The Tyranny of Size†: challenges of health administration in Pacific Island States

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Abstract

There is great diversity among Pacific Island states (n=22) in geography, history, population size, political status, endemic disease, resources, economic and social development and positions in the demographic and health transitions and their variants. Excluding Papua New Guinea, all Pacific states are less than one million, and half of them (11) are less than 100,000.

Smallness also means fewer resources available for health, even if percentage allocations are similar to larger countries, and a disproportionate amount may derive from international aid.

Specialisation is not cost-effective or even possible in clinical, administrative or public health domains in small populations, even if resources or personnel were available, since such staff would lose their skills. In instances where only one to two staff are required, retirement or migration means decimation of the workforce.

Training doctors within the Pacific Island region provides appropriately trained personnel who are more likely to remain, including those trained in the major specialities. Nursing training should be in-country, although in very small entities, training in neighbouring states is necessary.

Outmigration is a significant issue, however, opportunities in Pacific Rim countries for medical doctors are contracting, and there is now a more fluid workforce among Pacific health personnel, including those resident in Pacific Rim countries.

International and regional agencies have a disproportionate influence in small states which can mean that global policies intended for larger polities are often promulgated inappropriately in small Pacific states.

Smallness also leads to strong personal relationships between health staff, and contributes to teamwork, but can also create issues in supervision.

Small health services are not just scaled-down versions of large health services; they are qualitatively different. Smallness is usually intractable, and its effects require creative and particularistic solutions involving other more endowed Pacific states and Pacific Rim countries.

Abbreviations: **NCD – Non-Communicable Disease; NGOs – Non Government Organisations; ODA – Overseas Development Assistance; TFR – Total Fertility Rate.**

Key words: **health administration; Pacific Island States; specialisation; outmigration; small health services.**

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First published: 1966.

Context

The Pacific Island states of Melanesia, Micronesia and Polynesia encompass populations that vary greatly in size, from over eight million in Papua New Guinea (PNG), down to a few thousand in some small Polynesian entities. Since this article considers only small states, PNG will be excluded; all other Pacific countries and territories have populations <1 million. Excluding PNG, Fiji and Solomon Islands have populations over 0.5 million, three states are between a quarter and half a million, five states between 100,000 and a quarter million, and 11 states under 100,000, of which six are

<20,000. Fiji has a population of 850,000; Solomon Islands and Vanuatu 942,000; French territories 565,000; Samoa, Tonga and other Polynesian states 323,000; other Micronesia 304,000; and United States territories 220,000. [1]

While Solomon Islands, Vanuatu and Kiribati register population growth of ≥2% per annum, some states in Polynesia and Micronesia show population growth <1 % per annum, [1] despite substantial fertility, because of considerable out-migration, particularly to New Zealand and the United States. Pacific states manifest extensive variations in land mass and geography from substantial high islands with rich volcanic soil to tiny atolls consisting of little more than sand. While some populations are concentrated on main islands, others are scattered through rugged mountainous terrain or across far flung archipelagos. Many islands have plentiful water from rainfall, whereas those near the equator are severely drought-prone. The range of the malaria mosquito vector (Anopheles species), extends from Asia southwest to the Buxton line which encompasses PNG, the Solomon Islands and Vanuatu, but not beyond; all other Pacific Island states are malaria-free.

There are differences in language and culture within and between Pacific Island states. Melanesian society is traditionally led by men who have advanced through strategic alliances, and there are many local languages, although varieties of pidgin are widespread. Polynesian societies are hierarchical with hereditary nobility, and speak related (Austronesian) languages. Although Indigenous Fijians (i-Taukei) are racially considered Melanesian, their language and culture are more Polynesian in character. Immigrant Indians gained parity with Indigenous Fijians in 1946, and out-numbered i-Taukei from 1956 to 1986 (censuses). There were three` military coups in Fiji in 1987, 2000 and 2006. At the 1996 census i-Taukei constituted 51% of the population and Indians had declined to 44%, and at the 2007 census i-Taukei were 57%, and Indians declined further to 37% [2] - a consequence of out-migration and lowered fertility. There are also substantial communities derived from immigrants, or inter-mixed with them, in New Caledonia, Guam, and French Polynesia. Inter-communal conflicts in New Caledonia 1984-88 led to accords which have altered political, economic and social circumstances; at the 2014 census 40% declared Melanesian (Kanak), 27% European, then 'Caledonian', mixed race, Polynesian and Asian. [3] Although Christianity is widespread from European colonisation, there are still areas of animist belief in Melanesia, and Fijians of Indian descent are determinedly Hindu or Moslem.

As a consequence of the geographical and socio-cultural heterogeneity of Pacific Island populations, and different historical colonial experience, the demographic transition, and its variants, is not only evident over time in each population, but also currently observable in comparative cross-section. [2,4,5] The balanced high mortality and high fertility characteristic of the traditional demographic regime has been first affected by a decline in mortality (from reduction in undernutrition and infectious disease), which, in association with continued high fertility, produces population increase, especially seen in Solomon Islands, Vanuatu and Kiribati (Table 1). In other Pacific states, population increase has been moderated or rendered static, despite high fertility, by extensive outmigration, such as in Samoa, Tonga, and parts of Micronesia (Table 1). The demographic transition has progressed (and concluded) in some French and American territories, New Zealand associated states, and in Fiji, where the total fertility rate (TFR) has declined to <3 per woman, including some states where TFR is <2.1 per woman (replacement), and mortality and fertility have returned to balance, albeit at low levels (Table 1).

Likewise, the epidemiological transition is evident both from secular analyses and in crosssection. [4-5] Some Pacific states (such as PNG) still experience low life expectancy from infectious disease and perinatal, maternal, and nutritional conditions, characteristic of the traditional or pre-transitional pattern of causes of death (and morbidity), see Table 1. There are also populations, such as Guam (Table 1), with a modern or post-transitional pattern with relatively high life expectancy and death in the elderly from chronic non-communicable disease (NCD). During the epidemiological transition, between the traditional and modern patterns, there may be limitation of life expectancy from persistent premature mortality from traditional causes of death coupled with significant premature adult mortality from modern causes, producing the 'double burden of disease'. [5] In other instances, such as in Fiji, plateaux in life expectancy may occur from increases in premature adult mortality from cardiovascular disease, diabetes, certain cancers and chronic lung disease, while a simultaneous decline continues in infectious disease, and perinatal, maternal and nutritional conditions, especially in children. [6-8, 4-5] These transitional patterns occurred in North America and Australasia, and some countries of Europe, during twentieth century.

Availability of accurate demographic, health status and health service information is frequently deficient. In French and United States territories statistics are organised by the

Table 1: Population statistics, Pacific Island states (circa 2010-13)

PACIFIC ISLAND STATES	POPULATION '000	POPULATION GROWTH % PA	FERTILITY TFR	GDP PER CAPITA PPP US $'000	GDP PER CAPITA US $ 000	ODA % GNI	LE BIRTH MALE (GBD)	LE BIRTH FEMALE (GBD)	IMR/1000
Melanesia (excluding PNG)									
Fiji (Independent)	880.4	+0.5	2.6	4.7	3.5	3	65	69	14
Solomon Islands (Independent)	651.7	+2.7	4.7	2.7	1.2	61	61 (61)	70 (64)	18
Vanuatu (Independent)	289.7	+2.6	4.2	4.2	3.0	15	69 (62)	72 (67)	20
New Caledonia (French Territory)	277.0	+1.8	2.2				74	81	4
Polynesia									
French Polynesia (French Territory)	273.8	+0.6	2.1		25.0		73	78	5
Samoa (Independent)	194.0	+0.8	4.7	5.7	3.3	27	73 (68)	76 (73)	17
American Samoa (US Territory)	54.3		2.6		8.0		70	78	8
Tonga (Independent)	100.6	+0.2	4.1	7.8	3.5	19	66	70	13
Cook Islands (NZ associated)	15.2	+3.0	2.6		12.2		69	74	8
Wallis & Futuna (French Territory)	13.5	-1.9	1.8				74	78	4
Tuvalu (Independent)	10.1	+0.5	3.9	3.6	3.2	34	63	67	30
Niue (NZ associated)	1.6	-1.0	2.9				71	75	17
Tokelau (NZ associated)	1.4	-0.1					68	70	30
Pitcairn (UK Territory)	(n=49)								
Micronesia									
Guam (US Territory)	173.0		2.9		15.0		75	81	10
Kiribati (Independent)	115.3	+2.2	3.9	5.7	1.50	11	0	67	42
Federated States of Micronesia (US associated)	104.6	-0.4	3.6	2.3	2.70	41	69 (63)	72 (68)	30
Republic Marshall Isds (US associated)	55.0	+0.4	4.1	2.4	3.1	48	71 (62)	73 (66)	24
Palau (US associated)	17.8	+0.6	2.1	9.2	10.8	20	64	70	12
Nauru (Independent)	10.8	+1.8	4.5	5.6	6.2		56	59	44
C'wealth Nth Marianas (US Territory)	51.0		1.6				74	77	5

Data sources: Demographic: Linhart et al. 2014; SPC 2016; GBD: Global Burden of Disease. [11] + Connell 2013 [12]
ODA: Overseas Development Assistance. GBD estimates are given where they differ from official LE estimates. GNI Gross National Product.
GDP: Gross Domestic Product. PPP: Purchasing Power Parity: World Bank 2016. http://data.worldbank.org/indicator/SH.XPD.TOTL.ZS.
LE: Life expectancy at birth (years), IMR: Infant mortality rate per 1000 live births [14]

metropolitan country and generally reliable, although GDP is not produced by international agencies. In independent Pacific countries or Pacific states associated with New Zealand or the United States, data collection, analysis and dissemination usually falls to a hodgepodge of local ministries and statistical institutions, international and regional organisations, bi-lateral aid agencies, philanthropic institutions, and even non-government organisations, of variable competence. Thus the data in Table 1 are incomplete, and in some cases, suspect. For example, life expectancies from the Global Burden of disease are given in Table 1 where they vary significantly from official statistics.

Resources

Lack of readily available data is a considerable problem in assessment of small Island states, especially for territories where the economy is enmeshed with the metropolitan country (Table 2). The economy is very small in many Island countries and territories because of small populations, and in many cases scarcity of land which could be used for agriculture. Fishery is an important resource, but commercial fisheries are a capital-intensive and high technology enterprise, and many Pacific Islands lease their sea area to other nations who then fish it. Tourism is an important but precarious industry in Fiji, Guam, French Polynesia and New Caledonia, and also Cook Islands and Vanuatu; but distance and isolation make many Pacific destinations too difficult and expensive for the average tourist, and malarious destinations (Vanuatu) are less desirable.

Pacific Islands have important strategic value ('anchored aircraft carriers') because of their position and sea areas. Some have argued that the relatively high per capita aid flows received by these countries are a form of 'rent' in acknowledgement of their strategic value by donor countries. Such arrangements are formalised in the Compacts of Free Association entered into by the former US Trust Territories, obvious in Guam and French territories, and implicit in many relationships between Australia and New Zealand and certain Pacific Island nations.

Territories and states associated with metropolitan countries generally have higher GDP per capita than independent countries and overseas development assistance (ODA) contributes a significant proportion to gross national income in many Pacific Island states (Table 1).

The scarce resources allocated by government to the health sector in many Pacific Islands, is partly in the knowledge that there are considerable international resources available for work in this area. Many donor organisations and countries usually place a much greater emphasis on health than do developing country governments, because health is seen as 'humanitarian', which is popular with electorates in the industrialised donor nations.

In some Pacific states total health sector expenditure may be a relatively low proportion (<5%) of GDP, yet this may be appropriate since heath improvements at this level of development are importantly related to inputs from water supply and sanitation (Public Works), nutrition (Agriculture, Fisheries), primary and secondary education, electrification, and other development initiatives, rather from that designated specifically as within the health sector as defined by economists. On the other hand, some Pacific states show higher than anticipated (>10%) total health expenditure as a proportion of GDP, which may derive from external sources, especially in United States associated states. Most heath expenditure derives from public sources (Table 2).

There is often a profound lack of material resources in the less developed Pacific Island countries. This may include buildings (primary healthcare centres, hospitals etc.), but mostly supplies. Communication and basic equipment for primary healthcare and district hospital is unavailable or broken. Maintenance is a well-known problem in developing countries. In some cases large buildings or sophisticated equipment given by donors cannot be maintained or repaired, and may lie idle after a few years. Supplies of essential drugs or vaccines are often erratic at best, due to both procurement and distribution problems. Transport is frequently expensive and vehicles are usually poorly maintained and often subjected to extreme conditions. Communications are usually a problem both between the centre (national or provincial health department) and the periphery (health centres, hospitals, etc.), and between the health facilities and the sometimes scattered and isolated communities which they are supposed to serve.

The problems with communication and transport in some Pacific Island countries are often compounded by extreme climatic and geographical difficulties. Terrain is frequently impassable by land vehicles or impassable at certain times of the year. The Melanesian malarious countries and some of the Micronesian states have significant rural or outer island populations which are often scattered and isolated.

The lack of trained health personnel in many Pacific Island countries affects all levels of the healthcare system from top administrators to village level health workers, however, accurate data is often difficult to locate (Table 2). In some states medical doctors are supplemented by Medical

Table 2: Health resources, Pacific Island states, excluding Papua New Guinea (circa 2014)

PACIFIC ISLAND STATES	HEALTH EXPENDITURE PER CAPITA $US	HEALTH EXPENDITURE AS % GDP	PUBLIC AS % TOTAL HEALTH EXPENDITURE	MED DRS # (/10⁴)	MED ASSIST NURSE PRACT # (/10⁴)	NURSES MIDWIVES # (/10⁴)
Melanesia (excluding PNG)						
Fiji (Independent)	204	4.3	66			
Solomon Islands (Independent)	102	5.1	92	107 (1.6)		890 (13.7)
Vanuatu (Independent)	158	5.0	90	46 (1.6)	56 (1.9)	341 (11.8)
New Caledonia						
Polynesia						
French Polynesia						
Samoa (Independent)	301	7.2	91			
American Samoa						
Tonga (Independent)	213	5.2	82	55 (5.5)	51 (5.1)	280 (27.8)
Cook Islands						
Wallis & Futuna						
Tuvalu (Independent)	633	16.5	99			
Niue (NZ associated)						
Tokelau (NZ associated)				4 (28.6)		13 (92.9)
Pitcairn (UK Territory						
Micronesia						
Guam (US Territory)						
Kiribati (Independent)	154	10.2	81	22 (1.9)	46 (4.0)	301 (26.1)
Federated States of Micronesia (US associated)	415	13.7	91			
Republic Marshall Isds (US associated)	625	17.1	84	24 (4.4)	74 (13.5)	128 (23.3)
Palau (US associated)	1150	9.0	72			
Nauru (Independent)	516	3.3	86			
Commonwealth of Northern Marianas						

World Bank 2016 http://data.worldbank.org/indicator/SH.XPD.TOTL.ZS. [14]
$US: Current
WHO UNSW Human Resources for Health Pacific Country Reports 2014 [15-20]
Numbers. (/104) Rate per 10,000 population

Assistants or Nurse Practitioners, whereas in others it is Nurses who carry the load, especially at pimary care level, as is evident in Solomon Islands, Vanuatu and Kiribati (Table 2). On the other hand, relatively small numbers of staff translate into large population rations in small states such as Tokelau. In some middle level Pacific Island states there are a number of well-trained clinicians and health administrators at the national level, but severe deficiencies at middle and peripheral levels. There is often a tradition of moving the most competent administrators or people with quantitative/computer expertise from the health department to more 'important' sectors, such as economic statistics, etc., and moving experienced clinicians into health administration.

Specialisation

Smallness of population means that specialisation is not cost-effective or possible in clinical, administrative or public health domains. In the smallest Pacific states there may be no clinical specialisation at all. Medical doctors must handle adult and paediatric medicine and surgery, and abnormal obstetrics; obviously possible interventions are limited. This is not dissimilar to the situation in many rural and remote areas in developed countries up to the mid-twentieth century. In other instances, where there is sufficient population and medical staff, specialists may emerge in medicine, paediatrics, surgery, obstetrics-gynaecology and anaesthetics, and for which local training is currently offered by the Fiji School of Medicine. Although sub-speciality training may be acquired overseas, those who return can rarely practise only in their subspecialty. Surgeons are general surgeons first, and may also have special expertise in, for example, orthopaedics, or urology, etc. Physicians are general physicians first, but may also have special expertise in, for example, cardiology, gastro-enterology, etc. This situation was common in speciality practice and most provincial and district hospitals in developed countries well into the latter part of the 20th century. It is for these reasons that modern sub-specialists from developed countries often lack sufficient skills to function in a developing country environment at much lower levels of diagnostic and therapeutic technology, and where a wide range of clinical knowledge, skills and experience is required. Sub-specialisation is limited to those states with close links to metropolitan countries such as Guam or New Caledonia.

Specialisation in areas of health administration, and public health, is equally difficult as medical specialisation in small populations. Because of their population size, it is just not possible to have trained epidemiologists or demographers, or health economists or health administrators in many Pacific Island countries. And it would be an inappropriate use of resources to train such staff. Some Directors of Health in small Pacific states may spend mornings or afternoons in the operating theatre or general medical clinic, and may be on call at night and weekends for emergency cases, while also attending to the administration of the health service, compiling epidemiological and health service statistics, and interacting with international and aid agencies.

However, small island countries can often use the services of highly skilled specialists – whether it be cardiac surgery for rheumatic valvular disease, ocular surgery, diagnostic assessment for particular difficult problems, a detailed study of healthcare financing, in-depth epidemiological investigation of a disease outbreak or endemic disease, or a complex analysis of fertility and mortality from a population census. This can be supplied by creative arrangements with other Pacific states, Pacific Rim countries and or international or regional agencies.

Herein lies one of the most fundamental of development issues and central contradictions in small populations. In such polities, self-sufficiency in medical and health resources at a level to which many may aspire is not possible, even with high standards of living. Training highly specialised clinical, administrative, and public health personnel is not only an inappropriate use of resources in the less-developed Island countries with small populations, it is inappropriate no matter what the level of development. Paediatric surgeons cannot sit around waiting for the occasional case, otherwise they lose their skills. Epidemiologists cannot be expected to maintain their expertise by looking at the few health statistics which come their way. Furthermore, it is difficult to attract and retain qualified persons to such posts, and often not possible to localise such positions, or to episodically fill such positions by externally funded expatriate staff.

Solutions need to be found in creative connections, often mutually beneficial, between Pacific Island states and institutions in Pacific Rim countries, and assistance from international and regional agencies with sufficient competence. This can be achieved by off-island referral of selected cases for treatment to Pacific Rim countries, or even more distant South East or South Asian countries in order to contain costs. However, referral is always a limited option, difficult to ration fairly, and not appropriate for end-of-life situations. Other solutions involve intermittent short visits by teams of sub-specialists from neighbouring countries, especially suitable for elective surgery, which can be funded through non-government organisations and bilateral aid agencies at modest cost. Further, short and medium term

capacity supplementation of doctors, nurses and allied health workers can be provided for serious gaps caused by death, retirement, migration or well-deserved leave of absence for essential local health personnel if funded through bi-lateral aid agencies. This deficiency is being met to some extent from the reservoir of health personnel from Pacific states residing in New Zealand and Australia, and other countries of the Pacific Rim, or resident in larger Pacific states, such as Fiji, who often have linguistic ability competence in Austronesian Pacific languages, or Pidgin, and cultural familiarity. Such schemes are in operation, but require continued external funding.

Training

There are obvious issues concerning local training health personnel in states with very small populations. There are several nursing schools and health assistant courses in many Pacific Island countries and territories, but some Pacific states do not have nursing schools, and local nursing training is often not available in states with widely dispersed populations in Melanesia and Micronesia.

Training medical practitioners and paramedical workers poses greater difficulties. Medical training undertaken in metropolitan countries is expensive, requires many years, and equips medical doctors to practise in a high technology diagnostic and therapeutic environment, with ready access to specialist referral and availability of an extensive pharmaceutical armamentarium. This training is suitable and required in American and French territories, where there are also medical staff from the metropolitan countries; however, such training is not suitable for countries with lesser health service facilities. Furthermore, there is a considerable non-return rate of Pacific medical graduates who are trained in developed countries.

The two main institutions for training medical practitioners in Pacific Island countries are the Faculty of Medicine at the University of Papua New Guinea in Port Moresby, and the Fiji School of Medicine in Suva, which offer post-school six year MBBS programs. Many Pacific Islanders have difficulty in passing these regional medical courses, particularly the early basic science preclinical component. Failure is often due to inadequate secondary education and approaches to study, compiled with socio-cultural disorientation associated with the move to Suva or Port Moresby. The Pacific Basin Medical Officers Training Programme in Ponape, Federated States of Micronesia, which operated over 1987-97 was funded by the United States to ameliorate a shortfall in medical practitioners which had been filled by expatriate United States physicians on short-term contracts prior to the Compact of Free Association (1986). The program, which was partially influenced by the previous Diploma of Medicine and Surgery at the Fiji Medical School (changed to MBBS in 1982), graduated 70 Micronesian medical officers by 1998, most of who remained in FSM. Smaller medical schools have recently arisen in Fiji (Lautoka) and Samoa. Many Pacific Island medical doctors, even those with considerable clinical postgraduate qualifications and experience, become full-time medical administrators. This is, in many instances, is a significant waste of scarce clinical skills to the country. This problem could be ameliorated by parallel rather than sequential salary scales for clinical and administrative health personnel.

Perceived shortage of front line medical practitioners has led to some Pacific states accepting scholarships for medical training in distant countries outside of the Pacific Island region (such as Cuba or China) which have produced, in some instances, excessive number of graduates (beyond the capacity of countries to employ them), and who often require additional training to gain the clinical capabilities expected locally of Medical Officers.

Nurses are the backbone of health care systems in many Pacific Island countries, particularly the primary care level. Many Pacific Island countries have nursing schools, but some, partly as a consequence of small populations, do not, and those aspiring to this profession must travel to other countries (such as Fiji, Guam, etc.) for training.

Training of paramedical workers such as radiographers, physiotherapists, dieticians and laboratory technologists also poses difficulties. Relatively few of these personnel may be required, so that courses can only be run every few years, even at regional level. Some small countries may require only one or two of a certain type of personnel, but if one migrates or dies unexpectedly the workforce is decimated. A solution is to train nurses and doctors to perform some of these tasks when paramedical workers are not available. For example, in isolated locations, nurses should be able to give simply dietary advice and perform simple physiotherapy tasks, and doctors should be able to take X-rays and perform simple laboratory tests.

Health inspectors and sanitarians are trained at the Fiji Medical School and have made a very valuable contribution to health improvement in the Pacific Island region. Training in public health is usually easier if at postgraduate level (one to two years). Post-graduate training in the Pacific region is developing and locally recognisable Master degrees in

clinical specialities through Medical Schools in Fiji and Papua New Guinea (Medicine, Surgery, Paediatrics, Anaesthetics, Obstetrics and Gynaecology), supported by bilateral aid agencies, has been a beneficial trend in producing and registering appropriately trained local specialists, for Pacific states of sufficient size.

Out-migration of health personnel

Out-migration of skilled health workers poses significant problems for any developing country, but the impact is particularly great in small Island populations which may be left with a total deficiency of that category of professional if one or two people leave. For example, population size may dictate that only one pathologist or obstetrician/gynaecologist is required for the country, and more would be superfluous. If that person migrates then there is none. To retain scarce staff, as much local training as possible in the home country, or other Pacific Island countries, is one of the answers, and local Master degrees for specialist qualifications is one of the mechanisms. Furthermore, to minimise migration, systems need to evolve to relieve professional isolation, support continued professional education, and ensure adequate leave (with temporary replacements), supported by bi-lateral and international agencies. Experienced medical, nursing and other health personnel resident in Pacific rim countries may consider a return to their country of origin at later stages of their career, as part of a common pattern or 'circular migration' in the Pacific, and mechanisms could be developed to facilitate such movements.

The out-migration of locally trained Pacific Island medical doctors has been facilitated by the change of qualifications from Diploma to Bachelor degrees in Pacific medical schools. Replacements by international or aid agencies of foreign doctors with inadequate English, considerable cultural differences and often inadequate clinical training has not improved the situation. Migration is more likely if an individual had recognisable qualifications in the destination country, lived there for some period, and particularly if married to a national of that country - all are often a consequence of overseas professional training.

Increased production of medical doctors in English speaking developed countries over the last decade, especially in Australia and the United Kingdom, has considerably limited opportunities for medical migration, and is arguably the only real way to contain medical migration.

International agencies

The influence of multilateral, bilateral and non-government agencies is quite pervasive in many developing countries, which can be both beneficial and detrimental, and small Pacific states are impacted more than others since they have less expertise and less ability to resist offers of inappropriate largesse and development 'assistance'. American and French territories are least influenced by international agencies, while small Pacific states are the most influenced.

Health policy and planning in developing countries often takes place in two broad spheres. Firstly, in the international context, and secondly at the national and sub-national levels. Herein lies one of the most important differences between health policy and planning in developed and small less developed countries. In many Pacific Island states, the role of the international health-related agencies in policy and planning is the dominant or only influence. These agencies include: international agencies (World Health Organisation, UNICEF, ESCAP, FAO), regional agencies (Pacific Community), bilateral aid agencies (such as United States or Australian aid), and non-government organisations (NGOs).

One of the effects of smallness and lack of resources is that financial and personnel contributions of international and aid agencies may be relatively large in relation to the total health budget, and consequently these agencies may have a disproportionate amount of power and influence in small Pacific Island states as compared with their influence in larger developing countries.

It is important to recognise that small Pacific Island states are not just scaled-down versions of larger nations. They are of such a size, and isolated to such an extent, that their situation and difficulties are qualitatively, as well as quantitatively, different.

Many agencies involved in development have sets of policies which are designed for relatively large least-developed countries and may be framed in such general terms that they could apply to a considerable rage of diversity. Many of these policies are inappropriate for states with very small populations and for partially developed nations, and are often inappropriate for quasiindependent states with mutually beneficial arrangements with larger metropolitan nations. The highly centralised nature of some international agencies, and lack of delegation at the peripheral country level, may mean that policies and rules are applied inflexibly to both China (population 1.35 billion), and Cook Islands (population 20,000, plus another 62,000 in New Zealand).

Bilateral aid agencies profess a humanitarian rationale, but this is overlaid with significant strategic and commercial objectives. Although these donors usually try to encompass policies that are congruent with those of the major international agencies, they often emphasise aspects which are in their economic interest (such as food aid, supply of sophisticated equipment, etc), or strategic interest (training scholarships, supply of staff, fostering referral patterns, etc), which may not be particularly conducive to local health development.

A consequence of the geo-strategic significance of Pacific Islands, a significant proportion of the bilateral aid is destined to achieve foreign policy and defence objectives of donor countries. Following the end of the Cold War, global foreign aid flows decreased by two thirds during the 1990s, and only returned to previous levels after the events of 11 September 2001. Further, donor countries find it easier and less expensive to engineer votes for particular international policies or treaties in regional or global fora, or to support their nationals standing for key positions in international or regional agencies, from a myriad of small states, rather than from large populous countries with more experience and organisation.

Besides traditional bilateral donors, such as Australia, New Zealand, United States and France, during the last decade there has been a prominent increase in activity of China in Pacific Island states. This has been through business activities of its nationals, and through bi-lateral aid, mostly for infrastructure, including hospital and health department buildings, which also utilises Chinese companies, labour and materials. [10-11]

On the other hand, bilateral donors are very sensitive to what governments of developing countries say they need and want through official diplomatic channels (since this is a way to obtain maximum diplomatic return), and find it difficult to resist inappropriate proposals pushed by powerful individuals or elites.

The NGOs usually try to avoid working through government structures, and prefer to work through local counterpart organisations, or directly with those most in need. This can be both an advantage and a disadvantage; on one hand it avoids sometimes inept health departments and circumvents policies directed to hospital and curative services, but on the other hand these activities are often small isolated efforts, uncoordinated with mainstream health programmes. Furthermore, NGOs in small populations, far from being Indigenous, are often established, funded and run indirectly by foreign or international NGOs, with little local autonomy. Finally, the plethora of International and bilateral aid agencies, non-government and philanthropic organisations, and universities, research institutes and health departments in high income countries provide of wealth of opportunities for involvement in international projects and programs, conferences, and meetings, often at the headquarters of such institutions, requiring travel to the Pacific Rim, Asia, North America and Europe. In small heath systems there are few people in responsible positions, and it has not escaped notice that frequent 'off-Island' absences from a constant round of international visits is a major contributor to inadequate availability of senior health resources in small island states.

Advantages

Besides the disadvantages, there are also some advantages of small size. In small health services and health bureaucracies most staff know each other personally. Often they are related by family ties in some way. They live and work with each other for most of their lives. They know each other's strengths and weaknesses, and understand their position in the team. However, sometimes family ties are incongruent with administrative relationships, which can lead to issues concerning supervision and promotion.

Conclusions

Small health services are not just scaled-down versions of large health services; they are qualitatively different. Small population size is usually intractable. Populations in the medium size and smallest Pacific states are frequently static or decreasing from outmigration, despite high fertility. In any case, land is limited. Creative solutions are required involving co-operation with more well-endowed Pacific states, and with neighbouring countries of the Pacific Rim (including Pacific migrants resident there), based on a realistic appreciation of issues and their particularity over time and place.

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