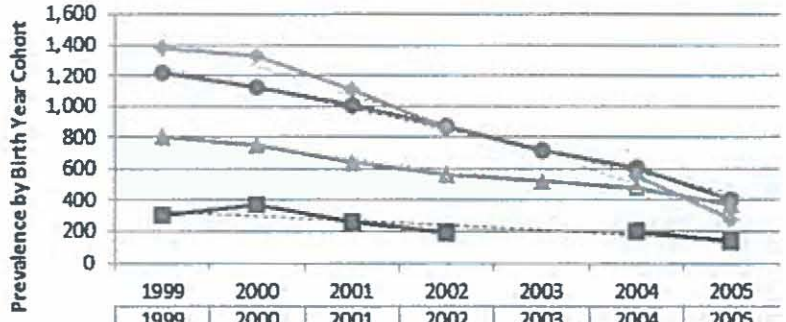
Guam Average	242.8
Trending	↓
Guam 2009 Rate	144.3
Goal	N/A
5-Year Target	

A specific 5-year target rate for persons with disabilities between the ages 6-22 has not been set or is not available at this time. However, based on the comparative analysis presented here, historically Guam's prevalence rate in this category has been low and steadily decreasing. Maintaining these patterns would be a reasonable goal.

Table 13-1. Average Prevalence of Disabilities by Birth Year Cohort Among Ages 6-22, 1999-2005

	Guam	US	Hawaii	Puerto Rico
Average prevalence by birth year cohort	242.8	850.2	591.7	915.0
Trend	↓	↓	↓	↓

Figure 13-1. Prevalence of Disabilities Among Ages 6-22, 1999-2005



	1999	2000	2001	2002	2003	2004	2005
Guam	298.4	366.0	260.9	188.0		199.4	144.3
US	1,220.6	1,125.5	1,010.4	869.4	717.0	604.0	404.4
Hawaii	803.7	752.1	639.6	565.8	524.3	483.0	373.2
Puerto Rico	1,376.7	1,324.4	1,110.2	853.3		552.5	272.7

(Source: Thoughtful House Center for Children, http://www.thoughtfulhouse.org/tech-labs/disabilities/rates.php?s=US&d=ALL)

Conversely, a disability may prevent one from fully participating in the economic and social life of their community, especially if proper support and accommodations are not readily available and accessible.

The incidence of disability rises proportionately with age as physical strengths and abilities decline.

There is a direct relationship between age and the incidence of disability. The incidence of disability rises sharply as individuals reach their sixth and seventh decade of life (see Table 13.2 and Figure 13.2 for supporting evidence). An overall decline in health among the elderly occurs due to decreased muscle strengths and coordination, as well as from impaired mental clarity. Deteriorating mental capacity has the potential to cause further complications as a person grows forgetful, thus neglecting to maintain proper preventative measures such as taking prescribed medication. Additionally, as the physical body ages weakening and unable to maintain various nutritional elements, a person is more susceptible to falls and bone fractures, further reducing their abilities.

Underlying illnesses contribute to the development of disabilities.

The most common causes of disability are not accidents or injuries but illnesses such as cancer, heart diseases, and diabetes. Arthritis, which affects 19% of the disabled population, is reported as the most common cause of disability, followed by back or spine problems (17%), and heart trouble. (Source: U.S. Census Bureau, Survey of Income and Program Participation, 2004 Panel, Wave 5, June–September 2005) It is believed that rates of disability reported underestimate actual incidence rates due to a lack of reporting, as well as a misunderstanding of what is considered disabled. A person may have a condition that prevents them from fully participating in their life but when asked if they consider themselves disabled, tend to deny it. Feelings of shame, denial, or disbelief about the state of one's condition often lead to underreporting.

A disability can often result in reduced society involvement and opportunities

The data collection and interview phase of this planning effort revealed concerns regarding the integration of persons with disabilities into society and their access to opportunities such as employment. Although this is not a cause of disability, this problem presents a challenge to those with disabilities as they try to remain or become integrated into society. Currently, workers with a disability are severely underutilized as a workforce. There are currently several local and federal programs that are focused on resolving this problem; however, additional progress is needed.

Plans/Programs to Address Issues

Americans with Disabilities Act (ADA)

Guam is subject to the guidelines mandated by the Americans with Disabilities Act (ADA), a federal law that is intended for the protection of all persons with a disability. The ADA provides comprehensive civil rights protections to individuals with disabilities in the areas of employment, state and local government services, public accommodations, major transportation, and telecommunications. The following discussion summarizes the five components (referred to as "Titles") of the ADA.

Title I: Employment

Business must provide reasonable accommodations to protect the rights of individuals with disabilities in all aspects of employment. Possible changes may include restructuring jobs, altering the layout of workstations, or modifying equipment. Employment aspects may include the application process, hiring, wages, benefits, and all other aspects of employment. Medical examinations are highly regulated.

Title II: Public Services

Public services, which include state and local government instrumentalities, the National Railroad Passenger Corporation, and other commuter authorities, cannot deny services to people with disabilities participation in programs or activities which are available to people without disabilities. In addition, public transportation systems, such as public transit buses, must be accessible to individuals with disabilities.

Title III: Public Accommodations

All new construction and modifications must be accessible to individuals with disabilities. For existing facilities, barriers to services must be removed if readily achievable. Public accommodations include facilities such as restaurants, hotels, grocery stores, retail stores, etc., as well as privately owned transportation systems.

Where do we Stand? Evaluating Trends

Current Trends

As shown in Table 13.2 and Figure 13.2, data relating to Guam's disability rates for persons ages 65 and above, is limited. For the one year (2000) that data was collected and is available, Guam's disability rate among this demographic was 44.9%, which was slightly higher than the US and Hawaii but over 15% less than Puerto Rico for that year. Since data for Guam is only available for a single year, it is not possible to provide a trend analysis. However, it should be noted that the three other geographic locations represented had downward trends over the eight-year timeframe.

Moving Forward

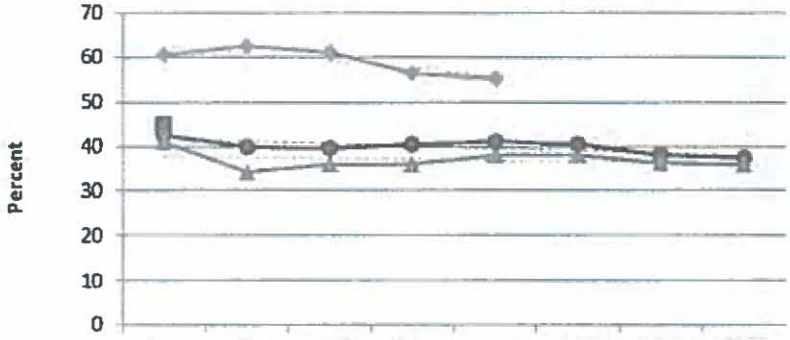
Guam Average	44.9
Trending	↔
Guam 2009 Rate	N/A
Goal	N/A
5-Year Target	

Specific goals for percentages of persons with disabilities ages 65 and older are not available. Since the US and Hawaii realized a lower percentage of disabled persons in this age group, Guam's goal would be to realize a decreased rate.

Table 13-2. Average Percent of Persons Age 65 and Above with a Disability, 2000-2007

	Guam	US	Hawaii	Puerto Rico
Average Percent	44.9	39.9	37.0	59.3
Trend	↔	↓	↓	↓

Figure 13-2. Percent of Persons Ages 65 and Above with a Disability, 2000-2007



	2000	2001	2002	2003	2004	2005	2006	2007
Guam	44.9							
US	42.4	39.9	39.6	40.5	41	40.6	38.1	37.4
Hawaii	41.0	34.4	35.9	36.1	38	38.2	36.2	36.1
Puerto Rico	60.5	63	61.2	56.4	55.2			

(Source: US Census Bureau American Fact Finder, http://factfinder.census.gov/servlet/ADPTable?_bm=y&-context=adp&-qr_name=ACS_2005_EST_G00_DP2PR&-ds_name=ACS_2005_EST_G00_&)

Title III: Public Accommodations
All new construction and modifications must be accessible to individuals with disabilities. For existing facilities, barriers to services must be removed if readily achievable. Public accommodations include facilities such as restaurants, hotels, grocery stores, retail stores, etc., as well as privately owned transportation systems.

Title IV: Telecommunications
Telecommunications companies offering telephone service to the general public must have telephone relay service to individuals who use telecommunication devices for the deaf (TTYs) or similar devices.

Title V: Miscellaneous
The final section includes a provision prohibiting either (a) coercing or threatening or (b) retaliating against the disabled or those attempting to aid people with disabilities in asserting their rights under the ADA.

(Source: Job Accommodation Network, 1997)

Guam Developmental Disabilities Council

The Guam Developmental Disabilities Council exists for the purpose of supporting persons with disabilities and ensuring maximized opportunities for participation in community life equivalent to those without a disability. The Council is founded on the philosophy "that persons with developmental disabilities have capabilities, competencies, and personal needs and preferences in common with all citizens. All individuals should be able to exercise control and choice in making decision that affect their life."

Federal law requires Developmental Disabilities Councils to develop five-year state plans that guide their activities and ensure the optimal fulfillment of their mission on behalf of people with disabilities, their family members, service providers, and other disability stakeholders. The 2007-2011 plan for Guam was released in June 2006 and is available on their website for public comment at:

http://www.guamddc.com/pdf/state_plan_development_version2.pdf.

Guam's plan contains ten areas of emphasis as described below:

- Child Care
- Cross Cutting
- Education/Early Intervention
- Employment
- Formal/Informal Community Supports
- Health
- Housing
- Quality Assurance
- Recreation
- Transportation

State Vocational Rehabilitation Agency

Guam has a State Vocational Rehabilitation Agency that offers vocational rehabilitation services to help people with disabilities live more independently. The agency provides education support services that help disabled people gain employment. The agency works with middle schools, high schools, and higher education to help students with disabilities access, appropriate support for employment and independence such as job coaching, teaching skills, support in job placement, assistive and adaptive supports, and more.

13.2 Homelessness

Generally speaking, homelessness is a condition and social category of individuals and families who are sleeping in places not meant for human habitation, such as cars, parks, sidewalks, and abandoned buildings, or those who are sleeping in emergency shelters as a primary nighttime residence because they cannot afford, or are otherwise unable to maintain, regular, safe, and adequate housing. The United States Department of Housing and Urban Development (HUD) defines a "chronically homeless" person as "an unaccompanied homeless individual with a disabling condition who has either been continuously homeless for a year or more, or has had at least four episodes of homelessness in the past three years. *(Source: US HUD, 2009)*

Homelessness and healthcare have a reciprocal relationship; poor health is both a cause and a result of homelessness. The National Health Care for the Homeless (HCH) Council (2008) estimates that 70% of their clients do not have health insurance. The need for good healthcare is even greater for the treatment of the homeless due to widespread disease and the potential for the spread of disease.

Accounting for the homeless population is a difficult undertaking for a variety of reasons, primary of which is their lack of participation in Census efforts as a result of no fixed address and the difficulty in reaching this population. As a result, efforts to count the homeless population and the resulting enumerations tend to vary by source and, regardless of source, are likely to substantially underestimate the actual population. Efforts to assess the magnitude of the homeless problem have been ramped up over the past several decades, particularly on Guam where efforts to count this population did not even exist prior to 1990. The lack of including homeless in the Guam Census resulted from the strong familial bonds and cultural traditions that do not allow Pacific Islanders to leave other Pacific Islanders "out on the street." According to the US Bureau of Census's Population Division's 2009 report "Homelessness on Guam", homelessness was previously not considered in Guam's Census surveys because it was believed that homelessness should simply not occur in Micronesia due to the fact that "in Micronesia persons who are temporarily homeless are soon taken in by others, usually relatives." However after the 1990 Census, public recognition that there may be a need to quantify the problem led to the development of a methodology for the enumeration of Guam's homeless population. The focus of this effort was on Micronesians "partly because their problems adapting to a different lifestyle are almost certainly greater than other groups, and partly because under terms of the Compact of Free Association implemented in 1986, Micronesians have free access to Guam and the United States."

Issues and Opportunities

Two trends that have been identified as the primary causes for the rise in homelessness over the past 25 years: a growing shortage of affordable rental housing and a simultaneous increase in poverty. The increase in foreclosures has resulted in an increased number of people who experience homelessness. According to the National Coalition for the Homeless a 32% jump in the number of foreclosures occurred between April 2008 and April 2009, when the U.S. entered a recession. "The National Low Income Housing Coalition estimates that 40% of families facing eviction due to foreclosure are renters and 7 million households living on very low incomes (31 – 50% of Area Median Income) are at risk of foreclosure."

Reduced employment and opportunities leads to poverty.

Poverty is the number one cause leading to homelessness. Without adequate income, families are unable to pay for housing, food, childcare, healthcare, and education. Housing is often the first need eliminated because it consumes the highest percentage of income. Poverty has increased in recent years due to reduced employment opportunities and a decline in public assistance.

Poor health behaviors and other health conditions lead to homelessness.

Another major cause of homelessness is poor health, resulting from a lack of health insurance and adequate care. Many people without health insurance have low incomes, and therefore lack the resources to seek treatment and care. According to the National Health Care for the Homeless Council, half of all personal bankruptcies in the United States are caused by health problems. Healthcare is an even greater problem for those who are already experiencing homelessness. Homeless people are approximately three to six times more likely to become ill than people with proper housing (Source: National Health Care for the Homeless Council, 2008). In addition, homelessness diminishes a person's ability to obtain good nutrition, maintain good personal hygiene, and

access basic first aid. Common diseases among the homeless population include heart disease, cancer, liver disease, kidney disease, skin infections, HIV/AIDS, pneumonia, and tuberculosis. *(Source: O'Connell, 2005)*

Barriers to healthcare among the homeless population include lack of knowledge on how and where to go for treatment, lack of transportation, and lack of identification required for a medical consultation. Psychological factors contribute to a homeless person avoiding treatment due to embarrassment, nervousness, and self-consciousness about appearance and hygiene. Additional factors known to cause homelessness include lack of affordable healthcare, experiencing domestic violence, mental illness, and addiction disorders.

Approximately 12 million Americans put more than 50% of their salaries towards housing costs and sacrifice meeting other needs as a result.

Plans/Programs to Address Issues

Healthcare for the Homeless

Healthcare for the Homeless (HCH) is a federally funded program designed to provide primary healthcare to homeless persons. Services provided through this program include primary healthcare, substance abuse services, emergency care, outreach, and assistance in qualifying for housing. Many offices also provide dental care, mental health treatment, supportive housing, and other services. Housing is the first form of treatment for homeless people with medical problems, protecting against illness and making it possible for those who remain ill to recover.

Temporary Assistance to Needy Families (TANF)

The Temporary Assistance to Needy Families program is a federally funded block grant program in place for the purpose of assisting needy families financially. This program provides temporary financial assistance charged with assisting people with sustainable and suitable accommodations, primarily through employment. The program is administered by the state through block grants provided by the federal government.

Catholic Social Services

Catholic Social Services (CSS) is a non-profit, community social services organization. CSS is charged with the assistance of Guam's elderly, homeless, persons with disabilities, and other individuals in need. The CSS campus located at 234 A Juan C. Fejeran Street, Barrigada, Guam is comprised of living areas designed for the elderly and disabled persons to live with ease. Moreover CSS provides 14 programs designed to develop the individual socially, mentally, spiritually, intellectually, and economically.

13.3 Long-Term Care

Long-term care includes a variety of medical and non-medical services that are required by a person with a chronic illness, disability or other infirmities to maintain daily health and personal needs. Long-term care services are generally categorized as either institutional and are provided through a nursing home, or based in the home and community and are provided in a private residence or in various facilities throughout the community, such as assisted living facilities (ALFs), board-and-care homes, and congregate housing. Most long-term care services consist of non-skilled personal care assistance, such as bathing, dressing, using the toilet, mobility, caring for incontinence, and eating. The goal of long-term care services is not to improve the health of an individual but to help maximize a person's independence and functioning at a time when one cannot perform all necessary daily activities independently. The most common long-term care facilities include nursing homes and assisted living facilities.

Nursing Home: A nursing home, also called a skilled nursing facility, health and rehabilitation center or healthcare center, offers room and board with 24-hour staff and care. Nursing homes must be licensed and regularly inspected by a healthcare agency to ensure they meet minimum standards. Services offered typically consist of providing skilled nursing care for people who are recovering from acute episodes of illness involving a recent stay in the hospital or for those whose health requires skilled assistance and where hospitalization is not needed. The majority of nursing facility services in the U.S. are funded by Medicare and Medicaid programs, provided through Part A: Skilled Nursing Facility (SNF) services which are associated with post-operative or post-hospitalization rehabilitation therapies.

Assisted Living Facility: Assisted Living Facilities (ALF's) provide housing, meals, personal care services and supportive services to older persons and disabled persons 18 or older unable to live independently but not requiring the intensity of care offered at a nursing home. ALFs range in size from one building for housing a few residents to an entire community of individual units housing hundreds of residents. Services offered at an ALF may include room and board, 24-hour emergency monitoring, supervision and dispensing of medications, opportunities for socializing, and assistance with one or more activities of daily living. ALFs provide are not licensed as medical facilities; however, some ALF's have specialty licenses to provide limited nursing services or mental health services, and some specialize in providing services to persons with Alzheimer's Disease.

(Source: National Clearinghouse for Long-Term Care Information, 2008)

Existing Condition and Trends

The US government estimates that approximately 9 million men and women over the age of 65 will require long term care this year and 12 million will by the year 2020. Although many will be cared for at home by family and friends, who are the primary caregivers for 70% of the elderly, the Department of Health and Human Services estimates that a person has a 40% chance of entering a nursing home after reaching the age of 65, and 10% who enter a nursing home will remain there for five years or longer.

(Source: Characteristics of Elderly Nursing Home Current Residents and Discharges, 2000 and Congressional Budget Office: An Overview of Long-Term Care Services, 2004)

Issues and Opportunities

Growing demand presents increasing challenges for the long-term care component of healthcare.

While aging is inevitable, the average life expectancy is increasing, thus increasing the need for long-term care facilities. In 1970, the average life expectancy at birth was 70.8 years; in 2000, it was 76.9 years; and by 2030 it is estimated that the number of people ages 85 and older could grow to 10 million people. While the demand for long term care is increasing, the nursing home industry is shrinking, with many for profit nursing home chains facing bankruptcy and other financial challenges. *(Source: Nursing Home Crisis: Public Policy Gone Awry No. 140, 2005)*

Individuals 85 years and older are one of the fastest growing segments of the population

(Source: US Census Bureau, 2000)

Additionally, public programs and assistance along with medical interventions have spurred the rising interest and care for seniors and the elderly, which ultimately has an increasing effect on life span. Over the past century, developed countries have experienced an average increase of 2.5 years in life span per decade. *(Source: Vaupel, J, March 2010).*

Financing of long-term care is inadequate and lacks viable alternatives.

Although public and private insurance may cover some services required, the majority are not covered under Medicare. The high cost of providing long-term care paired with weakness in healthcare policy, have contributed to a decreased quality of care. Financial incentives offered by the Medicaid program have little or no relationship to quality clinical care, offering a fixed per-diem rate that allows nursing home owners to make money by filling beds with Medicaid recipients while spending as little possible on care.

Low quality care can increase the overall cost of treatment, as poorly treated symptoms worsen and patients require more expensive, acute care. Public awareness and education of long term care financing should be ongoing and targeted at all age groups specifically those in their early 40s to enable them to obtain a private long term care policy before premiums increase. Long term care could be improved by better training for healthcare providers working with the elderly population. A better understanding of common illnesses such as dementia and Alzheimer's would benefit healthcare providers as well as family members serving as caregivers.

(Source: Nursing Home Crisis: Public Policy Gone Awry No. 140, 2005)

Plans / Programs to Address Issues

Several federal policies exist to support the provision of long term care, specifically as it applies to the elderly population. The focus of policies supporting long-term care has been on cost reduction; however, there has been little emphasis on both the quality of care and the supply of facilities available. Current policies are concerned with reducing the financial burden of care on the elderly and their families.

Program of All-Inclusive Care for the Elderly (PACE)

The Program of All-Inclusive Care for the Elderly (PACE) was established by the Balanced Budget Act of 1997 (BBA [P.L. 105-33]) as a benefit of Medicaid and Medicare and established that focuses entirely on older people who are considered frail as measured by their state's standards for nursing home care. PACE is comprised of comprehensive medical and social services that can be provided at an adult day health center, home, and/or inpatient facilities. The decision on whether or not to offer the program is discretionary by state, thus is not offered nationwide. In order to be eligible to enroll in the program, a person must:

- Be at least 55 years of age.
- Live in the PACE service area.
- Be screened by a team of doctors, nurses, and other health professionals as meeting that state's nursing facility level of care.
- At the time of enrollment, be able to safely live in a community setting.

Approximately 17,000 persons are being served through over two dozen program sites nationwide. Implementation of a quality reporting system is also a subject of this policy. The required minimum services of this program include: Minimum services that must be provided in the PACE center include primary care services, social services, restorative therapies, personal care and supportive services, nutritional counseling, recreational therapy, and meals.

Older Americans Act

Congress passed the Older Americans Act (OAA) in 1965 in response to concern over a lack of community social services for the older population. OAA established by funding for community planning and social services, research and development projects, and personnel training in the field of aging as well as the Administration on Aging (AoA) to administer the grant funding. The OAA authorizes a broad spectrum of service programs through a national network of 56 State Agencies on Aging, 629 area Agencies on Aging, nearly 20,000 service providers, 244 Tribal organizations, and 2 Native Hawaiian organizations representing 400 Tribes. Additional components include community service employment for low-income older Americans; training, research, and demonstration activities in the field of aging; and vulnerable elder rights protection activities.

13.4 Senior Services

The Division of Senior Citizens (DSC) is the lead advocate for senior citizens responsible for the oversight and monitoring of activities planned and developed for persons aged 60 and over. (Source: Guam SOA / DSC Four Year State Plan on Aging, 2007) These activities must comply with the Title III programs as mandated by the Older Americans Act. The State Agency on Aging, DSC works by contracting services out to appropriate organizations which provide the unique, direct care the elderly require.

The DSC through contracts and program management services provides various services to Guam's elderly in several roles including advocacy, service systems development, daily life functions services, and programs to enable elderly to live within the community in the comfort of their homes. Some of the services provided through the DSC include: adult day care, case management services, legal assistance services, transportation services, nutrition services—congregate meals and home-delivered meals, and elder and disabled persons' abuse prevention.

Moreover, the State Office on Aging, DSC's has the oversight of the Aging Services Network and the Adult Protective Services (APS) (Source: Guam SOA/DSC Four Year State Plan on Aging, 2011). APS serves Guam through intervention assistance and immediate support in suspected abuse cases against the elderly and disabled adults aged 18 and over.

Existing Condition and Trends

Senior Services on Guam continue to be impacted by the ever-changing economy. DSC continues to face the challenges of adequate funding and a well-trained workforce. A future challenge facing Guam's DSC will be the impending military expansion. With little idea of the demographics of the new population relocating to Guam, DSC is experiencing a difficult time planning ahead. Additionally, as people continue to live longer and healthier lives DSC's service population continues to expand. This puts an unintentional, financial strain on governments who provide care through Medicare insurance. In 2000, the US Census reported there were 12,749 persons aged 60 and over on Guam. While in 2008, Guam reported 18,085 elderly persons on-island. (Source: Guam SOA / DSC Four Year State Plan on Aging, 2007 & 2011) This is a rate of change of 42%. In less than a decade, the senior citizens population grew by slightly less than 50%, which is a significant rate of change. This growth rate explains a growing concern and challenge for the DSC to be able to identify funding and trained workforce to address this health and social services sector.

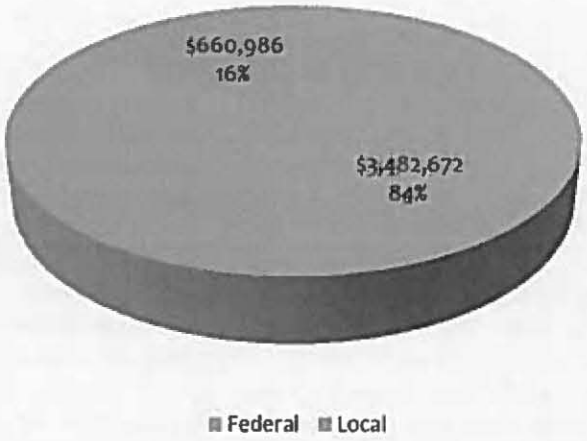
DSC's funding currently consists of general funding and federal funding as well as federal grants funding. The general breakdown of funding of the various programs that make up the DSC is illustrated in the following figures. Figure 13-3 shows the funding source percentages indicating the federal government assistance of the Government of Guam Senior Services programs accounts for 83%, which ultimately yields a heavy reliance on the Federal government in this area of healthcare and social services. Figure 13-4 specifically describes the funding by program and amount. As shown in the figures, there are several senior programs completely funded by the federal government.

Other challenges facing DSC include finding a workforce qualified to provide care to the elderly and people with disabilities. The 2007 Guam Four Year State Plan on Aging indicates that there were 48 positions budgeted that included a vacancy of seven positions. However four years later in the 2012-2015 Guam Four Year State Plan on Aging, reported that DSC currently has 20 positions budgeted with four vacancies. Within a four year period the DSC staff positions were reduced significantly by more than half of its reported staffing level in 2007. This decrease in budgeted positions is due to a reduction in federal funding. The recent economic downturn has reduced federal contributions to social service programs throughout the country.

Bureau of Adult Protection Services

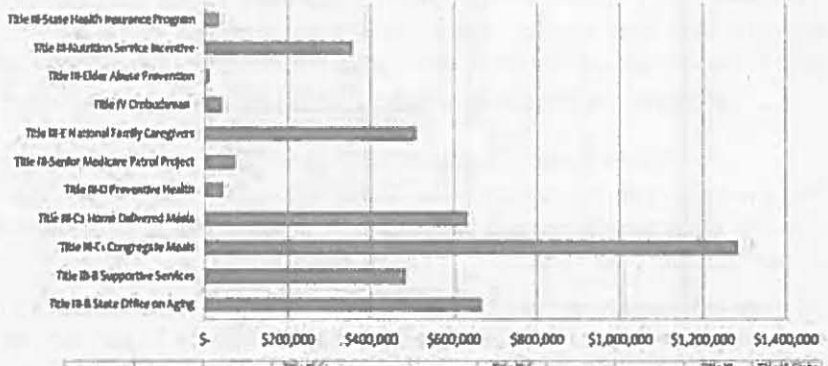
The Bureau of Adult Protection Services (BAPS) works in partnership with Emergency Receiving Home (ERH) to meet the demand of the elderly and disabled persons of Guam. Additionally, the BAPS is meeting the objectives mandated by Public Law 19-54 despite the reduction in staffing and funding levels (Source: Cruz, J. 2010). The BAPS is the program for which the adult protection services are implemented based on suspected abuse as well as those seeking additional information about elderly care and care for disabled persons. BAPS social workers carry out case investigations of alleged abuse and neglect. The various services provided in fiscal year 2010 comprised over 3000 units of service. Table 13-3 provides a breakdown BAPS caseload over the past year.

Figure 13-3. DSC Funding Sources FY10



(Source: Government of Guam, DSC Programs Summary, FY 2010.)

Figure 13-4. DSC Program Funding FY10



	Title III-B State Office on Aging	Title III-B Supportive Services	Title III-C1 Congregate Meals	Title III-C2 Home Delivered Meals	Title III-D Preventive Health	Title III-Senior Medicare Patrol Project	Title III-E National Family Caregivers	Title IV Ombudsman	Title III-Elder Abuse Prevention	Title III-Nutrition Service Incentive	Title III-State Health Insurance Program
Federal	$500,000	411,861	1,090,938	538,748	38,815	75,000	381,695	41,847	12,514	357,274	34,440
Local	$466,667	72,646	792,518	95,073	6,850	-	173,732	-	-	-	-

(Source: Government of Guam, DSC Programs Summary, FY 2010.)

Table 13-3. BAPS Units of Service FY10

FY 2010 Units of Service	Year-to-Date Total
Unduplicated Referrals / Intakes Received	143
Phone Calls	1,859
Office Visits	63
Home Visits	456
Information and Assistance	119
Collateral Contacts	728
Outreach Presentations	94
Total Units of Services Performed	**3,462**

(Source: Government of Guam, Federal Programs Summary, FY 2006-2011)

Emergency Receiving Home

The Emergency Receiving Home (ERH) works in tandem with the Bureau of Adult Protection Services (BAPS). ERH is a contracted component of Senior Services that provides direct care to elderly and adults with disabilities. The BAPS makes referrals to the ERH to further investigate and provide intervention services and support as necessary. ERH provides information and assistance, unduplicated intakes, outreach activities, case management activities, personal care and meals. In fiscal year 2010, ERH reported handling approximately six unduplicated cases a month (Source: Cruz, J., 2010). Social workers in this setting typically provide case management and intervention support to the elderly as well as adults with disabilities. Table 13-4 illustrates the units of services executed by the ERH in fiscal year 10.

Table 13-4. ERH Units of Services FY10

FY 2010	Year-to-Date Total
Information and Assistance	4,370
Unduplicated Referrals / Intakes Received	74
Outreach Activities	3
Case Management	2,655
Personal Care Provided	5,624
Meals Provided	4,138
Total Units of Services Provided	**16,864**

(Source: Government of Guam, Federal Programs Summary, FY 2006-2011)

Issues and Opportunities

Funding sources are primarily provided by the Federal government.

As illustrated previously, the DSC receives 83% of its funding from the US federal Government. A majority of the programs offered by the DSC Senior Services are significantly dependent on the federal government. When the US economy takes a downturn, then the federal assistance provided to the island of Guam for senior services is in danger of being reduced or rescinded due to lack of general assistance funds.

Developing strategic alliances, as in the case of current contracted services, and asking and encouraging donations would benefit the State Office of Aging Division of Senior Citizens to secure an additional funding source.

Lack of a full staff presents program operations challenges.

DSC has experienced a decrease of over half of reported staffing levels in 2007 in current staffing levels in the past four years. In both 2007 and 2011 Guam Four Year State Plans on Aging, delayed recruitment practices have prevented the DSC from being fully staffed and running at an optimal level. While the DSC is currently meeting all objectives as mandated by Public Law 19-54, the last Four Year State Plan on Aging and the current, draft State Plan indicate that the recruitment for vacant positions has been slow and sometimes burdensome taking up to six months to get a position filled.

DSC would benefit from communicating with the Department of Administration Human Resources Division to understand and learn common HR practices relative to hiring to reduce the wait time for filling a position.

Lack of planning causes financial constraints for caregivers and governments.

People are living longer as the current trend in healthcare being promoted is to make informed decisions regarding personal health and long-term care. Therefore, more programs are enabling individuals the opportunity to learn and empower individuals about healthcare and common conditions. However, as more people take responsibility for their healthcare, the unintentional adverse result is strain on financial resources and government services.

DSC would benefit from a consortium of identifying opportunities for partnering. Additionally, DSC benefits from the Four Year State Plans that give a thorough view of the Division of Senior Citizens and their work performance. DSC would also benefit from holding workshops with the community in effort to educate them on the financial resources needed to care for the elderly, so the Guamanians may begin planning for long-term care earlier.

Plans/Programs to Address the Issues

Guam Council on Senior Citizens

The Guam Council on Senior Citizens was established by Public Law 14-139. It is a council comprised of members who are 55 years and older representing different entities. The Council's responsibilities include leadership for long-range planning, coordinating with the Director on programs, activities, and services for the elderly; serving as an advocate for the elderly; and adopting rules and policies to ensure the full implementation of Public Law 14-139.

Although the Council has been inactive since 2003, this year a letter was sent to the Acting Director of Public Health to encourage and advocate that appointments be made to this council to reinstate the council.

Guam's Aging Network

Under the Guam's State Office on Aging, the Aging Network consists of contracted service providers and vendors administering the Title II aging programs. There are two non-profit organizations administering five programs, three for-profit entities administering four programs, and one educational institution administering one program. Furthermore, there are seven programs administered by Guam's State Office on Aging.

Additionally, the Aging Network not only consists of contracted service providers and vendors, but the network is assisted by other private and public organizations that have an interest in delivering services and assuring the health of the elderly on Guam.

Senior Center Operations

The Senior Center Operations provides services designed to enable older individuals to maintain physical and mental well-being by addressing their physical, social, psychological, economic, educational, and recreational and health needs. These services are available to eligible persons aged 60 years and older.

Transportation Services Program

The transportation services program is designed to assist older persons who cannot operate a vehicle or do not possess a mode of transportation to access the essential services in the community while allowing them to gain mobility and maintain independence.

Transportation services are provided by two means either door-to-door service or assisted services. Door-to-door transportation is defined as providing round-trip transportation from the elder person's home to either a senior citizen's center or an adult day care. Assisted transportation is the provision of an escort or other assistance for elderly who have physical or cognitive conditions, which impairs their ability to operate a vehicle.

Adult Day Care

Adult Day Care services provide an alternative home setting for older adults who are unable to function at home without supportive services. The older adults do not require 24 hour assistance. Activities are individualized and centered on education, social, spiritual, and recreational needs of the older individual.

Case Management Services

Case management services provides needed services to the elderly in a systematic process of assessment, planning, service and care coordination, referral, and constant monitoring and re-assessment to ensure the individual needs are met. This program includes medicine management, and nutrition education and management.

In-Home Services

The In-Home Services program provides much needed assistance to elder individuals who are without a caretaker and in risk of being institutionalized due to limitations on their ability to conduct daily life functions. These services are also available to those older individuals who do have a caretaker, but require extra assistance.

Legal Assistance Services

The Legal Assistance Services provides legal advice services to older individuals with economic and social needs. Counseling and other appropriate legal advice is provided as necessary.

Elderly Care Nutrition Program

The Elderly Care Nutrition Program is the provision of a hot, nutritious lunch that is at least 33 1/3% of the current daily recommended dietary allowance established by the Food and Nutrition Board of the National Academy of Sciences, National Research Council. The lunches may be in a congregate setting or may be home-delivered and provided to those persons age 60 and over.

Disease Prevention Health Program

The Disease Prevention Health Program provides information on disease prevention and health promotion to the elderly through various avenues including information pamphlets at senior citizens centers, through home-delivered meals, and other sites that older persons congregate. These services are provided to all eligible persons, but the focus is for those elderly that are in greatest economic and social need.

National Caregiver Support Program

The National Caregiver Support Program provides support services and information for caregivers of elderly, including families and other older individuals providing care to the elderly. Services in this program include individual counseling, organization of support groups, and caregiver training centered on helping caregivers make informed decisions about the care they are providing to the elderly.

Elder Abuse Prevention

The Elder Abuse Prevention program is 100% funded by the federal government that provides resources for training staff, outreach and educational activities about the prevention, detection, assessment, intervention, and investigation of suspected elder abuse, neglect, or exploitation.

Long Term Care Ombudsman Program

The Long-Term Care Ombudsman Program is designed to protect the health, safety, welfare and rights of the elderly residents living in long-term care and assisted living facilities. Services provided by the ombudsman include identifying, investigating, and resolving complaints made by elderly persons.

Adult Protection Services

The Adult Protection Services (APS) program is mandated by Public Law 19-54 and amended by Public Law 21-33 to provide protective services to elderly persons and persons with disabilities over the age of 18. The protective services are focused in the services that assist in dealing with abuse, neglect, and/or exploitation of the elderly and disabled persons over the age of 18.

Emergency Receiving Home Program

The Emergency Receiving Home (ERH) program is a 24-hour home in which elderly or disabled persons may be referred to immediately to provide a safe home for the individual who is suspected of being abused, neglected, and/or exploited. This home allows for a safe temporary place, while the incident is being investigated. The ERH is a component of the APS.

Senior Citizens Month

Senior Citizens Month is the nationally recognized month for senior citizens on Guam. In the month of May, the aging network of Guam and several other supporting and advocacy agencies provide a number of activities celebrating senior citizens on Guam. The activities are focused on senior citizens such as the Governor's Conference on Aging, Legislative Reception, Proclamation Signing, Frail Elderly Mass, and a Centenarian Celebration.

Guam State Health Insurance Assistance Program

Guam's State Health Insurance Assistance Program (SHIP) is funded partially by the Centers for Medicare and Medicaid Services. Guam's State Office of Agency administers this program, locally known as the Guam Medicare Assistance Program (Guam MAP). The services provided in this program include counseling services, education and information services, as well as enrollment assistance.

Guam Senior Medicare Patrol Project

The Guam Senior Medicare Patrol Project (SMP) is a service provided to families and individuals to understand and protect themselves against Medicare/Medicaid error. The program provides the protection services through education and informational assistance to those who utilize the Medicare / Medicaid plans.

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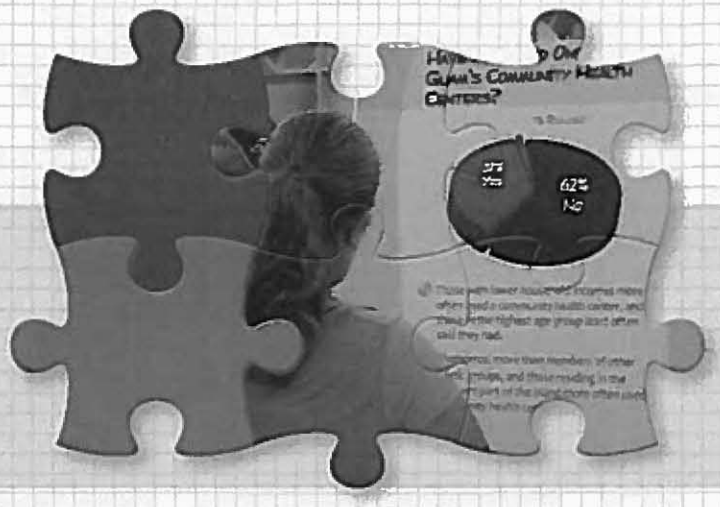

Appendix A
Providers Guide

Please see the next page.

A

Providers Guide

Inside Appendix A . . .

As part of the 5-Year Health and Social Services Strategic Plan and the assessment of workforce and infrastructure, a Providers Guide was prepared. This guide is designed to provide a snapshot in time to the key organizations that provide health care and social services on Guam.

The following pages contain the key organizations providing service on Guam, and are not a listing of individuals working in these fields.

A.1 Organizations Included in This Appendix

On the following pages, the following abbreviations are used:

Type Abbreviations:

Fed	Federal
GG	Government of Guam
JPP	Joint Public Provider
NGO	Non-Government Organization / Non-Profit
O	Other
PP	Private Provider

Sector / Category Abbreviations:

HP	Health Provider
HS	Health Sector
PS	Professional Support
RE	Resource Entity
SSP	Social Services Provider
SSS	Social Services Sector

Type of Service Abbreviations:

Care	Health Care / Social Services Care
Coord	Coordination
Gov	Government
Ins	Insurance
Rehab	Rehabilitation
Safe	Safety / Protection
Test	Testing
Treat	Treatment

Areas Served Abbreviations:

GU	Guam Only
MI	Micronesian Islands
O	Other U.S. Areas
WP	Western Pacific

A.2 GovGuam Organizations

Department of Integrated Services for Individuals with Disabilities (DISID)

www.disid.guam.gov 671-475 4645

Overview:	Programs / Services Provided:		
The Department of Integrated Services for Individuals with Disabilities (DISID) is a GovGuam department serving as an information repository, an advocate, and an educator and promoter of all island activities for individuals requiring rehabilitation and comprehensive community services living with disabilities. DISID monitors and tracks the incidence of disabilities on island as well as conducting QA/QC on pertinent programs and services.	■ Development of quality programs and services that promote independence and empowerment and affirm the dignity of individuals with disabilities. ■ To continue to provide Vocational Rehabilitation programs and services for persons with disabilities on Guam seeking employment. 238 Archbishop F.C. Flores St. Suite 703 Pacific News Bldg. Hagatna, Guam 96910	Type:	GC
		Sector / Category:	SSS
		Type of Service:	Rehabilitation
		Areas Served:	Guam

Department of Mental Health and Substance Abuse (DMHSA)

http://dmhsa.guam.gov/about_dmhsa/ 671-647-5330

Overview:	Programs / Services Provided:		
We are committed to enhancing and promoting the physical, mental and spiritual well-being of the people of Guam through caring communities empowered to support comprehensive mental health and substance abuse prevention and treatment programs that are culturally sensitive and consumer driven.	■ Provide Mental Health and Substance Abuse help to adults and kids and to develop privately funded community based programs. Multiple Locations Main Facility: 790 Governor Carlos G. Camacho Road Tamuning, Guam 96913	Type:	GG
		Sector / Category:	HS, SSS
		Type of Service:	Mental Health Prevention, Education, Intervention, Treatment
		Areas Served:	Guam

DMHSA Crisis Hotline

http://dmhsa.guam.gov 671-647-8833

Overview:	Programs / Services Provided:		
The DMHSA Crisis provides a free crisis intervention for those in need via a staffed telephone answering service. The Crisis Hotline is open 24 hours per day, seven days per week.	■ 24 hour crisis hotline [646-8833 and 646-8834] Weekend Location J& G Commercial & Professional Center Chalan Santo Papa Street, Suite 203 & 204F Hagatna, Guam 96913 Weekday Location 790 Governor Carlos G. Camacho Road Tamuning, Guam 96913	Type:	GG
		Sector / Category:	SSS
		Type of Service:	Care / Safe
		Areas Served:	Guam

DMHSA, Healing Hearts Crisis Center

http://dmhsa.guam.gov

671-647-5351

Overview:
Healing Hearts Crisis Center (HHCC) is Guam's Rape Crisis Center. It incorporates a holistic approach for individuals who may have experienced a sexual assault. Regardless of when the assault occurred or the age, race, or sex of the person, Healing Hearts offers a supportive, healing atmosphere with caring people to assist them in regaining feelings of safety, control, trust, autonomy, and self-esteem.

Programs / Services Provided:

- Medical Legal Examination: Registered nurses and medical doctors have been trained to perform medical-legal examinations on children as well as adults who may have experienced a sexual assault. HHCC is equipped to perform the examination in a private, calming environment, away from the crisis setting of the hospital emergency room. The medical-legal exam may include treatment for sexually transmitted infections, HIV testing, emergency contraception and collection of forensic evidence.
- Social Work Services: HHCC offers crisis intervention, short-term case management to coordinate services, and referrals for counseling and other services that may be needed. HHCC may offer assistance with payment for counseling services as funding is available.
- Multi-Disciplinary Team Interviews: Its best that a person has only one interview to limit the trauma of reliving the assault. HHCC works with a team of agencies by providing a neutral location to interview the patient on a one-time basis to avoid repetitive questions at different agencies. HHCC has specially-trained staff to conduct these interviews while the team observes through a one-way mirror to collect information necessary for their purposes.
- Community Outreach and Public Awareness: Education and public awareness are the best ways to help women, children and men who have survived sexual assault and to prevent sexual assault. HHCC is involved with outreach programs for elementary, middle and high schools and the community at large to talk about appropriate touching, when and how to say "NO," and personal safety

Physical Location:
215 Duenas Drive
Tamuning, Guam 96913

Mail:
790 Governor Carlos G. Camacho Road
Tamuning, Guam 96913

Type:	GG
Sector / Category:	HS, SSS
Type of Service:	Health Care / Social Services Care, Testing, Treatment
Areas Served:	Guam

DMHSA, I Famagu'on-Ta

671-477-8848/49

Overview:	Programs / Services Provided:	
The mission of I Famagu'on-Ta, Guam's System of Care is to improve the mental health and daily life functioning of children with Serious Emotional Disturbances (SED) and maintain the child and family system within the home/community setting.	■ Help children with severe emotional disturbances and mental health issues and their families. 215 Chalan Santo Papa, Suite 107F J&G Commercial Center Hagatna, Guam 96910 Mail: 790 Governor Carlos G. Camacho Road Tamuning, Guam 96913	Type: GG Sector / Category: HS, SSS Type of Service: Mental Health Prevention, Education, Intervention, Treatment Areas Served: Guam

DMHSA New Beginnings

http://dmhsa.guam.gov/services/substance_abuse/ 671-475-5438

Overview:	Programs / Services Provided:	
This is the term sometimes used for the Drug and Alcohol Branch of the Department of Mental Health. The philosophy of New Beginnings is that individuals who suffered from any substance abuse or addiction deserve to have a second chance to achieve sobriety and gain quality of life.	■ Provides three levels of care including Drug Education/Brief Intervention American Society of Addiction Medicine 0.5, Level I Outpatient, and Level II Intensive Outpatient. The Drug and Alcohol Branch has existing contracts with non-profit organizations to provide Level III.5 Residential, Level III.2-D Social Detoxification services, and lower levels as stated above. 215 Chalan Santo Papa, Suite 107F J&G Commercial Center, Suites 102 and 105 Hagatna, Guam 96910	Type: GG Sector / Category: SSP Type of Service: Rehab Areas Served: GU

DMHSA, PEACE		
www.peaceguam.org		671-477-9079
Overview: Prevention is an ongoing, lifelong process aimed at promoting healthier lifestyles by reducing the demand for alcohol, tobacco, and other drugs and related consequences in our community through education, life skills training and community mobilization and empowerment. The prevention and Training Branch staff works to strengthen relevant prevention policies, programs, and practices that address substance abuse and suicide prevention and early intervention. Services must be community-driven using relevant data and following a comprehensive and strategic planning and implementation approach that is culturally appropriate.	Programs / Services Provided: ■ Raise awareness about the effects of alcohol, tobacco, and other drug abuse on Guam ■ Prevent/reduce alcohol-free, tobacco-free, and other drug-free lifestyles ■ Reduce the harmful outcome, and other drug use ■ Build Guam's capacity and infrastructure for establishing and sustaining evidence based substance abuse prevention early intervention programs that are effective J&G Commercial & Professional Center Chalan Santo Papa Street, Suite 203 & 204F Hagatna, Guam 96913 Mail: 790 Governor Carlos G. Camacho Road Tamuning, Guam 96913	Type: GG Sector / Category: SSS Type of Service: Information / Education Areas Served: Guam

DPHSS, Division of Environmental Health		
http://www.dphss.guam.gov/about/environmental.php		671-735-7221
Overview: To serve and protect the people of Guam from environmental hazards through education and the implementation of governing laws designed to prevent injuries, disabilities, diseases, and deaths.	Programs / Services Provided: ■ Environmental health inspections, investigations, and assessments ■ Issuance of Sanitary Permits for regulated establishments and Health Certificates for employees of these establishments ■ Enforcement of environmental health laws Address 123 Chalan Kareta, Mangilao, Guam 96913-6304	Type: GG Sector / Category: HS Type of Service: Safety / Protection Areas Served: Guam

DPHSS, Division of Public Health

http://www.dphss.guam.gov/about/public_health.php

671-735 7305 / 7297

Overview:	Programs / Services Provided:	
Guam's Division of Public Health is responsible for ensuring the provision of direct and indirect health care services for individuals, families, high risk groups and the community at the three health facilities. The Division of Public Health also monitors health care services at schools, home settings, and other community locations in accordance with legal mandates and identified collective health needs of the population in an effective and efficient manner.	■ Monitor and fund health care community centers ■ Provide various healthcare services island-wide (for a detailed listing see Guam Community Health Centers) ■ Monitor the MIP and WIC programs island-wide Division of Public Health Office 123 Chalan Kareta Mangilao, Guam 96913-6304	Type: GG Sector / Category: HS Type of Service: Health Care Areas Served: Guam

DPHSS, Division of Public Welfare

http://www.dphss.guam.gov/about/public_welfare.php

671-735-7274

Overview:	Programs / Services Provided:	
To promote positive social conditions that contribute toward the attainment of the highest and social well-being for the economically and socially disadvantaged populations within the Territory of Guam by developing an efficient and effective delivery system of services to eligible clients within the territory; by determining eligibility of applicants; by administering payments and various social services to remove social barriers which prevent person from obtaining/maintaining the basic necessities of life to include safe and decent housing, medical care, nutritious foods and employment status.	■ Determine eligibility of applicants ■ Administer payments and various social services including WIC and MIP to provide the basic necessities of life Division of Public Welfare Bureau of Economic Security 123 Chalan Kareta, Room 242 Mangilao, Guam 96913-6304	Type: GG Sector / Category: SSS Type ofService: Health / Social Service Care Areas Served: Guam

DPHSS, Division of Senior Citizens

http://www.dphss.guam.gov/about/senior_citizens.php

671-735-7011/7382

Overview:	Programs / Services Provided:	
The Division of Senior Citizens is the principal advocate for senior citizens throughout the island. Activities and care relating to the elderly on Guam are planned, developed, and monitored to satisfy the requirements in the Older Americans Act. The Division is mandated by federal and Guam laws to ensure programs funded under Title III are coordinated effectively.	■ coordinate all activities on the island relating to elder care and quality of life ■ Serve as visible advocate for all older persons on Guam ■ Assist and monitor agencies and entities in the development of a comprehensive and coordinated elder care delivery system throughout Guam Division of Senior Citizens Guam 130 University Drive, Suite 8 University Castle Mall Mangilao, Guam 96913-6304	Type: GG Sector / Category: SSS Type ofService: Health / Social Service Care, Coordination Areas Served: Guam

DPHSS, Office of Vital Statistics

http://www.bit.guam.gov/DPSSVitalStats/tabid/1247/Default.aspx

671-735-7185

Overview:
The Office of Vital Statistics is responsible for recording and certifying significant life documents such as birth and death certificates and marriage licenses.

Programs / Services Provided:

- Verifies, certifies, and issues birth and death certificates
- Issues marriage licenses for Guam

123 Chalan Kareta, Room 109
Mangilao, Guam 96913-6304

P.O. Box 2816
Hagatna, Guam 96932

Type:	GG
Sector / Category:	RE
Type of Service:	Information / Data
Areas Served:	Guam

Department of Youth Affairs

http://dya.guam.gov/

671-7.5-5010

Overview:
To improve the quality of life on Guam for all people by the development and implementation of programs and services that promote youth development, decreases juvenile delinquency and status offenses, strengthen the family unit and communities of these juvenile offenders, protects the public from juvenile delinquents, ensures that offenders are held accountable for their actions, and are provided with appropriate treatment, and provides restitution to the victims.

Programs / Services Provided:

- Provides treatment, care, and rehabilitation services to youth adjudicated by the courts of Guam.

169 San Isidro Street
Mangilao, Guam 96923

P.O. Box 23672, GMF
Barrigada, Guam 96921

Type:	GG
Sector / Category:	SSS
Type of Service:	Social Service Care, Behavioral Rehabilitation, Treatment
Areas Served:	Guam

Guam Health Professional Licensing Office

http://www.dphss.guam.gov/about/licensing.htm

671-646-3456

Overview:
Guam Health Professional Licensing Office's primary function is to protect the public against unprofessional, improper, incompetent, unlawful, fraudulent or deceptive practices by persons who practice the healing art.

Programs / Services Provided:

- Maintains and monitors a database/list of registered and licensed medical professionals who practice various healing specialties on Guam
- Serves as an information repository to medical professionals on Guam—information includes proper guidelines, continuing education, education, and other licensure and renewal procedures

Health Professional Licensing Office
651 Legacy Square, Commercial Complex
South Route 10, Suite 9
Mangilao, Guam 96929

Type:	GG
Sector / Category:	HS
Type of Service:	Coord
Areas Served:	Guam

Guam Community Health Centers

http://www.dphss.guam.gov/about/DPH_BPCS/bpcs.htm

Northern: 671-635-7492/47
Southern: 671-828-7501/2

Overview:
Provide primary healthcare, acute outpatient care, and preventive services to the community. Family practitioners, pediatricians, internists, nurse practitioners, and other health professionals provide a full range of essential primary care services.

Programs / Services Provided:

- Provides primary care services including Prenatal and Postpartum Care, Women's Health (OB/GYN Care), Child Care, Adult Care, Communicable Disease screening and treatment, and Chronic Disease Care
- Provides support services including Diagnostic Laboratory Services, Pharmacy Services, Vision Screening, Nutrition Health Services, Translation Services
- Provides social services including Medical Social Services, Food Stamps, Medically Indigent Program (MIP), Medicaid Program, Women, Infant, and Children (WIC) Program

Southern Region Community Health Center
162 Apman Drive
Inarajan, Guam 96917

Northern Region Community Health Center
520 West Santa Monica Drive
Dededo, Guam 96914

Accepts Medicaid, MIP

Type:	GG
Sector / Category:	HS
Type of Service:	Health Care, Treatment
Areas Served:	Guam

Guam Department of Education, Division of Special Education

https://sites.google.com/a/gdoe.net/special-education/ 671-300-1322

Overview:
The Guam Department of Education, Division of Special Education is committed to supporting all exceptional children and youth lead rich, active lives by participating as full members of their school and community.

Programs / Services Provided:

- Administers the Early Childhood Special Education (ECSE) Preschool Program designed to provide special education services to children ages 3 through 5 years who have been identified as having developmental delays
- Serves as an Advisory Panel for Students with Disabilities or GAPSD which guides and assists the Department of Education's Division of Special Education in fulfilling its responsibility to meet the individual needs of children living with disabilities.
- Administers the Guam Early Intervention System for child and infant services.

Chief Brodie Elementary School and JFK High School
Annex Bldg., Room 1
225 North Marine Drive
Tamuning, Guam 96913

Guam Department of Education
Division of Special Education
P.O. Box DE
Hagåtña, Guam 96932

Type:	GG
Sector / Category:	SSS
Type of Service:	Child Development
Areas Served:	Guam

Guam Developmental Disabilities Council

http://www.guamddc.com/index.php 671-735-9127

Overview:
The Guam Developmental Disabilities Council advocates for systems change, public policy changes, and best practices that promote the full inclusion and integration of people living with developmental disabilities.

Programs / Services Provided:

- Serves as an information repository for healthcare services relating to disabilities
- Advocates for the integration of people living with disabilities by suggesting changes to programs and policy
- Educates the people of Guam about developmental disabilities and the integration of those people into Guam's society

Guam Developmental Disabilities Council
130 University Drive, Suite 17
Mangilao, Guam 96913

Type:	GG
Sector / Category:	SSS
Type of Service:	Coordination
Areas Served:	Guam

Guam Legislature, HSS Subcommittee Chair

Website

Phone Number

Overview:
Act as liaison between subcommittee and the general public to provide information

Programs / Services Provided:

- Provides guidance and legislative oversight on issues related to health and social services.

Address
No information provided / available.

Type:	GG
Sector / Category:	SSS
Type of Service:	Gov
Areas Served:	Guam

Guam Memorial Hospital Authority

http://www.gmha.org/gmha_new/default.htm

671-647-2555 thru 9

Overview:
Guam Memorial Hospital is Guam's public hospital, providing comprehensive, quality inpatient care and outpatient services for adults and children. For many, entering a hospital can be an extremely stressful occasion, and we wish to assure you that this institution is dedicated to serve you and provide every patient with the "Quality Health Care They Deserve", in a safe environment.

Programs / Services Provided:

- Guam Memorial Hospital Authority provides comprehensive, quality inpatient care and outpatient services for adults and children. Services include acute adult and pediatric medical care; 24-hour emergency services; obstetrics, labor/delivery and nursery; critical and intensive care (neonatal, pediatric and adult); skilled nursing care; laboratory and blood bank services; pharmacy; telemetry and progressive care; radiology, angiography, nuclear medicine and CT scan diagnostic services; respiratory care; catheterization laboratory; inpatient and outpatient renal dialysis; physical, occupational and recreational therapy, speech language pathology; dietetic services; patient education and medical library; and social services.

850 Gov. Carlos G. Camacho Road
Oka, Tamuning, Guam 96913-3128

Skilled Nursing Facility
499 North Sabana Drive
Barrigada, Guam 96913
Accepts Medicare, Medicaid, and MIP

Type:	GG
Sector / Category:	HS
Type of Service:	Health Care, Treatment
Areas Served:	Guam

Office of the Attorney General

http://www.guamattorneygeneral.com/

671-475-3324

Overview:
The Office is composed of several divisions that enforce various laws and legal matters, including the Family Divisions which, among other things, represents Child Protective Services in cases involving children that have been abused or neglected by their parents or caretakers, and the Child Support Enforcement Division.

Programs / Services Provided:

- Enforcement of law
- Child support enforcement
- Family division

287 W.O'Brien Drive
Hagatna, Guam 96910

Type:	GG
Sector / Category:	SSS
Type of Service:	Gov
Areas Served:	Guam

Office of the Public Guardian

http://www.guamsupremecourt.com/OPG/pubguard.html 671 475 3173

Overview:

The Public Guardian shall develop rules and regulations in compliance with the Administrative Adjudication Law. 7 GCA § 3112 (f). It will foster quality guardianship services for adults who are incompetent and unable to manage their own affairs, and services which are supportive of them, their family and friends. These policies, procedures and rules are dynamic and can be amended from time to time, in order to enable and foster quality services.

Programs / Services Provided:

- Serve as guardian of the person or estate of an adult in our community who by reason of age, disease, or disability is unable, unassisted to properly manage and take care of him or herself or his or her property, and for whom no alternate guardian among family and friends can be identified
- To assist the Superior Court in proceedings for the appointment of a guardian of an adult, and in supervision of persons who have been appointed guardian of an adult
- To assist, advise and guide persons who are seeking appointment, or who have been appointed as guardian of an adult person.
- To offer guidance and counsel encouraging maximum self-reliance and independence of needful persons to avoid the need for appointment of a guardian, where possible.
- To develop programs of public education on guardianship and alternatives to guardianship, and support and encourage the development of private guardians.

Old Court Building
110 W O'Brien Dr.
Hagatna, Guam 96910

Type:	**GG**
Sector / Category:	SSS
Type of Service:	**Financial / Livelihood Protection**
Areas Served:	Guam

A.3 Non-Governmental Agency Providers / Non-Profits

University of Guam, CEDDERS

http://www.guamcedders.org 671-735-2481

Overview:
In partnership with individuals with disabilities and their families, agencies, organizations, and service providers, the Guam CEDDERS creates pathways that enhance, improve and support the quality of life of individuals with developmental disabilities and their families.

Programs / Services Provided:

- The core function of CEDDERS is that of interdisciplinary training, services and supports, research, and dissemination activities that reflect cultural relevance and sensitivity.

University of Guam CEDDERS, Office of Academic & Student Affairs, UOG Station
Mangilao, Guam 96923

Type:	GG
Sector / Category:	SSS
Type of Service:	Support
Areas Served:	Guam

American Cancer Society

http://www.cancer.org 671-477-9451

Overview:
The American Cancer Society is the nationwide, community-based, voluntary health organization dedicated to eliminating cancer as a major health problem by preventing cancer, saving lives, and diminishing suffering from cancer, through research, education, advocacy, and service.

Programs / Services Provided:

- **Stay well** – We help you take steps to prevent cancer or detect it at its earliest, most treatable stage. We help people eat right, get active, quit smoking and get screenings.
- **Get well** – We're in your corner around the clock to guide you through a cancer experience. We know that every cancer patient is a fighter – and we're in the ring with you through every round.
- **Find cures** – We're getting results by investing in research that helps us understand cancer's causes, determine how best to prevent it, and discover new ways to cure it.
- **Fight back** – We help pass laws that defeat cancer and rally communities to join the fight

Address
No information provided / available.

Type:	NGO
Sector / Category:	RE
Type of Service:	Information / Education, Support
Areas Served:	No information provided / available.

American Pacific Nursing Leaders Council (APNLC)

671-735-0215

Overview:	Programs / Services Provided:		
To promote communication, collaboration and to enhance educational needs to advance standards of nursing practice and health delivery.	■ Continuing Educations for professional development, Scholarships, Research and Technical Assistance American Pacific Nursing Leaders Council c/o School of Nursing & Health Sciences University of Guam UOG Station Mangilao, Guam 96923	Type:	NGO
		Sector / Category:	RE
		Type of Service:	Coord
		Areas Served:	Western Pacific

American Red Cross – Guam Chapter

http://www.redcross.org/

671-472-6217

Overview:	Programs / Services Provided:		
The American Red Cross, a humanitarian organization led by volunteers and guided by its Congressional Charter and the Fundamental Principles of the International Red Cross Movement, will provide relief to victims of disaster and help people prevent, prepare for, and respond to emergencies.	■ Aiding victims of war and natural disasters ■ Preventing and relieving suffering ■ Community services that help the needy ■ Support and comfort for military personnel and family ■ Blood donation services American Red Cross Bldg. 285, Route 4 Hagatna, GU 96910	Type:	NGO
		Sector / Category:	RE
		Type of Service:	Emergency Response / Relief
		Areas Served:	Other U.S. Areas

Ayuda Foundation

671-473-3004

Overview:	Programs / Services Provided:		
The Mission of the AYUDA Foundation is to improve the delivery of health care services to Micronesia and the Western Pacific region.	Address No information provided / available.	Type:	NGO
		Sector / Category:	RE
		Type of Service:	Health Care Delivery
		Areas Served:	Micronesian Islands, Western Pacific

Catholic Social Services

http://www.catholicsocialservices.net/ 671-635-1442 / 3

Overview:	Programs / Services Provided:	
Offers programs for elderly, homeless, and disabled in Guam, including senior living, adult day care, and in-home services for seniors, shelters for abused women and children, and emergency food bank and shelter.	■ Offers programs for elderly, homeless, and disabled in Guam. 234-A Juan C. Fejeran St. Barrigada, Guam 96913	Type: NGO Sector / Category: SSP Type ofService: Care Areas Served: Guam

Erica's House

http://ericashouse.150m.com/index.html 671-642-4020 / 4022

Overview:	Programs / Services Provided:	
Erica's House is a support service for parents and children in need of visitation and exchange services.	■ A safe place to pick up and drop off children for exchange between parents. ■ On-site staff or Child Protective Service (CPS) supervised visitation for families. ■ Parenting Classes will be offered for Court and CPS referred parents. Erica's House 1102 East Sunset Blvd. Barrigada, Guam 96913	Type: JPP Sector / Category: SSS Type of Service: Child Protection Areas Served: Guam

Fuetsan Famalao'an

Phone Number

Overview:	Programs / Services Provided:	
An indigenous women's group that meets on a compulsory basis to ensure that the needs, the care, and the health of girls and women are prioritized in spite of and due to the increased military buildup on Guam and in the Pacific.	Address No information provided / available.	Type: NGO Sector / Category: SSP Type of Service: Care Areas Served: Guam

GUAHAN Project

671-647-5684
671-632-6815

Overview:
GUAHAN Project, Guam's sole AIDS Service Organization, seeks to enable people living with HIV / AIDS to live full, productive, and healthy lives through the provision of direct services.

Programs / Services Provided:

- Free educational workshops and training sessions.
- Support groups.
- Home and hospital visits.
- Provision of personal care items.
- Capacity-building assistance for local and regional community-based organizations.

Address
No information provided / available.

Type:	NGO
Sector / Category:	RE
Type of Service:	Education, Testing, Support, Counseling
Areas Served:	Mariana Islands, Western Pacific

Guam Association of Individual, Marriage, & Family Therapists

http://www.aimft.org/

Phone Number

Overview:
The Association of Individual, Marriage, and Family Therapists is comprised of licensed counselors practicing in a variety of settings, with a variety of specialties including sexual violence.

Individual, marriage and family therapy practice shall mean the application of psychotherapeutic techniques in the delivery of services to individuals, couples, families or groups in order to diagnose and treat mental, emotional, and nervous disorders, whether these are behavioral, cognitive, or affective, within the context of the individual's relationships. Individual, marriage and family therapy is offered directly to the general public or through organizations, either public or private for a fee or through pro bono work.

Programs / Services Provided:

- To encourage continued professional growth
- To encourage professional awareness
- To provide an introduction to the professional community for therapists new to Guam.

P.O. Box 3889
Hagatna, Guam 96932

Type:	NGO
Sector / Category:	PS
Type of Service:	Coord
Areas Served:	Micronesian Islands

Guam Coalition Against Sexual Assault and Family Violence

http://guamcoalition.org/index.html

671-479-2277

Overview:
To address sexual assault and family violence issues with one united voice. The Coalition includes members from various public, private, NGO, Guam, and Federal organizations.

Programs / Services Provided:

- Offers programs to help stop sexual assault and domestic violence. Also, they offer programs to help victims of assault and violence.

194 Hernan Cortez Ave., Suite 209
Hagatna, Guam 96910

P.O. Box 1093
Hagatna, GU 96932

Type:	JPP
Sector / Category:	SSP
Type of Service:	Care
Areas Served:	Guam

Guam Dental Association

website 671-646-5824

Overview:	Programs / Services Provided:	Type:	NGO
No information provided / available.	667 Marine Drive, Suite 204 Tamuning, Guam 96911	Sector / Category:	PS
		Type of Service:	Coord
		Areas Served:	Guam

Guam Diabetes Association

http://www.guamdiabetes.org/ 671-477-7776

Overview:	Programs / Services Provided:	Type:	NGO
Our vision is to inspire the people of Guam to take the effects of diabetes seriously, and see a decrease in our island's prevalence rate of diabetes.	■ Provide support for those with diabetes. Offer informational seminars on prevention of diabetes and treating diabetes. Mailing Address: P.O. Box 9909 Tamuning, Guam 96931	Sector / Category:	RE
		Type ofService:	Education, Support, Information
		Areas Served:	Guam

Guam Legal Services Corporation – Disability Law Center

http://www.lawhelp.org/GU/ 671-477-3416

Overview:	Programs / Services Provided:	Type:	NGO
Guam Legal Services Corporation – Disability Law Center is Guam's Protection and Advocacy agency mandated to promote and protect the legal and human rights of individuals with physical and/or mental disability, and is authorized under applicable federal and local laws to protect and promote the human, civil and legal rights of individuals with mental illness and/or developmental and other disabilities through legally based advocacy. It cannot provide representation in criminal matters or in matters where the client is seeking monetary compensation.	■ Protection and Advocacy for Individuals with Mental Illness (PAIMI) ■ Protection and Advocacy for Individuals with Developmental Disabilities (PADD) ■ Protection and Advocacy for Individual Rights (PAIR) ■ Protection and Advocacy for Assistive Technology (PAAT) ■ Protection and Advocacy for Individuals with Traumatic Brain Injury (PATBI) ■ Protection and Advocacy for Beneficiaries of Social Security (PABSS) ■ Protection and Advocacy for Voting Access (PAVA) 113 Bradley Place Hagatna, Guam 96910	Sector / Category:	SSS
		Type ofService:	Legal
		Areas Served:	GU

Guam Medical Association

http://www.gma-assn.org/ 671-483-6600

Overview:	Programs / Services Provided:		
The Guam Medical Association strives to promote the art and science of medicine and serve as a strong advocate for our patients to improve the health of our community so we can help doctors help patients by uniting physicians on Guam to work on the most important professional and public health issues.	Address No information provided / available	Type:	NGO
		Sector / Category:	PS
		Type of Service:	Coord
		Areas Served:	Guam, Other U.S. Areas

Guam Nurses Association

website 671-477-6877

Overview:	Programs / Services Provided:		
The general purpose of the association is to work for the improvement of health standards and the availability of health care services for all people, to foster high standards of nursing care, and to stimulate and promote the professional development and economic and general welfare of nurses.	■ Scholarships for nursing students, continuing education for professional development, health screenings at health fairs, research and other health topic presentations, donations to health related causes. P.O. Box CG Hagatna, GUAM 96932	Type:	NGO
		Sector / Category:	PS
		Type of Service:	Coordination
		Areas Served:	Guam, Other U.S. Areas

Guam Pharmacists Association

671-646-5556

Overview:	Programs / Services Provided:		
A professional group for pharmacists that promotes patient care settings for optimal medication use that improves health, wellness, and quality of life. Through information, education, and advocacy it empowers its members to improve medication use and advance patient care	P.O. Box 315998 Tamuning, Guam, 96931	Type:	NGO
		Sector / Category:	PS
		Type of Service:	Coordination
		Areas Served:	Guam, Other U.S. Areas

Guam's Positive Parents Together

http://www.guampirc.org/gppt.html 671-653-7991 671-777-7991

Overview:	Programs / Services Provided:		
To support and empower families who have children with disabilities, and to provide one voice and one vision for all children with disabilities on Guam.	■ Help families and individuals with disabilities by providing a better life through activities and financial support. They are a division of Parent Information Resource Center (PIRC). Address No information provided / available.	Type:	NGO
		Sector / Category:	SSP
		Type of Service:	Care
		Areas Served:	Guam

Guam Psychological Association

671-617-5315

Overview:	Programs / Services Provided:	
Based in Washington, DC, the American Psychological Association (APA) is a scientific and professional organization that represents psychology in the United States. With more than 150,000 members, APA is the largest association of psychologists worldwide. Through its divisions in 53 subfields of psychology and affiliations with 60 state, territorial and Canadian provincial associations, APA works to advance psychology as a science, as a profession and as a means of promoting health, education and human welfare.	■ To advance psychology as a science and profession and as a means of promoting health, education, and human welfare. APA supports membership interests through its directorates and central offices - Practice, Science, Education and Public Interest - as well as through its meetings, journals, newsletters, books, e-products, continuing education programs, training and accrediting activities. Members also benefit from APA's federal legislative and regulatory advocacy, media relations, as well as an ethics education program. Dept. of Mental Health & Substance Abuse 790 Governor Carlos Camacho Road Tamuning, GU 96931	Type: NGO Sector / Category: PS Type of Service: Coordination Areas Served: Guam

Guma' Mami

http://www.gumamami.org/

671-477-1505
671-477-1757

Overview:	Programs / Services Provided:	
Guma' Mami, Inc., is a non-profit local organization whose mission is to facilitate the full inclusion and integration of individuals with developmental disabilities and mental illnesses into their communities through individual and family supports.	■ Planning Alternative Tomorrows with Hope (PATH) helps participants to map out the vision of their future through the support of friends, family, and the community. ■ Guma' Mami's Community Homes (also known as the Mary Clare Home or the Independent Group Home) provide a family living environment, where adults share a home in the community with four peers, under the supervision of caring staff. ■ Sagan Mami empowers members through peer-operated programs that provide education, advocacy, leadership, support, and information. ■ STOP Violence Against Older and Women with Disabilities, places emphasis on prevention, awareness and capacity-building activities, legal services, as well as support groups and education for women with disabilities and seniors who are victims of domestic violence and abuse.	Type: NGO Sector / Category: RE, SSP Type of Service: Support Areas Served: Guam

	Physical Address: 117-A Chalan Guma' Yu'os, Room 5 Sinajana Community Center, Sinajana Mailing Address: Guma' Mami, Inc. P.O. Box FN Hagatna, Guam 96932	

Inafa' Maolek

http://ladygeek.biz/inafamaolek/ 671-475-1977

Overview: Inafa'Maolek is a conflict resolution organization dedicated to reducing violence related litigations and fostering peace and harmony in schools, Workplaces, and communities.	Programs / Services Provided: ■ Seminars to high schools about dating violence, bullying, hate crimes, suicide, sexual harassment, rumors, peer pressure and bulimia. P.O. Box 3267 Hagatna, Guam 96932	Type: NGO Sector / Category: SSP Type of Service: Treat, Safe, Care Areas Served: Guam

Kusinan Kamalen Karidat

671-472-4569
671-777-5433

Overview: Kusinan Kamalen Karidat is a ministry of the Archdiocese of Agana dedicated to feeding Guam's homeless brethren through its soup kitchen across Julale Shopping Center in Hagåtña. Without fail, seven days a week, 365 days a year, Kamalen Karidat's humble staff and volunteers feed and clothe Guam's homeless.	Programs / Services Provided: Address No information provided / available.	Type: NGO Sector / Category: SSP Type of Service: Care Areas Served: Guam

Make a Wish Foundation, Guam Chapter

http://www.guamwish.org/ 671-649-9474

Overview: Committed to reaching every eligible child and granting his or her heartfelt wish. With the child's imagination driving the process, our wish volunteers are dedicated to making the wish an experience that lasts a lifetime for everyone involved. Any child between the ages of 2 1/2 to 18 with a life-threatening illness may be eligible for a wish. Such an illness need not be terminal.	Programs / Services Provided: 590 South Marine Corps Drive ITC Building, Suite 125 Tamuning, GU 96913	Type: NGO Sector / Category: SSP Type of Service: Care Areas Served: Guam, Other U.S. Areas

National Association of Social Workers Guam Chapter

www.socialworkers.org 671-735-2878

Overview:	Programs / Services Provided:		
To promote quality, integrity, unification and effectiveness of the Social Work profession while supporting social workers in their mission to serve diverse populations and to ensure justice, equality, and opportunity for all citizens of the state.	■ National Family Caregiver Support Program ■ Fight to promote and protect the rights for social workers. College Of Nursing & Health Sciences Mangilao 96923, Guam	Type:	NGO
		Sector / Category:	PS
		Type of Service:	Coordination
		Areas Served:	Guam, Western Pacific, Other U.S. Areas

Oasis Empowerment Center

http://www.oasisguam.net/ 671-646-5601

Overview:	Programs / Services Provided:		
We are committed to help Pacific Islanders become all they were created to be, especially by providing practical supportive services that lead to freedom from life-controlling or life-limiting problems. Essentially we are here to "love'em and launch'em" Truly all things are possible and its love that makes miracles happen.	■ Provide residential recovery counseling for women, life-skills training, supportive services and job training. ■ For individuals with disabilities, we also operate a supported employment project and job coaching services. ■ The prevention project: THE OPEN COALITION is working to address the problems of heavy alcohol consumption throughout the islands through social marketing campaigns. ■ The DREAM CENTER is working to promote positive mentoring relationships that help people enter more fully into ABUNDANT LIVING. Address No information provided / available.	Type:	NGO
		Sector / Category:	RE
		Type of Service:	Rehabilitation
		Areas Served:	Guam

Pacific Islands AIDS Foundation (PIAF)

http://www.pacificaids.org/

Rarotonga: 682-23-102
Fiji: 679-666-0064

Overview:
To improve the quality of life for people living with HIV and AIDS, and to ensure that people with HIV play a central role in HIV education and advocacy. PIAF is also committed to eradicating discrimination against people living with HIV and to reducing the number of new cases.

Programs / Services Provided:

- AIDS Ambassadors Training is a two-week training session about legal and human rights, life skills, public advocacy, and treatment.
- The B.I.B.L.E. Project (Building Incredibly Beautiful Lives Enthusiastically) is designed to provide a combination of therapies to help people living with HIV learn or regain life skills. The project aims to build peer support and group counseling for HIV positive people.
- The Hardship Grant program provides emergency or temporary relief assistance to people living with HIV.
- PIAFilms is a multimedia effort featuring HIV positive Pacific Islanders.

P.O. Box 888
Rarotonga, Cook Islands

Type:	NGO
Sector / Category:	SSP
Type of Service:	HIV / AIDS Support
Areas Served:	Pacific Islands

Pacific Island Health Officers Association (PIHOA)

http://www.pihoa.org/

671-734-3338

Overview:
Dedicated to improving the health and well-being of its communities by providing, through consensus, a unified credible voice on health issues of regional significance.

Programs / Services Provided:

- They serve as the regional health policy body for the U.S. affiliated Pacific Islands.

PIHOA Regional Laboratory Coordinator

P.O. Box 5314
Mangilao, Guam 96923

Type:	NGO
Sector / Category:	HS
Type of Service:	Coordination
Areas Served:	Pacific Islands

Pacific Islands Primary Care Association

1 808 536-8442 ext. 221

Overview:

No information provided / available.

Programs / Services Provided:

- They are a subdivision of the Association of Asian Pacific Community Health Organizations (AAPCHO). They promote and support quality health care to the U.S. affiliated pacific islands.

345 Queen Street # 601
Honolulu, HI 96813-4715

Type:	NGO
Sector / Category:	PS
Type of Service:	Coordination
Areas Served:	Pacific

Payu-ta

http://sanctuaryguam.org/payutainc/index.html 671-475-7101

Overview:
Payu-ta is Guam's umbrella association of non-governmental organizations. It was founded on 2007 to address the need to enhance the services and effectiveness of non-governmental agencies in Guam. It is a support system that promotes and strengthens member organizations' capacity and advocates for a progressive and sustainable Guam community.

Programs / Services Provided:

406 Mai Mai Road
Chalan Pago, Guam 96910

Type:	NGO
Sector / Category:	SSS
Type of Service:	Coordination
Areas Served:	Micronesia
Sector / Category:	
Type of Service:	
Areas Served:	

Salvation Army – Guam Community

http://salvationarmy-guam.org/ 671-477-9872

Overview:
The Salvation Army is an integral part of the Christian Church, although distinctive in government and practice. The Army's doctrine follows the mainstream of Christian belief and its articles of faith emphasize God's saving purposes. Its objects are 'the advancement of the Christian religion... of education, the relief of poverty, and other charitable objects beneficial to society or the community of mankind as a whole.

Programs / Services Provided:

- Emergency assistance
- Adult and youth program services
- Correctional services
- Worship center
- Health services
- Family counseling services
- Disaster services

Corten Torres Street
Mangilao, Guam

Type:	NGO
Sector / Category:	SSP
Type ofService:	Rehab, Care
Areas Served:	Guam, Western Pacific, Other U.S. Areas

Sanctuary, Incorporated

http://www.sanctuaryguam.org/ 671-475-7101

Overview:
A community-based organization which exists to improve the quality of life for Guam's youth, to promote reconciliation during times of family conflicts, to foster the development of responsible community members, and to advocate for their needs in an effort to preserve family unity by providing 24-hour crisis intervention services, temporary safe refuge during family conflicts and abuse, supportive counseling for youth and families, outreach, education and prevention programs.

Programs / Services Provided:

- Youth shelter
- Crisis Hotline
- Casework and counseling
- After Care
- AmeriCorps

406 MaiMai Road
Chalan Pago, Guam 96910

Type:	NGO
Sector / Category:	SSP
Type of Service:	Treat, Safe, Care
Areas Served:	Guam

Sustantia Program, SDA Wellness Center

http://sustantia.org/home.php 671-898-7698

Overview:
The Sustantia Project encourages parents and children to engage in healthy eating and active living to help end childhood obesity on Guam.

Programs / Services Provided:

- Sustantia addresses the problem of obesity by helping parents and children access affordable nutritious food, as well as safe places to play.
- The SPARK (Sports, Physical Activity, and Recreation, Kommunidat) program encourages children to participate in recreation sports and physical activity.
- SPARK has an "Adopt-a-Playground" and "Playground Watch" program.

290 Chalan Palasyo Street
Agana Heights, Guam 96910

Type:	NGO
Sector / Category:	HS
Type of Service:	Education, Volunteer
Areas Served:	Guam

Victim Advocates Reaching Out (VARO)

http://varoguam.com/ 671-477-5552

Overview:
A non-profit volunteer corporation that provides services to victims and families of Domestic violence, Sexual assault, Abuse, Violent crime and traumatic events. It is our mission to respond to all victims of violent crime and trauma, and to elevate the stature of women and children on our island, those most often victimized by physical and sexual abuse. It is our hope that through our services of intervention, education and awareness we will lessen the need for crisis intervention for future generations.

Programs / Services Provided:

PO Box 2045
Hagatna, Guam 96932

Type:	NGO
Sector / Category:	SSP
Type of Service:	Treat, Safe, Care
Areas Served:	Guam

A.4 Private Providers

Advanced Chiropractic

http://guamchiropractor.wordpress.com/ 671-649-0545

Overview: Advanced Chiropractic specializes in: ■ Auto Accidents, ■ Work Injuries, ■ Neck Pain, ■ Back Pain, ■ Headaches	Programs / Services Provided: ■ Chiropractic services 267 S Marine Corps Dr Ste 2G Tamuning, Guam	Type: PP Sector / Category: HP Type of Service: Treat, Rehab, Care Areas Served: Guam

American Medical Center, LLC

http://www.americanmedicalcenter.net/ 671-647-8262

Overview: Provide services in pediatrics (neonatal care, immunizations, school physicals, learning and physical development, and adolescent care), internal medicine (cancer screening, diabetes management, high blood pressure treatment, executive health physicals, women's health evaluation, and treatment of STDs), and family medicine (well-child checkups, toddler care, modification of risk factors for heart disease, tuberculosis screening, general medical evaluations for children and adults, and end-of-life care). The facility also has a fully-equipped Triage Room, minor surgery suites, and a community pharmacy.	Programs / Services Provided: ■ Pediatrics ■ Internal medicine ■ Family medicine 1244 North Marine Corps Drive Upper Tumon, Guam 96913 Accepts Medicare	Type: PP Sector / Category: HP Type of Service: Treat, Care Areas Served: Guam

Cancer Center of Guam

website 671-647-4656

Overview: No information provided / available.	Programs / Services Provided: 633 Governor Carlos Camacho Road, Suite 1 Guam Medical Plaza Tamuning, Guam 96913	Type: PP Sector / Category: HP Type of Service: Treat, Care Areas Served: Western Pacific

Diagnostic Laboratory Services Inc.

http://www.dislab.com/ 808 589-5100

Overview:	Programs / Services Provided:		
A full service medical testing laboratory offering a comprehensive range of routine and esoteric clinical testing services, forensic toxicology and substance abuse testing services. Through our relationship with Hawaii Pathologists Laboratory (HPL) we also offer a full range of anatomic pathology services, including pathology consultation. Also offer a comprehensive benefits package including medical, drug, vision, dental, and insurance.	■ Diagnostic testing Multiple locations Accepts Medicare, Medicaid, and MIP	Type:	PP
		Sector / Category:	HP
		Type of Service:	Test
		Areas Served:	Western Pacific

FHP Health Center

http://www.takecareasia.com 671-646-5824

Overview:	Programs / Services Provided:		
FHP Health Center integrates complete and optimized healthcare solutions under one trusted family brand. For over 35 years, FHP has blossomed to encompass twelve Centers of Medical Care on Guam and Saipan, giving you region-wide access to complete medical attention.	■ Pediatrics ■ Adult Medicine ■ Radiology ■ Surgicenter ■ Urgent Care ■ Occupational Health Services ■ Vision Center ■ Dental Center ■ Women's Center ■ Home Health ■ Cancer Center ■ Pharmacy 548 South Marine Drive, Annex Building Tamuning, Guam 96911 Accepts Medicaid, No Medicare	Type:	PP
		Sector / Category:	HP
		Type of Service:	Treat, Care
		Areas Served:	Western Pacific
		Sector / Category:	
		Type of Service:	
		Areas Served:	

Guam Adult and Pediatric Clinic

671-633-4272

Overview:	Programs / Services Provided:	Type:
Provides primary care and testing / treatment for adults and youth.	612 N Marine Corps Dr., Suite 8 Dededo, Guam 96929	Sector / Category:
		Type of Service: Treat, Care
		Areas Served:

Guam Health and Wellness Chiropractic Center

http://www.guamchiropractic.com/ 671-646-2225

Overview:	Programs / Services Provided:	Type: PP
We believe in holistic healing, bringing you to your healthiest state, so that your body can heal itself naturally without the use of medication.	■ Chiropractic Care ■ Physical Therapies ■ Detoxification ■ Stretching ■ Active Release Technology ■ Activator Adjusting Technique ■ Cranial Sacral Therapy ■ Trigger Point Therapy 1023 N. Marine Drive Tumon View Plaza Suite A4	Sector / Category: HP
		Type of Service: Treat, Care
		Areas Served: Guam

Guam Healthcare and Hospital Development Foundation		671-688-7476 671-777-2668
Overview: Provide quality health care on Guam and foster the development of a private hospital on Guam. The Foundation has been successful in fostering the use of telemedicine on Guam and helping to facilitate the passage of Guam's first Telemedicine Act. The foundation has also sponsored several health care conferences and collaborated with other organizations for the purpose of acquiring donations of medical equipment to Guam Memorial Hospital.	Programs / Services Provided: Address No information provided / available	Type: NGO Sector / Category: HP Type of Service: Coordination Areas Served: Guam

Guam Medical Care, LLC		671-647-4174
Overview: Provides an urgent care clinic and ambulatory health care facilities	Programs / Services Provided: 744 N Marine Dr Suite 105 Tamuning , GU 96913	Type: PP Sector / Category: HP Type of Service: Treat, Care Areas Served: Guam

Guam Orthopedic Associates		671-646-6610
Overview: No information provided / available.	Programs / Services Provided: Address: Guam Medical Plaza, Ste. 212 Tamuning, GU 96913	Type: PP Sector / Category: HP Type of Service: Treat, Rehab, Care Areas Served: Guam

Guam Polyclinic		671-646-6822 / 6623
Overview: A multiservice location which includes a dental center, gynecology clinic, pregnancy clinic, abortion clinic, an on-site civil surgeon	Programs / Services Provided: 138 Ypao Road Tamuning, Guam 96931	Type: PP Sector / Category: HP Type of Service: Treat, Care Areas Served: Guam

Guam Radiology Consultants

http://www.guamradiology.com/ 671-649-1001

Overview:
Provide advanced imaging, including MRI and CAT scan as well as routine x-rays, 2D Echocardiography, advanced digital Holter monitoring, high resolution ultrasound - including 4-D, Fluoroscopy (upper GI and barium enema exams), Bone Mineral Density studies and mammography with computer aided diagnosis. Our interventional team offers a line of services including biopsies, angiograms with angioplasty and stent placement without the need to be hospitalized. Uterine artery embolization, interarterial chemotherapy and declotting of dialysis access grafts and fistulas can all be completed without the need to be admitted to a hospital.

Programs / Services Provided:

Guam Medical Plaza
633 Carlos Camacho Rd., Suite 210
Tamuning, Guam 96913 USA

Type:	PP
Sector / Category:	HP
Type of Service:	Test
Areas Served:	Western Pacific

Guam Renal Care

http://www.guamdialysis.com/facilities.html#renal 671-475-3600

Overview:
A free-standing hemodialysis facility that provides hemodialysis services with 20 stations, including a separate isolation area for those patients who are hepatitis positive. The facility is Medicare certified and has maintained a relationship with the Western Pacific Renal Network #17. This certification and relationship with the Network indicate that our facility meets federal regulations and clinical standards.

Programs / Services Provided:

265 Chalan Santo Papa
Hagatna, Guam 96910

Accepts Medicare, Medicaid, and MIP

Type:	PP
Sector / Category:	HP
Type of Service:	Treat
Areas Served:	Western Pacific

Guam Seventh Day Adventist Wellness Center

http://www.guamsda.com/moxie/wellness/index.shtml 671-646-8881

Overview:
Part of the Guam Seventh-Day Adventist Clinic provides health care services to the community of Guam. The clinic also includes a medical department, dental clinic, eye clinic. The wellness center includes a clinical preventionist and nutrition specialist who practices lifestyle and nutritional medicine for the management and reversal of diabetes, cardiovascular diseases, metabolic syndrome, osteoporosis, obesity, women's health, stress related disorders, and other lifestyle related disorders.

Programs / Services Provided:

- Wellness center and counseling
- Nutrition services
- Dental clinic
- Eye clinic

388 Ypao Road
Tamuning Guam 96911

Type:	NGO
Sector / Category:	HP
Type of Service:	Treat, Care
Areas Served:	Western Pacific

Guam Sleep Center

http://www.guamsleepcenter.com/ 671-647-6669

Overview:	Programs / Services Provided:		
Provides sleep studies and monitors sleep activity to determine various sleep disorders, sleep complaints, or daytime sleepiness.	■ Sleep studies ■ Counseling Address: Pia Marine # 609, 193 Tumon Ln. Tamuning, Guam 96921	Type:	PP
		Sector / Category:	HP
		Type of Service:	Treat
		Areas Served:	Guam

Guam Surgicenter

http://guamsurgicenter.com/ 671-646-3855

Overview:	Programs / Services Provided:		
A medical facility equipped for outpatient care that conducts surgical procedures for children and adults. Over 60 percent of all types of surgery can be safely performed here. The most common procedures include general surgery, gynecological, orthopedic, plastic, dental and oral, hand, eye, ear, nose and throat, and colon and rectal surgeries, as well as pain management.	■ Outpatient surgery Guam Medical Plaza 633 Governor Carlos Camacho Road, Suite 101 Tamuning, Guam 96913 Accepts Medicare	Type:	PP
		Sector / Category:	HP
		Type of Service:	Treat, Care
		Areas Served:	Guam

Harmon Doctor's Clinic

671-637-1777

Overview:	Programs / Services Provided:		
Provides ambulatory health care facilities, health service, clinical services, and has an on-site civil surgeon	■ Health clinic 2214 Army Drive Dededo, GU 96929	Type:	PP
		Sector / Category:	HP
		Type of Service:	Treat, Care
		Areas Served:	Guam

Health Partners, LLC

http://healthpartnersguam.com/ 671-646-5227 / 5228

Overview:	Programs / Services Provided:		
Provide a comprehensive range of clinical and public health services including diagnostic, therapeutic, and ancillary clinical services, technical assistance in health program development, management, and evaluation, and provides technical assistance to the Guam community for controlling the tobacco epidemic.	■ Health clinic ■ Tobacco cessation ITC Building 590 South Marine Corps Drive, Suite 226 Tamuning, Guam 96913	Type:	PP
		Sector / Category:	HP
		Type of Service:	Treat, Care
		Areas Served:	Guam

Health Services of the Pacific

http://www.hspguam.com/ 671-647-5355 / 5356

Overview:
Provides a wide range of in-home services including skilled nursing care (nutrition management, infection treatment, medication management and monitoring, etc.), physical, occupational, and speech rehabilitation, medical social worker, registered dietician, respiratory therapist, chronic disease management (diabetes, respiratory, and heart), patient education, and Hospice Care.

Programs / Services Provided:
- Skilled nursing care
- Therapy
- Hospice care

384 Gov. Carlos Camacho Road
Tamuning, GU 96913

Accepts Medicare, Medicaid, MIP

Type:	PP
Sector / Category:	HP, SSP
Type of Service:	Treat, Care
Areas Served:	Guam

Isla Chiropractic Clinic

website 671-649-6822 / 6823

Overview:
Specializes in difficult chronic cases, including slipped disc, pinched nerve, neck pain, whiplash injuries, muscle spasms, numbness, headache, arm and leg pain, and lower back pain.

Programs / Services Provided:
- Chiropractic services

388 South Marine Corps Drive, Suite 101

Type:	PP
Sector / Category:	HP
Type of Service:	Treat, Rehab
Areas Served:	Guam

Isla Pediatrics

671-647-4466
671-647-8495

Overview:
Provides general pediatric care

Programs / Services Provided:

132 East Espiritu Street
Tamuning, GU 96913

Type:	PP
Sector / Category:	HP
Type of Service:	Treat, Care
Areas Served:	Guam

Island Eye Center

671-647-5381

Overview:
Allopathic & Osteopathic Physicians Ophthalmology

Programs / Services Provided:
- Ophthalmology

Address: 415 214 Chalan San Antonio
Tamuning GU 96913

Accepts Medicare

Type:	PP
Sector / Category:	HP
Type of Service:	Treat, Care
Areas Served:	Guam

Island Cancer Center

http://www.islandcancercenter.com/ 671-646-3363

Overview:	Programs / Services Provided:		
The Island Cancer Center is an extension of the Guam Surgicenter. The Center specializes in radiation and intensity modulated radiation therapy to treat cancer patients. The Island Cancer Center works with all cancer care specialists on Guam and the broader medical community to collaboratively provide each patient with the best cancer care.	■ Radiation therapy Guam Medical Plaza 633 Governor Carlos Camacho Road, Suite G-1 Tamuning, Guam 96913	Type:	PP
		Sector / Category:	HP
		Type of Service:	Treat, Care
		Areas Served:	Guam

Island Surgical Center

671-646-0441/3

Overview:	Programs / Services Provided:		
Provides specialty surgical services.	633 Governor Carlos Camacho Road Tamuning, GU 96911	Type:	PP
		Sector / Category:	HP
		Type of Service:	Treat, Care
		Areas Served:	Guam
		Sector / Category:	HP
		Type of Service:	Treat, Care
		Areas Served:	Guam
		Sector / Category:	HP
		Type of Service:	Treat, Care
		Areas Served:	Guam

Latte Treatment Center LLC

http://lattecenter.com/ 671-647-5390

Overview:	Programs / Services Provided:		
Latte Treatment Center, LLC specializes in providing treatment services for children and youth with severe behavioral and emotional problems that may pose a danger to themselves or others. Latte operates a group home and respite service that is open twenty-four hours a day, seven days a week. The day treatment center operates a flexible schedule to meet the needs of parents and clients.	■ Behavioral counseling 306 Father Duenas Drive Tamuning, Guam 96913	Type:	PP
		Sector / Category:	HP
		Type of Service:	Treat, Care
		Areas Served:	Guam

LOHAS Chiropractic Clinic

http://www.lohaschiroguam.com/ 671-649-4871

Overview:	Programs / Services Provided:	Type:	PP
Provide superior health and balance through chiropractic care, and now offers the newest and most up to date 12 watt Class 4 high powered therapeutic laser on the market.	■ Chiropractic services 782 South Marine Corps Drive Tamuning, Guam 96913	Sector / Category:	HP
		Type of Service:	Treat, Rehab, Care
		Areas Served:	Guam

Larkin Family Chiropractic

website Dededo: 671-633-2225
Agana Heights: 671-472-2225

Overview:	Programs / Services Provided:	Type:	PP
No information provided / available.	■ Chiropractic services 330 W Marine Corps Drive, Suite 4 Dededo, Guam 96929	Sector / Category:	HP
		Type of Service:	Treat, Rehab, Care
		Areas Served:	Guam

Pacific Life Chiropractic

671-649-9355

Overview:	Programs / Services Provided:	Type:	PP
Family wellness care for infants, children, and adults including auto, work, and sports injuries.	■ Chiropractic services 761 S Marine Dr Cen-Tam Bldg, Suite A6 Tamuning, Guam	Sector / Category:	HP
		Type of Service:	Treat, Rehab, Care
		Areas Served:	Guam

Polymedic Clinic		Dededo: 671-637-9661 Tumon: 671-646-2185
Overview: Physicians and surgeons	Programs / Services Provided: ■ Primary care Address: 172 Buena Vista Avenue Dededo, GU. 96929 816 North Marine Corps Drive Ste 108 Tumon, GU. 96913	Type: PP Sector / Category: HP Type of Service: Treat, Care Areas Served: Guam
MPG Pediatrics		671-648-5437
Overview: No information provided / available.	Programs / Services Provided: 396 Chalan San Antonio Suite 103 Antonio Bldg. Tamuning, Guam 96913	Type: PP Sector / Category: HP Type of Service: Treat, Care Areas Served: Guam
Marianas Physicians Group		671-647-1830
Overview: Provides obstetrics, gynecology, and other services including surgeries.	Programs / Services Provided: ■ Internal medicine 472 Chalan San Antonio Tamuning, GU 96913	Type: PP Sector / Category: HP Type of Service: Treat, Care Areas Served: Guam
Medical Corner		Phone Number-
Overview: Medical clinic services including physicals, check-ups, etc.	Programs / Services Provided: ■ Primary care Address No information provided / available.	Type: PP Sector / Category: HP Type of Service: Treat, Care Areas Served: Guam

Ohana Island Care

671-789-9642

Overview:	Programs / Services Provided:	Type:	PP
Perinatal & Prenatal Yoga Qi classes Hypnobirthing classes Couples Preparing for Birth Classes Nutrition & Lactation Consultation Music Therapy & Birthing Ball Perinatal & Prenatal TuNai Massage Acu-therapy Fertility Consultation Herbs & Homeopathy	■ Perinatal and prenatal care Address No information provided / available.	Sector / Category:	HP
		Type of Service:	Care
		Areas Served:	Guam

The Neurology Clinic

671-646-6463

Overview:	Programs / Services Provided:	Type:	PP
Board certified pediatric and adult neurology	■ Neurological services Address No information provided / available.	Sector / Category:	HP
		Type of Service:	Treat, Rehab, Care
		Areas Served:	Guam

PMC Isla Health Systems

671-647-6201

Overview:	Programs / Services Provided:	Type:	PP
Urgent Primary Care, Family Care, Internal Medicine, Outpatient Medical Center. Offering Adult and Family Medicine on Guam since 1992, with U.S. trained & Board Certified physicians in Internal Medicine, Pediatrics, Family Practice & Ob/Gyn.	■ Primary care ■ Family medicine 177-C Chalan Pasaheru Tamuning, Guam 96911	Sector / Category:	HP
		Type of Service:	Treat, Care
		Areas Served:	Guam

Pacific Medical Group

671-649-7232

Overview:	Programs / Services Provided:	Type:	PP
Specialties at the clinic include: Internal Medicine, Family Practice, Nephrology (Kidney Disease), Hemodialysis, Peritoneal Dialysis, Hypertension, Pulmonology (Lung Disease), Pulmonary Function Testing, Sleep Disorders, Geriatrics (Elderly Medicine), Wound Care, Medical Weigh Management, and Women's Health.	■ Internal medicine ■ Family practice Guam Medical Plaza, Suite 205 Gov. Carlos Camacho Road Tamuning The clinic accepts Medicare, Staywell, Pacificare, Netcare, CalvoSelectCare, Nanbo, VA, MIP/Medicaid, Tricare/Champus, and many off-island insurance plans.	Sector / Category:	HP
		Type of Service:	Treat, Care
		Areas Served:	Guam

Pacific Sleep Center

http://www.guamhealthcareservices.com/sleep.html

671-649-3002

Overview:
Provides sleep diagnostic evaluations, or polysomnograms, which are recording processes utilizing several types of instruments in order to identify different sleep stages and classify various sleep problems. Services offered include sleep studies, EEG, ABI, NCT / EMG, and pulse oximetry testing. Pacific Medical Group offers, among other services, pulmonary function testing, wound care, women's health, general or annual physical exams, adult vaccinations, and nutrition consultation by certified dietitian.

Programs / Services Provided:
- Sleep disorder studies

650 Gov. Carlos Camacho Rd. Suite B-4
Guam Medical Plaza
Tamuning, Guam, 96913

Type:	PP
Sector / Category:	HP
Type of Service:	Treat, Care
Areas Served:	Western Pacific

Pediatric and Adolescents Clinic

671-647-7337
671-647-8336

Overview:
No information provided / available.

Programs / Services Provided:

Pemar Place Suite 101
472 Chalan San Antonio
Tamuning, Guam 96913

Type:	PP
Sector / Category:	HP
Type of Service:	Treat, Care
Areas Served:	Guam

Pregnancy Control Clinic

http://guamabortionclinic.com/

671-646-6111
671-647-1313

Overview:
Services provided infertility, sexual dysfunction, pap smears, sexually transmitted diseases, ultrasound, colposcopy, and legal abortions.

Programs / Services Provided:
- Family planning
- STD treatment and care

Guam Polyclinic
#138 Ypao Road
Tamuning, Guam 96931

Type:	PP
Sector / Category:	HP, SSP
Type of Service:	Treat, Care
Areas Served:	Guam

Primary Pediatric Care

671-646-2181 / 2185 /
617-637-9661

Overview:
No information provided / available.

Programs / Services Provided:
- Pediatrics

172 Buena Vista Avenue
Dededo, Guam 96929

Type:	PP
Sector / Category:	HP
Type of Service:	Treat, Care
Areas Served:	Guam

Sagua Managu

671-648-6363

Overview:	Programs / Services Provided:		
Guam's first birthing center that focuses on providing the best birthing experience for mothers. Each of the seven birthing rooms includes an incubator and bassinet, hospital bed for the mother, private bathroom with bathtub, and a medicine cabinet. Other amenities are also featured to give the home-away-from-home feel. Only normal deliveries are possible, and surgical deliveries are not accommodated at the center. In an emergency, patients are taken to Guam Memorial Hospital, just a few minutes away.	■ Birthing center 472 Chalan San Antonio Pe Mar Place Tamuning , Guam - 96913	Type:	PP
		Sector / Category:	HP
		Type of Service:	Care
		Areas Served:	Guam
		Sector / Category:	HP
		Type of Service:	Treat, Care
		Areas Served:	Guam

The Doctors Clinic

671-300-0825 / 0828

Overview:	Programs / Services Provided:		
Allopathic & Osteopathic Physicians	■ Internal medicine ■ Family medicine ■ Podiatric medicine and surgery services Address: 851 Governor Carlos Camacho Road Tamuning, Guam 96913	Type:	PP
		Sector / Category:	HP
		Type of Service:	Treat, Care
		Areas Served:	Guam

Dr. Sheih & Associates, Thomas Sheih M.D. F.A.C.O.G.

http://shiehclinic.org/Home.php

671-648-2229

Overview:	Programs / Services Provided:		
Specializes in primary care for women, and we offer a wide range of services in addressing all concerns for women in the field of obstetrics and gynecology.	■ Primary care for women 643 Chalan San Antonio, Suite 108 Tamuning, Guam 96913	Type:	PP
		Sector / Category:	HP
		Type of Service:	Treat, Care
		Areas Served:	Guam

Tumon Medical Office

671-649-5052

Overview:	Programs / Services Provided:		
No information provided / available.	■ Family medicine 125 Carlos Lane Carlos Heights Upper Tumon, GU. 96913	Type:	PP
		Sector / Category:	HP
		Type of Service:	Treat, Care
		Areas Served:	Guam

Guam Women's Clinic http://www.guamwomensclinic.com/main/		671-649-7539 671-649-4496
Overview: A clinic for women relating to pregnancy, which includes a strong infertility program (and offers artificial insemination), birth control options such as the morning after pill, and termination of pregnancy.	Programs / Services Provided: ■ Infertility ■ Family planning Address No information provided / available.	Type: PP Sector / Category: HP Type of Service: Treat, Care Areas Served: Guam

A.5 Joint Public / Private Partnerships

Guam Coalition Against Sexual Assault & Family Violence

http://guamcoalition.org/ 671-479-2277

Overview:

- To address sexual assault and family violence issues with one united voice.
- To provide education, outreach and training regarding sexual assault and family violence
- To identify gaps in services to victims of sexual assault and family violence and to make suggestions for changes
- To speak out so that victims of sexual assault and family violence on Guam can easily get the services that they need.
- To work with community organizations and networks to strengthen them through training and education so that they can meet Guam's sexual assault and family needs.
- To be sure that voices of survivors of sexual assault and family violence guide the work of the coalition.
- To develop, put into practice, and monitor laws and regulations regarding service and rights of sexual assault and family violence survivors.

Programs / Services Provided:

- Community Advocate Training (CAT) Project – aims to build the Coalition's capacity to effectively provide victim services influenced by evidence-based strategies and best practices relating to SA and DV issues; develop a pool of trained, culturally competent community presenters, and; support Guam's underserved multi-ethnic communities with information on criminal sexual conduct and domestic violence laws, victim rights, and service resources.
- Capacity Building and Training (CBT) Project – provides member agencies and community partners with the technical support necessary to move their respective SA and DV programs forward. Through the CBT Project, the Coalition continues to work to build the capacity of its member agencies and community groups to improve services to victims of SA/DV in our island community
- Help stop sexual assault and domestic violence
- Help victims of assault and violence.

Address
No information provided / available.

Type:	JPP
Sector / Category:	SSS
Type of Service:	Education, Information, Support, Outreach, Advocacy
Areas Served:	Guam

Guam Homeless Coalition

Phone number

Overview:
The Guam Homeless Coalition is committed to the provision of housing and supportive services for individuals and families who become homeless. The Guam Homeless Coalition believes and recognizes that quality housing should be tailored to meet the needs of the homeless individuals and families.

Programs / Services Provided:

- Homeless services

Address
No information provided / available.

Type:	JPP
Sector / Category:	SSS
Type of Service:	Support
Areas Served:	Guam

A.6 Insurance Providers

NetCare

http://www.netcarelifeandhealth.com/index.html 671-472-3610

Overview:	Programs / Services Provided:		
NetCare provides fully insured as well as self-funded health plan solutions on Guam, the Commonwealth of the Northern Marianas Islands, Republic of Palau, Republic of the Marshall Islands and the Federated States of Micronesia.	■ Health insurance Julale Center 2nd Floor, Hagatna Mailing Address: NetCare Life and Health Insurance 424 West O'Brien Drive Julale Center Suite 200 Hagatna, Guam 96910	Type:	PP
		Sector / Category:	RE
		Type of Service:	Ins
		Areas Served:	Western Pacific

SelectCare

http://www.calvosinsurance.com/ 671-477-9808

Overview:	Programs / Services Provided:		
Provides life and health insurance (including dental) for the residents of Guam. Benefits of SelectCare insurance include airfare to centers of excellence, emergency benefits, maternity care, and well-baby care.	■ Health insurance Multiple locations	Type:	PP
		Sector / Category:	RE
		Type of Service:	Ins
		Areas Served:	Guam

Staywell

http://www.staywellguam.com/ 671-477-5091

Overview:	Programs / Services Provided:		
Provides health, auto, and home insurance for the residents of Guam and the CNMI	■ Health insurance 430 West Soledad Ave Hagatna, Guam 96910	Type:	PP
		Sector / Category:	RE
		Type of Service:	Ins
		Areas Served:	Western Pacific

TakeCare

http://www.takecareasia.com/ 671-647-3526

Overview:	Programs / Services Provided:		
The company aims to provide comfort, security and peace of mind through a system in control. TakeCare delivers exact and accurate results at a consistent convenience to its members. As an organization, we strive to be at the forefront of the industry, upholding high standards of quality, comprehensive care, compassion for all, and a range of options that put healthcare firmly in the hands of individuals and families.	■ Health insurance ■ FHP Health Clinic Multiple locations	Type:	PP
		Sector / Category:	RE, HS, HP
		Type of Service:	Ins,Treat, Care
		Areas Served:	Mariana Islands

A.7 Federal Agencies

Guam Office of Minority Health

http://minorityhealth.hhs.gov/ 671-797-6755

Overview:	Programs / Services Provided:		
Office is dedicated to improving the health of racial and ethnic minority populations through the development of health policies and programs that will help eliminate health disparities.	■ Promotes the collection of health data by racial, ethnic, and primary language categories and strengthening infrastructures for data collection, reporting, and sharing. ■ Works to increase awareness of the major health problems of racial and ethnic minorities and factors that influence health. ■ Establishes and strengthens networks, coalitions, and partnerships to identify and solve health problems. ■ Develops and promotes policies, programs, and practices to eliminate health disparities and achieve health equity. ■ Fosters research, demonstrations, scientific investigations, and evaluations aimed at improving health. ■ Funds demonstration programs that can inform health policy and the effectiveness of strategies for improving health.	**Type:**	**Federal**
		Sector / Category:	HS
		Type of Service:	**Assistance**
		Areas Served:	Other U.S. Areas

Guam Vet Center

http://www.vetcenter.va.gov/index.asp 671-472-7160

Overview:	Programs / Services Provided:		
We are the people in VA who welcome home war veterans with honor by providing quality readjustment counseling in a caring manner. Vet Centers understand and appreciate Veterans' war experiences while assisting them and their family members toward a successful post-war adjustment in or near their community.	■ Readjustment counseling is a wide range of psycho social services offered to eligible Veterans and their families in the effort to make a successful transition from military to civilian life. ■ Individual and group counseling for Veterans and their families ■ Family counseling for military related issues ■ Bereavement counseling for families who experience an active duty death ■ Military sexual trauma counseling and referral ■ Outreach and education including PDHRA, community events, etc. ■ Substance abuse assessment and referral ■ Employment assessment & referral ■ VBA benefits explanation and referral ■ Screening & referral for medical issues including TBI, depression, etc.	Type:	Fed
		Sector / Category:	SSS
		Type of Service:	Counseling
		Areas Served:	Guam

Naval Hospital Guam

http://www.med.navy.mil/sites/usnhguam/Pages/navalhospitalguam.aspx Customer Relations: 671-344-9719

Overview:	Programs / Services Provided:		
Our Navy Medicine Team provides world class health services in support of our nation's military mission—anytime, anywhere.	■ Health care services to people of Guam and those in the military stationed at the Guam Naval Base	Type:	Fed
		Sector / Category:	HS
		Type of Service:	Health Care, Treatment
		Areas Served:	Guam

Department of Veteran's Affairs Guam Community Based Outpatient Clinic

http://www.hawaii.va.gov/visitors/guam_cboc.asp 671-475-5760

Overview:
The purpose of the Community Based Outpatient Clinic (CBOC) is to provide primary health care to eligible veterans using available resources. Primary health care means non-emergency care for veterans with stable chronic health problems or minor acute illnesses. The CBOC is not equipped with emergency services. Emergency situations should be transferred to the Naval Hospital.

Programs / Services Provided:

- Primary care and mental health services
- Health care for veterans without having to go through security at the Naval Hospital

Type:	**Fed**
Sector / Category:	HS
Type of Service:	**Health Care, Treatment**
Areas Served:	Mariana Islands

Please see the next page.

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