HEALTH DEVELOPMENT PROBLEMS OF SMALL STATES: THE DESIGN OF APPROPRIATE HEALTH DELIVERY SYSTEMS FOR THE ISLANDS OF THE PACIFIC AND INDIAN OCEANS

Paper prepared by Dr. J.H. Hirshman*

SUMMARY

A health delivery system for small countries is proposed which is largely government-financed, without discouraging a modest private sector. It is proposed to be based on only a comparatively small central administrative core with progressive decentralisation and with the strength as far as possible at the periphery. Peripheral health workers of comparatively short training and modest educational standards, with community support and involvement, are the basis for the service at rural and peripheral urban level. These workers, with supervision and support from medical assistants and nursing staff and with the support of environmental sanitation staff, will have public health and clinical responsibilities and will have a controlled range of medicaments and equipment at their disposal, as well as some transport and the possibility of the referral of patients to higher echelons.

The peripheral system of basic health services with community support fits into the primary health care concept. It aims at as much self-reliance as possible with limited resources. It gives the medical profession a leadership role in public health and clinical medicine but does not rely on an unobtainably high and expensive level of doctors and medical specialists. The system requires a conscious investment in, and a political decision towards, preventive medicine and public health.

This applies particularly to maternal and child health, including full immunisation coverage, to family planning, to environmental sanitation, to communicable disease control and to nutrition - in other words to areas of proven preventive effectiveness. The system, of course, must also provide curative services including hospitals, but such hospital services as are appropriate for the country and are not wasteful of resources.

Economic improvements markedly help health. Conversely, better health helps the economy.

It is suggested that health is not a matter for health workers alone. Government and private inter-sectoral coordination in health is necessary, as are a nutrition policy, adequate but not excessive budgetary support for health, and facilities for staff training and staff development. Existing traditional health

* formerly Director of Health Services, WHO regional office, Western Pacific. This paper, printed with the author's permission, was presented for the 1979 Development Studies Centre seminar series: "The island states of the Pacific and Indian Oceans: anatomy of development", Australian National University.

workers and methods should not be discarded but their useful features and community trust utilised.

Bulk purchasing of medicaments, vaccines, standardised equipment, etc., is proposed in a framework of technical cooperation between a number of small countries or states. Training of health staff should also be on a cooperative basis between countries, with states possessing greater resources serving as training areas for the more sophisticated health categories. Appropriate managerial and health planning skills should be developed and a modest health statistical and information system set up for planning and evaluation.

The proposals are not made as a rigid design but as one suggested way, with alternatives and flexibility available to suit country circumstances.

WHAT ARE THE HEALTH PROBLEMS AND CONSTRAINTS IN HEALTH CARE DELIVERY?

Countries with populations ranging from a few thousand up to a million or so face similar problems of small resources, limited health manpower and problems of access to health care facilities by the population. This is indeed the case in the small island states of the Pacific and Indian Oceans.

The biggest causes of illness and death in the islands and in most developing countries, large and small, are those of respiratory and diarrhoeal diseases. These are the two main killers, particularly in childhood. Other communicable diseases follow in importance. Malaria, where it occurs, is of great significance, aggravates the health situation profoundly and causes major economic problems. Malaria in the South Pacific is confined to Papua New Guinea, the Solomon Islands and the New Hebrides; it does extend into the Indian Ocean.

Significant bacterial diseases are tuberculosis, leprosy, the main venereal diseases, meningitis, leptospirosis, tetanus, other clostridial infections and whooping cough. The pneumonias and bronchopneumonias are included under respiratory diseases, usually the leading causes of mortality and morbidity. Gastroenteritis, typhoid, and the diarrhoeal diseases as a whole are the second largest cause of mortality and morbidity. Cholera has reached the South Pacific in Nauru and the Gilbert Islands (Kiribati).

Of the viral diseases, hepatitis, dengue, influenza and the viral components of diarrhoeal and respiratory infections are important. Poliomyelitis is no longer common. Rabies is not endemic in the Pacific.

Parasitic diseases are still important, with malaria foremost, followed by filariasis and intestinal parasitic infections (ascaris, hookworm, amoebiasis). Fungal infections are frequent, but in the main affect only the skin. Malnutrition, particularly of the weaning period is a common problem as is anaemia in women. Nutritional problems are aggravated by parasitism and by infections whether malarial, intestinal or other.

The chronic diseases are rising markedly in importance as communicable diseases come under control and as the population ages. This is just same as in larger developed and developing countries. Thus heart disease, hypertension, cancer and diabetes need increasing attention. Diabetes is particularly prevalent in Mirconesia and Polynesia. Obesity is common.

Mental illnesses and stress syndromes are not infrequent. The image of the carefree islander is a myth. Alcoholism is increasing but drug abuse is still comparatively rare.

Traffic accidents and other injuries are a significant cause of hospital occupancy, death and disability.

Infant mortality rates range from about 35 or 40 per thousand, to 100 plus. Urban infant mortality rates are better than rural figures. Crude death rates range from 5 or 6 to about 15.

Birth rates are generally still high, with a young population structure and a high dependency burden. Annual population increases vary but are mostly about 2 per cent or above. Life expectancy is rising, with female life expectancy, as usual, significantly higher.

Rural populations still make up the bulk of the people health services must reach but urbanisation is increasing and peri-urban slums with marked health and sanitation problems are not uncommon.

Environmental sanitation is generally poor, with water supplies not safe and excreta disposal inadequate. Air and water pollution, however, in the small states are not yet a serious problem. Housing standards are variable but are generally not conducive to optimal health. Garbage disposal is unsatisfactory. Vectors such flies, rats and mosquitoes are problems, with mosquitoes the most significant disease carriers. Communications are serious constraints in health services. The scattered nature of some islands groups makes health services delivery and service design complicated and more expensive.

A compact state with little need for sea travel and not too rugged a geography has great advantages over scattered island groups.

Roads, transport availability, shipping, telecommunications networks and administrative and managerial capacity are all important factors in health service design.

Educational levels are a constraint, not only in health personnel training but the educational level of the mother is probably one of the most important factors in child health. Cultural factors, community development and participation, womens' clubs and womens' interests and the status of traditional medicine all influence health services design and capability.

It is within the above social and epidemiological backgrounds that health care delivery systems and their appropriateness have to be developed.

WHAT KIND OF HEALTH SERVICE?

The scope for a private sector in health services delivery will be limited, particularly in the small island states and in those where a significant middle class has not yet developed. Basically, therefore, the health services are government-supported and financed from general revenue, with variable fees and collection charges according to government policy. Such charges often only result in token revenues and they sometimes do not even cover the cost of collection. Health insurance schemes are difficult to administer in small countries, though appropriate attempts are well worthwhile in the larger island states.

The most important decision for the govenrment, considering the limited resources, is the way in which most benefit can be obtained for health money expended. A conscious investment in preventive medicine and public health is essential.

Health promotion, curative services and preventive services are all necessary and have to be integrated into a practical whole. Curative facilities will always be necessary, no matter how efficient preventive services are, but the money spent on the costlier forms of curative services must be carefully gauged.

Unfortunately, the colonial heritage has emphasised the monumental hospital, beloved also by politicians because a plaque can be affixed and as it is a visible symbol of "health" - or rather ill-health.

Hospitals will always be needed. It is only the type of hospital and the level of facilities that need to be kept in tune with resources and needs.

Too many small countries spend 70 per cent of their health budget on curative facilities and medicaments, particularly on hospitals built in an expensive fashion through well-meaning bilateral aid. The countries are then saddled with large running and maintenance costs for inappropriate hospital facilities and the health budget has little left for other purposes.

A primary health care approach, with community involvement, is suggested and this will be discussed later on in this paper. Traditional medicine, often deeply rooted in the culture should be not destroyed but utilised whenever feasible, discarding the harmful, developing the good, and re-training and using traditional health workers.

WHAT KIND OF PREVENTIVE EMPHASIS?

Small states should concentrate on proven preventive measures. The following areas are suggested as priorities.

Environmental sanitation: safe water supply, safe excreta disposal, food control and hygiene, reasonable housing standards, sanitary garbage disposal, disease vector control, pollution control where applicable.

Maternal and child health preventive measures:

(a) The fullest possible immunisation coverage for diptheria, tetanus, whooping cough, (DPT vaccine), poliomyelitis (oral vaccine) and tuberculosis (BCG vaccination) - this involves the availability of vaccines of proven effectiveness, managerial capacity in scheduling coverage and follow-up and a cold chain to keep the vaccine potent till administered.

(b) Nutritional guidance and improvements; health education.

(c) Family planning, child spacing, prenatal services, prevention of obstetric complications; anaemia and parasite control.

Communicable disease control measures and campaigns (malaria, filariasis, tuberculosis etc.): practical measures to minimise disease introduction, i.e. "quarantine" services, and some epidemiological competence.

Accident and traffic accident prevention to the extent practicable.

A degree of effort in occupational health, as appropriate to country conditions. This extends to agricultural workers and is not confined to industry. Pesticide and other toxic substance control is included.

WHAT KIND OF HEALTH STRUCTURE?

Let us agreed that health is too important to be left to the health professionals alone.

There has to be inter-sectoral collaboration and support, with a total government and community involvement in health policy. Without being over-elaborate for small countries, coordination for health is needed from public works, education, agriculture, community development, labour and other related sectors. Whatever economic planning board or finance ministry exists should be involved and should be aware of social needs and not only economic needs. For many health problems, for example in mental ill-health, in malnutrition and in problems arising from high fertility, the possible solutions are largely outside the strict health services, and social, cultural and political efforts are needed to supplement what health services can do.

A modest national health advisory council is suggested for small countries, which advises the ministry of health, and through him, the cabinet. Such a council should have reasonably broad government and community (consumer) representation.

Let us also agree that the technical skill and knowledge of health workers must be augmented by an adequate managerial, administrative and logistic capacity of the staff and of the health service as a whole.

The structure should be capable of responding best to peripheral, rural demands. It should not be overweighted centrally. A minister of health should be the political and the administrative head. He need not be medically qualified. There would be a technical head under the minister, preferably medically-qualified and with public health orientation and training. The subsequent structure depends on the size and other circumstances of the small countries and this need not be described in detail. There need not be a strict division into curative and preventive services and in small countries health administrators should be as a multivalent as possible and not over-specialised. There should be a strong environmental health section, closely coordinated with "public works", clearly-defined responsibility for maternal and child health including family planning, for communicable diseases, for community nursing and for the education and training of health staff. There has to be adequate decentralisation to divisions and/or districts. Every effort should be made to reverse the usual trend of good access to health care in urban areas and poor access in the periphery in rural sectors.

Primary health care, as interpreted and adapted to each country's needs, provides this approach. It is no panacea, and really it is only a slogan for an approach, but in essence it means the provision of health care of an adequate type through primary health workers who have to be appropriately trained but whose training need not be of long duration. There must be support for, and supervision of, such primary health workers and there must be referral possibilities. There also should be community involvement, with the community having a hand in the choice of the primary health care workers and ideally sharing the support for him or her in collaboration with the government. This could apply to their housing, part of their salary and also to the labour component of building health centres, water supplies etc.

I do not believe that it is practical to ask communities to shoulder all the finance needed for primary health care, but a reasonable share is salutary.

I have a great belief in women power. In most cultures, women's committees concerned with health and social progress can exert a powerful influence. They can achieve more than the health professions by themselves, particularly in child health and family planning.

The primary health care worker needs a means of transport, whether a horse, a bicycle, motor-cycle, car or boat - in other words, whatever makes sense in the circumstances.

He or she needs a supply of well-chosen essential drugs and essential equipment. He or she needs adequate housing, a simple but clean health centre or sub-centre that can also serve as a health education and demonstration facility, and clear instructions. A manual for primary health care workers should be developed and this must be augmented by regular supervision and re-training. He or she needs to know when to call for help and where to call. They need communications means. He or she should get out into the community and should not sit in a health centre waiting for patients.

No small country, or any country for that matter, can rely predominantly on doctors for health care delivery. Leadership can be given by appropriately-trained doctors with a broad outlook, but doctors will always be expensive to train and maintain and will tend to avoid the periphery.

The peripheral staffing basis should be village health workers or urban primary health care workers with training of six months to a year. A degree of literacy is required. Re-trained traditional health workers may be suitable. Support and supervision will come from more highly trained nurses and midwives and from medical assistants. Sanitation workers, particularly sanitarians/health inspectors, are needed to support the environmental sanitation efforts of primary health care staff.

WHAT KIND OF DRUGS/MEDICAMENTS?

Doctors prefer a wide choice of drugs and like to prescribe widely - though not always wisely. Small countries cannot afford large drug bills and large drug inventories.

The World Health Organisation has developed lists of essential drugs, with flexibility for country circumstances. These drugs should be bought by generic name if possible (i.e. by chemical substance rather than by proprietary name). Thev should be bought in bulk as advantaheously as possible by small countries banding together in purchasing schemes to obtain better prices from reputable manufactures.

Traditional drugs and herbal medicines which are beneficial, or at least harmless, can be used. The local cultivation of useful medicinal plants and their processing should be encouraged.

WHAT KIND OF HEALTH CENTRE, EQUIPMENT AND TRANSPORT?

This should all be as appropriate and simple as practicable, and there must be provision for maintenance. Equipment should be standardised and well-meaning donations of all kinds of different equipment discouraged. It is realised that is not always easy to look the gift horse in the mouth.

Shipping is important for states with scattered island populations, particularly for those with limited or non-existent air services. Whether there should be a medical ship is a question that can be answered only by weighing all factors pertinent to each country. It is expensive but for some larger island groups it may be necessary.

Preventive maintenance may be an unfamiliar concept, but it is essential.

In general, the most practical, uncomplicated levels of buildings, transport and equipment that will do the job should be looked for, always with maintenance and cost-effectiveness in mind. There need to be some adequately-trained technicians who can check and maintain electro-medical and laboratory equipment, including X-rays. They will not be able to do everything, but

they can do preventive maintenance, minor repairs and at times even major repairs.

WHAT KIND OF HEALTH BUDGET?

While this must vary with the size of the countries and other circumstances, such as the policy towards fees for medical services and the country's transport and communication facilities, it is felt that 10 per cent of the total government budget for health would be a reasonable approximate yardstick.

WHAT KIND OF HEALTH STAFF AND WHAT TYPE OF TRAINING?

Doctors with training appropriate to the country's circumstances and a public health orientation are needed for public health leadership and for clinical/curative tasks.

There is no need whatever to aim for the doctor/population ratios of the so-called developed countries. While some small Pacific states have achieved ratios of one doctor to approximately 2000 people, one doctor for 4000-5000 people can be quite sufficient if other categories exist to take up some of the tasks. Much will depend on the accessibility of the population. Scattered smaller islands with small populations compound the problem. Medical assistants are important in my view, and this does not just apply to small island countries. These can be trained from scratch in a two to three years course or they can be developed by giving nurses additional training. Medical assistants can combine public health, clinical diagnostic and health promotional (health education) roles. They are a supervisory echelon for village health workers. One medical assistant for about 1,500 to 2000 of the population, depending on circumstances, could be aimed for.

Nurses and midwives are familiar categories of great importance and impact. They are usually the real "work horses" of the service and are not often given sufficient credit and good enough conditions. They should have a community orientation, not only bedside skills, and should be trained locally, and not only in a hospital setting. Nursing aides or similar auxiliary categories with shorter training can be very useful.

The basic peripheral workers, village health workers or urban health workers are perhaps the most basic if adequately selected, trained and motivated and if they have community support. Training of six months to one year, carried out locally, with good supervision, support and re-training is proposed. The aid post orderly in Papua New Guinea is a good example. Educational standards need not be high but a degree of literacy is most useful and some basic idea of a scientific approach to health.

Well-trained and practical sanitarians/health inspectors who are willing to get their hands dirty are worth their weight in gold. One to three years training is required, depending on the standard sought. They should be supported by basic environmental workers of little formal training who can help them at village level even on a part-time basis. Specialised sanitary

engineers are most important people but their full-time employment is usually not feasible in the small island states. A pharmacist and pharmacist assistants are needed. Assistant pharmacists' training can be carried out in some of smaller countries, but the training of full-qualified pharmacists usually requires developed-country facilities.

Dental services can be given by a very small cadre of qualified dentists supported by dental assistants, dental hygienists and, as required, dental technicians.

Radiographers, laboratory technicians, physiotherapists and nutritionist may all be needed, but for very small states flexible multivalent workers can carry out some of these functions adequately. As an example, nurses or nursing assistants can carry out some laboratory examinations, some X-ray technical work and even some physiotherapy. Medical assistants and nurses can help nutrition education.

All health workers can, and should, be health educators but one or two health professionals should have special training in health education techniques so they can pass these on to their colleagues. As for the clinical areas, most countries, unless very small, will need some "specialists"; some of their doctors should at least be trained in priority areas even if they cannot be termed "qualified specialists". These priority areas are internal medicine including cardiology and chest diseases, general surgery and orthopaedics, paediatrics, obstetrics and gynaecology, and anesthesiology. The second priority perhaps are ophthalmology, skin diseases, ear nose and throat, psychiatry and pathology. More "rarefied" specialties like neurology, neurosurgery, gastro-enterology, urology, endocrinology can usually only be covered by visiting specialists through collaboration from other countries. Even the second priorities and some of the first cannot always be met from indigenous resources, but there could be a pool of specialist resources common to two or three states in collaboration. There will always be cases where the transfer of patients to countries with greater facilities will have to be considered; this is an expensive exercise but at times unavoidable. As stated before, the public health administrator/medical officer needs a public health qualification with a reasonable grounding in epidemiology and communicable disease control. He should also have sufficient management skills to help his staff. Very importantly for health services, there have to be people with managerial and administrative skills, such as hospital administrators, supply officers, etc.

Health information and statistics are needed for feedback and for evaluation and planning efforts. There should be country health programming, even for small states, and some health planning skill available within the health administration.

A qualified health statistician may be a luxury and is rarely found in the island states, but a man with a good head for figures and a well-organised clerical mind will do nicely and can lead the needed health statistics section.

WHERE SHOULD HEALTH STAFF BE TRAINED?

It is clearly uneconomical and virtually impossible for small states to train all their health workers within their boundaries.

The only practical solution is for one of the larger developing countries in an area to provide facilities for basic and some post-basic training with support from the other countries in a Technical Cooperation among Developing Countries (TCDC) approach.

Fiji is a good example in the South Pacific where the Fiji School of Medicine trains doctors, dentists, laboratory technicians, health inspectors, radiographers and others for most of the area. Fiji can also provide some bost-basic training. Peripheral health workers, nurses, midwives and possibly medical assistants should have their basic training locally whenever feasible.

For specialised training one will have to use facilities in developed countries, provided they are appropriate and flexible.

Whether the training of doctors and dentist is at university level or at diploma level is to me immaterial but the prestige aspects are recognised and the pressures are for degrees and their recognition "internationally". The brain drain away from small states is unfortunately real and serious but there are no ready answers that fully respect human rights.

The aim should be to practise scientific medicine without frills and over-elaboration. This will require a level of diagnostic and laboratory services that is reasonable but not over-sophisticated. Self-reliance should be aimed for as far as possible. "Scientific medicine" however does not exclude the helpful contribution traditional medicine can make.

GENERAL COMMENTS

Hard as it may seem, small states must cut their cloth according to their resources. That is not always a health disadvantage. "Over-doctoring" and "over-medication", so commonly found in the "developed" world, can be damaging and counter-productive.

Let me say in conclusion that these outlines and proposals should in no way be looked at as a rigid mould. I believe the outline to be workable, and much of it exists now or is being developed. It fits in with the guiding principle, namely, access to appropriate, hopefully effective health care for all, health care without frills and prohibitive cost. There will never be "health for all" and slogans that imply this should not be misunderstood. There can however be access for all to appropriate health care and help and dignity in pregnancy, childbirth, illness and in the inevitable terminal phases of life.

There can and must also be a great reduction in <u>preventable</u> illness and death. The technology for this exists and it can be made applicable to available resources.

It should not be tolerated if what is available today in appropriate health technology is not applied and accessible. Countries however can find their own way that suits them best in health service design, within the above technical considerations and their own constraints.

Some, with already considerable health personnel resources and no great geographical problems, may not opt for village health workers of short duration training. Others may not agree, for various reasons, including professional conservatism, to a medical assistant category. Alternatives can be found. Let us however not just carry on inappropriate transfers of health care patterns that do not work well, are increasingly expensive and which deny social equity and health access to those that need them most.