

# **Guam Comprehensive Cancer Control Plan 2007-2012**



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A collaborative project of the  
**Guam Comprehensive Cancer Control Coalition**  
and the  
**Guam Comprehensive Cancer Control Program,**  
**Department of Public Health and Social Services**



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**GUAM  
COMPREHENSIVE  
CANCER CONTROL  
PLAN  
2007-2012  
OCTOBER 2007**

# Guam Comprehensive Cancer Control Plan 2007-2012



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Lieutenant Governor



## A MESSAGE FROM THE GOVERNOR AND LIEUTENANT GOVERNOR OF GUAM

*Hafa Adai!* Join us in defeating cancer by supporting the Guam Comprehensive Cancer Plan, created by the Guam Comprehensive Cancer Control Coalition. The most trusted medical professionals in our community came together to develop the direction toward a cancer-free Guam. Together, we can build upon our island's march against this disease by collaborating through this plan.

Cancer is the second-leading cause of death on Guam. It is a complex disease with no easy solution, which is what we work toward. Every day, people strive to bring awareness and defeat this disease. The result is a greater focus on cures, life-sustaining treatment, social care and prevention.

Our efforts as a community are bringing us closer each day to a cure, giving hope to all those affected by this disease. The battle against cancer is a community responsibility, driven now by a valuable plan. We must strengthen our resolve and commit to this plan so we can achieve a cancer-free Guam.

Thank you for doing your part and reading this plan.

*Sinsere van Magåhet,*

**FELIX P. CAMACHO**  
*I Muga' Låhen Guåham*  
Governor of Guam

**MICHAEL W. CRUZ, M.D.**  
*I Segundo Na Muga' Låhen Guåham*  
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## Guam Comprehensive Cancer Control Plan 2007-2012

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### Congress of the United States House of Representatives

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WILDLIFE AND OCEANS

SUBCOMMITTEE ON INSULAR AFFAIRS

ARMED SERVICES COMMITTEE

SUBCOMMITTEE ON READINESS  
SUBCOMMITTEE ON SEAPOWER  
AND EXPEDITIONARY FORCES

### *Hafa Adai*

Since my family first came to Guam, I have seen increased incidences of the many forms of cancer among our people. These increases have given rise to many efforts to raise an awareness of what has been traditionally suspected as cancer causing and to research into the epidemiology of this dreaded disease. All this to develop a scientific body of knowledge that can serve as a valuable resource and reference for future efforts. In this respect, I wish to express my extreme pride, joy and endorsement of the accomplishments of the Guam Comprehensive Cancer Control Coalition and its successful development of the Guam Comprehensive Cancer Control Plan for 2007-2012. This has been long needed and on behalf of the people of Guam, I extend a most Dangkulo Na' Si Yu'os Ma'ase.

Guam's Comprehensive Cancer Control Plan will be the road map and guiding light, over the next five years, in our efforts to reduce the cancer rates among our people and to attain improved health and quality of life for everyone, individuals, family and friends alike, touched by this dreaded disease. I am already encouraged by the progress achieved by everyone associated with the Plan and the Coalition. Their work has increased the level of confidence in the community that something is truly being done – not only to find cures, - but equally as important, - to develop ways and means to be able everyone to address all aspects of health while medical science continues its efforts. The battle against cancer requires the collective and collaborative efforts of everyone in the community if we are to achieve that final goal of "No More Cancer."

I commend every individual and organization who are members of the Guam Comprehensive Cancer Control Coalition and I encourage others, in the public, as well as, the private sector, to join the Coalition so that through a coordinated effort and working together, we can achieve our desired goals and objectives. Let us develop *and implement* an island cancer plan based on an intensified commitment to cooperation and collaboration. We must work together for any plan to succeed. I am personally grateful for all of the participants and every individual who helped in the formulating this blueprint for action and I look forward to ongoing collaboration as we begin implementing the objectives of this most important plan.

  
MADELEINE Z. BORDALLO  
Member of Congress

Letters of Support

**Guam Comprehensive Cancer Control Plan 2007-2012**

December 3, 2007

Dear Sir/Madam:

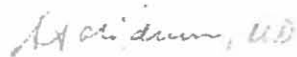
I want to recognize and applaud the pioneering spirit of the Guam Cancer Control Coalition (GCCCC) which is comprised of individuals and agencies both in the private and public sector in organizing Guam's Comprehensive Cancer Control Plan (GCCCCP).

My husband and I are both cancer survivors. We did not have direct history of cancer from our respective families. For some reasons which I tend to believe could be environmental, diet, stress or a combination thereof, we ended up with this dreaded disease.

We envision that with an aggressive implementation of the island's 7-pronged (Prevention, Early Screening, Treatment, Survivorship and Quality of Life, Data and Research, Financing and Insurance, and Policy and Advocacy) first Comprehensive Cancer Control Plan, through various ways and means which in effect will one day reduce the incidence (including mortality and morbidity from cancer) if not totally eradicate the disease; improved quality of life by promoting healthy lifestyles; create healthy environment, etc.

I would like to thank the Coalition's continuing concerted efforts and support on their commitment towards the implementation of Guam's five-year Comprehensive Cancer Control Plan. Rest assured that your efforts are very much appreciated.

Sincerely yours,



Dory Solidum, MD

Retired Government of Guam Employee and Resident of Agaña



## Guam Comprehensive Cancer Control Plan 2007-2012



**SENATOR FRANK F. BLAS JR.**

COMMITTEE ON HEALTH, HUMAN SERVICES  
AND HOMELAND SECURITY

I MINA BENTE NUBI NA LIHESLATURAN GUAHAN



December 17, 2007

Honorable Felix P. Camacho  
*Maga'laken Guåhan*  
R.J. Bordallo Governor's Complex  
Adelup, Guam 96910

Dear *Maga'lahi* Camacho:

Between 2001 through 2005, there were approximately 1,400 deaths due to cancer that were recorded by the Guam Cancer Registry. Guam's top three priority areas based on cancer incidence rates are lung, breast and colorectal cancer.

Based on the cancer incidence rates of Guam residents, Chamorros had the highest overall age-adjusted cancer mortality rate more than 25% higher than the U.S. rate. In conjunction with the Guam Comprehensive Cancer Control Plan, the Committee on Health, Human Services and Homeland Security supports your efforts to reduce cancer incidence and mortality on Guam through collaboration of public and private stakeholders.

The Committee members and I look forward to working with you and your team on this initiative to reduce cancer incidence on Guam.

*Si Yu'os Ma'ase!*

FRANK F. BLAS, JR.

Letters of Support

## Guam Comprehensive Cancer Control Plan 2007-2012



FELIX P. CAMACHO  
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MICHAEL W. CRUZ, M.D.  
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### GOVERNMENT OF GUAM

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PETERJOHN D. CAMACHO, MPH  
Acting Director

JPETER ROBERTO, ACSW  
Deputy Director

### Hafa Adai Taotao Guahan!

On behalf of the Executive Committee of the Guam Comprehensive Cancer Control Coalition (GCCCC), I am pleased to present the first iteration of the Guam Comprehensive Cancer Control Plan (GCCCCP). In recent years cancer has risen to be the second leading cause of death on Guam, being outpaced in this regard only by diseases of the heart and blood vessels. We are all aware that the unfavorable economic conditions that have affected our region recently have had a significant impact on many aspects of our lives including health care. It is hoped that through further development and refinement of the GCCCCP and community input, an integrated and coordinated approach to the control of the cancer on Guam will assure the most effective use of our limited health care resources. By placing emphasis on improved coordination of existing resources and effectively advocating for the provision of new resources, we hope to be able to create a continuum of health care on our island that will result in more effective cancer prevention measures, more readily accessible diagnostic and treatment services and improved quality of life for all cancer patients.

The GCCCCP can only hope to be successful to the extent that it is developed and supported by the collaboration of all segments of our community. This includes private enterprises, health care professionals, government agencies, community organizations, cancer survivors and most importantly, health care consumers. In the very near future, the Guam Comprehensive Cancer Control Coalition will begin a process of community involvement that will seek your input on how to further develop the GCCCCP. We earnestly invite your participation in the process.

*Dangkulo na si yu'us ma'ase!*

Robert L. Haddock  
Interim Chairperson

Letter of Support



## Guam Comprehensive Cancer Control Plan 2007-2012



October 15, 2007

Dear Residents of Guam:

We are proud to acknowledge the success of Guam's Comprehensive Cancer Control Coalition in developing the island's first Comprehensive Cancer Control Plan. The five year plan represents the collaborative work of numerous individuals and agencies committed to reducing Guam's cancer burden and improving the quality of life for our residents diagnosed with cancer.

As a community partner 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, the American Cancer Society Guam Field Office is encouraged by the steps taken by the Coalition on the road to reaching their vision of an island where: The people of Guam are cancer free, embracing a healthy lifestyle and living in a healthy environment.

We applaud the coalition's collaborative efforts and continued commitment to the island and congratulate them as they move towards launching and implementing Guam's five year Comprehensive Cancer Control Plan.

Sincerely,

American Cancer Society – Guam Field Office

Christina Balajadia Noket  
Community Manager – Development

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Letters of Support

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The Guam Comprehensive Cancer Control Coalition is the group that developed the plan with technical assistance from the University of Hawaii's Pacific Regional Cancer Control Program under the leadership and coordination of Drs. Neal Palafox, Lee Buenconsejo-Lum, and Vanessa Wong. The coordination of the coalition was undertaken by both the Department of Public Health and Social Services and the American Cancer Society Guam office during several phases of plan development. Coalition's Steering Committee provided management, oversight, and leadership for the plan development and preparation process. Their contribution of time and expertise is greatly appreciated.

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- Mark Duarte
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- Mae Quinata



## EXECUTIVE SUMMARY

### ***Vision and Mission:***



*"The people of Guam will be cancer free, embracing a healthy lifestyle and living in a healthy environment."*

**T**his is the vision of Guam's Comprehensive Cancer Control Coalition (GCCCC).

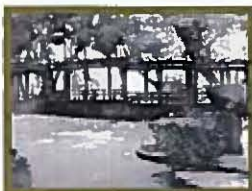
**N**umerous efforts exist in Guam to address the challenges presented by cancer. These efforts span the cancer continuum and address ways to prevent, detect, treat and sustain the best possible quality of life for all individuals. The Guam Comprehensive Cancer Control Coalition functions under the premise that no single organization or agency can address cancer alone. Rather, a collaborative approach with community buy-in and key stakeholders working together to identify problems and create solutions will result in more efficient and effective use of cancer resources. The GCCCC believes it is through the coordination of efforts that disparities and gaps will be identified and underserved populations will be cared for.

**T**he GCCCC has identified it as their mission to **reduce cancer incidence and mortality on Guam through collaboration of public and private stakeholders**. As the Coalition moves forward in their cancer control efforts, their work is guided by the following **Core Values**:



***R***espect

We respect opinions, each other and value the unique perspective that each individual brings.



***C***ollaboration

We will work together, not against each other for solutions.





## *I*nnovation

We keep an open-mind for creative ways to solve problems.



## *I*mpact

Our work will have positive impact on the community.



## *C*ommitment

We are committed to evidenced-based Comprehensive Cancer Control that continually engages the community.



## *T*rust

We trust one another to act with integrity and in good faith.

## **PRIMARY GOALS**

**T**he Primary Goals of the Guam Comprehensive 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 BACKGROUND

The island of Guam is the largest and southernmost island of the Mariana Islands. Guam is a melting pot that reflects the cultures of its original Chamorro inhabitants and the influences of European, American, Asian, Micronesian, and other people who have occupied, visited and immigrated to Guam since the 16th Century.



Guam has an ancient history and rich cultural heritage. The indigenous people of Guam, Chamorros, are widely believed to have been of Indo-Malaya descent sharing linguistic and cultural similarities to Malaysia, Indonesia and the Philippines. Guam's first contact with the West occurred in 1521 with the visit of Ferdinand Magellan. The island was formally

claimed by Spain in 1565 and Jesuit missionaries arrived in 1668 to establish their brand of European civilization, Christianity and trade. During this period, the Catholic Church became the focal point for village activities and Guam became a regular port-of-call for the Spanish galleons that crisscrossed the Pacific Ocean.

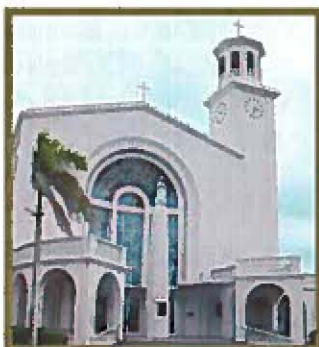


Guam was ceded to the United States following the Spanish American War in 1898. The island was formally purchased from Spain in 1899. Under the administrative jurisdiction of the United States Navy, Guam experienced many improvements in the areas of agriculture, public health, sanitation, education, land management, taxes, and public works. The U.S. Navy continued to use Guam as a refueling and communication station until 1941, when the island fell to invading Japanese forces shortly after the attack on Pearl Harbor. Guam remained

under Japanese occupation until reclaimed by American forces in July 1944. In 1949, President Harry S. Truman signed the Organic Act, making Guam an unincorporated



territory of the United States with limited self-governing authority, which it remains to this day.



Guam is a cosmopolitan community with a unique culture, the core of which is Chamorro with heavy influences as a result of Spanish occupation and the Catholic Church. American influence is evident in regard to celebration of public holidays and the form of government. Guam's culture has also been influenced and enriched by Filipino, Japanese, Korean, Chinese and Micronesian immigrants.

In 2000, 42% of the population were full or part Chamorro (Guam's indigenous people), 26% were Filipino and 7% were Caucasian and just over 1% were Black/African American. Other Asians (i.e., Chinese, Japanese, Korean, etc.) constitute nearly 8% of the population, while Native Hawaiian and Other Pacific Islanders (i.e., Carolinian, Chuukese, Kosraean, Marshallese, Palauan, Pohnpeian, Yapese and Other Pacific Islander) make up over 6%. Overall, over 82% of Guam's population is of Asian or Pacific Islander ethnicity.



The total population of Guam based on July 2007 estimates is 173,456 with a growth rate of 1.43% and a total life expectancy of 78.58 years (male: 75.52 years; female: 81.83 years). The average life expectancy at birth on Guam at the time of the 2000 Census was 76.9 years which was nearly identical to that of the U.S. at 77.0.

The official languages of Guam are English and Chamorro. However, because of a diverse population, Philippine dialects, other Pacific island languages and other Asian languages are used throughout the community.



## Guam Comprehensive Cancer Control Plan 2007-2012



The capital of Guam is Hagatna. Guam is located approximately 3,700 miles west of Hawaii and 1,300 miles southeast of Japan with a total land area of 541.3 sq km, approximately one third the size of Washington, DC.

The island's rapid economic development was fueled both by rapid growth in the tourism industry as well as increased U.S. Federal Government spending during the 1980s and 1990s. The Asian economic crisis of the late 1990s, which impacted Japan had severely affected

Guam tourism. Military cutbacks in the 1990s also disrupted the island's economy. The island's economic recovery was further hampered by devastation from Super typhoons Paka in 1997 and Pongsona in 2002, as well as the effects of the September 11 terrorist attacks on tourism. The economy depends largely on US military spending and tourism. Total U.S. grants, wage payments, and procurement outlays amounted to \$1.3 billion in 2004. Over the past 30 years, the tourist industry has grown to become the largest income source following national defense.

Approximately a third of Guam is controlled by the U.S. military, which maintains naval and air force bases on island. Currently, there are about 14,000 service members and family members on Guam. Over the next five years, an estimated 8,000 U.S. Marines will be relocated to Guam from Okinawa, Japan. According to the U.S. Government Accountability Office's Report (September 2007), the Guam military buildup population growth is estimated at 39,130 for service members and their families. This does not include long-term civilian workers needed to support the troops or influx of immigrants moving to Guam for opportunities as a result of Guam's military buildup. Those 39,130 people alone would increase the island's population of 171,000 by nearly 23%. However, there is an anticipated population growth of at least 15% within a window of 4 to 5 years for the construction phase. This growth will shift, meaning that initially it will comprise of construction related labor force. Once the construction phase is completed, the majority of that workforce will leave island and the military will eventually move to Guam over the next few years.



## *Healthcare Infrastructure*



The only civilian inpatient medical facility on Guam is the Guam Memorial Hospital Authority (GHMA), which has an emergency room, inpatient wards, surgical suites, a pharmacy, laboratory and x-ray services, physical therapy services, and health administration and data management offices.

The U.S. Naval Hospital is the military's central facility for general acute care. The hospital also provides outpatient services in the various medical disciplines and maintains a dental clinic. The medical center is staffed to provide for the medical needs of active military personnel and their dependents, military retirees, veterans and their eligible dependents.

The Department of Public Health and Social Services (DPHSS) maintains Guam's vital statistics in the Office of Vital Statistics. It also maintains the Guam Cancer Registry (GCR) within the Office of Epidemiology and Research and sponsors some programs in cancer prevention and control within the Bureau of Nutrition Services (BNS) and the Bureau of Professional Support Services (BPSS). Although 30 years ago the DPHSS operated village health clinics in every major village on Guam (14 total), budget restrictions and loss of public health nursing positions have resulted in the closure of all but three facilities, the Central Regional Community Health Center, the Northern Regional Community Health Center, and the Southern Regional Community Health Center.

The DPHSS operates the Medically Indigent Program (MIP), a 100% locally funded health assistance program, the safety net for those who cannot afford health insurance/care. Failure by the government to keep pace with the rising costs of health care services has caused undue burden to health care providers who accept MIP clients. "One clear disadvantage of being part of the Medically Indigent Program is that private doctors and clinics will not and cannot treat MIP patients. All private doctors and clinics stopped accepting those patients because the government failed to pay their bills, and a new government policy, Public Law 27-30, requires MIP patients to receive all of their primary medical care at government health clinics."

Some employers in Guam provide their staff with the option to purchase health insurance. There are a number of insurance companies in Guam and rates vary from provider to provider. Medicare and Medicaid Assistance Programs (MAP) are also available to Guam's residents who meet the minimum criteria for enrollment.



## Guam Comprehensive Cancer Control Plan 2007-2012

However, despite all these safety nets, the Guam HIES 2005 survey estimated that 22.6 percent of Guam's households remain uninsured and fall between the cracks of the health care system. "For Guam's population under the age of 65, 25 percent were estimated to have no health insurance in 2004. Of Guam's young adults, those between the ages of 20-24, 27.1 percent reported not having health insurance; and 26 percent of children 19 years and younger were uninsured. By comparison, the U.S. national average of households without health insurance was 15.6 percent. Within subgroups, the U.S. reported 19 percent under the age of 65; 3.5 percent of young adults; and 12 percent of children without health insurance. Of those with health insurance, 36.9 percent were affiliated with government programs; and 37.5 percent with private firms." (Source: Guam Household Income and Economic Survey 2005)

In addition to concerns regarding the cost and availability of insurance, access to diagnostic or treatment services remain a forefront problem for island residents. Many are forced to travel to overseas health centers to receive diagnostic or treatment services not available in Guam. This further exacerbates an already chronic problem of trying to find adequate resources to meet the needs of a medically underserved population.

Since 1988, Guam was designated and continues to be a Health Professional Shortage Area (HPSA) for Primary Medical Care by the U.S. DHHS. There is a need for more OB/GYN physicians on Guam, especially for low income women. Critical health workforce shortages also exist for several physician specialties including oncology. In addition, shortages exist in the nursing and allied health professional field in support of cancer care and treatment.



Guam does not currently have radiation therapy available for cancer treatment but plans are underway for one to be available beginning January 2008. Since 2002, patients needing radiation therapy had to go off-island for treatment and must continue to do so until early next year. At present, there's only the equivalent of 1-and-1/2 medical oncologists in the private sector on Guam. The Guam Cancer Center, a privately owned cancer treatment center, is faced with financial burdens due to non-payment by the government of Guam's MIP and MAP. The Center had threatened on several occasions to shut their doors altogether if delayed payments continue to become an issue. Fortunately, the government recently passed a measure (P.L. 28-150) to appropriate and earmark \$2 million dollars in reserve for making payments for MIP cancer care. Funds were also authorized for the Guam Memorial Hospital to prepare a plan to develop a Comprehensive Cancer Therapy Center, and for the provision of radiation therapy services on Guam. Through its own resources, the Guam Cancer Center has already taken steps to include radiation therapy on site and will have the equipment and radiation oncologist on board beginning January 2008.

## Cancer Burden



Between 2001 through 2005, there were 1,387 deaths due to cancer recorded by the Guam Cancer Registry (GCR). Guam's top three priority areas, based on cancer incidence rates are 1.) lung, 2.) breast, and 3.) colorectal cancer. Fortunately, incidence and mortality rates for each of these cancers can be reduced, if not prevented through existing

strategies. Avoiding tobacco, being physically active, adhering to a healthy diet and routine screening for breast and colorectal cancer can reduce incidence and/or mortality rates for all of these cancers.

Between 2000 and 2005 there were 1,638 new cases of cancer and 845 deaths due to cancer among Guam residents reported to the GCR.

**TABLE 1. CANCER INCIDENCE AND MORTALITY AMONG GUAM RESIDENTS, 2000-2005**

|               | 2000       | 2001       | 2002       | 2003       | 2004       | 2005       | TOTAL       |
|---------------|------------|------------|------------|------------|------------|------------|-------------|
| <b>CASES</b>  | <b>251</b> | <b>259</b> | <b>301</b> | <b>287</b> | <b>291</b> | <b>249</b> | <b>1638</b> |
| <b>DEATHS</b> | <b>148</b> | <b>122</b> | <b>158</b> | <b>151</b> | <b>148</b> | <b>118</b> | <b>845</b>  |

Between 2000 and 2005 the cancer incidence rate for Guam resident males was higher than that of Guam resident females for 4 of the 6 years (in 2001 they were virtually identical).



**TABLE 2. CANCER INCIDENCE RATES OF GUAM RESIDENTS BY GENDER, 2000-2005**

|                | 2000         | 2001         | 2002         | 2003         | 2004         | 2005         |
|----------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <b>MALES</b>   | <b>149.0</b> | <b>159.7</b> | <b>191.3</b> | <b>174.9</b> | <b>181.8</b> | <b>130.4</b> |
| <b>FEMALES</b> | <b>173.2</b> | <b>160.5</b> | <b>171.5</b> | <b>163.5</b> | <b>148.7</b> | <b>105.3</b> |

The ethnicity and site specific age-adjusted cancer mortality rates for Guam were recently calculated utilizing Guam Cancer Registry data for the years 1998-2002. Based on the Guam 2000 population census data and adjusting to the US 2000 standard population, Guam and U.S. 2002 age-adjusted cancer mortality rates may be compared as follows:

#### **Total cancers**

Chamorros had the highest overall age-adjusted cancer mortality rate at 247.2 cases per 100,000 population, more than 25% higher than the US rate. Caucasians were next at 204.6, and Micronesians were lower than the US rate at 172.9. Both Asians and Filipinos at 94.0 and 93.4 respectively, were more than 50% less than the US rate. The U.S. age-adjusted rate for total cancers for all races was 193.5.

#### **Cancers of the mouth and pharynx**

Chamorros had the highest age-adjusted rate of mouth and pharynx cancer at 15.5 per 100,000, almost six times the US rate. The rates among Micronesians at 6.3, Asians at 3.6, and Filipinos at 3.1 were all higher than the US rate. Only Caucasians came in lower at an age-adjusted rate of 2.6 per 100,000. The U.S. age-adjusted rate for all races was 2.7.

#### ***Nasopharyngeal carcinoma (NPC)***

Guam NPC age-adjusted mortality rates for the entire population are more than 20 times that of U.S. rates for ages 45 through 74. The age-adjusted rate for Chamorro males for the period studied is 12.2 per 100,000 population, or 61 times the U.S. rate for both sexes, the rate for Chamorro females is 5.6 or 28 times the U.S. rate for both sexes. The U.S. age-adjusted rate for all races was 0.2.

***Cancers of the mouth and pharynx (excluding nasopharyngeal cancer)***

When nasopharyngeal cancers are excluded the rates are highest for Chamorros and Micronesians (6.4 and 6.3 respectively, both groups who practice the chewing of betel nut socially), followed by Caucasians (2.6) and Filipinos (1.2). No cases were recorded for Asians during the period studied. The U.S. age-adjusted rate for all races was 2.5.

**Cancers of the lung and bronchus**

Ethnicity-specific age-adjusted lung and bronchus cancer rates are highest for Chamorros (66.9 per 100,000 population), followed by Micronesians (53.1), all above the US rate. Caucasians (49.2), Filipino (23.3) and Asians (14.3) were below the US rate. The U.S. age-adjusted rate for all races was 54.9. Although Guam lung cancer death rates are substantially lower than U.S. rates, lung cancer is still the leading cause of cancer mortality on Guam.

**Pancreatic cancer**

Asians had the highest age-adjusted pancreatic cancer death rate of all the major ethnic groups living on Guam at 12.5 per 100,000 population, just above the US rate. All other races had rates below the US rate, Caucasians at 10.1, Chamorros at 7.9 and Filipinos were low at 1.2 per 100,000. The U.S. age-adjusted rate for all races was 10.5.

**Liver cancer**

Age-adjusted liver cancer mortality rates were higher than the US rate for all ethnicities except the Caucasians. Rates are highest for the Micronesians (43.5 or almost nine times the US average), followed by the Chamorros (12.1), the Asians (7.2), and the Filipinos (5.0). There were no deaths due to liver cancer recorded for the Caucasians during the study period. The U.S. age-adjusted rate for all races was 4.9.

**Colon-rectum-anus cancer**

Chamorros had the highest age-adjusted rate of mortality due to colon-rectum-anus cancer at 28.6 per 100,000 with Caucasians next at 22.6, both above the US rate. Lower than the US rate were Filipinos at 15.3 and Asians who had the lowest rate at 12.5. The U.S. age-adjusted rate for all races was 19.

**Breast cancer**

Breast cancer is the leading cause of death due to cancer among women on Guam. Chamorro women have the highest age adjusted breast cancer mortality rate at 32.0 per 100,000 population, followed by Caucasians 25.9, both above the US rate. Under



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the US rate were Asian women at 16.1, Micronesians at 12.3 and Filipinas at 5.6. The U.S. age-adjusted rate for all races was 28.0.

**Cervical cancer**

For the period studied Asian women had the highest age-adjusted mortality rate for cervical cancer (8.5), followed by Caucasian women (7.6), and Chamorro women (7.5), all above the US benchmark. Below the US rate were Filipinas (1.5). No deaths due to cervical cancer were recorded among Micronesian women, generally believed to be an underserved group, during the period studied. The U.S. age-adjusted rate for all races was 2.6.

**Prostate cancer**

Chamorro males have the highest age-adjusted rate of prostate cancer at 40.9 per 100,000, followed by Caucasians at 33.6, both above the US rate. Asians at 18.4 and Filipinos at 16.7 were below the US rate. No instances of death due to prostate cancer were recorded among Micronesian residents of Guam during the period studied. The U.S. age-adjusted rate for all races was 27.9.

**Leukemia**

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 above the US benchmark. Chamorros at 6.5, Filipinos at 3.8, Micronesians at 2.1 and Asians at 1.8 were below the US age-adjusted rate of 7.5.

**Non-Hodgkin's lymphoma**

Caucasians had the highest age-adjusted mortality rate due to Non-Hodgkin's lymphoma at 17.6 per 100,000 population and were again the only group above (2.3 times) the US benchmark. Chamorros at 5.1, Filipinos at 3.8, Micronesians at 2.1 and Asians at 1.8 were all below the US rate. The U.S. age-adjusted rate for all races was 7.6.

**G**uam is fortunate in having more cancer-related services available to its residents than many of our neighboring islands. Guam has also been successful in obtaining funds for some cancer prevention programs such as the Breast and Cervical Cancer Early Detection Program. In addition, island residents have benefited from the presence of the Guam Chapter of the American Cancer Society, established in 1969 as part of the Hawaii Pacific Inc. Division, and the National Cancer Institute's Cancer Information Service.

For several years both radiation and chemotherapy services were provided locally at the Cancer Institute of Guam. Unfortunately, in December 2002, the island was hit by Supertyphoon Pongsona and most of the Institute's equipment was destroyed. Unfortunately funding has not been secured to replace it. Although radiation therapy is still not available on Guam, follow-up chemotherapy is now once again available to patients on-island.

Guam currently has one full-time oncologist. A second oncologist sees patients on a case-by-case basis. Although some Guam residents are fortunate enough to have the financial resources to seek treatment in Hawaii, the Philippines or the United States mainland, many residents can not afford to seek off-island diagnosis or treatment. Consequently their treatment is limited to the services available locally.

The major task for Guam is developing a healthcare system that is as efficient as possible in utilizing our very limited resources. Even though Guam spends more money on their annual healthcare budget than all of our neighbor islands combined, programs and services still fall short in many areas. This can be attributed to many reasons, including deficient infrastructure and the lack of access to appropriate services. These problems can be solved, however. With the necessary foundation in the form of government and community support, sustainable funding sources, and improved planning, we believe cancer care in Guam could provide a shining example for the rest of the Pacific Basin region.

## **EVOLUTION OF THE PLAN AND COLLABORATIVE PARTNERSHIPS**

Since the mid 1990's, physicians from the Pacific Basin Medical Association (PBMA) began to raise concern for the increasing number of patients dying from cancer. At the same time, the Pacific Islands Health Officers Association (PIHOA) was developing a strategic plan which focused on chronic diseases. PIHOA is the regional health policy body for the United States Associated Pacific Island (USAPIN) jurisdictions, an organization comprised of the chief executive health official in each of the six islands, the Directors of Health of the FSM States, the CEOs of Guam Memorial Hospital Authority and LBJ Tropical Medical Center in American Samoa. In 1999, the President's Cancer Council was presented with testimony regarding cancer health disparities in the USAPIN. Dr. Harold Freeman, the chair of the Council, encouraged development of databases to strengthen the evidence that the region suffered from true cancer disparities.



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In February 2001, both PBMA and PIHOA identified cancer as a priority and these issues were discussed numerous times at the Federal level. In 2002, the NCI Center to Reduce Cancer Health Disparities, under direction from Dr. Freeman, and the NIH National Center on Minority Health Disparities provided financial resources in response to Pacific advocates requests. Funding was channeled through Papa Ola Lokahi, a Native Hawaiian Health Organization with experience in providing advocacy and technical assistance to the Pacific. Dr. Neal Palafox, of the University of Hawaii Department of Family Medicine and Community Health serves as the Principal Investigator for this project. These combined NCI and NIH resources were used to form the Pacific Cancer Initiative.

The goal of the Pacific Cancer Initiative was to address the cancer health needs in the USAPIN by:

- (a) Creating a regional cancer leadership team of Pacific Islanders (the Cancer Council of the Pacific Islands (CCPI);
- (b) Assessing and articulating the cancer health needs of the USAPIN; and
- (c) Developing sustainable strategies to address the cancer burden in the USAPIN.

In January 2003, a cancer needs assessment was conducted in Guam by Family Medicine residents and faculty physicians from the University of Hawaii Department of Family Medicine and Community Health. In addition to consulting with the Guam Cancer Registry (GCR), information regarding cancer mortality and morbidity was obtained from a review of death records and off-island referrals for cancer treatment. As a result of this assessment, cancer was identified as the second leading cause of death in Guam and five priority areas 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; and 5.) Improve early detection and screening for priority cancers.

In June 2004, the University of Hawaii received a National Comprehensive Cancer Control Planning (NCCCCP) grant on behalf of 5 of the 6 USAPIN, including Guam. These grants were funded by the U.S. Centers for Disease Control and Prevention, Division of Cancer Prevention and Control, which provided funding for the formation of a Comprehensive Cancer Control Coalition to begin developing a comprehensive cancer control plan for the island.

The GCCCC represents a diverse group of public and private sector stakeholders and individuals whose collaborative work identifies methods to reduce the





burden of cancer and eliminate gaps in cancer services in Guam. At its inception on July 9, 2004, the Guam Cancer Coalition (as it was previously named) consisted of representatives from two agencies – the Department of Public Health and Social Services (DPHSS) and the University of Guam (UOG). This first meeting of six members has since evolved to include a membership representing a broader spectrum of stakeholders, agencies and programs around the island. In addition to DPHSS and UOG, members of the Coalition now include representatives from the American Cancer Society, the Guam Cancer Registry, the Cancer Information Service of the National Cancer Institute, Health Partners, L.L.C., Staywell Insurance, the Native Cancer Researchers, as well as cancer survivors. Several members of the GCCCC also belong to other coalitions such as the Coalition for a Tobacco Free Guam, the Get Healthy Guam Coalition and community based organizations such as the GUAHAN Project. (See appendix for a complete list of organizations represented in the coalition.) The present list of individuals, organizations and government agencies is dynamic and as the Comprehensive Cancer Control Program evolves so will the GCCCC membership.



The GCCCC has a Steering Committee that serves in a decision making capacity. For planning purposes, the Steering Committee meets regularly every other week (or weekly, when needed) with the coalition coordinator scheduling meetings and recording meeting minutes. Communication between meetings is maintained through e-mail correspondence facilitated by the



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coordinator. The coalition is kept informed of the activities and progress of the Steering Committee via e-mail correspondence from the coordinator.



In order to develop each section of the plan, the coalition organized into work groups to address seven work areas: 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. Once the work groups laid the framework for each of the six sections, the floor was opened to the Steering Committee to revise and fine-tune the goals, objectives, strategies and outcomes identified in each section. Key informant interviews were conducted with heads of organizations whose line of work prevented them from joining Coalition working meetings. These interviews served as an evaluation tool for the coalition to confirm relevancy of objectives and that the proposed timelines were realistic.



The GCCCC's vision and mission statements were developed with input from community stakeholders through the reconnaissance portion of Strategic Planning. A large group session was held (that included participation from coalition members) with discussion focused on the

development of vision and mission statements. Additionally, an environmental scan was conducted where external stakeholders, trends, competitors and collaborators were identified. The internal environment – what works well and what needs to be improved – was also discussed. The session also established a covenant based on the values and behaviors to which the Coalition will abide – the core values identified in the Executive Summary.

The positive change method Appreciative Inquiry (often called AI) was used to develop the plan with input from a large group of community stakeholders. Appreciative Inquiry focuses on the community's strengths to develop strategies based



on the best of “what is” and that pursue the possibilities of “what could be.” Developed in the 1980s, the approach is based on the premise that “organizations change in the direction in which they inquire.” Thus, if we appreciate the positive in what our community offers, we will not only discover what is best, but also use these discoveries to shape a future where the best becomes more common. The Appreciative Inquiry session served as an avenue for confirming the coalition’s success in identifying priority areas within the Plan, as they were consistent with the priorities identified by community stakeholders.

The Strategic Planning and Appreciative Inquiry sessions were facilitated by a team from the University of Guam’s Cooperative Extension Service, a community partner of the Guam Comprehensive Cancer Control Coalition whose facilitation services were provided in-kind.

The results of the Appreciative Inquiry process conducted at the 2007 Comprehensive Cancer Control Stakeholder Planning Session identified the following priority areas. Two areas ranked first in importance. They were a comprehensive cancer care “one-stop” facility that provides education, screening, treatment, caregiver assistance, family support, hospice care, etc.; and comprehensive cancer financing to include issues of insurance reform, insurance benefits, transportation costs and funding for facilities and equipment. The area ranked second in importance was policies, legislation and government support for a healthy environment, one that reduces exposure to carcinogens and promotes healthy living.

### ***Regional Collaboration***

While many challenges and needs exist at the jurisdiction level, a Regional approach to larger issues affecting CCC has been developed over the past 5 years. The USAPIN Pacific Regional Cancer Plan (refer to Appendix) speaks to maintaining a U.S. Associated Pacific regional format for discussing and addressing cancer. The Pacific Regional Cancer Plan is a long-term plan, designed to be coordinated in conjunction with the PIHOA efforts. The Plan aims to develop minimum standards for cancer care for the US Associated Pacific Island Nations largely through education and assisting with implementation of the jurisdiction-specific CCC plans, develop regional policies regarding utilization of cancer data, provide 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 US National level. Coordinated planning will also be conducted over the next five years to determine the feasibility of developing systems to better coordinate cancer care, developing regional laboratory services for cancer diagnosis (over time) and regional cancer referral centers (over time). Separate funding is being sought for development of a Regional Cancer Registry. The Regional efforts directly support the jurisdiction CCC efforts and therefore a Regional CCC Program Infrastructure which also serves as the Secretariat for the Cancer Council of the Pacific Islands must be developed. This grant application includes a \$25,000 subcontract to the University of Hawaii Department of Family Medicine and Community Health to continue guiding us with our implementation activities in our jurisdiction and the Region. The other jurisdictions are also contracting with University of Hawaii for the same scope of work.

## **MAJOR COMPONENTS**

### **I. PREVENTION**

**Primary Goal: Prevent and reduce exposure to cancer risk factors.**

Currently Guam has several active cancer-related prevention programs in the community all of which should be documented and evaluated to determine areas that need improvement and gaps identified. These programs could all be strengthened and expanded; however, this must be done without creating a duplication of services.



In order to achieve this, a formal and impartial resources/assets mapping should take place to insure that the expansion of preexisting programs and the development of any new programs be accomplished in an orderly and coordinated manner. This will take some time to achieve and thus much of the first year will involve continued assessment to strengthen existing programs and ensure the sustainability and effectiveness of new ones.

### ***A. TOBACCO PREVENTION & CONTROL***

The island of Guam has the **highest adult smoking rate** among all U.S. States and Territories. The 2003 Behavioral Risk Factor Surveillance System reports that 34.3% of Guam's adults are smokers. While smoking rates for males are higher than females, female smoking rates in Guam are higher than national and regional averages. The 2002 Youth Tobacco Survey administered by the Department of Public Health and Social Services (DPHSS) reported that 30.3% of Guam's youth are smokers. These numbers are among the highest in the United States and its territories. This translates to a devastating loss of life as well as an economic burden to Guam's health care system. Fortunately, the people of Guam are taking action against this developing epidemic.



Community partners are committed to working collaboratively for tobacco control. These partners, collectively called the Coalition for a Tobacco Free Guam, include the Department of Public Health and Social Services (DPHSS), Department of Mental Health and Substance Abuse (DMHSA), U.S. Naval Hospital Guam's Health Status Improvement Office, University of Guam, Guam Public Schools System/



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Department of Education, Guam Environmental Protection Agency, Army National Guard Counter Drug Program, Sanctuary Incorporated, the American Cancer Society, the NCI's Cancer Information Service, Health Partners, L.L.C., Staywell Insurance and other private businesses in the community. The focus of the coalition is to be a strong and unified force to address the negative impact of tobacco in Guam.

As a member of the Coalition for a Tobacco Free Guam (TFG), the American Cancer Society Guam Field Office has provided testimony to the Guam Legislature and conducted one on one conversations with legislators to educate and advocate for life saving laws such as maintaining the increase in the tobacco excise tax, statistically proven to reduce consumption and decrease tobacco-related death and disease. The Guam Field Office has also advocated for the appropriate use of tobacco excise tax money for effective prevention and control programs. The Guam Field Office stands firm that these educational programs and services in addition to an increase in tobacco excise tax are excellent first steps in addressing the high prevalence of smoking, both among adults and youth, in Guam.



Launching of the Guam Quitline, September 2007

The DPHSS provides basic health and social services to the people of Guam and is the lead tobacco control agency responsible for implementing the State-based Tobacco Control and Prevention Program. DPHSS has officially launched Guam's first and only tobacco cessation Quitline. The launching was spearheaded by Lt. Governor Michael W. Cruz, M.D., and the TFG Coalition during the Diabetes and Tobacco Conference on September 20, 2007, which was attended by over 150 participants and was aired on local television during the evening news. Adult tobacco

users on Guam can now avail of free telephone counseling to help them quit using tobacco.



the 2007 BRFSS. The survey is currently being conducted and results should be reported during the first quarter of 2008.

The DMHSA developed the Tobacco Control Program in 2003. The Tobacco Control Program utilizes a comprehensive approach to complement and support Guam's Tobacco Control Act of 1998, as well as federal guidelines for the SYNAR Amendment. Key activities include technical assistance in the development of tobacco control-related policy and legislation, strategic education and communications campaigns, collaboration and training of key community leaders and volunteers on the harmful effects of tobacco use, second hand smoke and nicotine addiction, yearly SYNAR inspections to monitor compliance to the "No Sale of Tobacco Products to Minors" law, and provision of cessation services to the Guam community.

In 2003, DMHSA launched a multi-media campaign that provided the community with critical information related to tobacco-control legislation, such as the Natasha Act and awareness regarding the benefits of quitting. DMHSA is also responsible for establishing the first, and to date, only sustained cessation program offered to the public at no cost.

The DMHSA provided technical assistance to the Legislature, to the Office of the Governor and to selected Cabinet members regarding the evidence on effective interventions for tobacco control. This technical assistance led to the Governor's veto of the bill to grant tobacco and alcohol tax exemptions to companies that donated money for the University of Guam Field house, and which contributed to the passage



of a sound version of the Natasha Act. The DMHSA was one of the first Government of Guam agencies to implement 100% tobacco-free campus policy, and it provided technical support to the Department of Corrections, the University of Guam and the Guam Memorial Hospital Authority when each agency went tobacco-free.

Through the work of the Guam Prevention and Early Intervention Advisory Community Empowerment (PEACE) Project, Guam's first State Epidemiological Workgroup was created, which collated and reviewed all available data on tobacco, alcohol, and illicit drug use and published its findings in the first Guam Substance Abuse Epidemiological Profile (Epi Profile) in 2006. The Epi Profile has since been updated, with the latest version officially approved by the Governor's PEACE Advisory Council in July 2007. In November 2006, the Guam Prevention and Early Intervention Advisory Community Empowerment (PEACE) Project endorsed their substance abuse Strategic Plan, which outlines their "commitment to the implementation and evaluation of sustainable, evidence-based prevention and early intervention practices, policies and programs..." targeting substance abuse. The PEACE Project has also extended its Brief Interventions training to various community groups in both the public and private sectors, and has taken the training to colleagues in the CNMI.

On March 31, 2007, Health Partners, L.L.C., through a sub-grant from the Asia Pacific Partners for Empowerment, Advocacy and Leadership (APPEAL), partnered with ACS-Guam, CIS-Guam, DMHSA Prevention and Training Branch, and DPHSS Tobacco Control Program, conducted a community workshop to obtain community input into assessing Guam's readiness for tobacco control and developing a vision and strategic directions for the future. A total of 36 participants attended the workshop. Using a series of exercises based on the Appreciative Inquiry model, the participants completed an assessment of Guam's readiness for tobacco control, and jointly created a vision and preliminary strategies for moving the tobacco control agenda further. Health Partners, L.L.C. together with the DMHSA Prevention and Training Branch and the Governor's PEACE Project also surveyed key community opinion leaders regarding Guam's readiness for tobacco control.

The Guam Public School System (GPSS) administers the Youth Risk Behavior Surveillance System (YRBS) and extracted data from 1999 to 2005 to analyze the trends of tobacco use among middle and high school students. The high school students (grades 9-12) trend has somewhat flattened from 1999 (37.3%) to 2001 (37.1%), but recognizably declined 5.5 percent in 2003 and .8 percent in 2005. The trend for tobacco smoking by middle school students (grades 6-8) have been increasing steadily by an average of three percent since 1999 (17.6%), 2001 (19.3%),



2003 (23.3%) and decreased tremendously in 2005 (14.8%) respectively. YRBS survey results are routinely used to expand and improve youth program and curriculum development; incorporated into staff development activities, Coordinated School Health Programs (CSHP), Comprehensive School Health and Physical Education Programs; and cited in justification of need for Federal grant applications and proposals.



Every two (2) years, through the Cooperative Agreement Grant funding provided by the Division of Adolescent School Health, Center for Disease Control and Prevention (DASH/CDC), the GPSS Curriculum and Instruction Division administer and conduct the YRBS survey through coordinated middle and high school grade levels. The YRBS system was designed to monitor priority health-risk behaviors that contribute to the leading causes of mortality, morbidity, and social problems among youth and adults. These behaviors fall into six categories: (1) Behaviors that result in unintentional injuries and violence; (2) Tobacco use; (3) Alcohol and other drug use; (4) Sexual behaviors that result in HIV infection, other sexually diseases (STD's) and unintended pregnancies; (5) Dietary behavior; and (6) Physical activity.

In fiscal year 2003, the Guam Legislature created the Healthy Futures Fund, P.L. 28-149, under Section 2: "Tobacco Tax Rate", referred to as the Comprehensive School Health and Physical Education Program under the management of the GPSS Curriculum and Instruction Division. The program is funded to provide health and education programs directed towards youth, at-risk persons relating to tobacco and alcohol prevention, cessation, treatment, drugs and substance abuse prevention, preventive health care, control and to improving overall health and well-being at the Guam Public School System. The programmatic professional development plans and activities are provided in collaboration with the GPSS leadership team, school officials and health education cadres, stakeholders, NGO's, and the Guam community.

There are challenges to overcome as the community moves toward denormalizing the use of tobacco. Among these challenges include the political and financial power of the tobacco industry and their local counterparts. This power was demonstrated when the Guam Legislature introduced legislation to protect the community from being exposed to secondhand smoke. The legislation was delayed as it moved from the Health Committee to the Committee on Finance and Taxation. The legislation was subsequently amended to include a provision for smoking if a specific



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ventilation device was installed. Since no such device exists, this created an opportunity for a legal challenge. The Attorney General of Guam challenged the law, which was subsequently dismissed, however, this challenge led to the delay in the implementation of the law.

Another challenge facing tobacco control efforts is its current emphasis on weak interventions, such as health fairs and educational programs that have been implemented without a strategic vision and coordination. The development of a strategic plan is one of the priorities for the Coalition for a Tobacco Free Guam. This comprehensive plan will help to direct energies and valuable resources toward evidence-based interventions that are effective in reducing the smoking rates in other jurisdictions.



Despite these challenges, there are many opportunities to make a difference in tobacco control in Guam. There has been external funding as a result of the Master Settlement Agreement (MSA) dedicated to tobacco control, which funded and made possible the Department of Mental Health's Tobacco Control Program. Additionally, there has been an emergence of stronger leadership among the various agencies involved in tobacco control; the policy environment is becoming increasingly more supportive of

tobacco free lifestyles; and there has been significant growth in smoking cessation programs for smokers who want to quit. Overall, with the aforementioned opportunities, Guam is in the best position to take action against its developing tobacco epidemic.

### **Goal A:**

**Reduce cancer incidence, illness and death  
associated with tobacco use.**

**Objective 1. Collaborate with and complement the work of the Coalition for a Tobacco-Free Guam, Department of Public Health and Social Services, Department of Mental Health and Substance Abuse (Prevention and Early Intervention Advisory Community Empowerment) Project ("PEACE Project"),**

**and other organizations to advocate for tobacco prevention, cessation and control to reduce tobacco use by 5% from the baseline by 2012.**

**Baseline: The adult smoking rate on Guam was 34% (BRFSS 2003)**

Strategy 1.1. Support the Coalition for a Tobacco Free Guam in their efforts to develop their Strategic Plan for tobacco control in Guam by 2009.

Outcome 1.1. The Coalition for a Tobacco Free Guam will have a Strategic Plan in place by 2012.

Strategy 1.2. Support the Coalition for a Tobacco Free Guam and the PEACE Project in their efforts to implement their Tobacco Control Plan.

Outcome 1.2. Evidence-based tobacco control interventions, including increased tobacco taxes and expanded smoke-free public places, will be implemented island-wide by 2010.

Strategy 1.3. Support the Coalition for a Tobacco Free Guam, the Department of Public Health and Social Services and the Guam Public School System in conducting the Youth Tobacco Survey by 2008.

Outcome 1.3. The Youth Tobacco Survey will be conducted regularly beginning 2008. The next YRBS will be conducted in 2009. CDC has acknowledged Guam in making history, receiving a weighted YRBS data results for 2007

Strategy 1.4. Support the Department of Public Health and Social Services in their efforts to launch a Tobacco Cessation Quitline.

Outcome 1.4. The Department of Public Health and Social Services Tobacco Cessation Quitline will be accessible to Guam residents by December 2007.

Strategy 1.5. Collaborate with GPSS/C&I, HIV Prevention for school-age Youth and Youth Risk Behavior Survey Program Office in providing YRBS data results for 2007 to review and analyze tobacco data trends among school-age youth on Guam. The GPSS conducted the most recent YRBS among the Middle and High School students in 2007.

Outcome 1.5. The YRBS 2007 survey results will be analyzed and disseminated to the GPSS population, the Coalition, other interested organizations, and the general public by 2008.

**Data Sources:** Process Evaluation results, Behavioral Risk Factor Surveillance System, YRBS.



**B. BETELNUT**

Similar to many of the other islands in the region, betelnut or pugua (pu-gwa) is chewed in Guam. Two types of betelnut are chewed and are identified by the color of the nut's kernel. "Ugam" (oo-gam) or the red variety has a red to deep purple kernel color. "Changnga" (chang-nga) or the white variety has an off white to deep tan kernel color. Betelnut chewers are distinguished by their preference for a particular variety. Those who prefer "ugam" like the nut at a soft or immature stage. Chewers of "changnga" like the nut at a hard or mature stage. Many consumers say they prefer "ugam" over "changnga" because of its stronger intoxicating effect.

Additionally, some betelnut chewers use additives. Both hard and soft betelnut can be chewed with betel leaf or "pupulu" (poo-pu-lu) and lime or "afuk" (a-fook; a chalky powder produced by burning limestone rocks). The combination of these three ingredients makes the chewer's saliva red. Often, tobacco or "amaska" (a-mas-ka) is also added to the "chew." Although both varieties of betelnut can be chewed with additives, most chewers of "changnga" will chew the nut alone or add only "pupulu."

Typically, chewers of Chamorro descent primarily consume the hard variety whereas those of Western Carolinian and Palauan descent prefer the soft variety. However, depending on availability of either variety, some avid betelnut consumers will switch between soft and hard nuts. In an effort to better understand betelnut usage and usage differences among the different ethnicities in Guam, a preliminary study was started in July of 2007.

The International Agency for Research on Cancer regards betelnut to be a known human carcinogen and with the addition of tobacco to the mix, users greatly increase their risk of developing many cancers and in particular oral cancer. Currently, there are no active intervention or cessation programs which target betelnut use in Guam.

**Goal B:**

**Document the cancer risk associated with betelnut usage in Guam.**

**Objective 1. Establish baseline data to determine cancer incidence and death due to cancers associated with betelnut use.**

**Baseline: To be determined.**

Strategy 1.1. Advocate with the Department of Public Health and Social Services and Guam Cancer Registry for data collection of cancer incidence, illness and death associated with betelnut use.

Outcome 1.1. The Behavioral Risk Factor Surveillance System will include questions regarding betelnut use beginning August 2007.

Outcome 1.2. The Guam Cancer Registry will correlate available data on cancer incidence and betelnut usage.

Data Sources: Behavioral Risk Factor Surveillance System, Guam Cancer Registry, Betelnut use on Guam Pilot Project

**Objective 2. Once baseline is established, identify and address usage variations among populations that use betelnut and chewing tobacco (i.e., identify what type of betelnut is chewed and whether additives are used).**

**Baseline: To be determined.**

Strategy 2.1. Collaborate with the Guam Public School System and Department of Public Health and Social Services to identify (through Youth Risk Behavior Survey and Behavioral Risk Factor Surveillance System) usage variations among betelnut and chewing tobacco users.

Outcome 2.1 Disaggregated data on consumption patterns for betelnut and chewing tobacco will be available by 2009.

Data Sources: Behavioral Risk Factor Surveillance System results, collected data evaluation.

**Objective 3. Increase the awareness and impact of betelnut usage in the community.**

**Baseline: Guam does not have active intervention or cessation programs which target betelnut use.**

Strategy 3.1. Research best practices for increasing awareness in the community and establish education campaign.

Outcome 3.1. Best practices will be identified and implementation will start by 2010.

Data Source: Process evaluation results.



### **C. ALCOHOL**

Data on alcohol consumption is gathered through the Behavioral Risk Factor Surveillance System (BRFSS) for adults and through the Youth Risk Behavior Survey (YRBS) for youth. The most current BRFSS data available for Guam is from 2003. Because the BRFSS uses the federal system for ethnic/racial categories and does not capture diversity among the Asian-Pacific Islander community, it does not capture racial differences in alcohol consumption in Guam.

Prevalence of alcohol use, heavy drinking and binge drinking among adults and youth in Guam is similar or lower than national averages. While statistics indicate that rates of current drinking and binge drinking among high school students are on the decline nationwide, this trend has not been seen in Guam. While alcohol use rates among Guam's youth are below national averages, the gap between prevalence rates of current and binge drinkers among Guam and US youths have narrowed. The Youth Risk Behavior Survey data result does provide the information by age group, gender, grade levels, and race/ethnic groups.

#### **Goal C:**

**Individuals in Guam will make healthy alcohol consumption choices towards cancer prevention.**

**Objective 1.** Collaborate with local organizations such as Mothers Against Drunk Driving (MADD) and PEACE Project and other organizations that advocate for alcohol education, prevention and control to reduce alcohol use by 5%.

**Baseline:** 17.7% of Guam adults reported having had more than two drinks per day compared to the U.S. rate of 16.1%. (BRFSS 2002). BRFSS 2003 (45.7%); YRBS 1997 (42%)

Strategy 1.1. Support the PEACE Project in their efforts to implement their Strategic Plan.

Outcome 1.1. Alcohol use in Guam will decrease 5% by 2012.

Data Source: PEACE Project progress reports.

## **D. *NUTRITION AND PHYSICAL ACTIVITY***



Guam benefits from an emphasis on increased awareness regarding the importance of nutrition and physical activity. Numerous programs exist throughout the island to promote nutrition and physical activities. The Guam Memorial Hospital Authority offers prevention programs and physical activity programs at little to no cost to participants. The American Cancer Society promotes programs to

local businesses that are geared at worksite wellness. The Department of Public Health and Social Services' Cancer Awareness Program (CAP) provides educational aids and conducts presentations at the elementary school level regarding the importance of eating 5 or more servings of fruits and vegetables a day in effort to reduce the risk of cancer.

The creation of the Get Healthy Guam Coalition in June 2006 provides another outlet for community engagement and increased public awareness regarding the importance of maintaining healthy lifestyle habits.



In December 12, 2005, the Local Wellness Policy Utilizing the Body Mass Index was signed into law by the Governor of Guam, P.L. 28-87, Federal mandates, the Child Nutrition & WIC Reauthorization Act of 2004, passed by US Congress P.L. 108-265, Section 204. The public law places the responsibility on the Guam Public School System to develop and implement a Local Wellness Policy focusing on Nutrition, Nutrition

Education, Physical Fitness, Physical Education, and the implementation of the Body Mass Index (BMI) process. The GPSS Guam Education Policy Board amend and adopt policies that will support and promote the program in the school curriculum and instruction standards and policies as follows: Policy 705, food and nutrition services management; 346, Instructional time for elementary schools; 338, middle school curriculum requirements; 351.4, high school graduation requirements; and 337, Health requirements for students.



Overweight and obesity are major contributors to many preventable causes of death. On average, higher body weights are associated with higher death rates. In the U.S., the number of overweight children, adolescents, and adults has risen over the past four decades. Total costs (medical cost and lost productivity) attributable to obesity alone amounted to an estimated \$99 billion in 1995. During 1988–94, 11 percent of children and adolescents aged 6 to 19 years were overweight or obese. During the same years, 23 percent of adults aged 20 years and older were considered obese.

On Guam, BRFSS 2003 survey results found that 21.9% of those 18 years of age and older were obese (BMI equal to or greater than 30.0). Among adult males, 21.6% reported that they were obese. Among adult females, 22.1% stated they were obese. Adults who reported they were overweight totaled 36.3%, with 45.5% of them are males and 26.4% females. The 1997 Guam YRBS results found that 29.8% of high school students described themselves as slightly or very overweight.

The following lifestyle factors for Guam adults were compared with the overall U.S. average. More Guam's adults reported they were overweight or obese than the overall U.S. rates.

#### Lifestyle Factors:

##### **2002 BRFSS:**

*Percent of Adults Who Reported Eating Less than 5 servings of fruits & vegetables daily:*

Guam: **73.7%**

U.S.A.: **77.3%**

*Percent of Adults Who Reported They Were Obese (BMI  $\geq$  30):*

Guam: **23.8%**

U.S.A.: **22.1%**

*Percent of Adults Who Reported They Were Overweight and at risk*

Guam: **61.4%**

U.S.A.: **58.9%**

Regular physical activity throughout life is important for maintaining a healthy body, enhancing psychological well-being, and preventing premature death. In 1999, 65 percent of adolescents engaged in the recommended amount of physical activity. In 1997, only 15 percent of adults performed the recommended amount of physical activity, and 40 percent of adults engaged in no leisure-time physical activity.

The major barriers most people face when trying to increase physical activity are lack of time, lack of access to convenient facilities, and lack of safe environments in which to be active.

The Guam YRBS 2003 survey showed that 40.2% of middle school students attend physical education (PE) daily, but 45.3% watched television for 3 or more hours daily. A total of 54.7% of middle school students also stated that they participate in vigorous physical activity for 20 minutes, three times a week.

Among high school students, the proportion declined with only 30.4% stating that they attend P.E. daily, and 50.6% exercising vigorously for 20 minutes, three days a week. 40.5% reported that they watch television three or more hours daily.

The Guam BRFSS 2003 survey showed that 49.2% of adults exercised 30+ minutes of moderate physical activity five or more days per week.

The Dietary Guidelines for Americans recommend that to build a healthy base, persons aged 2 years and older choose a healthful assortment of foods that includes vegetables; fruits; grains (especially whole grains); fat-free or low-fat milk products; and fish, lean meat, poultry, or beans. The guidelines further emphasize the importance of choosing foods that are low in saturated fat and added sugars most of the time and, whatever the food, eating a sensible portion size.

In Guam, 26.9% of Guam adults consumed 5 or more servings of fruits and vegetables per day (BRFSS 2003). 16.7% of Guam High School Youth consumed 5 or more servings of fruits and vegetables per day (YRBS 2003)

**Goal D:**

**Individuals in Guam will make healthy lifestyle choices towards cancer prevention.**

**Objective 1. Reduce the proportion of children and adolescents who are overweight by 10%.**

**Baseline: 21.9% of adults were considered obese, and 37.6% were considered overweight (BRFSS 2003). 29.8% of high school students described themselves as slightly or very overweight (YRBS 1997). 26.9% of Guam adults consumed 5 or more servings of fruits and vegetables per day (BRFSS 2003). 16.7% of Guam**



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**High School Youth consumed 5 or more servings of fruits and vegetables per day (YRBS 2003).**

Strategy 1.1. Research best practices for reducing obesity among youth and adults.

Outcome 1.1. Best practices for reducing obesity among youth and adults in Guam will be determined by February 2008.

Strategy 1.2. Work with the Guam Public School System on school policies related to physical activity and nutritional health so they align with best practices for reducing obesity among youth and adults.

Outcome 1.2. The Guam Public School System will implement the prevention strategies identified by CDC to help schools prevent obesity by promoting physical activity and healthy eating through the Coordinated School Health Programs, by 2008.

Strategy 1.3. Increase public awareness about the impact of diet and physical activity on cancer prevention.

Outcome 1.3. Education programs on diet and physical activity on cancer prevention will be established by 2010.

Data Sources: BMI monitoring, process evaluation results



**Objective 2. Increase the percentage of individuals who are physically active by 10%.**

**Baseline: 49.2% of adults performed 20+ minutes of vigorous physical activity five or more days per week (BRFSS 2003). 54.7% of middle school and high school youth performed 20+ minutes of physical activity three or more times per week (YRBS 2003)**

Strategy 2.1. Identify physical activity guidelines most appropriate for youth and adults in Guam.

Outcome 2.1. Physical activity guidelines for youth and adults in Guam will be determined by December 2007.

Strategy 2.2. Research best practices for worksite wellness, school wellness, and village/community wellness programs.

Outcome 2.2. Best practices for worksite wellness, school wellness, and village/community wellness programs will be determined by February 2008.

Strategy 2.3. Collaborate with existing programs to align their activities with best practices for worksite wellness, school wellness, and village/community wellness.

Outcome 2.3. Existing programs will use best practices for worksite wellness, school wellness and village/community wellness by July 2008.

Strategy 2.4. Advocate that existing public facilities are well maintained and lighted so they are safe and accessible.

Outcome 2.4. Public facilities for physical activity will be well maintained, safe and accessible by 2010.

Data Source: Process evaluation results

## ***E. INFECTIOUS DISEASES***

The Department of Public Health and Social Services has a Hepatitis B vaccination program that serves uninsured children. The Department of Public Health and Social Services' three clinics provide free Hepatitis B vaccine to uninsured children, ages up to the age of 18. Recipients of the vaccine are provided with an informational sheet about Hepatitis B.

Hepatitis B is endemic among Asian and Pacific Islander ethnic groups and with Guam's population over 80% Asian or Pacific Islander, high immunization coverage is a priority. To help reduce perinatal transmission, a universal Hepatitis B birth dose policy was implemented at Guam Memorial Hospital Authority (GMHA) in 1990. The Immunization Program continues to collaborate with the privately owned birthing center and GMHA to administer the birth dose of Hepatitis B to newborns within twelve hours of birth regardless of the mothers' Hepatitis B status. In order to improve immunization coverage for Hepatitis B, vaccination was required for all kindergarten and first grade students effective January 1999. The school mandate was updated in 2006 requiring all students, kindergarten through twelfth grade, to complete a Hepatitis B vaccination series.



The Human Papillomavirus vaccination is available in Guam. The current cost of HPV is \$119.75 per dose (approximately \$360 for the complete three dose series). The cost for the vaccine is currently not covered by insurance. The Immunization Program has federally funded HPV through our Vaccines for Children (VFC) grant from the U.S. CDC. The VFC Program provides free vaccines to children and adolescents under 19 years of age. Eligibility criteria are: non-insured; Medicaid enrolled; or Alaskan Native or American Indian ethnicity. Each year, the Immunization Program is allocated a certain amount of vaccines from the National Immunization Program at CDC. The program then distributes these vaccines to VFC enrolled medical providers, both public and private. With the limited stock of HPV, the program will focus its efforts on vaccinating females 11-18 years of age. The Immunization Program plans to collaborate with community partners (such as Guam Public School System, American Cancer Society, Girls Scouts, Island Girl Power, and other interested organizations) to help develop, expand and implement an effective HPV campaign.

The GPSS Curriculum and Instruction Division also administer the HIV (Human Immunodeficiency Virus) Prevention Program for School-Age Youth, through the Cooperative Agreement Grant funding provided by the Division of Adolescent School Health, Center for Disease Control and Prevention (DASH/CDC). The purpose of the HIV Prevention for School-Age Youth is to strengthen state and local-level education policies, programs, curriculum and support to help schools prevent sexual risk behaviors that result in HIV infection, especially among youth who are at highest risk. Since 1985, HIV testing has been available on Guam. Since 1985 to the present, 192 individuals have tested positive for HIV.

### **Goal E:**

**Reduce cancer incidence, illness and death associated with infectious diseases.**

**Objective 1. Assess community exposure to infectious diseases that cause cancer.**

**Baseline: To be determined.**

Strategy 1.1. Encourage collaboration between Guam Memorial Hospital laboratory, Department of Public Health and Social Services Laboratory and other private laboratories to determine the rates of Human Papilloma Virus (HPV) and helicobacter pylori (H. pylori) among Guam's population.

Outcome 1.1. Rates of HPV and helicobacter pylori among population will be

identified by 2010.

Data Source: Study results

**Objective 2. Reduce exposure to infectious diseases that cause cancer.**

**Baseline: Guam has an existing Hepatitis B immunization program and the Human Papilloma Virus vaccine is available**

Strategy 2.1. Promote existing Hepatitis B immunization program.

Outcome 2.1. Immunization rates for Hepatitis B will increase by 5% over established

baseline.

Strategy 2.2. Educate women about the Human Papilloma Virus (HPV) and the importance of annual pap smear and pelvic exams.

Outcome 2.2. Percentage of women screened for the Human Papilloma Virus (HPV) will increase 5% over established baseline by 2010, and immunization rates for HPV will increase 25% by 2010 for girls 11-18 years of age.

Strategy 2.3. Collaborate with partners to increase awareness of the relation between infectious diseases and cancers.

Outcome 2.3. Education programs will be established by 2008.

Data Sources: Department of Public Health and Social Services monitoring of Hepatitis B immunization program, Process Evaluation results

***F. ENVIRONMENTAL***



responds to public concerns and protects the environment of Guam. Individual

The Guam Environmental Protection Agency (GEPA) seeks to protect the environment through various programs. Each program enforces environmental regulations, issues environmental permits,



programs are assigned to one of GEPA's five divisions: administration, monitoring and analytical services, air and land programs, water programs and environmental planning and review.

Over one half of the island of Guam is considered to be a radon hot zone or an area with high potential for radon exposure. As a result, GEPA conducts educational campaigns regarding radon and presently offers free radon home testing. Additionally, GEPA has trained several contractors in radon home remediation. Testing of homes for radon is completely voluntary and requires that home owners pick up and drop off radon test kits from GEPA's office. The GEPA is currently working on legislation to require that all new home construction include passive radon remediation systems.

Radon is a radioactive gas that is colorless, tasteless, and odorless. Radon breaks down into decay products which can become suspended in a living space and breathed in by the occupants. Once the decay products reach the lungs, they give off alpha particles that can strike the sensitive lung tissue and cause damage to the DNA, which may lead to lung cancer. Radon is the second leading cause of lung cancer in the U.S. with about 21,000 people dying each year from radon exposure. Radon on Guam comes from the native soil and is from the breakdown of uranium and radium. The theory is that uranium and radium-rich dust from the Gobi Desert in Mongolia is lifted up into the atmosphere and blown to Guam and other locations, and has been deposited here for thousands of years. Thus far, testing on Guam has shown that about 1/3 of all homes tested, showed levels at or above the U.S. EPA action level.

Research on Guam conducted in the 1990's on public buildings showed that higher radon levels are present over limestone geologies to the north and along the eastern shore, but it is not as high over volcanic areas to the south. The reasons for this are: The limestone areas are flat and have intrusion layers where soil can penetrate and be held in place. Where there is volcanic soil, it is eroded away and ends up in the rivers and streams; therefore in low-lying areas in the south, there is the potential for higher levels of radon due to this runoff.

All homes on Guam need to be tested regardless of construction type or age and the only way to find out if there is a radon problem is to conduct a test. The U.S. EPA action level is 4PCi/L (Pico Curies per Liter of air). At this level, they recommend that mitigation takes place. That means that the problem needs to be fixed to drop the level below the action level and, hopefully to 2PCi/L or lower. It is important to understand that no radon level is safe, but the higher the level and the longer the exposure, the greater the chance of getting lung cancer. Radon levels in open air are not a problem because of dilution, but inside a building, radon can concentrate due to the closed conditions and this is the problem.

**Goal F:**

**Reduce cancer incidence, illness and death associated with environmental risk factors.**

**Objective 1. Increase the awareness of dangers associated with environmental contaminants.**

**Baseline: To be determined.**

Strategy 1.1. Collaborate with Guam Environmental Protection Agency to design and implement strategies to increase public awareness of the potential dangers of high radon levels and importance of radon testing in the homes, public buildings and workplaces.

Outcome 1.1. The number of homes, public buildings and workplaces in Guam tested for radon will be baseline, plus 10% by 2008.

Strategy 1.2. Encourage collaboration between the Guam Environmental Protection Agency and the Guam Cancer Registry to assess the association between household radon levels and lung cancer rates by village in Guam.

Outcome 1.2. The association between household radon levels and lung cancer incidence by village will be identified by 2010.

Strategy 1.3. Support the Guam Environmental Protection Agency in their efforts to pass legislation for radon-resistant construction guidelines for new homes, public buildings and workplaces.

Outcome 1.3. Legislation will be passed to ensure new homes, public buildings and work places are constructed to be radon resistant by 2012.

Strategy 1.4. Support the Guam Environmental Protection Agency in their efforts to pass legislation to require radon testing for all homes, public buildings and commercial buildings prior to be built or sold for real estate transactions.

Outcome 1.4. Legislation will be passed requiring all homes, public buildings and commercial buildings being tested for radon prior to sale or being built by 2012.

Data Sources: EPA monitoring, progress reports



**G. AGRICHEMICALS**

Locally grown produce is sold at grocery stores and roadside produce stands and thus accounts for a substantial percentage of the local produce market. Presently, the University of Guam Cooperative Extension Service provides pesticide training to farmers and other users while the Guam Environmental Protection Agency regulates the importation, sale and usage of pesticides. Unfortunately, Guam currently does not have a certified lab capable of doing chemical residue testing on produce. Although pesticide education and regulation programs are in place, no assessment of agrichemical usage and misuse has been conducted. Additionally, a survey has never been conducted to determine the number of local farmers and the location of their farms. Consequently, despite the GEPA's monitoring and regulatory programs, some agrichemical misuse may occur and may affect local produce. The misuse of unregulated pesticides on local produce can possibly expose the population to carcinogenic chemicals.

**Objective 1. Increase awareness of dangers associated with agrichemical use.****Baseline: To be determined.**

Strategy 1.1. Assess agrichemical usage in Guam and determine misuse and need for education regarding safety practices.

Outcome 1.1. Baseline data for agrichemical usage in Guam will be available and needed education will be determined by 2009.

Strategy 1.2. Collaborate with partners to develop a plan for needed agrichemical usage education.

Outcome 1.2. A plan to address needed education for agrichemical usage will be in place by 2010.

Strategy 1.3. Support implementation of plan to address needed education for agrichemical usage.

Outcome 1.3. The public will be aware of safe agrichemical practices by 2012.

Strategy 1.4. Encourage research efforts to study the effects of agrichemical exposure and its correlation to cancer.

Outcome 1.4. Increase the number of research projects on the effects of

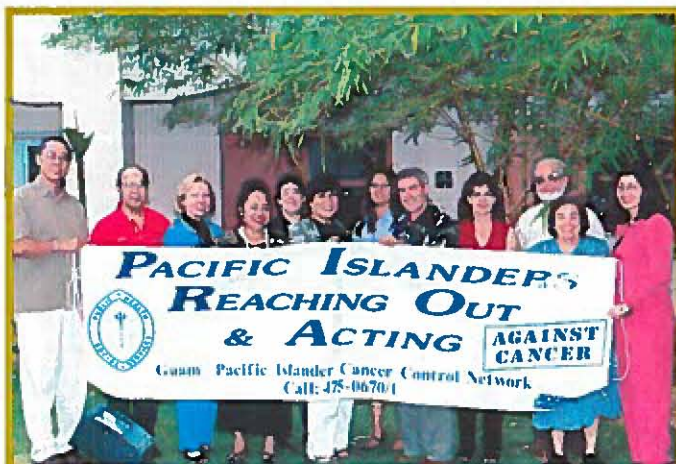
agricultural exposure and its correlation to cancer.

Strategy 1.5. Advocate for legislation to regulate the proper usage of agricultural chemicals.

Strategy 1.5. Legislation to regulate the proper usage of agricultural chemicals will be in place by 2012.

Data Source: University of Guam monitoring progress reports

## ***H. CANCER EDUCATION***



Despite the efforts being made by organizations such as the American Cancer Society (ACS), and the Pacific Islander Cancer Control Network (PICCN) the status of Cancer Education on Guam and in the Pacific Islands, although improving remains somewhat limited. According to the January/February issue of the Journal

of Public Health Management and Practice (Lippincott Williams & Wilkins © 2007) "Generally there is a limited ability to measure cancer burden and a lack of programs, equipment and trained personnel to detect and treat cancer" they further state that "concerted planning, training, and funding efforts are needed to overcome challenges and upgrade capacity in cancer education, prevention, detection, and treatment in the USAPI (US associated Pacific Islands)"

As early as 1990 the PICCN has made inroads into increasing cancer awareness in the USAPI. They have advocated for increased research among American Samoans, Tongans, and Chamorros and "developed new culturally sensitive cancer education materials and distributed them in a culturally appropriate manner (CANCER Volume 107, Issue S8, pp 2091-2098)" Since then the ACS and others have continued to provide and develop new materials to increase cancer education. Seminars and workshops for medical professionals and the general public have, and continue to be held. Recently there has been an increased emphasis on reducing the use of tobacco by the launching of the Tobacco QuitLine on Guam.





Progress is clearly being made, however, more needs to be done. The incidence of cancer among Pacific Islanders remains at alarming numbers. Stronger and more coordinated efforts aimed at limiting high risk behaviors, such as smoking, need to be developed. Programs, community outreaches and materials which are culturally sensitive and presented in any of several local languages need to be created. It is essential that in order to accomplish these goals additional funding, personnel and training be made available to the private and public agencies and organizations that are dedicated to stamping out cancer be made available.

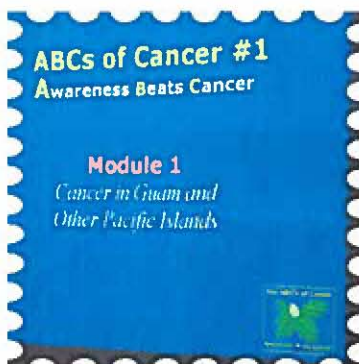
**Goal H:**

**Develop capacity of current cancer education programs.**

**Objective 1. Increase the number and availability of cancer education programs that are culturally appropriate.**

**Baseline: Cancer education programs are ongoing.**

Strategy 1.1. Assess current cancer education programs and determine what additional programs are needed.



Outcome 1.1. A list of cancer education programs will be compiled and needed programs will be identified by August 2008.

Strategy 1.2. Collaborate with partners to develop a plan to address needed cancer education programs.

Outcome 1.2. A plan to address cancer education needs will be in place by February 2009.

Strategy 1.3. Support implementation of the cancer education plan.

Outcome 1.3. The number of cancer education programs will increase by 10%.

Strategy 1.4. Develop or acquire culturally appropriate cancer education materials for Guam.

Outcome 1.4. Culturally appropriate cancer education material will be available by August 2010.

Data Source: Program survey evaluation

**Objective 2. Improve cancer prevention education for medical professionals, nurses and healthcare providers.**

**Baseline: Continuing education is available to medical professionals, nurses and healthcare providers.**

Strategy 2.1. Assess current cancer prevention education programs for medical professionals, nurses and healthcare providers and determine what additional programs are needed.

Outcome 2.1. A list of cancer prevention education programs for medical professionals, nurses and healthcare providers will be compiled and needed programs will be identified by August 2008.

Strategy 2.2. Collaborate with partners to develop a plan to address needed cancer prevention education programs for medical professionals, nurses and healthcare providers.

Outcome 2.2. A plan to address needed cancer prevention education programs



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for medical professionals, nurses and healthcare providers will be in place by February 2009.

Strategy 2.3. Support implementation of the plan to address needed cancer prevention education programs for medical professionals, nurses and healthcare providers.

Outcome 2.3. The number of cancer prevention education programs for medical professionals, nurses and healthcare providers will increase.

Data Source: Program survey evaluation

**II. SCREENING AND EARLY DETECTION**

**Primary Goal: Improve access to and utilization of cancer screening, diagnosis, treatment, and related services.**

An island-wide emphasis on early detection and prevention of cancer through screening could reduce the rate of cancer in Guam. While organizations such as the National Cancer Institute and the American Cancer Society provide guidelines for cancer screening, multiple screening guidelines are used island-wide.

In addition to standardizing guidelines, public awareness needs to be raised so individuals are empowered to actively seek screening for detectable cancers. According to 2002 Behavioral Risk Factor Surveillance System (BRFSS) data, only 13.3% of adults over the age of 50 have had a blood stool test in the last two years, while 30.6% of adults over the age of 50 have had a sigmoidoscopy or colonoscopy in the last two years to screen for colorectal cancer. Similarly, men over the age of 40 who have been screened for prostate cancer is 29.1%. In 2002, screening rates for breast cancer was 60.3%, while cervical cancer was 77.6%.

Insurance coverage for screening procedures varies by insurance company and chosen coverage. The implementation of the Guam Breast and Cervical Cancer Early Detection Program (GBCCEDP) through the Department of Public Health and Social Services in 2001 has impacted the number of women over the age of 30 who have had a Pap smear within the past three years. By providing screening services at no cost to women with income limitations or no health insurance, over 300 women per year have benefited from the program. There are six mammography facilities located on Guam. Five mammography facilities are available for local residents, and a single one at the Naval Hospital for the military, veterans, and their dependents. These

facilities meet Mammography Quality Standards Act of 1992 (MSQA), and are FDA certified.

The following depicts a snapshot of factors that contribute to increased breast cancer risk. When available, comparisons were made to U.S. rates.

**Breast Cancer Screening:**

**2002 BRFS:**

*Percent of Women Who Never* had mammograms

Guam: 53.9%

U.S.A.: 36.5%

Percent of Women (≥40 years of age) Who Never had mammograms

Guam: 36.8%

U.S.A.: 15.9%

**Lifestyle Factors:**

**2002 BRFSS:**

*Percent of Adults Who Reported They were Obese (BMI ≥ 30):*

Guam: 23.8%

U.S.A.: 22.1%

**Poverty Rates:**

**2000 Census:**

Poverty on Guam -

23% of individuals and 20% of families are living in poverty.

**Health Coverage:**

**2003 BRFSS:**

Guam: 20.9% lack health coverage

U.S.A.: 14.5%

"Cancers of the breast and genital areas accounted for 33.8% of female cancer deaths on Guam over the past 35 years."



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**Disparities:** (CY 2000 – CY 2002)**Breast Cancer Incidence Rate** for

Guam Population: 70.40

1. Black: 224.50

2. White: 175.54

3. Chamorro: 101.17

4. Filipino: 50.82

5. Micronesian: 44.17

**Breast Cancer Mortality Rate:**

Guam: 21.5

Chamorro: 32.0

White: 25.9

Asian: 16.1

U.S.A.: 28.8

Hawaii: 20.4

*[Age-adjusted incidence rates U.S. 2000 population standard]***Infrastructure:**

Federally funded BCCEDP pays for free pap smears and mammograms but does not pay for work-up for abnormal findings or treatment. There is no gynecology oncologist on Guam. With the closure of the Cancer Institute of Guam in 2003, radiology treatment is no longer available on island. Patients must obtain treatment off island in the Philippines, Hawaii, or the continental U.S. (depending on health coverage).

By end of June 2007, 1,434 women were enrolled in the program, 837 of them are currently active cases. Two public sites and 7 private contractors cover basic screening and diagnostic services, but no treatment.

There's a cap of \$12.5 million dollars on Medicaid federal dollars allocated to Guam. For every federal \$1 dollar spent, Guam equally spent \$1 dollar. Guam's billings for Medicaid in FY 2007 totaled \$25 million.

Most of the clients screened through the BCCEDP who have needed treatment have qualified for the 100% locally funded MIP. [Note: MIP recipients must

meet income and other eligibility requirements to qualify for assistance.]

Both MIP and MAP enrolled individuals are referred to Public Health's Northern and Southern Regional Community Health Centers (CHC) for health care services. The CHCs do not have mammography capability on site and must refer clients to the hospital or other private clinics with mammography facility for screening.

Annual physical exams including gynecological exam, mammogram, and labs are limited to \$200 per year for government employees. Since the government is the largest employer in Guam with over 12,000 employees, this represents a barrier for women who need to be screened for breast cancer.

The Medical Advisory Body meets regularly to review and update the Clinical Guidelines and Procedures to ensure compliance with the federal, national and state regulations.

The *Guam Breast and Cervical Cancer Coalition* has been inactive for over two years and needs to be revived. More grassroots representation should be encouraged. The coalition could serve as the catalyst for this action.

#### **Cervical Cancer Screening:**

With regard to cervical cancer, the following depicts factors that contribute to increased cervical cancer risk. When available, comparisons were made to U.S. rates.

#### **2002 BRFSS:**

Percent of Women Who Had No Pap Test within 3 yrs.

Guam: 22.5%

U.S.A.: 13.6%

#### **Disparities: (CY 2000 – CY 2002)**

Cervical Cancer Incidence Rate for

Guam Females: 13.84

1. Chamorro: 21.00
2. Micronesian: 17.52
3. White: 9.74
4. Other Asian: 8.68
5. Filipino: 7.88



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Cervical Cancer Mortality Rate:

Guam: 6.6 All Females

8.5 Asian Females

7.6 White Females

7.5 Chamorro Females

U.S.A.: 2.6

*[Age-adjusted incidence rates U.S. 2000 population standard]*

Colorectal Cancer Screening:

**2002 BRFSS:**

Percent of Adults Who Never had a sigmoidoscopy or colonoscopy

Guam: 69.4%

U.S.A.: 51.9%

Lifestyle Factors:

**2002 BRFSS:**

*Percent of Adults Who Ate Less than 5 servings of fruits & vegetables daily*

Guam: 73.7%

U.S.A.: 77.3%

*Percent of Adults Who Report They Were Obese (BMI  $\geq$  30):*

Guam: 23.8%

U.S.A.: 22.1%

*Percent of Adults Who Reported They Were Overweight and at risk*

Guam: 61.4%

U.S.A.: 58.9%

Colorectal cancer is the second leading cause of cancer deaths (9%) in Guam.

**Disparities:** (CY 2000 – CY 2002)

Colon Cancer Incidence Rate for

Guam Population: 35.23

1. White: 77.83
2. Black: 51.02
3. Chamorro: 43.33
4. Other Asian: 34.30
5. Filipino: 29.95

**Colon Cancer Mortality Rate:**

Guam: Males 19.8

Females 12.8

U.S.A.: Males 26.3

Females 8.5

*[Age-adjusted incidence rates U.S. 2000 population standard]*

**Prostate Cancer Screening:**

**2001 BRFSS:**

*Percent of Men Who Never had a PSA test*

Guam: 62.3%

*Percent of Men Who Never had a digital rectal exam*

Guam: 50.7%

**Disparities: (CY 2000 – CY 2002)**

**Prostate Cancer Incidence Rate for**

Guam Male Population: 44.38

1. Chamorro: 79.95
2. White: 48.67
3. Other Asian: 36.21
4. Filipino: 31.46

**Prostate Cancer Mortality Rate:**

Guam Males: 24.09



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|                 |       |
|-----------------|-------|
| Chamorro Males: | 40.90 |
| White Males:    | 33.60 |
| U.S.A. Males:   | 27.9  |

*[Age-adjusted incidence rates U.S. 2000 population standard]*

### Goal A:

#### **Detect all cancers at earliest stage**

**Objective 1. Advocate that all hospitals and clinics use standardized minimum screening guidelines by December 2009.**

**Baseline: Multiple screening guidelines are used island-wide.**

Strategy 1.1. Identify agency/organization that will determine the best minimum screening guidelines for Guam.

Outcome 1.1. Agency/organization will be identified and minimum screening guidelines will be identified by December 2009.

Strategy 1.2. Disseminate screening guidelines to the clinics and general public.

Outcome 1.2. Public awareness of screening guidelines will increase.

Strategy 1.3. Collaborate with partners to organize health fairs at the village level to encourage compliance with screening guidelines.

Outcome 1.3. Health fairs will be conducted by 2009.

Data Source: Quality assurance assessment of screening guidelines use

**Objective 2. Increase screening rates for breast cancer 5% above established baseline by 2012.**

**Baseline: 46.1% of Guam women had ever had a mammogram. (BRFSS 2002)**

Strategy 2.1. Support community partners such as the Department of Public Health and Social Services and the American Cancer Society in their efforts to implement educational campaigns to inform women about the importance of regular mammograms and clinical breast exams.

Outcome 2.1. The number of women aged 50+ who obtain yearly mammograms and clinical breast exams will be existing baseline, plus 5% by 2012. Women under 50 who obtain clinical breast exams will be existing baseline, plus 5% by 2012.

Strategy 2.2. Support the Guam Breast and Cervical Cancer Early Detection Program in their efforts to promote and educate women (over the age of 50) who do not have access to healthcare regarding the importance of early breast cancer screening.

Outcome 2.2. The number of women over the age of 50 who do not have access to healthcare who are screened for breast cancer will be existing baseline, plus 5% by 2012.

Data Sources: BRFSS, Guam Breast and Cervical Cancer Early Detection Program and Process evaluation results

**Objective 3. Increase screening rates for cervical cancer by 5% above established baseline by 2012.**

**Baseline: 77.5% of Guam women had a Pap test within a three-year period. (BRFSS 2002)**

Strategy 3.1. Support community partners, such as the Department of Public Health and Social Services and private clinics in their efforts to implement educational campaigns to inform women about the importance of annual pap smears and pelvic exams.

Outcome 3.1. The number of women aged 18+ who obtain yearly pap smears and pelvic exams will be 5% by 2012.

Strategy 3.2. Support the Guam Breast and Cervical Cancer Early Detection Program in the efforts to promote and educate women who do not have access to healthcare regarding the importance of annual pap smears and pelvic exams.

Outcome 3.2. The number of women who do not have access to healthcare who obtain annual pap smears and pelvic exams will be existing baseline, plus 5% by 2012.

Data Sources: BRFSS, Breast and Cervical Cancer Early Detection Program



**Objective 4. Increase the number of eligible men and women receiving sigmoidoscopy and colonoscopy screening by 5% above established baseline, by 2012.**

**Baseline: 30.6% of Guam adults had ever had a sigmoidoscopy or colonoscopy. (BRFSS 2002)**

Strategy 4.1. Collaborate with existing education programs to educate the public about best screening practices for colorectal cancer.

Outcome 4.1. At least two activities to educate the public about appropriate screening practices for colorectal cancer will be conducted beginning 2008.

Strategy 4.2. Support community partners such as the American Cancer Society in their efforts to increase the screening rates for colorectal cancer.

Outcome 4.2. The number of individuals who obtain colon cancer screening will be existing baseline, plus 5% by 2012.

Data Source: BRFSS, Process evaluation results

**Objective 5. Increase screening rates for prostate cancer by 5% above established baseline by 2012.**

**Baseline: 29.1% BRFSS 2002. Men who were screened for prostate cancer by digital rectal exam 49.3%, and prostate specific antigen (PSA) test 37.7%. (BRFSS 2001)**

Strategy 5.1. Collaborate with community partners to educate the public about screening practices for prostate cancer.

Outcome 5.1. At least two activities to educate the public about screening practices for prostate cancer will be conducted beginning in 2008.

Strategy 5.2. Collaborate with community partners to increase the number of eligible men receiving prostate cancer screening.

Outcome 5.2. The number of men receiving prostate cancer screening will increase by 5%, by 2012.

Data Source: Process evaluation results, BRFSS

**Objective 6. Reduce death and illness from liver cancer.**

**Baseline: 42 incidents from 1998-2002; Guam Cancer Registry**

Strategy 6.1. Increase viral hepatitis (Hepatitis B and Hepatitis C) screening among high risk patients.

Outcome 6.1. Screening rates for high risk patients will increase 5% over established baseline by 2012.

Strategy 6.2. Collaborate with Guam Memorial Hospital Authority, the Department of Public Health and Social Services and private clinics to ensure that the schedules for Hepatitis B vaccinations are completed.

Outcome 6.2. 90% of all children will have received the Hepatitis B vaccination series before school age by 2012.

Strategy 6.3. Collaborate with existing programs such as the Department of Mental Health and Substance Abuse and Mothers Against Drunk Driving to include information regarding the correlation between alcohol use and liver cancer in their existing education and prevention programs.

Outcome 6.3. Existing alcohol education and prevention programs will include information regarding the correlation between alcohol use and liver cancer by 2009.

Data Sources: Insurance claims data, provider surveys, and process evaluation results, Guam Cancer Registry

### **III. TREATMENT**

**Primary Goal: Advocate for sustainable funding for cancer programs.**

**G**uam has one full-time oncologist. A second oncologist sees patients on a case-by-case basis. Radiation therapy is not available in Guam, however chemotherapy is available. The only civilian inpatient medical facility on Guam is the Guam Memorial Hospital Authority (GHMA), which has an emergency room, inpatient wards, surgical suites, a pharmacy, laboratory and x-ray services, physical therapy services, and health administration and data management offices. [The photo



**Guam Comprehensive Cancer Control Plan 2007-2012**

(left) shows the location of the Cancer Center of Guam at the Guam Medical Plaza in central Guam.]

The U.S. Naval Hospital is the military's central facility for general acute care. The hospital also provides outpatient services in the various medical disciplines and maintains a dental clinic. The medical center is staffed to provide for

the medical needs of active military personnel and their dependents, military retirees, veterans and their eligible dependents.

Many residents in Guam are forced to seek treatment in Hawaii, the Philippines or the continental United States if the services are unavailable in Guam. While some are fortunate to have the option and financial resources to leave for treatment not all residents can afford to seek treatment outside of Guam. Subsequently, their treatment is limited to the services available on island.

Through the Office of the Governor, three medical referral offices are staffed off-island to support medical and social needs of Guam residents who seek treatment away from the island. The Guam Medical Referral Office operates an office in Hawaii, California and the Philippines.

Under Public Law 28-150, funds were allocated for fiscal year 2008 for the Guam Memorial Hospital Authority (GMHA), Guam's only hospital, to purchase a Radiation Therapy Machine. Additionally, under Public Law 28-150, GMHA will develop a plan of action to "...address the development and construction of a Comprehensive Cancer Therapy Center to provide radiation therapy or treatment and medical oncology for the treatment of cancer patients."

**Goal A:**

**When cancer is diagnosed, assure that the patient is treated with the most appropriate therapy, as close to home as possible.**

**Objective 1. Develop a resource guide that identifies patient diagnostic and**

**treatment services available in Guam.**

**Baseline: To be determined.**

Strategy 1.1. Collaborate with community partners to compile and disseminate a resource guide of cancer services.

Outcome 1.1. A resource guide will be published and disseminated by December 2009.

Data Source: Process evaluation results

**Objective 2. Improve access to cancer care.**

**Baseline: Guam Memorial Hospital Authority is currently not JCAHO accredited. Radiation therapy is unavailable in Guam.**

Strategy 2.1. Collaborate with partners to determine needed cancer services in Guam.

Outcome 2.1. A list of needed patient diagnostic and treatment services will be made available by December 2008.

Strategy 2.2. Advocate for Guam Memorial Hospital Authority to obtain their JCAHO (Joint Commission on Accreditation of Healthcare Organizations) accreditation.

Outcome 2.2. Guam Memorial Hospital Authority will be JCAHO accredited by 2009.

Strategy 2.3. Advocate for Guam Memorial Hospital Authority to provide oncology services not available in private cancer treatment centers.

Outcome 2.3. Guam Memorial Hospital Authority will provide oncology services not available through private cancer treatment centers by 2011.

Data Source: Process evaluation results

**Objective 3. Develop a Human Resources for Health plan to meet the diagnostic and cancer treatment related needs of Guam's residents.**

**Baseline: A Human Resource for Health plan does not exist in Guam.**

Strategy 3.1. Collaborate with professional organizations such as the Guam Medical Society, Guam Nurses Association, Guam Memorial Hospital



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Authority and educational institutions such as the University of Guam and Guam Public School System to identify a lead agency to develop a Human Resources for Health Plan.

Outcome 3.1. A lead agency will be identified by 2008.

Strategy 3.2. Collaborate with medical organizations and professionals to identify training needs to be addressed through a Human Resources for Health Plan.

Outcome 3.2. A Human Resources for Health Plan will be in place to address training needs by 2010.

Data Source: Process evaluation results

**Objective 4. Improve continuing education programs for physicians, nurses and other relevant health care providers regarding the screening, diagnosis and care of cancer patients.**

Strategy 4.1. Assess continuing education regarding the screening, diagnosis and care of cancer patients presently available to physicians, nurses and other health care providers in Guam and determine what gaps need to be filled.

Outcome 4.1. Gaps in continuing education regarding the screening, diagnosis and care of cancer patients will be identified by January 2009.

Strategy 4.2. Work with health professional organizations (e.g. the Guam Medical Society, the Guam Nurses Association) and educational institutions (University of Guam and Guam Community College) to outline a strategy/plan of work for meeting the identified needs in continuing education regarding the screening, diagnosis and care of cancer patients.

Outcome 4.2. A strategy/plan of work for meeting the identified needs in continuing education regarding the screening, diagnosis and care of cancer patients will be in place by December 2009.

Strategy 4.3. Support health professional organizations and educational institutions (University of Guam and Guam Community College) in their implementation of the strategy/plan of work for meeting the identified needs in continuing medical education regarding the screening, diagnosis and care of cancer patients.

Outcome 4.3. Health providers on Guam will have improved knowledge of the screening, diagnosis and care of cancer patients by 2014.

Data Source: Process evaluation results

**Objective 5. Encourage private clinics to recruit additional oncologist to improve capacity of private clinics.**

**Baseline: 1 full-time oncologist; 1 part-time, (on a case-by-case basis) oncologist.**

Strategy 5.1. Advocate for the recruitment of an off-island or visiting oncologist to provide services in Guam as appropriate.

Outcome 5.1. Cancer treatment services will be provided by additional Oncologist(s) by 2011.

Data Source: Process evaluation results

**Objective 6. Develop a Patient Navigation Program for Guam.**

**Baseline: Guam does not have a patient navigation program in existence.**

Strategy 6.1. Review models to develop a formal patient navigation program for Guam.

Outcome 6.1. A model patient navigation program will be developed for Guam by December 2010.

Strategy 6.2. Identify agency/organization that will oversee patient navigation program.

Outcome 6.2. A lead agency/organization for the patient navigation program will be identified by December 2010.

Strategy 6.3. Identify transportation barriers that impede access to cancer care and address current gaps.

Outcome 6.3. Transportation barriers will be identified by 2009.

Data Source: Process evaluation results, training surveys, recruitment progress reports.

**Objective 7. Provide information regarding cancer treatment through alternative/natural and complementary medicine.**

**Baseline: To be determined**

Strategy 7.1. Determine what, if any, alternative/natural medicine approaches



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to cancer treatment are available on Guam.

Outcome 7.1. A list of alternative/natural medicine approaches to cancer treatment on Guam will be available by December 2007.

Strategy 7.2. Disseminate information on alternative/natural medicine approaches to cancer treatment available on Guam.

Outcome 7.2. Public awareness of available alternative/natural medicine approaches to cancer treatment in Guam will increase by December 2008.

Data Sources: Process evaluation results, surveys

### IV. SURVIVORSHIP AND QUALITY OF LIFE

**Primary Goal: Enhance quality of life for cancer survivors.**



The Guam Cancer Support Group (GCSG) is one of Guam's main support group for cancer survivors and their families. Another group, the Pacific Association for Radiation Survivors is an association of Guam residents who are advocating for inclusion of Guam residents who were on island while the U.S. military was testing nuclear weapons in the Pacific between 1946 to 1958 to also be designated as "downwinders," and therefore be

eligible to apply for federal money under the Radiation Exposure Compensation Act, passed by the U.S. Congress in 1990.

The Guam Communications Network (GCN) established in 1993 has been involved in cancer education, research and advocacy since 1999. Their 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 educational material development. In addition, GCN founded the Chamorro Cancer Survivors Network which recently recruited and trained Chamorro

cancer survivors on Guam as support group facilitators and produced a cancer resource guide for cancer survivors and their families. Other GCN programs include diabetes education and management, senior care managements and HIV/AIDS community capacity building. GCN has been funded by the Susan G. Komen for the Cure Foundation, the Lance Armstrong Foundation, the Asian and Pacific Islander American Health Forum (APIAHF), the California Breast Cancer Research Program and is a community partner with the WINCART (Weaving an Islander Network in Cancer Awareness, Research and Training), a 5-year NCI funded project.

**T**he American Cancer Society Guam Unit has had a presence in Guam since 1969. In addition to providing patient services such as assistance for off-island referrals, medical equipment rental, assistance purchasing medical supplies and nutritional supplements, the American Cancer Society also provides cancer education resources such as brochures, educational aids, posters and on-line computer access for cancer information.

**T**he Edward M. Calvo Cancer Foundation was established in September 2004 by a local family on Guam after the loss of a family member to cancer. The foundation provides monetary grants for any Guam resident actively receiving treatment for cancer.

**GOAL A: ENSURE CANCER SURVIVORS RECEIVE ADEQUATE CARE AND SUPPORT TO MAINTAIN THE BEST QUALITY OF LIFE POSSIBLE.**

**Objective 1. Increase access to information regarding cancer survivor support groups.**

**Baseline: Access to information regarding support groups is limited.**

Strategy 1.1. Identify cancer survivor support groups available in Guam.

Outcome 1.1. A list of cancer survivor support groups in Guam will be available by December 2007.

Strategy 1.2. Disseminate information regarding available cancer survivor support groups to patient navigator program, clinics, hospital and community.

Outcome 1.2. Public awareness of cancer support groups available on Guam will increase by February 2008.

Strategy 1.3. Identify and disseminate information regarding online support groups, 1-800 toll free numbers and national organizations.



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Outcome 1.3. Public awareness of online support groups, 1-800 toll free numbers and national organizations will increase by August 2008.

Data Sources: Support group survey, process evaluation results

**Objective 2. Increase access to information regarding local financial resources such as the American Cancer Society and the Edward M. Calvo Cancer Foundation available to cancer patients.**

**Baseline: Access to information regarding financial resources is limited.**

Strategy 2.1. Identify organizations that provide financial assistance for cancer patients on Guam.

Outcome 2.1. A list of organizations that provide financial assistance will be available for cancer patients by December 2007.

Strategy 2.2. Disseminate information to patient navigator program, clinics, hospitals and community.

Outcome 2.2. Public awareness of available financial resources for cancer patients will increase by December 2008.

Data Source: Process evaluation results, Patient Navigation Program report

**Objective 3. Develop a palliative care program and collaborate with existing programs in Guam.**

**Baseline: Programs exist that address aspects of palliative care, however capacity is limited.**

Strategy 3.1. Assess what, if any palliative care programs are available in Guam and determine what programs are needed.

Outcome 3.1. A list of available palliative care programs and a list of needed programs will be available by December 2008.

Strategy 3.2. Review models of palliative care programs and determine what would be most appropriate for Guam.

Outcome 3.2. A palliative care program model suitable for Guam will be identified by December 2009.

Strategy 3.3. Collaborate with established Human Resources for Health to offer training programs for palliative care.

Outcome 3.3. Palliative Care training programs will be offered under the Human Resources for Health Plan by 2012.

Strategy 3.4. Advocate for palliative care programs to ensure cancer patients receive timely and effective pain and symptom care at Guam Memorial Hospital Authority or private clinics.

Outcome 3.4. Palliative care programs will be available to 30% of patients at Guam Memorial Hospital Authority or private clinics by 2013.

Strategy 3.5. Collaborate with community partners to encourage research for the establishment of a hospice facility in Guam.

Outcome 3.5. A plan for the establishment of a hospice facility will be developed by 2015.

Strategy 3.6. Encourage and support grant application and funding opportunities for the establishment of a hospice facility in Guam.

Outcome 3.6. Funding will be secured for the establishment of a hospice facility in Guam by 2020.

Data Sources: Process evaluation results, training progress reports, surveys

**Objective 4. Identify holistic approaches for pain management in Guam.**

**Baseline: To be determined.**

Strategy 4.1. Assess what, if any, alternative medicine services are available in Guam for pain management.

Outcome 4.1. A list of services for available alternative medicine in Guam will be compiled by March 2008.

Strategy 4.2. Disseminate information regarding available holistic approaches for pain management available in Guam.

Outcome 4.2. Public awareness of available holistic services for pain management will increase by December 2009.

Data Source: Process evaluation results



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**Objective 5. Provide counseling and support services for cancer patients and their families/caregivers.**

Baseline: To be determined.

Strategy 5.1. Identify existing counseling services for cancer patients and their families.

Outcome 5.1. A list of existing counseling and support services available to cancer patients' families will be established by January 2008.

Strategy 5.2. Disseminate list of existing counseling and support services to patient navigator program, clinics, hospitals and community.

Outcome 5.2. Public awareness of existing counseling and support services available to the families of cancer patients will increase by December 2008.

Data Source: Process evaluation results

**V. DATA AND RESEARCH**

Most cancer-related data (not to be limited to cancer incidence and mortality rates) is presently collected by various entities and organizations throughout the island without a coordinated approach. To date, the only coordinated system for data integration and analysis is through the Guam State Epidemiological Workgroup (SEW), which was established under the Strategic Prevention Framework State Incentive Grant (SPF-SIG) of the DMHSA. The SEW collects data on tobacco, alcohol and illicit drug consumption and consequences (including cancer) from multiple sources on an annual basis.

Data has been collected through the Behavioral Risk Factor Surveillance System (BRFSS), the Youth Tobacco Survey (YTS) but not on a consistent basis. The most recent data available through the BRFSS is for years 2001-2003. Although data has been collected through the YRBS for the years 1995-2007, the data for 1999-2005 is not accessible through national databases because the data was not weighted.

In March 2007, the Department of Public Health and Social Services initiated a contract with the University of Guam Cooperative Extension Service to conduct the 2007 BRFSS. The survey is currently being conducted and results should be reported during the first quarter of 2008.

### ***A. Guam Cancer Registry***

In 1998, in response to dissatisfaction with a lack of specific information regarding the impact of cancer in Guam, Dr. Eduardo Cruz, a physician member of the 24<sup>th</sup> Guam Legislature, introduced legislation to establish a Guam Cancer Registry (GCR) within the Department of Public Health and Social Services. Bill 24-198 was passed by the legislature with the intent that the GCR would "...aid in the reduction of cancer morbidity and mortality on Guam by providing basic island-wide population-based cancer incidence data for the facilitation of cancer research and the evaluation of cancer control programs." This bill became public law with the signature of then Governor, Carl T.C. Gutierrez on May 6, 1998. Public hearings were conducted to develop regulations governing operation of the GCR and, after submission to the legislature for review they went into effect on June 15, 1999.

Although the GRC officially began operation in 1999, information on earlier cancer cases was gathered by reviewing death certificate records in the Office of Vital Statistics that dated back to 1970 – the year the standardized national death certificate was adopted for use in Guam. The format for this record included information on contributing causes of death and "other significant conditions," thus, providing a more complete record of the medical state of deceased persons. For purposes of cancer registration, cases were added to the registry if cancer was specified in any section of the death certificate, not exclusively if the patient's attending physician believed cancer to be the immediate cause of death. Data on cancer cases diagnosed before 1998 was also collected by reviewing the files of the American Cancer Society, Guam Chapter.

The GCR is currently operated as a joint activity of the DPHSS and Cancer Research Center of Guam (CRC) at the University of Guam (UOG). With the support from the Secretariat of the South Pacific Community (SPC), the GRC was initiated using Canreg3 data collection software developed by the World Health Organization's International Agency for Research on Cancer. EpiInfo6, a National Centers for Disease Control and Prevention data analysis program, is currently used to analyze registry data. In September of 2003, UOG entered an agreement with the



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Cancer Research Center of Hawaii and Hawaii Tumor Registry to establish a research partnership which is supported by a NCI Minority Institution/Cancer Center Partnership grant. With this support, Guam Cancer Registry operations have improved significantly. The Abstract Plus software package (CDC National Program of Cancer Registries software) is presently being used and registry staffing has been increased from 1 part-time staff to the present two full-time and 1 part-time personnel.

Currently, the GCR collects data from the GMHA Medical Records Department and Laboratory as well as private clinics. Cancer cases are also obtained by reviewing records from the Vital Statistics office. Data on Guam patients in Hawaii are obtained from the Hawaii Tumor Registry.

Guam law dictates that Guam health care providers (anyone providing diagnostic or treatment services to cancer patients) shall report each new case of cancer to the GCR. However, challenges remain in accurately identifying all cancer cases. If a patient is sent overseas for diagnosis or treatment, it may not be possible to follow up with the patient or to retrieve information related to the patient's referral since their records are usually sent directly to the referring physician and GMHA medical records department may be bypassed. At present, however, one foreign hospital (St. Luke's in Manila, Philippines) is providing data on Guam cancer patients who are treated there. At present, efforts continue to establish routine data collection procedures from all private medical clinics in Guam as well as the Government of Guam Medical Referral Office and the American Cancer Society, Guam chapter.

**Goal A:**

**Improve the quality of cancer-related data for Guam (not to be limited to cancer incidence and mortality rates).**

**Objective 1. Provide accurate baseline data for each section of the Guam Comprehensive Cancer Control Plan.**

**Baseline: To be determined.**

Strategy 1.1. Assess existing baseline data for Guam.

Outcome 1.1. A compilation of existing baseline data will be available by December 2007.

Strategy 1.2. Obtain Guam baseline data that are unavailable.

Outcome 1.2. A compilation of baseline data will be available by July 2008.

Strategy 1.3. Include baseline data in the Guam Comprehensive Cancer Control Plan and revise the Plan accordingly.

Outcome 1.3. The Guam Comprehensive Cancer Control Plan will include updated baseline data by September 2008.

Strategy 1.4. Advocate for the Department of Public Health and Social Services to collect cancer risk factor data through the Behavioral Risk Factor Surveillance System, annually and the Youth Tobacco Survey, biannually; advocate for the Guam Public School System to continue to collect data through the Youth Risk Behavior Survey and publish report or develop website to access information.

Outcome 1.4. Data will be collected consistently through the Behavioral Risk Factor Surveillance System, the Youth Tobacco Survey and the Youth Risk Behavior Survey by 2012.

**Data Sources:** Comprehensive Cancer Control Plan, Guam Cancer Registry, Behavioral Risk Factor Surveillance System, the Youth Tobacco Survey and the Youth Risk Behavior Survey

**Objective 2. Improve reporting of cancer cases to the Guam Cancer Registry.**

**Baseline:** Data collected by the Guam Cancer Registry does not include data from all possible sources.

Strategy 2.1. Develop a process for non-Guam Memorial Hospital Authority entities to regularly provide cancer-related diagnostic and treatment information to the Guam Cancer Registry.

Outcome 2.1. The Guam Cancer Registry will have the cooperation of all potential sources of appropriate information by December 2009.

Strategy 2.2. Request that the Office of the Attorney General issue an opinion regarding whether current laws/regulations concerning the reporting of cancer data also apply to additional sources not currently cooperating with the Guam Cancer Registry (such as insurance companies, Medically Indigent Program and if not, advocate for modification of existing laws and regulations so that they do.



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Outcome 2.2. The Guam Cancer Registry will have the cooperation of all important sources of data by December 2010.

Data Source: Guam Cancer Registry

**Objective 3. Increase the capacity of the Guam Cancer Registry to identify and track cancer cases in a timely fashion.**

**Baseline: The Guam Cancer registry is staffed by two full-time employees and 1 part-time employee**

Strategy 3.1. Advocate that the Guam Cancer Registry has at least two cross-trained research assistants on its staff at all times.

Outcome 3.1. The Guam Cancer Registry will have two cross-trained research assistants on staff at all times to increase their capacity by July 2008.

Strategy 3.2. Advocate that the Guam Cancer Registry actively follow up with all living cancer patients at least once a year.

Outcome 3.2. The Guam Cancer Registry will actively follow up with all living cancer patients at least once a year by December 2007.

Data Source: Guam Cancer Registry

### ***B. The Cancer Research Center of Guam***



In September 2003, the University of Guam and the Cancer Research Center of Hawaii received a \$3.6 million planning grant from the National Institutes of Health to establish a research partnership between the two institutions. Under this partnership, cancer-related research is currently being conducted in the areas of nutrition, tobacco use and betel nut use. Potential cancer cures are also being sought through the study of marine sponges. In addition to these specific research studies, the partnership also aims to increase the number of qualified minority cancer research investigators and building local research capacity through training and development.

**Goal B:**

**Research on cancer in local populations will be conducted by local researchers.**

**Objective 1.** Advocate for increased capacity of the University of Guam to provide local residents with training in cancer research.

**Baseline:** The University of Guam/University of Hawaii Cancer Research Center collaboration to develop minority researchers is still in planning phase, so capacity is limited.

Strategy 1.1. Advocate for the expansion of the existing minority cancer research training program.

Outcome 1.1. The number of local researchers who receive training in cancer research through the minority cancer research training program will increase 5% by 2012.

Strategy 1.2. Encourage individuals who have received cancer research training to further their cancer research/studies.

Outcome 1.2. The number of individuals who further their cancer research/studies will increase 5% by 2012.

Strategy 1.3. Encourage Chamorro individuals who receive cancer research training to further their cancer research/studies to address disparities in the community.

Outcome 1.3. The number of Chamorro individuals who further their cancer research to address disparities in the community will increase 10% by 2012.

Data Source: University of Guam

**VI. FINANCING AND INSURANCE**



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Some employers in Guam provide their staff with the option to purchase health insurance. There are a number of insurance companies in Guam and rates vary from provider to provider. The cost and availability of insurance coverage for screening and treatment services are key concerns for the island. According to 2003 Behavioral Risk Factor Surveillance System data, 79.1% of individuals had insurance coverage.

Although the DPHSS operates a locally-funded Medically Indigent Program (MIP) designed to pay for medical expenses of low-income families without other health insurance, financial support for the program has been reduced. Many private physicians practicing in Guam now refuse to accept MIP patients because of chronically late payments and denial of claims.

In addition to concerns regarding the cost and availability of insurance, access to diagnostic or treatment services remain a problem for island residents. These factors force individuals to travel off-island to receive diagnostic or treatment services not available in Guam and ultimately present additional costs for treatment (for travel, lodging, etc.) and raise issues of whether insurance will cover the cost of all services.

### Goal A:

**Advocate that the best possible insurance coverage for cancer screening and treatment will be available and affordable.**

**Objective 1. Determine present insurance coverage of cancer-related services (including screening, diagnosis and treatment) in Guam.**

**Baseline: There are a number of health insurance companies in Guam with varying levels of coverage.**

Strategy 1.1. Collaborate with partners to assess current insurance plans to identify coverage offered through each health insurance company.

Outcome 1.1. Gaps in insurance coverage for cancer-related screening and

treatment will be identified by 2009.

Data Source: Process based evaluation

## VII. POLICY AND ADVOCACY

**Primary Goal: Promote social and policy environment conducive to living healthy lifestyles.**



Policy initiatives are among the most powerful levers of population-level behavior change. The World Health Organization, in its publication *“Preventing Chronic Diseases: A Vital Investment”* urges all of its Member States and Territories to enact evidence-based policies that support risk reduction, disease control and rehabilitation for the prevention and control of chronic diseases like cancer. The US Centers for Disease Control and Prevention (CDC) in its publication *“Preventing and Controlling Cancer”* recognizes the importance of collaborating with policy makers to ease the burden of cancer.

Guam’s SEW has documented the health impact of policy interventions on youth smoking. Prior to 1999, youth smoking rates on Guam were consistently over 40%, despite the ongoing presence of school-based educational programs and outreach (which are among the least effective tobacco control interventions.) Reductions in current smoking among high school youth first occurred in 1999, when the Synar law (prohibiting sales of tobacco to minors) was first introduced. The next significant



**Guam Comprehensive Cancer Control Plan 2007-2012**

drop in smoking prevalence happened in 2003, when tobacco taxes were increased by 1400%. Current smoking among middle school youth showed its first significant drop ever in 2005, when the Natasha Act (prohibiting smoking in most enclosed public places) came into effect. These highlight the critical and important role of tobacco taxation policy and tobacco control legislation in decreasing youth tobacco use.

Similar policy initiatives are needed to reduce exposure to cancer risk factors, promote healthy behaviors, and facilitate access to cancer services.

**Objective 1. Collaborate with local partners to advocate for health policies that support cancer prevention and control and improve community access to cancer-related screening, diagnostic and treatment services.**

**Baseline:** Currently, the Coalition does not have a policy advocacy committee.

Strategy 2.1. Identify and recruit members such as health providers (physicians, homecare, diagnostic, allied health practitioners) health plan providers, cancer survivors or their caregivers for the advocacy committee.

Outcome 2.1. Members of the Coalition's policy advocacy committee will be identified by 2008.

Strategy 2.2. Establish a plan of work that identifies key policy initiatives needed and the strategies, activities, expected results, and responsible parties to achieve the policy targets.

Outcome 2.2. The advocacy group's plan of work will be established by August 2009.

Strategy 2.3. Implement the plan of work and monitor progress towards achieving policy targets.

Outcome 2.3. Implementation activities outlined in the plan of work will begin before the end of 2009. Priority policy targets achieved by 2012.

**Data Source:** Process based evaluation

World Health Organization. *Preventing Chronic Disease: A Vital Investment*. WHO: Geneva, Switzerland, 2005.

## IMPLEMENTATION

The Guam Comprehensive Cancer Control Coalition (GCCCC) is committed to implementing the goals, objectives and strategies identified in the Guam Comprehensive Cancer Control Plan (GCCCP).



The Steering Committee will continue to serve in its capacity as the advisory and decision-making body of the GCCCC. The Steering Committee will oversee distribution of the GCCCP and establish timelines to achieve implementation activities based on yearly work plans. They will develop a process for identifying priorities based on evaluation results, the burden of cancer and available resources. Additionally, the Steering Committee will be responsible for overseeing the coalition membership: retaining current members, recruitment of new members, and strengthening partnerships in the community.

Standing committees will be created to oversee Communication and Evaluation. The Communication Committee will develop both short and long term communication plans and address the creation of a newsletter and a website to highlight Coalition activities. The Communication Committee will designate a Community Relations Officer to serve as the main point of contact for all media and community relations. The Evaluation Committee will be responsible for overseeing the processes identified in the evaluation portion of this plan.



Ad hoc committees to address the creation and revision of bylaws, the organization of annual community cancer conferences, membership drives and other activities will form and dissolve as needed.



Action Teams will be organized to address the six priority areas of 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. Each action team will collaborate to ensure strategies are implemented as prioritized in the yearly Work Plan.

Support Expertise Workgroups will organize to oversee data, funding and resources. A Data Support Expertise Workgroup will direct collaborative efforts as baseline data is compiled. Baseline data will be collected and in turn, used to measure the effectiveness of the GCCCP stated strategies. The Funding and Resources Support Expertise Workgroup will take on the responsibility of identifying additional sources of funding to further support implementation efforts.

## **EVALUATION**

As the GCCCP moves from planning to implementation continued evaluation as previously outlined will be a vital component to assessing progress and ensuring the sustainability and success of the Guam Comprehensive Cancer Control Plan.

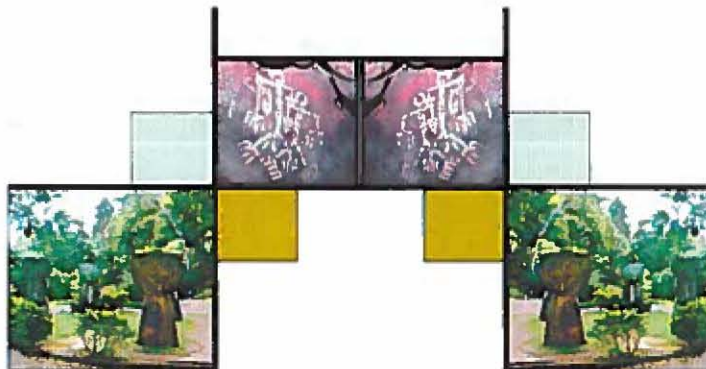
The GCCCP serves as a guide for addressing the burden of cancer in Guam. The GCCCP proposes goals, objectives and strategies aimed at reducing cancer incidence and mortality and improving the quality of life for the people of Guam. To determine effectiveness of the GCCCP, an Evaluation Committee will be formed under the Coalition to oversee all evaluation efforts. Evaluation will focus on the following areas:

1. Guam Comprehensive Cancer Control Plan;
2. The implementation process and success in achieving outcomes; and
3. Guam Comprehensive Cancer Control Coalition.

Annual reviews conducted externally will assess both the process used to meet stated objectives and the progress achieved towards meeting stated outcomes. These reviews will allow annual progress reports to be presented to the Coalition and annual opportunities for the revision of priorities to reflect changes in data, needs, improved technology and available resources. In this sense, the GCCCP will serve as a living document, evolving based on the outcomes identified through evaluation.

Whenever possible, measurable objectives were included in the GCCCP. A Data Support Expertise Workgroup (as outlined in the Implementation Plan) will oversee the collaborative efforts of related agencies to determine and compile needed baseline data. Baseline data will be collected to measure the effectiveness of the stated strategies.

Surveys will be conducted internally to evaluate the composition of the Coalition and determine membership satisfaction and membership needs. The survey process will ensure that the Coalition is representative of the community and the members remain committed to implementation of the GCCCP.



## References

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- 3 <http://new-paradigm.co.uk/Appreciative.ltm>; Last accessed: March 21, 2007
- 4 Behavioral Risk Factor Surveillance System at <http://www.ded.gov/brfss/index.htm>; Last accessed: March 22, 2007



5 Guam State Epidemiological Workgroup (SEW). *Guam Substance Abuse Epidemiological Profile, 2006*. Hagatna, Guam: DMHSA, 2007.

6 Ibid.

7 [www.tobaccofreeguam.com](http://www.tobaccofreeguam.com); Last accessed March 22, 2007

8 [http://www.peaceguam.org/docs/newsroom/PEACE\\_Strategic\\_Plan\\_Press\\_Release.pdf](http://www.peaceguam.org/docs/newsroom/PEACE_Strategic_Plan_Press_Release.pdf); Last accessed: March 22, 2007

9 Guam SEW. *Guam Epidemiological Profile, 2006*.

10 Ibid.

11 [http://www.guamlegislature.com/public\\_laws.htm](http://www.guamlegislature.com/public_laws.htm); last accessed: March 22, 2007

**APPENDIX**



## **COALITION COMPOSITION**

### **ACADEMIC:**

Guam Public Schools System

Private Schools

University of Guam Cancer Research Center Guam

University of Guam Cooperative Extension Service Agriculture and Natural Resources (ANR), 4-H, Expanded Food and Nutrition Education Program (EFNEP), Food Safety and Economic Community Systems (ECS)

University of Guam School of Nursing

University of Guam Tobacco Control Advisory Group (TAG)

### **PUBLIC HEALTH:**

Guam Breast and Cervical Cancer Early Detection Program (GBCCEDP)

Bureau of Family Health & Nursing Services (BFHNS)

Cancer Awareness Program (CAP), [Preventive Health Block Grant Program ]

Division of Senior Citizens (DSC)

Guam Cancer Registry

Immunization Program

Maternal and Child Health (MCH) and Family Planning Program

Medical Indigent Program (MIP) and Medicaid (MAP)

Medical Social Services (MSS), which includes Women's Health, Children with Special Health Care Needs (CSHCN) and the HIV/AIDS Program

Northern and Southern Regional Community Health Centers

## **Guam Comprehensive Cancer Control Plan 2007-2012**

Tobacco Prevention and Control Program

Women, Infants and Children (WIC) Program

### **GOVERNMENT AGENCIES:**

Governor's Office

Guam Environmental Protection Agency (GEPA)

Guam Women's Bureau

Guam Congressional Representative's Office, Delegate Madeleine Z. Bordallo  
29<sup>th</sup> Guam Legislature

Lieutenant Governor's Office

Mayors' Council of Guam

### **HEALTHCARE SYSTEMS:**

Cancer Center of Guam

Department of Mental Health and Substance Abuse (DMHSA), Prevention and  
Early Intervention Advisory Community Empowerment (PEACE)

Guam Memorial Hospital Authority (GMHA)

GMHA, Health Education Program

Health Partners, L.L.C.

Private Healthcare Clinics

University of Guam Student Health Services

U.S. Navy Hospital - Guam

### **PROFESSIONAL:**

Breast Feeding Coalition

Guam Medical Society

Guam Nurses Association (GNA)



## **COALITION COMPOSITION**

Guam Nurses Association (GNA)

Native Researchers' Cancer Control Training Program

Pacific Islander Cancer Control Network

### **OTHER ORGANIZATIONS**

American Cancer Society Guam Office

Catholic Social Service

Edward M. Calvo Cancer Foundation

Get Healthy Guam Coalition

Guam Cancer Support Group

Guam Diabetes Association

Guam Hotel and Restaurant Association

Guam Memorial Hospital Volunteers

Guam Women's Club

Guam Women's Council

National Cancer Institute's Cancer Information Service Pacific Region

Pacific Association for Radiation Survivors (PARS)

## **COALITION COMPOSITION**

### **Religious Organizations**

Rotary Club of Guam, Guam Shrine Club and Guam Lion's Club

Salvation Army

Soroptomist International of the Marianas

### **COMMUNITY-BASED ORGANIZATIONS**

The Guam HIV/AIDS Network Project (GUAHAN Project)

### **MEDIA:**

Guam Public Telecommunications Station

KPRG – National Public Radio Station

Sorensen Pacific

### **BUSINESSES:**

Bank of Guam

Staywell Guam, Inc.

### **INDIVIDUAL CANCER SURVIVORS**