

REPORT ON A FOUR ATOLL HEALTH CARE PROGRAM

TO: SECRETARY OF THE DEPARTMENT OF THE INTERIOR, WILLIAM CLARK

FROM: ASSISTANT SECRETARY FOR TERRITORIAL AND INTERNATIONAL
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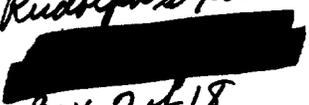
INTRODUCTION

The Secretary of the Interior is charged, in Public Law 95-134, as amended by P.L. 96-205, to implement a comprehensive health care plan

"for the people of the atolls of Bikini, Enewetak, Rongelap and Utirik, and for the people of such other atolls as may be found to be or to have been exposed to radiation from the nuclear weapons testing program."

This report, summarizes the planning process and recommends a program to implement the \$4 million appropriation of P.L. 98-213 (not limited to a given fiscal year). It is based on recent on-site visits in the Marshall Islands, meetings with federal and local officials and an extensive review of Congressional reports and other literature, by a team from the Interior Department's Office of Territorial and International Affairs and the Public Health Service. The team has tried to balance the intent of Congress with the concerns of the four atoll peoples, officials of the Republic of the Marshall Islands government and other federal agencies. The Report is divided into the following sections:

Historical/Legislative Background
Methodology
Findings
Program Components
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Recommendations

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HISTORICAL/LEGISLATIVE BACKGROUND

The Nuclear Testing Program in the Pacific

The Marshall Islands (Bikini and Enewetak Atolls) were chosen as an atomic bomb test site for Operation Crossroads. Tests began in 1946 and ended when a moratorium on nuclear testing was declared in 1958. Before the tests began in 1946, the Bikini people moved from their home island to Rongerik Atoll, later to Kwajalein Atoll, and finally settled on Kili Island in the southern Marshalls. In 1948, the Enewetak people were relocated to Ujelang. The tests did not result in significant radiation exposure to personnel or fallout contamination outside the test area except in one instance. On March 1, 1954, the detonation on Bikini of a thermonuclear device, Bravo, resulted in the accidental deposition of radioactive fall-out in certain populated locations. The yield was greater than expected, and unpredicted meteorological conditions caused the radioactive cloud to drift over and deposit fallout on several inhabited atolls to the east: Rongelap with 64 people, Ailinginae with 18 people, Rongerik with 28 American servicemen, and Utirik with 157 people. A Japanese fishing vessel in the area with 23 fisherman aboard was also exposed, and returned to Japan. This group has been defined by the U.S. government as "exposed" and does not include others referred to in P.L. 96-205 as "affected" in other ways by the U.S. nuclear testing program. These exposed people were evacuated by planes and Navy ships within two days and taken to Kwajalein Atoll, 175 miles to the south. They were first examined by the medical group at the Naval dispensary there. Eight days after the accident, a medical team of 21 doctors and technicians arrived at Kwajalein, and for two months the team administered medical histories and repeated physical examinations.

After the examination periods, the exposed Marshallese people went to Ebeye Island for several weeks. The exposed Rongelap people were taken to temporary villages built for them on Ejit Island in Majuro Atoll, and later returned to Rongelap. In June 1954 the Utirik people returned to their home Atoll. The American servicemen were taken to Tripler Army Hospital in Hawaii for further examination. Annual or semi-annual medical examinations of the exposed Marshallese people have been conducted since September 1954.

Currently there are 174 Marshallese people who were exposed in the Bravo test and continue to receive health care through a program administered by the Department of Energy. The Department of Energy also conducts an ongoing program of environmental research and radiological surveillance of the affected atolls. Results of this program are reported to the government of the Marshall Islands and to the atoll residents.

Legislative History

On November 30, 1983, the Congress approved a supplemental appropriation for \$4 million in Fiscal Year 1984 funds to implement the four atoll health care plan authorized in section 106 of Public Law 96-205. These funds were appropriated to the Department of Energy, with responsibility for program implementation given to the Secretary of the Department of Interior (Secretary),

"in consultation with the Secretaries of Defense, Energy, and Health, Education and Welfare [now, Health and Human Services], and with the direct involvement of representatives from the people of each of the affected atolls and from the Government of the Marshall Islands."

Public Law 96-205 (H.R. 3959), signed into law on March 12, 1980, amended P.L. 95-134 by adding section 106, providing:

"in addition to any other payments or benefits provided by law to compensate the inhabitants of the atolls of Bikini, Enewetak, Rongelap, and Utirik in the Marshall Islands, for radiation exposure or other losses sustained by them as a result of the United States nuclear weapons testing program at or near their atolls during the period 1946 to 1958, the Secretary of the Interior shall provide...a program of medical care and treatment and environmental research and monitoring for any injury, illness or condition which may be the result, directly or indirectly, of such nuclear weapons testing program."

Public Law (P.L.) 96-205 further requires the plan to

"set forth, as appropriate to the situation, condition, and needs of the individual atoll people: an integrated, comprehensive, health care program including primary, secondary, and tertiary care with special emphasis upon the biological effects of ionizing radiation; and an education and information program to enable the people of such atolls to more fully understand nuclear radiation and its effects."

The Conference Report that accompanies H.R. 3959 also states that

"The conferees intend that this funding (\$4 million) be consistent with the health care arrangements under Section 177 of the Compact for Free Association;"

and that a plan be developed by the Secretary of Interior

"addressing the health care needs of those found to have been exposed to radiation from the nuclear weapons testing program."

The Department of the Interior (DOI) initially contracted with Loma Linda University to conduct the necessary surveys and prepare the health care plan as called for in Section 106. In their report issued December 3, 1980, the Loma Linda Planners concluded that:

"it is increasingly evident that the actual health impact of radiation on even the most directly affected is minimal. This not only further complicates any attempt to distinguish these individuals from others, but also raises the question of the need for maintaining this distinction...Certainly any plan proposed should include this comprehensive care for this particular identified group, but limitation of improved health care to only these people raises serious political, ethical and cost-effective

issues...It is medically impossible to distinguish in any particular individual whether a disease complex or symptom is radiation related or not...Migration and resulting intermarrying is rapidly spreading those individuals throughout the Marshalls. With the groups resident among the large populations on Majuro and Ebeye, well over 75% of the total Marshallese population has people from the four affected atolls living among them. This means that even the narrowest interpretation of P.L. 96-205 will require health care to be provided far beyond the four atolls themselves...It is ethically impossible to provide health care for the affected peoples and deny it to their neighbors and even families because they do not qualify."

The Loma Linda Plan concluded that the best solution would be to improve health care throughout the Marshalls, with the initial phase of this plan including the four atolls. Neither the Department of the Interior nor the Marshall Islands Government officially endorsed the plan.

P.L. 98-213 was passed in December 1983, and section 8 of that law directed the Interior Secretary to implement a health care program for the four named atolls of the Marshall Islands; and to notify the appropriate Congressional committees if he finds that the populations of other atolls should be included in the program, setting forth the basis for his findings and the estimated cost of extending the program.

The Committee recommendations for P.L. 98-213 reiterated that the Congressional intent underlying P.L. 96-205, Section 102, is that

"...an instrumentality of the United States, not the Government of the Marshall Islands, will provide health care for those Marshallese adversely affected by U.S. nuclear testing in the Pacific."

Congressional intent is further clarified in the Budget Recommendations for Fiscal Year 1985 of the House Interior and Insular Affairs Committee issued on March 7, 1984. That report states:

"The Committee believes that the U.S. Government has a responsibility to continue to care for the health needs of these nuclear victims for the indefinite future. At the same time, providing funds to the Marshall Islands government to run such a program troubles the Committee. We have stressed that P.L. 96-205 is to be implemented

for the people of the four named atolls, but the position of the Marshall Islands Government is that all of the people of the Marshalls were 'exposed to radiation from the nuclear weapons testing program,' and that health care benefits under the Act must be provided to all Marshallese citizens."

At the same time, the House Committee notes that the four atoll program "is not designed to circumvent the existing health care system in the Marshall Islands."

This committee also states that "radiation-related health needs should continue to be met by ongoing U.S. medical programs, particularly those conducted by the Department of Energy." Information on DOE medical programs affecting the four atolls are noted in the Findings section of this report.

METHODOLOGY

In order to design a comprehensive health care system for the people of the four atolls, Department of Interior Assistant Secretary for Territorial and International Affairs - Richard Montoya, met with an interagency group that included the Department of Energy, Department of Defense, Public Health Service (in Health and Human Services Department), and the Office of Micronesian Status Negotiations. After gathering information on the involvement of other federal agencies in health care in the Marshall Islands, the Office of Territorial and International Affairs was given the lead in the planning process.

OTIA then asked the Public Health Service for the loan of an employee to provide medical and health system planning expertise in the planning process. PHS responded by identifying two individuals, a doctor from Region IX and a system planner from Washington, D.C., to assist OTIA as needed.

Before going on-site, the OTIA/PHS team reviewed several documents including: 1) all pertinent legislation, 2) hearings and conference reports, 3) "An Analysis of Crucial Issues, Especially Health Care, in the Trust Territory of the Pacific Islands (TTPI), Based on a Staff Inspection Trip Throughout the TTPI in November of 1982", 4) A Survey and Assessment Report of the Majuro Hospital prepared by the Sisters of Mercy International Health Program (private, non-profit), 5) the TTPI Five Year Comprehensive Health Plan for the Marshall Islands, 6) Certificate of Need legislation for the Republic of the Marshall Islands (RMI), 7) the Loma Linda Study, 8) separate proposals from the RMI and the United Benefits Corporation (private, third-party health administration company) for implementation of P.L. 96-205, 9) reports and findings of the Brookhaven National Laboratory (DOE contract health provider in the Marshall Islands), and 10) various publications prepared by the Department of Energy about the effects of the U.S. nuclear testing program in the Marshall Islands.

The DOI-appointed fact-finding team of PHS health planner - Mr. Joe Morris, PHS Region IX Medical Officer - Dr. Charles Hostetter, and OTIA Special Assistant - Teri Klein, traveled to the Marshall Islands in March, 1984. The team met in advance to identify the types of information needed and to review the available literature. Information was collected at each of the four atoll population centers on: the condition of existing facilities and equipment; medical and dental supplies on site; qualifications and training of current staff; transportation and communication access to Majuro; availability of power, water and sanitary facilities; type of records kept (both medical and fiscal); status of health education, immunization, pre-natal and

other health services provided by the RMI, DOE or other sources. On-site assessments were completed where the majority of the four atoll populations now reside on: Majuro, Kwajalein, Ebeye, Enewetak, Rongelap, Utirik, Kili and Ejit. The team met with the island health assistants, community leaders, and in all cases, with the community at large (via open meetings announced in advance of their arrival). In addition to the data the team had earlier identified for collection, they also opened the floor to questions, comments and suggestions from the community, after explaining the purpose of their mission.

In Honolulu and Majuro, the team met with the DOE staff who provide staffing assistance and logistical support to the DOE medical and environmental programs. They also toured the DOE chartered research vessel, Liktanur II, that provides transportation and on-site support to DOE programs on Majuro, Ebeye, Rongelap and Utirik, and talked with the contracted medical service providers from Brookhaven National Laboratory.

In Majuro, the team met with the RMI President and his cabinet, budget and health service officials, hospital administrators and planners, and concerned members of the Nitijela (RMI legislature). The team also toured both of the hospital facilities in the Marshalls, on Majuro and Ebeye, as well as a new hospital, under construction, on Majuro. They also met with Dr. Graham Conway, a physician from Honolulu who has been hired by the Bikini Trust Fund to serve the health needs of their population on Kili. The team's findings and recommendations follow.

FINDINGS

The planning process described in the methodology section has yielded extensive objective information to be used in formulating an appropriate health care system to serve the people of the four atolls. This system must be fully integrated into the medical system of the Republic of the Marshall Islands. In addition, much useful subjective information has been derived, individually and collectively, from the meetings and tours. These first-hand perceptions are particularly important since the health care system, if it is to succeed, must be developed with full appreciation of the social and political context within which it must function.

Geography

In discussing the four atolls, their populations and demographics, Bikini will not be included by name since it is now uninhabited. Rather, reference will be made to Kili, where the largest group of Bikinians now live, and Ejit, where a smaller number of Bikinians reside. The four atolls are located as far as 600 miles from the district center in Majuro:

<u>Atoll</u>	<u>Approximate Number of Miles from Majuro</u>
Rongelap	410 miles
Utirik	300 "
Enewetak	600 "
Kili	159 "
Ejit	Approx. one mile, part of Majuro Atoll

Note: Majuro is approximately 2,280 miles from Hawaii.

Each of the four (named) atolls is small and low. The highest point above sea level is on Kili where there is one point approximately 30 feet above sea level. The vegetation is tropical, the primary trees being coconut

palms. There is little agriculture, except for copra (coconut meat) production. The northern atolls (Utirik, Rongelap and Enewetak) are relatively more arid than the southern Marshalls. The Northern Marshalls receive approximately 80 inches of rain per year, while the Southern islands receive approximately 160 inches or more of rainfall in a year. Kili, Ejit and Majuro are in the Southern Marshalls. Since water catchment represents the major source of fresh water, the amount of rainfall has important health consequences. It also significantly affects the potential for local food production.

Transportation and Communication

Continental/Air Micronesia and Air Nauru connect the Marshall Islands with Hawaii, Guam and other islands of Micronesia and the South Pacific. The recently formed Airline of the Marshall Islands provides regularly scheduled domestic flights to eleven of the atolls in the Marshalls and is available for charter. Rongelap, Utirik, Enewetak and Kili are served by regular flights. Flights from Majuro to Rongelap and Enewetak are via Kwajalein. Utirik and Kili are served by direct flights from Majuro. The cost of a one-way airfare on Airline of the Marshall Islands in March 1984, from Majuro to Enewetak (the most distant of the four atolls) was \$199. Majuro to Kili was \$64 one-way.

The Government of the Marshall Islands owns four field trip ships which are scheduled to serve the outer islands on a regular basis. These field trip ships provide transportation between the outer atolls and Majuro/Kwajalein. In cases of medical emergency, patients can be evacuated to Majuro or Ebeye by Air Marshall Islands (where airstrips exist) or ship. The field trip ships also provide the means of transportation for public

health teams and Maternal and Infant Care teams to visit many of the outer atolls. For those outer atolls which are served by the Airline of the Marshall Islands, public health personnel may use this means of transportation to make regular visits.

Telephone communications between the Marshall Islands and overseas locations is via a commercial satellite station on Majuro. Communications among the outer atolls and islands is by short wave radio. Since the majority of the atolls do not have centrally generated electricity, the radios are operated either by battery, solar power or a small generator. The health assistants who work in each of the outer atoll dispensaries have access to these radios on a twenty-four hour basis, but the transmission is often unclear, or limited in range. Enewetak in particular noted difficulty in reaching Majuro by radio for all but a few hours each evening. They depend on the radio at the DOE Field Station on Enewetak in emergencies. There is usually a scheduled radio contact with the hospital in Majuro once a week. This communication system is a vital link in the medical care system since the health assistants located on the outer atolls frequently need to communicate with a medex or physician on Majuro or Ebeye regarding medical cases.

Population and Demography

Marshall Islands officials note a high level of migration and intermarriage among the atoll populations in the Marshalls as one reason it would be difficult to distinguish eligibility in a program for those affected by the nuclear testing. No data was provided to support this claim. Although there was some disagreement as to the precise number of inhabitants of each of the four affected atolls, the following population

data, taken from the five year health plan, correspond fairly closely with estimates provided by community leaders:

<u>Atoll</u>	<u>Estimated Population (1980)</u>
Rongelap	233 (compares to 190 in March, 1984)
Utirik	328
Enewetak	548
Kili	492
Ejit	(Included in Majuro total)
Majuro	12,500
Kwajalein	8,000 (5,000 on Ebeye)

Although the distribution of the population by age and sex is not available at this point for the individual atolls, it is thought that the distribution for the four atolls approximates that for the Marshall Islands as a whole. Data from 1980 show that the Marshall Islands population was 51% male and 49% female. The age distribution for both males and females is outlined in the table on the following page.

Of particular significance for the development of a health care system is the fact that 60% of the population are under the age of 20 years, and only 3% are 65 years and older. The median age for the population of the Marshall Islands is 14.8 years.

Although data are not available for the annual population growth for each of the atolls of the Marshall Islands, the overall annual population growth for the Marshall Islands for the period 1967-1980 was 5.1%. What is known is that during this period the fertility rates for women in Majuro were significantly higher than for women living in other areas of the Marshalls. If this pattern holds, we would expect that the rate of population growth of the four atolls may be slightly lower than the 5.1% noted for the Marshall Islands at large.

Marshalls Population by Sex and Age Group, 1980

Age Group	Male	%	Female	%	Both	%
All Ages:	15,851	100.0	15,022	100.0	30,875	100.0
Under 5 Yrs	3,377	21.3	3,125	20.8	6,502	21.1
5 to 9	2,661	16.8	2,362	15.7	5,023	16.3
10 to 14	2,117	13.4	1,937	12.9	4,054	13.1
15 to 19	1,434	9.0	1,522	10.1	2,956	9.6
20 to 24	1,223	7.7	1,378	9.2	2,601	8.4
25 to 29	1,142	7.2	1,085	7.2	2,225	7.2
30 to 34	930	5.9	849	5.7	1,779	5.8
35 to 39	608	3.8	528	3.5	1,136	3.7
40 to 44	436	2.8	383	2.5	819	2.7
45 to 49	409	2.6	400	2.7	809	2.6
50 to 54	376	2.4	323	2.2	699	2.3
55 to 59	332	2.1	332	2.2	664	2.2
60 to 64	359	2.3	283	1.9	642	2.1
65 to 69	212	1.3	211	1.4	423	1.4
70 to 74	107	0.7	137	0.9	244	0.8
75 to 79	73	0.5	93	0.6	166	0.5
80 to 84	30	0.2	40	0.3	70	0.2
85 and Over	25	0.1	36	0.2	61	0.2

With the above noted population distribution, and the relatively high rate of population growth, we anticipate that there will be a continued high number of so called "high-risk" population groups, namely children from birth to 4 years of age, and women of child bearing age. This fact calls for an emphasis in any Marshall Islands health care program upon health education, childhood immunizations, and

maternal and infant care. Furthermore, considering the tremendous increase in population over the past 15 years, and the anticipation that it may double by the year 2,000, it would be important to give serious consideration to health education in contraceptive techniques, and family planning.

Mortality and Morbidity:

According to the five year comprehensive health plan, for the period from 1978 to 1981, the five leading causes of death in the Marshall Islands were as follows:

Diseases of the Heart	2.2 per 1,000 population
Diarrheal and Intestinal Diseases	1.8 per 1,000 population
Prematurity	1.5 per 1,000 population
Malignant neoplasms (cancers)	1.4 per 1,000 population
Influenza and pneumonia	1.5 per 1,000 population

Three of these categories can be reduced through medical intervention, or by public health intervention: diarrheal and intestinal diseases, prematurity, influenza and pneumonia. These same three categories of illness occur most frequently in infants and young children, lending further support to the premise that an emphasis on health education, immunization, and maternal and infant care should be major components of any comprehensive health care system.

Since data collection and reporting are rudimentary in the current Marshall Islands health care system, the following represent the leading reported causes for both outpatient and inpatient medical treatment in the Marshall Islands as reported in the five year

comprehensive health plan:

Respiratory Diseases

Infectious Diseases of the Gastrointestinal Tract

Diabetes

Injuries and Accidents

Complications of Delivery

Non-infectious Diseases

Diseases of the Eye (excluding trauma)

Skin Conditions

Recent outbreaks of syphilis and pertussis point to a definite need for improved communicable disease control and immunization programs in the Marshall Islands.

Health Care Resources:

The people of the Marshall Islands are served by a health care system administered centrally in Majuro. There is an 86 bed hospital in Majuro which provides primary and secondary care; and a 26 bed field hospital in Ebeye which provides primary and some secondary care. In the outer atolls, rudimentary medical care is provided by health assistants, most of whom received their training ten or more years ago in Majuro. These health assistants provide basic first aid services, and minimal medical care, with more definitive medical care requiring referral to Ebeye or Majuro. A number of the outer atolls have small dispensaries, equipped with the most rudimentary of medical equipment and supplies. Eleven of these dispensaries were constructed in the 1970's with Hill-Burton grants.

Patients requiring secondary medical services not available in Majuro or Ebeye, or requiring tertiary medical services are referred to hospitals in Hawaii or the U.S. Mainland. Some referrals are also made to the hospital on Kwajalein which is administered by Global Associates under contract with the U.S. Government. All referrals outside of the Marshall Islands are on a reimbursable basis, and the budgets which have been established for off-island referrals in recent years have consistently been exceeded by large sums of money. In 1983, 6 referrals outside the Republic of the Marshall Islands were required for residents of the four atolls (not including DOE patients) at an approximate cost to the Republic of the Marshall Islands government of \$72,000.

Other medical resources which are available in the Marshall Islands include the comprehensive coverage which is provided by the Department of Energy for the remaining 174 victims of the nuclear accident which took place in March of 1954. Regular visits by the DOE ship are made to the atolls where these individuals now reside. During these visits, comprehensive monitoring of medical conditions is conducted, both for the exposed group and for a control group for comparison. During these visits, medical services are offered to other residents of the atolls as well. Medically indicated referrals for any of the exposed group are reimbursed by the Department of Energy. Brookhaven National Laboratory, under contract with the Department of Energy, maintains a clinic facility in Ebeye, staffed by a physician and a nurse. This physician, in addition to providing medical services to the exposed individuals residing in Ebeye, makes periodic visits to other atolls where the majority of the exposed individuals reside.

Finally, a limited medical program, administered by the United Benefits Corporation and funded by monies from the Bikinian Resettlement trust fund, has recently been established to care for the Bikinians residing in Kili. This program provides periodic visits by a physician for direct medical services. It also provides reimbursement to the Government of the Marshall Islands for covered patients who are hospitalized in the Majuro hospital. It provides limited coverage for off island referrals to institutions outside of the Marshall Islands. The survey team interviewed the physician, Dr. Conway, who is working for this program. In discussions with him and with community leaders in Kili, it was made clear that the Bikinians view this program as temporary, but necessary to meet their basic health care needs, which they feel are not met by the current Marshall Islands system. They believe their current program will be supplanted by benefits from the "Burton Bill". The Bikinians have also requested reimbursement for their costs from the Four Atoll Health Care Program.

Majuro Hospital:

As mentioned above, the Majuro hospital has 86 beds. The services provided at the Majuro hospital include comprehensive outpatient services, emergency services, basic surgery, renal dialysis, rehabilitation services, pharmacy, a very basic laboratory, and general public health programs. The hospital is staffed by one U.S. PHS National Health Service Corps physician (family practitioner) and four Philippine trained physicians (obstetrician, internist, surgeon, and pediatrician). In addition, there are three Medical Officers who received their training in Fiji. Another Medical Officer maintains the one private clinic in the RMI in Majuro. Mid-level support is provided by a number of

Medexs trained in the early 1970's. A staff of nurses, most of them Micronesian, provide inpatient nursing care and public health nursing services. A fully trained physical therapist provides rehabilitation services. Administratively, management of health services is the responsibility of the Secretary of Health who reports to the Minister of Health, a cabinet level position within the Marshall Islands Government. Maintenance of the current hospital facility is poor, and some of the basic items of equipment are either not present or non-functional. Basic pharmaceuticals are frequently in short supply or out of stock. It appears that systems for procurement of pharmaceuticals and supplies are inadequate to insure full stocks of all necessary items at all times.

A new 100-bed hospital to replace the current facility is now under construction and is expected to be completed by December of 1984. With this new facility will come new equipment and furnishings, but not necessarily solutions to current problems in staffing, management and procurement of supplies.

Ebeye Field Hospital:

The Ebeye Field Hospital, also run by the RMI government, is a 22 bed facility which serves more than 5,000 individuals living on Ebeye, and some of the northern Atolls. This facility had fallen into a state of significant disrepair, and one year ago a major renovation project was undertaken. As the project is now nearing completion, the facility is now in good condition and can provide basic in-patient and out-patient services. This hospital is staffed by three Philippine trained physicians (a surgeon, and two family practitioners), and one Medical Officer.

In addition, there is a small staff of nurses, a laboratory technician and a person who is trained in dispensing drugs. As mentioned earlier, patients not able to receive definitive treatment in Ebeye are frequently referred to the Kwajalein Hospital. The Ebeye pharmacy is considerably more limited than that found in Majuro, and the same supply deficiencies were noted. In some cases, patients are referred solely because the drugs or lab work prescribed are not available on Ebeye.

Having described the medical resources generally available in the Marshall Islands, and more specifically having assessed the secondary medical care services available in Ebeye and Majuro, the team undertook to assess the level of health resources available to the people of the four affected Atolls.

The Four Affected Atolls:

There is a resident health assistant for each of the four affected atolls (Rongelap, Utirik, Enewetak, and Kili). There is also a health assistant who lives on Majuro, but regularly serves the people of Ejit. These health assistants all received their training in the early 1960's and have had little continuing education since that time. They are trained in basic first aid, and in the medical diagnosis and treatment of minor common ailments. They all acknowledge that they need further training in the diagnosis of illnesses and in appropriate therapy. Physicians in Majuro who receive radio transmissions from health assistants relative to patients who are being considered for referral uniformly attest to the fact that the health assistants should have further training in the identification and description of signs and symptoms, thereby making it possible for better judgements to be made relative to referral.

The following describes the findings of the team relative to the facilities which house the medical activities on Rongelap, Utirik, Enewetak, and Ejit, including equipment, supplies, and pharmaceuticals in each of these facilities.

Rongelap: There is a dispensary facility which was constructed with Hill-Burton grant funds in the late 1970's. It is built on a concrete slab, is approximately 1,000 square feet of floor space, including living quarters, two patient holding rooms, a waiting room and toilet, and is of prefab-aluminum construction. Water is from a catchment tank at ground level, with a 100 gallon holding tank located on a 25 foot platform. A hand pump allows for water to be pumped from the ground level storage tank to the elevated storage tank. There is a kerosene refrigerator which is said to be functional, but was not functioning at the time of the team's visit since no kerosene was available on the island. The sewage drains into a septic tank which empties the effluent into a leach field. The furnishings which are present in the dispensary facility include hospital beds, which are rusted and have no mattresses, storage shelves for medications, a few chairs which are rusted, a small writing table, and a small movable cabinet for storage of equipment items. The equipment items include a stethoscope, otoscope, sphygmomanometer, and a fetoscope. Supplies are rudimentary and include cotton, alcohol, bandaging materials and a limited number of intravenous fluid administration sets. Lacking in the equipment area were a pediatric scale, an examining table, and a system for sterilizing instruments.

The number of drugs which were available included the types of drugs which would ordinarily be used in this primary care situation, and

by an individual of the level of training of the health assistant. Although it would be desirable to have insulin for the treatment of the diabetic patients, this is not feasible without refrigeration. Most of the drugs were well within their expiration period. Information from the health assistant would indicate that the relative adequacy of the Rongelap medicinal drug supply may be deceiving, in that the Brookhaven National Laboratory medical team customarily (but voluntarily) donates medications at the conclusion of its visit on the island. This resource should not be factored into future plans.

Record keeping in the dispensary is rudimentary. It is expected that the health assistant issue birth and death certificates, although this is not uniformly done. In addition, the health assistant keeps a log of the patients seen in the dispensary, including name, age, and sex of the patient, the presumed diagnosis and treatment. These, along with birth and death certificates are submitted to the Majuro hospital once per month. A small folder is maintained for each user of the dispensary services, and pertinent information relating to patient visits is entered into this folder.

A short wave radio is located not far from the dispensary facility and is available to the health assistant for emergency use at all times, although he is scheduled to use this equipment only once per week.

The dispensary is not well maintained, and has a number of broken windows. The furnishings have corroded significantly, and most need to be replaced. The equipment available, although generally functional, is inadequate to conduct the kind of primary care which

should be expected in this situation. For example, the health assistant had no oral or rectal thermometers. This renders it impossible to quantify or communicate even the most fundamental signs to physicians or other medical personnel. One result is a Majuro physician's estimate that 60% of the patients coming from the outer islands are referred unnecessarily to Majuro.

Utirik: The situation which the team found on Utirik was similar to that found in Rongelap in every way. The facility was similar, and in a similar state of disrepair. The level of training of the health assistant, the mode of operation, and the stocks of supplies and pharmaceuticals were also similar.

Enewetak: The residents of this atoll inhabit two islands - Enetewak and Medren. Additionally, about 100 Enewetakese recently moved to Ujelang, approximately 125 miles southwest of Enewetak. What was found on Enewetak was a health assistant operating in a room of a larger building which served as a community center.

The structure, built by the U.S. military before 1960, was of corrugated steel. The building has not been maintained and the interior was in disrepair, with acoustical tiles falling from the ceiling in some places. They had no running water, power or toilet facilities. Drugs were in shorter supply than in the dispensaries in Utirik and Rongelap, and there was less equipment. Both the facility and its contents were seen as wholly inadequate for a health facility. The residents of Enewetak stated a clear preference to upgrade on-island health care and thus avoid disruptive, and more expensive off-island medical referrals wherever possible.

In Kili, there is a health assistant who sees patients in his own home. He also stores his drugs and rudimentary equipment in one room of his home. However, as was mentioned earlier, the United Benefit Corporation, funded from the Bikinians' trust fund has commenced the support of periodic physician visits to Kili.

In Ejit, where a number of Bikinians reside, a health aid from neighboring Majuro serves the people on a daily basis. He operates in a crude room located in a shed like building which serves as a community meeting place. This is seen as completely inadequate as a health facility. The residents of Ejit do, however, have fairly easy access to the medical facilities of Majuro, less than 1 mile away. The overriding health concern voiced by community leaders there is with their fear of the effects of their exposure to low level radiation during the resettlement period at Bikini in the 1970's.

Perceptions of Significance:

The following represents a summary of perceptions which were elicited in meetings with community people from the four Atolls, representatives of the Government of the Marshall Islands, representatives from Brookhaven National Laboratory, the Department of Energy, and others. It was the team's impression that the medical program which is developed for the people of the four Atolls must be developed and implemented in a way which is sensitive of these perceptions in order for it to meet with success.

Community leaders and residents of the four Atolls:

Perceptions which emerged in meetings with the leaders and people of the four Atolls included:

- 1) That the program should pay for off-island medical referrals when needed.
- 2) That the Department of Energy is discriminatory in providing complete medical coverage to only a select group of people (it appears clear that the people recognize the basis for this discrimination).
- 3) That there are numerous medical conditions which have arisen as a result of the nuclear weapons testing program.
- 4) That the people fear the full range of medical consequences of the nuclear weapons testing program have not, in their opinion, been adequately addressed.
- 5) That measures should be taken to assure that the benefits of the "Burton Bill" accrue to the people for whom they are intended, (the 4 Atoll populations).
- 6) That, in addition to paying for medical referrals, the program should provide for regular physician visits, and adequate medical facilities on each of the islands which now are home to the people of the four Atolls.

Members of the Executive Branch of the Government of the Marshall Islands

Perceptions and opinions which emerged in the team's meetings with members of the executive branch of the Government of the Marshall Islands included:

- 1) That the funds for the development of the medical care program for the people of the four atolls should be managed by the RMI government and that its administration should be along the lines of the plan which was developed by them in May of 1983.

- 2) That the program should be fully integrated into the currently existing medical and health program of the Government of the Marshall Islands.
- 3) That in addition to using funds to improve medical services in the four Atolls, funds should be allowed to be expended for the improvement of the overall medical system of the Marshall Islands.
- 4) That to extend special privileges only to the residents of the four atolls is inequitable and not in keeping with Marshall Islands Constitutional requirements or government policy.
- 5) That visits to other outer islands would show that the four atolls already receive better service (as supplemented by the DOE program) than other "outer" islands.

Health Officials from the Government of the Marshall Islands:

In meetings with health officials of the Government of the Marshall Islands, the following perceptions and opinions were expressed:

- 1) That in order for health and medical services to be improved for the people of the four Atolls, some general improvements to the overall Marshall Islands medical care system are needed.
- 2) That the program for the four atolls must be fully integrated into the medical care system of the Marshall Islands.
- 3) That the medical program for the four Atolls should be developed in such a way that it would facilitate the overall plans for the improvement of the outer island health care system which is already envisioned by the Department of Health.

Physicians, DOE officials, and others from the medical team of the Brookhaven National Laboratory:

The planning team's perceptions, based upon formal and informal discussions with these individuals, include:

- 1) That the one category of medical conditions which has been shown to date to be increased in incidence among the exposed group is thyroid abnormalities such as hypothyroidism and thyroid nodules.
- 2) That in their opinion, the individuals living on the four atolls fully understand the rationale for their serving only the exposed group with comprehensive medical care.
- 3) That they have been very generous during their field trips in ministering to the medical needs of all who come to them, but that reimbursed referrals are approved only for the 174 members of the exposed group.
- 4) That when a program is launched, the benefits should be clearly articulated to the people of the four atolls.
- 5) That if the benefits of the program are to be afforded only to certain segments of the Marshallese people, the rules of eligibility for program services, and in particular for off-island referrals, must be clearly set forth and adhered to when the program begins.
- 6) That at any given location it is both difficult and ethically questionable to refuse needed medical attention to anyone, regardless of their defined eligibility. A clear understanding of operating procedures must be reached between the contractor and RMI Government.
- 7) That exploding population growth will soon create increasing problems for any health care system.

The Base Commander of the Kwajelein Missile Range

The commanding officer of the Kwajelein Missile Range reported that the Kwajalein Hospital (operated by Global Associates on a contract with the military to serve employees of the Kwajalein Missile Range) receives a number of referrals from Ebeye, both for in-patient and out-patient

services. This is done on a reimbursable basis and bills are submitted to the Republic of the Marshall Islands. He further pointed out that this assistance is extended purely on the basis of good-will, and that there is no written agreement or mandate which requires it. He says that to a limited extent they will be able to continue providing this service, but that it will have to continue to be carefully controlled.

PROGRAM COMPONENTS

Given the findings of the team on these site visits, it was concluded that the medical care program for the people of the four atolls should have the following components:

Program Summary

- #1: Recruit and hire a full-time medical doctor to be based in Majuro
- #2: Recruit and hire a trained administrator to be based in Majuro.
- #3: Identify and certify number of atoll residents and geographical distribution eligible for health care.
- #4: Identify which services and benefits the program will offer.
- #5: Upgrade the dispensaries and equipment at Utirik, Rongelap, Medren, and Ejit islands.
- #6: Construct and provide equipment for new dispensaries at Kili and Enewetak islands.
- #7: Devise a training program and schedule for health assistants to bring their capabilities up to a level where they can perform good health services to atoll residents.
- #8: Establish and maintain a central medical supply and pharmaceutical program.
- #9: Develop and monitor an off-island medical referral program.
- #10: Recruit and train one (1) additional health assistant for each of the atolls.
- #11: Purchase one portable dental unit for annual dental examinations on each atoll, to be provided by a dentist on a contract administered by the program.

These program components are to be incorporated within a Request for proposal and contract. They are noted in more detail below.

Program Components

- 1) The employment of a full-time, Majuro based physician whose responsibilities would include:

Medical oversight of the overall program.

Regular visits to the four atolls to provide medical treatment, continuing education for health assistants, replenishment of drugs and supplies, and basic health education for the inhabitants of the atolls.

Oversight and supervision of health assistants in the four atolls, and control of all medical referrals.

Maintenance of liaison with the Majuro and Ebeye medical communities, and program integration with the RMI health system

- 2) The employment of a Majuro based administrative person whose responsibilities would include:

Development of record keeping and appropriate data systems for use in the medical program.

Development and implementation of fiscal management systems in support of the program, including reimbursement agreements with the Marshall Islands government, Hawaii based providers, and other referral facilities.

The development of procurement systems for drugs and supplies, and systems for the distribution of such drugs and supplies to outer island health assistants.

Management of sub-contracts for facility construction and renovation.

Handling of the logistical aspects of the program generally.

- 3) Development by the contractor of criteria for the program to identify individuals eligible for program services is subject to approval by DOI. The team recommends that the contractor work with the community councils on each of the four atolls to define which individuals are eligible as members of the atoll population, (i.e., the Rongelap Council would decide if someone born on Rongelap 20 years ago and now

living on Majuro is eligible). Eligibility would initially be limited to the four atoll populations and would determine access to medical referrals off-island and medicines and treatment on-island. The Councils' will be motivated to limit eligibility in order to avoid overextending a limited resource.

- 4) There must be a clear articulation of the services and benefits which are, and are not included in this "comprehensive" program, and this must be clearly communicated to the populations of the four atolls. While primary health care provided in the dispensaries of the four atolls need not be complicated by red tape in eligibility, the high cost of off-island referrals could dramatically reduce the program's longevity and available resources if the referral component is offered to people outside of the eligible group. Subject to an MOU with the Department of Energy, the contractor would provide primary health care to the 174 members of the exposed group, while DOE would continue, as long as authorized, to pay their referral costs.
- 5) The renovation and refurbishing of the current dispensary facilities at Utirik, Rongelap, Ejit and Medren, including the purchase of certain new equipment items.
- 6) The construction of dispensaries at Enewetak and Kili, and the furnishing of these dispensaries.
- 7) An initial, formalized retraining program on Majuro for the health assistants of the four atolls, to which all other health assistants will be invited. Such training should emphasize diagnostic skills, the description of signs and symptoms, and the treatment of common illnesses. Training of one additional (new) Health Assistant for each of the four atoll population centers should

also be undertaken as soon as possible. Qualified candidates can be identified by the community councils, based upon criteria developed jointly by the contractor and the Marshall Islands Health Service.

- 8) A reliable, and carefully managed system of procurement and distribution of drugs and supplies.
- 9) A clearly articulated and carefully controlled system for the reimbursement of medical referrals to Majuro, Ebeye, Kwajelein, and facilities outside of the Marshall Islands.
- 10) A strong focus on prevention, health education, maternal and infant care, nutrition, family planning, immunizations, sanitation and health promotion generally.
- 11) Purchase of one portable dental unit for a dental program which would provide preventive measures as well as curative and reconstructive services. The unit would be operated by a dentist on contract with the program.
- 12) To ensure the program's consistency with Section 177 of the Compact and effective integration within the existing medical care system of the Marshall Islands, the program must be developed with the cooperation of the Marshall Islands Government. The details of that relationship should be negotiated in a Memorandum of Understanding before the program begins. The contractor will have to rely upon the hospitals in Ebeye and Majuro for routine secondary medical care, some primary care on a reimbursable basis. The program should also coordinate with the Department of Energy and the World Health Organization.

- 13) Assurance that those patients referred to Hawaii (or anywhere else outside the RMI) medical facilities are monitored medically to contain costs through controlling length of stay, unnecessary procedures, etc.
- 14) A specific procedure for ongoing health status assessment, and disease surveillance

MANAGEMENT OPTIONS

The team considered the various options for management of a program with the above components in light of the direction which was provided by the Congressional Committees, and at the same time mindful of arrangements which have a reasonable chance of producing a successful program.

As a result of these considerations, three major options surfaced:

Option I:

A program managed directly by an agency of the U.S. Government, such as the U.S. Public Health Service, employing Federal personnel to administer it and provide direct health services.

Option II:

A program contracted to a qualified public or private organization through a process of competitive procurement. Under this option, the responsible Federal Agency would insure the program's success through careful monitoring of the contractor's performance, and by having the continuation of the contract be contingent upon satisfactory performance.

Option III:

A program administered by the Government of the Marshall Islands, with the funding to be made available through a grant or contract mechanism.

Discussion of Options:

Given the articulation of Congressional intent as expressed by the House Committee on Interior and Insular Affairs, that "... an instrumentality of the United States, not the Government of the Marshall Islands, will provide health care for those Marshallese adversely affected by the U.S. nuclear testing in the Pacific", the team concluded that Option III would not be in keeping with the intent of the Congress, at least during the time before the effective date of the Compact.

Option I, while feasible, appears to be incompatible with Administration policy in removing the Federal Government from direct health care delivery, as an area of service which can be fully provided by the private sector, and as evidenced by the closure of the merchant marine hospitals and the Government's increasing use of contract medical services.

Option II, that of contracting with a qualified public or private organization for the management of the program is, in the opinion of the team members, the most appropriate mechanism to manage this health program. The success of this approach will depend, to a large extent, upon:

1. The specificity of the work scope as outlined in the Request for Proposal
2. The specificity of the required qualifications for offerors as outlined in the Request for Proposal.
3. The clarity and specificity of the contract scope of work, and the description of deliverables.
4. The type and level of contract evaluation and monitoring which is carried out by the responsible Federal agency or agencies.

Option II has the advantage of providing optimal flexibility in the development of a program which is truly responsive to the needs of the peoples of the four atolls, and provides, at the same time, a mechanism for the careful scrutiny of the program's progress by the responsible Federal and local government officials.

RECOMMENDATIONS:

The team therefore recommends the following approach to the management of the four atoll medical program:

The Department of the Interior should implement a program with the basic elements as outlined in the Program Components Section, through the use of a contract with a qualified public or private organization. The contract and RFP should be jointly developed by the Interior Department and Government of the Marshall Islands. The contractor should be selected through a competitive bidding process. It is further recommended that the Department of Health and Human Services/Public Health Service provide assistance to the Department of the Interior on a cost reimbursable basis in the preparation of the Request for Proposal, the review of proposals, selection of the contractor, and the monitoring and evaluation of the contractor's performance. The specific role of the Public Health Service should be laid out in a formal memorandum of understanding between the two Departments.

No element of this report is meant to imply that the Government of the Marshall Islands no longer has responsibility for providing health care to the residents of the four atolls. For example, the Government of the Marshall Islands should continue to provide vaccines for the immunization program, and should accept medically indicated referral as before. An MOU also in needed with the Marshall Islands Government.

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The Department of the Interior should continue to pursue the issue of whether and how Marshallese outside of the four atolls, but not included in the exposed group could be evaluated as potential beneficiaries of this program. It has been suggested that operation of a whole body counter to screen any Marshallese who thinks he/she may have been affected by radiation would act as a valid test. However, while this could provide some psychological relief to the concerned people, a whole body counter is a scientific instrument with specialized application. It has no value in either diagnosis or treatment of radiation effects. It simply measures the quantity of certain radioactive elements, which at the time of measurement reside in the human body. This team has been unable to find any valid medical test that can ascertain whether or how someone is "affected" more than a few weeks after their initial exposure to radiation. Although certain early symptoms of acute exposure to radiation can fairly conclusively be attributed to radiation, there is no known way to distinguish whether radiation is the cause of later occurring conditions. Neither have we seen conclusive evidence of any long term effects of low level radiation exposure - but we do recommend the contractor continue to try to assess the impact as objectively as possible, and report back to the DOI for follow-up.

Where possible, and without compromising the program's emphasis on the four atolls, the program should provide support to other components of the Marshall Islands health system. Examples of such support include:

- a) Four atolls physician could provide consultation to health assistants working on atolls other than the targeted atolls.
- b) Health assistant re-training would be extended to all health assistants (with direct costs limited to the four atolls).

- c) Referrals to Majuro, Ebeye, Kwajelein, or facilities outside of the Marshall Islands would be reimbursed with funds from this program, thereby saving funds for the Marshall islands health care system. Furthermore, such payments which are made for medical services in Ebeye or Majuro would accrue directly to the Government of the Marshall Islands.
- d) The four atoll program would accelerate, for these atolls, a process already envisioned by the Department of Health, namely the improvement of services in all of the outer atoll dispensaries.

Financing:

The team has estimated that to carry out a program containing the elements as outlined would require approximately \$1.27 million during the initial year, of which approximately \$500,000 would represent one-time-only costs, such as facility construction, renovations, repairs, and furniture purchase. The second year cost of the program is estimated at \$700,000. Considering a 5% annual inflation rate and a 20% estimate for contract administration, the cost of the program over four years is estimated at \$3,592,000. The full \$4 million is in the process of being transferred to OTIA in a memo of agreement. These funds will be obligated in a contract with typical 30-day draw-downs from the Government administering authority.

The program operation and budget should be evaluated by the supervising government authority annually, especially in light of the changing health care system in the Marshalls, and with Compact approval (and funding) pending.