

EMERGING HEALTH ISSUES IN ASIA AND THE PACIFIC: IMPLICATIONS FOR PUBLIC HEALTH POLICY

Amarakoon Bandara*

The Asia-Pacific region is confronted with several emerging health-related issues. The prevalence of diseases causing high rates of mortality and morbidity, and the lack of skilled health personnel, infrastructure, financial resources and health systems that are responsive to the needs of society, are among them. A pragmatic approach with a focus on issues of major health and socio-economic concern is vital for the development of successful public health services. Striking a balance between different service providers taking into account overall resource constraints, efficacy of service delivery and welfare gains is a key challenge for many countries in the region. While the governments of poor countries need to reinforce their involvement in public health service delivery, its role in other areas could be more of a policymaker and a regulator providing stewardship to different stakeholders. The paper proposes a dual track-approach to health intervention, and highlights the need for prioritization of interventions, better targeting, and effective pooling of both public and private resources in making public health systems efficient and sustainable. Policy reforms that encourage private sector participation in health service delivery and health insurance, and a regulatory framework to protect the environment could be important elements of a re-oriented health policy agenda.

The Asia-Pacific region is confronted with several emerging health related issues resulting in deterioration in its health indicators despite the economic progress of some countries. The high level of deaths due to diseases and the burden of diseases is striking. Over 30 million people in the region died of preventable diseases in 2002.¹

* Economic Affairs Officer, Poverty and Development Division, United Nations Economic and Social Commission for Asia and the Pacific, Bangkok. The author wishes to thank Raj Kumar for his valuable comments.

¹ WHO, *World Health Report 2004* (Geneva, 2004).

The number of deaths due to non-communicable diseases (NCD) is on the rise and the occurrence of communicable diseases, in particular infectious diseases has become more prevalent. Although the number of deaths and the disease burden due to Human Immuno Deficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) is relatively low compared to NCDs, tackling HIV/AIDS has become an urgent public health challenge in some countries in the region due to its explosive nature. According to World Health Report 2004, roughly 60 per cent of total deaths in the region in 2002 have been due to non-communicable diseases, a reflection of the correlation between changing socio-economic conditions and health. Communicable diseases account for around 29.9 per cent of total deaths in the region. Meanwhile, non-communicable diseases accounted for approximately 50 per cent of the disease burden in disability adjusted life years (DALY) in the region while communicable diseases accounted for around 37 per cent in 2002.

The lack of financial and human resources has become a major constraint for many poor countries in the region, posing a serious obstacle to the promotion of public health, particularly in the context of achieving health-related Millennium Development Goals² by 2015.³ Poor countries in the region are also grappling with the lack of technology and infrastructure, and an appropriate health policy framework within which different actors could play their role in health service delivery. The socio-economic consequences of diseases would have both short-term and long-term implications on governments and households. While some diseases, in particular infectious diseases, could disrupt the day-to-day activities and livelihood of affected people in the short-run, diseases such as malaria, tuberculosis and HIV/AIDS could have long-term implications for education and labour markets, with adverse effects on the economy, as evidenced from the African experience.

Developing countries in the Asia-Pacific region are in different stages of economic development and have varying levels of health systems. For the very poor, outreach of adequate basic health services is still a challenge; for others the issue is making policy choices on resource allocation and the appropriate balance of public-private interventions to address persistent and emerging health issues. While reinforcement of government involvement in ensuring public-oriented health

² Health related Millennium Development Goals are (i) reduce child mortality, (ii) improve maternal mortality and (iii) combat HIV/AIDS, malaria and other diseases. The respective targets are (i) reduce by two thirds the mortality rate among children under five, (ii) reduce by three quarters the maternal mortality rate and (iii) halt and begin to reverse the spread of HIV/AIDS, and halt and begin to reverse the incidence of malaria and other major diseases. <www.un.org/millenniumgoals/>

³ Sachs (2005). Available at <www.unmillenniumproject.org>.

service delivery is required in some cases, the private sector could play a vital role in others.

How should Governments respond to present and future health challenges? What does the recurrent emergence of diseases imply for public health policy in the region? What should be the role of government, private sector, and the local communities in re-orienting public health systems in the region to better suit the changing socio-economic conditions and the global context? Should the government continue to be in the driving seat in health service delivery or should it provide strong stewardship for various service providers? How to galvanize private sector involvement in health service delivery? These are some of the questions addressed in the paper.

The objective of the present paper is at the broader level of health sector strategy and is to review and analyze the implications of diseases on public health and explore how developing country governments could re-orient their public health policies to meet present and future health challenges. The paper is organized as follows. Section I provides a brief account of the impact of diseases on human life and health systems. Section II discusses ways to promote responsive public health systems. Section III presents a dual-track approach to health intervention. Section IV sets out a brief summary of policy options for interventions in improving public health.

I. DISEASES AND SOCIETAL IMPACT

Why are diseases a concern for governments and society at large? Deaths due to diseases and morbidity could disrupt normal functioning of day-to-day life and the livelihood of people as they affect institutions, in particular health-care systems and the people. They also impose a resource burden on governments and society, and constrain economic development and social welfare. This section reviews the impact of diseases on human life and health-care systems in an attempt to identify key issues related to the provision of basic health services.

Loss of human life and morbidity

As indicated above, non-communicable diseases have become the major killer in the Asia-Pacific region. As reflected in table 1, in 2002 non-communicable diseases caused 18.5 million deaths accounting for 60.1 per cent of the total deaths due to diseases in the region. Communicable diseases accounted for 9.2 million deaths or 29.9 per cent. Cardiovascular diseases, which resulted in 8.8 million deaths in 2002, was by far the largest cause of death across the region.

Table 1. Death by cause in Asia and the Pacific 2002*

	South-East Asia			Western Pacific			Eastern Mediterranean			Asia-Pacific			
	Deaths (^{'000})	rank	Per centage	Deaths (^{'000})	rank	Per centage	Deaths (^{'000})	rank	Per centage	Deaths (^{'000})	Per centage	Rank by type	Rank by cause
I. Communicable diseases, maternal and perinatal conditions and nutritional deficiencies	5 768		39.4	1 698		14.2	1 729		41.7	9 195	29.9		
<i>Infectious and parasitic diseases</i>	2 922			804			953			4 679	15.2	2	
Tuberculosis	599	5		366	4		138	5		1 103	3.6		4
HIV/AIDS	436	6		61	7		44	7		541	1.8		7
Diarrhoeal diseases	604	4		154	6		259	3		1 017	3.3		5
<i>Respiratory Infections</i>	1 474			498			354			2 326	7.6		4
Lower respiratory infections	1 453	2		471	3		348	2		2 272	7.4		3
<i>Nutritional deficiencies</i>	189			27			53			269	0.9		7
<i>Perinatal conditions</i>	1 012			349			303			1 664	5.4		5
II. Non Communicable diseases	7 423		50.6	9 013		75.5	2 030		48.9	18 466	60.1		
<i>Cardiovascular diseases</i>	3 911			3 825			1 079			8 815	28.7		1
Ischaemic heart disease	2 039	1		993	2		538	1		3 570	11.6		1
Cerebrovascular disease	1 059	3		1 957	1		227	4		3 243	10.5		2
<i>Malignant neoplasms (cancer)</i>	1 160			2 318			272			3 750	12.2		3
<i>Neuropsychiatric disorders</i>	267			167			89			523	1.7		6
III. Injuries	1 467		10.0	1 229		10.3	392		9.4	3 088	10.0		
Road traffic accidents	296	7		304	5		133	6		733	2.4		6
Total	14 658		100	11 940		100	4 151		100	30 749	100		

Source: WHO, World Health Report 2004 (Geneva, 2004).

* The regional classification is based on the WHO (2004) classification criteria i.e. South-East Asia: Bangladesh, Bhutan, Democratic People's Republic of Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand Timor-Leste; Eastern Mediterranean: Afghanistan, Bahrain, Djibouti, Egypt, Islamic Republic of Iran, Iraq, Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates, Yemen; Western Pacific: Australia, Brunei Darussalam, Cambodia, China, Cook Islands, Fiji, Japan, Kiribati, Lao People's Democratic Republic, Malaysia, Marshall Islands, Federated States of Micronesia, Mongolia, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Republic of Korea, Samoa, Singapore, Solomon Islands, Tonga, Tuvalu, Vanuatu, Viet Nam.

Within this category of disease, ischaemic heart disease and cerebrovascular disease accounted for 3.6 million (11.6 per cent) and 3.2 million (10.5 per cent) deaths respectively in 2002, ranking these silent killer diseases among the most serious. The pattern of deaths due to diseases is reminiscent of those observed in developed regions several decades ago. The changing socio-economic environment, stress due to pressure at work and the resulting work-life imbalance, lack of physical activity, lifestyles, in particular dietary habits appear to have had a major impact on the present high level of cardiovascular diseases in the region. This is particularly true in countries which experienced rapid economic progress.

Deaths due to infectious diseases at 4.7 million accounted for 15.2 per cent making it the second most serious category of disease in the region as well as across sub-regions except the Western Pacific. Within this category, tuberculosis, diarrhoea and HIV/AIDS claimed 1.1 million, 1.0 million and 0.5 million lives, respectively in 2002, indicating high levels of pollution, malnutrition, lack of access to clean water and sanitation, high risk sexual behaviour, and lack of adequate knowledge in disease prevention. However, in terms of individual diseases, lower respiratory infection was the most serious infectious disease and ranked third behind ischaemic heart disease and cerebrovascular disease. South-East Asia and the Eastern Mediterranean regions appear to be more prone to lower respiratory infection perhaps reflecting overcrowding, poorly managed local environments and the increasing level of pollution due to industrialization. Malignant neoplasms (cancers), another category of disease with strong links to consumer behaviour, in particular high tobacco consumption, have claimed 3.7 million people or 12.2 per cent of total deaths in the Asia-Pacific region in 2002.

A similar pattern is also observed in the burden of disease in DALY (table 2). Non-communicable diseases accounted for 50 per cent of the disease burden in 2002, while communicable diseases, maternal and perinatal conditions, and nutritional deficiencies accounted for 36.5 per cent. Injuries accounted for 13 per cent of the disease burden. However, in terms of the type of disease categories, infectious and parasitic diseases appear to cause more morbidity due to high diarrhoeal infections, tuberculosis and HIV/AIDS, accounting for 48 per cent of the total disease burden in 2002 followed by neuropsychiatric disorders (36 per cent) and cardiovascular diseases (29 per cent). Among the individual diseases lower respiratory infection (17 per cent), diarrhoeal diseases (12 per cent) and ischaemic heart disease (11 per cent) caused the most disease burden. The increasing level of morbidity due to infectious diseases has strong links to changes in ecological conditions, rising levels of pollution, and lack of access to clean water and sanitation.

Table 2. Burden of diseases in DALY 2002

	South-East Asia		Western Pacific		Eastern Mediterranean		Asia-Pacific	
	Burden of diseases in DALY ('000)	Percentage	Burden of diseases in DALY ('000)	Percentage	Burden of diseases in DALY ('000)	Percentage	Burden of diseases in DALY ('000)	Percentage
I. Communicable diseases, maternal and perinatal conditions and nutritional deficiencies	184 649	43.3	54 287	20.5	64 373	46.3	303 309	36.5
<i>Infectious and parasitic diseases</i>	88 953		23 671		32 410		145 034	
Tuberculosis	13 931		6 030		3 040		23 001	
HIV/AIDS	12 129		2 303		1 402		15 834	
Diarrhoeal diseases	20 299		6 687		8 661		35 647	
Respiratory Infections	33 026		8 654		10 819		52 499	
Lower respiratory infections	32 258		7 769		10 453		50 480	
Nutritional deficiencies	12 128		4 360		4 491		20 979	
Perinatal conditions	39 147		14 389		12 138		65 674	
II. Non Communicable diseases	186 376	43.7	173 618	65.5	57 223	41.1	417 217	50.2
<i>Cardiovascular diseases</i>	42 987		32 413		12 060		87 460	
Ischaemic heart disease	20 734		7 502		5 321		33 557	
Cerebrovascular disease	10 395		17 276		2 531		30 202	
Malignant neoplasms (cancer)	13 742		24 822		3 816		42 380	
Neuropsychiatric disorders	48 314		46 534		15 020		109 868	
III. Injuries	55 547	13.0	36 974	14.0	17 481	12.6	110 002	13.2
Road traffic accidents	10 016		8 904		4 588		23 508	
Total	426 572	100	264 879	100	139 077	100	830 528	100

Source: WHO, World Health Report 2004 (Geneva, 2004).

Overall, while “the classical epidemiological transition”⁴ may explain the changing disease pattern in some countries, in others it could be due to a combination of factors such as heavy environmental pollution resulting from industrialization and changing lifestyles and consumption patterns due to modernization of societies. It could also be due to both these factors as in the case of China (Cook and Dummer, 2004). The above analysis also revealed two important points. Firstly, taken individually, some communicable diseases, in particular lower respiratory infections and diarrhoeal diseases appear to cause more disease burden in DALY than any other disease. Secondly, although these infectious diseases appear to cause more disease burden than non-communicable diseases such as heart diseases, they are not as fatal as the latter. In terms of minimizing the societal impact, these point to the need for prioritization of health intervention depending on the severity of the diseases.

⁴ This is a situation where the high rates of infectious disease and early mortality associated with a predominantly peasant society have changed into disease patterns that correspond to an ageing, increasingly urban, population.

Weakening health-care systems

Diseases add considerable strain to public health-care systems. This is particularly true in the case of most developing countries where health systems are financed almost entirely by state funds. In the absence of adequate human capital and financial resources and private health care provision to meet the rising demand, a higher level of disease burden implies deteriorating quality of public services, over crowded hospitals with long queues and long waiting times not only for specific treatments such as surgeries but also out patient treatments.

The low quality of health services in Asian developing countries is reflected in the scarcity of doctors and the high rates of births not attended by skilled health personnel (table 3). In such countries as Bangladesh, Bhutan, Cambodia, Indonesia, the Lao People's Democratic Republic and Nepal, physician to population ratios are so small that one cannot expect patients to receive quality health care. In these countries the share of births attended by skilled health personnel is also very low indicating high probability of high maternal and infant mortality rates.

The health systems in many developing countries are also burdened with the high likelihood of disease outbreaks due to lack of sustainable access to clean water and improved sanitary conditions. The problem is particularly acute in rural areas in South-East Asia where the majority of people do not have access to clean water and sanitation. The status of health in the region could be summarized as follows:

Status of health

- a) The changing socio-economic environment in the region has resulted in a major health transition in the region; non-communicable diseases, in particular cardio vascular diseases are taking a heavy toll both in deaths and disease burden.
- b) Communicable diseases, in particular respiratory infections and parasitic diseases continue to be a major health problem.

Health systems

- a) Health systems in most developing countries are plagued by lack of skilled health personnel due to a host of factors including lack of financial resources. As a result the existing health systems in many developing countries in the region are not in a position to provide access to quality health services on their own.

Table 3. Selected health indicators 2000

	Number of physicians per 100,000 population	Years	Births attended by skilled health personnel (percentage)	Population with sustainable access to improved water source (percentage)		Population with access to improved sanitation (percentage)	
				Urban	Rural	Urban	Rural
South-South West Asia							
Bangladesh	20.0	(1997)	12.1	99	97	71	41
Bhutan	16.0	(1995)	15.0	86	60	65	70
India	48.0	(1992)	42.3	95	79	61	15
Iran (Islamic Republic of)	85.0	(1996)	..	98	83	86	79
Nepal	4.0	(1995)	11.9	94	87	73	22
Pakistan	57.0	(1997)	20.0	95	87	95	43
Sri Lanka	36.5	(1999)	94.1	98	70	97	93
Turkey	121.0	(1998)	80.6	81	86	97	70
South-East Asia							
Cambodia	29.7	(1998)	31.8	54	26	56	10
Indonesia	16.0	(1994)	55.8	90	69	69	46
Lao People's Democratic Republic	24.3	(1996)	21.4	61	29	67	19
Malaysia	65.8	(1997)	96.2	..	94	..	98
Myanmar	29.7	(1999)	56.4	89	66	84	57
Philippines	123.0	(1996)	56.4	91	79	93	69
Singapore	162.7	(1998)	100.0	100	..	100	..
Thailand	24.0	(1995)	85.0	95	81	96	96
Viet Nam	48.0	(1998)	69.6	95	72	82	38
East-North East Asia							
China	161.7	(1998)	89.3	94	66	69	26
Japan	193.2	(1996)	100.0
Mongolia	243.3	(1998)	96.6	77	30	46	2
Republic of Korea	136.1	(1997)	100.0	97	71	76	4
United States of America	279.0	(1995)	99.0	100	100	100	100

Source: WHO, *World Health Report 2004* (Geneva, 2004), WHO Estimates of Health Personnel <www.who.int/whosis/health_personnel/health_personnel.cfm> (accessed on 10 June 2004).

Major causes of diseases

- a) Changing lifestyles, dietary habits, work-life imbalance and lack of physical activity.
- b) High levels of pollution, malnutrition, overcrowding and poor living conditions.
- c) Lack of sustainable access to clean water and improved sanitation is a major cause for concern and is a prime factor for parasitic diseases.

Issues arising from these problems, in particular those relating to access to basic health services, health promotion, the role of different service providers, localization of service delivery, and alternative options for financing health care will be discussed in detail in the next section.

II. PROMOTING RESPONSIVE PUBLIC HEALTH SYSTEMS

Building a health system that is responsive to the needs of the society and has the capacity to cope with emerging health issues, particularly in the context of globalization and the associated behavioural changes that affect health, would require an effective division of responsibilities among the government, the private sector and communities taking into account overall resource constraints, efficacy of service delivery and welfare gains.

(1) Service providers

The government

The government, as the lawmaker and the caretaker of people, has primary responsibility for ensuring good public health. Affordable access to basic quality health services is a human right. The provision of public goods in health, infrastructure, human resources, financing of primary health care and implementation of an effective health policy are some of the areas where the government has taken the lead and will continue to do so. The level of government intervention in service provision depends not only on the level of economic development of the country but also on the social costs involved.

(a) Intervention in service delivery

It is often argued that public, rather than private, provision of basic health services is socially optimal.⁵ Public intervention in the health sector, particularly at the primary level, is often justified on the basis of its impact on poverty, the distribution of resources or access to resources within a society. In addition, diseases impose heavy economic and social costs on governments and society, in which case the government may intervene in disease prevention. For example, there could be negative externalities relating to infectious diseases as infectious people can infect other people who in turn infect other people. This is particularly important when the public, including the government, reflect prevalence-elastic

⁵ See Filmer et al. (1997) for an account on health policy in poor countries.

behaviour, of the degree to which prevention rises in response to disease outbreaks.⁶

However, governments need to strike a balance between state and private sector interventions in health service delivery. In poor countries the government needs to play a catalytic role in the direct provision of primary health care and other health services with a special focus on access to health in remote areas, the role of government in more affluent countries may be more as a policymaker and a regulator. In the latter case rather than being in the drivers seat for service provision, the government has an important role to play in providing stewardship, particularly in designing a pro-active public health policy framework within which the private sector can operate efficiently, re-aligning government functions, institution building and altering incentives for private sector institutions to perform better. In most countries an appropriate mix of both approaches could be most effective.

For example, the system adopted by Malaysia, which has done better in terms of health care than many developing countries in the region, provides good examples for government involvement in health care provision. The success comes basically from its pragmatic approach towards the development of public health services, giving priority to major issues of health and socio-economic concern. The country has embarked on an extensive infrastructure development in under served areas within its overall objective of "Health for all" by 2020. Its health programmes are mainly targeted at diseases of major incidence and prevalence, and at high risk groups (Bin Juni, 1996).

(b) *Institution building*

An effective institutional setup is a prerequisite for the efficient delivery of public health services.⁷ In addition to health infrastructure, technology, financial and human resources, a responsive health policy is also required to meet the emerging health challenges. Health systems in many developing countries in the region are plagued by a lack of skilled health personnel, financial resources and political commitment resulting in heavy disease burdens. On the other hand, weaknesses in public health policies could also be symptoms of longer-term institutional factors arising from a systemic mismatch between the incentive structure

⁶ See also Brito et al (1991), Francis (1997), Gersovitz and Hammer (2000), and Philipson (1999).

⁷ According to Kittikanya (2004), the introduction of the 30-baht universal health insurance system by the Thai government in the absence of appropriate infrastructure and institutional setup and a good financial management system has negatively affected medical professionals and the public's access to health care services.

in the public sector and tasks of the health service.⁸ Correcting public health policies without addressing the institutional drawbacks will bring few long-term benefits.⁹

An integrated approach to building an efficient institutional system of health care would include:

- Provision of adequate resources through taxation, particularly for universal primary care. Taxes specially earmarked for health services would be a better way to provide equitable services and ensure firm commitments.
- Development of human resources in the health service sector, taking into account country specific requirements. For example increasing the number of medical doctors may not be the most effective way to improve human resources in the medical sector if the most urgent need is for nurses or mid-wives.
- Provision of incentives to health personnel that adequately reflect their tasks and responsibilities.
- Provision of physical infrastructure needed to efficiently deliver services.

It may also be necessary to redefine public sector responsibilities and objectives within an integrated framework enabling the private sector, including non-governmental organizations to play a greater role in health care provision, particularly in view of resource constraints.

(c) *Public policy on environment*

Many infectious diseases are thought to worsen or spread by poor environmental quality.¹⁰ Diseases such as tuberculosis, diarrhoeal diseases and respiratory infections, which altogether account for 15 per cent of total deaths due to diseases in the region, are closely linked to pollution. It is also a cause for

⁸ For example, payments in cash or kind are increasingly expected for consultation as doctors and nurses seek to survive on an income of less than US\$ 5 per month in Tajikistan (Falkingham, 2004). A top factor cited by health-care workers for resigning from their jobs in Thailand is workload, followed by low wages (Kittikanya, 2004).

⁹ See for example, Easterly and Lavine (2002).

¹⁰ The pneumonia plague that hit India in early 1990s was considered the result of a filthy urban environment (Garrett, 2000). See also Newsweek (5 May 2003) and World Bank (1992).

some vector borne diseases such as dengue and filariasis. With the exception of catastrophic events, human behaviour has a far more negative impact on Earth's ecology than natural change. Almost any activity that disrupts the environment and ecological balance can enhance the emergence and the mobility of disease-causing microbes. Increased competition in an environment of globalization and shifts in economic policies without proper safe guards have led to a depletion in the quality of the environment, making human beings prone to infectious diseases. Hossain (2000) points out that the shift to a more market oriented economy has changed environmental and behavioural factors, thus diversifying the types of disease across regions in China.

Pollution, deteriorating sanitary conditions and sub-standard farm practices provide an environment conducive to the emergence of deadly viruses. As such, environmental policy could be used as an effective policy tool to prevent the creation of an environment conducive to diseases. The increasing exposure to health hazards arising from environmental degradation calls for urgent and effective action to protect the environment at the domestic, regional and global level.

Policy options available to governments include:

- Implementation of a regulatory framework to protect the environment and minimise the potential damages to ecological balance and thereby the emergence of infectious diseases.
- Imposing punitive charges for those who violate environment regulations.
- Sale of pollution rights for firms engaged in environment damaging activities; such funds shall be used for environmental cleanup.
- Implementation of effective waste disposal systems at the local level along with strict penalties for violating regulations as in the case of Singapore.

The private sector

The increasing demand for health services and the constraints faced by governments necessitate private sector involvement in health service delivery along with the public sector, particularly in catering to the needs of different income strata.

(i) *Health service provision*

Private sector involvement in health service delivery could have several advantages not only because competition impacts performance but also because it is an effective alternative to public health services, particularly in resource constrained developing countries. Lack of financial resources is one of the major reasons for poor quality public health services. In countries where public infrastructure is weak, disease prevention strategies may not be scaled up without private sector involvement. On the other hand, social marketing is increasingly being used to stimulate demand for effective public health interventions, such as family planning and the treatment of sexually transmitted diseases through the private sector (Mills et al. 2004). Contracting out certain activities could also offer advantages in terms of cost reduction, service quality and management convenience. However, private provision of health services could become ineffective in the absence of an effective regulatory environment.

(ii) *Making public-private partnerships effective*

Public-private partnerships would be most effective in areas where both the public sector and the private sector fail when operating on their own. These partnerships would reflect the recognition by the public, the private sector and communities that some emerging health issues require complex organizational mechanisms, diverse skills and resources. Both for-profit and not-for-profit private sector institutions could collaborate with governments in areas such as community level health service delivery.

When there is market failure in the distribution of health benefits to people, particularly the poor in developing countries, public-private partnerships offer an innovative mechanism in delivering health services to the poor.¹¹ Addressing issues arising from the diversity of partners involved in such a mechanism however, would require mutual understanding and flexibility in organizational culture. It is especially important to take into account the diverse organizational and working cultures of the public, private sectors and the community level participants.

The region provides several examples of successful partnerships in the health sector which could be replicated by developing countries. For example a partnership between a private hospital and the state Tuberculosis Training and Demonstration Centre in Andhra Pradesh in India has resulted in 85 per cent cure

¹¹ For a detailed account of public private partnerships for public health see Reigh (2002).

rate of TB.¹² Aga Khan Health Services (AKHS) operates comprehensive private, not-for-profit health-care systems in several developing countries, including India and Pakistan. These services are designed to reach vulnerable groups. It provides services such as immunization, systematic prenatal care, and oral rehydration therapy for diarrhoeal diseases. It has proven the efficacy and cost-effectiveness of private health care.¹³

Recognition of cultural aspects and opening up space for participation are particularly important for success in community-based health-care services. For example, community-based health-care projects in Cambodia, which recognized the important role played by Buddhist pagodas in village social, religious and welfare activities in project implementation were a success (Jacobs and Price, 2003). However similar projects in Bangladesh failed due to limited and unclear responsibilities, bias towards the well-off in selecting members for Community Groupings, the unequal social relationship between the rich and the poor and the low self-esteem of the poor (Mahmud, 2003).

(2) Decentralization of service delivery

Does the provision of services at the local level through decentralization improve public health service delivery both in terms of access and quality? The evidence from empirical analyses are far from conclusive. In principle, local institutions, appropriately staffed and resourced can make services more effective through accurate targeting, better needs based services and cost effective provision (Kumar and Dante, 2005). In most cases, the failure to achieve this outcome appears to be due to incomplete decentralization and lack of institutional arrangements to support efficient functioning of decentralized systems.¹⁴ For example, decentralization of primary health care in Chile without effective fiscal and political decentralization led to inefficient outcomes (Gideon, 2003). Also, health care decentralization in China led to a reduction in funding levels and service quality.¹⁵ In addition, according to Kumar and Dante (2005), several features of health care such as the integrated nature of services, the necessity of formally trained personnel, licensing of health personnel, pharmaceutical quality and safety, as well as the controversial nature of some services such as family planning, make

¹² WHO Regional Office for South-East Asia (2001), <www.whosea.org/tb/tb&you2.htm>.

¹³ Aga Khan Development Network, available at <www.akdn.org/agency/akhs.html>.

¹⁴ ESCAP, *Economic and Social Survey of Asia and the Pacific 2004*, (United Nations publication, Sales No. E.04.II.F.20).

¹⁵ Tang and Bloom (2000).

decentralization of health services more difficult than in other sectors. In certain cases, however, the trade-off between economic efficiency and political stability would make decentralization an economically inefficient but socially optimal approach to governance.¹⁶

For efficient outcomes, decentralization of health services should have the following features:

- Careful planning and sequencing of decentralization, taking into account local conditions.
- Proper institutional arrangements, including skilled health personnel and management capacity in place at the local level.
- Decentralization of fiscal powers along with decentralization of health service delivery.
- Appropriate transparency and accountability rules and regulatory mechanisms relating to health service delivery.

(3) Financing health interventions: alternative approaches

(i) Financing intervention costs

The public goods concept as applied to public health justifies the financing of public intervention costs by the government. This could be done by imposing taxes or through deficit financing. Taxation of the current generation would imply a redistribution of income from the rich to the poor. A deficit financed intervention programme, which spends beyond current taxes and transfers the tax burden to future generations, could also improve social welfare if the public is unwilling to take protective actions by themselves (say by getting vaccinated) and such programmes would benefit the future generation by minimizing the probability of contracting the disease.¹⁷ Yet, investing in health systems has become a major challenge for many countries in the region due to resource constraints. The weak health systems in the region are mainly a reflection of inadequate investments in the health sector.

¹⁶ Tanzi (1996) as reported in R. Fisman and R. Gatti, "Decentralization and corruption: evidence across countries", World Bank Policy Research Working Paper No. 2290, February 2000.

¹⁷ The government is in a better position to face the systemic risks associated with alternative financing arrangements such as health insurance due to its power of taxation. See for example Jack (2000) and Filmer et al. (1997).

Table 4. Health expenditure as percentage of GDP

	Health expenditure as percentage of GDP					Expenditure on health as percentage of total government expenditure				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
South and South-West Asia										
Bangladesh	2.9	2.9	3.1	3.6	3.5	5.6	5.9	6.3	8.6	8.7
Bhutan	3.6	3.8	3.5	3.9	3.9	10.1	9.6	8.3	9.2	7.5
India	5.3	5.0	5.2	5.1	5.1	3.2	3.5	3.3	3.1	3.1
Iran (Islamic Republic of)	5.9	6.0	6.5	6.4	6.3	10.5	10.8	11.2	11.8	12.0
Nepal	5.4	5.5	5.3	5.2	5.2	9.3	9.9	9.0	9.0	8.1
Pakistan	3.8	3.9	4.0	4.1	3.9	3.8	4.2	3.7	3.3	3.5
Sri Lanka	3.2	3.4	3.5	3.6	3.6	6.0	5.8	5.7	6.1	6.1
Turkey	4.2	4.8	4.9	5.0	5.0	10.8	11.5	9.1	9.0	9.1
South-East Asia										
Cambodia	10.9	10.8	10.8	11.8	11.8	12.5	11.8	11.3	15.7	16.0
Indonesia	2.4	2.5	2.6	2.7	2.4	2.8	3.2	3.6	3.2	3.3
Lao People's Democratic Republic	2.9	2.5	3.0	2.9	3.1	9.8	5.7	8.8	7.6	8.7
Malaysia	2.8	3.0	3.1	3.3	3.8	6.1	5.1	6.0	6.1	6.5
Myanmar	2.1	2.0	2.0	2.0	2.1	2.7	2.5	3.0	5.0	5.7
Philippines	3.6	3.5	3.5	3.4	3.3	6.7	6.6	6.5	7.1	6.2
Singapore	3.7	4.2	4.0	3.6	3.9	8.4	8.7	8.2	6.7	5.9
Thailand	3.7	3.9	3.7	3.6	3.7	10.2	13.3	11.6	11.6	11.6
Viet Nam	4.4	4.9	4.9	5.2	5.1	5.6	7.1	6.7	6.1	6.1
East and North-East Asia										
China	4.6	4.8	5.1	5.3	5.5	14.2	13.3	11.8	10.8	10.2
Japan	6.8	7.1	7.5	7.7	8.0	14.9	13.2	15.3	15.5	16.4
Mongolia	5.0	6.2	6.1	6.3	6.4	9.1	9.0	9.8	10.5	10.5
Republic of Korea	5.0	5.1	5.6	5.9	6.0	9.0	9.3	9.7	10.7	9.5
Germany	10.7	10.6	10.7	10.6	10.8	16.3	16.3	16.3	17.3	16.6
United States of America	13.0	13.0	13.0	13.1	13.9	16.8	16.9	16.9	17.2	17.6

Source: WHO, *World Health Report 2004*, (Geneva, 2004).

For example, as reflected in table 4, total expenditures on health as a percentage of GDP in developing countries in the region varied from a low range of 2.4 per cent in Indonesia to 5.5 per cent in China in 2001 (excluding Cambodia's relatively high level of 11.8) against 13.9 per cent in the United States. Developing countries in the region in particular need to find innovative and effective ways of mobilizing financial resources needed for investments in the health sector.

The systems adopted by Malaysia and Singapore could provide important lessons for developing countries. Both Malaysia and Singapore have managed to achieve good health outcomes with a relatively low level of investment in the health sector (3 per cent of GDP). In Malaysia, public health expenditure is subject to strict cost control, while equal focus is being made to regulatory functions, increased

community participation and cost sharing in health and intersectoral and interagency coordination and collaboration in health and health-related activities (Bin Juni, 1996). In Singapore the government is actively engaged in regulating the supply and prices of health care services. The government's objective is clear: no one but the poor would be entitled to free health care services (Liu and Yue, 1999). Its financing system combines universal savings accounts with supplementary programmes to protect the poor and address potential market failure in health financing.

Increasing pressure on resource requirements and resource constraints in developing countries imply that countries need to strike a balance between the provision of social welfare and resource availability. Non-discriminatory across the board taxation of income of employees at a given rate and channelling such revenue to health and education programmes, application of user charges in certain services and encouraging private sector involvement in health service delivery and human resource development are some options available for governments to fill the resource gap.

Another way out is the promotion of cost cutting through a reduction of unnecessary prescriptions. For example, a survey of prescription charges in Nepal showed that between 20 to 50 per cent of drug costs arise from unnecessary prescriptions (Holloway and Gautam, 2002). This is true for many developing countries where pharmaceutical companies actively promote their prescription drugs. By promoting cheaper generic drugs rather than brand names and making it mandatory for patient consultation prior to prescribing expensive drugs, governments could bring these costs down. The use of limited resources for maximum outcome through quality improvement is another approach to addressing resource constraints. For example, evidence from Sri Lanka shows that by applying modern quality improvement principles used in manufacturing, public health care administration can greatly enhance quality and improve health outcomes without extra burden on budget.¹⁸

(ii) *Health insurance*

The introduction of health insurance is an alternative approach to public finance of the treatment component of public intervention. Asymmetric information creates conditions for moral hazard and adverse selection. In addition, imperfect competition may have negative effects on allocative efficiency, leading to failures

¹⁸ The application of five "S" system of Japanese management for quality improvement in reorganizing the Castle Street Hospital for Women, Colombo, Sri Lanka and its health service delivery resulted in a significant drop (64 per cent) in maternal mortality rate in 2004. See Karandagoda (2003).

in insurance markets. This is particularly relevant in health insurance markets making a compelling reason for significant public intervention. However, instead of a comprehensive public insurance package, private involvement could be encouraged by solving the adverse selection problem by providing partial insurance coverage by the public (say for the poor) and allowing the private market to provide supplementary insurance coverage.¹⁹ The private sector should also be allowed to operate in the market along side the government so that pressure on the public health system arising from those who can afford to pay could be minimized.

Despite the potential gains, countries in the Asian region have yet to exploit private insurance markets for the provision of health insurance. Almost all of the private health care expenses in Asian countries is made out-of-pocket. For example, as can be seen in table 5, although a major share of total expenditure on health is borne by the private sector in many countries in the region, private pre-paid plans as a percentage of private expenditure on health still stand at a very low level of below 10 per cent except for the Philippines (19.8 per cent) and the Republic of Korea (17.2 per cent). In contrast to this low level of dependency on private insurance in Asia, some developed countries such as the United States rely more on private health insurance (64.1 per cent) for meeting future health expenditures. Conversion of current out-of-pocket expenditure on health into private health insurance (pre-paid schemes) would not only enable pooling of risks but also reduce average total cost on health expenditure and increase access to health care. For example, the introduction of health insurance in Viet Nam increased the level of access to health care, especially among the poorest groups (Jowett et al. 2004). In Kazakstan, health insurance made up some of the shortfall in state health sector investment due to economic decline in the 1990s (Ensor and Thompson, 1999).

Health insurance, even if it is partially funded by the government, could be an effective way of financing health care in cash-strapped developing countries. However, health insurance may lead to higher costs and poor quality when the insurance is subsidized by the government. For example, community based health insurance in rural Gujarat in India led to higher charges for poor quality care (Ramson and John, 2001). Despite potential benefits, the 30-baht universal health care system in Thailand is said to cause financial strain for hospitals, low wages and a high work load for hospital staff and a high number of complaints (Kittikanya,

¹⁹ Finkelstein (2002) finds empirical support for such an argument in relation to the United States Medicare programme. According to Wilson (1977), when there is a pooling equilibrium in a private insurance market with adverse selection, the government can always Pareto dominate such an equilibrium by providing partial insurance and allowing the private sector to provide supplemental insurance coverage.

Table 5. Expenditure on health 2001

	<i>Private expenditure on health as percentage of total expenditure on health</i>	<i>Out-of-pocket expenditure as a percentage of private expenditure on health</i>	<i>Private prepaid plans as percentage of private expenditure on health</i>
South and South-West Asia			
Bangladesh	55.8	93.2	0.0
Bhutan	9.4	100.0	0.0
India	82.1	100.0	..
Iran (Islamic Republic of)	56.5	94.2	2.6
Nepal	70.3	93.3	0.0
Pakistan	75.6	100.0	0.0
Sri Lanka	51.1	95.0	1.1
Turkey	29.0	98.8	1.2
South-East Asia			
Cambodia	85.1	84.6	0.0
Indonesia	74.9	91.8	8.2
Lao People's Democratic Republic	44.5	80.0	..
Malaysia	46.3	92.8	7.2
Myanmar	82.2	99.6	0.0
Philippines	54.8	78.2	19.8
Singapore	66.5	97.0	0.0
Thailand	42.9	85.0	9.6
Viet Nam	71.5	87.6	4.2
East and North-East Asia			
China	62.8	95.4	0.4
Japan	22.1	74.9	1.4
Mongolia	27.7	73.4	0.0
Republic of Korea	55.6	74.3	17.2
Germany			
	25.1	42.4	33.5
United States of America			
	55.6	26.5	64.1

Source: WHO, *World Health Report 2004* (Geneva, 2004).

2004). These issues could be addressed by (i) introducing community-based health insurance schemes, (ii) targeting the neediest groups, with premiums for the poorest being paid by the local authority preferably through setting up a central fund, (iii) infrastructure development and good financial management and (iv) monitoring the results and costs.

III. A DUAL-TRACK APPROACH TO HEALTH INTERVENTION

How should a resource-constrained country respond to emerging health challenges? Prioritizing interventions may be an effective approach to the efficient utilization of scarce resources for generating maximum health outcomes. This paper proposes a dual-track approach in which health interventions are looked at from two different angles.

Track I

In Track I, disease categories (or individual diseases) are classified in the order of their merit for priority intervention. Prioritization of intervention in disease prevention either at the regional, subregional or national level could be achieved by identifying the seriousness of the disease based on death rates or disease burden. Table 6 provides a classification of disease categories based on the total number of deaths due to diseases in the Asia-Pacific region, identifies possible preventable root causes and proposes low cost preventive measures.

As mentioned earlier, many of the diseases are closely associated with dietary habits, risky behaviour, lack of knowledge, environmental pollution and the lack of basic needs such as access to clean water and sanitation. Health education and promotional campaigns appear to be the single most important low-cost disease prevention strategy. Such programmes should focus on healthy diets, the link between health and physical activity, reducing stress, safe sex behaviour and the adverse effects of smoking. Introduction and effective implementation of laws could be used to limit aggressive campaigns promoting food containing excessive saturated fat, sale of cigarettes to minors, controlling pollution including disposal of industrial and household waste and motor vehicle emissions, standardization of farm practices, and strict enforcement of traffic laws aimed at preventing driving while intoxicated and requiring the use of seat belts. Prohibitive taxation, together with measures to prevent smuggling and local production would be an effective way to reduce demand for cigarettes and alcohol.

Apart from these measures, improving the living conditions of the urban and rural poor by providing proper housing and access to clean water and sanitation would be essential in controlling tuberculosis and diarrhoeal diseases. Financial savings through prioritization of preventive measures and public-private partnerships could be used for improving conditions in these areas. Additional public investments in these areas, particularly targeted at the poor, could be justified as the costs incurred in curative care outweigh those of preventive measures.

Table 6. Matrix of low cost disease prevention

<i>Ranking of disease categories based on deaths</i>	<i>Preventable risk factors</i>	<i>Low cost preventive measures</i>
1) Cardiovascular disease	Dietary habits	Promotion of healthy diets, Implementing laws to contain aggressive marketing campaigns on food containing excessive levels of saturated fat
<i>Ischaemic heart disease</i>	Lack of physical activity/regular exercise	Promotion of physical activity
<i>Cerebrovascular disease</i>	Lack of work-life balance, stress	Promotion of work-life balance
2) Infectious and parasitic diseases		
<i>Tuberculosis</i>	Pollution, smoking, malnutrition	Implementing laws to restrict pollution and smoking
<i>Diarrhoeal diseases</i>	Lack of clean water and sanitation	Improving nutritional and living conditions Provision of clean water and sanitation
<i>HIV/AIDS</i>	High risk behaviour, lack of knowledge in prevention	Educational programmes on risks and safe sex behaviour
3) Respiratory infections	Pollution, overcrowding, poor living conditions	Improving living conditions, proper planning of cities, Implementing laws to restrict pollution
	Sub-standard farm practices	Implementing laws to maintain minimum standards
4) Malignant neoplasms	Smoking	Prohibitive taxation of tobacco products (cigarettes), laws preventing the sale of tobacco products to minors and imposing restrictions on advertising health education campaigns on the risks of smoking
5) Road traffic accidents	Alcohol and substance abuse, ignorance, lack of law and order	Strict implementation of traffic laws

Prioritization of preventive measures may differ in subregions and countries depending on their vulnerability to certain types of diseases. For example, as table 7 reflects, in terms of the number of deaths, South-East Asia's most serious health issue is ischaemic heart disease while that of the Western Pacific is cerebrovascular disease. Diarrhoeal diseases are more serious in the Eastern

Mediterranean than in South-East Asia or the Western Pacific. Meanwhile, road traffic accidents are becoming a more serious problem in the Western Pacific than elsewhere in the region. As such, countries need to identify their priority areas for more effective preventive interventions so that scarce resources could be used efficiently and to identify areas where low-cost intervention methods may not be effective.

Table 7. Ranking of diseases based on the number of deaths

<i>Disease</i>	<i>South-East Asia</i>	<i>Western Pacific</i>	<i>Eastern Mediterranean</i>
Ischaemic heart disease	1	2	1
Cerebrovascular disease	3	1	4
Lower respiratory infections	2	3	2
Tuberculosis	5	4	5
Diarrhoeal diseases	4	6	3
Road traffic accidents	7	5	6
HIV/AIDS	6	7	7

Source: Author's calculations based on World Health Report 2004

Track II

Track II diseases are those that have the potential to become explosive and cause severe social and economic damage. Such diseases need priority attention even if they may not be the most severe in terms of current death rates or disease burden. HIV/AIDS is a case in point. The disease could spread at an exponential rate if priority action is not taken. Preventive measures are urgently needed, particularly in countries where the disease is making headway, to prevent a catastrophic outbreak such as those experienced in countries such as Botswana or Zimbabwe where the HIV prevalence rate is as high as 39 per cent and 34 per cent respectively.

The control of such diseases would require a national approach supported by local level programmes. Here again low-cost preventive measures would be more effective if national level strategies are backed by political commitment. Institutional arrangements alone may not be sufficient and effective in tackling such diseases. The link between diseases and behavioural changes and habits could very well be a determining factor in disease prevention. Thailand's success in reversing the trend in HIV infection is mainly due to low-cost intervention methods such as making condoms available and awareness campaigns. The increase in

the use of condoms from the current level of 20 to 30 per cent to 60 per cent alone could induce a reverse in the trend in HIV prevalence by 2010.

IV. CONCLUSION

Health indicators for the Asia-Pacific region point to deteriorating health conditions. Prevalence of non-communicable diseases, which are usually seen in developed economies is growing rapidly. For example, nearly 30 per cent of deaths due to diseases within a year are caused by three silent killer diseases: ischaemic heart disease, cerebrovascular disease and lower respiratory infections. Tuberculosis and diarrhoea add another 16 per cent to total deaths due to diseases. The threat of communicable diseases, in particular infectious diseases, is also growing. Meanwhile, HIV/AIDS has become an urgent public health challenge in the region due to its potential explosive nature and grave implications.

The underlying reasons for this rapid health transition are many. While increasing deaths due to cardiovascular diseases reflect the impact of changing socio-economic environment and related changes in life styles and dietary habits, environmental pollution, smoking, malnutrition, overcrowding and poor living conditions also appear to contribute significantly to high deaths due to lower respiratory infection and tuberculosis. The lack of sustainable access to clean water and improved sanitary conditions is the primary cause of diarrhoeal infections and other parasitic diseases.

The health systems in many developing countries are burdened with the high likelihood of disease outbreaks. On top of these, health systems in most developing countries are plagued by lack of skilled health personnel and required infrastructure due to a host of factors including lack of financial resources. Therefore, they are not in a position to provide adequate quality health services.

The deteriorating health systems and the health of people call for an urgent re-orientation of public health systems and policies to cope with the emerging health issues. This paper proposes that while government should reinforce its involvement in ensuring public oriented health service delivery in poor countries, its role in other countries could be in the form of regulator and supervisor. In such countries providing stewardship, particularly in designing a pro-active public health policy framework within which the private sector can operate efficiently, re-aligning government functions, institution building and altering incentives for private sector institutions to perform better would be major tasks. As such, striking a balance between public and private provision of health services would become important.

The paper finds that many of the diseases that the region is confronted with could be effectively addressed by relatively low-cost preventive interventions by government through educational and promotional campaigns, law enforcement, taxation policy and improved access to clean water and sanitation. The paper highlights the importance of a more focussed health policy, prioritising public intervention in critical areas, which can make a significant impact on health outcomes, pooling both public and private resources in an effective manner to make public health systems efficient and sustainable. Policy reforms designed to encourage private sector participation in health service provision and health insurance, and a regulatory framework to protect the environment would be viable options in this regard. In this respect, a dual-track approach to health intervention is proposed prioritizing interventions based on the severity and the explosiveness of diseases.

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