The Health Systems of Small and Island States:

Issues Overview

2012

Michael Tremblay PhD

mike@tremblay-consulting.biz

Introduction

Health reform and policy development involve a variety of specific considerations:

- economic policies to reduce social exclusion
- development of education and training facilities, general literacy programmes
- capital investment in health and social security infrastructure
- reduction or elimination of barriers to access to care, and general equity in care overall
- competency of those charged with health service management, service delivery and continuing reform.

Smaller nations present significant challenges to these considerations.

The World Bank notes that of its membership, 40 countries have less than 1.5 million of population. The Bank suggests they share a set of vulnerabilities:

- remoteness and insularity
- susceptibility to natural disasters and climate change
- limited institutional capacity
- open economies vulnerable to exogenous shocks and unable to easily diversify
- difficulty accessing external capital.

How small is small?

This paper takes a view that small countries are generally under about 2 million people. Many countries are islands, but I have excluded at this stage larger islands.

Next steps

While there are many studies that related to small systems, systematic understanding of various issues is absent. The resources listed at the end of this report suggest that healthcare systems as such are not a priority. Instead, the focus is frequently on public health itself (independently of the system delivering care) or country financing (so healthcare financing is seen within the context of overall country taxation, debt and economic performance).

Perhaps with some support and funding, a more comprehensive scoping of these issues can be developed and appropriate actions developed to address these areas:

- knowledge transfer, training and development
- institutional capacity and design
- financing and system governance.

Contents

Geography, population and proximity to other states

Smaller nations are often islands, extending from a single island to extensive archipelagos. They are separated from other nations and in the case of archipelagos, internally from other parts of the country, and often over great distances. Some nations are physically in two (or more) unconnected geographical locations and separated by another country.

Connections between islands are via ferries, air, causeways and tunnels, though the last two are more expensive and less common solutions. Connections between disconnected geographies depends in part on safe passage through the other country's territory, and therefore requires a degree of political stability.

Smaller countries are often linguistically homogeneous communities, while historical processes, for one reason or another, have not led to their assimilation by adjacent countries.

Increasingly, we see a reversal of the trend to larger states, producing more, and smaller, countries, and, so it is often claimed, more homogeneous nations. This may reflect tribal, religious or other affiliations, which collectively produces often irreconcilable tensions arising from intolerance, as much as self-determination.

Providing health systems in geographically separated and small populations is quite different from large populations that are geographically contiguous. Health needs of remote islands are expensive to meet and service, and present unique challenges in emergency and specialist services.

Smaller countries may have an advantage in their need to develop better linkages to their neighbours, which can lead to closer working, though, for instance, ehealth/telemedicine.

Policy, financing and structure

The challenge facing all nations, regardless of size, is ensuring that an appropriate amount of a nation's wealth and income is allocated to healthcare, and once allocated, is well spent.

Smaller countries face particular challenges with smaller populations and potentially smaller economic incomes to cover the often massive investments needed just to provide a marginal service. Smaller nations are less economically diversified, though that is obviously changing; they are often dependent on tourism, perhaps on one or two significant national resources (such as oil, or mining), and usually need to import the bulk of their food and supplies.

The financing of these smaller health systems is usually through taxation (or national wealth if there is enough), distributing the financing broadly across the economy; this contrasts with using a social insurance system, which puts the financing pressure on the workforce and companies (governments in these models are free-riders when it comes to the social insurance costs of public servants). General taxation addresses social exclusion and ensures that poor and unemployed people receive healthcare.

Smaller countries, too, may fund and operate the healthcare system as a branch of government, in effect a civil service model of provision, to ensure that all services that are needed are provided. This embeds the cost of the healthcare system within the costs of government.

Social insurance models, in contrast, may require more private and/or independent sector activity to finance the capital for new infrastructure, to raised funding through charitable means, or provide expertise in health system management.

In the past, access to these resources, and expertise, has often been more easily done by governments, hence a preference for state-run systems when national resources are limited. State-run systems, may, for some, more directly address equity and accessibility but at the expense of responsiveness and personalisation.

Over the past decade, and more, health system reform in many larger countries (UK, Netherlands, Sweden) has questioned the pivotal role of government in the healthcare system and posited that the application of market forces to public services is appropriate. While this is no doubt controversial for some, this sustained critique of the role of government is checking unrestrained growth (and rent-seeking), suggesting that models built on private provision (but public or quasi-public purchasing) may be an effective alternative. Such models require new forms of regulation, which is to date poorly understood or conceived.

Other reform vectors (US, Canada) argue for a role for government (increased in the case of the US where a relative free market exists). Learning is proceeding on appropriate regulatory processes, finding the balance of government and private expenditure (none in the case of Canada), and how healthcare systems can be made more contestable to new provider entrants.

Asian countries are explore a new balance of government (which is generally small as percentage of the economy) as regulator and private provision, which is a new and emerging model to compete with the more traditional Beveridge/Bismarck policy duopoly.

Smaller nations are faced with a range of options to assist them in rethinking their own healthcare system. The options will reflect choices about the role of government and of the markets. Their smaller size may constrain what can be done. Critical issues arise in deciding how to choose amongst available design options, developing appropriate funding arrangements and appropriate regulations and policies, and where can advice be found that is appropriate to the scale of the system.

Public health and prevention

Smaller nations, especially islands with large tourist industries, experience substantial pressure on their public health, sanitation and prevention infrastructure.

With large numbers of tourists to cater to, (perhaps on any given day being 10% of the local population), food, accommodation, water and sanitary quality come under stress. Environmental considerations are similarly important, affecting the quality of life of people who live in the country, versus those who only visit.

Knowledge Capacity of Small Countries

The capacity of health systems to operate is a function of the supply of trained health professionals. A proxy for the extent to which a small state values education is whether they have a university. A proxy for whether they in turn are prepared to invest in domestic training for health professionals is whether there are schools of nursing, pharmacy and so on. In general, there are more nursing schools in the world, than medical schools, and fewer schools of pharmacy.

That a country has a medical school, with all due respect to my non-medical colleagues, is also a proxy for developing clinical research and biomedical research capabilities. There is productive substitution of roles between nurses and doctors and that can be fruitful, while the research capacity builds on key factors being in essentially the same place: a teaching hospital, a medical school (better is a medical school within a school of health professions), clinical research arising from clinical training, physician-researchers, nurse-researchers, etc., along with the laboratory infrastructure that goes with this.

As may countries are prioritising biotechnology and life sciences as an area of commercial development, it is useful to reflect on the extent to which these priorities depend on a university with robust clinical facilities.

I advocate integration of teaching hospital with medical/health sciences schools where possible to produce an "academic health science centre". With only one per small country, they are a better way of aligning incentives, reducing overlapping but separately undertaken objectives, and achieving resource pooling to improve cost controls. This of course raises issues of bureaucratic and governance control as in many countries, universities are funded or controlled by a different government ministry from that funding or controlling the health system. At the least, the hospital management should be free to create clinical/academic units without undue bureaucratic overhang, while university autonomy is always a good thing.

Nevertheless, lacking a medical school, generally means that biomedical research capacity is weak, as effective links to patient populations is constrained. However, building biotechnology, and life sciences research capacity is not beyond the reach of many smaller countries, as it builds on related disciplines, such as biology, engineering, information sciences, chemistry and physics. However, few small countries universities are world-class, or rank highly on performance metrics, and therefore need to align with other countries to achieve research scale. In addition, smaller countries, on a per capita basis, have fewer researchers, in part owing to having a smaller scale commercial infrastructure to commercialise life science innovations.

Educational Infrastructure

Smaller nations may not always possess the necessary educational infrastructure to produce diversity of health professions that they need to the numbers required. Many, indeed, most, small countries have no medical schools and will be totally dependent on other countries for the supply of doctors. Many smaller countries often train their nurses, but not always to degree level.

As other countries produce the relevant health professionals, smaller countries are dependent on the standards and regulations of health professions of those countries – and not all countries agree on this matter, so there is potential for incompatible professional

regulation, particularly around professional ethics and discipline or fitness to practice.

Advanced and specialist training will usually also depend on other countries to provide not just clinical learning opportunities, but access to the expertise to develop further competencies. Smaller nations, in virtue of their smaller populations, have smaller numbers of individuals with specific conditions, making specialist services uneconomical, while detection and familiarly with what would be rarer conditions a necessary clinical skill.

The increasingly sophisticated nature of modern healthcare is challenging the existing resources of even wealthy large countries. This further emphasises the dependency smaller nations may experience.

A tertiary or quaternary healthcare capability is usually out of reach; this depends on high technology clinical resources, specialists clinical facilities, very highly trained specialist doctors, nurses and other professionals, as well as access to a sufficient number of cases to create the logic itself to create such facilities. Smaller nations, on this basis, would be hard-pressed to justify a tertiary/quaternary sector and will end up borrowing from a neighbouring country. It remains to be seen whether technology can enable greater access to expertise, such as through teleconsultations, or bring down the cost of equipment to justify specialist facilities. Medical tourism is often suggested as a way to create aggregation of patient numbers to justify specialist treatment facilities, which would also offer benefits to the local population.

Educational institutions may be (perhaps perversely) incentivised to develop post-graduate degree programmes at the expense of building domestic undergraduate capacity in across the health professions. This trend has proved troublesome for many countries as domestic post-graduate training has tended to see individuals pursue their more academic needs in other countries, never to return. By not prioritising undergraduate nursing, physiotherapy, pharmacy, occupational therapy, speech therapy, audiology, laboratory sciences, pathology, and so on, smaller nations reduce career opportunities for their own young people, and increase their domestic costs by needing to recruit internationally. International recruitment, too, is fraught, as most countries are not running a surplus in health professions.

Health professions capacity

The main healthcare knowledge transfer infrastructure that is often first on the development list is a medical school. Nursing education is often in greater demand, though. Few countries prioritise pharmacy, or allied health professions such as physiotherapy and occupational therapy, speech and audiology, and so on. Despite these various therapies providing significant benefit in rehabilitation, getting people back to work, or enabling children to benefit from education where hearing health is at risk, academic programmes are broadly not available.

The medical school listing is from the WHO's Avicenna Directory (http://avicenna.ku.dk/database/medicine). The Pharmacy listing is from the International Pharmaceutical Federation (FIP), www.fip.org. Centralised nursing data are not available.

Disclaimer and Note: No views are expressed on quality or reputation of listed schools, universities and no political views are expressed through the inclusion or exclusion of any country or territory. The author is mindful that many smaller states are actually

administered by, run by, protected by, or assimilated into, former colonial states: e.g. UK and its bailiwicks and overseas protectorates, France and its overseas territories, Netherlands and its overseas territories, and the US and its non-territorial jurisdictions such as Samoa, Guam, Puerto Rico and the US Virgin Islands, and so on). In time, I would be inclined to include these for completeness in future; there are no doubt important implications for these states health systems in respect of influence from the supervising nation.

Institutional Capacity of Small Countries for Knowledge Transfer, as of 2012						
	Institutional Relationships		Academic Infrastructure			
State	AOSIS Member	SIDSnet Member	University	Medicine	Nursing	Pharmacy
AOSIS: Alliance of Small Island States / SIDSnet: Small Island Developing States Network						
American Samoa						
Andorra			University of Andorra		Yes	
Anguilla				St James School of Medicine		
Antigua and Barbuda				American University of Antigua College of Medicine	Yes	
Aruba				Aureus University School of Medicine Xavier University School of Medicine		
Bahamas			College of the Bahamas			

Institutional Capacity of Small Countries for Knowledge Transfer, as of 2012						
	Institutional Relationships		Academic Infrastructure			
State	AOSIS Member	SIDSnet Member	University	Medicine	Nursing	Pharmacy
Bahrain			Arabian Gulf University AMA International University	RCSI-Bahrain Weill-Cornell Medical College		
Barbados			University of the West Indies: Cave Hill	University of the West Indies: Cave Hill		
Belize			University of Belize	No	Yes	Yes
Bhutan			Royal University of Bhutan	No	Yes	Yes
Brunei			University of Brunei Darussalam Brunei Institute of Technology Universiti Islam Sultan Sharif Ali	No	Yes	No
Cape Verde			12 universities			Yes
Cayman Islands			St Matthews University	St Matthews University School of Medicine	Yes	
Comoros						
Cook Islands						
Cyprus			12 universities	Yes	Yes	Yes

Institutional Capacity of Small Countries for Knowledge Transfer, as of 2012						
	Institutional Relationships		Academic Infrastructure			
State	AOSIS Member	SIDSnet Member	University	Medicine	Nursing	Pharmacy
Djibouti			University of Djibouti	No		
Dominica			Ross University	Ross University All Saints University School of Medicine	Yes	Yes
Dominican Republic			Many	10 medical schools	Yes	Yes
Equatorial Guinea			National University of Equatorial Guinea	Yes	Yes	Yes
Estonia			Many	Yes	Yes	Yes
Federated States of Micronesia						
Fiji			University of Fiji University of the South Pacific Fiji National University	Fiji School of Medicine Umanand Prasad School of Medicine at the University of Fiji		Yes
Gabon			Omar Bongo University	No		Yes
Gambia			University of the Gambia	Yes		

Institutional Capacity of Small Countries for Knowledge Transfer, as of 2012						
	Institutional Relationships		Academic Infrastructure			
State	AOSIS Member	SIDSnet Member	University	Medicine	Nursing	Pharmacy
Grenada			St George's University	St George's University School of Medicine		
Guam			University of Guam	No		
Guinea-Bissau						
Guyana			University of Guyana others	University of Guyana Green Heart University School of Medicine		Yes
Haiti			Many	4 medical schools		Yes
Iceland			University of Iceland	Yes	Yes	Yes
Jamaica			University of the West Indies: Mona University of Technology	University of the West Indies: Mona All American Institute of Medical Sciences		Yes
Kiribati						
Latvia			6 universities	University of Latvia Riga Stradins University		

Institutional Capacity of Small Countries for Knowledge Transfer, as of 2012						
	Institutional Relationships		Academic Infrastructure			
State	AOSIS Member	SIDSnet Member	University	Medicine	Nursing	Pharmacy
Lesotho			National University of Lesotho	No	Yes	No
Liechtenstein			University of Liechtenstein			
Luxembourg			University of Luxembourg	No		Yes
Maldives			Maldives National University	No	Yes	
Malta			University of Malta	Yes	Yes	Yes
Marshall Islands						
Mauritius			University of Mauritius	Sir Seewoosagar Ramgoolam Medical College	Yes	Yes
Monaco			International University of Monaco	No	Yes	No
Montenegro			University of Montenegro	Yes	Yes	Yes
Montserrat			University of Science, Arts and Technology	University of Science, Arts and Technology Faculty of Medicine	Yes	

Institutional Capacity of Small Countries for Knowledge Transfer, as of 2012						
	Institutional Relationships		Academic Infrastructure			
State	AOSIS Member	SIDSnet Member	University	Medicine	Nursing	Pharmacy
Namibia			Polytechnic of Namibia University of Namibia International University of Management	University of Namibia Faculty of Medicine	Yes	Yes
Nauru			University of the South Pacific			
Netherlands Antilles						
Niue						
Palau						
Papua New Guinea			University of Papua New Guinea	Yes	Yes	Yes
Qatar			9 universities	Yes	Yes	Qatar University College of Pharmacy
San Marino			University of the Republic of San Marino	No	No	No
Sao Tome and Principe			Instituto Superior Politécnico			
Seychelles			University of Seychelles	University of Seychelles American Institute of Medicine	Yes	No

Institutional Capacity of Small Countries for Knowledge Transfer, as of 2012						
	Institutional Relationships		Academic Infrastructure			
State	AOSIS Member	SIDSnet Member	University	Medicine	Nursing	Pharmacy
Singapore			National University of Singapore	Duke-National University of Singapore Graduate Medical School Yong Loo Lin School of Medicine		National University of Singapore Dept of Pharmacy 3 based in polytechnics
Solomon Islands			University of the South Pacific University of Papua New Guinea	No	Yes	
St. Kitts and Nevis			University of the West Indies	University of the West Indies International University of the Health Sciences Windsor University School of Medicine University of Medicine and Health Sciences	Yes	

Institutional Capacity of Small Countries for Knowledge Transfer, as of 2012						
	Institutional Relationships		Academic Infrastructure			
State	AOSIS Member	SIDSnet Member	University	Medicine	Nursing	Pharmacy
St. Lucia			University of the West Indies	International American University College of Medicine Atlantic University School of Medicine Destiny University School of Medicine Spartan Health Sciences University Washington Medical Sciences Institute		
St. Vincent and the Grenadines			University of the West Indies	American University of St Vincent School of Medicine Trinity School of Medicine All Saints University College of Medicine		
Suriname			Anton de Kom University	Yes	Yes	

Institutional Capacity of Small Countries for Knowledge Transfer, as of 2012						
	Institutional Relationships		Academic Infrastructure			
State	AOSIS Member	SIDSnet Member	University	Medicine	Nursing	Pharmacy
Swaziland			University of Swaziland	No		Yes
Timor-Leste						
Tonga			Atenisi Universityi	No		
Trinidad and Tobago			University of the West Indies: St Augustine	Yes	Yes	Yes
Tuvalu						
U.S. Virgin Islands			University of the Virgin Islands	No	Yes	No
Vanuatu			University of the Pacific			

Procurement, economies of scale, and monopoly suppliers

Smaller nations experience particular problems in procurement of supplies, equipment and pharmaceuticals. The smaller supply requirements are often reflected in higher per unit pricing. Equipment spares may not be stocked locally, but in larger countries where suppliers would maintain their business base. Without a local presence, equipment maintenance can be compromised.

One response is offer suppliers sole supplier status; in effect, to permit a monopoly supply situation to develop in order to get good prices and a guarantee of security of supply. However, this may backfire by insulating the country from cheaper pricing arrived at through more competitive means.

Tendering for medicines is one example which may lead to lower costs, but at the expense of consistency in brands, as distributors substitute product brands to meet their own supply chains. This can produce patient confusion as medicine brands change frequently. However, the smaller contracts can make them unattractive to bidders if they cannot mix the supply with that of other countries, further reducing the independence of the smaller country to maintain supply control.

A monopoly supplier of information, though, may be a productive route for smaller

countries, and this would show up in the ease of introducing an electronic health record system, electronic prescribing or hospital information system/PACS. Centralised systems in small countries could be seen as an analogue of a standalone system in a large country as the volume of activity may approximate that of a large vertically integrated provider.

Comparator nations and getting good advice

There are many very large countries, and many small countries. Most health data are produced about a particular group of nations. The OECD nations are mostly large. The European Union's data sets routinely leave out data on the smallest member states. WHO data frequently is missing data from smaller countries. It may not be available, not collected, or in some cases, no one bothered to find out.

But we do know that these data sets are influencing the development of health systems (what works and what doesn't work), funding systems, public health challenges, reform and the role of government.

Smaller nations are affected by a 'neighbourhood' effect: the influence of neighbouring states' policies and economic development can constrain national choices as borrowing from a neighbour may be easier and cheaper. This further creates national dependencies, and fails to address domestic priorities.

Learning from the reforms in other, larger, countries, or innovations in management, need to be carefully interpreted and translated into terms appropriate to the scale of the smaller infrastructure and population.

As well, the development and collation of appropriate indicators permitting comparisons between smaller nations would enable policy and practice analyses to be understood better.

In the final analysis, smaller nations need to work with people who understand the challenges of smaller nations and their specific priorities, concerns and capabilities.

Notes & Resources

Matthias Maass, The Elusive Definition of the Small State, *International Politics*, (2009) **46,** 65–83. doi:10.1057/ip.2008.37.

World Bank, **Small States Issues Note**, 2011 web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/0,,contentMDK:22994504~pagePK:41367~piPK:51533~theSitePK:40941,00.html#BackgroundDocuments [World Bank's focus on issues of small nations is illustrated in this note for a conference.]

Resources

Alliance of Small Island States, www.aosis.org

- focus is climate change and sustainable development

Commonwealth Secretariat, www.thecommonwealth.org/Internal/180407

- 32 of the Commonwealth's 54 members are small states

Island Studies, www.islandstudies.ca

- publishes Island Studies Journal

Small Island Developing States Network (SIDSnet), www.sidsnet.org

- knowledge management platform, data collection
- linking small states
- sponsored by the UN Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and the Small Island Developing States (UN-OHRLLS)

Islands and Small States Institute, University of Malta, Malta, www.um.edu.mt/islands

- research, training
- activities have addressed: banking and finance in small states, competitiveness strategies in small states
- funded by Commonwealth Institute, preparing country profiles on economic vulnerability and resilience

Small Islands Voice

- ensuring public views are heard, main focus is sustainable development
- UNESCO initiative

Small States Network for Economic Development (SSNED), www.ssned.org

- capacity building and best practice sharing
- encouragement of private-public partnerships to support the efficient provision of public services
- supported by World Bank

Small Island States Foundation, Bahamas, www.smallislandstates.org

- funding priorities: sustainable development, economic protection, social justice

World Bank, Small States, www.worldbank.org/en/country/smallstates

- infrastructure development, poverty, public services, etc.
- database