UNITED STATES NAVAL ADMINISTRATION OF THE TRUST TERRITORY OF THE PACIFIC ISLANDS

By
DOROTHY E. RICHARD
Commander, U. S. N. R.

Office of the Chief of Naval Operations

1957

CONTENTS

The Tru
19

PART VII

The Health Program

Chapter XL

PUBLIC HEALTH PROBLEMS AND POLICIES

Problems

Improvement in the health of the Micronesians continued to be one of the principal aims of the administration during the trusteeship period. The Naval Medical Department had performed an outstanding and spectacular job during the military government era and the islanders had, for the most part, accepted the health program willingly and gratefully. Cultural obstacles to American standards of health had largely disappeared by 1947 although there were still some people who sought dispensary care only after native medicine and witchcraft had failed. Isolation of patients with communicable diseases, especially tuberculosis, was difficult because the idea of bacteria seemed mysterious. The belief that illness was caused by evil spirits remained popular and the western concepts of disease origin and transmission, based on the germ theory, were sometimes met with indifference or skepticism.

Medical personnel suspected that they had only touched the surface of the health problem both because factual knowledge of the type and incidence of disease was not available and because total indigenous understanding and acceptance of the program had not been completely achieved. Continued improvement in the health of the people, therefore, depended upon procuring a true picture of the health and sanitation situation of the islands, developing further the already established program to meet the evident problems, and obtaining the unqualified cooperation of the inhabitants.

Disease statistics and information on the sanitation of the islands was obtained by the USS WHIDBEY, a medical survey ship which sailed throughout the Trust Territory from the summer of 1948 to the spring of 1951, and in the course of its cruise, examined sixty percent of

the indigenous population.[1] The ship reported that, in general, the health of the Micronesians was "excellent" and nutrition and sanitation were "good." The specific conditions discovered or verified by the survey were proof, however, that the control and elimination of disease was a long range problem.

The WHIDBEY statistics[2] showed that the most prevalent, widespread diseases were tuberculosis, intestinal parasitism, and yaws. Leprosy was of major importance throughout the area, filariasis and encephalitis were found in small incidence in the Carolines, mental disease occurred in only five individuals, venereal disease was practically nonexistent, and malaria was completely absent. Some measles and meningitis were found among children. Dengue and typhoid fever, which had previously been thought to be widspread, did not appear in any area. Among the miscellaneous diseases, the most prevalent were diseases of the skin, eyes, and respiratory organs; of wide prevalence were degenerative joint diseases, inflammatory diseases of the ear, neoplastic diseases, rickets and vitamin deficiency, and anemia.

Tuberculosis was out of control and was the most serious health problem. Its high incidence on Saipan, where in 1947 and 1948 the deaths resulting from it exceeded the number of deaths from all other causes, had been recognized for some time, but the WHIDBEY survey produced alarming statistics from all other areas. Chest defects occurred in 4.5 percent of persons examined in the Saipan, Palau and Marshall Islands Districts. Incidence of pulmonary tuberculosis in the various districts was: Saipan, 2 percent; Palau, 1.6 percent; Truk, 0.92 percent; Ponape, 1.7 percent; Marshalls, 0.8 percent. Incidence on individual islands varied from Kwajalein's 0.1 percent to Faraulep's 6.8 percent; Saipan had 3.9 percent; Yap had 4.9 percent. Reaction to tuberculin tests was exceptionally high: of the approximately 90 percent of the population tested in the Saipan, Palau and Marshall Islands Districts, 46.5 percent had positive reactions; incidence for individual islands varied from 6.7 percent for Elato to 84.5 percent for Yap.

---

[1] *Infra*, p. 912 ff.

[2] *Health Survey of the Trust Territory of the Pacific Islands, 1948–1950*, prepared by the Medical Statistics Division, Bureau of Medicine and Surgery, Navy Department; hereinafter referred to as *Whidbey* Report. Incomplete statistics for the Truk area were contained in Encl (1) to MedOff USS *Whidbey* memo dtd 4 Jun 51.

Fleet Medical Officer Talks With Health Aide and Patient at Dispensary, Ngulu, Caroline Islands

Comparison of percentages of positive reactions to the tuberculin test by the Saipanese school children with those of Wisconsin school children was startling: [3]

Age	Percentage positive Saipan	Percentage positive in 100,000 cases in Wisconsin
7	39.3	
8	40.8	5
9	59.6	
10	62.4	
11	66.7	
12	63.9	9.3
13	64.6	
14	80.6	
15	86.7	
16	57.1	13.9
17	81.8	

Intestinal parisitism was found in more than half of the people examined, especially in children from 5 to 14 years of age. The incidence for each district except Ponape [4] was Saipan, 79.3 percent; Palau. 64.5 percent; Truk, 19.3 percent; [5] Marshall Islands, 47.7 percent. The most prevalent intestinal parasites were hookworm, 23.1 percent; trichuris, 22.3 percent, ascaris, 17.2 percent. The most serious type found was amebiasis.

Yaws, which in its active form had been as high as 90 percent in some areas in 1946, had been practically obliterated by the time the WHIDBEY made its survey, but scars were mute evidence of its former high incidence. Of the more than 25,000 people given Kahn tests, however, these percentages had positive reactions: Saipan, 30.4 percent; Palau, 65.4 percent; Truk, 82 percent; Marshalls, 38.1 percent. A reaction was considered likely evidence of the presence of yaws because malaria did not exist and syphilis, leprosy, and infectious mononucleosis rarely occurred.

Very few cases of leprosy were found by the WHIDBEY. Although the doctors noted 83 clinically suspicious cases in the Saipan

[3] CivAd Saipan Med Off ltr ser FF12(6)/P3-1 WJH:rsb dtd 18 Jun 48.
[4] Chest X-rays only were given in the Ponape District.
[5] Statistics are for Truk Atoll only.

and Palau Districts [6] and found 3 certain cases in Truk Atoll, they were hesitant about diagnosing the disease without the assistance of specialists. As a result, district medical personnel were instructed to examine the suspected cases and to send those whom they thought afflicted to the leprosarium on Tinian.[7]

A minimum of filariasis was discovered until the Truk area was surveyed. One case was found on Saipan and several cases in the Palaus but the incidence of positive reactions in the Truk District was 29 percent for the 2600 people tested. Later observations on Ponape indicated that this disease was also endemic to Ponape.

Encephalitis had been discovered on Ponape in 1947, previous to the WHIDBEY survey and had existed in a mild form but in epidemic proportions at that time. An epidemiological team was sent to Ponape from the Naval Medical Research Institute, Bethesda, in January 1948 and succeeded in determining that the probable agent of transmission was the mosquito.[8] Quarantine regulations prevented its spread to other areas of the Trust Territory but lack of time for a thorough medical survey of Ponape by the WHIDBEY prevented obtaining later statistics on its prevalence.

Venereal disease statistics available for all districts but Ponape showed a minute incidence of syphilis and gonorrhea:

District	No. of cases of syphilis	No. of cases of gonorrhea
Saipan	0	0
Palau	0	4
Truk	0	1
Marshalls	12	20

Skin diseases, especially dermatophytosis, were prevalent chiefly because of low standards of hygiene and the hot, humid climate. Incidence for the districts was: Saipan, 29.8 percent; Palau, 25.4 percent; Marshall Islands, 30.9 percent.

The prevalence rate for diseases of skin and cellular tissue was 14.9 percent for the same three districts: Saipan, 24.6 percent; Palau, 6.3

[6] There were no clinically suspicious cases of leprosy found in the Marshall Islands District.
[7] *Infra*, p. 900 ff.
[8] *Infra*, pp. 940–1 ff.

percent; Marshalls, 21.4 percent. The incidence of mycotic skin diseases in the Truk District was 17.1 percent.

Eye diseases occurring most frequently were pterygium and conjunctivitis. Cataracts occurred mostly in the aged. Eighty-five cases of blindness were congenital or the result of physical injury. In comparison with other districts, the Marshall Islands had the highest rate for pterygium, 14.6 percent, as compared with 9.0 percent for Saipan and 6.4 percent for Palau. Conjunctivitis was most prevalent in the Saipan District and cataracts occurred most frequently in the Palau District.

A high incidence of acute respiratory infections existed throughout the area and was caused by the changeable humid climate, crowded living conditions, sleeping on floors, low levels of nutrition, and occasional poor standards of sanitation. Saipan had the highest incidence, 8.5 percent, as compared with 1.3 percent for the Marshalls and 1.2 percent for Palau. Acute pharyngitis, acute tonsillitis, and the common cold occurred most frequently. Chronic tonsillitis and nasopharyngitis also were widespread with these prevalence rates: Saipan, 28.7 percent; Palau, 5.3 percent; Marshalls, 20.4 percent. Occasionally epidemics resembling common colds or influenza developed as at Truk in April 1950 and at Ulithi in November 1950. In both instances the illness was a trachea bronchitis of influenza bacilli origin. Twenty or more deaths occurred at Truk, probably because of the development of secondary pneumonias or pleural effusions due to living in houses of thatch construction; no deaths occurred at Ulithi where the people lived in quonset huts.

Degenerative joint disease prevailed among the aged and showed a rate of 7.1 percent for the Saipan, Palau and Marshall Islands Districts combined, with the highest rate in the Palaus and the lowest in Saipan. Inflammatory diseases of the ear were most common in Saipan, 2.6 percent, and of lesser importance in the Palaus, .09 percent, and in the Marshalls, 1.1 percent. The overall prevalence rate for vitamin deficiency was 0.9 percent and for anemia 0.8 percent.[9]

No generalizations concerning blood pressure readings could be made for the area as a whole because variations followed no consistent pattern. As normally expected, median blood-pressure readings,

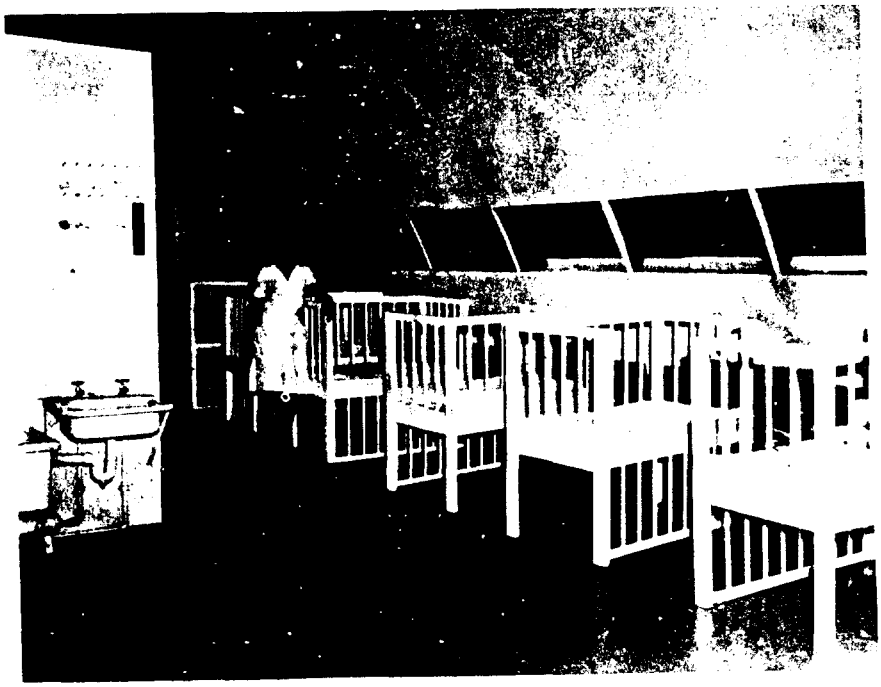
Children's Ward.

systolic and diastolic for both sex
was greatest in Saipan, the most

Surveys of the dental health
Whidbey, reemphasized the "
Lack of oral hygiene and the h
food combined to produce an av
older people. Caries existed in
tically every case of a person ove
involvement.[10] Prosthesis was u
eral state of health of the peopl

[9] See also table p. 852.

[10] CinCPacFlt Dent Off ltr ser A17-10/P5



Children's Ward, Dispensary, Yap Island

systolic and diastolic for both sexes, increased with age. The increase was greatest in Saipan, the most acculturated of the districts.

Surveys of the dental health of the people, including that of the *Whidbey,* reemphasized the "deplorable" dental health situation. Lack of oral hygiene and the high carbohydrate intake from native food combined to produce an average of over 70 caries a mouth in the older people. Caries existed in 97 percent of the people, and in practically every case of a person over 25 years of age, there was peridontal involvement.[10] Prosthesis was unobtainable and, as a result, the general state of health of the people was often affected. The Navy had

[10] CinCPacFlt Dent Off ltr ser A17–10/P5/FF12/45:wrf dtd 23 Jul 47.

Morbidity for Selected Diagnoses, Saipan, Palau, and Marshall Islands
Districts: 1948–50

Prevalence rates per 1,000 examinations

Selected diagnosis	Total		District					
			Saipan		Palau		Marshall Islands	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Examinations	22, 146	.....	4, 999	.....	10, 575	.....	6, 572	.....
Dermatophytosis	6, 611	298.5	1, 899	379.9	2, 683	253.7	2, 029	308.7
Chronic tonsillitis and nasopharyngitis	3, 326	150.2	1, 433	286.6	555	52.5	1, 338	203.6
Diseases of the skin and cellular tissue	3, 304	149.2	1, 231	246.2	665	62.9	1, 408	214.2
Pterygium	2, 087	94.2	449	89.8	675	63.8	963	146.5
Degenerative joint disease	1, 563	70.6	262	52.4	900	85.1	401	61.0
Conjunctivitis	909	41.0	273	54.6	443	41.9	193	29.4
Cataract	784	35.4	87	17.4	519	49.1	178	27.1
Acute respiratory infections	632	28.5	426	85.2	123	11.6	83	12.6
Neoplastic diseases	325	14.7	60	12.0	74	7.0	191	29.1
Inflammatory diseases of ear	217	9.8	132	26.4	10	.9	75	11.4
Opacity of cornea	211	9.5	82	16.4	86	8.1	43	6.5
Vitamin deficiency	195	8.8	101	20.2	28	2.6	66	10.0
Anemia	185	8.4	64	12.8	4	.4	117	17.8

been able to perform only emergen
lation dental officers could not be as
some other system of dental care v

Several factors continued to mak
lem. From the first day that naval
islands, they had expended an im
teach the Micronesians to observe
means of curbing disease. Conditi
district headquarters where admi
frequent inspections, but the situati
where the field trip officers could
inspections once every three montl
little or no appreciation of the "ge
a humid climate, a wealth of inse
people, made correction of the situa

The WHIDBEY survey noted:

> . . . most islands have commun
> and in good repair. It was evide
> still a common practice throughou
> and toilet paper were thrown abo
> latrines, in some instances clean a
> used. Even on Saipan Island whe
> pit latrine, use of the beach was evi
>
> Garbage is usually buried in p
> carried out to sea and dumped.
> disposal were noted on Utirik A
> allowed to accumulate over long per
>
> Rain water is collected in old oil
> houses and coconut trees. The wat
> out covers or safeguards against
> water supply was contaminated.

The heavy ground cover and dec
breeding spots for many varietie
mites, rates and mice continued to
by anthropods were not so import
tropical areas, the types of mosqui
definite threat to health because
filariasis were all present.

[11] BuMed *Manual*, para. 1325; the Dental
than naval personnel.

been able to perform only emergency treatment and, because, by regulation dental officers could not be assigned to treat indigenous persons,[11] some other system of dental care would have to be instituted.

Several factors continued to make improvement of sanitation a problem. From the first day that naval medical officers had landed on the islands, they had expended an immense amount of energy trying to teach the Micronesians to observe the basic rules of sanitation as a means of curbing disease. Conditions were satisfactory at and around district headquarters where administration personnel could conduct frequent inspections, but the situation on many of the outlying islands, where the field trip officers could do little more than make superficial inspections once every three months, was often poor. The natives had little or no appreciation of the "germ theory" and this, combined with a humid climate, a wealth of insects and the natural indolence of the people, made correction of the situation always difficult.

The WHIDBEY survey noted:

> . . . most islands have community latrines which, in general, are clean and in good repair. It was evident, however, that use of the beaches was still a common practice throughout the islands and, in many places, leaves and toilet paper were thrown about promiscuously . . . many islands had latrines, in some instances clean and well constructed, which were seldom used. Even on Saipan Island where virtually every household has its own pit latrine, use of the beach was evident.
>
> Garbage is usually buried in pits, but on some islands it is burned or carried out to sea and dumped. The most inadequate methods of garbage disposal were noted on Utirik Atoll and Namorik Island where it was allowed to accumulate over long periods of time . . .
>
> Rain water is collected in old oil drums by means of spouts and drains on houses and coconut trees. The water is then stored in the drums, often without covers or safeguards against debris. There were indications that the water supply was contaminated. Most wells were contaminated . . .

The heavy ground cover and decaying vegetation furnished excellent breeding spots for many varieties of pests. Flies, mosquitoes, lice, mites, rates and mice continued to abound. Although diseases carried by anthropods were not so important in the Trust Territory as in other tropical areas, the types of mosquitoes noted during the survey were a definite threat to health because vectors of dengue, yellow fever and filariasis were all present.

[11] BuMed *Manual*, para. 1325; the Dental Corps lacked sufficient officers for care of other than naval personnel.

The nutrition of the Micronesians was satisfactory in most instances. Their basic diet continued to be high in starch and deficient in proteins and fats, but they had existed on it for centuries and survived. Supplementary foods were provided by the Island Trading Company and only lack of transportation limited this source of supply. Food shortages occurred occasionally on a few islands where the breadfruit and coconut trees had been destroyed during the war.

Native intoxicants were a problem in some areas. The WHIDBEY report noted:

> Kava, a drink which produces languor and sleepiness, is prepared from juices of certain roots and used extensively throughout the islands. On at least one island a native distillery is in operation preparing fermented coconut juice. Imbibing of the beverage did not appear to be universal throughout the island. Sour toddy wine, although illegal, is also probably consumed. This drink, which is made from flowers of wine palms, is highly intoxicating and is said to have deleterious effects upon the urinary and nervous systems.[12]

Betel nut chewing was a definite health hazard on Yap, Lamotrek and Woleai. Addicts were undernourished and frequently physically below par because the narcotizing effect of the nut suppressed hunger and stupefied the individual. On Yap, where the chewing of betel nut was practically universal, the pathways and gathering places were spattered with betel nut spittle, and it was believed that the habit of careless spitting had much to do with the spread of pulmonary tuberculosis.[13]

The health conditions as thus presented by the WHIDBEY reports, together with the previous and continuing experiences of the civil administration medical personnel, served as the basis for expansion of the public health program during the period of naval administration of the trusteeship. Reevaluation and restatement of policy, systematic administration of the program, improved facilities for the care of the ill and the practice of preventive medicine, increased training of indigenous assistants, reemphasis on sanitation, and continuing education of the people to seek and accept the care offered them constituted the public health program for the islands.

---

[12] WHIDBEY Report, p. 14.
[13] CinCPacFlt Med Off memo dtd 30 Jun 50.

Policy

The original health policy set for the ex-Japanese Mandated Islands by the directive of December 12, 1945[14] had been adhered to and expanded during the postwar military government period so that, when the trusteeship was established in July 1947, an extensive health program was already in existence.[15] The Trusteeship Agreement required the Administration simply to "protect the health of the inhabitants"[16] but upon this responsibility was built one of the most successful health programs ever conducted for dependent peoples.

One of the first acts of Admiral Louis E. Denfeld after his appointment as High Commissioner of the Trust Territory, was the issuance of the *Health Service Policy for the Trust Territory of the Pacific Islands*, prepared by Captain (later Rear Admiral) Frederick C. Greaves, Commander in Chief Pacific Fleet Staff Medical Officer, as of August 5, 1947 and adopted the following day.[17] The mission of the health program as stated therein was:

> 1. To raise public health standards in the Trust Territory of the Pacific Islands and to control preventable disease among the inhabitants thereof.
>
> 2. To provide the means of rendering medical and dental care to the inhabitants of the Trust Territory of the Pacific Islands.
>
> 3. To conduct medical and dental research into health problems peculiar to the Trust Territory of the Pacific Islands and their inhabitants.
>
> 4. To train native men and women in the arts of medical, dental, and nursing practice.

Four programs, Preventive Medicine, Medical and Dental Care, Research, and Native Training were outlined to carry out the mission:

Preventive Medicine Program

> 1. An annual health and sanitary survey shall be conducted on each inhabited island.
>
> 2. Provisions shall be made for the reporting of preventable diseases and the collection of appropriate vital statistics.
>
> 3. A program for the eradication of intestinal parasites and yaws shall be placed in operation.
>
> 4. An organization for the treatment of tuberculosis and leprosy shall be established.

---

[14] See v. II, p. 280 ff.
[15] See v. II, p. 349 ff.
[16] Trusteeship Agreement, Art. 6, 3.
[17] Encl (A) to CinCPacFlt ltr ser 4786 dtd 6 Aug 47; see app. 23, p. 1298.

5. A program to insure potable water and the sanitary disposal of sewage and garbage shall be established.

6. The immunization of natives against small-pox, typhoid fever and tetanus shall be routine.

7. An efficient program for the control of rodents and other pests shall be established.

8. Quarantine rules and regulations shall be promulgated to prevent the importation of preventable diseases into the islands and between the separate islands.

9. A practical food sanitation program shall be adopted.

10. A program to improve the nutritional status of the inhabitants shall be established.

11. A venereal disease program shall be maintained.

Medical and Dental Care Program

1. Hospital, dispensary and out-patient medical and dental care shall be provided for the inhabitants of the Trust Territory of the Pacific Islands. A progressively self-sustaining status for these services shall be encouraged. A procedure for licensure of private practitioners in medicine, dentistry and nursing shall be promulgated.

Research Program

1. A medical and dental research program will be established. It shall embody the procedures for submission of requests and recommendations for research projects and for their consideration by a board of qualified officers appointed for this purpose.

2. Periodic and final reports of all medical and dental research projects shall be submitted, via official channels, to the Bureau of Medicine and Surgery.

Native Training Program

1. A training program for native men and women in the arts of medical, dental and nursing practice shall be maintained to provide a sufficient number of trained individuals to meet the needs of the inhabited islands. Candidates for training shall be carefully chosen for intelligence, leadership, character, good health and such other qualities as may be prescribed, from time to time.

Realization of the program, the policy stated, would be dependent upon personnel, funds and other facilities available. Every effort was to be made to reach the goals set at the earliest practicable time.[18]

The *Health Service Policy* was implemented by the *Interim Health Service Program for the Trust Territory of the Pacific Islands,* issued

[18] For a complete copy of *Health Service Policy,* see app. 23, pp. 1298–9.

Sick Call on a Carolinian Island When Visited by Field Trip Vessel

by the High Commissioner on November 28, 1947,[19] which provided for temporary measures to be placed in effect at once:

I. Objective:

1. To implement and advance the Health Service Policy as set forth in reference (a).[20]

2. To provide interim medical and dental treatment for inhabitants of the islands of the Trust Territory of the Pacific Islands, until such time as the provisions of reference (a) can be fulfilled.

II. Preventive Medical Program:

1. The rules and regulations as set forth in reference (b) [21] shall be placed in effect at the earliest practicable date.

2. Until such time as a complete health survey has been accomplished, the Medical Department of the Civil Administration Unit shall conduct studies of medical and public health conditions to the greatest extent possible commensurate with personnel and facilities available.

[19] Both documents were promulgated by DepHiComTerPacIs ltr ser 473 dtd 28 Nov 47.
[20] *Health Service Policy.*
[21] *Public Health Rules and Regulations;* infra, pp. 1318–9.

These studies shall include routine physical examinations of school children, spot checks of stools for intestinal parasitism and examination of general population during field trips to determine the incidence of yaws, venereal disease, leprosy, and other infectious diseases. X-ray examinations of the chest shall be performed to the extent of facilities available.

3. The current practice of treatment of yaws with initial massive doses of penicillin in oil, followed by a course of twelve (12) injections each of Mapharson and bismuth shall be continued unless circumstances prevent this procedure or results obtained indicate that this treatment is not efficacious. In the later case the Staff Medical Officer of the Deputy High Commissioner of the Trust Territory of the Pacific Islands shall be notified.

4. The routine administration of anthelmintics to the population may be practiced if indicated by spot surveys.

5. Until such time as a central leprosarium is established, persons suffering from leprosy, known contacts thereto, and suspected cases shall be isolated until diagnosis has been confirmed or disproven. Such logistic support as may be necessary for these colonies shall be provided by the local Civil Administration Unit.

6. An educational program to teach voluntary isolation and essentials of control of spread of tuberculosis shall be established. Where medical facilities with adequate beds and Medical Department personnel are available, the Medical Officer shall hospitalize such cases of tuberculosis or suspected tuberculosis as would be most benefited by hospitalization. The Medical Department personnel of the various Civil Government Units shall cooperate with the Health Survey Ship which it is contemplated will be operating throughout the area in the near future.

7. The Medical Department shall keep the Civil Administrator advised as to the potability of all water supplies and shall assist in every way possible toward maintaining potable water systems.

8. The Medical Department through its sanitation officer shall conduct regular sanitary inspections and shall report any deficiencies in general sanitation, preparation and serving of food and beverages in restaurants and in garbage and sewage disposal procedures.

9. An active immunization campaign against small pox and typhoid shall be conducted in accordance with current public health practices.

10. Active baiting and trapping campaigns shall be conducted against rodents.

11. An educational campaign to teach the value of balanced diets and to encourage the practice of varying diets shall be conducted.

12. A venereal disease program shall be maintained.

13. The Medical Department shall cooperate with other Civil Government Personnel in enforcement of quarantine regulations.

III. Interim Program for Training Natives:

An interim training program shall be conducted to meet the needs for trained Health Aides and Nurses Aides until graduates of the

School of Medical Practitioners become available. The courses shall be conducted in accordance with the provisions of CinCPacFlt letter, serial 1557, dated 10 March 1947, and Commander Marianas letter serial 11116, dated 16 April 1947. The training program shall be conducted at the Civil Administration Unit Dispensaries for a minimum of six (6) months, with an additional three (3) months training in the field. The subjects to be taught shall include basic English, care of the sick and injured, preventive medicine, sanitation, and rodent control.

IV. Care of the Sick and Injured:

Medical and dental care shall be provided the inhabitants of islands of the Trust Territory of the Pacific Islands, commensurate with medical and dental personnel and facilities available. Subsistence shall be provided for patients in the dispensaries making charges for such subsistence in accordance with current directives. (Commander Marianas letter serial 12402 dated 14 May 1947.) However, every effort should be made to substitute native foods for Navy rations whenever practicable in order to reduce the cost of subsistence to the government and provide a diet more nearly in accord with native food habits and desires.

At the same time that the policy and interim program were directed, November 28, 1947, the High Commissioner issued *Public Health Rules and Regulations for the Trust Territory of the Pacific Islands* to control preventable diseases and elevate public health standards in the islands. Persons violating any of the following regulations were subject to trial by authorized courts of justice:

1. It shall be the responsibility of the Civil Administrator to promulgate and enforce the regulations set forth herein and to formulate such additional rules and regulations as may be deemed necessary for the furtherance of the public health objectives.

2. It shall be unlawful for any person or persons to practice medicine or other of the healing arts for a fee unless duly licensed and/or authorized by the High Commissioner of the Trust Territory of the Pacific Islands, or his duly appointed representative.

3. It shall be unlawful for any person other than those properly accredited to import, sell, give or dispense medicines, drugs, or other substances of a deleterious nature, which in the opinion of proper medical authority should only be administered by authorized practitioners, physicians or other medical personnel.

4. It shall be unlawful to import, sell, traffic in, purchase, give or prescribe narcotics or medicine containing narcotics or other so-called habit-forming drugs except by specific authority of the Civil Administrator.

5. It shall be unlawful to knowingly and willfully conceal or fail to report to proper authorities, cases of communicable diseases. Persons suffering from contagious or communicable diseases or known contacts thereto,

shall be isolated, treated, and, if necessary, be confined by the civil authorities in accordance with standard preventive medicine procedures as outlined by the medical staff of Civil Government. Treatment for persons infected with venereal disease is compulsory.

6. Persons desiring to travel between administrative districts shall be required to obtain a certificate of health from a medical practitioner, physician, or medical representative of the Civil Administration. This certificate shall certify that the individual has been examined and is apparently free of communicable diseases, that he has been vaccinated for smallpox and typhoid fever within the prescribed interval and shall include the findings of X-ray examination of chest if available. The provisions of this paragraph do not apply to travel between islands within an administrative district.

7. Vaccination and inoculations as prescribed by proper authority shall be compulsory.

8. Regulations and directives relative to control of rodents and other pests shall be promulgated by the Civil Administrator.

9. It shall be unlawful for any person or persons to prepare and dispense foods for public consumption unless specifically authorized by the Civil Administration. Establishments engaged in the preparing or dispensing of foods for public consumption shall be subject to periodic inspections by the Civil Administrator or his medical advisor. Failure to conform to standards of sanitation prescribed shall be cause for revocation of license.

10. Persons engaged in handling food for public consumption shall be examined at prescribed intervals or at other times by a duly authorized physician, practitioner, or medical representative of the Civil Administrator.

11. It shall be unlawful for any person to sell or dispense for human consumption food which is known to be contaminated, decomposed or adulterated, thereby rendering such food unfit for human consumption.

12. Participation in established public health programs for school children is compulsory.

13. Disposal of waste sewage and garbage by methods and in areas other than those prescribed by health authorities shall be unlawful.

14. The use of night soil (human excreta) as a fertilizer is prohibited.

15. Sanitary privies (benjos) shall be of a type and in areas designated by local authorities. Defecation in the immediate vicinity of any village other than in those privies is prohibited.

16. Barber shops and beauty parlors shall be duly licensed and inspected periodically by a medical representative of the Civil Administrator.

17. A record of births and deaths will be maintained by the registrar of the Civil Administration Unit. All births will be reported to the registrar within seventy-two (72) hours after occurrence. In case of death when the deceased has not been attended by a practitioner, physician, or health aide during his terminal illness, burial will not take place until remains have been viewed by a representative of the Civil Administration. Death occurring under suspicious circumstances shall be reported to the Chief of the village

or magistrate for further investigation. All deaths will be reported within twenty-four (24) hours and burial will take place within thirty-six (36) hours after death has occurred. Forms VS-1 and VS-2 shall be completed and filed in each CAU. Refer to COMMARIANAS directive, serial 12936 of 15 November 1946 for detailed directions.

18. Burial will take place only in specified areas and in a manner designated by the Civil Administration.

19. Persons violating any of the above regulations are subject to trial by such authorized courts of justice as now exist or may be established in the future.

Specific regulations for the practice of "medicine or other of the healing arts" were issued also on November 28, 1947 as *Medical Practice in the Trust Territory*.[22] This document provided for licensing or, under certain conditions, registration of any person engaged in such practice. Provision was made for establishment of a "Commission of Licensure" and Boards of Examiners, and standards were set for professioal training, conduct of examinations and licensing or registration. In every instance the welfare of the people was protected by restrictions upon illicit medical practice. Nonconformance with the regulations was a cause for criminal prosecution by the Deputy High Commissioner: "Any person who shall practice the healing arts in any of its branches or shall treat human ailments by any system whatsoever or shall practice midwifery without a valid existing license under these regulations so to do shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine or by confinement in jail or by both such fine and imprisonment in the discretion of the court." [23]

A statement of the Navy's basic policy for the government of the islands under the trusteeship, amending the original December 12, 1945 policy statement, was issued on January 15, 1948.[24] The section concerning health affairs stated:

> The Health Service Policy for the Trust Territory of the Pacific Islands issued by the High Commissioner on 5 August 1947 and promulgated by the Deputy High Commissioner in his letter serial 473 of 28 November 1947, together with the Program, Rules and Regulations promulgated by

[22] DepHiComTerPacIs ltr ser 473 dtd 28 Nov 47.
[23] *Medical Practice in the Trust Territory*; for a copy of this document, see app. 25, p. 1304.
[24] CNO ltr ser 1422P22 dtd 15 Jan 48.

the same letter are hereby approved. Details of the program and of the rules and regulations for its execution may be modified as necessary to suit changing conditions.

Methods of implementing the public health policy were studied during the next two months by the DepHiComTerPacIs Staff Medical Officer and his proposal forwarded to the Chief of Naval Operations on January 23, 1948.[25] The study noted the following problems and possible methods of solution:

1. Health and sanitation survey: use of a health survey ship or, as a less effective alternative, a portable medical unit placed on field trip vessels.
2. Reporting of preventable diseases and collection of vital statistics: system for this already established.
3. Eradication of intestinal parasitism and yaws: treatment of intestinal parasitism by mass deworming and prevention of further infestation by education relative to health habits and sanitation; continuation of current treatment of yaws by massive dosage of penicillin supplemented by Mapharson.
4. Treatment of tuberculosis and leprosy: establishment and staffing of a small central tuberculosis sanitarium at Saipan; establishment of a leprosarium in accordance with previously suggested plans.
5. General sanitation: improvement of water containers and sanitary facilities and education of the people in sanitation procedures.
6. Immunization: continuous campaign for immunization against small pox, typhoid and tetanus.
7. Rodents and other pests: control by instruction of people and plant and animal quarantine.
8. Quarantine regulation: already issued.
9. Food sanitation: education program for care of food.
10. Nutrition: eradication of disease, improvement in economic status and education in proper diets.
11. Venereal disease: to be controlled but not a major problem.
12. Dispensaries and subdispensaries: establishment of adequate facilities.
13. Licensure of indigenous health personnel: procedure already established.
14. Research: continuation of program, especially relative to encephalitis epidemic on Ponape.
15. Training of indigenous health personnel: continuation of program as established.
16. Administration of program: assignment of one Medical Corps Officer of grade of Captain or Commander; one Medical Service Corps Officer, and one Pharmacist's Mate to staff of DepHiComTerPacIs.
17. Personnel: small temporary increase in naval medical personnel until relieved by trained indigenes.

[25] DepHiComTerPacIs ltr ser 122 dtd 23 Jan 48.

The administration, in these proposals, was attempting to legislate for a flexible health program that would not impose radical change on the Micronesians. The CinCPacFlt Medical Officer noted:

> The suggested changes in the proposed Public Health regulations were prompted by the belief that a rigid inflexible system will not be as successful as one which permits a gradual change from native habits and customs through education and native leadership. It is believed that the regulations should established the goal to be attained but that the ways and means of reaching the goal should be flexible enough to permit local variations to meet local conditions. It has been the experience of other colonial administrators that primitive peoples do not rapidly or willingly give up their native habits and that progress in public health and sanitation is apt to be retarded when compulsion alone is used. A docile race, such as inhabit the islands of the Trust Territory, will probably not openly reject the new regulations but it may be expected that they will be apathetic and passively resistant. A case in point is the experiences of the German and Japanese administrators at Yap where the natives are unusually resistant to changes imposed by police regulations. Both administrations made excellent attempts to improve the health of the natives and particularly to stamp out tuberculosis which has been the principal cause of death among the natives for generations. Both made the mistake, however, of trying to accomplish results by regulations and ignoring education and native leadership, and both failed completely in accomplishing results. The natives would not cooperate because they were perfectly satisfied with their age old customs and resented efforts to change them by dogmatic laws and regulations. There is no reason to expect that they will regard American rules and regulations any differently. But there is a reasonable expectation of success if we provide the clinical facilities and undertake a program of impressing the native leaders with the advantages to be gained by them in following modern methods.[26]

The proposals were accepted by higher authority and provided the basis for future planning and administration of the health program.

The interim government for the Trust Territory, established by Interim Regulation 4-48, promulgated in May 1948, provided for a "Division of Public Health" of the Staff of the Deputy High Commissioner (Section 2).[27] The *Public Health Rules and Regulations,* first issued in November 1947, were restated and legalized in the same interim regulation (Section 7) with only three changes in the original rules. The following statement was added to the first regulation: "In cases where there is an obvious conflict between these regulations and local habits and customs, the judicious use of education and local

[26] Capt F. C. Greaves memo dtd 31 Mar. 48.
[27] For a copy of Int. Reg. 4-48, see app. 6, p. 1137.

Sub-Dispensary Constructed of Coconut Logs and Palms, Caroline Islands

leadership to overcome existing local prejudices to modern methods is authorized in lieu of direct compulsion, provided that full compliance with these regulations can thus be assured:" (n) the provision "Treatment of persons infected with venereal disease is compulsory" was deleted from rule 5; punishment upon conviction of violation of the regulation consisting of imprisonment not exceeding six months or and a fine of not more than one hundred dollars was added to rule 19.

When the government of the Trust Territory was reorganized in 1950 and Interim Regulation 3-50, issued August 26, 1950, amended Interim Regulation 4-48, the Division of Public Health became the "Public Health Department" under a "Director of Public Health" (Chapter II, paragraph 16). The duties of the latter in the conduct of programs of research and preventive medicine, hospitals and medical treatment, collection and compilation of vital statistics, licensing of medical and dental practitioners, professional training, and regula-

Sub-Dispensary Constructed of Breadfruit Lumber, Truk Atoll, Caroline Islands

tions for quarantine and communicable diseases were specifically stated (Chapter 2, paragraph 17).[28]

Two Trust Territory Health Department Orders were issued in the spring of 1951. Order No. 1–51, "Hansen's Disease: Regulation Regarding Care and Disposition of Patients," briefly explained leprosy and provided for its prevention, treatment and control.[29] Order No. 2–51, "Public Health Department Employees: Pay and Allowances for", set a minimum pay scale for indigenous employees, defined the positions they could hold in the health program, and provided for waiver of license requirements.[30]

The administration allowed no interference with its health program by other nonindigenous organizations in the islands. Naval medical

[28] For a copy of Int. Reg. 3–50, see app. 6, p. 1138.
[29] App. 27, p. 1320; *infra*, pp. 901 ff.
[30] App. 28, p. 1322; *infra*, pp. 876 ff.

officers were "responsible for the implementation of an effective medical program" and a policy statement of July 29, 1947, concerning the relationship between medical personnel and missionaries stated:

> Commander Marianas desires to encourage, and to assist as practicable, and with impartiality, the clergy in its efforts toward native rehabilitation, so long as those efforts are in consonance with the peace and security of the islands. It is felt that medical personnel and the clergy can be of mutual assistance for the benefit of the native inhabitants, particularly in the field of education. In this respect, the clergy can supplement the efforts of medical personnel by instructing the natives in the value of proper medical care, by familiarizing them with available medical personnel and facilities and by impressing upon them the importance of reporting to proper medical authority any and all cases that require medical treatment. In the event of any neglect of duty on the part of medical personnel, a report of the circumstances to the local commanding officer would be in order.
>
> Since medical personnel are responsible for native health, it follows that they should not only be well aware of any and all medical aid extended to natives but also should supervise such aid in order to insure proper treatment. The procedures established by the Navy for the improvement of native health, hygiene and sanitation will be observed by all persons in the area. Under no circumstances will unlicensed persons be permitted to practice medicine or distribute or administer narcotics. Violations will be immediately brought to the attention of local commanders.
>
> It is directed that missionaries be requested to confer with cognizant medical officers concerning the ways and means by which the medical program may be supplemented. In the interest of public health and where practicable, medical officers may request the services of missionaries or others to distribute simple medical supplies such as household remedies and to administer first aid.[31]

Thus the administration provided detailed policy and regulatory measures for its health program. Because thorough implementation of the high standards set was possible of fulfillment only over a considerable period of time, the prevention, treatment and control of disease became a long range program.

[31] ComMarianas ltr ser 15968 dtd 26 Jul 47.

Chapter XLI

ADMINISTRATION OF PUBLIC HEALTH PROGRAM

Organization and Personnel

Direction of the health program at the time of establishment of trusteeship was the responsibility of the Senior Medical Officer on the staff of Commander Marianas Area (ComMarianas) who had additional duty on the Staff of the Deputy High Commissioner of the Trust Territory (DepHiComTerPacIs). Assisting him was the ComMarianas Staff Dental Officer who also had additional duty on the DepHiComTerPacIs Staff. This arrangement continued until February 1, 1949 when a Medical Corps officer of the rank of captain was assigned full time duty as Public Health Officer on the DepHiComTerPacIs Staff. The billet of Staff Dental Officer, however, remained an additional duty assignment throughout the period of naval administration.

The Staff Public Health Officer maintained his headquarters at Guam during the period when the DepHiComTerPacIs Staff was located there, and after the transfer of part of the staff to Pearl Harbor in October 1949, he continued to remain on Guam as part of the Chief Administrator Field Headquarters (FieldTerPacIs) Staff. When the latter moved to Truk in June 1950, the Public Health Officer also transferred his headquarters there. In August of that year, when the Trust Territory Government was reorganized by Interim Regulation 3-50, his title was changed to Director of Public Health.

The responsibilities assigned to the Public Health Officer of the DepHiComTerPacIs Staff were briefly stated by Interim Regulation 4-48, Section 2, as direction of the programs for: (1) Preventive Medicine; (2) Medical and Dental Care; (3) Health and Training Programs; (4) Medical and Dental Research Programs; (5) Annual Health Survey; (6) Health Quarantine.[1] Responsibility for the train-

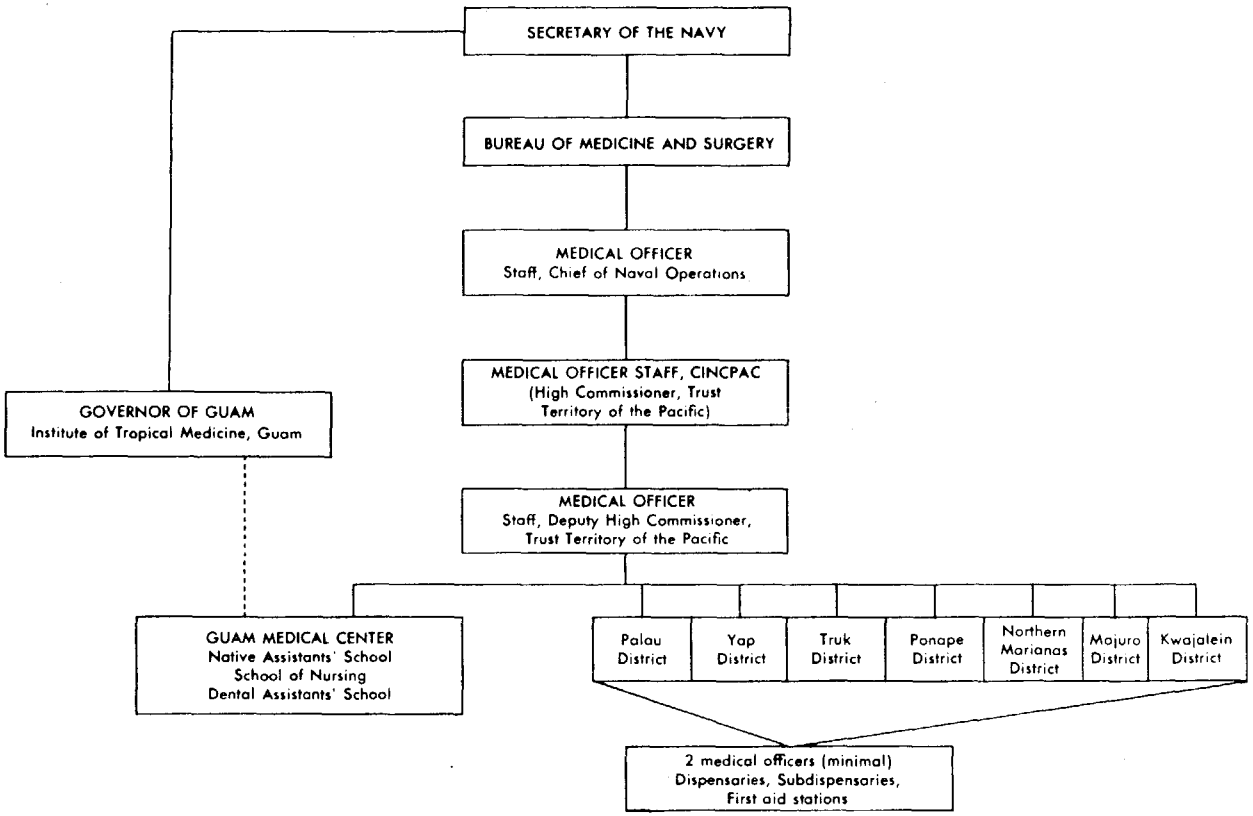
[1] For copy of Int. Reg. 4-48, see app. 6, p. 1137.

ing and research programs involved supervision of the medical, dental, and nursing schools and, for matters of Trust Territory interest, of the School of Tropical Medicine, all located on Guam.

More specific description of the duties of the offices in charge of health was stated in Interim Regulation 3–50 which amended Interim Regulation 4–48.[2] His title was changed to "Director of Public Health" and his responsibilities described thus:

> a. *Preparation and Enforcement of Regulations.* The Director of Public Health shall draw up health and sanitation laws and regulations for presentation to the Legislative Advisory Committee or the High Commissioner for approval; and shall supervise generally the enforcement of health laws and regulations throughout the Trust Territory.
>
> b. *Research and Preventive Medicine.* The Director of Public Health shall conduct and shall encourage, cooperate with, and render assistance to other appropriate authorities, scientific institutions, and scientists, in the conduct of research, investigation, experiments, demonstration, and studies relating to the causes, diagnosis, treatment, control, and prevention of physical and mental diseases, including water purification, sewage treatment, and water pollution, with special emphasis on those diseases peculiar to tropical areas, their prevention and cure; and shall take such action and make such recommendations as to legislation or other measures to be undertaken for the improvement of the general health conditions in the area, and to prevent the introduction or spread of diseases.
>
> c. *Hospitals and Medical Treatment.* The Director of Public Health shall control, manage, and operate all institutions, hospitals, and dispensaries established by the Civil Administration in the Trust Territory, and provide for the care, treatment, and hospitalization of patients, including the furnishing of prosthetic or orthopedic devices; fix reasonable fees and charges to be paid for such services, supplies, medicines, foods, or devices furnished; provide regulations on the transfer of patients under the care of Civil Administration medical or dental personnel, where necessary, between hospitals, and dispensaries, and the payment of the expense of such transfer; provide regulations concerning the employment of medical and dental personnel on field trips and in out-patient treatment, and shall fix the fees therefor; and, from time to time, with the approval of the High Commissioner, advise suitable sites for and establish such institutions, hospitals, and dispensaries as may be found to be necessary to enable the Public Health Department to discharge its functions and duties.
>
> d. *Vital Statistics.* To secure uniformity in the registration of mortality, morbidity, and vital statistics, the Director of Public Health shall prepare and distribute suitable forms for the collection and compilation of such statistics which shall be maintained in the record department of the Administration Department in such form as to be readily available for reference

[2] For copy of Int. Reg. 3X50, se app. 6, p. 1138.



Organization of Medical Department, Trust Territory of the Pacific Islands

by heads of departments, for the preparation of reports and for other purposes.

e. *Licensing of Medical and Dental Practitioners.* The Director of Public Health shall prepare for the approval of the High Commissioner through the Legislative Advisory Committee, regulations, laws, and order providing for the licensing of persons for the practice of medicine, surgery, dentistry, dental surgery, midwifery, and nursing in the Trust Territory of the Pacific Islands; shall set the standards and qualifications, personal and professional, for such practice; and shall prepare and conduct any professional examinations or personal interviews considered by him to be necessary or advisable. The Director of Public Health shall be charged with the policing of the medical profession and with the institution of proceedings for prosecution, license revocation, or other necessary action to insure the proper protection of the people of the territory.

f. *Professional Training.* The Director of Public Health, in cooperation with the Education Department, shall fix curricula and standards of medical, dental, and nursing schools or other training centers for the training of persons to enter the practice of these professions in the Trust Territory; shall set the standards for and assist in the procurement of instructors for such schools and training centers; and shall set up programs of training, retraining, or advance training to insure, insofar as practicable, an adequate number of qualified personnel to provide medical, dental, and nursing care in the Trust Territory.

g. *Quarantine and Communicable Diseases.* The Director of Public Health shall prepare for the approval of the High Commissioner or the Committee, such regulations, laws, orders, or directives as in his judgment are necessary to prevent the introduction, transmission, or spread of communicable diseases from any place without the Trust Territory or between and within the Districts of the Trust Territory.

The Trust Territory public health program was of interest also to the Commander in Chief Pacific Fleet (CinCPacFlt) Staff Medical Officer as part of his general supervisory responsibilities for health matters in the Pacific Area. He was often consulted on medical problems referred to the High Commissioner (HiComTerPacIs) for decision and usually accompanied the latter on his annual inspection trips through the Trust Territory. In the summer of 1950 he was given additional duty on the staff of HiComTerPacIs in order to facilitate conduct of medical administrative matters under his cognizance.[3]

The field organization of the Public Health Department as developed during the military government period continued throughout the trusteeship period. The medical program of each civil administration

[3] AC/S to DepHiComTerPacIs memo dtd 25 Jul 50.

unit (civad unit) was under the direction of a Naval Medical Corps officer assigned to the civil administration unit staff and responsible for administrative matters to the civil administrator. He was assisted by one or two additional Medical Corps officers, a Medical Service Corps officer as administrative assistant, and six to ten hospital corpsmen. No Nurse Corps officers were stationed at civad units. After the Yap and Koror Districts were combined under the Civil Administrator Koror on June 30, 1948, one Medical Corps officer continued to be stationed at Yap on the staff of the Civil Administration Representative Yap; when Kwajalein and Majuro were combined under the Civil Administrator Majuro on October 1, 1948, medical care of natives in the Kwajalein Atoll was provided by personnel of the staff of the Governor of the Marshalls.[4]

The general responsibilities of the Department of Public Health in each civil administration unit were stated in Interim Regulation 4-48, Chapter 4, as:

(1) Medical and Dental Care
(2) Sanitation
(3) Leprosaria
(4) Asylums
(5) Dispensaries
(6) Hospitals
(7) Health and Nurses Aides Training
(8) Health Quarantine
(9) Preventive Medicine
(10) Insect and Rodent Control
(11) Cemeteries
(12) Vital Statistics

The primary mission assigned the Medical Department personnel was "to raise the public health standards in their respective districts and to control preventable diseases among the inhabitants thereof." The secondary mission was "to render medical care to inhabitants, to conduct limited research into health problems, and to assist in native training programs by training Health Aides and Nurses Aides."[5]

No Naval Dental Corps officers were assigned to the field. Existing regulations of the Bureau of Medicine and Surgery forbade their use for other than naval personnel[6] and the administration employed

[4] See pp. 125 ff. and pp. 152–3.
[5] Encl (A) to DepHiComTerPacIs ltr ser 1022 dtd 13 Jul 48.
[6] *Supra*, p. 306.

civilian dentists in a civil service status at each of the district headquarters. At the request of DepHiComTerPacIs, the Office of Industrial Relations of the Navy Department, on October 27, 1947, established seven positions with the classification "Dentist, P–4," at a yearly salary of $6127.50, later raised to $6540.00.[7] One dentist each was to be stationed at Saipan, Truk and Ponape and two each at Koror and Majuro. Use of civilian dentists was planned as a stop gap measure to provide necessary dental treatment for a five year period when it was hoped that indigenous dental practitioners, then being trained at Guam, would be able to take over the dental care of the people.

Recruitment of civilian dentists proved difficult. Lack of living facilities for families required that the dentists be unmarried and a dental program which for some time had of necessity to consist chiefly of emergency treatment offered small chance of professional improvement. By the end of 1948, five dentists were in the area and early in 1949 one of them returned to the United States. Two indigenous dentists who had been trained by the Japanese were eventually licensed and practiced on Saipan and Truk. At the close of the period of naval administration, one nonindigenous civilian dentist was stationed at Koror, one at Ponape and two at Majuro.

General supervision of the Trust Territory dental program was the responsibility of the ComMarianas Staff Dental Officer who had additional duty on the HiComTerPacIs Staff. Immediate supervision and direction of the civilian dentists employed in the field was the responsibility of the Senior Medical Officer at each civil administration unit.

Micronesians were employed by the public health departments of all civil administration units and paid from Trust Territory funds. A very few indigenes were medical and dental practitioners who had received their training prior to World War II; late in the period of naval administration a few medical and dental assistants, trained at the schools on Guam, returned to the islands to serve their internships and several graduate nurses were employed in the dispensaries. The greater number of indigenous employees were health, dental and nurses aides, trained both to care for the ill and improve the sanitation of their islands.[8]

---

[7] Encl (A) to DepHiComTerPacIs ltr ser 1568 dtd 30 Oct 48.

[8] See tables pp. 873–4.

389307 O-63—50

Personnel Employed in Public Health Work—Trust Territory of the Pacific Islands

	Saipan				Koror				Truk				Ponape				Majuro			
	1948	1949	1950	1951	1948	1949	1950	1951	1948	1949	1950	1951	1948	1949	1950	1951	1948	1949	1950	1951
Medical officers	3	3	3	2	5	3	3	4	3	2	2	2	3	2	2	3	5	3	3	2
Medical service corps officers	2	2	2	1	3	2	1	0	2	2	1	1	2	2	1	1	3	2	1	0
Hospital corpsmen	18	8	11	11	18	10	11	2	10	10	10	9	10	10	10	8	18	10	10	1
Medical practitioners	0	0	2	3	0	0	0	1	0	0	0	1	0	0	1	2	0	0	1	5
Dental practitioners	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
Nurses	0	1	1	1	0	3	7	11	0	0	2	3	0	0	0	4	0	0	0	4
Health aides	8	8	19	3	25	11	29	13	87	66	59	73	15	26	22	25	33	46	41	43
Dental aides	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4
Nurses aides	37	52	31	23	16	17	14	10	11	2	4	5	11	8	8	6	9	9	3	0

Medical Personnel in the Trust Territory of the Pacific Islands

	June 30, 1948	June 30, 1949	June 30, 1950	June 30, 1951
Medical officers (Navy)	19	14	14	
Dental officers (Navy)	*2	*2	*2	*
Dental officers (Civil Service)	3	5	5	
Medical service corps officers (Navy)	15	9	7	
Hospital corpsmen (Navy)	74	56	52	3
Medical practitioners	7	7	8	1
Dental practitioners	3	3	3	
Nurses	0	4	10	2
Health aides, medical	110	113	118	13
Health aides, dental	1	9	9	
Nurses aides	28	43	35	3
Health aides in training	58	35	28	1
Nurses aides in training	56	45	23	

*Part time, on staff of Dental Practitioners' School, Guam.

A definite plan for the assignment of health aides and nurses aide was set in August 1948:

> It is believed that this mission can be accomplished by assigning on health aide or nurses aide for each two of the average number of patients i the Civil Administration Unit Dispensary and by employing health aides an nurses aides in the field . . .
>
> For islands or villages with populations of less than 50, no health aid should be employed. For islands or villages with populations of fron 50 to 400, one health aide should be employed provided all substantial settle ments in the area served are within reasonable walking distance or paddlin canoe distance of the central village. For islands or villages with a popula tion of from 400 to 1000, a total of two health aides or nurses aides should b assigned. For large heavily populated islands, health aides and nurses aide should be employed on the basis of either a health aide or a nurses aide fo each 500 of population, with the exception of the area surrounding th CivAd Unit dispensary where the number employed will depend upon loca conditions but should be less than on other islands.
>
> The above assignment of health aides and nurses aides is considere sufficient to cover both the care of the sick and the direction of the sanitatio program. Except in the most populous areas the same man or men shoul perform both these functions. Less skilled and less expensive labor shoul be used for the purely manual work involved in the sanitation program. N health aide should be employed purely for sanitation work, except wher this is of such volume and complexity as to require the full time of a ma with specialized training.[9]

[9] DepHiComTerPacIs ltr ser 1152 dtd 7 Aug 48.

Medical Trainees, Naval Civil Administration Dispensary, Ponape, Caroline Islands

The practice of each civil administration unit with respect to duties and salaries of public health personnel varied widely until the spring of 1951 when HiComTerPacIs defined their duties and formulated a pay scale flexible enough to suit the local social and economic situations. Trust Territory Health Department Order No. 2-51 [10] established the following positions:

1. *Medical Practitioner:* A graduate of a school of medicine approved by the High Commissioner, or at least equivalent training, who has satisfactorily completed two years post-graduate service in a Trust Territory Hospital or Dispensary or other approved hospital, and who has been licensed by the High Commissioner to practice medicine in the Trust Territory.

2. *Dental Practitioner:* A graduate of a school of dentistry approved by the High Commissioner, or of at least equivalent training, who has satisfactorily completed two (2) years post-graduate service in a Trust Territory Dental Clinic, or other approved dental clinic, and who has been licensed by the High Commissioner to practice dentistry in the Trust Territory.

3. *Medical Assistant, Field:* A graduate of a school of medicine, approved by the High Commissioner, and employed in a Trust Territory Hospital or Dispensary, who has satisfactorily completed one year's service in a Trust Territory Hospital or Dispensary as a Medical Assistant, Intern.

4. *Dental Assistant, Field:* A graduate of a school of dentistry, approved by the High Commissioner, and employed in a Trust Territory Hospital, Dispensary, or Dental Clinic, who has satisfactorily completed one year's service in a Trust Territory Dental Clinic as a Dental Assistant, Intern.

5. *Medical Assistant, Intern:* A graduate of a school of medicine, approved by the High Commissioner, who is serving his first year of post-graduate service in a Trust Territory Hospital or Dispensary.

6. *Dental Assistant, Intern:* A graduate of a school of dentistry, approved by the High Commissioner, who is serving his first year of post-graduate service in a Trust Territory Hospital, Dispensary or Dental Clinic.

7. *Nurse, Graduate:* A graduate of the School of Nursing, Guam, or of at least equivalent training, licensed by the High Commissioner to practice nursing, and employed in a Trust Territory Hospital, Dispensary, Dental Clinic, or otherwise by the Trust Territory Public Health Department.

8. *Dental Assistant, Prosthesis:* One who has satisfactorily completed a course of training in dental prosthetics and is employed in a Trust Territory Dental Clinic, Hospital, Dispensary, or otherwise by the Trust Territory Public Health Department.

9. *Dental Aide:* One who has satisfactorily completed a course of appropriate training and is employed in a Trust Territory Dental Clinic, Hospital or Dispensary as a Dental Aide, or otherwise by the Trust Territory Public Health Department.

10. *Nurse Aide (female) or Health Aide (male):* One who has satis-

[10] App. 28, p. 1322.

factorily completed a course of training at, and is employed in, a Trust Territory Hospital, Dispensary or Dental Clinic.

11. *Nurse Aide, Field or Health Aide, Field:* A qualified Nurse Aide or Health Aide, employed by the Public Health Department at a Sub-Dispensary or in the field.

12. *Nurse Aide, Training of Health Aide, Training:* One who is undergoing a course of training at a Trust Territory Hospital or Dispensary to qualify for the grade of Nurse Aide or Health Aide.

13. *Dental Aide, Training:* One who is undergoing a course of training at a Trust Territory Hospital, Dispensary, or Dental Clinic to qualify for the grade of Dental Aide.

Persons who were already satisfactorily performing the duties described above but who could not meet the requirements prescribed could be certified or qualified for such employment upon written recommendation of the District Director of Public Health and the High Commissioner.

The intern system as established provided that graduates of the Schools of Medical Assistant and of Dental Assistants on Guam and of the Central Medical School, Suva, Fiji,[11] would serve one year after graduation as medical assistants or dental assistants in Trust Territory hospitals or dispensaries and one year in the field before being licensed to practice as medical or dental practitioners.[12]

The Health Department Order also set a minimum monthly pay schedule for each grade:

Grade	Title	Minimum monthly salary
1	Medical Practitioner	$100
2	Dental Practitioner	100
3	Medical Assistant, Field	*50
4	Dental Assistant, Field	*50
5	Medical Assistant, Intern	*35
6	Dental Assistant, Intern	*35
7	Nurse, Graduate	50
8	Dental Assistant, Prosthesis	40
9	Dental Aide	40
10	Nurse Aide or Health Aide	25
11	Nurse, Aide, Field or Health Aide, Field	15
12	Nurse Aide, Training or Health Aide, Training	*10
13	Dental Aide, Training	*15

*Plus subsistence.

[11] The medical and dental schools on Guam were closed in January 1951 and the students transferred to the school at Suva. See *infra*, p. 934 ff.

[12] Trust Territory Health Department Order No. 2–51.

Subsistence included room and board and was an integral part of the remuneration for the job. Rates 3, 4, 5 and 6 were training rates, and since incumbents were not retained in them for more than one year, in-grade pay advances were not grated for those grades. Persons employed in all other rates were granted in-grade increases in recognition of efficiency or length of service.[13] Because living costs varied from one district to another, civil administrators could, with the prior approval of the High Commissioner, grant an additional cost of living allowance.

Finance and Supply

The public health program in the Trust Territory was financed by appropriated funds and local reserves. Figures for appropriations and expenditures noted below do not include salaries of naval medical personnel, construction and maintenance of buildings, communications and transportation. In addition, the expenses of the medical, dental and nursing schools on Guam were paid from the educational appropriation and averaged over $100,000 each year.

Yearly expenditures for the health program during the trusteeship period amounted to approximately one fourth of the total monies expended for administration of the Trust Territory. The following table lists the amounts and percentages of the total expenditures for each fiscal year:

Fiscal year	Expenditures for Public Health	Percentage of total expenditures for Trust Territory Administration
1948	$249,682.02	26.3
1949	385,417.90	27.8
1950	295,811.46	25.4
1951	299,000.00	22.2
Total	1,229,911.38	
Yearly average	$307,477.85	25.4

Supplies were procured from the medical supply centers at Guam or in the United States and distributed by regular logistic shipping to all dispensaries; subdispensaries were restocked by field trip per-

[13] *Ibid.*

Dispensary at Koror, Palau Islands

sonnel. Of all programs in the Trust Territory, the health program fared best in obtaining supplies. There were occasions when shortages existed briefly, but if ever they threatened to create a health problem, the Navy flew in the necessary material.

The following breakdown of the dollar value of medical stores requisitioned through the Naval Medical Supply Depot, Guam, by all districts except the Marshalls [14] for fiscal year 1948 gives an indication of the varying amounts of supplies needed:

Saipan	$18,417.67
Yap	9,674.74
Palaus	25,808.30
Truk	20,349.63
Ponape	23,844.49
Total	98,094.83

[14] The Marshalls obtained their supplies from Pearl Harbor.

Operating Room, Dispensary, at Moen, Truk Atoll

All but a very small fraction of the expenses of the public health program were met through appropriated funds. Local revenues provided by nominal fees collected for medical and dental services contributed insignificantly to total expenditures. Health services were free until the fall of 1948 when DepHiComTerPacIs set medical fees for the entire territory and directed the civil administrators to establish dental fees for their districts.[15] The following services remained free:

Inoculations and vaccinations
Pre-natal care and difficult delivering
Treatments for yaws, worms, amebiasis, tuberculosis, leprosy and other contagious diseases
Examination of school children
Emergency first aid
Tooth extractions and other dental work, essential to the maintenance of general public health or required for humanitarian reasons

[15] DepHiComTerPacIs ltr ser 1217 dtd 20 Aug 48.

Dental care of children under 16 years of age
Infant care and care of children under 5 years of age
Public health education

All other services rendered by medical officers and health personnel employed by the administration were charged for on one of the following bases:

> For each in-patient at a CAU dispensary or a subdispensary staffed by a medical officer or a medical practitioner, there shall be a charge of $1.00 per day if the dispensary or subdispensary provides subsistence for its patients, or a charge of 50 cents per day if the dispensary or subdispensary does not provide subsistence. For each out-patient treatment by any CAU medical personnel (including medical practitioners, health aides and nurses aides) at the dispensary, any subdispensary, or in the field, there shall be a charge of 10 cents per visit. These charges shall be paid by the patient or his family at the time of treatment, except that in cases where the patient and his family are unable to meet the charge without undue hardship the Magistrate of the Municipality where the patient resides shall so certify in writing, subject to review by Civil Administration and any medical care needed shall then be paid for at the above rates by the municipality with such part-payment if any, as the patient or his family may be able to make.
>
> A municipality may arrange to purchase medical care for all its residents by paying a charge per quarter for the balance of fiscal 1949 equal to what the charges would have been at the above rates for services rendered their residents during the period 1 April to 30 June 1948. The charge per quarter after 1 July 1949 shall be adjusted according to the experience up to that date.

Fees for dental services, also set by the civil administrators, were "not to be so low as to set a precedent which would discourage anyone from entering the private practice of dentistry in that locality nor should they be unreasonably high." Ponape set the following fees:

Fillings	$0.10 per tooth
Extraction	.10 per tooth
Single X-ray	.10
Full X-ray	1.50
Full denture	12.50
Partial denture	2.00 per tooth

The Marshalls had a more elaborate and costlier schedule:

Examination	$0.00
Dental X-rays, Single Film	.25
Dental X-rays, Full Mouth	2.50
Sedative Treatments	.00
Extractions, Simple	.25
Extractions, Surgical Removal	1.00
Simple Cement Filling	.25
Compound Filling, Cement	.50
Simple Amalgam Filling	.50

Two Surface Amalgam Filling	1.00
Three Scrface Amalgam Filling	2.00
Oral Prophylaxis	.50
Gingivitis Treatments	.00

Prosthesis, if practical to attempt, cost:

Full Upper Denture	$25.00
Full Lower Denture	25.00
Partial Dentures, per tooth	2.00
Clasps for Partial Dentures extra, per Clasp	2.50
Gold Shell Crowns, Anterior	5.00
Gold Shell Crowns, Posterior	6.00
Bridge Abutment Shell Crown, Anterior	5.00
Bridge Abutment Shell Crown, Posterior	7.00
Cast Full Crown, Bridge Abutment	12.00
Cast Three-quarter Crown, Bridge Abutment	10.00
Inlay, Bridge Abutment, Two Surface	10.00
Inlay, Bridge Abutment, Three Surface	12.00
Dummys, per Tooth	2.50
Gold Inlay, One Surface	8.00
Gold Inlay, Two Surface	10.00
Gold Inlay, Three Surface	12.00

Charges were collected by the senior medical officers and dentists then transferred to the supply officers or their agent cashiers and remitted by them to the treasurer of the Trust Territory each month HiComTerPacIs made quarterly allocations from these collections and other funds in the Trust Territory treasury to each civil administration unit for medical and dental supplies and materials and subsistence charges for dispensary patients.

Total collections from indigenous patients amounted to $5342.65 for fiscal year 1948; $15,565.31 for 1950; $25,351.78 for 1951.

Medical services provided by the USS WHIDBEY and the Tinian Leprosarium were free but Trust Territory patients at the Guam Memorial Hospital were charged three dollars a day plus any extra service costs.[16] If the hospital charges placed an undue hardship on a patient, HiComTerPacIs paid the costs, including a five dollar allowance for incidentals, from Trust Territory Treasury monies.

The administration considered payment of medical and dental charges an educational measure to make the people aware of their responsibilities and "not by any means as an attempt to make the medical service program pay for itself, as is obvious from the charges prescribed which are but token payments, scaled down to native pocketbooks." Therefore, it considered the policy basically sound on these grounds:

[16] ComMarianas msg of 21 Aug 48.

(a) It is in line with the overall policy of assisting the natives to a high level of economic self-sufficiency, instead of permitting them to become increasingly dependent on a dole system.

(b) It is essential, if the Medical Practitioners now in school are to make a livelihood in private practice when they return to their home islands; obviously, they could not compete with free medical services, and would lose their knowledge and skills so expensively obtained by turning to other means of livelihood.

(c) The policy is psychologically sound, for it is a recognized principle that goods and services for which one pays are likely to be better utilized and more appreciated than gratuitous ones. Psychiatrists and psychoanalysts always charge to the limit of the patient's resources to make him feel that he must cooperate fully in the treatments to realize full value on his investment.

(d) Trust Territory natives were quite accustomed to paying for medical attention under Japanese rule; the Japanese provided free medical service until 1922, when they began to charge at a rate of one quarter of the rate charged Japanese for the particular treatment, and in 1927 they adjusted the rates upward, creating three different classes according to the economic well-being of the various administrative districts.[17]

Civil administrators were directed to indoctrinate the natives along the following lines:

(a) Explain to the natives that paying for treatment is an American custom.

(b) Appeal to their pride (consideration might be given to the advisability, in certain districts at least, of establishing a slightly higher rate of pay for "chiefs and people of high rank" in order to relate paying for medical services with prestige).

(c) Compare medical services and medicines with trade goods for which the people are thoroughly accustomed to pay.

(d) Point out that payments revert to the district and will be used to purchase more medical supplies.

(e) Point out that before long, the payments will be going to their own Medical Practitioners.[18]

The policy of payment for medical and dental fees was never completely understood or adhered to by the native peoples. The Japanese had charged them for such services but American medical care had been free for four years before the policy was reinstituted so that the islanders had become accustomed to expect free treatment. In some areas, especially in the Marshalls, where in prewar days the *iroij* had paid the medical expenses of their people, the regulations, according

[17] DepHiComTerPacIs ltr ser 1892 dtd 22 Dec 48.
[18] ComMarianas msg of 21 Aug 48.

to a medical officer, were not only an "unfair and unprecedented on their economy" but "virtually unenforceable."[19] No Trust T tory inhabitant, however, was ever denied medical care either for of money or resentment against the regulation. The wide accept of the public health program and the gratitude of the people for care given them was reward enough for the Navy.

[19] Morgan, D. P., "Medical Care in the Marshall Islands," typescript, n. d., CNO files.

Chapter XLII

MEDICAL FACILITIES AND TREATMENT

Medical facilities for the care of the inhabitants of the Trust Territory included dispensaries at Saipan, Yap, Koror, Truk, Ponape and Majuro; subdispensaries at all inhabited outlying atolls and islands; the Guam Memorial Hospital; the Tinian Leprosarium; and, if an itinerant ship can be called a facility, the naval vessel USS WHIDBEY (AG–141).

Dispensaries

The dispensaries at the civil administration headquarters and Yap, usually of quonset construction, provided medical and dental outpatient care for local inhabitants and in-patient care for all persons in the districts. Their size varied from the 2 ward, 25 bed facilities at Ponape to the 12 ward, 235 bed capacity at Saipan.[1] By June 30, 1951, a total of 544 beds were available in the Trust Territory dispensaries and at Guam for the care of the people.[2]

The dispensaries provided treatment for all illnesses except leprosy and those requiring special facilities available only at a large hospital. Each was staffed by two or three Naval Medical Corps officers, Medical Hospital Corps officers, Hospital Corpsmen and indigenous health aides and nurses aides. All nonindigenous medical personnel spent part of their time visiting the subdispensaries on the outlying islands during field trips.

In addition to the medical and dental care provided by the staff, a training program for health aides and nurses aides was conducted at each dispensary under the direction of the senior medical officer. Required refresher courses were also held for aides stationed at the subdispensaries.[3]

---

[1] The Saipan figures include the wards containing 150 beds at the Northern Marianas Tuberculosis Sanitarium.

[2] See table, p. 886.

[3] *Infra*, p. 920 ff.

Medical Facilities—Trust Territory of the Pacific Islands

Year	Hospital (Guam) 250 beds	Leprosarium 100 beds	Dispensaries	Subdispensaries	Medical Survey Ship
1948	1	1	7	89	
1949	1	1	*5	90	
1950	1	1	5	96	
1951	1	1	5	97	

*The dispensaries at Yap and Kwajalein became subdispensaries when these districts we combined with Koror and Majuro respectively.

Considerable discussion was held during the naval period concer ing the establishment of a tuberculosis sanitarium for patients fro the entire Trust Territory. This was first suggested in July 194 when Saipan began construction of a 150 bed tuberculosis hospit The number of cases in the Marianas filled the new hospital, howeve and nothing further was done about making it into a territory-wi sanitarium until 1950 when the High Commissioner (HiComTe PacIs) requested comments from the Commander in Chief Pacif Fleet (CinCPacFlt) Medical Officer and the HiComTerPacIs Sta Medical Officer concerning such an institution.[5] Both disapproved t plan. The CinCPacFlt Medical Officer objected to the addition facilities and personnel that would be necessary, the increased proble of transportation, and the transfer of patients from their homes to different cultural environment.[6] The HiComTerPacIs Staff Medic Officer opposed the plan because the location would not be centra the cost of operating and maintaining a sanitarium on Saipan woul be excessive because of the comparatively high cost of living on tha island and, especially, those afflicted with the disease needed rest– "physical rest, mental rest, emotional rest"—which could be mor readily provided if the people were kept within their home district He added: "It is difficult, if not impossible, to actually establish thi fact, but my opinion, after many contacts with patients and people from outlying districts is that they are not happy and emotionally a rest in the Mariana Islands, including Guam."[7]

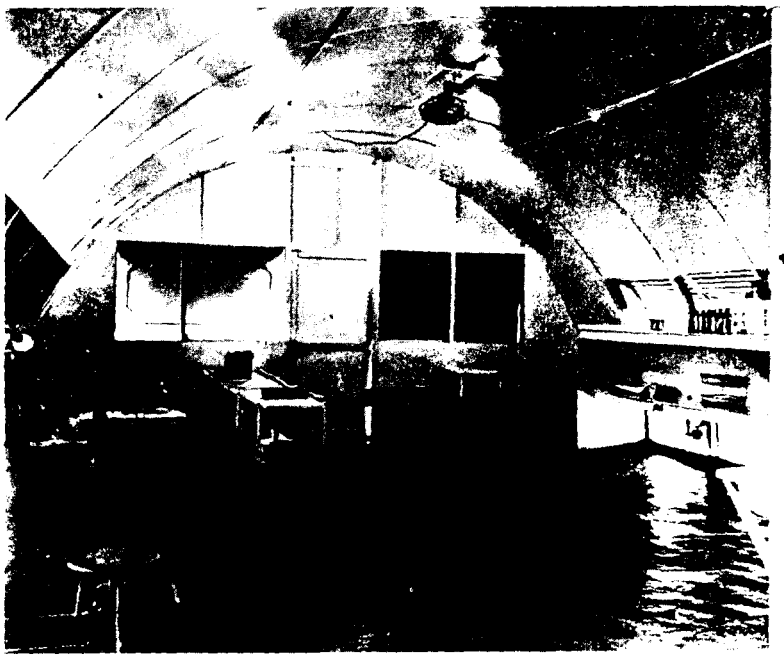
[4] Encl (A) to DepHiComTerPacIs ltr ser 1022 dtd 13 Jul 48.
[5] HiComTerPacIs msg of 6 Jul 50.
[6] CinCPacFlt Med Off memo dtd 30 Jun 50.
[7] FieldTerPacIs ltr ser 576 dtd 6 Jul 50.

Children's Ward at Dispensary, Moen, Truk Atoll

As a result of the opposition of these officers it was decided to establish small units at each district dispensary for the care of tubercular patients and to send those persons requiring chest surgery to the Guam Memorial Hospital. Accordingly, HiComTerPacIs cancelled the DepHiComTerPacIs letter of July 13, 1948 on August 2, 1950 and directed that the extensive facilities at Saipan be operated as a unit of the Saipan dispensary for the Northern Marianas and the Bonins and designated the "Northern Marianas Tuberculosis Sanitarium"; facilities for patients at other district headquarters, consisting of isolation wards, were to be integral parts of the dispensaries.

No separate facility for mentally deranged persons was established during naval administration. The few cases, averaging five in number during this period, were confined at the local dispensaries.

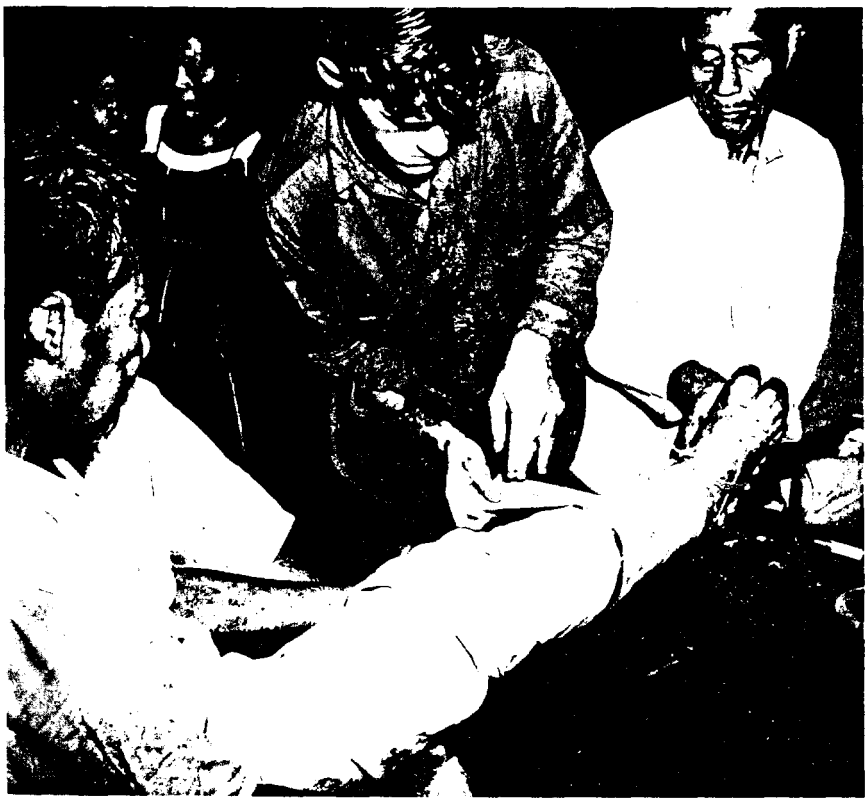
Treatment of diseases endemic to the Trust Territory and respiratory illness accounted for the majority of dispensary work. Active



Sick Call at Dispensary, Moen, Truk Atoll

yaws was practically eliminated by massive doses of penicillin
lowed by weekly injections of Mapharson. Intestinal parasitism
curbed to some degree by a deworming program and health educat
Filariasis was treated by the administration of Hetrazan (Diethyl
bamazine) and controlled by quarantine within the district of th
afflicted and by elimination of the mosquito vector, *Culex Quin*
fasciatus.[8] Quarantine measures were also instituted to control
outbreak of encephalitis at Ponape in 1947 and treatment consistin
bed rest, salicylates, and liberal fluids was given. Respiratory dise
gave every indication of remaining a problem until the people co
be persuaded to improve their living conditions and avoid exposur
unhealthful climatic conditions. All children and a large percen
of adults were immunized for smallpox, typhoid and tetanus at
dispensaries or by field trip personnel.[9]

[8] FieldTerPacIs ltr ser 8 dtd 16 Jan 51.
[9] See tables, pp. 891–5.



U.S. Naval Doctor Treating Patient at Losap Island, Caroline Islands

In some instances the dispensaries supplied eye glasses and made arrangements for the procurement of artificial limbs. The Island Trading Company (ITC) also sold eye glasses for approximately fifty cents a pair.

Dental treatment other than that of an emergency nature was possible after the employment of civilian dentists. A program of sodium fluoride dental treatment was begun for the school children and gave promise of improving oral hygiene and eventually reducing the amount of dentistry. No prosthetic work was done until the civilian dentists were in the field.

A typical work load of a district dentist is shown by the followin dental treatment statistics for Ponape from January through Novemb 1949;

Number of patients seen	27
Simple extractions	21
Impactions	
Oral prophylaxis	
Abscessed teeth treated	
Gingivitis treated	
Amalgam restorations	
1 surface	5
2 surfaces	2
Cement restorations	
Oxygen Phosphate	
Silicate	
Regional anaesthesia	18
Intra oral X-rays	
Cases requiring prosthesis	

Medical Treatments to Indigenes—Trust Territory of the Pacific Island

	In-Patient treatments				Out-Patient treatments			
	1948	1949	1950	1951	1948	1949	1950	1951
Saipan	728	14, 735	*53, 585	*41, 200	4, 500	11, 499	13, 833	6, 0
Palau	1, 236	22, 644	20, 030	25, 950	17, 240	7, 354	8, 710	10, 5
Truk	1, 723	6, 273	6, 733	18, 916	26, 960	57, 095	63, 256	52, 5
Ponape	1, 280	7, 184	6, 917	5, 785	12, 960	10, 886	11, 998	13, 8
Majuro	898	2, 337	3, 415	4, 032	5, 892	35, 115	25, 831	8, 4

*Figures include treatment of leprosarium patients.

Subdispensaries

The subdispensaries on the outlying atolls and islands were usuall small, one room wooden structures, staffed with one or mor indigenous health aides or nurses aides and capable of providing firs aid for minor ailments. Some of the health aides had been traine originally by the Japanese but the majority had received their instruc tion from United States naval medical personnel at the civil admin istration dispensaries. No in-patient care was available at any of th subdispensaries except at Kwajalein (later, Ebeye) where eight bed were available, and at Kusaie where Dr. Albert Hicking, a Gilbertes graduate of the Central Medical School, Suva, Fiji, maintained a eight bed dispensary and provided professional care.

389307 O-63—51

Treatment of Diseases—Trust Territory of the Pacific Islands

SAIPAN

	1948			1949			1950			1951		
	Number treated	Number cured or arrested	Fatalities	Number treated	Number cured or arrested	Fatalities	Number treated	Number cured or arrested	Fatalities	Number treated	Number cured or arrested	Fatalities
Yaws	4	4	0	1	1	0	35	35	0	4	4	0
Tuberculosis	96	10	40	75	8	25	219	20	35	72	14	16
Intestinal parasitism	75	72	3	15	10	5	162	162	0	23	18	5
Leprosy	6	0	0	91	0	2	99	0	4	112	0	0
Gonococcus infection	4	4	0	9	9	0	3	3	0	0	0	0
Fungus infection	12	12	0	5	5	0	965	965	0	0	0	0
Respiratory infection	60	45	0	127	125	0	954	940	14	25	22	3
Amebiasis	4	4	0	4	3	0	0	0	0	1	0	1

Treatment of Diseases—Trust Territory of the Pacific Islands

PALAU AND YAP

	1948			1949			1950			1951		
	Number treated	Number cured or arrested	Fatalities	Number treated	Number cured or arrested	Fatalities	Number treated	Number cured or arrested	Fatalities	Number treated	Number cured or arrested	Fatalities
Yaws	28	28	0	67	67	0	183	183	0	24	24	0
Tuberculosis	34	0	6	34	3	1	95	9	15	89	5	0
Intestinal parasitism	44	44	0	15	15	0	611	611	0	38	38	0
Leprosy	58	0	2	0	0	0	12	0	0	0	0	0
Gonococcus infection	190	190	0	66	61	0	80	80	0	134	134	0
Fungus infection	19	19	0	18	18	0	249	249	0	7	7	0
Respiratory infection	90	90	0	252	248	0	1,238	1,238	0	189	189	0
Amebiasis	44	32	0	8	8	0	15	15	0	7	7	0

Treatment of Diseases—Trust Territory of the Pacific Islands

TRUK

	1948			1949			1950			1951		
	Number treated	Number cured or arrested	Fatalities	Number treated	Number cured or arrested	Fatalities	Number treated	Number cured or arrested	Fatalities	Number treated	Number cured or arrested	Fatalities
Yaws	360	350	0	176	175	0	1, 382	1, 382	0	1, 571	604	0
Tuberculosis	36	0	4	22	2	0	49	4	[1] 94	196	136	43
Intestinal parasitism	176	176	0	227	227	0	6, 812	6, 812	0	8, 091	6, 338	0
Leprosy	5	0	0	4	0	0	0	0	0	2	0	0
Gonococcus infection	105	105	0	69	57	0	48	48	0	19	19	0
Fungus infection	32	32	0	135	125	0	3, 921	3, 921	0	4, 846	4, 078	0
Respiratory infection	208	208	0	541	533	0	4, 736	4, 736	[1] 41	9, 958	7, 468	78
Amebiasis	8	8	0	4	4	0	0	0	0	7	5	0

[1] Many of these cases had probably never been seen by the doctor.

Treatment of Diseases—Trust Territory of the Pacific Islands

PONAPE

	1948			1949			1950			1951		
	Number treated	Number cured or arrested	Fatalities	Number treated	Number cured or arrested	Fatalities	Number treated	Number cured or arrested	Fatalities	Number treated	Number cured or arrested	Fatalities
Yaws	12	12	0	109	109	0	342	342	0	145	145	0
Tuberculosis	50	0	4	36	6	2	81	8	7	30	21	4
Intestinal parasitism	5	5	0	104	104	0	444	444	0	1,248	1,248	0
Leprosy	5	0	0	3	0	0	2	0	0	0	0	0
Gonococcus infection	16	16	0	15	15	0	38	38	0	24	24	0
Fungus infection	0	0	0	109	96	0	200	200	0	144	144	0
Respiratory infection	44	44	0	261	261	0	735	734	1	1,720	1,714	0
Amebiasis	16	16	0	7	7	0	1	1	0	0	0	0
Encephalitis	192	192	0	103	103	0	.....	.....	.....	.....	.....	.....

Treatment of Diseases—Trust Territory of the Pacific Islands

MARSHALL ISLANDS

	1948			1949			1950			1951 *		
	Number treated	Number cured or arrested	Fatalities	Number treated	Number cured or arrested	Fatalities	Number treated	Number cured or arrested	Fatalities	Number treated	Number cured or arrested	Fatalities
Yaws	24	24	0	56	56	0	914	914	0	648	648	0
Tuberculosis	10	2	2	5	1	1	7	1	12	10	10	4
Intestinal parasitism	56	56	0	8	8	0	44	44	0	132	132	0
Leprosy	11	0	0	0	0	0	0	0	0	0	0	0
Gonococcus infection	35	35	0	52	51	0	209	209	0	274	274	0
Fungus infection	4	4	0	68	66	0	315	315	0	309	309	0
Respiratory infection	44	44	0	218	218	0	924	904	20	2, 941	2, 941	0
Amebiasis	0	0	0	0	0	0	0	0	0	0	0	0

*April 1951 to 30 June 1951.

Field Trips

The system of field trips from civil administration headquarters continued to be the administration's only means of contacting the outlying islands on a regular schedule. Naval Medical Corps officers, Hospital Corpsmen and indigenous health aides from the dispensaries were always part of each field trip group and, when ashore, inspected the subdispensaries on field trips, attended to patients beyond the capabilities of local health aides, immunized the population against typhoid fever, tetanus and smallpox, instructed the health aides in health measures and maintenance of medical records, and replenished the medical supplies. If possible, the dentist also accompanied the field trip party, but because only one was assigned to each district, his presence was more the exception than the rule. Patients who needed hospital care were taken to the district headquarters by the field trip vessel and either treated at the dispensary or sent to Guam or Tinian if their particular illness warranted more specialized care.

Field trip vessels visited the islands once each three months and usually stayed only one day at each port of call. The time that the doctor and dentist had ashore, therefore, was too brief to do more than make a quick survey of the health and sanitation situation. In an attempt to improve this procedure, the administration, in the fall of 1950, instituted "administrative-medical field trips" so that more complete assistance could be given in solving the varied problems of the outlying islands.[10] Two such trips were conducted by the Navy: the first, to Woleai and Lamotrek in the Palau District, during November and December 1950 for a period of four weeks;[11] the second, to the Mortlock Islands in the Truk District during January, February and March 1951 for eight weeks.[12]

The medical aspect of these field trips was designed to give follow-up medical and dental care in relation to the conditions as reported by the USS WHIDBEY and, as such, established a procedure for implementation of the health survey. The teams were sent into the field with sufficient allotted time to examine and treat all natives, conduct on-the-island observation and training of health aides, correct deficien-

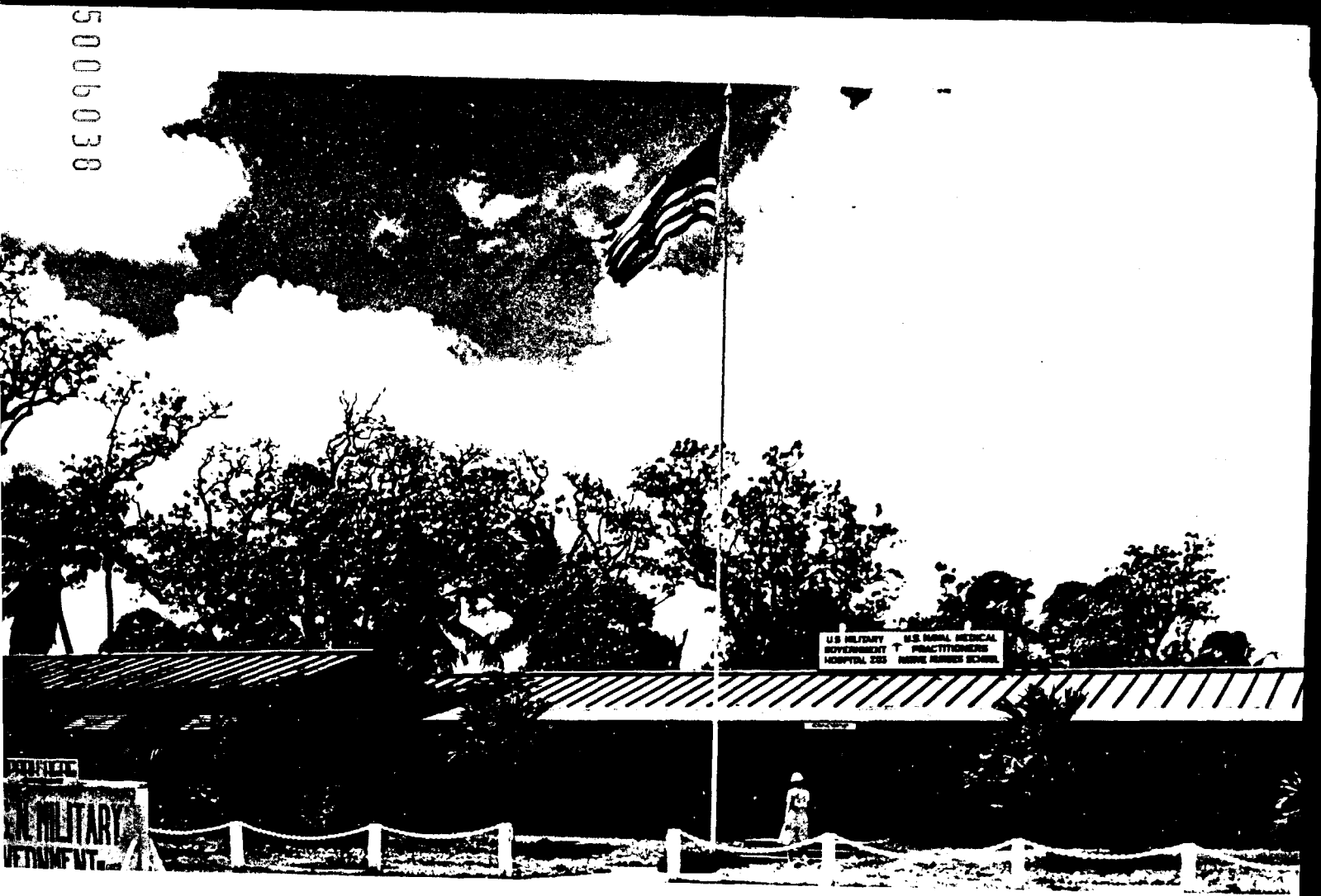
[10] *Supra*, p. 365 ff.
[11] HiComTerPacIs ltr ser 2040 dtd 3 Nov 50.
[12] FieldTerPacIs msg of 18 Dec 50.

cies in hygiene and sanitation, and institute health education programs. The results were most satisfactory.

The Woleai-Lamotrek field trip personnel together with their equipment departed Guam via plane on November 10, 1950 and arrived on Woleai the same day. The medical team consisted of a Medical Corps officer, a Dental Corps officer, a Chief Hospital Corpsman and a student from the School of Medical Assistants on Guam. The party left Woleai for Lamotrek on November 24 and remained there until December 3 when it returned to Guam. The medical officer found that the natives on both atolls were "in good condition in general" and that the average level of public sanitation was improving due to emphasis given it on routine quarterly field trips. The outstanding medical problems continued to be intestinal parasitism and tuberculosis. The dental condition of the people was "extremely poor" but the dental officer discovered that it was due to lack of knowledge of oral prophylaxis and oral hygiene rather than poor structure of the teeth so that education in dental care would rapidly improve the situation.[13]

The Mortlocks field trip personnel left Truk abroad the indigenous owned ketch NOMAD on January 15, 1951 and, during the next eight weeks, visited Nama, Losap, Namoluk, Satawan and Lukunor, returning to Truk via naval vessel (AKL-3) on March 14. Medical personnel consisted of a Medical Corps officer, a Dental Corps officer, a Chief Hospitalman, and a Marshallese medical assistant recently graduated from the medical school on Guam. The WHIDBEY had not yet worked in the Mortlocks and no follow-up procedures were possible. Although the medical personnel examined approximately one half of the total population of the islands visited and prepared record cards for the Truk dispensary, the lack of supporting x-ray and laboratory facilities lessened the effectiveness of the information gathered, especially in the case of tuberculosis. Considerable time was spent on each island in teaching health and sanitation principles. The major finding of the dental officer was the high incidence of periodentoclasia and his recommendations paralleled those of the dentist of the preceding field trip.[14]

[13] Chief of Party, Woleai-Lamotrek Administrative-Medical Field Trip Report dtd 15 Dec 50, and ltr dtd 9 Mar 51.
[14] Chief of Party, Mortlocks Administrative-Medical Field Trip, Report dtd 10 Apr 51.



Administration Building, Guam Memorial Hospital (formerly U.S. Naval Military Government Hospital)

Guam Memorial Hospital

Natives needing care beyond the means of the dispensaries were sent to the Guam Memorial Hospital, the United States Naval Medical Center, Guam, until July 1, 1950 and, after that date, to the United States Naval Hospital, Guam. The 250 bed Guam Memorial Hospital, which was supported by the Government of Guam, cared for indigenes from Guam, American Samoa and the Trust Territory. Patients from the Marshalls were flown to Guam by Military Air Transport Service (MATS) planes; those from the Carolines and the Marshalls were flown by the weekly logistic flights of Squadron VR 3, attached to the Marianas Command. In emergency cases, Commander Marianas area provided special flights. Expenses at the hospital, including an allowance for incidental expenses, were paid by the patients if possible; if financially unable to meet the costs, the civil administrator of the patient's district so certified and funds were provided by HiComTerPacIs from the Trust Territory treasury.

The United States Naval Medical Center, Guam, including Guam Memorial Hospital, was disestablished as of July 1, 1950 when the administration of Guam was transferred from the Department of the Navy to the Department of the Interior.[15] Thereafter, all indigenous patients were treated at the United States Naval Hospital, Guam. The following regulations for transfer of patients to the naval hospital were promulgated by HiComTerPacIs on September 14, 1950:

> Hospitalization of Trust Territory natives at the U. S. Naval Hospital, Guam will be kept to the minimum consistent with adequate treatment of all patients concerned. Addressees shall insure that Trust Territory natives assume to the extent of their capability, their own financial obligations for services at the U. S. Naval Hospital for elective surgery or other elective treatments, unless the patient is financially able to bear the expense of hospitalization at the prescribed rate of $5 per diem, and/or admission has been certified by the Director of Public Health, HICOMTERPACIS or his Deputy.
>
> When it has been determined by the CIVAD Medical Officer that treatment of any Trust Territory patient is beyond the scope of facilities afforded by the CIVAD dispensaries, the local CIVAD will request instructions from the Field Medical Officer, HICOMTERPACIS Staff, as to disposition of the case. Transfer of the patient to the CIVAD Dispensary, Truk or Naval Hospital, Guam will be directed by Field Medical Officer, HICOMTERPACIS Staff. Dispatch requests shall contain the diagnosis, condition of

[15] SecNav ltr ser 1940P21 dtd 7 Aug 50.

patient and desirable method of transfer. Patients shall be transferred a: rapidly as circumstances permit and by the most expeditious and safe means

CIVAD Medical Officers shall provide all possible treatment, including surgery, in their own CIVAD Dispensaries prior to requesting transfer of patients to either Truk or Guam. CIVAD Medical Officers are advised that competent surgeons are available at Kwajalein and Truk. These activities shall be consulted and facilities used whenever possible.

Bills submitted by the Naval Hospital for in-patient treatment of Trust Territory patients will be forwarded to the cognizant Civil Administrator, who will certify by endorsement thereon, as to the indigent or nonindigent status of the patient, returning the original and two copies to the Commanding Officer, U. S. Naval Hospital, Guam. This is necessary in order that the hospital may adjust accounting records and justify and substantiate classification of Trust Territory patients as humanitarian, indigent (nonpay) cases. Collections for nonindigent cases will be made by the cognizant Civil Administrator and delivered to the Collection Agent, U. S. Naval Hospital, Guam for deposit as directed in current instructions of the Bureau of Medicine and Surgery.

HICOMTERPACIS Liaison Officer, Guam, shall maintain close liaison with the Commanding Officer, U. S. Naval Hospital, Guam. On issue of patients discharge orders by the Naval Hospital, COMNAVMARIANAS shall arrange for transportation, assigning the highest priority possible which will insure the earliest and most expeditious evacuation of Trust Territory patients thereby keeping indigent patient subsistence and hospital charges at the minimum.[16]

The number of beds available for the inhabitants of the Trust Territory, including the 100 beds at the Tinian Leprosarium,[17] totalled 888 in June 1951, or one bed for every 62 people. This compared favorably with the corresponding figure for the United States which, as of 1953, had one bed for every 97 persons.[18]

The Tinian Leprosarium

During the military government period, 1944–1947, the Navy had continued the practice instituted by the Japanese of transferring lepers to certain isolated islands in the various districts where they were visited occasionally by administration personnel and given supplies and ordinary medical treatment. This was an unsatisfactory arrangement, however, and as soon as the United States assumed responsibility

[16] CinCPacFlt ltr ser 3471/HiComTerPacIs ltr ser 1692 dtd 14 Sep 50.
[17] *Infra*, p. 901, ff.
[18] *The World Almanac*, 1954.

for the trusteeship, and in accordance with the Health Service Policy,[19] planning for a central leprosarium for the area was begun.

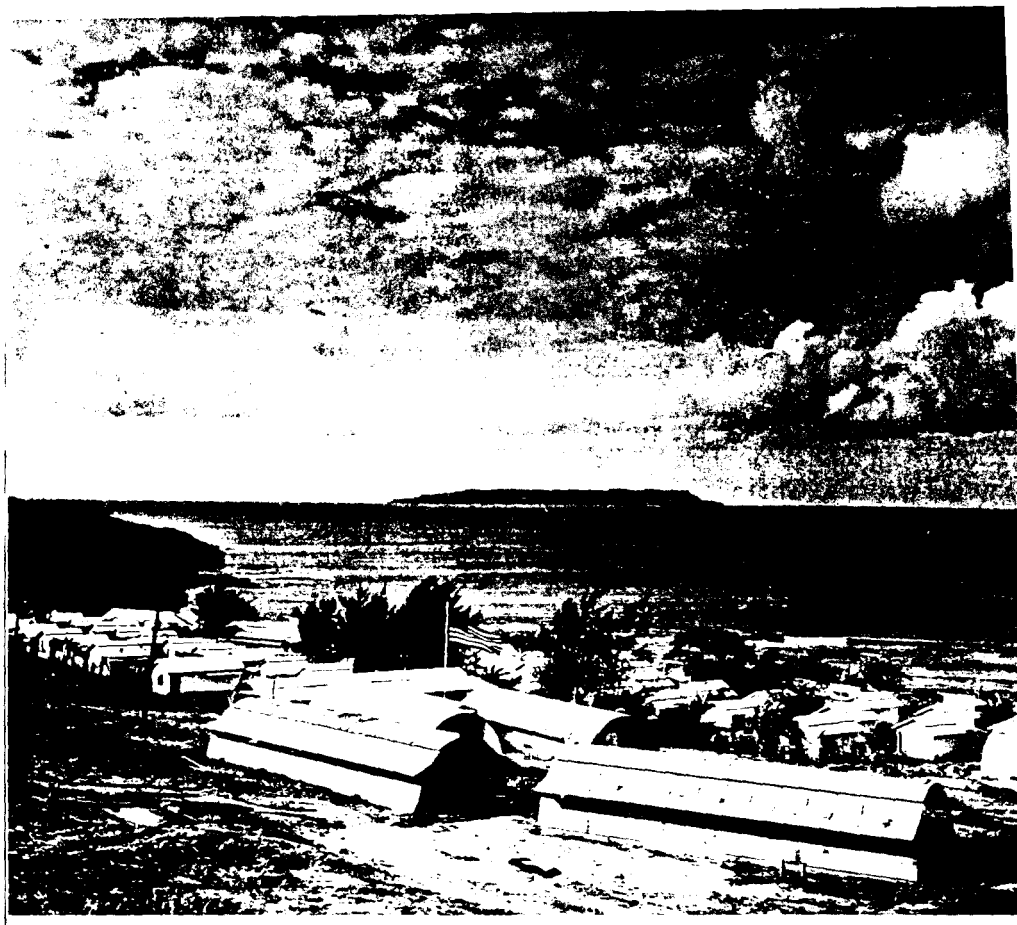
It was feared that leprosy, endemic throughout the Trust Territory, was prevalent and widespread, and first estimates by medical officials, based on a survey of the disease made on Guam in the late 1930's, placed the possible number of cases at 350. The definite number could not be learned until a complete medical survey of the area was made. By September 1947, fifty-two cases were isolated;[20] others were known to exist but the patients remained on their home islands, segregated only by community arrangement. Under such conditions it was not possible to provide specific treatment and facilities necessary for their care.

The first recommendation for the establishment of a central leprosarium to be located on Tinian and provide care for patients from the Trust Territory, Guam and American Samoa, was made by ComMarianas on July 31, 1947.[21] CinCPacFlt preferred to postpone action until the medical survey ship USS WHIDBEY had gathered statistics on the disease [22] but DepHiComTerPacIs objected to a delay of possibly three years while the survey was being conducted and urged that interim arrangements be made at the earliest practicable date to care for the lepers.[23] HiComTerPacIs thereupon agreed to establishment of temporary facilities and instructed DepHiComTerPacIs to submit a proposal for a leper colony that would also provide adequate dispensary and sickbay facilities.[24]

DepHiComTerPacIs submitted his proposal in December 1947 but at that time recommended that the leprosarium be established on Saipan rather than on Tinian. Due to rollup and cutback operations in the fall of 1947, a site in the Kagman area of Saipan had become available and was more desirable than the Tinian location in that it had the advantages of "being more favorably located for logistic support and medical supervision from the permanent naval establishment and the civil administration unit," and possessed "adequate suitable land for cultivation, a beach for fishing and an ample water supply."[25]

---

[19] *Supra*, p. 855, ff.
[20] Jaluit, 11; Truk, 4; Saipan, 6; Yap, 23; Palau, 4; Ponape, 4.
[21] ComMarianas ltr ser 16121 dtd 31 Jul 47.
[22] CinCPacFlt 1st end dtd 20 Aug 47 to ComMarianas ltr ser 16121.
[23] DepHiComTerPacIs ltr ser 139 dtd 17 Sep 47.
[24] HiComTerPacIs 1st end ser 6169 dtd 16 Oct 1947 to DepHiComTerPacIs ltr ser 139.
[25] DepHiComTerPacIs ltr ser 589 dtd 19 Dec 47.



View of Leprosarium, Tinian, Northern Mariana Islands

The High Commissioner and the Chief of the Bureau of Medicine and Surgery had given their final assent to this plan [26] when it was learned that the Army had need for the particular area selected as the site on Saipan. The original plan to place it on Tinian was then revived and approved.

[26] HiComTerPacIs ltr ser 221 dtd 16 Jan 48; ChBuMed ltr ser BuMed-311-GHS FF12/A6- dtd 19 Feb 48.

The imminent establishment of the leprosarium at Tinian was announced to the field on March 9, 1948 and administration officials were directed to explain to the people the need for treatment at a centralized point and the possibility of cures in a goodly number of cases.[27] Construction of temporary facilities for 100 patients on government held land was begun in the late spring of 1948.[28] Working parties from Saipan rehabilitated buildings of the former fishing base at Garguan Point and constructed several new ones. By the fall of that year the leprosarium consisted of fifty housing units, each 10 by 16 feet, eight cookhouses, four pit type latrines, one boathouse, and two buildings containing an office, laboratory, examining room, and operating room.[29]

Lieutenant (j. g.) Jack William Millar (MC), USN, requested to be assigned as medical officer in charge, and after receiving special training at the Kalaupapa Settlement, Molokai, Hawaii, and the Leper Receiving Station, Oahu, Hawaii, reported to Tinian in October 1948.

The first patients, 51 Yapese and 6 Palauans, arrived by ship at Tinian on September 6, 1948. They were allowed to bring with them their personal possessions and canoes, livestock, and food donated by friends and relatives. A Yap health aide, Gamed, who had cared for the Yapese for many years, volunteered to accompany them and remain on Tinian.

The naval vessel LST 1134 disgorged a bizarre cargo on the Tinian docks that day: Yapese in their traditional dress, 50 chickens encased in pandanas bags, 12 pigs, fishing gear, rice, coconuts, breadfruit, squash and betel nuts. The Chamorros who had migrated from Yap to Tinian in April 1948 and a contingent of naval officials were waiting to greet them and help them ashore. By the next morning they were ready to start the normal routine of their life once more. Some of the men went fishing and others planted coconuts and betel nut under the supervision of Gamed.[30] It was a new, exciting experience in the drab life of these unfortunate people and those who were physically able exerted every effort to cooperate with the leprosarium staff in improving the facilities and providing their own subsistence.

---

[27] CinCPacFlt Med Off memo ser P 2–4/FF12/46-rbs dtd 9 Mar 48.
[28] DepHiComTerPacIs msg of 14 May 48.
[29] McNeilly, G. C., "The Tinian Leprosarium," MS. CNO files.
[30] Encl (A), "Narrative Report, Establishment of the Tinian Leprosarium," to CivAd Saipan ltr ser 663 dtd 16 Dec 48.

The leprosarium was administered by the Civil Administrator S: pan and was under the direct control of a medical officer in charg Logistic support, both medical and maintenance, was provided l CivAd Saipan through a civil administration representative on Tini who served also as public works officer for the leprosarium. For time after its establishment, United States Air Force facilities operatin on Tinian supplied certain supporting utilities to the colony.

The personnel complement for the leprosarium provided for or Medical Corps officer as the officer in charge, one Hospital Corps chi warrant officer (as the administrative assistant), one public works o ficer who was also the Civil Administration Representative, Tinia four Hospital Corps enlisted men including a laboratory technician an an x-ray technician, and four maintenance enlisted men consisting of a engineman, electrician's mate, boatswain's mate, and yeoman. Nativ employees consisted of a Japanese trained nurse, an untrained mal health aide, and maintenance men.

The original facilities were makeshift and inadequate as HiCom TerPacIs noted when he inspected the leprosarium soon after it wa opened. As a result of his visit and subsequent recommendation planning for a permanent, suitable establishment was begun. Th Chief of Naval Operations accordingly directed the Bureau of Yard and Docks to reserve $500,000 of the unobligated balance under th Naval Procurement Fund, subhead 16, for the project[31] and notifie DepHiComTerPacIs to expedite the program.[32]

The DepHiComTerPacIs plan, submitted on November 27, 1948 and approved by HiComTerPacIs on December 13, 1948,[34] provide for the construction of four concrete buildings at a cost of $430,000: dispensary, a 20 bed ward for male and female lepers, a 20 bed war for male and female lepers also suffering from tuberculosis, and combination galley, messhall, and storage spaces. The remainin $70,000 was to be spent on collateral and miscellaneous equipment.

Early in 1949, HiComTerPacIs, DepHiComTerPacIs, and th Assistant Chief of Naval Operations (Island Governments) visite Tinian for a further check on the facilities of the leprosarium. At th

[31] CNO ltr ser 1140P22 dtd 11 Oct 48.
[32] CNO msg of 17 Nov 48.
[33] DepHiComTerPacIs ltr ser 1746 dtd 27 Nov 48.
[34] HiComTerPacIs 1st end ser 2077 dtd 13 Dec 48 on DepHiComTerPacIs ltr ser 1746.
[35] DepHiComTerPacIs ltr ser 1746 dtd 27 Nov 48.

same time, the Air Force announced that it was closing its establishment on Tinian. Because their supporting utilities would no longer be available to the leprosarium, CivAdSaipan proposed to the inspecting party that the leprosarium be moved to Saipan. The proposal, however, was disapproved because: (1) the leper colony should be able to supply its own utility services; (2) the Tinian site met the requirements of segregation, agricultural lands, fishing opportunities and proximity to the Guam Medical Center; (3) the Army had the only suitable site on Saipan; (4) the Tinian site was not involved in any military plans.[36] As a result of discussions held at the same time with the medical officers, the administration decided that it would be a mistake to undertake permanent construction of a leprosarium both because the site had not been agreed upon and the number of lepers to be treated was not known.[37]

It was decided, therefore, that the facilities of the leprosarium should be kept as they were for the next two years by which time all possible information for a long time operation of the colony would be available; meanwhile the sum of $100,000 should be allocated for additional necessary interim construction, maintenance and repair.[38] The Secretary of the Navy approved the revised project on May 18, 1949[39] and financing was arranged with funds available for overseas construction under appropriation "Public Works, Bureau of Yards and Docks, 1947."[40]

The construction, done by Seabees in 1949–50, provided two 10 bed quonset type hospital wards, a tuberculosis isolation ward, a hospital galley, a quonset containing an office, pharmacy, x-ray room, laboratory and operating room, six concrete decked flush toilets and showers, eighteen community type cook houses, a sewage system, and an adequate power plant. The patients built two chapels, one Protestant and one Catholic, and a combined school-recreation hall. American personnel without dependents were quartered in two remodelled Japanese frame houses near the leprosarium and those with dependents lived in quonsets erected two miles away.[41]

[36] CinCPacFltMed Off memo dtd 10 Mar 49.
[37] ChBuMed 3rd end ltr BuMed-4112-MFD, FF12/A6-4 dtd 21 Feb 49 on DepHiComTerPacIs ltr ser 1746.
[38] *Ibid:* DepHiComTerPacIs msgs of 16 and 18 Mar 49.
[39] DuDocks msg of 27 May 49.
[40] BuDocks 4th end ser ND 14/N9, C-241/cc dtd 1 Apr 49 on DepHiComTerPacIs ltr ser 1746 dtd 27 Nov 48.
[41] McNeilly, *op. cit.*

The original number of 57 patients was added to gradually as other known sufferers from the disease and later diagnosed cases were sent to Tinian. By April 1950 the leprosarium population was 91, by July 1950 it was 101, and by July 1951 it was 112. In addition, four non-leprous spouses, two male and two female, lived at the leprosarium and occupied the same status as patients. Five babies were born there and removed from their mothers at birth and sent to relatives.[42]

The 112 patients in the spring of 1951 came from the following islands:

	Male	Female	Total
Saipan	4	4	8
Rota	1	2	3
Guam	5	2	7
Palau	4	0	4
Yap	32	24	56
Truk	6	2	8
Ponape	12	10	22
Marshalls	3	1	4
	67	45	112

The age distribution of the patients was:

Age	*Number*
4–5	2
10–15	5
16–24	14
25–34	32
35–44	23
45–64	26
65–74	9
Over 75	1

Ninety-seven families were represented in the 112 patients and, of these, 26 families had had more than one known case of leprosy: two families each had 3 members undergoing treatment; 11 families each had 2 members as patients; 13 other patients gave a history of close relatives having had leprosy.

On admission most of the patients were undernourished and anemic. A significant number had lower extremity endema caused mainly by leprosy itself, intestinal infestation with worms, and malnutrition. After several months of treatment their general condition improved

[42] These statistics and the ones following are taken from McNeilly, *op. cit.*

but crippling of the extremities and blindness often resulted. The following is a summary of the common deformities in the 112 patients:

Hands:	
Severe crippling (contractures and/or tissue loss)	13
Moderate crippling (contractures and/or tissue loss)	7
Mild crippling (contractures and/or tissue loss)	25
No crippling (contractures and/or tissue loss)	67
Feet:	
Foot drop (some bilateral)	12
Plantar ulcers (including those with osteomyelitis)	34
Osteomyelitis (secondary to ulcers)	12
Osteolysis (leprous bone reabsorption)	12
Eyes:	
Total blindness, both eyes (leprous)	1
Total blindness, one eye (leprous)	1
Leprous eye involvement (not serious)	13
Serious eye involvement, not leprous (traumatic or congenital)	4
Nose:	
Septal perforation	8
Mucous membrane ulceration without perforation	31

The 20 nontuberculosis wards remained filled most of the time with patients hospitalized chiefly for: (1) severe plantar ulcers, some with osteomyelitis; (2) lepra reactions: systemic, cutaneous, and/or neural; (3) intercurrent nonrelated illnesses. Small burns were common due to the anesthesia. Four of the five deaths which occurred at the leprosarium between September 1948 and July 1951 were due to tuberculosis rather than leprosy.

Treatment routines at Tinian were patterned after those used at the National Leprosarium, U. S. Marine Hospital, Carville, Louisiana. Lieutenant (j. g.) G. C. McNeilly, MC, USNR, who succeeded Dr. Millar as medical officer in charge in 1950, has written of the treatment and prognosis:

> To date the treatment of choice in leprosy is the sulfone series of drugs. Over 40 of our patients receive intravenous promine daily, omitting Sundays and every fourth week. Over 60 are given oral diason on the same schedule. An experiment was conducted on the use of streptomycin in the treatment of leprosy. It was the clinical impression that the value of streptomycin is definitely less than that of the sulfones. Complications are treated separately. For hand paralysis and contractures we have inaugurated a small physiotherapy program. Subsequently tendon transplants are anticipated by several patients. Only one has been done to date, with a gratifying result. For foot ulcers treatment has consisted of supportive and conservative experimental measures with results thus far being rather disappointing. Simple special shoes for 2 patients, and external metatarsal bars for 2 others have recently been ordered locally. Lepra reactions are treated symptomatically and by giving intravenous procaline, antihistaminics, occasionally discon-

Homes for Patients, Tinian Leprosarium

tinuing the sulfone, and occasionally giving fuadin I. M. For neuritic reaction parenteral thiamin, and sometimes perineural injection of procaine is added. Specific treatment is given for intestinal worm infestation.

Since the advent of the sulfone drugs (Carville, 1941), the prognosis has entirely changed. Previously, the outlook was toward progressive development of deformity and crippling, with usually permanent isolation. The outlook now held is for arrest of progression of the disease within several months of starting sulfone treatment, and for discharge from the place of isolation within three to five years. Probably some 10% of such patients will relapse and have to repeat the treatment. Trust Territory Regulations require that for discharge from the Tinian Leprosarium as an arrested case the patient show no evidence of clinical activity of the disease on repeated examinations, and that he have 6 consecutive monthly negative multiple area bacterioscopic examinations of material obtained from tiny skin incisions. The patient and his record are then examined by a board of 3 doctors, who certify as to his noninfectiousness. The first such group, 16

of our patients, have recently been so certified, and are now awaiting transportation to their home island.[43]

Ambulatory patients lived in small one room houses on the leprosarium grounds and prepared their food in cook houses assigned to people from their particular area of the Trust Territory. Each person was free to decorate his house and plant his tiny piece of land as he desired and the effect, looking beyond the quonset construction of the hospital facilities, was of a colorful toy village nestling on a cliff at the edge of a blue ocean.

The patients who were in sufficiently good health worked if they wished. Of the 112 patients at Tinian in the spring of 1951, 58 were employed on a five day week basis:

30 worked on the produce and livestock farms, leprosarium grounds, and plant nursery.
10 were maintenance men engaged in carpentry, tire repair and running the motor whale boat.
10 worked in the hospital as nurses aides, x-ray and laboratory assistants, cooks and food handlers.
2 worked in the patient's store and food issue room.
3 worked in the central laundry.
1 cared for the school-recreation hall.
1 was a barber.
1 assisted in the sewing room.

In addition to their regular jobs, all patients could fish when they so desired. The Navy had given them a motor whaleboat and the Marshallese had sent them a large outrigger canoe.

Those who worked received $2.50 per week and all others received $1.00 per week. During the fiscal year 1950–1951, the administration granted $9600.00 for patients' pay. The money earned by or given to each person was deposited to his credit at the leprosarium store and purchases deducted from this sum. At the end of each quarter, patients could withdraw the amount left to their credit.[44]

The store was set up in the spring of 1949 and CivAd Saipan was directed to stock it with $2000 worth of goods purchased from any naval supply activity or the Island Trading Company, Guam,[45] and charged to the Island Government, Navy, appropriation for main-

[43] McNeilly, *op. cit.*, 70.
[44] DepHiComTerPacIs ltr ser 694 dtd 7 Apr 49.
[45] Saipan had no ITC activity.

tenance of the leprosarium.[46] Later, the cost of merchandise was paid by the supply officer of the Civil Administration Unit Saipan, from Trust Territory funds.[47] Selling prices of Island Trading Company (ITC) goods were ten percent less than the consumer ceiling price quoted in the ITC catalog and those of Navy goods ten percent above cost.[48]

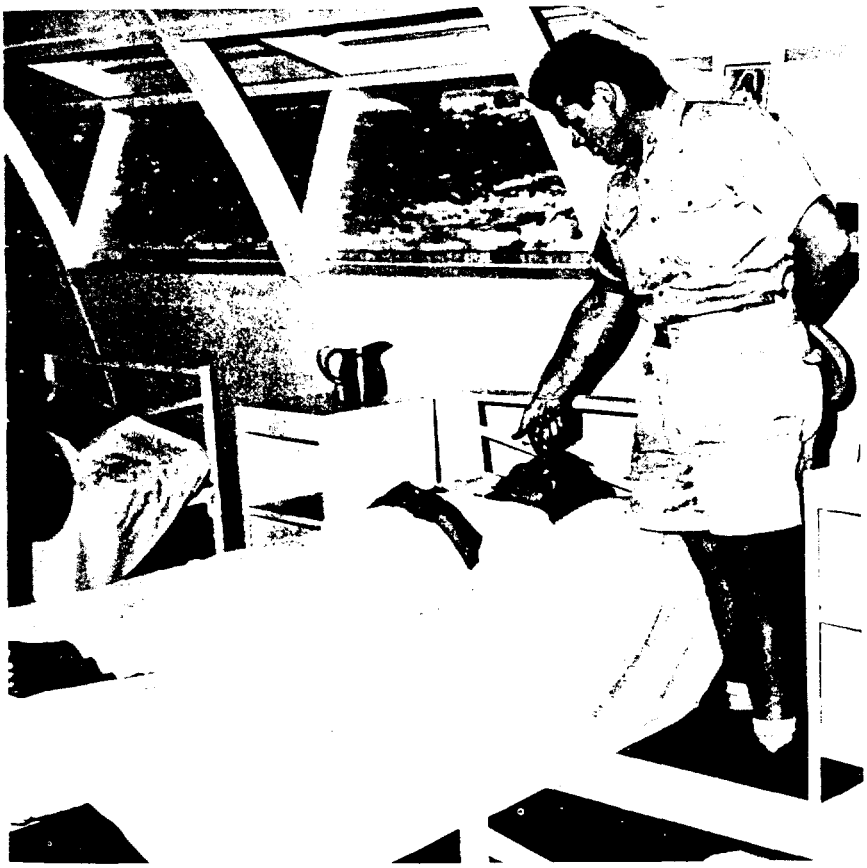
Each patient received his subsistence and clothing. The food issue consisted of one half pound of meat and one half pound of rice per day, and one pound of sugar, one half pound of lard, three pounds of flour, and one pint can of milk per week. The cost of issued food per patient per day for the period July 1–December 31, 1950 was 36 cents. Supplementary food obtained locally, including that from the leprosarium garden, consisted of bananas, breadfruit, cantaloupe, corn, cucumbers, papayas, squash, string beans, sweet potatoes, taro, watermelon, yams, onions and radishes. On Wednesday and Saturday afternoons those who wished were taken by truck to other areas on the island to gather wild fruits. Clothing was supplied by the administration and the Baptist Missionary Board. The people of the Trust Territory never forgot their friends and relatives on Tinian and sent them occasional gifts of clothing, livestock and money.

The Catholic missionary on Tinian, Father Martian, a Capuchin, ministered to the patients of his faith. Two Protestant missionaries, Reverend and Mrs. Colbert, of the Baptist Missionary Board, were stationed at the leprosarium. Mrs. Colbert conducted a school for the patients and all who wanted to study were excused from working at the regular tasks.

Patients with arrested cases of leprosy were allowed to return home or remain on Tinian. Those who went back to their home islands were required to report to their district dispensary every six months. Those who remained on Tinian, usually the blind and crippled who did not want to become a burden to their families, continued to be supported by the administration and worked as much as they were able.[49]

Late in the period of naval administration, HiComTerPacIs inaugurated a homesteading program on Tinian for patients discharged from

[46] DepHiComTerPacIs ltr ser 548 dtd 16 Mar 49.
[47] DepHiComTerPacIs ltr ser 694 dtd 7 Apr 49.
[48] DepHiComTerPacIs ltr ser 548 dtd 16 Mar 49.
[49] HiComTerPacIs ltr ser 738 dtd 2 Apr 51.



Lieut. J. W. Millar, MC, USN, and Patient, Tinian Leprosarium

the leprosarium. Each person who wished to farm was given two hectares (4.5 acres) of land selected by him within the areas open to all homesteaders on the island. The administration also furnished him with coconut and fruit tree seedings and building materials for which he eventually paid by a deferred payment plan.[50]

The leprosarium continued to be considered an interim facility during the period of naval administration. The surprisingly small incidence of leprosy discovered in the course of the USS WHIDBEY

[50] CivAdRep Tinian ltr ser 51 dtd 21 Apr 51; HiComTerPacIs ltr ser 1370 dtd 6 Jun 51.

survey[51] and the success of the sulfone treatment for those affected lessened the earlier fears that leprosy would continue to be an outstanding medical problem of long duration. In June 1950 the CinCPacFlt Medical Officer noted that leprosaria were archaic and not in conformity with the present day treatment of the disease and recommended that no permanent Trust Territory leprosarium be built and that patients be treated at home or in the local dispensary. Such action, he considered, would receive the cooperation of the people and would persuade those afflicted with the disease to report for early treatment.[52] FieldTerPacIs disagreed with this suggestion, however, and thought that until the islanders were educated to such a program, fear of the disease would hamper local treatment.[53] Trust Territory Health Department Order No. 1–51, issued in the spring of 1951, directed the continued isolation of bacterialogically positive patients at Tinian.[54] The leprosarium, therefore, remained one of the chief projects of the medical program.

USS *WHIDBEY*

The most unusual medical facility in the Trust Territory was the USS WHIDBEY, a naval vessel assigned to conduct a comprehensive health and sanitation survey of the entire area. Information on health and sanitation conditions was still scanty and unreliable at the time of assumption of trusteeship and the High Commissioner, then Admiral Denfeld, suggested the use of a medically equipped ship which, because of its mobility and equipment, could contact the farthest outlying islands and conduct thorough physical examinations of the inhabitants.

On October 17, 1947, CinCPacFlt requested $150,000 for the conversion of an Army FS type ship (176 foot cargo vessel) for such work[55] and on December 2, 1947, the Chief of Naval Operations approved the medical survey project dependent upon the availability of the necessary funds for alteration and operation of a vessel from appropriation Island

[51] "The fact that the true macular lesion is not readily recognized by other than specialists in the field may have reduced the discovery rate for leprosy in this survey. Recognition of leprosy was especially difficult because of the prevalence of tinea versicolor and traumatic contracture, both requiring differentiation from the disease. Personnel conducting the survey were reluctant to make a diagnosis of leprosy where there was any question of its certainty" (WHIDBEY report).

[52] CinCPacFlt Med Off memo dtd 30 Jun 50.

[53] FieldTerPacIs memo dtd 5 Jul 50

[54] App. 27, p. 1320.

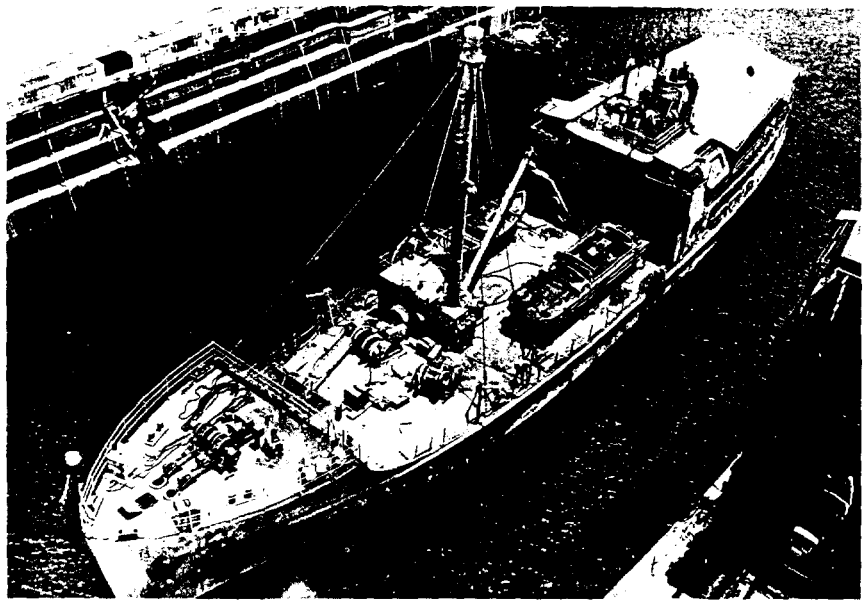
[55] CinCPacFlt ltr ser 6179 dtd 17 Oct 47.

Governments, Navy (IGN).[56] ComMarianas, however, had no vessel that could be spared for such a task[57] and DepHiComTerPacIs considered the project inadvisable both because the estimated cost had not been included in the 1948 or 1949 IGN appropriation and because, at best, the survey would produce only statistics.[58] DepHiComTerPacIs suggested as an alternative plan that the field trip ships be provided with portable medical equipment and the survey be conducted gradually on regularly scheduled logistic runs of these ships.[59] HiComTerPacIs disapproved this suggestion and, finally, on January 30, 1948, CNO authorized acceptance of the Army FS 391 for use as a medical survey ship.[60] Funds for its conversion and minimal alteration were authorized in February[61] but before the necessary work was directed,[62] the FS 395 was substituted for the FS 391 and redesignated the AG–141 (WHIDBEY). In April 1948 Commander Service Force Pacific (ComServPac) allotted $150,000 for its conversion.[63]

In directing employment of the ship CinCPacFlt/HiComTerPacIs stated:

> The term, Health Survey, shall be understood to mean the collection of statistics on the state of health and the incidence of disease among the inhabitants of the Trust Territory.
>
> The term, Sanitation Survey, shall be understood to mean the collection of data on the Public Health practices of inhabited islands . . .
>
> Emergency medical and dental care within the capacity of USS WHIDBEY (AG–141) to provide shall be furnished the inhabitants of the Trust Territory. Scheduled itineraries of the survey ship shall not be changed for this purpose, except when in the opinion of Commander Marianas emergency measures, including diversion of the ship, are justified.
>
> Routine medical and dental care of the inhabitants of the Trust Territory is the responsibility of the Civil Administration and shall not be assumed by the survey ship. Medical and dental personnel attached to WHIDBEY may advise and assist Civil Administration personnel in these matters, provided this service does not interfere with the primary mission of the ship.[64]

[56] CNO ltr ser 3309P414.
[57] Jt ltr ComMarianas ser 23269/DepHiComTerPacIs ser 642.
[58] DepHiComTerPacIs ltr ser 88 dtd 16 Jan 48.
[59] *Ibid.*
[60] CNO msg of 30 Jan 48.
[61] CNO ltrs ser 360P414 dtd 20 Feb 48 and ser 2038P28 dtd 26 Feb 48.
[62] CinCPacFlt msg of 25 Apr 48.
[63] ComServPac msg of 26 Apr 48.
[64] Jt ltr CinCPacFlt ser 2835 HiComTerPacIs ser 1972 dtd 23 Jun 48.



USS WHIDBEY (AG 141), Medical Survey Ship

By July 1948, the WHIDBEY had been transformed into a floating clinic and laboratory, equipped with medical and dental examining facilities including a photofluorographic unit, and staffed with four medical, dental, and health officers and nine enlisted x-ray, laboratory, and clerical technicians. Four officers and twenty enlisted men formed the ship's company. The WHIDBEY sailed from Pear Harbor on July 22 and on August 1, 1948 arrived in the Marshalls to begin the survey of the islands.

Administrative control of the vessel was first assigned Commander Service Division 51 (ComServDiv 51), the Trust Territory logistic force, later assumed by ComServPac on March 1, 1950 while undergoing overhaul at Pearl Harbor and working in the Eastern Marshalls, and finally returned to ComServDiv 51 in August 16, 1950 when it arrived at Truk. Operational control was the responsibility of ComMarianas until early in 1950, when it passed temporarily to ComServPac and then, on August 12, 1950, to ComServDiv 51.[65] Personnel

[65] CinCPacFlt ltr ser 2139 dtd 6 May 48; ComServPac msgs of 13 Jul 48 and 5 Apr 50; ComServPac spdltr ser 17719 dtd 21 Jul 50.

assigned as crew of the ship were provided by CinCPacFlt from his allowance [66] and medical personnel were procured from the Bureau of Medicine and Surgery insofar as practicable.[67] Funds for the support of the WHIDBEY beginning in fiscal year 1949 were provided by the Chief of Naval Operations from the IGN appropriation; cost of medical supplies and materials was granted by DepHiComTerPacIs from his share of IGN money.[68]

The several voyages of the WHIDBEY were not without their difficulties. The ship had been on its initial survey of the Marshalls but a few weeks when personnel difficulties developed between the ship's company and the medical department. Neither could appreciate the problems of the other and the frequent clashes that resulted were reflected in friction throughout the ship. The morale of the enlisted crewmen was badly shaken also when they learned that medical personnel were to be rotated after a six months' tour of duty. Commander Marshalls Subarea alleviated the situation somewhat [69] so that when ComServPac and the ComMarianas Staff Medical Officer conducted an investigation in November 1948 they found the morale of the crew "above average and excellent under the conditions." [70]

Other difficulties, evident from the outset of the survey, were not so easily solved. Mechanical failures, especially, continued to delay the progress of the survey. The ship's generator broke down almost immediately because of the extra load put upon it by the medical and dental equipment aboard so that it was necessary to go to Guam for installation of an additional generator. The X-ray equipment did not always function properly and the ship was often forced to sail off in search of repairs. Frequent difficulty in obtaining medical supplies and spare parts for the medical equipment created morale as well as professional problems.

Lack of cooperation by the natives occasionally slowed progress also. Although the civil administrators briefed the people in the immediate vicinity of district headquarters and distributed written statements concerning the survey to each magistrate and health aide before the arrival of the ship,[71] gathering the people together for transportation

[66] CNO ltr ser 360P214 dtd 20 Feb 48.
[67] CNO ltr ser 411P22 dtd 2 Apr 48.
[68] CNO msg of 1 Jul 48.
[69] ComMarshalls Subarea ltr ser 068 dtd 28 Sep 48.
[70] ComServPac ltr ser 0325 dtd 20 Nov 48.
[71] As directed by HiComTerPacIs ltr ser 938 dtd 17 Jun 48.

to the ship depended upon the cooperation of the chiefs and their power over the islanders. Some persons in the outlying islands in the Carolines, especially women, refused to be examined. Widely separated villages on certain atolls made it difficult to reach all the inhabitants. There was also the problem of getting the native people out to the ship which at most atolls and islands had to lie off the reef. The WHIDBEY carried only two boats and at times when they were insufficient or unable to cope with the heavy seas, native canoes and the ship's rubber boats made hazardous trips between shore and ship.

The original itinerary provided that the Marshallese be examined first but when the generator and x-ray machine broke it was necessary to go to Guam for repairs before completing the survey of that district. From Guam the ship went to Rota and Tinian, thence to the Western Carolines, Saipan, the Eastern Marshalls, Truk and Ponape. Interspersed throughout the survey were periods spent at Guam and Pearl Harbor for upkeep and overhaul. The time spent at Guam was always longer than planned because of material failures and personnel changes and, in one instance, because of a typhoon.

The itinerary, with approximate dates, follows:

July 22, 1948: WHIDBEY departs Pearl Harbor
August 1–December 1948: Marshalls
Late December 1948–January 1949: Guam
January–February 1949: Rota, Tinian
February 1949: Guam
February 21–August 1949: Western Carolines
August 5–September 20, 1949: Guam
September 20–November 8, 1949: Saipan
November 8, 1949—January 9, 1950: Guam
January 24–April 15, 1950: Pearl Harbor
April 15–June 19, 1950: Marshalls
June 27—July 31, 1950: Pearl Harbor
August 12–December 16, 1950: Truk
December 18, 1950–February 5, 1951: Guam
February–March 20, 1951: Truk
March 24–May 1951: Ponape
May 1951: departs Ponape for Western Pacific.

A total of 33,820 persons or 60.7 percent of the inhabitants of the Trust Territory were seen during the almost three year tour of the WHIDBEY. Breakdowns of persons examined in each district were:

District	Population	Number examined	Percent examined
Saipan	6, 506	4, 999	76. 8
Palau	11, 740	10, 575	90. 1
Truk	15, 788	9, 088	57. 8
Ponape	10, 397	*2, 586	24. 9
Marshalls	11, 299	6, 572	58. 2
Total	55, 730	33, 820	60. 7

*Chest X-rays only.

Lack of time to complete the survey accounted for the low percentages of examinations in the Truk, Ponape and Marshall Islands Districts. The Ponapeans examined were given only chest X-rays, but for all other persons, the medical personnel of the ship set up medical record cards complete with data gathered [72] and performed physical and dental examinations, chest X-rays, tuberculin tests, stool examinations for intestinal parasitism,[73] and specific examinations such as blood kahns and biopsies of tumors. All infants were immunized against smallpox, typhoid fever and diphtheria.

Vital statistics consisting of records of births, deaths, marriages, and divorces were gathered in each district and these, together with the individual medical records, provided a wealth of statistical data never before available for the area. The original medical record card was kept aboard the ship and the copy sent to the proper dispensary.[74]

Sanitation inspections of the islands visited were conducted by the medical personnel and data collected on public health practices. Specific conditions noted were water and food supplies, sewage and garbage disposal, control of communicable diseases, obstetrical practices, housing, control of rodents and insect pests, maintenance of vital statistical records, care of the dead, and indigenous customs affecting health.[75] A general health and sanitation report for each island was prepared in triplicate; the original was sent to DepHiComTerPacIs,

[72] Cards were set up for the Ponapeans also. When operating commitments cut short the cruise of the ship in the Ponape District, arrangements were made for the dispensary at Ponape to complete the survey (HiComTerPacIs msg of 16 Mar 51).

[73] Omitted in the Mortlocks, Truk District, in order that more time could be devoted to the study of filariasis.

[74] HiComTerPacIs ltr ser 35 dtd 7 Apr 49.

[75] Jt CinCPacFlt ltr ser 2835/HiComTerPacIs ltr ser 1972 dtd 23 Jun 48.

Medical Personnel of USS WHIDBEY Examine Natives of Tinian

one copy was sent to HiComTerPacIs and the other retained on the ship. All data collected by the WHIDBEY was centralied and systematized by the Bureau of Medicine and Surgery.[76]

The medical survey took much longer than originally planned. A first estimate considered that it could be accomplished in one year but CinCPacFlt was forced to ask for an extension for each succeeding fiscal year.[77] As the period of naval administration drew to a close, CinCPacFlt requested that the ship be transferred to the Western Pacific.[78] The Chief of Naval Operations approved the request [79] and in May 1951 the WHIDBEY was withdrawn from the Trust Territory, The civilian High Commissioner, who had succeeded Admiral Radford in January 1951, protested the withdrawal noting that he had not been given the opportunity to comment on her deployment and requested that CNO transfer the WHIDBEY or a similar ship to the Department of Interior in order that a continuing follow up medical program could be carried on under the new administration.[80] Because of the hostilities in Korea the Navy needed all available shipping and the request was refused.

The WHIDBEY had one of the most unusual and worthwhile voyages of any ship of the United States Navy. The statistics gathered were of inestimable value for evaluation of the health problems of the Trust Territory that remained to be attacked and solved. The Navy, unfortunately, was unable to make use of the information it had gathered but the records, deposited at each dispensary, provided a composite picture of health conditions for the district and hitherto unavailable knowledge for an exact approach to the problem by the Department of the Interior.

[76] Directed by HiComTerPacIs ltr ser 35 dtd 7 Apr 49.
[77] CinCPacFlt msg of 5 Nov 49; CinCPacFlt/HiComTerPacIs msg of 9 Apr 50.
[78] CinCPacFlt msg of 14 Mar 51.
[79] CNO msg of 15 Mar 51.
[80] HiComTerPacIs ltr ser 773 dtd 5 Apr 51.

Chapter XLIII

HEALTH PROGRAMS

Training of Native Health Personnel

Training of health aides, dental aides and nurses aides for service in the public health program was conducted at the various civil administration dispensaries and was one of the most important functions of the senior medical officers. The plan of the administration, to place trained health aides [1] in the civil administration dispensaries, on all islands and in all villages,[2] necessitated instruction of a considerable number of natives and refresher training for those trained by the Japanese in prewar days.

Health aides were selected by the medical officers in conjunction with the indigenous chiefs and sent to the dispensaries at district headquarters for nine to twelve months' residence where they learned the techniques of first aid, simple laboratory work, dispensary medicine and sanitation. Before the end of the period of naval administration, all aides had received basic training and some had returned to the dispensaries for additional instruction. The success of the training program depended upon the teaching ability of the doctors, the time they could devote to the task, and the supplies and equipment available.

Numbers of health aides, trained and in-training, at the close of each fiscal year were:

TRAINED

	1948	1949	1950	1951
Health aides	110	113	118	135
Dental aides	1	9	9	9
Nurses aides	28	43	55	54

[1] The term "health aides" as used hereafter denotes also dental aides and nurses aides unless otherwise specified.

[2] Encl (A) to DepHiComTerPacIs ltr ser 473 dtd 28 Nov 47.

IN-TRAINING

	1948	1949	1950	1951
Health aides	65	35	28	19
Dental aides	8	0	0	0
Nurses aides	57	45	25	9

The health aide training program was successful throughout the Trust Territory. Those who worked at the dispensaries had continuing opportunities for training and many of them became exceptionally skilled in assisting the medical staff. Most of those who returned to their home islands did a creditable job considering the frequent difficulties in obtaining supplies and the lack of direction in diagnosis which was obtainable only when a field trip vessel arrived.

Practitioners and Nurses

Advanced training of medical, dental and nursing personnel continued to be conducted at Guam during the period of naval administration of the Trust Territory.[3] The School of Medical Practitioners commissioned on January 2, 1946, and the School of Dental Practitioners, commissioned on February 21, 1947, were redesignated the School of Medical Assistants and the School of Dental Assistants on April 23, 1948.[4] At the time of the establishment of trusteeship in July 1947, the medical and dental schools were parts of the United States Naval Medical Center, Guam,[5] which was under the military command and coordination control of Commander United States Naval Forces Marianas and the management control of the Bureau of Medicine and Surgery.[6] These two schools were responsible to the Commanding Officer, United States Naval Hospital, Guam, and each was under the immediate direction of an officer in charge who was a Commander, Medical Corps, and Commander, Dental Corps, respectively. The School of Nursing, commissioned on January 2, 1946, was not a separate part of the United States Naval Medical Center but

[3] See v. II, p. 352 ff.
[4] SecNav ltr ser 168P24 dtd 23 Apr 48.
[5] The U. S. Naval Medical Center, Guam, also consisted of the U. S. Naval Hospital, Guam, the Guam Memorial Hospital and the Institute of Tropical Medicine.
[6] SecNav ltr ser 331P24 dtd 6 Sep 49.

Dr. Jose Torres, a Native Saipanese, and Nurse's Aides at the Dispensary, Saipan, Northern Mariana Islands

under the Director of Medical Services, Guam Memorial Hospital. Clinical training was given at the Guam Memorial Hospital, the U. S. Naval Hospital, Guam, and the Fleet Dental Clinic. Logistic support for the schools was furnished by the U. S. Naval Medical Supply Depot, Guam.

The staffs of the schools consisted of both naval and civilian personnel. In December 1948 the medical school had a staff of 16 full time and 21 part time naval personnel and 5 full time and 1 part time civilians. The dental school, as of the same date, had 4 naval personnel assigned and an additional 3 naval personnel and 1 civilian scheduled to report.

The greater part of the funds for the support of the schools was provided for in the Trust Territory Department of Education alloca-

tion. In fiscal year 1949, the budget of $125,088 was derived from these sources: Island Government Navy (IGN): $44,100; Trust Territory of the Pacific Islands: $53,800; Government of Samoa: $27,188. Of the total Trust Territory educational expenditures for fiscal year 1950, $113,755, or approximately 30 percent, was spent on the schools on Guam and distributed thus: School of Medical Assistants: $50,485; School of Dental Assistants: $32,800; School of Nursing: $30,470. The yearly cost of maintaining an individual student in May 1950 was $1787 for a medical student, $1362 for a dental student, and $673 for a nursing student.[7] These sums included the monthly stipend of $20 given each student by the Trust Territory for the purchase of clothing and other personal necessities and the cost of his quarters, laundry and subsistence which was paid from civil administration funds of his home district.

A total of $103,679.04 was requested for the support of the schools in fiscal year 1951 based on the following requirements:[8]

Personal services	$48,435.50
Rental	8,971.26
Laundry	4,005.48
Subsistence	23,176.80
Maintenance and repair transportation	1,100.00
Supplies and material	2,190.00
Maintenance material and supplies	3,550.00
Transportation material and parts	250.00
Repair of buildings	12,000.00
	$103,679.04

Reduced appropriations forced the High Commissioner to request that this sum be lowered to $55,876[9] but the Commanding Officer, School of Medical Assistants, could see no hope of reducing it by less that $29,000.[10]

The medical and dental practitioners training program had been established basically as an interim and emergency measure. It was not intended that medical and dental assistants would permanently meet the need for doctors of medicine and dentistry and the long range public health programs, therefore, did not include planning for permanent construction of these schools.[11] The Bureau of Medicine and Surgery considered that 56 medical assistants and 36 dental assistants

[7] FieldTerPacIs ltr ser 494 dtd 5 May 50.
[8] Guam's share of this sum, for maintenance of four students, amounted to $3,571.68.
[9] HiComTerPacIs msg of 1 July 1950.
[10] CO Sch of Med Assts ltr ser NG(12)/L1-1 WWG:gd dtd to Jul 50.
[11] GovGuam ltr ser 003 dtd 2 Mar 49.

Health Aide at Ponape Dispensary Receives Instruction From U.S. Navy Hospitalman

would provide "sufficient area saturation for personnel of this semi-skilled type."[12] Nurses' training, however, was designed to provide replacement, and because that was a constant and continuous requirement, it was planned at one time to provide permanent quarters and lecture rooms for the students in the Guam Memorial Hospital. In March 1949 the Governor of Guam asked for the sum of $5,845,000 for new construction but lowered appropriations and plans for eventual transfer of the hospital to Department of the Interior administration made it impracticable to undertake the project.

Students for the schools at Guam were originally chosen from among the health aides who were receiving training at the civil administration dispensaries. Because of lack of instruction in English and mathematics, however, many of the students were unable to cope with the classes at Guam and DepHiComTerPacIs directed that, beginning January 1, 1949, all candidates for advanced professional training should have successfully completed at least one year of intermediate schooling.[13] In addition, applicants were required to pass an intelligence test and be selected by a board in each district composed of the civil administrator, the senior medical officer and the education officer. Vocabulary requirements, originally set at 500 words for medical and dental students and 200 words for nursing students, were later raised to 800 words for medical and dental students and 500 words for nursing students. Other entrance requirements remained as established when the schools were first started.[14]

The length of the courses also continued approximately as established in the military government period. The pre-school, four months intensive training in English and mathematics was increased to six months and a smattering of social studies added. The medical and dental courses remained of four years duration and the nursing course three years. Occasionally medical and dental practitioners who had been trained by the Japanese were sent to the schools for refresher training. A one year course in prosthetic dentistry was added in 1948 and the students given instruction at the Fleet Dental Clinic. The school year of eleven months began on January 1 for the medical and dental students and on March 1 for the nursing students.

[12] BuMed ltr ser 00196 dtd 12 Apr 49.
[13] DepHiComTerPacIs ltr ser 969 dtd 28 Jun 48.
[14] See v. II, p. 354 ff.

SCHOOL OF DENTAL ASSISTANTS—Continued

Fifth semester

Clinical Dentistry ..... 528 hours

Course	*Lecture*	*Laboratory*
Anesthesia	22	
Diagnosis and treatment planning	44	
Materia medica	22	
Operative Dentistry	66	
Oral anatomy and physiology	22	
Oral surgery	22	
Pedodontia	22	22
Periodontia	22	
Prosthetic dentistry	44	
Radiography	22	
Total hours	836	22

Sixth semester

Clinical Dentistry ..... 396 hours

Course	*Lecture*	*Laboratory*
Crown technic	22	44
Operative dentistry	22	44
Oral medicine	44	
Oral surgery	22	
Pedodontia	22	
Periodontia	22	
Prosthetic dentistry	22	44
Research trends in dentistry	22	
Total hours	726	132

Seventh semester

Clinical dentistry (operative) .... 396 hours
Clinical Dentistry (prosthetic) ... 198 hours

Course	*Lecture*	*Laboratory*
Crown and bridge technic	22	
History of dentistry	22	
Nutrition	22	
Prosthetic dentistry	44	132
Public health dentistry	22	
Total hours	726	132

Eighth semester

Clinical dentistry (operative) .... 396 hours
Clinical dentistry (prosthetic) .... 330 hours

Course	*Lecture*	*Laboratory*
Crown and bridge technic	22	
Orthodontia	22	
Principles of medicine	22	
Prosthetic dentistry	22	
Public health dentistry	22	
Surgical anatomy	22	
Total hours	858	

SCHOOL OF NURSING—1950

Preparatory

Course	*Hours*
English	260
Arithmetic	130
Nursing arts introduction	260
Total hours	650

Pre-Clinical

Course	*Hours*
English	60
Arithmetic	60
Nursing arts	120
Anatomy and physiology	80
Microbiology and introduction to medical science	60
Total hours	380

SCHOOL OF NURSING—Continued

First Year

Course	*Hours*
Nursing arts	270
Drugs and solutions	45
Pharmacology	50
Dietetics and diet therapy	50
English	190
Medical and surgical nursing unit plan	80
Total hours	685

Second Year

Course	*Hours*
Obstetrics and gynecology	40
Pediatrics	40
Psychology	30
Mental hygiene	20
Sociology	30
Hygiene and sanitation	45
English	240
Nursing and health service in the family	30
Total hours	475

Third Year

First semester

Course	*Hours*
Principles of Public Health	35
Nursing and health service in community:	
Maternal health	
Child health	
School health	
Tuberculosis control	
Communicable disease control	
Morbidity service	140
Total hours	175

Second semester

Course	*Hours*
Public Health field work	88
Advanced nursing and electives:	
Ward management	
Supervision (medical, surgical, and specialities)	
Advanced public health nursing:	
Advanced obstetrics and midwifery	
Practice teaching	40
Total hours (plus practice)	128

Twenty students entered the School of Medical Assistants each year, 10 the School of Dental Assistants, and 25 the School of Nursing. Quotas were usually met, although with difficulty, not only because of inadequate scholastic preparation but because of parental objection. Most Micronesians did not like their children to be exposed to Guamanian culture for too long a period and especially they disapproved of daughters who returned home wearing slacks and lipstick.

The numbers of Trust Territory students in the schools as of June 30 of each year were:

Students	1948	1949	1950	1951
Medical	41	46	38	31
Dental	20	20	19	20
Nursing	46	42	43	13
Totals	107	108	100	64

The geographic distribution of the students on the dates noted were:

Island	Medical June 1950	Dental June 1950	Nursing June 1949
Saipan	5	0	3
Tinian	1	0	0
Rota	1	0	0
Yap	1	0	3
Palau	7	6	15
Truk	8	5	4
Ponape*	6	3	9
Majuro	5	5	4
Kwajalein	4	.....	10

*Includes Kusaie.

One class was graduated from the School of Medical Assistants during the period of naval administration. The twelve graduates received their diplomas in December 1950 and returned to their home districts to begin their internships in the dispensaries. No dental assistants completed the dental course before the transfer of administration to the Department of the Interior. A total of approximately 35 nurses from the Trust Territory were graduated from the School of Nursing before July 1951; of those, 23 were employed as of that date.

Attrition was high among the medical and dental students and was usually traceable to lack of fluency in English and of preparation in basic science. The whole problem of medical and dental training was reviewed at various times but no satisfactory substitute for the Guam schools was devised. The Governor of Guam (GovGuam) suggested, in the spring of 1949, that students should be sent to schools in the United States but his recommendation was disapproved along the entire chain of command: the Fleet Medical Officer noted that the students were not educationally prepared for schooling abroad and the cost would be too high;[15] DepCinCPac feared that they would not want to return to their islands after living in the United States;[16] HiComTerPacIs stated that this country had a "moral obligation" to provide means to train medical and dental assistants and that such training was the "keystone of the medical program."[17]

[15] CinCPacFlt MedOff memo, n. d.
[16] DepCinCPac memo dtd 10 May 49.
[17] HiComTerPacIs ltr ser 003 dtd 24 May 49.

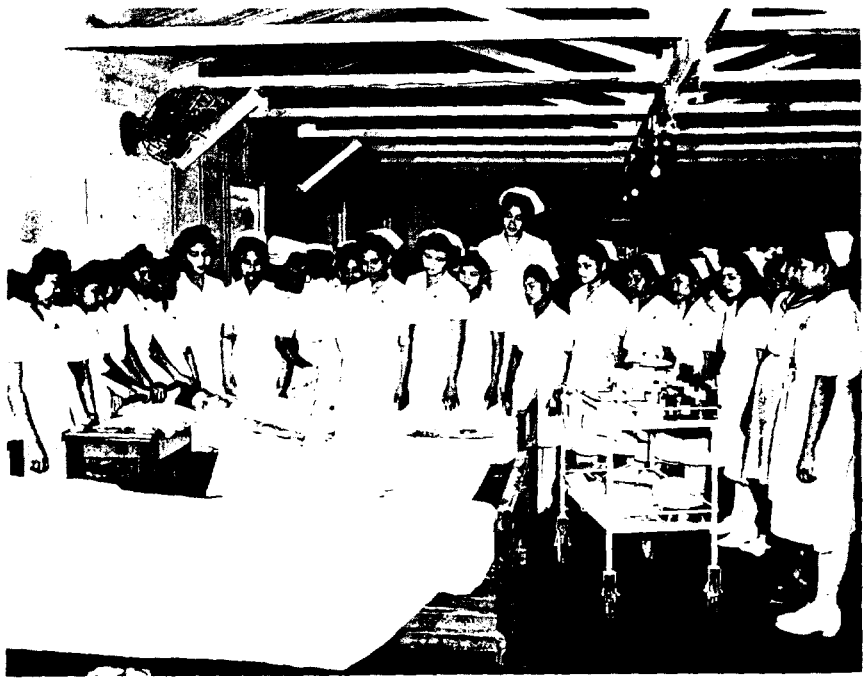
As a result of this difference of opinion between GovGuam and HiComTerPacIs and the contemplated transfer of administration to the Department of the Interior, the Chief of Naval Operations directed that the matter be held in abeyance.[18] The Bureau of Medicine and Surgery meanwhile suggested that the whole problem of training medical and dental assistants be reviewed by HiComTerPacIs and a definite program for their training and subsequent employment be formulated. Until this was done, the Bureau recommended that training be conducted by the Public Health Department, Guam, and the civil administration dispensaries and directed toward the field of preventive medicine with emphasis on first aid procedures, sanitation, and insect control.[19]

The Bureau of Medicine and Surgery's opinion concerning medical and dental training for the natives was concurred in by the senior medical officers at Guam. The Commanding Officer, School of Medical Assistants, considered that the "high plane" of training could be reduced, and, in May 1950, proposed that medical students receive basic pre-school training at the Pacific Islands Teacher Training School (PITTS) and in a two year course at Guam which would eliminate much of training in procedures that they would not have a chance to practice on their home islands.[20]

The Commanding Officer, U. S. Naval Medical Center, Guam, noted that the medical school was a "noble experiment" but that the curriculum exceeded the capacity of the students to assimilate and extended beyond the scope of future employment as "assistants." He also pointed out that much of what they learned was useless because of lack of medical facilities on small islands or because of the nature of the people with whom they would work: "Teaching of psychiatry with its redundant classifications of mental diseases to individuals that bow to the laws of taboo and other native superstitions appear superfluous." [21]

The recommendations to lower the "high plane" of the teaching were not acted upon because planning for the future status of the school under eventual Department of the Interior administration overweighed academic disagreements. Because the Naval Medical Center

[18] CNO ltr ser 0022P22 dtd 5 Jul 49.
[19] ChBuMed ltr ser 00386 dtd 15 Jun 49.
[20] CO, School of Medical Assistants, ltr ser NG(12)/L1-1 dtd 10 Jul 50.
[21] CO, U. S. Naval Medical Center, Guam, 1st end dtd 10 Jul 50 on *ibid*.



Students at School of Nursing, Guam

was to be disestablished, some provision had to be made for continuing the medical and dental schools, then parts of the Medical Center. The nursing school involved no organizational difficulty because it was part of the Guam Memorial Hospital, an indigenous institution which was to be taken over by the Department of the Interior. It would be possible to conduct the medical and dental schools as parts of the Naval Hospital, Guam, which was to continue to exist in the Marianas command, but with nurses' training responsible to a different organization, i. e. the Department of the Interior, there was no assurance that Guam and Trust Territory patients would be clinically available to the medical and dental school students.

To avoid this possibility and also reduce the cost of training, which was to be necessary during the forthcoming fiscal year, FieldTerPacIs recommended that: (1) the Trust Territory establish at Truk its own hospital with facilities for medical, dental and nursing training; (2)

all first year students in the three schools receive their first year training at PITTS. Thus the training program could continue to be conducted as a unit with clerical facilities available and at an estimated reduction in cost per pupil from $1787 a year to $500 [22] which would amount to a yearly saving of approximately $40,000.

The Commanding Officer, U. S. Naval Medical Center, Guam, concurred with the FieldTerPacIs suggestions [23] but, in assessing the entire situation in the light of concurrent developments, HiComTerPacIs disapproved the transfer to Truk of all training and hospital facilities for the natives. The start of the Korean emergency of "indefinite duration" in late June 1950 made it impossible to construct the necessary additional facilities. DepHiComTerPacIs therefore recommended that: (1) a small number of replacements for medical and dental practitioners continue to be trained at the Naval Hospital, Guam, for as long as the Navy had responsibility for the Trust Territory and thereafter they be trained at Truk; (2) nureses' training be continued on the present scale at Truk where the necessary facilities could be constructed at a cost of $12,000 in contrast to the $58,000 that would have to be spent on Guam for similar construction.[24]

Finally, in September 1950, it was decided that the medical and dental schools would be kept at Guam as part of the naval hospital where the service of all personnel would be utilized to the fullest extent possible and that nurses training should continue at the Guam Memorial Hospital. The six months pre-school language and mathematics instruction would be given at PITTS starting January 15, 1951.[25] FieldTerPacIs requested that the PITTS training not begin until the summer of 1951 [26] and HiComTerPacIs, after first denying the request,[27] ordered all plans for the Truk pre-school cancelled.[28]

Meanwhile the Naval Medical Center had been disestablished as of July 1, 1950 and its functions assumed by the United States Naval Hospital, Guam.[29] As a result of this reorganization, the medical and dental schools were placed under the military command and coordi-

[22] FieldTerPacIs ltr ser 494 dtd 5 May 50.
[23] CO, U. S. Naval Medical Center, Guam, ltr ser 2064 dtd 17 May 50.
[24] DepHiComTerPacIs memo dtd 25 Jul 50.
[25] HiComTerPacIs ltr ser 1748 dtd 25 Sep 50.
[26] FieldTerPacIs msg of 13 Oct 50.
[27] HiComTerPacIs msg of 20 Oct 50.
[28] HiComTerPacIs ltr ser 90-6 dtd 25 Nov 50.
[29] SecNav ltr ser 1940P21 dtd 7 Aug 50.

nation control of the Commanding Officer, United States Naval Hospital, Guam. The Guam Memorial Hospital, which was an indigenous institution, was transferred to Department of Interior control in July 1950 and the School of Nursing became the responsibility of the new administration.

The Navy had no information as late as December 6, 1950 about Department of Interior plans for continuation of the schools because, on that day, the Secretary of the Navy wrote the Secretary of the Interior that he did not know the situation in respect to the future status and training after July 1, 1951 of those enrolled at the schools. He hoped, however, that the Department of the Interior would continue a "sound and well integrated health program" and offered the "services of the Naval Medical personnel stationed on Guam for time-to-time lectures as desired on general or special medical and dental subjects for use as the Department of the Interior may see fit."[30]

The standard of education at the medical and nursing schools deteriorated noticeably during the fall of 1950 and this situation was of concern to the Navy. The number of lecture hours given by staff members of the naval hospital to medical students had been cut from the previous 34 hours to 10 hours and several instructors, including an English teacher, had been discharged. The nursing trainees received no formal classroom instruction after the administration of Guam Memorial Hospital had been transferred from the Navy and the students were being used only for cleaning the hospital.[31] Although the situation had been corrected by November 1950, many of the nursing students left the school and returned to their homes.

The Department of the Interior meanwhile had decided to keep the School of Nursing on Guam and had made arrangements with the Society of Medical Missionaries of New York, a Catholic nursing order, to take over the school.[32] The new administration also was considering the possibility of transferring the medical and dental students from Guam to the Central Medical School at Suva, Fiji.[33] This school, operated by the British South Pacific Health Service, had been established in 1888 and built around the Colonial War

[30] SecNav ltr ser 1009P22 dtd 6 Dec 50.
[31] Encl (6) to FieldTerPacIs ltr ser 804 dtd 20 Dec 50.
[32] *Ibid.*
[33] Chief Pacific Branch, Dept of Interior, ltr to Governor of Fiji and High Commissioner for the Western Pacific dtd 21 Nov 50.

Memorial Hospital. The laboratory and clinical facilities were excellent and its graduates had performed outstanding service in British Oceania.[34] Sixty-six Micronesian medical students could be accommodated during the school year opening January 15, 1951. The school had no facilities for training dental practioners but plans existed for establishing them shortly.[35]

The Chief of Naval Operations informed the High Commissioner of the possibility of the use of the school at Suva[36] but the latter withheld comment until he procured additional information from the school director.[37] The move was discussed at Pearl Harbor during the next week, and although Admiral Radford opposed it, especially because it would expose the students to still another culture, he notified Washington on December 21 that the transfer to Suva appeared to be the "logical solution".[38] At the same time he noted the lack of a dental school, but because plans for its establishment were being made, it was decided to transfer the dental students also.

The situation was explained to the students at Guam and they were allowed to decide for themselves whether or not they wanted to go to Suva.[39] In order to assure their eventual return to the Trust Territory, however, each student before his departure had voluntarily to sign an agreement that: (1) he would return to his home district, or if directed by HiComTerPacIs, to his home municipality and remain there for a period of three years immediately following the completion of his training; (2) he would accept employment in his specialty at any place in his home district when so ordered by HiComTerPacIs, the period of obligated service not to extend beyond three years from the date of completion of training; (3) he recognized the fact that the additional service to which he obligated himself would be in the nature of in-service training employed for advance training of medical professional personnel in the United States; (4) he understood that it probably would be impossible for him to return home until his training at Suva was completed. Students unwilling to

[34] One graduate of the Central Medical School, Albert Hicking, a Gilbertese, was medical practitioner on Kusaie.
[35] GovFiji and HiComWestPac ltr dtd 7 Dec 50.
[36] CNO msg of 9 Dec 50.
[37] HiComTerPacIs msg of 10 Dec 50.
[38] HiComTerPacIs msg of 21 Dec 50.
[39] HiComTerPacIs msg of 29 Dec 50.

accept these obligations would be dropped from the program under honorable conditions.[40]

All but six or seven medical and dental students agreed to go to Suva and on January 25, 1951, 54 of them departed Guam for Honolulu by a chartered Transocean Airlines plane and the overflow, three Samoans, came in via MATS. After a brief stopover in Honolulu, where they were briefed by Trust Territory personnel, they continued on to Suva. The Transocean plane arrived at Nadi, Fiji, on January 26 and a Pan American flight, carrying the Samoans, on February 3.

Awaiting them at Suva was the HiComTerPacIs Staff Anthropologist, Lieutenant Commander Philip Drucker, USNR, who had been sent ahead to investigate the situation, make arrangements for their arrival, and assist in their adjustment to a new environment. Conditions at the school were understandably "abnormal" so that there was little chance to observe its normal functioning, but Commander Drucker considered that the training would be competent and adequate. He recommended that: (1) special classes be conducted temporarily for the Trust Territory students because of their lack of facility in English; (2) an allowance of five dollars a month be paid them instead of the one pound allowed the other students; (3) the Trust Territory administration affiliate itself with the South Pacific Health Service so that it could be represented on the South Pacific Health Service Board; (4) the students not be allowed to feel they had been sent away and then forgotten by the administration.[41]

Scholastically, Commander Drucker noted:

> In comparing the course provided in Guam with that obtaining at the Central Medical School (CMS), Suva, it is noted that the academic year in Guam commences in July as opposed to January in Fiji, also the first year of the curriculum at Guam has been devoted entirely to English and mathematics for 12 months; and science (six months) has not been commenced until the second year, whereas at the Central Medical School the first year students receive six months science and six months anatomy and physiology. One other difference in the course is that students at Guam have been receiving hospital experience for 1½ years whereas Central Medical School students have 2½ years hospital experience included in their curriculum. The above differences have been carefully examined and the adjustment between the two curricula will not be too difficult.
>
> It appears that students from the Trust Territory have not attained the same standard of general education from preliminary schooling as that

[40] HiComTerPacIs msg of 10 Jan 51.
[41] Staff Anthropologist memo dtd 5 Feb 51.

reached by the normal intake of the Central Medical School, but it is confidently expected that they will overcome this handicap since they are starting at the beginning of the School's session.

The second year students present the greatest difficulty in fitting into the regular classes, in that they received no anatomy or physiology during their first year at Guam. Arrangements have now been made for them to start the study of anatomy and physiology so that they will not have to miss another six months' tuition while waiting for the next anatomy class to commence. Additional lectures are being given during the evenings to these students to enable them to catch up with the normal curriculum for the other CMS students.

Third and fourth year dental students will fit into the teaching programme naturally and should have no trouble in mastering their subject.

Third and fourth year medical students will be at a considerable disadvantage in that they have not had as much clinical experience as the CMS students in these years (the third year students from Guam have had no hospital experiences and fourth year students have had only six months as compared with our six months and eighteen months respectively and none of them have had any practical work in a dispensary). These students, however, have been put in their equivalent years at the CMS and if they work hard it is hoped that they will make up the lost ground.

The students have made a good impression and there is no doubt that they will fit into the life of the CMS and take their part in all its activities. The students so far appear to be happy and conscientious in their studies. A system of prefects exists for each year with whom the students may discuss any of their immediate problems and have them referred to the Principal of the School, who is always willing to advise the students in their academic and personal problems.[42]

Conditions at the school remained confused throughout the spring of 1951. Physical facilities were definitely inadequate and the staff was too small for the increased pupil load. The director requested additional instructors from the Trust Territory administration but only one civilian dentist, Dr. Harry Cloud, could be spared, and his services were utilized principally in working with the dental students and setting up facilities for their training. In May 1951, the Navy contributed seven dental field kits with chairs for their use.

A further report of the progress of the Trust Territory students was made at the request of HiComTerPacIs by Dr. Felix M. Keesing, a member of the South Pacific Commission, who visited Suva from May 23–30, 1951 enroute to a meeting of the Commission at Noumea. His pessimistic report noted that adjustment of the students to the training and living conditions was difficult. The transfer also had

[42] Staff Anthropologist "Preliminary Report on the Progress of Students," n. d.

Students at School of Medical Assistants, Guam

aggravated an emergency situation in an already crowded school: 160 students were living and working in facilities planned for 40 students and as a result, most of the classes for the first and second year groups were held at the Tamavua Hospital some three miles away and living quarters and subsistence were poor by American standards. The Trust Territory students were continuing to have linguistic difficulties especially in understanding the "varied dialected forms of English" spoken by the instructors. Dr. Keesing also lamented the lack of "familiar American style sports equipment" but rejoiced that just before his departure some baseball gear arrived.[43]

One of the greatest dissatisfactions of the Trust Territory students was the small personal allowance granted by the school. On Guam they had received twenty dollars monthly but because clothing was

[43] Dr. F. M. Keesing *Report*, n. d.

furnished at Suva, the Trust Territory administration thought that the one pound ($2.68) given the other students would be sufficient. A carton of cigarettes, however, cost approximately one pound at Suva and no money remained to purchase air mail stamps, a most necessary requirement for the Trust Territory students. Therefore, in accordance with the recommendation made by the staff anthropologist, HiComTerPacIs increased the allowance to five dollars retroactive to February 1, 1951. On April 13, 1951, funds to cover the additional sum were sent to the Director of the school [44] but by the end of May the latter had still not distributed them because he feared it would create dissatisfaction if some of the students received twice as much spending money as the others.[45]

By the end of the period of naval administration, some of the difficulties were being corrected. Plans were being made for the construction of a new and larger school at Suva, dental training had been started and the students were becoming better adjusted to life in a new country. The move of the medical and dental students, however, was one of the most unfortunate results of the transfer of Trust Territory administration to the Department of the Interior. Admiral Radford's fears for their contact with still another alien culture were justified, but as he had earlier acknowledged, it was the only logical solution at the time.

The plan to have the School of Nursing remain on Guam under the direction of a Catholic nursing order did not materialize because the transfer of the School of Medical Assistants to Suva removed clinical and laboratory facilities for the nursing students. In the spring of 1951 it was decided to conduct nurses' training at Truk as one of the PITTS schools after the Trust Territory became the responsibility of the Department of the Interior.

Research

Facilities for research on Trust Territory medical problems were available at the Institute of Tropical Medicine of the U. S. Naval Medical Center, Guam, and at the Naval Medical Research Institute of the National Naval Medical Center, Bethesda, Maryland. Research on intestinal parasitism was a continuing project at the naval facilities and extended by a parasitological survey of Yap in the summer of

[44] DepHiComTerPacIs C/S ltr to Director, Central School, dtd 13 Apr 51.
[45] Keesing *Report*.

1950. Study of the type of leprosy endemic to the Trust Territory was carried on both at the Trust Territory leprosarium (Tinian) and at the National Leprosarium, Carville, Louisiana.[46]

Specific research problems involved the study of filariasis and encephalitis. The high incidence of filariasis in the Truk District 20 to 35 percent, discovered during the WHIDBEY survey, required that adequate controls be provided to control the spread of the disease. In the spring of 1951 an epidemiological research team was sent to Truk [47] and directed to: (1) determine the geographical limits of the disease; (2) identify the species of etiologic agent and vector present in various areas; (3) develop effective measures for controlling the insect vector; (4) explore methods of treating existing filarial infections. The research unit had not completed its study by the time of transfer of administration to the Department of the Interior.

The first investigation of a suspected encephalitis which appeared on Ponape in late 1946 and reached epidemic proportions in 1947 and 1948 was made by Commander R. A. Mount, MC, USN. His report characterized the illness as an "encephalitis, believed to be a virus disease, and believed to be transmitted by mosquitoes" and recommended quarantine measures to curb its spread.[48] As a result, travel to and from Ponape was restricted for several months beginning December 16, 1947. Serum specimens collected during the investigation were sent to the Hooper Foundation of the University of California where complement-fixation and neutralization tests were carried out.[49]

A more thorough investigation of the disease was conducted in January and February 1948 by an epidemiological team from the Naval Medical Research Institute, Bethesda, Maryland, consisting of Commander Herbert S. Hurlburt, MSC, USN, Lieutenant (j. g.) Charles A. Bailey, MC, USNR, and John I. Thomas, Hospital Corpsman, USN. Serological work, except for certain preliminary trials on Ponape, was done at Bethesda. The disease, previously undescribed, was named "eosinophilic meningitis" and summarized thus:

> 1. A relatively mild disease characterized by headache, vertigo, nausea, vomiting and pain in the posterior nuchal and lumbar regions was found to occur in epidemic proportions on the island of Ponape, Eastern Carolines.

[46] *Supra*, p. 906 ff.
[47] CinCPacFlt TAD orders No. T-299 ser P-134 dtd 12 Feb 51.
[48] Mount, R. A., "Encephalitis Outbreak on Ponape, Eastern Caroline Islands," dtd 8 Oct 47.
[49] Hammon, W. McD., "Ponape Island Encephalitis Investigation," dtd 24 Dec 47.

Fever, if present, was generally low-grade. Infrequent physical findings were ataxia, Romberg sign, occasional unequal deep tendon reflexes and paraesthetic skin areas.

2. The cardinal laboratory finding was pleocytosis, occurring in about one half of the patients and averaging 530 cells per cubic millimeter of which eosinophils were found in percentages varying between 1 and 100 per cent. This together with the symptomatology, is arbitrarily used for the characterization of an apparently previously undescribed syndrome.

3. Attempts to determine the etiology have included culturing of acute phase blood and cerebrospinal fluid on media for bacteria and fungi, inoculation of mice and monkeys by various routes. No causative agent has thus far been demonstrated.

4. Complement-fixation and neutralization tests for viruses of the encephalitides; complement-fixation tests for amoebiasis, filariasis, echinococcosis, toxoplasmosis and trichinosis; precipitin tests for ascariasis; agglutination tests for leptospirosis were all negative.

5. Whether the mosquito is the vector or not was not determined; however, the evidence in favor of its being the agent of transmission is as convincing as the evidence to the contrary.

6. The sequelae, previously ascribed to this disease, such as paralyses and psychoses are probably not the result of this disease.

7. No disease of a similar character has been reported in the literature.[50]

In addition to the work done by the research institutes, naval medical personnel stationed in the field often conducted research in problems peculiar to their particular areas. The information gathered was coordinated by the Director of Public Health and made available to all medical staffs.

Research in nutrition was conducted in 1951 by a qualified food and nutrition expert[51] as part of the Scientific Investigation of Micronesia (SIM) program.[52] Investigations were made on Majuro, a "low" island of the Marshalls, from January 18 to May 29 and on Udot, a "high" island in Truk Atoll, from June 27 to October 8; research analysis was performed at the civil administration dispensaries and the nutrition laboratory of the University of Hawaii. The project had for its specific object a study of the dietary habits and nutritional status of the inhabitants and the nutrient composition of basic plant and animal foods. Data was gathered on: foods eaten, quantities, methods

[50] Bailey, C. A., "An Epidemic of Eosinophilic Meningitis, a Previously Undescribed Disease, Occurring on Ponape, Eastern Carolines," Naval Research Institute, National Naval Medical Center, Bethesda, Maryland, Project NM 005 007, Report No. 7, dtd 14 Oct 48. See also Hurlburt, H. S., and Thomas, J. L., "An Entomological Survey of Ponape, Eastern Caroline Islands," Naval Medical Research Institute, Project NM 005 007, Report No. 4, dtd 5 May 48.

[51] Miss Mary Murai of the University of Hawaii.

[52] HiComTerPacIs ltr ser 1256 dtd 22 May 51.

of preparation, preferably by family or social group, noting child habits particularly; nutrient analysis of plant and animal foods including protein, fat, carbohydrate, vitamins and minerals; calculations from analytical data and food consumption records of total nutrient consumption including calories; clinical status—disease patterns; height-weight-age-sex-date of children; effort and activity involved in food procurement. The project was designed to furnish information necessary for the development of educational programs in nutrition.

Sanitation

Great effort was expended by the administration in its attempts to improve the sanitation of the islands. The medical officers at each civil administration unit inspected the headquarters area weekly and the outlying islands when on field trips. Indigenous sanitation inspectors, usually the native health aides, were appointed for each village and made responsible for their cleanliness. The population was acquainted with the public health regulations for the Trust Territory and infraction of the rules was made a punishable offense. Some islands were always models of neatness but there were others that never ceased to be problems. The administration's insistence that they be kept clean impressed the inhabitants if it did not always overcome their indifference to their surroundings. A naval vessel appearing unexpectedly off an island sent the natives scurrying around collecting and burning trash. If any two English words were synonymous to the natives, they were "Navy" and "cleanliness."

Programs for the control of rodents and insect pests concentrated on efforts to eliminate food sources and breeding grounds. Deep burying of garbage and refuse or dumping it at sea, draining and filling of stagnant water reservoirs near living areas, and community clean-up projects accomplished some reduction in fly, mosquito and rat population. District headquarters areas were sprayed with DDT regularly and outlying islands occasionally; rat poison and rat traps were distributed to all villages and rat catching contests occasionally arranged for school children. Strict regulations existed for the disposal of human waste and the administration assisted the communities in constructing sanitary facilities.

The Navy's public works programs often included replacement or construction of water storage facilities, and the people were required

to screen all individual water tanks. The administration observed rigid standards in the inspection of water distribution systems. Establishments dispensing food were required to be licensed and were inspected frequently.

Nutrition

The information collected during the nutrition survey made in 1951 [53] was not available until after the period of naval administration ended.[54] The investigation produced a pessimistic picture of food patterns that could definitely contribute to health problems. In both areas studied, Majuro Village of Majuro Atoll, and Udot Island of Truk Atoll, sustenance was a combination of local food products and imported foods, and food consumption was dependent upon seasonal changes due to ripening of various plant food so that the nutrient contents of diets differed at various times of the year.

To assess the adequacy of diets, the *Recommended Dietary Allowances* (revised 1948), prepared by the Food and Nutrition Board of the National Research Council (NRC), were used as standards. The various nutrients and the percentages below the NRC allowances obtained by each group in their food are shown in the following table:

Nutrient	Majuro Village		Udot Island	
	Number of people	Percent below NRC* allowances	Number of people	Percent below NRC allowances
Calories	157	.....	290	64
Fat	157	97	290	99
Protein	161	81	290	56
Calcium	161	98	290	33
Phosphorus	153	95	290	73
Iron	161	65	290	97
Vitamin A	161	87	290	99
Thiamine	161	85	290	58
Riboflavin	161	99	290	99
Niacin	161	79	290	68
Ascorbic acid	161	94	290	99

*National Research Council.

[53] *Supra*, p. 592.

[54] Murai, M., *Nutrition Study in Micronesia*, SIM Report No. 17, typescript, Honolulu, 1953.

Graduation Day at School of Nursing, Guam

The actual nutrition situation was not so startling as it appears from these statistics, however. The WHIDBEY survey reported a vitamin deficiency incidence of 0.9 percent for all districts but Truk and Ponape, and found few instances of illness which could be traced to lack of adequate food. Although the levels of consumption of proper foods left much to be desired according to American standards, the dietary habits of the people had sufficed for generations. Better food consumption would depend upon both education and an improved economic situation.

Control of narcotics was never a problem in the Trust Territory. Betel nut chewing, although a distasteful habit to Americans, was accepted by the Micronesians, and because it was customary, no attempt was made to forbid its use. The following civil administration regulations relative to the importation, sale, manufacture of drugs and

pharmaceuticals were promulgated in Interim Regulation 4–48, Chapter 7:

> It shall be unlawful for any person other than those properly accredited to import, sell, give or dispense medicines, drugs, or other substances of a deleterious nature, which in the opinion of proper medical authority should only be administered by authorized practitioners, physicians or other medical personnel.
>
> It shall be unlawful to import, sell, traffic in, purchase, give or prescribe narcotics or medicine containing narcotics or other so-called habit-forming drugs except by specific authority of the Civil Administrator.

Alcoholic beverages consumed in the area were entirely of local manufacture except on Saipan where the sale of beer was permitted. As in the case of betel nut, its use in accordance with indigenous tradition was permitted subject to community control. Intoxication was more a matter of law enforcement than a medical problem.[55]

Health Education

The importance of health education to the people of the Trust Territory was always evident to the medical personnel but its satisfactory implementation was not possible during the too brief time of naval administration. As in other phases of administration, the principal difficulties were experienced in the outlying areas, away from the civil administration headquarters, where contacts with the indigenes were infrequent.

Health education was included in all school curricula and especially at the Pacific Island Teachers Training School (PITTS). The fundamentals of hygiene, sanitation, and preventive medicine were taught in the schools and students at the Teacher Training School received additional instruction in methods of teaching health subjects. Medical officers at administration headquarters conducted classes at the intermediate schools and lectured to adult classes at evening schools. Visual aids, especially posters and films, were distributed widely by the Health Department and always received with interest; medical personnel, however, could never be certain, in the case of films, to what extent the natives' eagerness for "movies" inspired their attention. At times the people reacted in an unexpected manner to the determination of the lecturer to clarify the issue. One doctor, who expended great effort in constructing a three foot model of a fly for use in describing

[55] *Supra*, pp. 450–1.

the dangers of the pest, was crestfallen when, after his most enthusiastic lecture, a member of the audience commented: "That may all be true, Doctor, but we don't have flies that large."

Medical personnel assigned to field trips always spent part of their time ashore giving instruction in preventive medicine and sanitation. Doctors became increasingly aware during these visits of the need for a local solution to the problem of medical attention because most of the patients were reluctant to leave their home islands for treatment at the civil administration dispensaries. The report of the administrative-medical field trip to the Mortlocks in 1951, when thorough investigation of conditions in an outlying area was possible, notes:

> . . . only through the medium of education can the health of these islands be materially improved. Public health, its teaching and its methods, must precede the steps of curative medicine. There is little value in treating a disease in one or two individuals when the population as a whole has no conception of its communicability or control. The natives are eager to learn and should be taught. This can be done through the school system provided the instructors themselves have a firm and truthful understanding of diseases. Fleeting visits by medical officers or assistants can not accomplish this end. Fundamentals of sanitation and public health must be stressed in the schools and in the daily lives of the islanders.
>
> The problem of enteric parasitism is a glaring example of the need for mass education. On all the islands it is believed that 50% or more of the younger age groups harbor Ascaris Lumbrecoides. Though no survey was conducted several scattered atoll examinations revealed Hookworm ova as well. Most of the islands have an adequate number of benjos. However, as has been witnessed, the natives do not use the benjos even though they are convenient. They do not understand our insistence that benjos be constructed and used. Teaching must start at the most primitive level and follow through until the problem is understood and then the cure of the most common diseases will come from the people themselves.[56]

The impossibility of assigning a sufficient number of nonindigenous medical personnel to conduct an education program definitely retarded the progress of the entire health program. The only solution lay in intensive, reiterative training of health aides and teachers who, when they returned to their home islands, could assume responsibility for teaching the principles of health education. The lack of knowledge of preventive medicine and of appreciation of American health and sanitation standards, together with the understandable slowness of

[56] Encl (3) to *Technical Reports on Administrative-Medical Field Team Trip to Mortlock Islands*, pp. 15–16.

the less acculturated islanders to accept change, indefinitely postponed permanent improvement.

Conclusion

The health program established and expanded by the Navy during its administration of the islands was successful considering the immensity of the problem and the few years that the program was in effect. The statistics of treatments, cures, facilities and training are impressive but no person connected with the program considered that anything but a beginning had been made in eliminating prevalent diseases and acquainting the inhabitants of the islands with the basic reasons for acceptance of American health standards.

Working contrary to the progress of the program were many of the same difficulties that hindered endeavor in other fields of native administration. The problems of transportation and communication made satisfactory conduct of medical and sanitation programs on outlying islands always a problem. Lack of laboratory facilities in the field and nonavailability of skilled nursing limited diagnostic and therapeutic work. Language difficulties sometimes complicated treatment because, as one medical officer commented, "Taking a psychiatric history through an interpreter is an unparalleled intellectual feat."

The permanent success of the health program for the Trust Territory depended to a great extent upon its acceptance and continuance by the islanders themselves. Each year the number of people voluntarily seeking assistance from the administration's health services increased and the influence of unqualified indigenous practitioners, the so-called "witch doctors," progressively decreased. At no time did the administration attempt by legislation to forbid the practice of traditional island medicine, but if at any time such practice endangered the welfare of the people, medical officers resolved the problem through consultation with local community officials.

A naval medical officer who served in the Marshall Islands noted that desirable health standards in the islands could be reached only by progress in an "individual trinity:" education, public demand, and economy. Education would furnish knowledge of the basic theories of health and sanitation and result in public demand for the program. Island economy, which should provide more than subsistence for health, would include "better housing, clean food and clothing, shoes, balanced diets, clean water stowage, sanitary waste disposal, immu-

nization programs, and independent support of local health p
sonnel." [57]

Proposed solutions for the health program always emphasized th
three objectives. When the people of the Trust Territory wou
become impressed with the benefits to be gained by acceptance a
practice of American concepts of sanitation and public health, a
when they were in a position to procure with reasonable facility t
materials necessary to convert theory into practice, then sustain
advances in sanitation and preventive medicine could be made.

[57] Morgan, D. P., *Medical Care in the Marshall Islands*, typescript, n. d., CNO files.