

# Poverty and Mortality in the Context of Economic Growth and Urbanization

*The urban health frontier, especially in  
the poverty-stricken slums, is going to present a  
major challenge for decades to come*

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Asia has always been a demographic giant, but in the second half of the twentieth century it also became an economic giant. In those 50 years, real per capita income (expressed in purchasing power parity) in Asia multiplied by more than five, compared with a multiplication in Western countries of little more than threefold, and in Latin America and Africa by 2.3 and 1.6 times, respectively (Maddison, 2001). During this half century, the world GDP in

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fixed United States dollars multiplied six times but that of Asia did so by more than 12 times, taking the continent's proportion of the world economy from 18 to 36 per cent. That growth was fundamental to the mortality revolution outlined here but it was also achieved by massive urbanization, producing huge cities with savage contrasts between the living conditions of the poor and the rich. Asian urban population multiplied over eightfold from under one quarter of a billion to over two billion, and will by 2020 constitute half the population. This was partly the product of hundreds of millions of poor villagers streaming into illegal shanty towns, especially around the largest cities.

The aim of this paper is twofold. First, we will outline the macroscopic changes and then we will focus on poverty and death in the slums of one of Asia's great cities, Dhaka, the capital of Bangladesh, which has grown from a centre of 300,000 people in 1950 to one with around 12 million inhabitants at present. It remains a metropolis where rural-urban migration is still the major source of growth.

### **An outline of change**

Tables 1 and 2 are constructed within a framework of real per capita income (gross national income in purchasing power parity per head) in order to overcome the distortions produced by exchange rates in evaluating relative incomes. Excluded are those countries, mostly small Pacific ones, where the economic income calculations have not been made. The major distortion will probably arise from the omission of Afghanistan, apparently the poorest country, and certainly the one with the highest mortality (an expectation of life at birth of 43 years) in the Asian and Pacific region. The main message of the two tables is that national mortality levels are closely tied to economic development and individual economic levels, especially at the extreme ends of the income range. Indeed, among the richer populations that relationship may be becoming stronger. In group A, with per capita incomes in the US\$ 15,000-25,000 range, life expectancies near 80 have now been achieved, while even the next highest income level is characterized by life expectancies not only little above 70 years but not much greater than those of countries with incomes down to about US\$ 2,000.

These richer countries have achieved the additional decade of life expectancy in two ways which have become increasingly possible during the last few decades and require expensive technology. The first intervention has been the reduction of perinatal mortality by the intensive care of the newborn, especially premature and very light-weight babies. Thus, the almost incredibly low infant mortality rate of 3 per 1,000 live births has been achieved in Hong

Kong, China; Japan; and Singapore, one fifth the level of the next richest nations, and one twentieth of that not only of the poorest nations but of developed countries at the mid-twentieth century. The necessary intensive care has been achieved by the use of expensive equipment in technically advanced hospitals. The second change which has allowed the steepest declines in the whole demographic transition in the mortality of the aged population is the product of high-technology in the form of the expensive testing and treatment of the old (United Nations, 2002; United Nations, 2001).

This is not good news for poorer countries. The Republic of Korea, with a per capita income of over US\$ 8,000, is just getting there, while Malaysia, with half the Republic of Korea's per capita income, has greatly reduced child mortality but not old-age mortality. If the lower bound for achieving really low child and infant mortality is a 1999 real per capita income of US\$ 8,000, then life expectancies near 80 years will, even with 4 per cent annual growth in per capita income, not be reached by the poorest group until the late twenty-first century.

What is better news is that income is not nearly so important in determining mortality over most of the income range, certainly above US\$ 2,000 per capita income. Life expectancy of 70 years is within reach by all but the very poorest countries. It can be reached, as we discuss below, by an emphasis on education and easy access to curative treatment. Much depends on the existence of an adequate public health base. This has been furthered in most Asian countries by very high rates of immunization among children, possibly higher than the Latin America and certainly higher than in Africa. Safer water supplies and sanitation are also important.

Where national poverty plays a decisive role is among the very poor countries, found mostly in South Asia and the old Indo-China grouping. Here, the near universal provision of safe water and sanitation has been beyond the capacity of government budgets. In 1994-1995, the proportion of the population with access to safe drinking water was 95 to 100 per cent in the group A countries except the Republic of Korea (where it was 89 per cent), 88 per cent in Malaysia, 60 per cent in Pakistan, 48 per cent in Nepal and 39 per cent in the Lao People's Democratic Republic. An anomaly was the situation of Bangladesh, where a very high rural level of tubewells for water access has meant the almost universal drinking of bacteriologically safe water, but where it is now realized that much of this water may contain dangerous levels of arsenic. The exact danger is still undetermined (Caldwell and others, 2002). Similarly, access to satisfactory sanitation in 1994-1995 fell from over 90 per cent in richer countries to 30 per cent in Pakistan, 20 per cent in Nepal and 19 per cent in the Lao People's Democratic Republic.

**Table 1. Parity purchasing power per capita income (PPPPI) and mortality, 1999-2002**

Income Group (1999)	Country or area	PPPPI (1999)	Life expectancy at birth (LEB) (years)	Increase in LEBs over last 25 years (years)	Under 5 mortality (per thousand births)	PPPPI ranking	Life expectancy ranking	Relative ranking to PPPPI ranking	Percentage urban
<b>A. Over US\$ 15,000</b>	Japan	25 170	82	7.5	5	1	1	0	79
	Australia	23 850	79	7.0	7	2	3	-1	85
	Singapore	22 640	78	7.6	4	3	5	-2	100
	Hong Kong, China	22 570	80	7.1	4	4	2	+2	100
	New Zealand	21 130	78	6.5	8	5	5	0	86
	Republic of Korea	15 530	76	11.7	10	6	4	+2	83
	Malaysia	7 640	73	8.9	9	7	8	-1	59
	Turkey	6 440	71	11.1	50	8	13	-5	77
	Thailand	5 950	73	10.1	31	9	8	+1	31
	Iran (Islamic Republic of)	5 520	70	14.1	43	10	15	-5	63
<b>C. US\$ 3,000-5,000</b>	Kazakhstan	4 790	66	-0.3	53	11	30	-19	57
	Fiji	4 780	70	7.8	22	12	15	-3	51
	Maldives	4 200	68	14.3	49	13	24	-11	27
	Samoa	4 070	70	12.4	32	14	15	-1	22
	China	3 550	71	6.6	73	15	13	+2	33
	Philippines	3 390	70	10.5	36	16	15	+1	60
	Turkmenistan	3 340	67	4.7	69	17	26	-9	45
	Sri Lanka	3 230	73	6.5	24	18	8	+10	25

<b>D. US\$ 2,000-3,000</b>												
Vanuatu	2 880	69	13.2	36	19	21	-2	21				
Indonesia	2 660	67	15.9	51	20	26	-6	43				
Georgia	2 540	74	3.5	22	21	7	+14	62				
Azerbaijan	2 450	72	2.0	41	22	12	+10	58				
Kyrgyzstan	2 420	69	3.8	47	23	21	+2	33				
Armenia	2 360	73	-0.1	18	24	8	+16	71				
<b>E. US\$ 1,000-2,000</b>												
Papua New Guinea	2 260	58	10.9	63	25	36	-11	18				
Uzbekistan	2 230	70	4.1	37	26	15	+11	37				
India	2 230	64	12.0	87	26	28	+2	29				
Solomon Islands	2 050	70	11.8	31	28	15	+13	21				
Pakistan	1 860	61	10.0	103	29	32	-3	38				
Viet Nam	1 860	69	16.9	46	30	21	+9	20				
Mongolia	1 610	64	8.1	87	31	28	+3	65				
Bangladesh	1 530	61	13.2	94	32	32	0	26				
Nepal	1 470	60	14.0	100	33	34	-1	13				
Lao People's Democratic Republic	1 430	59	12.1	107	34	35	-1	25				
Cambodia	1 350	57	16.2	106	35	37	-2	17				
Bhutan	1 260	63	17.5	82	36	30	+6	8				
Tajikistan	1 100	68	3.8	77	37	24	+13	28				

Sources: United Nations (1998). *World Urbanization Prospects: The 1996 Revision* (New York, United Nations); United Nations (2001). *World Population Prospects: The 2000 Revision*, vol. 1, *Comprehensive Tables* (New York, United Nations); United Nations (2002). *2002 ESCAP Population Data Sheet* (Bangkok, Economic and Social Commission for Asia and the Pacific).

**Table 2. Average characteristics by income grouping (unweighted averages)**

Group	PPPCI (US\$)	Life expectancy at birth	Under 5 mortality	Percentage urban population
A	21,815	79	6	89
B	6,390	72	33	66
C	3,920	69	45	42
D	2,410	69	48	36
E	1,500	62	89	33

*Source:* See table 1.

Access to curative services also falls with income. The poorer countries usually have inferior services with low-quality staff and shortages of drugs. Indeed, growing dissatisfaction with the lowest-level services has led to rural Chinese bypassing them and going to district hospitals and Indians increasingly turning to private practitioners. The number of private practitioners in most countries is increasing faster than the rate of economic growth and they will inevitably form an ever larger proportion of total health services. In retrospect, primary health care will be seen to have been a stopgap measure, albeit a very important one, for spreading health services to the poor during the late twentieth and early twenty-first centuries until economic growth allowed the development of the public-private mix which has long characterized developed countries. In many countries, they may be paralleled by the rise of government-organized national health insurance.

### **Relative success and failure in mortality improvement**

There are two ways of measuring mortality advantage and disadvantage and they yield different findings, especially in the case of one anomalous group. The first way is to compare the life expectancy ranking with that of real per capita income ranking; the second way is to examine the rate of increase of life expectancy over a period such as the last 25 years, 1970-1975 to 1995-2000 (see table 1).

The anomalous group is constituted by the seven Asian republics that emerged from the break-up of the Union of Soviet Socialist Republics. All had rising life expectancies up to about the 1970s and also rising incomes until around that time. Subsequently, the economic system faltered and then changed, real per capita income fell, and, rather uniquely in the modern world, life expectancy either levelled off or fell (although not to the same extent that occurred in the European segments of the former Union of Soviet Socialist Republics). According to the United Nations (2001) there were two patterns. In the Caucasian republics (Armenia, Azerbaijan and Georgia), mortality

decline ceased or flattened out as early as the 1970s and bottomed out in the 1980s, while in the Central Asian republics (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan), mortality declined through the 1980s only to rise or flatten out in the 1990s. What is true of all of them is that, prior to crises, the centralized system provided good educational and health systems, and subsequently high levels of education and women's independence plus a commitment to survival, especially children's survival, arising from low mortality levels and an expectation of medical treatment. This meant that mortality levels did not fall as far as income levels. Thus, Armenia, Azerbaijan, Georgia, Tajikistan and Uzbekistan now all have life expectancy far above that predicted by incomes, Kyrgyzstan somewhat above, but Kazakhstan and Turkmenistan well below (in the latter two, the income figures are probably more likely to be suspect than the mortality ones). Nevertheless, the mortality crisis meant that the life expectancy gains over the last quarter of the twentieth century were all below half of the 9.5 years recorded by Asia as a whole during the period, while those of Armenia and Kazakhstan had actually fallen.

Other countries have increased their life expectancy disproportionately over the last quarter of a century: Cambodia, the Lao People's Democratic Republic and Viet Nam with peace returning to Indo-China; Bangladesh, Bhutan, India and Nepal as a second Asian economic miracle comes within reach of South Asia; Indonesia and the Islamic Republic of Iran with a greater concentration on health services; and some Pacific and Indian Ocean countries such as Maldives, Papua New Guinea, Samoa and Vanuatu. Some of these countries and areas made gains because they started the quarter of a century from an under-performing level. In spite of their relatively rapid recent progress, Indonesia, Maldives and Papua New Guinea still have lower life expectancies than their real per capita incomes would mandate.

The important lessons come from two countries that have been singled out before as examples of the way that economies need not shackle the pursuit of good health for all: Sri Lanka and Viet Nam, ten and nine ranks respectively higher in their life expectancies than might be anticipated from their real per capita incomes. Their political systems are different but the success of each depends on a relatively good situation for women, high education levels for females as well as males, and easy and low-cost access to an adequate health service. Both have probably been assisted by societies which are not strongly socially stratified and have largely been moulded by Buddhism (see Caldwell, 1976; Pieris, 1999). Partly as a consequence, both emphasize egalitarianism and popular involvement.

The richer countries tend to be the most urbanized, largely because they are the most industrialized. The relationship is neither simple nor linear, as is shown by a comparison of moderately prosperous Thailand, with only one third

of its people in towns, with much poorer Mongolia with two thirds of the population urbanized. The explanations lie in very different intensities of rural land use and contrasting political histories. Urbanization helps in mortality reduction for at least two reasons. The first is that urban mortality in developing countries has been lower than that of rural areas since at least the mid-twentieth century because it is easier to give access for such concentrated populations to modern medical technology and specialist hospitals. Doctors prefer to live there. In contrast to the situation in early industrializing Europe, where the cities were highly polluted and the killers of their inhabitants, contemporary developing country cities actually have safer water and sanitation than rural areas. The second reason for the rural disadvantage is that some of its population are still at least partly in the subsistence sector of the economy, unused to an exchange economy or getting the most out of public facilities, with little money to spend, and often with their own explanations of disease causation which weaken their determination to secure the most from the modern medical system. This is reinforced by lower educational levels outside the towns. Recently, it has been argued that the urban mortality advantage was disappearing (Brockhoff and Brennan, 1998), but the case remains insecure and, in any case, was most conspicuous outside the Asian and Pacific area.

But this is not the whole story, as is shown later in this paper. The new cities, especially in South Asia, are characterized by huge socio-economic differentials in their populations, with their poor prevented from making full use of the urban health facilities.

Contemporary developing countries do have one huge advantage in achieving lower mortality over the experience of the now developed countries. Health technologies have improved and public health measures have become ever more suited to mass application. The result has been a persistent decline in the cost of achieving specific health targets. Table 3 shows that in 1990, United States dollars purchasing power parity, Australia, the United Kingdom of Great Britain and Northern Ireland and the United States of America could not confer upon their populations a life expectancy of 60 years until their per capita incomes were around US\$ 6,000. By the end of the twentieth century, Bangladesh and Viet Nam could reach this mark with only one sixth of that per capita income.

### **Emerging issues**

Two further changes will have an impact on the Asian and Pacific struggle for good health for all.

The first is the continuing rise in the proportion of the aged, as is shown in table 4. This is largely a reflection of declining birth rates, with almost half the population of the ESCAP region now living in countries with

**Table 3. Real per capita income in 1990 American dollars when life expectancy of 60 years was attained**

Date	Country	Per capita income
1914	Australia	5 800
1919	Sweden	3 200
1931	United Kingdom of Great Britain and Northern Ireland	5 500
1933	United States of America	6 500
1935	France	4 500
1946	Italy	3 000
1948	Japan	1 700
1959	Sri Lanka	1 200
1966	Malaysia	2 000
1970	Republic of Korea	1 350
1977	Turkey	4 100
1978	Philippines	2 000
1987	Indonesia	2 350
1989	Viet Nam	1 000
1993	India	1 400
2000	Pakistan	2 100
2002	Bangladesh	900

*Sources:* United Nations (2001). *World Population Prospects: The 2000 Revision*, vol. 1, *Comprehensive Tables* (New York, United Nations); Keyfitz, N. and W. Flieger (1968). *World Population: An Analysis of Vital Data* (Chicago, University of Chicago Press); Maddison, A. (2001). *The World Economy: A Millennial Perspective* (Paris, Development Centre of the Organization for Economic Cooperation and Development).

below-long-term-replacement fertility. The result, unforeseen only 20 years ago, is that by 2050 East Asia will have a larger proportion of its population over 65 years of age than will North America. The situation will at that date be less severe in South-East and South Asia, where the proportions of the old will be much the same as they are at present in Europe.

High proportions of the old place very considerable burdens on government budgets, as has been demonstrated for the United States of America (Lee and Edwards, 2001). This is partly because keeping the old alive means the employment of expensive, high-technology approaches. But in the West, it has also been the product of a tradition whereby the residential family incorporates the young and meets a substantial proportion of their educational and health costs from the household budget. In contrast, the old live separately and pension, health and often residential expenses are met by the State with money raised by — often resented — taxes.

It has been held that Asian countries have an advantage here because of a continuing tradition of aged parents living with their married children and being at least partly supported by them. It is open to doubt whether this system

**Table 4. Percentage of the population aged 65 years and over in 1950, 2000 and 2050**

	1950	2000	2050
Asia	4.1	5.9	16.7
Eastern Asia	4.5	7.7	23.6
South-Central Asia	3.7	4.6	13.2
South-Eastern Asia	3.8	4.7	16.1
Europe	8.2	14.7	29.2
North America	8.2	12.3	21.4
Latin America	3.7	5.4	16.9

*Source:* United Nations (2001). *World Population Prospects: The 2000 Revision*, vol. 1, *Comprehensive Tables*, (New York, United Nations), (Past: Estimates; Future: Medium Projection).

can indefinitely survive rising levels of education, female employment, occupational and associated geographical mobility, and Western influences among the younger married generations. This family transition appears to be under-way, albeit slowly, in Japan. If it runs its full course, the jolt in East Asia will be tremendous, for two reasons. The first is the speed with which the transformation of the age structure will have taken place. East Asia will have moved from the proportion of the population over 65 years of age being 4.5 per cent, to it being 23.6 per cent in the course of 100 years. The United Kingdom of Great Britain and Northern Ireland climbed somewhat more slowly from 4.7 per cent over 65 years in 1911 (through 6.1 per cent in 1921) and will not pass the 23.6 per cent level until almost 2030, a span of 120 years (Keyfitz and Flieger, 1968; United Nations, 2001). The second is that Europe had long since had in place various mechanisms, admittedly often deficient, for assisting the indigent old, while Asia has to invent such systems.

The second change, shown in table 5, is the rapidity of urbanization. East Asia, long thought of as one of the great agrarian regions of the world, will have half its population living in urban areas by 2014 and 60 per cent by 2030. Even more startling, a majority of the population of South-Central Asia will live in towns and cities from 2032.

Clearly, future concerns will focus more and more on urban populations, especially city ones. This is not an especially gloomy picture. Urbanization is a product of economic growth and is itself an engine for achieving higher incomes and lower mortality. But, in many of the larger cities, the poor and undereducated will number millions. In the poorer parts of Asia, mostly in South Asia, intractable problems will beset the attempt to bring good health to the poverty-stricken slums often outside the planning arrangements of the Government because of the illegality of the settlements. The full range of problems is evident in Bangladesh's metropolis, Dhaka, with its population already at 12 million and growing by half a million people a year.

**Table 5. Percentage of the population urban in 1950, 2000 and 2030**

	1950	2000	2030	Date when 50 per cent urbanized
Asia	17.4	37.6	55.2	2020
Eastern Asia	18.0	40.6	59.1	2014
South-Central Asia	16.6	30.7	48.5	2032
South-East Asia	14.8	36.9	55.0	2021
Latin America	41.4	75.4	83.2	1974
Africa	14.6	37.8	54.3	2021

*Source:* United Nations (1998). *World Urbanization Prospects: The 1996 Revision* (New York, United Nations).

### **The Dhaka slums: good health for all?**

Dhaka, having been a major city as the Moghul capital of Bengal from 1608 to 1704, was then eclipsed by Calcutta and had declined to being a minor provincial centre by the beginning of the twentieth century. Its modern expansion began only after it was made the colonial capital of East Bengal and Assam from 1905 to 1912 and subsequently after 1947, the administrative capital of East Pakistan. Intensive growth set in after it became the capital of the newly independent nation of Bangladesh in 1971. From around 100,000 inhabitants in 1901, the population rose to just under 300,000 in 1951, two million in 1974 and approximately 12 million today (Siddiqui and others, 1990; United Nations, 2001).

Dhaka is the main destination in Bangladesh for rural-urban migrants and in contrast to most Asian cities, this source of growth continues to outstrip its own natural increase, resulting in an annual growth rate of nearly 6 per cent (Islam, 1998:71). The growth has resulted in Dhaka being transformed from a small largely administrative town into a complex metropolis with a huge socio-economic gradient from a very wealthy elite to a vast urban poor population. This partly reflects the composition of the migrants who comprise a diverse group, some being educated individuals with skills in demand, but many being very poor families with little education, few skills, and usually little or no capital — it is the landless who have least reason to stay in the country and most to gain by migrating to the city. The poorest live in squatter settlements known as basties (bosties), with the destitute living on the streets of the main city as pavement-dwellers, both groups consisting predominantly of migrants. This enormous expansion and the growing diversity of the city have affected every aspect of the citizen's lives, including their health.

In 1999-2000, a project, Access to Health and Reproductive Health Services (AHRHS), employed survey and microdemographic approaches to

examine health among the poorer population of Dhaka. Within the framework provided by the survey information, families were identified that had experienced particular health issues, such as the death of a child, and the circumstances and outcomes explored. The survey was conducted in the last months of 1999 and the microdemographic follow-up in the first months of 2000. Two lists were compiled covering together about one third of the city's population. One covered bosties, the other poor areas. The interviewing unit was the household and the persons in it. The sample yielded interviews with 911 bostie households and 914 poor households.

The majority of migrant households reported that their health was better (72 per cent of non-bostie poor area dwellers and 64 per cent of bostie-dwellers) in Dhaka than it had been in the rural area. The main reasons they gave as affecting their health negatively was the very poor environment in which they lived (poor area, 83 per cent, bosties, 92 per cent). The main positive health reasons they gave were the presence of good doctors (poor area, 64 per cent, bosties 63 per cent) and the availability of health services (poor areas, 73 per cent, bosties, 60 per cent — respondents were allowed to give more than one reason).

Indices of health, such as infant and child mortality, have been consistently better in urban than rural Bangladesh, but the differential appears to have diminished in recent years. For example, the under-5-year mortality rate, though declining, is only marginally better in urban Bangladesh (96.7 in 1999-2000) than in rural Bangladesh (112.6), a differential that was substantially less than earlier figures (in 1993-1994, the under-5-year mortality rate was 114.3 in urban areas and 153.2 in rural areas) (Mitra and others, 2001). For the bosties, mortality rates are in general above rural rates; AHRHS recorded a rate of 165 in the bosties and 115 in non-bostie slums, though a truer comparison might be between the bostie-dwellers and the very deprived socio-economic strata in the rural areas from which many had migrated.

The key factors here are social composition, household and community environment, access to public services and health facilities. In terms of the composition of the population, the key factors are their poverty, the lack of education and the fact that many slum-dwellers, including most bostie-dwellers (poor area 50 per cent, bostie 72 per cent) and pavement-dwellers (96 per cent) are migrant households.

For the poorest households (a category excluding many bostie households), mortality rates appear to be disproportionately higher. By a household index of possessions, Perry and others (1997:16) found that those with the least possessions had 88 per cent higher mortality than the others. Caldwell and others (2001) found a 30 per cent margin. A number of factors may be involved. Firstly, the extremely poor may lack food security: 71 per

cent of bostie-dwellers reported in the AHRHS that at some time in the past year they had no money to pay for food. Secondly, many find it difficult to afford health care, paying not only for a doctor's examination but also for medicine and for medical tests. Many also find it difficult to afford the time required to seek treatment from a hospital. Thirdly, the very poor live in the worst, most crowded and unhygienic housing.

Bostie and pavement-dwellers, however, are not just poor. Most are also uneducated: the AHRHS found that 40 per cent of males and 53 per cent of females aged six and over in the bosties had never been to school. This was also true of 22 per cent of males and 29 per cent of females in other poor areas (excluding the bosties). In comparison, the DHS found that 31 per cent of rural males and 40 per cent of rural females aged six and over had never been to school and 18 per cent of urban males and 29 per cent of urban females had not (Mitra and others, 2001:13).

Caldwell and others (2001) found that education of the mother was a more important predictor of child death than income or possessions. The mother's education was closely linked to whether the child had had the full recommended schedule of immunizations. It was also linked to the likelihood of seeking treatment from a trained health provider for a sick child, but was less important in that respect than wealth as measured by the possessions index. Education also contributed to better hygiene. Educated mothers were more likely to wash their hands prior to preparing food. Similarly, they were much more likely to ensure that their children used sanitary toilets.

However, a household's individual characteristics constitute only one factor. The AHRHS also found that locality, and particularly living in a bostie, had an independent effect. In part, this reflects the influence of neighbours. In an AHRHS sub-study, it was found that in decisions to seek health care for young children, young mothers were strongly influenced by the older women living in neighbouring houses. In many cases involving migrant households, these women substituted for relatives who would have made such decisions in their village homes. These women are more experienced, but as older women they are generally less educated and more traditional than the young women they are advising. In the bosties, the women can act to discourage women from seeking attention from hospitals and clinics and instead encourage them to seek attention from a *kobiraj* (practitioner of "ayurvedic" medicine, often having many aspects of a folk healer) or other traditional healer.

Locality also affects health through its environment and its access to health services. A major factor affecting health in the Dhaka slums, and particularly in the bosties and on the pavements, is, as the respondents themselves commented, the lamentable state of the environment. Overcrowding

is a major problem with extremely high population density and houses squashed closely together. House quality is generally better in the urban areas, and especially Dhaka, than in rural Bangladesh. However, the bosties are exceptional in their lack of security of tenure, which means that there is little incentive either for house-owners or tenants to improve housing conditions. Many of the houses are extremely small and poorly built. More generally, environmental conditions are unhygienic, especially in the bosties. Drainage is extremely poor, sanitation inadequate and non-existent, and rubbish, including faeces, uncollected and indeed scattered underfoot. Bosties, as illegal settlements, are often located in areas regarded as unsuitable for housing, for example areas subject to flooding.

More critically, because they are illegal settlements, bosties receive few or no government services, such as paved roads, paved footpaths, drains, sewerage, piped water or rubbish collection. A lack of paved roads and footpaths, and a lack of drains together with poor housing mean that bostie-dwellers are in a poor position to cope with the effects of flooding.

Lack of sanitation results in a large proportion of the population using open latrines or in some cases no latrines at all. In cases where households do have access to sanitary latrines, up to 10 households or 50 individuals may share one. Young children rarely bother: their faeces are collected and thrown onto rubbish heaps, or where these are absent, simply into the open, a point that highlights the importance of municipal rubbish collection. The insecurity of tenure in the bosties means that house-owners have little incentive to improve matters by building better sanitary facilities. The lack of piped water means that most households have to share wells (themselves generally safe, but having to queue for water and carry it over a distance reduces the amount of water available for cleanliness, and storage raises the potential for contamination). The result of such poor environmental conditions is that such infections as pneumonia and diarrhoea remain major killers of children, and tuberculosis of adults.

On top of environmental conditions that are conducive to infection, Dhaka suffers from extremely high atmospheric pollution, including excessive levels of lead, nitrous oxides and suspended particulate matter owing to poorly maintained motor vehicle engines (Karim, 1999). There is strong evidence that atmospheric lead impedes the mental and physical development of children and nitrous oxides and particulate matter contribute to respiratory illnesses.

The health impact of a poor environment is compensated, to some extent, by access to health facilities and expertise, of a far higher standard, in theory, than is available in rural Bangladesh. However, the health system is not fully utilized. Government health services are predominantly in the form of large

specialist hospitals, with some out-service facilities, mostly found in the old part of the city, and often difficult for the poor to attend. Services that are, in theory, free usually involve payment, at least for medicine. Families usually have to queue for services, time they can ill afford away from work. On top of this, many of the poor say they are badly treated by the health workers, and are reluctant to go unless they have no choice.

Increasingly, health services are provided by the private sector. The better-off use private clinics, often staffed by government doctors after hours. Somewhat cheaper services are provided by doctors who work in rooms often at the back of pharmacies. The poor who cannot afford these services use other alternatives, the most important of which is simply to ask the pharmacist for medicine. Dhaka has one pharmacy for every 1,000 people (Mookherjee and others, 1996:1). In addition, people use untrained (quack) doctors, or obtain medicine from traditional or alternative medical providers such as *kobiraj*, fakirs or homeopaths. These providers are preferred as being cheap, convenient, polite and, in the case of traditional providers, more in keeping with the understanding of appropriate treatment of clients (Fariduddin and Khan, 1996:43; Caldwell and others, 2001).

Treatment varies according to gender. For persistent illness, Ahsan and Ahmad (1991:17) found that doctors were eventually consulted by 60 per cent of males but only 22 per cent of females. This reflects, no doubt, a male preference, a concern for the well-being of the household head, usually the main breadwinner, as well as female seclusion and modesty, which makes it difficult for women to go to male doctors, but also to female doctors in the case of reproductive tract infections (RTIs) and sexually transmitted diseases (STDs). Furthermore, men usually control the family finances and while women can in emergencies take some initiative with regard to their children, they usually do not for their own health, for to do so might be regarded as putting their own interests before that of their households. A final factor is a belief that many problems that affect women specifically are natural, and hence are not to be interfered with. This is particularly the case with childbirth, with serious implications for both mother and child.

The proportion of childbirths attended by highly trained attendants (doctors and nurse/midwives) is extremely low in rural Bangladesh (8 per cent). It is higher in urban Bangladesh but is still only about 33 per cent (Mitra and others, 2001:118) and it is clear that many dangerous cases are not being attended to in time. In answers to the AHRHS, it was clear that many women who had lost children had not sought appropriate care in time. The women felt that childbirth was natural and were reluctant, until too late, to seek support from health-care workers, and especially male doctors. Most of the births in urban areas are attended by traditional birth attendants, a minority with

limited training (9 per cent of births), but most without any (42 per cent). A substantial proportion were attended by family members (14 per cent) and a few by no one (1 per cent). Many traditional birth attendants believe that to call a doctor or nurse would be to suggest that they were not skilled enough to conduct the birth. Furthermore, in many cases, the husband was away from home working. The AHRHS interviews suggested that an important factor in not seeking medical care for newly born infants was that in many cases of serious illness, the child was believed to be suffering from conditions that could not be treated by the modern medical system but only by a traditional doctor.

In rural Bangladesh, the Government has attempted with limited success to overcome the gap between the hospital-based system and the basic health needs of the populace by creating a primary health-care system based on Union Health and Family Welfare Clinics employing a medical assistant and a female paramedic (family welfare visitor), and more recently instituting a very basic Essential Service Package. This has not been altogether successful for a number of reasons, including a lack of popular acceptors of the value of the services being offered, and lack of an effective referral system for more serious cases between the clinics and the district and subdistrict hospital system. This, however, is only now being attempted in Dhaka by the Dhaka Municipal Corporation with support from the Asian Development Bank.

## **Conclusion**

Poverty is inimical to good health. The very poorest countries cannot afford a minimally protective curative health service across the entire population. Only the very richest can afford for the mass of their populations the expensive measures which keep nearly all newly born babies alive and many old sick people from prematurely succumbing to death, thus achieving life expectancy close to or beyond 80 years. In between these extremes, life expectancy can be raised to at least 70 years by comprehensive educational, public health and curative systems accessible even to the poor.

The most neglected group has been the urban poor, and this is increasingly serious because soon, and for the rest of time, most of the population in the region will be urban. In terms of health services, minimum safety nets have slowly been established in rural areas, while urban health has largely been left to the market. Such a system does not meet the needs of the very poor in the cities. In addition, the poorest, the rural-urban migrants in "squatter" areas, are often positively discriminated against by being denied roads, electricity, water, sewerage, and refuse removal services on the grounds that their settlements are illegal and are subject to clearance at any time.

Dhaka provides a good example of all these problems, being a huge and rapidly growing metropolis in Asia's most health-challenged region. The settled poor are disadvantaged, but, with legal tenure, they have access to most services, although even they suffer from their constrained inability to purchase health services in a largely market situation. But the most disadvantaged are the hostie-dwellers, those in illegal shanty towns. They lack most services and are often a long way from hospitals and other health provision. They can be easily missed by public health programmes. They often retain the age-old health beliefs of the rural areas. This is particularly the case among the women, a serious matter because pregnancy, birth and the survival of young children are often regarded as matters to be faced by them alone.

The way to the future is in the long-term economic growth. In the medium term, it is to move towards education for all with nearly all children progressing well into secondary education. But it is the short term that should immediately concern us, with the strongest focus being on the poorest of the poor. It is urgent that recognition be given to the reality of the continuing rural-urban migration of people so poor that they cannot afford to pay rent and are capable only of using free or very cheap materials to construct makeshift housing on empty government (or, less often, private) land. They must be given free or very cheap areas to settle on where there is no dispute about their right to do so or their right to services such as water, sewerage, electricity and refuse removal. There must be some kind of health service with no or low charges, not only for medical attention but also for prescribed medicines. There is a strong case for dynamic rather than passive health services. Somehow, health educators have to convey the message of the efficacy of modern medicine to the women, and the message that reproduction and infant health are the concern of husbands as well as wives. This will be helped if professional antenatal and birthing services are available for all and if families are educated to employ such services.

The urban health frontier, especially in the poverty-stricken slums, is going to present a major challenge for decades to come.

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