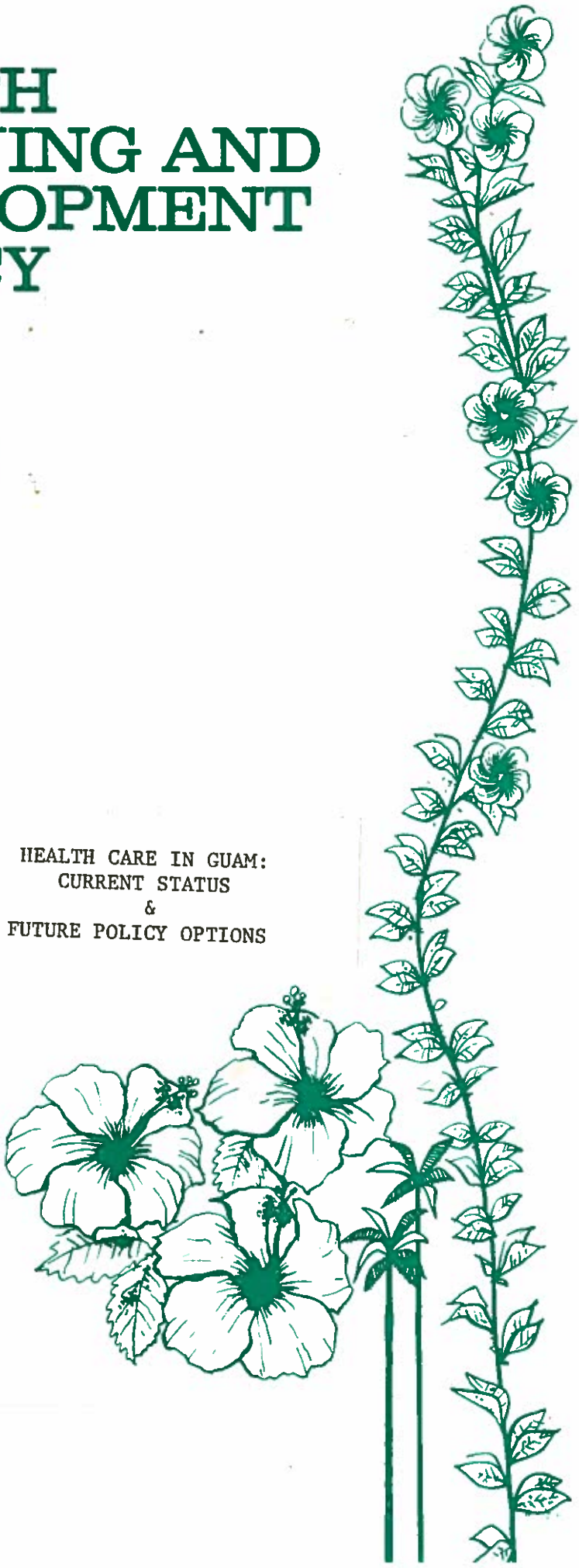
GUAM HEALTH PLANNING AND DEVELOPMENT AGENCY



HEALTH CARE IN GUAM:
CURRENT STATUS
&
FUTURE POLICY OPTIONS

HEALTH CARE IN GUAM:

Current Status and Future Policy Options

Prepared for

Guam Health Planning & Development Agency

by

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HEALTH CARE IN GUAM: Current Status and Future Policy Options

I. EXECUTIVE SUMMARY

INTRODUCTION

To its great credit and with wisdom, the Guam Health Planning and Development Agency conceived and commissioned this first-of-its kind study and analysis of Guam's health care system. The completion of this work provides public officials and policy-makers with a clear view of the current status and organization of Guam's health care system, coupled with a massive blueprint of alternative policy options which can usefully serve to direct further development and refinement of health care in Guam to the eventual benefit of all of her citizens.

Basic data were collected during the period July-August, 1981, and analysis and development of alternative future policy options consumed a large portion of the Fall of 1981. The study was conducted by a team of five highly experienced professionals representing the fields of health administration, medicine, planning, financial management, hospital administration, systems analysis and demography. Well over 100 leaders in the health, business, political, religious and community fields were interviewed in the course of this study, and volumes of published data were reviewed in an effort to compile a system description which is as accurate as possible.

GUAM'S HEALTH CARE SYSTEM

Having emerged in its present complex and pluralistic form from earlier centralized, government-dominated, health care services only in the past two decades, the citizens of Guam enjoy a health care system which is generally similar to those to be found in most U.S. mainland communities of like size. In some respects, Guam's system contains components typical only of larger urban communities and differs significantly from the more simple, totally government systems to be found in other Pacific Island Territories.

The system is composed of two major sectors -- the public agencies and programs, and the private, free-enterprise sector. The public sector is presently the larger of the two, and contains such major direct health care providing entities as Guam Memorial Hospital,

well-developed public health and environmental health agencies, a Community Mental Health Center, emergency medical services, home care, Medicaid, and Senior Citizens services. Some of the major related public components which serve health-related purposes include Guam Community College and the University of Guam, the Rehabilitation Workshop, the Vocational Rehabilitation Agency, Youth Affairs Agency, Department of Education, Public Utilities Agency of Guam, Environmental Protection Agency, and the Department of Public Safety.

The private sector comprises individual and group practitioners of medicine, dentistry, optometry and psychology, clinical laboratories, retail pharmacies, a medical supply system, a network of voluntary health organizations, professional societies, and indigenous healers. It is in the private sector that some of the more critical shortages of health personnel presently exist. Both the public and private sectors are both supported to some degree by, and relied upon by, the personnel and resources of the U.S. Naval Regional Medical Center.

As is typical elsewhere, planning for improved health care services and programs is somewhat divided among Guam Health Planning and Development Agency, the Mental Health and Drug Abuse Agency, the Environmental Protection Agency, the Developmental Disabilities Council, and a myriad of categorical program planning efforts distributed mainly within the public health programs.

Generally, no health care system can be said to have a true abundance of needed professional and technical personnel and this is certainly the case with respect to Guam's system. However, with a few notable exceptions in nursing, dentistry and medicine, Guam's system appears to be minimally but adequately staffed. Of greatest numeric need are nursing personnel, in which field an apparent deficit of more than 150 nurses currently exists with the preponderance of need in Guam Memorial Hospital and public health nursing. In dentistry, it appears that about 11 new dentists would be desirable. In medical practice, the major needs are for additional general and family practitioners, pediatricians, cardiologists, ophthalmologists, urologists, radiologists, pathologists, and psychiatrists. In these,

and a number of other medical specialty areas, it is estimated that 43 additional new physicians would be desirable to adequately meet the range of medical care demands resident in Guam's population.

Guam's health care system currently represents an estimated annual expenditure (from all sources) of about 33 million dollars, of which about 42% derives from government appropriations, 33% from insurance and other pre-payment, 13% from Federal sources, and the remainder from private out-of-pocket payment. Appearing only in recent years, health insurance of various forms and types now exists to cover part of health care costs for about 51% of Guam's population. An estimated 33% remain, however, uninsured and ineligible for public assistance or other entitlements. Against the national figure of about 85% insured, there appears to be substantial room for additional insurance enrollment in Guam. The major pre-paid health plans are Guam Memorial Health Plan and Family Health Plan, both organized desirably in the health maintenance organization format. Another 25 health insurance programs of various kinds cover smaller numbers of enrollees.

Examination of the system supports the conclusion that the current health care system is principally oriented to the provision of acute medical care for the few in need, with commensurately less attention to health promotion, disease prevention and health maintenance for the many. It is thus an "acute-reactive" system for the most part, and future investment and development toward the "prevention-promotion" model would seem warranted.

THE MAJOR ISSUES

As it would from the examination of any health care system, this analysis has revealed a number of "issue areas" which deserve serious attention as means of further improving an already well-developed system. Although the study identified several hundred discrete "problems" of relatively minor types existing within the current system, the major focus is on major issues which appear to lie at the root of numerous smaller problems. It is toward these large issues that the fundamental policy alternatives which are presented are directed. The following were the major issues identified:

- insufficient control and coordination of health services
- absence of a basic policy framework for health services
- unclear eligibility criteria for various governmental services
- "crisis" funding for health services
- absence of a central and integrating planning focus

POLICY OPTIONS AND RECOMMENDATIONS

A carefully selected set of policy areas are proposed for future attention, some of major magnitude and others of smaller dimensions. In their totality, they are designed to eventually bring to Guam a full-service, integrated and coordinated modern health and medical care system of which all can be proud. In the listing which follows, the recommended policy is summarized, with other alternatives specified where appropriate:

1. *To provide for more efficient and better coordinated governmental health services*

   - Establish a secretariat for health in the form of an umbrella agency, providing central organization within which all governmental health and health-related services are organized and coordinated. Other approaches would include designation of a "coordinator for health services" and creation of a formal "cabinet for health" comprising agency and program heads.
   - Create a representative and publicly accountable Board of Health for purposes of overall health policy creation, with membership being appointed by the Governor. Other options include an elective board, employment of the present Guam Health Coordinating Council in a dual capacity, creation of an "umbrella" board comprised of members from existing boards and commissions in the health field, or creation of a board comprised of heads of all health and health-related agencies and organizations.
   - Achieve stability in chief executives for health services by creating a new "executive series" under civil service. Other approaches embody establishment of statutory terms of appointment authority to appropriate boards and commissions.

- Establish improved budgetary practices for health services by requiring the preparation and consideration of single, consolidated health service budget embracing all operating health agencies. Other prospects include the adoption of "zero-based" budgeting and the annual re-evaluation of all governmentally funded programs on a program-by-program basis.
- Funding of capital depreciation should be reflected by an allowance with price adjustment of reasonable capital depreciation in each health service operating budget. Other options include long-range capital replacement budgeting as a separate appropriation item.
- Establish a trust fund for health services to overcome service curtailment during times of unexpected cash short-falls. This could be approached through reserving a proportion of each agency's operating budget, or by developing a sliding scale of service fees and a stringent collection policy, some proportion of which would be reserved in a trust account.
- Adopt a form of contingency budgeting through the establishment of an emergency health fund to be drawn upon for unexpected emergencies requiring health and medical services. Other approaches would be reserving some small percentage of appropriated funds for such an account, or shortening the budget cycle for health services in the form of "rolling budgets" to be considered several times each year rather than annually.
- Centralize health-related planning by creating a single health planning agency which would subsume the numerous and generally unrelated health planning entities which exist at present. Other options include the designation of the Guam Health Planning and Development Agency as the locus for coordination of all health and health-related plans, and the placement of all governmental planning (health, social, education, land-use, economic development, etc.) into a single planning agency.

- Create greater cost-efficiency in government health services by centralizing governmental purchasing and warehousing of supplies for health services, and by contracting with other public and private entities to provide services for them.
- Reform the Medicaid program through maintaining the present program, but improving fee schedules, eligibility criteria, and claims processing. Other more drastic options would include withdrawal from the Federal program and tailoring a different locally-funded program to Guam's unique needs, and seeking Federal approval to limit services and service providers to either cost-effective providers or to totally governmental health providers.

2. *To expand and diversify governmental health services*

- Expand governmental provision of primary medical care by establishing a network of Family Health Centers, operated by the Division of Public Health, to provide primary medical care for the indigent, near-poor, and Medicaid populations, as a regionalized substitute for the current out-patient department at Guam Memorial Hospital and private sector vendor payment system. Other expansion options include provision of domiciliary facilities for dependent elderly who lack suitable personal home environments, establishment of day-care facilities for the elderly who do live at home, and creation of a transit system designed for the poor, isolated and elderly who cannot conveniently access available health services.
- Establish Guam Memorial Hospital as a totally autonomous, non-profit public corporation with the responsibility of becoming self-sustaining. Other options related to GMH's aegis include diverstiture to private ownership and operation, and reversion of GMH to line-agency status within the government. In any case, the thrust of the argument is to improve the financial and management position of GMH.

- Divorce Guam Memorial Health Plan from the Guam Memorial Hospital Authority, which is presently in a serious position of conflict of interest, by creating a separate and unrelated board to govern GMHP. Other options include divestiture through sale to a private entity, and the total amalgamation of GMH and GMHP into a single health maintenance organization operation.

3. *To improve the financial health of the system*

- Establish fair and appropriate fee schedules for government health services as a means of partially recovering the direct costs of service from those with varying degrees of ability to pay.
- Enroll all eligible elderly under Medicare, providing if necessary supplemental subsidies to enable the poor elderly to meet the financial requirements of the program. This is intended to increase to the fullest possible extent Guam recoveries from the Federal Medicare program.
- Establish local intermediary capabilities as a means of expediting the processing of various insurance and Medicaid claims in Guam, by identifying private sector capabilities in Guam to assume such functions. Other options include contracting with off-island entities such as in Hawaii, or the assumption by governmental computer facilities of these responsibilities.
- Establish a compulsory health insurance program for the employed and needy by enacting legislation following the Hawaii prototype. Other extensions include government "buy-in" for the poor in GMHP and other pre-paid plans, and the creation by government of a public insurance corporation which would have the sole responsibility with appropriated funds as proxies for premium income, for the purchase of medical services for the indigent and poor.

4. *To further assure the supply of high quality health personnel*

- Improve regulation and licensure of health professions and facilities by establishing formal local licensure statutes

at least in the fields of medicine, dentistry, pharmacy and psychology. Other extended options include statutory requirement of professional up-dating, and the licensing of health facilities including medical clinics, private laboratories, pharmacies and private care homes of various types.

- Provide a basis for malpractice insurance for health professionals through statute which supplements both customary malpractice insurance or self-insurance programs. Other approaches would include governmental recruitment of insurance companies to offer malpractice insurance for Guam-based practitioners, governmental creation of its own malpractice insurance pool and its provision to Guam-based practitioners, or the creation of an insurance pool by a consortia of private practitioners.
- Establish functional boards of professional examination by creating separate and powerful boards of professional licensure which would regulate at least the fields of medicine, nursing, dentistry, pharmacy and psychology. Other options include strengthening the existing Licensure Commission by expanding its membership to include various professions and lay persons, and the employment of professional panels created by professional societies to assist in licensing, certification and disciplinary functions.
- Expand the range of function for professional workers by authorizing limited drug prescribing and dispensing functions for pharmacists, nurses and physicians assistants. Other options include permitting the independent practice of nurses in the several nurse practitioner specialities.
- Establish a health professions recruitment program for both public and private practitioners based on a long-range health manpower plan. Other approaches include assignment of professional manpower recruitment to an agency of Guam Government, development of collaborative recruitment activities with local health professions associations, arrangement for off-island "up-grading" of existing personnel, contracting with schools

of health professions to feed needed manpower, and contracting with private professional manpower services for mainland recruitment.

- Establish a health manpower development program which would enrich high school basic sciences, provide clear pre-professional tracks at the University of Guam and Guam Community College, and which would make opportunities available for Guam's people to enter and complete training in any of the major health professions at universities elsewhere.

5. *To meet Guam's regional role*

- Equip and staff Guam Memorial Hospital and the general system to serve as a regional medical referral center for the Western Pacific, and execute appropriate inter-governmental compacts and agreements with adjacent jurisdictions.

It is clear that the pursuit of the multiple policy options presented above will require many dimensions of time. Some are amenable to rather immediate implementation, while others (such as performing a regional medical referral role) will doubtless take several decades to achieve. The important point to this study is that there are several areas of remedy revealed, attention to which will hasten the process of further improving an already relatively fine health care system. The general directions for improvement and expansion are now in hand. What remains is the studied consideration by executives and policy-makers of the options, their refinement, tuning and detailed planning which can lead to their eventual implementation.

II. INTRODUCTION

A. THE PROBLEM

As originally presented, the major problem toward which this study was to be directed was the lack of a clear picture of the current functional and financial organization of Guam's health and medical care systems. A second closely related problem was the lack of well-developed alternatives, appropriate and feasible policy options which could serve as a basis for the Government of Guam's evaluation of future changes and as a blueprint for making improvements in Guam's health and medical care system. Thus, the initial problem requires the answers to the following broad and significant policy questions:

- which health and medical care system(s) would serve Guam best in the future, given available and predictable future resources, current law, and the history of the system?
- what would be the preferred future organizational relationships within the preferred system(s)?
- what should be the relative resource allocations among components of the preferred system(s), and how should funds flow in support of the services which the preferred system(s) should provide?

The study was conducted to meet the foregoing mandates and to provide alternative answers to the questions raised. It proceeded as well under a set of perceptions of Guam's needs held by the investigating team. For example, we are aware that Guam is undergoing economic and social development, and is emerging as a major locus for trade and commerce in the Western Pacific. While Guam's health care system has evolved largely to meet the gradually emerging needs of her citizens, there has been little attention paid to the needs and potential demands which may be forthcoming from peripheral Pacific Island populations, or those which burgeoning economic development in Guam may bring. This dimension of the problem was selected by the investigators as an added facet of the analysis.

Likewise, we are concerned that Guam's tripartite health care system, comprising military medical facilities and services, a developing private sector medical service system, and an expanding network of governmentally owned and operated in-patient, ambulatory and public health services, was proceeding without clear and conscious overall policy direction -- it has been, in short, "growing like Topsy". Thus, we chose to add to the problem under study ways in which broad overall system policy-making might be achieved, and particularly in a manner linked to other policy and developmental strategies in related fields such as economic development.

We have questions as to whether the present health and medical care service system, as it has evolved in a piece-meal fashion over time, is indeed the most efficient or effective way to protect, improve and promote the health of the people of Guam. Based on experience elsewhere in the Pacific, we were concerned that there may be features of the present system which serve to foster undue and unnecessary dependency on external resources. We felt it entirely probable that lines of authority, responsibility and accountability within the current system may not be as clearly defined as they might desirably be. These concerns led us to add to the problem yet another concentration, that upon defining clear, non-conflicting and functional lines of relationship so as to contribute to the highest quality of health service at the lowest possible cost which would operate in a highly coordinated and comprehensive manner.

And finally, as elsewhere in the Pacific and in the United States generally, we recognized the deep concern over the rising cost of providing health care to Guam's citizens, and added our concern for appropriate and equitable future financing of a system which is growing in complexity and cost as another dimension of the problem to be addressed.

B. ASSUMPTIONS AND BELIEFS

The analyses, conclusions and recommendations which are embodied in this report have obviously been biased substantially by the personal orientations of those responsible for their development -- in brief, the study team members. Based both on our respective professional backgrounds, and most importantly upon the data which we acquired through extensive and deep interviews with many of Guam's citizens, we developed a unique set of assumptions and beliefs about what is important for Guam's further development. It is, therefore, to the satisfaction of the following beliefs and assumptions that the concluding portions of this report are directed.

- *Modern Health Care System:* Guam's citizens have slowly become accustomed to the receipt of health and medical services, both in-patient and out-patient, which are increasingly sophisticated and comprehensive. As with most Pacific Island populations, the people of Guam have come to believe that it is their right to have access to high quality health and medical services of the professional caliber enjoyed by any other U.S. population of similar size. In short, we believe that the political leaders and the people of Guam now demand a complete and first-rate medical care system in the sophisticated Western model.

- *Pacific Basin Orientation:* We hold the strong assumption that Guam is not selfish in her desire for a complete, high quality medical care apparatus, but that she shares close cultural bonds with adjacent Pacific populations for which Guam assumes (informally at the moment) substantial responsibility. From this stems our belief that whichever the direction of improved health care on Guam, it must be developed with a view to meeting unmet health and medical care needs of Guam's close Pacific neighbors.

- *Commitment to Development:* One of our strongest beliefs, which is exemplified in the recommendations contained in this report, is that Guam is achieving a level of economic and

political development which will permit both the development and the maintenance of a truly comprehensive and modern health care system. Not only is there sufficient civil population base to support a comprehensive system, but there is clearly evident a prevailing philosophy among elected policy-makers and strong voices from the business and commerical community that suggests a willingness to make the needed investments which would bring Guam's health and medical care system up to the standards of the best systems elsewhere. Thus, some of the suggested actions contained in this report will seem at first blush to be unfeasible, but they are premised on the believe that the courage and determination exists to make major, and in some cases expensive, changes.

- *Commitment to Health Status Improvement:* Based upon what we have seen and learned, we have no doubt that there exist a set of clear health system goals, perhaps not yet formally expressed, which embody a strong desire for a more healthy population, one which can live better, learn better, work better and generally prosper. It is evident that another clear goal is for citizens to live more healthy lives, have better health habits and require increasingly less medical service. There is equally clear desire to respect and nourish the cultures of the people. And finally, there is evident the desire that Guam's young people be provided opportunities to fully and completely participate in the technological age of the latter twentieth century, and this includes taking their fair position in the health professions as well as other professions and vocations, entry into which is taken almost for granted by populations elsewhere in the United States.

- *Self-sufficiency and Self-determination:* Toward the goals stated above, we assume there is interest and dedication toward erecting, as soon as possible, a local health care system which is both economically and professionally self-sufficient; a system whose eventual configuration and governance is largely self-determined locally; a system which is

tailored to the current and potential future health care needs of Guam's people and which provides the maximum of health protective and health maintenance services to the end of an increasingly healthy population.

- *Public Financial Participation:* In many quarters, we were told with great pride the extent to which Guam's citizens have, in large part, become paying participants in their health care. We have noted the significant extent of civilian enrollment in prepaid health plans. From these indicators, we have arrived at the assumption that increased financial participation in paying more fully the costs of health and medical care on the part of individual citizens is worthy of serious consideration. One of our beliefs in this connection is that those who pay for any service (health, education, public safety, etc.) deserve formal means for participation in the governance of that service, in the development of policy governing that service, and in entering their grievances with respect to the system and its services.

- *Private Sector Initiative:* We believe that the present era of concentration upon restoring the values and practices of free enterprise are entirely consistent with the economic and social development of Guam. They are also consistent with the earlier stated belief that Guam is dedicated to self-sufficiency. Therefore, we have adopted the assumption that most future developmental attention should be focused on more fully creating private sector health delivery mechanisms, with the concurrent refocusing of governmental services to the maintenance and operation of a modern, acute hospital for all persons, and the provision of wide-spectrum public health services for targeted populations. We assume, in addition, the government's willingness to provide, directly or by contract, all needed health services to those members of the population unable economically to participate in private sector services. This approach is generally consistent with broader

United States policy with respect to health service -- a broader policy within which it would be wise for Guam to undertake her further development.

C. GOALS OF THE STUDY

The overall purpose of the study is the development of strategies for improving the present systems of health care delivery, health care facilities and resources, and health manpower mixes for the delivery of health and medical care services in Guam. The following sub-objectives have guided the overall study:

1. reduce undue and unnecessary dependency on external personnel and service resources for health care;
2. develop a health care system within an organizational framework which provides for clearly defined, non-conflicting lines of authority, responsibility and accountability;
3. identify the types, numbers and distributions of health care providers which will be required to staff and operate an increasingly modern, high-technology health care system;
4. design a system which will assure that (a) health and medical care services are accessible and available to all citizens; (b) medical and health services are acceptable to the citizens; (c) a sufficient range of health care skills and resources are available to provide comprehensive and continuous care for the citizens of Guam and adjacent Pacific Island populations; and (d) that health care personnel are trained and facilities constructed to such standards as to assure high quality services;
5. design a future health care system which will not only adequately and fully treat acute illnesses, but which will effectively and efficiently promote, protect and maintain the health of the people of Guam;

6. provide a policy framework, which embodies multiple alternative courses of action, which can provide governmental and other policy-makers the necessary options for the development of future policy affecting health care delivery;

7. develop future health manpower needs and propose functional means whereby future health professions personnel might feasibly be met;

8. design a health care system which provides the desired level of health services in the most economical way possible and within known and predictable economic constraints binding Guam's citizens.

D. STUDY, STAFF, APPROACH AND METHODS OF PROCEDURE

The following persons conducted this study and prepared this report:

Henrik L. Blum, M.D., M.P.H.
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Robert E. Mytinger, Dr.P.H. (Project Director)

Two quite specific approaches were employed in this study. First, and most importantly, special pains were taken to elicit the perceptions, desires and ideas held by a broad cross-section of citizens, health care providers, and governmental officials in Guam. Secondly, the informed insight and judgement on the part of a team of five highly experienced external professionals (the study team) was also applied. This bi-lateral approach to exploring the current health care system and to constructing desirable future options was chosen to avoid the "outside expert syndrome" wherein the visiting "expert", often with no prior knowledge of the study site and its conditions, considers mainly his own perceptions in arriving at recommended actions.

As expected, there was wide knowledge of health system deficiencies and problems lodged in the hearts and minds of

those interviewed. Not as expected was the rich array of proposed solutions to known problems which are also in minds of citizens of Guam. One of the major tasks of this study has been to identify and classify these notions of appropriate change and to incorporate them into an overall developmental strategy. Through interviews, we were able to test the concepts of desirable system change against the beliefs and opinions of many people in Guam, and the result has been a general mirroring of a set of ideas already conceived by residents of Guam, augmented by extensions and elaborations generated by the study team. Accordingly, it should be emphasized at the outset that a solid constituency for many, if not for all, of the actions and changes recommended in this report has existed in fragmented, although sometimes unspoken, forms for years. This report, in many ways then, simply brings into focus in an organized way the wishes which many have had, and the acceptance which many feel, for needed change and improvement in the system.

The study was approached through four major distinct and sequential stages. During Stage 1, the project team reviewed in detail written materials which were available in several library collections. Other materials reviewed related to the organization and function of the present health and medical system, and were provided to us by operating units. Published materials related to the culture and social organization, economic status, geography and population characteristics of Guam were also reviewed in study team seminars.

Stage 2 comprised the on-site portion of the study during which five professional members of the team engaged in interviews and field observations in Guam for a two-week period in July of 1981. The purpose of this data collection was to compile a knowledge base which would support the eventual description and critical analysis of the current health and medical care system, of the current functional organization, the present service delivery and utilization patterns, and present methods for organizing the financing and payment for health and medical

services. It was during this time that we were able to elicit the feelings and opinions of a wide diversity of citizens of Guam.

Based upon the yield of Stage 2 activities in Guam, members of the study team compiled the description of the current system, characterized the current orientation of the system, developed sets of future developmental options for the health system, and completed the design of alternative feasible and appropriate future systems, this activity comprising Stage 3.

The final Stage 4, which depended completely upon the documentation developed during Stage 3, was the preparation of recommendations embodied in the report.

As suggested above, a great deal of the on-site data collection which serves as a foundation for our critical analyses and conclusions was done through the medium of personal interviews with a broad cross-section of health care providers, consumers, business people, religious leaders, government officials and others. Appendix A contains the names of those who contributed extremely valuable insights. To each we are extremely grateful for their willing and most candid responses to our questions. We found uniformly high levels of interest among all those contacted with improving health care in Guam, and an unusually highly informed group of respondents. It is clear, from these interviews, that virtually every person interviewed has had important and central thoughts about the health care system. It can thus be concluded that health care is a high priority item in the minds of the citizens of Guam at all levels of society. With this enthusiastic concern for health matters so broadly extant in the population, it would appear all the more reasonable to move promptly to the implementation of the preferred alternatives suggested in this report.

III. DESCRIPTION AND ASSESSMENT OF GUAM'S HEALTH CARE SYSTEM

A. THE HEALTH SERVICE ENVIRONMENT

1. Introduction

The purpose of this section is to acquaint readers of this Report, newcomer or longtime resident, with the facts and considerations that have been compiled and that have helped guide the analysis of the current health care system on Guam and the development of alternatives for the future of this island. In this overview of the population and society of Guam, we are largely interested in presenting information in an integrated manner, such that implications for the health status and the health care of Guam's people can be highlighted. It is essential that health care on Guam be placed in proper perspective and balanced against the pursuit of alternative objectives or larger goals of social and personal welfare, of which health service is only one contributing component. This overview, then, also serves to identify important trends, opportunities, and constraints which have been created by the combined impact of demographic, social and economic forces that are historically rooted. No clear picture of what is right or wrong about the current organization and utilization of health care on Guam, or about beneficial alternatives for the future can be thoughtfully developed until such a perspective is attained.

This portion of the Report, then, is divided into sections dealing with packages of background information as well as the health implications which they suggest. Each section addresses a unique subject matter and each is dealt with in turn: Cultural Setting, Population, Economy and Health Status.

2. The Cultural Setting

This section presents information on the cultural distinctiveness of Guam and its people through short presentations

on island history, physical setting, environment and housing, environmental risks, and general cultural pattern.

Summary: Guam's long history has seen the near extinction of its original Chamorro inhabitants and the development of a racially and culturally mixed population whose major component is a ("neo-Chamorro") population of Chamorro-Spanish extraction. Guam's location in the center of typhoon production in the western Pacific forces long-term planning and continued preparedness for disaster relief.

a. The Territory of Guam

The island of Guam has been a U.S. possession since 1898 when it was seized from Spain. Administratively, Guam has been an Unincorporated Territory since 1950 by Organic Act approved by Congress. As such, it has the following features: (1) the Territory answers directly to the U.S. Department of Interior, (2) an Organic Act (1950) rather than a Constitution defines Guam's status and responsibilities, (3) a single non-voting representative from Guam sits in the U.S. House of Representatives, (4) there are significant restrictions placed on Guam's participation in Pacific-regional events, and all foreign affairs dealings are removed from the Territory's administration, and (5) only certrain sections of the U.S. Constitution apply to Guam; any powers vested in Guam can be rescinded by the U.S. Congress; federal income taxes collected on Guam remain on Guam; and regulations and policies regarding foreign in-migration are not subject to deliberation or formulation by Guam.

Administratively, Guam has an Executive branch with a governor elected every four years; a unicameral Legislature with 21 seats; and a Judiciary including a Federal Distrct judge. The Territory follows a "municipal" form of districting whereby 19 major village areas have been developed

as municipalities each with its own elected village Commissioner and each serving as an election district for Territorial elections.

Guam is the largest single landmass in Micronesia, the island region of which it is a part, and it is located strategically between Manila and Hawaii (Figure 1). The island is the westernmost possession of the United States, 3700 miles west-southwest of Honolulu, fully 6300 miles from California, but only 1500 miles of south-southeast of Tokyo and 1500 miles east of Manila. Only 120 miles to the north of Guam lies the Commonwealth of the Northern Marianas with a 1980 population of 16,900. While politically and economically different, the two areas are closely linked by common cultural and linguistic ties; divergent foreign power affiliation during the period 1898-1945 has strained the formal relationship somewhat and may have prevented more active consideration of a politically united Marianas state, which repeated referendums in Guam have voted down. The major implications of Guam's Territorial status are (1) that the island's population is physically isolated from major economic centers and must depend on commercial airlines for regular off-island transport, (2) that the Territory is unable to conduct a flexible and more meaningful regional Pacific foreign policy and hence cannot take advantage of economic or health care linkage opportunities in the Philippines or in Japan, which are much closer than Honolulu or California, and (3) that as a strategic "forward base" for a U.S. military interests in the Pacific, Guam now has a substantial U.S. military presence which influences the economy as well as the organization of health care.

b. Capsule History

The short history of Guam that follows focuses on the events and developments that shaped the present society, its health and its health care on the island.

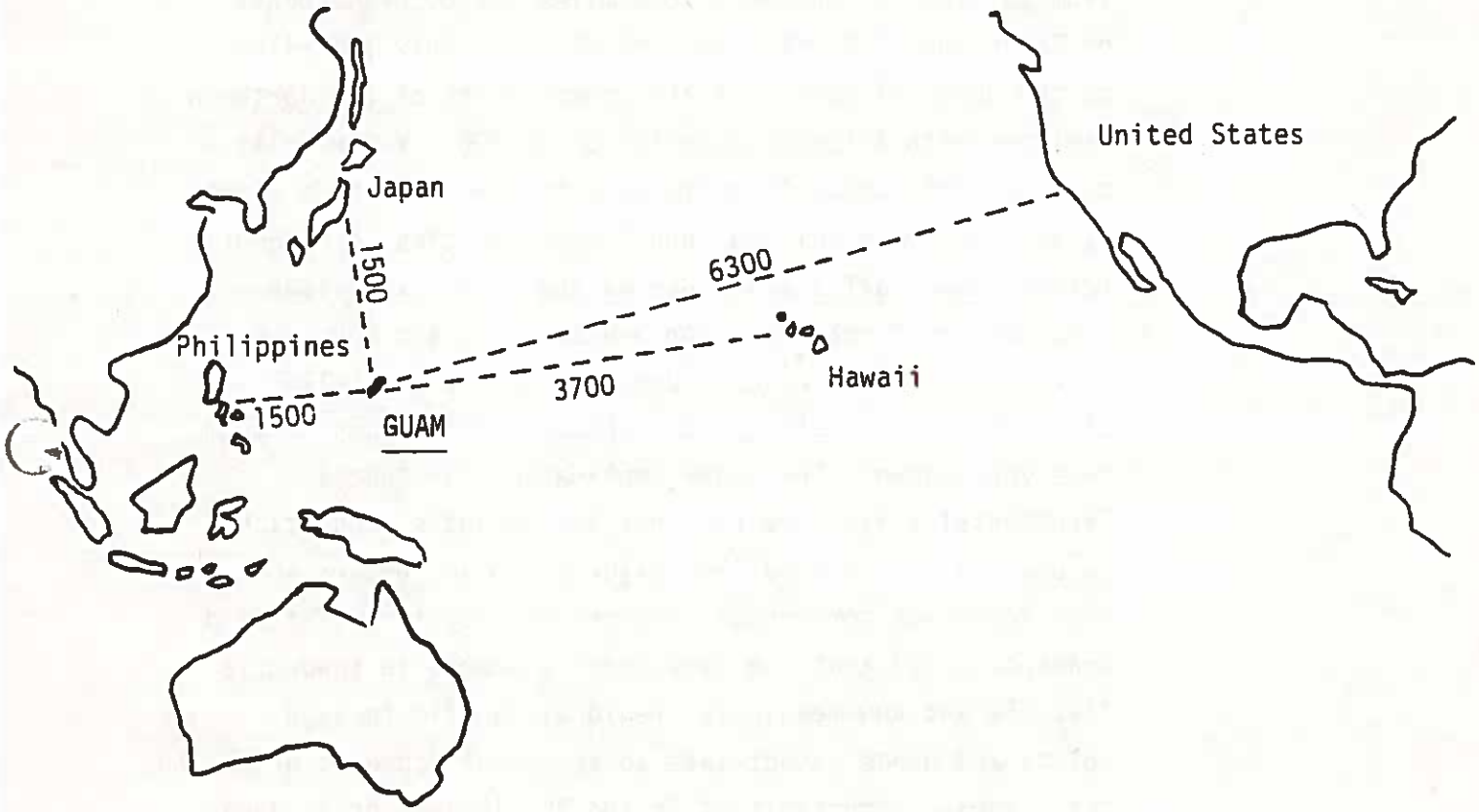


Figure 1. Guam in the Pacific Area

[Note: distances in statute miles]

Source: Bureau of Planning

The Mariana Islands are an archipelago originally inhabited by a distinct cultural group known as Chamorros (the terms was coined by the Spanish and refers to the early natives' bald heads). Initial contacts with Spanish explorers (led by Magellan) in 1521 were soon followed by more permanent contingents of Spanish missionaries and soldiers. Spain's interest in Guam lay in its strategic location in the western Pacific along the Manila-Acapulco trade route used by Spanish galleons. Spanish acquisition of the island chain -- a Spanish priest named it after Queen Maria Anna of Spain -- was quick and brutal. Forced conversions invited the Chamorros to rebellion beginning in 1672, but the revolt was forcibly suppressed by the better armed Spanish soldiers who battled the natives for 30 years. Spanish introduction of western diseases also helped to rapidly reduce the Chamorro population from a pre-Contact (ca.1520) level of perhaps 80,000 for the Marianas (and 20,000 for Guam alone) to just 4,000 in the Marianas by 1710 and only 1500 on Guam by 1783 (Table 1). Between 1570 and 1700, repeated military battles, typhoons and epidemics (influenza and smallpox) took their toll of the original Chamorro natives. After much of the male Chamorro population was eliminated, Chamorro women began to curtail their childbearing, which further reduced the population. Gradually, however, increased intermarriage between Spanish and Chamorro helped to raise the island population level, until by 1900 some 9,600 Guamanians could be counted.

The Spanish ruled Guam and the Marianas from 1598 to 1898. During this period of 300 years, only minor development of the island occurred: roads and bridges were constructed, livestock and new crops were introduced, and sporadic by unsuccessful attempts to provide new vocational trades were made. But Guam was of no economic value to the Spanish empire and the colony languished from neglect; even its yearly stipend was cut off in the mid-1800s and

Table 1. Historical Population Series for Guam

YEAR	POPULATION TOTAL	CIVILIAN/LOCAL	SOURCE
ca. 1500	40,000 - 100,000		
1521	80,000 (Mariana Islands) 20,000 (Guam)		Underwood(1973)
1668	estimated 30,000		
1690	approx. 2,000		
1710	3,678		
1742	estimated 4,000		
1783		1,500	Underwood(1973)
1801		3,908	Spanish census
1815	4,700 (Marianas)		
1816	5,389 (incl.Rota,Tinian)		
1855	9,000		Underwood(1973)
1901	9,676	9,630	U.S. Navy
1904	10,450		
1908	11,490	11,159	U.S. Navy
1910	11,806		
1920	13,275		
1930	18,509		
1940	22,609	22,290 estimated	
1945		21,838	
1946		23,136	
1947		24,139	
1950	58,754		U.S. Census
1960	67,044	43,715	U.S. Census
1965	73,000	50,000 estimated	U.S. Dept.Interior
1970	84,996	64,680	U.S. Census
1980	105,816	84,300 estimated	U.S. Census/ Guam Dept.of Commerce

[Various sources and levels of accuracy, including J.Underwood (1973) "Population history of Guam",Micronesica,Vol.9]

the island was left to fend for itself. Periodically, epidemics swept across the island. In 1856, a smallpox epidemic killed 3600 Gaumanians, or one-fourth of the island population. Only one Spanish governor, whose term was short, attempted to introduce (unsuccessfully) a vaccination against smallpox. Leprosy was prevalent and barely controlled, and dysentery was also common. A leper colony begun at Pago was destroyed in an 1892 typhoon, and a small hospital established at Asan in that year was destroyed in a 1900 typhoon.

In three centuries the Spanish managed to shape a new cultural pattern and eliminate much of the original Chamorro way. Matrilineal ancestral and prestige ties were abolished in favor of patrilineal organization, and important links to the past were thus severed. The Chamorro language gradually absorbed a heavily Spanish vocabulary. Ancestor worship was replaced by deep ceremonial faith in Catholicism, and the religion still dominates most village, family and spiritual aspects of Guamanian life today. Subsistence agriculture gave way to official attempts at larger-scale agricultural enterprise whose failure in the long run led to much greater dependence of the natives upon imported foodstuffs. In 1898, as a result of the Spanish American War, the United States thrust into the Pacific Ocean and promptly acquired the Philippines and Guam.

In 1899, the U.S. took formal possession of its new Pacific island territory. A Navy staff report of that year summarized the major pressing needs of the island's inhabitants, most of these needs being medical: government doctors, hospitals for lepers, syphillitics and tubercular cases, sewers for all the towns, a pharmacy, compulsory physical examinations, free medical treatment, public schools, and an agricultural station. The Department of the Navy was given complete jurisdiction over Guam by Executive Order and ruled the island continuously until 1950, interrupted only

briefly by Japanese occupation during World War II. Health regulations were promptly set, three dispensaries were created for rural areas, and a death reporting and disease registration systems were begun. Early diseases most commonly reported and treated included: tuberculosis, dysentery, leprosy, typhoid fever, hookworm, and 'gangosa'. In 1899 a typhoid fever epidemic broke out and in late 1900 a typhoon swept across the island, ruining towns and coconut trees (important for local copra production); in 1902 a severe earthquake hit Guam, wrecking many buildings. Workers proceeded, however, to erect two hospitals (one for men and the Navy, one for women and infants). By 1908, most Guamanians were used to their new administrators and freely used the outpatient clinics that were established for them, but still avoided the hospital as much as possible. An earthquake the following year leveled both hospitals, which were promptly replaced, one of which was then named the Naval Hospital. At the same time, colonies for lepers and 'gangosa' victims were established at Tumon and Ypao respectively. By 1941, an isolation ward for TB patients was added to the Navy Hospital and a TB survey carried out showed 126 cases of TB, along with 35 cases of pneumonia, 29 of dysentery, 231 of conjunctivitis, 99 of chicken pox, 28 venereal disease, and 347 catarrhal fever. In general, the Navy established a better system of roads, a minimal electric system, sewers, broad curative public health programs with some preventive work accomplished through immunizations of school children. In 1940, however, a major typhoon again ruined much of the accomplishment.

In December of 1941, the Japanese invaded Guam and held the island for nearly three years. Little in the way of infrastructural or public health improvements were made during their occupation. The struggle by the U.S. military to regain control of Guam pitted 55,000 U.S. soldiers against 18,500 Japanese soldiers, and the battle devastated

most of the developed portions of the island, including the capital of Agana. Refugee camps set up by the Navy after the battle in some cases became sites for later town development, while some older traditional villages were abandoned. After the United States had regained control of Guam, the public health picture remained quite stark for a while. In 1947, 280 deaths were recorded, 60 due to tuberculosis, 37 to pneumonia, and 11 to hookworm. Hospital admissions that year numbered 154 for gastroenteritis, 100 for TB, 99 for pneumonia, 73 for catarrhal fever, 64 for asthma, 47 for hookworm, and 43 for bronchitis. In 1946, a 300-bed hospital was erected out of Butler huts and named Guam Memorial Hospital. By 1956, a new hospital had been built at Saupon Point with a six-story TB wing; at the time, 14 outlying dispensaries were also in operation.

In 1950, the U.S. Congress passed the Organic Act for Guam which established Guamanians as U.S. citizens and Guam as an unincorporated U.S. territory. At this time, Navy governors gave way to civilian governors although still appointed. The first locally elected governor (in 1971) was also the last appointed governor: Dr. Carlos G. Camacho.

The overall trend that this brief history of Guam indicates is a major cultural re-orientation of the original population and, after American occupation in 1898, increasing Americanization of Guamanians' attidues and material way of life. A 1962 initiative of the Kennedy Administration to develop the American Pacific socially and economically gave rise to a welter of federal programs which introduced government employment as a major occupation, removed all barriers to travel onto and off the formerly "sealed" island, and increased the pace of modernization and social change enormously. Guam was the seat of air operations against Vietnam during 1965-1973, and a heavy drug problem developed among island youth, which had several repercussions including mouting crime rates in the late 1970s. It

appears that modern Guam has learned of the prosperity that an American style of life holds, but has also acquired some of its social problems. The infectious diseases that prevailed for so long in the past have recently given way to more chronic diseases and illness caused by personal behavior and modern lifestyles. In general, a local health care system has emerged from persistent efforts by the Navy administration; this system in large part is public and non-competitive, and provides essentially free care. Free medical care has unfortunately been generally assumed to be a right of citizens, without adequate understanding of the costs involved. Private clinics and outpatient centers, including Health Maintenance Organizations have developed in the recent past, but there is much debate over the appropriateness of a public hospital, public health, and free medical care.

c. Physical Setting and Infrastructure

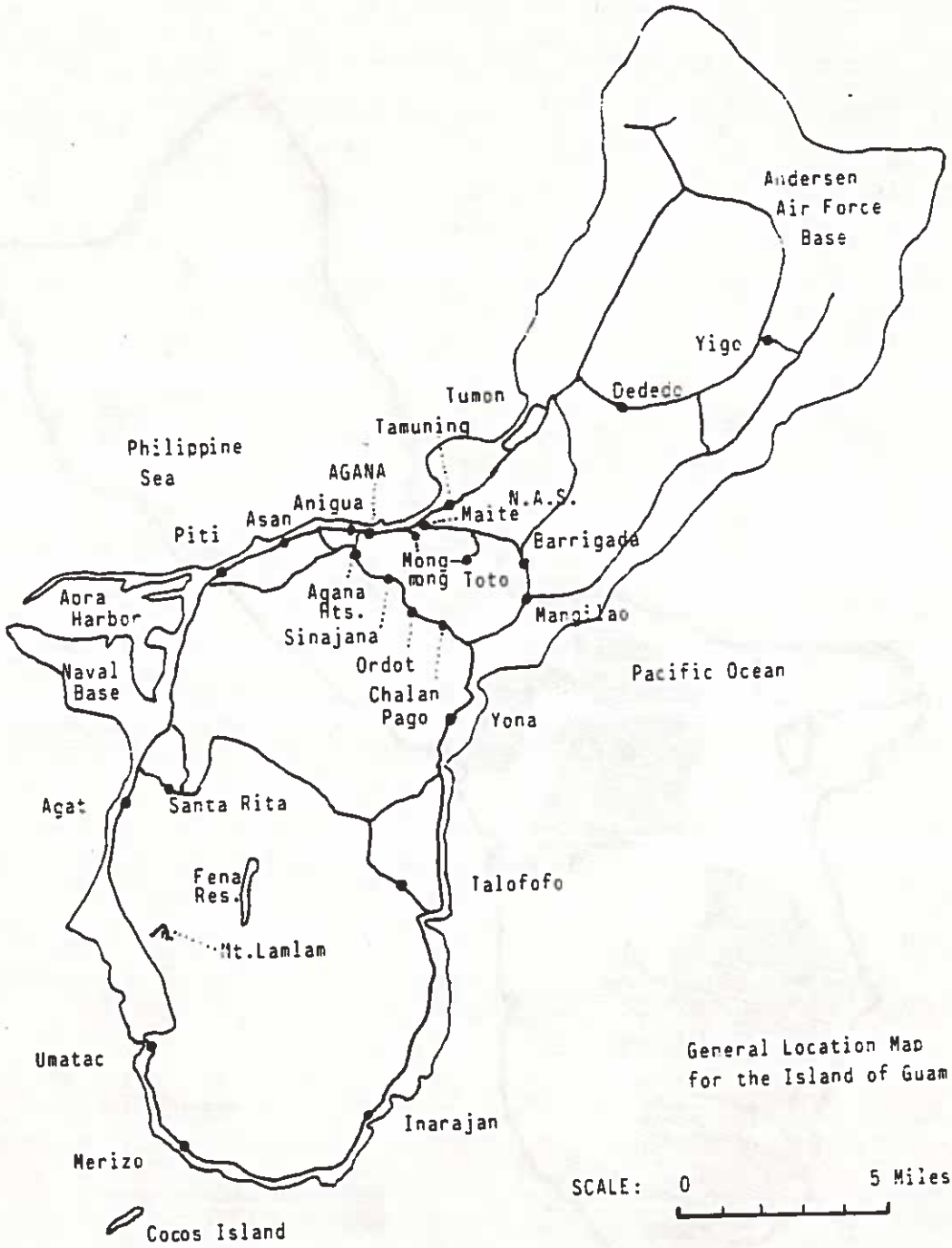
Physically, the Marianas archipelago consists of a string of "high islands" of volcanic origin, Guam being by far the largest. Guam measures 31 miles long and between 4 and 9 miles wide, for a rough dry land area of 224 square miles. Guam's physical development resulted in a dual geologic structure, which divides the island nearly in half: a southern hilly terrain with a maximum elevation of 1300 feet (Mt. Lamlam) and a northern limestone plateau formed from uplifted shallow sea deposits which is relatively flat (Figure 2). Almost all future housing development is planned to take advantage of the level northern area; thus a gradual population shift is occurring, leaving several southern villages quite isolated.

An extensive paved road system rings the island and connects east and west sides, but all roads currently use a coral composite which provides minimal traction when wet and is consequently dangerous in rainy weather. (Figure 3). Accessibility of population concentrations to medical

Figure 2

Map of the Island of Guam
and its Topography

Figure 3


Andersen
Air Force
Base
Yigo
Dededo
Tumon
Tamuning
Philippine
Sea
AGANA
Anigua
Asan
Piti
Maite
N.A.S.
Barrigada
Mong-
mong
Toto
Agana
Hts.
Sinajana
Ordot
Chalan
Pago
Yona
Mangilao
Pacific Ocean
Aora
Harbor
Naval
Base
Agat
Santa Rita
Fena
Res.
Mt.Lamlam
Talofofo
Umatac
Inarajan
Merizo
Cocos Island
General Location Map
for the Island of Guam
SCALE: 0
5 Miles

facilities is fair. Medical facilities are concentrated in Tamuning (hospital, private clinics, HMOs) and Mangilao (Public Health Department), although a public health clinic is maintained in Inarajan, and another will shortly be built in Dededo. While emergency ambulances are now located in outlying areas, including the southern villages, an emergency trip to the hospital (GMH) can take up to 30 minutes. Most of the population is more adequately and promptly served, however.

The early island settlement pattern of scattered native villages and a small administrative center (Agana) has given way, first, to a more recent concentration of "urban" development as well as low-level commercial sprawl between Anigua (southern Agana) and Tamuning, linked by Marine Drive. More recently, a shift of residential population out of Agana (which held 50% of the island's population at war's end) and surrounding areas, and north into Tamuning and Dededo as well as east into Mangilao and Yona (Table 2). Agana is still the capital and major business center of Guam. It is located on the west central coast and includes a new stadium, an offshore sewage treatment plant, major office buildings and banks, and most governmental offices. Federal and Territorial public branches of administration can also be found in surrounding districts and in northern Tamuning. The Department of Public Health and Social Services is located in Mangilao on the east central part of the island, near the University of Guam and the Guam Community College. The single major harbor area is Apra Harbor located some 7 miles south of Agana, and is used by the Navy as well as by the government as a commercial port. The major electric power plant is also located here, and an oil refinery is a few miles away. Commercial airport facilities are located on a plateau north of Agana and adjacent to Tamuning. The airport handles all sizes of commercial aircraft; major airlines serving Guam include

Table 2. Distribution of Population by Village on Guam: 1960-1980

VILLAGE	POPULATION 1960	%	POPULATION 1970	%	POPULATION 1980	%	% CHANGE 1960-1970	% CHANGE 1970-1980
Agaña	1,642	2.5	2,119	2.5	861	0.8	29	-59
Agaña Heights	3,210	4.8	3,156	3.7	3,284	3.1	-2	4
Agat	3,107	4.6	4,308	5.1	3,979	3.8	39	-8
Asan	3,053	4.6	2,629	3.1	2,012	1.9	-14	-23
Barrigada	5,430	8.1	6,356	7.5	7,762	7.3	17	22
Chalan-P-Ordot	1,835	2.7	2,931	3.4	3,135	3.0	60	7
Dededo	5,126	7.6	10,780	12.7	23,659	22.4	110	120
Inarajan	1,730	2.6	1,897	2.2	2,062	1.9	10	9
Mangilao	1,946	2.9	3,228	3.8	6,822	6.4	64	111
Merizo	1,398	2.1	1,529	1.8	1,658	1.6	9	8
Mongmong-T-Maite	3,015	4.5	6,057	7.1	5,230	4.9	101	-14
Piti	1,467	2.2	1,284	1.5	1,521	1.4	-12	18
Santa Rita	12,126	18.1	8,109	9.5	10,409	9.8	-33	28
Sinajaña	3,862	5.8	3,506	4.1	2,471	2.3	-9	-30
Talofofo	1,352	2.0	1,935	2.3	2,016	1.9	43	4
Tamuning	5,944	8.9	10,218	12.0	13,527	12.8	72	32
Umatac	744	1.1	813	0.9	732	0.7	9	-10
Yigo	7,682	11.5	11,542	13.6	10,424	9.9	50	-10
Yoña	2,356	3.5	2,599	3.1	4,233	4.0	10	63
TOTAL	67,044	100.0	84,996	100.0	105,816	100.0	27%	24%

Pan American, Japan Air Lines, and Continental Air Micronesia, while Air Nauru links Guam to other Pacific islands including American Samoa. Telephone service extends to almost all residences but even after renovation is still of very poor quality. Water lines are of sufficient integrity in the north, but lines and supplies are still inadequate in the south. The sewage network is also insufficient and is now the subject of a major planning and upgrading effort. Major military facilities exist in the north (Andersen Air Force Base) and central portions (Naval Base Marianas at Apra, and Naval Air Station at Tamuning) of the island. Military uniformed personnel were estimated at 11,500 and military dependents at 10,000 in 1980, for a total of 21,500. This level of military personnel has remained fairly constant over the past 5 years.

d. Environment and Housing

The tropical climate of Guam provides a warm climate year-round, with cooling tradewinds prevailing most of the time. This climate is also conducive to bacteria and parasites, and major public health nuisances continue, with effects felt by children. Food spoilage occurs rapidly, and high sanitary standards must thus be maintained. Unfortunately, the island population is rather lax with respect to garbage disposal (food waste as well as solid waste), and flies and rats are prevalent as a result. Public standards and expectations regarding roadside and park cleanliness are low and these areas are generally poorly maintained. It would appear that the population is not adequately informed about sanitation problems or the health hazards that are linked to them. Sewage treatment is generally adequate for the northern and central island residential areas, but is deficient in the south. A sewage system exists, hooked to the Agana treatment plant, but many households, especially in the south, are not connected. As a consequent, water supplies in the south are periodically contaminated.

The island's water supply derives from an abundant rainfall which average 85+ inches a year. Surface water supplies are tapped from the northern plateau's underground basal lens and from Fena Reservoir and various streams and underground supplies in the south. Water shortages periodically affect southern villages however. Water quality is fairly high, especially with regular chlorination. With the continued development of residential areas in central and northern Guam, there is increasing concern that water supplies may not be adequate to allow full replenishment of the underground water table; its depletion could cause salt leaching and the seepage of other contaminants into the supply. A Water Facilities Master Plan was completed in 1980 by Guam Environmental Protection Agency.

Guam faces a housing supply problem. The older housing structures of wood and metal siding or roofing do not withstand typhoon forces. Typhoon Pamela in May of 1976 destroyed 9% of Guam's single family units (or 1,427 of the 15,860 units total). Fully 85% of the single family units destroyed were dilapidated or of wooden frame/metal side construction. A 1976 (post typhoon) study identified 21,026 housing units on Guam, 14,406 of which (or 68%) are single family units. About 42% of the single family housing stock is concentrated in Dededo, Tamuning, and Barrigada while 45% of the multi-family housing stock is concentrated in Tamuning alone. The 1970 Census identified 5,000 (or 38%) of the 13,000 civilian housing units as substandard or dilapidated. There is rapid growth in multi-family unit construction, principally due to the high or unaffordable price of single family homes. Subdivision development has taken place, principally in Dededo, while subsidized housing projects have been developed in Sinajana, Yona, Yigo, and Dededo. These new residential patterns are reflecting -- and aiding -- the shift from traditional, large-family households to smaller nuclear family households

that are less reliant on strong central family authority and more open to modern, independent consumer lifestyles. Special housing for the elderly has only recently been constructed, after much controversy over its appropriateness in this island society.

A housing shortage has existed for some time, especially in view of the substandard quality of many of the older, wooden frame houses. The 1976 estimate of 21,026 housing units for a population of 89,600 (a figure which includes Guam residents and off-base military dependents) identified 20% of the units as dilapidated, hence a latent demand for 4,205 new units already was felt at this time. For a population of 105,000 (projected for the year 1980), the Guam Residential Development Policy Report estimates 25,000 housing units are required (16,000 single family, and 9,000 multi-family units). This represents 4,000 additional units over the actual 1976 stock, or 8,200 units required for quality housing demand. This figure in turn implies a minimum of 1,000 new units a year or a maximum of 2,050 new units a year to be built, while current building capacity averages 600 new units per year; hence the dimensions of the future housing shortage and the continued existence of substandard units are clearly outlined. By 1985, it is estimated that a maximum of 32,000 dwelling units will be required for a ceiling total population estimate of 128,982 at 4.25 persons per dwelling unit. The more accurate estimate for 1985 of 109,000 residents plus military dependents in "civilian" households yields 25,600 total (civilian) dwelling units as the necessary housing stock, which may suggest that more realistic population figures may help to reduce the scale of the housing problem. However, the Policy Report suggests that over 60% of Guam's future households will not be able to enter the home purchasing market due to inadequate incomes, and the government will consequently have to determine to what extent it can or will provide public subsidies of one kind or another.

e. Major Environmental Risks

Given the location of Guam and its past experience with its local environment, it is important to identify the major environmental risks that present a health hazard of some magnitude to the population. The following features should be considered as significant risks or hazards: they are ranked according to estimated severity of hazard and probability of occurrence within a 10-year period.

1. Typhoon
2. Flooding and Water Contamination
3. Earthquake
4. Airplane Crash
5. Drought
6. Munitions Explosion or Nuclear Attack

1) Typhoon: Guam lies directly in the typhoon creation belt and has suffered direct hits by typhoons with devastating results (due to high winds and heavy inundation) regularly in the past. Major typhoons have struck in 1962 and 1976 with devastating force and another serious typhoon can be expected, and should be planned for, by 1990 (Table 3). To the extent that concrete housing replaces wooden housing and building codes are enforced, future damage from major typhoons should be limited to temporary power, water and transport disruptions for the most part.

2) Flooding: Typhoons almost yearly pass close to Guam, and rainfall volumes at such times produce flooded conditions rather rapidly, especially in hilly village areas in southern Guam. Better flood protection and flood relief are requisite health precautions for the future. One result of flooding is that water supplies are contaminated by sewage leeching and other surface pollutants. Better efforts to secure the quality of water supplies against such contamination are clearly necessary.

3) Earthquakes: Earthquakes of major and damaging severity have hit Guam regularly in its history (Table 4). There is some indication of a lessening in frequency of severe earthquakes over the past 50 years. However, an earthquake of magnitude 6.1 (Richter scale) struck Guam in 1975, causing several million dollars' damage. Major fault zones cut across the entire island. There is no indication of adequate plans for protection of the population against another major earthquake.

4) Airplane Crash: In 1960 a Philippine Airlines plane crashed just after take-off from the Guam airport, killing 80 people aboard and several passersby. In 1976 another smaller plane crash occurred. Guam has since been quite fortunate, given the amount of military air traffic, in having no major air crashes in populated areas. The military has been somewhat reluctant to plan or prepare for such a disaster, and local government appears to have no emergency plans for such an eventuality, despite the severe impact it would have on the residential population in a crash site and the strain that would be placed on medical facilities.

5) Drought: Drought conditions sporadically occur during the dry season (January to May), especially in southern Guam. At such time, not only do existing water supplies diminish but stream sources stagnate and contaminants, including sewage, filter into the supply. Water trucks are the current means by which drought is relieved in sourhtern Guam. The Water Facilities Master Plan, when implemented, will change this state of affairs but a major drought in the meantime could incur major public health problems for affected areas, including outbreaks of vector-borne diseases, influenza, hepatitis, and possibly cholera.

6) Munition and Attack: Guam is major military outpost of the United States, and handles nuclear missile-carrying submarines as well as nuclear bomb-carrying B-52

Table 3. A Partial Listing and Description of Major Typhoons Affecting Guam: 1671 - 1976

TYPHOONS

DATE	COMMENT
1671	
1693	
August 1848	"devastating" typhoon during Gov.Perez' rule
October 1892	leper colony at Pago destroyed
November 1900	destroyed Asan hospital
August 1912	
July 1918	severe typhoon and extensive flooding
November 1940	"one of the most severe on record",set back development of Guam many years
November 1962	demolished 90% of the structures on Guam
May 1976	an "off-season" typhoon that destroyed 1500 homes and caused $40+ million in damage

Table 4. A Partial Listing of Earthquakes on Guam and Their Estimated Magnitude (7.00+):1902-1975

EARTHQUAKES

DATE	Magnitude	DATE	Magnitude
September 1902	8.10	June 1942	7.10
July 1905	7.25	June 1942	7.10
December 1909	7.40	April 1943	7.00
November 1914	8.10	July 1945	7.10
November 1929	7.20	June 1947	7.20
October 1930	7.10	June 1947	7.00
January 1931	7.20	July 1949	7.10
September 1931	7.10	May 1950	7.00
September 1935	7.00	July 1953	7.00
October 1935	7.10	February 1956	7.00
January 1940	7.30	May 1957	7.00
December 1940	7.30	March 1962	7.00
		(November 1975	6.10)

strategic aircraft. Guam can be considered a probable target in any global nuclear conflict. In addition, unknown amounts of non-nuclear munitions are stored and transported on the island and pose a much more immediate hazard. During the height of the Vietnam air bombings by Guam-based B-52s, bomb-laden trucks regularly used Marine Drive to transport munitions to Andersen Air Force Base from Apra Harbor. The Governor has recently installed a civil defense shelter and command post adjacent to Governor's House in Agana, but there is no indication of adequate preparations for military-related disasters that could affect the general population. A Guam Civil Defense plan is reportedly being prepared.

f. The Cultural Pattern

As noted in the earlier short historical review, the cultural pattern presently evident on Guam is far removed from the original Chamorro pattern of pre-Spanish contact. Yet, at the same time, unique traits exist that are still referred to as distinctively "Chamorro" (what may be more accurately characterized as "neo-Chamorro"), with which a major segment of the island population (roughly 56%) identifies. This current pattern includes: (1) a strong religious (Catholic) emphasis in daily life and family affairs, (2) a strong set of links and bonds of obligation and support within an extended family network, and (3) sensitivity to social status and social roles of peers, relatives, and work relations. "Chamorro" lifestyle emphasizes relaxed, friendly interactions and the sharing and outright giving of time, food, and other possessions or resources. Great attention is paid to all relatives, and respect and deference are maintained for elders, although there is an increasing awareness of neglect of the aged in recent years. Most descendants of Chamorro people, though mixed by blood with Spanish and Filipino peoples, still speak the modern Chamorro language as well as English.

The transformation of Chamorro culture by Western influence began with Spanish alteration of the pattern of lineage and descent reckoning, the modification of the Chamorro language itself by Spanish loan-words, the creation of a municipality-based political system to replace the matua-atchaot-manachang class divisions, and the introduction of and mass conversion of the populace to Catholicism. The transformation continued under American rule with the redistribution of large landholdings, the introduction of democratic principles, and the distribution of material goods and services, along with American education. Today, an American-style of life (at least in material terms) is aspired to by nearly all residents of Guam. In fact, Guam is caught between the new and old ways, and the modern cultural transformation is both recent (dating to 1962 and the Kennedy Administration) and rapid. Guam is comparatively more "Americanized" than the Northern Marianas, for example, due to the greater influence of American military personnel and the general orientation and historical affiliation of the people. It would appear that the older generation may be particularly hard hit for having experienced such rapid cultural changes, that have seen revered ways of thinking and behaving replaced by quite different ways. Some young people have begun to drift into an ill-defined pattern of life without the previous constraining yet meaningful ties of family and kin networks, and parents may share part of the blame for neglecting their children in favor of new found personal leisure time, nightly activities, and material comforts. As a consequence, less time is spent in large family get-togethers and less adult guidance is provided to the young. Adults themselves at times appear confused by the need for adjustment to new roles and responsibilities and incur added stress for having to make more personal choices and face the consequences alone. Whether the profound shifts in cultural pattern are in part responsible for some of

the stresses and mental and emotional problems, including alcohol and drug abuse, among Guam's youth and young adults has not been documented clearly as yet.

3. *The Population of Guam*

This section presents data on the population components and dynamics of Guam. It serves the purposes of correcting and updating population estimates for the past on the one hand, and providing a means and a model by which to estimate future population levels, by means of simple common sense projections.

Summary: Contrary to informed expectations, the population of Guam has not risen at the rapid rates assumed by many planners and demographers. In 1970, the total population of Guam (including military and dependents) was counted as 84,996 by the Census, while the civilian population was counted as 64,680. In 1980, the preliminary tally indicated a total population of 105,816 and a civilian population of roughly 84,300. Rather than pre-1980 Census estimates of Guam's growth rates in the neighborhood of 5.3% for the period 1970 to 1980, actual average annual growth rate of the civilian population has been only 2.6%. This lower growth rate is most likely due to heavy net out-migration of the civilian population which reduces the net growth of Guam's population. By 1985 Guam's civilian population is projected to be no greater than 96,250, and by 1990 approximately 110,000.

a. Review of Data Sources and Methods:

Guam is blessed with a comparatively rich data base for population analysis, and with agencies that are concerned about appropriate population information and projections for planning purposes. Three major data analysis agencies are: the Department of Commerce (and its Economic Research Center), the Bureau of Labor Statistics, and the Bureau of Planning. In addition, there have been at least

three consultant studies in the past decade which have attempted to assemble population and related data. In particular, the study of Quinton-Budlong in 1973, and the Roy Chung analyses are notable. More recently, both the Bureau of Labor Statistics and the Bureau of Planning have attempted to estimate the mid-decade population of Guam. And within the past three years, the demographer attached to the Economic Research Center, Shuiliang Tung, has attempted to compile and analyze the data available on Guam in a consistent fashion and as a result has produced current estimates and breakdowns and future projections of the island population. While Tung's data (Tung, 1980, 1981) will be employed herein as the most reliable and consistent existing source of data, our own more direct methodology has been applied to indicate the broad population trends and growth rates, and to show that major over-estimations have been made in the past. Population information is critical to any assessment of a health care system which seeks to provide choices and organizational or development paths for the future. The correct picture of the population helps focus attention on appropriate resource levels to be allocated to health care activities as well as on likely utilization levels to be experienced.

It should be noted at the outset that a quite straightforward method is used to calculate annual growth rates; this method takes the place of some complicated formula or methodology which tends to build in assumptions about population dynamics which may not be warranted. The direct method depends on identifying what <u>average annual rate</u> of growth will take a population from one (initial) level, P_0, to a subsequent (final level, P_T, over a given interval of T years. The formula to calculate the average annual growth rate, R, when given P_0, P_T, and T is as follows: $R = ((\ln (P_T/P_0))/ T) \times 100$, where R is expressed in percentile terms. Conversely, the formula allows the computation of any future population level P_T once R is known.

This is done by calculating new $P_T = (e^{((R \times T)/100)}) \times P_o$. Note that the basic assumption behind this formula and its use is that between P_o and P_T, the annual growth rate is the same for each year. The assumption is that a constant (average) annual growth rate is a reasonable approximation to the real annual growth rate, although we understand that by its use we are actually "smoothing" the yearly population changes for a given period. The equivalent assumption is that this "smoothing" of a population series is an adequate representation of the actual yearly changes in population; it is obvious that real yearly population changes will fluctuate. In fact, a "smooth" population series is simply the most direct way of deriving yearly population estimates between known data points (e.g., official censuses). It is also the best way to handle population projections (past known data points) in the absence of confidence in other methods.

A final note: with Guam's large representation of military personnel it has been necessary to carefully identify the nature of the population (total or civilian) wherever counts and projections are given. In general, the assumption is that the relatively constant presence of 22,000 military personnel and dependents will not change for the foreseeable future.

b. Overall Growth 1970-1980:

A general picture of population change is revealed from a simple comparison of the population levels recorded by official U.S. Censuses in 1970 and 1980, and if we then note the change that has occurred (Table 5). In April 1970, the U.S. Census counted a Guam total population of 84,996 and a Guam civilian population of 64,680. Over this ten-year period, the, the total population of Guam has increased by 24.5%, or at a "smoothed" average annual growth rate of 2.9%. Over the same period, the Guam civilian population has increased by 30.3%, for an average annual growth rate of 2.65%.

Table 5. Comparison of Census Population Counts for Guam, 1970 and 1980

COMPONENT:	POPULATION: 1970	1980	% CHANGE	Annual Growth (%)
Total	84,996	105,816	24.5	2.19
Civilian	64,680	84,300	30.3	2.65
Military	20,316	21,516	5.9	0.57

It is interesting to note at this point that these two growth rates for the period 1970-1980 are far below the rates assumed by other demographic studies (viz., Chung, Quinton-Budlong), which range between 3.5 and 4.4% for total population, and between 4.4 and 5.5% for civilian population. The estimated population series for individual years between 1970 and 1980 using the "smoothing" approach is obviously different (Table 6). The "smoothed" average annual growth rate for Guam's total and civilian populations have been surprisingly low (compare the Department of Commerce series and the "smooth" series for total population, Table 7). In terms of actual numbers, the discrepancy between estimated and actual 1980 total population is 20,184, while for civilian population in 1980 the discrepancy is 19,700. These findings -- of low actual growth rates and large errors in estimation of given-year population levels -- have a major impact on the determination of the future population and the planning of appropriate levels of health services for them.

c. Composition of the Population:

The dimensions of the population that call for the closest scrutiny are residency status, ethnic affiliation, village distribution, and age-sex distributions. These dimensions are treated in turn below.

Table 6. Population Series for Guam:
"Smooth Interpolation" for Period 1960 - 1980

POPULATION COMPONENT:	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
TOTAL	67,044	68,654	70,302	71,990	73,718	75,488	77,301	79,157	81,057	83,003	84,996
CIVILIAN	43,715	45,462	47,278	49,167	51,131	53,174	55,299	57,508	59,806	62,195	64,680

POPULATION COMPONENT:	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
TOTAL	84,996	86,879	88,803	90,770	92,781	94,836	96,937	99,084	101,280	103,523	105,816
CIVILIAN	64,680	66,416	68,200	70,031	71,911	73,841	75,824	77,859	79,950	82,096	84,300

Table 7 . Comparison of Guam DOC Population Estimates and "Smooth Series" Population Estimates for the Inter-Census Period 1970-1980: Total Island Population
[Note: "smooth Series" assumes 2.19% annual growth rate in population.]

YEAR	DOC ESTIMATED POPULATION	"SMOOTH SERIES" POPULATION
1970*	84,996	84,996
1971	89,042	86,879
1972	93,959	88,803
1973	105,168	90,770
1974	105,543	92,781
1975	102,223	94,836
1976	100,560	96,937
1977	99,600	99,084
1978	102,605	101,280
1979	101,947	103,523
1980*	105,816	105,816

1) Residency Status: Guam's population composition is unique among Pacific islands in having such a large component of military personnel and dependents (Table 8). In 1980, according to the U.S. Census preliminary figures and Department of Commerce estimates fully 20% of the total population was "military-related"; the remainder is classed as "civilian". In the military category, it is important to note two items. First, the military-related population does not appear to fluctuate at all radically (Table 9). Between July 1976 and January 1980, the uniformed military figure ranged between 9,164 and 10,594; military dependents ranged between 9,115 and 11,520. The average level for each group has been roughly 9,900. The second point is that the military population (uniformed or dependent) does not figure heavily into planning for health care services by the Government of Guam, for the simple reason that the military has its own health care system, which includes Naval Regional Medical Center (NRMC).

The civilian component of Guam's population is more complex. Included here are local residents, temporary aliens (H-2 temporary workers), and "stateside hires" who are usually civilians employed by the Department of Defense. As can be seen from the table, the local resident component of the civilian population on Guam has been a fairly stable proportion (about 74%) of the total population. Stateside hires have been estimated to be essentially constant in numbers. Temporary (non-immigrant) aliens, on the other hand, have fluctuated quite a bit. Between 1963 and 1969, during a period of rapid growth, the number of alien contract workers ranged from 3,707 to 5,544, according to a report by the Bureau of Planning ("Historical Overview of Guam's Temporary Non-immigrant Alien Labor Policies:

Table 8. POPULATION OF GUAM BY RESIDENCY STATUS 1977 - 1980

Population Component	March 1977	%	July 1978	%	April 1980	%
Civilian	79,400	79.7	81,700	81.1	84,300	79.7
Local Resident	73,000	73.3	75,400	74.9	79,000	74.7
Temporary Aliens	5,100	5.1	5,000	5.0	4,000	3.8
Stateside Hire*	1,300	1.3	1,300	1.3	1,300	1.2
Military	20,200	20.3	19,000	18.9	21,500	20.3
Uniformed Military	10,100	10.1	9,800	9.7	11,500	10.9
Military Dependents	10,100	10.1	9,200	9.1	10,000	9.5
TOTAL	99,600	100.0	100,700	100.0	105,800	100.0

* Department of Defense Employees and dependents.

DATA SOURCES: Department of Labor, Department of Commerce, Government of Guam; U.S. Immigration and Naturalization Service; Commander Naval Forces Marianas. Refer to Table 3 in Guam Annual Economic Review 1980. 1977 and 1978 data are estimates, and 1980 data are Preliminary U.S. Census figures.

Table 9. Military Population on Guam, 1976 - 1980

Data Source: Commander Naval Forces Marianas

	July 1976	Jan. 1977	July 1977	Jan. 1978	July 1978	Jan. 1979	July 1979	Jan. 1980
UNIFORMED MILITARY	10,594	9,879	10,357	9,164	9,749	9,888	10,038	10,267
MILITARY DEPENDENTS	11,520	9,632	10,527	9,587	9,204	9,447	9,115	9,999
TOTAL	22,114	19,511	20,884	18,751	18,953	19,335	19,153	20,226

1947-1980"). By 1974 the number had climbed to 8,900, but since then has steadily dropped: to 5,000 in 1978 and 4,000 in 1980. It is anticipated that this number will not increase greatly in the future due to conscious policy to limit temporary aliens.

Thus the population component to watch the closest is in fact the "local resident" component, especially since several kinds of population are involved: local Guamanian, other local inhabitants, and permanent resident aliens (PRAs). To understand how each of these groups influences the level of "local resident" population, the next discussion is of ethnic composition.

2) Ethnic Composition: While Guam's native population of pure Chamorros has long since passed on, there exists today a vigorous Chamorro cultural heritage which is a blend of early Chamorro as well as Spanish influences. This cultural heritage is supported by a majority of the population. Today's native Guamanians with the closest ties to the original inhabitants still refer to themselves as Chamorros and number some 44,000 people or 55% of the civilian population (Figure 4). (Military personnel and dependents are assumed to be largely Caucasian or Negro.)

The time series on the toal population presents data which suggests the extent to which a multi-cultural pattern has asserted itself in recent times (Table 10). Whereas in 1920 Chamorros represented 92% of the total population, with Caucasians 2% and Filipinos 3%, in 1978 Chamorros represented only 48%, while Caucasians were 24% (mostly military, with only 9% representing civilian residents of Guam) and Filipinos were 20%. In fact, the Filipino population has grown the fastest of any identified group, with a rapid increase just after World War II and again with the easing of immigration laws and regulations in the 1970s. It appears

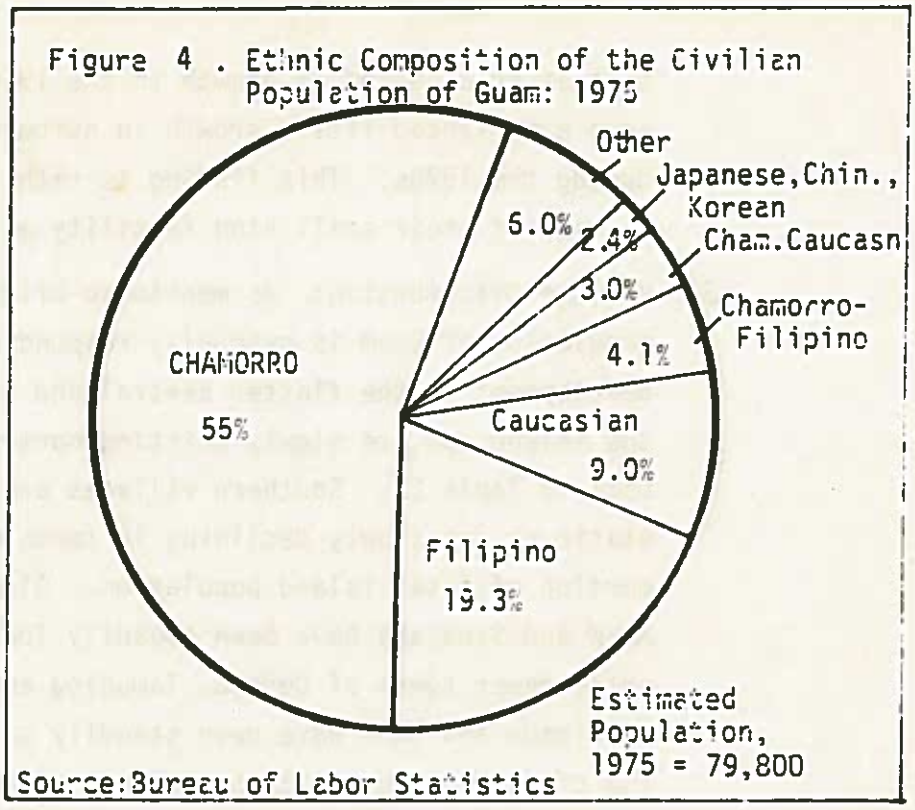


Figure 4 . Ethnic Composition of the Civilian Population of Guam: 1975

Table 10 . Ethnic Composition of Guam Population by Proportion and by Annual Rate of Growth (Percent), 1920 - 1978

[Note: population consists of estimated total population, including military and dependents.

Source: Tung(1981), Table 7,revised.

YEAR	TOTAL POPULATION	Chamorro (%)	Caucasian (%)	Filipino (%)	Other (%)
1920	13,275	12,216 (92.0)	280 (2.1)	396 (3.0)	383 (2.9)
1930	18,509	16,402 (88.6)	1,205 (6.5)	365 (2.0)	537 (2.9)
1940	22,290	20,177 (90.5)	785 (3.5)	569 (2.6)	759 (3.4)
1950	59,498	27,124 (45.6)	22,920 (38.5)	7,258 (12.2)	2196 (3.7)
1960	67,044	34,762 (51.8)	20,724 (30.9)	8,580 (12.8)	2979 (4.4)
1970	84,996	47,513 (55.9)	23,969 (28.2)	10,200 (12.0)	3314 (3.9)
1978	102,605	49,045 (47.8)	24,112 (23.5)	20,521 (20.0)	8927 (8.9)

PERIOD:					
1920-30	3.3 %	2.9 %	14.6 %	-0.8 %	3.4 %
1930-40	1.9	2.1	-4.3	4.4	3.5
1940-50	9.8	3.0	33.7	25.5	10.6
1950-60	1.2	2.5	-1.0	1.7	3.0
1960-70	2.4	3.1	1.5	1.7	1.1
1970-78	2.4	0.4	0.1	8.7	12.4

that after a period of growth in the 1950s, Chamorros have experienced little growth in numbers on-island during the 1970s. This finding is rather remarkable in view of their still high fertility and birth rates.

3) Village Distribution: As mentioned briefly before, the population of Guam is gradually responding to new housing development in the flatter central and northern areas of the island and are slowly shifting northwards (refer back to Table 2). Southern villages are essentially static or are slowly declining in terms of their proportion of total island population. Older towns of Asan and Sinajana have been steadily losing population, while newer towns of Dededo, Tamuning and Mangilao, Barrigada and Yona have been steadily gaining. A charting of population shifts by island region (village grouping) makes the population re-distribution more evident (Table 11 and Figure 5).

4) Age Distribution: Guam's population is a relatively young population (Tables 12 and 13), although not as young as found in other Micronesian island peoples. In 1920, 43% of the total population was under 15 years of age; however, the proportion was only 27% in 1950 but has risen since then to 42 percent by 1977. Less than 3% of the population is over the age of 65 years. It is expected then that for the foreseeable future the population of Guam will remain relatively young. The actual proportion of the population aged 14 years or less is likely to fall somewhat as birth rates slowly fall. The youth of the population in general suggests a continued emphasis in the future on obstetrics and pediatric care.

5) Other Components of Population:

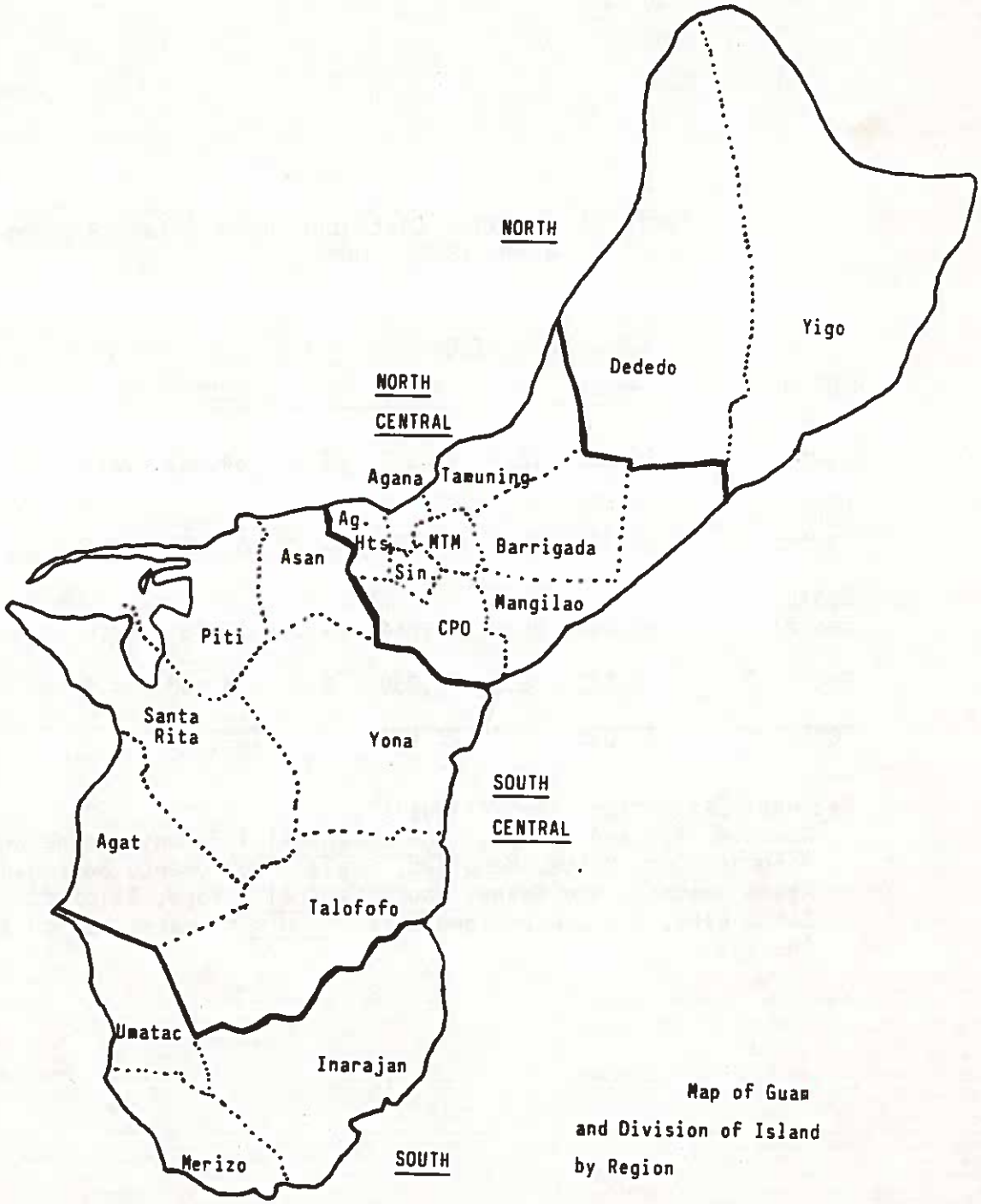
   (a) Permanent Resident Aliens: The most volatile and least understood population component for Guam is

Table 11. Regional Distribution of Island Population
Guam, 1960 - 1980

REGION:	TOTAL POPULATION: 1960	%	1970	%	1980	%
North	12,808	19.1	22,322	26.3	34,083	32.2
North Central	26,903	40.1	37,571	44.2	53,520	50.6
South Central	23,461	35.0	20,864	24.5	13,761	13.0
South	3,872	5.8	4,239	5.0	4,452	4.2
TOTAL	67,044		84,996		105,816	

Regional Definitions (by Village):
North = Yigo and Dededo; North Central = Tamuning, Sinajana, Mongmong-Toto-Maite, Mangilao, Chalan Pago-Ordot, Barrigada, Agana Heights, and Agana; South Central = Yona, Talofofo, Santa Rita, Piti, Asan, and Agat; South = Umatac, Merizo and Inarajan.

Figure 5



Map of Guam
and Division of Island
by Region

Table 12. Civilian Population of Guam, March 1977
Age and Sex Distribution

Data Source: Tung (1980)

AGE INTERVAL	TOTAL	%	MALE	%	FEMALE	%
Under 1	2,300	2.9	1,200	3.0	1,100	2.7
1 - 4	9,300	11.6	4,700	11.8	4,600	11.5
5 - 9	10,700	13.4	5,800	14.6	4,900	12.2
10 - 14	11,100	13.9	5,700	14.3	5,400	13.5
15 - 19	9,300	11.6	4,600	11.6	4,700	11.7
20 - 24	5,600	7.0	2,400	6.0	3,200	8.0
25 - 29	5,900	7.4	2,700	6.8	3,200	8.0
30 - 34	4,700	5.9	2,100	5.3	2,600	6.5
35 - 39	4,200	5.3	2,100	5.3	2,100	5.2
40 - 44	4,000	5.0	2,000	5.0	2,000	5.0
45 - 49	3,800	4.8	1,900	4.8	1,900	4.7
50 - 54	3,500	4.4	2,000	5.0	1,500	3.7
55 - 59	2,000	2.5	1,000	2.5	1,000	2.5
60 - 64	1,400	1.8	700	1.8	700	1.8
65 & Over	2,100	2.6	900	2.3	1,200	3.0
ALL AGES	79,900		39,800		40,100	

Table 13. Age-Sex Distributions of Guam Population
by Year: 1920 - 1977

Data Source: Tung(1981)

TOTAL	1920	1930	1940	1950	1960	1970	1977
1.t.15	43.1	41.9	44.1	27.1	40.6	39.7	41.8
15-64	54.7	55.4	52.7	71.5	57.7	58.7	55.6
65 +	2.2	2.6	3.1	1.3	1.6	1.7	2.6
MALE							
1.t.15	45.0	41.1	45.4	20.5	35.4	36.7	
15-64	53.6	56.8	52.2	78.7	63.3	61.9	
65 +	1.4	2.1	2.4	0.8	1.3	1.4	
FEMALE							
1.t.15	41.4	43.0	42.7	41.1	47.9	43.4	
15-64	55.7	53.9	53.6	56.5	49.9	54.3	
65 +	2.9	3.1	3.7	2.4	2.2	2.3	

the sum of permanent resident aliens (PRAs). Previously, they have been mentioned as a component of the civilian population. But they represent an unknown element because their numbers are not counted accurately by any agency federal or local. Permanent resident aliens freely move within the United States, and the granting of such status to a person in one locale does not guarantee that the individual will stay for very long. Thus, it is now known how many Filipinos and Vietnamese who have been granted PRA status in Guam have moved on to Hawaii or to the Mainland. Likewise, it is not known how many granted PRA status elsewhere have moved to Guam to be closer to the Philippines.

Tung (1981) has tallied the total number of aliens present in Guam between 1950 and 1975, and has included estimates of permanent resident aliens for the years 1970 and 1975 (Table 14). The data show total aliens to be a slowly increasing proportion of the population: 9,454 or 16% in 1950; 20,809 or 20% in 1975. But the data also show that permanent resident aliens jumped from 6,428 in 1970 to 12,876 in 1975, which represents an annual growth rate of 9.9% -- by far the highest rate of growth of any population component. Yearly numbers of immigrants granted PRA status in Guam are available. These data identify early 1960s levels of 620 to 740 per year with a jump in 1967 to 100 per year. For the late 1970s, the number of PRAs is between 1,800 and 2,700 yearly. Again, what is <u>not</u> known is how many PRAs remain on Guam for what length of time. More will be said about immigrants and aliens under discussion of the labor force.

Table 14. Aliens as a Component of Guam's Population 1950 - 1975
Data Source: Tung(1980)
* Temporary aliens in 1977 were 5100 and in 1980 were 3052. + Unofficial estimate.

POPULATION COMPONENT	YEAR: 1950	(%)	1960	(%)	1970	(%)	1975	(%)
Military & Dependents	22,920	(38.5)	23,329	(34.8)	20,316	(23.9)	22,499	(22.0)
Local Residents	27,124	(45.6)	39,300	(58.6)	52,638	(61.9)	58,915	(57.6)
Aliens-Total	9,454	(15.9)	4,415	(6.6)	12,042	(14.2)	20,809	(20.4)
Perm.Resident					6,428		12,876	
Temporary					1,435		6,737*	
Other					4,179		1,196	
Total	59,498		67,044		84,996		102,223+	

(b) Visitor Population: In general the visitor population represents a transient group who have special housing and activity patterns and are usually quite healthy. The number of visitors to Guam has rapidly increased due to efforts to make the island a major tourist destination, especially for Japanese (Table 15). Annual visitor arrivals have increased from 60,000 in 1969 to 119,174 in 1971 and 291,133 in 1980, although a marked decline in numbers occurred during the period 1975-1978. In 1980, the average daily census of visitors was roughly 800, and visitors generally stay about 3 or 4 days. About 70% of all visitors are tourists and are concentrated in hotels along Tumon Bay. Health hazards associated with coastal tourism are to be expected, namely coral punctures, sunburn, occasional abrasions and fractures due to accidents and

occasional drowning accidents. No data are collected on this subject at this time, although police files do track the number of criminal offences involving tourists as victims.

Table 15. Visitor Arrivals to Guam, 1967-1980, By Origin
Data Source: Guam Visitors Bureau

YEAR:	1967	1968	1969	1970	1971	1972	1973
TOTAL VISITORS	6,600	18,000	58,265	73,723	119,174	185,399	241,146
% From Japan	66.0	35.0	50.0	49.8	70.5	74.9	68.3
% From U.S.	n.a.	38.0	32.0	24.4	16.6	15.6	15.4
% From TTPI	n.a.	n.a.	n.a.	7.7	6.2	4.0	7.0

YEAR:	1974	1975	1976	1977	1978	1979	1980
TOTAL VISITORS	260,568	239,695	201,344	240,467	231,975	263,320	291,133
% From Japan	66.1	72.7	69.4	63.4	69.6	72.2	76.2
% From U.S.	10.5	10.6	9.4	12.4	13.8	13.2	11.7
% From TTPI	7.7	8.6	8.3	7.4	7.3	8.9	n.a.

d. Population Dynamics and Projected Growth

It is rather straightforward to uncover the present demographic structure of the island of Guam. It is another matter, however, to attempt to assemble these facts into a coherent picture of the dynamics of the population and to further calculate a likely future growth path. Yet health planning and the study of future alternatives necessitates that both the dynamics and their implications for future growth be examined. The first concern will thus be to assess what affects change in population levels from year to year, and subsequently to forecast future population levels by means of the most reasonable projection method.

1) Birth, Death and Migration: Population changes from year to year are solely due to one or both of two population processes: net increase and net migration (out or in). Net increase, or net additions, compares a given area's births to its deaths. Net migration compares levels of in-migration and out-migration. For example, in this general view, the population level for 1971 is determined by the net additions to the population for 1970 minus net out-migration for 1970. Lacking data on net migration, it is still possible to calculate its magnitude when a population series along with data on births and deaths for this series is available. Such is the case for Guam: there is no adquate way of obtaining reliable data on in- or out-migration, but net out-migration can be calculated.

We begin by noting trends in yearly births and deaths and their respective standardized rates (per 1,000 population; Table 16). The data indicate that in general Guam's birth rates are high and will probably not decline appreciably in the immediate future, while Guam's death rates has not changed much at all and cannot be expected to decline significantly in the

Table 16. Vital Events Data Series for Guam, 1970-1979

YEAR	POPULATION	BIRTHS	BIRTH RATE*	DEATHS	DEATH RATE*
1970	84,996	2875	33.8	355	4.2
1971	86,879	3068	35.3	364	4.2
1972	88,803	3206	36.1	409	4.6
1973	90,770	3234	35.6	435	4.8
1974	92,781	3226	34.8	449	4.8
1975	94,836	3163	33.4	441	4.7
1976	96,937	3048	31.4	466	4.8
1977	99,084	3007	30.3	380	3.8
1978	101,280	2903	28.7	424	4.2
1979	103,523	2797	27.0	397	3.8

Note: Population figures are estimates derived from "smooth series".

* Rates are per 1,000 population.

future. If we assemble the most reasonable estimates of yearly total population for Guam along with yearly births and deaths, it is possible to have a clearer picture of the sources of population change over time and to calculate net out-migration levels (Table 17). In fact, these latter levels turn out to be net out-migration for each and every year in the series (1970-1980). What is of interest then is the fact that net additions (births minus deaths) have remained fairly constant, experiencing only a slight decline between 1970 and 1980. Net out-migration is then calculated as a "residual" to account for the differences in population levels between two adjacent years after net additions have been factored out. And net out-migration has actually declined over the decade, from 800 per year in 1972 to just over 100 per year in 1979. If net out-migration levels are declining, it suggests that in-migration is increasing relative to out-migration, or that out-migration is tapering off

Table 17. Population Dynamics Model for Guam Using Simple Birth-Death-Migration Data

YEAR	POPULATION	LIVE BIRTHS	DEATHS	NET ADDITIONS	NET OUT-MIGRATION	NEXT YEAR'S POPULATION
1969						84,996
1970	84,996	2875	355	2520	637	86,879
1971	86,879	3068	364	2704	780	88,803
1972	88,803	3206	409	2797	803	90,770
1973	90,770	3234	435	2799	788	92,781
1974	92,781	3226	449	2777	722	94,836
1975	94,836	3163	441	2722	621	96,937
1976	96,937	3048	466	2582	435	99,084
1977	99,084	3007	380	2627	431	101,280
1978	101,280	2903	424	2479	236	103,523
1979	103,523	2797	397	2400	107	105,816
1980	105,816					
AVERAGE:	93,989	3053	412	2641	556	96,071

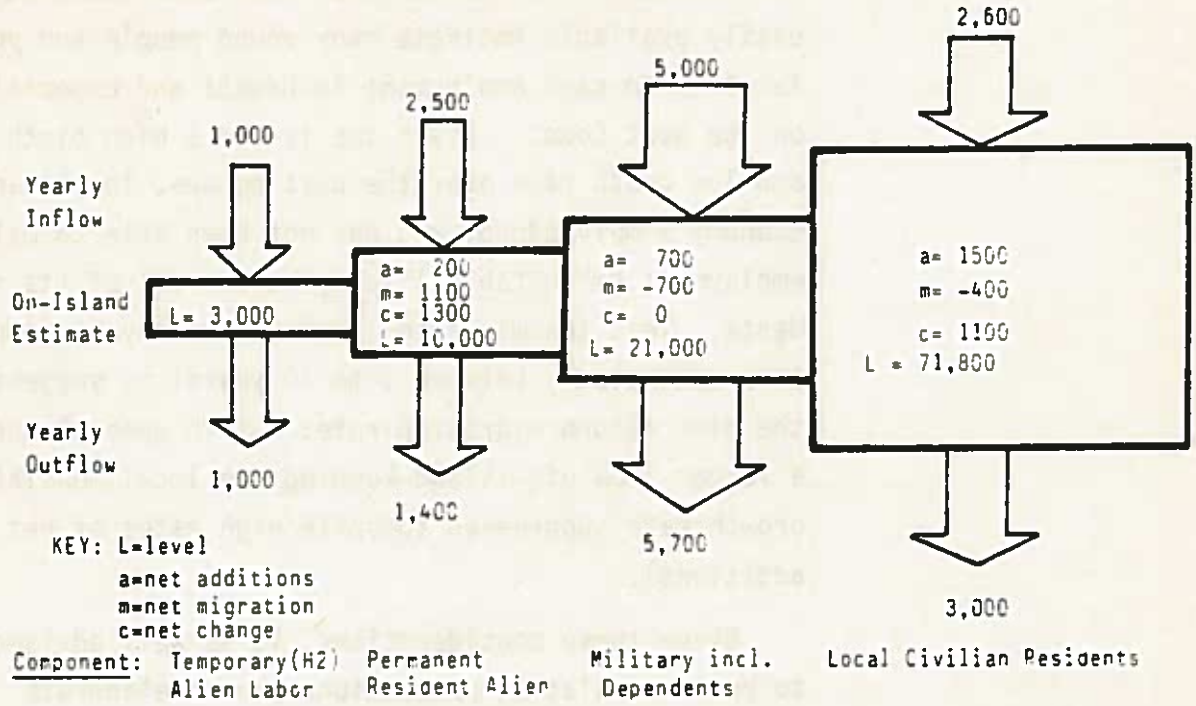
[Sample equation: this-year population plus births minus deaths minus net out-migration equals next-year population]

relative to a steady in-migration stream. Roughly 2,500 Permanent Resident Aliens immigrate to Guam yearly at the present time, according to a Bureau of Planning report ("Immigration and Nationality Act", June 1980), although it is not known how many stay and how many travel to the States. It appears, moreover, given the data on ethnic composition changes (Table 10), that Filipinos have increased rapidly during 1970-1980, roughly a net increase of 1,300 per year, while Chamorros on Guam have increased at a lower rate, roughly a net increase of 190 per year. For Filipinos in Guam, increase by net additions (births minus deaths) could only add about 200 yearly, so the remaining increase (1,090 yearly) must be accounted for by net in-migration. For Chamorros in Guam, net additions account for 1,225 persons added each year, so that net

out-migration of about 1,035 each year must be occurring. These figures, if even only approximately correct, suggest that a dramatic re-distribution of Guam's population and of political power centers may well take place in the next several decades, if current dynamics continue. At the very least we have a handle on why the population of Guam (total of civilian) has not increased as dramatically as has been projected by some: it is clearly due to the "openness" of island travel patterns and the flow of migrants into, but largely out of the island.

A crude model of present annual Guam population change (ca. 1980) would separate aliens (PRAs and temporary hires) military (including dependents) and civilian/local residents (Figure 6). Each group can then be pictured as a separate box representing on-island levels (underscored number) plus arrows indicating in-migrant and out-migrant streams. Temporary aliens, who currently number about 3,000, are estimated to have a flow-through of 1,000, with no increase to their on-island level (no births on-island are assumed). Permanent resident aliens are admitted at roughly 2,500 yearly and exit at the estimated rate of 1,400 per year, with a net addition of roughly 200 yearly and an overall net change in population level from year to year of 1,300. Local civilian residents on Guam, largely Chamorro, Filipino and some Caucasian, leave the island at the estimated rate of 3,000 yearly and return at the rate of 2,600 yearly, for a net out-migration rate of 400 each year. Their net additions are 1,500 per year but a net yearly change in population of only 1,100 is recorded. Of note then is the degree to which Permanent Resident Aliens show a net annual change that is greater than that for Local

Figure 6. A Crude Model of Current Annual Population Change for the Territory of Guam, 1980



Civilian Residents: PRAs outstrip locals by 200 per year. This comparative gain for aliens may only be a temporary phenomenon but bears closer scrutiny in years ahead.

2) Projections of the Population: We are now in a position to assemble enough data to enable recent population changes to be understood, albeit crudely, and to enable us to select viable assumptions for a projection of population levels for the future. In fact, in reviewing the population levels and trends that are projected by Chung and Quinton-Budlong, we find an over-reliance on the birth rate-death rate differential and a lack of appropriate consideration of the (in)ability of Guam to "retain" its population and the losses that occur in local population levels due to migration. In fact, the economic position and limited labor market that exist on Guam suggest the underlying reasons for heavy

out-migration. The proximity of the United States and the economic opportunities that seem (apparently) easily available motivate many young people and young families to seek employment in Hawaii and especially on the West Coast. Given the island's high birth rate and low death rate over the past decade, the island economy simply cannot and has not been able to maintain employment or suitable lifestyles for all of its residents. That the migration that ensues may be temporary (one estimate is between 3 to 10 years) is suggested by the high return migration rate; but in general there is a larger flow off-island keeping the local population growth rate suppressed (despite high rates of net additions).

Given these considerations, it is well advised not to build population projections around elaborate cohort-survival or component growth models which are not suited to "open systems" such as Guam where migration plays such a heavy role. For this island context, it is more appropriate to examine past and near-past trends in population growth and to extrapolate this growth pattern into the foreseeable future -- barring any major deflecting forces which would drastically alter one or more of the population dynamics components, none of which can be identified at the present time.

In examining known population levels as computed by the U.S. Census for two different times, and seeking to determine population levels for years in-between, we have already presented the "smooth" annual increase method. It is easy to adapt this method to handle projections of future population levels on the assumption that the annual growth rate does not change by inserting the growth rate, calculated for a prior period, into the projective equation:

$P_T = [e^{((R \times T)/100)}] \times P_0$, where P_T is the future population level to be calculated and P_0 is the base year population level from which P_T differs by T years, and R is the average annual growth rate assumed to hold over this time period, expressed in percentile form. This formula then gives a "smoothed" projection of population change for the future.

Using this "smoothing" formula, it has been possible to find, by interpolation, the population levels that lie between known Census years 1960 and 1970 (Table 6 , previously presented). These two population series indicated that average annual growth rates have actually declined for both total and civilian populations on Guam; thus there is no basis for assuming a high growth rate for any future period, especially in light of what is known or estimated about migration behavior. Thus, the most appropriate assumption about future growth is that Guam's population will increase at most at the average annual growth rates operating in the past decade (1970-1980). Thus for the total island population, future population levels are predicted on a growth rate (R) of 2.19%, while for civilian population the growth rate (R) is assumed to be 2.65%.

The following table indicates the respective population levels that have been projected using the "smooth" formula and the indicated growth rates, R (Table 18). The accompanying chart and table also show graphically and comparatively just how different -- and lower -- these projections are from previous projections (Figure 7 and Table 19; note that in the figure the heavy line indicates the more realistic projection).

Table 18. Projected Population Series for Guam: "Smooth Extrapolation" for Period 1980-1990

	POPULATION COMPONENT	
YEAR:	TOTAL	CIVILIAN
1980	105,816	84,300
1981	108,160	85,563
1982	110,556	88,887
1983	113,005	91,274
1984	115,508	93,274
1985	118,067	96,240
1986	120,682	98,824
1987	123,355	101,477
1988	126,088	104,201
1989	128,881	106,999
1990	131,736	109,872

In sum, the "smooth" method of extrapolating population levels for future years indicates a civilian population of no more than 96,000 by 1985 and no more than 110,000 by 1990. The 1990 figure is 33,500 less than the next lowest projection, by Chung. However, this is still an increase of 13,632 over the 1985 level, or a smoothed increase of 2,700 individuals yearly that must be handled by a developing economy and island health care system.

4. *Economy and Development of Guam*

Summary: Guam's economy is viable but rather narrowly based on defense-related expenditures and federal grants, and on a healthy but small tourist industry. Prospectives for future expansion or diversification of the economic base are uncertain. The labor force

Figure 7. Population Trend and Projection for Guam: 1950-2000

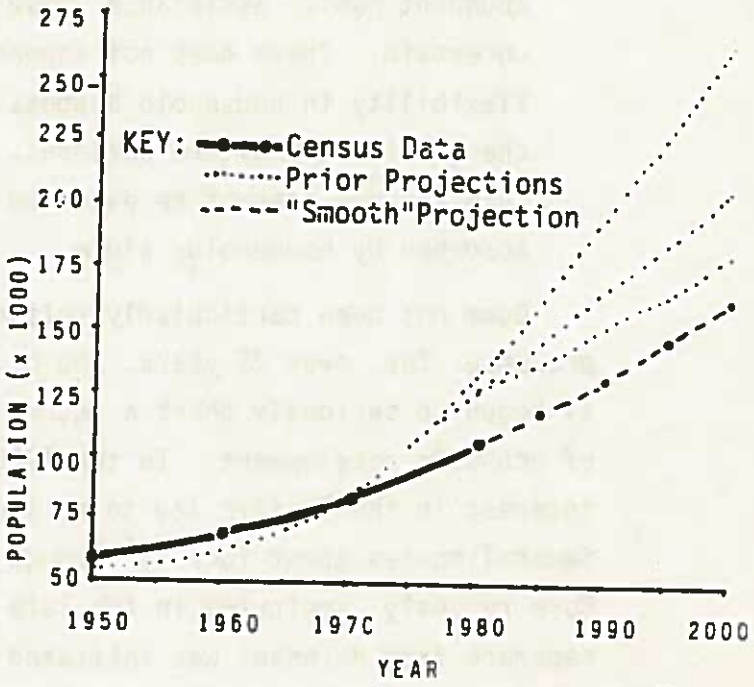


Table 19. Comparison of Population Projections for Guam by Various Sources and Methods, 1970 - 2000

METHOD AND COMPONENT	YEAR: 1970	1975	1980	1990	2000
Chung Ser.D					
Total	85,380	105,400	126,000	165,400	206,660
Civilian	63,380	83,400	104,000	143,400	183,660
Quinton-Budlong Series B					
Total	89,890	106,310	126,956	179,352	236,000
Civilian	67,890	84,310	104,956	157,352	214,000
Chung Ser.C					
Total	85,380	107,400	132,200	198,000	268,000
Civilian	63,380	85,400	110,200	176,000	246,660
Bur.Planning Land Use					
Total		106,700			188,500
Civilian		84,700			167,500
"Smooth Series"					
Total	84,996	102,223	105,816	131,736	164,005
Civilian	64,680	73,841	84,300	109,872	143,200

> is fairly well skilled and increasingly is local in character, with the recent reduction in temporary alien labor. Economic welfare measured by income levels is low but supplemented by abundant public assistance whose future is uncertain. There does not appear to be much flexibility in household budgets, and radical changes in expenditure patterns, such as medical care charges, cannot be expected to be fully absorbed by households alone.

Guam has been particularly reliant on heavy U.S. military presence for over 25 years, and only in the past decade has it begun to seriously chart a future and more diversified path of economic development. In the 1960s, a rekindled U.S. interest in the Pacific led to an increase in the amount of federal monies spent locally through various public programs. More recently, beginning in the late 1960s, a local industry, separate from defense, was initiated to capture the Pacific tourist market; it has been quite successful if volatile. Finally, major efforts have been made to study and promote local agriculture, fishery, and manufacturing industries, but to date adequate returns on investments have not been forthcoming.

The development of Guam economically is a function of the physical resources and investments that can be brought to bear on various opportunities, on the one hand, and of the size and quality of the local labor force that can be allocated to these investments. The viability of the economy has direct implications for health care organization. Not only does the relative health of the economic base determine the tax revenues that can be brought in and channeled to public health services (in part), but such health will imply a better economic status for the people it employs. And accompanying higher levels of socio-economic well-being will be higher incomes, hence better ability

to pay for services, and better education and the chance for healthier and more satisfying lifestyles. There is, of course, a recursive effect in that a healthier population will be able to provide better service to the economy, make it more productive, and enhance the attractiveness of Guam as a place to invest in, considering its healthier labor force. Below, then, the current and potential economic base of Guam and the nature of the island's labor force are discussed, along with a review of the economic welfare of the population.

a) Economic Base of Guam:

Guam's economic base rests on its comparative advantage in resources, labor, and special opportunities and investments. Guam's chief advantage is its strategic location in the Pacific Ocean, relatively close to Asia, and its ability to serve the United States' national interests and defense posture in the region. More than anything else, this location (and the sizeable area the island affords for military installations) guarantees a viable, if narrow, future economic base for Guam. Civilian employment for defense-related activities stood at 5,726 at the beginning of 1980, and 80 percent of these (or 4,581) were hired locally. Total military expenditures on Guam amounted to $306 million: military pay accounted for $89 million, civilian employee salaries for $84.4 million, and military construction for $84.7 million. However, a more vigorous and stable economy will be realized only by exploring Guam's other unique features and assets, and tapping special Pacific area markets.

Guam's climate, scenic resources and location in proximity to Japan argue for a strong tourist industry for the foreseeable future. The industry is notably healthy and has experienced generally steady growth over the past decade; airline strikes and hotel union strikes as well as economic slowdowns that affect the Hawaii tourist industry from time to time have not been felt on Guam.

Total visitor expenditures on Guam for 1979 were estimated at $132 million, or given the 273,000 visitors that year, about $485 per visitor. (Guam's Bureau of Planning has estimated the per capita visitor expenditure is closer to $580.) The Hotel Occupancy Tax of 5% initially and 10% since July, 1972, has generated large tax receipts for the government: more than $800,000 for 1977-1978. The additional 4% gross business receipts tax generated an added $1.5 million from hotels. Studies indicate that some 1,300 people are directly employed in hotel lodging on Guam; a total of 3,000 to 5,329 jobs depend directly on visitor expenditures, while an additional 500 to 3,000 jobs are indirectly created due to the circulation of tourist dollars. The total employment impact is thus between 3,500 and 8,300.

There is room for expansion of the visitor industry, but there are also significant cautions and pitfalls. The expandable visitor market is mostly Japanese tourist. Currently, mostly young, newlywed and newly salaried Japanese visit Guam, but for only 3 to 4 days (compared with 7 to 8 days in Hawaii); few visitors actually make a return visit. In order for the industry and hence jobs and revenues to grow in the future, it will be necessary to invest in a higher quality and more varied visitor experience for tourists on Guam. A 1980 Bureau of Planning report ("Five Year Economic Development Strategy for Guam") makes some pertinent suggestions.

Aside from military-related and tourist expenditures, another large category of employment and income is government. The federal government pumped an estimated $48 million in (non-military) grants into the island in FY 1979 -- although this figure may be cut by as much as one-fourth by the current Administration in Washington. Income taxes collected in Guam remain, by Organic Act stipulation, on Guam and thus provide the Territorial government with

roughly $20 million in 1978. An estimated 11,100 people are employed by the Territorial government, and another 6,500 by the federal government (but excluding defense-related employment, only 1,100).

The construction industry employs about 1,400 local residents, at present, and another 1,000 temporary (H-2) alien laborers are also hired. Construction revenue and employment are highly conditioned by exogenous forces, including the health of the national economy, since that influences interest rates which regulate the number of housing loans and mortgages sought for new or renovated housing. Paradoxically, the damage wreaked by typhoons creates jobs and revenues for the construction industry as it rebuiilds damaged or destroyed facilities; military reconstruction funds are a major source of revenue. The industry is highly volatile, however. In one year (1979-1980), total construction employment dropped from 4,170 to 2,443, with further reduction expected. Building permit value dropped from $55 million in FY 1978 to $34 million in FY 1979.

Prospects for a more diversified economic base rest with current research and future development of agriculture, fishery and manufacturing activities. As the 1980 Guam Annual Economic Review makes clear, import substitution is the primary goal in seeking to expand local agriculture and fishery concerns. Hog production expansion as well as hydroponic farming appear promising. To illustrate the current export dependency of Guam, the estimated $2.8 million locally consumed catch of fish can be compared with the $6.5 million foreign-source imported catch of fish. Both equipment and facilities and marketing strategies are major shortcomings of current agricultural and fishery activities. Aquaculture, like hydroponic farming, is still in the developmental stage. In a similar youthful and unpredictable position on Guam is the small manufacturing activity that accounts for only 3.5% of total

employment at present (about 1,200 workers). About 90% of manufacturing receipts are generated by Guam's single petroleum refinery, GORCO. The manufacturing base can be considered a definite growth opportunity, considering the island economies of Hawaii and Puerto Rico and their successes. However, watch and bracelet assembly firms have actually declined from 7 to 1, and garment firms from 4 to 1, between 1973 and 1979. In 1979, Guam exported a total product value of $42.7 million (with fuel exports making the largest contribution), but imported product value for the same year amounted to $445.8 million, or ten times as much.

The overall economic prospects for Guam are not outstanding. The Guam Economic Development Authority expects several infrastructural projects in the near future to shape the future expansion of Guam's economy, notably increased highway construction and investment in an Ocean Thermal Energy project, and completion of expansion and renovation of the Commercial Port at Apra Harbor, as well as development of nearby industrial park area. It is believed by GEDA that economic expansion will definitely occur in the hotel industry, in fisheries, and in small-scale manufacturing. The concrete investment commitments have yet to reveal themselves, and it is best to assume only slow to moderate improvement in the island's economy, with no great attractions developing to curtail the current out-migrant stream.

b) Guam's Labor Force:

In 1980, the number of individuals in Guam's civilian labor force stood at 35,180, up from a low of 27,087 in 1976. Unemployment rates have fluctuated in this period between 7.3 and 11.3 percent, with the 1980 rate being 10.4 percent. The Guam Annual Economic Review notes that essentially "all of the increase in employment from September 1978 to September 1979 resulted from an expansion

of part-time jobs, as the number of part-time workers grew by 25,560 and full-time workers grew by only 370" (page 7 of the report). In October 1979, roughly 46% or 14,950 of civilian total employment (32,500) was in the public sector (6,500 in the federal government and 8,450 in the Territorial government). This reflects the almost standard picture of U.S. affiliated territories in the Pacific (i.e, American Samoa with 46% public sector and the Northern Marianas with 55%, both in 1979). In other Pacific economies, either dependent or affiliated with other nations, strikingly different pictures emerge (i.e., Fiji -- 25.4% public; Tonga -- 13.2% public; French Polynesia -- 27.6%; Papua, New Guinea -- 14.4%). Tung (1981) has provided total, male and female civilian labor force projections in keeping with our revised population growth projections for the period 1980 to 1985, total civilian labor force can be expected to rise from 33,000 to between 36,800 and 39,800. By 1990, the total civilian labor force will lie between 43,500 and 47,500. Guam has a sufficiently large population to support a wide variety of skills and occupations, although more could be done to bring specialized technical skill training to the potential labor force. Guam supports both a university and a community college/ vocational school to help prepare young people for the labor force. In fact, a low-skilled labor market has been dominated until recently by temporary (H-2) alien labor, due to preferences built into immigration laws and regulations regarding wage scales which deterred local residents from seeking such occupations. The wage scale differential has since been revised upward to attract more of the local labor force to such unskilled jobs, and as a result H-2 workers have gradually declined: from 6,737 in March 1975, to 4,785 in March of 1979, to roughly 3,000 in March of 1980. It has been assumed by economic forecasters that non-immigrant workers will remain constant at about 2,500 yearly in the future.

c) Economic Welfare:

For our review purposes here, we will assess the economic welfare of Guam's civilian population in terms of their income, other assistance, and their cost of living. In 1976, the per capita income for civilians stood at $3,093, but this increased to $4,198 by 1978; after controlling for inflation, however, the actual increase in buying power was only $400. Because of large household sizes on Guam (averaging 4.25 persons per household), median household income in 1978 was about $15,000. This level represents a rather low figure and explains the difficulty Guamanians have in becoming homeowners. As another consequence, public assistance payments and especially food stamp allocations have been substantial. The number of financial public assistance recipients rose from 5,469 in 1977 to 6,500 in January 1981, while medical payment recipients have averaged 1,000 yearly. Public assistance expenditures in 1980 totaled $4.6 million. Medicaid (Title IX) expenditures totaled $2.5 million in the same year.

Participation in the Food Stamp Program averaged 1,010 housholds (5,702 persons) in 1974, but currently (ca. March 1981) averages 5,572 households (or 25,792 persons, which is 31% of the civilian population).

The distribution of income among Guam's residents is fairly even. According to a Bureau of Labor Statistics survey in 1978, 21% of all households (which total 18,930) had incomes under $7,000; 21% were between $7,000 and $12,999; 23% had incomes between $13,000 and $19,999; and 36% were over $20,000.

The Department of Commerce has prepared consumer price index information by expenditure category for Guam in comparison with the United States as a whole. The data show that the CPI rose 13.3% in the U.S. but only 10% in

Guam. Transportation increased the sharpest on Guam $14.5%) followed by food (14%) and medical (11.5% -- compared to a U.S. rise of only 1.5%). It is not known, however, to what extent the average household has any residual "discretionary" income available, or to what extent expenditure patterns might be alterable, especially for health and medical care use. Given the above information on the economic welfare of Guam's population, it is questionable whether much room exists for a shift in the burden of medical payments to consumers in any direct manner over that which has already been achieved through insurance and HMO participation. It is more than likely that the Government of Guam will continue to have to underwrite a portion of the medical bill for the majority of its citizens for some time to come.

5. *Health Status of Guam's Population*

It is now appropriate to briefly review and assess the health status of the island's population. Health status might be termed a major outcome of the dynamic interaction of the island's population, society, and economy. This description of the health service environment hinges on the paramount assumption that the island environment and society function in part to structure a health care system that is (or should be) designed to improve the health status of all Guamanians. This assumption establishes the basic relationship between health status as an outcome and health services and their organization as one means to achieve the most positive outcome. With this perspective in mind, we proceed to examine what health status outcomes have in fact been realized on Guam. This examination is conducted by constructing a profile of the health of the population in terms of key indicators, namely: mortality, life expectancy, and morbidity, as well as qualitative consideration of the behavioral and personal dimensions of health status. Unfortunately, current statistical compendia emphasize "negative" indicators of health status (degrees of negative

health status) rather than positive measures of health, and this study has no capability to correct this methodological shortcoming. The brief summary of health status provided below is meant to sketch the health status of Guam's population in outline form. Much more detailed data and interpretation are available through the Guam Health Planning and Development Agency and its publication, the State Health Plan for 1978-83.

Summary: The health status of Guam's population is characterized by a low crude death rate but a fairly high and unwarranted infant mortality rate. The pattern of leading causes of death has shifted from earlier infectious disease-related causes to chronic disease causes. But, infectious and parasitic diseases still rank high today. The morbidity pattern suggests that basic immunizable diseases are well-controlled but that greater attention needs to be paid to environmental sources of contamination and infection, and efforts should be expanded to educate more of the public with regard to health and hygiene in such risk envornments.

a) Mortality Levels:

We begin by examining the basic vital statistics for Guam over the past decade: 1970-1980 (Table 20). Here, we note, first, that Guam's birth rates are very high when compared worldwide and especially when compared with the U.S. (Table 21). While the birth rate has fallen by about 8 per 1,000 population in this ten-year period, the rate is still high. Its level implies continued youthfulness of the island population, suggests that many women and children may be at risk of complications of pregnancy or birth, and assures continuing emphasis on the health conditions and the health care given to the young in the future.

Table 20. Vital Indicators and Rates for Guam, 1970-1980

YEAR	TOTAL POPULATION	Live Births	Total Deaths	Infant Deaths	BIRTH RATE*	CRUDE DEATH RATE*	INFANT MORTALITY RATE+
1970	84,996	2,875	355	62	33.8	4.2	21.6
1971	86,879	3,068	364	63	35.3	4.2	20.5
1972	88,803	3,206	409	49	36.1	4.6	15.3
1973	90,770	3,234	435	75	35.6	4.8	23.2
1974	92,781	3,226	449	75	34.8	4.8	23.2
1975	94,836	3,165	441	64	33.4	4.7	20.3
1976	96,937	3,048	466	55	31.4	4.8	18.0
1977	99,084	3,007	380	46	30.3	3.8	15.3
1978	101,280	2,903	424	46	38.7	4.2	15.8
1979	103,523	2,950	411	33	28.5	4.0	11.2
1980	105,816	3,003	423	49	28.4	4.0	16.3

* Rates are per 1,000 individuals in the population.

\+ Rate is per 1,000 live births.

Table 21. Comparison of Vital Rates for Guam, Hawaii, and the U.S., 1977

VITAL RATE	TERRITORY: GUAM, 1977	HAWAII, 1977	U.S., 1977
Birth Rate	30.3	17.5	15.3
Crude Death Rate	3.8	4.9	8.8
Infant Mortality Rate	15.3	10.6	14.0

Data Source: Guam Annual Economic Review, 1980.

Guam's death rates, on the other hand, signal the life-style and the overall impact of health care provided to the population according to American standards. Guam's crude death rate is generally lower than that for the U.S. as a whole at present, as well as lower than that for Hawaii which is considered to have an exceptionally healthy population. In contrast to crude or overall death rates, the infant mortality rate is unreasonably high. Equally noteworthy is the lack of indication of any decline in infant mortality rates over the decade. This suggests that appropriate pregnancy planning, pre-natal care, or delivery or post-delivery care are not fully provided or utilized by the population.

b) Leading Causes of Death:

As Guam has come to adopt an increasingly Western and American style of life, Western and developed-society patterns of diseases (e.g., chronic and behaviorally based) have come to replace the earlier, more developing-society pattern of acute infectious diseases. In 1925, the leading causes of death on Guam were reported to be dysentery, tuberculosis, and typhoid fever (Table 22). (It is likely, however, that death registration in this year was not complete.) But 1960, the leading causes of death were heart disease, early infant and prematurity-related diseases, pneumonia, non-auto accidents, and central nervous system diseases. The pattern of diseases causing death in 1960 still shows the influence of infectious diseases involving infants. In contrast cancer ranks only seventh at this time. By 1970, cancer has climbed to second leading cause of death, while pneumonia has shifted down, but early infant diseases still take a high toll. In 1980, 423 deaths were recorded, and the leading causes, in order, were heart disease, cancer, infective/parasitic, cerebrovascular, respiratory, and early infant diseases. It is noteworthy then that infective/parasitic diseases

Table 22. LEADING CAUSES OF DEATH ON GUAM, 1925 - 1980, COMPARED WITH U.S. 1976

Note: Rates are deaths per 1000 population

GUAM 1925	GUAM 1960	GUAM 1970	GUAM 1975	GUAM 1980	UNITED STATES 1976
ACILLARY DYSENTERY	HEART DISEASE	HEART DISEASE	1 HEART DISEASE	HEART DISEASE	HEART DISEASE
=32 r=1.9	n=61 r=0.91	n=38 r=0.45	n=96 r=1.01	n=86 r=0.81	r=3.38
UBERCULOSIS	EARLY INFANT DIS.	CANCER	CANCER	1 CANCER	CANCER
=13 r=0.8	n=37 r=0.55	n=34 r=0.40	2 n=42 r=0.44	1 n=57 r=0.54	r=1.74
YPHOID FEVER	PNEUMONIA	EARLY INFANT DIS.	EARLY INFANT DIS.	INFEC./PARASIT.DIS.	CEREBROVASC.DIS.
= 8 r=0.5	n=30 r=0.45	n=34 r=0.40	3 n=39 r=0.41	3 n=39 r=0.37	r=0.88
OOKWORM	NON-M.V.ACCIDENTS	CEREBROVASC.DIS.	M.V.ACCIDENTS	CEREBROVASC.DIS.	ALL ACCIDENTS
= 2 r=0.1	n=29 r=0.43	n=28 r=0.33	4 n=33 r=0.35	n=36 r=0.34	r=0.47
SCARIASIS	CNS VASC.LESIONS	CNS(ALS/PD)	NON-M.V.ACCIDENTS	RESPIRATORY DIS.	INFLUENZ./PNEUMONIA
=2 r=0.1	n=18 r=0.27	n+22 r=0.26	5 n=25 r=0.26	n=29 r=0.27	r=0.29
EASLES	OTHER CNS(ALS/PD)	M.V.ACCIDENTS	CEREBROVASC.DIS.	EARLY INFANT DIS.	DIABETES
=1 r=0.06	n=17 r=0.25	n=22 r=0.26	6 n=23 r=0.24	n=28 r=0.26	r=0.16
ERITONITIS	CANCER	PNEUMONIA	CNS(ALS/PD)	CNS DISEASES	CIRRHOSIS LIVER
=1 r=0.06	n=15 r=0.22	n=21 r=0.25	7 n=21 r=0.22	n+24 r+0.23	r=0.14
	M.V.ACCIDENTS	DIABETES	PNEUMONIA	M.V.ACCIDENTS	ARTERIAL DIS.
OTAL (partial)	n=14 r=0.21	n=15 r=0.18	8 n=20 r=0.21	n=15 r=0.14	r=0.13
=97 r=5.8	PULM.TUBERCULOSIS	LIVER/GALL/PANCR.	CIRRHOSIS LIVER	NON-M.V.ACCIDENTS	SUICIDE
	n=10 r=0.15	n=12 r=0.14	n=14 r=0.15	n=15 r=0.14	r=0.12
opulation=	MENINGITIS	NON-M.V.ACCIDENTS	HOMICIDE		EARLY INFANT DIS.
16,648	n=6 r=0.09	n=11 r=0.13	n=13 r=0.14		r=0.12
	ALL OTHER	ALL OTHER	ALL OTHER	ALL OTHER	ALL OTHER
	n=114 r=1.7	n=118 r=1.39	n=109 r=1.15	n=94 r=0.89	r=1.12
	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
	n=351 r=5.2	n=355 r=4.18	n=441 r=4.65	n=423 r=4.0	r=8.91
	Population=	Population=	Population=	Population=	
	67,004	84,996	94,836	105,816	

and cerebrovascular diseases are ranked rather high: one indicating continued basic (environmental) health protection measures are still inadequate, the other suggesting the increasing influence of Western diet and lifestyle, including lack of exercise.

A closer inspection of the 1980 cause-specific mortality data suggests two basic patterns of disease antecedants. On the one hand, the expected developed-society cluster of heart disease, cancer, and cerebrovascular disease are usually linked to personal dietary habits, inadequate exercise, and stressful activity patterns associated with work and home life. This pattern is not easily changed by medical measures. The appropriate strategies for reducing this disease cluster's impact include health education, health information dissemination, and emphasis on periodic preventive health examinations for early detection. A cause of death that is associated with the above cluster but is not a disease as such is motor vehicle accidents, which have involved too many Guamanians in the past. In large part, high motor vehicle accident mortality is due to alcohol-influenced driving, and to a small extent on poorly paved and poorly lit roads. Of interest, then, is the recent impact that preventive policy surveillance and detention of the intoxicated has had on reducing traffic fatalities, if not the volume of accidents.

The second cluster of diseases is associated with Guam's developmental roots and reflects the inadequacy of attention given to mothers, the newborn, and the environment. Diseases related to early infancy, the previously mentioned high infant mortality rates, parasitic infections, all suggest that basic public health information is not well retained or transmitted to the public. There is more responsibility indicated here for preventive and control and surveillance efforts by public health personnel working with families and communities to reduce environmental hazards and assure

adequate health care is provided to the mother and to children in general.

c) Morbidity:

Of the notifiable diseases that appear on the standard annual morbidity summaries prepared by the Epidemiology Branch, none stand out as particularly critical for Guam (Table 23). Immunizable diseases appear to be well controlled, with declines reported in cases of measles, Rubella, and mumps over the period 1975-1980. One exception is chickenpox which continues to have large yearly cases. Of more note is the presence and resurgency of venereal disease, the continuing high numbers of cases of conjunctivitis, and the enduring presence of large numbers of cases of salmonellosis and hepatitis. Again, there is evidence here that a basic environmental quality standard is lacking which in turn prevents children and adults alike from enjoying a high level of health, free of such acute infectious disease. Basic health care practices, health behavior, hygiene, and preventive care appear to warrant more thorough communication to the entire population of Guam.

Table 23. Partial List of Reported Morbid Conditions for Guam, 1975-1980

MORBIDITY CONDITION	YEAR For REPORTED CASES: 1975	1976	1977	1978	1979	1980
Chickenpox	275	140	229	289	129	165
Bacterial Conjunctivitis	676	327	211	270	268	235
Viral Conjunctivitis	200	610	134	201	77	210
Gonorrhea,civilian	145	111	64	131	131	162
Syphilis,total	27	5	4	2	18	68
Hepatitis A(infectious)	115	58	37	46	42	49
Hepatitis (viral)	48	25	33	45	72	80
Influenza,flu syndrome	982	3655	1247	1332	720	669
Mumps	36	26	12	40	15	11
Measles(rubeola)	33	16	6	28	13	7
Rubella(Ger,measles)	8	8	12	5	4	2
Salmonellosis	65	36	82	70	88	126
Pulmonary Tuberculosis	46	39	57	62	57	47

Data Source: Department of Public Health, Epidemiology Branch.

B. THE STRUCTURE OF GUAM'S HEALTH SERVICE SYSTEM

The purpose of this section is to provide an overview of the current organizational and functional form of the major components of Guam's health service system.

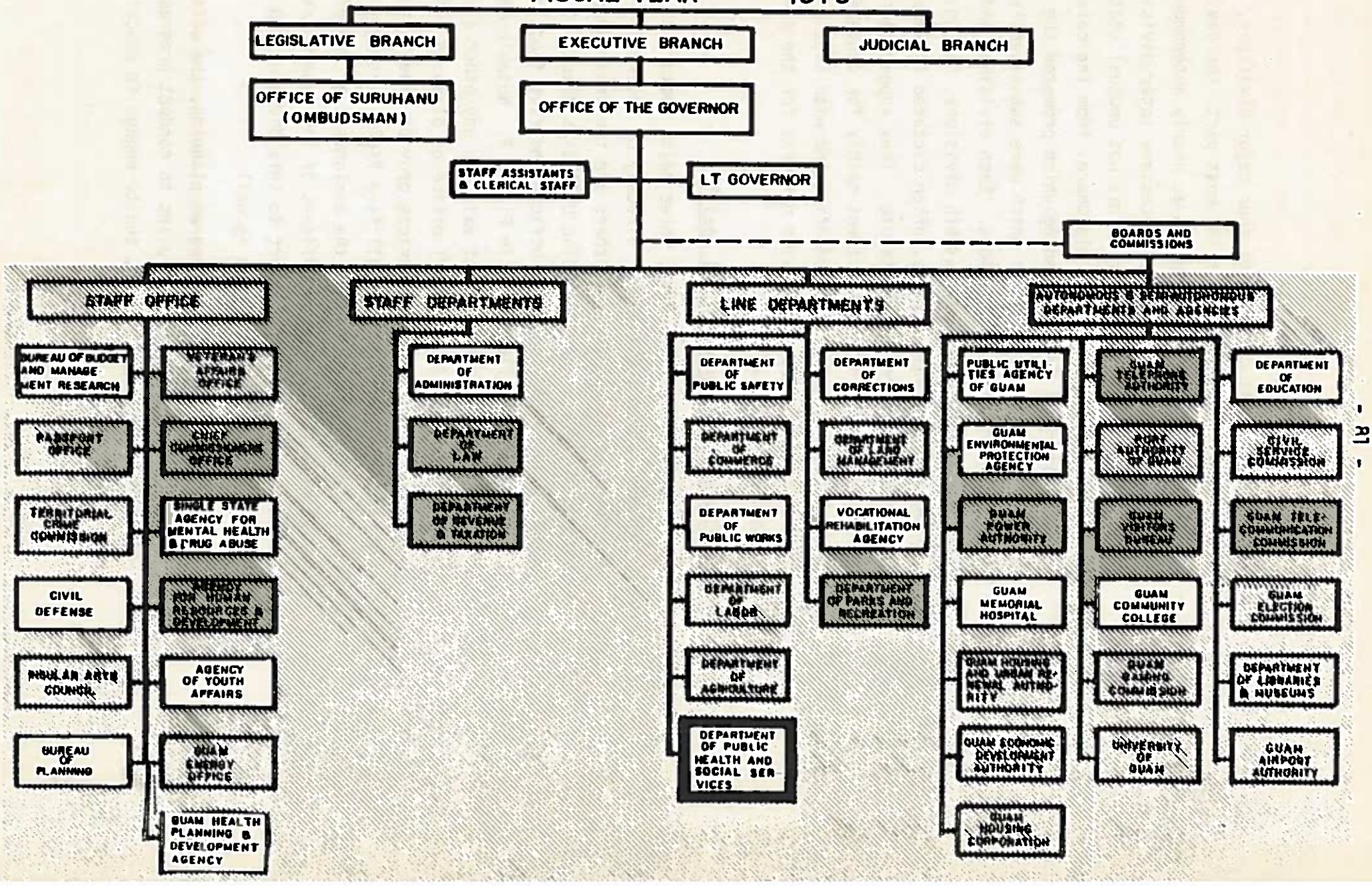
1. The Public Sector Health Service System

a. Department of Public Health and Social Services

While many other elements of Guam's government contribute both directly and indirectly to the health and medical care of Guam's citizens (see Figure 8), this Department represents the government's major consolidated thrust in the provision of preventive and social services. The highlighted sections of the general government organization chart illustrate those other agencies and departments with which the Department has the most salient relationships, either of a regulatory or collaborative nature. For example, the Department of Public Safety operates the Emergency Medical Service System, but the central planning and administration is vested in the DPH&SS. Likewise, Guam Memorial Hospital stands as a semi-autonomous entity within the governmental structure, yet important resource and personnel sharing takes place between GMH and DPH&SS. In yet other cases, the destiny and day-to-day operations of the Department are controlled in large measure by such entities as the Bureau of Budget and Management Reseach, by the Governor's Office and by the Legislative Branch. Other entities such as the University of Guam and the Guam Community College stand as important contributory resources to the staffing and staff development needs of the Department. Although some services are limited to those meeting specific entitlement requirements, many other services of the Department are rendered to all citizens, in some cases on a fee-for-service basis where ability to pay exists.

Figure 8

GOVERNMENT OF GUAM
ORGANIZATIONAL CHART
FISCAL YEAR 1979



The Department consists of four major divisions, as illustrated in Figure 9. For the most part, the divisions conduct their respective programs as nearly autonomous entities, with only occasional necessary inter-divisional programming and collaboration. This not unusual state of affairs stems, in Guam as elsewhere, from the categorical nature of Federal funding which prompted the creation of original programs which were subsequently appended as functional divisions. Each division, and the many separate program areas within divisions, has unique sets of mandates and missions, often dictated by Federal regulations or Territorial statute. They appear to have been grouped within the department mainly for convenient central administration and budgeting and with little regard for inter-program service networks for the same or similar clientele.

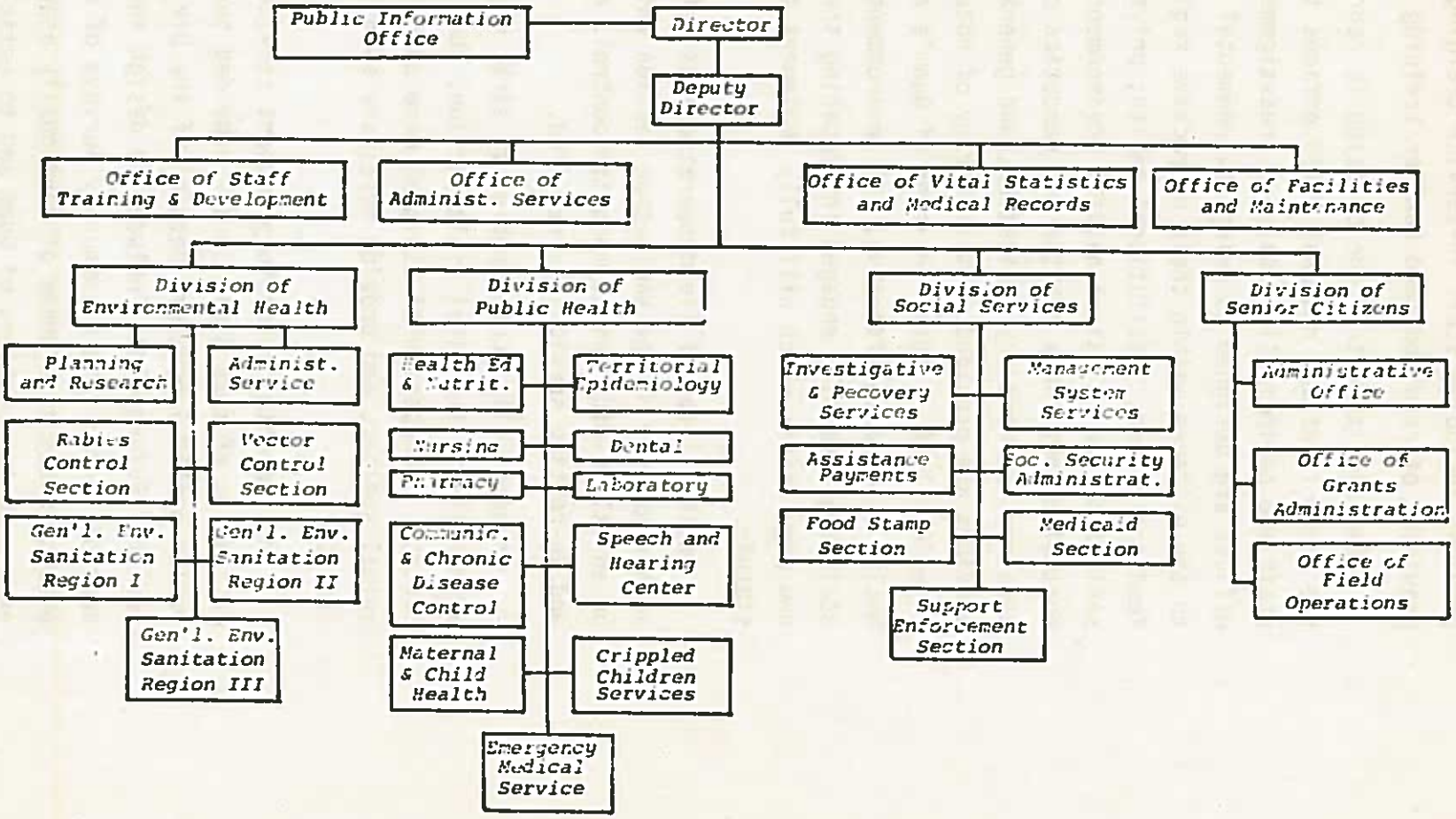
The Division of Environmental Health

This division, one of the three major sectors of government which deals either directly or indirectly with environmental concerns (the others are the Environmental Protection Agency and the Public Utilities Agency of Guam), consists of two staff offices and five functional line sections as illustrated in Figure 9. Notable mainly because a counterpart does not exist in any other division of the Department is the staff office of planning and research. Administrative services provide general budgetary and clerical support to all five field sections, and is in turn supported through the assignment of one of the two Administrative Service Officers of the Department who provides administrative support to this division and to the Division of Public Health as well.

In addition to general program planning, the office of planning and research has plans to conduct program evaluations for the division, and to engage in educational

Figure 9

ORGANIZATIONAL CHART
Department of Public Health & Social Services
Government of Guam



services including staff in-service training and the provision of required food handler training.

The major thrust of the division is represented in the three identical regional field offices through which staff are periodically rotated by reassignment. The field offices are designed to bring environmental services close to the villages within their respective regions. In each, food sanitation, institutional health, private premises sanitation, radiological health, environmental sampling, control of hazardous substances, narcotics control, cemetary and mortuary sanitation, and general sanitation services are provided. It is worthy of note that effective July 1980, a total revision of Guam's environmental health act became effective, and environmental health staff are presently engaged in preparing the necessary new regulations which will fully implement the revised statute.

Another level of field operations is reflected in the vector control/village sanitation section which provides, on an island-wide basis, mosquito control, rodent control, and de-ratting services as required.

An especially acute problem of stray dogs throughout Guam falls to the final field section, that of rabies control. The personnel assigned here operate the central animal shelter, and provide necessary animal quarantine services.

Environmental laboratory support services for the activities of this division are provided through the public health laboratory section of the Division of Public Health. Future plans include the design and regular conduct of random sample community surveys of environmental problem areas as a means of continually assessing the environmental problems of Guam and to establish baselines for eventual program evaluation.

Attaining a continuous supply of trained personnel for environmental health represents a special problem, for there does not now exist any specific educational program in Guam for the professional preparation of sanitarians and environmentalists. Those employees who have had the advantage of advanced preparation in public health sanitation tend to be held off from environmental activities and placed in more senior administrative posts (i.e., the current Deputy Director of the Department, and the current Chief Public Health Officer). There is an apparent need for the establishment of a formal environmental health training program in Guam, perhaps at the Associate or Arts level under the auspices of Guam Community College.

The Division of Senior Citizens

This division represents the designated single state agency on aging and, as such, administers all programs from the Federal Administration on Aging in Guam. Acting as the traditional state office on aging, the division provides no direct services itself, but rather provides for the administration and implementation of programs which are conducted by other public and private entities under direct contract with the division. Included among current contract programs are health screening for the elderly (conducted by the Division of Public Health), senior center operations with 16 centers in operation, transportation services, information and referral, outreach, professional counselling (through the Behavioral Clinic), and congregate dining and home delivered meals for the elderly. Plans for future program development include legal services for the elderly, the establishment of a day care program as an alternative to institutionalization for elderly persons whose family members require day-time respite but otherwise can care for the senior family members within the home, and a senior citizens employment program.

Organizationally, the staff of 13 included in this division is spread over three administrative entities, as displayed in Figure 9. There is expressed interest in separating this division from the Department as a free-standing line agency of government. While there is no doubt that the magnitude of programs and budget ($2.2 million) appear to warrant independent status, such a move might be expected to seriously dilute the existing collaborative relations which exist with other direct health service delivery entities of government. A second option might be considered, that of further institutionalizing senior citizens operations within those of public health and social services, rather than divorcing them therefrom. For example, there are some eligible elderly who are not enrolled in either of the parts of Medicare, probably owing to the increasing out-of-pocket costs for such enrollment and the relative poverty status occupied by most of Guam's elderly. Hawaii Medical Service Association has estimated that 2,000 persons are enrolled in Part A and 1,700 in Part B of Medicare. Thus, probably owing to their ineligibility for Social Security, perhaps as many as 400 elderly citizens are not enrolled in an insurance program for which they are eligible. Because this division lacks direct program power to engage with the problem, Guam may be losing money each year in foregone Medicare reimbursement for services which are now being provided free-of-charge on an abatement basis by the Division of Public Health and Guam Memorial Hospital. Were activities and programs for the elderly more closely linked with, for example, those of public health and social services, it might be possible to identify other governmental funds which could "buy in" for poor elderly, thus permitting their enrollment in Medicare and yielding a substantial return on each dollar thus invested.

The Division of Social Services

This is the only division of the Department which employs an external advisory committee representing 15 appointed members. It is structured into five line sections and supported by two staff sections, as pictured in Figure 9. The fundamental services include social security, food stamps, and social case work. The principal portal of entry for clients is through the assistance payments section which not only administers categorical cash grants programs at three regional office locations, but also determines eligiblity and refers clients to Medicaid and general social services for counselling, job finding and the like. The division also has responsibility for licensure of foster homes, day care facilities, group homes and facilities operated by the Department of Youth Affairs.

The social services administration is roughly divided into adult services including family services, protective services and the work incentive program, and into child welfare services including protective services, adoption and custody, and the licensing responsibilities mentioned above. These latter services are, in turn, supported by the support enforcement section which operates the absent parent locator, and is responsible for establishment of paternity and support and enforcement. There is concern here that among the elderly adult, and especially among the retarded, there are insufficient domiciliary facilities as alternatives to nursing homes and overburdened families. There now exists a task force representing the Department of Education, the Department of Public Safety, the Department of Youth Affairs, the Sanctuary (a private protective service) and the Department of Public Health and Social Services, with the presumed mission to deal with a large unmet problem related to child abuse and neglect. While there is some collaboration with health education and, to a more limited extent with education,

there remains to be an agency willing to play the "lead" role in this respect. A major priority and strength of this program is an interagency panel representing the attorney general, mental health services, social services and medicine to which case presentations may be made in suspected cases of child abuse or neglect. However, this laudible collaboration appears to be mainly on a case-by-case basis, with little continuity and no present means of mounting a major and sustained program to deal with the origins of child abuse.

The Medicaid section represents one of the highly important and problem-laden sectors of this division. Operating with a staff of only six persons, and burdened with manual claims processing procedures, this section continues to operate under the stinging rebuke delivered as a result of a Federal program audit in 1979. Claims payments are notoriously late, owing mainly to absolute shortages of funds which the program experiences from time to time. Under such circumstances, the established policy is simply to stop paying bills when funds have been exhausted. The recent increase in Guam's Medicaid cap from $900,000 to $1.4 million will help somewhat to alleviating these pressures, but they can be predicted to remain a serious burden on Guam's economic resources. Guam's Medicaid program is severely overmatched on the Guam side of the ledger, with the result that predictable deficits call for supplemental appropriations by the Legislature to keep the program running, and this proves to be troublesome to all concerned. It is reported that claims are nearly up-to-date at present, with the major provider (Guam Memorial Hospital) having been paid up through October 1980. Employing 1967 eligibility criteria, the program serves approximately 7,500 recipients at a total cost of around $3 million. This represents an annual expenditure per recipient of only $400, substantially below comparable figures elsewhere

and undoubtedly substantially below actual costs incurred in Guam. As a result of cash shortfalls, all Medicaid supported off-island treatment has been terminated, much to the displeasure of attending physicians and Federal officials. Other program cutbacks have been necessary, including reducing or curtailing medical supplies and equipment, eyeglass provision, and adult dental services for recipients. The Federal EPSDT program is also a responsibility of the Medicaid section, with only about 15-20% of eligible children presently enrolled. This is apparently occasioned by short staffing in the program, and a low priority accorded to the screening services mandated under EPSDT when there is insufficient money to pay therapy bills for conditions discovered through the screening efforts. There is also increasing difficulty in finding private medical service providers to accept Medicaid patients, partly owing to perceived low payments but mainly due to severely delayed claims processing and payment. Attempts at finding economical alternatives to the present fee-for-service vendor system have been made, including approaches to the Family Health Plan. The least expensive pre-paid package which has been identified so far rests at a rate of $35 per person per month ($420 per year not including hospital services), but with the restriction that only AFDC clients (representing large, young families with lower than normal medical risk) would be included. This plan was rejected because one-quarter of the total Medicaid budget would have been allocated for one-eighth of eligible recipients. Serious attention has yet to be given to restricting Medicaid recipients to pre-selected economical provider entities, an option which has been open for Guam for some time, and which has now been opened for all states -- the freedom to reduce or constrain free choice of provider.

Guam's indigent medical care program was vested in this division by PL 14-94, but full responsibility for the operation of this program has reportedly never been fully assumed. Confusion, therefore, exists between the Division of Public Health, Guam Memorial Hospital and this division as to who administers and pays for health care for indigent (non-Medicaid eligible). This substantial population, plus that of Medicaid might provide an excellent population for a dedicated primary medical care system which could be devoted exclusively to the care of the poor, the indigent and the needy aged.

The Division of Public Health

Beginning with Naval administration in 1899, public health programs became the principal focus of government health activity. Formerly the heart of the entire Department, then embracing environmental, senior citizens, and mental health programs, this division now provides a smaller number of more traditional public health program areas.

Two versions of the current formal organization of the DPH were discovered during the data collection stage of this study. The first is illustrated in Figure 10, showing nine (9) direct line relationships, and two (2) seeming staff relationships. In all, this suggests a span of control for management purposes of 11 discrete entities. In Figure 11 a second version has been taken from that which appeared in BBMR Form 83 dated April 1981 entitled Departmental/Divisional Summary of Personnel/Resource Requirements. In this version, it will be noted that sixteen (16) undifferentiated direct lines of authority emanate from the office of the Chief Public Health Officer (CPHO). The latter figure also illustrates the more recent shift of the Medical Records and Vital Statistics offices to the DPH from their formal staff relationships with the Director of DPH&SS.

FIGURE 10

Current Organization of Division of Public Health - I

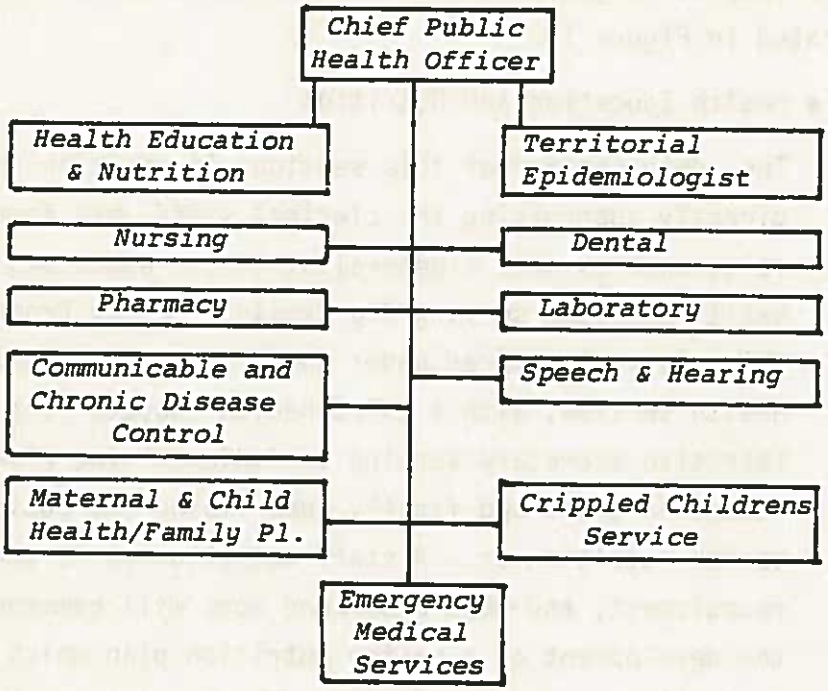
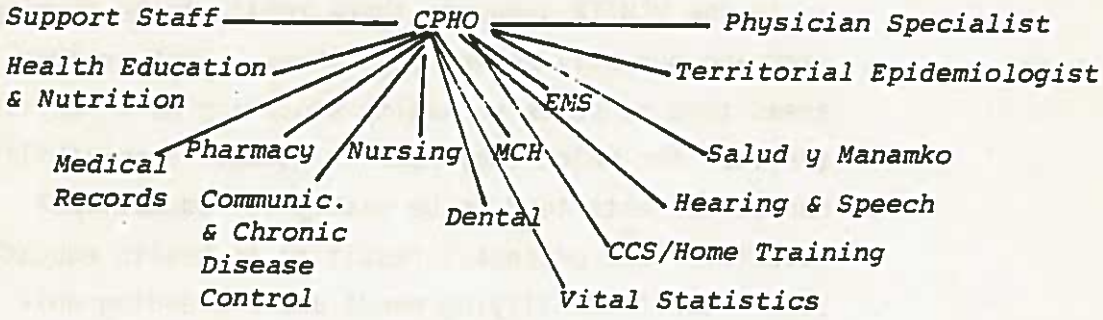


FIGURE 11

Current Organization of Division of Public Health - II



Information provided during the on-site data collection phase of this study allows us to illustrate in some detail the internal organization of the functional units illustrated in Figure 11.

- Health Education and Nutrition

  The administrator of this section, in addition to directly supervising the clerical staff, has four line relationships with a generalist health educator, another health educator serving the Family Planning Program which is administered under the Maternal and Child Health section, with a third health educator and administrative secretary serving to implement the risk reduction grant and finally supervising the public health nutritionist. A staff nutritionist is under recruitment, and when appointed work will commence on the development of a master nutrition plan which is presently non-existent. This section is supportive to other entities of DPH in a staff sense, for its basic mission is to provide assistance to such other sections as CDC, MCH, Dental and CCS through educational means to attain their own objectives. In some cases, as in the MCH/FP support, there remain to be developed firm and mutually agreed objectives. Most program areas tend to perceive health education as a "deliverable service" for which they have no mutual responsibility. Hence, requests tend to be mainly for educational materials (not process), resulting in health education staff itself identifying needs and proceeding unilaterally in undertaking programs. This section also functions as a component of planning and evaluation through conducting needs assessments, establishing behavioral objectives, evaluating behavioral outcomes, community organization, facilitation of communication, and participation in planning. This section also has

state-level responsibility in establishing direction and standards for health education and nutrition services and for providing technical assistance and training in these areas.

- Hearing and Speech Center

  This unit contains seven staff members with the administrator serving as the audiology supervisor and directing the work of the speech pathology supervisor and the audiologist. This section provides diagnostic services exclusively, principally for those between birth and 18 years of age. Multiple referral lines exist between this activity and other entities such as CCS, the Department of Education's special education division, and to EENT physician specialists either privately or via CCS. Frequent blocakges to effective liaison occur at administrative levels, however, necessitating staff "end runs" through informal channels we have been told. Indirect relationships exist between the Medicaid section of DPH&SS for occasional purchase of appliances, with public health nursing's home health program, with health education and nutrition for nutrition evaluation referrals, and with the Head Start Program for evaluation purposes. Substantial cooperative relationships with related voluntary agencies (i.e., Micronesian Association for Retarded Citizens, Legal Services Corporation, etc.) exist within this section. An interesting feature is that two of the professional workers in this section also serve as professional staff members at GMH, providing services to private patients on off-duty hours, thus contributing a professional staff basis for certification of the hospital.

- Emergency Medical Services

  Within the structure of DPH, the EMS section is the simplest unit, comprising a single person. However, a

network of complex relationships beyond DPH exist. The fundamental roles played by this section are those of regulation, system development, involvement in standards setting, coordinating the licensing of ambulances which is done under the aegis of DPH&SS, collaborating and consulting with other operating entities, and working in a grantee-grantor relationship with those to whom EMS grant funds (which are administered by this section) may flow. This section and many other involved agencies comprise the membership of the EMS Commission, with the Chief of Civil Defense serving as chair. This body acts as a useful buffer for the EMS administrator. The EMS system consists of eight ambulances located at six stations throughout Guam, equipped with an apparently satisfactory radio communications systems (See Figure 12). A 911 telephone system has yet to be achieved. There appears to be reluctance at GMH emergency room to participate fully in the EMS reporting system, which if fully implemented, could serve subsequently as a basis for billing for ambulance services -- presently free of charge to all regardless of insurance coverage or ability to pay.

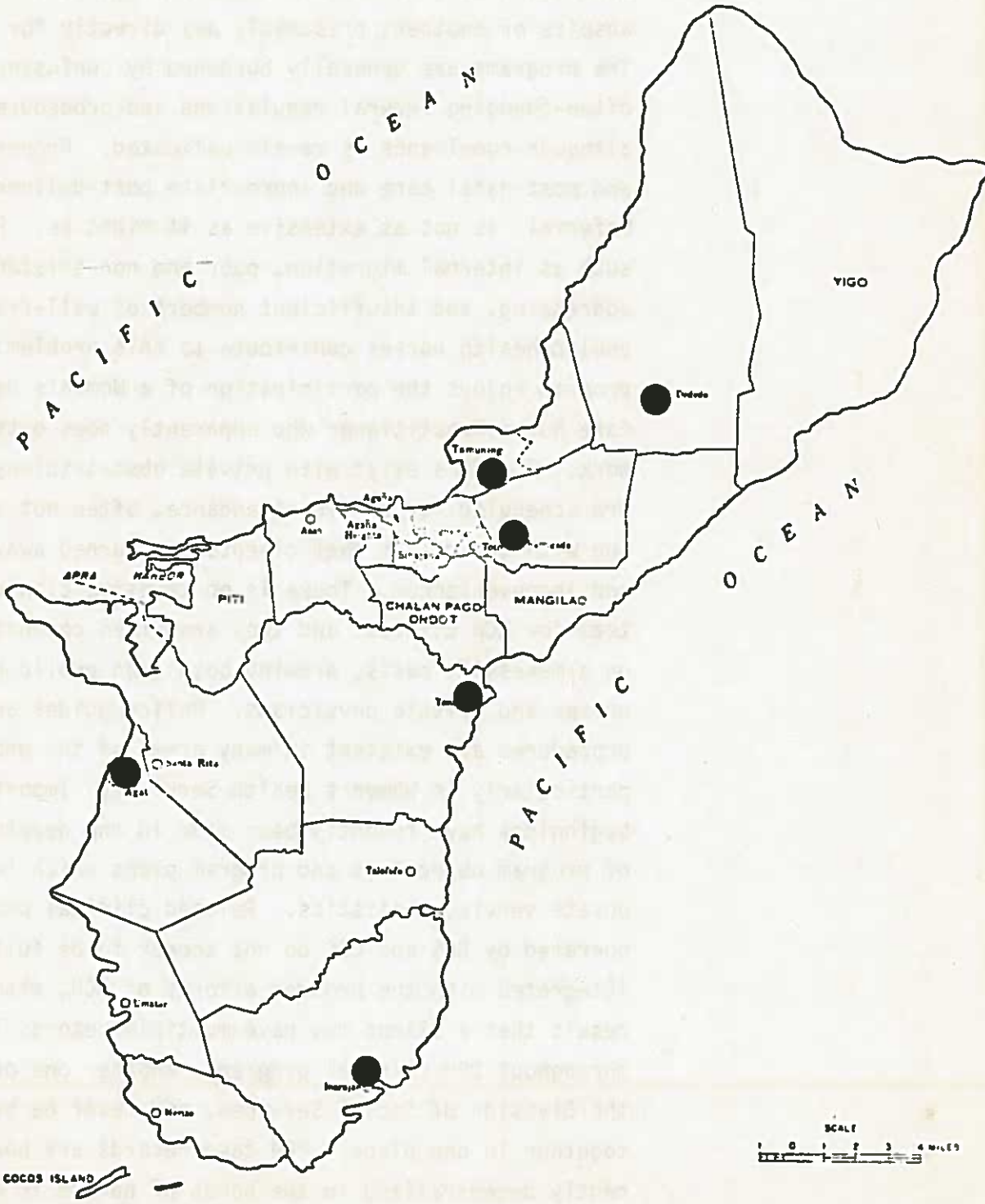
- Maternal and Child Health and Family Planning

  Among the larger of the DPH programs in terms of clinical services offered, MCH is managed by a public health administrator who is assisted by two administrative assistants. This section is characterized by a refreshing openness to work with all interests, public and private, internal and external to DPH, to extend to Guam's mothers and children the maximum that existing programs can offer.

  Women's health services include supervision of the pregnant, family planning and simple infertility diagnosis, and the provision of annual PAP smears for those who cannot afford or obtain them privately.

Figure 12

AMBULANCE STATIONS



Eligibility for services is specifically limited to persons without private insurance coverage for the service in need. Screening for insurance coverage is routine, but further income screening is not being carried out and the program probably extends many services free of charge to those who could, through one auspice or another, presumably pay directly for them. The programs are generally burdened by confusing and often-changing Federal regulations and procedures, although compliance is rarely validated. Proper pre- and post-natal care and appropriate post-delivery referral is not as extensive as it might be. Problems such as internal migration, poor and non-existent street addressing, and insufficient numbers of well-trained public health nurses contribute to this problem. The program enjoys the participation of a Women's Health Care Nurse Practitioner who apparently does outstanding work. Problems exist with private obstetricians who are scheduled for clinic attendance, often not appearing with the result that clients are turned away angry and inconvenienced. There is no cohesive clinical team for MCH clinics, and they are often conducted on a makeshift basis, drawing both upon public health nurses and private physicians. Policy guides and procedures are existent in many areas of the program, particularly in Women's Health Services. Important beginnings have recently been made in the development of program objectives and program plans which incorporate service statistics. Related clinical programs operated by CCS and CDC do not appear to be fully integrated with the broader efforts of MCH, with the result that a client may have multiple records located throughout DPH clinical programs, another one or two in the Division of Social Services, and never be brought together in one place. MCH case records are now apparently decentralized in the hands of nurses in each

nursing office, clinic and health center. The problem of multiple records becomes acute in such cases as immunization, which is done both by MCH and CDC, but with separate clinical records being maintained. The Immunization Program does distribute individual patient immunization records as a means of informing parents of their child's status, and MCH program staff can use such records to up-date patient charts. A problem seems to exist in the MCH program with clinic staff often failing to check the immunization status of pre-school clients.

Programs for infants and children, at least for the first year of life, extend eligibility to all children to attend well baby conference. These clinics have been staffed in the past by part-time physicians from the military and the private practice sector, and a full-time employed pediatrician has recently been retained to take central responsibility. Clinics for children are conducted in various nursing district offices. There is special emphasis placed on high-risk infants whose risk status is determined by guidelines established in the 1978 MCH state plan. Such guidelines often become irrelevant, as in the case of classifying all children of unwed mothers as high-risk, even when two or three prior children are fluorishing, and they are currently under revision. To complicate the picture further, there are estimated to be many unserved truly high-risk infants, but shortages of public health nursing staff makes it difficult to provide the necessary outreach and case-finding. Even daily GMH delivery records lack complete utility because of absence in many cases of meaningful street addresses and the commensurate difficulty in tracking down the mother and her infant.

Responsibilities for programs closely associated with the mission of MCH, such as for the EPSDT program, rest within the Division of Social Services. Adoptions and related matters are also handled in that Division, as are arrangements for dental work for children up to 18 years of age and physical examinations under Medicaid. This complicates the MCH programs with closely allied programs, being controlled by another Division with the staff of which few functional communications exist.

Family planning services which aim specifically at reducing high-risk pregnancies among specific age and parity groups, include medical examination and prescription for family planning method of the patient's choice, monitoring of the patient's success with the chosen method, social assistance, nutrition counselling and individual counselling on the ffects of available methods. Instruction in natural family planning methods is included.

Assistance in payment for medically-warranted sterilization is provided to patients meeting eligibility requirements. Referrals are also made for clients requesting infertility evaluation.

The program has only begun to penetrate the overall problem of a very high crude birth rate, and the continuing high incidence of pregnancy among teenage women.

- Public Health Nursing

The public health nursing section is organized with five primary supervisors reporting directly through an assistant director to the director of public health nursing. Staff functions, such as continuing education and administrative services are adjuncts to central administration. Except for the customary public health nursing home visits and the home care program, it can

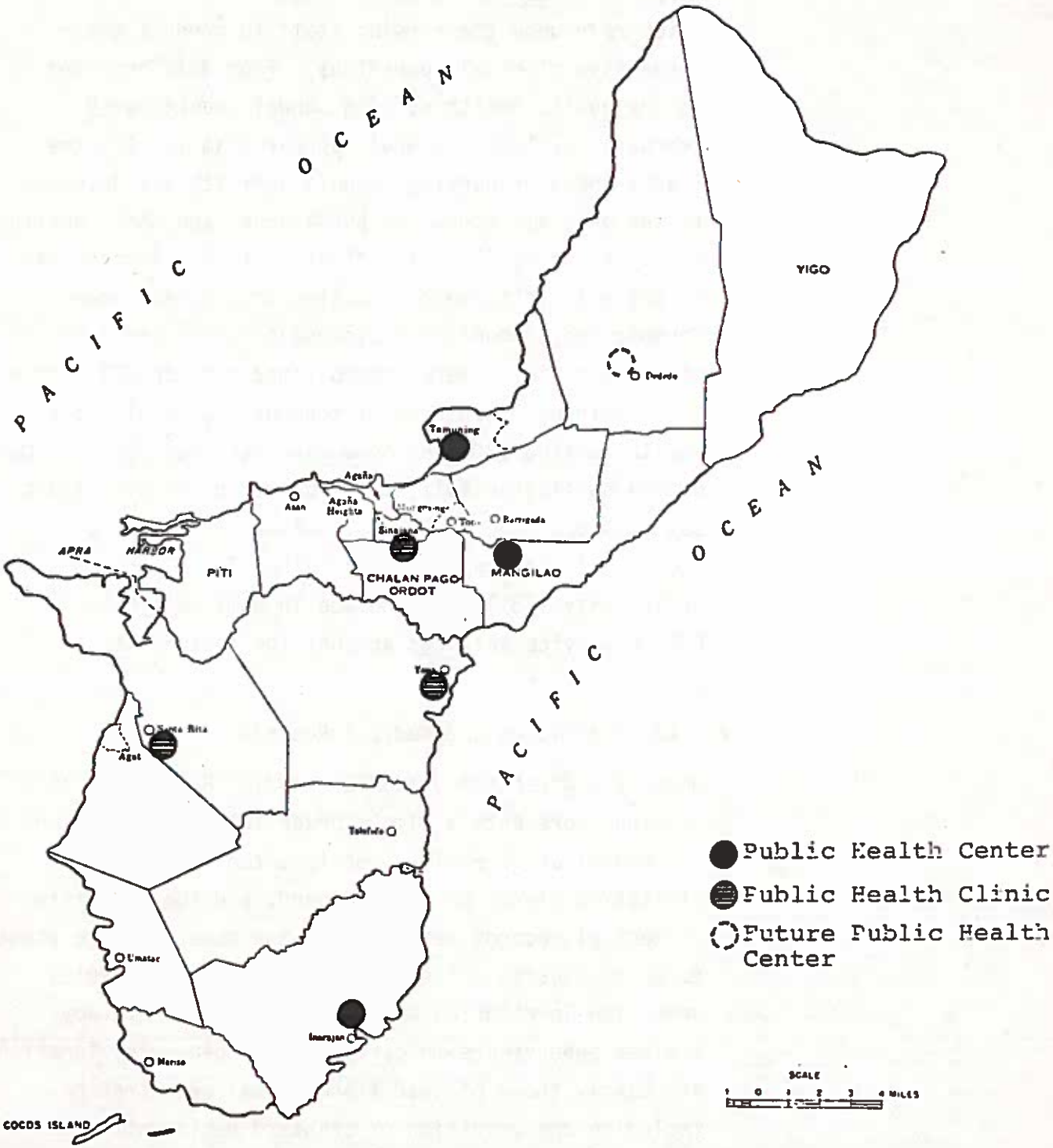
generally be said that this section provides little in the way of specific programs, but stands as the major supportive service to other programs of the Division which rely upon the nursing staff to conduct their respective clinical operations. From data provided in the public health nursing annual report dated February 26, 1981, it would appear that in 1980 the lion's share of nursing support activity was devoted to the programs conducted by Maternal and Child Health/ Family Planning (59% of patient visits). Another 24% of patient visits were allocated to programs under Chronic and Communicable Disease Control, and 4.5% of patient visits were accomplished for the CCS program. The remaining 12.5% were divided over general public health nursing (4%) and home care services (8.5%). Most of the nursing activity takes place in the six clinic settings operated by DPH (61%) (see Figure 13 for locations), accompanied by a rather large proportion of activity (23%) taking place in home settings. Office service settings account for another 15% of patient visits.

- Vital Statistics and Medical Records

Under the direction of the Territorial Registrar, this section represents a simple organization under which the Registrar directly supervises the work of vital statistics clerks on the one hand, and the activities of medical records personnel on the other. There appear to be no clearly differentiated supervisorial roles under the Territorial Registrar, nor are there any trained supervisors to carry this burden. The functions are mainly those of traditional vital registration, including the provision of standard registration of deaths, births, marriages and divorces, and the production of monthly and annual statistical reports. Copies of vital records are now produced manually at

Figure 13

PUBLIC HEALTH CENTERS/CLINICS



great expense of staff. The maintenance of some medical records pertinent to the clinical functions of DPH are a second major function. Not all clinical medical records are maintained in this section, however, with substantial decentralization (and resultant fractionation of individual clients to their distinct disadvantage) of records maintenance now falling to dental, VD, CCS and speech and hearing programs. Under these conditions, it is readily possible for duplicative services to be rendered, important follow-up to be ignored, and routine status checking to be made possible. There is inadequate space for central records storage at present and no standard purging or efficient archival storage programs exist. The section does not contain personnel specially trained in statistical analysis, thus few analytical activities are carried out.

- Pharmacy

The Chief Pharmacist administers pharmacy services which are supportive to all clinical programs of DPH, including those sponsored by MCH, Family Planning, CCS, CDC and Dentistry. This section, housed in seriously cramped quarters, also acts as the central supply unit for DPH, providing supplies and pharmacy support to nursing clinics, the health centers and ECG supplies as well. An important collaborative relationship has been established with the U.S. Naval Regional Medical Center under which DPH has the ability to purchase pharmaceuticals and other supplies from the Navy at greatly reduced cost to the government. A second relationship exists with the pharmacy at GMH under which occasional compounded drugs are obtained, for there is apparently little or no compounding done in the public health pharmacy operations. With the exception of birth control pills which are directly dispensed by public health nurses during clinic operations, all other drugs are dispensed by pharmacists

within this section. At this moment, there does not appear to be a fee schedule and thus all drugs which are dispensed are free of charge to the recipient. The section maintains statutory logs (by program area) of drugs, supplies and other services, and the required Schedule II, III, IV and V narcotics logs and security storage. Owing to occasional cash flow and availability problems, required drugs are not always in stock, although relatively heroic efforts are made often to restore depleted supplies. In these cases, patients are simply referred to outside pharmacies where they are obliged to obtain their medications at their own expense. This occurs regularly in some areas where, for example, public health pharmacies do not provide injectables for diabetes or more powerful anti-hypertensive drugs.

- Public Health Dentistry

The dental section provides diagnostic and therapeutic dental services to a variety of special populations. It is headed by the Chief Public Health Dental Officer, a clinical dentist who is primarily engaged in clinical dentistry, who is assisted by another clinical dentist who also provides dental service at the dental clinic at Southern Area Health Center. The principle thrust of the program presently lies in the field of school age dental health, although broader community dental health and prevention programs are also included. The aim of the program is the enlistment of children beginning at age 2, in an effort to bring them under annual observation and examination with the repair of decaying teeth in order to maintain a suitable jaw structure for permanent teeth which would be expected to subsequently be kept decay free. The program provides limited dental treatment to its target population which includes examination (including x-rays) diagnosis,

cleaning, fluoride treatment, treatment planning and treatment as required except for orthodontics, complicated oral surgery and root canal therapy of multi-rooted teeth. The realities are that few children prior to age 6 receive either public or private dental care, owing partially to the general expectation on the part of families that the school dental program (children are bussed from schools to DPH dental clinics) is sufficient. Additionally, available resources are extremely constrained, with only one seriously over-extended Pedodontist available in Guam. But the time a child actually enters into the school program, owing mainly to poor dietary habits extant in Guam, decay is often far advanced. Current budgetary constraints and a growing population, coupled with general inflation, has the effect of continually limiting even further the number of children examined and treated by this program. In addition to restorative dentistry, the program also includes a school-based fluoride rinse program which offers measurably significant decay retardant effects. The program works closely with Head Start to provide examination and treatment of, unfortunately, limited numbers of pre-school children.

This program also illogically provides examinations and referrals to private dental care for prisoners. This appears to be an unusually wasteful use of scarce dental personnel who are, and should be, more oriented to preventive dentistry rather than to adult restorative work. No dental service is provided at either of the two clinic settings for the elderly and this group is not a part of the primary target audience and dental clinics are not prepared to serve the special problems of the elderly. The patients are referred to the Division of Senior Citizens which, turn, refers them to private dentists for treatment.

The fluoridation of public water supplies represents another major concern of this section. All military water supplies on Guam are presently fluoridated, and some military water is sold to public water supply systems which otherwise presently have essentially no fluoride content. It is our understanding that PUAG will shortly place an initial group of fluoridation units into operation under DPH supervision. The DPH surveillance function will become extremely critical as more fluoridation systems are inserted into various water delivery mains about the island. There appears to be little public and organized opposition to fluoridation of public water supplies, and when extended island wide in an expected three years, this highly cost-effective means of controlling caries should result in monumental future savings in dental care expense and great increases in dental health.

There are, finally, efforts in dental health education, with the provision of educational materials to school children while they await clinical treatment, but this results in individual educational contact only once every two or three years. However, through teachers and school nurses, exposure to dental health education occurs much more often, at a rate of several times each month for each student, outside the dental clinic settings. Little has yet been established in the public media, at work places or through community groups, although parents have been included in the school educational format in an effort to encourage their reinforcement and support of oral hygiene in young people.

- Territorial Epidemiology

The conduct of epidemiological investigations falls to a single individual, who is well trained in public health and epidemiology. Supportive and specialized

roles are played by a part-time neurologist assigned by the National Institutes of Health to work especially on ALS-PD. Significant studies have been completed, most recently on the relatively high incidence of hepatitis in Guam. Epidemiological collaboration, such as with qualified ophthalmologists regarding extant eye diseases unique to Pacific Islands, with clinicians on the high incidence of diabetes, and with respect to development of improved methods of case finding in most public health clinical areas have not, as yet, been fully developed. As adjacent and surrounding political entities begin to emerge in the Western Pacific and should Guam begin to be seen as a regional medical referral center, it can be expected that a flood of new diseases will be observed, the epidemiology of which may be more critical than the care per se in the long run. This bodes an important future for epidemiological activities within DPH and may call for a radical expansion of the present limited service. Support by a qualified biostatistician, and the availability of a broader spectrum of data which could result from establishment of a division-wide information system, would greatly augment the work of this section.

- Communicable and Chronic Disease Section

Four programs are operated under this section which is directed by a physician, with administrative support offered through an administrative assistant and a public health administrator, both of whom are in a staff relationship to the Chief. The physician chief also serves as the primary clinician for the clinics which serve the four major program areas. This would appear to be somewhat of a stand-alone section, given its maintenance of its own exclusive records system for venereal disease, and its employment of its own field investigators and its conduct of its own clinics which

are primarily centralized at the main public health headquarters. However, significant services are provided these activities by nursing, laboratory, pharmacy, and health education and nutrition. The separate investigation staff occurred owing to reductions in nursing staffing, and the separate VD records maintenance due to a lack of records jackets and storage space on medical records.

Of the four programs, the tuberculosis control activity seems to be that in greatest disrepair. There are apparently serious gaps in keeping case files up-to-date, in following up active cases, and frequent problems in ensuring that needed drugs are taken regularly by active cases. The program is further complicated by a flow of immigrants, many of whom either have or soon develop active tuberculosis. The case register is not kept up to date, contacts are not always tested, and cases are not always followed. There does not seem to be a close working relationship between public health nurses and their activities in the homes and clinics, and the investigatory and treatment services of this section, and given acute nursing staff vacancies, there appears little current opportunity to develop such working relationships. There is an expressed feeling that scarce nursing personnel should be dedicated to medical clinics rather than going door-to-door informing patients about appointments and non-medical functions. Thus, specially trained disease investigators are seen as being more appropriate than diluting the clinic activities of nursing personnel. The efficiency of this philosophy is, in part, attested to by the very successful VD program.

On the other hand, the venereal disease control program appears to be highly successful in case-finding and treatment, indicating perhaps some skewing of priority to this area of disease control.

The immunization program of DPH is lodged in this section. Wisely the Government of Guam has enacted a law requiring all school entrants to be brought up-to-date on the contagious diseases immunizations, and this is accomplished through clinics which are provided in schools and other settings. Younger, pre-school children are sought out in surveys which start with the birth certificate. Infants are immunized in well-baby clinics which are operated by public health nursing for the MPH program. At the school age and beyond, immunization levels appear to be quite satisfactory, but it would appear that many pre-school children are missed and remain non-immune.

The Immunization Program consists of two major thrusts.

MCH (which constitutes approximately 1/4 of the total prevention aspect of the program) provides:

Hospital immunization education consisting of visits with new mothers at GMH. This activity is sporadic at present and not well monitored.

A tickler follow-up system of newborns is maintained to detect lack of immunizations among preschool clients.

Also provided are rubella immunity of mothers and rubella screening with women of child-bearing age.

The CDC immunization program conducts:

Disease monitoring surveillance activities involving contact with private clinics, GMH, Naval Regional Medical Center, all military base clinics and all private physicians concerning the incidence of immunizable diseases. Coordination with the Territorial Epidemiologist is maintained daily.

Disease investigation activities involve prompt (i.e., within 24 hours) epidemiologic follow-up of reported cases of measles, polio, diphtheria, pertussis, and tetanus, and follow-up of mumps no later than the next working day.

The follow-up activity involves positive confirmation of the reported disease, identification of all susceptible contacts to the case and arranging for immunizations given to these susceptibles.

A disease prevention components includes:

- immunization status survey of school aged children,
- immunization survey of all day care and Head Start programs.
- public and professional education,
- vaccine distribution to private physicians and clinics upon request, in return for assessments of patients and whom vaccine was given,
- assessment of the MCH vaccine utilization for pre-school clients,
- vaccine ordering, storage, and coordinated distributing, and
- professional consultation concerning immunizable diseases.

Hypertension control represents the fourth major program of this section and is especially important in the context of Guam. It is well documented that diet, diabetes, arteriosclerosis, hypertension, stroke and heart disease make up a formidable health problem as an aggregate in Guam. The detection and control of hypertension

represent one of the more useful points of intervention in this galaxy of interrelated problems and has proven useful as a means of reducing severe complications. Despite this, the current program primarily emphasizes surveys for the purpose of detecting elevated blood pressure. Since the majority of patients screened so far are persons with private health insurance, follow-up of diagnosed patients has not occurred to any great extent in clinics of the DPH. No data are available as to the effectiveness of private sector medicine in case control. DPH clinics do not provide injectables for diabetes, nor do public health pharmacy stocks include important anti-high blood pressure drugs. The case-finding value of the program would be substantially bolstered by the availability of needed pharmaceuticals in public health settings, especially in rural areas where retail pharmacies are not located, particularly as program efforts are extended to public health clients.

- Public Health Laboratory

  The diverse programs of the laboratory are under the central management of a well-trained and alert technologist. This section provides supportive and basic clinical laboratory work for persons receiving medical care through all of the public health clinic operations. Presently, most laboratory operations are centralized in the public health headquarters, although there is a branch laboratory at the Southern Area Health Center. In addition to general clinical laboratory procedures, as yet largely non-automated, the laboratory can provide mycology and microbiological testing. This laboratory also provides environmental laboratory services to support the Division of Environmental Health. Other environmental laboratories are maintained under PUAG and EPA sponsorships as well, with EPA acting as the "controlling" agency for environmental testing.

Little is currently done in the area of toxicology and drug monitoring, although the laboratory skills are essentially in place. A modest investment in specialized laboratory equipment would permit the provision of basic laboratory services related to certain exposures, certain medications and the like.

- Crippled Childrens Services

This section, under the direction of a trained public health pediatrician, operates two major program streams, one dealing with diagnosis and treatment for failing and damaged infants and children, and the second with providing home training for the management of retarded children within the family setting.

Formerly a portion of the broader maternal and child health programs, this section was separated some two years ago owing to the feeling that the overall management was too broad a responsibility for a single chief of service who had no active or competent administrative assistants.

Children are referred to the crippled children service by public health nurses, physicians at GMH or in private practice and the high-risk pregnancy clinics conducted by the MPH program. The CCS Program provides medical and health services to children under 21 years of age who have a crippling or potentially crippling condition. The objective is to provide early identification, diagnosis and treatment and/or referral of children with crippling condition or potentially crippling condition and to provide continuity and supervision of medical care and social rehabilitative services. Children suspected of having crippling or potentially crippling CCS priority conditions are eligible for free diagnostic work-up. Admission for the balance of medical care services is based upon reasonable expectation of cure or restoration of useful

functions and progress for life, availability of appropriate medical personnel, facilities and funds. Based on ability to pay, parents co-share on purchased services such as hospitalization: Treatment includes the following: Follow-up medical care services to patients with congenital heart and rheumatic fever, neurological conditions associated with epilepsy, cerebral palsy and children with delayed development, congenital malformations of bones, joints and residue of acquired disease or of trauma causing handicapping condition, otologic conditions leading to or associated with loss of hearing, ophthalmological conditions leading to or associated with loss of vision, strabismus and corneal opacities. Reconstructive services are provided for those with conditions requiring reconstructive or plastic surgery such as cleft lip/palate and congenital defects or residual of burns and disfiguring lesions causing functional disability. The CCS Rescreening Clinic provides initial diagnostic work-up for patients with presumptive diagnosis of an eligible condition. CCS patients are seen on regularly scheduled CCS specialty clinics held in Central Public Health, Mangilao. Physicians providing the medical services in CCS specialty clinics are either board certified or board eligible specialists in their medical field. The CCS social workers provide coordination of services with other programs and agencies that the patients need for comprehensive medical and rehabilitation care, and counseling of parents and patients. When available, visiting off-island consultant specialty clinics are also offered. While collaboration among the many entities related to this program seems to work well, there is substantial concern among physicians in the community over the relatively low level of funding provided to the program and the difficulty of arranging for off-island care in a prompt manner when absolutely needed.

The home training program represents an innovation which provides to referred and suspect infants and their families training and parental guidance regarding the special care required by retarded children between the ages of 0 and 3 years. Specialist training sessions are held at various locations throughout Guam, and close follow-up communication is maintained with involved families. It is estimated that the program presently reaches no more than one-third of those with retardation problems, however. Beginning at age 3, with cooperation of the Department of Education, supervision of school placed retarded children is then assumed by that department in the schools.

Owing probably mainly to its highly categorical funding base, this program tends to operate, as many others with DPH, as somewhat of an independent entity often receiving sporadic referral and support from other clinical entities. Complete integration of clinical tasks, with other related clinical and potentially mutually supportive activities of DPH has not yet been achieved.

b. Guam Memorial Hospital

Guam Memorial Hospital (GMH) serves as the sole civilian in-patient medical facility on Guam. It has been characterized by frequent administrative turn-over for the past eight years, and represents generally an unstable organization, difficult to describe organizationally except at a specific point in time.

The description which follows reflects the organization and its functioning as of July 1981. It should be noted that within two months of that date a new administrator had assumed office even at the time this report was being written. Therefore, we have no knowledge at this time as to whether changes will be or have been made which might alter the picture presented here.

As with the preceding and the following sections of this report, it is not the intent of this study to perform an in-depth critical analysis of GMH, but rather to provide an analytic description of its structure, operations and capacity to provide hospital care to the people of Guam, and to ascertain its relationship and integration with other health care agencies and organizations within the general health care system.

General Organization

Figure 14 displays the functional organization of GMH as of July 1981, and the sections which follow will treat major elements of this overall organization which we feel are important to understand in the context of Guam's total system of health care.

Governing Board

As with any hospital, GMH has a policy-setting trusteeship in the form of the Guam Memorial Hospital Authority. This is a semi-autonomous agency of government, the seven members of which are appointed by the Governor for specific terms of office. The Authority is charged under law with the operating responsibilities for the hospital. It is also given responsibility for the operation of Guam Memorial Health Plan, a government-sponsored HMO which purchases services from GMH.

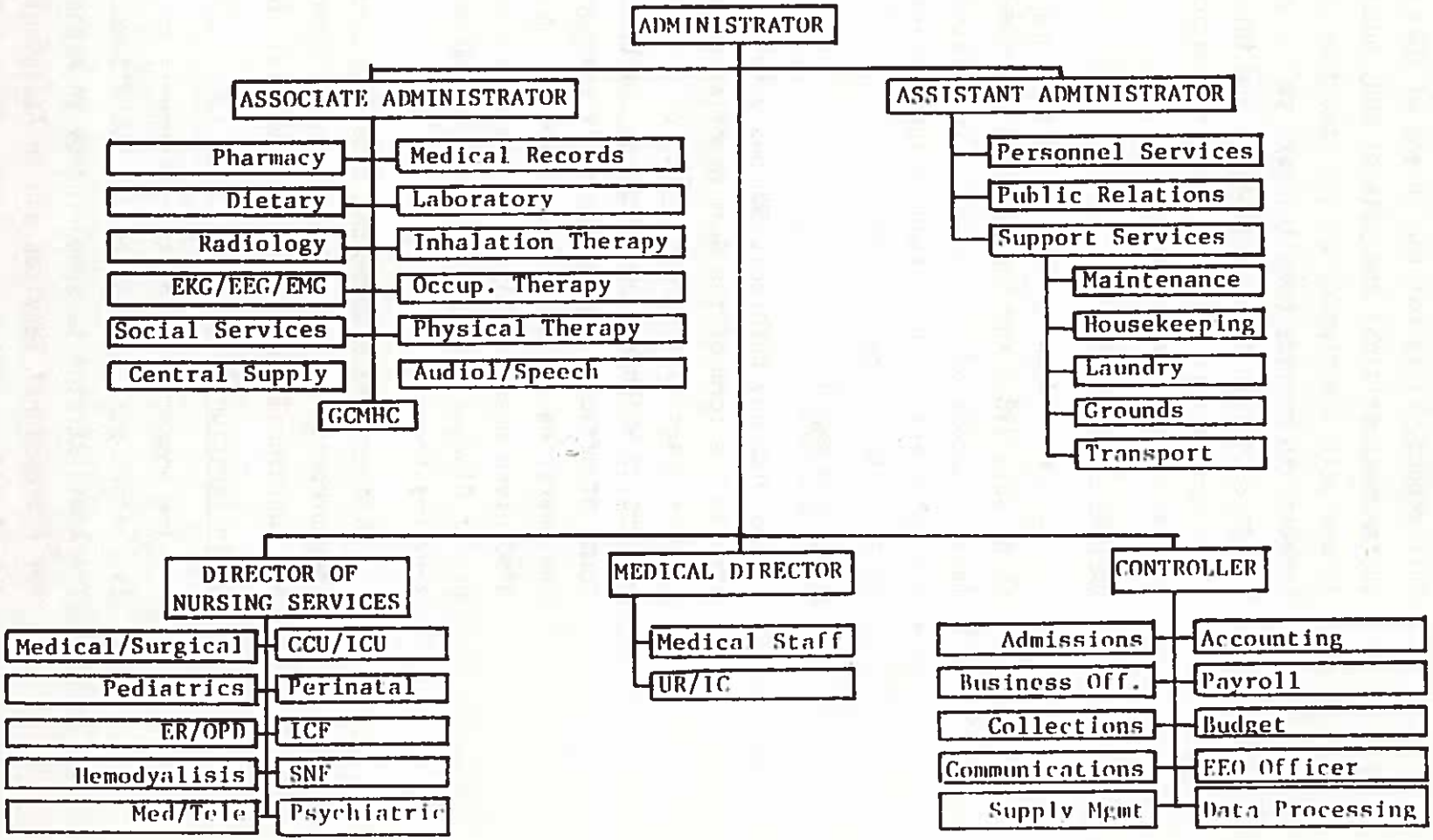
Officers are a Chairman, Vice-Chairperson, and Secretary. The Authority reports directly to the Governor, and contains one functional committee, the Financial Committee.

Administration

The Hospital Administrator reports to the Authority and is charged with the day-to-day operations of the hospital. The Administrator is supported by an Associate Administrator for Professional Services and an Assistant Administrator for Planning, Administration and General Services. Three additional executive positions report directly to the

Figure 14

ORGANIZATIONAL CHART: GUAM MEMORIAL HOSPITAL, JULY 1981



Administrator, the Controller, the Director of Nursing and the Medical Director.

This present organization, representing a radical departure from recent history, has the effect of collapsing to five the number of persons reporting directly to the Administrator. Prior to this organizational form, the head of virtually every operating unit within the hospital reported directly to top management. Present operating conditions appear to encourage substantial daily interference with hospital management by many parties outside the hospital and its trusteeship. Including the incumbent Administrator, over the past four years there have been nine different administrators, testifying dramatically to the difficulty of the post. This lack of continuity in central administration has had adverse effects throughout the organization, but has not apparently affected the quality of patient care rendered.

The Administrator and the Associate/Assistant Administrators, the Medical Director, Controller and Director of Nursing are all appointed by the Authority. However, neither the Administrator nor the Chairman of the Authority are identified as "cabinet" officers of the government, and thus receive little direct administrative support or protection from the chief executive of the Territory. They are in a somewhat distant relationship to other health services of governmental line agencies.

We are aware that the actual functioning of the organization does not precisely follow that depicted in the organizational chart, for many individuals who previously reported directly to the Administrator continue to do so despite the new structure. This can be attributed to the newness of the organizational form and the necessity for the Administrator to approve virtually every expenditure under current conditions of fiscal duress.

Physical Plant

GMH operates two distinct physical facilities. One is about twenty-five years old, in a state of disrepair and is not suited to modern in-patient hospital care. This older facility, separated from the major facility by approximately three-quarters of a mile, currently houses the Community Mental Health Center, the Skilled Nursing Facility, the Intermediate Care Facility, psychiatric beds and some administrative offices. Given the older hospital's physical condition, any attempt to upgrade or renovate it would be exceedingly costly and little could be accomplished at great expense.

The newer facility, the former Medical Center of the Marianas, was constructed by the Roman Catholic Dioscese of Agana. With the growing influx of private practicing physicians in the early 1970's and under a dream characterized as establishing a "satellite of the Mayo Clinic in Guam", the decision was made to construct an independent, non-governmental hospital to which the bulk of civilian medical care was expected to be transferred. When the new facility was finally commissioned, earlier commitments to its utilization by the central core of government physicians were ignored for medical-political reasons, thus depriving the new facility the patient load necessary for efficient operation. Furthermore, and against an extremely low occupancy rate. rampant inflation made continuing private operation of the hospital impossible. It was at this point, and with specially appropriated Federal funds administered through the Department of the Interior, that the government acquired the Medical Center of the Marianas and placed it in operation as the principle physical facility for GMH.

The new hospital is an imposing structure, but suffers from a general lack of preventive maintenance. It consists of two main buildings. One building is an administrative

wing which houses all administrative functions except community mental health and all the support services offices. This wing is connected to the main building by an overhead ramp which is exposed to the elements. The main building contains all patient care services, including a consolidated out-patient and emergency department. Provision was made in the original construction for upwards expansion. A separate boiler room structure completes the main campus.

The main structure has many built-in deficiencies which add substantially to the basic operating costs of the hospital. Distances between nursing stations and patient rooms are excessive, sufficient and secure storage space is not available, and there are numerous areas of wasted space. Considering its utilization rates, the out-patient department is commodious by any standard.

The combined bed complement for both facilities is as follows:

Service	Complement	Certified
Adult/Pediatrics (acute med/surg)	148	148
Skilled Nursing	36	36
Intermediate Care	36	-0-
Psychiatric	17	17

With this bed complement, GMH represents a 165-bed acute/long-term care facility for adult, pediatric and psychiatric services. The available beds provide Guam's population with an acute care bed ratio of almost 2 beds per 1,000 civilian population. The national norm presently stands at 4 beds/1,000 persons, but other areas such as Hawaii do quite well with ratios in the range of 2.8 to 3 beds/1,000 population. Guam's existing beds appear to be appropriately utilized at a rate of about 523 patient

days of care for each 1,000 persons. This compares favorably with U.S. mainland HMO experience, but is still reducible to levels such as the 360 days/1,000 experienced in Hawaii's more complex system. Thus, given appropriately reduced utilization, more beds may not be needed for some time. This is not the case, however, with respect to skilled nursing, intermediate care and psychiatric beds, in which areas Guam appears to be underbedded to the extent of about 15% of what may actually be warranted. The current 72 long-term beds represent a ratio of .8 beds/1,000 population, while in Hawaii (another notoriously underbedded area with respect to long-term nursing beds), the ratio is 3/1,000 persons. However, inasmuch as these beds are principally used by elderly patients and because Hawaii has about twice the proportion of elderly as does Guam, a more appropriate comparative figure might be 1.5 beds/1,000 persons. This suggests a future need of about 50 additional long-term nursing care beds.

Medical Staff

The medical staff for GMH contains two separate cohorts of physicians. At the time of this study, eight physicians comprised the salaried medical staff, one of which served as the Medical Director for GMH. These medical staff members provide support services to other physicians who are in private practice, operate the out-patient and emergency departments, and provide in-patient medical services for the indigent. They also participate as providers under Guam Memorial Health Plan. The second cohort are the bulk of Guam's physicians who are in private practice (including dentists as well) and who are admitted to the medical staff with practice privileges in GMH. This latter group can be further divided into those affiliated with the Family Health Program, the second HMO, which makes substantially less use of in-patient facilities than does the second group of private practitioners, those either

completely independent or affiliated with the Guam Memorial Health Plan as participating doctors. A handful of Naval physicians also have staff privileges, usually associated with their specialty and serving in a very supportive role to Guam's otherwise limited supply of medical doctors.

The Medical Director's responsibilities pertain principally to the salaried medical staff, not to the larger group of physicians with practice privileges. It was astonishing to find the Medical Director carrying out his responsibilities without support of a telephone and with minimal clerical assistance. His principle means of communication within the facility is a bulky "walkie-talkie" which he must carry with him whenever communications are required.

Nursing Department

As in any hospital, this is the major service department. It operates internally with an unwieldly administrative structure with the supervision of closely associated nursing services curiously divided between the Director and Associate Director of Nursing. Perpetual shortages of qualified Registered Nurses plague the operation of nursing service with as many as 20 nursing positions remaining vacant at given points in time, thus contributing to sharply constrained nursing staffing patterns. Despite its problems which are essentially fiscal, the Nursing Department provides quality nursing service to GMH patients.

Laboratory, Radiology and Pharmacy

These classical hospital departments are those of which GMH can be proud. Radiology appears to be one of the true premier departments of the hospital, having adequate space, good basic equipment and is well staffed. "Moonlighting" radiographic technicians from the Naval Hospital further enhance the ability of the department to respond to all

requirements. Major concerns relate to maintaining adequate supplies, continuing education for professional staff, and a lack of new diagnostic and therapeutic equipment. With the proposed addition of a CAT scanner, some of this deficiency will be moderated, but this will in turn require additional training for at least one radiologist to provide maximal service. In the context of other competitors for scarce resources, there remains a question as to the immediate need for this new and expensive technology.

The pharmacy is a modern, well-stocked operation which, however, does not provide full-service 24-hour coverage. During evening and some weekend hours, needed pharmaceutical supplies can be obtained only from limited nursing stocks which are maintained by the hospital pharmacy.

The laboratory is thoroughly modern and well-equipped, and is served by an excellent and well-trained staff of technologists and technicians. It is not presently equipped, however, to do all laboratory tests needed by patients, and must send certain tests to off-island laboratories for completion. It also relies, in certain areas, upon the public health laboratory and a close working relationship exists between the two laboratories.

Physical Therapy, Occupational Therapy and Recreational Therapy

All of these services fall under the responsibility of a single supervisor who is the only Registered Physical Therapist in the hospital. There are no Registered Occupational or Recreational Therapists, these areas being staffed essentially by technicians and aides. The department sees approximately 50 patients per day with approximately 2-3 modalities being provided each patient. Despite understaffing and a high treatment load, the department is well run with high morale and good rapport with patients clearly evident. There has been virtually no addition of

needed new equipment for about six years, however, and a pernicious need always exists with respect to obtaining qualified technical staff.

Central Supply

This department was recently separated from nursing services, and is now free-standing. It provides coordination between the purchasing department and the surgical and nursing units of the hospital, although it is administratively independent of both purchasing and nursing. Proper sterilization practices are maintained throughout the department, but owing to fiscal constraints, adequate stocks for the needs of the hospital are not always able to be maintained, necessitating occasional borrowing from the Naval Regional Medical Center or rush-ordering from mainland suppliers. Items required to be gas-sterilized are sent to the Naval Hospital under a cooperative arrangement. There is a gas sterilizer in the department but, because of lack of funds, it has never been completely installed. Critical and close coordination with operating room supervisors is somewhat lacking, resulting in inappropriate information and scheduling which frequently results in uneven flows of supplies.

Purchasing Department

This department operates under an older school of thought which holds that its responsibility is not materials management but simply materials acquisition. Essentially, it has been in the business of keeping its head above water due to the inability to obtain appropriate funding levels to maintain adequate stocks and supplies for the hospital. Ordering of needed stocks is based on funds available, resulting in orders at frequent intervals for small amounts of goods, often on a rush basis, all of which contributes to an unnecessarily high cost of operation. Instances were noted where hospital purchase orders included air freight

charges, but where supplies ended up in Hawaii having been air freighted only part-way to Guam. Local supply houses have indicated their willingness to provide substantial savings through discounts applied to larger quantity supply orders, and have extended their offer to include assistance in setting up purchasing programs and materials management procedures which would provide a substantial savings over current practices.

Accounting Department

The accounting function at GMH is performed through extremely laborious accumulation and summarization of financial data on an entirely manual basis. The department is faced with frequent demands for financial data from central administration, the Authority and the Legislature. Needless to say, manual processing creates difficulty in providing useful data and also limits its utility with respect to timeliness and credibility.

There is no longer a data processing department within the hospital, other than keypunch and programming capabilities. Programmers do not work at the hospital, but are assigned to the government Data Processing Service to support in part that organization's computer service for the hospital. All hospital data processing is presently done through the central data processing capability which is more payroll than health related. Problems exist with respect to long delays in processing and delivery of needed reports.

Community Mental Health Center

Formerly a line department of the hospital, the Community Mental Health Center is now a sub-unit reporting to the Associate Administrator of GMH. Its staff contains only one psychiatrist whose workload spans in-patient, out-patient and forensic psychiatry. The in-patient physical facilities, in the older GMH facility, are dilapidated and inadequate and, because of staffing

limitations, the opportunity to provide realistic out-reach services appears to be highly restricted. Of great importance is the lack of maximum security rooms for potentially violent psychiatric patients, thus creating serious risks for both staff members and other patients.

The Guam Community Mental Health Center was established some 8 years ago as an extension of the Guam Memorial Hospital, initially to handle the in-patient caseload, and subsequently to develop community-based and out-patient services for the identified emotionally disturbed. After eight years of Federal operations grants funding, the Center was nearly discontinued for lack of continuation funds, until a special Federal Distress Grant was approved for an additional year of operation. However, the next year will be particularly trying for the Center as it seeks to develop alternative sources of funding or face the prospect of shutdown altogether. Administratively, the Guam Community Mental Health Center is under the supervision of Guam Memorial Hospital, a relationship which has proved to be uncomfortable for both parties, one finding it a financial burden, while the other feeling that no real support is extended to the Center. With the creation of the Single State Agency on Mental Health and Substance Abuse an appropriate vehicle has been created in which to review this relationship and suggest alternative arrangements.

Like any federally funded CMHC, the Guam CMHC is required to provide a full range of mental health services, including: in-patient care, out-patient care, consultation and education, after-care and follow-up services, and community outreach. Some services not mandated are felt to be more desirably situated, such as the current location of mental retardation services inside Guam Memorial Hospital, despite evidence that out-patient settings might be more beneficial, at least as an alternative setting. Currently,

Guam CMHC focuses on counseling services to Department of Corrections inmates, youth counseling services in several (not all) public schools, teaching sites for the University of Guam, training for the employees of the Department of Vocational Rehabilitation, and community outreach and services from satellite clinics. At the main CMHC site adjacent to Guam Memorial Hospital are to be found in-patient, out-patient, and after-care services. A major problem with Guam CMHC that is currently being addressed is the lack of a functioning management information system that can also provide documentation of services utilization in a flexible manner. Without such data readily available it is difficult to evaluate the effectiveness of the services provided. While there is currently a high level of service utilization, it is largely due to the presence of a Methadone Maintenance program which brings in about two-thirds of the total out-patient clients. Discounting this client group, it is estimated that the CMHC may have as little as 25% of the national average client-load. This supports anecdotal information that, for Guamanians as for many Micronesians, the concept of using a service for "mental problems" is foreign and undesirable. This stigma is compounded by the public and visible nature of the program's setting which prevents clients from maintaining their anonymity.

Other Salient Services

While the hospital has a nutritionist, food preparation and food service is provided under contract by a private concern which caters most dietary needs. Similarly, laundry services are contracted to a commercial laundry in the community. The advantages of these arrangements have not been clearly demonstrated, but choices to do otherwise are highly limited given in-house staffing and equipment deficiencies.

A general lack of standardization of equipment pervades GMH, seen perhaps most clearly in the variety of non-standardized and out-of-date dictation equipment with which medical records personnel must deal. Electronic equipment throughout the hospital has not been standardized, resulting in multiple sources of maintenance.

Support services which include maintenance, housekeeping, grounds and transportation lack sufficient resources, thus hampering their effective performance. It is currently impossible to provide a systematic program of preventive maintenance owing to shortage of needed supplies and lack of a maintenance plan, and transportation services (usually reflected in a motor pool) is virtually non-existent. There is a questionable level of ability in maintenance to provide highly technical biomedical technical service of delicate equipment.

Laundry service, while contracted out, is hampered by problems with delivery schedules by the contractor, and has a serious lack of soiled linen storage space. Despite these problems, however, GMH appears as a clean, pleasant and presentable hospital.

Finally, the patient affairs department operates essentially as the collection arm of the hospital accounting department, with apparent failure to function effectively. Adequate information gathering and collections data is commonly lacking. Difficulties are further compounded by the a la carte method of posting charges throughout the hospital which makes it usually impossible to provide a patient with a reasonably accurate statement of charges upon discharge. A general lack of means for insurance verification at the time of discharge further hampers effective collection efforts.

Relationships Between GMH and NMRC

Both GMH and NMRC appear to have a cordial relationship which involves the exchange of supplies, drugs and necessary

equipment in times of emergency, the sharing of certain scarce medical specialists, and limited civilian emergency care at the military hospital. The Naval administration has made clear their interest in contract with GMH for the provision of certain basic services which would be otherwise inefficient for the Navy to maintain on a separate basis. Included would be the use of the proposed CAT scanner, certain advanced laboratory procedures, and the services of highly specialized physicians such as a neuro-surgeon.

The Inadequate Financial Condition of GMH

The basic financial condition of Guam Memorial Hospital can be considered to be a patchwork system at best. Patient collections, and collections from various governmental and private third-party program appear to be exceptionally lax, and with the continued infusion of deficit financing there is little incentive to improve the level of collectable debts. Internal operations have consistently turn to the Legislature to provide stop-gap and sporadic solutions to the financial inadequacies.

On the other hand, when the hospital has been under pressure to improve collections, various political considerations and pressures arise with regard to collection policies and serve to constrain actual recoveries from various governmental agencies and HMO payors. In respect to the latter, it appears that services are performed for members of various pre-paid health plans, but poor medical audit procedures at the nursing unit level leads to disparities between the medical record's version of what was provided and the patient's bill. Thus, lack of substantial documentation of actual services provided leads to a continuous series of disputes over bills collectable, most of what remain unresolved and, hence, uncollectable.

Substantial revenues are also foregone owing to inordinately high discounts which are extended to pre-paid health plans such as FHP and GMHP. Discounts to one user (a pre-paid health plan, for instance) is simply an added expense to another user (A self-pay or government-pay patient, for example). Prompt payment of amounts due is usually considered as deserving of some consideration, and discounts in the order of 2-5% are usual as a reward for payment within a 30-day period.

The hospital continues the practice of billing for some physician's services, and this places the hospital in the untenable position of playing financial intermediary for both private and governmental doctors. This practice not only drains substantial energy from an already overloaded fiscal office, but distorts the financial statements and clutters an already overburdened billing operation.

Finally, recent financial statements of GMH indicate a considerable liability for employee withholdings not remitted to the Government of Guam. While this may be simply an internal budgeting device of convenience to the government, the practice could be misunderstood by the public at large, and help to create a poor public image for the hospital.

Criteria Regarding Indigent Care

While there are appropriations made for "medical care of the indigent" (which we believe to be the statutory responsibility of the Division of Social Services to administer), there is no formal mechanism for defining care eligible patients. The current practice is apparently to make the determination in many cases after the fact and subsequent to the patient actually receiving care in the hospital. Without sufficient guidelines to determine eligibility for indigent care, the various agencies providing health services have no effective way of making

fair and impartial determinations when faced with the claimant for indigent (free) medical care. No inter-agency arrangement has been concluded which would effectively assign responsibility for maintaining and monitoring a true program of indigent eligibility determination and service. With the relatively low penetration of insurance into the general population, and the basic illiquidity that exists within the Guam economy, the problem of free care seeking under the guise of indigency has become all the more acute, especially under conditions wherein legislators and other influential persons directly thwart the hospital's attempts at collections from members of their special constituencies. We estimate that between 7 and 10% of the patients served at GMH are eventually considered "indigent" and the costs of their medical service is absorbed into the overall hospital operations. This would appear to be a larger than usual "gap" group (i.e., those not covered by either private insurance, personal ability to pay, Federal benefit programs, or Medicaid). Usually, the truly indigent (general assistance recipients) represent about 5% of a typical population. Until such time as adequate criteria have been developed to define indigency, and until such time as a more or less accurate count of potentially eligible persons have been attained, realistic budgeting for the care of the truly indigent cannot be done. It is our belief that a great proportion of the so-called indigent who receive care represent persons from outside Guam (other Pacific Islands particularly) who are in Guam with very limited local resources and for whom their own governments take no responsibility for medical care. We believe further that some are represented by the elderly who, lacking Medicare enrollment, private insurance and personal resources, turn as they have historically done to the government hospital for both in- and out-patient care in their times of need as if this were an inalienable right and privilege.

Conclusion

Despite its numerous and crippling problems, understaffing in critical areas, and underfinancing throughout, Guam Memorial Hospital is an institution capable of providing adequate care to its patients. It is staffed with highly motivated personnel in key areas. It is an institution being quite candidly taken advantage of through being required to care for categories of patients for which there is no clear source of remuneration, it has become an agreeable and accessible "dumping ground" for certain private physicians who for one reason or another no longer care to continue responsibility for a patient and simply hand them over to GMH house staff. Crisis management has been the rule rather than the exception, and leadership continuity and fiscal stability have yet to be achieved. Recurrent themes have been noted including fiscal constraints affecting every phase of the hospital, critical shortages of qualified personnel, cumbersome hiring processes, protocol violations, lack of sufficient protocols, inadequate in-service training, and increasing staff frustration and evidence of professional "burn out".

c. Other Governmental Agencies and Organizations

In this section, it is our intention to briefly examine a spectrum of governmental agencies which appear central to the overall health delivery system. Less complete operational description is provided, for it would serve only to further expand an already burdensome volume with data which is easily accessible locally. We will, therefore, concentrate on issues relevant to this class of organization as they pertain to the delivery of health and medical services.

(1) Guam Health Planning and Development Agency

This agency's forerunner was the Guam Comprehensive Health Planning Agency, created under P.L. 89-749 as

as a component of the Department of Public Health and Social Services. Under the later P.L. 93-641, the Guam Health Planning and Development Agency (GHPDA) was created as a distinct and separate line department of general government. It presently serves as the government's principal planning unit for health services in the Territory. Its staff comprises an Administrator and Associate Administrator, five health planners, several special purpose consultants and a four-member clerical staff. This agency conjointly provides the planning services for Guam which are customarily provided by both state and local (HSA) agencies elsewhere.

Planning activities include the preparation of regularly updated five-year Territorial Health Plans, annual implementation plans, project review for proposed uses of Federal funds, appropriateness review, and execution of a certificate of need program. To support its planning activities, and those of other agencies, the agency has evolved a model collaborative health information system which, through cooperative agreements with agencies which have original data collection responsibilities, provides GHPDA with the needed flow of health status, health system and environmental data upon which to base its plans and its various reviews.

A closely associated entity, for which GHPDA provides staff support and with which it works in close cooperation in the development of plans and in review functions is the Guam Health Coordinating Council (GHCC). This body, mandated by P.L. 93-641, comprises 26 members appointed by the Governor from designated community organizations for overlapping terms of office. It elects its own officers and creates its own committee structure which contains two major committees -- the Project Review Committee and the Plan Development

Committee. There is also an Executive Committee which conducts necessary business between the regular monthly meetings of GHCC. The Council has fundamental responsibility for the promulgation of the Territorial Health Plan, while its responsibilities for project review and certificate of need determination are purely advisory, with principal responsibility and authority resting with the Administrator of GHPDA in these latter cases.

The agency has undertaken a most ambitious work program for fiscal year 1982, which includes efforts directed to the improvement of agency management and organization and the improvement of inter-agency coordinative arrangements principally with government bodies and health agencies. Plan development and the conduct of mandated reviews (project and appropriateness) are, of course, within the next year's work program. Most lauditory in the project work program are efforts directed toward informing major sectors of the community with respect to GHPDA and GHCC activities and current health planning prorities, and the further recruitment of volunteers to assist with preparation and review of plans and projects. A major development which is envisaged will be the development and implementation of a comprehensive advocacy strategy as a means of moving the implementation of planned actions within the health service providing sectors of the community, and as a means of monitoring the implementation of recommended actions identified in the annual implementation plan.

Planned implementations which require both stimulation and monitoring include such major objectives as the achievement of a pilot comprehensive health education curriculum for the public schools, the provision of a motivation-education program regarding health risk

factors to a large cohort of the working population, and upgrading basic life support services and personnel. Several 1982 objectives relate directly to health status problems, and include substantially increasing the proportion of women who receive pre-natal care in their first trimester, reducing high-risk pregnancies, attaining a substantial increase in screening case-loads, maintenance of immunization levels among Guam's children, and reducing the prevalence and incidence of hypertension and sexually transmitted diseases. Other objectives relate to fostering planned fluoridation of public water supplies, increased penetration of the home training program of the Division of Public Health, and the development of appropriate placements and treatment for patients now inappropriately placed in the mental health in-patient unit of GMH.

Following a current survey activity directed toward identifying the number and general needs of Guam's mentally retarded population, a second special survey is planned as a population needs assessment for women and elderly to determine types of mental health and substance abuse services which these sub-populations might require in the future.

From the foregoing description, a picture of a potentially overstressed agency emerges, with sufficient regulatory, planning and developmental activities already underway or planned which could well consume the time and energy of an agency twice the size of GHPDA. Because of the basic regulatory functions which are vested within GHPDA (i.e., project review, certificate of need, and appropriateness review), and because health planning is directed toward <u>other</u> agencies and entities in both the public and private health providing sectors, the functions and activities of both GHPDA and GHCC have become, predictably contentious, often raising issues which have clear

political connotations. Owing principally to Federal regulations and requirements, much staff time and energy has in recent years been devoted more to the regulatory and control activities. A great deal of agency attention, therefore, centers about determination of public need for various improvements and additions to the health care system, and to the review of project proposals related to various categorical Federal funds. The stage is presently set for the implementation of appropriateness review which can be expected to be viewed with great suspicion on the part of those whose "appropriateness" (apparently, to exist) will subsequently be determined. Thus, here as elsewhere, with engagement in regulatory functions comes a degree of external distrust and an understandable arms-length relationship between the planning/regulating agencies and those agencies and organizations affected by its activities. The latter have strong constituencies, many of which are political and some of which are economic and entreprenurial. When "sacred" interests are at stake, planning agencies usually experience the full thrust of external power as subsystem constituencies move to protect their respective vested interests.

An interesting example of the foregoing is the occasional use of GHPDA by some members of the Legislature as a body to which they turn for private advice and comment on legislative matters pertinent to health, employing GHPDA much in the manner as more mature legislatures might use their legislative reference bureau for specialized research and background documentation. However, playing out this role (i.e., as a confidential legislative advisor) without the direct involvement of agencies and organizations which are the potential target of the advice and comment has in the past placed GHPDA in what often appeared to be an

adversarial role with respect to some elements of the health care system, in the sense that they became viewed as the "enemy" by those who were directly affected by such private advice. From the earliest days of Federally-initiated health planning, the intended role of planning agencies was that of partner in development. While GHPDA, its leadership and staff, clearly do not view themselves as adversaries to the providing community, the roles which both Federal and Legislative authorities have placed upon them have created this allusion, most noticeably in the minds of prior administrations at Guam Memorial Hospital. Two current developments can be expected to go far toward ameliorating this condition. First, the Federal Omnibus Budget Reconciliation Act of 1981 has substantially reduced the impact of the often despised (by the providing community) certificate of need authority, by requiring CON reviews only for projects entailing more than $600,000 for new capital expenditures, $400,000 for the purchase of major medical equipment, and $250,000 in annual operating costs for new institutional services. There can be expected to be relatively few future projects in Guam which would exceed the newer limits, and thus very little in the way of future CON activity can be projected. Furthermore, the former Administrator of GHPDA has recently assumed the position as Administrator of GMH, and it appears a much higher degree of collaboration between GMH (if not between other delivery sector entities as well) and GHPDA can be expected to result.

With the prospect of either sharply reduced or non-existent Federal support for health planning beginning as early as fiscal year 1983, the future of this agency is somewhat unclear. With uncertainty as to future Federal support and a concurrent slight degree of instability in Federal program staffing, there is a

parallel potential for relaxation of attention to strict adherence to some less important Federal regulations. This opens, at least in the short-run, exciting opportunities for the diversion of GHPDA staff efforts in directions other than routine and troublesome regulatory functions, and these could be the topic of fruitful retreats with staff, GHCC members and Legislators. The health plans which have been developed to date are considered rather good in comparison with other plans developed in other states. The current plan embraces major areas of health problems in Guam, and as described previously, the agencies immediate work program calls for substantial attention to implementing recommended actions. The arena of plan implementation may not become the principal preoccupation of GHPDA staff and leadership, with very little future attention to the less rewarding regulatory functions. There is room, however, for expansion of scope of interest. For example, in most of the prior project reviews and certificate of need determinations, work has been devoted largely to governmental health services (i.e., DPH&SS, GMH, and others) with very little activity affecting the private delivery sector. Likewise, the great majority of GHPDA work program elements are directed to the implementation of activities to be carried out by public sector agencies and organizations, principally DPH&SS. Many other issues are raised in this study, including the recruitment of needed new physicians for the private sector, professional licensure affecting both public and private sector providers, malpractice insurance, new kinds of health facilities and programs for the aged, Medicaid reimbursement problems, and financing of Guam Memorial Hospital to name but a few. GHPDA stands as the one body which can help create understanding and assist in implementing solutions for these critical matters.

The GHCC is an eminently representative and capable body, representing as it does a good balance of the interests of health care providers and consumers. However, it strikes us as curious that its membership does not routinely include key administrators within the health care system. We are convinced that the majority of GHCC members hold the expectation that their appointment was for involvement in health planning and constructive building of a new and improved health care system for Guam. We believe the majority to be truly interested in improving the health of Guam's citizens and the health of the medical system which serves their needs. As forms of political in-fighting and side-taking on troublesome issues fade away in favor of collegial, hand-in-glove collaborative planning for improved health services (which we believe they will), it can be expected that a fuller degree of participation in problem analysis and solution finding will occur on the part of GHCC members.

(2) U.S. Naval Regional Medical Center

While not directly a functional component of Guam's civilian health care system, except for the occasional receipt of emergency cases, the Naval Hospital is engaged on several fronts. This hospital is staffed and equipped to deal with the in-patient needs of active duty military personnel on Guam as its first priority. Second priorities for care relate to dependents of retirees and veterans. Given this relatively limited clientele (estimated at between 30-35,000 persons) the obligations, budgeting and staffing of NRMC is understandably limited. For example, certain medical specialties (such as neurosurgery, for example) upon which the civilian sector has become accustomed to depend, cannot truly be justified within NRMC's

staffing pattern, for the need for such specialized care is quite infrequent among its primary service target population.

The Navy has provided substantial medical staffing support, and through professionally trained dependents, substantial nursing and other technical support to Guam's general health care system. Naval medical officers are allowed up to 16 hours of compensated medical practice per week after normal duty hours. Further professional service may apparently be volunteered with no specified maximum. They may not, however, work in civilian medical settings during duty hours unless specifically assigned to such duty. A mix of all the foregoing modalities has served to support Guam's needs for medical specialists in the past. This is, at best a tenuous situation which can collapse at a moment's notice and cannot be depended upon in the long run.

With an escalation of pressure upon the Veterans Administration to be more realistic in providing medical care for eligible veterans on Guam, the Naval Hospital can be expected to assume some, but not all, of this added case load through contracts with the V.A. The remainder of such entitled medical care may, in the future under expanded V.A. funding and attention to Guam, fall to GMH and/or the civilian delivery system generally. However, many older retired persons, have become accustomed to receiving medical care through Naval facilities and even if future financing schemes should make available civilian services, they could be expected to continue their dependency upon military services. The military system is, however, not well equipped to deal with older patients who often are not prone to follow medical regimes or medication protocols, and the NMRC does not provide the level of patient education service which older populations customarily

require. There is presently no vehicle for referral for follow-up to village level public health nurses for NMRC patients upon discharge, and no linkage with governmental health education services for support of such patients.

Naval drug and pharmaceutical supplies provide frequent support for public health pharmacy needs, at a substantial savings in cost to the government. In the other direction, when newer technology such as CAT scanning is added at GMH, there is likelihood that NMRC will come to depend to some extent upon such technology from the civilian sector. As mutual dependency grows in the future, the opportunities for the formalization and routinization of such arrangements present themselves, for there is then incentive on the part of both parties to enter into collaborative agreements.

(3) Environmental Protection Agency

This semi-autonomous agency was founded under Guam statute in response to enabling and mandating Federal legislation, and as in most states, was separated from the more traditional environmental protection activities of public health and made a new entity within government. Its responsibilities, which include the complete environmental surveillance and monitoring of air, water, sewage, toxic substances and solid wastes, closely approximate and in some cases appear to duplicate those of the Division of Environmental Health in DPH&SS. The major point of difference is in the development of concrete plans for the safety of each environmental area of concern to EPA, and the promotion and use of enforcement powers to gain adoption and enforcement of such plans. EPA activities, furthermore, include assistance and advice to operating agencies such as PUAG to help in arranging necessary funding

to carry out planned environmental improvements, especially in the construction of needed water and sewage systems. Since its responsibilities are so close to many other governmental agencies, it is important to note that strong working liaisons have been established and maintained between EPA and public works, public utilities, and the Bureau of Planning. Other working relationships exist with DEH/DPH&SS. It is unfortunate that this well-run, competently staffed, agency which provides outstanding services to the community is nearly totally reliant on uncertain Federal funding, with only a small proportion of its operating budget deriving from locally appropriations and recoveries through permits and fees. The Agency is funded jointly by federal (75%) and Territorial (25%) governments for a total 1981 budget of $930,000, with a staff of 40-plus persons.

In general, GEPA officials feel that they are operating in a "preventive mode", having undertaken and completed most direct clean-up and reclamation work in the past.

The main problem still threatening Guam's overall environmental quality is the lack of proper sewage disposal facilities, in terms of basic collection and and routing, in urban as well as suburban areas. In the past, high case rates of hepatitis in southern Guam (Umatac and Merizo in particular) helped spur EPA and other agencies to concentrate sewage treatment facility development in the south part of the island. The facility package has included treatment, interceptors, and collectors, but it remains to have a sufficient number of households connected to the system; the actual incentives for such connection are limited to small subsidies, which are not attractive in view of currently utilized home cisterns, however adequate. Individual houses for the most part still depend on

over-used home systems which have contaminated ground surface and ground water and thereby created hazardous environmental conditions and public health hazards which have yet to be controlled. A "Sewer Construction Priority list" was revised in 1981 and now forms the basis for extending sewage collectors and interceptors to major residential areas, such as Dededo, Barrigada, and Mangilao.

A second major area of concern is water quality. In 1980, a Water Facilities Master Plan was completed. An estimated 70 to 80% of all potable water is of high quality at present. However, the distribution system for that water is outdated and is easily contaminated in certain areas. Again, the deficient area is southern Guam. The Plan lays out orojects required to adequately capture and treat water, rather than simply disinfect a poor quality supply. It is estimated that $68 million in capital improvements are needed to implement the Water Facilities Plan, but no dependable Federal source of funds exists at present, and little Territorial money is allocated. PUAG does have a small grant presently to install fluoridation equipment in southern Guam. EPA, however, is responsible for the implementation of the Plan but recognizes that they have fallen behind schedule, largely because of local (village) political pressure to deviate from the established ordering of projects.

A third initiative is solid waste disposal. The indiscriminate disposal of solid waste on Guam is a major program and contributes to the overall hazardousness of the environment by providing breeding grounds for various vectors. Three landfills are present on-island: one at Andersen AFB, one at Naval Station, and one public landfill at Ordot. This public landfill is not controlled at all and is a major hazard itself. A Master Plan for Solid Waste Disposal

has been formulated and calls for tighter collection, storage and disposal regulations, non-landfill site dump removal, and transfer station upgrading. The Department of Public Works is responsible for solid waste operations and EPA has sought tighter coordination with that Department.

Finally, EPA also monitors air quality, which is quite high overall, and controls pesticides, from introduction to the island and distribution, to final utilization. The Agency has noted that particulate counts overall are high and that bronchial problems are largely due to the dust generated in dry and unpaved areas; silica content of southern soil is also implicated. EPA has a well-trained staff and an efficient management, and the Agency works well with a variety of public agencies on Guam, including Public Health. It should be regarded by these agencies as a major resource for technical and planning assistance in the area of environmental control, management and enhancement.

It is our belief that it is not uncommon that scheduling of various aspects of EPA plan implementation is altered through political pressures brought to bear upon other government agencies which have the implementation responsibility and authority, foregoing needed and planned environmental improvements in favor of other projects or spending priorities.

Because of the seeming duplication of services, there have been suggestions that, at the very least, the laboratory functions now provided by the EPA laboratory could be economically merged with either those of public health or GMH. A more extreme thought has been the administrative merging of all environmental health activities of government in a single agency. However, given the general high quality of

laboratory, field surveillance, and general top level supervision of environmental concerns provided by EPA, it is likely that should this agency be subsumed under another that both quality and economy of function would suffer severely.

(4) Vocational Rehabilitation Agency

This agency, with a staff of 63, provides services including evaluation, counseling and guidance, rehabilitation services, job placement and follow-up. Service provision is arranged through the purchase of service from private physicians, operation of the Asan Center for day care for the severely handicapped, the Rehabilitation and Workshop Center which provides vocational and work evaluation, personal and work adjustment, and job placement, and the relatively new Life Skill Center administered by this agency for the developmental disabilities program. Vocational evaluation is a special service provided at the Rehabilitation and Workshop Center wherein vocational strengths and weaknesses are evaluated and a vocational plan of action developed for the physically and mentally handicapped. The Rehabilitation and Workshop Center, while a non-profit voluntary association, serves clients of the agency under a special arrangement.

Despite these strengths, there are gaps in coverage. No group homes presently exist where handicapped persons could help themselves and one another by sharing their limited capacities and harnessing them into saleable and productive work. There are apparent deficits in training methods on the part of trainers at the workshop, with little in the way of educational input to improve their teaching skills.

From the perspective of clients, there appears to be a general reluctance of families in Guam to fully use rehabilitation services which are available, but

rather to look the other way and accept the the handicapped person as a normal family burden and responsibility. New trainees, therefore, come into programs without basic education, thus doubly burdening the programs. Clients, especially the congenitally handicapped, tend to start late in life with rehabilitation, but as this relatively new program matures and outreach is improved, it can be expected that candidates will be identified and recruited much earlier in life with a more favorable prognosis for successful care. The present system, whereunder those on DVR payments receive and equivalent reduction in SSDI funding simply means that the handicapped on Guam works to become trained and rehabilitated without coming out ahead in any real financial sense. This disincentive works against continuing with the often difficult vocational rehabilitation efforts as opposed to less demanding SSDI support system. Given the impressive leadership in this agency, and if the health related agencies of government were brought together to work as a team in behalf of the physically and mentally handicapped, the major issues blocking broader rehabilitation efforts could be worked out rapidly and adequately.

(5) Mental Health and Substance Abuse Services

Guam has been strongly impacted by widespread and rapid changes of an economic, social and cultural nature, which have probably left no household unaffected. Some of these changes have had the result of introducing an undesirable level of stress into the lives of working people, families, children, and young adults. A particularly devastating stimulus was the heavy concentration of U.S. military personnel in combat relief status on Guam during the Vietnam War years, which had the effect of introducing the young civilian population to several different kinds of drugs, including heroin and marijuana. Heroin addiction rates

climbed steadily through the early 1970s and peaked, it is believed, in 1977 or 1978, especially after eight persons died from drug overdoses. By 1980 there were perhaps only 500 heroin addicts on Guam, down considerably from years prior, and a 1981 estimate is that there may be only 100 to 150 addicts remaining. In the last several months, however, there is some concern that heroin re-introduction may initiate a new cycle of addiction. Along with the increase in the addicted population, of course, has gone a tremendous increase in personal and property crime.

It would also appear that alcohol abuse is both highly prevalent among young adults (and even teenagers in schools) and widely recognized as a problem. Two surveys conducted in the past two years have targeted respondents in the Government of Guam and in the island's secondary schools. Both sources indicated great concern with alcohol and drug abuse.

There has been much less documentation of the nature, kinds, and consequences of stress that affect various groups in the population. Certainly the rapid pace of modernization and acquisition of or search for an American style of life and material luxury have led to severe strain on traditional cultural and family practices, on family relationships in households where both spouses are working to bring in desired or necessary income. The manner in which stresses accumulate, and develop into various behavioral and emotional problems including mental illness are not clearly understood, however.

There are at the present time a number of private sector providers of counseling and psychological/psychiatric services and thus there are alternatives on-island to the Guam CMHC. Some of these alternative resources are: The Behavioral Clinic, run by

Dr. Kanaiapuni, a psychologist with counseling skills, Catholic Social Services (a recent service addition) and their substance abuse counseling program, and Human Services Corporation run by Phyllis Luminelli.

Unfortunately for Guam, many individuals were unable to secure any help for substance abuse problems until quite recently, in the absence of any formal services. Currently, however, Catholic Social Services (as mentioned) has a one-year counseling and residential treatment program, and the Guam CMHC has had a Drug and Alcohol program; the methadone program has been in existence for some time, while the alcohol program has been in existence for about one year.

The Mental Health and Substance Abuse Agency (Single State Agency) has been in existence since February 1978 and is mandated to provide a central coordinating function for services and programs dealing with mental health and substance abuse problems. To this end, MHSAA has spent much of its time to date gathering information and assessing the problems of the Territory. Two problem surveys have been conducted in the past year or so, including surveys of alcohol used by Government workers and by school children. The Agency also spends a considerable amount of time collecting data and implementing improved data base systems for the island, although the detail and variety of dataforms being provided may be excessive for such a relatively small to medium sized planning environment. MHSAA works closely with Guam CMHC, especially since providing technical assistance in producing the Federal Distress Grant for Guam CMHC, as well as with GMH, Department of Public Health and Social Services, and Guam Health Planning and Development Agency. Essentially the Agency is a technical branch that can provide assistance in planning, training, and data collection and processing, as well as some evaluation

skills. While direct service impact is limited to two substance abuse programs of any weight at the present time, MHSAA looks forward to implementing a storefront program for crisis intervention, information and referral, and social (alcohol) detoxification. A major interest is also expressed in developing a standing service, linked to the Department of Public Safety, for individuals arraigned on charges of driving while intoxicated (DWI) to help them control their alcohol consumption habits. In all, it can be said that despite years of operations for mental health care and the services of a Single State Agency, there is still much room for improvement in the delivery of comprehensive care on Guam for this problem area.

2. The Private Sector Health Delivery System

Equally impressive as the network of governmental health and medical care services are those only fairly recently mounted through private initiative and sponsorship. In the sections which follow, we have divided the private sector analysis into three parts, the first dealing with financing systems (health insurance and pre-payment), then private professional practice, and finally private agencies and organizations of a voluntary, non-governmental nature.

a. Health Plans

There are three major health insurance or pre-payment plans presently available to Guam's people. Another 25 health insurance programs cover smaller numbers of enrollees. While one of these is governmentally sponsored (the Guam Memorial Health Plan), it has been included in this section for comparative purposes.

Health insurance and pre-payment is often viewed as the backbone of the health care system, inasmuch as it provides the vehicle through which individual people gain access to needed health care. Unfortunately, in most cases the organization of financing (e.g., insurance programs).

is done without regard to the organization of the services for which the financing program pays, and without regard for the quality of the service provided beneficiaries. It is encouraging to note that in Guam, at least with respect to the two largest pre-payment programs operating, both finance and service organization have been accommodated in plan development, in the form of prototypical health maintenance organizations.

It was estimated in 1977 that approximately 45% of Guam's civilian population was covered by employer subsidized pre-paid health insurance. At present, we estimate the total insured to represent about 51% of the popuation, with the remainder distributed as illustrated in Table 24.

Table 24

Distribution of Guam's Population With Respect to Medical Care Financing

Poor and categorically needy (Medicaid and indigent care)		12%
Uninsured		33%
Poor and uninsured, but not eligible for categorical programs.....	10%	
Working uninsured.....	23%	
Insured		51%
Other Entitlements		4%

Those included in the insured population are covered primarily through health insurance benefit programs offered by the Government of Guam for its employees, the Federal government for its, and by a few of the larger commercial employers. Other are included under plans offered by smaller employers (estimated at about 60% of businesses offering some kind of health insurance plan to their

employees), but in this case the extent of coverage is quite uneven and the respective employee-employer proportions of premium payment are irregular, variably requiring the employee to pay all, half or none of the premium.

(1) Guam Memorial Health Plan

This is non-Federally qualified health maintenance organization sponsored by the Government of Guam as an autonomous sub-agency of the Guam Memorial Hospital Authority. In this case, the Authority acts both as trustee for the hospital which provides services under the plan and as trustee for the HMO which purchases services by negotiation from the hospital and other entities.

GMHP presently enrolls approximately 20,000 members, a great majority of whom are government employees who have taken advantage of the lower premium structure offered by this plan in contrast with competing options. It is our understanding that the lower premium structure in fact reflects a degree of subsidization by GMH through favorable rate negotiations with GMH. The plan is classifiable as an independent practice association (IPA) form of health maintenance organization, whereunder not only hospital services are arranged by negotiation with GMHC but the service of some 40 private physicians, 9 dental clinics, 15 pharmacies, 7 optometrists, and 3 laboratories all combine to form the service delivery structure. Within this network, individual plan members are expected to localize their receipt of medical care with relatively free choice of primary provider at the outset. Each participating provider relates to the plan on contractual basis through an agreement with the Government of Guam, with the contracting provider being paid a fee based on the percentage of premium dollars collected.

The key problem presently facing GMHP is essentially financial. The plan appears to have been considerably underfunded in its infancy and this was apparently a device used to provide a false savings to the members of the program. The plan is further complicated due to the politics it is confronted with from both its major competitor (FHP) and its sole provider of in-patient services, GMH. As is typical with most unsophisticated IPA forms elsewhere, physicians participating in the plan appear to be over-utilizing hospital facilities. This may in part be due to the general lack of malpractice insurance and the consequent practice of "defensive medicine". The ratio of monthly charges incurred at GMH to total plan membership appears to be about 50% greater than the competing FHP program which makes substantially less use of in-patient resources for its membership.

(2) Family Health Plan

This plan represents the classical group practice based health maintenance organization, built upon the foundation of a medical group practice of approximately 18 physicians. While the plan purchases from other providers various medical service for its members when necessary, it is essentially self-contained and operates its own complete pharmacy and clinical laboratory services. It presently enrolls approximately 23,000 regular members and an additional 5,000 general members. Clinic hours at FHP (and at most other private medical locations) are constrained to day-time, week-day periods mainly. Accordingly, for off-hour medical services, large numbers (approximating 2,500 each month) of FHP members and beneficiaries of other insurance plans seek physician care at GMH out-patient department. Since GMH billing is lax or non-existent, this results in a "windfall" for the affected pre-payment plans, inasmuch as their beneficiaries receive essentially free service.

FHP appears to be efficiently run, and among other novelties (because it is based in California) it is able to obtain malpractice insurance for its physicians and other professional providers. Accordingly, it appears that FHP members' hospital care is closely monitored through an internally administered quality assurance program which controls unnecessary (and costly to the plan) hospitalization.

FHP is a wholly-owned subsidiary of a California-based HMO firm, but is locally administered by a strong management team which is clearly on the offensive with respect to plan efficiency and market penetration. As such, it represents the dominant and most cohesive health intermediary system on Guam at this time.

(3) Health Maintenance/Life Insurance Program

HML is a purely indemnity insurance program such as the more familiar Aetna, Prudential or Hawaii Medical Service Association (Blue Cross/Blue Shield). Because of the customary deductible and co-insurance features standard among such plans, it has been subscribed to a far less degree than either FHP or GMHP which offer lower out-of-pocket expenses at the point of service at a somewhat higher premium cost. The lower market penetration of this, and other, indemnity plans in Guam is in direct contrast to their predominance in other places, and stand as clear testimony to the local preference for the more organized health maintenance forms of programs. This probably, in the case of Guam, stems from the earlier days when virtually all medical care was provided in highly organized, governmental clinic settings as opposed to the more traditional solo physician office setting. It is, in our opinion, a trend to be encouraged through major policy decisions.

b. Private Professional Practice

Here we have further subdivided the private sector system into six major components -- private medical practice, private dental and other professional practices, private clinical laboratory, private pharmacy, medical supply and indigenous healers -- each of which can be seen as a major sub-set of this important sector.

(1) Private medical practice

Following the end of World War II, and beginning about 1950, the initial civil government of Guam began divorcing medical care provision from the former Naval auspices, through the recruitment of physicians from abroad. The initial cohort tended to be displaced doctors from Europe, who responded to recruitment efforts and established early private practices in Guam side-by-side with part-time Navy physicians. A few years later, in response to clear needs for more and better trained physicians to serve both in- and out-patient needs of Guam's people, the Catholic and Seventh-day Adventist churches opened their respective clinics, each of which employed from three to four physicians, mainly Filipino doctors coupled with a few U.S. trained medical specialists. The latter clinics grew slowly in size, and in the early 1960's were transferred to the present center of physician care -- Tamuning.

Attracted by a growing caseload and opportunities for private practice, an increasing number of private physicians began relocating their practices to Guam during the late 1960's and early 1970's. Thus, the private practice of medicine in Guam is of relatively recent vintage, and the growth and development of this sector has yet to peak.

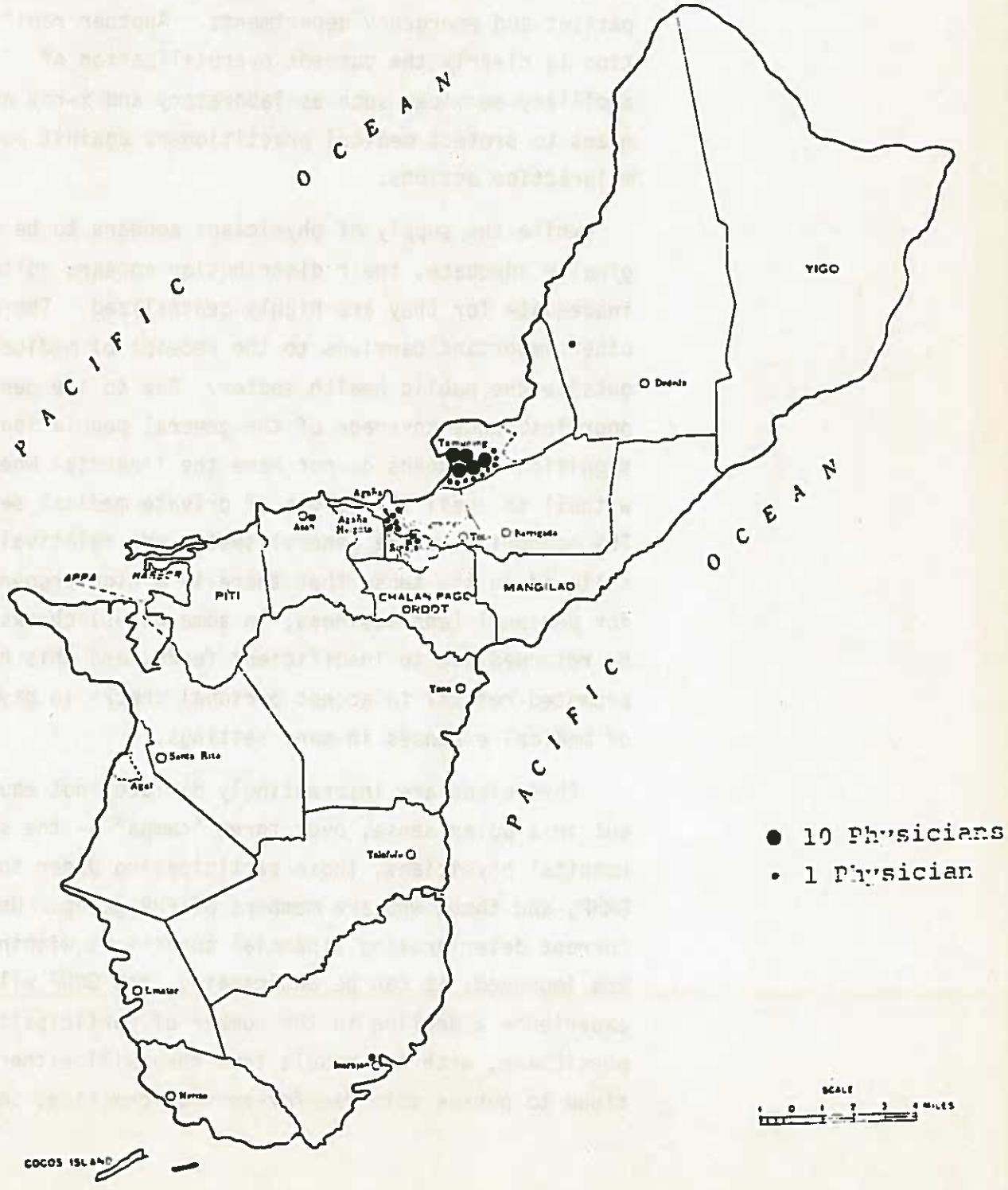
Presently, physicians in the private sector practice in three primary types of setting: the medical group, smaller medical clinics, and solo independent practice offices. A fourth group of physicians, employees of GMH, practice exclusively in the hospital setting, offering both in- and out-patient care in which they are complemented by the larger group of private practicing physicians.

Approximately 14 physicians are presently in the solo practice of medicine, although the name given to their practice setting (i.e., "XYZ Clinic") belies the solo nature of their practice. An additional 17 or so physicians practice in more formal clinic settings wherein two or more physicians representing differing specialties practice side-by-side, in some cases offering rather complete laboratory and pharmacy services as adjuncts to medical practice in the same setting. The remaining physicians, numbering about 40, practice in more formal group practice settings in four major settings: GMH staff practice, FHP, SDA Clinic and ITC Clinic. Nearly 100% of all physicians are located in a very constricted area of Guam, as illustrated in Figure 15. This same area also contains two governmental medical care settings, the out-patient department of GMH and one of the public health centers.

While there appears to be generally an adequate supply of primary physicians, i.e., family practice and general practitioners, physicians generally agree that important unmet needs exist in the areas of neurosurgery, family practice, pediatrics, obstetrics, chest and vascular surgery, ophthalmology, oncology, cardiology and neuroradiology. Some of these specialities can be developed with minor added training for existing physicians. Greater attention to physician and other health personnel shortages will be given in the later section of health manpower.

Figure 15

LOCATION OF PHYSICIANS



The ability of this community to attract needed medical specialists in the numbers required appears to be closely related to the general inability of physicians on Guam to obtain malpractice insurance. This situation also may be a cause for some primary and more common specialty physicians to "dump" cases perceived to be fairly high risk upon the GMH outpatient and emergency departments. Another ramification is clearly the current overutilization of ancillary services such as laboratory and x-ray as a means to protect medical practitioners against potential malpractice actions.

While the supply of physicians appears to be marginally adequate, their distribution appears quite inadequate for they are highly centralized. There are other important barriers to the receipt of medical care outside the public health sector. Due to the generally poor insurance coverage of the general population, significant numbers do not have the financial wherewithall to avail themselves of private medical services. The economics of the general system are relatively illiquid in the sense that there is a high propensity for personal (and business, in some cases) checks to be returned due to insufficient funds, and this has prompted refusal to accept personal checks in payment of medical expenses in many settings.

Physicians are interestingly divided, not equally but in a polar sense, over three "camps" -- the salaried hospital physicians, those participating under the GMHP, and those who are members of FHP group. Unless current deteriorating financial conditions within GMHP are improved, it can be anticipated that GMHP will experience a decline in the number of participating physicians, with the result that they will either continue to pursue solo fee-for-service practice, seek to

join forces with FHP or perhaps move to create yet newer physician-sponsored smaller HMO-like plans of their own.

Physicians on Guam are not specifically licensed by any local authority, but are permitted to practice based upon their licensure elsewhere. The lack of local standards and control over this profession undoubtedly works against the interest of insurance companies in extending malpractice insurance to physicians in Guam. Interesting features of medical practice, such as providing dispensing pharmacy services, are to be found in Guam but would not be ethically or legally permitted elsewhere.

The practice of many existing physicians is further constrained owing to the unavailability of technical equipment which would extend the limits of their practice, the acquisition of which would not be economical for an individual physician. For example, owing to the lack of sophisticated ophthalmology and orthopedic equipment and technology (usually expected by physicians to be available to them as a part of general hospital equipment), cases are unnecessarily sent abroad where the required equipment exists. Some emergency cases which require referral abroad are of such emergent nature that even the brief delay represented by flying time to Hawaii results in disaster for the patient.

As noted previously, primary medical care for the poor is highly fragmented with only a handful of physicians willing to put up with Medicaid reimbursement policies, with the medically indigent shunted almost exclusively to the GMH out-patient department, and with virtually no physicians practicing in proximity to the rural areas where the preponderance of the poor are to be located.

The Guam Medical Association appears relatively weak, and has done little to encourage opportunities for continuing professional education, quality appraisal, peer review and discipline, self-insurance programs, and other features which characterize more mature professional communities.

(2) Private Dental and Other Professional Practices

Dental services are provided primarily by private practicing dentists, although a smaller but well-developed dental program also exists within public health. There are an estimated 28 licensed dentists in practice in Guam, reportedly with capabilities in providing general dentistry, pedodontics, oral surgery, periodontics, endodontic, orthodontics and prosthetic services. As with physicians, dentists are heavily concentrated in the Tamuning area as illustrated in Figure 16. Owing to a relatively sparse population of dentists in practice, Guam relies more heavily than elsewhere on dental hygienists, dental assistants of various types and dental auxiliaries to augment the work of professional dentists. The practice of dentistry. like that of medicine, is not locally controlled through rigorous licensure, with reliance on licensure elsewhere being the standard means of evaluating competency to practice. Malpractice insurance coverage is generally not available to dentists, for the same reasons it is not extended to physicians and other health professionals.

The present cadre of dentists is severely over-extended, owing to very poor dentition among Guam's citizens and extremely high rates of dental caries. The nutritional status of the population is a close correlate to these conditions, and the lack of forceful public health, school, private sector advances on the problems of human nutrition creates unusual demands for dental care.

Figure 16

DENTAL CLINIC LOCATIONS

Optometry practice exists on Guam, with an estimated 11 practicing optometrists, some of whom extend their work northward to service needs in Saipan as well. These are complimented by 4 dispensing opticians and 2 optical laboratory technicians. There are no existing licensure requirements for the practice of either optometry or dispensing optician, nor is optometric practice as regulated and constrained by law in Guam as it is elsewhere.

While the majority of psychiatric and psychological services are provided through GMH and the Community Mental Health Center, there are practicing private psychologists available through one clinic and other solo practices. There is no regulation or licensure of the practice of psychology, nor are there any private psychiatrists presently practicing in Guam. This sector represents, therefore, an inversion of all other professional practice, with the major burden remaining as a governmental responsibility and with the private sector largely underdeveloped.

(3) Private Clinical Laboratory Service

There are three major independent clinic laboratories catering to the needs of private physicians and their patients. The FHP medical center also maintains a complete clinical laboratory, primarily serving FHP physicians and clients but available as needed to others. These augment the governmental laboratory services provided at GMH and in public health. In addition, a fair number of private physicians maintain minimal clinical testing capabilities in their private clinics much as they do with pharmacy services. Most specialized testing is done through either the GMH or public health laboratories, with private laboratories dependent upon these and other off-island more specialized and better equipped laboratories for reference service.

There does not appear to be formal regulation or control over the private practice of clinical laboratory.

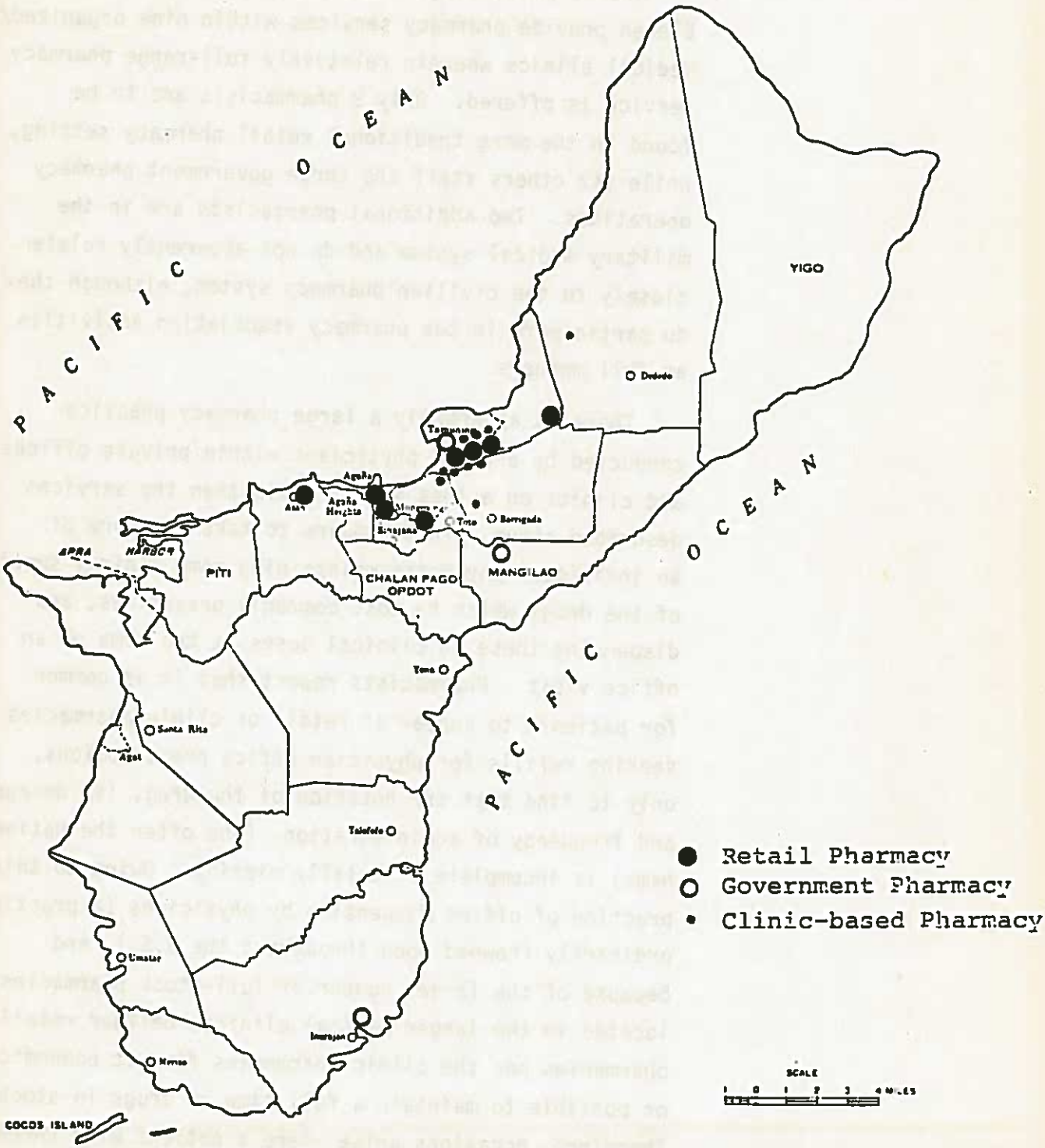
(4) The Pharmacy System

Guam's pharmacy system consists of 13 "drug stores", of which we can confirm 8 as being relatively full-line retail pharmacies. Clinic pharmacies are located in 9 medical clinics, three governmental pharmacies are operated in GMH and public health clinic centers, and an unknown multiplicity of casual physician office drug stocks complete the picture. Most pharmacies are concentrated in the retail and commercial trade zone of Guam as illustrated in Figure 17.

There are 27 registered pharmacists, all of whom are presumed to be in either full- or part-time practice in Guam. This yields a ratio of about 32 pharmacists/100,000 civilian population, which contrasts with the U.S. national average of 68/100,000, giving Guam a comparative shortage of pharmacists at present. Moreover, only 19% (5 pharmacists) are U.S. trained with the balance having been prepared in foreign schools. In this connection, it is important to note that Guam presently has few laws governing the practice of pharmacy and no board of pharmacy licensure. While the practice of pharmacy is regulated by the Division of Public Health, this appears to be largely confined to enforcement of narcotics laws, and related files and records requirements. Foreign-trained pharmacists are required to obtain a license which requires passage of a local examination which does not appear to be equivalent to the U.S. national board examination in pharmacy. This examination is administered by the Division of Public Health, which determines the passing level which cannot be construed as being at the national norm. Thus, while an apparently modest manpower supply in pharmacy exists,

Figure 17

PHARMACIES



the quality of pharmacy practice remains to be fully appraised and remains somewhat questionable.

Guam's pharmacists practice in three settings. Eleven provide pharmacy services within nine organized/ medical clinics wherein relatively full-range pharmacy service is offered. Only 9 pharmacists are to be found in the more traditional retail pharmacy setting, while six others staff the three government pharmacy operations. Two additional pharmacists are in the military medical system and do not apparently relate closely to the civilian pharmacy system, although they do participate in the pharmacy association activities as full members.

There is apparently a large pharmacy practice conducted by private physicians within private offices and clinics on a less formal basis than the services described above. This appears to take the form of an individual physician maintaining some minimal supply of the drugs which he most commonly prescribes, and dispensing these in clinical doses at the time of an office visit. Pharmacists report that it is common for patients to appear at retail or clinic pharmacies seeking refills for physician office prescriptions, only to find that the notation of the drug, its dosage and frequency of administration (and often the patient's name) is incomplete or totally missing. Owing to this practice of office dispensing by physicians (a practice ordinarily frowned upon throughout the U.S.), and because of the large number of full-stock pharmacies located in the larger medical clinics, neither retail pharmacies nor the clinic pharmacies find it economical or possible to maintain a full time of drugs in stock. Therefore, occasions arise where a patient with three or four prescriptions to be filled must go to more than one pharmacy in order go get all prescriptions filled. In the same context, because of the relatively small

scale of pharmacy on Guam, the single drug wholesale house does not find it feasible to maintain a full line of drugs, necessitating frequent ordering of drugs from more fully stocked wholesalers in Hawaii and on the U.S. mainland, occasioning severe time delays in most cases. Comparable with the physician office dispensing practice is that of physician ownership of clinic pharmacies (of the clinic pharmacies, only two are associated with an independent pharmacist-owner, while the remainder are owned and operated by physicians who employ pharmacists).

There is no 24-hour pharmacy coverage, although limited drug supplies in nursing stocks are available at GMH in evening and weekend hours. Most pharmacies operate a normal 8 to 5 day, closing as most retail stores do at 5:00 p.m., and closing half-days on Saturdays and all day Sunday. Thus, the emergency acquisition of needed, misplaced or spilled drugs is most often difficult if not impossible without great effort.

Because of high cost and other supply problems, there has been recent discussion of joint purchase of drugs (at an estimated 5% overhead as opposed to the current 30% premium through the single local wholesaler) by arrangement with one or another major mainland outlet. While the cost of drugs remains relatively high, the price paid for pharmacy manpower is relatively low, with the top pharmacy salary estimated at about 75% that of starting pharmacy salaries in the U.S.

Few pharmacies will currently accept Medicaid patient prescriptions (only 4, we understand) owing to greatly delayed reimbursement, and non-current drug pricing. Retail pharmacies do, however, service members of pre-paid health care plans, and are reimbursed $1.50/prescription as their filling fee (plus the cost of the drug).

The Guam Pharmaceutical Association, a relatively young professional association, boasts membership of 25 of the 27 registered pharmacists. The association has conducted seminars to bring local pharmacists up-to-date, with special focus on the foreign-trained pharmacists. They have sponsored career days as a means of attracting Guam people into the pharmacy profession, and have been concerned about the lack of malpractice insurance in Guam for pharmacists. Several years ago, the American Pharmaceutical Association extended a malpractice insurance policy which covered Guam-based pharmacists, but have withdrawn such coverage on the basis of their practice in a "foreign country". The true reason probably relates more to the relatively uncontrolled practice of pharmacy than foreignness, however.

As a means of improving the quality of and control over pharmacy, the Association has prepared a pharmacy act for possible consideration by the sixteenth Guam legislature. This act, should it become law, would place the practice of pharmacy under strict controls related to credentials and formal education, would impose U.S. norms and standards for entry into the profession and would prohibit the practice of pharmacy to others than registered pharmacists. It would, if passed and as a by-product, also exacerbate the pharmacist supply problem and require renewed attention to the recruitment of a larger supply of qualified pharmacists. The repercussion strikes us as a suitable trade-off for what presently appears to be a highly dangerous set of conditions in pharmacy practice and a set of physician-dispensing practices which can only lead to over-prescription. The act would, furthermore, go far toward prohibiting the sale and distribution of foreign drugs which apparently freely takes place through at least one Chinese and one Filipino store,

although such drugs are not permitted to be stocked in the more regulated retail pharmacies.

(5) Medical Supply Firms

Six wholesale medical and pharmaceutical supply companies comprise Guam's basic purchase and warehousing capabilities. Most recognize the lack of an effective materials management program at the major purchaser, Guam Memorial Hospital, and admit interest in providing help to better meet such requirements. Existing supply ordering practices throughout the system create considerable paperwork for the supply firms, and piecemeal requisitioning which is the present order of the day makes it extremely difficult to provide forecasts of future needs to dominant users. At present, most suppliers can provide up to three months requirements without future forecasting, based on past purchasing practice. However, this requires the wholesaler in turn to purchase in smaller quantities than might otherwise be possible, thus incurring considerable additional costs which could, under conditions of bulk forward purchasing, be saved to the ultimate consumer. Accordingly, the climate seems ripe, both in terms of the suppliers and the users of medical supplies and equipment, for the planning and implementation of a system-wide materials management program which would permit bulk ordering at the wholesale level and group purchases at the retail level, whether governmental or private.

Owing to cash shortfalls and other impediments, it is not uncommon for GMH and other organizations to operate at a thin edge in supply stocks, with the expectation that emergency supplies can be airfreighted to Guam when needed. Experience shows, however, that not only is this expedient very expensive, but that it is not at all dependable and may result in the lack

of critically needed supplies which could someday jeopardize the quality of medical care.

(6) The Suruhana and Traditional Healing on Guam

In many developing areas are to be found dual or overlapping health care systems. In fact, even in developed societies, the existence of a variety of cultures usually suggests the existence of multiple philosophies of and strategies for dealing with illness and disease. Guam is no exception, although it is interesting to note the modern and complex character of its American style medical care system, with its new hospital and Health Maintenance Organizations and other modern private clinics, existing alongside a small but highly utilized corps of traditional healers: suruhanu (male) and suruhana (female). Presently estimated at between one and two dozen, Guam suruhanu represent a continuity with the past traditional native healing arts. These arts largely consist of undocumented knowledge and experience in the use of herbs, lotions and salves, and massage, and their topical application to handle a variety of presenting complaints. The medicine is entirely "pragmatic", not analytical or scientific, and offers the distinct advantage over modern medicine of being more personalized and a more direct expression of cultural perceptions and attitudes towards health and illness causes and cures. The complaints that are commonly handled by suruhanu range from headaches and cramps, to diarrhea, head colds, and congestion, to infertility and complicatins during pregnancy. Suruhanu are sometimes employed in a home occupation and practice healing on the side, while other devote their full time to healing. They are invariably elderly people, since no one in the young or middle aged generations has had enough interest to spend the many years of training and apprenticeship necessary to be proficient at the art. The art is

actually multiple, since different suruhanu tend to specialize in different problems or approaches to their treatment; some healers handle only physical-somatic aspects while others appear to emphasize the spiritual or emotional side of any health problem. Modern doctors express some misgiving about their patients' concurrent use of suruhanu, but few cases of maltreatment have been documented. Filipino physicians more readily understand the appeal of traditional healers (given the role of such healers in their own cultural background) and in some cases refer their patients to suruhanu. By the same token, the native healers of Guam do not appear to openly interfere with or try to debunk Western medicine, but rather view the approaches as complementary. In cases where a serious medical problem is found of an infectious or complicated internal or organic kind which is determined to be resistant to traditional methods, suruhanu readily refer individuals to the hospital for more modern approaches to health care. While no official data on the utilization of suruhanu by the island population exists, anecdotal accounts and "guesstimates" suggest the widespread acceptance and use of suruhanu by most Guamanians even today, in particular for minor complaints and for mild, early childhood ailments such as constipation, diarrhea, congestion and the like. One rough guess at the magnitude of utilization is that each suruhanu may average 50 clients each week, for a total of perhaps 600 patients seen each week, island-wide -- or some 2,400 visits to all suruhanu per month. This contrasts almost precisely with the frequency of out-patient visits at GMH.

The major attraction of the suruhanu is quite clearly the cultural compatibility and sympathy in the healing process; the personal and individualized attention given in an informal setting (invariably home); and the accessibility of the healers (in terms of time

and distance). While the numbers involved may not warrant formal efforts at more direct integration of the suruhanu in the health care system of the island, it is important for the medical professions on Guam to understand and not disparage the reasons for the popularity of suruhanus as an alternative source of health care, and to learn more about the cultural relevance of the care which they offer.

c. Private Agencies and Organizations

Major voluntary agencies on Guam include the American Cancer Society, American Lung Association, American Heart Association, Muscular Dystrophy Chapter, Rehabilitation Workshop, and Catholic Social Services. The activities and involvement of these agencies vary considerably, and functions range from advocacy and information dissemination, to investigation, evaluation, screening, to direct staff and money contributions and service provision.

The American Heart Association, for example, began in 1975 and is an affiliate of the Hawaii Heart Association. It deals with all heart-related diseases and their treatment, in terms of information dissemination, prevention-focused activities, and screening and follow-up services. The AHA has a very active Cardio-Pulmonary Resuscitation (CPR) training program which has operated for more than a year now, using military instructors. AHA recently bought a heart defibrillator at a rough cost of $7,000 and donated it to Guam Memorial Hospital. AHA has also undertaken blood pressure screenings in conjunction with Guam's Blood Pressure Council, which also brings together the Red Cross, Kiwanis Club, and Division of Public Health. AHA hopes to start a coordinated program with GMH for cardiac rehabilitation, but awaits GMH staff planning of this activity.

The American Lung Association is the former name for the present Guam Respiratory and Health Association. The Guam Tuberculosis and Health Association existed from 1965 to 1970, and was superseded by the ALA, but disinclination

to continue as an affiliate of a main office in Hawaii led to the current name change in 1980. GRHA has turned over to the Division of Public Health its former involvement in TB testing and has discontinued its mobile X-ray unit rounds in the villages. GRHA has donated a respiratory function indicator to DPH and a bronchofibroscope to the Hospital. GRHA activities at the moment are limited to distribution of information, especially in schools.

The American Cancer Society remains affiliated with its Hawaii chapter, and has been active in Guam since 1969. The Society has helped initiate the Tumor Registry in 1979 and has given $3,000 in 1980 and $1,000 in 1981 towards its operation. The Society has been involved in direct patient care by providing rehabilitation classes for some 64 patients. The programs in breast, colon, and lung cancer rehabilitation involve patients only after doctor and patient approval have been obtained. The Society works closely with the Division of Public Health, which refers patients to it.

One of the most active voluntary agencies is Catholic Social Services, which started operations in Guam only in September of 1979. CSS has a very solid reputation for effective service in areas where it now is located. It has targeted the problems of the elderly on Guam as an immediate concern and has instituted a Home Health Care program which, after meeting initial resistance from families, has proven to be a valuable service to elderly who do not have enough supervision or assistance. The program provides a helper who works in the elderly client's home in simple housekeeping capacity as well as training in personal hygiene. CSS has recently applied for funds for elderly transportation service with the use of a van. CSS also plans ahead for a day care center which would provide an activity for the elderly during the day when relatives and family are engaged in work.

Another focus of Catholic Social Service's initial concern is with drug and alcohol abuse, and it has

established a residential treatment facility called ISA, which began in July of 1979 with funding from the Mental Health and Substance Abuse Agency. However, the current absence of further funds may force the shut down of this service which provided counseling and shelter to substance abuse victims.

Overall, the picture of voluntary services on Guam is one of fragmentation and lack of systematic or coordinated consideration of opportunities for voluntary work and participation to improve specific health conditions and work with specific target groups. Any health care system relies to a great but often unrecognized extent on the volunteers in the community who provide their time and skills and their resources without compensation. In many cities and counties, however, the lesson has been learned that voluntary efforts are enhanced rather than defeated by close cooperation between differnt agencies, if only to enable them to communicate a message of common concern, to alert the public to their presence and their need for contributions of money, and to collect and allocate those contributions in an efficient and rational manner according to identified priority needs. In Guam at the present time, there seems to be a general unwillingness to affiliate with a mainland or Hawaii-based parent agency (and perhaps the benefits of such affiliation are not excessive), but there seems to be no large amount of local initiative to assume the necessary needs identification and planning efforts required to make their agencies more effective in the island. It is well for Guam's voluntary organizations to take a second look at the ability to achieve desired outcomes in the absence of at least minimal coordination. The benefit of an umbrella organization like a United Way, United Fund,or Community Chest have been quite evident in other areas, at least in the matter of coordinate fund-raising and allocation of collected funds in an efficient and timely manner. However, it has been common practice for such major entities as heart and cancer associations to

remain independently beyond such collective orbits, and this could prove to be the future case in Guam as well unless planned against.

3. Other Salient Systems Relevant to Health Services

As in any other health care system, it is very easy to become preoccupied with the analysis of those agencies, organizations and individuals which actually deliver direct medical care and health services to the population. However, there are contributory, supportive, and complimentary organizations in any system which also must be classified and understood in order to grasp the functioning of the total system. While intentially not exhaustive in our treatment, we have chosen to discuss the following agencies and offices of Guam's government structure because of the actual or potential roles which they play in health care. It will be to the optimal articulation of these systems, or components of them, with the other functional components of the health care system that subsequent recommendations and alternative policies will deal.

a. Department of Corrections

This department, a component of the criminal justice system of Guam, has responsibility for the health and well-being of incarcerated prisoners in correctional facilities. Present correctional facilities lack in-patient beds and modern dental treatment facilities, necessitating the transfer of prisoners to either GMH for in-patient care of even a mild nature, and to public health and private dentists for dental care. There is apparently included in the plan for a new corrections facility a 10-bed infirmary which, with appropriate nurse and visiting physician staffing could accommodate most of the medical needs of prisoners who tend to be reasonably well, displaying run-of-the-mill illnesses, occasional acute dental episodes and minor injuries associated with farm work and mechanical equipment. Presently, medical and dental care is provided to prisoners on an episodic basis

either by staff physicians at GMH, by public health dentists for examinations and by private dentists for restorative dentistry. There appears to be no mental health (psychiatric or psychological) services provided in a rehabilitative sense, nor are routine public health and preventive services incorporated in the current corrections program. The prison population, therefore, represents a potentially medically-needy cohort for which there is currently lacking any clear medical care system.

Similar needs, often of a more acute nature related to drug and alcohol withdrawal, exist in the police jail system which is operated by the Department of Public Safety. There is lacking a maximum security ward or other in-patient arrangement at GMH to satisfactorily care for dangerous prisoners or for mentally ill prisoners who must now be placed under special police guard to protect them from injuring themselves, other patients and staff members. In more developed systems, it is common that arrangements for the care of such patients is part and parcel of the corrections program, with separate (often part-time) medical and dental staffs and dedicated in- and out-patient facilities to serve the prison population.

b. Office of the Suruhanu (Ombudsman)

This recently created governmental agency is an organ of the Legislature rather than of the Executive Branch of government. It serves as a consumer advocate for the population, mainly in the area of governmental services, and as a sort of consumer council for private entities in the community. The staff of the Office are clearly "on the side of" the consumer, and procedures have been established by which individuals may file formal complaints or specify services or needs which they wish fulfilled. Such complaints and/or requests are referred directly to the head of the agency involved, and it is customary that staff members arrange appointments with appropriate agency representatives to go deeper into detail with respect to

the complaint. Findings are then prepared which include suggestions to the agency as to steps which it should take, and the complainant is fully informed at this point. Some 60 cases per month represents an average load, with about 80% resulting in satisfactory closure. Complaints are frequent with respect to health services and social services, many involving environmental conditions, and a large number relating to GMH services, billing procedures and related financial matters.

The Suruhanu also becomes involved in government personnel actions, when complaints and grievances are filed with respect to overlooked annual pay increments, perceived discrimination in treatment and employment, and kindred matters. It is not uncommon that this avenue of redress is pursued by employees prior to activating the formal grievance processes which are otherwise available.

Despite a well-staffed and apparently well-functioning ombudsman program, people continue to employ multiple channels to voice their concerns, frustrations and unhappiness. The Office of the Suruhanu is but one such avenue, with others including agency and department heads themselves, members of the Legislature, the Governor and his staff and individual staff members of agencies and offices. It is common that people will simultaneously employ two or more such channels, and it is often that they use the more formal channel of the Ombudsman to validate what an agency head or employee has told them, indicating a degree of lack of faith and trust in bureaucrats on the part of citizens.

c. University of Guam

While not usually perceived as a classical sector of the medical care system, institutions of higher education play vital roles in providing for the supply of fresh manpower to meet health system requirements. It is equally unusual that those institutions supplying manpower

are, in any way, integrated into the system which consumes their products.

The University of Guam is a fully accredited four-year land grant university offering a wide range of both Associate of Arts, baccalaureate and masters degree preparation. In the health fields, UoG presently offers a baccalaureate program in social work, and an associate of arts (2-year) program in nursing which leads to RN licensure for graduates who successfully complete the registration examination. Production in the latter has been highly variable, ranging from as few as 10 AA nurses to as many as 40 per year. Current practice is to admit a single class in this program once each year, with the target being the graduation of between 20-25 AA degree nurses each year. Beginning in 1982, the intention is to inaugurate a Bachelor of Science in Nursing program, following the standard U.S. pattern of generalized nursing education coupled with community health nursing. This new program intends to admit about 10 students each year, and after four years of operation (given normal attrition rates) should be producing about eight new BSN nurses for Guam's needs each year thereafter. There are no apparent plans to offer masters degree nursing programs, with baccalaureate nurses from Guam now being fully accommodated in the University of Hawaii for such training.

In the past there were training programs for laboratory technicians and for dental assistants, but in both cases the market for graduates became saturated and the programs were discontinued.

There was hope that a family nurse practitioner program would be implemented beginning in the summer of 1981 in conjunction with the Division of Public Health. However, UoG was unable to attract the necessary instructors for the standard 9-12 month instructional period. This was unfortunate, for such nurse practitioners could be readily used in many existing public health programs of a clinical nature.

Further deficits appears in the preparation of administrative personnel for health services. While the business and public administration programs offer substantial preparation in their respective areas, there is neither faculty oriented to health applications nor funding available for the acquisition of same. It may be possible that field or adjunct faculty from Guam's practicing community might later be employed to extend present management training into a focused health administration sub-program.

While there probably exists the necessary foundation for eventual medical, dental and other primary health professions education, there are at present no clear and demarcated pre-medicine, pre-dental, pre-pharmacy or other "pre-professional" tracks within the baccalaureate programs.

There is every reason, despite budgetary constraints, to believe that administrators at UoG stand ready to give serious consideration to the establishment of newer academic programs provided that system needs and a market exists for graduates. A splendid example of such an unfulfilled need would be in the area of environmental health, where most sanitarians are now tutored on-the-job, with little or no opportunity for formal basic academic preparation for their responsibilities.

There is missing an aggressive continuing education program related to the health professions, but with little underway in the health fields within UoG, it is understandable that faculty resources have not been extended to the health professions as they apparently are to other fields of interest.

The University also plays a regional higher education role, accepting and educating students (particularly in nursing) from adjacent Pacific Island territories. In these cases, and often in the case of students from Guam, there is a problem not only to attracting and keeping students in the program, but of retaining them to work in

island settings upon graduation. UoG faculty are involved in a new organization, the Pacific Basin Nurse Leaders Conference which is attempting to mount a regional educational program for nursing, including attempts to style nursing licensure examinations to fit local Pacific Island cultures and to establish appropriate licensure laws in all Pacific territories. It might be considered that this organization, now formalized after four years of informal consortium, could be expanded to deal with health professions educational needs for the Pacific, engage in recruitment, education, retention, continuing education and kindred activities as a major health manpower resource.

d. Agencies Which Relate to Youth and Health Problems

With the large population of young persons to be found on Guam, it is natural to find an increased concern among public officials with the health and well-being of this group. There are several different kinds of agencies which are directly or indirectly involved with youth and their problems on Guam, among them several volunteer groups such as the Boy Scouts and 4-H Clubs. More directly involved with youth problems in an official capacity is the Department of Youth Affairs (DYA) which was created in September 1978 by legislative mandate. DYA derived from youth corrections services and was an answer to the demand for more comprehensive treatment of the social and behavioral problems of youth involved in delinquent and criminal situations. DYA has as its current focus the twin programs of youth (corrections) services and youth development.

The Special Services Division of DYA address youth found guilty of criminal offenses by the courts. Programs include juvenile detention in a secured group home environment, which is a short-term residential facility for care and custody. This Division also has several cottage homes in Talofofo for the non-security type of problem youth who are provided with an alternative living situation that emphasizes the learning of group living skills. Finally

the Division has a vocational rehabilitation program which provides work situations for high school dropouts who are in the Juvenile Justice School for remedial education.

The Youth Development Division takes a more preventive approach by emphasizing community-level programs aimed at diverting would-be delinquents into constructive activities. The services provided include recreational programs in various communities, children's programs, and specific outreach efforts targeted to troubled youth.

While the Department of Youth Affairs at the present time has no strong health care or health education component, other than some intervention and outreach work done with youth who are in trouble over drugs and drug abuse, it offers an excellent vehicle for reaching teenages and children with health information of direct use and benefit to them. To the extent that youth problems involve drug abuse and alcohol abuse, the Youth Development Division is in a position to provide health care outreach services to this targeted group and this targeted problem.

It is apparent, moreover, that youth indeed do not have an adequate understanding of health hazards, health standards, the kinds of healthy behavior that are beneficial in the long run, or even basic hygienic practices. What has been quite damaging in this respect is the lack, until very recently, of any public commitment to the provision of substantial health information to young people through the standard school curriculum. A problem survey given to youth in the communities of Guam in the summer of 1980 illustrates the problem in that information about sex behavior and drug use were not identified as problems by the young respondents (600 altogether between the ages of 13 and 18), even though young people are heavily involved in unwanted (teenage) pregnancies and substance abuse. Thus, rather than showing that these are not real problems as far as youth are concerned, the survey establishes the

lack of information that might guide them in making better decisions and in leading more healthy lives.

To this end, the Legislature in December of 1979 passed a bill requiring the planning and implementation of a school-based curriculum in health education. Planning was begun in the summer of 1980, and the Fall of 1981 saw health curriculum pilot projects instituted in a number of secondary schools for 7th Graders. The curriculum, once finalized, will be extended to involve Seniors in high schools across Guam as well. It is also a priority for younger children, in grades K through 6, to be more exposed to health concepts and information about appropriate healthy practices in the following areas: (1) nutrition, (2) disease control, (3) personal health and hygiene (including basic information about body systems), (4) family and (some) sex education, (5) mental health, (6) safety and first aid, (7) environmental health, (8) substance abuse, (9) consumer health, and finally, (10) local health practices, such as traditional healing methods. It should also be noted that the Legislature has also mandated a separate curriculum with a bill passed in the summer of 1978 for drug education to address the growing problem of youth and substance abuse. The pilot curriculum for this is now being finalized.

C. FINANCIAL ORGANIZATION OF THE SYSTEM

1. Introduction

One of the most elusive components of any health care system is an accurate description of its financial base. While governmental appropriations (which commonly represent only about 40% of total expenditures for health care) can, of course, be usually tracked with a fair degree of precision. However, in Guam and owing to the fact that government's participation in health care financing is spread over so great an array of agencies which report on different parameters, and because much of government's participation occurs much later than the period

for which the service is being provided (i.e., deficit financing, interim appropriations, and emergency funding which cannot be linked with prior service data), even public sector financial participation is difficult to estimate with any precision. Data reflecting costs and revenues attributable to private sector providers are partially revealed in aggregate gross revenue statistics, but are seriously misleading owing to cumulations of revenues under headings other than those easily identified as direct health care provision. Other funds flow, such as those represented by insurance premiums collected, benefits paid and retained earnings are not routinely reported for health, as opposed to other, insurance policy holders.

Accordingly, the available data are not sufficient in Guam (nor are they sufficient in more data-rich areas such as Hawaii or most U.S. states) to accurately depict the true magnitude of Guam's health care financing picture. What follows are estimates based on the most reliable of the available data. These, in our opinion, represent "ballpark" estimates at best and are intended to reveal artifacts in current financial balances which create problems with the total system.

2. *Funding Sources*

The dollars which flow in support of the wide spectrum of health care delivered in Guam derive from four major sources, including:

a. Federal grants-in-aid which largely support special programs and services, and which benefit special classes of people such as the poor, and direct Federal programs which benefit certain classes of people;

b. Government of Guam appropriated funds for purposes of directly supporting health programs, (i.e., much of the public health activity), providing supplementation or deficit financing (i.e., as in the case of Guam Memorial Hospital), and providing required matching funds for various Federal grants-in-aid;

c. Insurance and pre-payment programs which partially support both private and public sector services through capitation payments and direct fees-for-service;

d. Private, out-of-pocket payment at or after the point of service delivery by individual citizens.

The Federal component comprises special purpose grants and contracts for various public health, health planning, developmental disabilities, mental health and substance abuse, and similar services. A second source of Federal funds accrues to the Medicaid program whereunder (at the time of this study) a maximum of $900,000 is available to Guam annually. This ceiling has been raised to $1,400,000 annually effective the current fiscal year. A more limited source of Federal dollars flows through the Medicare program. Finally, a wide variety of other Federal entitlements bring dollars into Guam's system through such intermediaries as the CHAMPUS, CHAMPVA, Veterans Administration eligibility programs and Federal dependent out-of-pocket payments. While the data are imprecise, it is our estimate that somewhere between 20-25% of total expenditures for civilian health services can be attributed to Federal sources and beneficiaries of all types.

The Government of Guam represents the largest contributor to payment of health and medical care expenses, estimated at somewhere between 30-40% of the total expenditure. Included here are direct appropriations made to the several governmental entities which deliver health and related human services, government matching funds which permit implementation of many of the Federally-funded programs, appropriations for indigent medical care and appropriations for Guam Memorial Hospital. Obscured in governmental appropriations are those portions of Federal direct subsidies to the Territory provided through the Department of Interior, some of which must find their way via the general appropriations process into health-related expenditures, and foregone Federal revenues which are residual in Guam in the form of taxes on income. It would be virtually

impossible to separate these funds from general fund appropriations and to more properly classify them as Federal investments in the system.

There has been recent and substantial growth in enrollments in the two major health insurance programs in Guam (FHP and GMHP) which, in their totality, represent an estimated 43,000 persons. An additional indenmity plan local to Guam (HML) and various off-island indemnity insurance plans (Aetna, Mutual of Omaha, HMSA, and about 25 others) are estimated to enroll an additional 5,000 persons. At an estimated annual average premium for an estimated 16,000 active policies (without regard to who actually pays the premium) of about $650, this sector of the financing system would account for approximately $11 million dollars annually, or about one-third of the total.

Finally, private payment for health care is, in our opinion, a fairly significant portion of the total dollar flow in the system, perhaps accounting for as much as 12-15% of total expenditures.

Table 25, which should be used with the most extreme caution (in our opinion it probably represents a generally understated and conservative estimate of funds flows), displays the probable distribution of funds entering Guam's health care system by major source.

Table 25

Estimated Total Expenditures for Health Care
by Source of Funds - 1980

		% of Total
Federal sources	$ 4.1 million	12.5%
Government of Guam appropriations	13.7	42.0%
Insurance and pre-payment	11.0	33.5%
Private, out-of-pocket payment	4.0	12.0%
TOTAL	$32.8 million	100.0%

When the foregoing distribution is viewed against U.S. national trends, Guam appears as almost the inverse of the Nation, with 54.5% of health care expenditures represented by governmental purchases (as opposed to about 40% nationally), and 45.5% representing private expenditures (as opposed to 60% nationally). This would be expected, inasmuch as so many health services and facilities are public sector in their sponsorship and operation, and the private sector growth has become substantial only recently. However, room appears to exist for a further shifting of fiscal responsibility to the private sector payment routes and a commensurate relief of at least some of the present governmental financial burden.

3. *Expenditures for Health Care*

Per capita, it would appear that Guam spends approximately $400 per civilian person per year for health and direct medical services. Excluded from this estimate and the earlier estimates are indirect health services such as environmental control and improvement, and education in the health professions. The distribution of these expenditures becomes the next area of interest. Based on the best data available, we have been able to construct Table 26 which illustrates the probable distribution of Guam's total health care expenditure:

Table 26

Probable Distribution of
Health Care Expenditures in Guam, 1980

	Expense	% of Total	National % of Total
Physicians (private).....	$ 3.6 million	11%	20%
Dentists (private).....	1.5	5%	6%
Drugs and appliances.....	.6	2%	8%
Laboratories, other medical services and off-island care.....	3.1	9%	10%
Pre-payment administration.	1.0	3%	3%
Hospital and nursing care..	17.2	52%	48%
Public health and other governmental services....	5.8	18%	3%
Research, education and construction.....	n/a	n/a	2%
Totals.....	$32.8	100%	100%

The contrast with U.S. national distribution of medical care expenditures helps somewhat to substantiate the probable accuracy of this picture. For example, the lower expenditures in the private physician system is accounted for by the fact that so much medical care on Guam is administered through government facilities via salaried physicians who are included in the inflated hospital and nursing care figure. The high proportion of all expenditures through public health and other governmental services reflects the institutionalization of public medical care through many diverse service programs of the Division of Public Health and other direct service agencies.

Furthermore, the known expenditures for hospital and nursing facility care on Guam when computed against the general proportion of all medical care expense confirms the total $32.8 million dollar aggregate expenditures.

As in the previous sestion, the figures presented above represent serious efforts to arrive at a reasonable, although quite conservative, estimate of where the dollars flow. It is clear that substantial opportunity remains for diversion of private and cash flows to private sector providers of health care, with commensurate reductions in governmental appropriations responsibilities in some sectors.

Another confirming feature develops when the foregoing estimates are contrasted with estimates (equally unreliable) developed for the State of Hawaii. Hawaii, where personal and family affluence is nearly double that of Guam (despite nearly equivalent costs of living), the estimated annaul per capita expenditure for health and medical care is about $800 per person. This contrasts nicely with our estimate of about $400 per person in Guam. Other contrasts, such as the annual cost of health maintenance organization premiums (about $700 on the average in Guam as opposed to nearer $1,400 in Hawaii) further contributes to the validity of the estimates we have presented.

One final note is important. The general illiquidity on the part of private citizens (e.g., personal checks are not believed to be dependable by most merchants), public agencies (i.e. periodic cash shortfalls), and a general under-insurance for the total population, complicates collection efforts for the cash payment for medical and health services in all but the free-of-charge governmental sectors.

D. HEALTH MANPOWER

Earlier sections have included some health manpower counts and distributions. There also exists an excellent health manpower inventory based upon survey results which was published by Guam Health Planning and Development Agency in August, 1980. Accordingly, this section will be constrained to a critical analysis of significant areas of manpower shortage, to analysis of qualitative aspects of current manpower, and to an analysis of future sources of needed health manpower, and will make no effort to duplicate other health manpower documents.

1. Manpower Shortage Areas

a. Physicians

Table 27 below displays the current distribution of licensed practicing physicians in Guam. Physicians are distributed over the medical specialty areas in slightly different proportions than those in the U.S. generally. For example, 51% of Guam's physicians are medical specialists as opposed to only 45% nationally. This would seem to be a healthy sign, indicating more attention to primary and ambulatory care with commensurate reduced attention to the more expensive in-patient care. However, upon further examination we note that 37% of Guam's physicians practice surgical specialties as opposed to but 28% of physicians nationally. Thus, the illusion of a strong ambulatory care focus in some-

what dispelled. Guam's medical community is not well developed in the "other specialties" area, in which only 12% of Guam's physicians practice as contrasted with 27% of physicians in the nation.

Table 27

Active Physicians in Guam by Specialty

Medical Specialties	35	(51%)
General Practice	14	
Internal Medicine	11	
Pediatrics	9	
Dermatology	1	
Surgical Specialties	25	(37%)
General Surgery	6	
Obstetrics/Gynecology	9	
Ophthalmology	2	
Orthopedics	2	
Otolaryngology	3	
Plastic Surgery	1	
Thoracic Surgery	1	
Urology	1	
Other Specialties	8	(12%)
Anesthesiology	3	
Neurology	1	
Pathology	1	
Psychiatry	1	
Radiology	2	

As Table 27 further illustrates, Guam has an estimated 68 physicians in active practice, 59 of whom practice in private settings with the remaining nine representing the GMH house staff. Other physicians practice in Guam who are not represented in the totals portrayed. For example, three physicians staff public health programs, but cannot be counted among direct patient care resources. There are 12 naval physicians licensed who occasionally, and to varying degrees, practice in the civilian sector on off-duty hours and/or by assignment. Because this substantial body of medical talent is highly transient in nature, it should not properly be counted as a base resource since its specialty mix is always subject to change. Naval physicians practicing in the private or GMH sector are estimated to represent the

equivalent of about 2 full-time private physicians, although the specialty care which they provide assumes proportions of importance far exceeding the full-time equivalency of their contribution.

Guam's total complement of physicians represents a ratio of 8 physicians for every 10,000 people which may be contrasted with the U.S. ratio of 20 physicians per 10,000 persons. It would be unwise for Guam to aspire to the national norm, however, for the 20/10,000 figure represents a seriously "over-doctored" population, and national efforts are now directed to reducing that ratio to something approximating 15/10,000 through attrition, reduced medical education output and reduced importation of foreign trained physicians. Thus, a more suitable target for Guam's system would be in the range of 12-15/10,000.

Table 28 further examines Guam's current physician supply against two sets of data which reflect physician to population ratios in the State of Hawaii and also conservative "norms" derived from various studies of physician productivity. The reader will note that 15 different areas of medical specialization currently appear to be in short or non-existant supply in Guam. This table suggests the potential of adding some 43 new physicians to Guam's current supply which would bring the total practice community to 113 physicians, resulting in a ratio of about 13 physicians for each 10,000 persons--a favorable reflection of national tendencies. The future distribution illustrated in Table 28 would result in an increase of physicians in the medical specialties (from 51% to 55%) thus further emphasizing the ambulatory care pattern. Surgical specialties, while augmented, would fall to 33% of the total which brings Guam's distribution closer to the national picture. The greatest enhancement is seen in the other specialty areas where the potential increase of 11 specialists would bring that sector's representation to 15% of the total, still far short of the national figure. However,

it might be seen as desirable to continue to focus on the more primary, ambulatory and thus least costly medical specialties in favor of overdeveloping unneeded specialty areas simply for conformity.

Table 28

Physician/Population Ratios on Guam Contrasted With Other Ratios, and Projected to Comparable Future States

				Need	
	Guam	Hawaii	Standard	Total	New
Medical Specialties					
General Practice	1:4,750	1:4,800		18	4*
Internal Medicine	1:7,700	1:5,000	1:1,700	17	6
Pediatrics	1:3,600	1:2,070		16	7
Dermatology	1:85,500	n/a	1:45,000	2	1
Allergy	-0-	1:81,000	1:40,000	2	2
Cardiology	-0-	1:47,000	1:51,000	2	2
Oncology	-0-	n/a	n/a	1	1
Surgical Specialties					
Gen'l. Surgery	1:14,250	1:12,067	n/a	7	1
Neurosurgery	-0-	1:99,000	1:100,000	1	1
Ob/Gynecology	1:2,900	1:3,800	n/a	7	0
Ophthalmology	1:42,750	1:18,600	1:20,000	4	2
Orthopedics	1:42,750	1:21,260	1:27,000	3	1
Otolaryngology	1:28,500	1:37,200	1:29,000	3	0
Plastic Surgery	1:85,500	1:63,700	1:100,000	1	0
Colon & Rectal	-0-	1:29,700	n/a	3	3
Thoracic Surgery	1:85,500	1:178,000	1:100,000	1	0
Urology	1:85,500	1:38,800	1:36,000	3	2
Vascular Surgery	-0-	1:100,000	n/a	1	1
Other Specialties					
Anesthesiology	1:28,500		1:14,000	6	3
Neurology	1:85,500		1:68,000	1	0
Pathology	1:85,500	1:4,300	1:25,000	3	2
Psychiatry	1:85,500		1:21,000	4	3
Rehabilitation	-0-		n/a	1	1
Radiology	1:42,750		1:53,000	2**	0
				113	43

*Family Practice Specialists
**One specialized in neuroradiology

b. Other Health Personnel

With the excellent data already available through GHPDA, we do not feel it wise to attempt an exhaustive review of all health manpower in this report. However, we have chosen to analyze a few critical manpower areas and have made future projections for each as we have done above for physicians. These are reflected in Figure 29 below. Clearly the greatest current shortage area in nursing services, with a deficit of 163 nurses estimated. Dental manpower, except for dental hygienists, appears as a second priority for future recruitment attention. In the case of dentists, given the very poor dental condition of Guam's citizens, the application of U.S. ratios may, in fact, be quite misleading and the number actually required by Guam's citizens may be substantially higher than that projected in Table 29. A non-existent professional service, that of podiatry, has been included in the table simply to call attention to presently missing but potentially important service professionals, especially as the population ages.

Table 29

Professional/Population Ratios for Selected Health Professions and Projected Comparable Future States

			Needs	
	U.S.	Standard	Total	New
Dentists	5.2/10,000	5.2/10,000	44	11
Dental Hygienists	2/10,000	3.7/10,000	17	-0-
Pharmacists	6.8/10,000	1.2/10,000	10	-0-
Nurses	43.3/10,000	46/10,000	393	163
Optometrists	n/a	1.4/10,000	12	1
Podiatrists	n/a	.3/10,000	3	3

2. Qualitative Considerations

One remarkable feature of Guam's health care system is the nearly total lack of systematic, rigorous and high-standard licensure and registration of those permitted to practice in the system. Thus, physicians, pharmacists, dentists and many other health professionals practice in Guam essentially on the basis of credentials which were issued elsewhere. The well-known fact is that there are wide variations in the quality and rigor of professional examinations and requirements across the U.S., and widely varying qualities of medical education across different countries. Therefore, the simple expedient of accepting credentials issued elsewhere, in many cases a great number of years ago, does not provide the protection truly needed by Guam's citizens. This is not to suggest that a single one of Guam's present cadre of professional workers lacks ability or practices inferior medicine, but it is entered simply to raise a serious note of caution that continued reliance on external quality controls is not to Guam's best advantage. There are many reasons why professional personnel succumb to recruitment efforts and relocate in remote and rural areas such as Guam and other Pacific Islands. Not uncommon among these reasons are loss of practice privilege (but not loss of license) in other locations, emotional and behavioral problems, and in rare cases legal entanglements which are resolved by physical escape to another area. These conditions which may be expected to characterize some practitioners in Guam cannot be exposed or fathomed by simply accepting professional credentialing done elsewhere. They represent, however, situations whereunder the professional competence of any practitioner could be severely compromised.

Furthermore, once admitted to practice in Guam, there are no further requirements imposed on professionals to maintain currently in their field of practice. It has grown to be customary in most areas of the U.S. to require most practicing

professionals to periodically submit evidence of post-graduate, continuing education which is aimed at keeping them current and advancing their knowledge and skill in their respective professions.

Given the severe shortages of health manpower in certain professions and occupations in Guam, it is altogether understandable that "any warm and willing body" would be accepted rather than continue to deprive needy patients their services. This, despite its humanitarian underlying motive, can prove disastrous in the long run, however, because the practice potentially places the care of patients in the hands of under- or unqualified practitioners.

3. *Future Sources of Health Manpower*

Except for nurses, Guam presently stands in a totally dependent position with respect to health manpower supplies, and relies solely upon health professions educational institutions elsewhere to supply her growing appetite for well trained, qualified professional workers. Furthermore, as noted elsewhere, there is no program under which Guam's young people can begin to prepare themselves for entry into health professions education, except for the field of nursing.

Recruitment of needed professionals in the public sector tends to take the form of awaiting critical vacancies and then setting into motion the laborious and time-consuming traditional civil service recruitment system. In the private sector, with the exception of the FHP medical staff, recruitment takes the form of serendipity with the seeming expectation that needed physicians, dentists and other short-supply professionals will, somehow, automatically gravitate to Guam. There is, in short, no central agency or organization which has the responsibility or mandate to continuously forecase both public and private professional supply needs and to mount a rigorous, systematic, planned and continuing effort directed to identifying and attracting the needed workers for the system.

Needs for professional workers (demand for new supplies) arises from a combination of multiple forces. First of these is the growth in the size of the population, and changing population characteristics such as either aging or younging. Economic factors such as increases in consumer's incomes further generate demands for additional workers. The state-of-the-art in medical and health technology, as it advances, brings further new demands for additional workers and new types of workers. As these forces come to play, they increase the demand for health service by the population and in turn create demands for health manpower.

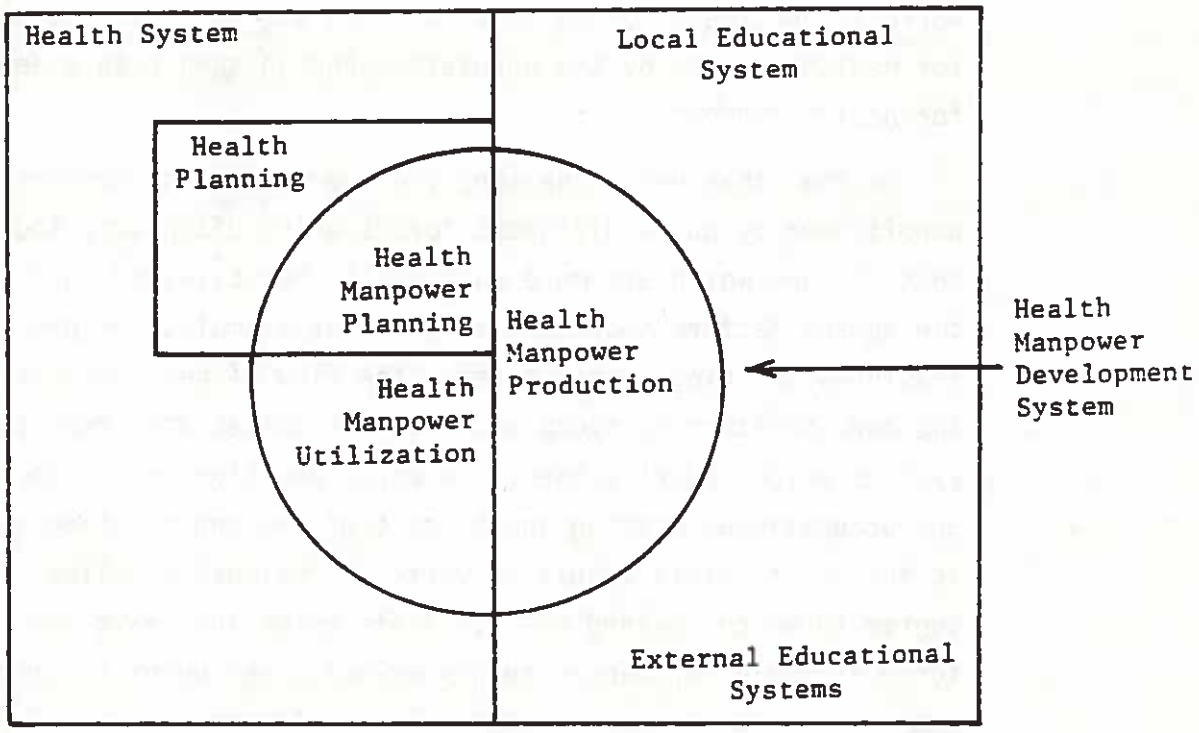
On the other hand, the supply of needed health workers is conditioned by quite different forces which often defy local control, and which are more customarily not balanced against the demand factors suggested above. For example, the professional training system governs the flow of new entrants into the many healthprofessions and into the collegiate preparatory systems which underlie them. Personal decisions as to location and occupational setting on the part of new and existing entrants in the health field result in variable regional supplies. The degree to which trained professionals enter and leave the labor force strongly influences supply at any given point in time. For example, while one can project a "need" for more than 150 nurses in Guam, there are likely twice that number available in Guam who, for one reason or another, do not choose to practice their profession. Licensing and certification are forms of regulation which tend to affect the supply of available manpower, as does the rate of pay offered at any given practice location. Where licensure is difficult, supplies will be predictably short; where pay and local conditions are attractive, supplies will be predictably rich.

The foregoing discussion is presented as prelude to the conclusion that a <u>health manpower development system</u> is presently lacking in Guam. The missing system would be one which would be

capable to balancing the demand and supply factors which affect the availability of needed health manpower. Figure 18 depicts such a system, but its construction in and for Guam remains to be achieved.

Figure 18

A Health Manpower Development System



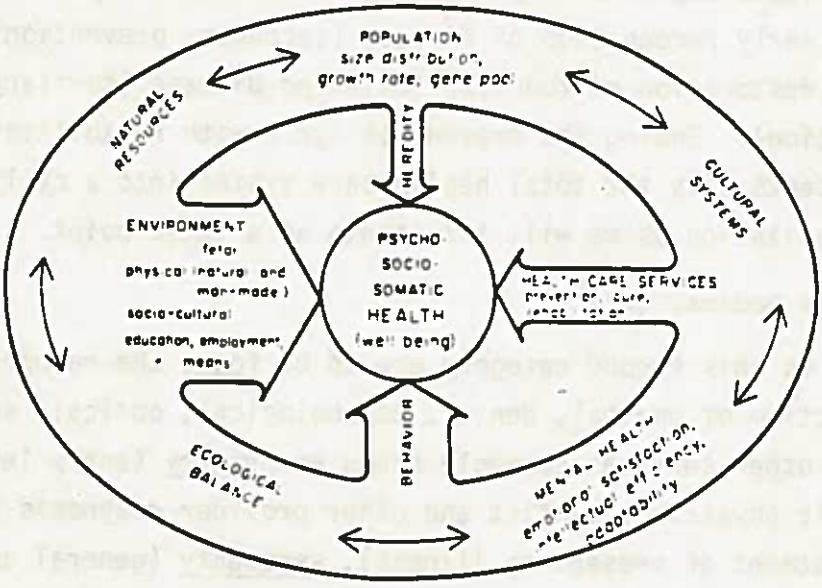
E. THE HEALTH SYSTEM'S ORIENTATION

The preceding sections of this chapter have displayed a highly complex, pluralistic health and medical care system. The more or less fragmented details of individual components of this system, as they have been elaborated, tend to obscure a broader picture of the system's overall "intention," "purpose," or as we choose its "orientation." The purpose of this section is to step back from the often bewildering array of discrete, separate components in order to reveal what appears to be the central orientation of the totality.

The attainment of "health" is generally taken as the overall mission of any health or medical care system. Abundant research

has now made completely clear that health is an outcome of multiple societal and individual forces which contribute in varying degrees to the attainment of health. Figure 19 below illustrates these mutually interactive forces as they impact on health of individual people.

Figure 19
Forces Impacting on Human Health



Adapted from H.L. Blum, "Planning for Health," Human Sciences Press, 1974, 3.

Within the medical care sector of Figure 19, there can be identified eight major components which comprise the spectrum of comprehensive health and medical services. These, in turn, divide somewhat equally into three broad categories which represent distinct, and often competitive, system orientations, as follows:

1. Prevention

This category includes the formal means by which health services promote health through education, awareness, fitness, and related activities. Also included are those activities directed toward the prevention of illness such as immunization, quarantine and isolation, provision of pure water and safe sewage disposal, early detection of illness in its pre-clinical

stages, and routine medical surveillance of the apparently healthy individual. The third component of this category is commonly called maintenance of health which includes those functions aimed at periodic examination, health appraisal, and modifications in personal behavior and life-style.

The prevention component is normally considered the most desirable portal of entry into the health care system, for it places emphasis on preventing disease (primary prevention), the early recognition of disease (secondary prevention), and the restoration of function following disease (tertiary) prevention). Ending the prevention cycle with rehabilitation concepts ties the total health care system into a cyclical organization as we will illustrate at a later point.

2. *Acute Medical Care*

In this second category are to be found the recognized spectrum of medical, dental, psychological, optical, sensory and other services commonly known as primary (entry level, basic physician, dentist and other provider diagnosis and treatment of presenting illness), secondary (general and special hospital in-patient services, surgery of a general nature, and advanced diagnostic work involving invasive techniques), and tertiary (advanced and complicated surgery intensive in-patient care of a highly technical nature, and specialized services such as burn care, renal dialysis, and the like).

3. *Long-Term Care*

The third category of the spectrum of health and medical care includes long-term hospitalization, skilled nursing care of convalescent patients, semi-skilled intermediate nursing care intended for patients over long periods of time, day-, night-, and partial-hospitalization services, various levels of domiciliary and custodial care for patients requiring sheltered and controlled living environments as a

result of illness, and rehabilitative services intended to restore impaired functions to some reasonable level of their previous ability. It is important to note that this final feature of the long-term care component is identical to the tertiary prevention aspect of the prevention component, thus completing the circle of comprehensive patient care.

While it is desirable that any system of health care embrace the full spectrum of service orientations described above, it is most customary that each tends to take on a flavor or orientation which variously favors or emphasizes one or more of the major components above, to the relative exclusion of others. It is equally desirable, recognizing the multiple forces which contribute the desired outcome of the system--health, that any system of health care include means whereby not only medical care is provided, but wherein substantial impacts are made on environmental, behavioral and genetic components which strongly influence health outcomes. Again, it is more common to find health care systems which emphasize one or another of the factors influencing health to the virtual exclusion of others. It will be against the foregoing concepts that we will subsequently examine the general orientation of Guam's present health care system.

As a basis for our characterization of Guam's current orientation, a few notes distilled from the foregoing system component descriptions are appropriate.

- the great majority of personnel in the health professions are presently allocated responsibilities in, or supportive to, the care and treatment of the acutely ill person.
- within public health programs, a great deal of primary medical care is provided of a diagnostic and therapeutic nature as high priority programs.
- more than 80% of health care expenditures are consumed by the provision of primary, secondary and tertiary medical care.

- ambulatory facilities, including many of a public health nature, are strongly oriented to acute/reactive medical care.
- nearly every component of the delivery system is geared to dealing with a presenting condition and its diagnosis and treatment, without comensurate attention to related conditions in the same individual, or to social, environmental, economic, family and other attributes of the individual, resulting in a very limited and fractionalized continuity of care for individual persons.
- while there are exemplary exceptions, only very limited primary prevention emphasis is evident within the system. Programs such as hypertension screening, screening of children and youth for developmental disabilities, nutrition counselling, and integrated health education exist but presently deal only with a superficial degree of the total problem or potential target audience.
- the major locus of decision-making attention (by the Legislature and other highly placed entities) appears to be in the realm of financing and operation of acute medical facilities and services.
- the focus of health planning appears to be on the coordination, development and control of the acute medical care delivery system, with considerately less attention to the promotion and maintenance of health.
- health care facilities and providers are intensely geographically centralized in the normal acute care model extant in most U.S. mainland cities, further emphasizing the acute/reactive emphasis.

While not meant in a critical vein, the foregoing features of the present system must lead one to conclude that Guam's current system is principally oriented to the provision of acute medical care for the few, with commensurate lack of

attention to health promotion, disease prevention, and health maintenance for the many.

Alternative orientations do exist. The system could, if further policy should dictate, be turned to a more prevention/promotion orientation which relatively less attention to the provision of acute medical care. A greater health maintenance/behavioral, educational emphasis could be developed to displace much of the present orientation. The latter options are, of course, polar extremes not to be taken entirely seriously as opportunities to be pursued at the expense of needed acute medical care services. It is evident, however, that a better balance within the system's overall orientation may be desirable. In the policy options offered later in this report, care has been taken to construct future alternative courses with a view to enhanced attention to presently underdeveloped components of the system. The improved balance of the system's orientation cannot be achieved solely through improvements in the health care system per se. Many changes which would impact on social, economic and physical environmental conditions would be important as means of more importantly influencing the health of Guam's citizens. Greater attention to human behavior and emerging life-styles can be predicted to have greater influence on health than major improvements in medical care will bring. Attention to biological factors influencing health fall in part beyond the medical system as well. Thus, in considering future alternative developmental courses for the health/medical care system, developments in other systems which impact on behavior, environment and biology must also be considered. To improve the medical care system to its ultimate can be expected to have no greater than a 20% contribution to improved health. Other sectors of the economy (employment, economic development, education, religion, culture, transportation, family structure, housing, and recreation to name but a few) must be brought into play and made to bear on the health needs and status of the population concurrently

with improving the health and medical care system in order to achieve the profound improvement of health which we believe to be a high governmental priority.

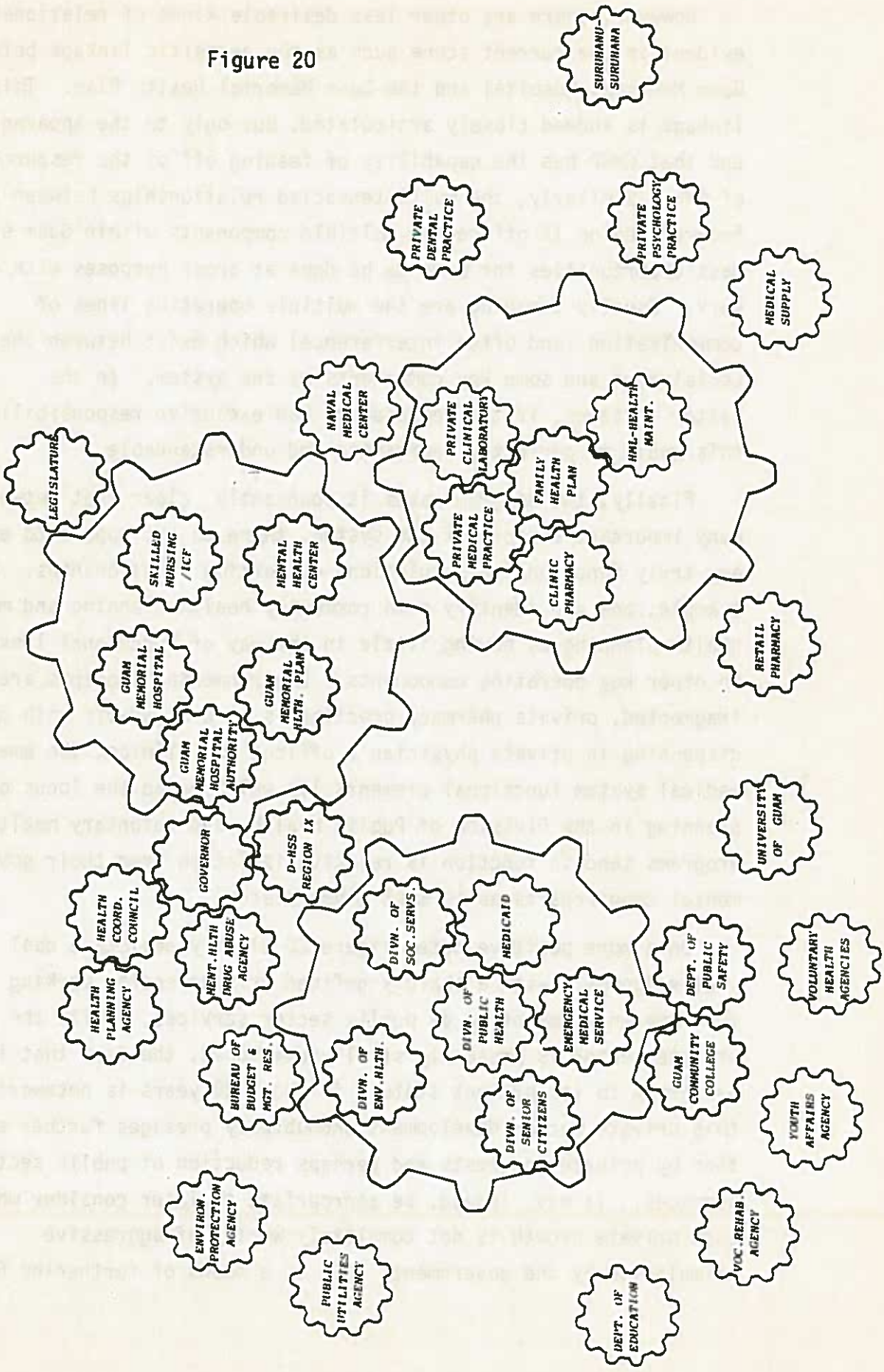
F. OVERALL ASSESSMENT

Having now reviewed in substantial detail each of the major operating components of the health care system and what appears to be the system's overall orientation, it becomes possible to step back from the details to take the broadest view of the entire system. Just as in Section IV, wherein discrete problems have been collapsed into broader issues, it is important as a foundation for subsequent recommendations to look now at broader issues of the total system.

Certainly not by master design, and as a product of private development during the last two decades, Guam now has a completely pluralistic health care system replete with most of the advantageous ingredients of similar systems throughout the United States, but also complete with all of the defects characteristic of pluralistic, uncoordinated social efforts.

Figure 20 is one attempt to pictorialize the current Guam health system. We have chosen the symbolism of gears to depict the many system components (or sub-systems) for we wish to begin now to emphasize the importance of establishig linkages between and among the many separate, discrete and autonomous features of the system. If, as we believe, we have captured the system accurately, it is immediately clear that there is not one system, but at least three separate and distinct major health systems and at least 16 external but closely related systems now operating. In some cases, these are mutually supportive although not fully articulated, as in the case of the U.S. Military system and the frequent role which it plays in support of Guam Memorial Hospital as in the informal supply of physician specialists, or as it supports pharmacy services within the Government of Guam by providing low cost purchasing agreements.

Figure 20


SURUHANU-SURUHANA
PRIVATE DENTAL PRACTICE
PRIVATE PSYCHOLOGY PRACTICE
MEDICAL SUPPLY
NAVAL MEDICAL CENTER
PRIVATE CLINICAL LABORATORY
HML-HEALTH MAINT.
FAMILY HEALTH PLAN
LEGISLATURE
SKILLED NURSING /ICF
MENTAL HEALTH CENTER
PRIVATE MEDICAL PRACTICE
CLINIC PHARMACY
GUAM MEMORIAL HOSPITAL
GUAM MEMORIAL HLTH. PLAN
GUAM MEMORIAL HOSPITAL AUTHORITY
RETAIL PHARMACY
UNIVERSITY OF GUAM
GOVERNOR
D-HSS REGION IX
HEALTH COORD. COUNCIL
DIVN. OF SOC.SERVS.
MEDICAID
DEPT. OF PUBLIC SAFETY
VOLUNTARY HEALTH AGENCIES
MENT.HLTH DRUG ABUSE AGENCY
HEALTH PLANNING AGENCY
DIVN. OF PUBLIC HEALTH
EMERGENCY MEDICAL SERVICE
BUREAU OF BUDGET & MGT. RES.
DIVN. OF ENV.HLTH.
GUAM COMMUNITY COLLEGE
DIVN. OF SENIOR CITIZENS
YOUTH AFFAIRS AGENCY
ENVIRON. PROTECTION AGENCY
VOC.REHAB. AGENCY
PUBLIC UTILITIES AGENCY
DEPT. OF EDUCATION

However, there are other less desirable kinds of relationships evident in the current scene such as the parasitic linkage between Guam Memorial Hospital and the Guam Memorial Health Plan. This linkage is indeed closely articulated, but only to the apparent end that GMHP has the capability of feeding off of the resources of GMH. Similarly, the multi-tentacled relationships between the Federal Region IX office and multiple components within Guam suggests vast opportunities for work to be done at cross purposes with other work. Equally damaging are the multiple operating lines of communication (and often interference) which exist between the Legislature and some key components of the system. In the latter instance, if the Legislature had executive responsibilities, this would be perfectly legitimate and understandable.

Finally, the diagram makes it abundantly clear that between many important sectors of the system, there do not appear to exist any truly functional articulations or working relationships. For example, one can identify both community health planning and mental health planning as having little in the way of functional linkages to other key operating components. Environmental concepts are fragmented, private pharmacy practice is at a stand-off with drug dispensing in private physician's offices and clinics, the emergency medical system functional elements lie well beyond the locus of EMS planning in the Division of Public Health, and voluntary health programs tend to function is relative isolation from their governmental counterparts as in most other places.

On a more positive note, Figure 20 clearly depicts a dual sector approach with a sharply defined private sector working in the same environment as do public sector services. While the private sector is presently still undeveloped, the fact that it has grown to its present stature in about 20 years is noteworthy, for this private sector development undoubtedly presages further exploitation by private interests and perhaps reduction of public sector services. It may, indeed, be appropriate to later consider whether such private growth is not completely worthy of aggressive stimulation by the government, both as a means of furthering Guam's

economic development and of removing the government from a substantial portion of its present responsibilities which could be assumed by an enlarged private sector delivery system.

The term "system" is essentially a concept rather than an entity which can be held or felt. The concept of system is an organization which pulls together the great array of medical bits and pieces seen by individual patients one at a time. A system weaves these bits and pieces together in an intelligible pattern wherein comprehensive health services provide health maintenance, prevention of disease where possible, diagnosis and treatment where disease exists, and rehabilitation at all stages of disease to prevent after effects. In Guam's present health care "system," a tragic paradox seems to exist: the tools are largely available and are sporadically applied where patient, doctor and tool (sometimes serendipitously) meet. But, by and large, in a smooth flow of interrelated and uninterrupted service, the tools and skills of modern health care are not uniformly available or accessible to all the people in need of them. In brief, health and medical services are clearly not always available or accessible to the right patient, at the right time, in the right place, in the right amount, and at the right cost.

The basic problem is that a set of components have been assembled or have developed, most of which operate with relatively good internal efficiency--they do what they are supposed to do quite well, with good outcomes and at fairly reasonable cost. But, they generally lack suitable interconnections between components, and until these have been established, a total true system will never really exist. The hospital sub-system and the private medical practice sub-system apparently function reasonably well as independent systems. There is some interlocking to be sure. But the interfunctioning of just these two sub-systems of the total results in a fire-brigade technique--patient becomes ill, usually receives concentrated care in a hospital bed and is surrounded by the best available medical talents. Had other components of

the system been functioning in unison, the patient might have been spared the illness in the first place, or his physical, mental or social restoration might have begun earlier. With the clearly existing discrete components (sub-systems) now in place, the typical patient stands a good chance of getting lost in the maze created by the varied, frequently separate, types of services or facilities he may require. Thus, the problem which this analysis presents is that of achieving better utilization of already available medical and health resources, which results in greater output (focused where it is needed and when it is needed) with the same, or less, input. This, of course, calls for the highest degree of efficiency within the system for the maximum output. Where medical care systems as in the case of Guam, lack the necessary interconnections, one then turns to the device of "articulation" as the means of devising a functional system from among disparate sub-systems. The articulation of sub-systems within a total system does not necessarily imply a merging of agencies and groups. It does not imply a hierarchical structure in which some agency, organization or profession is the "boss" and all others are "subordinates." It does, however, imply coordinated planning in which community goals and priorities--not merely those of the separate public and private sub-systems--become the targets for achievement through mutual involvement.

Thus, articulation as used here means the blending of objectives and effort put forth by many diverse and often autonomous persons, agencies, organizations and facilities. Articulation is meant to focus all components of the system on the central need, rather than the dispersal of effort on peripheral or secondary needs (which tend often to be seen as primary needs when they are viewed from the limited perspective of an individual sub-system).

There are predictable barriers to achieving articulation or interagency coordination. Agency diversity, wherein organizations differ not only in clientele served, in sources of funding, and in specialized skills offered, but also in objectives and goals and

in divergent sources of authority. Specialization is another impediment to articulation, and most existing health and medical care sub-systems are intentionally specialized and give little coordinated attention to the "whole person." Deficient communication is another kind of deterrant wherein many professional workers associate with one kind of endeavor remain ignorant of the services and activities of those workers not directly connected with their areas of endeavor. This occurs, remarkably, not only between agencies and organizations, but within the same organization. Professional conflicts present another major deterrant. While the medical profession has historically seen the leadership role as its, that role has been diminished by the trends toward specialization in medicine itself. Unfortunately, each profession contributing to the total health system can be expected to see the patient's need from their own special viewpoint, and with little reference to other, equally valid, viewpoints. Inadequate motivation blocks effective articulation, and it is easy to understand reluctance to participate in coordinating endeavors when ones own world is going along swimmingly and when so much time and extra effort may be required, and when an enjoyable status quo may be adversely affected.

Despite such seemingly insurmountable obstacles, we are convinced that changes in Guam's society and changes in diseases are reshaping the medical care needs of her population. This coupled with a short supply of funds, creates a demand for a system where all the necessary facilities, and all the necessary resources are brought to bear, in an orderly and articulated manner, to meet these emerging needs, in as efficient way as possible. The ingredients of such a system already exist in Guam. To a large degree and for a variety of reasons, they are not fully articulated into a master system for the delivery of health care which focuses upon the whole person.

The task now becomes one of finding ways to better articulate the existing components, of providing fits for future components to be added, and of building in assurances that the barriers to

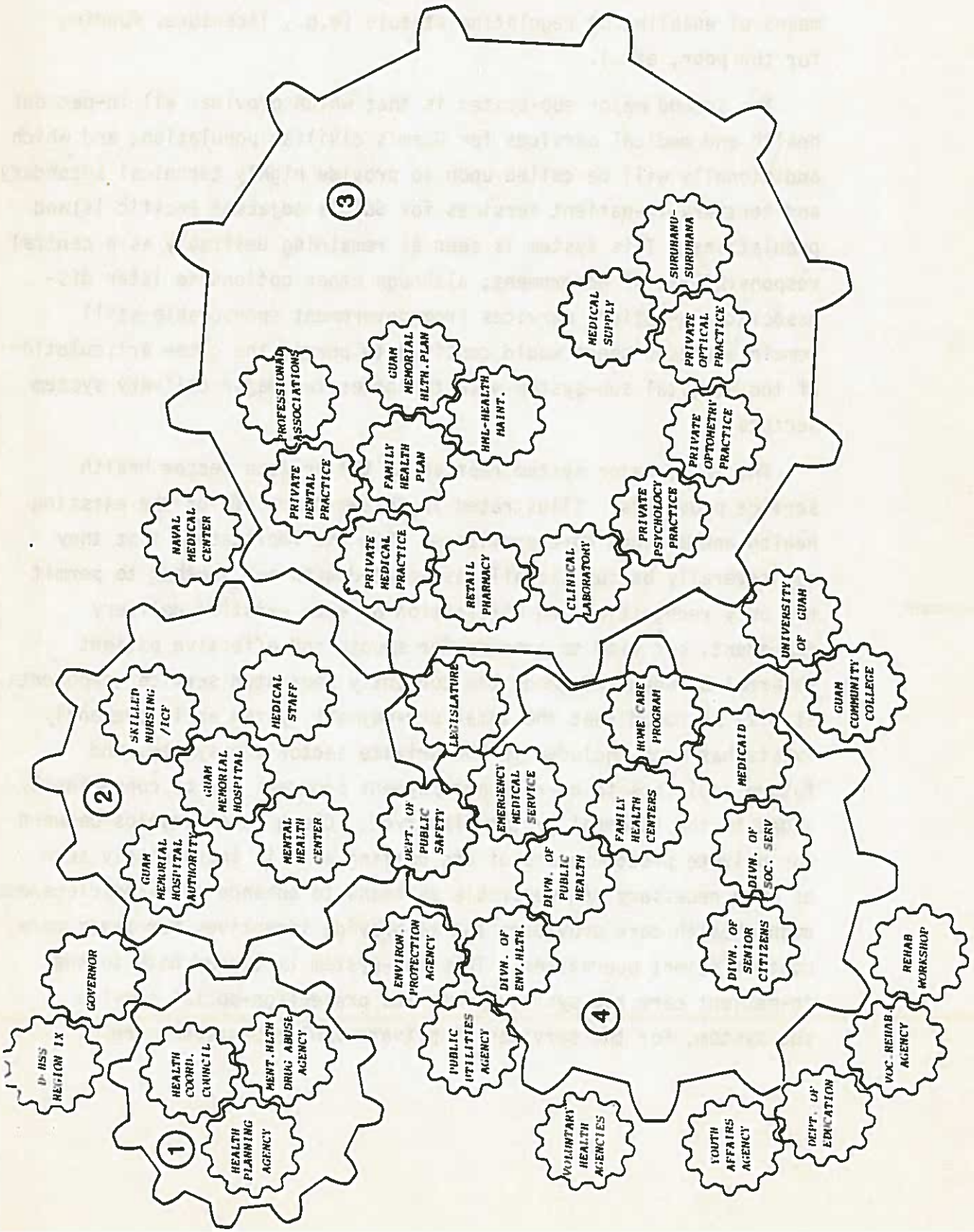
articulation have been accounted for. This discussion may now be brought to closure with a suggested pattern for a fully articulated sytem. In later sections of this report, specific and alternative suggestions for future development are offered. These are each intended to help in bringing Guam's health care system closer to the recommended fully articulated system suggested here.

Figure 21 presents an articulated system which is well within the grasp of Guam. It is a system which recognizes the value and importance of each existing component, but which places each into a functional (and in some cases, an interdependent) relationship to other components with which interactivity would be beneficial to citizens and their health needs.

The proposed future system configuration, toward which many of the recommendations presented are directed, consists of four major sub-systems, all closely articulated but each with a high degree of internal integrity. The first major sub-system could be termed the "planning and development" system (labelled 1 in Figure 21) wherein closely articulated personal, public health, mental health and other kindered planning activities are subsumed. This sub-system can be seen as a form of guidance system for the total system, providing future directions, coordination and oversight for the total system's functioning. It should be noted that the Governor and the Executive Branch of Government is seen as most closely articulated with this sub-system, for the concerns of this system lie primarily in the arena of public policy development.

The multiple and varied roles of Federal agencies, exemplified by the Region IX offices of the Department of Health and Human Services, are shown as desirably impacting on the total system through a close interface with the Governor, not with sub-components within the system, thus providing a greatly enhanced ability to creatively coordinate and style Federal initiatives to the real needs of Guam. The Legislature is portrayed in a highly central position, with close articulations with the three major delivery

Figure 21


1
2
3
4
D HSS REGION IX
GOVERNOR
HEALTH COORD. COUNCIL
MENT. HLTH DRUG ABUSE AGENCY
HEALTH PLANNING AGENCY
SKILLED NURSING /ICF
MEDICAL STAFF
GUAM MEMORIAL HOSPITAL
GUAM MEMORIAL HOSPITAL AUTHORITY
MENTAL HEALTH CENTER
NAVAL MEDICAL CENTER
PROFESSIONAL ASSOCIATIONS
GUAM MEMORIAL HLTH. PLAN
PRIVATE DENTAL PRACTICE
FAMILY HEALTH PLAN
HMO-HEALTH MAINT.
PRIVATE MEDICAL PRACTICE
RETAIL PHARMACY
CLINICAL LABORATORY
PRIVATE PSYCHOLOGY PRACTICE
PRIVATE OPTOMETRY PRACTICE
MEDICAL SUPPLY
PRIVATE OPTICAL PRACTICE
SURUHANO-SURUHANA
LEGISLATURE
DEPT. OF PUBLIC SAFETY
EMERGENCY MEDICAL SERVICE
DIVN. OF PUBLIC HEALTH
HOME CARE PROGRAM
FAMILY HEALTH CENTERS
MEDICAID
DIVN. OF SOC. SERV
UNIVERSITY OF GUAM
GUAM COMMUNITY COLLEGE
ENVIRON. PROTECTION AGENCY
DIVN. OF ENV. HLTH.
PUBLIC UTILITIES AGENCY
DIVN. OF SENIOR CITIZENS
REHAB WORKSHOP
VOC. REHAB. AGENCY
VOLUNTARY HEALTH AGENCIES
YOUTH AFFAIRS AGENCY
DEPT. OF EDUCATION

sub-systems. This is not meant to connote a controlling linkage, but rather to display the central importance of legislative acts as facilitators of the functions of multiple system components and of the necessary integration and coordination between and among sub-systems and their internal components by means of enabling or regulating statute (e.g., licensure, funding for the poor, etc.).

The second major sub-system is that which provides all in-patient health and medical services for Guam's civilian population, and which additionally will be called upon to provide highly technical secondary and tertiary in-patient services for Guam's adjacent Pacific Island populations. This system is seen as remaining desirably as a central responsibility of government, although other options to later dis-associate in-patient services from government sponsorship still remain and even these would continue to permit the close articulation of the hospital sub-system with the other two major delivery system sectors.

The third major system represents the private sector health service providers. Illustrated in system 3 are all of the existing health and medical care providers, with the implication that they may severally be functionally associated with one another to permit not only recognition and utilization of each existing delivery component, but also to provide for smooth and effective patient referral between and among the currently separated service components. It will be noted that the total pre-payment system as it presently exists has been included in the private sector sub-system, and future additions to current pre-payment programs can be conveniently added to the internal system displayed. Close relationships between the private practitioners of the healing arts is increasingly seen as both necessary and desirable as means to enhance cost-consciousness among health care providers and to provide incentives for their more cost-efficient operations. This sub-system is linked both to the in-patient care sub-system and to the prevention-social service sub-system, for the services of private sector providers are

required to achieve full function of the other two main delivery sub-systems, and members of the private sector sub-system are, in large measure, dependent upon the other two delivery sub-systems.

The fourth major sub-system we have termed the preventive-social service system (number 4 in Figure 21). Here, not only are close working articulations among and between the official health and social service systems of government implied, but closer working relationships are also suggested with a wide spectrum of other governmental systems which contribute to health care or which in some ways depend upon the health care system. The contributions to health care derived from presently external and isolated systems can, in this image of the future, best be gained through the portal of the preventive-social services sub-system. In some, as in the case of emergency ambulance services operated by the Department of Public Safety, a more direct articulation between two major delivery sub-systems is portrayed as appropriate. Similar supportive relationships for both the University of Guam and Guam Community College are foreseen as important with both the private sector and the preventive-social service sub-system as future manpower and educational support networks are fully developed. A possible new adjunct to public health services--family health centers, and their close articulation with home care programs--have been included in the preventive-social service system as an indication of the desirability of separating primary medical care services of government from the acute in-patient sub-system. These, as the diagram suggests, need however to be closely articulated with the private service delivery sector, for much of the professional service will continue to be derived from that sector.

As explained earlier, the articulations and coordinations suggested in the proposed future system configuration are not intended to establish any kind of heirarchical superior-subordinate relationships between any sub-systems or components thereof. What is suggested is the establishment of mutual working relationships, means of mutual participation in decision-making and program

planning, formal dependency linkages, and cross-component, cross-service participation in health service delivery. The establishment of a closely articulated total system will require recognition of the existence and value of each component by all other components, in some cases incorporating the abandonment (or at least development of a partnership) of the delivery of some services in favor of their assignment elsewhere. For example, with respect to primary out-patient medical services provided by government, their separation from Guam Memorial Hospital is implied in the system design, but this does not mean that medical staff and other resources of GMH or of the private sector are not to be employed. In another case, the recognition and articulation of retail pharmacy with the private medical practice sector does, for the most part, suggest abandonment of present private office drug dispensing practices, leaving to the organized pharmacies at either the retail level or in organized medical groups the drug dispensing responsibilities of the system. At another extreme, the proposed system suggests not only recognition but articulation of the Suruhanu and Suruhana who now practice their traditional medicine in total isolation and separation from Western medical practice.

Many of the major issues which are highlighted in the following section of this report relate to the current structure of Guam's health service system. All of the major recommendations and alternative developmental pathways suggested in Section V serve to support and document the desirability of the proposed future system configuration discussed above.

IV. PROBLEMS AND ISSUES

A. INTRODUCTION AND PROBLEMS OF THE SYSTEM

Deriving from the foregoing analysis of individual system components, and from personal interviews with more than 100 informed persons on Guam, the study team assembled an awesome listing of specific, discrete problems and issues which confront Guam's present health care system. We have chosen to ignore a great array of small and relatively unimportant problems in the following section, reserving it for the most major issues and problems from among this lengthy listing. These have been organized within four major areas of concern: financing of health service, delivery of health service, organization and management of health service, and the quality of health services. Since issues and major problems relate to specific sectors of the delivery system, we have further partitioned them as they relate to four major perspectives: Guam Memorial Hospital and related institutions, the Department of Public Health and Social Services, the private sector of professional practice, and the general system. Our intelligence regarding issues and problems stems from reports received from private citizens, elected public officials, governmental agency officials and operatives, staff members of the hospital, military officials, private practitioners of the healing arts, business people, and religious leaders. It does not appear important to us just exactly who perceives the problem or issue--the major concern is that those which we present here are in fact either directly observed and documented problems/issues are are felt to be important issues by well-informed people within the community and within the health care system.

A redundant note of caution must be entered at this point. Beginning next on page 209, the reader will enter Table 30 which displays a wide and impressive array of quite serious problems. The normal temptation will be to begin to develop notions as to how each specific problem might be dealt with individually. For example, late payment of Medicaid providers is amenable to immediate solution; the issue of lack of night and weekend easy access to pharmacy services can be approached in a straightforward manner.

Every issue and problem included in the following pages can be similarly attacked as if it stood alone and had no "root causes." As we emphasized in the introduction to this report, to do so would, in our opinion, be wasteful and unproductive. Each issue and problem reported here can be viewed as a "brush fire," and a "crisis," to which a band-aid can be applied as a solution. The reader should bear in mind the honored medical axion that treating the symptoms (the brush fires and crises) without treating the underlying cause is simply palliative, and the therapist can usually expect to see the same or related symptoms reappear at another time in history.

For this reason, we present the issues and problems as we presented the earlier critical description of system components, only as a diagnostic tool which supports our concluding identification of major factors or forces which compel, create, foster and encourage the kinds of problems and issues reported here. Appropriate "treatment" should only be applied to these latter "causal" factors, and dealing with them rather than with discrete problems will assure a more profound and lasting solution to the more symptomatic issues.

Table 30

Problems in Guam Health Care System

PERSPECTIVE: Guam Memorial Hospital

Financing Problems & Issues

-- acute periodic financial crises affect every phase of GMH operation

-- the frequent lack of adequate funds in GMH results in basic supplies not always being available when needed

-- the hospital pharmacy finds it necessary to depend on retail pharmacies when it runs short and needs to purchase on short notice, at substantial increased costs

-- GMH often fails to recover all that is due it, owing to poor billing and collection procedures, underpayment, no payment and partial payment, and failure to bill all eligible payees

-- political interference on behalf of individuals often makes GMH collections nearly impossible

-- undisciplined admitting procedures at GMH result in misclassification of patients in terms of payment eligibility, resulting in improper charges to various entitlement programs or in lack of collection from available entitlement programs

-- GMH is slow in rendering bills, some as long as 10 years old, and people forget the details and become reluctant to pay

Organization & Management Problems & Issues

-- GMH appears to have essentially no constituency or advocacy for it and and its programs

-- GMHA plays a weak role of buffer for GMH management with the community in general, and with the Executive and Legislative branches of government

-- the lack of continuity in GMH management makes resolution of internal hospital problems impossible. Under conditions of routine management turnover, neither short-term nor long-term plans can be instituted, let alone followed through

-- FMH has had 7 administrators in four years, and with the latest resignation, it now is 8, thus averaging a 6-month tenure per administrator

-- the failure to give any one GMH management team an adequate period of time and firm ground rules to work with has occasiond management chaos

-- GMHA is in conflict of interest since it controls both GMH (a provider of service) and GMHP (a purchaser of service on a negotiated basis)

Service Delivery Problems & Issues

-- provision of all indigent medical care responsibility has been made that of GMH, and not shared with DPH and other appropriate entities

-- off-island medical care is an illogical GMH responsibility

-- the design of GMH causes logistical service and storage problems and wastes space

-- physical facilities for mental health services at GMH are inadequate, and maximum security rooms are non-existent

-- GMH discharge planning is not fully coordinated with public health or private medical follow-up programs

-- some patients in GMH feel the need for family/friend to tend to their personal needs, especially after 10:00 p.m.

-- there have been cases where a private physician prescribes surgery, but cannot enlist GMH staff physicians to provide assistance

-- GMH has controlled hours for release to remains to the displeasure of some mortuaries

Service Quality Problems & Issues

-- GMH has a shortage of qualified manpower in some areas

-- inadequate inservice training for GMH staff members

-- owing to critical nursing shortages, some GMH nursing supervisors have dual and triple responsibilities

-- there are some GMH services in which nursing supervision is not adequate, relating to lack of basic training in some cases

-- GMH lacks maximum security holding facilities for criminal and related cases which must be held in the hospital

-- GMH OPD and ER discharge patients who complain that they still have the presenting symptoms and don't understand what appears to be lack of effective care

-- GMH is seen by some clients as not being as clean as it might be

-- the local media convenys a negative image of GMH and people tend to believe it because it is so constant

PERSPECTIVE: Guam Memorial Hospital (continued)

Financing Problems & Issues

-- because of lack of resources, a systematic program of preventive maintenance is not now provided at GMH, creating certain high future costs

-- the two separate facilities at GMH pose problems of duplicated costs of maintenance

-- the "old" GMH building has deteriorated to such an extent that refurbishment costs would be a waste, and current maintenance costs are extraordinarily high

-- there is no system operating for appraising the relative operating efficiency of hospital departments as a cost reduction device

-- past rate increases have not been disproportionately allocated to cost centers as a means of maximizing reimbursement from Federal programs

Organization & Management Problems & Issues

-- political interference sometimes occurs with internal management and personnel administration

-- GMH lacks a master long-range institutional plan to guide future development

-- GMHP is poorly managed, apparently to the advantage of the management firm and not the Plan per se

-- poor supply ordering practices exist in GMH, with no materials management program involving preselected and dependable suppliers

-- GMH lacks needed services, supplies and upkeep which would permit its operation as a first-rate hospital

-- GMH has an overabundance of employees in some categories, due in part to patronage

-- GMH personnel department operates principally as a clerical clearinghouse for civil service hiring procedures, and does little regarding systematic recruitment and staff refreshment

-- although a semi-autonomous agency, GMH is saddled with a cumbersome governmental hiring process not suited to medical staffing

Service Delivery Problems & Issues

-- GMH personnel are seen as not meeting the emotional needs of patients

-- the GMH OPD system is cumbersome for patients who need to make many steps as they progress through the OPD system, becoming depressed and angry

-- care in GMH emergency room is sometimes slow

-- the elderly tend to find the GMH OPD unacceptable and tend to go to their own private physician and pay the bill--often a physician from earlier years whose specialty may be irrelevant to the older person

-- GMH has essentially no transportation service

Service Quality Problems & Issues

PERSPECTIVE: Guam Memorial Hospital (continued)

Financing Problems & Issues	Organization & Management Problems & Issues	Service Delivery Problems & Issues	Service Quality Problems & Issues
	-- the GMH medical director operates without telephone or secretary, having to rely upon a bulky "walkie-talkie" for communication with staff physicians, other units and administration, making effective medical supervision difficult, if not impossible		
	-- GMH nursing services have an unwieldly administrative structure which tends to deal with crisis management, owing in large measure to the acute shortage of registered nurses		
	-- there are significant protocol violations within GMH relating to a lack of efficient supervision		
	-- because GMH is required by law to service certain categories of patients without remuneration, it has become a dumping ground for certain private practitioners		

PERSPECTIVE: Department of Public Health & Social Services

Financing Problems & Issues

-- there have been few experiments with patient cost sharing in public health programs, resulting in foregone revenues

-- because of lack of funds, especially in later quarters of the fiscal year, clients do not always receive eligible services when needed resulting in occasional life-threatening situations as in CCS children's service curtailment

-- insufficient employment and use of less costly medical providers such as nurse practitioners, physician assistants, nurse midwives, etc., resulting in high cost and low volume of physician provided services

-- bureaucratic and political failure to deal realistically with medicaid definitions, services and collections from the federal government

-- physicians are concerned that medicaid eligibility permits many inappropriate persons to be covered

-- very slow and late medicaid reimbursement due to cash shortfalls and manual claims processing

-- medicaid spending of $400 per person per annum is very low by any standard

-- because of current fiscal crises, medicaid does not allow or pay for off-island medical care, regardless need

Organization & Management Problems & Issues

-- some units within DPH are fractionated with less than desirable inter-program coordinationg

-- little drawing together of divisions within DPH&SS or establishment of common missions to which each contributes

-- there is no administrative or policy watchdog over the public health programs

-- the existing Board of Health is a medical board of health which is characterized locally essentially as a "country club" which plays a weak role

-- DPH&SS section heads can't always get their job done because of administrative (mainly fiscal) barriers

-- many Federal regulations and guidelines are inappropriate for Guam, forcing in some cases the deploying of medically trained personnel to perform purely administrative work and forcing unneeded programs to be mounted

-- organizational structure in public health could be improved

-- insufficient communication across and within divisions

-- generally vague and unclear authority relationships

Service Delivery Problems & Issues

-- public health operations do not provide sufficient out-patient and clinic services in the various districts to meet existing needs

-- PL 14-94 placed indigent care in social services, but the responsibility has not been assumed and there is not coherent program for the indigent

-- EPSDT program only enrolls 15-20% of eligible children, and is of low priority because of insufficient dollars to pay treatment bills or to provide requisite screening services

-- there is a weak public health program in nutrition and virtually no involvement of private physicians in nutrition counseling for their patients

-- major nuisance and health hazards, such as stray dogs, not dealt with forceably

-- environmental health is reportedly slow in inspecting and correcting insect breeding problems

-- environmental health is reportedly lax in making recommendations re: sewage problems following frequent lowland flooding

-- Federal food and drug and local sanitation regulations are not sufficiently well enforced

Service Quality Problems & Issues

-- positions in DPH & SS often filled by politically selected persons who cannot do the work required of the position

-- severe shortage of trained public health nurses who are normally seen as the backbone of case-finding and follow-up for all other health programs at the village and home level

-- DPH & SS dentists are clinically trained and oriented with none having had formal public health dentistry training

-- general lack of personnel at supervisorial and middle-management levels with formal public health training

-- virtually no programs for in-service training and professional development of staff

-- follow-up of communicable disease cases and contacts is not always complete or routine

-- clients and their needs are fractionated over multiple and uncoordinated programs

-- patient records within DPH&SS are fractionated, and the same individual appears in multiple nd unrelated medical records and social service records

PERSPECTIVE: Department of Public Health & Social Services (continued)

Financing Problems & Issues	Organization & Management Problems & Issues	Service Delivery Problems & Issues	Service Quality Problems & Issues
	-- general lack of written policies	-- present childrens dental program insufficient to reach the required audience, as a result advanced decay is prevalent in early childhood	
	-- lack of clear written goals and objectives for many programs	-- less expensive and more effective (in the long run) preventive dental programs are foregone in favor of treatment programs for relatively few clients	
	-- unstable, confusing and non-participative internal budget processes	-- DPH & SS not taking the lead in providing dental care for the aged with mobility limitations, the poor, and prisoners, and private sector dentistry has little interest or time for these patients	
	-- general lack of consistent planning process, resulting in few written plans to guide activities		
	-- general lack of program evaluation		

PERPSECTIVE: Private Sector Health Services

Financing Problems & Issues

-- physicians are not paid realistic fees under Medicaid, which deprives many recipients of total free choice of provider, for some physicians and other providers will not serve Medicaid patients

-- because of delays in payment and outdated pricing, only 4 pharmacies will currently accept Medicaid patients

-- despite their status in the community, private sector providers are not a potent voice in asserting the financial needs of GMH, their principle work place

Organization & Management Problems & Issues

-- there is an absolute lack of physicians in neurosurgery, family practice, pediatrics, obstetrics, chest and vascular surgery, ophthalmology, oncology, cardiology, and neuro-radiology

-- the Navy is beginning to rely on private medical practice for dependent medical care (e.g. abortions and orthopedic care) and the civilian system is not prepared

-- the customary supportive role played by Navy physicians is declining and the Navy can no longer support physicians not specifically needed in their services, but who may be needed for Guam's civilian populations

-- there is no malpractice insurance available for pharmacists, physicians, dentists and other professional practitioners

-- the existing medical, dental and other professional organizations do not play customary roles in recruiting new professionals, providing continuing education opportunities, asserting quality standards for their profession, or collectively organizing to further their respective interests

Service Delivery Problems & Issues

-- medical and dental offices and clinics are open for primary care only during the traditional business hours, and few offer weekend or evening service

-- private physicians are reported to be slow in expediting legal documents, including filing certificates of death

-- many physicians act as their own pharmacists, dispensing greater than "office doses" and owning their own pharmacy in some cases

-- because of competition with physician dispensing, private drug stores cannot carry full line of drugs, requiring patients to go to several to get multiple prescriptions filled

-- there is no pharmacy in the southern or northern areas except one public health pharmacy on a part-time basis

-- there is no 24-hour pharmacy service

-- the local pharmacy wholesaler does not carry full line, creating long delays in ordering off-island

-- drug profiles on individual people are impossible to maintain because patients are required to shop around to get prescriptions filled and no pharmacy has a consistent patient population

Service Quality Problems & Issues

-- the only quality assurance available in the absence of standard medical licensure or a Board of Medical Quality Control is the credentials committee of GMH, and that is not known for being strong

-- private medical clinices are not regulated

-- pharmacy practice is not regulated and there is no real pharmacy practice act

-- pharmacists are not all quality educated and lack important abilities in patient counseling

-- there appears to be lax screening of foreign trained pharmacists

-- many Guam dentists are foreign trained and may not meet the customary U.S. standards for dental practice

-- clinical laboratories are not regulated and there is no formal quality control mechanism to control the quality of their work

-- lack of licensure laws results in insurance companies refusing to offer malpractice insurance for local practitioners, and forces the Government of Guam to self-insure its professional employees

PERPSECTIVE: Private Sector Health Services (continued)

Financing Problems & Issues	Organization & Management Problem & Issues	Service Delivery Problems & Issues	Service Quality Problems & Issues
	-- most private professionals have tended to localize their offices and clinics in the central urban area, in close proximity to the hospital	-- there is no clinical pharmacy practice in Guam to assist physicians with drug therapy	-- the lack of malpractice insurance concerns physicians who are in the prime of their practice, and several are considering leaving
	-- there are no organized off-island referral and consultation networks established by private practitioners for their benefit or that of their patients	-- inadequate psychological and psychiatric services	-- the lack of malpractice insurance is a prime force in keeping out new physicians
	-- Western professionals have not established linkages with indiginous practitioners		-- the existing arbitration laws have not been put to work, but even then will not itself overcome the need for malpractice insurance
			-- medical care tends to generally overprescribe, owing to lack of malpractice insurance, appropriate utilization review mechanisms, physician ownership of pharmacies and laboratories
			-- there may be a good deal of unnecessary surgery because of too few available and competent consultants to render second opinions
			-- many physicians do their own dispensing of greater than office doses, providing an incentive for over-prescribing
			-- some dispensing physicians do not properly label office prescriptions, and pharmacists cannot later properly refill them upon request
			-- patients often receive medications, but are not properly counselled in their use

PERSPECTIVE: Private Sector Health Services (continued)

Financing Problems & Issues	Organization & Management Problems & Issues	Service Delivery Problems & Issues	Service Quality Problems & Issues
			-- physician ownership of pharmacies is an unethical practice under AMA codes -- there is insufficient on-island professional continuing education for all health professionals -- there is insufficient continuing education for physicians, they practice too far from medical resource centers, and thus may not be as current as they might be -- it has proven hard to get "successful" physicians to come to Guam, and most are viewed as being in Guam for reasons of personal problems

PERSPECTIVE: General System Considerations

Financing Problems & Issues

-- insurance coverage is not universal and totally elective, resulting in many non-insured who could be so but who become government responsibilities at the time of need because of their lack of insurance

-- there is no low cost health insurance plan for families not eligible for medicaid, but with some financial resources

-- some elderly, who are eligible, do not enroll in Medicare (high deductable and co-insurance requirements) and have no incentive to do so since they will be cared for under other GovGuam supported programs at no cost, resulting in large foregone revenues

-- current health insurance programs, regarding obstetrical care limit benefits only to in-patient care, thus requiring many insured but low-income women to become Medicaid or indigent care beneficiaries for ambulatory pre-natal care

-- GMHP has few controls over utilization, resulting in financial burdens on GMH and on private physicans who participate but are not paid because of cost overruns.

Organization & Management Problems & Issues

-- there is no functional central governmental health policy board

-- lack of formal mechanisms for coordination within the governmental health care system, either inter-agency or inter-departmental

-- no neutral arena for regular communication, coordination, adjudication, or education among agencies involved in health care deliverly

-- government has a history of relatively rapid change in department heads who don't stay in office long enough to become knowledgeable and effective owing to political changeovers

-- Guam has a young government, still dealing with inherited problems with the electorate expecting miracles

-- legislators are not yet completly sophisticated in understanding health system problems

-- the power of the Filipino vote and the role of Filipino doctors strongly skews political decision-making regarding health services and GMH

Service Delivery Problems & Issues

-- there are no group homes for the physically and mentally handicapped

-- no sheltered environments for assistance to the retarded and others unable to live independently

-- inadequate guidance and counseling, day care and boarding services, and special counseling for physically disabled

-- government buildings are not totally accessible to the physically handicapped

-- inadequate physical rehabilitation workshop

-- there is little vocational rehabilitation outreach service, resulting in reluctance of families to use rehabilitation services for their handicapped, simply absorbing them into families as unrehabilitated members

-- little attention to establishing meaningful employment for active elderly citizens

-- little official governmental emphasis on the adult disabled and retarded citizens

-- there appears to be little attention to encouraging medically recovered persons to return to work

Service Quality Problems & Issues

-- most governmental health programs are conducted because staff members see a need for them, or there is a Federal grant available for their support, rather than being in response to overall health plans

-- inadequate licesnure requirements and standards for medical care facilities, products, services and providers

-- inadequate regulation of health manpower and health services

-- Guam lacks some needed high medical technology

-- many cases are now sent to Hawaii and elsewhere owing to lack of locally available equipment, in many cases resulting in life-threatening situations which could be dealt with on Guam

-- inadequate ambulance maintenance

-- good nurses flow when possible to DOE, private physicians and public health rather than GMH because they receive the same pay, lower hours and better schedules in those settings

-- UoG nurse practitioner program not implemented, despite serious need for such personnel

PERSPECTIVE: General System Considerations (continued)

Financing Problems & Issues

- top level bureaucratic budgetary manipulation of line operating agencies, often without knowledge of agency/program administrator, resulting in delayed or deferred services

- Federal regulations which accompany Federal dollars are not always styled for Guam, resulting in wasteful expenditures while true needs go unmet

- special groups eat up Guam's resources (e.g., Micronesian students at UoG with no money and no health coverage, immigrants and others) through receipt of free medical care

- private sector services compete directly with governmental services (e.g., surgicenter at Good Samaritan, which takes business away while GMH operation costs remain the same

-- there is lack of criteria regarding indigent care, resulting in ineligible persons being served as indigent which swells costs beyond budget limits

-- government medical and health purchasing is totally decentralized, resulting in losses of benefits of group or central purchasing of equipment and supplies

Organization & Management Problems & Issues

-- agency heads are not considered cabinet members, meeting perhaps but once per month while governor's assistants meet several times each week

-- related governmental services and activities are not fully consolidated

-- throughout the Government of Guam there are "empty shells" where an activity has become obsolete while its continuation drains scarce resources

-- fractionated and somewhat uncoordinated set of components within and outside government

-- very little inter-agency and agency-legislature communication and understanding exists

-- coordinating bodies (e.g., Developmental Disabilities Council) are incomplete in their membership

-- health and mental health planning are not coordinated or centralized

-- governmental health services are strongly influenced by private physicians

Service Delivery Problems & Issues

-- no low cost domiciliary facilities for the aged

-- indigenous midwives and healers (Suruhanu and Suruhana) are ignored by all sectors of the health care system, although they are widely employed by individual people

-- people tend to go abroad for "serious" medical care if they possibly can afford to, because of lack of confidence in local physicians and GMH

-- referral mechanisms, and follow-up procedures, for patients sent abroad for medical care are weak or non-existent

-- early childhood programs are only skimming the top of the problem

-- insufficient legislation to protect victims of family violence, child abuse and neglect

-- no program to screen, refer and follow-up in important areas such as birth defects and dietary deficiencies

-- little attention to, and poor equipment for, eye care which, with substantial epidemiological study, could cut needless blindness and large welfare costs associated with blindness and associated diseases unique to the area

Service Quality Problems & Issues

-- UoG has no health-oriented management program, despite demonstrated need for better prepared middle management personnel in all governmental health services

-- UoG has no clear pre-professional undergraduate tracks for Guam students desiring to prepare for medical, dental and other professional graduate programs

PERSPECTIVE: General System Considerations (continued)

Financing Problems & Issues	Organization & Management Problems & Issues	Service Delivery Problems & Issues	Service Quality Problems & Issues
-- no charges made for ambulance service, despite existing insurance coverage	-- the private sector has had bad experience working with government, and there is a mutual suspicion: government workers feel private providers and health plans are "ripping off" the people, while private sector providers feel government is inefficient and incompetent	-- the corrections facility lacks a modern dental unit, thus necessitating prisoners going outside the compound under guard for dental examination and treatment	
-- there is no provision for the pooled purchase of drugs, supplies and other commodities in large quantities		-- too little accessible dental care for the aged	
-- suitable, lower cost, alternatives to expensive hospitalization are only marginally developed, or are non-existent, such as day care facilities	-- people appear not to trust governmental agencies, and frequently use the Office of Suruhanu to validate what they have been told my an agency staff member	-- government services, like all others, are centralized in the urban areas to the disadvantage of rural dwellers	
	-- the village commissioner system, laudible as it is as an ombudsman network for gaining needed health and social services for villages, tends to focus only on the requirements of individual villages which are too small for full service	-- lack of available and accessible services to all persons	
		-- satellite health unit plan has not been fully developed for rural areas	
	-- people tend to see themselves as citizens of a village, rather than as citizens of Guam, and this parochialism obscures their vision of broader, collaborative, multi-village service arrangements	-- because of lack of reliable transport and local clinics, many in southern and other rural areas, especially older, poor and incapacitated persons, cannot easily get to care when needed	
		-- there is opinion that there are insufficient ambulance stations	
	-- there are multiple and uncoordinated routes by which complaints arrive at GMH and other agency heads -- direct, through legislators, through Suruhanu, through Governor	-- as many as 50% of the available ambulances may be out of service at any given time, and this in view of the poor telephone system places peoples lives at stake	
		-- there is a great deal of potentially duplicative service, as for example, in government and private clinical laboratories	

ERSPECTIVE: General System Considerations (continued)

Financing Problems & Issues	Organization & Management Problems & Issues	Service Delivery Problems & Issues	Service Quality Problems & Issues
	-- political pressures are brought to bear on governmental agencies to alter scheduling of various aspects of EPA plans which require coordinating with other governmental entities	-- many government services are slow in their delivery, for example, lengthy delays in obtaining food stamps	
	-- there are few plans for future medical needs, e.g., organ bank, burn care, trauma center, etc.	-- the general lack of house numbers and street indivators makes public health follow-up difficult or impossible in certain cases	
	-- Guam is not prepared to serve as a Western Pacific medical referral center, although surrounding territories will more and more become dependent upon Guam	-- poor environmental quality in some areas of Guam	
	-- government responsibility for outpatient care services is divided over GMH and DPH&SS with unclear division of responsibility	-- inadequate health education and wellness promotion	
	-- no VA office to properly service the large number of veterns with eligible health care needs	-- shortage of health manpower and inadequate training of some of the existing stock	
	-- there is no plan to distribute the care of veterans--the Naval Hospital could not assume the entire burden even if the VA provided added funding, and some mix of Naval and private medical care remains to be arranged		

ERSPECTIVE: General System Considerations (continued)

Financing Problems & Issues	Organization & Management Problems & Issues	Service Delivery Problems & Issues	Service Quality Problems & Issues
	-- military dependents are relied upon to fill a large number of professional positions in the health system, and this dependency appears dangerous in the long-run		
	-- UoG needs improved nursing program and pre-professional tracks		
	-- there is no central, organized professional recruitment program for the systematic attraction of needed health professionals to Guam		

B. THE MAJOR ISSUES

MAJOR ISSUE I

Government affairs as they pertain to the organization, control and delivery of health services, are not routinely conducted in a systematic, coordinated business-like way.

This broad concern can be divided into two highly related components which are (1) inconsistent executive leadership in health and (2) lack of an adequate policy framework to guide the management and delivery of health services.

1. Inconsistent Executive Control and Coordination in Health Service Areas

We have noted before, and it is evident in many of the problems cited, that the conduct of the health business of the Government of Guam is not always completely business-like at the executive levels. Whether we examine the Governor's control over the major governmental health agencies, the control of the Director of DPH&SS over his divisions, the control of the Public Health Division over its many operating units, or the control of Guam Memorial Hospital by its trustees and management, we find only occasional instances where chief operating executives have assumed and executed the complete responsibility of regulating the organizational subunits accountable to him into a functioning whole, as would be routine in the case in any successful business operation.

To be more specific, the Governor has no continuous and routine mechanism at his disposal by which he may be assured that all of his health-related agencies do, in fact, function in an effective, non-wasteful and non-duplicative way. The management span of control for the Governor is indeed awesome, with some 12 staff offices, 3 staff departments, 10 line departments, 20 autonomous and semi-autonomous departments and agencies, and more than 10 boards and commissions reporting directly to him. Except in the most loosely knit research and development organization, or the most routinized, repetetive kind of business organization could such a span of control be

managed effectively by an executive. In the complex business of government, it is patently unworkable as it is in any complex industrial enterprise. While it is true that the Governor is assisted by a senior advisor, executive assistants, and a number of special assistants to whom groups of departments and units of government are assigned, the responsibilities of the Governor's aides (at least so far as health agencies are concerned) seem mainly to be those of liaison, not management and control. Thus, those sub-executives who have been appointed to provide executive oversight over complex agencies are apparently not regularly held accountable for the effectiveness of their executive leadership, with reliance apparently resting on their imputed capacity to do so. In the health sector, the special assistant is apparently not expected to know what things are to be done, the best ways of doing them, or specifically who should do them and in what mixture. As the Governor's direct proxy, he appears to have been given no authority to assign tasks, to determine that they are being done properly, or to bring mutual interests together. To further complicate coordination of Guam's major governmental health agencies at the executive level, we note that that a major provider of service, and a major pre-payment program, are semi-autonomous and operate essentially as subsidiaries which lie in a state of limbo somewhere between self-governance and direct executive control.

We have spoken before about the desirability of coordination among and between major line and staff agencies of government for the most effective programming in the health sector. There is lacking, however, a formal cabinet structure which is the vehicle customarily employed by chief state executives for exercising that kind of leadership. Department heads meet as a group with the Governor only infrequently, with the majority of communication existing between the Governor and individual department head and his corps of assistants. This is at least one level removed from that point of inter-program interaction which could bear fruitful coordination results.

Similarly, failures have occurred in directing and integrating the work within both GMH and DPH&SS. In each case, the sub-units of the parent organization are basically permitted to go their own ways without continuous executive oversight over sub-unit contributions to the success of the overall mission of the master agency. Both DPH&SS and GMH presently lack functional and clear cut missions per se, and their executives have tended to focus their attention on component parts of their agency, with concern that each works well at its respective set of independent tasks, but with less concern for overall agency mission. This is not intended as an indictment of individual people, but rather of the system which appears to place people in executive positions which have the mission of "holding operations"--holding the pieces together, bargaining for scrace resources, keeping the multiple programs afloat somehow, but without a clear mandate to assure that their organization and its sub-units are mode to function as a part of the whole system. The expectation that somehow, if all the parts are functioning, all will turn out well appears to be well ensconced at each level of executive structure. Examples as cutting off or transferring budgeted funds without communication with the units affected have occurred at the agency sub-unit level. The simple expedient of regular face-to-face meetings among major division directors as a group with the superintending executive may, in some instances, not take place for a year at a time.

We continue to find the same non-integrating and non-businesslike approach to managing occuring further down in the ranks of executives, as for example among the sub-units of the Public Health Division. Until very recently, few attempts had been made to organize a firm set of relationships among the sub-units even though there is recognition that mutual collaboration among many programs is necessary in order to assure that a given client receives the services needed. Under conditions of lax program integration, it is, for example, possible that a diabetic client may not be able to get insulin, or a hypertensive patient

an adequately potent drug, all the while other aspects of the same client's case have been acted upon. There are many cracks in the sidewalk down which clients of the governmental health system must walk, cracks which represent misarticulations among and between components of the system, cracks into which many clients fall to the disadvantage of their health.

2. *Absence of a Basic Policy Framework*

While this facet of this major issue area has its origins in the foregoing state of affairs, it is so specific and important that we choose to give it a place of prominence of its own.

Laws are routinely created at the legislative level which, in essence, are stipulated policies, the execution of which the Governor oversees in his role as chief executive. However, as we will subsequently demonstrate, there are serious gaps in statutory policy suitable to determine very fundamental directions, such as for example precisely which institutions and agencies shall organize and provide funding and care for the poor.

There are few clear cut and understood policies for budgeting or for controlling the often necessary shifting of funds from one unit or agency, for employee choice and hiring influences by outsiders as they impact on the employing agency, for required times and ways of paying legal debts incurred in the receipt of health care, or for dealing with recurring and demoralizing temporary freezes on hiring, purchasing supplies and making capital outlays which have otherwise been previously planned for, justified, budgeted and appropriated for.

This issue of over-appropriation, over-budgeting, and failure to utilize a reasonable cash-flow guidance relationship has been recently commented on in a review of the Department of Education, and it is not unique to the health sector.

At the individual agency level, many of these same problems recur among divisions. Not only are there few directions from above to assure comparable efficiency among operating agencies, there are few internal directions based on general policies which apply to an agency's own divisions with their own special concerns.

Similarly, there are few guides for the sub-units within agency divisions which allow them to work in an integrated way, reporting in comparable ways, and assuring integrated program planning.

At the level of the individual employee, procedural guides, reporting requirements and policy manuals are available or up-to-date only in a few program areas.

These conditions can be expected to have appalling results on operating efficiency. The lack of a clear means of acquiring funds, or at GMH for servicing the poor and indigent, results in inadequate cash flows, hiring freezes, inability to order in discounted quantities, etc. The services, however, go on even if delayed but with the potential result of more complicated disease which may require the use of more expensive procedures and supplies. Thus, inadequate policy guidance leads directly to restrictions in program function which in turn results in further delays, complications and expense. One could almost imagine the existence of implicit policy which defies order and system. While we do not find evidence to support that contention, the current situation so long as it exists will continue to deprive government and government workers of a source of respect and initiative and will continue to impose a high price on the delayed and obstructed work which they perform. There is no business, including government, which can tolerate these conditions for long and remain viable and solvent.

We hasten to point out that the foregoing kinds of failures are widely known in states with much more than the few years of self governance which Guam has enjoyed. We should also note the

precarious political position of Guam, wherein in many ways the government behaves as a sovereign nation, in most ways as a state, as a city-county government, and at the same time maintaining a very special territorial set of relationships. The latter often deny Guam's government of freedom to make many critical decisions locally or force it to accept many decisions which are truly irrelevant and inappropriate for a young and far from fully-developed territory. Guam has a heavy dependence on programs administered by the Department of Health and Human Services, which often are co-administered by the Department of the Interior as well. At the same time, it is virtually ignored by other Federal agencies such as the Veterans Administration, although it contains a higher than average proportion of veterans eligible for VA services, its citizens are denied eligibility for SSI funding which is highly health service correlated, receives greatly less than average matching for Social Security programs, and even with the recent increase receives an extremely poor match for its Medicaid program compared to the largesse received by the 50 states.

What is perhaps most troublesome of all in terms of the issue of unbusinesslike operation is the subserviant relationship which Guam has to D-HSS and its categorical programs. In many cases, Federal to Guam control and intervention goes directly to the operating sub-unit of health agencies carrying very specific operating orders, specifying manpower, procedures, reproting, eligibility, and even the choice of contractors. In the context of Federally mandated or supported programs, this effectively made it useless and unnecessary for the Governor to even attempt to organize departments, for departments to organize divisions, or for divisions to organize their operating units, for the latter often exist under direct control of those who control Federal funds and who require adherence to Federal guidelines. The question here is, who exactly is running the show? This era may, however, be waning. Consolidated funds, block grants and a greater degree of territorial independence in governance

and economic reliability appear to have arrived. Options appear now to be open to discontinue the Federally-funded anarchy in government and its agencies which has led to duplication and waste in some areas and to neglect and waste in others. Thus, we can begin to understand one major origin of the current policy failure--Guam has depended in the past on others alien to her government and people to supply the policy framework, since that came automatically with much of the money needed to support the service system. Indiginous policy statements were infrequently needed under that condition.

Equally probable is that Guam's operatives, aware of and resistant to, heavy tomes of outside policy (often totally irrelevant to the concerns and needs of Guam, or the procedures of her people) may well have unintentionally developed a general aversion to all policy-type guidance, extending even to the most basic set needed for Guam's own affairs. But, times are changing and Guam now stands in serious need of its own basic set of policies at the top, administrative guides in middle executive levels, and more technical guides at the worker level. The establishment of such policies will bring much more business-like operation as a result, and will direclty resolve a great many of the discrete problems previously isolated. There would be predictable resistance to bringing a business-like approach to governmental management and to the establishment of policy, for so many for so long have enjoyed the pleasures of unrestrained laissez-faire and operating autonomy. However, we have observed very successful business-like management of private enterprise in Guam, and remarkable evidence of successful community level voluntary enterprise. Accordingly, we find it hard to believe that government enterprises cannot be handled in the same business-like way since they are led, in many instances, by the very same people who have made the commercial successes so outstanding.

As a preface to our subsequent recommendations, we now present a series of more specific problems which derive from this broad issue of inconsistent executive leadership and deficient policy framework.

a. sufficient integration, coordination and cooperation is lacking among government health agencies owing to the lack of clear-cut overall government missions and lack of assignment among agencies of the specific work they must do for and with one another.

b. comparable inappropriate autonomy and disregard among agency sub-units for overall agency missions and for the work expected of each unit by other units which are dependent upon cooperation of others.

c. failure to maintain realistic cash flows for government programs which presently delude agency executives in their understanding of what they can spend, result in unrealistic appropriations and movement of funds as a fait accompli from time-to-time from place-to-place so that agencies cannot do the work expected of them.

d. common absence of understanding at the division or operating unit level of the meaning of "justifications" which lie behind budgetary manipulations and a widely held belief that "games are being played," resulting in a total loss of faith in governmental promises and methods. Losses in worker's time and damage to clients due to delays is keenly felt at the firing line, but sensible explanations of such are rarely supplied.

e. extensive and often contradictory interference if not partial administration on the part of legislative committees, and by individual legislators in some instances. It is common to be told repreatedly by legislators that GMH must learn how to collect unpaid bills. But, at the same time, some make no bones that they would

personally intervene with the hospital if it attempted to enforce collection on one of their voters should a contest develop.

f. executive and legislative intervention sometimes occurs in the choice of agency workers, at all levels from top to bottom, often without concern for special competencies or leadership ability, having resulted in clearly better prepared people being passed over and resulting in development of prolonged hard feelings. Where those authorized to make personnel decisions are overridden by purely political influence, endless schisms are set up which prevent effective work. Where incompetents are selected or tolerated, not only is there salary lost, but damage of the most serious sort may be expected.

g. clear and systematic role relationships and lines of communication do not uniformly exist within and between government agencies. They are equally variable with Federal agencies beginning with the Region IX staff and extending to headquarters executives in Washington.

h. excessive instability at agency and division executive levels results in constant turmoil in working relationships, supervision and consistency of mission. Policy instability, and sometime lack of managerial and technical skills in executive positions are damaging beyond reason.

MAJOR ISSUE 2

Absence of clear understanding, agreement or commitment to a suitable framework for delivering and financing necessary health care to all on Guam, coupled with absence of clear definitions of what portion of the health care load is the responsibility of government and what services its agencies must provide.

This issue has two major dimensions, namely (1) who needs Government of Guam health services, and (2) how will these services be paid for.

1. Who Needs Government of Guam Services

There is a clear government policy to make available to all persons various relevant basic health preventive and promotive services through DPH&SS programs. As a result and within finite fiscal constraints, DPH&SS has taken steps to disperse its services through health centers, visiting nurses and field operations. A comparable stream of logic for therapeutic services does not exist. The nature of an isolated island (state, nation or territory) is such that its government has little choice but to guarantee all of its people therapeutic services irrespective of peoples means, or otherwise see the destitute and ill literally dying on the streets, for they have no other adjacent jurisdiction to which to turn. But this does not necessarily imply the extreme notion that government must foot the entire bill, or that ways cannot be found to cover the needy and marginally needy in other reasonable ways. The current Territorial Health Plan begins to develop a picture of what services are needed, by what kinds of people, and at what locations and hours. Continued development of this picture, and the use of such a plan in directing future service development and deployment, is needed however.

At present, there is no ratified agreement by government as to what services for what people will be rendered by the private sector, by the armed forces, and by the various institutions and agencies operated by the government. Neither is there any agreement existing as to how these various entities, as a whole, relate to one another. Eligibility for Medicaid coverage, is for example, vague and unclear, as is the definition of those who shall be serviced free of charge by government because they lack funds, eligibility for categorical programs or any insurance.

Plans for delivering therapeutic care to persons in outlying areas which have no doctors, dentists or pharmacists are lacking. It is unclear, in such situations and for the poor, whether the

out-patient service of GMH or DPH&SS should be the service entity, and much is now divided. As a result, poor and isolated persons without transport have very limited access to care, or must often become in-patients needlessly at GMH because there is no other recourse. This is totally unfair and contrary to expressed government intentions to see that all Guam citizens have reasonable access to care.

An equally unclarified access issue is the proper number and distribution of lower-cost rest home, day care and domiciliary facilities near where people live. Home care servcies have been implemented by DPH&SS, but enfeebled persons who have no one to look after them are now often neglected in the home environment or are admitted to more costly and less suitable nursing beds available only at the central GMH location. As in other places, this results in patients needing skilled nurisng care remaining in the acute care setting of the hospital, for the nursing bed they need is occupied by an inappropriate patient needing a much less intensive level of custodial care.

As medical care has become more complex and dependent upon specialized technical equipment, doctors have also become more specialized and find it difficult to provide their services in any other than the central population center. The traditional Suruhanu or Suruhana is less frequently consulted as his or her science is limited and unrelated to modern western medical practice. Thus, residents of less densely populated areas (and of growing areas formerly considered "rural") must commute to the more populous area for medical care, dentists, and pharmacies. During this era of high fuel costs and the economic recession, it is difficult for many poorer and older people (the rural residents, largely) to afford or even make the round trip to medical care. At the same time, families are "breaking up," in the sense that younger people no longer stay in the family home surroundings, and women are entering the labor force in increasing numbers, resulting in lack of caretakers in the home to assist elderly family members. Public transportation services have

not proven popular and remain generally unavailable, probably for many years to come in the remote areas where mobility and poverty problems are at their worst.

While these problems have been largely understood and responded to by DPH&SS in its deployment of services, its services are primarily preventive and promotive, and are not established to provide therapeutic services of any magnitude despite their geographic distribution.

On a more global plane, but nonetheless important in the determination of who is to be served, is the question of health needs of Pacific Island populations adjacent to Guam. Within about two and one-half hours of flying time, to the East, West and North of Guam, lie kindred island populations within soon-to-be autonomous polities associated with the U.S., together numbering somewhat less than 100,000 persons. This population is distributed over small political and economic entities, none with the capability of mounting and supporting all of the necessary health medical services to serve the needs of their respective populations. Guam, with its already impressive array of primary, secondary and tertiary medical and health services stands at almost the geographic center of these populations which, whether they choose to recognize it or not, stand in a dependency relationship to Guam. We see little evidence that executive leadership in Guam has yet formally recognized this broader service role which Guam must, one day, morally assume. There is little evidence of aggressive efforts, at any level of government, to develop agreements and covenants with adjacent governments which assure both their recognition of Guam as their supportive service center, and which commit Guam's resources and their further development to the needs of surrounding populations. Thus, we feel the insular and parochial view of government to be an important issue. The issue must be eventually met with Guam's assumption of regional responsibility, the appropriation and extention of "risk capital" against certain future service demands

which would make available a "market basket" of health and medical services which adjacent populations would find it impossible to resist. In a selfish sense, the payoffs for Guam's citizens, of course, would be substantial, for consideration of an expanded service population of not 85,500 in Guam but of 175,000 in all would permit as modern and extensive a medical care system as is available anywhere.

2. *How Will These Services Be Paid For*

Because financing of health care is so critical a sub-issue, and will become more so with the current Federal administration's position with regard to retrenchment of Federal funding, the financial burdens involved in providing the care expected and needed by all of Guam's citizens will have a significant role in the determination of not only how best to provide the needed care, but in how to do it most reasonably and with what degree of fiscal participation on the part of clients.

Need and cost are the two major parameters of this issue, and accordingly the issues of how to pay for (finance) health care would need simultaneous consideration with issues of what care is needed and by whom it is to be provided.

Public financing programs, such as Medicaid, have never covered all those too poor to pay for their care or for the full range of services which they need. It is very likely that there are at least as many poor and near-poor who are not eligible for public program enrollment as are eligible. To complicate matters further, useful records are not maintained at GMH on the actual costs of services provided to Medicaid eligible persons, thus depriving Guam opportunity to receive its fair share of Federal dollars. These and other failures to collect matching funds, insurance revenues and other forms of reimbursement mean simply that those uncollected expenses must be made up from general revenue funds in order to keep services operating.

Above the poverty level, there is a sizeable group of people who have no pre-paid coverage of any kind, but which depend upon GMH services usually at government expense, either in whole or in part. A considerable sector of Guam's population (estimated to be between 30-35%) have marginal financial ability to participate in the cost of their medical care, but there are lacking mechanisms which would permit or foster such participation. They are customarily in employment situations wherein their employer does not offer health insurance benefits or membership, or they do not choose to participate in their financial share of available insurance. Accordingly, they are usually ill-prepared to pay for care when they become ill. And even if they are judged to be capable paying any or all of their care costs, it appears nearly impossible to collect on the part of government agencies since an appeal to their elected representatives usually calls forth a clear demand to defer collection efforts. Probably one-half of GMH's annual deficit, and perhaps as much as one-quarter of the public health service budget, could be recovered from this cohort of the population.

A third group of concern are those who are essentially poor but not Medicaid eligible, and who are not employed and thus lack access to any reasonable basis for enrollment in a pre-paid health plan. We estimate that about one-half of the non-Medicaid bills which government routinely writes off are attributable to this group.

Veterans, eligible for medical care at Federal expense, may be seen as a member of any of the groups above. However, because Guam lacks VA health services and the Naval Hospital provides very limited access for veterans, a large portion of their medical care falls upon GMH and other health services of government. Reimbursement is normally difficult to negotiate with the result that much medical care expense which is properly a Federal responsibility is probably borne by Guam directly.

Other fiscal drains representing inappropriate government financial responsibilities relate to the incestuous conflict of interest which exists between GMH and GMHP. Whenever GMHP fails to pay its fair costs to GMH (an arrangement fostered by an identical board of trustees for both entities which "negotiates with itself"), the financial burden falls directly back upon general government revenues. Even if the present "favored treatment" accorded to GMHP because of its financial hardships (most probably due to management deficiencies) is accepted, it must be understood that shortfalls in paying due billings simply adds yet one other burden to the general revenues of Guam as well as being grossly unfair to other pre-paid health plans and insurance programs as well as to other paying patients.

As yet another example of an unbusiness-like conduct in Guam's governmental health services, it seems clear that the issues enumerated above have not previously been sorted out but rather have been permitted to come to periodic heads in the form of GMH budget deficits and the concomitant public fighting and blaming GMH managers when supplemental appropriations are needed to keep the hospital and other entities afloat. The specific problems which then need to be dealt with in subsequent recommendations become the following:

a. unclear Medicaid eligibility criteria, potential abuse and lack of fiscal controls, and insufficient Federal participation in a seriously locally overmatched program.

b. many do not pay for hospital and public health services who could pay, particularly if they had some means of pre-paying against uncertain future expenses.

c. unclear determination of those eligible for "indigent" (free) care and lack of definition of clear forward budgeting to cover their costs.

d. unfair treatment of Guam veterans through the lack of VA services locally and inequitable reimbursement policies

which transfer veterans care to general revenue support in many cases.

e. unclear and uneven responsibility for delivering primary and other medical care to the poor, the rural, the aged and the isolated populations.

f. GMH has been permitted to be periodically "bailed out" through extensive supplemental appropriations without having been required (or permitted) to stand on its own feet, both fiscally and operationally.

g. no integrated system of care that would allow all feeble and sick poor persons to go to a suitable level of care for home visits, rest homes, nursing homes, physician care, and hospitalization.

h. lack of development of, availability of, or incentives for, universal health insurance coverage of the majority of persons, including the poor and marginally poor.

i. GMH is left "in the middle" with respect to recovering costs of veterans care, needless hospitalization, uncollectables from the uninsured, delayed payments from GMHP, delayed Medicaid payments and has not contracted with each entity as it does with insurance companies and Medicaid for reimbursement. A simple contract with government for the care of those unable to pay would avoid the multiple appropriations blood baths to which GMH is subjected and which make the hospital appear as a financial disaster when, in fact, its operations are reasonably efficient.

j. lack of planning for full development of services to provide regional medical referral capabilities or for mechanisms for participatory financing which would reduce Guam's liability for the cost of medical care for referred patients from abroad.

MAJOR ISSUE 3

Failure in bringing together all Guam Health interests, and in analyzing, publicizing and suggesting solutions for the two preceding vast problem areas with their trail of smaller derivative problems.

As a result of Federal initiatives primarily, health and health-related planning for Guam has been unfortunately fractionated over a number of separate, autonomous planning bodies which include health planning, environmental, mental health and substance abuse, developmental disabilities, and emergency medical services to name but a few. All are involved in health planning, but owing to their fractional roles, none can be defined as doing central health planning. Health, and the forces which impinge upon it, was described earlier in this report. The attack on illness and planning to improve health requires a totality of effort. Separated, categorical planning and development is usually self-defeating and often counter-productive.

The one agency, Guam Health Planning and Development Agency, which could be looked to for central leadership and coordination of all health planning has, itself, been somewhat hamstrung by faulty Federal initiatives and regulations. The basic statute under which formal health planning (i.e., GHPDA) must operate was neither well thought through nor conducive to the production of useful planning products. The major focus in these implementing statutes was on agency structure and process as though these would produce planning. Federal regulations forced GHPDA and GHCC to hold the line on new expenditures as through Guam were one of the over-developed medical service areas for which the national guidelines were specifically developed. Thus, a growth area like Guam was supposed to act like an over-developed one, and planning relevant to Guam and its real problems was not really emphasized by Federal reviewing authorities. In fact, the attention to Federal guidelines and regulations which has been forced upon GHPDA and GHCC has placed administrative impediments directly in the way of seeking potentially valuable new developments, such as installing an imaging CT scanner

in the only major hospital in the Western Pacific. GHPDA has been, to a large degree, restrained from adopting the hand-in-glove partnership with the providing sectors which would enable expansion and improvement rather than constrain it, despite its wishes to do otherwise as a major direction. Furthermore, there is nothing in Federal statute which either requires or promotes the unification of health-related planning, and planning fractionation is actually stimulated through Federal categorical approaches and programs.

Perhaps fortunately, much of the present thrust of the categorical planning machinery initiated at the Federal level is almost surely going to expire during the next two years. Moreover, even under present relaxed guidelines, Guam is now in a position (if it chooses to do so) to turn its health planning efforts around to more powerfully focus on the real problems, only one of which is cost induced by the introduction of newer technologies.

The absence of a centering, investigative, analytic and integrating health planning focus contributes to a number of highly important problems which subsequent recommendations will attempt to resolve.

1. Study groups and analytic efforts which have been established to attack either of the adverse forces discussed above, have not been of a sufficiently inter-agency, inter-sector nature as to deal effectively with major system problems.

2. The 1978-83 Guam Health Plan describes major health problems and establishes important goals, but concerted and collaborative effort has been lacking in achieving progress toward reaching those goals.

3. This study was commissioned by GHPDA as the first serious effort to examine the overall health care system, to determine what was missing but needed, and to suggest means of filling those gaps.

4. GHCC has not fully realized its potential as a major health policy-making body, and its efforts have been directed principally to details of project reviews and to planning of highly specific and discrete health programs, rather than to broader, overall health system policy considerations.

5. Guam's special needs vis a vis Federal health planning guidelines and requirements (which were established to repress over-serviced large cities) were never recognized by special waivers which Federal authorities could extend.

6. While major health manpower studies have been constructed, no planning has yet been completed which would establish a systematic means of attracting and retaining needed professional personnel in both the governmental and private sectors.

7. Current plans (either Territorial in scope or progrmmatic in the categorical planning sense) do not adequately deal with such significant problems as missing malpractice insurance which inhibits Guam's ability to attract physicians, to the lack of current licensure and professional regulation of the health professions, or to the serious problems associated with delivery of medical care for the needy and the indigent.

8. Considerable planning staff energy has been routinely siphoned off for the preparation of special reports and studies aimed at providing intelligence for elected officials, some of which is later used against operating agencies, placing the planning agency in the role of covert conspirator rather than ally.

9. Insufficient progress in the establishment of close working relationships and integration of plans among relevant health-related planning bodies both within government and in the private sector, and no clear

mandate for any lead agency to assume responsibility for such integration.

10. Except in categorical areas, planning has not fully matured into supportive roles which assist health care providers and facilities in obtaining, for example, ophthalmologic equipment, expanded dialysis services, CT scanning services, and others. The more administrative approach to process planning which Federal guidelines and regulations have imposed upon Guam's planning community have served to preclude substantial attention to some of the major issues facing the health sector and has delayed their solution accordingly. As in illness, delays in planning for needed improvements often serve to exacerbate the condition and raise the cost of its treatment.

V. ALTERNATIVE AND RECOMMENDED FUTURE POLICY OPTIONS AS SOLUTIONS FOR THE MAJOR ISSUES

A. INTRODUCTION

The foregoing sections have developed a functional picture of Guam's current health and medical care system. A great number of operational, organizational, financial and other problems have been surfaced, and we have illustrated how these many and often seemingly diverse and unrelated problems do, indeed, tie together with one another in broad areas of issue.

It is the intent of this concluding section to offer constructive alternative paths through which major aggregates of otherwise discrete problems might be dealt with, and to present our considered recommendations as to the preferred policy options. Final policy decisions will, as in all walks of human endeavor, become the result of an intricate amalgum of our opinions and points of view, the practical politics of every day life in Guam, the realities of Guam's economy, and the persuasiveness of those who may choose to champion one or another of the causes represented in the following alternative options.

What we present here is essentially a broad plan for health system construction and improvement. Each alternative course of action is the result of careful and thoughtful study on the part of investigators who have no vested interest in Guam or its health care system, and nothing to gain through the adoption or rejection of any suggested action. Thus, the reader is presented with a set of options which have no proprietary bias. Where alternative opportunities are rejected, they should be rejected with clear and studied reason. Likewise, where options are chosen as desirable and firm and continuing commitment to their achievement will be required or else really nothing will change. It should be noted that virtually every suggested course of action presented here represents change from the <u>status quo</u>. Change is one of the most threatening events to face human beings, whether they be program administrators, legislators, governors or agency employees,

for it brings with it upset routines, new alliances and working relationships, losses or gains of power, prestige and status, and unfamiliar responsibilities within new contexts of accountability. Small, incremental changes (represented by timid approaches to major policy decisions) are more easily assimilated by individual people, are more comfortable for all affected, and create the least disruption of the status quo. This kind of change is often referred to as "first order" change, wherein small changes within a system permit the system to itself remain unchanged. "Second order" change is that whose occurrence actually changes the system itself. It is to the latter magnitude of change that the options presented here are directed. True, they might selectively be adopted in a piecemeal fashion, over great time, and result only in first-order change. More creatively, they will be considered a package -- a set of inseparable desiderata each component of which, in one way or another, depends upon others or contributes to others -- the aggregate implementation of which would result in true (second-order) total system change which we believe to be warranted for the well-being of Guam's citizens.

It should be further noted that the following policy options do not contain specific operational alternatives related to improvement of internal operations of either Guam Memorial Hospital or the Division of Public Health. In these cases, two parallel projects will provide separate documentation of management and organizational options available to these two central organizations. One is the separate report entitled "An Organizational and Management Analysis of the Division of Public Health, DPH&SS", dated November 1981. The second, to be published on or about February 15, 1982, is the "Long-Range Institutional Plan for Guam Memorial Hospital". Care has been taken in these latter two reports to articulate their more detailed recommendations with the broader policy options presented here, so that movement toward the goals recommended in this report would be entirely consistent with internal improvements and reorganizations in the two major governmental health delivery entities.

Because of the close interdependence of most policy options presented, we have chosen to present them in a more or less sequential manner, beginning with those of apparent first priority, and then proceeding to develop those which would be follow-on developments. In their totality, a fairly rich "menu" for future development is offered. Where clear interdependence exists (as it does in many cases), we caution against the selection of any single developmental options without paying commensurate attention to those other options which, in our opinion, would desirably precede its development. We have summarized the major policy developments in Figure 22, depicting therein a logical flow of development which begins with some fundamental foundation developments upon which many other recommended actions are in turn premised. For each of the major developments illustrated in Figure 22, the following text describes alternative developmental options which relate to the major theme.

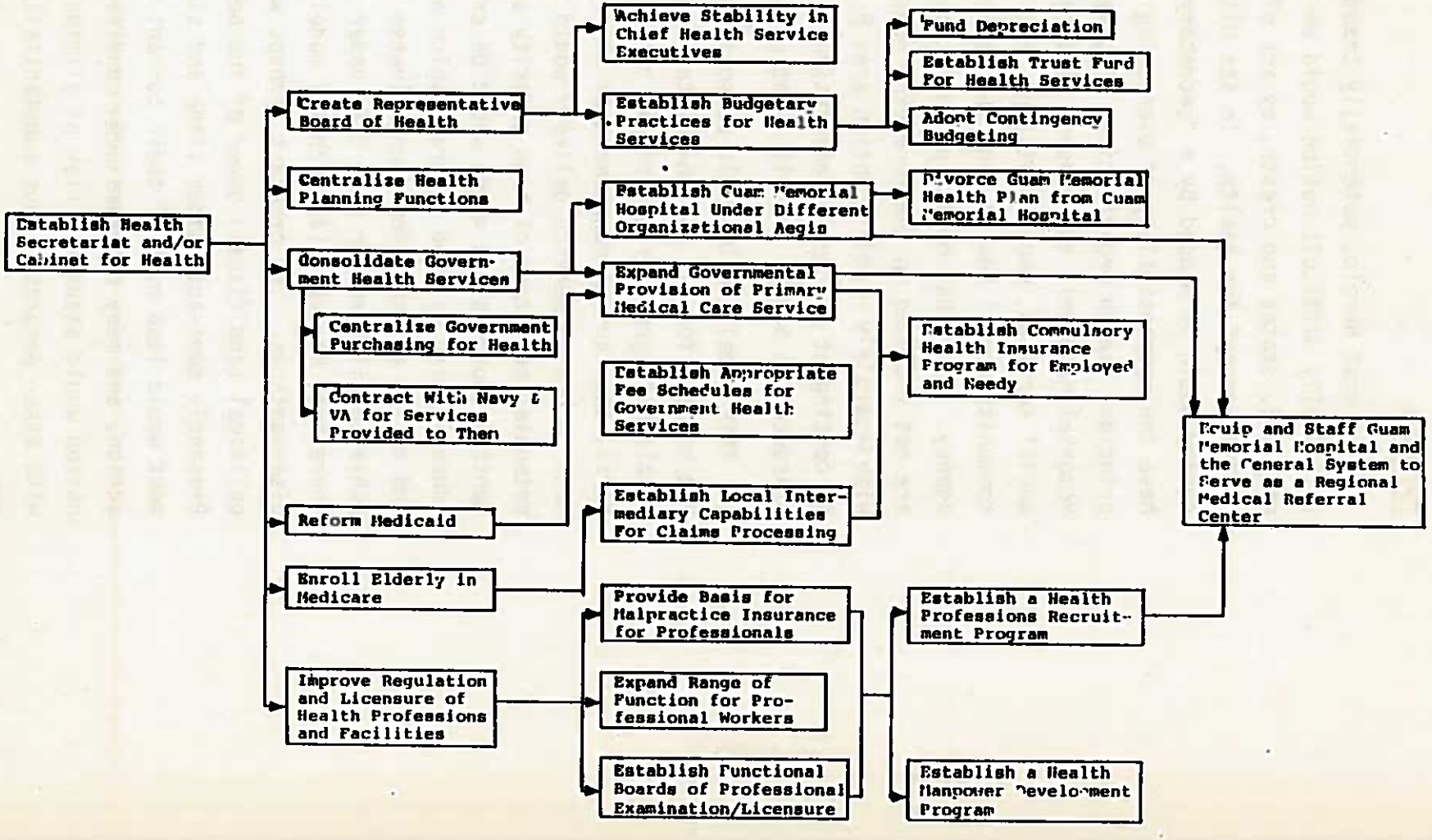
The adoption, either in their present form or some reasonable modification thereof, will enable Guam to resolve the major issues and many contributory problems described in the previous section.

B. THE ALTERNATIVE FUTURE POLICY OPTIONS

1. Establish a Secretariat of Health and/or a Cabinet for Health

Throughout the foregiong analyses of system components, especially those in the public sector, and the display of system problems, a major and central theme of disjointed, largely unarticulated, multiple health service agencies has been clearly developed. Whether by accident or design, the majority of Guam's public sector health system is comprised of a pluarism of relatively unrelated and uncoordinated public agencies. In our opinion, the first step toward general system reform must begin with the resolution of this major issue, culminating with the bringing together (in one form or another) of all the major public sector health related operations of the government in order to bring order, coordinated effort, and efficiency into operations.

Figure 22


Establish Health Secretariat and/or Cabinet for Health
Create Representative Board of Health
Centralize Health Planning Functions
Consolidate Government Health Services
Centralize Government Purchasing for Health
Contract With Navy & VA for Services Provided to Them
Reform Medicaid
Enroll Elderly in Medicare
Improve Regulation and Licensure of Health Professions and Facilities
Achieve Stability in Chief Health Service Executives
Establish Budgetary Practices for Health Services
Establish Guam Memorial Hospital Under Different Organizational Aegis
Expand Governmental Provision of Primary Medical Care Service
Establish Appropriate Fee Schedules for Government Health Services
Establish Local Intermediary Capabilities For Claims Processing
Provide Basis for Malpractice Insurance for Professionals
Expand Range of Function for Professional Workers
Establish Functional Boards of Professional Examination/Licensure
Fund Depreciation
Establish Trust Fund For Health Services
Adopt Contingency Budgeting
Divorce Guam Memorial Health Plan from Guam Memorial Hospital
Establish Compulsory Health Insurance Program for Employed and Needy
Establish a Health Professions Recruitment Program
Establish a Health Manpower Development Program
Equip and Staff Guam Memorial Hospital and the General System to Serve as a Regional Medical Referral Center

OPTION A

The most heroic, potentially traumatic and certainly most politically difficult option would be to follow the suit of many U.S. states and create, by act of the Legislature, a "super-agency" for health. In its ultimate form, an umbrella agency would be headed by a "secretary of health" who would have the responsibility of overseeing and coordinating all principal health organizations of government, including Guam Memorial Hospital, the present divisions of public health, social services, senior citizens, and environmental health, community mental health, and the environmental protection agency. Note that health planning functions of government are not included in the foregoing roster, and these are dealt with separately in policy option area 8. The inclusion of GMH is contingent on the implementation of one of the options presented in option area 15 relating to GMH.

This model, which would consolidate not only operations but budgets for all health-related agencies into a single, monolithic agency of government has distinct advantages. First, the central management of all Federal revenues pertinent to health service delivery would be centralized, to the potential advantage of high priority spending needs. The central coordination which would be created could go far toward consolidating related programs which are now widely distributed, and closer articulation among diverse activities could be achieved with greater ease than under the present arrangement. There are, however, (as with any model) several distinct disadvantages. The greatest perhaps would be the great political (and fiscal) power of the head of such an agency. Presently semi-autonomous (line and staff) agencies of government would lose much of their current freedom of unilateral action, and many programs under conditions of central coordination would stand the risk of elimination or consolidation with other programs, thus substantially upsetting the status quo.

We feel, in balance, that the potential advantages probably outweigh the disadvantages, and of all the options, we would recommend this as the paramount choice, all other factors (including political feasibility) being equal. To further offset the potential disadvantages, great care should be taken in defining the qualifications of the person who would head such an umbrella agency, in which substantial administrative skills coupled with a formal health background would be absolutely necessary.

OPTION B

The foregoing model could be collapsed by deleting Guam Memorial Hospital and, perhaps, the environmental protection agency from the agency leaving these two rather substantial operations to separate administrations. This has the political advantage of representing only a slight expansion of the present Department of Public Health and Social Services. It, however, fails to permit the relatively total coordination of Guam's health services.

OPTION C

Another approach to the coordination of governmental programs would be the appointment of a "coordinator of health services" at the Governor's level, with powers and responsibilities for working with the present separated agency heads in better coordinating their respective activities. There is certainly sufficient work to be done to warrant the creation of such an administrative post, but the success of such an endeavor would greatly depend on the interpersonal relationships which the incumbent would establish with separate and often semi-autonomous agency heads.

OPTION D

The least disruptive but yet promising alternative would be the establishment by the Governor of a formal "cabinet of health", over which the Governor would preside the which would include the heads of major agencies (and their major divisions) providing health and health-related services. Regular "cabinet"

meetings would be required for purposes of achieving the needed reconciliations among presently uncoordinated programs, but over time and through the medium of regular, routine face-to-face high-level policy meetings, it would be possible to ameliorate much of the current misarticulation of governmental services. Under this model, the Governor might wish to chose existing agency heads, perhaps on a rotating basis, to be the "secretary" for the cabinet, with their responsibility being both the creation of agendas and the actual conduct of regular meetings. In our opinion, should this option be adopted, meetings would be required at least on a monthly basis if not more frequently in order to establish the rigor of communication required to solve coordination and fragmentation problems.

2. *Create a Representative Board of Health*

The only existing means of creating and adopting policy to guide health services in Guam rests either with acts of the Legislature, executive orders issued by the Governor, or day-to-day decisions on the part of operating health agency executives and their respective advisory/administrative bodies such as the Guam Memorial Hospital Authority. Thus, Guam lacks central policy-making for health and this deficit, perhaps more than any other single factor, has in our opinion fostered the disjointed nature of governmental programs. There is current authority for a Board of Health, largely medical in nature, but this has never been truly implemented and it has not contributed seriously to health policy direction.

OPTION A

The most dramatic approach would be through statutory means whereby (following the model of the Board of Education) an elective Board of Health would be created. Probably numbering no more than 9 persons to be elected at-large from the populace, such a board would have responsibilities for advising and overseeing the programs of all governmental health agencies. Following models in use elsewhere, the board would

elect its own officers. Ex-officio members could include the chief operating executives of major health service entities. This model would make the greatest sense should the health "super-agency" suggested above be created, for then the "secretary of health" would also appropriately serve as secretary to the board of health. Under those conditions, the board would hold responsibility for policy matters affecting the entire governmental health enterprise, not being limited as it presently is to simply public health policy.

This option is, of course, both politically sensitive and costly, for public elections (even if conducted during normal general elections) add a burden to public financing. On the other hand, the politicization of health affairs may not be so bad a repercussion, for politics is an important aspect of human affairs, and no other area of human affairs is more important than the health of the population.

An elected board of health would normally be granted the responsibility of selecting and hiring the overall director of health, and the individual directors of major departments delivering health services as well. Because such elected boards usually end up as a bi-partisan body, it would be likely that fewer turn-overs of effective health agency heads may occur, for it could have a smoothing effect at the time of gubernatorial changes. On the other hand, with the selection of key administrative personnel removed from the discretion of the Governor, then cabinet-level relationships within the executive branch of government could become strained indeed. An alternative might be the appointment of key health administrators by the Governor with the advice of the board of health.

OPTION B

Because we do not feel the foregoing option to be truly feasible, although desirable, a second less radical approach is suggested as our favored option. Under this plan, an

appointive board of health would be created. The size and composition of the appointive board is highly optional as follows:

1. Fifteen members, five of whom would be the heads of public health, environmental health, social services, senior citizens, and GMH/community mental health. The remaining ten would be selected from the community to reflect a balance of geographic area, ethnic groups, business, labor, and health service providers, with the majority membership of this latter group being consumers. The community sector of the board could be further partitioned by assigning two of the ten community members to each of the five operating agencies to work hand-in-glove with the head of the respective agency, thus giving each major operating arm a "constituency" on the board and at least two board members deeply informed in those programs. Under this plan, it would be preferable that the director of health (under the "super-agency" model) or the director of the present DPH&SS serve as secretary to the board.

2. Fifteen members appointed at large (to be representative as described above) but with agency heads serving only in ex-officio or advisory capacities.

3. Employing the present Guam Health Coordinating Council, which is a gubernatorially-appointed body, reflective of a diversity of consumer, community and provider interests, as the board of health. This model would preclude the establishment of yet another appointive body of gobernment, and could go far toward establishing operating health policy congruent with the state plans developed under the GHSS oversight. Thus, another level of coordination between overall territorial planning and individual agency and program planning could be achieved.

4. A final option worth mentioning, although we would not strongly favor it, would be the establishment of a modified board of health which would simply comprise the heads

of all health and health-related agencies of government (such as Youth Affairs Agency, Department of Education, EPA, and many others) which would meet regularly to reconcile various and often conflicting policies as they impact on health affairs. While this would be an effective coordinating vehicle, it lacks considerable adequacy as a master health policy-setting method.

OPTION C

The foregoing options are premised somewhat on the assumption that some consolidation of existing agencies of government were to take place. If that were not the eventuality, then another form of policy-making board would be appropriate, this taking the form of a "super board" which is comprised of members (selected either by the Governor or by the respective boards) of existing boards and authorities. Thus, the existing Board of Health, the Guam Memorial Hospital Authority, GHCC, and others would contribute membership to the umbrella board whose responsibilities would include establishment of overall governmental health system policy, reconciliation of policy and operational differences among otherwise somewhat independent entities, and the like. This has the disadvantage that, to be implemented, it would require the establishment of advisory boards for some entities which presently lack them. That may, in retrospect, not be too high a price to pay, for where policy-guidance boards are either non-existent or non-functional, there is serious risk that program managers are pursuing activities which lack sufficient policy legitimization.

3. *Achieve Stability in Chief Executives for Health Services*

The development and pursuit of long-range plans and policies requires stability in the officers who must direct such affairs. Frequent mid-stream turnovers of executives in the hospital, public health, and other elements of governmental health services simply places each organization back to "square one" each time an incumbent leaves office and a new person assumes

the chair. A number of options to alleviate this condition can be suggested.

OPTION A

Create, as in the Federal system, a high-level "executive series" in the civil service classification scheme whereunder the operating executives of divisions of larger organizations are not subject to periodic political replacement. This would assure that at operating levels (i.e., public health, social services, etc.) there would be continuing stability of management, even though higher level politically appointed officials were to come and go. This would be particularly attractive should the "super agency" form of organization be adopted, wherein the "secretary of health" would be the principal political appointee, and all other agency heads would fall under the classified executive service series. This option would not preclude the dismissal of incumbents for cause, but would place greater importance on the initial selection of incumbents for high standards of qualifications and experience would need to be observed at the time of original appointment against the prospect that their tenure in the job would be substantial.

OPTION B

While we favor the foregoing, and do not feel the following to be politically feasible, another notion would be creating statutory terms of office for appointive agency heads which overlap election years. This model was adopted many years ago in California, and until the change to super-agency occurred, the state health officer was appointed for a term which extended two-years beyond each gubernatorial election year. Considerable stability in office was the result. Such an arrangement does not necessarily deny effective cabinet government, but it does contain serious potential problems of working relationships between highly placed agency executives and newly elected public officials.

OPTION C

Should any of the forms of policy-making boards be adopted, another means of attaining relative job security for top executives would be the delegation of authority for their appointment to the respective board or boards (or super board). With overlapping appointments among board members and a probable bi-partisan board composition occurring over time, the effect of gubernatorial changes might be somewhat lessened in terms of agency head stability.

4. *Establish Budgetary Practices for Health Services*

Health budgeting is in an obvious state of disarray, with frequent instances of interim appropriations, emergency appropriations, cash short-falls which affect health programs, and the like. Furthermore, the newer Federal block grant mechanisms will not work well under conditions of decentralized budgeting.

OPTION A

The most obvious reconciliating alternative would be the preparation and consideration of a single, consolidated health service budget embracing all operating health service entities. Such a consolidated budget should include not only a current year budget, but a multi-year projection against current year programs and a long-range capital improvements budget as well. Such a budget document then reflects master policy directions for future growth and expansion of health services, tends to be an implementing device for long-range territorial health plans, and provides the Legislature with an overall perspective on government's responsibilities in health care delivery.

Should such a consolidated health budget be prepared under the aegis of any of the cabinet forms of health service organization proposed earlier, then substantial opportunities for contingency budgeting within the overall allocation occur.

This option would be the least disruptive of current procedures, but would require a higher degree of coordinated budget preparation among health service entities than now exists.

OPTION B

Move forthrightly to some adaptation of the "zero-based budgeting" procedure. Under this format, considerable staff and administrative time and effort (at the expense of program activities) would have to be invested in the development of clear programmatic goals, the development of multiple levels of program (and budget) related to the attainment of multiple levels of goal satisfaction, and the association of resource and personnel needs (expressed in dollars) for each level of production. We tend to favor this approach, since it places on elected public officials the ultimate decision as to program outcomes to be achieved, expressed in terms of the actual amounts appropriated. It further and very usefully emphasizes at the operating agency level the imperative of having clear goals or purposes which lie behind each and every function and activity carried out and for each and every dollar spent. Accountability is thus appropriately divided, with accountability for levels of human service to be provided vested in the Legislature, and accountability for achievement under fixed budgetary constraints resting with the executives of the operating agencies.

Under conditions of finite resources, this method forces an annual re-evaluation of at least questionable or new programs and activities of government in terms of its purpose, continuing importance and utility, and its priority in terms of newer emerging needs.

OTHER BUDGETARY CONSIDERATIONS:

While not necessarily options to the current budget process, we would offer the following suggestions as means of enhancing the abilities of line agencies in their budget execution responsibilities.

1. Improved monthly expenditure status reports should be readily and freely made available to every management level so that program managers have accurate financial status data to contrast with program performance data.

2. Except under the most unusual of emergency conditions, deviations in the availability of budgeted funds should never be allowed, for capricious and sporadic "raiding" of one budget in favor of expenditures in another area bodes ill for sensitive human service programs.

3. As underspending within related budgets occurs as it usually does on quarterly bases, a contingency account could be created and reported to all related program executives which expresses "reserve" funds which have accumulated and which become candidate dollars for unexpected or accelerated program needs. This would become a creative re-budgeting process where under-expended funds could be put to important uses within related program areas.

5. Funding of Depreciation

A general practice observed within health agencies is the lack of accounting for and actual funding of depreciation allocated to capital assets.

OPTION A

Permit an allowance with price adjustment of reasonable depreciation in each operating budget, as it is permitted in GMH, so that actual dollars are available to be set aside in trust accounts for the eventual replacement of outdated equipment, buildings and other tangible assets at future year costs. Depreciation schedules would have to be constructed as a portion of future year capital improvement budgets. Without setting aside trust accounts for inevitable and foreseeable replacements simply transfers to future year general fund levels large appropriations which, when absolutely necessary as in the case of expanding or replacing something as expensive as a hospital, will require foregoing other perhaps equally essential expenditures. Trust accounts, which accrue reasonable interest, are the only viable buffer to assure that when newer equipment and resources are required that sufficient money is available to acquire them.

OPTION B

Should actual funding of depreciation be found non-feasible, then the imperative of long-range capital replacement budgeting becomes all the more important. In this manner, the Legislature has annually at its disposal a picture of future year's capital replacement requirements which represent (at least for the health sector) targets against which taxation and other policies would need to be set. Thus, statutory progressive tax increases could be designed with a view to meeting predicted future year capital requirements and at least some assurance would be built in that the needed funds would probably be generated for use in the year when needed.

6. *Trust Fund for Health Services*

All too often, our studies have revealed deferred expenditures in programs owing to unexpected cash shortfalls. We have also disclosed numerous areas of potential revenue generation by governmental health services which remain uncaptured.

OPTION A

As one means of establishing a buffer account which could be drawn upon for needed expenditures during times of fiscal duress, it would be possible to set aside a given percentage of each year's appropriation (by agency, or by health budget overall) which would establish a trust account to be held in strict reserve for health expenditures during shortfall situations. Unexpended funds could either be carried over as the base for a succeeding year's trust account, or could be reverted to the general revenue accounts at the close of each fourth quarter.

OPTION B

More creatively would be the enhancement of collections on the part of governmental health agencies and approval of policies which would permit retention of all or some proportion of such recoveries rather than the current practice of reverting them to the general fund. In the case of many

public health programs, for example, they now serve persons who are Medicaid eligible, who have private health insurance, or who have personal or family ability to pay all or a portion of the cost of such services. Recognition of these facts should lead to the enunciation of newer governmental policy which would free governmental health agencies from the burden of current policy which is interpreted to require the delivery of services free of charge for the most part. The Organic Act requires the government to care for the health and welfare of its citizens. It is non-specific as to whether that must be done totally free-of-charge. In fact, given the growth of Guam's economy and of per capita income in recent years, and the increasingly large number of persons entitled to or covered by one form of insurance or another, it is quite unrealistic of the government to continue to accept the responsibility of entirely free-of-charge care. Should realistic policies be developed together with sliding fee schedules related to ability to pay, coupled with realistic criteria for eligibility determination, then substantial revenues could begin flowing.

At that point, we would recommend the adoption of policies which would permit agency retention of at least some proportion of generated income which would be placed into reserve accounts rather than the general fund, and which would provide a contingency account for withdrawals in emergencies and an account which would permit program expansion without additional appropriations. Under these conditions, it could be expected that some programs (including some newer dimensions recommended in this report) could become at least 50% self-sustaining through the medium of recoveries, thus releasing current appropriations for other high priority purposes. We would, however, caution against establishing health services as income producers which, in an indirect way support other governmental services as health services may possibly begin to require fewer general fund appropriations.

7. *Adoption of Contingency Budgeting*

In the business of government, as in everyday life, the only constant is change, the only fact the manager can really count on is that things won't stay the same. Some changes and opportunities are customarily foreseen and planned for at the time initial program plans and budgets are prepared, but others seem to follow Murphy's two laws:

a. If something can go wrong, it will.

b. Something that has gone wrong will get worse.

Accordingly, managers of health programs face a variety of unfortunate events and unforeseen developments including material shortages, cost increases, accelerations of the rates of service consumption (unexpected utilization demands which call forth more than planned provision of services, tests, and procedures) and unanticipated personnel turnovers, to name but a few. Variances in spending needs are often considered to be "contingencies", and while the foregoing option areas have dealt to some degree with providing for such contingencies, we feel the need for special attention to this area to be so great that we present the following alternative approaches.

OPTION A

One approach to levelling-out unexpected and high priority demands for extraordinary expenditures would be the creation of an "emergency health fund" of some substance which could be drawn upon only by order of the Governor. Such a fund would have obvious utility in the case of disasters of various types which incur substantial added demands upon health and public health services. But it could also be immensely helpful in cases where extraordinary demands for free medical care arise, as in the case of unanticipated numbers of qualified indigents. In all cases, such a fund would require regular replenishment through supplemental and interim appropriations. Should an earlier option of permitting retention of earnings accruing from fees for governmental services be elected, then

a portion (or perhaps all) of the emergency health fund could be established with a portion of such earnings.

OPTION B

When divisional and/or departmental budgets are originally prepared, a small fraction (2-3% perhaps) could be set aside as reserve, either to be spent as unexpected demands and needs arise during the budget period, or should such demands not arise, to be preserved as carry-over funds into the succeeding budget period or reverted as unexpended and unobligated funds at years end. This would actually be tantamount to establishing the emergency health fund, but would imbed such a reserve account within the operating budgets of agencies rather than establishing a separate trust account.

OPTION C

Because health services cannot generally be clearly projected far into the future, annual budgets and plans especially related to hospital care are regularly upset by unpredictable developments that arise during the year. One approach to resolving such problems would be the adoption of shorter budgeting periods, with sometimes two or more budgeting cycles during each year. This system is usually referred to as "rolling budgets", and with the fairly regular business sessions of the Legislature might have utility for certain of the more unpredictable (and contentious) health care budgets, especially that of GMH.

8. *Centralize Health-Related Planning*

Health planning, owing largely to various Federal mandates, has become highly fractionated in Guam as it is elsewhere. Separate planning proceeds for hospital care development, mental health, environmental health, developmental disabilities, and general health planning. Other agencies deal with broader social, economic and developmental planning. By and large, these remain separate, unrelated and disconnected activities of government.

OPTION A

The least disruptive approach would be the clear designation of Guam Health Planning and Development Agency and the Guam Health Coordinating Council as the principal locus for coordination of all health planning. This could be extended by requiring that all other health-related plans be coordinated during their development with the overall Territorial Health Plan, and that GHPDA representatives participate directly in the development of all other pertinent plans. This has the disadvantage of placing several agencies in a seeming subordinate relationship to another agency (usually avoided by most entrenched bureaucrats with great facility). It has the further disadvantage of placing substantial added burdens on a small and already overburdened staff.

OPTION B

In our opinion, the most powerful move would be the creation of a single health planning agency of government to which would be assigned all categorical planning functions. With respect to Federal planning initiatives, this would simply require the Governor to designate a different "single state agency" as that responsible for various categorical planning tasks. It would create a "super planning agency" which could be viewed by agencies such as DPH&SS, its divisions, GMH, and others as a shared staff planning entity for their internal operations. It would be expected to absorb and integrate the present distributed planning staffs, and as we have depicted it in the image of a preferred health system (Figure 21), it would be a stand-alone entity, providing planning and evaluation services spanning the entire delivery system. This would have the obvious advantages of consolidating, at least at the planning level, presently fractured elements of medical care including therapeutic, preventive, emotional and rehabilitative within the concern of a single forward-looking, problem-solving planning agency. Not only would this not cost government additional funding, it would provide promise of

achieving greater efficiency and economy in overall health planning through the consolidation of multiple staffs and their respective equipment. This will, in our opinion, become much more critical in the next few years as Federal planning initiatives are repealed or curtailed and as greater responsibility for health planning is transferred to states and territories.

OPTION C

An extension of the foregoing recommendation would be the consolidation of all governmental planning into a single existing line agency such as the Bureau of Planning, under which there would be categorical planning sections, one of which would be the consolidated health planning activities described above. This would, of course, constitute a major governmental reorganization with all of the political barriers associated with grand strategies. It would have the great advantage of bringing health, human service, welfare, educational, economic development, land use and other planning functions together in a planning system which could achieve a high degree of inter-plan coordination to the benefit of all.

OPTION D

A final alternative would be the consolidation of all health and health-related planning as a major division of the "super-agency" for health which has been previously suggested. This makes substantial sense (providing the majority of government's health related agencies and organizations are subsumed under such an agency), for it brings the planning function (overall and categorical) into its proper staff relationship with providing entities such as public health, mental health, hospital services, etc.

GENERAL PLANNING CONSIDERATIONS:

Whichever of the foregoing options might be adopted, it will be important (at least in health planning) to favor the

planning and development tasks and to reduce the present level of attention to the regulatory tasks which consume much of the effort and energy of GHPDA. This is to say that whatever future health planning effort it mounted, it should move forward hand-in-glove with the entities of both private and public sector which are in the business of providing and developing health services. Planning should be preoccupied with problem identification and problem-solving, and it should act as an ally to the delivery system, not as an adversary. This suggests that future health planning would center about the creation of working parties, task forces and other organized efforts which bring the providing community directly into the identification and calibration of health problems and into active searches for the most cost-effective and efficient alternative means of their solution.

A second future preoccupation of planning in the health sector should be the continual evaluation of the effectiveness, efficiency and efficacy of on-going health programs. Evaluation is, of course, the second part of planning -- plans establish needs to be met and suggest means to meet them; evaluation continuously tests progress toward implementation of the selected means and their impact on the problems being addressed. Thus, a community "watchdog" (not necessarily regulatory) function is suggested.

9. *Consolidate Government Health Services*

Earlier recommendations and options have dealt with means whereby governmental health services might be administratively consolidated and coordinated. The series of policy options which follow are intended to explore in more detail various operational features of a consolidated governmental health service, all of which are intended to bring greater operating efficiencies and economies to an over-stressed system.

10. Centralize Governmental Purchasing for Health

Presently, purchasing of supplies and equipment for health services is widely distributed over many line and semi-autonomous agencies of government. Furthermore, purchasing is constrained to quarterly budgeted allotments. All of this conspires to deprive the government of major economies which could be achieved should supplies, equipment and other material be purchased in standardized bulk quantities at infrequent intervals.

OPTION A

The simplest approach would be the annual consolidation of all supply requirements according to kindred function, across agency lines, into an annual requisition list. Thus, all pharmacy requirements of public health and GMH would be forecast as an annual requisition; clinical supplies for GMH, public health and other entities could similarly be consolidated. Laboratory equipment and supplies pertinent to GMH, public health, PUAG and EPA could be grouped into an annual requirement. Then, for each operating entity, the major supplies and equipment budget (perhaps subdivided by supplies, material and equipment) would be assigned a specific budget quarter, during which (for example) all pharmacy supplies for the year would be obtained, all laboratory supplies, etc. This would permit solicitation of bids from appropriate wholesalers, including proposals for warehousing for the government of pre-ordered supplies and their timely delivery on a routine basis. We estimate that such a move could be expected to save between 25-40% of current supply costs.

OPTION B

A major materials management center for government could be created which would have the central responsibility for bulk purchasing, warehousing and distribution of supplies and material for all agencies of government. In this model, actual purchasing responsibilities would be shifted from

line agencies to the central agency, and it would be the central supply agency's budget which reflects the costs of supplies and material, not those of operating entities. This would have an advantage in that greater leverage in obtaining signficant discounts and bulk deliveries could be achieved, and a high level of purchasing expertise could be expected in the management of such an agency.

OPTION C

At least for GMH, and for certain sectors of public health, arrangements could be made through centralized purchasing consortia which exist among hospitals in Hawaii, and among health agencies in West Coast locations, for the inclusion of Guam's medical supply needs. We believe there would be willingness on the part of other central purchasing/warehousing operations which are operated as non-profit organizations to include Guam. This would require, as in the models above, the lumping of supply appropriations into a single budget period so that ample funds are available for the payment of large orders. In all models, both governmental and private sector supplies could be included in master requisitions. This would, of course, require an interesting co-mingling of private (e.g., FHP) funds with those of government, and a serious attempt at standardizing brands and other specifications. Considering just the volume of laboratory, pharmaceutical and clinical supplies which are consumed annually on Guam, given pooled purchasing power and standardized items, the payoffs in cost savings for the general economy would be immense.

11. Contract With Other Entities to Provide Services

As Guam's health care system continues its development, there will be equipment and services available through governmental entities which will be sought by others, including the Navy. There are many eligible beneficiaries in Guam for various Federal programs, such as medical care under the Veterans Administration, for whom Federal services are not

fully locally available. There exist opportunities for Guam's service system to fill these needs.

OPTION A

As newer equipment and competencies are added to Guam, the various laboratories of government, and the institutional care system, it is recommended that formal contracts be sought with the Naval Regional Medical Center which specify the conditions under which such resources would be made available for its clientele and the price for each usage. This would not only develop added sources of revenue for the government, but would permit better forward planning by the Navy as to its own internal resource needs and those which it need not supply but which would be available for them in the broader community. In the future, as elaborated more fully under option area 26, similar contractual arrangements would become important with surrounding governments (Commonwealth of the Northern Marianas, the Republic of Belau, and the Federated States of Micronesia) for similar support usage of Guam-based equipment and services. We feel strongly that formal contractual arrangements, either on a fee-for-service basis or on a pre-paid stipulated retainer basis, would be important for two reasons. First, it provides a basis for rationing often scarce services among multiple users and appropriate scheduling of their use. Second, it provides a sensible base for budgeting and forecasting of funds flow for governmental health services.

OPTION B

A second opportunity lies with the direct provision of medical care services at all available levels to qualified beneficiaries of the Veterans Administration. We believe, given the over-burdened Naval Hospital (which is the only locally available Federal resource to serve Federal beneficiaries) and the great distance to the nearest VA facility (Tripler Army Medical Center in Honolulu), that officials of the Veterans Administration could be interested in entering

into contracts with GMH (and with DPH should expanded primary medical care services be developed therein as recommended in option area 13) for the servicing of their beneficiaries at agreed-upon prices. This arrangement would not only clarify responsibilities for the provision of veterans care, but it would create a clear channel for recovery of costs for services provided to eligible veterans and it would improve substantially the access of qualified veterans into services to which they have legal rights. Similar arrangement might be made under the CHAMPUS as well , should military officials feel the need to transfer military dependent care to the local system.

12. *Reform the Medicaid Program*

The present Medicaid program is under-funded, locally supported to inappropriate levels, late in payment, and inefficiently manual in its operations. Serious attention to corrections of problems in this area is warranted by all policy-makers.

OPTION A

Inasmuch as the present Federal participation level of $1.4 million dollars constitutes only an estimated 20% of the total Medicaid costs incurred, and applies constraints and requirements which Guam finds difficult to comply with, one option would be withdrawal from participation. Not only would this free Guam from compliance with voluminous Federal regulations, it would provide discretion as to which services Guam would provide the poor in the future. It would also serve to provide Guam the discretion of establishing her own eligibility criteria, perhaps better suited to Guam's people in need. It would offer creative opportunities for cost-sharing among some marginally poor. It would also cause the loss of $1.4 million dollars in Federal revenues which might well be completely offset by the establishment of a more efficient service system offering appropriate medical services for the poor and near-poor. We do not necessarily recommend

this option for immediate consideration, but it is appealing especially when coupled with one of the opportunities included in option area 13.

OPTION B

Maintain the present Medicaid program, but continue to place pressure upon the Federal government for a more realistic cost-sharing formula. The absolute minimum which should be settled for, in our opinion, would be 50% Federal matching. This is generally the minimum level afforded to all states, and we see little rationale for discrimination against the territories. Furthermore, we believe there to be substantial sympathy for the financial plight of Guam and other territories in the U.S. Congress, and since the consideration involves only several million dollars (perhaps 15 to 18 to bring all territories to par). A more equitable arrangement would make an imperceptible dent in a multi-billion dollar program.

Under this condition, a multiplicity of internal reforms would be required. First claims processing, which is now done on an entirely manual basis, should be mechanized with the commensurate establishment of a management information system especially styled to the Medicaid program. We estimate that claims processing services could be obtained locally, or by contract with entities in Honolulu, at a cost of no more than $1.25 per claim, or an aggregate estimated annual cost of about $20,000. Part of this cost would be offset by a reduced clerical staff which is now assigned manual processing, and the good will generated through more prompt claims processing and payment would be a worthwhile investment.

The Medicaid fee schedule is seriously behind the economic times, and places undue burdens on both GMH and private medical service providers whose costs of actually providing services greatly exceed the reimbursement levels presently permitted.

Eligibility requirements need to be seriously studied and criteria of great clarity will need to be established. As it is now, intake workers in the Division of Social Services are

apparently freely admitting nearly anyone who applies to the Medicaid program, and apparently do so because there are no clear guidelines for inclusion and exclusion of individual cases. This practice can be predicted to bankrupt the program, for demands for service will shortly completely outstrip any realistic level of program funding.

A closely related concern is the definition of "indigency". In part, Federal regulations help to define those eligible for Medicaid on the basis of their eligibility for other welfare entitlements. This leaves the question of who are the indigent for whom the Government of Guam additionally feels responsibility. Are they the "destitute", the "vagrants", the "poor" who are not eligible for Medicaid? Should 1981 rather than 1967 criteria be employed to determine Medicaid eligibility, it is our estimation that about 25% of Guam's population would be eligible, including virtually all of the present "indigent" group. Such broadening of the Medicaid eligible pool would, of course, severely stress the current program. It would, however, provide substantial argument for enhanced Federal participation in what is presently a seriously under-matched program. Often, it is our perception that the indigent are those whose medical bills are not paid by either Medicaid or any other entity -- in other words, those "who don't pay their bill", for these are the people whose care is paid for by appropriations for indigent care. We feel, however, that many are classified (after the fact and after bills become uncollected) as indigent who actually have means of paying all or a portion of their expenses. Similarly, we feel many are included in Medicaid eligibility who also have some ability to pay at least a portion of their medical care expense, or for whom other means (such as insurance) could have been arranged.

Many of the changes in Medicaid regulations which came as a part of the Budget Reconciliation Act of 1981 require serious study. For example, states may now request approval

to limit specified providers services to be offered Medicaid clients. They may also, by contract, arrange for certain services including laboratory and drugs at specified cost-efficient providers. Inasmuch as reimbursement formulae, delayed payments and other problems make participation in the Medicaid program undesirable for many private sector providers, there would not appear to be significant barriers to decisions to limit the provision of services to Medicaid beneficiaries to something less than total freedom of choice.

OPTION C

We understand it now to be permissible to arrange for the total pre-payment through some form or another of the insurance mechanism for medical services under Medicaid. This has been explored with Guam's two major health maintenance organizations, but premium costs have proven to be exhorbitant and there is relunctance to enroll any but young families as members of the HMO's (these, of course, are the best or low risk families). While continued investigation of this option should be pursued, there is another possibility worth consideration.

It would be possible for the government itself to create an insurance program -- a pure indemnity program, underwritten by the government, the premiums for which would be paid by the Medicaid program on behalf of eligible beneficiaries. Once clearly defined, the indigent (non-Medicaid eligible) could also be enrolled in such a program. This type of program could carry with it some financial responsibility on the part of the participant, such as a nominal front-end deductible, and/or some level of co-insurance based upon ability to pay. Thus, when service is needed, the enrolled member (whose dues have been actuarily estimated in sufficient amounts to cover the estimated expenses of services) simply presents him/herself as any other insured person to either private or public sector health care providers who, in turn, bill the insurance program for eligible (fee-schedule based) reimbursements and also would be required to collect eligible

(fee-schedule based) reimbursements and also would be required to collect eligible deductibles and co-payments from the client. This mechanism would be most desirable should the decision be made to withdraw from participation in the Federal Medicaid program, although such decision would not be mandatory to implement the notion. The financial integrity of the program would depend, in large measure, upon a controllable group of participating providers who would be expected to accept limited fee schedules, and not abuse the system with unnecessary procedures and services. This would obviously be best achieved under a more closed system of service provision for the poor as described in the following policy options.

13. Expand Governmental Provision of Primary Medical Services

While this policy option has been dealt with at some length in another report entitled "An Organizational and Management Analysis of the Division of Public Health, DPH&SS", dated October 1981, it is our purpose here to reiterate the idea and to expand upon it as a specific recommendation for policy consideration.

OPTION A

Owing principally to the current high costs of providing medical services to both the poor (under Medicaid) and to the indigent (largely through GMH), recent relaxations in Federal policies governing Medicaid, and to the general disinterest in the private sector medical community in serving the poor at financial loss, there exists a climate conducive to considering the consolidation of all primary medical care for the needy and the indigent in a single governmentally-sponsored and operated health service. Given its current array of clinical services and clinic settings, the logical agency for such centralized service provision would, in our opinion, be the Division of Public Health, DPH&SS.

It would be feasible and possible to establish full-staffed primary care out-patient clinics at the central, southern, and

(soon-to-be) northern area health centers, with a fourth location in or near Guam Memorial Hospital.

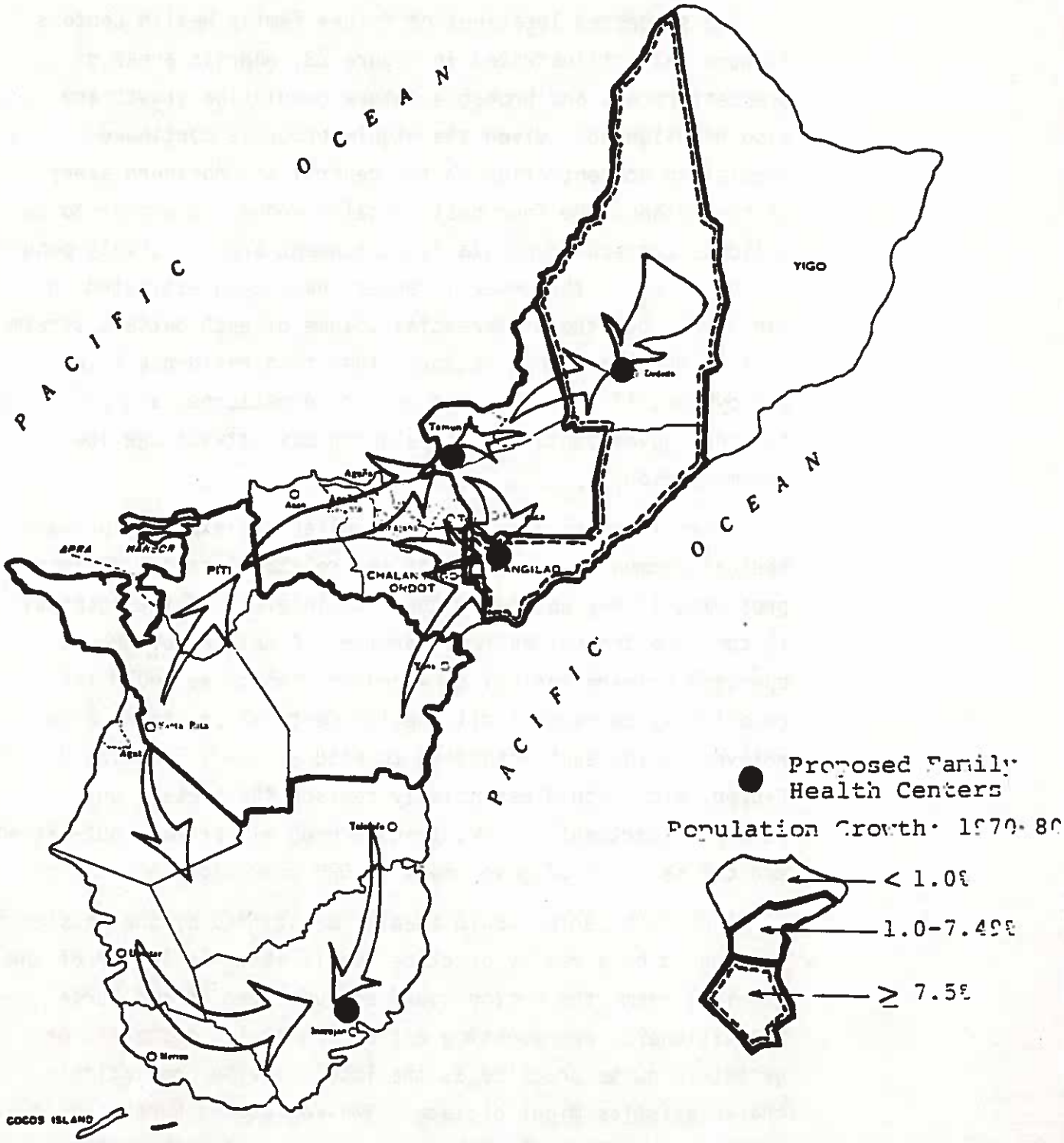
The suggested locations of future Family Health Centers is more fully illustrated in Figure 23, wherein areas of greatest recent and probable future population growth are also highlighted. Given the highly probable continued population concentration in the central and northern areas of the island, the four basic locales suggested appear to be valid as centers of population catchment areas. Likely population flows to the several centers have been estimated in Figure 23, but the differential volume of each patient stream will be dependent upon factors other than residence (e.g., employment, if any; shopping and trade patterns; and proximity to other governmental services which may attract the low income person).

There is concern at GMH that, given the expanded private medical community now existent and related internal financial problems, it may not be in the best interest of the hospital to continue the out-patient service. A network of DPH-operated primary medical care centers (which we would favor generically terming "Family Health Centers" or, as an alternative, naming each according to site -- i.e., Tamuning Health Center, etc.) could essentially replace the present out-patient department at GMH, transferring all primary out-patient medical services of government to DPH operation and control.

Each such center would ideally be staffed by one physician who should be a family practice specialist. As leader of the clinical team, the doctor would be supported by two Nurse Practitioners, representing either pediatric, obstetric or geriatric nurse practice as the local service population's characteristics might dictate. Two Registered Nurses would complete the clinical team at each center, together with a clerical person for registration and record keeping. In addition to the four principal teams, we would envisage a fifth team, identically staffed, to "float" between the Mangilao

Figure 23

Locations of Proposed Family Health Centers



and Tamuning centers since the heaviest patient load could be expected at those locations. An additional laboratory technician would be needed at the southern and northern area health centers to support the clinical team, but laboratory services at Mangilao and Tamuning could be accommodated in current facilities. At the outset, radiology should be concentrated at GMH, but as demand and future usage dictates, minimal radiographic equipment could be added to each of the outlying Family Health Centers. One pharmacist could adequately service the drug stocking and dispensing needs of all four centers.

We have generously estimated the salary and supply costs for such an endeavor, and calculate the total annual expense to be approximately $800,000.

The services provided at the Family Health Centers would include personal health services such as health promotion, maintenance, disease prevention, predictive and diagnostic, out-patient treatment including simple ambulatory surgery, examinations and therapy, emergency service of a first-order type, limited formulary pharmaceuticals, rehabilitation, and basic clinical laboratory. Medical procedures would be provided in the areas of general medicine, pediatrics and obstetrics, minor surgery, counseling and mental health crisis intervention, therapy and referral. All in-patient services would be referred to Guam Memorial Hospital, and necessary medical specialty services would be referred to private sector physicians.

If it were assumed that approximately 25% of medical care expenditures for the poor and indigent are related to the foregoing types of primary care, then the estimated cost of the Family Health Centers ($800,000) would suggest a total system cost of about $3.2 million for all indigent and poor care. This is substantially less than current governmental spending through Medicaid, appropriations for indigent care, and foregone collections at GMH.

We have estimated there to be approximately 12,000 persons classifiable as needy, poor, indigent or Medicaid eligible. Distributing this number over the five clinical teams provided for in this model, patient visits at a rate of about 5/person/year would amount to nearly 40 patient visits per day -- a figure well within the capacity of a one physician-four nurse team. In fact, there is the possibility that substantial slack capacity would exist, especially in the more rural northern and southern center locales, and the Family Health Centers in these settings, and others as well could extend their services to private patients in the vicinity, recovering actual costs through billing FHP, GMHP, and other insurance carriers.

We would see each center providing services at least five and one-half days per week, with occasional scheduled evening clinic sessions. Specialty clinics, employing physicians from the private community, could be accommodated as needed. For weekend and evening coverage, it might be feasible to consider nurse practitioners as live-in, on-call professionals for such times.

It is true that such centers would represent direct competition with the private practice of medicine in physician's offices and clinics. However, we feel the level of general disinterest in programs for the poor to be sufficiently high that there are no serious impediments to making such a move. Moreover, the Family Health Centers would be in business to provide only primary medical care, and would rely upon the private sector to provide secondary and specialist medical care through the referral and vendor payment process.

A major value of such a plan would be the centralization of patient management responsibility in one or another of the centers, which would become for the poor and indigent at least their primary portal of entry into the broader health care system. Thus, strict controls could be exercised over the total medical experience of each patient through

centralized case management. Furthermore, central as opposed to the presently widely dispersed patient medical records could become a reality, thus contributing to improved quality of case management.

At each center, the full range of public health programs could be handily coordinated with the therapeutic and diagnostic services provided by the center's clinical team, and each center could be the base for the present home care service, linking it more effectively with out- and in-patient services which would be coordinated by the center's medical staff.

OPTION B

Many variations on the foregoing theme are possible, and as major options we would suggest consideration of only a few.

a. establish fewer centers with commensurate savings in staff, but with greater difficulty for the eligible population in attaining services.

b. staff the centers with salaried nursing personnel, but retain on a countractual basis physicians from the private sector to provide some or all medical services and supervision.

c. with the collaboration of public health nursing, establish the smaller village-level public health clinics as feeder stations to the Family Health Centers, with substantial triage and referral responsibilities falling to the public health nurses as the first entry portal.

d. place the same idea under the management of Guam Memorial Hospital rather than public health, and operate the center network simply as an expanded out-patient department of the hospital.

e. establish the network of centers as provider entities under a governmentally-sponsored health maintenance organization (not the same as GMHP, incidentally) especially for the poor who would be enrolled under a governmental insurance system.

OPTION C

There are at least two other areas of potentially expanded governmental service to which we would call the reader's attention.

a. There are presently lacking domiciliary facilities for the dependent elderly who lack suitable personal home environments. For the most part, the only alternative for their custodial care is admission to the skilled nursing facility at GMH, at extraordinary expense given their needs. The opportunities in this connection are two-fold:

   - establish a network of governmentally-sponsored (or have government stimulate private investment) "rest" or "care" homes in which frail but ambulant elderly can pursue their normal activities of daily living in a protected, home-like setting under minimal supervision, but with the full array of health and other supportive services being coordinated for them.
   - establish day-care facilities to offer the elderly who do live at home, often with their children, a protected day-time environment (equally coordinated with other health and social services), and to provide respite for their families who would re-assume responsibilities for the care of their aged in evenings and weekends.

b. While not customarily considered a health service, owing to the general lack of public transit in Guam, some consideration should be given a medical transport system for those who are poor, infirm, disabled or otherwise disadvantaged to move freely from their homes to those places where their needed medical care is available. A free-of-charge radial bus service providing transport from the existing 16 village centers to either present locales for medical care, or to the suggested future Family Health Centers would seem appropriate. In fact,

as a first step in establishing governmentally-provided primary medical care for the poor and indigent and before fully extending centers to all locales, an experiment with free transport to a more limited number of centers would be important. The results and acceptability of readily available transport could dictate the numbers and locations of future centers.

14. *Establish Appropriate Fee Schedules for Government Health Services*

Whether or not decisions are made to require payment, either in full or in part, for the wide array of governmental health services provided especially by DPH and GMH, we feel it would be desirable that realistic fee schedules be developed for each such service. Fees should be based on the actual computed cost of providing a given service, and should be clearly established at least in the areas of home care, pharmacy, laboratory, family planning, dentistry, and medical and mental health out-patient care.

This would establish a future basis for appropriately seeking reimbursement for services provided to patients who are enrolled in HMO's and insurance programs, for partially- or fully-charging current fee-of-charge patients, and for determining premium levels for potential future government insurance programs. Such fee schedules would be imperative at that point where formal contracts with entities such as the Navy and Veterans Administration might be entered into. We recognize that many such fee schedules and other schedules of charges are already in place (generally throughout GMH and in selected program areas of DPH), but we highlight the issue in order to assure that continued attention be given the matter. The creation of realistic bases for charging for governmental services rests at the heart of many other recommendations, and therefore assumes proportions of importance for the future.

15. Establish Guam Memorial Hospital Under a Different Legal Form

Since acquisition of Guam Memorial Hospital from the Catholic Dioscese of Agana and the creation of the Guam Memorial Hospital Authority as a semi-autonomous agency of government, there have been continuous and irritating operational and financial problems related to the hospital. It has, in short, become the major center of conflict within Guam's health care system and the focus of public, legislative and planning attention, potentially to the disadvantage of patient care. It is clear to us that there is general unwillingness that operations as at present continue much longer, and we generally support the feeling that some changes of rather major magnitude will be required in the very near future.

OPTION A

Appealing mainly to private physicians and the business community of Guam, a first option would be the divestiture by government of ownership and operation of GMH through its transfer and sale to a private entity. Several alternatives offer themselves, including the outright sale to one of the major firms which specialize in the ownership and operation of proprietary hospitals such as Hospital Corporation of America. Another would be the identification of a suitable local voluntary alliance which could acquire the assets of GMH. A third would be a coalition of business interests, partially local to Guam and extended to a broader partnership reflecting financial interests in Japan, the United States and elsewhere.

The decision to essentially go out of the hospital business would certainly relieve a stressed governmental system of a major controversy and financial burden. It would, however, under any condition, deprive government and Guam's citizens of any means whatsoever of containing the costs of hospital care, for GMH represents th sole civilian hospital available in the Territory and her citizens are completely dependent upon it. Therefore, under private auspices (whether profit or not-for-profit) the consuming public would be lacking

any other alternative than to pay whatever charges the privately operated hospital might choose to fix. Relationships with public health and mental health programs would become strained, and many Federal programs now operated through the hospital would require transfer to other agencies of government in order to qualify for Federal participation. There is, further, the question of the government's responsibility for the Federal grant-in-aid which made initial acquisition of the Medical Center of the Marianas possible, and the high likelihood that Federal officials could not approve the outright sale of this major asset of local government.

We must conclude, therefore, that this option is not a particularly desirable or viable one at the present time. As Guam's population continues to grow and broadly distribute itself throughout the island, it may be feasible in three or four decades to consider a second major hospital which could then be developed under private aegis and operate competitively with a governmental hospital.

OPTION B

The option which would be most desirable, in our opinion, would be incorporation of GMH, by act of the Legislature, as a separate, completely autonomous non-profit public corporation to which the government could transfer the assets and operations of the present GMH. Under this option, the ownership and operation of the hospital is actually divorced from government, and placed in the hands of a publicly accountable corporation created especially for the purpose by statute, reporting only to its Board of Directors, but with statutory public reports as well. It is not unusual that the statutory charters for public corporations stipulate relationships with government, including permission to seek appropriations (but implying no fiscal responsibility on the part of government), annual public reports, and occasionally special fee discount arrangements for governmental purchases of services. A form of rate review could be entered into the charter, for example,

requiring the corporation to seek and obtain governmental or legislative approval of future rate increaes, initial rate structures, and the like.

Thus, this option differs significantly from A above, in that it retains a large degree of public accountability, and yet releases government from its present semi-direct obligations in the delivery of hospital care. As a public, non-profit corporation, most of the Federally-funded programs such as community mental health services could, if desire were manifested, remain under the umbrella of the new management structure. Under this structure, whether by direct prospective reimbursement, or vendor payments, the Government of Guam would remain responsible for paying the costs of hospital services rendered to the indigent.

OPTION C

Another option for which we believe there to be a substantial constituency is that of converting GMH to line agency status in the government structure. This would have the effect of repealing the current Authority, and vesting management responsibility for the hospital in the person of a gubernatorially-appointed chief executive. There would, however, remain a need for the establishment of some form of "board of directors" or "trusteeship" to which the chief executive would be accountable and answerable. Any of the previously recommended forms of a board of health would serve this purpose in terms of accreditation requirements and operational needs. On the other hand, a special commission or board could be appointed by the Governor to play the necessary trusteeship roles.

Questions remain as to whether GMH as a line agency should be subordinate to or parallel with other line agencies. As suggested earlier, we favor serious attention to the creation of a master health agency of government, one major element of which could be GMH and all of its ancilliary services. If this were to be achieved, and if the network of Family Health Centers as primary medical care settings under DPH were to be

implemented, then great opportunities for close collaboration between public health, primary care and in-patient services would accrue.

As a line agency of government, it would probably be most appropriate to adopt a single annual budget reflecting the total operating expenses of the institution, building as we will subsequently suggest a more aggressive billing and collection system, with some hospital revenues reverting to the general funds, and with others reserved to fund contingencies and depreciation. In this way, as with any other major line agency, the hospital has a dependable although fixed amount of money with which it can conduct its services, meet its payrolls and maintain its equipment. It would, however, serve to further politicize the hospital, bringing it under more direct and probably more frequent surveillance by the Legislature. However, given the political realities of Guam, this may happen inevitably as it is now, and would represent little change. On the other hand, under conditions of a fixed, large appropriated annual budget, one could expect the hospital to make many fewer trips back to the Legislature for supplemental appropriations, for the custom in other direct government hospital operations is the axiom "live within your budget".

As a line agency, with operating expenses covered by a fixed budget, there would be less incentive for aggressive collections than at present because such revenues would not accrue to the hospital's operating budget. On the other hand, there would be a much greater incentive than at present for more realistic provision of services, inasmuch as abundantly over-budgeted service provision will simply exhaust a fixed budget before its time.

This option obviously provides for the greatest degree of public accountability, but suffers from probable inefficiencies and functional difficulties which seem to arise every time any government operates relatively non-traditional public services such as hospitals.

OPTION D

A make-shift alternative would be to leave the sponsorship as it is, but require greatly improved estimates of requirements for appropriated funds to cover the cost of medical care provided to those persons for whom the government is responsible (i.e., the indigent and Medicaid). An annual appropriation, coupled with the caveat "live with it", would essentially place the hospital on a totally self-supporting basis and require it to generate the balance of its operating revenues from the most customary sources. This would be tantamount to prospective reimbursement and would actually be possible with more aggressive billing and collection procedures (and a lessened degree of external political intervention which often prevents collections), more creative financial arrangements with third-party payors, and tightened internal efficiency. This, of course, was the original design when the current organizational form was adopted, and history suggests that the form does not meet its promise.

OTHER GHM CONSIDERATIONS

A variety of specific recommendations are contained in the following section, each pertinent regardless of the future organizational form of GMH.

a. Collection procedures to recover just amounts due the hospital are an absolute requisite. This will require the hospital to have freedom to develop its own collection criteria and to provide for the enforcement of that criteria.

b. The development of an all-inclusive rate system whereby each patient's obligations are identifiable and readily determined at the point of service, whether it be discharge following in-patient services, or at the time of service in the out-patient and emergency departments, is seen as a desirable development. Not only does the all-inclusive rate concept greatly simplify internal bookkeeping, but it

facilitates the billing process. It is usually acceptable to third-party payors as well.

c. Restructured delineation of responsibilities with regard to indigent medical care is sorely needed. The hospital's primary responsibility is for the provision of medical care and not the maintenance of various payment programs as is now the case. In particular, the responsibilities for managing the payment (or recovery) for indigent care services are inappropriately lodged with GMH and would be more appropriately the responsibility of the Division of Public Health.

d. The hospital presently acts as a billing and collection agency for certain physicians amounting to about $250,000 each year, and this role should be immediately lifted as an inappropriate function of a hospital.

e. The receipt of payments by the hospital from third-party payors (GMHP, FHP, Medicaid, etc.) contains substantial time lags. Any acceleration of payments and reductions in accounts receivable would constitute an important windfall for hospital operations. We feel that incentives of a positive nature could be undertaken, including a more or less standard 2% early payment discount (payment within 30 days or less) extended to third-party payors and to private paying patients alike. The establishment of the above recommended all-inclusive rate structure would also enhance timeliness of payments by reducing the number of disputed bills.

f. The mechanism for reimbursement of the hospital for services rendered to beneficiaries of the Medicaid program can be substantially improved by close examination of the hospital's cost allocations internally (which could enhance the basis for recovery through allowable Medicaid formulae). For example, with better internal strategies for cost allocation, substantial increases in allowable Federal reimbursements

for the renal dialysis program would be possible. Other service areas are also candidates.

g. Although we have previously mentioned it, the lack of stability in hospital management constitutes a severe problem. The administration has become a revolving door over the past several years, and without stability in management department heads have developed virtually their own operating systems so they can get on with the business at hand. We recommend that the position be stabilized through direct Executive support of the hospital administrator, which could be readily achieved if line status is adopted. We also recommend that the hospital and the Executive Branch engage in an active legislative relations program to improve relationships between the hospital and individual Senators. In a similar vein, there is currently a high degree of skepticism, especially among better informed and better educated members of the community, over the quality of GMH services. Thus, there is urgently needed a strong and persuasive public relations program aimed at educating the general consuming public to the relative excellence of services which GMH does, in fact, provide. Perhaps a stimulated patient affairs or community affairs office in the hospital is needed; perhaps a consumer advisory council would help.

16. *Divorce Guam Memorial Health Plan from Guam Memorial Hospital Authority*

In no other sector of Guam's health care system, or in any other setting for that matter, have we encountered so gross and unworkable conflict of interest as that which exists in GMHA's dual authorities over GMH and GMHP. At the same time, a single authority is determining what price to charge a vendor and simultaneously determining from the vendor's perspective what will be paid to the hospital. On the one hand, the Authority sets collection policies, but in its role as management for GMHP it determines whether bills will be honored or not.

These roles are directly conflicting and cannot be carried out adequately without total separation.

OPTION A

The operation of GMHP could, in the simplest model, be transferred to some new entity created by the Legislature, or perhaps by Executive Order authorized to assume it. This could take the more formal form of a new public non-profit corporation created especially for that purpose, or it could be assigned to some line agency of government for operation so long as that agency is not a provider of service to GMHP and its membership.

OPTION B

The plan could be sold outright for the value of its liabilities plus $1.00 to private interests for operation as a private, competitive HMO. Given what we perceive to be serious fiscal problems within GMHP, it is doubtful that a private sponsor could be located to assume its operation.

OPTION C

Should wisdom be found in an earlier recommendation that the government consider establishing a separate, governmental insurance program for purposes of enrolling the poor and indigent, then that concept could be expanded to include the operation of GMHP as a governmental insurance entity serving both the employed and the needy under a single umbrella.

GENERAL COMMENTS REGARDING GMHP

We feel strongly that it is important to have at least two competing health maintenance organizations in Guam, and GMHP presently plays an appropriate competitive role. However, to ensure proper competition, GMHP must not be allowed special benefits of pricing, payment and service not otherwise available to all competitors. The essential elements in this policy are two-fold: first, remove the present conflict of interest which exists in the dual management of a hospital and

a health plan, and second, maintain a viable insurance program alternative for substantial numbers of Guam's people who have elected enrollment in GMHP.

17. *Enroll the Elderly in Medicare*

For some not well explained reasons, a small proportion of Guam's aged population are not currently enrolled in the Federal Medicare program. Enrollment in Part A (hospital benefits) is now automatic for all Federal social security annuitants. Since many in Guam have been excluded from participation in the social security program, they have not been automatically enrolled. However, their eligibility for enrollment is still current, although the Secretary of Health and Human Services is now required to extend open enrollment only during a brief two-month period each year. Nonetheless, the opportunity remains. Of an estimated 2,300 or so persons 65 years of age and older in Guam, approximately 2,000 are enrolled in Part A. Part B (doctors and other services out of hospital) is available on a purchase basis for those who are also enrolled in Part A, and only 1,700 of Guam's elderly are presently enrolled in this Part.

The lack of universal enrollment may be partially explained on the basis of economics. It costs the elderly money to enroll in Medicare, and it is not the free insurance for the aged that many believe it to be. Beginning January 1, 1982, for those in Part A, the first $256 of hospital expenses must be met out-of-pocket before benefits come into play. As days of hospitalization exceed 60, then the beneficiary must be prepared to pay $51 per day, and as they exceed 90 days, the beneficiary pays $102 per day for continued hospital care. Should nursing care be required beyond hospitalization, after the 20th day, the beneficiary must pay $25 for each additional day of skilled and intermediate nursing care. Part B is equally increasingly strenuous for the older citizen from a financial point of view, with the first $75 of expenses having to be paid directly by the beneficiary before other benefits are triggered. A monthly

premium of $11 is required ($132 per annum) and a co-payment of 20% of subsequent medical bills is required. Taking a straightforward case of an elderly person with 10 physician office visits, a brief hospitalization and 30 days of skilled nursing care, the total annual cost for that individual would approximate $750 including all premiums, deductible and co-payments. This would not appear to many impoverished elderly to be a big bargain, especially when tradition on Guam has been essentially free medical care and they have become accustomed to its provision on that basis.

We have estimated that Guam is presently foregoing about $500,000 annually in potential Medicare revenues. Last year, the 2,000 enrolled in Part A alone generated reimbursement to Guam of $1.2 million. That figure represents 77% of potential, and if all elderly had been enrolled and consumed hospital services at about the same rate as those enrolled did, the total reimbursement would have been around $1.6 million.

It would clearly be to Guam's benefit to escalate the numbers of elderly enrolled in their rightful Medicare entitlement. Since this does not appear to be a major area of concern, the options have been suitably constrained.

OPTION A

A strong publicity and public relations campaign, through senior centers, senior citizens groups, the churches and the village commissioners, urging seniors to enroll in Medicare might have some effect. This would have to be coupled with physical arrangements to make it very easy for each eligible person to complete the necessary forms and arrange for their submittal to proper authorities. We have concern, however, that Guam's elderly are well aware of the financial obligations imposed when they enter Medicare, and probably lack, for the most part, the purchasing power to meet the premium, deductible and co-insurance features.

GENERAL COMMENTS REGARDING MEDICARE

It should be noted that to take maximum advantage of potential future Medicare reimbursement, Guam Memorial Hospital will have to take two important steps. First, it must maintain certification as a Medicare provider. We do not believe that to be a serious obstacle. Secondly, the hospital's internal cost allocation system will have to be seriously studied in order to develop a strategy which gains the maximum rate of reimbursement for Medicare (and Medicaid, we might add) eligible services, the reimbursement for which is based on attributable costs.

Total penetration of the elderly population with the Medicare program would also have the effect of increasing both participation in and revenues for the home care program administered by DPH. As Guam's elderly population continues to grow slowly in numbers, careful future planning would be required to assure that future staffing levels in both the hospital, skilled/intermediate nursing and home care are sufficient for the added case load which increased third-party Federal payment would undoubtedly stimulate.

As the Federal government continues to shift substantial financial participation on the elderly, and recognizing that most elderly are also relatively poor, the government must anticipate future needs to participate financially in Medicare (as it now does partially through Medicaid for those eligible) probably with some form and level of subsidy for the poor and marginally poor elderly.

18. Establish Local Intermediary Capabilities

As complexity increases, especially in the organization of health care financing through multiple private and public pre-payment, insurance and vendor payment programs, so also does the need for modern, efficient business-like processing of financial data.

OPTION A

Beginning perhaps only with the needs of the Medicaid local resources with computer resources could be identified to undertake development of skills and procedures to effectively manage an automated claims processing/information system service for Medicaid. There are proven economies of scale in such operations, and once procedures have been established for Medicaid, the other third-party programs such as FHP, GMHP and indemnity insurance programs might well find wisdom in considering contracting out their own claims processing responsibilities to such entity. Furthermore, should substantial Medicare business eventually be generated by a growing elderly population, it may be possible that existing Pacific area intermediaries (HMSA in Hawaii and Aetna in California) might be willing either to sub-contract Guam claims processing to a local entity, or a Guam-based intermediary might be established as a formal fractionation of the Pacific area intermediary responsibilities. Similarly, a local CHAMPUS and CHAMPVA intermediary would be of value.

This would make it greatly easier for patients and providers to deal with medical claims problems than it is now when existing intermediaries are more than 3,000 miles away. It is possible that the existence of claims processing capacity in Guam would also be employed by numerous other off-island insurance programs, including CHAMPUS and CHAMPVA.

OPTION B

Similar capacities to mechanically process claims could be developed with the government's computer services, or through dedicated computational resources vested perhaps within the DHP&SS. This alternative would fall far short of the mark suggested above, for private sector claims processing through contracts with governmental processing entities would be a strained relationship to say the least. Furthermore, it is most typical that existing governmental computer systems are especially tailored to the payroll, budget management and

other fiscal affairs of government, and it is often found to be quite difficult to get prompt services and reports or new services when collateral and tangential demands on such systems are imposed.

OPTION C

Again beginning with Medicaid, and later perhaps extending to other entities with claims processing needs, contracts could be developed with existing and elegant claims processing centers elsewhere, such as that operated by the Hawaii Medical Service Association in Honolulu. This program presently processes HMSA claims for more than 500,000 subscribers, all Hawaii Medicaid claims, Part A claims for Medicare, and CHAMPUS claims as well. Except for the time delays incurred in the express shipping of either hard copy claims or locally prepared computer tapes, this would provide a relatively simple approach to making current claims processing much more efficient than at present.

19. *Establish Compulsory Health Insurance Program for the Employed and the Needy*

Presently, about 51% of Guam's civilian population is enrolled in one or another type of health insurance program. An additional 4% we estimate as being eligible for various other free-of-charge or pre-paid programs, including various Federal entitlements. About 9% of the population is covered for medical care under the Medicaid program. The residual of 36% represents our estimate of the uninsured who are otherwise ineligible for existing government programs. Of this residual, we estimate that 22% are employed persons without health insurance, about 8% are elderly persons who are not enrolled in Medicare, and 6% are indigent persons without eligibility for or access to any organized payment program for their medical care. It is principally to the indigent (and in one option, the Medicaid population as well) and the employed but uninsured population that this option area is directed.

OPTION A

While state (and territorial) powers to impose requirements on employers which mandate the provision of health insurance for employees -- in the model of Hawaii's pre-paid health care act -- has recently been found by the U.S. Supreme Court to be in violation of overriding Federal ERISA statutes, there persist opportunities as variations on the general theme. The overriding philosophy in this connection is that every wage-earning person should be given the opportunity to participate under a group enrollment premium structure in some health insurance program. Those who may electively choose not to participate could do so by their own free will, but it should be made abundantly clear that the election of the option not to participate will not necessarily trigger government payment for needed medical care in the time of need. Thus, those electing the non-participation roles would be opting essentially for self-insurance and would have few future legitimate claims on government supported services.

We recommend, for the employed but not insured population of Guam, serious study of the Hawaii pre-paid health care act, a copy of which is included as Appendix B. While government may apparently not require employers to offer health insurance to their employees and to participate financially in its purchase, it is clear that various kinds of incentives could be provided by statute which would make the offering of health insurance enrollment a desirable act on the part of employers. For example, an appropriate trust fund which would meet a portion of the employer's premium share, should that share exceed some reasonable percentage of gross payroll, could be established as an enticement for smaller employers to voluntarily offer this important fringe benefit to employees. Important tax incentives could be included to induce employers to develop creative insurance packages for their employees. The appropriated funds expended, and tax revenues foregone, under these expedients by government would most probably be more than

returned in improved collections for services at GMH and other government health services which are now paid directly by government for the uninsured.

Such a move by the Legislature would also tend to foster greater competition in the existing health insurance system of Guam, and provide incentives for FHP, GMHP, HML and other entities to be more aggressive and competitive in their respective marketing efforts. We perceive little in the way of animosity toward such a program on the part of Guam's business community. In fact, those large employers who now provide health insurance benefits for employees see it as a near moral duty which should also be assumed by all employers.

OPTION B

Guam Memorial Health Plan could, as suggested as one alternative earlier, be reconstituted as a public, non-profit insurance corporation. In this form, it could, of course, continue to participate as an active competitor in the general health insurance industry of Guam and should do so. However, recalling the earlier figures which suggest that 6% of the population fall into the indigent category, we can now suggest consideration of the government directly enrolling qualified and eligible indigent persons in a special insurance benefit program which new statute could require GMHP to create. This alternative would create a clear channel for the management of the financing of medical and health care for the indigent, a third-party which would negotiate fees and rates with all appropriate providers, including private physicians and dentists, GMH and DPH&SS. Since the GMHP program would be a governmental entity, it would be appropriate to constrain its service benefits package for the indigent solely to governmental service sectors, and should the Family Health Center concept be eventually embraced, an insurance program for the poor could pay for their care at such centers, at GMH and when necessary by vendor payment to private specialist physicians and dentists.

OPTION C

This alternative is a simple expansion of the foregoing whereunder the current Medicaid population would also be enrolled as "members" of GMHP, with the benefit package for their plan being similarly constrained mainly to services provided through governmental entities as described as an option under our earlier consideration of the Medicaid program.

OPTION D

The most extreme option would be the creation of a new government insurance corporation which would have the sole responsibility, with appropriated funds as proxies for dues and premium income, for the purchase of medical services for either/and the indigent/Medicaid populations. This would leave GMHP unencumbered with any special benefit packages and special enrollees, and free to compete only with more traditional health insurance programs in the community.

OTHER HEALTH INSURANCE CONSIDERATIONS

Given relaxation of the current Medicaid service benefit package, the specification of sole source providers, and other changes now permitted under Federal regulations, new benefit packages for the Medicaid-eligible, and perhaps for the indigent, could be developed by existing health insurance programs including FHP, GMHP which, because of constrained services and costs, could be priced at a level approximating current levels of expenditure for those populations. Thus, a dim option of simply employing the existing health insurance industry for "insurance" coverage of the poor and indigent may be possible.

We would close be reinterating a previous recommendation, namely that serious attention be paid to achieving complete enrollment of the aged in Medicare and the establishment of various other Federal entitlements in Guam (i.e., CHAMPUS, CHAMPVA) as means of easing financial burdens for yet other cohorts of the population and as devices to increase external financial participation in the cost of Guam's health system.

While we cannot identify them precisely, certainly a small number of those now termed indigent are represented by students at the University of Guam and Guam Community College who are citizens of surrounding Pacific territories. Some are "nationals" of surrounding areas who choose to live and perhaps work in Guam. In these cases, once having left their home islands, they are generally beyond medical care support from their own governments, and tend to end up being wards of Guam's government. Should one of the options dealing with providing health insurance for the poor or indigent be created, then a simple requirement that all "alien" students and visitors be enrolled would be an obvious step. It would at the outset, be even simpler to seek special student and/or visitor benefit packages from existing health insurance programs and require, as a condition of residence of greater than 30 days in Guam, the enrollment of all non-citizens (excluding, of course, the military and Federal contract workers).

20. *Improve Regulation and Licensure of Health Professions and Facilities*

Inasmuch as Guam presently relies almost exclusively upon professional licensure achieved elsewhere as a condition for professional practice, we find few options to recommend as a remedy except that which suggests establishment of local professional licensure for at least critical and central health professions. In another policy area to follow, we will suggest multiple approaches to doing so.

OPTION A

Guam's government should move promptly, in league with the appropriate professional associations and their leadership, to draft and adopt statutes controlling the practice of the following healing arts in Guam:

a. Medicine and Osteopathy

b. Dentistry

c. Pharmacy

d. Psychology

Upon its own initiative, the Guam Pharmacy Association has taken the lead in such developments, and a proposed pharmacy licensure act is contained in Appendix C as an exemplary approach to voluntary quality control of a profession. The licensure and discipline of the health professions should be conducted under formal boards of examiners which are described later.

OPTION B

As an adjunct to basic licensure, statute or regulation should also prescribe some minimal level of regular continuing education, if not re-examination, as a condition for license renewal.

OPTION C

At the very minimum, newer statute should require licensure in at least one U.S. state as a condition for practice in Guam. In and of itself, this is not sufficient, however, for local statute related to conditions of suspension and removal of local license, and of requisite continuing education is left unattended. All of the U.S. conventions relating to the practice of foreign-trained health professionals should, of course, be observed in Guam statute.

OPTION D

In addition to the licensure of personnel, greater attention is recommended to the issue of licensing of facilities. Included, and presently not specifically licensed, would be medical clinics, private laboratories, pharmacies and private care homes of various types. Such licensure, which will require new statute, would be dependent, of course, on meeting standards of life and safety codes and applicable building codes. But it would extend to considerations of adequacy of personnel and procedures, standardization of equipment, and in some cases specifying limitations of services which may be provided.

GENERAL COMMENTS ON LICENSURE

As the government may move to tighten the qualifications for professional practice in Guam, we strongly recommend that such moves be made with the full participation of the practicing professionals themselves. The role and function of existing professional associations and societies is presently quite weak. Serious participatory responsibilities in the drafting and consideration of professional licensure statute and process could be a useful and consuming activity for such bodies. When those who are expected to live and operate within the constraints of statute are extended the opportunity to create such statute, it is common that the requirements which the professions themselves will impose will be greater than those which might otherwise be expected. They, the professions, will be their own harshest judges.

There are undoubtedly some current practitioners who would not qualify under newer licensure statute. We do not recommend their summary dismissal from practice, but rather would foresee a form of "grandfathering" and provisional licensure coupled with a conscious diagnosis of their respective relative weaknesses and the prescription of some professional updating in areas of need as a condition for upgrading a provisional license to a full license.

The actual conduct of examinations could be either done completely locally, employing examination materials gleaned from other jurisdictions, or could be contracted for to be administered in Guam by existing and more mature licensure bodies elsewhere, as in Hawaii. As Guam moves further toward a role as a center for medical excellence and technology in the Pacific, we see it as necessary that local licensure and control of the health professions be established and that dependence on external standards be eliminated as rapidly as possible.

21. Provide Basis for Malpractice Insurance for Health Professionals

Except for government self-insurance for its professional employees, and a group malpractice policy maintained by FHP, there is essentially no malpractice insurance available for individual physicians, dentists or pharmacists. We believe that a large amount of "defensive" medicine is presently being practiced in an understandable effort to protect practitioners from any possible future litigation. Difficult and potentially litigious cases are, we believe, often transferred to the responsibility of government salaried physicians and other providers, since it is risky for uninsured private practitioners to continue to deal with them. Accordingly, owing in large measure to the lack of malpractice insurance, a great deal of potentially unnecessary medical care may now be delivered to Guam's citizens, at undue cost to the total system.

None of the options which follow will be totally viable unless and until stronger standards governing the practice of the health professions have been established in Guam. Thus, licensure and control of the professions will be a requisite first step prior to any serious penetration of the malpractice insurance issue.

OPTION A

The simplest approach would be a concerted effort of government, through direct contact, to recruit U.S. insurance companies and to entice them to write malpractice policies for Guam's health professionals. We would feel this to be a futile attempt under current conditions, however.

OPTION B

Exercising the options available to the government under P.L. 13-115, the existing "Malpractice Claims Mandatory Screening and Mandatory Arbitration Act" would be amended to more closely resemble some features of a kindred act which has served Hawaii's health professionals extremely well. A copy of the Hawaii statute is to be found as Appendix D. Under this plan,

a "patients' compensation fund" is established which supplements either customary malpractice insurance or self-insurance programs, reducing individual insurance premium liabilities for individual practitioners substantially, and creating a more attractive market for the writing of basic malpractice coverage for individuals.

OPTION C

Acknowledging the difficulty in obtaining external malpractice at the time being, an alternative would be for the government to create an actuarily determined insurance pool to which individual practitioners could subscribe. Thus, the government could, at least pro tem, serve as a malpractice insurance underwriter for Guam's health professionals. This would make greater sense if it were tied directly to the option above related to establishing a patient's compensation fund.

OPTION D

If the patients' compensation fund notion were to be implemented, then it would be possible for consortia of health professionals (i.e., physicians through the medical association, dentists and pharmacists through their respective associations) to establish their own insurance funds as has been done quite successfully by a physician-sponsored malpractice insurance program in Hawaii. This requires substantial contributions at the outset to create the necessary pool, which in the future would grow substantially through investment income requiring greatly lowered future contributions. Such a pool, when coupled with the "major risk" features of the patients' compensation fund, is more feasible than without such a backup.

22. *Establish Functional Boards of Professional Examination*

There is currently "The Commission on Licensure to Practice the Healing Arts (Licensure Commission)" to which examination and licensure responsibilities fall. In practice, with respect to licensure of health professionals, this Commission's responsibility is mainly in the determination of "equivalency" of other

licensure(s) held by applicants, and the issuance of a Guam license based on those determinations. The Commission has regulatory and disciplinary powers vested in it under the Medical Malpractice Reform Act of 1975, and is empowered to revoke, suspend or otherwise regulate the licenses of physicians. They are further empowered to reprimand, fine, require refresher educational courses and require licensees to submit to medical treatment.

Thus, a single board of professional licensure currently exists in Guam, covering all licensed professions, including the allied health professions. Grounds for suspension and revocation of the various licenses granted by the Commission are unclear, as they are in most other jurisdictions. They do not include "incompetence to practice" for example, as a clear basis for revocation or limitation of practice priviledges. Comprised as it is as a single board, there is insufficient breadth of professional competence and community interest to properly deal with the broad range of professional fields requiring licensure.

OPTION A

If the single Commission (Board) concept is to be retained, it would be necessary to reconsider its membership and assure that the board contains substantial membership directly representative of the individual professions being licensed. It is inappropriate for physician-dominated boards to license dentists, nurses, or podiatrists, for physicians are not trained in their fields. The converse is true as well. There is further a growing national sentiment to include increasingly large numbers of non-professional community representatives on boards and commission which regulate the healing arts, in an effort to more adequately protect the interests of the general public and to preclude licensure bodies acting as mutual protection societies which can substantially control entry into the health professions at the point of licensure.

OPTION B

A more forward-looking developmental alternative would be the repeal of the single Commission, and the establishment of multiple boards of professional licensure, one each of medicine and osteopathy, nursing, dentistry, pharmacy, and nursing home administration at the very least. Such individual boards could be supplied with a single executive secretary (perhaps an expanded duty for an existing executive within DPH&SS) who would convene meetings, arrange agendas, issue licenses at the behest of the board, arrange to conduct actual examinations and obtain them as necessary, certify credentials, and conduct necessary verifications. The boards should each be composed of members of the licensed profession, but should also contain members representative of the general community who are knowledgeable in the profession being licensed and regulated.

OPTION C

The single Commission could be retained as the ultimate licensure/regulatory authority for all of the healing arts and allied health professions, but each such licensed profession (through its respective professional association) could be encouraged to constitute a preliminary review panel which would investigate and perhaps examine prospective licentiates and make their findings and recommendations to the central Commission. The same professional panels could be employed as peer review councils at the times when disciplinary hearings may be necessary, again making their respective findings and conclusions available as reports to the Commission.

GENERAL COMMENTS REGARDING LICENSURE

As we have emphasized in other places, one of the strongest barriers to both the attraction of needed high quality medical and other health practitioners and to high quality medical care is the absence of available malpractice insurance. Under

these conditions, otherwise interested private practitioners cannot be expected to relocate to Guam and place themselves and their professional career at risk. One of the reasons that malpractice is unavailable is the pending serious question about the actual quality of health care providers who work in or might migrate to Guam in the future. One of the strongest pieces of evidence of the professional qualification of workers is a rigorous and seriously enforced licensure and regulatory system. Guam's present system which essentially takes the word of external examiners as testimony to the competence and skill level of applicants for license is hardly the kind of comforting evidence that underwriters seek when they extend risk insurance. Nor is it the kind of comforting evidence which Guam's citizens deserve when they seek health care form individual providers. Dependence upon external certification, and tolerance of generally relaxed standards of professional competence was necessary in days of very scarce medical and health personnel, when each new doctor was welcomed because of severe need and not because of his or her special abilities. We believe that era to have passed, and see Guam as an attractive locale for professional practice for a growing number of top-notch physicians and others who find the U.S. mainland over-doctored and over-dentists unduly competitive. We find, further, that Guam is and will be looked to as a medical referral center for the Western Pacific, and as such has serious obligations to sister governments in the area to provide and maintain a high quality medical system. Given these conditions and obligations, we can find no other alternative than to suggest strengthening Guam's professional codes of licensure and regulation to a level equivalent to that of Hawaii, California or New York. To do less would be a serious abbrogation of responsibility.

23. *Expand Range of Function for Professional Workers*

Two areas pertinent to some primary and allied health workers and their respective functions are worthy of comment.

OPTION A

We recommend study of the desirability of expanding the drug prescription and dispensing functions of pharmacists, nurses and physicians assistants in view of potential future "semi-private" practice of these professionals either in governmental or private sector delivery organizations. The State of California is now in the third year of a five-year experimental statute which permits pharmacists, nurse practitioners and physicians assistants to prescribe drugs within clearly limited ranges, making unnecessary the intervention of a physician for simple and routine prescriptions. Not only is this a potentially cost-saving expedient, it tends to recognize the relatively high level of competence which these (and perhaps other) professionals have in their ability to conduct relatively private primary medical care practices.

OPTION B

In order to permit the fullest employment of nurse practitioners, especially in the recommended Family Health Centers, and in other public and private settings, as well as the practice of other cost efficient primary medical care providers, we would recommend consideration of statute which would permit the independent practice of nurses in the several nurse practitioner specialities. This will require amendment of current licensure acts pertinent to nurse practitioners (and physicians assistants might also be included), with clear delineations of an expanded scope of practice which should not necessarily (for prescribed functions) need to be under the immediate supervision of a licensed physician. There has been ample experience, in California, New Jersey and a number of other states, with the independent private practice of nurse pediatric, geriatric/chronic disease, family, and obstetric practitioners to suggest that not only are patients willing to seek primary care from such persons, but that they enjoy the closer and more open communication between themselves and such practitioners. Primary services provided by nurse practitioners are customarily

at least 30% less costly that similar services provided by physicians, and the fact that so much primary care provided in well developed health maintenance organizations is provided by nurse practitioners attests to the relative efficiency of their employment.

24. *Establish a Health Professions Recruitment Program*

Guam presently lacks a master, long-range personnel developmental plan for the health field. In a preceding section which treats health manpower, we have provided some estimates of future manpower requirements for a presently understaffed system, and this represents only a beginning in the development of a long-range recruitment and replenishment strategy.

OPTION A

A long-range health professions manpower plan should be developed, with immediate responsibility falling to GHPDA. Not only should projections of needed personnel be made on the basis of current absolute shortages, but the existing manpower pool must be studied in individual detail to construct estimates of attrition rates. Such estimates, by profession and by specialty with profession, can be projected to future years and can disclose the number and type of practitioner which will be needed to refresh the present system for each succeeding year. As a bare minimum, we recommend this action.

OPTION B

Needed health manpower will not universally appear out of thin air. Rather, a concerted recruitment program will undoubtedly be required which is aimed at attaining the annual staffing needs reflected in the long-range manpower plan. A number of alternative approaches to developing and sustaining an aggressive recruitment program suggest themselves.

- Assign general responsibility to the DPH&SS which, working against the annual quotas reflected in the master manpower plan, would advertise in appropriate media, arrange for interviews and site visits for appropriate candidates, and otherwise pay continual attention to the attraction and placement of needed health professionals.

- Do as above, but add a collaborative relationship with existing major medical groups and individual health practitioners, enlisting them in the overall recruitment effort. This would be desirable, inasmuch as many of the presently needed, and future supply, personnel will be employed within or will associate with existing practice.

- As an interim expedient, as in the case of a radiologist with neurological diagnostic skills for example, arrange for on- or off-island short-term training for existing practitioners to upgrade their specialty skills to fill present voids.

- Contract with a U.S. mainland medical education complex, such as that at University of California at either or both San Francisco or Los Angeles for regular and continuous assistance with the advertising, identification of suitable individuals and their screening, and related recruitment responsibilities. This is suggested because such educational complexes include professional schools and faculties representing the major areas of manpower need and are in close contact with broad communities of professional practitioners. Thus, from their faculty, students, alumni and their surrounding professional communities, a rich resource for recruitment would be provided.

- Contract, as Guam did in the past and as American Samoa has recently done, with one of the professional manpower service bureaus on the U.S. mainland for recruitment and screening services.

GENERAL COMMENTS ON RECRUITMENT

No matter which combination of the devices suggested above may eventually be employed, it is recommended that recruitment efforts go forth on a consolidated basis. That is, recruitment stimulated by the government should not be exclusively limited to attracting needed governmental employees. Given Guam's size and relative cohesiveness, a mutual public-private sector consolidated recruitment effort seems both feasible and desirable.

Furthermore, no recruitment should go forward without its being done in the frame of reference of the recommended long-range manpower development plan. To do otherwise will likely result in an inappropriate skewing of types of professionals who are attracted to Guam, with greater attention being paid to the easiest to attract and with little to the more difficult to obtain. While we would not suggest restraint of trade, it would not be unreasonable that manpower recruitment efforts also be closely coordinated with licensure bodies, for they can provide short-run buffering against the intrusion of truly unneeded numbers of professionals, and help create incentives which would assist in the attraction of truly needed professionals.

25. Establish a Health Manpower Development Program

Guam's health personnel development problems have been shown to divide into two major sectors. The first relates to expanding the capacities and skills of those already employed in the system, while the second relates to a much longer-range concern for future supplies of needed personnel.

OPTION A

In this study, and in a related analysis of the organization and management of the Division of Public Health, a number of opportunities for the enhancement of current skills have been srufaced. We see this as an immediate concern of individual agencies wherein aggressive and continuous in-service and

other educational programs have not been fully developed. Within most of Guam's health agencies, for example, there are persons occupying important management jobs (and doing as well as they can with their responsibilities) who lack formal training in management process. Difficulty is routinely encountered in providing powerful educational programs which will keep nursing staff members up-to-date on the latest developments in their field. Similarly, laboratory, environmental, and technical staff members lack the wealth of educational opportunities which would keep them at the leading edge of an explosive technological age.

- As a very first step, we would recommend that each agency of government involved in health service delivery take inventory of probable developmental and in-service training needs, and reflect programs to meet such needs in the very next budget cycle. Some will be met through education provided by more skilled professionals within the agency or organization. Others can be met through arrangements with either or both Guam Community College and the University of Guam for either formal, regular coursework or for more specialized and intensive short-term training. Some will have to be brought to Guam in the form of visiting instructors and packaged courses. Many universities, especially the most proximate -- the University of Hawaii, and its schools of the health professions -- undoubtedly stand in a position of interest and concern, and would with minimal resources being provided by Guam be able to provide a relative wealth of needed education for governmental staff members.

- As a more creative, but more complex alternative, we would suggest the creation of an inter-agency manpower development committee (including representatives from private sector health delivery organizations as well) which would coordinate the identification of staff development needs throughout the health care system. The identified needs

could then be categorized by personnel or professional types, and kindred developmental needs across agencies and organizations could be identified. Once this has been completed, jointly funded and jointly sponsored educational activities could be developed which would meet the mutual needs of multiple kindred staff members from many different agencies.

OPTION B

For most of the advanced health professions, Guam now stands in a donee position, completely dependent upon external resources for the production of her physicians, dentists, pharmacists and other highly skilled health professionals. Furthermore, this supply has little present prospect of including within its numbers persons from Guam who have been trained in the health professions and who return to Guam to practice their profession. Thus, not only is Guam largely dependent upon external resources, but upon "alien" products of those resources. This situation will obtain for a considerable period of time to come, but it need not persist forever if aggressive and constructive action is begun soon to alter the pattern. It will, however, persist forever without concerted action in the near future.

While it will necessarily remain for a much more serious planning effort to develop the details, we suggest below a series of inter-related steps and activities which would have the effect of bringing greater numbers of Guam's young people into health careers and eventually populating Guam's health care system with her own people. Few would dispute the wisdom of doing so, in our opinion. We propose attention to four distinct phases, as follow:

a. Getting Guam's People Ready for Health Careers

Health careers are highly technical in their nature, and the first step in preparing a career path for Guam's young people would desirably begin with examination of and

improvement of, where necessary, the basic science and mathematical studies in the high schools. It will be upon that foundation that future success in competing in health professions education will largely be premised.

Related to biological and science studies in the high schools, a series of "health science clubs" might be established as means of identifying young people with career interests in health, and as a means of building group identity and pride as "pre-professionals" in health among interested youngsters. The health agencies and institutions of Guam could participate by providing group activities, observational tours and other educational experiences for members of the health science clubs, and could even consider utilizing their members as a form of junior auxiliary to actually work for brief periods of time in the hospital, clinics, field investigations and other activities of the system.

From the high school level, attention must next center upon the fine resources available through the Guam Community College and the University of Guam. Here, portals of entry for those interested in health careers must be provided, and should be enhanced with the careful and clear delineation of pre-professional undergraduate program tracks which will prepare graduates for eventual entry either into existing Guam-based professional education or at institutions elsewhere.

Thus, at the community college level, various technical preparations could be developed, to provide training in health occupations requiring but one or two years. This should not be done in a dead-ended manner, however, and in such time-limited training programs, open ends should be retained which would permit some students to build at a later time on their foundation technical training and to pursue additional degree-oriented training in more advanced health professions.

The current nursing education program at the University of Guam is a splendid beginning, especially as it moves to its new emphasis on baccalaureate studies. Other opportunities, at the baccalaureate area and associated with existing departments of the university would be in the development of a health administration emphasis within business and public administration, and the creation of special studies in environmental sciences as an adjunct to the basic science departments. While these three baccalaureate tracks are operating, there needs to be the further identification of sequences of courses (and perhaps the identification and development of missing courses) which would constitute appropriate pre- (medicine, dentistry, pharmacy, optometry, etc.) professional tracks for students aspiring to careers in those fields. It would be desirable that pre-professional tracks and the programs in nursing, environmental health, and other fields be linked in such a manner that students realizing in mid-stream of the college education that their career aspirations have altered or their aptitudes fall in different areas have branching options available to them without having to return to "square one" if their career path choice should change.

As at the high school level, it might be possible to establish at the University of Guam a "health science corps" which would include students studying in any of the specific degree-oriented health science programs and those in the more general pre-professional curricula. The corps could sponsor special educational experiences, develop field experiences for members who could work at somewhat responsible levels in health delivery agencies and institutions to further enhance their interest and dedication to a health career.

In our opinion, considerable calibration of existing UoG science and other pre-professional courses to the

expectations and standards of external health professions schools will be required, and consultation on this score should be sought by university officials.

b. Getting Guam's People Into External Professional Schools

Some of the products of the previous stage will complete their professional education at that level (at least for the time being) and will become eligible for positions in the health care delivery system. Others, however, will require admission to medical, dental and other professional schools in Hawaii or the U.S. mainland in order to complete their preparation. To achieve this, and to assure the special consideration which Pacific Island young people require and deserve in often hostile, alien university settings, a series of liaisons would be required. There is the medium of the Area Health Education Center, a Federally-supported program through which medical schools (in league with all other schools of the health professions) reach out to medically underserved areas both to bring local residents into professional education, and to bring the benefits of professional education directly to the medically underserved area. It is not beyond belief that an AHEC especially for the Western Pacific, developed in conjunction with an appropriate medical school either in Hawaii or California, could be designed and funded. Through the auspices of the AHEC, Guam's young people would specifically be identified as a high priority cohort for admission to advanced professional schools.

It may not even be necessary to pursue the AHEC notion, for it is our belief (given some form of financial support) that a number of universities with health professions schools would be willing to enter into a compact with Guam to assure special consideration and receipt of students from Guam. This arrangement, as it could be under the AHEC model, could also provide for the cycling back to Guam of advanced medical, dental and other students (as

residents, interns and for clinical preceptorship training) together with clinical faculty members. This would provide a flow of visiting professional educators who could be occasionally utilized in the undergraduate programs at UoG, could be a powerful stimulus to generate interest in health careers among young people, who could while in Guam contribute to general medical and professional education, and who would over time build important and lasting liaisons with practitioners in Guam and come to know and understand Guam's special health care needs.

c. Keeping Guam's People in Health Professional Education

It will be insufficient just to arrange pre-professional training and to gain entrance into medical school for many young people from Guam. They will require support networks, including financial support, which maintain their sense of cultural identity and which provide for the special tutorial needs which past history suggests they will require. They will require periodic return to Guam during their professional training to further reinforce their obligation to return and to practice in Guam upon completion of their training.

d. Getting Guam's People Back After Education

This is perhaps the most difficult component of any manpower development schema, for it so often happens that students from any rural area, once exposed to the "big city" and all of the cultural, professional and technological trappings of centers for health education become disenchanted with the more parochial and isolated life which rural practice offers. Thus, any system will require reinforcing devices which continue to focus the young person's attention to deeper obligations to serve Guam and its people.

Paramount among these has been the time-honored educational loan with foregiveness provisions for those who return and practice, usually on a year-for-year basis, in

the home area. Given the income producing power to a recently graduated physician or dentists, however, many find it possible to "buy out" of such arrangements with great facility, never to be seen again on the home ground.

The arrangement of medical and other residencies to be performed in Guam would be a powerful means of re-establishing the soon-to-be professional in his own home territory. Should a regular flow of visiting clinicians from the very professional schools in which the person was trained be established, then despite the relative isolation of Guam, the young graduate has opportunity of having familiar and respected faculty members from his very own professional school visit him periodically.

Other incentives could include tax incentives (perhaps also necessary to recruit and retain non-Guam professionals, particularly in the more scarce specialties), special recognition and status awards, government help with establishment of practice and housing, and the like.

Similar opportunities and problems exist, incidentally, in Pacific territories surrounding Guam, and some form of inter-governmental scheme might solve multiple problems.

26. *Equip and Staff Guam Memorial Hospital and the General System to Serve as a Regional Medical Referral Center for the Western Pacific*

Guam stands at the economic crossroads of the Western Pacific, has the largest single civilian population in the area, and has the most modern and best-equipped general medical and health care system in the area. Serious medical cases are presently referred to Guam's health care system from the Northern Marianas and Palau with relative frequency, although many more fly by Guam to Hawaii and the West Coast. Many individuals annually come to Guam from the Northern Marianas, Palau, Truk and even Ponape for personal medical care. Thus, by no particular design, Guam is presently serving as a sort of regional medical referral center.

However, as Guam's "market basket" of medical goods and services continues to expand, we believe that a much more serious set of demands will be placed upon the local system for a much broader population than now utilizes the system. For example, should the CAT scanner be installed and made operational, it will be the major trauma diagnostic instrument available to the peoples of Micronesia. In this instance, given the nature of trauma and the undesirability of transporting patients for great distances, Guam will inherit without plan a regional referral responsibility.

We estimate conservatively that there are an additional 100,000 persons in Guam's regional service catchment area who, along with their respective governments, will need to expect medical backup, support and referral from Guam's health care apparatus. To this eventuality, a number of policies need to be addressed.

OPTION A

One policy would be to ignore the needs of surrounding populations and to continue to plan and develop Guam's system for Guam's own people. To do so would be vastly unjust and would represent the conscious denial of added income for Guam's health system of substantial proportions. It would further reinforce decisions in surrounding polities to further the development and introduction of inappropriate medical technology to locally meet the needs of their people. This would be costly and medically dangerous. Thus, we can find no constituency for this option.

OPTION B

Our favored alternative would be the recognition of a regional responsibility by Guam's political leadership, and the adoption of a course of action which would systematically and rapidly build Guam's technologic and medical capabilities to the point that not only would Guam's needs be better met, but that all secondary and tertiary appartus of any modern medical care system is in place and functioning for the benefit of nearly 200,000 people in the general area.

This will require an inventory and specification of technologies either not now existing or not yet completely developed in Guam. For example, burn care, blood banking, organ and tissue banks, and high-intensity radiotherapy and nuclear medicine capabilities remain to be developed. Intensive neo-natal and other intensive care capabilities are of such financial and technical magnitude that they cannot be sustained for fewer than 100,000 persons, and these need radical expansion in Guam.

To support these and added technologic advances which will eventually be added to the system, there will be commensurate requirements to obtain and/or train the technicians who will operate newer equipment, to introduce physicians to newer technological developments, and to expand the capabilities of many other personnel including nursing staff.

Finally, as we have earlier identified, there is need to attract to practice in Guam a variety of medical and other specialists not now represented. There is, in our belief, the necessary critical mass of population in Guam to completely and adequately support at least one of every major medical and dental specialist, and their acquisition together with the advanced equipment which they will be required to practice would complete the developmental picture.

Inasmuch as patients from outlying areas, and to some extent from rural areas of Guam, generally must travel with either an attendant or with family members, careful thought must then be given to the creation or identification of suitable transient housing including arrangements for feeding such added guests. This might be one of many short-run uses of portions of the "old" GMH facility.

Once the total expanded system is in place, and is supported by most all of the foregoing policy considerations related to organization, financing and improving quality in the system, Guam would truly stand as <u>the</u> center of medical excellence in the Western Pacific. What then?

- The impressive market-basket could simply be put in place and left alone to sell itself to all who would partake. We believe this approach will burden Guam with many who will come to partake, but without financial ability to pay, thus exacerbating the indigent care problem.
- In our opinion, it would be best to pursue the process which has already begun and to which Governor Calvo is party, of creating formal intergovernmental agreements for the referral and exchange of patients. Such agreements should stipulate fee schedules, and contain medical referral and feedback agreemtns. They obviously will require some sort of cost-sharing agreement among governments, for Guam's resources cannot and should not be the sole basis for the creation and maintenance of a regional resource.

APPENDIX A

The following listing includes the names of those who were interviewed during the field study portion of this project, and those who provided vital factual information and detail. To each the project study team is deeply indebted for their candid and most helpful responses to our inquiries.

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Mildred Arceo
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Acting Academic Vice-President
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Annie Bordallo, Director of Nursing
Guam Memorial Hospital

Mr. Tim Brady
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Appendix A

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U.S. Naval Regional Medical Center

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Tamuning Commissioner

Greg Calvo, Jr., Community Relations Officer
Guam Health Planning and Development Agency

Eric Canovas
Bristol Myers Overseas Corp.

A. T. Carbullido, Suruhanu
Office of the Suruhanu

Dr. Rosa Carter, President
University of Guam

Dr. Jose Castillio, Psychiatrist
Guam Memorial Hospital

Gertrudes Castro
GMH Patient Affairs Section

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Guam Health Coordinating Council

John Chargalaf, Purchasing Agent
Guam Memorial Hospital

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John J. Chiu, M.D.
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Mrs. Lourdes Camacho, Director
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Galo Camacho
Special Assistant to the Governor

Leon Concepcion, M.D.
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Senator Thomas C. Crisostomo
Sixteenth Guam Legislature

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GMH Physical Therapy

Franklin Cruz, Ed. D. Director
Department of Public Health and Social Services

Karen Cruz, Administrator
Health Education/Nutrition Section
Division of Public Health
Department of Public Health and Social Services

Peter Cruz, Head
GMH Maintenance Section

Tony Cruz
Island Home Drug Store

Zenaida C. Custodio
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Rose Dizon, Supervisor
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Vincent Duenas, M.D., Medical Director
Guam Memorial Hospital

Alfred Dungca
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Rosa R. Echevarria, M.D., Chief
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Appendix A

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Guam Memorial Hospital

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American Cancer Society

Rita Fejerang, Supervisor
GMH Medical Records Department

Bishop Felixberto Flores
Catholic Diocese of Agana

Luis P. Flores
Director of Laboratory
Division of Public Health
Department of Public Health and Social Services

Robert Gaskins, Administrator
GMH Personnel Services

Thomas Gibson, M.D.
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J. D. Guerrero, Board of Trustees
Guam Memorial Hospital Authority

Mr. Joe Leon Guerrero, Director
Vocational Rehabilitation Workshop

Jesus Herrera, Director
Community Mental Health
Guam Memorial Hospital

John H. Hoffman, DDS

Carmelita Illagan
GMH Payroll Section

Kathy Illarmo, Administrator
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Department of PH & SS

Appendix A

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The Behavioral Clinic

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Sixteenth Guam Legislature

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Guam Memorial Hospital

Leland Knapp, Chief
GMH Accounting Section

Dr. Roberto Labalan, D.D.S.

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Bank of Guam

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Appendix A

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Appendix A

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Pacific BioMedical Supplies

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Rosie Tainatongo, Secretary
Guam Memorial Hospital Authority

Senator Thomas V. C. Tanaka
Speaker
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Helen Tenorio
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Senator Jesus Q. Torres
Sixteenth Guam Legislature

Senator James H. Underwood
Sixteenth Guam Legislature

Senator Antonio R. Unpingco
Sixteenth Guam Legislature

Appendix A

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PREPAID HEALTH CARE ACT

PART I. SHORT TITLE; PURPOSE; DEFINITIONS

§ 393-1 Short title. This chapter shall be known as the Hawaii Prepaid Health Care Act [L 1974, c 210, pt of §1]

§ 393-2 Findings and purpose. The cost of medical care in case of sudden need may consume all or an excessive part of a person's resources. Prepaid health care plans offer a certain measure of protection against such emergencies. It is the purpose of this chapter in view of the spiraling cost of comprehensive medical care to provide this type of protection for the employees in this State. Although a large segment of the labor force in the State already enjoys coverage of this type either by virtue of collective bargaining agreements, employer-sponsored plans, or individual initiative, there is a need to extend that protection to workers who at present do not possess any or possess only inadequate prepayment coverage.

This chapter shall not be construed to diminish any protection already provided pursuant to collective bargaining agreements or employer-sponsored plans that is more favorable to the employees benefited thereby than the protection provided by this chapter or at least equivalent thereto, provided that presently existing collective bargaining agreements shall not be affected by the provisions of this section. [L 1974, c 210, pt of §1; am L 1978, c 199, pt of §1]

NOTE. The 1978 amendment takes effect on January 1, 1978. L 1978, c 199, § 5.

Amendment Note

L 1978 added proviso at end of second paragraph.

§ 393-3. Definitions generally. As used in this chapter, unless the context clearly requires otherwise:

(1) "Department" means the department of labor and industrial relations.

(2) "Director" means the director of labor and industrial relations.

(3) "Employer" means any individual or type of organization, including any partnership, association, trust, estate, joint stock company, insurance company, or corporation, whether domestic or foreign, a debtor in possession or receiver or trustee in bankruptcy, or the legal representative of a deceased person, who has one or more regular employees in his employment. "Employer" does not include:

(A) The State, any of its political subdivisions, or any instrumentality of the State or its political subdivisions;

(B) The United States government or any instrumentality of the United States;

(C) Any other state or political subdivision thereof or instrumentality of such state or political subdivision;

(D) Any foreign government or instrumentality wholly owned by a foreign government, if (i) the service performed in its employ is of a character similar to that performed in foreign countries by employees of the United States government or of an instrumentality thereof, and (ii) the United States Secretary of State has certified or certifies to the United States Secretary of the Treasury that the foreign government, with respect to whose instrumentality exemption is claimed, grants an equivalent exemption with respect to similar service performed in the foreign country by employees of the United States government and of instrumentalities thereof.

(4) "Employment" means service, including service in interstate commerce, performed for wages under any contract of hire, written or oral, expressed or implied, with an employer, except as otherwise provided in sections 393-4 and 393-5.

(5) "Premium" means the amount payable to a prepaid health care plan contractor as consideration for his obligations under a prepaid health care plan.

(6) "Prepaid health care plan" means any agreement by which any prepaid health care plan contractor undertakes in consideration of a stipulated premium:

(A) Either to furnish health care, including hospitalization, surgery, medical or nursing

charge; or

(B) To defray or reimburse, in whole or in part, the expenses of health care.

(7) "Prepaid health care plan contractor" means:

(A) Any medical group or organization which undertakes under a prepaid health care plan to provide health care; or

(B) Any nonprofit organization which undertakes under a prepaid health care plan to defray or reimburse in whole or in part the expenses of health care; or

(C) Any insurer who undertakes under a prepaid health care plan to defray or reimburse in whole or in part the expenses of health care.

(8) "Regular employee" means a person employed in the employment of any one employer for at least twenty hours per week but does not include a person employed in seasonal employment. "Seasonal employment" for the purposes of this paragraph means employment in a seasonal pursuit as defined in section 387-1 by a seasonal employer during a seasonal period or seasonal periods for the employer in the seasonal pursuit or employment by an employer engaged in the cultivating, harvesting, processing, canning, and warehousing of pineapple during its seasonal periods. The director by rule and regulation may determine the kind of employment that constitutes seasonal employment.

(9) "Wages" means all remuneration for services from whatever source, including commissions, bonuses, and tips and gratuities paid directly to any individual by a customer of his employer, and the cash value of all remuneration in any medium other than cash.

The director may issue regulations for the reasonable determination of the cash value of remuneration in any medium other than cash.

If the employee does not account to his employer for the tips and gratuities received and is engaged in an occupation in which he customarily and regularly receives more than $20 a month in tips, the combined amount received by him from his employer and tips shall be deemed to be at least equal to the wage required by chapter 387 or a greater sum as determined by regulation of the director.

"Wages" does not include the amount of any payment specified in section 383-11 or 392-22 or chapter 386. [L 1974, c 210, pt of § 1; am L 1976, c 78, § 1]

§ 393-4 Place of performance. "Employment" includes an individual's entire service, performed within or both within and without this State if:

(1) The service is localized in this State; or

(2) The service is not localized in any state but some of the service is performed in this State and

(A) the individual's base of operation, or, if there is no base of operation, the place from which such service is directed or controlled, is in the State; or

(B) the individual's base of operation or place from which the service is directed or controlled is not in any state in which some part of the service is performed but the individual's residence is in this State. [L 1974, c 210, pt of § 1]

§ 393-5 Excluded services. "Employment" as defined in section 393-3 does not include the following services:

(1) Service performed by an individual in the employ of an employer who, by the laws of the United States, is responsible for care and cost in connection with such service.

(2) Service performed by an individual in the employ of his spouse, son, or daughter, and service performed by an individual under the age of twenty-one in the employ of his father or mother.

(3) Service performed in the employ of a voluntary employee's beneficiary association providing for the payment of life, sick, accident, or other benefits to the members of the association or their dependents or their designated beneficiaries, if

(A) admission to membership in the association is limited to individuals who are officers or employees of the United States government, and

(B) no part of the net earnings of the association inures (other than through such payments to the benefits of any private shareholder or individual

(4) Service performed by an individual for an employer as an insurance agent or as an insurance solicitor, if all such service performed by the individual for the employer is performed for remuneration solely by way of commission.

(5) Service performed by an individual for an employer as a real estate salesman or as a real estate broker, if all such service performed by the individual for the employer is performed for remuneration solely by way of commission.

(6) Service performed by an individual who, pursuant to the Federal Economic Opportunity Act of 1964, is not subject to the provisions of law relating to federal employment, including unemployment compensation.

(7) Domestic, which includes attendant care, and day care services authorized by the department of social services and housing under the Social Security Act, as amended, performed by an individual in the employ of a recipient of social service payments. [L 1974, c 210, pt of § 1; am L 1978, c 110, pt of § 6]

§ 393-6 Principal and secondary employer defined; coercion, interference, etc. prohibited. If an individual is concurrently a regular employee of two or more employers as defined in this chapter, the principal employer shall be the employer who pays him the most wages; provided that if one of the employers, who does not pay the most wages, employs the regular employee for at least thirty-five hours per week, the employee shall determine which of the employers shall be his principal employer. His other employers are secondary employers. An employer so designated as the principal employer shall remain as such principal employer for one year or until change of employment, whichever is earlier.

If an individual is concurrently a regular employee of a public entity which is not an employer as defined in section 393-3 and of an employer as defined in section 393-3 the latter shall be deemed to be a secondary employer.

An employer who, directly or indirectly, interferes with or coerces or attempts to coerce an employee in making a determination under this section shall be subject to the penalty provided under subsection 393-33(b). [L 1974, c 210, pt of § 1; am L 1975, c 51, § 1]

§ 393-7 Required health care benefits. (a) A prepaid health care plan shall qualify as a plan providing the mandatory health care benefits required under this chapter if it provides for health care benefits equal to, or medically reasonably substitutable for, the benefits provided by prepaid health plans of the same type, as specified in section 393-12(a) (1) or (2), which have the largest numbers of subscribers in the State. This applies to the types and quantity of benefits as well as to limitations on reimbursability, including deductibles, and to required amounts of co-insurance.

The director, after advice by the prepaid health care advisory council, shall determine whether benefits provided in a plan, other than the plan of the respective type having the largest numbers of subscribers in the State, comply with the standards specified in this subsection.

(b) A prepaid group health care plan shall also qualify for the mandatory health care benefits required under this chapter if it is demonstrated by the health care plan contractor offering such coverage to the satisfaction of the director after advice by the prepaid health care advisory council that the plan provides for sound basic hospital, surgical, medical, and other health care benefits at a premium commensurate with the benefits included taking proper account of the limitations, co-insurance features, and deductibles specified in such plan. Coverage under a plan which provides aggregate benefits that are more limited than those provided by plans qualifying under subsection (a) shall be in compliance with section 393-11 only if the employer contributes at least half of the cost of the coverage of dependents under such plan.

(c) Subject to the provisions of subsections (a) and (b) without limiting the development of medically more desirable combinations and the inclusion of new types of benefits, a prepaid health care plan qualifying under this chapter shall include at least the following benefit types:

(1) Hospital benefits:

(A) In patient care for a period of at least one hundred twenty days of confinement in each calendar year covering:

(i) Room accommodations;
(ii) Regular and special diets;
(iii) General nursing services;
(iv) Use of operating room, surgical supplies, anesthesia services, and supplies;
(v) Drugs, dressing, oxygen, antibiotics, and blood transfusion services.
(B) Out-patient care:
(i) Covering use of out-patient hospital;
(ii) Facilities for surgical procedures or medical care of an emergency and urgent nature.
(2) Surgical benefits:
(A) Surgical services performed by a licensed physician, as determined by plans meeting the standards of subsections (a) and (b);
(B) After-care visits for a reasonable period;
(C) Anesthesiologist services.
(3) Medical benefits:
(A) Necessary home, office, and hospital visits by a licensed physician;
(B) Intensive medical care while hospitalized;
(C) Medical or surgical consultations while confined.
(4) Diagnostic laboratory services, x-ray films, and radio-therapeutic services, necessary for diagnosis or treatment of injuries or diseases.
(5) Maternity benefits, at least if the employee has been covered by the prepaid health care plan for nine consecutive months prior to the delivery.
(6) Substance abuse benefits:
(A) Alcoholism and drug addiction are illnesses and shall receive benefits as such. In-patient and out-patient benefits for the diagnosis and treatment of substance abuse, including but not limited to alcoholism and drug addiction, shall be specifically stated and shall not be less than the benefits for any other illness, except as provided in this subsection. Medical treatment of substance abuse shall not be limited or reduced by restricting coverage to the mental health or psychiatric benefits of a plan. However, any psychiatric services received as a result of the treatment of substance abuse may be limited to the psychiatric benefits of the plan.
(B) Out-patient benefits provided by a physician, psychiatrist, or psychologist, without restriction as to place of service; provided that health plans of the type specified in section 393-12(a) shall retain for the contractor the option of:
(i) Providing the benefits in its own facility and utilizing its own staff, or
(ii) Contracting for the provision of these benefits, or
(iii) Authorizing the patient to utilize outside services and defraying or reimbursing the expenses at a rate not to exceed that for provision of services utilizing the health contractor's own facilities and staff.
(C) Detoxification and acute care benefits in hospital or any other public or private treatment facility, or portion thereof, providing services especially for the detoxification of intoxicated persons or drug addicts, which is appropriately licensed, certified, or approved by the department of health in accordance with the standards prescribed by the Joint Commission on Accreditation of Hospitals. In-patient benefits for detoxification and acute care shall be limited in the case of alcohol abuse to three admissions per calendar year, not to exceed seven days per admission, and shall be limited in the case of other substance abuse to three admissions per calendar year, not to exceed twenty-one days per admission.
(D) Prepaid health plans shall not be required to make reimbursements for care furnished by government agencies and available at no cost to a patient, or for which no charge would have been made if there were no health plan coverage.
(d) The prepaid health care advisory council shall be appointed by the director and shall include representatives of the medical and public health professions, representatives of consumer interests, and persons experienced in prepaid health care protection. The membership of the council shall not exceed seven individuals. [L 1974, c 210, pt of § 1; am L 1976, c 25, § 2]

PART II. MANDATORY COVERAGE

§ 393-11 Coverage of regular employees by group prepaid health care plan. Every employer who pays to a regular employee monthly wages in an amount of at least 86.67 times the minimum hourly wage, specified in chapter 387, as rounded off by regulation of the director, shall provide coverage of such employee by a prepaid group health care plan qualifying under section 393-7 with a prepaid health care plan contractor in accordance with the provisions of this chapter. [L 1974, c 210, pt of § 1]

§ 393-12 Choice of plan type and of contractor. (a) Every employer required to provide coverage for his employees by a prepaid group health care plan under this chapter shall elect whether coverage shall be provided by:
(1) A plan which obligates the prepaid health care plan contractor to furnish the required health care benefits; or
(2) A plan which obligates the prepaid health care plan contractor to defray or reimburse the expenses of health care.
His election is binding for one year.
(b) Whether the employer elects a plan type described in subsection (a) (1) or in subsection (a) (2), the employer may elect the particular contractor but the employee shall not be obligated to contribute a greater amount to the premium than he would have to contribute had the employer elected coverage with the contractor providing the prevailing coverage of the respective type in the State.
Subject to the provision of section 393-20, the employer shall provide coverage with the prepaid health care plan contractor selected pursuant to this subsection for all his employees in the State electing this type of coverage who are covered by the provisions of this chapter, except for employees covered by the health care provisions of an applicable collective bargaining agreement as provided in section 393-19(b) first sentence. [L 1974, c 210, pt of § 1]

§ 393-13 Liability for payment of premium; withholding, recovery of premium. Unless an applicable collective bargaining agreement specifies differently every employer shall contribute at least one-half of the premium for the coverage required by this chapter and the employee shall contribute the balance; provided that in no case shall the employee contribute more than 1.5 per cent of his wages; and provided that if the amount of the employee's contribution is less than one-half of the premium, the employer shall be liable for the whole remaining portion of the premium.
The employer shall withhold the employee's share from his wages with respect to pay periods as specified by the director.
If an employee separates from his employment after his employer has prepaid the employee's share of the cost of providing health care coverage, the employer may deduct an amount not to exceed one-half of the premium cost but without regard to the 1.5 per cent limitation, from the last salary or wages due the employee, or seek other appropriate means to recover the premium. [L 1974, c 210, pt of § 1; am L 1976, c 206, § 1]

§ 393-14 Commencement of coverage. The employer shall provide the coverage required by this chapter for any regular employee, who has been in his employ for four consecutive weeks, at the earliest time thereafter at which coverage may be provided with the prepaid health care plan contractor selected pursuant to this chapter. [L 1974, c 210, pt of § 1]

§ 393-15 Continuation of coverage in case of inability to earn wages. If an employee is hospitalized or otherwise prevented by sickness from working, the employer shall enable the employee to continue his coverage by contributing to the premium the amounts paid by the employer toward such premium prior to the employee's sickness for the period that such employee is hospitalized or prevented by sickness from working. This obligation shall not exceed a period of three months following the month during which the employee became hospitalized or disabled from working, or the period for which the employer has undertaken the

§ 393-16 Liability of secondary employer. An employer who has been notified by an employee, in the form prescribed by the director, that he is not the principal employer as defined in section 393-6 shall be relieved of the duty of providing the coverage required by this chapter until he is notified by the employee pursuant to section 393-18 that he has become the principal employer. He shall notify the director, in the form prescribed by the director, that he is relieved from the duty of providing coverage or of any change in that status. [L 1974, c 210, pt of § 1]

§ 393-17 Exemption of certain employees. (a) In addition to the exemption specified in section 393-16, an employer shall be relieved of his duty under section 393-11 with respect to any employee who has notified him, in the form specified by the director, that the employee is:

(1) Protected by health insurance or any prepaid health care plan established under any law of the United States;

(2) Covered as a dependent under a prepaid health care plan, entitling him to the health benefits required by this chapter;

(3) A recipient of public assistance or covered by a prepaid health care plan established under the laws of the State governing medical assistance.

(b) Employers receiving notice of a claim of exemption under this section shall notify the director of such claim in the form prescribed by the director. [L 1974, c 210, pt of § 1]

§ 393-18 Termination of exemption. (a) If an exemption which has been claimed by an employee pursuant to section 393-17 terminates because of any change in the circumstances entitling the employee to claim such exemption, the employee shall promptly notify the principal employer of the termination of the exemption and the employer thereupon shall provide coverage as required by this chapter.

(b) If because of a change in the employment situation of an employee or a redetermination by an employee as provided in section 393-6, a principal employer becomes a secondary employer or a secondary employer becomes the principal employer, the employee shall promptly notify the employers affected of such change and the new principal employer shall provide coverage as required by this chapter. [L 1974, c 210, pt of § 1]

§ 393-19 Freedom of Collective Bargaining. (a) In addition to the policy stated in section 393-2, nothing in this chapter shall be construed to limit the freedom of employees to bargain collectively for different prepaid health care coverage, if the protection provided by the negotiated plan is more favorable to the employees benefited than the protection provided by this chapter or at least equivalent thereto, or for a different allocation of costs thereof. A collective bargaining agreement may provide that the employer himself undertakes to provide the health care specified in the agreement.

(b) If the employees rendering particular types of services are not covered by the health care provisions of the applicable collective bargaining agreements to which their employer is a party, the provisions of this chapter shall be applicable with respect to them. An employer or group of employers shall be deemed to have complied with the provisions of this chapter if they undertake to provide health care services pursuant to a collective bargaining agreement and the services are available to all other employees not covered by such agreement. [L 1974, c 210, pt of § 1; am L 1978, c 199, pt of § 2]

§ 393-20 Adjustment of employer-sponsored plans. Where employees subject to the coverage of this chapter are included in the coverage provisions of an employer-sponsored prepaid health care plan covering similar employees employed outside the State and the majority of such employees are not subject to this chapter, the benefits applicable to the employees covered by this chapter shall be adjusted within one year after the effective date of this chapter so as to meet the requirements of this chapter. [L 1974, c 210, pt of § 1]

§ 393-21 Individual waivers; additional withholding for dependents. (a) An employee may waive individually all of the required health care benefits pursuant to this chapter by:

(1) Requesting the waiver by a writing submitted to the employer; and

(2) Receiving approval of the waiver from the director upon the director determining that the employee has other coverage under a prepaid health care plan which provides benefits that meet the standards prescribed in section 393-7.

(b) The employer who receives from an employee a written request for a waiver under this section shall transmit to the director a copy of the waiver, on a form prescribed by the director, and a copy of the prepaid health care plan on the basis of which the waiver is requested.

(c) A waiver under this section is binding for one year and is renewable for subsequent one-year periods.

(d) An employer who, directly or indirectly, coerces or attempts to coerce an employee in making a waiver under this section shall be subject to the penalty provided under subsection 393-33(b).

(e) An employee may not agree to pay a greater share of the premium for such benefits than is required by this chapter.

(f) Subject to section 393-7(b), an employee may consent to pay a greater share of his wages and to a withholding of such share by the employer for the purpose of providing prepaid health care benefits of his dependents under the plan providing such benefits for himself. [L 1974, c 210, pt of § 1; am L 1976, c 81, § 1]

§ 393-22 Exemption of followers of certain teachings or beliefs. This chapter shall not apply to any individual who pursuant to the teachings, faith, or belief of any group, depends for healing upon prayer or other spiritual means. [L 1974, c 210, pt of § 1]

§ 393-23 Joint provision of coverage. Employers may form associations for the purpose of jointly providing prepaid health care protection under this chapter for their employees with the contractors authorized to provide such coverage in the State. [L 1974, c 210, pt of § 1]

§ 393-24 Noncomplying employer held liable for employee's health care costs. Any employer who fails to provide coverage as required by this chapter shall be liable to pay for the health care costs incurred by an eligible employee during the period in which the employer failed to provide coverage. [L 1977, c 91, § 1]

PART III. ADMINISTRATION AND ENFORCEMENT

§ 393-31 Enforcement by the director. Except as otherwise provided in section 393-7 the director shall administer and enforce this chapter. The director may appoint such assistants and such clerical, stenographic, and other help as may be necessary for the proper administration and enforcement of this chapter subject to any civil service act relating to state employees. [L 1974, c 210, pt of § 1]

§ 393-32 Rule making and other powers of the director. The director may adopt, amend, or repeal, pursuant to chapter 91, such rules and regulations as he deems necessary or suitable for the proper administration and enforcement of this chapter.

The director may round off the amounts specified in this chapter for the purpose of eliminating payments from the premium supplementation fund in other than even dollar amounts or other purposes.

The director may prescribe the filing of reports by prepaid health care plan contractors and prescribe the form and content of request by employers for premium supplementation and the period for the payment thereof. [L 1974, c 210, pt of § 1]

§ 393-33 Penalties; injunction. (a) If an employer fails to comply with section 393-11, 393-12, 393-13, or 393-15 he shall pay a penalty of not less than $25 or of $1 for each employee for every day during which such failure continues, whichever sum is greater. The penalty shall be assessed under rules and regulations promulgated pursuant to chapter 91 and shall be collected by the director and paid into the special fund for premium supplementation established by section 393-41. The director may, for good cause shown, remit all or any part of the penalty.

(b) Any employer, employee, or prepaid health care plan contractor who willfully fails to comply with any other provision of this chapter or any rule or regulation thereunder may be

fined not more than $200 for each such violation.

(c) Any employer who fails to initiate compliance with the coverage requirements of section 393-11 for a period of thirty days, may be enjoined by the circuit court of the circuit in which his principal place of business is located from carrying on his business any place in the State so long as the default continues, such action for injunction to be prosecuted by the attorney general or any county attorney if so requested by the director. [L 1974, c 210, pt of § 1; am L 1977, c 190, § 1]

PART IV. PREMIUM SUPPLEMENTATION

§ 393-41 Establishment of special premium supplementation fund. There is established in the treasury of the State, separate and apart from all public moneys or funds of the State, a special fund for premium supplementation which shall be administered exclusively for the purposes of this chapter. All premium supplementations payable under this part shall be paid from the fund. The fund shall consist of (1) all money appropriated by the State for the purposes of premium supplementation under this part and (2) all fines and penalties collected pursuant to this chapter. [L 1974, c 210, pt of § 1]

§ 393-42 Management of the fund. The director of finance shall be the treasurer and custodian of the premium supplementation fund and shall administer the fund in accordance with the directions of the director of labor and industrial relations. All monies in the fund shall be held in trust for the purposes of this part only and shall not be expended, released, or appropriated or otherwise disposed of for any other purpose. Moneys in the fund may be deposited in any depositary bank in which general funds of the State may be deposited but such monies shall not be commingled with other state funds and shall be maintained in separate accounts on the books of the depositary bank. Such monies shall be secured by the depositary bank to the same extent and in the same manner as required by the general depositary law of the State; and collateral pledged for this purpose shall be kept separate and distinct from any other collateral pledged to secure other funds of the State. The director of finance shall be liable for the performance of his duties under this section as provided in chapter 37. [L 1974, c 210, pt of § 1]

§ 393-43 Disbursements from the fund. Expenditures of monies in the premium supplementation fund shall not be subject to any provisions of law requiring specific appropriations or other formal release by the state officers of money in their custody. All payments from the fund shall be made upon warrants drawn upon the director of finance by the comptroller of the State supported by vouchers approved by the director. [L 1974, c 210, pt of § 1]

§ 393-44 Investment of moneys. With the approval of the department the director of finance may, from time to time, invest such moneys in the premium supplementation fund as are in excess of the amount deemed necessary for the payment of benefits for a reasonable future period. Such moneys may be invested in bonds of any political or municipal corporation or subdivision of the State, or any of the outstanding bonds of the State, or invested in bonds or interest-bearing notes or obligations of the State (including state director of finance's warrant notes issued pursuant to chapter 40), or of the United States, or those for which the faith and credit of the United States, are pledged for the payment of principal and interest, or in federal land bank bonds or joint stock farm loan bonds. The investment shall at all times be so made that all the assets of the fund shall always be readily convertible into cash when needed for the payment of benefits. The director of finance shall dispose of securities or other properties belonging to the fund only under the direction of the director of labor and industrial relations. [L 1974, c, 210, pt of § 1]

§ 393-45 Entitlement to premium supplementation. (a) An employer who employs less than eight employees entitled to coverage under this chapter and who provides coverage to such employees pursuant to section 393-7(a) shall be entitled to premium supplementation from the fund if the employer's share of the cost of providing such coverage, as determined by and if the amount of such excess is greater than five per cent of the employer's income before taxes directly attributable to the business in which such employees are employed.

(b) The amount of the supplementation shall be that part of the employer's share of the premium cost which exceeds the limits specified in subsection (a). [L 1974, c 210, pt of § 1]

§ 393-46 Income directly attributable to the business. (a) "Income directly attributable to the business" means gross profits from the business minus deduction for:

(1) Compensation of officers;
(2) Salaries and wages, except wages paid by an individual proprietor to himself;
(3) Repairs;
(4) Taxes on business and business property;
(5) Business advertising;
(6) Amounts contributed to employee benefit plans;
(7) Interest on business indebtedness;
(8) Rent on business property; and
(9) Other expenses necessary for the current conduct of business.

(b) Deductions shall not include:

(1) Bad debts;
(2) Contributions or gifts, other than those listed under subsection (a)(6);
(3) Amortization and depreciation; or
(4) Losses by fire, storm, casualty, or theft.

(c) The director may promulgate rules and regulations necessary to define income directly attributable to business for the purpose of section 393-45. [L 1974, c 210, pt of § 1

§393-47 Claim of premium supplementation. An employer entitled to premium supplementation shall file a claim therefor in the manner provided by regulation of the director. The employer shall have the burden of proof of establishing his entitlement. [L 1974, c 210, pt of §]

§ 393-48 Prepaid health care benefits to be paid from the premium supplementation fund; recovery of benefits. Prepaid health care benefits shall be paid from the premium supplementation fund to an employee who is entitled to receive prepaid health care benefits but cannot receive such benefits because of the bankruptcy of his employer or because his employer is not in compliance with this chapter. Benefits paid from the premium supplementation fund to such employee may be recovered from his bankrupt or noncomplying employer. The director shall institute administrative and legal actions as provided in section 393-33 to effect recovery of such benefits. [L 1978, c 3, pt of § 1]

PART V. TERMINATION OF CHAPTER

§ 393-51 Termination of chapter. This chapter shall terminate upon the effective date of federal legislation that provides for voluntary prepaid health care for the people of Hawaii in a manner at least as favorable as the health care provided by this chapter, or upon the effective date of federal legislation that provides for mandatory prepaid health care for the people of Hawaii. [L 1974, c 210, pt of § 2]

Coverage under this chapter commenced January 1, 1975. [L 1974, c 210, §2.]

APPENDIX C

Proposed Pharmacy Regulatory Act

"SUBCHAPTER"

Pharmacists and Pharmacy

Section 9590. Definitions. As used in this Subchapter:

(1) 'board' means the Board of Pharmacy of the Territory except where another meaning is clearly manifested by the context, and in which the Administration and enforcement of this Subchapter is vested.

(2) 'device' means instruments, apparatus and contrivances, including their components, parts, products or byproducts of a device, and accessories which are used or intended (a) for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in a man or any other animal; or (b) to affect the structure or any function of the body of a man or any other animal.

(3) 'drug' means (a) articles recognized in the official United States pharmacopeoia, official homeopathic pharmacopeoia of the United States, or official national formulary, or any supplement to any of them, intended for use in the diagnosis, cure, mitigation, treatment or prevention of disease in human beings or animals; (b) articles (other than food or clothing) intended to affect the structure or any function of the body of human beings or animals; and (c) articles intended for use as a component of any articles specified in clause (a) or (b) of this section.

(4) 'dangerous drug' or 'dangerous device' means any drug or device unsafe for self medication and includes any drug or device which bears the legend:

"Caution: Federal law prohibits dispensing without a perscription."

The Board, if after open hearing following due notice to persons who have filed written request for such notice to the Board it shall find any drug or device to be dangerous to the public health or safety, may make other rules, not inconsistent with this Subchapter, limiting or restricting the furnishing of such drug.

(5) 'furnish' means to supply by any means by sale or otherwise.

(6) 'dispense' means the furnishing of drugs upon a prescription from a physician, dentist, podiatrist or veterinarian.

(7) 'manufacturer' means and includes every person who prepares, derives, produces, compounds, or repackages any drug excepting a pharmacy which manufactures on the immediate premises where the drug is sold to the ultimate consumer.

(8) 'pharmacy' is an area, place or premises in which the profession of pharmacy is practiced and where prescriptions are compounded. "Pharmacy" means and includes but is not limited to any area, place, or premises described in a permit issued by the Board by reference to plans filed with and approved by the Board wherein narcotics, or dangerous drugs or dangerous devices, as they are herein defined, are stored, possessed, prepared, manufactured, derived, compounded or repackaged, and from which said narcotics or dangerous drugs or dangerous devices are furnished, sold or dispensed at retail.

(9) 'registered pharmacist' means a person licensed under this Subchapter to practice pharmacy except where another meaning is clearly manifested by the context.

(10) 'prescription' means an oral order given individually for the person or persons for whom prescribed directly from the prescriber to the furnisher, or indirectly by means of a written order, signed by the prescriber, and shall bear the name and address of the patient, the name and quantity of the drug or device prescribed, directions for use, and the date of issue, and either rubber stamped, typed or printed by hand or typeset the name, address and telephone number of the prescriber, his license classification and his federal registry number, if a controlled substance is prescribed. No person other than a physician, dentist, podiatrist, or veterinarian currently licensed to practice their respective professions in the territory of Guam shall prescribe or write a prescription.

(a) Except as provided in (11) below, an oral prescription shall as soon as practicable be reduced to writing by the pharmacist and shall be filed by, or under the direction of, the pharmacist. The pharmacist need not reduce to writing the address, telephone number, license classification, federal registry number of the prescriber or the address of the patient if such information is readily retrievable in the pharmacy.

(b) Not withstanding any other provision of law, a prescriber may authorize his employee on his behalf to transmit a prescription to the furnisher. The furnisher shall record the name of the employee of the prescriber who transmits the order.

(c) The provisions of this section do not apply to the furnishing of any dangerous drug or device by a manufacturer or wholesaler or pharmacy to each other or to a physician, dentist, podiatrist, or veterinarian or to a laboratory under sales and purchase records that correctly give the date, the names and addresses of the supplier and the buyer, the drug or device and its quantity.

(11) 'chart order' means an order entered on the chart or medical record of a patient registered in a hospital or a patient under emergency treatment in the hospital by or on the order of a practitioner authorized by law to prescribe drugs, shall be authorizations for the administration of such drug from hospital floor or ward stocks furnished by the hospital pharmacy and shall be considered to be a prescription if such medication is to be furnished directly to the patient by the hospital pharmacy or another pharmacy furnishing prescribed drugs for hospital patients; provided that the chart or medical record of the patient contains all of the information required by (10) above and the order is signed by the practitioner authorized by law to prescribe drugs, if he is present when the drugs are given, or if his is not present, then on his next visit to the hospital.

(12) 'wholesaler' means and includes every person who acts as a drug wholesale merchant, broker, jobber, or agent, who sells for resale, or negotiates for distribution any drug. Pharmacies and licensed manufacturers are exempt from the provisions of this subsection.

Section 9590.1. Board of Pharmacy; appointment qualifications.

(a) The Board of Pharmacy is created consisting of five members, 3 registered pharmacists and 2 public members who shall not be doctors of medicine or osteopathy who shall be appointed by the Governor with the advice and consent of the Legislature.

(b) Members of the Board shall serve terms of three (3) years. Of the initial appointments, two (2) shall be for a term of one (1) year, two (2) shall be for a term of two (2) years and one (1) shall be for a term of three (3) years as designated by the Governor in his initial nominations.

(c) The pharmacists on the Board shall be graduates of a school or college of pharmacy and shall have been licensed as pharmacists and actively engaged in the practice of pharmacy in the Territory for at least two (2) years prior to their appointment.

Section 9590.2. Officers.

(a) The Board of Pharmacy shall select a chairman, a secretary, and a treasurer.

(b) The Chairman of the Board shall preside at all meetings and in his absence the members present shall select a chairman pro tem.

(c) The secretary shall, subject to the direction of the Board, make and keep all records and record books required to be kept by the Board and shall furnish any government agency with copies of such of those records as it requires. The records and record books of the Board as made and kept by the secretary shall be prima facie evidence of the matter therein recorded in any court of law.

(d) All fees collected shall be deposited in the 'Board of Pharmacy Fudn' for administration of the provisions of this Subchapter.

Section 9590.3. Meetings; powers and duties of the Board.

(a) Meetings. The Board of Pharmacy shall hold meetings in April and September of each year, and at such other times as it deems necessary. A majority of the Board shall constitute a quorum, and the concurrence of a majority of the members present shall be necessary to make any action of the Board valid.

(b) Reports. The Board shall make a written report annually to the Governor and the Legislature of its proceedings and of its receipts and disbursements, and shall include therein a list of the names of all registrants duly licensed to practice under this Subchapter.

(c) Power to suspend or revoke license. The Board may suspend or revoke any license of any pharmacist to practice pharmacy, issued under this Subchapter for:

(1) professional misconduct;
(2) gross carelessness;
(3) manifest incapacity of a licensee; or
(4) any violation by the licensee of this Subchapter or of any rule and regulation prescribed pursuant thereto. No such license shall be suspended or revoked except upon due notice to the licensee of the charge against him and only after an opportunity for a full and fair hearing.

(d) Power to suspend or revoke permits. The Board may suspend or revoke any permit to operate a pharmacy or to sell or distribute drugs, issued under this Subchapter, in any case, where the permittee has violated any of the provisions of this Subchapter or of any rule and regulation prescribed pursuant thereto. No permit shall be suspended or revoked except upon due notice to the permittee of the charge against him and only after an opportunity for a full and fair hearing.

(e) Power to Regulate. The Board may make such rules and regulations, not inconsistent with the laws of this Territory as may be necessary for the protection of the public. Included therein shall be the right to make rules and regulations as follows: for the proper and more effective enforcement and administration of this subchapter pertaining to the practice of pharmacy; regulation the sale of poisons; relating to the sanitation of persons and establishments licensed under the provisions of the chapter; pertaining to establishments wherein any drug is compounded, prepared or sold; providing for standards of minimum equipment of establishments licensed under the provisions of this subchapter; pertaining to the sale of drugs by or through any mechanical device.

The Board shall adopt, amend, repeal and establish such rules, regulations and standards in accordance with the provisions of the Administrative Adjudication Act.

(f) The Board may by rule or regulation adopt, amend or repeal rules of professional conduct appropriate to the establishment and maintenance of a high standard of integrity and dignity in the profession. Every person who holds a certificate, license, permit, registration or exemption issued by the Board shall be governed and controlled by the rules of professional conduct adopted by the Board.

(g) Power to Inspect. The Board or any duly authorized representative thereof, may inspect, during business hours, all pharmacies, dispensaries, stores or places in which drugs or poisons are compounded, dispensed or sold in the Territory.

(h) All stock of any dangerous drug or device in the Territory of a manufacturer, wholesaler, pharmacy, physician, dentist, podiatrist, veterinarian, laboratory, or shipments through a customs broker or carrier shall be at all times during business hours open to inspection by the Board or any duly authorized representative thereof.

(i) All records of manufacture and of sale, purchase or disposition of dangerous drugs or devices shall be at all times, during business hours, open to inspection by the Board or any duly authorized representative thereof, and shall be preserved for at least three years from the date of making. A current inventory shall be kept by every manufacturer, wholesaler, phamarcy, physician, dentist, podiatrist, veterinarian, laboratory, clinic, or hospital who maintains a stock of dangerous drugs or devices.

(j) Power to investigate. The Board or any member thereof, or any person designated by the Board for the purpose, may investigate any violation or suspected violation of this Subchapter or of any rules and regulations duly prescribed by the Board.

(k) Oaths. Each member of the Board may administer oaths in connection with the duties of the Board.

Section 9590.4. Qualifications for License. The Board shall register as registered pharmacists, and issue a certificate to all applicants who meet the following requirements:

(a) That the applicant is years if age.

(b) That the applicant has graduated from a college of pharmacy of a university recognized by the Board, which school or college of pharmacy of department of pharmacy of a university requires a resident attendance of not less than eight calendar months of each year of its course. The course in pharmacy shall consist of not less than 3,200 hours distributed over a period of not less than four years. Any student, however, may complete the required course of 3,200 hours in a lesser period of time.

(c) That the applicant has had 1,500 hours of practical experience in accordance with regulations adopted by the Board and that such experience constitutes service and experience under the personal supervision of a registered pharmacist, and consists of service and experience predominantly related to the selling of drugs, compounding physician's prescriptions, preparing pharmaceutical preparations, and keeping records and making reports required under Territorial and Federal statues.

Anyone who is registered as a pharmacist in any state or Territory of the United States and who has practiced as a pharmacist in that State or Territory for at least one year, as certified by the Board of Pharmacy of that state or Territory, shall be exempt from pharmaceutical experience requirements.

(d) That the applicant has passed a written and practical examination given by the Board.

Section 9590.5 A person shall be eligible to take the written and practical examination where the person furnishes documentary evidence satisfactory to the Board that he meets all of the following:

(a) Is at least 18 years of age.

(b) Has graduated from a college of pharmacy recognized by the Board, or has successfully completed in a foreign pharmacy school the courses established by the Board as being equivalent to those required for domestic graduates.

(c) Has had not less than 1,500 hours of practical experience in a pharmacy recognized by the Board. The Board shall determine the specific hours of experience required, not to exceed 3.000 hours for the applicant based upon an evaluation of such applicant's previous training and experience.

The Board shall register as pharmacists and issue a certificate to all applicants who meet the requirements of this section and successfully complete the written and practical examination.

Section 9590.6. Any registered pharmacist of any state or Territory of the United States who has practiced there for one year or more may be granted a temporary license by the Board provided that he shall first pass a preliminary examination with a grade of not less than seventy percent (70%) covering territorial laws and public health regulations relating to drugs, poisons, and devices used in the practice of pharmacy in the Territory. A temporary license shall not entitle the holder thereof to a permanent license and no permanent license shall be issued until he has passed the regular examination set forth in Section 9590.4 of this Subchapter. Only one temporary license shall be issued to the same applicant. A temporary license shall only remain in effect until the results of the next regular examination are announcd, provided that the Board may extend any temporary license upon written application, for good and just cause. Any applicant who fails to take or to pass the next regular examination shall surrender his temporary license. The Board shall establish a fee for the issuance of a temporary license.

Section 9590.7 The registration or certification already granted by the Department of Public Health and Social Services of the Government of Guam to persons as license to engage in the practice of pharmacy in Guam on or before _____ shall not be affected by this Subchapter and such registration shall have the same force and effect under this Subchapter.

Section 9590.8 Renewal of Licenses.

(a) Renewal Required. All license issued by the Board of Pharmacy except temporary license issued in Section 9590.6 of this Subchapter shall expire on December 31 of each odd-numbered year next following the issuance of the same.

(b) Renewal Fee. Every registered pharmacist shall pay to the Treasurer of the Board bi-annually between December 1 and December 31, a renewal fee established by the Board for the year next following. The payment of the renewal fee shall entitle the registrant to renewal of his license.

(c) Renewal after lapse. Any holder of an expired license amy be reinstated as a registered pharmacist upon payment of a penalty established by the Board and all fees which he would have paid if he had continuously renewed his license.

(d) On or after _____ the Board will not issue any renewal of license unless the applicant therefor submits proof satisfactory to the Board that he has completed 15 hours of continuing pharmaceutical education during the two years preceding the application for renewal.

Section 9590.9. Pharmacist in Charge. A registered pharmacist shall be in personal and immediate charge of every pharmacy. Temporary absences of the registered pharmacist shall be unlawful except for such circumstances as authorized under the rules and regulations of the Board of Pharmacy. During any absence of the registered pharmacist, prescriptions may not be filled, compounded, or received by telephone and no drugs shall be furnished, provided, that this shall not preclude the sale at such times of such things as might be sold were the pharmacy a store not subject to this Subchapter. No person other than a registered pharmacist or an assistant under his immediate supervision shall fill or compound prescriptions.

Section 9590.10. Pharmacies. Any person who has obtained a certificate, license, permit or registration to conduct a pharmacy who fails or neglects to place a registered pharmacist in charge thereof or who permits the compounding of prescriptions, or the furnishing of drugs, except by or under the immediate supervision of a registered pharmacist, shall be deemed to have violated this Subchapter. Any person who, not being a registered pharmacist, compounds prescriptions or furnishes drugs, while not subject to the immediate supervision of a registered pharmacist, shall be deemed to have violated this Subchapter.

Section 9590.11. Duties of a Registered pharmacist. Every registered pharmacist shall comply with all laws, rules and regulations. All registered pharmacists shall notify the Board of Pharmacy of changes of business address within ten (10) days.

Section 9590.12. Prescription records. Every pharmacy shall keep a suitable book or file, or a microfilm of such book or file, in which shall be preserved, for a period of not less than three (3) years, every prescription compounded or dispensed at the pharmacy. The book, file, or microfilm of prescriptions shall at all times be open to inspection by the Board of Pharmacy and other law enforcement officers.

Section 9590.13. No person shall conduct a pharmacy in the Territory of Guam unless he has obtained a certificate, license, permit or registration from the Board. Each certificate, license, permit or registration shall be required for each place of business owned or operated by a specific person. Separate certificates, licenses, permits or registrations shall be required for each of the premises of any business establishment having more than one location. Such certificate, license, permit or registration shall not be transferable.

The board may issue a temporary permit, when the ownership of a pharmacy is transferred from one person to another, upon such conditions and for such periods of time as the Board determines to be in the public interest. A temporary permit fee shall be fixed by the Board at an amount not to exceed the annual fee for renewal of a permit to conduct a pharmacy.

(a) The Board shall not renew or issue any new permit to conduct a pharmacy to any of the following:

(1) A person or persons authorized to prescribe or write a prescription as specified in Section 9590 in the Territory of Guam.

(2) A person or persons with whom a person or persons specified in paragraph (1) shares a community or other financial interest in the permit sought.

(3) A corporation which is controlled by, or in which 10 percent or more of the stock is owned by a person or persons prohibited from pharmacy ownership by paragraph (1) or (2).

(b) Subdivision (a) shall not preclude the issuance of a permit for an inpatient pharmacy located within any hospital, institution, or establishment which maintains and operates organized facilities for the diagnosis care and treatment of human illnesses to which persons may be admitted for overnight stay and which meets all of the requirements of this Subchapter and the rules and regulations of the Board.

(c) The Board may require information necessary for the enforcement of this Section.

Section 9590.14.

(a) Each application to conduct a pharmacy shall be made on a form furnished by the Board, and shall state the name, address, usual occupation and professional qualifications, if any, of the applicant. If the applicant is other than a natural person, the application shall state such information as to each person beneficially interested therein.

(b) As used in this section, and subject to the provisions of subdivision (c) of this section, the term 'person beneficially interested' means and includes:

(1) If the applicant is a partnership or other unincorporated association, each partner or member.

(2) If the applicant is a corporation, each of its officers, directors and stockholders, provided that no natural person shall be deemed to be beneficially interested in a nonprofit corporation.

(c) In any case where the applicant is a partnership or other unincorporated association, or is a corporation, and where the number of partners, members or stockholders, as the case may be, exceed five, the application shall so state, and shall further state such information as to each of the five partners, members or stockholders who own the five largest interests in the applicant entity. Upon request by the secretary, the applicant shall furnish the Board with such information as to partners, members or stockholders not named in the application, or shall refer the Board to an appropriate source of such information.

(d) Upon the approval of such application by the Board and paying the fee required by this Chapter for each pharmacy, the secretary of the Board shall issue a permit to conduct a pharmacy under the provisions of Section 9590.13, if all of the provisions of this chapter have been complied with. Any other provision of law notwithstanding, such permit shall authorize the holder to conduct a pharmacy.

Section 9590.15. Miscellaneous Permits. It shall be unlawful;

(1) For any person to sell or offer for sale at public auction, or to sell or offer for sale at private sale in a place where public auctions are conducted, any drugs without first having obtained a permit from the Board of Pharmacy so to do.

(2) For wholesalers to sell, distribute or dispense any dangerous drug or device except to a pharmacist, physician, dentist, podiatrist, veterinarian, or to a generally recognized industrial, agricultural, manufacturing, or scientific user of drugs for professional or business purposes; and no person shall act as a wholesaler or manufacturer, as principal or agent, unless he has obtained a certificate, license permit, or registration from the Board. Separate certificates, licenses, permits, or registrations shall be required for each place of business owned or operated and shall not be transferable.

Section 9590.16. The Board shall establish a fee for each certificate, license, permit, or registration granted. Permits issued in Section 9590.13 and 9590.15 shall be conspicuously displayed in the place for which the permit was granted. The permits shall not be transferable, shall expire on December 31 each odd numbered year following the date of issuance, and shall be renewed _____. The holder of an expired permit may have the same restored within three (3) years of the date of expiration upon due application therefor and payment of the deliquent fees and a penalty established by the Board.

Section 9590.17. Penalties. Any person violating this Subchapter or the rules and regulations duly prescribed by the Board of Pharmacy shall be guilty of a misdemeanor.

Section 9590.18. Right of injunction. The Board of Pharmacy may, in addition to the remedy set forth in Section 9590.17 apply to a court having competent jurisdiction over the parties and subject matter for an injunction

Section 9590.19.

This Subchapter does not apply or interfere with anyone who is a physician, dentist or podiatrist currently licensed to practice their respective professions in the Territory of Guam and who furnishes his own patients with such remedies as are necessary in the treatment of the condition for which he attends such patient if he acts as their physician and is employed by them as such, and provided such person keeps accurate records of drugs furnished, drugs furnished are labelled according to the requirements set forth in rules and regulations, and such drugs may not be furnished by a nurse or attendant.

Section 9590.20.

No manufacturer's sales representative shall distribute any dangerous drug as a complimentary sample without the written request of a physician, dentist, podiatrist or veterinarian. Such requests shall contain the names and addresses of the supplier and the requester, the name and quantity of the specific dangerous drug desired, and shall be preserved by the supplier with the records required by Section 9590.3.

APPENDIX D

Chapter 9
Patients' Compensation Fund

PART I. GENERAL PROVISIONS

1.1 Definitions. Unless the context indicates otherwise, as used in these rules:

(1) "Health Care Provider" means a physician or surgeon licensed under Chapter 453, HRS, including one possessing a limited or temporary license, a health care facility and health care service as defined in Section 323D-41(4), HRS, and the employees of any of them. A health care facility or health care service includes any program, institution, place, building, or agency, or portion thereof, private or public, other than federal facilities or services, whether organized for profit or not, used, operated, or designed to provide medical diagnosis, treatment, nursing, rehabilitative, or preventive care to any person or persons. The terms include, but are not limited to, health care facilities and health care services commonly referred to as hospitals, extended care and rehabilitation centers, nursing homes, intermediate care facilities, out-patient clinics, ambulatory care facilities, emergency care facilities and centers, community mental health and mental retardation centers, home health agencies, health maintenance organizations, blood banks and others providing similarly organized services regardless of nomenclature.

(2) "Medical tort" means professional negligence, the rendering of professional services without informed consent as required under Section -3, Part I, Act 219, SLH 1976, or an error or omission in professional practice, by a health care provider, including, but not limited to, the furnishing or dispensing of drugs or medical or surgical supplies, the handling or performing of autopsies on deceased human bodies, acts or omissions of any individual as a member of a formal accreditation or similar professional board or committee of a health care provider, or as the person charged with the duty of executing directives of any such board or committee, which proximately cause death, injury or other damage to a patient.

(3) "Claim filed against a health care provider" means any claim arising out of a medical tort which has been received and loss reserve established by the insurer or by a self-insured health care provider.

(4) "Commissioner" means the insurance commissioner as defined in Section 431-31, HRS.

1.2 Requirements to participate in the patients' compensation fund. Effective September 1, 1977, in order to participate in the patients' compensation fund, a health care provider must have basic liability coverage for medical torts in the form of (1) a medical malpractice insurance policy; or (2) a self-insurance program approved by the commissioner; or (3) participation in a cooperative corporation established under Act 182, SLH 1977. The basic liability coverage must provide coverage on an occurrence basis in the following minimum amounts:

(a) For individual physicians or surgeons - $100,000 per claim and $300,000 per policy period aggregate;

(b) For partnerships or corporations consisting of two or more physicians or surgeons - $100,000 per claim and $300,000 per policy period aggregate for each partner or employee;

(c) For hospitals and other eligible institutions - $100,000 per claim and $1,000,000 per policy period aggregate.

Basic liability coverage written on a claims made basis shall be acceptable only with the prior approval of the commissioner.

PART II. LIMITS OF LIABILITY

2.1 Coverage. The patients' compensation fund shall pay on behalf of a participating health care provider all sums which the health care provider shall become legally obligated to pay as damages as a result of medical torts to the extent that such damages exceed the basic liability coverage required to participate in the patients' compensation fund and to the extent of the limit of liability purchased from the patients' compensation fund by the health care provider. Damages as used

2.2 Liability limits offered - physicians or surgeons. Eligible physicians or surgeons may purchase coverage from the patients' compensation fund in excess of the basic liability coverage in one of the following amounts:

(a) $400,000 per claim and $700,000 per policy period aggregate ($500,000/$1,000,000); or

(b) $900,000 per claim and $1,700,000 per policy period aggregate ($1,000,000/$2,000,000); or

(c) $900,000 per claim and $2,700,000 per policy period aggregate ($1,000,000/$3,000,000); or

(d) $900,000 per claim and $4,700,000 per policy period aggregate ($1,000,000/$5,000,000).

The figures in parentheses indicate the total per claim and aggregate limit of the basic liability coverage and patients' compensation fund coverage upon purchase of the respective liability limits from the patients' compensation fund.

2.3 Liability limits offered - hospitals and other institutions. Eligible hospitals or other eligible institutions may purchase coverage from the patients' compensation fund in excess of the basic liability coverage in one of the following amounts:

(a) $900,000 per claim and $2,000,000 per policy period aggregate ($1,000,000/$3,000,000); or

(b) $900,000 per claim and $4,000,000 per policy period aggregate ($1,000,000/$5,000,000).

The figures in parentheses indicate the total per claim and aggregate limit of the basic liability coverage and patients' compensation fund coverage upon purchase of the respective liability limits from the patients' compensation fund.

PART III. REQUIREMENTS FOR SELF-INSURANCE

3.1 Qualification for self-insurance. The commissioner shall issue a certificate of self-insurance after he determines that the applicant is financially sound by reviewing the assets, liabilities, profit and loss records, net worth and past loss experience and the applicant has complied with the following:

(1) The applicant has submitted an application to the commissioner on a form prescribed by the commissioner.

(2) The applicant has complied with the "net worth" requirement as described in Section 3.2.

(3) The applicant has executed and filed with the commissioner the self-insurance agreement as described in Section 3.3.

(4) The applicant has provided the necessary security as a self-insurer as described in Section 3.5.

3.2 "Net Worth" requirement. To qualify for a certificate of self-insurance, an applicant must have in his name alone, a net worth in an amount to be determined by the commissioner but in no event less than $100,000. Net worth means the excess of the value of assets over the sum of liabilities. In determining the net worth necessary to qualify for a certificate of self-insurance, the commissioner shall consider the nature of the applicant's assets, its location, the availability of the assets to satisfy claims, the applicant's contingent liabilities, profit and loss records, past experience of the applicant and any other matters bearing on the ability of the applicant to satisfy claims. The applicant shall submit to the commissioner such evidence of his financial condition as the commissioner deems necessary or desirable to verify the net worth and financial condition of the applicant. A self-insurer shall immediately report to the commissioner any decrease in his net worth amounting to ten (10) per cent or more of his last statement of net worth and any other change in his financial condition which materially affects the self-insurer's ability to fulfill his obligations under the self-insurance agreement.

3.3 Agreement. The applicant shall also execute and file with the commissioner, an agreement in a form prescribed by the commissioner, that if certified as a self-insurer he will:

(1) Pay on behalf of himself and his employees all sums which he himself and/or his employees become legally obligated to pay as damages for medical torts during the certification period;

(2) In accordance with Section -5, Part I, Act 219, SLH 1976, report any medical tort claim that has been settled, arbitrated, or adjudicated to final judgment within 10 working days following such disposition;

(3) In accordance with Section -35, Part III, Act 219, SLH 1976, report to the commissioner within 10 working days any medical tort claim filed against the health care provider and make supplemental reports as required by the commissioner;

(4) In accordance with Section -19, Part II, Act 219, SLH 1976, cooperate with the medical claim conciliation panel for the purpose of achieving a prompt, fair and just disposition or settlement of a claim;

(5) Pay to the commissioner the annual surcharge determined by the commissioner pursuant to Section -31, (a) (2), Part III, Act 219, SLH 1976;

(6) Provide for a complete claims service to process and pay claims with reasonable promptness;

(7) Establish and maintain a self-insurance reserve fund meeting the requirements of Section 3.4 and submit semi-annual reports to the commissioner as to its claims experience and reserve during the certification year;

(8) Maintain his net worth at the level set by the commissioner to qualify as a self-insurer and immediately report any change in his net worth or financial condition to the commissioner as required by Section 3.2;

(9) Provide such other information to the commissioner as he deems necessary and permit the commissioner or his authorized representative to inspect and examine the records pertaining to the self-insurer's financial condition, processing and payment of claims and any other matters pertinent to the administration and enforcement of Act 219, SLH 1976.

Self-insurance reserve fund. The self-insurance reserve fund of a self-insurer shall provide for payment of such amounts and at such times into the fund as determined to be necessary to support disbursements to cover malpractice losses and those expenses related to malpractice losses. The determination of the amounts and the times at which such payments shall be made into the reserve fund shall be made by an actuary who is a Fellow of the Casualty Actuarial Society or a person determined by the commissioner to be qualified by background and experience in claims adjusting and reserving to make such determinations, using methods currently and customarily used by the insurance industry to determine the adequacy of reserves. All moneys for the reserve fund shall be kept in a separate account and shall not be commingled with other moneys of the self-insurer. The self-insurer may invest the moneys held in the reserve in such securities as may be legally purchased for investment by insurers under Chapter 431 HRS. Prior to certification or re-certification as a self-insurer, the applicant shall submit a statement to the commissioner setting forth the amounts and schedule of payments to be made to the reserve fund and the basis for the determination.

Establishment of the reserve fund may be waived by the insurance commissioner if the self-insurer's "net worth" as described in Section 3.2 exceeds $3,000,000. The self-insurer whose reserve fund requirement has been waived shall immediately report to the insurance commissioner any decrease in his net worth.

Surety Bond, Deposit of Security. Self-insurers shall be required to:

(1) File with the commissioner and maintain the bond of a surety insurer in a form approved by the commissioner and in a penal sum not less than $25,000 for individual physicians or surgeons and not less than $50,000 for all other self-insured health care providers, enforceable in the name of the "Insurance Commissioner, State of Hawaii" which shall not be cancelled without the prior written approval of the commissioner and conditioned upon performance of the health care providers' obligations under the self-insurance agreement; or

(2) Submit to the commissioner a certificate of the State Director of Finance that the applicant has deposited with him cash or such other securities deemed adequate by the commissioner to secure the performance by the applicant of its obligations under the insurance agreement and provide evidence that there are no unsatisfied judgments against the applicant. The securities shall, prior to issuance of a certificate of self-insurance, be registered in the name of the "Insurance Commissioner, State of Hawaii." The cash or market value of the securities deposited shall be in an amount not less than $25,000 for individual physicians or surgeons and not less than $50,000 for all other self-insured health care providers.

Self-insurance Management. A self-insured health care provider may utilize an insurance facility designated by the commissioner to adjust medical tort claims, obtain legal assistance, obtain actuarial expertise in the establishment of loss reserves and to carry out the requirements of the self-insurance agreement.

3.7 **Duration of Certification.** A certificate of self-insurance is valid for a twelve month period unless sooner cancelled by the health care provider or revoked by the commissioner.

3.8 **Revocation of Certificate of Self-Insurance.** The commissioner may revoke a certificate of self-insurance for good cause at any time after providing notice and opportunity for a hearing in accordance with the Hawaii Administrative Procedure Act (Chapter 91, HRS). Failure to comply with the Medical Professional Liability Act (Act 219, SLH 1976) or these rules constitutes cause for revocation. Upon such revocation, the commissioner shall promptly notify the Board of Medical Examiners.

3.9 **Termination of Self-Insurer Status and Withdrawal of Security Deposit.** A health care provider who terminates his status as a self-insurer or whose certificate of self-insurance has been revoked, and who obtains a medical malpractice insurance policy may apply to the commissioner for return of his security or cancellation of the bond. The commissioner will return the security or approve cancellation of the bond only when he is satisfied that the requirements of the Medical Professional Liability Law (Act 219, SLH 1976) have been met, all claims against the self-insurer have been satisfactorily resolved and that adequate and reasonable provisions have been made for the handling of any future claims allegedly arising out of medical tort which occurred during the period of certified self-insurer status.

PART IV. PREMIUM SURCHARGE

4.1 **Annual surcharge.** On September 1 of each year the commissioner shall actuarially determine the surcharge to be levied in terms of a stated percentage of the surcharge base as defined in Section 4.2. The commissioner shall notify each participating health care provider and insurers of the surcharge percentage and in addition, notify each participating self-insurer of the surcharge base.

4.2 **Surcharge Base.**

(1) For an individual physician or surgeon, the surcharge base shall be the medical malpractice insurance premium charged by the insurer. In the case of a self-insured physician or surgeon, the surcharge base shall be the comparable insurance premium he would have paid if he were insured under an insurance policy.

(2) For a partnership or corporation, the surcharge base shall be the medical malpractice insurance premium exclusive of the partnership or corporation surcharge charged by the insurer. In the case of a self-insured partnership or corporation, the surcharge base shall be the comparable insurance premium (exclusive of the partnership or corporation surcharge) it would have to pay if it were insured under an insurance policy.

(3) For a hospital or other similar institution, the surcharge base shall be the insurance premium charged by the insurer. In the case of a self-insured hospital the surcharge base shall be the comparable insurance premium it would have to pay if it were insured under an insurance policy.

4.3 **Payment of Surcharge.** Each participating health care provider shall pay the surcharge as follows:

(1) If insured, to the insurer together with the insurance premium. The insurer in turn shall remit the surcharge collected to the commissioner within thirty (30) days from the time the insurance premium is collected; provided that if the insurer is outside the jurisdiction of the State and fails to collect or remit the surcharge to the commissioner, the health care provider shall pay the surcharge to the commissioner within thirty (30) days from the time the insurance premium is due.

(2) If a self-insurer, to the commissioner at the time the certificate of self-insurance is issued.

4.4 **Refund of Surcharge.** If a health care provider ceases his practice of medicine and surgery in the State and the Board of Medical Examiners places his license on an inactive status, or if his license is revoked or otherwise terminated, upon application of the health care provider, the commissioner shall refund a pro rata share of the surcharge for the year in which the health care provider's license is placed on an inactive status or is revoked or otherwise terminated and for which the health care provider has paid a surcharge.