

FIRST DRAFT

**LBJ TROPICAL MEDICAL CENTER
PLAN FOR FACILITY DEVELOPMENT - 2005**

**Prepared by
Mercy International Health Services**

February 1994



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PART ONE: INTRODUCTION AND PURPOSE OF STUDY

The Government of American Samoa operates one central hospital, the LBJ Tropical Medical Center, and a number of outreach clinics which comprise the diagnostic and curative sections of the health department. Continuing population growth has contributed to increased demand for healthcare services. The physical hospital facilities, originally constructed in 1968, have not been significantly upgraded to respond to changing technology or increased demand.

The Government of American Samoa engaged Mercy International Health Services (MIHS) to assist local leadership in addressing the physical facility issues. Specifically, MIHS was asked to determine the need for outpatient and inpatient facilities, evaluate existing medical facilities, and program development activities related to the construction of new outpatient and inpatient facilities on a different site in American Samoa. MIHS also evaluated the existing site and facilities to support projected demand for healthcare services.

The scope of services provided in this study include the following:

1. Review historical and current healthcare service delivery patterns and hospital service utilization data.
2. Review population projections through 2005 and draw relationships to projected utilization and service demand changes.
3. Conduct personal interviews with key healthcare leaders, including members of the Hospital Authority, medical staff, department

managers, and community representatives to better understand the current healthcare environment and its future needs.

4. Conduct SWOT sessions with selected audiences to gain insight to perceived strengths, weaknesses, opportunities, and threats regarding healthcare delivery in American Samoa.
5. Identify basic strategies that respond to identified needs through the year 2005.
6. Assess the condition, location, and design capabilities of the existing hospital to determine its capacity to adequately meet future need.
7. Provide site and facility options for the government of American Samoa to consider in responding to facility needs.
8. Project future space needs by department for gross planning needs.
9. Prepare block drawings, or space envelopes, based on departmental space projections.
10. Develop a master project schedule for planning, designing, financing, and construction.
11. Identify cost guidelines for the proposed facility solution. This includes construction costs, equipment, fees, contingencies, and administrative expense.

MIHS staff made an initial site visit to American Samoa from February 15-28, 1994. The team consisted of Glen Haydon, president of MIHS; Mark Bombyk, project officer, MIHS; Peter Mannix, vice president, Strategic Planning and Analysis,

Mercy Health Services; and Frederick Wesolowski, director of design, MAS Associates, Inc., Farmington Hills, Michigan. This document contains the findings, conclusions and recommendations of MIHS.

PART TWO: EXECUTIVE SUMMARY

1. Population is growing steadily and will result in increased demand for healthcare service.

The current population estimate is approximately 53,000. Population is projected to increase at an annual average rate of 3.4%. The projected year 2005 population is approximately 71,000. This is a 34% increase over the current population.

2. The population of American Samoa is quite young which results in unusually low inpatient utilization rates. The 65 and over age category is the smallest age cohort in American Samoa, comprising only 3% of the total population. The United States average is approximately 12%. People in the 65 and over age category utilize inpatient services nearly four times the rate of all other age categories. As a result, the demand for inpatient services in American Samoa is lower than would be observed in a population with a more typical age distribution.

3. While population of the 65 and over age category will grow over the next ten years, it will have a nominal impact on inpatient utilization. The current discharge per one thousand population rate of 100 is expected to be approximately 99 by 2005. Thus, inpatient demand will not increase due to the aging of the population, as is the case in many U.S. communities.

A factor that could have an impact on future utilization is the number of off-island referrals. Appropriate reductions could increase admissions and length of stay at LBJ.

4. LBJ will require approximately 112 inpatient beds to serve the population through the year 2005. This number of beds will support the increases in population and a reduced level of off-island referrals.

5. Facility improvements will be required to support projected healthcare needs in American Samoa. However, improvements in the number and quality of healthcare providers, as well as continual training and education are an even higher priority.

6. Strategies recommended to achieve the locally sustainable healthcare system include the following:

- Strengthen the LBJ medical staff complement by aggressively recruiting physicians in new specialties, expanding coverage in others, and adding to the existing number of practitioners. Specific numbers and specialties must be determined by local healthcare experts. As a guideline, the desired medical staff complement in the U.S. to serve a population of approximately 75,000 would total approximately 90 physicians, more than double American Samoa's existing complement. New specialties that should be recruited or expanded in coverage include ophthalmology, radiology, pathology, urology, orthopedic surgery, and cardiology. Existing specialties that require additional physicians include family practice, general practice, internal medicine, OB/Gyn, pediatrics and general surgery.
- In order to recruit and retain these physicians, it will be necessary to increase the salaries and benefits in the healthcare budget. However, these increases could be offset by the related decrease in off-island referrals that would result in having these specialties provided in American Samoa. The recruitment effort must be well organized and coordinated to be successful. Improved quality of care should be a major goal of the medical staff development program.
- Investments should be made to further education and training of physicians. Continuing education requirements for medical staff members should be established and funds budgeted annually to support this important activity.

- The amount of clinic space necessary to serve existing and proposed numbers of physicians is inadequate. Further, the high volumes of clinic visits result in long waiting times and overcrowding of facilities. Consideration should be given to constructing a large medical office building on or near the hospital site to provide clinic space.
 - The concept of functioning as a multispecialty group practice should be explored. This could improve continuity of care, referral among physicians, coverage during vacations, holidays and off hours, and most importantly, improved quality of care. Development of a large medical office building on the health campus would support this concept.
7. Further train, develop, and recruit professional staff. Improvements in medical staff skills must be supported by similar improvements in skill levels of other hospital personnel. Additional staff will also be needed to support existing and proposed levels of service. Ongoing training of current and new personnel must be a high priority.
8. Closely manage the number of off-island referrals. Success in recruiting, retaining, educating, and training physicians and staff should contribute to a reduction in the number of referrals and the significant expense associated with their treatment and transportation. Ideally funds saved should be reinvested in equipment and staff to continue to expand the scope of services that can be provided on-island.
9. Enhance the management of hospital operations. Regardless of the physical plant improvements implemented, there are management enhancements that can be made at LBJ. Numerous management issues and inefficiencies were observed; these can only be improved through close daily attention by management and staff of the hospital. A program similar to the worldwide concept of continuous quality improvement would be beneficial in American Samoa.

10. Support prevention and health education programs designed to keep the population well and to reduce the need for healthcare services. Improvements in service delivery through satellite clinics would improve access to care and could reduce volume at the clinics.

11. Enhance the physical facilities of LBJ Tropical Medical Center. The MIHS study team considered three facility responses to the projected space requirements defined in this report:

- Additions to and renovation of present hospital
- New hospital on a new site
- New hospital on the existing site

The investigation of "additions to and renovation of the present hospital" indicate that the present site is not adequate for the projected space requirements and its associated parking. Furthermore, it has a relatively high cost, especially in view of the disadvantages that remain.

The "new hospital on a new site" option is more costly as expected; however, the additional benefits for the incremental cost may be viewed positively. The land required is approximately 28 acres.

The "new hospital on the existing site" is not a viable option due to construction phasing and operational constraints of the existing facility.

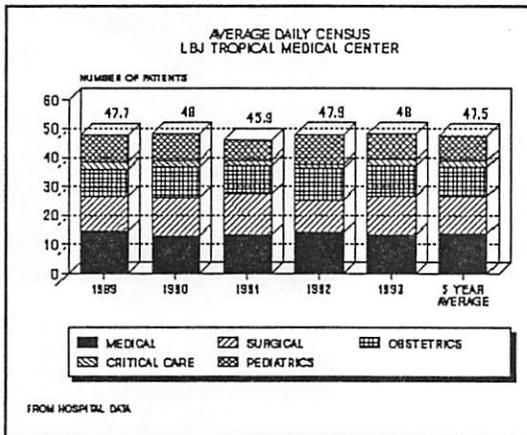
12. Significantly enhance preventive and general maintenance programs at LBJ. Regardless of the facility solution selected, LBJ must have a sufficient budget to maintain equipment and buildings. Funds must be made available to protect the significant investments made in plant and equipment. Such funding is particularly important given the distance and difficulty of bringing repair personnel to American Samoa, as well as the significant impact downtime has on hospital operations.

PART III

A. HISTORICAL UTILIZATION OF BEDS AND SERVICES

The five years from 1989 through 1993 were reviewed and analyzed to provide a basis for projecting out to the year 2005. Data was obtained from hospital departments and from the American Samoa Statistical Report-1992. The following paragraphs summarize the results of the analysis of the five years from 1989 through 1993.

Occupancy



LBJ Tropical Medical Center (LBJ) was built to house 138 patients and today operates 111 beds. Over the past five years, LBJ has averaged an occupancy rate of 42.8% with a standard deviation of .75%. On average, that translated into a census of 47.5 patients per day.

Figure 1

Discharges by Service

Over the past five years, LBJ has averaged 4,776 discharges (excluding newborn) per year. The bulk of the discharges in each year have been obstetric patients (45.6% avg) followed by pediatric patients (18.0%), and medical and surgical patients (17.1% and 17.0% respectively). The standard deviation of discharges has been approximately 5.7% or 271 discharges per year.

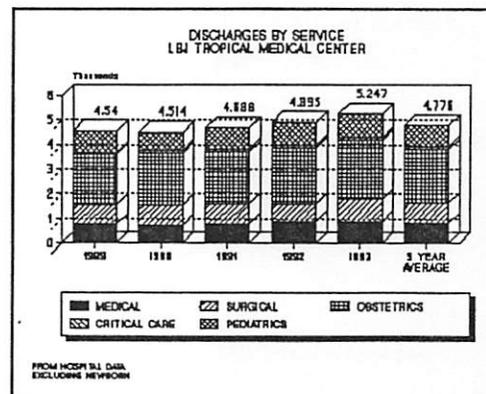


Figure 2

Length of Stay (LOS)

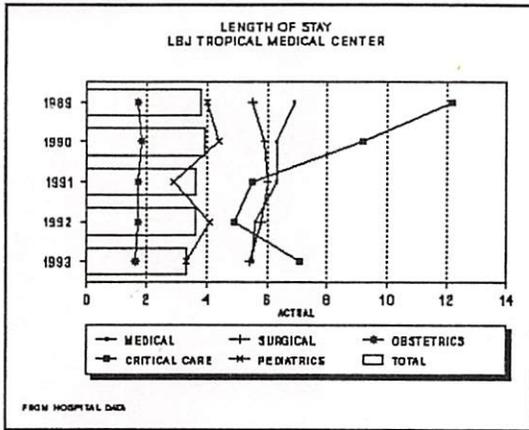


Figure 3

Total length of stay over the past five years has averaged 3.6 days. During that time period, total length of stay has decreased from 3.8 days in 1989 to 3.6 days in 1993 (13.5%). Critical care LOS dropped from 12.9 days in 1989 to 7.1 in 1993 (42.1%) and medical LOS dropped 20.9% from 6.9 days in 1989 to 5.5 days in 1993. Obstetrics had the lowest and most consistent LOS at 1.7 days on average.

Overall, the length of stay has been very consistent throughout the different services. The standard deviation for total LOS was .2 days. The largest deviation was 2.7 days in Critical Care with the rest of the services deviating by .55 days or less.

Patient Day History

Patient days have averaged 17,337 during the period and remained steady, showing a .5% increase between 1989 and 1993. Of the average total days during the five-year period, medical and surgical patients have accounted for 55.5% of the total (28.7% and 26.8% respectively), followed by obstetrics (21.5%), pediatrics (18.5%) and critical care (4.6%).

22,867

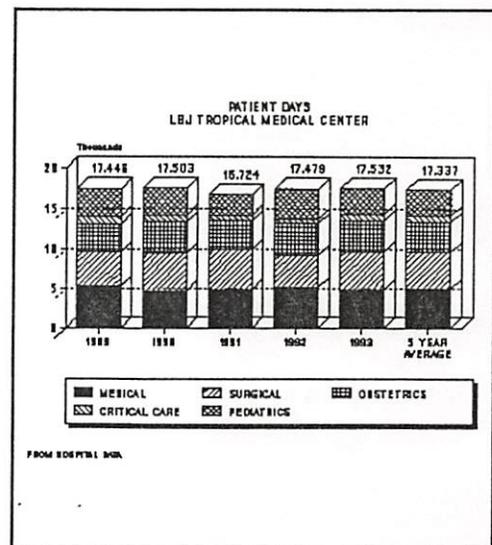


Figure 4

Outpatient Clinics

Over the past five years, outpatient clinic volumes have remained stable, averaging 3,167 per thousand population with a standard deviation of 134.8 visits per thousand. While total visits increased by 4.1% from 1989 to 1993, utilization on a per thousand basis decreased by 9.8%.

Population Status

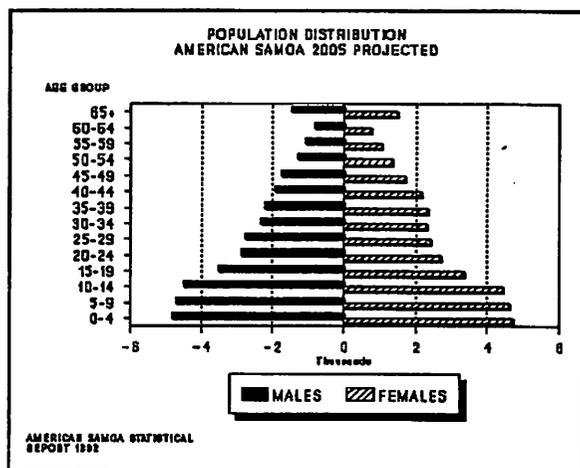


Figure 5

American Samoa has a young population. The median age of the population is 21, and life expectancy is 71 years. Recent statistics show a crude birth rate of 37.1 per thousand in American Samoa compared to 15 per thousand on the mainland. Infant mortality is 11 per thousand compared to the mainland average of 10 per thousand. The death rate in American Samoa is 4 per thousand compared to a rate of 9 per thousand on the

mainland.

The youngest population group, children 0-14, is projected to peak as a percent of the population by 1995 at 39.1% and decrease slightly by 2005 to 38.9%. Women aged 15-44 peaked at 23.5% in 1990 and are projected to fall to 21.3% by 2005. Men aged 15-44 peaked at 23.6% in 1990 and will fall by 1.5% to 22% by 2005. Adults in the 65+ group will grow by .7% from 3.5% in 1990 to 4.2% by 2005. The fastest growing group will be the adult 45-64 age group which is projected to grow from 11.4% of the population in 1990 by 2.2% to 13.7% by 2005.

The population of American Samoa is approximately 52,200 in 1993 and is projected to grow to approximately 71,300 by the year 2005.

Use Rates

Discharges averaged 98.4 per one thousand population (excluding newborns) during the five-year period. Overall, use rates remained steady during the period (100.6 in 1993 versus 100.8 in 1989) showing a 1.9 day standard deviation.

The discharge rate is quite low compared to the average for hospitals on the U.S. mainland (approximately 130 per thousand). The major cause of the low use rate seen in American Samoa is due to the small size of the 65+ age group (3.7% of the population compared to approximately 12% on the mainland).

Summary

While the population has grown from an estimated 45,042 in 1989 to 52,200 in 1993, hospital utilization has remained fairly constant. Discharges have increased 15.6% while patient days have remained steady (up .5%) and total length of stay has fallen 13.1% or .2 days. -

The same thing can be seen on the outpatient side. While total visits have increased by 4.5% (including OB) or 6,868 visits, visits on a per thousand basis have decreased by 9.8% or 112 visits per thousand.

While population growth in the younger groups is slowing and the 45 and over group is growing, that growth will not significantly impact healthcare delivery during the 1995 to 2005 time period. The young population will keep inpatient utilization at the low levels currently seen.

B. PROPOSED LOCALLY SUSTAINABLE HEALTHCARE SYSTEM

The concept of a locally sustainable healthcare delivery system is rapidly becoming the goal of governments throughout the world. It is generally driven by changes in donor philosophy toward subsidizing healthcare that is beyond the

categories of disease prevention, wellness education, broad public health measures, and the provision of very basic primary care to the masses. Some donor agencies are expressing interest in the development of improved management practices, particularly in hospitals, and privatization. There is also interest by donors and many governments in developing cost recovery programs. These include encouragement of private health insurance, increased fees for acute care services, and emphasis on collection of such fees. The movement is all designed to involve individuals in taking more responsibility for their own health and the health of their family.

In many countries where healthcare has always been provided free or for a token payment, it is becoming clear that government, through taxes alone, will not be able to continue providing the level of healthcare more sophisticated consumers are starting to demand.

The MIHS planning team suggests that a high priority be placed on clearly identifying the level of acute healthcare that can be realistically supported in American Samoa now and ten to twenty years into the future. If the public, as was indicated by members of one group interviewed, is strongly opposed to paying any more for healthcare even though extremely dissatisfied with the quality and level now available, it may be very difficult to improve the current delivery system.

Additional funds will need to be found within current budgets, with the approximately \$3.5 million spent on off-island referral a likely target for redistribution. This will, of course, require a change in thinking by members of the public who seem to want off-island referral maintained and increased and local care also vastly improved.

Given past fiscal difficulties in the maintenance of local healthcare services, some very stringent budget practices will need to be employed and guidelines set and adhered to.

The MIHS planning team believes that numerous improvements can be made to the local acute care delivery system to maximize scarce budget dollars. A number of strategies have been outlined in Item "C," below.

C. STRATEGIES TO ACHIEVE NEEDED IMPROVEMENTS

The construction of a new acute care hospital, or the modernization of the existing hospital, is only one part of the overall plan required to greatly enhance the quality and availability of healthcare services in American Samoa. Other concerns appear to be common knowledge, as they came up time after time in interviews and SWOT sessions. The MIHS study team has noted the areas of concern and outlined suggested strategies for implementing improvements.

1. Medical Staff Development

a. Recruitment and Retention

- Increase the salary and benefit package to attract more MD/DO trained physicians with practice experience. Review salaries paid in other Pacific island nations as one base of information. Determine if MD/DOs are acceptable to the public if recruited from other Pacific and Pacific Rim nations such as the Philippines, Singapore, and Malaysia where physician salaries are generally low compared to the U.S. Or does the public expect the doctors to be U.S., New Zealand, or Australian trained? Set adjusted salaries based on the market in which you decide to recruit.
- Implement special efforts to bring MD/DO Samoan scholarship students home to practice in American Samoa after graduation and licensure.
- Establish the medical staff roster to clearly spell out the types of physicians and the numbers in each category that are to make up the

medical staff. Assign priorities and carry out a planned, ongoing recruitment effort. All interviews suggest the following are priorities:

Ophthalmologist, urologist, radiologist, pathologist, orthopedic surgeon and additional staff in existing categories such as family practice, E.R., general surgery and OB/gynecology. It appears that cardiology can be strengthened by training of on-island physicians and periodic visits by an off-island cardiologist.

- Identify good quality housing for off-island doctors and be prepared to place the new doctors and their families in such housing within 5 to 10 days after arrival.
- Set up a doctors' coffee/meeting room in the hospital to facilitate communication, case discussion, and morale building within the medical staff.
- Establish a policy of exit interviews for physicians at the conclusion of their contracts to gain further insights into retention planning.

b. Education and Training

- Establish a credentials and privileges policy for the hospital medical staff. Issue diagnostic and treatment privileges to medical staff based on documentation of their training and experience to perform each procedure they request to be allowed to do. This is a first basic step in quality improvement.

- Establish continuing education requirements for medical staff members and budget money each year to bring in selected lectures and send one to two medical staff members to overseas courses.
- Develop an ongoing continuing education programs for all personnel within the hospital, from nurses to janitors. This is the second step in improving quality.
- Initially require monthly reports of all training activity listing subject matter, names of attendees, and the instructor/s.
- Implement information programs starting in junior high school which introduce young people to the wide variety of careers in healthcare, and how to pursue the necessary education.

c. Medical Office Building Concept

The design of a new hospital or modernization of the existing one will be driven by the organizational concepts and style of medical practice or changes that may be forthcoming in the next ten to fifteen years. Through discussions with members of the medical staff, the study team determined that there was interest in considering improvements to the current practice style, especially in the clinics. Attempts at scheduling patients to minimize the overload in the mornings and relative paucity of patients in the afternoons have not been successful in the past for several reasons. It has not been past practice, and patients are not used to being required to be on time to see the doctor. Physicians have not had to open clinics on time to keep a patient appointment schedule. Patients have found that some physicians are not present in the clinics after lunch, and thus the early morning rush to be seen. Building of new space or modernizing existing space to meet a morning patient bulge is not cost effective when changes in procedures

and practices can more appropriately spread patient load over the eight-hour clinic operating time.

The study team suggests a clinic design and practice pattern change which would reduce the cost of the clinic building, and improve patient flow, enhance communication between physicians concerning cases and improve the image of care delivery. All physicians would be located in a medical building on the hospital site but not attached to the hospital. A small phlebotomy station would be staffed by the hospital laboratory to draw blood samples as ordered by the physicians. All outpatients and ambulatory patients would be seen in the doctors' offices, by appointment, except for true emergency cases and after-hours sudden illnesses, which would be seen in the Emergency Department of the hospital.

This is, in fact, almost the same as the current clinics, except that patients are seen by appointment, and the multispecialty group practice concept is closely tied with the building concept.

d. Multispecialty Group Practice Concept

The variety of different physicians currently employed by the Government of American Samoa are, in fact, very like a multispecialty group practice arrangement. This existing structure provides an excellent opportunity to enhance patient care by actually grouping all family practitioners, surgeons, pediatricians, obstetricians, gynecologists and other specialists in office settings where they can confer on difficult cases and arrange office hour and on-call coverage to improve their quality of life and timely patient access.

Off-island specialists who are recruited on contract will be very familiar with group practice arrangements. The study team also felt that this concept would enhance the potential for on-going education of physicians and introduction of peer review and continuous quality assurance techniques.

A medical staff and Hospital Authority committee could be appointed to plan the development of both the multispecialty group practice and physicians office building as a single medical practice improvement to enhance the current clinic system.

2. Hospital Staff Training, Développement, Recruitment

The improvements in medical staff skills must be supported by similar improvements in the skill levels of the other hospital personnel, from nurses to radiologic and laboratory technicians to bio-medical and maintenance personnel. It is not always a matter of hiring more staff, but also of identifying and removing ineffective personnel who are unable or unwilling to learn and apply new skills. Currently there is trained staff within the hospital who could plan and direct a hospitalwide training and inservice education program for all departments. Teaching materials, classroom space, and other educational aids need to be made available. To be fully effective, additional staff may be needed as the inservice education activities grow and reach out to all departments. Ongoing training of current personnel should be a very high priority and attendance made mandatory.

3. Management and Finance of Hospital Operations

Whether a new hospital is constructed or the present one modernized, the issues of administration and utilization of scarce healthcare resources must be considered high priorities. During the MIHS study team's review of departments, numerous management issues and inefficiencies surfaced that can only be improved

through close day-to-day attention by the management team of the hospital. Issues of "turf" and control need to be resolved in the best interests of overall hospital operations and quality of patient care, rather than protection of power and self-interest. These concerns are not unlike those found in many other hospitals around the world. However, tight budgets, needed improvements in the quality of patient care, and the potential of a new hospital or modernization of the existing one call for the development of an effective team effort. Goal setting and monitoring of follow through by the Hospital Authority board and senior management would be a significant step forward.

The financing of healthcare in American Samoa will continue to be a difficult issue until the public is educated to the need to help pay for the care they utilize. If all care is to continue being funded by government, including off-island referrals which have no caps on dollar amounts nor criteria for categories to be referred and not referred (as any private insurance carrier would), budgets will continue to be overspent. In 1990 and 1991, \$3.6 and \$3.3 million dollars respectively was spent on the off-island care of less than 1% of the population, or 22% of the entire Department of Health budget.

To carry out the improvement strategies outlined in just items 1 and 2, above, will require an infusion of new money into the health budget or the trimming of any waste in current operations and a reduction in annual off-island referral spending.

5. Wellness, Health Education, Public Health Activities

Meetings were held with Dr. Edgar Reed, director of Public Health, to discuss his programs and plans as they might affect future patient loads at the hospital. Dr. Reed envisions improvements in the outlying health clinics to include an M.O., nurse, and small laboratory for basic tests, which will handle a large volume of the minor injuries and general nonacute illnesses in each region. This

approach would greatly reduce the influx of patients to the main hospital-operated clinics and outpatient/emergency department.

The MIHS study team strongly supports Public Health efforts to disperse primary healthcare out to population centers. Design of the hospital has taken into consideration the potential for movement of patients, as noted above, into modern, well staffed community health clinics.