

GUAM HEALTH PLAN

SUMMARY

**BUREAU OF PLANNING
GOVERNMENT OF GUAM
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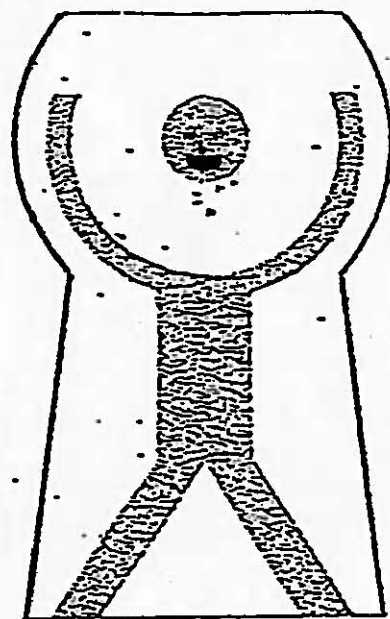
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INTRODUCTION

INTRODUCTION

The Guam Health Plan or Health Systems Plan (GHP or HSP)

of the Guam Health Planning and Development Agency (GHPDA)

What does it mean to you,

as a citizen of Guam?

as a health provider?

The Guam Health Plan - or GHP - is a five-year plan for improving the health of the residents of Guam. It was developed by local residents, both consumers and providers. This "Plan Summary Guide" has been prepared to tell you about the Guam Health Plan. The Guide contains highlights of the service components of the Plan, background information about the Guam Health Planning and Development Agency, and information about how the Plan was developed. The Guide is not intended to be a substitute for the Plan itself, but rather an introduction to it and a summary of what it contains.

After you have read this Guide, if you would like additional information, we encourage you to refer to the entire Guam Health Plan document. Copies of the GHP are available for public inspection at the GHPDA office at Suite 205 GCIC Bldg., Agana, Guam. The telephone numbers are 472-6831 or 472-6832. Residents can also inspect the Plan at the Department of Public Health and Social Services, Mangilao, Nieves Flores Memorial Library and Guam Memorial Hospital.

The overall purpose of the GHP is to provide a basis for developing a stronger more economic and efficient health delivery system. In developing this GHP, the GHPDA has been guided by national and state goals, objectives, regulations,)

and planning priorities. Using these as a base, the Council members working with the GHPDA adopted goals for the Plan which localized these national and state policies. In other words, they established goals which responded to the needs of the people of Guam, while still being consistent with national and State policies.

It is important to note that the goals in the Guam Health Plan are also directly related to reducing present and future increases in health care costs. This is accomplished in a variety of ways. For example, some goals address a desired number of health care resources. If the existing resources in our area are greater than the desired number, then objectives may be aimed at reducing these excess resources. In this way, the continued maintenance of unneeded resources does not contribute to the total cost of health care. Another example is that some goals may emphasize the need for less costly alternatives to inpatient care. Also, there are goals which focus on health promotion and the prevention of illness as other ways of containing or reducing health care costs.

The purpose of all the goals in the Guam Health Plan is to help create a health system in which health facilities and services are matched to the needs of the local population in the most effective and efficient manner possible.

WHAT IS THE GUAM HEALTH PLANNING AND DEVELOPMENT AGENCY?

The Guam Health Planning and Development Agency is a Government of Guam Agency established under authority of Public Law and is designated to implement a federal law -- Public Law 93-641, which is known as the Health Planning and Resources Development Act of 1974. This Law established State Health Planning and Development Agencies and Health Systems Agencies throughout the entire country, and made them responsible for health planning and for the development of health resources in the areas they serve. There are over 200 HSAs in the United States and 1536 agencies of which Guam is one.

One of the most important features of P.L. 93-641 is that it gives local citizens the opportunity to work together to plan for their own health care. GHPDA is assisted in its work by the Guam Health Coordinating Council members, made up of area residents who serve as Council members upon appointment by the Governor. These citizens represent the social, economic, linguistic, racial and geographic populations of the population. A majority of these citizens (60%) are health care "consumers", and the remainder are "providers" of health care.

The Guam Health Planning and Development Agency was designated by the United States Department of Health, Education and Welfare (DHEW) on August 1, 1976. It is the health planning agency for the Territory of Guam, which is considered as a Health Service Area. This area of some 212 square miles contains a population of some 100,000 persons. The area served by the Territory ranges from the urban concentration of villages like Dededo to rural areas like Merizo.

There is more information about the GHPDA -- how it is organized, what its responsibilities are, and how it operates -- within the complete Health Systems Plan.

WHAT IS THE HEALTH SYSTEMS PLAN?

The Guam Health Plan is the Territorial plan for improving health care in Guam over the next five years. It analyzes the delivery of health care services in the Territory, points out the long-range health needs of our citizens, and establishes goals and objectives to meet those needs. It will be used to help plan for the delivery of health care in this area for the next five years.

The objectives of the GHP are:

1. To identify the health needs of our citizens;
2. To help coordinate the delivery of health services to meet those needs;
3. To help make health care available for all citizens; and
4. To help control the mounting cost of health care.

The Plan is used as the basis for the Annual Implementation Plan (AIP). The AIP contains those goals and objectives derived from the GHP that were selected as having the highest priority for implementation within the first year.

In addition, the Plan will serve as the guiding document for the GHPDA to follow in carrying out its programs and activities. For example, the Plan provides guidelines for the GHPDA to use when it reviews applications for what is known as "Certificate of Need". Under local law, all hospitals and other health facilities must file applications, called Certificate of Need applications, when they want to start new services, increase or change existing services, or

buy new equipment which costs over \$50,000. The GHPDA is authorized by P.L. 14-150 to review all Certificate of Need applications within the Territory, and to recommend that they be approved or disapproved. Once the Guam Health Plan is approved by the federal government, the guidelines in the Plan will be used in this review process. The guidelines will also be used when the GHPDA reviews applications for federal funds for health projects within the Territory.

HOW WAS THE HEALTH SYSTEMS PLAN DEVELOPED?

The creation of a Guam Health Plan is the most important activity of GHPDA during its first two years. It has been the focus of the Agency's activities for well over three years. The Plan Development Committee, which is one of a number of standing committees of GHPDA has the overall responsibility for developing the GHP. Like the other Guam Health Coordinating Council committees, the Plan Development Committee is made up of local citizens, both consumers and providers. In fact, local consumers and providers have been involved at every stage in the process of putting together the Plan.

As an example -- to insure community participation in the development of the GHP, the Plan Development Committee appointed study and/or special groups, which were made up of local consumers and providers with special interests and expertise. These study groups will help develop the service components in the Plan in the coming years. These reports will be reviewed by our local providers and interested individuals. They will also be reviewed by the Municipal Planning Councils. These draft reports will need to be revised many times, based on the comments received from such local residents.

All these revised reports will be put together into the Guam Health Plan throughout the years, and will be released for public review. Then, the entire community will be asked to comment on the Plan by reviewing it and by attending Public Hearings. In order to make sure that all interested citizens have the opportunity to participate, many Public Hearings on the Plan will be held at convenient locations throughout the Territory. This year it will be held between March 5 and April 12, 1979. In addition to the Public Hearings, members of the public

are encouraged to submit written comments about the GIP.

All comments received at the Hearings and in writing will then be reviewed by the GHCC and the Plan Development Committee, and final revisions will be made in the Plan document. The final revised Health Systems Plan will then be further reviewed by the GHCC and approved by the GHCC in April 1979, and forwarded to the Governor and to Region IX of the U.S. Department of Health, Education and Welfare.

WHAT IS INCLUDED IN THE HEALTH SYSTEMS PLAN?

As you can see from looking at the Table of Contents, the GHP is a long and comprehensive document. It is divided into ten chapters, and several of the chapters are subdivided into sections. This is the first Guam Health Plan of the Guam Health Planning and Development Agency. It is just the beginning. As the planning process continues over the next five years, the Guam Health Plan will be revised and updated every year. It will be expanded to include aspects of the health care system which are not in this first Plan such as additional health services and the development of the medical facilities plan portion.

GUAM HEALTH PLAN

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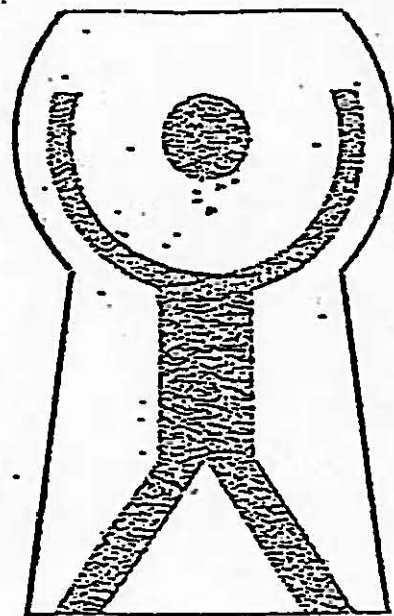
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PLANNING AREA PROFILE

DESCRIPTION OF THE HEALTH SERVICES PLANNING AREA

Demographic Overview

This overview describes the prevalent demographic and socio-economic conditions in Guam. Both the health of Guam resident and the delivery of health care services are affected by the structure and social and economic condition of the population. The numbers and proportions of males and females, the ethnic group distribution, the age distribution, and the migration patterns of the population are information that is utilized in planning a health care delivery system which is responsive to the needs of the people. Additional information such as median family income, percent of families below the poverty level, and the unemployment rate can also be used in determining the need for health services.

The information for this section is extracted primarily from Bureau of planning & other government data. There are some limitations in using this data, but its overall consistency in presenting a Territorial overview far outweighs the drawbacks of using old estimates which are questionable. When consistent information is available, however, more recent estimates are included. Whenever possible, national, and Guam health service area statistics are compared. Further review and analysis of this information as it relates to the health system is presented in other sections of this document. Additional detailed information describing the demography of the island as a health service area can be found in the Guam Health Systems Plan (GHP) of the Guam Health Planning and Development Agency.

1. Delineation of the Planning Area

Guam is situated between Honolulu and the Philippines and is some 2,000 miles from San Francisco, 1,600 miles from Manila, 1,550 from Tokyo & 3,700 miles from Hawaii.

Guam is divided into 19 villages but is considered as one health service area. This area contains one civilian acute care hospital facility & a number of village health centers & 2 areawide health facilities under the auspices of the Department of Public Health & Social Services. The Island covers some 212 square miles with a population density of persons per square mile.

2. General Population Characteristics

The total population of Guam as of 1979 was 87,205 (civilian only) with an estimated military & military dependents. Of Guam's villages some are considered rural like Merizo & Umatac in the Southern area. Areas having urban populations are as follows: Agaña, Tededo, Barrigada & Tamuning. The median age in 1975 was 18.9 years showing the island to be a relatively young population. In the U.S. the average median age is 28.1 years. Between April 1970 & Sept. 1975, the civilian population increased from 64,510 to 76,089 for an annual growth rate of 3.4 percent. More than 50.7% of the population increase between 1970-1975 were attributed to net

migration.

am's sex distribution is almost evenly distributed except for the groups 5-19, 45-54 & 60-64. There were more males in these age groups. Between the ages of 20-24, 30-44 & 65 and older, there were more females. In terms of ethnic groups, 55% of the population in 1975 were Chamorros, 19% were Filipinos & 9% were Caucasians.

For purposes of health planning, the population has been further subdivided to emphasize specific age characteristics: under 1 year (preschool), 5-19 years (school age), 20-44 and 45-64 (working age) and 65 years and over (elderly). The population breakdown for 1975 by age group shows that 12.9% of the total population is under 1-4 years of age; 39.4% 5-19; 31.0% 20-44; 13.7% 45-64; and 3.0% 65 years and over.

General Social and Economic Characteristics

Socio-economic statistics provide many indicators of an individual's ability to maintain his/her health and to finance personal health care. The following social and economic characteristics should, therefore, be considered in health planning activities.

Income is one of the dominant factors in obtaining health care. It needs to be further examined in the future. The mean family (four persons) income for Guam in 1976 is \$16,870 as compared to the national figure of \$16,870. 13% of the population 16 years and above have completed at least 4 years of college, 11% have completed high school and 16% have completed elementary schooling and 8% either the 7th or 8th grade. Some 2,166 families are receiving public assistance. Public assistance income includes cash receipts of payments made under the following public assistance programs: aid to families with dependent children, old age assistance programs, aid to the blind, and aid to the permanently and totally disabled. Separate payments received for hospital or other medical care are excluded from this income. Nationally, 5.3% of all families in 1970 were receiving public welfare/assistance income. There are 32,600 employees on the payroll as of Sept. 1977; 55% are employed by the private sector; 30% by the federal government & 25% by the local government.

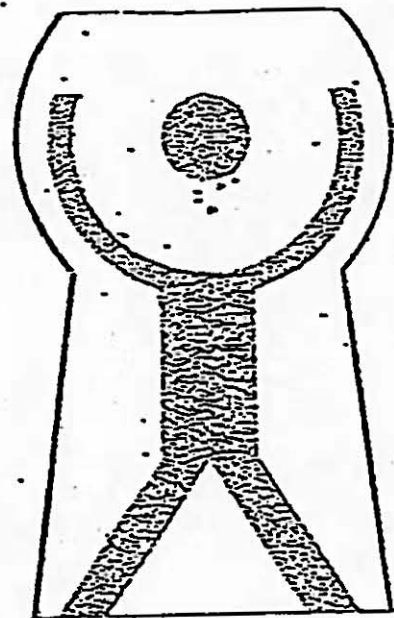
D. Demographic Summary

The general population and socio-economic characteristics greatly influence the health status of Guam resident and affect the delivery of health care.

Age is one of the characteristics which can be used to predict health status and judge the need for health services. In general, older people are less healthy and tend to utilize health services more frequently than younger ones. In areas where there is a high immigration of retired persons or high outmigration of young people, there are likely to be high death rates, greater prevalence of chronic conditions, and greater utilization of health services, especially long-term care services.

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Whereas, where a population includes a high proportion of children,
it is likely to be a greater incidence of acute or short-term
infections, as children are particularly subject to upper respiratory
infections and contagious diseases. Where there is a high pro-
portion of women of childbearing age, birth rates will be relatively
higher with an accompanying need for more pre and post-natal care,
gynecologic units in hospitals, well-baby services, and immunization
programs.

Death rates are different for different racial groups, for men and
women, and for people living in cities as opposed to rural areas.
The kinds of illnesses and disabilities and the needs for curative
and preventive care for each of these population groups also tend
to be different.



HEALTH STATUS

A MODEL SHOWING THE RELATIONSHIP
OF THE HEALTH FIELD CONCEPT TO HEALTH STATUS

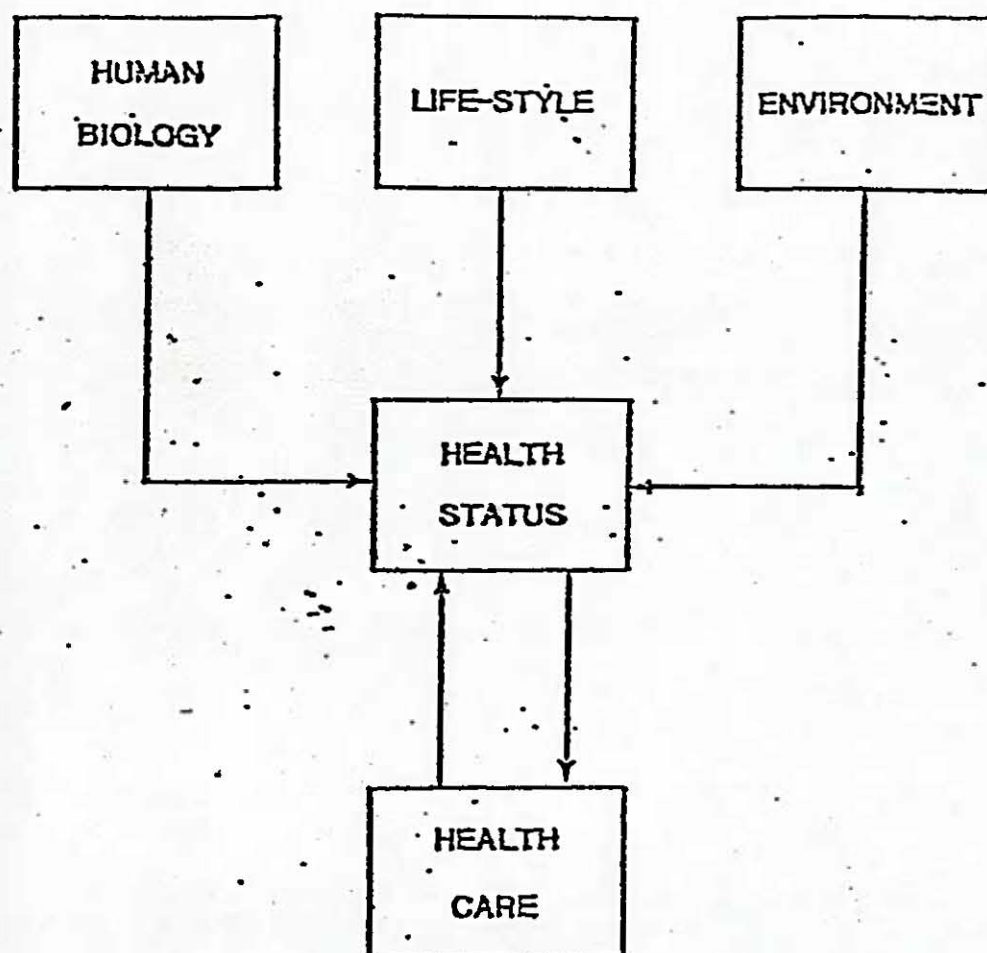


Figure 1.

Source: G. B. Hill and J. M. Romeder: "Health Statistics in Canada," paper presented at the Society for Epidemiological Research, Toronto, Ontario, June 18, 1976.

HEALTH STATUS

Since the emergence of "scientific" medicine some one hundred years ago, society has tended to define health in terms of its negative correlaries-- disease and illness. Problems of health have, as a consequence, been viewed as physical and/or mental conditions requiring medical intervention. Although infectious diseases of decades past have been all but eliminated by vaccines and antibiotics and, hence, supplanted in importance by chronic conditions, we have continued to seek solutions through medical intervention. By and large, the chronic conditions have proven highly resistant to these efforts, despite ever increasing investments in medical research and technology.

Today there is a growing realization that a definition of human health rooted solely in its negative implications is inadequate. There is, therefore, a growing interest in defining health in positive terms; to define what health is as opposed to what it is not; to seek solutions which aims at the promotion of health, not merely the eradication of illness.

One effort to classify the divergent factors affecting human health is the "Health Field Concept" devised by March Lalonde. According to Lalonde this conceptual model "...envisages that the health field can be broken up into four broad elements: Human Biology, Environment, Lifestyle, and Health Care Organization."

Human Biology - includes all aspects of health, both physical and mental which are developed within the human body as a consequence of the basic biology of man and the organic makeup of the individual. This element includes the genetic inheritance of the individual, the processes of maturation and aging, and the many complex internal systems in the body, such as skeletal, nervous, muscular, cardiovascular, endocrine, digestive and so on.

Environment - includes all those matters related to health which are external to the human body and over which the individual has little or no control.

Lifestyle - consists of the aggregation of decisions by individuals which affect their health and over which they more or less have control.

Health Care Organization - consists of the quantity, quality, arrangement, nature, and relationships of people and resources in the provision of health care. It includes medical practice, nursing, hospitals, nursing homes, medical drugs, public and community health care services, ambulances, dental treatment and other health services such as optometry and chiropractics.

The Health Field Concept provides a simple framework for describing, analyzing and reporting community health status problems. Furthermore, analysis in terms of the Health Field Concept suggests that solutions to Guam's priority health problems must be sought not only through medical intervention, but also through social reforms, environmental action, health system monitoring, and individual lifestyle decisions.

The specific health status problems to be addressed in the Guam Health Plan are:

1. Infant Mortality
2. Accidents
3. Chronic Disease inclusive of cardiovascular disease, cancer, cerebrovascular, ALS/PD, cirrhosis of the liver and diabetes mellitus
4. Infectious Diseases Problems
5. Dental Health Problems
6. Suicide
7. Drug Abuse and Alcohol Abuse

A detailed analyses of health status problems is found in the Health Status Section of the Guam Health Plan. Thus this section will only attempt to highlight the major health status problems. The health status problems overview which follows suffers the traditional weakness in that most of the data currently available continues to be related to medical conditions and negative health (i.e., illness and death) measures. What information does exist concerning the social and behavioral aspects of health (both positive and negative) pertains mostly to the nation as a whole. Thus, at present, we can only infer what health related perceptions and practices exist among the various elements of Guam's population as well as the social conditions which promote or inhibit such health related phenomena. Hopefully, time and effort will bring about changes in this situation, allowing us to more adequately plan for and promote the health and well-being of all Guam residents.

TABLE III
LEADING CAUSES OF DEATHS ON GUAM

1925

<u>CAUSE</u>	<u>NUMBER</u>	<u>RATE</u>
BACILLARY DYSENTERY	32	192
TUBERCULOSIS	13	0.78
TYPHOID FEVER	8	0.48
HOOKWORM	2	0.12
ASCARIASIS	2	0.06
MEASLES	1	0.06
PERITONITIS	1	0.06
<u>TOTAL DEATHS</u>	97	583
TOTAL POPULATION	16,648	

TABLE IV
LEADING CAUSES OF DEATHS ON GUAM

1960

<u>CAUSE</u>	<u>NUMBER</u>	<u>RATE</u>
DISEASES OF THE HEART AND ARTERIES	61	0.91
DISEASES OF EARLY INFANCY AND PREMATUREITY UNQUALIFIED	37	0.55
PNEUMONIA AND OTHER DISEASES OF THE RESPIRATORY SYSTEM	30	0.45
ACCIDENTS OTHER THAN MOTOR VEHICLE	29	0.43
CEREBROVASCULAR LESIONS OF THE CNS	18	0.27
OTHER DISEASES OF THE CNS AND SENSE ORGANS *	17	0.25
MALIGNANT NEOPLASMS	15	0.22
MOTOR VEHICLE ACCIDENTS	14	0.21
TUBERCULOSIS, PULMONARY	10	0.15
BRUCELLOSIS, NON-MENINGOCOCCAL	6	0.09
TOTAL DEATHS	351	524
TOTAL POPULATION	67,004	

* PRIMARILY AMYOTROPHIC LATERAL SCLEROSIS- PARKINSONISM DEMENTIA

HEALTH STATUS PROBLEMS

1. Infant Mortality

Although Guam's infant mortality rate has steadily declined since 1974, to a rate in 1977 of 14 infant deaths per 1000 live births, this rate is still short by 2 per 1000 of the national goal of 12 infant deaths per 1000 live births. On Guam, 75% of these deaths are in the first 28 days of life. Additionally, half of the municipalities have unacceptable infant mortality rates greater than 20 per 1000, including: Inarajan, Umatac, Santa Rita, Agat, Dededo, Agaña Heights, Mangilzo, Sinajana, and Yona.

2. Fetal Deaths

In the period 1971-1975, an average of 42.3 fetal deaths were recorded. While the average fetal death ratio² was 14.1, minimum levels of 12.2, 11.1, and 10.1 were recorded for 1971, 1972 and 1973. In 1977, 27% of all fetal deaths were due to anoxia, while another 17% were due to prematurity and still-born causes. Sixty three percent (63%) of fetal deaths occur in pregnancies of 27 weeks or less gestation.

3. Congenital Anomaly

In 1977, the death rate due to congenital anomalies was 0.12 per 1000 population; an average of 0.14/1000 however, was in evidence for the period 1971-1977, making congenital anomaly the eleventh ranking cause

of death on Guam. Of all infant deaths in 1977 (44), 18.2% were due to congenital anomalies. *In 1973, the death rate per 1000 population aged 1-4 for the U.S. was 0.096.)

4. Diseases of Early Infancy and Childhood

Deaths due to diseases of early infancy ranked 5th on Guam in the period 1971-1977, for an average rate of 0.42 deaths per 1000 population or 7 percent (7%) of all deaths. However, in 1977, the average death rate was 0.23 per 1000 population. Diseases of early infancy have ranked as the third and fourth leading cause of death in Guam for 1974-1976, taking 95, 9%, and 6% of all deaths in those years.

Contributing Problem: Low average birth weight has been linked to a number of infant diseases and complications. Low average birth weights have been recorded particularly among native Guamanians (Chamorro) and has been linked to nutritional deficit and lack of proper prenatal care. For the years 1965-1967, the median birth weight of live-born Guamanian infants was 6 pounds 15 ounces, compared to 7 pounds 4 ounces for U.S. newborn infant.

5. Otitis Media

In a 1966 screening sample of school-aged children, 17% were found to have hearing impairments, and 50% of those were due to otitis media. Since 1973, hundreds of children have been diagnosed as suffering from hearing loss by the Hearing and Speech Center. A study in 1970 indicated that hearing loss is four times as frequent among Guamanian school children as for U.S. school children. The problem appears to be particularly acute among children of large families (5 or more siblings).

6. Salmonellosis

Of all Salmonella infections recorded in 1977 (a total of 89), 48% occurred among infants aged 1 year or less.

GOAL I Reduce infant mortality and morbidity, with particular attention to reduction in village differentials, neonatal complications, and certain diseases of early infancy with a high incidence among Guam's population.

GOAL II. ACCIDENTS PROBLEM STATEMENTS

1. ALL ACCIDENTS

For all accidents, the U.S. average mortality rate for 1970-1975, was 0.47 per 1000. For Guam in the period 1972-1976, this rate was 0.85/1000 population,* almost doubled the U.S. average.

2. MOTOR VEHICLE

For the period 1970-1975, the average mortality rate for motor vehicle accidents in the U.S. was 0.20/1000 population, whereas, for Guam the average for 1972-1976 was doubled this 0.44/1000. For the period 1971-1977, motor vehicle accidents as a leading cause of death in Guam has averaged third in rank. The U.S. rate has generally been declining over this period, while Guam's rate has not. Eighty-two percent (82%) of Guam motor vehicle deaths occur among males; males in the 15-24 age group are especially vulnerable.

3. OTHER ACCIDENTS

An average of 29 deaths per year were recorded for the period 1971-1977, for an average mortality rate of .39 per 1000 population. Four times as many males as females died during this period in this category. For the years 1972-1975, the Guam mortality rate exceeds the U.S. rate does not appear to be declining like the U.S. rate. Drowning was the leading cause of death in this category (30% of deaths), followed by accidental falls (15%).

*45 deaths recorded in 1976, due to an airplane crash involving transiting passengers were excluded.

4. OCCUPATIONAL INJURY

The incidence of cases of occupational injury in Guam, expressed as a rate per 100 FTE employees, covering all private sector industries has declined from 6.8 in 1974, to 6.0 in 1975, and 4.7 in 1976. During the same period, the incidence rate of injury in the contract construction industry fell from 13.1 cases to 12.2 cases per 100 FTE employees. In 1976, a rate of 21.4 cases per 100 FTE employees was recorded for residential construction. 2 of the total of 5 fatalities in this year were registered in the construction sector. The occupational injury incidence rate in the private sector on Guam is less than the United States rate for both 1976 (9.2) and 1975 (9.1), and the rate for contract construction on Guam is less than the United States rate for these years (15.3 and 15.9). In general, therefore, occupational injury is not a priority health problem for Guam, although attention should be addressed to conditions and safety precautions that may influence occupational injuries associated with residential construction.

Source: Bureau of Labor Statistics, Guam
1976 Occupational Injuries and Illness;
1974 Occupational Injuries and Illnesses.

GOAL III. CHRONIC DISEASE PROBLEM STATEMENT:

1. CHRONIC DISEASE

In 1977, 44% of all deaths were due to six key chronic diseases:

1) Cardiovascular, 2) Cancer, 3) Cerebrovascular, 4) CNS (ALS-PD), 5) Cirrhosis of the Liver, and 6) Diabetes Mellitus. For the period 1971-1977, the average mortality ratio due to these chronic diseases was 2.46 deaths per 1000 population; or 43% of all deaths were due to these diseases. This rate can be expected to rise (*ceteris paribus*) as the population of Guam continues to age and thus, become more susceptible to chronic diseases of all kinds.

2. CONTRIBUTING PROBLEM

Public health clinicians and officials have long recognized obesity as a major contributing factor to deaths and disease of a chronic nature. Between 1967 and 1968, 112 females and 20 males were hospitalized with a primary or associated diagnosis of obesity.

3. CANCER (MALIGNANT NEOPLASMS)

In 1977, Cancer was the third leading cause of death on Guam, but the second leading cause for the U.S. and for Guam both for the period 1971-1977. Whereas, the U.S. trend showed a rise in the mortality rate, the Guam trend suggests a decline. Both in the U.S. and on Guam, the respiratory system and digestive organs were the primary sites for malignant neoplasms, accounting for 50% of the mortality rate for cancer. On Guam, 85% of the deaths due to malignant neoplasms occurred in the 45+ age group.

In 1977, cerebrovascular disease (including stroke) ranked as the fourth leading cause of death on Guam, with a mortality rate of 0.32 per 1000 population. The average rate of 0.36 per 1000 for the period 1972-1976 on Guam is lower than the U.S. average rate for the same period of 0.40. However, there is no decline evident over the period in Guam as there is for the U.S. 87% of deaths due to cerebrovascular disease occurred among people aged 45+. (50% of such deaths were among those aged 65+.)

5. DISEASES OF THE CENTRAL NERVOUS SYSTEM - ALS-PD

During the period 1971-1977, an average of 18.4 deaths due to diseases of the central nervous system were recorded. This represents a mortality rate of 0.25 per 1000 population. The primary causes of death within this category are two diseases peculiar to Guam:

Amyotrophic Lateral Sclerosis or ALS (accounting for 53% of CNS deaths, 1971-1977), and Parkinson's Dementia or PD (accounting for 47% of CNS deaths). Since 1950, there has been a decline in the incidence and mortality of both diseases, especially ALS. However, for the period 1971-1977, the U.S. recorded an average .01 deaths from ALS/PD for every 100 deaths while Guam recorded 4.4 deaths from ALS/PD per 100 deaths a mortality ratio 440% greater. ALS/PD therefore remains a critical health problem on Guam, particularly among the native Chamorros population and, to a more limited extent, among Filipinos on Guam.

For the period 1971-1977, Cirrhosis of the Liver was the 9th leading cause of death with an average mortality rate of 0.19 deaths per 1000 population. For the period 1970-1975, the average mortality rate on Guam due to cirrhosis of the liver was 0.16 deaths per 1000 population, compared to 0.15 per 1000 population for the U.S. as a whole. There is no trend of decrease in the death rate due to cirrhosis of the liver in the period 1971-1977. The age group with the highest cause-specific death rate was persons aged 45-64 with 69% of yearly cirrhosis deaths. Males were 3 1/2 times more at risk than females overall. Cirrhosis of the liver is closely associated with heavy drinking and alcoholism.

7. DIABETES

During the period 1971-1977, diabetes ranked as for the 10th leading cause of death on average, with an average mortality rate of 0.15 deaths per 1000 population. There is no consistent trend in the yearly mortality rate during this period. For the period 1971-1975, the U.S. average rate was 0.18 per 1000 while Guam's average rate was 0.15 per 1000 population. The 45-64 age group had the greatest frequency of cause-specific death (54% of all diabetes deaths recorded between 1972 and 1976). For the period 1973-1976, there was an average of 5 cases per 1000 population hospitalized for diabetes mellitus, with demonstrated greater susceptibility among Guamaniana females, especially among Guamanians and those aged 65+. For 1971-1977, in the 45-64 age group, Guam had an average diabetes mortality rate among females of .96/1000, four times the national average rate of

GOAL IV. INFECTIOUS DISEASES PROBLEM STATEMENTS:

1. PNEUMONIA

During the period 1971-1977, Pneumonia has averaged 7th among the leading causes of death on Guam. It was responsible for an average of 21 deaths yearly or 0.28 deaths per 1000 population. Guam's average mortality rate for the seven year period is slightly higher than the corresponding U.S. average of 0.26 per 1000 population. Both in the U.S. and on Guam, the general trend is a gradual decline in mortality rates associated with pneumonia. 66% of the average yearly deaths from pneumonia occurred among those aged 45 and over; 19% were among infants less than one year old. For the period 1972-1975, an average incidence (morbidity) rate of 2.97 cases per 1000 population were registered, 84% of them among native Guamanians.

2. VENEREAL DISEASE

For the period 1974-1978, yearly cases of gonorrhea have averaged 256 (conservative figure). Excluding off-island cases, the average incidence rate of gonorrhea among civilians is 1.11 cases per 1000 population, while among military personnel it is 3.82 cases per 1000.

3. HEPATITIS

Infectious cases of hepatitis A, B, and unspecified types averaged 194 cases for the period 1973-1977, for military and civilian population combined. The average civilian incidence rate was 1.18 cases per 1000 population, while it was 4.7 per 1000 for the military. Cases of

hepatitis A were 2 1/2 times as frequent as hepatitis B and unspecified types, on average. Cases primarily affect the 15-30 age group. During severe outbreaks, southern villages appear to be particularly susceptible to the disease.

4. MUMPS

The average number of reported cases of mumps for 1973-1977 was 74 for civilians and 29 for the military; the corresponding incidence rates were 0.97 per 1000 (civilian) and 1.05 per 1000 (military). A severe outbreak of mumps in 1974, however, generated 388 cases in all, 75% of them among civilians, for an incidence rate of 4.05 cases per 1000 population. (Suppression of this year's data yields average incidence rates of 0.27 per 1000 civilian, and 0.51 per 1000 military). In the 1974 outbreak, southern Guam villages were again significantly overrepresented in terms of cases. For the period 1972-1976, the U.S. average incidence rate for cases of mumps was 0.28 per 1000 population.

5. MEASLES (RUBEOLA)

Between 1973 and 1976, 22 civilian cases of mumps were reported for an average incidence rate of 0.23 per 1000 population, which was 1.6 times greater than the U.S. average rate of 0.14 per 1000. 3 Guam villages (Asan, Piti, and Agana) were above the Guam average incidence rate. Suppressing the 1973 outbreak of rubcola, which was double the average number of cases for the study period, incidence rates for civilian population of 0.15 per 1000, and for military population 0.31 per 1000 were recorded.

6. PULMONARY TUBERCULOSIS

For the period 1972-1976, Guam ranks among the U.S. areas with the highest incidence rate: 0.43 per 1000 population, nearly 3 times the U.S. rate of 0.15 per 1000 population. The average civilian rate is 0.66 per 1000, while the average military rate is 0.04 per 1000. Five villages had average rates higher than 0.75 per 1000: Asan, Agana, Agat, Sinajana, and Merizo.

7. SALMONELLOSIS

Between 1973 and 1977, an average of 36 civilian cases of salmonellosis were reported, for an average incidence rate of 0.47 per 1000 population. The incidence rate among military personnel was almost half this figure. Incidence rates above 0.90 per 1000, however, were recorded for the villages of Umatac, Inarajan, Talofofo, Asan, and Agana. In 1977, 61% of all cases were male, and 63% of all cases among those under age 4. For 1972-1976, the Guam incidence rate was 0.24 per 1000 compared to the U.S. rate of 0.11 per 1000.

8. SHIGELLOSIS

The average reported incidence rate for shigellosis, 1973-1977, is about 1/4 that of salmonellosis, or ^{12/100,000} 0.12 per 1000 population, but villages in southern Guam (namely: Inarajan, Talofofo, and Merizo) have rates higher than ^{36/100,000} 0.36 per 1000. Civilian and military rates are equivalent over the period. For 1972-1976, Guam's incidence rate of 0.08 was near the U.S. rate of 0.09 per 1000 population.

9. PARASITIC DISEASES

It is apparent that prevalence rates among school-aged children on Guam of parasites, particularly intestinal parasites, exceed 50% in some villages, notably in the south. A survey in 1973 indicated that Umatac and Merizo villages had positive test-rates for ascaris and trichuris exceeding 20%. The age group most at risk appears to be children aged 1-9. The full extent of parasite infection is not known at this time.

10. BRONCHITIS

The limited morbidity data available to assess the number of people affected by bronchitis suggests an average incidence rate (1972-1975) of 1.56 cases per 1000 combined civilian and military population. The disease affects native Guamanians much more than other ethnic groups (83% of all cases). 60% of all cases were recorded for those aged 1-10.

GOAL V. DENTAL HEALTH PROBLEM STATEMENT:

Dental caries constitutes the major portion of the problem of dental ill-health on Guam, with an estimated 90% of all elementary and preschoolage children having carious teeth. The average number of carious teeth per child is approximately 8. Decayed-missing-and-filled

GOAL VI. SUICIDE PROBLEM STATEMENT:

The seven year average annual rate of deaths due to suicide between 1971 and 1977 was 0.10 per 1000 population; in 1975, the U.S. rate was 0.13 per 1000 population. While the suicide rate has increased in recent years for the U.S. as a whole, there is no demonstrable trend in Guam's suicide rate. The average annual suicide rate for males for the seven year period was 0.85 per 1000 and only 0.15 per 1000 females. It should be noted, however, that for the last three years (1975-1977), an average rate of 0.21 suicides per 1000

GOAL VII. SUBSTANCE ABUSE PROBLEM STATEMENT:

1. DRUG ABUSE (HEROIN)

Using the Heroin Problem Index (HPI), Guam ranks 6th out of 24 U.S. areas in terms of treatment for drug abuse, first in terms of emergency room drug-related cases per 1000 population (3.26 per 1000 in 1976), third in terms of death rate associated with drug abuse, for an overall HPI ranking of first (most critical) area out of the 24 studied. Using the Indicator Dilution Method, the prevalence rate for heroin use on Guam in 1976 was estimated at 11.8 per 1000 population. During FY 1978, 128 admissions and 197 discharges were recorded by the Methadone Clinic. 98% of the clinic's clients are heroin addicts (compared to 51% nationally). Predominantly male, more than two-thirds of the clients are between the ages of 21 and

30. 41% of the Clinic's clients began using heroin between the ages of 18 and 21.

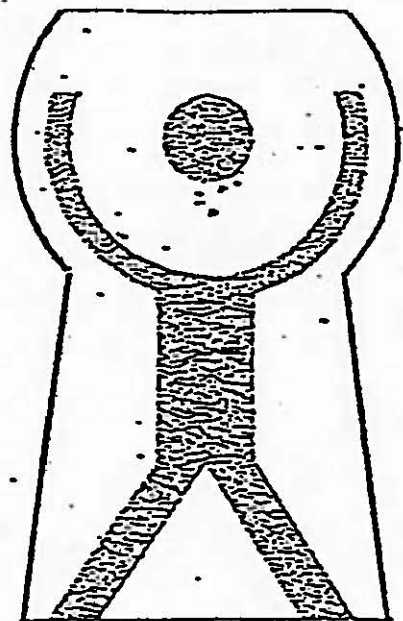
2. ALCOHOL ABUSE

Direct counts of alcoholic cases are not available, but the severity of the problem of alcoholism and alcohol abuse can be assessed roughly by certain cirrhosis deaths and by alcohol-related traffic fatalities. Between 1968 and 1972, Laennec's cirrhosis (directly linked to extended alcohol abuse) was found responsible for 10.2% of all cirrhosis deaths on Guam in the age group 45-54. Of all caucasian deaths in the age interval 45-54, 23.7% were due to alcohol-induced cirrhosis. In addition, Department of Public Safety data shows that 15.3% of all traffic deaths for 1976-1978 were the direct result of drunken driving.

SUMMARY TABLE OF LEADING CAUSES
OF DEATH AVERAGED OVER 1971-1977

RANK	CAUSE OF DEATH	AVERAGE NO. OF DEATHS	RATE/1000	% OF TOTAL AVG. DEATHS
1	HEART DISEASE	75.3	1.02	17.9
2	MALIGNANT NEOPLASMS	37.7	0.51	9.0
3	MOTOR VEHICLE ACCIDENTS	34.3	0.46	8.1
4	DISEASES OF EARLY INFANCY	31.6	0.43	7.5
5	NON-MOTOR VEHICLE ACCIDENTS	29.1	0.39	6.9
6	CEREBROVASCULAR DISEASE	26.8	0.36	6.4
7	PNEUMONIA	21.0	0.28	5.0
8	OTHER DISEASE OF CNS(ALS/PD)	18.4	0.25	4.4
9	CIRRHOSIS OF THE LIVER	13.3	0.18	3.1
10	DIABETES	11.1	0.15	2.6
11	CONGENITAL ANORMALIES	10.8	0.15	2.6
12	HOMICIDE	8.7	0.12	2.1
13	SUICIDE	7.4	0.10	1.8
	ALL OTHER CAUSES	95.1	1.28	22.6
	ALL CAUSES	420.6	5.68	100.0

SOURCE: STATISTICAL REPORTS 1971-77, OFFICE OF VITAL STATISTICS, DPHSS.



HEALTH STATUS GOALS AND OBJECTIVES

HEALTH STATUS GOALS AND OBJECTIVES

INFANT MORTALITY & MORBIDITY

GOAL I.

Reduce infant mortality and morbidity (particularly village differentials) neonatal complications and disease of early infancy.

Objective I.1 (Overall Infant Mortality)

Reduce infant mortality rate to at least 12 per 1,000 live births by 1983.

Sub-Objective I.1a (Neonatal Mortality)

Reduce Neonatal mortality rate to 6 per 1,000 live births by 1983.

Sub-Objective I.1b (Village Differentials)

Reduce infant mortality rate to no more than 20 per 1,000 live Births by 1983, especially in 4 key villages.

Objective I.2 (Fetal Deaths)

Reduce fetal deaths to achieve fetal death ratio of 12.0 by 1983 (15% reduction from 1971-1976 average)

Objective I.3 (Congenital Anomaly)

Reduce overall death rate to 0.10 per 1,00 population by reducing deaths among newborn infants due to congenital anomalies), by 1983.

Objective I.4 (Early Infant Diseases)

Reduce overall mortality rate for infancy diseases as well as the incidence of Otitis Media and Salmonellosis.

Subjective I.4a (Early Infant Disease Deaths)

Reduce death rate of early infancy due to all diseases by 50% to 0.12 per 1,000 by 1983.

Sub-Objective I.4a* (Contributing Objective)

Achieve increase in average weight of infant born to island women, particularly Chamorros by 1983.

Sub-Objective I.4b (Otitis Media)

Reduce hearing impairment level among infants and school-age children at least 50 % by 1983.

Sub-Objective I.4c (Salmonellosis)

Reduce incidence of Salmonella infectious among 1 year old children to less than 20% of all cases by 1983.

ACCIDENTS

GOAL II

Reduce deaths and injury by accidents of all kinds, particularly those by motor vehicles and those effecting the 15-24 age groups.

Objective II.1 (Mortality due to all accidents)

Reduce overall mortality rate due to accidents by 60% to at most 0.50 deaths per 1,000 population by 1983.

Objective II.2 (Motor Vehicle Accidents Mortality)

Reduce high mortality rate of 0.44/1,000 population by 50% to 0.22/1,000 population by 1983.

Sub-Objective II.2* (Young at Risk)

Reduce motor vehicle mortality rate among: age 15-24 males by 1983.

Objective II.3 (Deaths due to other accidents)

Reduce mortality rate by 30% from 0.39/1,000 population to 0.27/1,000 population by 1983.

Sub-Objective II.3* (Drowning, Falls and Suffocation)

Reduce deaths caused by drowning & falls (chiefly among elderly) and suffocation (chiefly among children)

Objective II.4 (Occupational Injury)

Continue to improve working environment and occupational safety to further reduce occupational injuries to not more than 10 cases per 1,000 FTE employees by 1983.

CHRONIC DISEASES

GOALS III

Reduce chronic disease contribution to death rate for Guam particularly those by cardiovascular cancerous and cerebrovascular diseases and specialized chronic diseases (ALS/PD, cirrhosis of the liver, and diabetes)

Objective III.I (Heart Disease)

Reduce the death rate caused by heart disease by 20% to 0.8 per 1,000 population and reduce mortality rate by 15% by 1983.

Objective III.1a (Ischemic Heart Diseases)

- Reduce high mortality rate due to ischemic heart disease by at least 25%, especially among Chamorros and those aged 45+

Objective III.1b (Hypertension)

Reduce hypertension and hypertensive heart conditions at least 10% by 1983.

Objective III.1c (Obesity)

Reduce chronic disease, complications, incidence, and mortality linked to obesity by achieving reduction of average weight per person, especially among Chamorro women.

Objective III.2 (Cancer)

Attempt to reduce deaths caused by cancer by at least 10% by 1983.

Objective III.3 (Cerebrovascular Disease)

Attempt to reduce deaths due to cerebrovascular conditions at least 10% by 1983

Objective III.4 (ALS-PD)

Attempt to reduce mortality rate due to ALS-PD by 10% by 1983, especially among Chamorros.

Objective III.5 (Cirrhosis of the liver)

Reduce mortality rate due to cirrhosis of the liver to less than 0.14 per 1,000 population by 1983, particularly in the 45-64 age-group and males.

Objective III.6 (Diabetes)

Reduce mortality rate due to diabetes among all age groups to less than 0.15, and reduce the high rate for females aged 45-64 by 50% by 1983.

INFECTIOUS DISEASES

GOAL IV

Reduce the mortality rate due to infectious or communicable diseases on Guam (especially pneumonia), and reduce the morbidity rate and disability due to particular infectious diseases with high case rates on Guam.

Objective IV.1 (Pneumonia Mortality)

Reduce mortality rate for pneumonia from 0.28 deaths per 1,000 population to 0.25 per 1,000 population by 1983.

Sub-Objective IV.1a (Pneumonia Morbidity)

Reduce morbidity rate associated with pneumonia to 2.65 or fewer cases per 1,000 population.

Objective IV.2 (Bronchitis Morbidity)

Reduce incidence of this condition by at least 15% from 1.56 to 1.33 or less for the combined civilian and military population by 1983, with special emphasis on reduction morbidity among children aged 1-10 and among Chamorros.

Objective IV.3 (Venereal Disease Morbidity)

Reduce case rate for gonorrhea for the combined population at least 40%, from 1.61/1,000 to 0.97/1,000 by 1983 paying particular attention to military personnel.

Objective IV.4 (Hepatitis Morbidity)

Reduce the incidence of infectious Hepatitis A, B and unspecified types by 50% by 1983, including a rate reduction of hepatitis A for civilians to 0.60/1,000 and 2.3/1,000 for military, paying particular attention to military personnel and children ages 5-9 and to southern Guam villages as target groups and area.

Objective IV.5 (Mumps and Measles (Rubeola) Morbidity)

By 1983 reduce civilian incidence rate of mumps to at least 0.25/1,000 especially in the southern villages, and reduce the combined population's incidence rate of measles by 50% from 0.23/1,000, to 0.12/1,000, with the military as target group.

Objective IV.6 (Tuberculosis Morbidity)

Reduce rate of pulmonary Tuberculosis cases at least 50% for the combined population by 1983, from 0.43/1,000 to 0.22/1,000, with efforts directed to the villages of Agana, Asan and southern Guam.

Objective IV.7 (Salmonellosis and Shigelosis Morbidity)

By 1983 reduce both rates of Salmonellosis from 0.47/1,000 to 0.25/1,000, particularly for children under the age of 5 and for Agana, Asan and southern villages, and reduce the rate of shigelosis at least 10% with particular attention to the above groups.

Objective IV.8 (Morbidity due to Parasites)

By 1983, reduce prevalence rate of parasitic infections from 15% to 8% or less with special attention to children ages 1-9.

DENTAL HEALTH

GOAL V

Reduce the high rate of incidence and prevalence of dental problems especially dental caries.

Objective V.1 (Dental caries prevalence)

Reduce prevalence of dental caries by at least $\frac{1}{2}$ by 1983, particularly the non-caucasian and female population.

Objective V.2 (DMF Rate)

By 1983 reduce the mean number of decayed-missing-and filled Teeth for for both sexes at least 10% to 6.8 DMF teeth per male and 8 DMF teeth per female, particularly for school-age children.

SUICIDE

GOAL VI

Reduce rate of suicides, with particular attention to problems faced by adolescents and young adults.

Objective VI.1 (Suicide Rate)

By 1983, reduce rate of suicides, especially among young adults, at least 25% to no more than 0.075 per 1,000 population, and concurrently alleviate mental and emotional problems that underly suicide.

SUBSTANCE ABUSE

GOAL VII

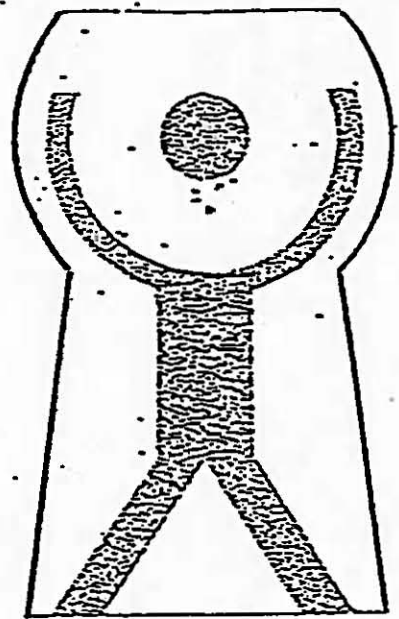
Reduce drug and alcohol related deaths, as well as the incidence and prevalence of drug and alcohol abuse and addiction on Guam.

Objective VII.1 (Drug Abuse)

By 1983, reduce the drug-related death rate, hospital admission and heroin use prevalence rates by 50%.

Objective VII.2 (Alcohol Abuse)

By 1983 reduce both mortality and morbidity rate due to alcohol-related abuse, including cirrhosis of the liver and alcohol-related traffic fatalities at least 25%, and reduce the prevalence of alcohol abuse at least 15%.



HEALTH SYSTEM

HEALTH SYSTEM

The health system includes those services, resources, financing mechanisms, and programs which can be used to positively affect the level of health in the population. Since the promotion of health or the prevention of ill health often require consideration of lifestyle and environmental factors, the definition of the health system has also been expanded to include components which are normally thought of as outside the medical care model, such as health education services or environmental quality management. For the purposes of planning and analysis, the Health Systems Taxonomy has been used as the conceptual framework for viewing the health system. This includes seven major health service categories which can be further delineated into subservice categories:

Community Health Promotion and Protection Services

Those services directed toward informing, educating and motivating the public to adopt personal life styles and nutritional practices which will promote optimal health, avoid health risks, and make appropriate use of health care services in the community.

Prevention and Detection Services

Services delivered to individuals in order to promote optimum physical and mental well-being, including protection from the development of disease and ill-health, or to identify disease or ill-health at the presymptomatic or unrecognized and symptomatic stage to permit early intervention.

Diagnosis and Treatment Services

Services for evaluating the health status of individuals and identifying and alleviating disease and ill-health or the symptoms thereof.

Habilitation and Rehabilitation Services

Services to restore the ill or disabled individual to, or to assist the developmentally disabled individual to achieve, the fullest physical, mental, social, vocational and economic usefulness of which he is capable.

Maintenance Services

Services provided to individuals with chronic physical and mental ill-health conditions in order to prevent deterioration in those conditions, as well as services provided to individuals in need of assistance in activities of daily living. The purpose of such services is to enable an individual to participate in the community to the fullest degree to which that individual is capable. Maintenance services do not include habilitative or rehabilitative services, since the primary purpose of the latter service is to increase functional ability rather than maintain an existing level of function.

Personal Health Care Support Services

Services which do not involve direct medical care, but which assist in the prevention, diagnosis and treatment of diseases or ill-health conditions, or in the habilitation, rehabilitation or maintenance of ill or disabled individuals.

Health System Enabling Services

Organized activities designed to influence the means by which, and conditions under which, health system services are delivered. This includes health planning, resources development, financing, regulation, and research.

This framework allows for an analysis of services within alternative settings according to the needs of the population, and for an identification of interrelationships between components of the system. The major settings in which these services can be delivered are as follows:

Community Setting

Settings in which community health promotion and health system enabling services, rather than personal health care services or patient related support services, are provided.

Home Setting

Providing health care services in the patient's residence with the result that the patient does not travel in order to receive services.

Mobile Setting

Providing health care services at temporary locations selected for their convenience to a geographically selected target population using a movable vehicle or facility or a provider which provides health care services during transportation of patients.

Ambulatory Setting

Providing health care services to patients who travel to the provider to receive services. An ambulatory setting has no regular provision for patients to stay overnight.

Short-Stay Setting

Providing health care services to patients who stay overnight in the institution, fifty percent or more of whom return to their normal place of residence within less than thirty days of entering the institution.

Long-Stay Setting

Providing health care services to patients who stay overnight in the institution, fifty percent or more of whom remain in the institution thirty days or longer. A long-stay setting may be the usual place of residence of some or all of its patients.

Free-Standing Support Setting

A location where health services are provided which support the delivery of personal health care services without providing direct patient care, and which is not a component of an organization which delivers personal health services in another setting.

Finally, these health services are analyzed in light of the following six performance characteristics:

Cost

The total economic value of resources required to provide services, including all financing expenditures, especially expenditures for capital and operating requirements.

Availability

A measure of the appropriate supply and mix of health services and the capacity of resources for providing care.

Accessibility

A measure of the degree to which the system inhibits or facilitates the ability of an individual or group to gain entry and receive appropriate services, including geographic, architectural, transportation, social, time and financial considerations.

Continuity

A measure of the degree of effective linkages and coordination in providing a succession of services over time regardless of whether care is provided in one setting or multiple settings.

Acceptability

An individual's (or group's) overall assessment of medical care available to him or her in terms of such factors as cost, quality, outcome, convenience of care, and provider attitudes.

Quality

A measure of the degree to which health services delivered meet established professional standards and judgments of value to the consumer. Quality is frequently described as having three dimensions: Quality of input resources, (e.g., certification and/or training of providers - both manpower and facility factors); quality of the process of service delivery (e.g., the use of appropriate procedures for a given condition); and quality of outcome of service use (actual improvement in condition or reduction of harmful effects).

The analysis of health services according to these characteristics serves at least two major purposes:

1. It provides for an assessment of the appropriate configuration of services based on the health needs of the population. These services are then analyzed to determine not only their general availability in the health care delivery system, but also their accessibility to the population or to sub-groups within that population.
2. It is a means of assessing the performance of the health system; that is, whether services are being provided efficiently, in a cost effective manner, and within certain standards of quality.

The degree to which the health services in this document have been assessed has been largely dependent upon the validity and availability of data, time constraints, and limitations which relate to the "state-of-the-art". Often, the analyses of the problem areas raised questions requiring further study, much of it in the area of developing methodologies for determining population-based service need. Thus, it is likely that many of these priority areas will be revisited in future plans, but in greater detail.



FIGURE 1

ANALYTICAL FRAMEWORK FOR HEALTH SYSTEMS ANALYSIS

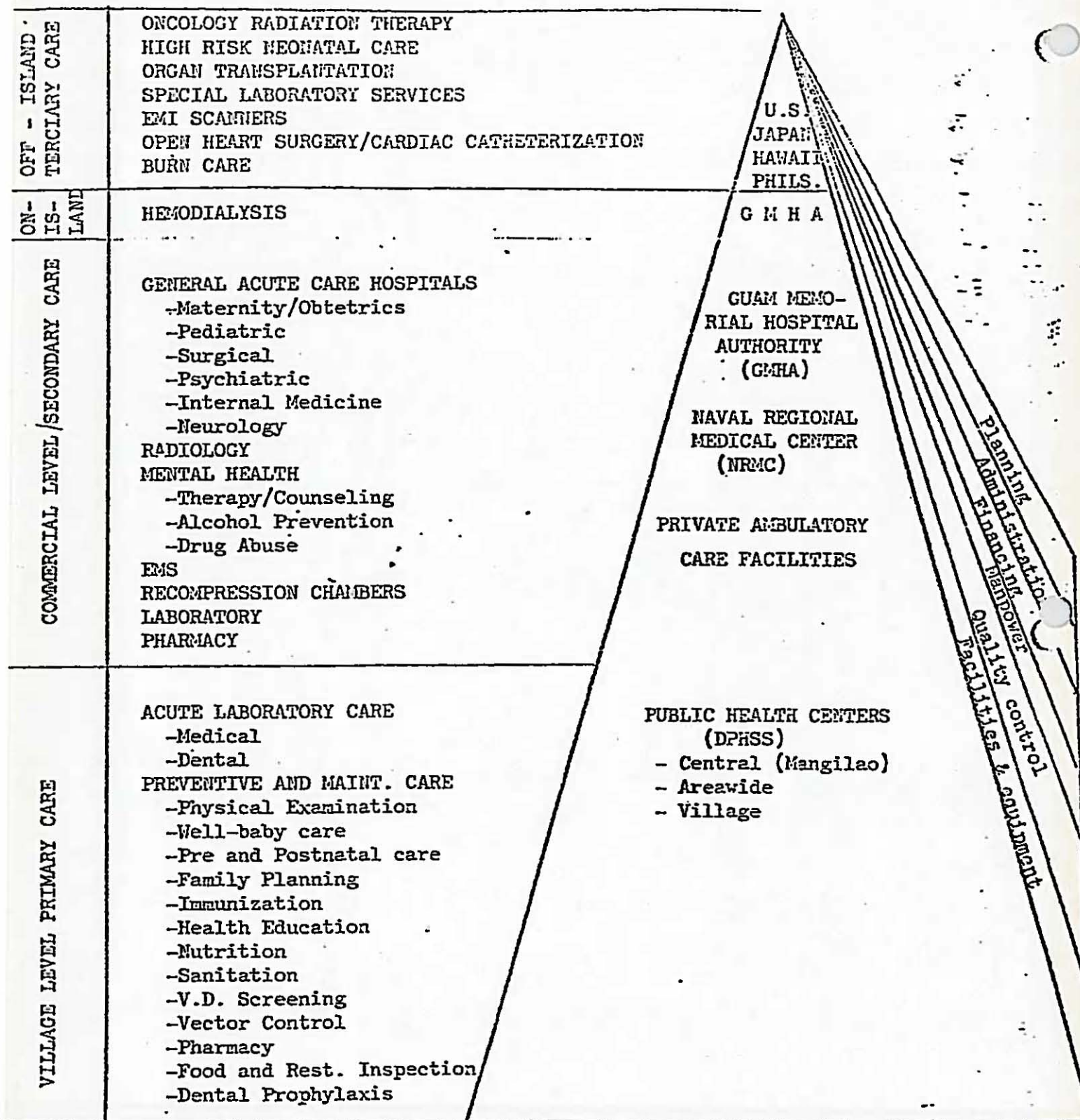
Services (x)	Settings (y)						
	Community	Home	Mobile	Ambulatory	Short-Stay	Long-Stay	Free Standing Support
Community Health Promotion and Protection							
Prevention and Detection							
Diagnostic and Treatment							
Habilitation and Rehabilitation							
Maintenance							
Personal Health Care Support							

For "x" services in "y" settings, an analysis of:

1. Cost
2. Accessibility
3. Availability
4. Acceptability
5. Continuity
6. Quality

Source: "A Process for Plan Development Under P.L. 93-641,"
 American Journal of Health Planning, Volume 3, Number 1,
 January, 1978.

HEALTH CARE SERVICES BY LEVELS OF CARE



THE PROVIDERS OF HEALTH CARE SERVICES:
 (a) Public - DPHSS, GMH, etc. (b) Private - Private
 Populations received ill-health and/or clinical
 illnesses — health services demands

PRODUCES

*** POPULATION ***

Community Health Promotion and Protection Services

Community Health Promotion and Protection Services contain those services whose purpose is the improvement of personal health behavior or of environmental factors which may affect health. Some of these include:

- Health Education Services
- Environmental Quality Management
- Food Protection
- Occupational Health and Safety
- Radiation Safety
- Biomedical and Consumer Product Safety

Most of these services are provided by governmental agencies at differing levels, particularly those concerned with environmental protection and safety. As many linkages to health are identified as personal behavior patterns or social, economic, and physical environmental factors, greater emphasis will be placed on effecting positive changes in health through these services. Unfortunately, as behavioral patterns and environmental factors have generally long gestation periods in their impact on health, so too will intervention strategies in these areas provide little visible results for years to come. Nevertheless, recognition of their potential is a first step, and it may be that short-run mental and physical health benefits will accrue in ways that we currently cannot foresee.

For the first Guam Health Plan, Health Education Services and air and water quality components of Environmental Quality Management were chosen as priority areas for analysis and for the development of state-wide goals and objectives.

Prevention and Detection Services

Prevention and Detection Services aim to promote optimum physical and mental well-being of the individual. This end may be achieved through protection from the development of disease and ill-health as well as identification of disease or ill-health at the presymptomatic or unrecognized symptomatic stage. Health system activities designed to insure health protection include:

- ◉ Individual Education
- ◉ Routine Examination
- ◉ Immunization
- ◉ Dental Prophylaxis
- ◉ Mental Health Consultation

Detection services not only attempt to uncover disease and ill-health conditions but also to identify individuals at risk of developing such conditions. Illustrative service categories include:

- ◉ Condition-Specific Screening
- ◉ Multiphasic Screening
- ◉ Contact/Collateral Follow-Up
- ◉ Physical Abuse Reporting Systems

Prevention and Detection services lend themselves to delivery in home ambulatory and mobile settings. Further, many of these services are amenable to self-delivery. For example, today millions of women undertake routine breast self-examination for cancer.

One of the top ten National Priorities in P.L. 93-641 is the promotion of medical group practices such as Health Maintenance Organizations (HMOs) which emphasize prevention and early detection of disease as part of a comprehensive health care program. Given the HMO's philosophy of achieving cost reduction and quality control through prevention and the emphasis HMOs place on active consumer participation in implementing this philosophy, it is appropriate that HMOs have been selected at the state level as a priority area of concern within the health system.

Diagnosis and Treatment Services

At present, the greatest portion of the health care dollar is spent to diagnose and treat ill-health symptoms. Diagnosis and Treatment services are defined as those

Services for evaluating the health status of individuals and identifying and alleviating disease and ill-health or the symptoms thereof.

In an attempt to further medical science and thus to prolong life and ameliorate its pains, resources have been poured into development of a myriad of diagnostic procedures, technological advancements in specialized equipment and surgical procedures, chemical and drug solutions, highly trained and specialized manpower, and so on. Yet the high cost of these resources is now giving policy makers reason for concern. Alternatives to traditional health care systems such as HMOs have been promoted, manpower extenders such as nurse practitioners and physician assistants are being trained, and alternative means of insuring for health care are being explored. The current health care system is in transition, with threats of increasing regulation as costs continue to rise. Because these diagnosis and treatment services consume the largest percentage of dollars, they will inevitably bear the brunt of any regulatory controls which are implemented and thus be subjected to the closest scrutiny from planners and regulators. Only time will tell whether these efforts or solutions can have a positive impact on cost and, more importantly, on the health of the population.

Habilitation and Rehabilitation Services

Habilitation and Rehabilitation Services are defined as those services which are designed to restore the ill or disabled individual to, and to assist the developmentally disabled individual to achieve, the fullest physical, mental, social, vocational and economic usefulness of which he is capable. This includes:

- 1) Medical Habilitation and Rehabilitation. The medical evaluation of the needs of the ill or disabled individual, and the design, management, and evaluation of a habilitation or rehabilitation program to meet those needs.
- 2) Therapy Services. The therapeutic techniques used in implementing a program of habilitation or rehabilitation designed to meet the needs of an ill or disabled individual such as physical therapy, occupational therapy, social therapy among others.

Maintenance Services

Maintenance Services are services provided to individuals in need of assistance in activities of daily living or to individuals with chronic physical and mental ill-health conditions in order to prevent deterioration. The general purpose of Maintenance Services is to enable an individual to participate in the community to the fullest degree to which that individual is capable.

Maintenance Services are primarily provided in the home, ambulatory or long-stay setting. Services provided in the home setting include home health care and homemaker services, and adult day care. Those provided in an ambulatory setting include congregate meals and end-stage renal disease treatment stations. In the long-stay setting, maintenance services include nursing home care, adult congregate living, and foster home care, most of which Guam does not have presently.

Though the elderly comprises only 2 percent of the population, new means of enabling them to live in their more familiar and normal environment must be sought and implemented. In addition to contributing to the quality of care, these noninstitutional services are deemed to be more cost-effective and if supported through public financing such as Medicare and sometimes Medicaid.

Personal Health Care Support Services

Personal Health Care Support Services do not involve direct medical care, but assist in the prevention, diagnosis and treatment of diseases or ill-health conditions, or in the habilitation, rehabilitation or maintenance of ill or disabled individuals. Such services include for example, pharmacy services, blood bank services, food and nutrition services, medical records services, and facility maintenance and house-keeping services.

Advances in technology, particularly computer technology, make possible the sharing of many support services among institutions. Indeed, Congress has established as a national priority the development of multi-institutional arrangements for the sharing of support services necessary to all health service institutions.

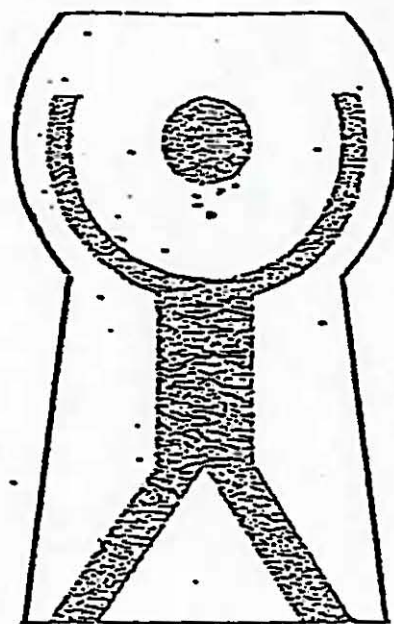
Health System Enabling Services

Health System Enabling Services are those organized activities designed to influence the means by which, and conditions under which health services are delivered. Examples of enabling services are: health planning, resource development, regulation, research, and financing.

Many changes in the methods and means by which health services are delivered can be attributed to health system enabling services. Health research and resource development have been instrumental in advancing the state of health technology and assuring that the appropriate manpower, facilities, and equipment are available to implement the new technology. Health Planning and regulation, on the other hand, work together in an attempt to guarantee that resources are developed appropriately in areas of need. Planning is necessary to determine where needs are, regulation to assure that resource allocation occurs according to the needs set forth in plans.

Of all the health system enabling services perhaps financing has had the greatest impact on how health care is delivered today. Reimbursement policy, both private and public, has over the years emphasized the delivery of diagnosis and treatment delivered in ambulatory settings and health promotion and protection services have been under-utilized.

In order to better understand how health care in Guam is financed, this section of the Guam Health Plan will analyze health care expenditures in-depth and offer in the way of goals, objectives, and recommended actions changes in the financing of health care which may reduce the current increases in health care expenditures.



HEALTH SYSTEM PROBLEMS

With a view to the entire range of health status problems faced on Guam at the present and assumed to be enduring for the duration of the initial planning period (5 years), and given the detailed and comprehensive study of the system of health services and resources available on Guam at present, the following major health system deficiencies can be isolated:

1. Lack of Available and Accessible Services -

Despite the impressive array and quantity of health resources available on Guam at the present time there are serious gaps in resource availability in several health service areas, including geriatric services, alcoholism services, public health nursing, rehabilitation and counseling services, and certain specialized or tertiary care components. The impact of these deficiencies cannot be directly gauged at present. However, it is certain that these resources and service gaps place undue burdens on those in need of such services, but unable to obtain them for lack of availability. Furthermore, it may well be that certain health problems are exacerbated because of insufficient services to find, identify and treat such problems early on. Finally, lack of availability of appropriate services may lead to over utilization and inappropriate use of substitute services which then unfairly burdens health resources designed for other purposes. For example, for lack of alcoholic day programs, alcoholics may ultimately go to hospital facilities.

Compounding the problem of unavailable services, and the strains

it produces in the existing service delivery systems, is the problem of inaccessible services that are available. The concentration of ambulatory and in patient care resources in the Agaña-Tañing corridor is well documented. While the island of Guam is relatively small by most standards, what is not perhaps fully appreciated is the "costs" in travel time and convenience, if not actual monetary expenses, which dissuade individuals as close as Yigo or Agat from seeking prompt medical attention, or from using available preventive care services. Problems of accessibility are never simply physical distance or time problems. There is an important perceptual element which links willingness to use services that are available with visibility and familiarity of those services. In this respect, and given the concentration of various health status problem, particularly acute conditions, which recurrently face residents of southern Guam, it is important to mitigate the isolation of populations which are relatively, if not absolutely, remote from available services. If services cannot be physically re-located at this stage, then the possibilities for establishing satellite facilities, mobile units, or even transportation services should be explored.

The issue of accessibility also covers a range of barriers to the utilization of available health services and resources which need to be overcome, if all individuals are to have the equal right to a healthful life. Financial barriers may well prevent many Guamanians from seeking services, and unless such barriers are overcome or reduced, individual health status will continue to have a strong (negative) association with income.

2. Poor Environmental Quality

A review of the planning area description (ch. 2) and of certain programs concerning environmental management and improvement will indicate the seriousness of deficiencies in the quality of Guam's environment as it affects health status, particularly in the areas of water quality, sewage treatment, highway and traffic safety, and prevalence of carriers of or agents of invertebrate disease (especially parasites). That such fundamental steps as ensuring a safe, adequate, and conveniently and continuously usable water supply, removing or reducing sources of potable water contamination by chemical or fecal pollutants from water supply systems, eliminating obstacles and hazards to safer driving, and carrying out systematic programs to reduce the presence of parasites or to at least improve the population's understanding of means to avoid parasitic infection, especially among children, are all suggestive of serious shortcomings in the current allocation of resources within the health system as a whole. The high incidence rates recorded in general and during recurring outbreaks of such diseases as hepatitis, salmonellosis, measles, and gastroenteritis, in addition to the known widespread prevalence of parasitic infections, leave no room for doubt as to the major contribution that environmental quality - in particular water quality - has on health status, and the consequent priority that should be given to reducing environmental sources, agents, reservoirs and carriers of diseases. The fact that dental caries has been found to be so widely prevalent on Guam among school-children, coupled with the knowledge that known methods for caries control and prevention are available (and feasible to implement)

leaves little room for argument against taking immediate steps to alleviate basic health problems.

The issue is not merely one of establishing appropriate standards, surveillance procedures, and control and management techniques. It is also one of ensuring that such actions taken apply uniformly to all areas of Guam, and seek to minimize quality differentials in the physical environment as a first step towards providing all individuals with an equal chance of securing a healthy living environment.

3. Inadequate Health Education and Wellness Promotion

Reviewing the major causes of death on Guam for the past 7 years should suggest the dilemma that health planning and publicly directed efforts to improve health status currently face. Most major causes of death, both on Guam and in the United States and other developing countries are known to derive less from environmental factors, which if controlled might reduce disease or disability incidence among populations affected by such factors and more from social, attitudinal, and personal discretionary factors which often orient individual behavior and lifestyle towards behavior which does not promote high levels of health or wellness. Dietary habits, personal preferences and risks taken with respect to driving behavior, smoking habits all have been patterned in socially reinforced ways which do not take into account the long-term consequences of such behaviors. Many young women are unprepared for their first pregnancy and do not seek the proper amount of prenatal care, nor do they alter their nutritional and dietary patterns in order to provide the proper gestational environment. While it may be the case that individuals will continue to choose to ignore behavioral patterns that will promote health

and wellness, a serious shortcoming in the health system can be identified in the wide range of basic health information which is not being provided to the population in an appropriate form or manner which would lend itself to scrutiny, discussion and eventual and practical application. Basic knowledge about the role of nutrition, physical exercise and fitness, and occupational and dental health as they contribute to overall health status is not being disseminated. Likewise, current information about known symptoms, effects and consequences of hypertension, obesity, and venereal disease are poorly disseminated at present. Maternal care, as provided in certain of the health insurance plans, does include attention to basic education of the expectant mother concerning proper care of herself and her infant; yet information on family planning, pre-natal care (including maternal nutrition and behavior), and potential genetic problems for certain mothers is not generally provided to the pool of potential mothers, particularly adolescent and young adult women. The high incidence of dental problems among school-aged children, particularly decayed teeth, suggest not only a range of poor dietary habits (high ingestion of sugars and carbohydrates, for example), but also that little education in appropriate dental hygiene is being given. It is much the same sort of problem when the high death rate associated with automobile accidents is examined. While on the onehand, basic driving habits are discretionary behavior, there is a clear responsibility on the part of public agencies - particularly those concerned with education and traffic safety - to educate the public in safe driving behavior, to alert new and potential drivers, especially adolescents and young

adults, to the risks and consequences of bad driving practices, and indeed to provide and enforce disincentives to as well as periodic checks on the extent of dangerous driving and accident-promoting behavior. The fact that driver education is currently not a mandatory class in the schools, and that driver reexaminations or re-education programs are not employed, suggest that feasible approaches to reducing automobile accidents and the resulting deaths and disabilities have not been exhausted by public agencies.

4. Shortage of Manpower Components and Inadequate Training

Contributing to the general unavailability of certain health services are the inadequate levels of health manpower resources, particularly for primary and some secondary health care components. At the same time, insufficient training, qualifications or continuing education; as well as a general lack of alternative manpower types (allied health professionals, nurse practitioners, and physician assistants) have combined to lower the overall effectiveness of health manpower currently deployed on Guam. Given the concentration of private practitioners in the Agaña-Tamuning corridor, it is particularly distressing that the numbers of public health nurses are inadequate to provide sufficient preventive, screening and diagnostic services to more remote populations on Guam, especially those in the districts of Yigo, Talofofo, Inarajan, Merizo, Umatac, and Merizo. Furthermore, acknowledging the difficulties of attracting and maintaining an adequate supply of private physicians in both general and specialized practices, it is important to consider all means of extending or complementing or substituting for such manpower with the provision of health care aides, nurse practitioners, physician assistants and the like. It seems especially urgent that a

cadre of health manpower, whether physicians per se or alternative forms, should be trained and developed from the local Guamanian population in order to ensure that their expertise and practice remains on the island.

5. Inadequate Regulation

There are serious deficiencies in the licensing, certification, and regulation of current health manpower and services on Guam at the present time. This may well be due in part, to the relatively special governmental status that the Territory of Guam has held until recently. However, where inadequate legislative mandates now exist, it should be the responsibility of appropriate public agencies to submit the necessary bills or resolutions in order to begin to upgrade the standards and procedures that every level and component of health care and health service delivery should be subject to.

Under this heading are reported similar deficiencies with motor vehicle licensing and testing which need to be addressed as part of an overall program to upgrade driver competency and responsibility in order to reduce deaths and injuries due to motor vehicle and traffic-related accidents.

Finally, there are basic ambiguities in the rules and conduct of present bodies engaged in both P.S.R.O. activity and the GHPDA's Certificate of Need process which have to be clarified and resolved if the quality of health care regulation is to improve to the point where it can effectively monitor and guide the future course of health care delivery on Guam.

6. Insufficient and Ineffective Planning, Coordination and Evaluation of Health Care Activities

The Guam Health Planning and Development Agency must shoulder some responsibility for the present state of uncoordinated and unguided health care delivery on Guam. While this assessment can be made of many, if not most, SHPDA's in the United States, it is important to recognize the specific problems facing this particular agency, in order that they may be consciously addressed and corrected as an integral part of the overall health planning process that takes place now and in the future. It is also important to identify the institutional setting within which the GHPDA must work and which, to a considerable extent, also acts to impede effective health planning.

Problems internal to the Guam Health Planning and Development Agency stem largely from the staffing pattern, and staffing notation which have served to deny the agency the necessary continuity of direction, competency of expertise, and coordination of efforts to identify, undertake, and complete planning tasks in a comprehensive fashion. (The replacement of directors every other year has not allowed sufficient coherency of policy formulation and direction to be established and adopted by all members of the agency. The result has been that line staff have been forced to work, often without appropriate guidance or training on unrelated tasks which have thereby consumed amounts of time disproportionate to their contribution to the overall planning process and ultimate product.) In particular, relevant goals objectives and priorities, along with the appropriate tasks and procedures to adopt for their accomplishment,

were not specified and agreed to at an early enough stage in the planning process to allow GHPDA to assemble appropriate data elements in an orderly fashion. Basic methods and formats for evaluating both health status and health system levels were not specified until a very late date in the planning process. With the current draft of the Guam Health Systems Plan, however, a foundation for future health planning efforts has been established within which comprehensive planning, inter-agency coordination, and evaluation efforts can be undertaken.

It is essential that the critique of the health planning agency's past efforts not be misconstrued. The process of health planning is still very much an art, despite the efforts of the federal government to provide all manner of technical assistance, methodology, standards, and guidelines. The essence of health planning is combined, coordinated, and cooperative efforts among a range of actors and agencies in the field of health care, and these efforts are not easily achieved. What applies to the GHPDA in terms of past inadequacies equally applies to the institutional context within which it has had to work. Despite national-level as well as territorial enabling legislation as mandates for health planning as needed public activity, the level of cooperation and coordination between agencies has been inadequate to the task of reorienting the health care system to improve health status or reduce health care costs. There are four basic reasons for this. First, as with early efforts of GHPDA, there has not been specific policy or mission statements concerning goals, objectives, priorities and tasks, as well as criteria for evaluating progress achieved, for any of the public or semi-public agencies currently involved in health care delivery, including: the Department of Public Health and Social

maintenance organizations. Without such basic statements and assessments directed to the internal management of health care activities of the individual agencies, it is difficult to see how these agencies in combination could achieve any comprehensive perspective from which to view the entire health system. Secondly, there has been insufficient staffing and technical expertise within each major health care agency to enable planning efforts, either singly or in concert with other agencies, to be conducted with any assurance of continuity and competence. Thirdly, of consequence, there has been a minimal amount of attention given to creating the appropriate policy bodies and task forces with established missions that could serve as working entities within which to establish inter-agency communication, cooperative links, and eventual coordination of efforts and policies. In particular, there is as yet no ongoing multi-level health service planning or coordination activities being undertaken by the Department of Public Health and Social Services, Guam Memorial Hospital Authority, and the several health maintenance organizations, to name the major entities. Efforts have also not been made to involve, on an on-going basis, representatives from the military health care system - which admittedly tend to operate autonomously - or private practitioners and physician groups on Guam. Fourthly, and lastly, a major contributing factor to the inadequacy of past health planning efforts has been the isolation of public budget allocation activities from any and all formal health planning activities as undertaken by GHPDA, DPSS, or GHA. Public sector planning is tantamount to speculation about alternative futures, prospective assessment, or trend extrapolation alone when not coupled

with the means and the ability to designate and allocate (or at least influence the allocation of) resources in a pattern consistent with plan recommendations. One of the first plan implementation steps that must be taken is to ensure that proper, coordinated budget drafting authority resides in agencies responsible for plan formulation.

7. Inadequate Health and Financial Records and Information System

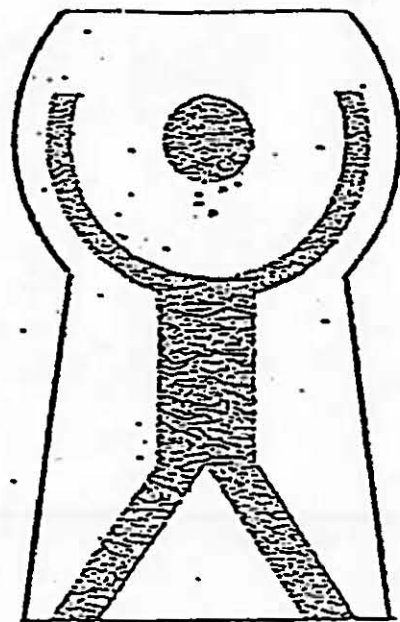
By far, the most serious impediment to proper assessment of the health status of the population and evaluation of the impact of the health care delivery system on health system, including requisite corrections and interventions that can be effected to ultimately improve health status, is the fragmented and un-systematic form in which health data currently exists, where it exists at all. Despite the comprehensive and information-intensive nature of present health planning efforts, there has been no recognition of the requisite standardization and compilation of health data in a manner that would enhance the ability of analysts to derive meaningful planning information. There are several contributing conditions underlying the present state of disorganization in health information collection and analysis activities. Firstly, a single agency has not been delegated enough authority or responsibility to bring about closer cooperation between all private and public agencies in identifying appropriate data elements required for comprehensive health planning, standardizing the manner in which such elements are to be collected, specifying the appropriate agencies which are to be responsible for their collection, and finally, ensuring that all such data is assembled and stored in a form that would enable various reports and analyses to be produced on a regular and timely basis. With proper staff and expertise, the Guam

Health Planning and Development Agency could be the locus of this health information system development effort, but it need not be. What is essential is that the basic data components necessary for comprehensive, population-based health planning be collected, integrated, and analyzed as an interrelated whole. Such minimum data components have been specified elsewhere*, but can here be summarized as: (1) population (demographic and socioeconomic) data, (2) mortality and morbidity, (3) health services: facility, manpower, program, equipment and cost/financial data, and (4) health service utilization data. While this listing identifies a minimum data set, it does not complete the picture.

Given the current state of health data on Guam, several issues need to be immediately addressed. First, the accuracy, reliability, and uniformity of reporting of all health status information, but especially reports of illnesses, injuries, disabilities and deaths must be promoted and enhanced, if reliable estimates of incidence and prevalence of various health status conditions are to be made and used as the basis for health planning. Given the small number of health care providers in reporting any and all conditions. Second, the reliability and utility of such reports, when produced, could be greatly enhanced by a concerted effort to computerize all health data. With the adoption of reporting forms that are machine-readable, this effort could also facilitate the primary collection of data as well. Thirdly, the manner in which meaningful planning information is derived from available health data is a function of the analytical tools and

*Cf.

expertise brought to bear on such data, as well as the basic issues and questions motivating such analysis. The development of appropriate methodologies to analyze data for health planning purposes is admittedly in its infancy, and techniques to summarize, profile, characterize and otherwise describe existing conditions are presently stronger than inferential tools. However, if health planning analyses are to have an objective basis, then methods and models must be developed by which determinants or health status levels and conditions can be assessed and relevant health system components, activities, or conditions can be identified (at least probabilistically) as appropriate interventions. The role of epidemiological analysis in health status assessment is an obvious one, but its strength in the arena of comprehensive health planning will rest on its ability to logically and analytically link health status changes with specific policies, programs, and configurations of health services and health care activities that comprise current or future health systems.



HEALTH SYSTEM! GOALS AND OBJECTIVES

SYSTEM GOAL I. HEALTH EDUCATION AND WELLNESS PROMOTION SERVICES

Improve the quality and coverage of health education and wellness programs and services, with particular attention to provision of basic information and education on health-promoting practices, as well as on risks associated with specific health conditions, in order to increase the general awareness among all residents of Guam of the basic determinants of health and illness.

System Objective I.1 Diet/Nutrition/Obesity Information

By 1983, achieve 90% coverage of targeted populations of pregnant women and overweight individuals with basic information on appropriate diet and nutritional standards, and on the health risks (especially risks to fetal development and maternal health) associated with improper diet and nutrition.

System Objective I.2 Physical Fitness/Exercise Information

By 1983, establish services to provide continuing and widespread dissemination of information on the health-promoting value of physical fitness and of various forms of exercise to all residents of Guam.

System Objective I.3 Maternal/Prenatal Health Education

By 1983, achieve 95% coverage of all pregnant women and at least 80% coverage of women in child-bearing years (especially adolescent women) with information and education programs concerning appropriate maternal, prenatal and child care.

System Objective I.4 Family Planning/Genetics Information

By 1983, establish and maintain services which provide complete and continuing information on all aspects of family planning, fertility regulation, and birth control options for all individuals 15 and over; and provide special information services for targeted mothers at risk concerning genetic problems, congenital malformations, and the potential for developmental disabilities.

System Objective I.5 Occupational Health Promotion

Within the 5-year initial planning period, establish information services to inform all employers and employees of particularly hazardous occupations

(construction, industry, transportation) of occupational risks as well as preventive measures to reduce such risks.

System Objective I.6 Home Health and Personal Hygiene

By 1983, achieve at least 75% coverage of all individuals, households and community organizations with information provided or made available on conditions for healthy living and practices of personal hygiene.

System Objective I.7 Dental Health Promotion

By 1983, achieve at least 95% coverage of all school-aged children and 80% coverage of all individuals with information and education provided on appropriate dental hygiene and the risks and diseases associated with inappropriate eating habits or dental cleaning practices.

System Objective I.8 Special Health Problem/Condition Information

Within the five-year planning period, establish services to reach targeted risk-groups and groups with specific health conditions with information on warning signs, risks, inappropriate behaviors and appropriate preventive, diagnostic and treatment services to contact for such health conditions as hypertension, diabetes, heart disease, stroke, cancer, and venereal disease.

System Objective I.9 Driver Education and Traffic Safety Promotion

Within the five-year planning period, achieve 100% coverage of all driving license applicants with information on safe driver practices, and with mandatory driver education for all applicants aged 25 or less.

SYSTEM GOAL II. AVAILABLE AND ACCESSIBLE DIRECT HEALTH CARE SERVICES

Improve the availability of and accessibility to a full, comprehensive and integrated system of direct health care services (preventive, diagnostic, treatment, rehabilitative and maintenance services) to the maximum extent possible, with emphasis on the development of continuing activities for identification, early diagnosis, and early treatment of acute and chronic conditions, and the provision of appropriate secondary and special health care services in support of direct treatment.

**System Objective II.10 Provision of Village-Level Clinic Services
and Accessible Public Primary Care**

By 1983, establish a network of decentralized public health clinics providing essential primary care services (particularly for pregnant women, mothers and infants), including basic health maintenance, immunization, diagnostic and basic acute care services, covering all residents and residences on Guam with a maximum residence-to-clinic travel time of 20 minutes.

System Objective II.11 Outreach/Screening/Diagnostic Services

By 1983, establish a continuing prevention service emphasizing early detection of acute and chronic conditions in the population, through a series of periodically provided outreach, screening, surveillance, case follow-up, and diagnostic activities; such activities covering all households and areas on Guam, and aimed at detecting early symptoms or stages of a wide range of acute and chronic disease conditions, especially those among pregnant women, the newborn and infants, as well as the elderly.

System Objective II.12 Counseling Services

Within the five year planning period, establish multiple counseling services able to advise, inform, and treat at least 75 % of all individuals identified and referred with psychiatric, drug and alcohol abuse, suicide, family conflict, or venereal disease problems.

System Objective II.13 Rehabilitation and Maintenance Services

By 1983, expand the limited set of current maintenance services to a complete and comprehensive set of habilitation, rehabilitation, and health status maintenance services, including but not limited to services for the chronic care, treatment and training of the mentally ill and developmentally disabled, the physically handicapped, the unsupported aged in poor health, and the bed-ridden; such services covering at least 80 % of all identified cases, and providing care in a range of settings through such programs as home health care, board-and-care, day care, and institutional care in both inpatient and outpatient settings.

System Objective II.14 Alcoholism Services

By 1983, expand current services to at least 75 % of identified and targeted alcoholics to include a complete range of diagnostic, treatment and recovery services, including detoxification centers, and halfway and transitional living houses, in order to meet the full needs of all individuals identified as needing health services to combat alcoholism.

System Objective II.15 Secondary and Tertiary Health Care Elements

By 1983, make the following adjustments to the present set of secondary and tertiary health care services:

(15a) Pediatric inpatient beds: attempt to achieve at least 65 % occupancy rate for beds assigned to pediatric inpatient care, in order to satisfy fully the National Guidelines;

(15b) End stage renal services/dialysis: establish a program to promote self-care and home-based dialysis treatment, as one means of lowering overall costs associated with ESRD treatment; (15c) Crippled children's services: expand screening, diagnostic and therapeutic services for all crippled children on Guam, and in particular those with hearing/ speech/ communication disorders, in order to achieve at least 95 % coverage of all children with potential or actual crippling health problems; and (15d) Chronic and intermediate bed and service needs: increase the number of beds allocated to Intermediate Care for chronically ill individuals as well as geriatric cases, and expand associated services to meet the long term treatment, health maintenance, and rehabilitative needs of all such clients requiring inpatient as well as ambulatory care. *

* With the fulfillment of Objective II.15, all services and service standards included as part of the "National Guidelines for Health Planning" (March, 1978) are adequately met by Guam's health care delivery system. Certain tertiary level health-service components are not represented on Guam, including: open heart surgery, cardiac catheterization, and computed tomographic scanning. Because such services are not justified with current population levels or client load/utilization rates, no service planning is required for them at this time; off-island referrals for these procedures remain the most cost-effective alternative. Other "National Guideline" service components are found to be adequate at the present time on Guam. These components include: general hospital services (bed capacity and occupancy rate); obstetrical services and neonatal services; neonatal special care unit; pediatric inpatient care beds; radiation therapy; and end-stage renal dialysis units.

System Objective II.16 Geriatric Services

By 1983, provide a comprehensive health program for the continuous care of all elderly individuals with health care needs who are without support from family members, through such services as day care, group home living units, nursing services, home health care, and long term inpatient care for the chronically ill aged.

System Objective II.17 Emergency Medical Services

By 1983, provide a comprehensive emergency medical service capable of responding on-site to home, occupational, vehicle or other accidents, or emergency health problems demanding immediate attention; such service serving 100 % of Guam's population and area with the integral capability of reaching emergency sites with a maximum response time of 20 minutes, and delivering victims to secondary and/or tertiary care units within 30 minutes.

System Objective II.18 Physical Accessibility

By 1983, ensure that the entire population's access to essential primary care services and initial diagnostic and treatment service sites is provided for through the following means: (18a) decentralize and distribute over the entire island primary care service centers (in particular, public health clinics) to ensure that travel time from any given residence to a primary care site is no greater than 30 minutes; (18b) extend clinic visiting hours to ensure that all residents have at least one primary care and emergency outpatient service center accessible within 45 minutes' travel time between 8:00 a.m. and 8:00 p.m. daily; and (18c) provide some form of public transportation service (possibly a demand-responsive mini-bus service) throughout the island to enable any resident at least daytime mobility and access to any and all health services at no or minimal cost.

System Objective II.19 Financial Access

Within the five year planning period, ensure that all residents of Guam have guaranteed access to a complete, comprehensive, and coordinated system of health care services (preventive, diagnostic, treatment, habilitative and rehabilitative, and maintenance) regardless of ability-to-pay; and adopt a uniform, sliding payment scale for public services, varying according to the ability to pay, and applicable to any individual seeking health care.

SYSTEM GOAL III. QUALITY HEALTH-PROMOTING ENVIRONMENT

Improve the overall quality of and minimize health hazards associated with the physical and built environment of Guam, with particular attention to water purity, adequate safe and non-polluting sewage and waste disposal, neighborhood and environmental sanitation, parasite and vector control, and traffic and occupational safety.

System Objective III.20 Water Quality/Water Treatment

By 1983, ensure that all water bodies and sources are regularly and continuously monitored for water quality and that such sources are maintained at or treated to ensure maximum purity and minimum biological, chemical or inorganic contamination at all times.

System Objective III.21 Sewage Treatment

By 1983, provide at least primary sewage treatment to all sources of sewage on the island, and extend the sewage piping network to all residences which are without adequate and safe on-premises sewage disposal (i.e., cesspool or septic tank facilities); and ensure that all sources of drinking water are free from contamination or pollution by sewage in raw or non-tertiary treated form.

System Objective III.22 Neighborhood Sanitation

By 1983, establish an island-wide program that ensures that each municipality and its component neighborhoods or residential areas on Guam have services and activities in operation to safely and sanitarily dispose of all solid waste, and to identify, monitor, and reduce or eliminate unsanitary conditions and waste- and pollution-related health or safety hazards, including the identification and elimination of unsanitary conditions on public, commercial, and private premises which are in violation of territorial health and safety codes.

System Objective III.23 Parasite Control

By 1983, establish a service to isolate, monitor and reduce or eliminate sources and areas of concentration of or infestation by parasites of major concern as health threats to individuals, especially children (e.g., ascaris, trichuris, and hookworm).

System Objective III.24 Traffic and Highway Safety

By 1983, inventory and assess all existing traffic safety programs and equipment, including stop-lighting and signing patterns, route configurations and traffic flow separation barriers; assess sites and areas of critical traffic safety hazards; and implement an on-going program to upgrade traffic control and traffic safety procedures in order to reduce or eliminate identified hazards.

System Objective III.25 Occupational Safety

By 1983, inventory and assess all sites and conditions in critical occupations and economic activities (especially contract and residential construction) which are demonstrably hazardous to worker/employee health or safety; devise or revise standards for occupational safety; and monitor and enforce compliance with such standards by all critical occupation employers.

SYSTEM GOAL IV. MANPOWER SUPPLY AND TRAINING

Provide a complete and comprehensive mix of health manpower to staff all needed health care and health system service components, and improve the quality of training and service competency through selected basic education and re-education programs.

System Objective IV.26 Support Services Manpower

By 1983, ensure that manpower levels in the following service areas or service programs are adequate to carry out all current service activities and to meet the service objectives specified in this plan: water quality control, sewage treatment, neighborhood sanitation, parasite control, traffic and highway safety (recruitment of a traffic engineer included), occupational safety; health services and manpower regulation and certification; health care services and Guam Health Planning and Development Agency planning and evaluation; and health information system development and implementation.

System Objective IV.27 Secondary Level Health Manpower

By 1983, ensure that recruitment of and continuing funding for nursing staff for upgraded Intermediate Care, chronic care, and geriatric care services; speech pathologists and necessary therapists for expanded Crippled Children's Services and programs for the handicapped and developmentally disabled; and counseling staff for the multiple counseling services required on Guam (psychiatric, drug and alcohol abuse, suicide, family conflict and juvenile problems, and family planning and venereal disease programs).

System Objective IV.28 Public Health Nurses

By 1983, expand the number of public health nurses (PHNs) to the full complement requisite for complete implementation of expanded, comprehensive and accessible services covering all of Guam's population with basic primary care, outreach, diagnostic and screening services, and immunizations conducted through or in conjunction with public health clinics.

System Objective IV.29 Nurse Practitioners and Allied Health Care Aides

By 1983, establish a local training and recruitment program that will provide Guam with a corps of primary and preventive health care providers as a mix of Nurse Practitioners, Physician Assistants, and other health care aides who will be trained and/or recruited to supplement existing primary care health manpower (physicians, LPNs, and PHNs) as a means of decentralizing preventive and primary care services which they will provide at the village and municipal levels.

System Objective IV.30 Emergency Services and Paramedic Manpower

By 1983, establish a local training and recruitment program that will develop a full complement of emergency medical services personnel, including associated paramedics, consistent with and able to meet the service demands of an expanded Emergency Medical Services system for all of Guam.

System Objective IV.31 General Health Manpower Training Programs

By 1983, upgrade all local (Guam) health and health-related manpower training programs in order to improve the quality and qualifications of all such personnel licensed, certified, or employed locally, and to ensure that all such personnel meet the minimum qualifications of the respective professional organizations (regardless of membership standing).

System Objective IV.32 Continuing Education for Health Manpower

Within the five year planning period, establish guidelines and programs for implementation of recommendations concerning regular and periodic continuing education requirements for each branch and level of health and health-related manpower practicing on Guam, including demonstration on the part of all such personnel of involvement in such continuing training and education as a condition for local re-licensing and re-certification for practice.

SYSTEM GOAL V. HEALTH SERVICES AND MANPOWER REGULATION

Improve, integrate and coordinate all health service and health manpower regulatory activities on Guam designed or re-designed to ensure and enforce the maximum compliance with existing or revised codes, qualifications, tests, and standards for the operation of health care and health care related services and the practice by all health and health-related personnel, in order that such system regulation will improve the overall performance and quality of component services engaged in direct or indirect health care delivery.

System Objective V.33 Licensing and Certification Procedures

By 1983, establish and implement a program to review, assess, and revise as necessary all existing local licensing and certification procedures and practices, and to introduce new licensing and certification procedures as necessary, in order to ensure that all health and health-related services and personnel meet minimum performance, professional competency, and quality standards.

System Objective V.34 Legislation for Regulatory Powers:

Within the five year period, and pursuant to System Objective V.33, expand regulatory powers and authority through new or revised legislation where necessary, in order to ensure the maximum application, coverage, and

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enforceability of all new, revised or existing licensing and certification procedures and regulatory activities for health and health-related services and personnel.

System Objective V.35 Motor Vehicle Testing and Licensing

By 1983, achieve a complete review, assessment and revision of existing motor vehicle testing and licensing procedures, to ensure that 100 % of all new license applicants or re-applicants are subject to stringent driving practice and driving and traffic safety standards competency assessment; with provisions incorporated for mandatory driver re-education and re-testing for established classes of moving violations and traffic safety violations.

Sytem Objective V.36 P.S.R.O. Enhancement

Within the five year planning period, achieve a reassessment and restructuring of Guam's Professional Standards Review Organization, with new mandate and guidelines for the fulfillment of that mandate to establish professional standards for health service performance and to evaluate and report on the assessment of all health care professions and personnel in a systematic, comprehensive and timely fashion.

System Objective V.37 GHPDA Certificate of Need Process Clarification

By 1983, under the direction of the Guam Health Planning and Development Agency, review and revise the current procedures and program within which the Certificate of Need process is carried out, and, as part of this revision, implement a program of covering all health system services intending to expand or modify their configuration of health resources for service delivery with uniform standards, criteria for evaluation of the need for and appropriateness of such changes, and schedule for the timely evaluation of applications for approval of intended service changes.

SYSTEM GOAL VI, HEALTH PLANNING, COORDINATION AND EVALUATION

Improve the effectiveness and efficiency with which health planning, coordination and evaluation efforts in support of health services and programs are conducted, in order to provide the health system as a whole on Guam with the best long run performance capability in response to identified health status problems and conditions.

System Objective VI.38 Guam Health Planning and Development
Agency Capabilities Enhancement

Within the five year planning period, adopt a fixed staffing pattern and delegation of planning agency responsibilities and task-assignments in GHPDA, consistent with comprehensive health planning functions and activities, with clear lines of direction and supervisory authority; establish minimum planning qualifications consistent with agency responsibilities and task-assignments, which are specific to each staff position; and formulate and implement a detailed schedule of activities, tasks, methods, and products required for specific plan analysis, plan development, and service evaluation efforts undertaken by the agency.

System Objective VI.39 Health Care Agency Policy Formulation

By 1983, achieve system-wide adoption and implementation of a concerted, GHPDA-sponsored program to develop and activate policy-making bodies, boards, or continuing task forces concerned with agency-specific service delivery and administration activities in all major health care agencies, public and private, including but not limited to: Department of Public Health and Social Services, Guam Memorial Hospital Authority, and the island's health maintenance organizations; such bodies to establish agency-relevant missions, goals, objectives, priorities, tasks and agency evaluation criteria, consistent with the evolving Guam Health Systems Plan and its specification of agency function and purview.

System Objective VI.40 Health Care Agency Planning-Evaluation Expertise

By 1983, achieve the cooperation of all major health care agencies in their adoption of personnel positions or staff time allocated to agency planning, evaluation and system-wide and GHPDA Plan coordination efforts.

System Objective VI.41 Health Planning-Health Budgeting Linkage

By 1983, establish an ongoing joint planning agency-legislative committee liaison to coordinate planning recommendations and budget allocation decisions to be incorporated in draft or final budget legislation, in order to ensure that future Health System Plans for Guam incorporate the most feasible and implementable set of plan recommendations consistent with political and budgetary realities of the Territory.

System Objective VI.42 Inter-Governmental Health Agency Coordination

Within the five year planning period, establish a continuing program of periodic meetings of all governmental agencies (Federal and Territorial) involved directly or indirectly with health care delivery, for the purpose of coordinating and evaluating information, decisions, plans, and projections with respect to health status and health system components, and in order to arrive at a more consistent set of public policies with regard to health care delivery and health problem abatement.

Sytem Objective VI.43 Multi-Level Health Care Services Coordination

Within the five year planning period, under the direction of GHPDA, establish an inter-agency task force composed of representatives of all major health service organizations, public and private, large and small, and including military health care representatives if possible, with the express mission of analyzing, evaluating and coordinating activities, programs and policies in pursuit of all goals and objectives of the Health Systems Plan adopted by the Territory.

SYSTEM GOAL VII. HEALTH INFORMATION SYSTEM IMPLEMENTATION

Strengthen and consolidate the data-base foundation required for local, population-based comprehensive health planning, by enhancing the coverage, comprehensiveness, and timeliness of collection of all needed data elements, and by integrating such a combined data-base with all appropriate analytical and evaluation methodologies, epidemiological, statistical and financial tools in order to maximize the amount of useful and utilizable information made available to GHPDA and to other agencies for comprehensive health planning.

System Objective VII.44 Comprehensive Morbidity, Provider and Cost Data

By 1983, establish and carru out data collection procedures on a regular and timely basis which enable the comprehensive compilation of morbidity and disability conditions as reported to provider physicians as well as to health clinics, HMOs, or the hospitals (military and civilian); the complete monitoring and updating of basic data sets on health care provider characteristics and activities; and the recording of basic financial, budgetary, and cost data from each health care service and provider; such data coupled with other routinely available and collected data (mortality, vital statistics, service utilization, demographic and socio-economic data) to enable complete and detailed analyses of changes in health status and health system activity.

System Objective VII.45 Records and Data Element Standardization

By 1983, establish a completely standardized, consistent and uniformly accessible set of basic health and population data, which eliminates duplication of data gathering and reporting, and records data elements on standard, coded forms (suitable for machine-reading or key-punching), and with reference to which all regular and necessary analyses of health status, health status determinants, health services configuration and performance, and health service utilization can be carried out.

System Objective VII.46 Database Coordination and Centralization

By 1983, establish a single data collection, storage and analysis entity (or agency locus) which is the central unit to which all data elements will be sent on a regular basis; adopt and implement a computerized system of record storage and record retrieval for all data elements utilized in health planning; and achieve the requisite degree of cooperation and coordination with all health service agencies and service providers - through formal agreements on data gathering, protection of confidentiality of patients and providers, where necessary, and sharing of health information and analytical output - in order to guarantee the regular and continued compilation of all essential health planning data elements.

System Objective VII.47 Information System Analytical and Output Capacity

Within the five year planning period, create, integrate, and maintain a package of analytical methods and procedures which will maximize the use of all collected data for health planning and maximally facilitate the conversion of raw data into interpreted data (i.e., useful, communicable, policy- or program-relevant information); such methods and procedures to include but not to be limited to standard health status rates and indicators computations, tabular and graphic summary presentations of health data, epidemiological methods for analyzing determinants of health status conditions, and statistical routines to summarize health data and to explain associations or relationships between different data elements, as well as additional contingency procedures for supplementing regular reports and records data sources with special survey data when appropriate and cost-effective to answer specific health planning questions,