

# HEALTH AND POVERTY IN SUB-SAHARAN AFRICA<sup>1</sup>

## IDS WORKING PAPER 103

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### SUMMARY

This paper is based on a background paper prepared for the 1999 Africa Poverty Status Report for the SPA. The current version incorporates comments by three very experienced experts on rural health services in Africa. Its purpose is to review current thinking on issues of health and poverty in Africa and provide a basis for the design of a programme of work to support the design and implementation of pro-poor health strategies in Africa.

The paper summarises the available data on health in Africa. It documents the general improvements in health status since the 1960s, but points to a slowing of improvements and reversal of mortality trends in some countries. This can be attributed, in part, to the HIV/AIDS epidemic and a resurgence of malaria and tuberculosis. However, the paper notes a relationship between the lack of basic health, water and sanitation infrastructure and poor health performance. A case study of Zambia points to the importance of effective basic health services in reducing mortality.

The paper reviews recent methods for incorporating the findings of cost-effectiveness studies into planning public health expenditure. It argues that data on the impact of diseases on morbidity and mortality needs to be supplemented with information on the well-being of individuals, households and the community. Options for the use of public funds need to be assessed in terms of the degree to which they enable the poor to address their health needs and cope with health shocks.

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<sup>1</sup> This paper is based on a background paper for the 1999 Africa Poverty Status Report. The authors would like to acknowledge useful comments by participants at a workshop at the IDS to review these background papers. They are particularly grateful to Mark Wheeler and Paul Smithson for the very helpful written notes. The work on the background paper was financed by the SPA and carried out under the auspices of the World Bank, and is reproduced with their permission. The usual disclaimer applies. Subsequent revision of the paper after consultations with African experts was funded out of a grant from the Rockefeller Foundation to support the establishment of a Health and Social Change Partnership Programme.

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The paper discusses strategies for meeting the needs of the poor in a pluralist health sector. It argues that the first step in defining such strategies must be a realistic assessment of the complex and largely unregulated market for health services which exists in many parts of Africa. It suggests that simplistic calls for governments and donors either to cease or substantially increase funding for existing public health services are misguided in a situation where even the labels 'public' and 'private' require careful analysis. Instead it proposes that governments should use their resources and influence to promote the substantial changes required to establish effective health services. It also calls for a fundamental reassessment of the relationships between government, health service providers, civil society organisations, communities and households in the health sector. It concludes that a new vision for pro-poor health services will emerge from a process of listening to the needs of the poor, learning from mistakes and applying lessons from good practice models to address these needs. The aim of the Health and Social Change Programme at the IDS is to contribute to this learning process.

## **1. INTRODUCTION**

People have known about the close relationship between illness, development and poverty for centuries. This is reflected in many ancient texts. The Jewish and Christian Bibles, for example, make many references to disease, from the description of a major epidemic in the Book of Exodus to the association of plagues with social crisis in the Book of Revelations. Historians have documented the intimate relationship between disease and development including the waves of Bubonic Plague in Europe and the decimation of the population of the Western Hemisphere by new diseases introduced from Europe. (McNeil 1977; Sigerist 1943).

The creation of the modern state has been intimately linked to the need to protect the population against disease. International trade was controlled, in part, in an effort to contain Bubonic Plague. During the second half of the Nineteenth Century, the establishment of effective local governments in Europe was strongly influenced by the fear of cholera (Evans 1987). Colonial governments recognised the need to prevent epidemics. In the case of Zimbabwe, for example, Gelfand (1976) documents early measures to examine urban workers for signs of sexually transmitted diseases and isolate villages where there was an outbreak of smallpox.

During the 1950s-1970s many countries invested heavily in health services and health indicators improved substantially. The interest in the relationship between health, development and poverty culminated in the international acceptance of the primary health care strategy (WHO 1978). This interest subsequently waned. Health care came to be seen as a consumption good rather than a developmental necessity. This perception was supported by the fact that countries tend to spend more on health as they develop. In 1990 Sub-Saharan Africa spent 4.5% of GDP on health compared to 9.2% by the established market economies (World Bank 1993). It appeared that improvements in health would simply be one of the benefits of economic development.

The understanding of the role of health is changing once more as development efforts focus on poverty reduction. The poor continue to face serious health problems. In some parts of the World the rate of health improvement has slowed or even reversed (Cornia and Mwabu 1997). It has become clear that successful poverty reduction must include measures that specifically address the health needs of the poor. The aim of this paper is to contribute to the formulation of the health component of such strategies in Sub-Saharan Africa. It reviews the evidence on health trends; asks how poor households cope with sickness and premature death; and describes the context within which government strategies for supporting these households have to be implemented. It concludes with proposals for protecting the population against health crises.

## **2. RECENT TRENDS IN MORTALITY AND MORBIDITY**

### **2.1 Data Sources and Reliability**

This is not the appropriate place for a lengthy discussion of the quality of mortality and morbidity data for sub-Saharan Africa. There is widespread agreement that the absence of reliable routine sources on either

forces reliance on national census and household survey estimates (Timaeus, 1998). This has two direct consequences in the context of the current paper. First, most surveys, particularly those supported by international agencies, are intended to provide national level estimates, possibly classified in terms of urban and rural populations. Experience would suggest that there are major inter-district variations in morbidity, mortality and related factors which are not captured by such exercises (Simms, 1998, Muhari, 1994). Second, surveys focused primarily on aspects of health status have tended to collect very limited data on household income, expenditure or wealth. It is, therefore, difficult to analyse specific issues relating to poverty households. (Two recent papers suggesting possible approaches to this issue are Filmer, 1998 and Pradhan, 1998.)

Two further points on data quality are worth noting. First, data quality is probably inversely related to the level of morbidity and mortality. Poorer countries tend to have both higher levels of sickness and less resources allocated to monitoring health status. Second, the changing pattern of disease may have reduced the reliability of overall population mortality indicators such as life expectancy at birth. Until the advent of AIDS, the trend in such indicators over time was largely determined by infant and child deaths. Increases in life expectancy would almost invariably be associated with declines in infant and child mortality indicators. In countries with widespread AIDS, increases in adult mortality may become a determining factor. Reliable estimates of adult mortality are much more difficult to obtain than those of infants and children, and the determination of population mortality trends may be more problematic than in the past. The model life tables which form the basis for the estimation of life expectancy in sub-Saharan Africa are often modified to fit specific countries purely on the basis of estimated infant and child mortality rates. These typically being the only reasonably reliable statistics available. There must be some question as to whether the existing tables, derived from historic populations and patterns of mortality, will remain an appropriate basis for what is possibly a qualitatively different situation.

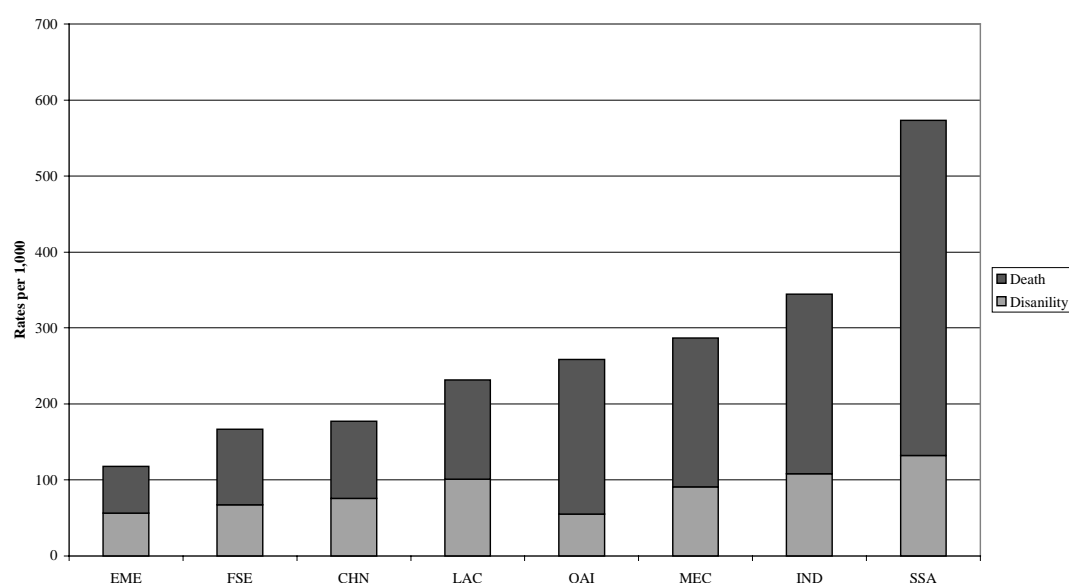
## **2.2 The Burden of Disease in Sub-Saharan Africa**

In a discussion of the results of a major World Bank and WHO programme on burden of disease assessment, Murray and Lopez (1994), produce figure 1 below, showing the markedly worse position in sub-Saharan Africa compared to other regions<sup>3</sup>. The figure is based on the concept of disability adjusted life years (DALYs) which are commonly used to measure the extent of sickness and premature death. The DALY rate for a country estimates the excess years of active life lost per 1,000 of the population due to disability and death, above what are regarded as achievable targets based on expert judgements. Not only does sub-Saharan Africa, with less than 10% of world population, account for 22% of total world DALYs and 25% of those lost to premature death, this latter rate is almost twice that of the second worst region, India, and seven times that of the established market economies.

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<sup>3</sup> EME: Established Market Economies, FSE: Formerly Social Economies of Europe, CHN: China, LAC: Latin America and Caribbean, OAI: Other Asia and Islands, MEC: Middle Eastern Crescent, IND: India.

**Total DALY rates by region**



The pattern of disease in sub-Saharan Africa is markedly different from other regions. Using the DALY concept as a basis for comparison, table 1 shows a predominance of communicable diseases, with levels of infectious and parasitic diseases almost twice those in other developing country regions. The most recent estimates for 1998 (WHO, 1999) show little change in the overall pattern. The most striking feature being a marked increase (to 15%) in the burden of disease attributed to physical injuries.

### 2.3 Mortality

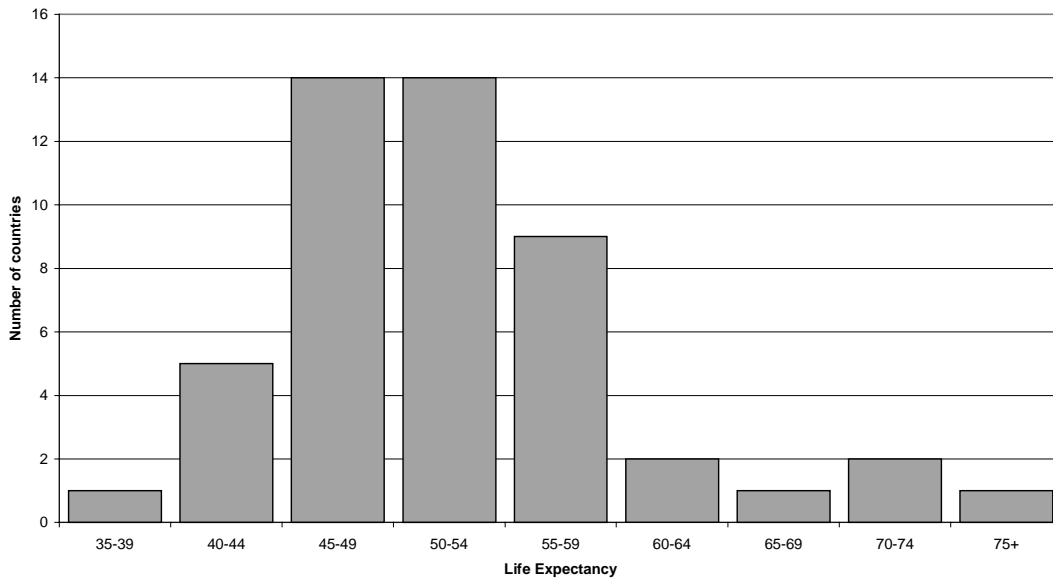
The above aggregate analysis strongly indicates the highly unfavourable health status position of sub-Saharan Africa as a whole, when compared with any other region of the world. However, as Cornia and Mwabu (1997) point out, such aggregation conceals considerable diversity. For example, the countries of Southern Africa have consistently had lower infant and child mortality rates and higher life expectancies than those of West Africa. In this and the following sections, attention will be focused on the distribution of mortality and morbidity across the 50 countries classified as constituting sub-Saharan Africa in the 1998/1999 World Development Report (World Bank, 1998b).

**Table 1: Percentage distribution of DALYs by disease or injury for each region 1990**

Disease or injury	SSA	MEC	IND	OAI	LAC	CHN	EME	FSE
Communicable	71	51	51	49	42	25	10	9
Infectious and parasitic	51	26	28	28	25	12	4	3
Respiratory	11	12	11	11	6	6	3	3
Maternal conditions	3	3	3	3	2	1	1	1
Perinatal causes	7	11	9	7	9	5	2	2
Non-communicable	19	36	40	40	43	58	79	75
Injuries	9	13	9	11	15	17	12	17

Source: Calculated from annex tables 4-11, Murray and Lopez, 1994.

Figure2: Distribution of countries by Life Expectancy 1996



Mortality will here be considered mainly in terms of two indicators, life expectancy and the infant mortality rate (IMR). These indicators are used primarily because of their general availability across almost all of the countries examined. Both have limitations. In the case of the IMR, it can be effectively argued that under five mortality might be a preferable health status indicator given that it is more specifically determined by infant and early childhood diseases. As indicated above, life expectancy is a highly artificial construct in all the countries of sub-Saharan Africa, being based on a set of model life-tables (Coale and Demeny 1983) that are adjusted in the light of whatever age-specific mortality data can be assembled. An estimated IMR may be the only country specific data used in calculating a life expectancy.

In 1996 (figure 2), the majority of countries had life expectancies in the range 45-54, with six exhibiting values less than 44 and six achieving a value over 60 years (data were not available for one country, Mayotte). As commonly observed (WHO, 1998c), the life expectancy for women was typically somewhat higher than that for men, an average difference of just over three years. This average gap has changed very little since 1970, but there are indications that differences may be narrowing in countries where HIV/AIDS has had a major impact. In Uganda and Zambia, for example, male and female life expectancies are now very similar.

#### 2.4 Trends in Mortality 1970-1996

Table 2 indicates the considerable progress made in terms of increasing life expectancy since 1970. In that year 60% of sub-Saharan countries had life expectancies below 45 years. By 1990 this had reduced to just 12%. However, the picture had become less clear by 1996. The proportion under 45 remained constant while that under 55 or 60 increased.

**Table 2: Cumulative distribution of countries by life expectancy 1970-1996**

Year	Cumulative percent of countries with life expectancy less than:									
	35	40	45	50	55	60	65	70	75	80
1970	2	19	60	87	94	96	100	100	100	100
1980	0	6	32	64	89	94	96	100	100	100
1990	0	4	12	47	65	86	94	96	100	100
1996	0	2	12	41	69	88	92	94	98	100

Source: World Bank, 1998c

Table 3 explores the extent to which improvements in overall mortality varied depending on initial health status. Traditionally, it would be expected that very low values of life expectancy will be associated with very high infant mortality rates, and that those rates could potentially be rapidly reduced by appropriate health and health-related interventions. This appears to be reflected in the data. While the twenty eight countries with life expectancies below 45 years in 1970 improved consistently (at least on average) through each period, improvement was considerably more limited over 1990 to 1996 for the sixteen countries with values in the range 45-54. Seven countries experienced a fall in life expectancy between 1980 and 1990, and eleven between 1990 and 1996. These will be considered further below.

## 2.5 Infant Mortality

As with life expectancy, infant mortality varies considerably across the countries of sub-Saharan Africa (figure 3). The great majority are high compared to the rest of the world, with 29 having rates above 80 per 1,000 births and 9 having rates above 120.

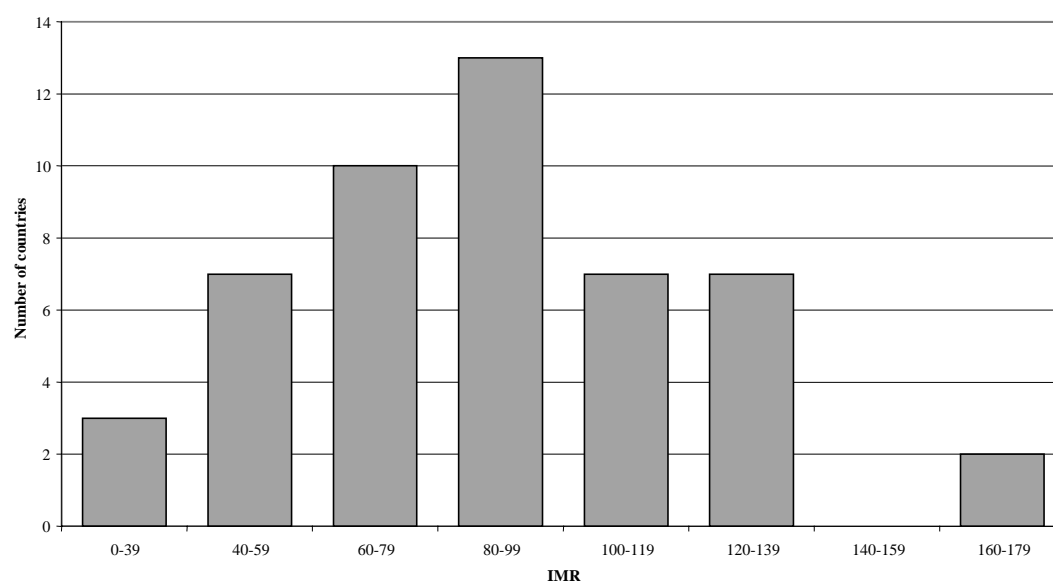
The pattern described above for changes in overall mortality over time was not repeated for infant mortality. Figures 4 and 5, which are based on tables 2 and 4, illustrate graphically the major differences. In the case of infant mortality, gains over the period 1970-80 (for example the proportion of countries with IMRs less than 100 increased from 13% to 34%), were sustained both from 1980 to 1990 (34% to 51%) and 1990 to 1996 (51% to 67%). The main concern in table 4 is that the number of countries exhibiting extremely high rates was not being more rapidly reduced.

**Table 3: Changes in life expectancy classified by 1970 life expectancy category.**

Life expectancy 1970	Number of countries	Change in Life Expectancy between years		
		1970-80	1980-90	1990-96
30-39	9	3.27	4.26	1.96
40-44	19	3.58	2.55	1.41
45-49	13	3.95	2.19	0.32
50-54	3	4.95	3.04	-2.48
55+	3	4.48	3.77	1.96
All	47	3.77	2.89	1.00

Source: World Bank, 1998c

**Figure 3: Distribution of countries by infant mortality rate 1996**



**Table 4: Cumulative distribution of countries by infant mortality rate 1970-1996**

Year	Cumulative percent of countries with infant mortality rate less than:									
	20	40	60	80	100	120	140	160	180	200
1970	0	0	4	7	13	29	56	71	84	100
1980	2	4	4	13	34	57	70	89	94	100
1990	4	6	14	27	51	71	94	96	98	100
1996	6	6	20	41	67	82	96	96	100	100

Source: World Bank, 1998c

Following the analysis of life expectancy above, table 5 considers changes in IMR related to initial status. Just five countries experienced no decline in IMR over the periods 1980-1990 or 1990-1996, Botswana, The Republic of the Congo, Liberia, Rwanda and Zambia. Only Zambia experienced an increase in both periods.

Timaues (1998) reviews evidence on under-five mortality which supports the view that this indicator also declined through the 1980s and early 1990s, possibly more rapidly in countries with high initial rates. Slowing of the decline appeared limited to the latter part of this period and occurred in some lower mortality

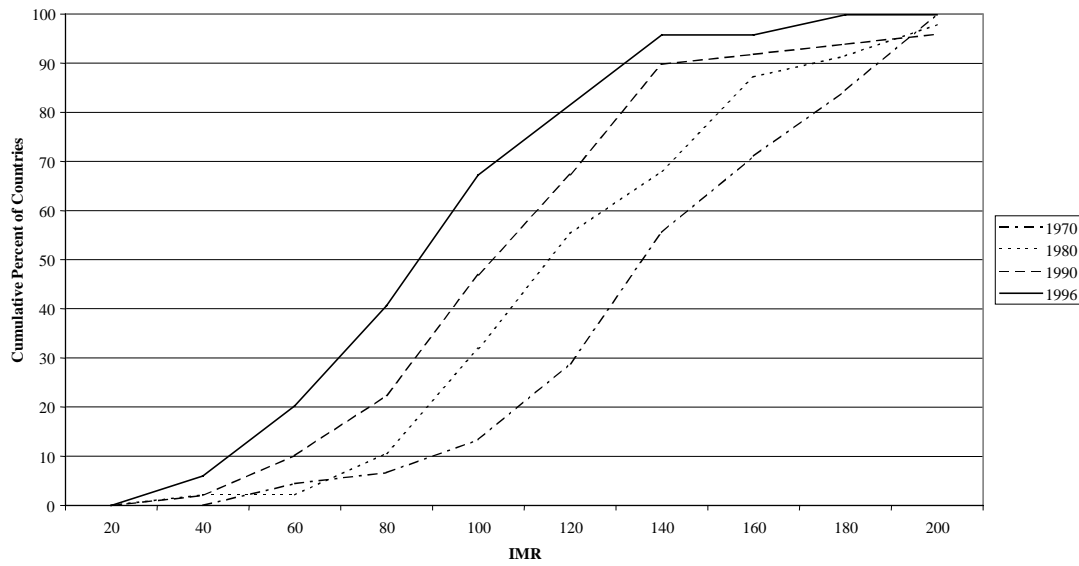
**Table 5: Changes in IMR classified by 1970 IMR.**

IMR 1970	Number of countries	Change in IMR between years		
		1970-80	1980-90	1990-96
<99	6	-23	-14	-4
100-119	7	-16	-8	-5
120-139	12	-27	-19	-9
140-159	7	-18	-15	-10
160-179	6	-21	-14	-12
180-200	7	-19	-35	-15
All	45	-21	-18	-9

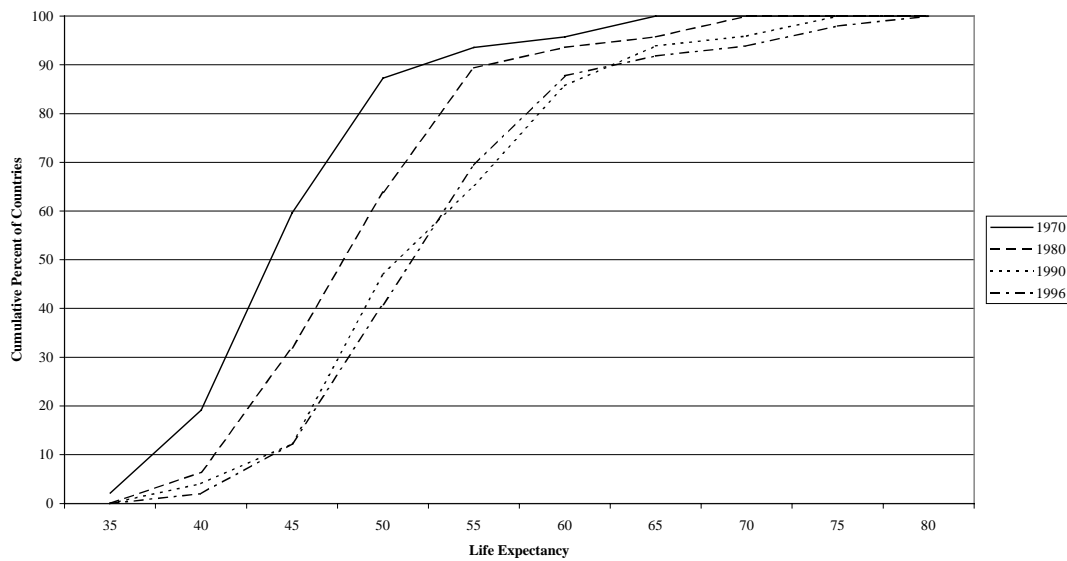
Source: World Bank, 1998c



**Figure 4 IMR 1970-1996:**  
**Cumulative percent of countries below given value**



**Life Expectancy 1970-1996:**  
**Cumulative percent of countries below given value**



countries (Botswana, Central African Republic, Cote d'Ivoire, Kenya, Togo and Zimbabwe) and several with higher rates (Malawi, Liberia, Niger and Nigeria). Zambia again stands out as the one country where child mortality increased considerably.

## 2.6 Morbidity

The morbidity pattern for sub-Saharan Africa is very different to that in other world regions, being still dominated by communicable diseases (Section 2.2). Here we consider three such diseases, HIV/AIDS, tuberculosis and malaria. One reason for this choice is simply availability of data. Because they have been the focus of much recent activity, considerable efforts have been made to produce at least reasonably reliable

estimates of their incidence and prevalence. The importance of this group of diseases is not in doubt. In DALY terms, they jointly accounted for over 21% (HIV/AIDS 6.3%, Tuberculosis 4.7% and Malaria 10.7%) of total active life years foregone in 1990 and this value has almost certainly increased considerably since then.

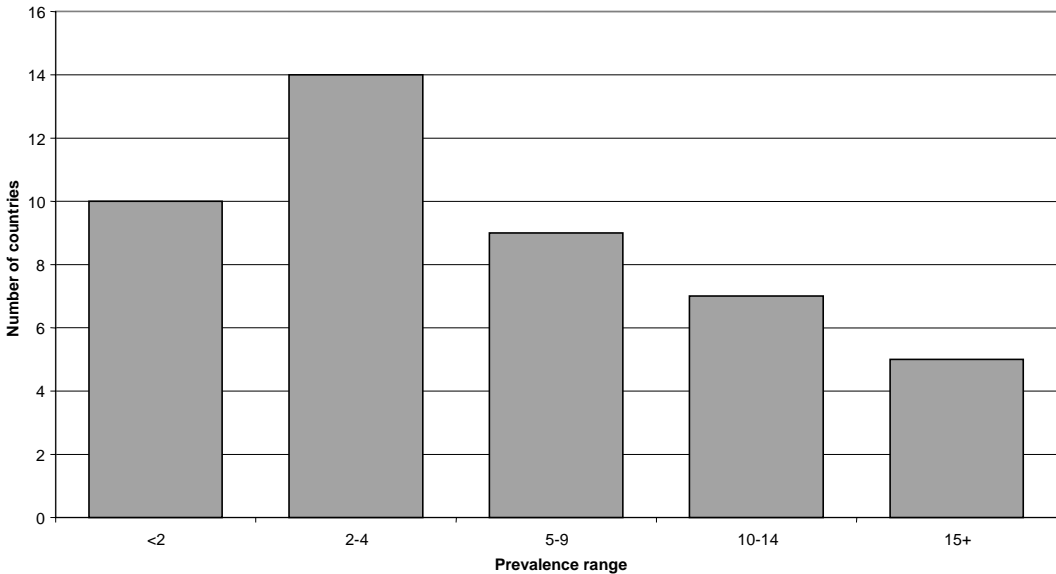
**2.6.1 HIV/AIDS**

One of the main factors repeatedly cited to explain the relatively slow decline, and in a few cases increases in mortality, through the 1990s is the impact of AIDS. It is currently estimated (UNAIDS/WHO, 1998a) that 22.5 million people in sub-Saharan Africa are living with HIV. Whereas in many parts of the world male rates exceed those of females, here it is suggested that approximately six women are infected for every five men, with consequential high rates among their children. Some 11.5 million people, including 3 million children, have died from AIDS since the onset of the epidemic. Eighty percent of all AIDS deaths in 1998 occurred in the region, and they were estimated to account for 19% of total mortality, more than twice the figure for lower respiratory infections, the second most important cause of deaths (WHO,1999).

Timaeus (1998), argues that “the severity of the HIV epidemic is now the dominant determinant of adult mortality” and cites the example of Zimbabwe, previously one of the lowest adult mortality countries in Africa but now one of the highest, where the probability of dying between the ages of 15 and 60 years more than doubled between 1985 and 1995. On the other hand he cautions that this is not the case for infant and child mortality, which are largely determined by other factors.

Recent estimates of HIV/AIDS prevalence in the population aged 15-49 (UNAIDS/WHO,1998b) for sub-Saharan Africa are shown in figure 6. Only ten of the forty six countries with data had rates below 2%, while twelve were in excess of 10%. Southern Africa has the highest rates, with estimated numbers of people between 15-49 living with HIV in Botswana, Namibia, Swaziland and Zimbabwe exceeding 20%, and South Africa on course to reach these levels in the near future.

**Figure6: Distribution of countries by HIV/AIDS prevalence in population 15-49, 1997**



**Table 6: Change in life expectancy by HIV prevalence 1997**

HIV Prevalence 15-49 1997	Number of countries	Change in LE 1980-90	Change in LE 1990-96
<2	11	4.16	2.33
2-4	14	3.53	2.14
5-9	9	2.03	-0.32
10-14	7	1.16	0.89
15+	5	2.24	-2.85
All	46	2.88	0.92

Source: World Bank, 1998c, UNAIDS 1998a

As shown in table 6, there is a relatively strong correlation (at least at the aggregate level) between HIV prevalence rates and increases in overall mortality between 1990 and 1996.

### 2.6.2 Tuberculosis

There has been considerable concern at the rapid rise in reported tuberculosis cases in recent years, which has been closely linked to the HIV/AIDS epidemic. For Africa as a whole, notified TB cases are estimated to represent 53% of total incidence (WHO, 1998a). On this basis, total new cases in 1996 were around 1.5 million. This is projected to rise to 2.1 million by 2000, an increase of 41% in four years. In two countries regarded as having reasonably reliable information systems, Tanzania and Malawi, case notifications increased by 190% and 290% respectively between 1984 and 1994 (WHO 1996). Such increases are generally attributed to co-infection with HIV which both greatly increases the risk of developing active TB and dramatically increases its progression. "TB is the most important opportunistic disease observed among HIV-infected patients in Africa because it is common, transmissible to everyone and life-threatening" (Raviglione et al., 1997). Failure to treat infected people and trace and treat those in contact with them has also contributed.

Figure 7 is based on WHO estimated rates by country for 1996 (WHO, 1998b). These show that the majority of sub-Saharan countries had rates between 150 and 250 cases per 100,000, eight countries estimated had rates over 300 and just two had rates less than 100. This compares with a global estimated rate of around 120.

Reported cases of tuberculosis would seem to indicate a notably higher prevalence in men. However, it has generally been accepted in recent years that this is simply a reflection of a greater propensity to seek treatment. Recent estimates of prevalence, mortality and burden of disease all show higher rates among women (table 7).

Figure 7: Distribution of countries by estimated TB cases

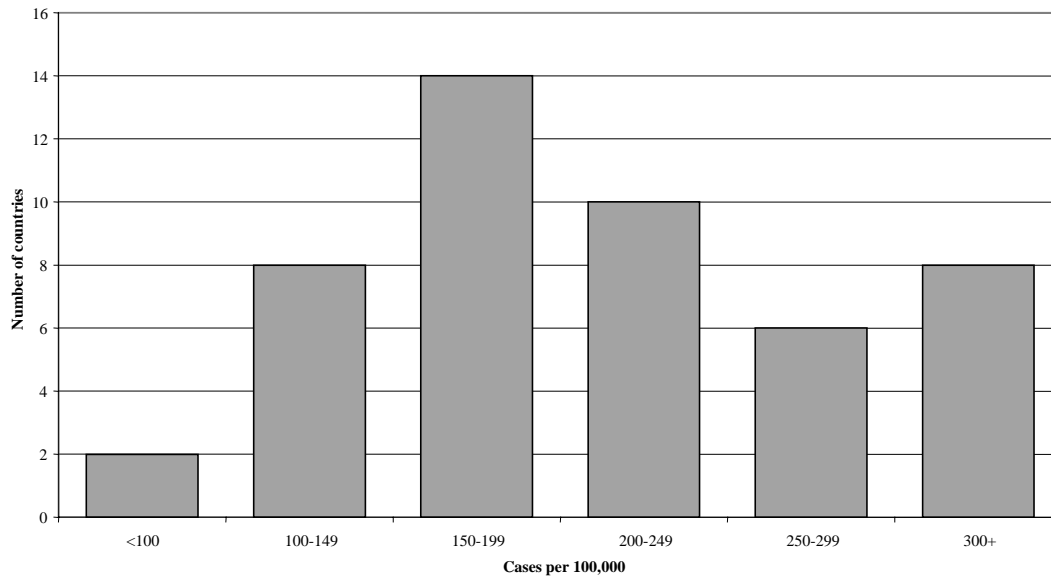


Table 7: Estimated tuberculosis deaths, prevalence and burden of disease 1998 ('000)

	HIV positive			HIV negative		
	all	male	female	all	male	female
Deaths	305	147	158	209	101	108
Prevalence	510	246	264	1,047	505	543
DALYS	7,934	3,719	4,215	5,442	2,551	2,891

Source: WHO, 1999

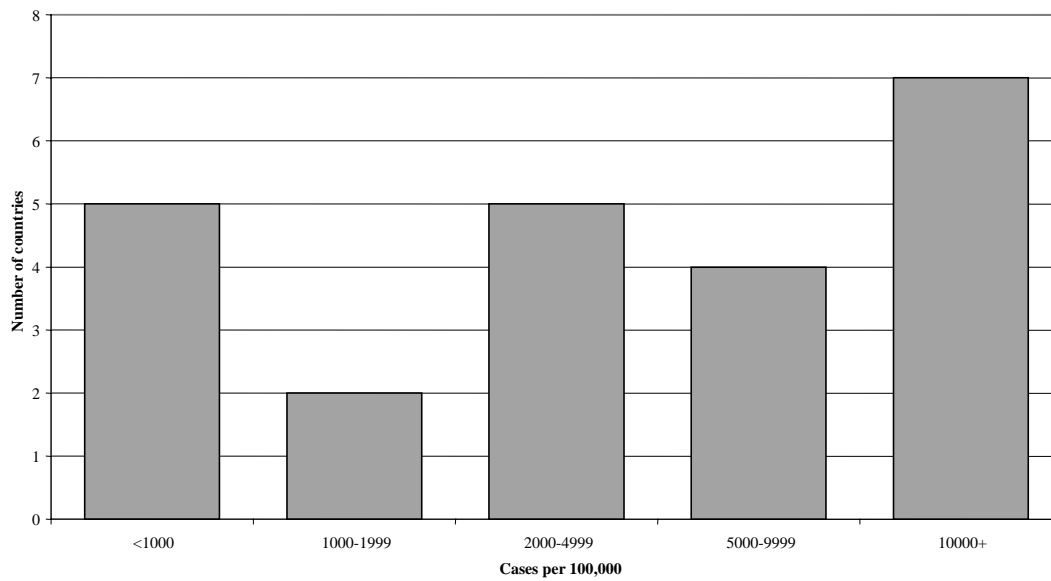
### 2.6.3 Malaria

Over 90% of the population of sub-Saharan Africa live in areas with a significant risk of malaria and around 75% live in high risk areas. Estimates of total cases are extremely difficult, given that only a very limited proportion are officially reported, but the WHO suggests an annual occurrence of 270-480 million cases (WHO,1997), or 90% of all cases worldwide. Somewhat over half of cases probably occur in children under five, resulting in almost one million deaths each year. In burden of disease terms it ranks alongside respiratory disease as the most important cause of death and disability. It also constitutes a major burden on primary health care services, typically being included in 20-40% of all out-patient diagnoses in the region.

Recent data on the incidence of malaria are available for only twenty three countries in sub-Saharan Africa (UNDP, 1998), who reported a total of some 28 million cases, i.e. probably less than one in ten of the total. Of these, eleven reported more than 5,000 notified cases per 100,000 population and just five less than 1,000 cases (figure 8).

As with tuberculosis, it now seems to be accepted that women are at at least as great a risk as men. Table 8 provides recent estimates on malaria deaths, incidence and burden of disease by age, sex and HIV status for 1998.

**Figure 8: Distribution of countries by notified malaria cases 1994**



**Table 8: Estimated malaria deaths, incidence and burden of disease 1998 ('000)**

	Male		Female	
	0-14	15+	0-14	15+
Deaths	476	22	438	27
Incidence	67,422	51,436	66,597	52,192
DALYS	17,040	719	15,860	888

Source: WHO, 1999

## 2.7 Public Health

Whatever their impact, new or resurgent diseases are clearly not the only factors which may have contributed to recent mortality and morbidity trends. For example, most of the countries of sub-Saharan Africa suffered considerable economic reversals between 1980 and the mid-1990s and many introduced stabilisation and adjustment programmes specifically designed to reduce inflation and government deficits. Though precise data are problematic (Murray, 1994), it is clear that in the great majority of countries aggregate government spending on health and related areas has been at best static over the period, with consequent reductions in per capita expenditures.

The impact of government spending on health status is a highly contentious issue (Gupta, 1999, Filmer and Pritchett, 1997a), which will be considered further in the next section. Here the focus is on a related question – is there a correlation between indicators of outputs derived from such expenditure, in terms of clean water, sanitation, provision of services, etc. and improved health status?

Consideration of the relative importance of public health in reducing the burden of mortality and morbidity is severely limited by the absence of reliable quantity indicators – particularly in the poorest countries, given the absence of useful administrative data. The commonly used access measures, for example, are usually based on the physical availability of a given resource: a safe water supply, sanitation systems or a

**Table 9: Public health indicators by life expectancy**

Life Expectancy 1996	Access per 1,000 population to			Malnutrition Children <5 % 1990-96	Births Attended by health staff % 90- 96	Immunisation Children <1 with DPT % 1995
	Safe water 1989-95	Sanitation 1989-95	Health services 1993			
30-49	44	30	51	32	28	45
50-54	60	44	67	29	51	63
55-59	52	39	46	21	61	61
60+	100	73	99	13	90	83
All	53	39	58	27	45	58

Source: World Bank, 1998c, World Bank, 1998a.

health facility. However, one characteristic feature of severe economic decline has been the deterioration of such resources: water supplies become contaminated; sanitation systems are not maintained and cease to function; health facility buildings and equipment deteriorate (Okello et al., 1998), stocks of drugs are not replenished and skilled staff leave or become part-time, supplementing their declining salaries from alternative sources (Asiimwe et al., 1997b). Access measures rarely take such factors into account, usually being based on records of available resources which may be many years out of date and bear little relation to reality.

In spite of these limitations, there does appear to be a consistent relationship between some public health and related indicators and overall mortality. Table 9 shows the values of six widely available indicators classified by 1996 life expectancy categories. In addition to the access measures, it includes indicators of malnutrition among children under five, DPT immunisation and attended births, for all of which estimates are usually based or at least can be verified by data from sample surveys. Attended births has been shown (Simms, 1998) to be a potentially very useful statistic, in that it may indicate at least the presence of functioning health facilities when other reliable information on utilisation is lacking, and when the standard access measure may be highly misleading.

Higher levels of life expectancy are generally positively associated with all the above indicators. More particularly, if attended births can be interpreted as suggested above, there is a strong and consistent relationship between life expectancy and the proportion of the population with functioning health facilities. However, perhaps the main message of table 9 is that in a considerable number of countries in sub-Saharan Africa the general public health situation should be a cause for major concern. On average in the lowest group, even accepting the probably optimistic access measures, well under half of the population has no access to safe water or sanitation, half have no access to basic health services, one third of children are malnourished, less than one third of births are attended and more than fifty percent of one year olds have not received DPT immunisation.

**Table 10: Countries experiencing a decline in life expectancy over 1980-90 or 1991-96**

Country	Change in Life Expectancy		HIV Prevalence 1996	Incidence of Drought <sup>1</sup> 1980-97	War and dislocation <sup>2</sup> 1980-96	Economic Shock <sup>3</sup> 1980-96
	1980-90	1990-96				
Botswana	-1.54	-5.73	25.6	8		
Burundi	-1.05	0.60	8.2	3	X	X
Congo, Rep.	1.84	-0.69	7.8	0		X
Cote d'Ivoire	3.88	-1.26	9.8	1		
Kenya	3.59	-0.21	12.0	5		
Liberia	-5.60	4.00	3.7	0	X	
Malawi	0.47	-1.51	15.0	5		X
Mozambique	-0.59	1.62	14.7	4	X	X
Namibia	3.27	-0.31	20.0	2	X	
Rwanda	-6.24	1.08	12.9	4	X	X
Tanzania	1.50	-1.07	9.8	4	X	
Togo	2.07	-1.25	8.4	1	X	X
Uganda	-1.69	-3.63	9.6	0	X	
Zambia	-1.40	-4.66	19.1	6		X
Zimbabwe	5.86	-4.56	25.2	6		X

1. The number of drought years between 1980-97. This is a subjective measure, indicating

a significant shortage of rainfall unfavourably effecting agricultural production. The World Bank, *African Development Indicators 1998/99*.

2. From UNHCR The State of the World Refugees, 1997/98, "internal armed conflicts" and "major refugee movements".

3. At least one year on year fall in constant price GDP by more than 5%, based on WDI 1998.

## 2.8 Other Factors Influencing Morbidity and Mortality

While examining the distribution of mortality and morbidity data across countries may be informative there is a risk of over-simplifying the diverse and complex range of factors bearing on health status. During the 1980s and 1990s many of the countries of sub-Saharan Africa have suffered not only from the tragic impact of HIV/AIDS but from a variety of other natural and man-made shocks which have had dramatic consequences, sometimes for the whole nation and sometimes for specific regions. These have included war, civil unrest, ethnic conflicts, large scale movement of migrants and refugees, economic crisis, drought, crop failure and famine.

Table 10 lists the 16 countries for which life expectancy declined over 1980-90 or 1990-96, together with indicators of severe social economic and environmental 'shocks' over the period which may well have had major implications for morbidity and mortality.

## 2.9 Mortality, Morbidity and Poverty

At the national level, the correlation between income and mortality appears clear. Of those countries in sub-Saharan Africa with life expectancies over sixty in 1996, all but one were in the middle or high income groups as defined by the WDR. The 18 countries with the lowest life expectancy were all low income. All of these had life expectancies below 50, compared with just 2 of the 11 in the higher income group. Table 11 shows the overall distribution.

**Table 11: Life Expectancy 1996 by income group**

Life Expectancy	Income Group		All
	Low	Middle	
35-39	1		1
40-44	5		5
45-49	12	2	14
50-54	12	2	14
55-59	7	2	9
60-64	1	1	2
65-69		1	1
70-74		2	2
75+		1	1
	38	11	49

Source: World Bank, 1998b

**Table 12: Prevalence of specific diseases by GNP**

GNP 1996	HIV Prevalence rate 15-49 1998	TB Cases/100,000 1996	Malaria Cases/100,000 1994
<250	7.3	226	20,930
250-499	5.8	212	15,863
500+	9.0	181	4,098
All	7.4	205	11,132

Sources: World Bank 1998c, UNAIDS, 1998a, WHO 1998b, WHO 1997

It can reasonably be inferred that overall morbidity will similarly tend to decrease as national income increases. However, the composition of morbidity may vary considerably. As table 12 indicates, while the prevalence of malaria appears to decrease considerably as national income rises, this is not the case for HIV or tuberculosis.

Research on within-country differential mortality by income has focused heavily on infant and child mortality. This shows a strong inverse correlation between household income and risk of infant or child death. The extent to which this can be attributed to the confounding effects of mother's education, which is clearly highly correlated with household income, has been the subject of a detailed review by Cleland and van Ginneken (1989).

Within-country studies of the relationship between income and morbidity have the major weakness that they are seldom undertaken on the basis of medical diagnosis. Medical research into particular conditions such as those described above rarely also collect data which would allow the determination of the income, wealth or socio-economic status of the sampled populations. On the other hand, household surveys usually rely on the self-reporting of illness symptoms. This both implies dependence on the subjective judgement and predisposition to report of the respondent, which may also be related to socio-economic status, and typically cannot be reliably attributed to a specific diagnosis. Individuals in poorer households may on average have higher incidence of disease but may report less, either because they are more tolerant or because they do not see the point of reporting if they do not have the time and/or resources to obtain



treatment. Given this uncertainty, it is perhaps not surprising that country studies have mixed findings as to whether 'the poor are sicker'. They do tend to agree that the poor less often seek care (Gertler and van der Gang, 1990)

There is limited cross-national comparative evidence on disease prevalence by income or socio-economic status. The DHS surveys, which might be expected to be a major source of information at least on childhood morbidity, allow only a very crude asset ownership approach, which may well be confounded with rural/urban differences. With this caveat in mind, Fosu (1994) found mixed results for relationships between reported sickness among children under five and asset ownership. Asset ownership appeared highly correlated in Uganda, Ghana and Zimbabwe, but not in Kenya, Togo or Botswana. A further analysis of these surveys which disaggregates by rural and urban population focuses on diarrhoea (Gage, Sommerfelt and Piani, 1996). This indicates significantly higher incidence rates in lower socio-economic groups in rural and urban areas of Cameroon, Namibia, Rwanda and Zambia, and in urban areas of Kenya and Nigeria. However, differences in Burkina Faso, Madagascar, Niger, Senegal and Tanzania (all but the last case in the same direction) were not significant.

The DHS surveys also provide indirect evidence that the poor have less access to health care. In almost all the countries covered by the diarrhoea study discussed above, socio-economic status was strongly correlated with both knowledge and use of ORS treatment. In Burkina Faso, Niger, Nigeria, Senegal, Tanzania and Zambia it was similarly correlated with treatment being sought at a health facility. Results from DHS surveys also indicate that urban children are much more likely to be immunised, whatever the disease (Sommerfelt and Piani, 1997b). Over 60% of rural children in Niger and 40% in Nigeria were estimated to receive no immunisations, while the corresponding urban values are 20% and 10% respectively. Immunisation coverage was also found to be highly correlated with mothers education. Coverage of children with mothers who had received no education was on average 40 percentage points lower as compared with those who had completed primary in Burkina Faso, Cameroon, Ghana, Niger, Nigeria, Senegal and Sudan.

In another review which uses the urban/rural distinction as a proxy for income status. Ainsworth and Over (1994), discuss the prevalence of HIV across different economic groups, highlighting the contrast with other causes of death. They point out, for example, that the rate of infection in rural areas was around half that in urban, where adult life expectancies have traditionally been considerably higher (Timaeus, 1993). They also present limited evidence from small scale studies in Uganda and Zaire to suggest a positive correlation with both education and socio-economic status, possibly due to an increased number of sexual partners among those with higher incomes.

Given the scarcity of reliable direct evidence of the links between poverty and health, there have been recent attempts to model the health status differential faced by poor households. Table 13, taken from the 1999 World Health Report and based on a methodology developed by King (Gakidou, forthcoming), provides estimates of the ratios of death rates and tuberculosis prevalence rates for poor households (per capita income below one international dollar per day) to rich households.

**Table 13: Ratio of mortality rates and TB prevalence rates of poor<sup>1</sup> to non-poor groups**

Country	Male 15-59	Female 15-59	Male 0-5	Female 0-5	TB
Botswana	2.3	4.0	4.9	4.8	1.2
Cote d'Ivoire	1.5	1.5	2.4	3.3	1.6
Ethiopia	2.2	3.6	3.0	4.0	2.9
Guinea	2.1	3.5	3.7	5.6	1.9
Guinea-Bissau	1.7	2.1	2.2	3.0	2.6
Kenya	2.1	3.8	3.7	3.8	2.6
Lesotho	2.6	5.4	3.9	5.2	1.7
Madagascar	2.0	3.4	3.8	4.1	2.6
Mauritania	1.9	3.4	3.0	3.7	1.3
Niger	1.9	3.5	3.4	4.8	2.4
Nigeria	1.8	2.8	3.1	3.7	2.2
Rwanda	1.2	1.0	2.7	4.2	2.3
Senegal	2.2	3.8	4.0	4.9	2.5
South Africa	1.7	3.6	4.7	5.3	1.0
Tanzania U. Rep. of	2.1	3.3	5.6	5.0	1.4
Uganda	1.4	1.4	2.1	2.5	1.3
Zambia	2.5	3.6	3.5	3.9	3.8
Zimbabwe	2.1	2.3	4.1	5.0	1.2

1. Per capita income less than one international dollar per day

Source: World Health Report 1999, WHO

### Childhood Mortality in Zambia

Zambia has suffered a prolonged and severe reversal in under five mortality, which has risen from 15% in 1980 to 21% in the late 1990s. Although the prevalence of HIV is very high, there is evidence that other factors contributed to this trend.

The reasons for the rise in childhood mortality were different in the 1980s and the 1990s and urban trends were distinct from rural ones. Data collected by health facilities and surveys do not show an increase in the number of consultations for acute respiratory infection, diarrhoeal disease or malnutrition during the 1980s. There was a large increase in total cases of malaria in Lusaka and Copperbelt due, in part, to the collapse of urban spraying programmes. The HIV epidemic does not fully explain the rise in childhood mortality during this period. Infant and under-five mortality in rural areas began to rise in the second half of the 1970s and first half of the 1980s and then levelled off after 1985 when it is presumed that HIV began to spread. Urban under-five mortality, on the other hand, increased gradually from the late 1970s until the mid-1980s and then the increase accelerated during the second half of the 1980s, suggesting the influence of HIV infection.

Government health expenditure fell substantially, in real terms during the 1980s. There was a particularly sharp fall in non-personnel expenditure on rural health services. This had a negative impact on the effectiveness of primary health care. One sign that health services had deteriorated was that case fatality rates for inpatients rose. Childhood mortality varies considerably between Zambian districts. This variation cannot be explained by differences in levels of poverty or malnutrition. However, there is a negative relationship between the proportion of medically supported births and childhood mortality. This suggests that certain health services can reduce the proportion of children who die and many deaths could have been prevented if all district health services had performed as well as the best.

The further rise in mortality during the 1990s has other explanations. The impact of the HIV epidemic had increased. The worst drought in 50 years contributed to a large rise in extreme poverty, malnutrition and childhood morbidity. Also, the introduction of user fees reduced access to health care by vulnerable populations. The Zambian experience highlights how a number of factors increase the risk of poor health and how effective and affordable health services can protect poor households from the worst impact of these shocks.

Box prepared by Chris Simms on the basis of Simms (1998) and Simms *et al* (1998)

### **3. THE BURDEN OF DISEASE ON THE POOR**

#### **3.1 Introduction**

Clearly many factors influence the health of an individual or population. These include access to nutritious food, clean water, adequate clothing and shelter, and the means for hygienic disposal of human wastes; freedom from contamination by hazardous substances and environmental pollutants; and relevant information and skills. Many if not all such factors tend to improve with rising incomes and it is the common experience that declining levels of poverty are generally associated with increasing health status. Advances in preventive or curative health services may be involved, but not necessarily. Europe experienced considerable improvements in life expectancy during the Eighteenth and Nineteenth Centuries, in spite of the virtual absence of effective medical interventions (McKeown 1976). Nonetheless, most societies organise measures specifically intended to prevent and cure sickness and support the severely ill and their families. The purpose of the remainder of this paper is to identify measures that can best address the health and health care needs of the poor, while accepting that these will have a much greater impact if they are part of a broader effort to meet all of the requirements identified above.

The effectiveness of health services in meeting the needs of the poor depends on the mix of services provided. In recent years there has been a concerted international effort to use the findings of cost effectiveness analyses in health policy formulation. The approach commonly used is to consider the cost of reducing the DALY indicators of excess sickness and premature death discussed above. This methodology led the World Bank (1993) to propose that governments of low income countries allocate their health budgets preferentially to interventions such as immunisation, school health, other public health programmes, tobacco and alcohol control, AIDS prevention and treatment of common health problems for which affordable therapies are available. There is general agreement that these activities can be cost effective and are strong candidates for government support. However, this section argues that decision-makers need to complement DALY estimates with other information if they wish to identify the best use of public resources to reduce the burden of disease on the poor.

It should be recognised that there are many possible ways to quantify the ‘costs’ of ill-health. From an epidemiological or demographic perspective, the DALY approach, using potential life years lost through death and years of suffering due to illness, seems appropriate. However, the issue can also be addressed via household economics, estimating actual expenditure and opportunity-cost at the time of sickness and expected income-foregone in the event of death or disability. It would also be possible to use a participatory approach. For example, members of the relevant population could be asked to undertake a subjective evaluation, possibly in terms of a ranking exercise, of the cost of various sickness events.

The outcome of such exercises will depend on the approach adopted. The death of a child, for example, though a human tragedy which appropriately contributes considerably to the DALY count, may have much less economic impact on a household than the death or prolonged incapacity of a principle income-earner; the survival and well-being of a mother after childbirth will typically be much more important from this perspective than the survival of the infant. Again, while some might judge it cost-effective to deny care to an

aged person during a lengthy terminal illness, many communities would see this course of action as socially and morally unthinkable. Indeed, the trust by family members that such obligations will be honoured may be an important part of a community's social capital.

Such social considerations may play a role in explaining why participatory rural appraisals (for example, World Bank 1994) consistently find that the poor give high priority to improvements in health care. However, economic factors are probably central. The following sub-sections explore three major categories of economic cost of ill health to households: loss of production by sick individuals, financial cost of health care and time cost borne by carers (Sauerborn et al 1996b). The aim is simply to indicate the wide range of factors which may need to be taken into account in designing a pro-poor health strategy (Carrin and Politi 1997).

### **3.2 Loss of Production by Sick Individuals**

A very sick or disabled person tends to be less productive than a healthy one. This is obvious when someone is seriously disabled by an acute illness. There is a wide spectrum of states of diminished capacity due to feebleness (resulting from old age or chronic illness), loss of one or more senses, reduced mobility and so forth. The degree to which these problems reduce output depends on both the degree of disability and the availability of opportunities for productive employment.

The impact of ill health is particularly evident in areas with a serious endemic health problem. For example, some parts of Africa are poor because of sleeping sickness or onchocerciasis. Evans (1989) describes how the productivity of young adults with the latter disease falls, as they lose their sight, and ultimately their family becomes impoverished. Illness is a major block to development in affected areas.

It is more difficult to measure the effect on productivity of moderately debilitating illness. A recent review of the literature concludes that demonstrations of the economic impact of malaria on households are unconvincing (Chima *et al* 1999). The authors suggest that this reflects the limited opportunities for productive labour in low income countries, the ability of households to re-allocate labour and the narrow perspective of most studies. Gallup and Sachs (1998) point out that the elimination of malaria from Southern Europe during the late 1940s yielded substantial economic benefits. They also claim that countries with severe malaria in 1965 had 1.3% lower economic growth per year, even taking into account factors like initial income level, overall life expectancy and tropical location. They suggest that malaria has indirect effects on household income by discouraging foreign investment and tourism, thereby slowing economic growth. This underlines the need to define the counterfactual clearly in assessing the economic impact of specific diseases.

Ill health can reduce returns to investment in human capital. For example, malnutrition and poor health interferes with schooling and makes expenditure on education less productive (Behrman 1996; Miller Del Roso and Marek 1996). This underlines the painful decision households have to make when they choose between buying food, paying school fees and purchasing health care. It takes up to 20 years and substantial expenditure to produce a highly skilled worker. There is a heavy cost to society and to a skilled worker's

extended family when he or she drops out of the labour force prematurely. This is a major cause of economic loss from AIDS (Ainsworth and Over 1994, Loewenson and Kerkhoven 1996).

A pro-poor health strategy must take the relationship between ill health and productivity into account. This raises difficult questions regarding the relative impact of diseases of adults, management of pregnancies, child health and so forth. For example, should particular attention be given to treatment of injuries and reversible conditions which are most likely to affect household production?

### 3.3 Financial Costs

The World Bank (1998) estimates that 42.6% of total health expenditure in sub-Saharan Africa (excluding South Africa) came from non-government sources in 1994, accounting for 1.3% of GDP. This included out-of-pocket expenditure, health insurance and contributions to non governmental organisations. It did not include such items as the cost of travel to a health provider. Part of this expenditure was clearly from poor households. For example, a recent household survey in Uganda found that poor rural households allocated, on average, 5% of total consumption expenditure to health and medical care (Republic of Uganda 1995).

There has been a heated debate about whether government health facilities should charge for services. Some argue that it should be possible to provide individuals with better services at the same level of private expenditure, if these charges result in improved services and/or reduced informal payments (Abel Smith and Rawal 1992). This point of view has been bolstered by a study in Cameroon which found that utilisation by the poor rose when increased charges were linked to quality improvements (Litvak and Bodart 1992).

On the other, hand, there is evidence that poor households respond to increases in the cost of health care at government facilities by using them less (Creese and Kutzin 1996; Gertler and van der Gaag 1990; Russell 1996). It would also seem reasonable to suggest that the discussion of official user charges should at least take account of the widespread illicit payments which are a common feature of public health services in many countries (Bennett et al, 1997). There is certainly evidence that poor households may simply forego health care because it costs too much. A study in Zambia, for example, found that some people turned to drug peddlers and others died without seeking medical help, after user charges were increased (World Bank 1994).

After a decade of debate, there are no simple answers regarding the role of user charges. Policy-makers must assess their impact on the poor on a case-by-case basis. The fundamental problem facing the poor is that they cannot afford many services from which they could benefit substantially. The World Bank (1993) estimates that a basic package of public health measures would cost \$12 per capita, which is a substantial sum for many poor families. The problems of poor households are exacerbated when they receive little value for the money they spend on health. For example they may travel to government health facilities which do not have drugs, or purchase doses of drugs which are unlikely to be effective (Asenso-Okyere 1998, Lucas *et al* 1996, World Bank 1994). In such cases they waste resources they can ill-afford to lose.

We need to shift our understanding of user charges from the perspective of health service managers to that of poor households (Chambers 1995). The former view user charges as one component of a new

strategy for public health finance, and the debate has been about how different social groups will react to these charges. The viewpoint of poor households is different. They can choose from a variety of public and private providers and they need to use the limited money they can spend on health services as effectively as possible. They are interested in what government can do to help them meet their needs. This reverses the question from: “Should public facilities charge for some services?” to “What should public funding subsidise?” and “How can government help poor households get value for money in health care?” Section 4 addresses these issues.

### **3.4 Opportunity Cost of Caring for the Sick**

The third element of cost of health shocks is the time carers, usually women, spend away from productive labour (Leslie 1992; Taylor *et al* 1996). Standing (1997) argues that prolonged financial constraints on public health services have put a higher burden of care on unpaid female household members. She warns against calls for community participation or community care which have hidden costs. Lesley (1992) describes concrete examples such as the design of child health care programmes which do not take into account the work patterns of mothers. There is a risk that strategies for health improvement will fail if they are based on unrealistic assumptions about the availability of unpaid household labour. This is one reason why many attempts to establish national community health workers programmes have been unsustainable (Walt 1988).

The recognition that long term care of the sick and vulnerable puts a substantial burden on households is slowly changing perceptions of the roles of outpatient and inpatient services. There has been a tendency to perceive hospitals as centres of costly, high technology care and donors have been particularly insistent in calling for a major shift of funds in favour of outpatient facilities. This neglects the role of local general hospitals as sources of basic nursing care for seriously ill people and treatments that may return some of those people to productive activity.

Many hospitals face serious financial problems, and are unable to provide adequate care for the severely ill. These difficulties have been exacerbated by the HIV/AIDS epidemic which has substantially increased the demand for hospital care. Loewenson and Kirkhaven (1996) report that up to 70% of hospital admissions in Zimbabwe are HIV-related. These problems have increased the burden on household carers. People often must choose between feeding and providing additional nursing for hospitalised family members or caring for them at home.

The present arrangements, whereby a large proportion of a country’s health workers are based in hospitals which cannot afford to provide effective services, is not sustainable (Bloom 1998). Governments may not be able to increase public funding of hospitals for some time and they may have to re-allocate resources in favour of the more basic inpatient services. A good case can also be made for the creation of alternative providers of low cost basic support to very sick or disabled people. For example, there have been experiments with community arrangements for the care of AIDS patients.

Most governments have hardly begun to consider options for reconstruction and reorganisation of their hospital services. They face difficult choices. For example, sophisticated hospitals may not be able to provide

effective specialist services unless they find alternative sources of finance. Their options include charging substantial fees for some hospital services, closing wards or even privatisation. The choice between alternatives should take into account the likely impact on access by the poor to essential inpatient treatment.

### 3.5 Household Coping with an Illness Shock

One characteristic of health care is that major illness episodes are rare but costly. The serious illness of a family member is a major shock to an entire household. It is possible to conceptualise household adaptation in three phases related to the severity of the shock (Corbett 1988 and 1989; Russell 1997; Wilkes *et al* 1997).

The household's primary adaptation consists of measures to reallocate resources and deplete reserves without substantially affecting future productivity. It may mobilise cash by running down savings, selling produce or undertaking additional paid labour to finance medical bills. If it has access to land or other productive assets, it maintains production by requiring healthy members to work more intensively than otherwise.

Poor households may even find it difficult to cope with inter-seasonal variations in income and expenditure. The rainy season is often the period of maximum risk of ill-health and minimum availability of cash. This creates barriers to access to care (Sauerborn *et al* 1996a). A study in Uganda found that households strongly prefer providers who extend credit at times of cash shortage. Fee-charging public health facilities seldom provided this facility (Lucas and Nuwagaba 1998).

Households may have access to social support from their extended family or neighbours. Mariam (1999) found that use of health services by Ethiopian households is influenced by their ability to ask for help from family members. He also found that many Ethiopians contribute to funeral societies, some of which provide moral and financial support when members fall ill (Mariam 1999). There is a precedent in Nineteenth Century Britain of funeral societies evolving to include coverage for medical care costs (Hollingsworth 1986).

Communities sometimes provide different kinds of support for different health problems. A study in Mali found that people were willing to help neighbours with their agricultural work if they had river blindness but not malaria<sup>4</sup>. Lucas and Nuwagaba (1998) found that villagers in Uganda were unwilling to provide financial help to households coping with major illness. However, they did find that people used loans from local credit associations to tide them over during a period of illness.

A number of countries have experimented with rural health prepayment schemes (Criel 1998). They have had limited success, and successful interventions have been largely dependent on substantial donor-funded technical assistance (Creese and Bennett 1997). It is particularly difficult to establish schemes which provide significant protection against the risk of major illness. One reason is that potential contributors are not confident that the scheme will last for very long. They do not believe that a contribution will result in an entitlement to future benefits. This exacerbates the problem of adverse selection, whereby the most enthusiastic contributors to schemes are people who expect to make substantial use of health services. It

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<sup>4</sup> Personal communication by Jean-Paul Azam

requires considerable efforts to establish trustworthy institutions which manage funds well and prevent powerful groups from gaining disproportionate benefits. The creation of health prepayment schemes are best regarded as long-term investments in the creation of facilities for saving, investment and insurance. In some cases it may be better to establish specific health institutions and in others to extend existing ones to cover health.

A secondary adaptation is necessary when a sickness episode (or episodes) is more severe. The household may have to choose between neglecting the sick person or compromising its capacity to withstand future shocks. The measures open to it, if it chooses the latter, include forgoing expenditure on essential inputs such as food or education, borrowing from commercial money lenders, and selling potentially productive assets. A household can recover from these measures, but its ability to withstand another shock may be reduced in a so-called “poverty ratchet” (Chambers 1983).

The tertiary adaptation consists of survival measures including migration in search of a livelihood or the reconstitution of households into less viable entities (for example an elderly person caring for young children). This has become a significant problem in regions where AIDS is widespread. Households are placed under enormous strain and traditional coping mechanisms may be reaching their limits (Ainsworth and Over 1994, Barnett and Blaikie 1992). Measures to help such households need to go beyond safety nets and be concerned with trying to restore some productive capacity to the household base.

### **3.6 The Social Impact of Major Health Crises**

One characteristic of the recent history of sub-Saharan Africa is that the population has faced a series of shocks including war and/or conflict-related movements of people, environmental shocks including severe crop failures, substantial economic adjustments, the HIV/AIDS epidemic, and the prolonged financial squeeze on the public sector (Table 10). It is impossible to separate the impact of each shock, but together they put pressure on social coping mechanisms.

One can apply the concept of poverty ratchets to communities and nations. A sequence of shocks disrupts different aspects of social coping. Prolonged stress on households reduces their ability to respond to future shocks and increasing numbers of people develop livelihood strategies outside an extended social network. This contributes to the expansion of extra-legal activities such as commercial sex and drug distribution with attendant health risks.

Continued pressure on extended families and communities reduces their capacity to support stressed households and individuals. Large movements of people create densely populated rural encampments or urban settlements where people are exposed to health threats and social coping mechanisms are eroded. Deterioration of public administration reduces the state’s capacity to protect households against future shocks. All these factors increase the risk that households will be impoverished by a serious health problem. The capacity of communities to provide support during times of stress can be stretched so much that it becomes compromised. This may already have happened in areas which have experienced repeated civil disturbance, population movements and economic decline.



Health crises follow and amplify other social stresses at a societal as well as individual level. The major cause of fatality in the Darfur famine, in Sudan, during the mid-1980s, was a series of epidemics, resulting from the concentration of people in areas without adequate sanitation and clean water (de Waal 1989). These outbreaks aggravated the effort to recover from the initial shock. One can tell similar stories about the social and health impact of conflict and major socio-economic adjustment (references).

The people of much of sub-Saharan Africa are vulnerable to health crises. The HIV/AIDS epidemic has increased their exposure to infectious diseases and reduced their capacity to cope with them. It is difficult to contain health crises within specific communities. An epidemic that starts amongst the poor can spread to other social groups within or outside a country, and thereby amplify the impact of a local shock. It is particularly important to take measures to reduce the risk of major outbreaks of illness during periods of socio-economic stress.

### **3.7 Measuring the Burden of Disease on the Poor**

The purpose of this section was to demonstrate the many ways that illnesses affect individuals, families and entire populations. The measure of the benefits of an intervention in terms of DALYs is a useful assessment of its impact on health. However, it provides insufficient information on, for example, the impact on poverty. It is necessary to supplement epidemiological data with data on other key aspects of well-being of the poor in determining health sector priorities. More information is also needed on the impact of ill health on different groups amongst the poor, such as women and girls. The most important source of information on these issues is likely to be the people most affected.

## **4. MEETING THE NEEDS OF THE POOR IN A PLURALIST HEALTH SECTOR**

### **4.1 Introduction**

Discussions of international health policy have focused on the identification of interventions which have the potential to reduce the burden of ill-health cost-effectively. The underlying assumption is that governments are in a position to define and implement policies that would make such interventions available to the poor. In fact, most governments in sub-Saharan Africa have only limited powers to influence the activities of an increasingly pluralistic health service. This section describes the present situation of health services and identifies the major elements of a realistic government pro-poor health strategy.

### **4.2 The Divergence between Post-colonial Vision and Current Reality**

The health development strategies of most African countries were based on a shared vision of a health sector in which households and communities provided basic social support and voluntary labour for public health activities, and government provided and financed services requiring specialist knowledge, drugs and equipment. To attain this goal more rapidly, many countries trained large numbers of so-called “health assistants”, who could provide basic services within the public sector but only under the close supervision of

more highly qualified staff. In some countries civil society organisations and/or private providers also had a recognised role, but this was seen as strictly complementary to public sector facilities.

The current reality in many countries differs radically from expectations: a diverse range of providers, from drug peddlers to specialist doctors, provide a spectrum of services (frequently unsupervised and unregulated); people obtain drugs and medical items from a wide variety of public and private sources; and users pay a combination of fees and informal charges for most services, including those provided by government. The emerging pluralistic health sector increasingly resembles a weakly regulated, publicly subsidised, market (Leonard 1999). Many national health development strategies do not acknowledge this situation adequately.

Policy debates parallel the divergence between vision and reality. There is a great deal of support for proposals to increase government and donor spending on cost-effective health services. However, questions are being raised about these proposals, citing studies showing no relationship between public health expenditure and mortality (Filmer and Pritchett 1997). The existence of diametrically opposed policy conclusions suggests the need to look beyond simplistic notions of health sector development and reform.

Most public health services provide limited benefits to the poor. Many studies indicate that poor households have serious problems with access and that the services they use are inefficient and relatively ineffective. Though inadequate funding is clearly a major factor, it is not clear that simply increasing resources in the absence of structural change will greatly improve this situation (DANIDA, 1998).

Governments and donors could respond to the poor performance of public health services by further withdrawing support for health care. In doing so, they would be acknowledging that their previous investments in infrastructure, personnel and system development were mistaken. They would also be rejecting one possible avenue for providing poor households with access to services that could substantially improve their health and economic status. Service provision can make a difference. Data from Zambia, for example, suggest that access to basic MCH care is associated with lower childhood mortality (Simms *et al* 1998). Peters *et al* (1999) found a similar relationship between supervised delivery and infant mortality in African countries. The menu of cost-effective interventions derived from analysis of DALY reduction could substantially improve health (section 3). Modifications are required to emphasise the needs of the poor but its existence testifies primarily to lost opportunities.

The present situation will not be transformed by simply increasing funding of government health services. It is no longer plausible to believe that the post-colonial vision can be restored. What is needed is a systematic approach that identifies plausible strategies for meeting the needs of the poor, based on a realistic assessment of the existing health sector, both public and private.

### **4.3 The Health Sector after Structural Adjustment**

The changes in Africa's health sector have partly been due to increases in the supply of health-related goods and services. During the past thirty years many countries have created a network of health facilities and trained large numbers of health workers. Systems for distribution of goods, including health-related ones,

have developed considerably. A large proportion of the population now lives within walking distance of a health worker and a supplier of health-related commodities.

The economic crisis of the 1980s, and the resulting economic and institutional changes, accelerated the marketisation of the health sector. Public health services experienced prolonged financial constraints. One of the most extreme examples is Zambia, where real health expenditure *per capita* fell by 46% between 1970 and 1981 and by a further 44% over the subsequent decade (Bloom 1996). Many other countries experienced large falls in real expenditure (Cornia and Mwabu 1997). Some governments magnified the impact of these falls by acting as if they would soon be reversed: reducing expenditure on maintenance and non-salary operating costs disproportionately, maintaining staffing levels when total spending on salaries was falling; and trying to sustain all services, rather than protect the most essential. The common outcome is run down, ill-equipped facilities, shortages of drugs and consumable inputs, and personnel who have worked for inadequate pay with little supervision for years.

The health sector's difficulties have been compounded by problems with government finance and public sector organisation (Nunberg and Lindauer 1994). Many public services cannot pay adequate salaries. Government employees commonly have few incentives to perform well, and many have developed livelihood strategies that imply they no longer function as full-time, salaried officers. Supervisory functions have broken down because of a lack of transportation and effective communications and because supervisors prefer to spend their time on other activities. The capacity of many governments to discharge their core responsibilities has been severely impaired (World Bank 1997). This has contributed to a formal and informal marketization of government services. It is now accepted practice in many countries for government health workers to ask patients for informal payments (Assimye et al 1997b).

It is important to understand these changes from the perspective of poor households. The major barriers to access to effective health care for such households are an inability to pay for many goods and services, particularly during an episode of serious illness, and a lack of quality control. While some may still travel a long distance to reach any form of health facility, others confront a bewildering variety of public and private care providers and drug suppliers. In most localities there is no effective regulation and public health laws are widely ignored. Users find it difficult to assess the competence of different practitioners, many of whom have had relatively little training. They do not have access to reliable advice on the most cost-effective way to deal with particular health problems and frequently have to rely on their own judgement. What little money they have available is thus often wasted on inappropriate or unnecessary treatment. The result of decades of public investment in health facilities and training is often a market which does not deliver basic reliable, cost-effective services to poor people.

The remainder of this paper highlights questions which African governments, stakeholders and donors must address in formulating pro-poor health strategies. There are no outstanding national models of excellent practice for them to emulate. They need to develop a realistic approach to the assessment of options for meeting the needs of the poor. In doing so they can create a new vision for the pluralistic health system that has emerged.

#### **4.4 What Functions Must Government Perform?**

Once governments acknowledge they are not the only provider of health services, they must identify their specific responsibilities more clearly. At a minimum they have to strive to achieve the following: (i) enforce public health regulations, (ii) assist communities to dispose of human wastes and provide access to clean water, (iii) organise programmes to reduce exposure to malaria, tuberculosis, sexually transmitted infections and water-borne epidemic diseases, (iv) enforce regulation of health practitioners, drugs and other products, and (v) provide information to enable people to cope with health problems more effectively and make better use of the available resources.

Many countries do not come near to meeting these objectives and any strategy must give them priority. This will be difficult to achieve unless governments are able to pay suitably skilled personnel competitive salaries and finance the other costs of providing these services. Reforms to health services, public sector employment and public finance are thus inextricably linked.

There is a considerable debate about what should happen to other government health services. One option would be to increase public finance substantially so that all existing employees can be paid appropriate salaries. As a variant of this, government budgets could be supplemented by substantial user charges for certain non-essential services. For example, government health facilities could earn revenue by selling over-the-counter drugs. Alternatively, the number of public employees could be substantially reduced and the range of services provided strictly limited. People would seek other services from an increased number of private sector organisations and individuals, in some cases operating under a contractual arrangement with government. There is little solid evidence upon which to base a choice between these options.

#### **4.5 What Health Services Should Government Finance?**

According to World Bank (1993) estimates, a package of essential health services cost \$12 per person in 1990. That year, many African countries spent less than half that amount on health. Since then, major socio-economic shocks due to factors including conflict, crop failures and widespread drought, and the HIV/AIDS epidemic have, if anything, increased health care needs. Governments will have to increase their health budgets substantially if they seriously intend to address the health problems of their population. This will require long-term commitments by governments and international donors.

Public expenditure reviews consistently find imbalances in spending on (i) new construction, maintenance and recurrent expenditure, (ii) personnel and non-personnel inputs, and (iii) referral facilities, general hospitals, basic health facilities and preventive programmes (Peters *et al* 1999). These imbalances indicate government unwillingness to prioritise expenditure.

Government health expenditure frequently favours the better off. A study of South Africa, for example, found that public health expenditure was lower in poorer census districts (McIntyre *et al* 1995). A recent study of nine African countries found that the richest 20% of the population received, on average, over twice as much financial benefit from public health expenditure than the poorest 20% (Castro Leal *et al* 1999) This

underlines the need for more active measures to ensure that increases in public health budgets are linked to measures to ensure it is spent on services the poor use. There are a variety of strategies for achieving this.

Governments can allocate resources preferentially to providers of basic services for the poor, such as primary level facilities and basic general hospitals (Segall 1991). Mozambique, for example, prepared a post-war rehabilitation plan which projected a change in the allocation of recurrent expenditure between categories of health facility and between geographical areas (Noormahomed and Segall 1994). The aim was to improve services which meet the health needs of the poor as quickly as possible.

It is more difficult to plan health expenditure in countries where local governments finance basic health services. Each authority has the right to establish its own priorities. Also their capacity to finance health services depends, to some extent, on their ability to raise revenue. Regional inequalities are likely to increase unless specific measures are taken to prevent this from happening with substantial fiscal transfers from national level. It also may be necessary to establish minimum standards for the availability of facilities, personnel and other resources.

Another way to reach the poor is to allocate resources to particular health problems. Many governments preferentially fund preventive programmes and the treatment of illnesses which can spread to others, such as tuberculosis and sexually transmitted infections. They need to find ways of supporting potentially cost-effective interventions without creating a multiplicity of vertically organised programmes. Donor-funded programmes of this kind tend to be expensive and unsustainable (LaFond 1995). Mechanisms need to be found to ensure that programmes are funded without creating complicated administrative systems.

Countries also target poor households. For example, when they increase user charges they exempt those who cannot afford to pay. These provisions are often not translated into practice (Russell and Gilson 1997). This is partly because health facilities have little incentive to provide services free of charge and partly because the administrative arrangements for identifying the destitute may be complex and time consuming.

Different targeting arrangements are appropriate for different kinds of services. It is simpler to subsidise certain highly cost-effective services universally on the grounds that the benefits of ensuring that few people are denied access outweighs the loss of revenue from people who could pay. Services which address particular health problems of the poor and facilities which other social groups are unlikely to use are most appropriate for this treatment.

Other services may be too costly to provide on a universal basis. It may be better to charge for some kinds of hospital care and establish mechanisms, no matter how imperfect, to enable people to claim exemptions. This will certainly exclude some people from services from which they could benefit. However, this may be necessary if alternative uses of scarce government resources would provide greater benefits.

Many governments provide civil servants with highly subsidised health care in public hospitals. The Ministry of Health is often expected to finance this benefit from its budget. This is a source of pressure for a continuation of funding of the more sophisticated hospitals. One step governments could take to make policy-making more transparent would be to establish a health insurance fund to cover some or all of the cost of services in designated facilities for government employees. The government could encourage the

fund to explore strategies for improving the cost-effectiveness of services. For example, beneficiaries could be discouraged from using the outpatient departments of the referral hospitals.

Most governments have been unwilling to address the consequences of shifting public funding away from certain services. Many hospitals have had to cope with decreasing government grants. They have found it increasingly difficult to provide effective services and case fatality rates have risen in some cases. Most governments have hardly begun to consider options for reconstruction and reorganisation of their hospital services. They face difficult choices which include: closure of some specialist services or charging substantial fees for them, closing facilities, or privatising them. In choosing between alternatives, they need to take into account the potential benefits to patients who can afford to pay for the improved services and the likely impact on access by the poor to essential inpatient treatment (Bloom 1998). It will be very difficult to increase charges for hospital services substantially, without providing people earning more than subsistence income with the opportunity to purchase hospital insurance.

#### **4.6 What Can Government Do to Ensure that Cost-effective Services Are Available?**

One of the major characteristics of the health sector in Africa is government's limited ability to influence provider behaviour directly. Strategies to make health services more cost-effective must combine action by government and other stakeholders.

There is a great deal of evidence that public health services are inefficient. Measures to improve their performance would include rationalisation of staffing levels, more efficient procurement and distribution of drugs, and better management of health care technology.

The poor obtain a large proportion of their health services from poorly trained personnel, who were trained on the assumption they would work under close supervision. Things have not worked out that way. One of the greatest challenges the African health sector faces is to establish mechanisms to protect the population against incompetent health advice. Strategies for achieving this will combine: training for health workers in the provision of effective and cost-effective treatment; improved management of clinical practice in public facilities; increasing involvement of NGOs in service provision; strengthening the capacity of local government health services to regulate service providers; and increased involvement of professional organisations and local communities in monitoring service quality.

It will take a long time to establish an effective regulatory regime. In the meantime, government can help households make better informed decisions by providing reliable information. People can already purchase almost any drug from local retailers. They would benefit a great deal if they knew how to treat common conditions such as cough, fever and diarrhoea. The government could provide this information through a number of channels and they could insist that drug sellers and health facilities put relevant posters on their wall. This would enable individuals to make better use of their limited resources. Government could also provide information on the performance of local health providers in terms of health outcomes and cost. This would enable the local population to make more informed decisions in choosing providers.

#### 4.7 How Can Households be Helped to Cope with Health Shocks?

Table 14 summarises measures which government can take to prevent major health shocks, assist households to cope with them, and help highly stressed households and communities survive a crisis. There has been an increasing interest in the possibility of creating local health insurance schemes. To date, many of them have been supported by donors and questions have been raised about their sustainability. There are a wide variety of local arrangements to protect individuals against serious health shocks. They vary from well-organised transfers of resources within households and extended families, to funeral societies and informal understandings within communities. Governments need to find ways to build upon these initiatives to strengthen their ability to support households.

There has been a great deal of interest in strategies to make saving and access to credit easier for the poor. The availability of credit is a major factor in their choice of health care provider. Households will be much less exposed to risk of impoverishment from a serious disease if they have better ways to manage inter-temporal resource allocation. Governments should continue to support the very unfortunate and destitute who have no means of taking care of themselves.

**Table 14. Measures to reduce the impoverishing impact of health shocks**

Prevention of major shocks	<ul style="list-style-type: none"> <li>· decrease risk of major illness by strengthening preventive programmes</li> <li>· improve access to effective health services by subsidising essential services, reducing inefficiencies and improving quality</li> <li>· strengthen the capacity of household carers to support the sick by providing relevant information and access to drugs and other inputs</li> </ul>
Improved coping	<ul style="list-style-type: none"> <li>· improve local markets for savings and credit to enable households to manage lumpy expenditure and life-cycle expenditure patterns</li> <li>· strengthen existing mechanisms to support households coping with health problems by establishing health prepayment schemes</li> <li>· subsidise basic hospital inpatient services and support the establishment of low cost mechanisms to support the severely ill (such as community nursing homes)</li> </ul>
Survival measures for highly stressed households and communities	<ul style="list-style-type: none"> <li>· safety net arrangements to meet the cost of essential health care for the very poor</li> <li>· interventions to restore the productive capacity of households coping with disability or loss of family members</li> <li>· emergency measures to help communities or concentrations of people cope with crises such as crop failures, war, and so forth</li> </ul>

#### 4.8 How Can Providers be Made More Accountable for their Performance?

In many countries, health service providers are virtually unsupervised and additional funding from government or donors could simply result in higher incomes for them. This underlines the need for measures to make providers more accountable. The government has a major role to play in supervising and regulating health services. In order to achieve this, it will have to employ enough people with the necessary skills and provide them with sufficient resources to carry out their responsibility. It will also need to recreate a situation in which people responsible for these tasks perceive themselves as representatives of the public good. It may take a considerable amount of time for governments to establish such a capacity in areas where poverty levels are high.

There is increasing interest in the potential role of community organisations in monitoring the use of government and donor funds and overseeing the performance of service providers (Loewenson 1999). This might be approached through the establishment of formal community structures and/or informally by making information more widely available. In both cases, it will be necessary to train representatives in the use of relevant information to monitor health services and intervene when problems arise. Health workers will have to become accustomed to negotiating with users of their services. The success of this kind of initiative may be linked to society-wide democratisation efforts.

#### **4.9 Conclusions**

Governments will have to lead the adaptation of the health sector to the new economic and institutional realities. In doing so, they need to keep sight of the objectives of pro-poor development and the constraints to achieving them. Changes can only be justified to the population if they lead to improved access to services of reasonable quality. Also health workers must feel that their aspirations will be met.

Governments have limited control over the performance of health providers or individual health workers. They have to negotiate changes. Some countries have concentrated excessively on developing a vision of how the health sector may evolve and creating central management structures, whilst neglecting measures to meet the needs of the public or address the problems of health workers. This can lead to lack of popular support and there are examples where the change process has collapsed.

Health sectors in sub-Saharan Africa face enormous challenges in addressing the unmet health service needs of the poor, while coping with the problems left by years of serious financial constraint. There are no models or prescriptions for addressing these challenges. However, there are examples of good practice in many places. For example, even though Zambia has been specifically identified above as having suffered one of the worst declines in health status over the 1980s and 90s, some districts in that country have much better health experiences than the national average. The new vision for pro-poor health services will emerge from a process of listening to the needs of the poor, learning from mistakes and applying lessons from good practice models to address these needs.



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## THE HEALTH AND SOCIAL CHANGE PROGRAMME AT THE INSTITUTE OF DEVELOPMENT STUDIES

### **What is the Health and Social Change Programme?**

The Health and Social Change (HSC) Programme is an initiative to generate innovative thinking on health policy for a rapidly changing world. It has been launched by a group of researchers and policy analysts based at the Institute of Development Studies, an international centre of expertise on social and economic development. We are committed to the goal of improving health in some of the poorest areas of the world, with a particular focus on women and children, by expanding access to the benefits of health care technologies and knowledge. Our aim is to stimulate a thorough rethinking of health sector strategies for achieving this goal.

The HSC Programme co-ordinates the *Health and Social Change Partnership* - an international network of researchers, health sector stakeholders and decision-makers linked by a commitment to common goals and a willingness to look beyond current orthodoxies for ways of achieving them. It developed out of a recognition that we need new strategies for generating knowledge in the present circumstance of accelerating social change. Many innovative approaches are emerging out of the experience of grappling with issues at first hand. The partnership provides a framework for sharing those experiences, testing new ideas and systematising new knowledge.

### **What do we do?**

The HSC Programme operates to facilitate the development of new strategies for improving health and health services through:

- Knowledge generation
- Regional and international workshops and dissemination of innovative ideas
- Working with policy makers, planners, civic structures and groups of stakeholders to develop strategic analyses and implement “good practice”
- Provision of training and technical support in operational research and policy analysis

### **What are the programme’s major themes?**

As we enter the new millennium, the international environment is characterised by major discontinuities, unpredictability and inequalities of wealth and access to basic resources. Many countries substantially improved their population’s health, over the past half century, by implementing commonplace environmental measures and providing access to basic health services. However, millions of the world’s poor still do not have their most basic needs met.

Endemic conflict, epidemics, demographic changes and the impact of globalisation and economic change have affected national and regional capacities to sustain viable social sector policies. The relationships between governments, civil society organisations, communities and households are changing rapidly. Gender and intergenerational relations are undergoing profound transformation. In many of the poorest countries, the public sector has become degraded and health services are in severe crisis. The achievements of reforms to public health services have been modest in these countries.

The challenge is to reinvigorate the social sector in the context of a radically altered economic and institutional environment. Many examples of fresh thinking and innovation exist. What often distinguishes them is an appreciation of the dynamic nature of the economic and political landscape and the need to engage with a wide range of stakeholders in forging pro-poor alliances, rather than a prescriptive, top-down approach to health sector development. The work of the HSC Partnership will contribute to this process through the following three themes:

- **Health pluralism - rethinking the nature and scope of the health sector**

The public sector is no longer the principal provider of services in most poor and transitional countries. There has been a burgeoning of alternative sources of health care. Many of the poor now obtain services from a mix of unpaid carers in the household and community, traditional and religious healers, drug sellers, unqualified informal providers, and a variety of trained health workers operating in a mix of public and private modes, often outside any regulatory system. The public sector, itself, has changed considerably and government employees frequently depend on informal payments for their living.

This unregulated proliferation of providers has brought with it high transactions costs for users. Also households often bear major financial burdens if a family member falls seriously ill. There are important gender and inter-generational implications in terms of how health care is produced and consumed. In this complex health care environment, we need to rethink the relative roles of households, communities, civil society organisations, markets and governments in meeting health needs. In particular, governments need to formulate effective strategies for supporting pro-poor health development.

- **Participation and accountability “from below”**

It is vital that those who are the subject of policies have a voice in shaping them. Community-based organisations and civil society stakeholders can play an important role in consulting with users on their needs and priorities, managing services and monitoring the performance of service providers. This offers an exciting potential strategy for increasing effectiveness, service quality and equity of access. However, many questions need to be addressed. What kinds of partnerships and coalitions are needed to negotiate new social contracts with civil society? What systems of accountability for health services work in the context of different forms of decentralisation? How can processes of participation be made genuinely inclusive and enabling of the poor?



- **National and international negotiations on pro-poor policies for the social sector**

International donors have increasingly become co-funders of health services in very poor countries. Efforts to establish sector wide approaches and social action funds recognise this fundamental change. These models of donor support emphasise partnerships between governments, donors and civil society. The success of such a strategy depends on the existence of mechanisms to ensure that resources are used for the benefit of local populations and particularly poorer people. Donor agencies need to rethink their management approaches to take into account their new role and the changing nature of health systems.

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- Health and Poverty in sub-Saharan Africa, Gerald Bloom and Henry Lucas, with Mungai Lenneiye and John Milimo, Working Paper 103, 2000 £9.95 44pp 1 85864 287 6

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- Financing Health Services in China: Adapting to Economic Reform, Tang Sheng-Lan, Gerald Bloom, Feng Xue-Shan, Henry Lucas, Gu Xing-Yuan, Malcolm Segal, with Garth Singleton and Polly Payne, Research Report 26, 1994, £24.95 163pp 1 85864 022 9
- Quality of Public Health Services and Household Health Care Decisions in Rural Communes of Vietnam, Research Report 27, Gill Tipping, Truong Viet Dung, Nguyen Thanh Tam, Malcolm Segal, 1994 £9.95 52pp 1 85864 032 6
- Economic Reform, Poverty and Equity in Access to Health Care: Case Studies in Viet Nam, Research Report 34, Malcolm Segal, Gill Tipping, Dao Xuan Vinh, Dao Lan Huong, 1999 £14.95 72pp 1 85864 253 1

### IDS Bulletins

- Accountability through Participation: Developing Workable Partnership Models in the Health Sector, IDS Bulletin Vol 31 No 1, edited by Andrea Cornwall, Henry Lucas, Kath Pasteur, 2000 £11.95 112pp
- Health in Transition: Reforming China's Rural Health Services, IDS Bulletin Vol 28 No 1, edited by Gerald Bloom and Andreas Wilkes, 1997 £11.95 120pp