Health services in Solomon Islands

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Solomon Islands has achieved major improvements in health status during the past two decades. Infant mortality rates dropped from 70 deaths per 1,000 live births in the 1970s to 44 deaths per 1,000 live births in 1992. Still, major challenges lie ahead. Infectious and parasitic diseases, including malaria, continue to dominate the morbidity and mortality picture. Non-communicable or 'lifestyle' diseases are on the rise and the population is growing at very high rates. The health care system is under significant pressure to deliver services to a growing population in the face of a diverse disease profile under economically constrained conditions. Meeting these challenges will require significant changes in the structure, focus and financing of health services.

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Health problems and options in Solomon Islands are heavily influenced by its geographic characteristics and tropical climate. The country is archipelagic, with six main islands and nearly 1,000 smaller islands stretching over almost 1,300 kilometres of Pacific Ocean. Of the total land area of 11,500 square miles, more than 90 per cent is mountainous and covered with dense rainforests.

Solomon Islands gained independence from Great Britain in 1978, and is divided administratively into nine provinces and a municipal authority in Honiara. The monetised economy is mainly dominated by export-oriented production involving tree crop plantations, commercial fishing and logging. Subsistence agriculture provides the livelihood of about 80 per cent of the population. GDP, estimated at about US$200 million in 1991, grew by an average of 2.8 per cent per annum during the 1980s, a growth pattern that has fallen short of the country's needs, especially in view of the high rate of population growth. Per capita GNP was estimated at US$560 in 1992, ranking Solomon Islands as a low-income country. Educational attainments are low. Thirty per cent of the population is literate and less than 1 per cent has tertiary education. Over most of the 1980s and early 1990s, the public sector grew at an unsustainable

rate, resulting in significant fiscal imbalances.

Over the next decade, public sector health financing options will be constrained significantly by the need for government to contain expenditures. In view of various demographic, epidemiologic, geographic and economic constraints, further improvements in health will require policy reforms designed to establish the sector on a sustainable basis.

Demographic profile

The Solomon Islands population, estimated at about 339,000 in 1992, is growing at about 3.1 per cent per annum. At this rate of growth the population will double in about 22 years. The average rate of population growth in Solomon Islands increased over the past four decades from a low of 1 per cent in the 1950s to over 3 per cent in the 1970s. The crude birth rate is about 38 births per 1,000 population whereas the crude death rate is estimated to be seven deaths per 1,000 (Table 1).

Fertility levels in Solomon Islands are among the highest in the world. The 1986 census estimated the total fertility rate at about 6.1 births per woman. During the 1990–95 period, this rate is expected to have declined to about 5.4 births per woman, mainly as a result of delayed marriage and earlier cessation of child bearing. An increase in the use of contraceptive methods could be contributing to the decline, however, the data on contraceptive prevalence are very poor.

The population is characterised by a young age structure with a high dependency ratio. About 45 per cent of the population is less than 15 years of age. The overall dependency ratio of the economically inactive population (less than 15 and greater than 64 years of age) to those economically active (15 to 65) is 109. In terms of ethnic composition, 93 per cent of the population are Melanesians, 4 per cent are Polynesians and the remaining 3 per cent comprise other ethnic groups.

The high rate of population growth between 1970 and 1986 was heavily influenced by the age structure of the population, specifically the increasing number of females entering the reproductive age group, as well as high fertility levels and declining mortality rates.

High levels of fertility are associated with increased health risks for mothers and their children. Repeated, relatively close pregnancies raise the risk of mothers' exposure to maternal mortality and morbidity. Short birth intervals, especially

Table 1 **Selected demographic indicators, 1976–2010**

	Population ('000)	Rate of growth (per cent)	Crude birth rate	Crude death rate	Total fertility rate	Infant mortality rate	Life expectancy (years)
1976	197	3.4	46	12	7.4	-	-
1986	282	3.5	43	8	6.1	53	62
1995	369	3.1	38	7	5.4	44	65
2000	431	3.1	37	6	5.1	36	67
2005	500	2.9	34	5	4.5	29	69
2010	569	2.6	31	5	3.9	24	70

Sources: World Bank, *Population Projections*, Population, Health and Nutrition Department, World Bank, Washington, DC; National Statistical Office, *Solomon Islands Statistical Reports*, National Statistical Office, Honiara.

when interacting with other health problems and malnutrition, have a negative impact on the mother's health and increase the risk of maternal depletion. Births to very young women elevate the health dangers to both mother and child, and births at older ages and higher parities are riskier to mothers. For instance, in the absence of obstetric care, women over 34 years of age are five times more likely to die than those 20 to 29 years of age. Hence, high fertility levels are likely to have a direct negative effect on the health of the population, especially mothers and children.

In addition to the impact on health status of high fertility levels, high population growth translates to a higher demand for health care services. For instance, the population under five will increase from about 50,000 in 1986 to about 80,000 in the year 2010, assuming a gradual decline in fertility. The number of women in the reproductive age group will also increase from about 60,000 in 1986 to about 137,000 by the year 2010 (2.3 times). These two groups are the most frequent users of health services, and will likely lead to increased pressure on the health care system.

The high rate of population growth is also an important factor in economic development. Growth will raise the demand for employment, increase public sector spending for social services, impact on the environmental sustainability of development projects and is already leading to unplanned urban growth. For instance, population projections show that between 1986 and 2010, the number of school age children (5–9 years of age) will increase by about 1.8 times. The working age group (15–59 years) is also projected to increase by more than three times during the same period.

Population growth has had an uneven impact across Solomon Islands, affecting urban areas more than rural areas and some provinces more than others. In 1970–86, urban population growth was more than twice that in rural areas. Most of the growth is in the capital, Honiara, causing pressures on housing, schools, water and sanitation, and health facilities. Urban population is projected to increase from 13 per cent of the total in 1986 to more than 30 per cent in 2010.

Fertility decline and declining mortality rates indicate that Solomon Islands is in the initial stages of the demographic transition. This transition will affect the health indicators in the country as a result of the decline in mortality levels, changes in the age structure and in the major causes of death. The demographic profile interacts with the disease pattern to influence health indicators of the population, and subsequently determine health care needs in the country. Understanding these profiles and their interaction is crucial for long-term health planning in the country.

Mortality and morbidity trends

Overall health status has improved since the mid-1970s. The best global indicator of this improvement is the fall in the infant mortality rate from 70 deaths per 1,000 live births in the 1970s to a low of 44 deaths per 1,000 live births in 1992 (based on World Bank projections). Despite these improvements, communicable diseases continue to have a large impact on morbidity and mortality, especially in children. This burden of infectious disease is superimposed on, and contributes to, a pattern of chronic protein-energy malnutrition, itself a major factor increasing the risk of death in any episode of infectious disease. In addition, adult non-communicable diseases, particularly those related to cardiovascular disease, diabetes and cancer are now emerging as significant, but still largely undocumented, health problems. At the same time maternal mortality remains high and sexually transmitted diseases are increasing.

Communicable diseases

Infectious and parasitic diseases continue to be major causes of mortality. Service statistics for 1990 show that the principal causes of death were infectious and parasitic diseases (24 per cent), diseases of the circulatory system (17 per cent) and diseases of the respiratory system (15 per cent) (Solomon Islands 1991). Among children under five, who contribute 30 per cent of reported deaths, the leading causes of death were infectious and parasitic diseases (41 per cent), deaths related to childbirth and puerperium complications (17 per cent) and respiratory conditions (15 per cent). Among children, respiratory infections accounted for 28 per cent of pediatric admissions and 14 per cent of pediatric deaths in Central Hospital (1988 data). A 1986 survey estimated that, on average, a child under five years of age experienced about 3.5 diarrhoeal episodes per year.

Malaria remains a significant public health problem in Solomon Islands, despite more than 30 years of intensive efforts to bring it under control. Between 1965 and 1975 the incidence of malaria declined as a consequence of a major malaria control/eradication program. But malaria incidence subsequently increased, and it became evident that eradication was not a viable strategy. When health services were significantly disrupted by cyclone Namu in 1986, malaria incidence increased. An increased incidence was also reported among infants from 170 per 1,000 in 1989 to 267 per 1,000 in 1990. Of particular concern is that parasite resistance to chloroquine appears to be widespread.

Immunisable diseases continue to be of concern. Measles and pertussis continue to be reported and Hepatitis B seems to be a growing health problem. Current immunisation rates are not yet high enough to prevent periodic outbreaks of immunisable diseases. In 1989 a major measles outbreak, mostly among those not previously immunised, involved 14,000 cases.

Tuberculosis and leprosy, previously major public health problems, are still reported, indicating the need for continued program efforts. In 1990 there were about 372 new tuberculosis cases and 29 tuberculosis-related deaths. The total number of tuberculosis cases under treatment has been declining, however, with improvements in treatment completion rates. Leprosy is no longer considered a major public health problem but new cases continue to be reported. There has been an increase in the incidence of sexually transmitted diseases, particularly in the urban population (Solomon Islands 1990). No AIDS cases have been reported to date, however, the disease remains a potential public health threat.

Non-communicable diseases and lifestyle factors

The incidence of non-communicable diseases, particularly those associated with changes in lifestyle, is increasing. These health problems are more prevalent in urban areas and are associated with a more sedentary lifestyle, dietary changes and an increase in consumption of alcohol and tobacco. Cases of heart disease, hypertension and diabetes are increasing.

The only population-based information on non-communicable diseases of adults, and then only for women, comes from the 1989 National Nutrition Survey which obtained data on obesity, cigarette smoking, and betel nut chewing, all important risk factors for non-communicable diseases.

Obesity among women tends to be more prevalent among Polynesians, Micronesians and those living in urban and peri-urban areas. The National Nutrition Survey

reported that 33 per cent of women were overweight and 11 per cent were obese. There are no similar data for adult males.

Cigarette smoking and consumption of alcoholic beverages are now common, particularly in urban areas. Of women canvassed in the Survey, 23 per cent were smokers. Smoking was most common in Central (45 per cent) and Temotu (40 per cent) provinces and least common in women from Makira and Western provinces and Honiara (10 per cent, 13 per cent and 15 per cent, respectively). There are no similar data for men.

Information on betel nut chewing, the most important risk factor for oral cancer in the South Pacific, is also available for women. Overall, 46 per cent consumed betel nut, with considerable regional variation. There are no similar results for men.

Nutrition and dietary factors

Although severe malnutrition is not widespread in Solomon Islands, mild to moderate undernutrition is a significant problem among children under 5 years of age. As in other low-income countries, undernutrition increases the risk of death from a number of infectious diseases. The 1989 National Nutrition Survey showed that of children under five years of age, 23 per cent were underweight (less than 80 per cent weight for age), 12 per cent were stunted (less than 90 per cent height for age) and 21 per cent wasted (less than 90 per cent weight for height). There was considerable regional variation (Table 2). Children residing in 'bush' villages showed a prevalence of stunting (24 per cent)—twice the national average. Children of shorter mothers were significantly more likely to be stunted than those of taller mothers, emphasising the importance of the nutritional status of women.

The National Nutrition Survey reported the nutritional status of women of child-bearing age who were not pregnant. Only 7 per cent were underweight and 11 per cent were obese. Furthermore, the incidence of low birth weight is relatively low, with approximately 13 per cent of recorded births being below 2,500 grams. However, as 20–25 per cent of births are not attended by trained health staff, mainly in inland areas, it is possible that the true prevalence of low birth weight is considerably higher.

Micronutrient deficiencies are also common. Iron deficiency anaemia, a significant problem among women and children, is exacerbated by the high prevalence of malaria. Signs of vitamin A deficiency have also been reported. This is unlikely, however, to be a significant public health problem. Although there is no survey information, it likely that the dietary pattern leads to marginal zinc deficiency, a known factor in limiting the linear growth of pre-school children.

Dietary patterns vary considerably between rural and urban areas. Traditional root crop staples remain a major element of the diet of the rural population, whereas rice, tinned fish and other imported foods are more commonly consumed by urban residents and groups involved in the cash

Table 2 **Nutritional status of children, 0–4 years of age by province** (per cent)

	Underweight	Stunted	Wasted
Western	32	15	30
Isabel	35	16	31
Central	29	9	28
Guadalcanal	26	11	23
Honiara	14	4	17
Malaita	20	16	15
Makira	21	11	17
Temoutu	15	5	19
Polynesian outlier	9	1	16
Solomon Islands	23	12	21

Source: Solomon Islands National Nutrition Survey, 1989.

economy. These changes in diet lead to increased intake of proteins, fat, energy and sodium and a decreased intake of fibres, changes known to be associated with increases in non-communicable diseases in other South Pacific populations.

The epidemiological transition in Solomon Islands has begun. The disease pattern is changing. While the overall mortality rate has fallen, infectious diseases and chronic undernutrition continue to dominate morbidity and mortality of children. Non-communicable diseases of adults are becoming increasingly important. At the same time, the demographic transition has also commenced. The outcome of these dual trends is likely to be a more complex health situation. While much attention will need to be devoted to prevention and control of infectious diseases, there will be increasing demand for health services to respond to the increase in non-communicable diseases.

Prospects and options for health services in Solomon Islands

The current health system in Solomon Islands has developed in response to a number of pressures and influences. It represents the response during the colonial era to a disease pattern which was dominated by infectious diseases and a dispersed settlement pattern in an island nation. A pattern of services with many peripheral delivery points, small provincial hospitals or health centres and a single main referral hospital in the capital developed. At the periphery there is reliance on paramedical staff to deliver services. Provincial hospitals are managed by a small medical staff who are also responsible for overall management of provincial health services. Total health expenditure is dominated by the central hospital, at which approximately half of the medical and nursing staff are found. In the post-independence period, allocations to health by the central government, as a proportion of total expenditures, have been generous by comparison with most other low-income countries. Despite these allocations, real expenditures on peripheral health services and public health have been decreasing in recent years and reliance on donors for funding operations, maintenance and capital expenditures has been increasing and is now at a high level.

The next two decades

The next two decades will see an increase in the proportion of the population who are adults, with a corresponding change in the structure of demand for health services.

Economic development and delivery of government services have led to two important pressures which are already affecting the health system. The population in urban areas is increasing more rapidly than the population as a whole, with an increasing demand for health services in these areas. The proportion of the population in wage employment has increased with the growth of government and the monetised private sector. As a consequence, a significant proportion of the population is demanding increasingly sophisticated health services and providing the stimulus for the development of a private health sector. At the same time, it is vital that health services in the rural areas, where the majority of the population reside, are maintained and improved.

The economic circumstances which led to the expansion of the government sector in the 1980s are unlikely to continue. It is also unlikely that the relatively privileged position of the health sector with respect to the allocation of government revenues will continue. As a consequence, real government allocations to health as a

proportion of government expenditure is likely to decrease, placing pressure on the sector to find other sources of revenue and to become more efficient in the delivery of health services. Demographic, economic and disease pattern changes will place additional burdens on the health system to which it needs to respond. Nevertheless, the vast majority of the population will remain in the rural areas. It is there that the burden of disease will be greatest and that the biggest challenges in delivering improved health will be.

Health services

The current structure of health services in Solomon Islands raises four main issues

- the relative emphasis on hospitals at the expense of rural health services
- within rural health services, the relative emphasis on curative versus public health activities
- the timely and adequate provision of drugs and supplies, especially to rural health services
- supervision and labour issues.

Although rural health services and public health activities are said to have priority, it is clear from the allocation of funds and staff that the reality is somewhat different. Within rural health services, the emphasis is on curative tasks at the expense of public health activities. While most curative activities are funded from within the recurrent budget, many public health activities, particularly at the periphery, are dependent on donor support. Thus, improvements in the coverage of the immunisation program have been highly dependent on donor support as have water supply and sanitation activities.

Health promotion activities are generally inadequate and heavily dependent on donors. Capacity at the centre is limited and few resources have been allocated to the provincial level. Continuation of activities on completion of one project is often dependent on identifying another source of funds.

The most important public health programs have not been institutionalised within the recurrent funding mechanisms and are constantly at risk of being scaled down or terminated. As a consequence, priorities for these activities are largely set by donors and are not always appropriate to the health concerns at the periphery.

Bias to clinical rather than preventive health care

The bias towards clinical rather than preventive health care results from a number of factors. These include the clinical bias of training programs, management and incentive structure, and the structure of health services. In Solomon Islands both public health activities and basic clinical services are delivered through the same components of the health system, the village health workers, nurse aide posts and rural (and urban) health clinics.

The current bias raises concerns about equity and cost-effectiveness. The focus on hospitals means that a large proportion of the benefits go to the 13 per cent of the population living in urban areas. The relative emphasis on curative services, even within rural facilities, at the expense of public health activities raises issues of cost-effectiveness. In general, public health activities are more cost-effective than curative services. The relative dependence of public health activities on donor financing raises questions about the sustainability of these cost-effective interventions.

The effectiveness of both curative services and public health activities is dependent on an adequate and timely supply of drugs and supplies to the rural

health facilities. This remains problematic in many areas of the country, and services are impaired as a result.

Quality of care and referral patterns are another set of issues that need to be examined in Solomon Islands. Peripheral services at the moment lack support and supervision. Human resources shortages not only make it difficult for peripheral staff to carry out all the tasks expected of them, but also lead to less supervision and support than needed. Priority needs to be given to supervision coordinated with in-service training.

After revising the content of basic services at the periphery, enhancing the role of health promotion and prevention, the associated staffing, training and related implementation issues need to be addressed. This, in turn, will have implications for donor assistance and programs.

Increased emphasis on preventive and peripheral curative care would not preclude continuing government involvement in hospital-based health care. There are a series of issues, however, that should be raised in that regard, including cost-recovery options, the role of the private sector, utilisation and maintenance of these facilities and referral patterns.

Role of the central department

A reassertion of the primacy of rural health services has implications for the role of the centre and the way it supports service delivery in rural areas. It is at the periphery that the vast majority of illness occurs, and it is there that services must be delivered.

The primary role of the centre should be to provide resources and support to provincial-level service delivery. The major activities would include

- national-level planning
- budgeting
- coordination of donors
- human resources planning
- provision of technical support to the provinces (for example, health education and nutrition)
- organisation and monitoring of training (such as training of nurse aides and registered nurses)
- the design and implementation of activities which are inter-provincial in scope (for example, health information systems)
- operational and applied research to support priority setting (for example, evaluation of particular interventions such as bednets to curtail malaria).

The mix of skills needed to fulfil these roles will determine the staffing requirements for this unit.

Role of the provincial health offices

The primary role of the provincial health offices should be the management of the resources (staff, funds, equipment and supplies) to respond to the local situation. This implies a change in budgeting and deployment of staff. An adequate and timely response to the local health situation requires flexibility in the allocation of resources at this level. Further, provincial managers will require greater control over the allocation of all staff. Greater emphasis on responsibility for management of resources at the provincial level also requires increased emphasis on the provision of relevant health information, and the resources to analyse and utilise it quickly.

Human resources

The bias in the allocation of staff in favour of Honiara and the central administration, particularly of nurses and doctors, means that rural hospitals and facilities are frequently understaffed and that nurses and nurse aides at the periphery frequently receive less support and supervision than needed. A related issue is the extent to which the isolation, low workloads, and lack of supervision mean that staff at the periphery are being effectively deskilled. Thus, the emphasis must be on maintaining existing capacity and, where indicated, developing additional capacity.

A revision of health priorities will result in changes in staffing requirements, in terms of roles, and deployment policies. This will entail a careful reconsideration of the capacity and skills needed in the health service, the roles to be played by the different staff at the various levels, the expected workloads and the possible need for new categories in the workforce to meet emerging needs.

Any redefinition of roles in the health system raises the issue of in-service training for existing staff to allow them to acquire any new skills and capacities needed, in addition to reversing the existing trend of deskilling, particularly for those working at the periphery. Current allocations for this activity at both the central and provincial levels are low and will need to be increased. In addition, there is an important role for the centre in supporting the provinces in the organisation and provision of such training.

An emerging issue of importance is the reluctance of experienced national medical graduates to work in the provinces and in administration of health services. Historically, these positions have been filled by expatriates, largely financed by donors. In view of the possible phasing out of donor financing for such positions and if local medical staff cannot fulfil this need, it will be critical that consideration is given to the creation of a new group of professional administrators within the health system. This group could be drawn from current health staff, particularly nurses or other paramedical staff like primary health care practitioners.

An important issue is the maintenance of skills and capacities in those who are already in the service and the creation of an appropriate new capacity to deal with emerging problems. Building a capacity for management among national staff is one of the most critical aspects of addressing future health care needs. It is important that the Ministry is able to identify the requirements for new skills and capacities as they are needed and that staff are able to adapt to emerging new situations. This will require senior managers at the national and provincial levels to place much greater emphasis on capacity building than is the case at the moment.

The question of adequate levels of staffing with the appropriate type of staff underlies the issue of the quality of care being provided by the various levels of health facilities.

Family planning

A number of factors could lead to an increase in the demand for family planning services in the near future. These include the new political commitment to, and concerns about, population issues, increased awareness of reproductive choices, improved access to family planning services, and the general improvements in girls' education and other socioeconomic developments. Mobilisation of all service delivery staff to educate clients will also create demand for services and supplies.

Given the likely increase in demand, the family planning program faces a series

of challenges, and needs to develop a strategy specifying realistic and clear objectives. Training of providers is still a major limitation, both in terms of the number of providers trained and the content and scope of the training. Service statistics are poor in terms of the quality of the data collected and their analysis—a major limitation for program monitoring, evaluation and management. Community participation could be strengthened, with an effort made to build on existing social structures. Research that could help address these challenges is lacking.

A related issue of concern is funding for family planning activities. A number of donors, including UNFPA, IPPF and WHO are already funding the family planning program. In addition, other funding agencies currently active in the health sector (for example, AusAID) are also expressing interest in maternal and child health. Given the number of agencies and potential donors which could be involved in the program and the expected expansion in its scope and coverage, there is a need for an assessment which explores various options and the associated resource implications. It is also important to integrate different donor inputs into a single clearly defined program strategy.

Anti-malaria program

The main issues facing the malaria control program include continuing attempts to integrate the program within other Ministry of Health and Medical Services activities, funding for bednets and anti-malaria drugs, drug resistance, and the continuing need for program evaluation and research.

The integration of the malaria program into the ongoing activities of the Ministry is proving more difficult than anticipated. The recent change in policy and control strategies has meant that current staff skills are not always appropriate for the new activities. The malaria program is faced with the need to change its style of operation to one which is decentralised and collaborative. These challenges will require a high level of leadership, commitment to change and a clear plan of action.

Impregnated bednets and drugs are the mainstays of the current control strategy. Funds for these activities, now derived largely from donors, will need to be found within the recurrent budget if these activities are to be sustainable. Drug resistance has led to changes in the effectiveness of drugs and the need for constant evaluation of the standard treatment regimen. Resources must also be found to support the monitoring of levels of drug resistance on a routine basis.

The changing circumstances of malaria point to the need for continuing applied research to monitor changes and evaluate new approaches to control. Research efforts have an important role in providing support of routine health services, particularly maintaining quality control of microscopy activities.

Water and sanitation

The construction of elaborate water supply systems has been mainly supply driven. One consequence is that many systems are both difficult and expensive to maintain and have never had strong community support to help sustain them. There is a need for the water supply program to be demand driven, and built on the past and current experience of acceptable systems in the community. Community involvement in all aspects of the program—design, location and selection of water source(s), construction and maintenance—is vital if the efforts are to lead to sustainable improvements in water supply access.

Development of improved sanitation systems and practices has been hampered by a lack of program focus relative to water supplies and entrenched traditional practices. Significant effort needs to be made to improve the level of sanitation services available and to ensure that material and appropriate advice are available where communities or individuals show a willingness to make a significant contribution to the costs of improved latrines.

There is also a need to pay particular attention to the specific problems of servicing the needs of other rural sites such as schools and health facilities. It is important that rural water and sanitation systems are not overloaded by including institutional needs without carefully considering their capacity.

Finally, authorities planning for water supply and sanitation systems in urban areas need to consider carefully their financial viability and sustainability. On public health grounds, it is essential that appropriate services are developed in urban areas and peri-urban settlements. All current urban systems have significant problems with coverage, reliability and quality. Recent attempts have been made to explore options for urban service development. However, it is crucial that decisions to proceed with any investment scheme are made within the context of a physical plan that ensures all basic urban infrastructure services can be provided optimally on a least cost basis, with provisions for cost recovery when feasible.

Health education

Health education should be given a high priority in light of the emerging health patterns and the importance of behavioural factors in disease prevention and prognosis. Current health education programs face various issues relating to program implementation and sustainability, including

- funding
- the role of the central division as a resource for the provinces
- the program content at the provincial and central levels.

The national health plan and the activities of the provincial health offices place particular emphasis on the role of health education in health promotion. If the division is to do more than respond to the priorities set by the donors, it is important that funds are allocated in the recurrent budget to allow the development of a program which responds to priorities set by the Ministry of Health and Medical Services. This should include building a capacity to develop, deliver and evaluate health promotion activities. In addition to funding and capacity building within the Ministry, the scope of health promotion activities should be expanded to include other points of contact with the population including formal and informal education activities.

In developing such a response, it is important that the role of the division is clear. Provinces have few resources and there is limited development of local materials at either the central or provincial levels. There is a clear need for the centre to respond to the needs of the provinces in development and reproduction of materials and in provision of technical support for the efforts of provincial staff. To achieve this it will be important to assess and, if necessary, supplement the skills currently available at the centre. More effective use of peripheral health workers could be achieved with more frequent visits by health educators from the national and provincial levels.

The Ministry of Health and Medical Services is placing increasing emphasis on lifestyle factors as non-communicable

diseases in adults become more prevalent. It is important to determine the extent to which health education can realistically contribute to this effort. In a number of cases, other factors in society, particularly economic ones, may be more important determinants of behaviour. For example, duties are crucial in determining the price of imported foods high in fat and salt. Other factors like exchange rates, income distribution and lifestyle also have an impact on the structure of consumption. In such cases, health education may have little effect unless it is supported by changes elsewhere. It is critical then, that health education efforts be monitored and evaluated. Needed skills, though, are largely absent from the Ministry at the moment. Attention should also be paid to the school health education syllabus, at both primary and secondary level with new emphasis placed on diet, exercise, and family and interpersonal relationships including sex education. To be successful, this will require strong commitment from the Ministry of Education and teachers.

Health information system

Health information systems are potentially useful at the central level for monitoring and planning and at the provincial level for program management. Currently, the use of the health information system at both levels is limited. At the central level, current use is mainly for monitoring. Other uses are restricted by the lack of planning skills at the Ministry of Health and Medical Services and the lack of information on in-patients, human resources, drugs and supplies. Capacity to process and analyse data on a consistent and timely basis needs to be firmly established. At the provincial level data use in program management will require the development of provincial capacity to process and utilise data.

Health financing

The health system in Solomon Islands faces significant resource shortages. The government has relied heavily on donor support for health infrastructure development, management of provincial health services, maintenance and for the financing of a number of priority public health programs. Budget resources focus on curative hospital-based services rather than on preventive and primary health services at the periphery.

Solomon Islands already allocates a large share of its budget to health. Funding requirements for the health sector are likely to continue to increase. Sustained population growth and the consequent population structure will result in increased demand for health services. The existing system is experiencing recurrent budget and maintenance underfunding relative to requirements to ensure sustainability of quality services. There is still a need to extend and improve access to services provided through the rural health infrastructure. Solomon Islands will need to become increasingly responsible for existing health financing efforts. In the medium to long term, chronic diseases will increase the resource requirements of the curative health system which continues to receive sustained support from donors through infrastructure and staffing assistance, and for preventive/primary health care programs.

The challenge facing the Ministry is to sustain the existing system, extend and improve its quality, particularly service delivery at the periphery, while also taking increased responsibility for recurrent costs currently financed by donors. In order to meet this challenge Solomon Islands will need to significantly reform the financing of the health sector. In this respect, a range of opportunities is available including cost recovery, improved use of foreign assistance, targeted import levies, promotion of private

sector service delivery (including the cautious exploration of health insurance options), encouragement of non-government organisations (particularly missions) in the running, maintenance and management of health services, and improved use of existing budget and human resources.

Cost recovery and other user charges

Cost recovery remains a largely unexploited policy tool in Solomon Islands. User charges could help sustain health services, improve management and positively influence health-related behaviour. Greater recourse to patient fees, payments for drugs and other charges appears to be feasible for several reasons. User fees for traditional healers is a common practice throughout most parts of the country. An increasing proportion of the economically active population is now participating in the monetised sector of the economy. The introduction of reasonable patient fees, payments for drugs and other user charges is also feasible on equity, efficiency and affordability grounds. The population has historically accepted user charges in education with individuals and families paying significant fees for education.

A key question is what should be priced and how should charges be determined? From first principles, it is appropriate to collect fees for goods and services (such as medicines, sutures and surgery) which yield a direct and immediate therapeutic benefit to the individual. It is not appropriate to charge for immunisation or other preventive activities since the benefits from such service accrue to individuals only over a long period of time. The full benefits of these programs accrue to the community and individuals only if everyone participates in the program.

The level of charges should be set with clear objectives in mind. A principal objective, in the Solomon Islands context, is to raise additional revenue to sustain and improve the quality of peripheral health services. Fees signal that real resources are being used to provide services. Individuals will carefully consider the need for a service (for example, drugs) just as they purchase other items for consumption. On the other hand, payment of fees raises consumer expectations about the quality of service. A fee-collecting health service is under pressure to respond to the needs of consumers.

The modest level of fees proposed should not raise major equity concerns, especially if a mechanism is established to provide for fee reductions, fee caps or waivers for those without access to a cash income. Careful consideration also needs to be given (in the absence of health insurance arrangements) to the level of charges for children and the aged on whom a significant proportion of the burden of illness falls. It is important that the schedule of fees does not become too complex to administer and remains transparent to both patients and the community. Provision should also be made for regular adjustment of the schedule of fees to ensure modest real increases over the medium term.

Health insurance

An embryonic private insurance sector is expanding in Honiara. Introduction of substantial fees for private wards and increased cost recovery for hospital services would further encourage the industry. It would also affect the structure of benefits likely to be offered in the future if, as is appropriate, insured patients pay the full costs of services delivered. At present the industry is focusing on infrequent events (for example, expensive medical evacuation and inappropriately subsidised in-patient secondary and tertiary care). It will be necessary for the government to establish

an appropriate regulatory framework for the industry in order to ensure fair practice and protection for consumers.

Import levies

Consumption decisions of Solomon Islanders are having an increasingly adverse impact on their health. Consumption of sugar and related products, tobacco, high salt and/or fat content foods, and alcohol is significant and rising and is contributing to a range of emerging high cost health problems. From a health status perspective it may be prudent to increase the excise taxes on those items which directly contribute to the rising cost of health care provision. Import taxes and duties, excise or indirect taxes on these products also provide a potential basis for raising additional revenues for the health sector.

The import and excise duties that can be collected from sugar, alcohol and tobacco-related products are significant. It is estimated that the total revenue currently collected is about SI$14.8 million. It would be feasible to increase duty rates by 25 per cent immediately. Further systematic increases over the next four to five years, to raise existing rates 75 to 100 per cent, would be desirable. A 25 per cent increase in the average/implied duty rates on these items could generate an additional SI$2.5 million in revenues. Raising duty rates by 75 per cent would generate an additional SI$7.5 million in revenues. The duty rate on sugar (raw and cane) which accounts for 80 per cent of all sugar-related imports is very low at 5 per cent. It would be desirable to move very quickly to the 80 per cent duty level. One possible constraint to rapid sustained increases in the duties on these products could be the recent rapid increases in indirect taxes and the significant shift from income taxes to an indirect tax base. Public health concerns suggest these products should be singled out for specific additional taxes. Excise on both domestic and imported beer should be increased and differential excise rates abolished.

The current range of tariffs varies widely. In a number of instances, foods with high fat and/or salt content have lower excise rates than other more nutritious foods. It should be possible to adjust the relative structure of duties and charges to encourage better (more nutritious) food consumption patterns within the population.

Improved efficiency of resource use

The Ministry of Health and Medical Services has a number of alternatives available to realise cost savings. Opportunities exist to effect significant cost savings on the existing malaria program now that the decision has been made to abandon systematic malaria spraying and focus on impregnated bed net distribution. There is scope to reduce drastically the current number of staff employed by the program. This will entail a significant number of redundancies as well as redeployment of staff after appropriate retraining.

It is likely that systematic mapping of the catchment areas for each health facility would yield opportunities for rationalisation in some areas and reveal service delivery needs in others. Current utilisation figures suggest many facilities are underutilised. The current roles and skills of the various cadres (particularly medical officers, registered nurses and nurse aides) are ill-defined and their current deployment is not demand driven. Opportunities exist to substitute health cadres which would yield staff salary savings. In this context it is probable that the introduction of a small number of other health workers, like primary health care practitioners, into the staffing structure would enable both cost savings and improved service quality.

The current complement of headquarters staff in the Ministry is large and expensive because of the excessive number of senior-level positions. Rationalisation of this structure and redeployment of staff to provincial service delivery functions would yield overhead savings and improve service delivery capability. Systematic efforts to apply existing standard treatment protocols for health problems, and to further rationalise pharmaceutical use also have the potential to produce savings. Finally, cost finding and management studies of hospital service delivery have the potential to yield savings. Improved delivery of public health and primary health care programs also have the capacity to reduce the pressure for hospital expenditure.

External aid, health planning and the need for a public investment program

The lack of a public investment program for the health sector has resulted in a piecemeal approach in utilising external aid. As a consequence, health priorities have been distorted, and scarce domestic resources (human and financial) have not been strategically focused. Most planning has been undertaken at the headquarters level with very little involvement of institution/program managers. Better use of both external assistance and domestic resources could be achieved through the development of an effective sectoral planning capacity in the health sector which is able to draw on the knowledge of health managers scattered throughout the country.

The current planning unit is focused on development of projects for donor financing, rather than setting resource allocation priorities. This, in part, arises as a consequence of the planning unit not being fully integrated into the budgeting and policy/priority setting framework of the Department of Health and Medical Services. The current national health plan for Solomon Islands lists a large number of projects to be financed by donors. It does not set overall priorities for the development of the sector within a framework which links the capacity of the operating budget to sustain the proposed investments. Financing of all projects and programs must be sustainable.

A coherent investment program for health service delivery should emerge from a national health plan which establishes health sector priorities, program objectives and outputs. Once health sector objectives and outputs have been established, the management, human resource development and capital implications of the strategy need to be determined within the framework of an expenditure plan which aligns recurrent budget, development investments and donor resources to the plan. This may require changes in the government's budgeting and planning procedures. Responsibility for resource allocation priority setting, the establishment of a national health public expenditure plan and the coordination of donor assistance need to be institutionalised within the Ministry.

Private sector

The scope for the private sector to expand in the future will be related to the nature of services able to be effectively provided by the public sector, the direct costs of publicly provided medical services and the niche market (or specialty) within which individual practitioners operate. There are currently no significant barriers to entry of medical officers to the private sector except for those who are public servants. There is, however, a need for recognition by government of the positive contribution an active private sector could make to the health care of the population. The reintroduction of user fees may encourage more consumers

(and practitioners) to enter the market for medical services and stimulate development of private insurance.

Consideration of the role and function of the private sector is often limited to the role of medical officers, dentists and pharmacists. This does not seem appropriate in the context of a health system which is dependent on other professional cadres, that is, nurses, nurse aides and village health workers currently work without the direct supervision of medical officers. The entry of health professionals to the private sector could increase access to health services, especially in remote areas. However, such an approach would require registration procedures to be codified and other potential barriers to entry to the private sector to be addressed. The Ministry would also need to develop appropriate inspectorate/quality assurance programs for both the public and private sector.

While there is not likely to be a rapid change in the composition of health care delivery between the private and public sector, a clear signal for its development could reduce the burden of health care to public finance and improve access to health services. Specialist medical officers could be encouraged to enter the private sector and be employed on a sessional basis in the public system when their skills are required. This may enable specialist incomes to be increased, but would guarantee specialist skills for the public sector.

Future directions

The present system has led to considerable gains, but it is at risk of becoming increasingly inappropriate to health needs in Solomon Islands. Solomon Islands government has several options through which it can pursue alternative health priorities and sector needs.

System and workforce

The health care system needs to alter its current pattern of allocating most resources to hospitals at the expense of rural health services. Ensuring quality services, especially in the rural areas, will require adequate and timely provision of drugs and medical supplies and equipment. There is also a need to reassess the focus of rural health services to provide adequate priority to public health and outreach activities. To achieve this goal, the content, staffing and resource requirements for each level of the system will need to be reviewed.

What services should be provided through the government's health care system? Perhaps the most important criterion for deciding what services to deliver is the relative impact of the service on health status. Priorities for the system should be selected based on the magnitude of the problem (both its severity and prevalence), its susceptibility to interventions, and the economic feasibility of the intervention. Within this framework, public health interventions (immunisation, information and selected services for family planning and nutrition and health education), and some basic clinical services (such as pregnancy-related care, family planning service, tuberculosis control, control of sexually transmitted diseases, and care for common serious illnesses of young children), especially in the rural areas, will likely have a high priority. This priority setting exercise should be used to redefine health system needs and inputs. The inputs should include facilities, staff (numbers and skills), supplies, training and transport.

Workforce and human resource issues need to be addressed in view of the likely reorientation of the system. In order to address workforce planning issues, there is a need for a workforce study that analyses the major issues, including system needs

and the definition of the roles and functions of the different workers, and leads to a clear definition of training requirements. There is also a need to address in-service training requirements for existing staff to allow them to acquire any new skills and capacities needed. This is in addition to reversing the existing trend of deskilling, particularly for those working at the periphery. In view of the possible phasing out of donor financing for provincial health directors, and if local medical staff cannot fulfil this need, it will be critical that consideration is given to the creation of a new group of professional administrators within the health system.

Management and structure

Assertion of the primacy of rural health services will imply changes in the role of the centre and its role in supporting service delivery in rural areas.

At the provincial level, the primary role of the health office should be the management of health services in a way that responds to local needs. To achieve this, major changes in budgeting and deployment of workers are needed. Greater emphasis on responsibility for management of resources at the provincial level also requires increased emphasis on both the provision of relevant health information and the resources to analyse and utilise it quickly.

Resources

The reorientation of the health sector will require significant reform of health sector financing. This will imply changes in the government planning and budgeting procedures to ensure that resources match program priorities, and that crucial recurrent expenditures for the program are adequately financed. Options for health financing include cost recovery, improved use of foreign assistance, targeted import levies, promotion of private sector service delivery (including the cautious exploration of health insurance options), encouragement of non-government organisations to run and/or manage health services, and improved use of existing resources (budget and human resources).

Cost recovery is a largely unexploited tool for health financing in Solomon Islands. Increased resort to patient fees, payments for medication and other charges are feasible options. Estimates indicate that about 7 per cent of recurrent expenditures can be generated through cost recovery mechanisms. Moreover, consumption of sugar and related products, tobacco, high salt and/or fat content foods, and alcohol is significant and rising, and is contributing to a range of emerging high cost health problems. From a health status point of view, increasing the excise taxes on those items which directly contribute to the rising cost of health care provision may be prudent. Health insurance is another health financing option that could be considered for further cautious development. Before this option is pursued, however, the government needs to establish an appropriate regulatory framework for the industry in order to ensure fair practices and protection for consumers.

The Ministry of Health and Medical Services should also explore options and opportunities for cost savings and more efficient use of resources. Several alternatives are available to realise cost savings. These include

- reducing excessive staffing in some parts of the sector (for example, the Ministry's central office and the malaria program)
- exploring possibilities to rationalise service delivery points in some areas through a systematic mapping of the catchment areas for each health

facility, especially where utilisation rates of health facilities are low

- improving deployment practices and clarifying the roles and skills of health staff
- cost finding and management studies of hospitals to identify areas for cost savings.

The private sector, despite its relatively small size, has a potentially important role in health care delivery. The development of this sector should be encouraged since it could both reduce the burden of health care to the public purse and enhance access to health services. Future roles for the private sector could include providing specialised medical services. Specialists could be employed on a contract basis in the public system when their skills are required.

Donor assistance will probably continue to be a significant part of health care financing in Solomon Islands. The allocation of donor funds has been less than optimal, partly due to the lack of a strategic plan and a public investment program for the health sector. By developing such plans, the government could direct donor assistance to complement its own efforts and resources while ensuring sustainability of the different interventions. Following the development of such strategic plans, the government and the donors could then direct external assistance to the sector in accordance with national priorities. For such an exercise to succeed, a significant effort to coordinate donor assistance is needed.

Health planning and the need for a public investment program

A set of options and recommendations has been put forward here. The adoption of these recommendations is likely to have a significant impact on health status. The first step should involve integrating the different recommendations through a priority setting exercise used to develop a coherent expenditure program for the sector. The exercise will have major corollaries for other aspects of the system, like health information and budgeting. It is crucial for Solomon Islands to initiate this process and to define national priorities and needs for external assistance in a way that optimises use of resources and ensures institutionalisation of key programs.

References

Solomon Islands, 1990. *National Health Plan 1990–1994*, Ministry of Health and Medical Services, Honiara.

——, 1991. *Vital Statistics Report*, Ministry of Health and Medical Services, Honiara.

——, National Statistical Office, various issues. *Solomon Islands Statistical Reports*, National Statistical Office, Honiara.

World Bank, various issues. *Population Projections*, Population, Health and Nutrition Department, World Bank, Washington, DC.

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