

Chapter 4

Population and Health

Key Points

- A continued high rate of natural increase in population during the 1990s has been largely offset by emigration.
- There has been a significant improvement in child mortality rates and life expectancy in the RMI.
- The health status of the RMI is complicated by the after-effects of US nuclear testing, which will fade over several generations.
- Further improvements in health status will need greater efforts in primary health care, and a basis of stronger community support.
- The implementation of the health care strategy requires people to take more responsibility for their own health.
- Much ill-health in the RMI is the result of poor diet and lack of exercise.
- Demand for overseas referrals is putting an unsustainable load on the health care budget. Better domestic facilities could replace most referrals at much lower recurrent cost.
- Curative health services on Majuro and Ebeye absorb the major part of health finances, reducing resources available for other in-country primary and preventive health care.
- Health sector expenditures are heavily dependent on US funding, and would have to be cut or supplemented from other sources if US funding were reduced.

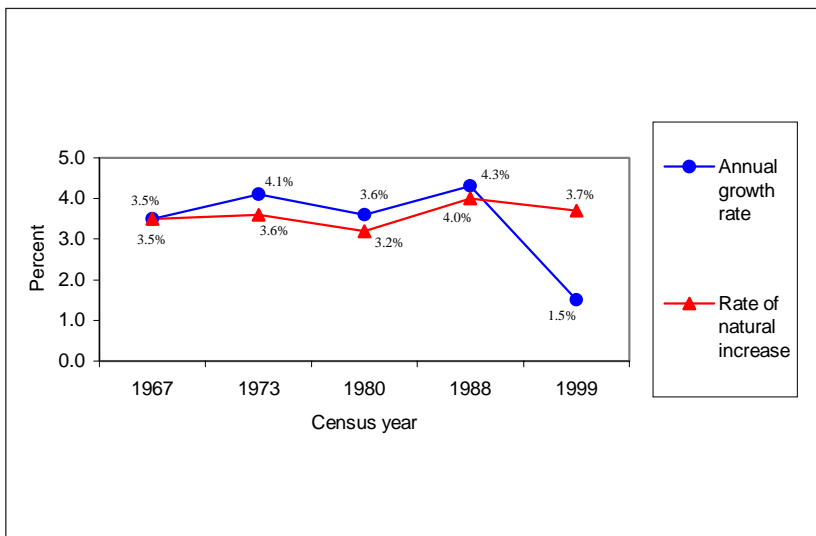
- The RMI depends heavily on expatriate health workers to staff government hospitals, and professional cadre management is problematic.
- Many people could directly contribute more towards the cost of health services in general, and to the curative services they use in particular.

Population Size, Growth and Distribution

The total population of the Marshall Islands counted in the 1999 census was 50,840 people. This is an increase of 7,460 people or 17% from 43,360 people enumerated in the 1988 census. The population of the Marshall Islands has doubled in the last 26 years.

The annual average growth rate of the population during 1988–1999 is 1.5% compared with the high rate of population growth of 4.3% during the previous census period (Figure 4.1). The natural rate of increase of the population during the

Figure 4.1: Population Growth Rates, 1967–1999



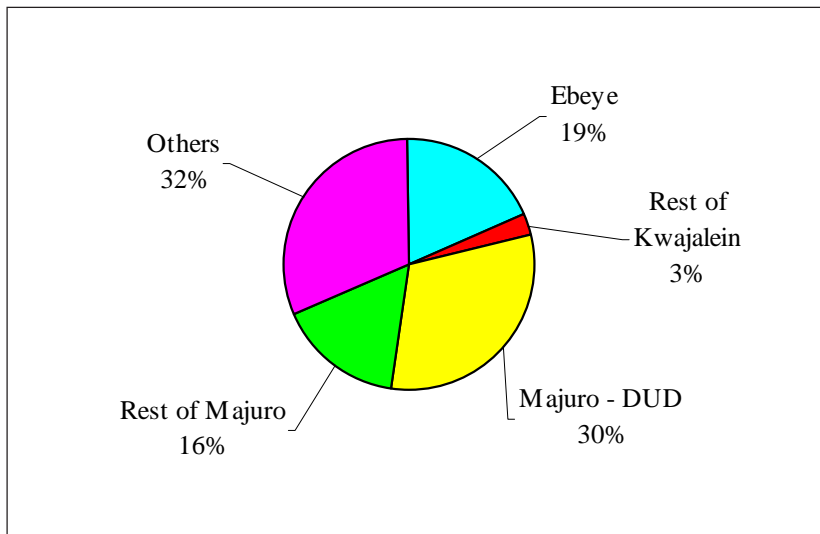
Source: RMI 1999 Census Final Report, Office of Planning and Statistics (OPS).

period, being the difference between the birth rate and death rate, has come down to 3.7%—still a very high rate—and is probably still falling slowly, as a result of socio-economic factors and the continuing family planning program. The 1994 multi-subject household survey estimated a population growth rate of 3.6%. The enumerated population in 1999 was about the same as the estimated population in 1992, 3 years after the 1988 census. This suggests that during the 1990s people were emigrating from the Marshall Islands at about the same rate as the population was naturally increasing.

Most of the people in Marshall Islands live in the urban areas on Majuro and Kwajalein atolls. Less than one-third of the population lives in rural areas, i.e., other atolls and islands (Figure 4.2).

The areas of greatest population concentration are the Djarrit (Rita)-Uluga-Delap (DUD) area on Majuro Atoll, with 30% of the population, and Ebeye Island on Kwajalein Atoll with 18% of the population. Ebeye Island with just 0.14 square

Figure 4.2: Population Distribution by Atoll and Rural-Urban Areas, 1999

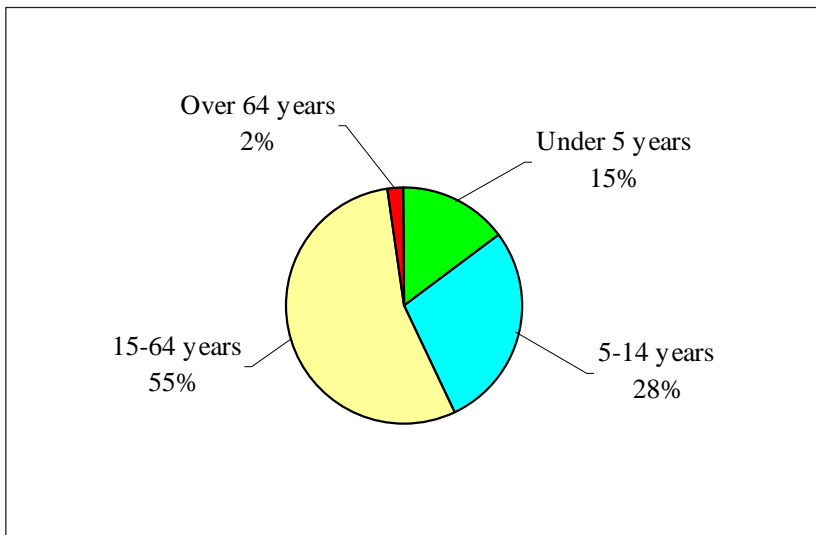


Source: RMI 1999 Census Final Report, OPS.

miles is the most densely populated area in the country, with an equivalent population density of 66,750 persons per square mile. The DUD area with its 0.51 square miles has an equivalent population density of 30,365 persons per square mile. The average population density of the Marshall Islands is 726 persons per square mile.

The Marshall Islands has a young population. Children under 5 years make up 15% of the population (Figure 4.3). Children and youth under 15 years of age comprise about 43%, and 55% of the population are under 20 years old. Over half of the population is in the statistical working age group of 15–64 years old. Those aged 65 years and over represent only a small percentage of the population. The total dependency ratio, i.e., those under 15 and above 64 years old per 100 in the working age group is 88 compared with 117 in 1988. The child dependency ratio was 78 in 1999, down from 109 in 1988. Given the high rate of natural increase of the population, the reduction in the dependency ratio may partly be due to the out-migration of families from the Marshall Islands during the 1990s.

Figure 4.3: Population Distribution by Age Group, 1999



Source: RMI 1999 Census Final Report, OPS.

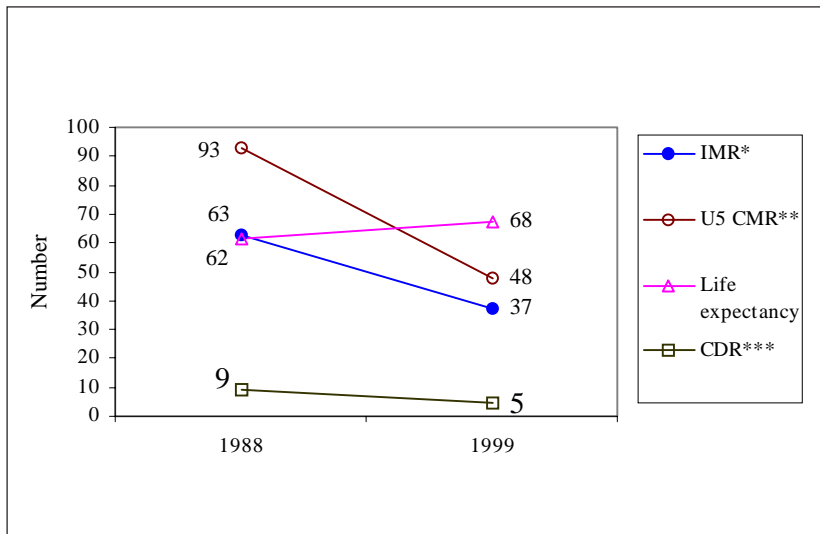
Just over half of the population is male. There are more males than females in all age groups with the exception of the 20–24 age group and those 60 and over. Out-migration of males may explain the higher proportion of females in the 20–24 age group. At the older age groups women normally live longer than men.

Marshallese comprise 97% of the population. The remaining 3% are people from other Pacific islands, Asia, US, and other countries. Each of the latter categories comprises less than one percent of the population.

Health Status of the Population

Generally, there has been a marked improvement in the health status of Marshallese as shown by the basic health status indicators of mortality and longevity (Figure 4.4). Infant and child

Figure 4.4: Mortality Rates and Life Expectancy, 1998–1999



* IMR=Infant mortality rate (per 1000 live births);

** U5 CMR=Under 5 child mortality rate (per 1000 live births);

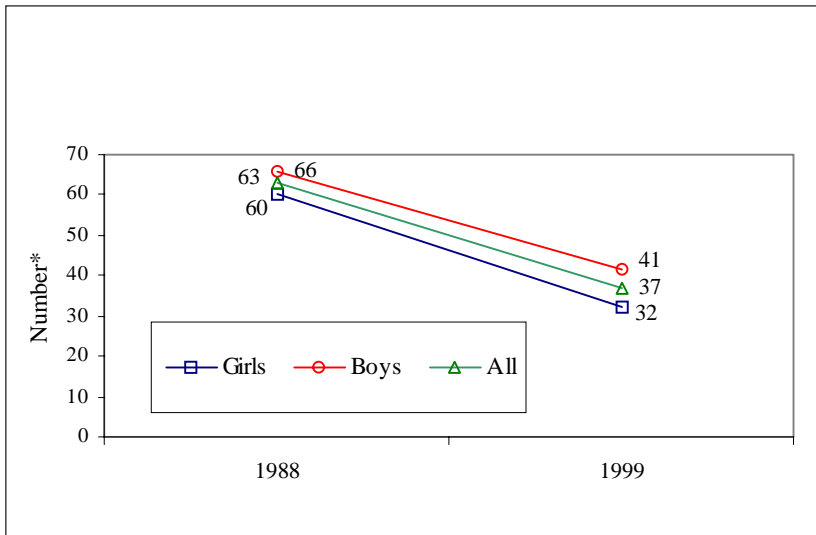
***CDR=Crude death rate (per 1,000 population)

Source: RMI 1999 Census Final Report, OPS.

death rates have been considerably reduced in the last 10 years. Infant deaths have been reduced by 35% from 63–37 per 1,000 live births.³⁹ Among children under 5 years of age there has been a reduction of mortality rate by nearly 50% from 93–48 per 1,000 live births since 1988. More of the children born now can expect to live to celebrate their first birthdays and to begin their first year of education in a kindergarten. There is also longer life expectancy. People are expected to live longer now as adults compared with 10 years ago. Crude death rates are now also lower. These statistics indicate that there has been improvement in the quality of health care available to the population.

Infant girls have a higher survival rate than boys (Figure 4.5). The infant mortality rate among baby girls is lower than that of boys, 32 for girls compared with 41 for boys in 1999.

Figure 4.5: Infant Mortality Rate by Gender, 1998–1999

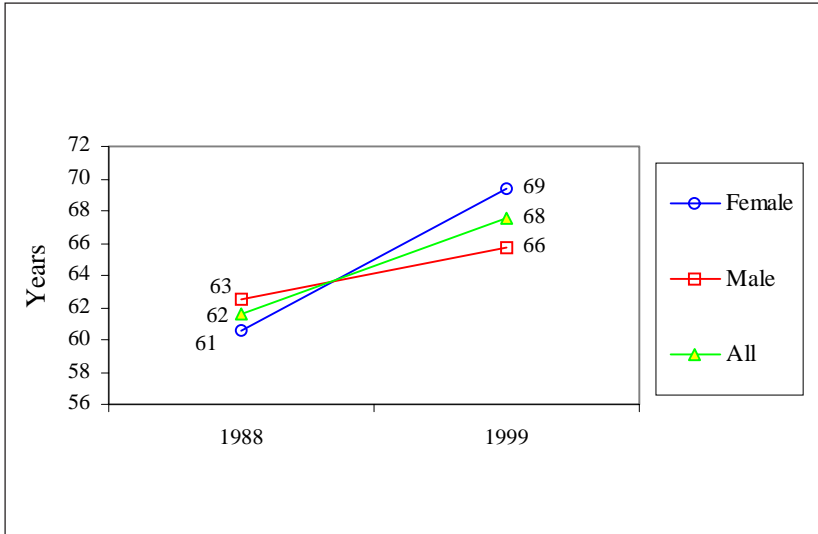


* per 1,000 live births

Source: RMI 1999 Census Final Report, OPS.

³⁹ The IMR figures discussed here are from the 1988 and 1999 census reports. The Ministry of Health and Environment 15-Year Strategy Plan has an IMR of 26 per 1,000 live births for 1999. The 1994 Household Survey reported an IMR of 63 per 1,000 live births.

Figure 4.6: Life Expectancy at Birth by Gender, 1998–1999



Source: RMI 1999 Census Final Report, OPS.

There has also been a faster reduction in infant girl deaths. The infant mortality rate among baby girls has been reduced by 46% from 60 in 1988 and that of boys by 37% from 66 in 1988.

Women normally live longer than men. Life expectancy among women was 63 years in 1988 compared with 61 years for men (Figure 4.6). During the last 10 years, life expectancy among women increased to 69 years compared with 66 years for men.

Despite these improvements in the health status of the population, both the infant and child mortality rates are still unnecessarily high at 37 and 48 per 1,000 live births, respectively. Many of the diseases that cause untimely deaths and illnesses are not costly to prevent.

Patterns of Sickness

The health situation in the Marshall Islands is characterized by a dual disease pattern. There is a prevalence of both communicable and non-communicable diseases. The common infectious and communicable diseases include amoebiasis, conjunctivitis,

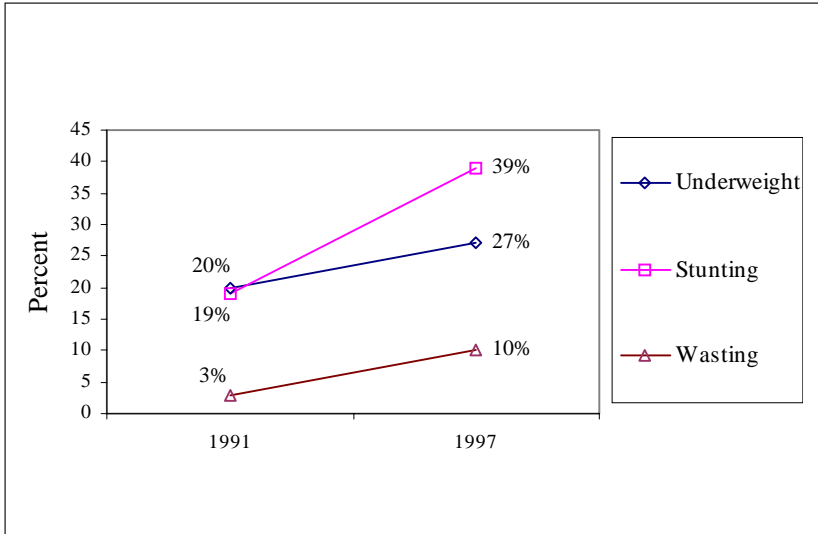
diarrhea, gastroenteritis, gonorrhoea, influenza, leprosy, scabies, syphilis, and tuberculosis. Among the common non-communicable diseases are diabetes, hypertension, heart disease, cancer, and fish poisoning.

The health situation in the Marshall Islands is affected by environmental, lifestyle, and demographic factors. Overshadowing all health analysis in the RMI is the after-effect of the US nuclear testing program in the northern atolls. This has seriously damaged the health of not only those exposed to the explosions or the fallout but also of others who have lived and worked in contaminated environments during and after the testing, and the communities that were relocated away from their lands and marine resources.

Noncommunicable diseases are usually a result of lifestyle habits of eating large amounts of fatty foods, consumption of large amounts of alcohol and tobacco, as well as lack of exercise. Other relevant factors include food prices and income levels as well as local food production. For low-income people, the relatively high cost of health foods in shops make it difficult for them to afford nutritional meals. For people in the urban areas, limited space is a constraint on those who want to have home gardens to meet their nutritional needs. There is dependency on and preference for imported, often junk, foods. Among the noncommunicable diseases, diabetes is now a major health problem. Diabetes and diseases related to it are the major cause of morbidity and death. Hypertension and heart diseases are also on the increase. These diseases are related to obesity, which has become a nationwide problem that has been increasing, particularly among women and people in the urban areas. A concern is the increasing number of young people in the age group 20–35 years old who are obese and identified as diabetics.

A major problem related to diet is malnutrition among children. While a 1995–1999 pilot study on over-nutrition and under-nutrition in the Marshall Islands found that 57% of the population aged 18–50 years is overweight and obese, it also indicated a high prevalence of under-nutrition among children. The pilot study showed that over one quarter of children under 5 years of age were malnourished in terms of weight for age (underweight). The pilot study results showed that in the areas

**Figure 4.7: Malnutrition Among US Children,
1991–1997**



Source: Ministry of Health Services (1994), Ministry of Health and Environment (2000)

surveyed (Majuro [DUD and Laura], Arno, Ebon, and Namdrik) the main indicators of undernutrition (underweight, stunting and wasting) were higher than the overall results of nutritional status from a 1991 national nutrition survey (Figure 4.7).⁴⁰ Severe malnutrition is not a problem, but there is a high incidence of mild-to-moderate malnutrition among children. This increases the vulnerability of children and risk of death from a variety of infectious diseases.

The results of the pilot study cannot be generalized as representative of the whole country to determine the overall situation of malnutrition among children in 1997 compared with the situation in 1991. However, the Ministry of Health and Environment (MOHE) has taken the results of the pilot study as the indicators for the base year (1999) in its 15-Year Strategy Plan for the purposes of establishing targets for reducing mal-

⁴⁰ Moderate levels of underweight (low weight for age), stunting (low height for age) and wasting (low weight for height) were found in comparison with the World Health Organization/National Center for Health Statistics Standard.

nutrition among children during plan period (Box 4).

Reproductive health services, also known as family planning, aim at fewer, healthier children. The family planning program in the Marshall Islands has been in place since the mid-sixties. During the 1990s the number of contraceptive users increased from 2,731 in 1991 to 3,922 in 1999, an increase of 44% during the period, or an annual average rate of about 5%.

The appropriate spacing of children, i.e., women having children not too early, not too close and not too late, is important for the health of the mother and the child as well as the family as a whole, and is usually associated with a slowing in population growth. The spread of sexually transmitted diseases (STDs) and risk of human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) can also be contained through family planning methods via the use of condoms. The involvement of men in family planning clinics is important for them to better understand the health related issues and for their support and cooperation. The churches have also been supportive of the school-based family planning/reproductive health services carried out by the Youth To Youth In Health.

Water supply, sanitation, personal hygiene and habits, and overcrowding problems are associated with the prevalence of infectious and communicable diseases. The 1999 census found that the main source of drinking water for most households is rainwater catchments and tanks. These water sources are easily contaminated. Proper sanitation is a problem. About a quarter of households reported having unsanitary toilet facilities, e.g., pit latrines or no toilet facilities at all. Health problems of amoebiasis, diarrhea, and gastroenteritis are related to unsafe water supply and poor sanitation. Densely populated areas such as the DUD area on Majuro and Ebeye make it easy for the spread of airborne diseases such as tuberculosis and other diseases that are passed through direct contact such as leprosy, conjunctivitis, and skin diseases such as scabies.

STDs and the risk of HIV/AIDS is a serious threat. Although the STD rates based on tests carried out are low, they may not reflect the real prevalence of STDs in the Marshall Islands because of the limited coverage of the tests. The tests showed rising rates of positive cases of STDs. Positive tests for syphilis in

recent years went from less than 1% in 1996 and 1997 to 2.5% in 1998 and 3.5% in 1999. Positive tests for gonorrhea generally remained between 3–4% in 1996–1998 but went up to 6.5% in 1999. Chlamydia seems to be an increasing problem among women. Tests in 1996/97 identified just one positive case of Chlamydia, but this has increased to 7–10% in 1998–1999.⁴¹ Tests for HIV/AIDS in 1997–1999 found no positive cases. However, tests in 1996 detected one positive HIV case. A relevant factor for consideration is the larger number of foreign fishing boats calling at Majuro, the increasing level of prostitution and the consequent higher risk of HIV and AIDS being introduced.

Radiation-related health problems caused by the nuclear testing on Bikini and Enewetak continue to affect a significant number of Marshallese. The Nuclear Claims Tribunal was established under the Compact to determine financial compensation payable to Marshallese so injured. The list of 35 medical conditions irrebuttably presumed to have resulted from the US Nuclear Testing Program includes several types of cancers, tumors and thyroid problems. Since its establishment, the Nuclear Claims Tribunal has made awards to 1,656 individuals for personal injuries caused by the nuclear testing program. Over 39% of them have since died.

Health Services Delivery

Health services are mainly provided by the Government through MOHE, operating two hospitals (on Majuro and Ebeye), and 60 health centers in the rural and outer atolls and islands. Health assistants, who are usually high school graduates with basic health training, staff the outer island health centers. Patients are referred from these centers to Majuro and Ebeye hospitals. Patients who cannot be treated at the hospitals on Majuro and Ebeye are referred for treatment overseas in Honolulu and the

⁴¹ However, it should be noted the tests for chlamydia were recently introduced, which could explain the rapid increase in positive cases reported during the period.

Philippines and also to the USAKA hospital on Kwajalein Island.

The public health facilities need upgrading and maintenance. With the assistance of ADB, the Government is completing the new hospital on Ebeye and has rehabilitated a number of the health centers in the outer islands. The rehabilitation of the remaining health centers is needed. There is a need to upgrade the facilities at the Majuro Hospital to the level where the hospital can carry out some of the diagnoses and treatments for which overseas referrals are currently required.

Apart from the health services provided by MOHE, separate medical and health services are provided for the people from the four atolls most directly affected by nuclear testing: Bikini, Enewetak, Rongelap and Utrik atolls. The 177 Health Program⁴² provides health and medical services for the people of the four atolls. The 177 Health Program has a clinic on Majuro with two doctors and two health assistants and five outer island clinics each staffed by a health assistant and representative on Ebeye. Patients are referred from the outer island clinics to the Majuro 177 Clinic for treatment. The Majuro 177 Clinic provides outpatient services and uses Majuro Hospital facilities, e.g., laboratory and in-patient facilities. The 177 Health Program presently serves 13,000–14,000 people.

In addition to the 177 program health clinics, special medical care is also provided to the Marshallese originally exposed to the testing, and inhabitants of Rongelap who were selected as a control group when the victims of radiation moved back to Rongelap. These services are provided by the US Department of Energy (DOE) and the Pacific Health Research Institute (PHRI). There is a DOE/PHRI clinic on Majuro and one at USAKA on Kwajalein. The resident medical staff at the clinics are assisted by visiting doctors arranged by PHRI. The DOE/PHRI clinics provide comprehensive annual medical examinations and treatment to the 214 remaining victims of

⁴² 177 refers to Section 177 of the Compact, which deals with matters concerning the nuclear testing program and the responsibility of the US for the effects of the nuclear tests on the people of the Marshall Islands.

nuclear exposure and the Rongelap control group. The DOE/PHRI patients are also referred to Straub Hospital in Hawaii for further medical examination and treatment as required.

Private and nongovernment organizations are also involved in the delivery of health services. There is one private medical clinic on Majuro (DUD) and a church-based health clinic (Baptist Church) in Laura, also on Majuro Atoll. Youth To Youth In Health has a clinic on Majuro catering to the youth on Majuro. Mission Pacific has been involved in health services. TOMAK Inc. is also interested in providing health care services but no agreement has been reached with MOHE for it to start providing services.

The Government adopted the concept of primary health care in 1986 and established the Bureau of Primary Health Care to strengthen preventive programs and services at the community level. The primary health care strategy is implemented through the outer island health centers and community health councils as well as through the hospitals. The community health councils were initiated in 1995 to encourage participation in health care, foster preventive health care, and encourage communities and individuals to take care of their own health.

With regard to policy on health services delivery, people generally expect the Government to be responsible for delivery of such services. However, there is need for other agencies to provide such services to supplement the public health services. It is necessary for the Government to encourage the provision of health care services by privately owned clinics and pharmacies as well as by nongovernment organizations (NGOs). It is important that MOHE monitors such services to ensure the quality and standard of health care provided.

In 1999, MOHE developed a 15-Year Strategic Plan for the period 2001–2015, which was approved by the Cabinet in May 2000. The Strategic Plan contains 5-year strategic and operational plans as well as targets to be achieved during the plan period (Box 4).

Box 4: Ministry of Health and Environment 15-Year Strategic Plan 2001–2015

The Ministry of Health and Environment (MOHE)'s 15-Year Strategic Plan 2001–2015 was approved by the Cabinet in May 2000. The MOHE staff prepared the plan under the guidance of a steering committee chaired by the Secretary of Health and comprised of senior ministry staff. There was some technical assistance involved in facilitating the process and the financial analysis. But the plan was largely created by those who would be required to implement it. The plan sets out to implement the mission statement of MOHE:

"To provide high quality, effective affordable and efficient health services to all peoples of the Marshall Islands, through a primary health care program to improve health status and build the capacity of each community, family and individual to care for their own health. To the maximum possible, the Ministry of Health and Environment pursues these goals using the national facilities, staff and resources of the Republic of the Marshall Islands."

The plan has three components:

- (a) The 15-Year Strategic Plan for 2001–2015 broken down into three 5-year plans,
- (b) A 5-year plan for 2001–2005 broken down by year, and
- (c) An operational plan for the first five years 2001–2005.

The plan sets out targets, where appropriate, on periodic and annual bases. The following are selected primary health care targets in the strategic plan:

Objective Indicator	Base Year	5-Year Period Targets				
		1 st 5 Yr	2 nd 5 Yr	3 rd 5 Yr	4 th 5 Yr	5 th 5 Yr
Infant mortality rate*	25 (1998)	20	16	12		
Child mortality rate**	26 (1998)	20	15	10		
Children with full immunization (%)	64 (1998)	85	90	95		
Prevalence of diabetes (%)	40 (1999)	25	15	10		
People in control of own fertility (%)***	9 (1999)	25	35	50		

Objective Indicator	Base Year	5-Year Period Targets		
		1 st 5 Yr	2 nd 5 Yr	3 rd 5 Yr
Malnutrition among children under 5 years:				
Stunting in children (%)	36 (1999)	15	10	0
Wasting in children (%)	10 (1999)	5	2	0
Low weight/age in children (%)	27 (1999)	10	5	0
Undernutrition in children (%)	25 (1999)	10	5	0

* Infant mortality rate: number of deaths of children <1 year per 1000 live births.

** Child mortality rate: number of deaths of children aged 1–14 years per 100,000 live births.

*** Ratio of number of people receiving family planning services to the combined total number of fertile females (15–49 years) and number of sexually active males (15–74 years).

Note: The IMR and CMR used by MOHE in the strategic plan are lower than those reported in the 1999 census.

Programs are identified in primary and secondary health care and central health service management, with detailed objectives and sets of implementing activities (misnamed “strategies”) in each case. These embrace maternal and child health, chronic and communicable diseases, family planning and nutrition, replacement and repair of outer island health centers, a new central hospital in Majuro, and reduction of overseas referrals. The estimated cost of the activities and asset acquisitions included in the plan is much greater than current expenditure levels. Actual allocations will have to be determined in the rolling economic and financial frameworks described in Chapter 9.

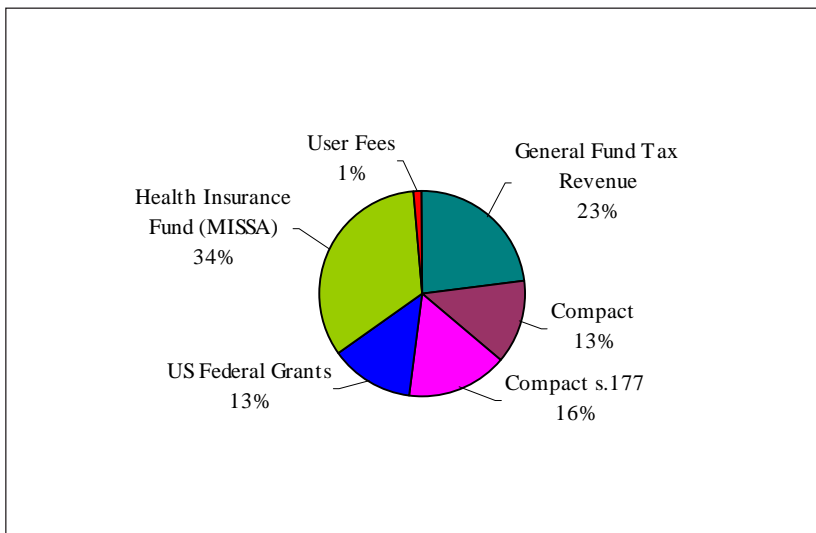
Source: MOHE 15-Year Strategic Plan 2001–2015.

Health Financing

Financing of public health services comes from several sources including government tax revenue, Compact funds, US federal grants, a health insurance fund, and user charges as well as funding from other donors for operational expenditures and development projects. User fees comprise a tiny 1% of health funding, a share that could be substantially increased by selective increases in charges without hardship. The funding of the operational budget of MOHE comes largely from Compact funding and federal grants as well as the health insurance fund managed by the Marshall Islands Social Security Association (MISSA) (Figure 4.8). Funding from the Government's general fund to the health budget averaged about 12% during the last 3 years.

The resources for the health insurance fund managed by MISSA come from contributions by employees and their employers as required under the Social Security Act of 1990. Under the act employees were required to contribute 8.5% of their salary,

**Figure 4.8: Financing of Recurrent Health Expenditures, 1999
(Total \$12.6 million)**



Source: MOHE (2000) and Ministry of Finance (MOF).

of which 3.5% went to the health insurance fund and 5% to the retirement fund. The employer provided a matching contribution similarly applied. These rates were increased to a total of 9.5% of pay from employer and employee, with 7% allocated to the retirement fund and 2.5% to the health fund.⁴³ In the light of the crisis affecting health funds and overseas referrals, there is a case for further adjusting these contributions so as to rebuild the badly depleted health insurance fund.

Funds from the health insurance fund are used to pay for medical supplies for the hospitals and outer island health centers and for payment of referrals to Honolulu, the Philippines, and the USAKA hospital. The previous administration of MISSA did not provide annual accounts from 1996–1999, giving rise to considerable public concern. The new administration has contracted a private audit firm to assemble and audit the accounts, and has announced reforms to MISSA's financial management designed to avoid a repeat of the recent (unbudgeted) need for a \$2.65 million government subsidy to meet overseas debts for referral services.

User fees are charged for outpatient services at the government hospitals on Majuro and Ebeye at \$5.00 per visit. For in-patients, \$5.00 is charged per day including food, medicines, and other care provided to the patient. In 1999, user charges contributed just 1% of the health budget. Funds from Compact Section 177 are used only for the health care of people from the four atolls most directly affected by the nuclear testing program. Under Section 177, \$2.0 million is allocated to the health care program for the people of the four affected atolls.

Funding of the payments for personal injuries caused by the nuclear testing awarded by the Nuclear Claims Tribunal comes from the Nuclear Claims Trust Fund.

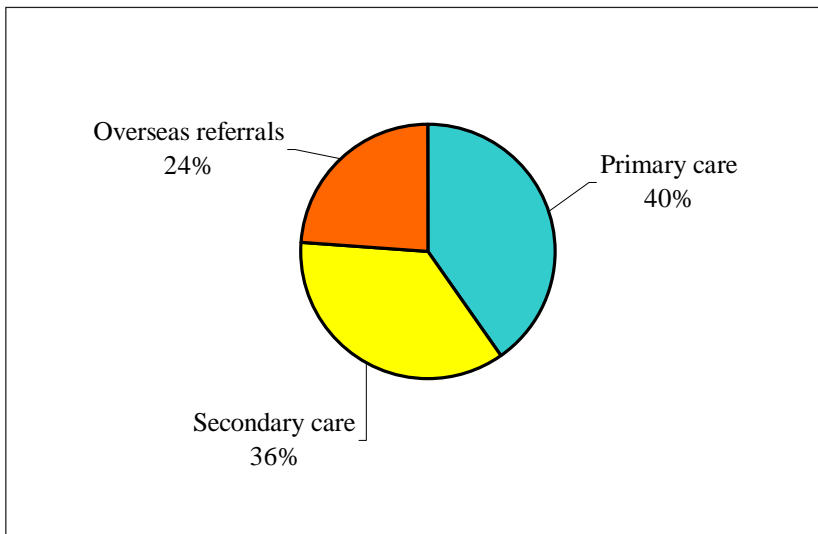
The US DOE also spends \$6–7 million annually on RMI-related activities in three areas: medical care for certain of the originally exposed Marshallese citizens, environmental cleanup

⁴³ Recent mismanagement of MISSA has contributed greatly to fogging the public financial picture, but total social security payments at 19% of pay, split 74/26 between retirement benefits and the health fund, are a significant cost in the employment calculus, and must be taken into account in the review of taxation recommended elsewhere in this report.

activity for the four most directly affected atolls, and the Whole Body Count for Cesium program. About \$2.5 million is used for the DOE/PHRI medical care program and the logistical support to the medical program for transporting patients between the atolls and to Straub Hospital in Hawaii for testing and treatment.

Health funds are largely spent on secondary and overseas referrals (Figure 4.9). A large part of the health fund is spent on off-island referrals including referrals to USAKA Hospital on Kwajalein. In 1999, overseas referrals absorbed nearly one quarter of the total health funds. This means that 70% of the funds from the MISSA health insurance fund were spent on overseas referrals and 30% on medicines and other medical supplies provided to the public hospitals and outer island health centers in 1999. Over one-third of health expenditures were spent on secondary health care and the remaining 40% on primary care. In 1999/2000, the Government provided \$2.65 million to subsidize the health insurance fund and enable MISSA meet costs incurred on overseas referrals.

Figure 4.9: Distribution of Recurrent Health Expenditures, 1999 (Total \$12.6 million)



Source: MOHE (2000) and MOF.

Overall, the pattern of health funding does not reflect the Government's stated health priorities. Clearly, this cannot be corrected overnight, but a process of real adjustment whereby policy can increasingly shape expenditure (rather than the other way around) can be launched now. By bringing health funding within the strategic planning process described later in this report, and allocating resources through the rolling economic and financial planning framework outlined in Chapter 9, policy can be brought to bear on allocations, and the RMI's health priorities can be made to drive health expenditures. The role of a new national hospital, private health insurance, and payment of fees for curative services (among other health issues) can then be seen clearly in an overall development context.