Chapter III
HEALTH

1. This section will cover some global health issues that have come to the fore in recent years. These include changes in life expectancy, particularly in Africa and the transition economies (where there has been a decline), an assessment of the burden that ill health places on the world, and the emergence of new infectious diseases, which is making global cooperation in health a priority and the costs of neglecting public health systems obvious.

A. Life expectancy

2. One measure of global health is life expectancy. According to the recently revised World Population Prospects produced by the United Nations, life expectancy rose from 63.1 to 64.3 years between 1985-1990 and 1990-1995.[1] In Asia the increase was 1.9 years. Between 1975-1980 and 1990-1995 life expectancy rose six years in Asia as a whole and nine years in South-East Asia. Even in North America and Europe further increases of about three years were seen in this period, up from the already high rates of more than 73 years.

3. As a result of better diets, more effective provision of medical care, particularly preventive care, and the discovery of new medicines, life expectancy should increase over time. Even in Japan, the country with the highest longevity, progress is still being recorded. Between 1980-1985 and 1990-1995 life expectancy increased overall by 2.6 years, from 76.9 to 79.5, with men increasing their life expectancy from 74.2 to 76.4 years, and women from 79.7 to 82.4 years. It is, then, of particular concern when countries with levels considerably below those recorded elsewhere show decreases in life expectancy. This situation has emerged most clearly in the past few years in sub-Saharan Africa and Central and Eastern Europe.

1. *Life expectancy in Africa*

4. Of the 15 African countries where life expectancies fell, only Kenya, Malawi, Uganda and Zambia showed a fall between 1980-1985 and 1985-1990 (table 3.1). Some of the other African countries registered improvements of more than one year in this period. In no case, however, had there been an increase of more than two years, which was the average improvement in Asia. Moreover, the life expectancies of 1985-1990 were low to begin with. Only in Botswana, Kenya and Zimbabwe was life expectancy above 55 years (the lowest of the developing country regions shown in table 3.1). In some countries the falls after 1990 were so sharp that they dragged rates of life expectancy below 1980-1985 levels.

5. Apart from war, which had a great effect on the figures for Liberia, Rwanda and Sierra Leone, AIDS[2] has been the main reason for declines in life expectancy. Because those infected are often young adults, not the elderly, countries are losing the contribution that they (and those caring for them) could make to economic activity. Also, countries have to make difficult choices about where to devote the scarce resources available for the prevention and treatment of diseases. Even though some drugs, such as Azidothy Midine: Zidovudine: retrovir (AZT), have been somewhat successful in treating (though not curing) patients with AIDS, their cost and that of the newer drugs being developed are beyond the means of the health services of poorer developing countries. These dilemmas are becoming more acute, as these countries will have to devote greater resources to other infectious diseases, which, it had been earlier thought, had been largely conquered.

2. *Life expectancy in countries with economies in transition*

6. In the countries with economies in transition the decline in life expectancy is starting from about 70 years, and cannot be so easily identified with a single illness, such as AIDS. The decline also took place after a plateau had been reached at a much earlier date than in other comparable countries (figure 3.1).

7. Figure 3.1 shows that Portugal and Spain now enjoy considerably greater longevity than the transition economies: 74.4 and 77.3 years, respectively, compared with 68.2 for Eastern Europe as a whole. These two countries had seen steady increases in longevity, whereas the improvement ceased in the former Czechoslovakia and the former Union of Soviet Socialist Republics as early as 1960-1965 and in Romania in 1975-1980.

B. Special features of the countries with economies in transition

8. These developments may at first appear surprising, since most of the Central and Eastern European transition economies had built extensive health infrastructures of medical and pharmaceutical personnel and delivered care in greater quantities than that in many developed market economies.[3] Unlimited and free medical care was a right guaranteed by the constitution and financed by the State budget. Structurally integrated networks of hospitals, clinics and other clinical facilities secured universal access to curative health services throughout the region. A highly structured system of hygiene and epidemiology stations formed an integrated network of public health services, which concentrated on the control of infectious, occupational and environment-related diseases. Regular check-ups in workplaces meant that individuals could not slip through the health care net by simply avoiding the doctor's office. Instead, health-threatening conditions were diagnosed and, presumably, treated.

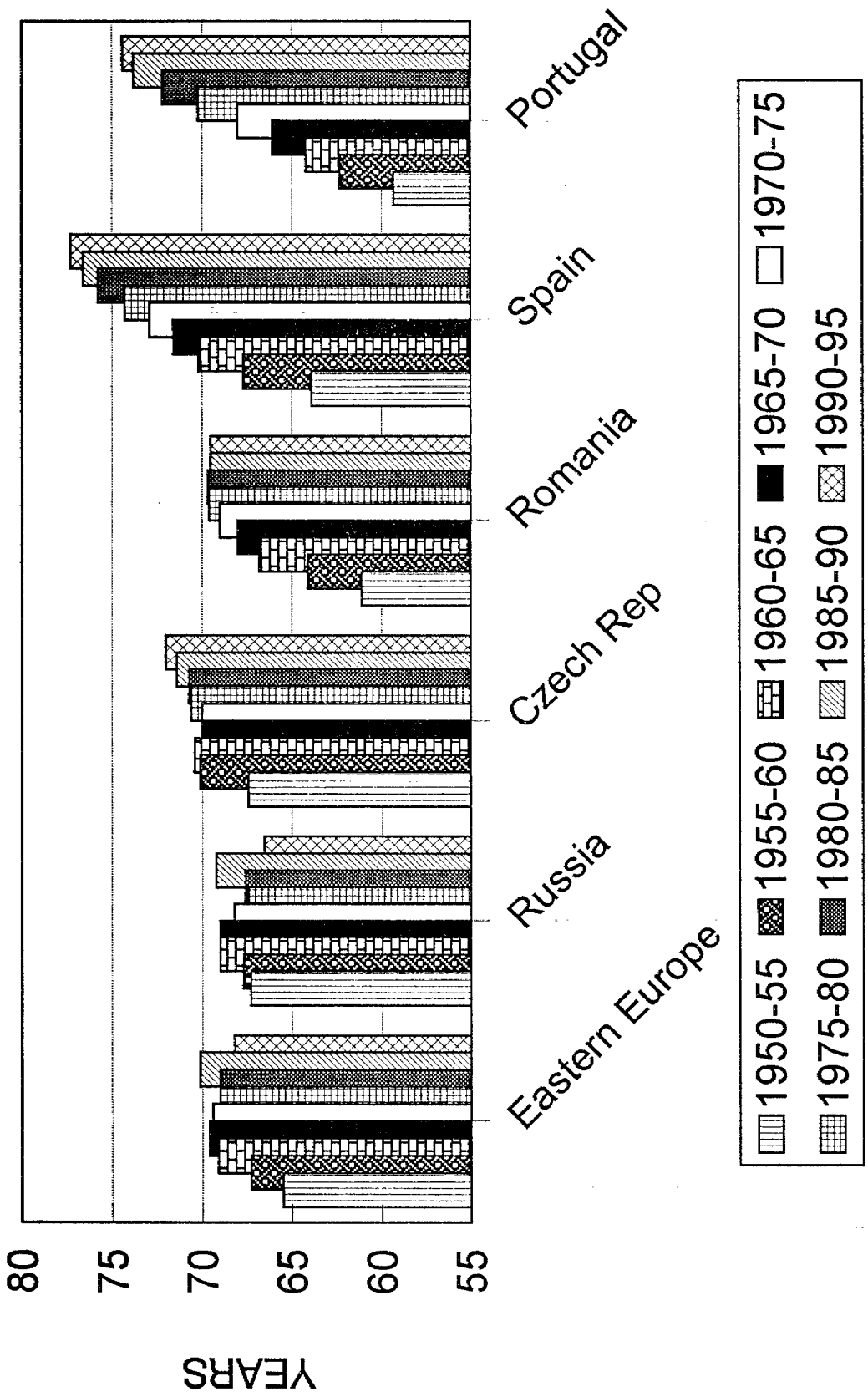
9. This system initially increased life expectancy. Simultaneously, there was a swift decline in mortality from infectious, parasitic and respiratory diseases, injury, poisoning and other causes. Improvements in health conditions were particularly pronounced for infants and young children, brought about by a rapid expansion of

TABLE 3.1. SELECTED COUNTRIES SHOWING DECREASES IN LIFE EXPECTANCY, 1980-1985 TO 1990-1995

Country	*1980-85*	*1985-90*	*1990-95*
Africa			
Botswana	59.8	61.0	54.3
Burkina Faso	44.9	46.6	46.5
Burundi	47.8	48.3	44.6
Congo	50.8	52.2	51.5
Côte d'Ivoire	50.4	52.2	52.1
Kenya	55.8	55.7	54.1
Liberia	51.5	53.5	39.4
Malawi	45.0	44.9	42.0
Rwanda	46.3	46.7	22.6
Sierra Leone	35.5	36.9	34.4
Togo	50.5	52.3	51.0
Uganda	47.0	43.7	41.0
United Republic of Tanzania	50.8	51.0	50.4
Zambia	51.3	49.6	44.2
Zimbabwe	55.9	56.3	50.7
Asia			
Kazakstan	66.9	68.6	67.7
Tajikistan	65.9	68.5	67.2
Uzbekistan	66.6	67.7	67.5
Economies in transition			
Albania	70.4	72.0	70.9
Belarus	70.7	71.3	69.7
Bulgaria	71.4	71.6	71.2
Estonia	69.6	70.4	69.5
Hungary	69.1	69.4	69.0
Latvia	69.3	70.2	68.4
Lithuania	70.8	71.7	70.4
Russian Federation	67.6	69.2	66.5
Slovakia	70.6	71.0	70.8
Ukraine	69.4	70.4	68.8
Memo item:			
Czech Republic	70.7	71.4	72.0
Poland	70.9	70.9	71.1
Republic of Moldova	64.8	67.3	67.6
Romania	69.7	69.5	69.5

Source: United Nations, World Population Prospects: 1996 Revision, (New York, United Nations Publication, forthcoming).

Figure 3.1. Life expectancy



basic and low-cost, highly effective, maternal and child health services.

10. However, the system's ability to function effectively was limited by numerous funding, management and incentive problems. Moreover, it had to struggle with some health problems that resulted largely from the deficiencies of the socio-economic system, including environmental pollution. With an unsanitary and often hazardous working environment, and few incentives to extra effort, workers often found escape in alcohol, tobacco and even suicide. Furthermore, diets were often poor. The death rate for middle-aged men rose markedly, with heart disease, cardiovascular disease, lung cancer, alcohol-related traffic accidents and alcoholic cirrhosis of the liver leading the causes of death.[4]

11. Life expectancy improved in 1985-1990. In the Russian Federation, this improvement has been partly attributed to the anti-alcohol campaign of 1985-1987. Russian statistics show that deaths from the broad category, "accidents, poisoning and injuries", which are often alcohol-related, fell between 1985 and 1987, and rose sharply after 1991.[5] Another possible cause for the improvement in life expectancy in the countries of the former Soviet Union, although more difficult to document, was psychological relief. *Glasnost* and *perestroika* led to an optimistic belief that living conditions would change for the better, that greater freedoms would be enjoyed and that, after years of stagnation, economic activity would revive.

12. But after 1990 the health situation deteriorated sharply. The crude death rate rose between 1985-1990 and 1990-1995 from 11.0 per 1,000 to 12.6 per 1,000 in Eastern Europe (including the Russian Federation and Ukraine). For the entire period 1989-1993 the total increase in deaths over the 1989 figure was estimated to be 1.4 million.

13. In any event it would be difficult to provide a fully satisfactory explanation for this surprising and tragic development. Part of the problem lies in categorizing the cause of death: What caused a heart attack? How many accidents at work or on the road were due to alcohol? The situation varied across countries in transition. However, the shock and stress caused by the transition, in which individuals lost the stable support mechanisms that had guaranteed them an assured, if fairly low, standard of living, suggest a psychological explanation, in the same way as the earlier improvement in life expectancy can be partly attributed to optimism. Old certainties suddenly disappeared and living standards slipped for many people. What was more, many of the changes seemed inequitable: those suffering from the transition could see the conspicuous consumption of others who had suddenly, and many thought illegally, acquired the assets of the old system (or were benefiting, perhaps also illegally, from opportunities being generated in the new situation).

14. Yet, in some transition countries, including the Czech Republic and Poland, there was no decline in life expectancy. The causal relationships between transition, stress and early death are clearly complicated. Account must be taken of how the transition affected different groups in society, what coping mechanisms they developed and what support, psychological and otherwise, they received.

15. The differences among countries show that it is difficult to generalize about the relationship between stress and transition. One statistic that would be expected to reflect stress is suicide. Suicide rates have been high, but have varied considerably: the rates were higher in Lithuania (more than 70 per 100,000 men) and the Russian Federation (66) than in Ukraine (38).[6] The rate for men in Poland (24) was half that of Hungary (58). Moreover, the overall rate for Poland (14) was considerably less than that of many developed countries, including Finland (30), France (20), Germany (17) and Japan (16), and the rate for women (4.4) lower than that of almost any developed country.

16. A predominant proportion of the increase in deaths, ranging from 32 to 80 per cent, is explained by heart and circulatory diseases, including strokes, ischaemic heart disease and other cardiovascular diseases. "External causes" of death, including poisoning, accidents, suicide and homicide, explain a sizeable part of the increase in the crude death rate in the Russian Federation, Ukraine and, to a lesser degree, Hungary. Cancer accounts for an important, but not a dominant part of the increase in the crude death rate.

17. The relaxation of hygiene and quality controls that took place during the transition in some countries has increased deaths due to food and alcohol poisoning.[7] Moreover, there was an increase in unauthorized sales of alcoholic home-brews, which heightened the risk of alcohol poisoning, as well as alcohol psychosis, cirrhosis of the liver and heart disease. Official numbers of registered alcoholics have recently shown a declining trend in most transition economies, though this decline is due to weakening controls and to fewer resources being available for treatment centres and health monitoring units.[8]

18. After more than 40 years of decline, mortality due to infectious and parasitic diseases tuberculosis, diphtheria, hepatitis, viral meningitis, which, it was thought, had been eradicated from the European continent escalated again in transition economies. The re-emergence of these infectious diseases has been attributed to the breakdown of the previous health care system and to the population's new mobility, those from the remoter parts of a country moved to the cities in search of employment, thereby evading the health monitoring services.

19. The picture in the transition economies is further complicated by the fact that other indicators have continued to improve, indicators which would be expected to deteriorate if the health system itself deteriorated. This is the case with the provision of health services to the young. In most countries infant mortality rates have continued to decline.[9] Indeed, part of the explanation for the increase in Poland's life expectancy has been a significant decline in infant mortality.

20. Because of the problems with the previous health care system, reform proposals were formulated early in the transition. So far, however, these reforms have progressed little, partly because of the budgetary crisis. Budgetary pressures forced transition economies to place greater emphasis on allocating resources efficiently among levels of care. In the new model the principal health provider is the family doctor, a general practitioner who is selected by patients.[10] Since these doctors will act as filters for specialized care, this shift should allow important cost reductions, as well as greater flexibility and efficiency at both primary and secondary levels.

21. Health administrations in transition economies hope to introduce cost-recovery measures and incentives for medical staff through performance-related compensation schemes within the public sector. Per capita payments for family doctors and for specializing in particular ailments, as practised already in Hungary, may provide better incentives and resource allocation without increasing health expenditures of the central budget.

22. Another means of alleviating the acute financial crisis affecting health institutions has patients bearing a rising share of health costs. The introduction of fees, combined with sharp increases in the prices of pharmaceuticals and other medical supplies, could adversely affect access to health care, especially for low-income patients.

23. Most transition economies are aiming to shift health care financing away from the State budget through either compulsory work-related health insurance, financed by employer and employee contributions; the creation of an off-budget account, funded by earmarked taxes; or the creation of separate health (and pension) accounts, financed by employer and employee contributions.[11] Still another method of reform in Central and Eastern Europe has been to privatize parts of the health care system.

C. The global burden of health

24. In all countries policy makers have an opportunity to redesign their health services and health financing systems and to show citizens how to protect their own health. Yet the transition economies and other countries suffering from economic difficulties run the risk that lower standards of living, a weaker commitment by Governments to maintaining essential services, and restrictions in public expenditures on health care will weaken the health sector's role as a critical link in the social safety net. Continued underfunding of immunization programmes or maternal and child clinics could worsen the already high infant and maternal mortality rates in many developing and transition economies. Similar considerations apply even in wealthy countries, where private provision of health services is encouraged. The risk is that essential parts of the health delivery and maintenance system will be underfunded.

25. Protecting the nation's health is one of the primary duties of government, and the physical health of a nation is inextricably linked to its economic health. Illness limits people's autonomy, reduces their participation in employment and increases their dependence on health services. Thus, poor health negatively affects labour mobility, productivity and public spending. Rising demand for health services and increasing costs of medicines could trigger a vicious cycle of upward pressure on public spending, poor economic performance and deteriorating standards of living which would in turn jeopardize other measures taken to improve health.

26. In order to choose the most appropriate and cost-effective steps to improve the nation's health, policy makers must have information on the extent and causes of ill health. Figures such as life expectancy provide a broad picture of the years of productive activity that are denied to much of the world's population because of ill health. Yet to determine which actions health administrators should take, it is also important to understand why death occurred, the importance of different causes of death, which diseases lead to disability and the risk factors that can lead to premature death or disability. It is doubly important to know how communicable diseases are spread. Such issues have been highlighted by the AIDS epidemic, which was treated too lightly at first, perhaps because in developed countries the disease affected what was thought to be a small part of the population: homosexual men and intravenous drug users. Yet its subsequent rapid spread through tainted blood and heterosexual activity increased public concern, leading to actions that, if taken earlier, would have saved many lives.

27. *The Global Burden of Disease and Injury Series*, published by the Harvard School of Public Health on behalf of WHO and the World Bank, has attempted to provide information to guide policy makers. A preliminary assessment of its results was given in the *World Development Report 1993* and a revised version was published in 1993.

28. The report showed how, in the age groups for which comparisons are meaningful, the health situation was worse in the developing than in developed countries. The death rates for children under 5 years of age, for those between the ages of 5 and 14, and people of working age (between 15 and 60), were often many times higher in the developing countries than in the developed market economies (see table 3.2). (After the age of 60 it is more difficult to draw conclusions from the figures for death rates.) The serious health situation in the transition economies of Europe was highlighted by the fact that death rates for children between the ages of 5 and 15 were higher than in any of the developing regions except for sub-Saharan Africa. The picture for women in developing countries was considerably better: death rates were unexpectedlyhigher for men than for women in all age groups and for all regions, with the exception of China for children under 5 and India for children under 14. The large difference between the death rates for children under 5 and under 15 in the developed and the developing countries, compared with the difference in death rates for the population aged 15 to 60, points up how many children are dying unnecessarily in developing countries. Adequate hospital care, particularly at birth, hygiene and nutrition are decisive in ensuring a child's survival.

29. These avoidable deaths were further analysed by the report, which disaggregates deaths into three broad categories:

(*a*) Group 1: Communicable, maternal, conditions arising during the perinatal period, and nutritional deficiencies;

(*b*) Group 2: Non-communicable diseases, such as cancer, ischaemic heart disease and cerebrovascular disease (stroke);

(*c*) Group 3: Injuries.

30. The reason for this breakdown is that Group 1 diseases are largely avoidable. Of the 50.5 million people who died in 1990, 39.5 died in developing countries and 10.9 in developed and transition countries (see table 3.3). Group 1 diseases accounted for 17.3 million of the 50.5 million deaths, with 16.5 million occurring in the developing countries. Thus 42 per cent of deaths in the developing countries were caused by Group 1 diseases.

TABLE 3.2. DEATH RATES IN 1990

Age group (years)	*Male*	*Female*	*Total*
Developed economies			
0-4	228	181	205
5-14	26	17	22
15-59	307	150	229
60+	4,653	3,592	4,035
European economies in transition			
0-4	479	366	424
5-14	61	36	49
15-59	657	252	453
60+	5,472	4,287	4,720
India			
0-4	2,676	2,911	2,790
5-14	252	309	279
15-59	507	456	483
60+	5,912	5,207	5,565
China			
0-4	838	975	905
5-14	89	70	80
15-59	362	266	316
60+	5,851	4,843	5,334
Other Asia and Islands			
0-4	2,058	1,704	1,885
5-14	274	214	244
15-59	438	319	379
60+	5,237	4,335	4,760
Sub-Saharan Africa			
0-4	4,568	3,957	4,264
5-14	548	508	528
15-59	924	756	839
60+	5,923	5,439	5,658
Latin America and the Caribbean			
0-4	1,402	1,105	1,256
5-14	140	109	124
15-59	434	299	366
60+	4,422	3,646	4,002
Middle Eastern crescent			
0-4	2,320	2,285	2,303
5-14	242	227	235
15-59	426	330	380
60+	5,175	4,378	4,752

TABLE 3.3. DISTRIBUTION OF DEATHS, BY BROAD-CAUSE GROUP AND REGION, 1990

	Percentage of regional total			*Regional total (thousands)*
	Group I[a]	*Group II*[b]	*Group III*[c]	
World	34.2	55.8	10.1	50,467
Developed and transition economies:	6.1	86.2	7.6	10,912
Developed economies	6.4	87.4	6.3	7,121
Transition economies of Europe[d]	5.6	84.1	10.3	3,791
Developing:	41.9	47.4	10.7	39,554
India	50.9	40.4	8.6	9,371
China	15.8	72.7	11.5	8,885
Latin American and the Caribbean	31.3	55.7	12.9	3,009
Middle East crescent[e]	42.7	47.4	9.9	4,553
Other Asia and Islands	39.6	50.3	10.1	5,534
Sub-Saharan Africa	64.8	22.7	12.5	8,202

Source: Christopher Murray and Alan Lopez, eds., *The Global Burden of Disease*, Global burden of disease and injury series: v.1, Harvard School of Public Health, World Bank, and World Health Organization (1996), p. 176.

[a] Communicable, maternal, perinatal and nutritional conditions.

[b] Non-communicable diseases.

[c] Injuries.

[d] Central and Eastern European transition economies, Baltic States, Belarus, Ukraine and Russian Federation.

[e] North African Arab countries, Afghanistan, Cyprus, Islamic Republic of Iran, Pakistan, Turkey and transition economies of the Caucasus and Central Asia.

31. In the developed countries the majority of deaths, 86 per cent were due to non-communicable diseases (Group 2) and only 6 per cent to Group 1 diseases. Injuries (Group 3) accounted for the remainder of deaths, about 10 per cent in both developing and developed countries.

32. These broad conclusions suggest that as countries become richer, they are better able to control infectious diseases, and thus those people who die are older and succumb to non-communicable diseases. Indeed, only in sub-Saharan Africa and India did Group 1 deaths predominate. In the other developing country areas Group 2 diseases accounted for more deaths than Group 1 diseases. Not only do people in the developed countries live longer, but the part of their lives that is affected by illness is much shorter. At all stages of life, people in developing countries are more exposed to illness than those in developed countries. The probability of dying before the age of 70 from a non-communicable disease (Group 2) was higher in sub-Saharan Africa and India than in the market economies.

33. The fact that different diseases affect people at different stages of their life, with some tending to strike late in life, necessitates that health administrators evaluate losses from death in terms of the unnecessary curtailing of life: in years of life lost (YLL). This measure sums up the number of years taken by a particular illness, a number that is considerably greater than the number of deaths, about 900 million years (table 3.4). Because non-communicable diseases affect mainly older people, although they accounted for 56 per cent of deaths, they accounted for only 31 per cent of YLL. Injuries, which mainly affect young people, account for a larger percentage of YLL (15 per cent) than of deaths.

34. In developing countries Group 1 causes such as lower respiratory infections (pneumonia), diarrhoeal diseases, conditions arising during the perinatal peroid, tuberculosis, measles and malaria accounted for a considerably larger proportion of YLL than of actual deaths. Thus, although non-communicable diseases claim more lives than Group 1 diseases in almost all developing countries,

TABLE 3.4. YEARS OF LIFE LOST, BY BROAD-CAUSE GROUP, 1990

	Percentage of regional total			*Regional total (in millions)*
	Group I[a]	*Group II*[b]	*Group III*[c]	
World	54.1	31.3	14.6	906.5
Developed and transition economies:				
Developed economies	8.8	75.3	15.9	49.7
Transition economies of Europe[d]	9.4	67.6	23.0	35.9
Developing:				
India	66.4	22.6	11.0	200.1
China	28.3	51.5	20.2	117.9
Latin America and the Caribbean	47.5	34.0	18.5	56.2
Middle East Crescent[e]	57.8	29.7	12.6	105.2
Other Asia and Islands	53.6	32.6	13.8	114.6
Sub-Saharan Africa	73.9	12.4	13.7	226.9

Source: Christopher Murray and Alan Lopez, eds., *The Global Burden of Disease*, Global burden of disease and injury series: v.1, Harvard School of Public Health, World Bank, and World Health Organization (1996), p. 176.

[a] Communicable, maternal, perinatal and nutritional conditions.
[b] Non-communicable diseases.
[c] Injuries.
[d] Central and Eastern European transition economies, Baltic States, Belarus, Ukraine and Russian Federation.
[e] North African Arab countries, Afghanistan, Cyprus, Islamic Republic of Iran, Pakistan, Turkey and transition economies of the Caucasus and Central Asia.

the significance of Group 1 diseases in terms of lost years of life is much greater.

35. Other information produced by the study included years lived with a disability condition (YLD). Even if a particular disease does not cause death, it still reduces the chances for an active and productive life. Similar to YLL, YLD must be based on estimates—in this case, of the number of people with the particular disability and how long they live with it (table 3.5). YLD must also include a weighting for the severity of the disability. For instance, the disability weight for asthma was set at 10 per cent if untreated and 6 per cent if treated, whereas the weights for active psychosis and dementia were higher than 70 per cent. The estimate for the YLD in 1990 was 473 million. In comparison, the world's population was about 5,300 million in that year.

36. The research showed that a completely different set of diseases led to losses through disability rather than through death. Psychiatric and neurological conditions, unipolar major depression, alcohol use, bipolar affective disorder (manic depression), schizophrenia and obsessive-compulsive disorder accounted for 28 per cent of all YLD, for only 1.4 per cent of all deaths and 1.1 per cent of YLL. These conditions were the most important in causing diseases in all regions except sub-Saharan Africa, where they accounted for 16 per cent of YLD. However, they were less important causes of disability in the developing than in the developed countries. Also, tuberculosis, iron-deficiency anaemias, obstructed labour and maternal sepsis were much greater causes of disability in the developing than in the developed economies.

37. The calculations for YLD also showed that 18 per cent of conditions began in early childhood and almost half in young adulthood (between 15 and 44 years). Only 10 per cent began after the age of 60. Yet the proportion of life lived with a disability actually fell with longevity: in the developed countries, which have greater life expectancies than the developing countries, the proportion of years lived with disability was about 20 per cent, compared with more than 30 per cent in most of the developing countries and more than 40 per cent in sub-Saharan Africa.

38. The sum of YLL and YLD constitutes the total burden of disease. The measure, called the disability-

TABLE 3.5. PERCENTAGE DISTRIBUTION OF YEARS LIVED WITH DISABILITY FOR SPECIFIC CAUSES, 1990

Group/Cause	Developed and transition economies of Europe	Developed economies	Transition economies of Europe	Developing countries	India	China	Latin America and the Caribbean	Middle East Crescent	Other Asia and Islands	sub-Saharan Africa	World
Group I.	6.3	5.5	7.8	27.8	33.6	18.9	19.0	24.6	28.5	39.3	24.4
Infectious and parasitic diseases	2.7	2.6	3.0	12.3	14.3	6.4	9.7	6.4	12.6	22.4	10.7
Respiratory infections	0.4	0.3	0.4	1.4	1.4	1.4	1.0	1.8	1.4	1.3	1.2
Maternal conditions	1.1	0.6	1.9	4.0	4.7	1.9	2.7	5.0	4.0	5.8	3.5
Conditions arising during the perinatal period	0.5	0.5	0.5	2.3	3.5	1.1	1.6	2.9	1.7	3.2	2.0
Nutritional deficiencies	1.7	1.5	2.0	7.9	9.8	8.2	4.1	8.6	8.7	6.6	6.9
Group II.	84.2	86.7	79.5	54.8	43.7	66.9	67.3	61.5	56.1	39.8	59.5
Neuro-psychiatric conditions	43.9	47.2	37.6	25.5	20.9	30.7	34.6	25.4	28.5	16.3	28.5
Cardiovascular diseases	6.5	6.2	7.1	3.0	3.6	3.5	2.4	3.8	2.9	1.6	3.6
Group III.	9.5	7.9	12.7	17.4	22.8	14.2	13.6	13.9	15.4	20.9	16.1
Unintentional injuries	8.3	7.1	10.7	15.4	22.4	12.9	12.3	10.0	14.6	16.3	14.3
Intentional injuries	1.2	0.8	2.0	1.9	0.4	1.3	1.4	3.9	0.8	4.6	1.8

Source: Christopher Murray and Alan Lopez, eds., The Global Burden of Disease, Global burden of disease and injury series: v.1, Harvard School of Public Health, World Bank, and World Health Organization (1996), p. 234.

TABLE 3.6. PERCENTAGE DISTRIBUTION OF DISABILITY-ADJUSTED LIFE YEARS AMONG SPECIFIC CAUSES, 1990

Group/Cause	Developed and transition economies of Europe	Devel-oped econ-omies	Transition economies of Europe	Developing countries	India	China	Latin America and the Caribbean	Middle East Crescent	Other Asia and Islands	sub-Saharan Africa	World
Group I.	7.8	7.1	8.8	48.7	56.4	24.2	35.3	47.7	44.7	65.9	43.9
Infectious and parasitic diseases	2.7	2.8	2.7	25.6	28.9	7.5	17.6	20.2	22.3	42.5	22.9
Respiratory infections	1.6	1.4	2.0	9.4	11.9	5.9	4.9	10.7	8.7	10.5	8.5
Maternal conditions	0.6	0.3	0.9	2.4	2.6	1.3	1.7	2.4	2.3	3.2	2.2
Conditions arising during the perinatal period	1.9	1.8	2.2	7.3	8.8	4.9	7.4	9.7	6.9	6.5	6.7
Nutritional deficiencies	0.9	0.9	1.0	4.1	4.2	4.6	3.7	4.7	4.5	3.2	3.7
Group II.	77.7	81.0	72.6	36.1	29.0	58.2	48.2	39.3	40.9	18.8	40.9
Neuro-psychiatric conditions	22.0	25.1	17.2	9.0	7.0	14.2	15.9	8.7	10.8	4.0	10.5
Cardiovascular diseases	20.4	18.6	23.2	8.3	8.2	11.0	8.0	11.1	10.1	3.9	9.7
Group III.	14.5	11.9	18.7	15.2	14.6	17.6	16.4	13.0	14.4	15.4	15.1
Unintentional injuries	10.3	8.7	12.9	11.04	13.0	12.9	11.9	6.8	12.1	9.3	11.0
Intentional injuries	4.2	3.2	5.8	4.1	1.5	4.7	4.5	6.2	2.3	6.0	4.1

Source: Christopher Murray and Alan Lopez, eds., The Global Burden of Disease, Global burden of disease and injury series: v.1, Harvard School of Public Health, World Bank, and World Health Organization (1996), p. 261.

adjusted life year (DALY), expresses the years of life lost to premature death and the years lived with a disability. The total was approximately 1.4 billion for 1990 (see table 3.6). Again, a very different pattern emerges for the developed and transition countries than for the developing countries. To help providers of health services, the study attempted to calculate the percentage of this total contributed by 10 specific "risk" factors (table 3.7): malnutrition (15.9 per cent); poor water supply, sanitation and personal and domestic hygiene (6.8 per cent); unsafe sex (3.5 per cent); alcohol use (3.5 per cent); occupation (that is, exposure to hazards through work) (2.7 per cent); tobacco use (2.6 per cent); hypertension (1.4 per cent); physical inactivity (1.0 per cent); illicit drug use (0.6 per cent); and air pollution (0.5 per cent). These 10 factors account for nearly 40 per cent of the global burden of disease. Moreover, the two most important risk factors, malnutrition and poor water supply, sanitation and hygiene, which account for almost a quarter of the burden, are largely confined to the developing countries, and especially to the poorest countries. Malnutrition was responsible for 33 per cent of the total disease burden in sub-Saharan Africa and 22 per cent in India. Largely because of the AIDS epidemic, the burden of unsafe sex was considerably higher in sub-Saharan Africa than in other regions. In the European transition economies, air pollution was six times more important in causing disability than in the developed economies.

39. *The Global Burden of Health* can help countries to direct their resources to combat those illnesses that pose the greatest threat to their populations. In the case of the transition economies, for instance, the burden of alcohol, tobacco and air pollution is especially strong. In many developing countries interventions to provide proper nutrition and safe water would make major contributions to health. The study has also shown that many conditions that might not cause death should be taken more seriously because of their contribution to disability. This was especially relevant to psychological illnesses.

40. Finally, the developing countries have an opportunity, by examining risk factors in the developed and transition economies, to see how they can increase the health

TABLE 3.7. PERCENTAGES OF DISABILITY-ADJUSTED LIFE YEARS ATTRIBUTABLE TO DIFFERENT RISK FACTORS, 1990

Risk factor	World	Developed and transition economies	Developed economies	Transition economies of Europe	Developing countries	India	China	Latin America and Caribbean	Middle East Crescent	Other Asia and islands	sub Saharan Africa
Malnutrition	15.9	0.0	0.0	0.0	18.0	22.4	5.3	5.1	11.0	14.5	32.7
Poor water supply and personal and domestic hygiene	6.8	0.1	0.1	0.2	7.6	9.5	2.0	5.3	8.8	7.4	10.1
Unsafe sex	3.5	2.1	2.0	2.2	3.7	4.0	0.4	3.7	1.5	4.4	6.5
Alcohol	3.5	9.6	10.3	8.3	2.7	1.6	2.3	9.7	0.4	2.8	2.6
Occupation	2.7	4.6	5.0	3.8	2.5	2.0	3.9	3.7	2.6	2.8	1.3
Tobacco	2.6	12.1	11.7	12.5	1.4	0.6	3.9	1.4	1.2	1.5	0.4
Hypertension	1.4	4.7	3.9	5.9	0.9	0.9	1.0	1.8	1.7	0.3	0.6
Physical inactivity	1.0	4.0	4.8	2.8	0.6	1.0	0.8	1.0	0.8	0.3	0.0
Illicit drugs	0.6	1.9	2.3	1.3	0.4	0.1	0.3	1.6	0.7	0.7	0.2
Air pollution	0.5	1.5	0.5	3.1	0.4	0.5	0.4	0.5	0.5	0.4	0.2

Source: Christopher Murray and Alan Lopez, eds., The Global Burden of Disease, Global burden of disease and injury series: v.1, Harvard School of Public Health, World Bank, and World Health Organization (1996), pp. 311-315.

of their population in the future as they become richer. The two largest risk factors in both the developed and transition economies are tobacco and alcohol. A serious risk factor in the transition economies was, as mentioned earlier, air pollution. Action at the present time to counter pollution, tobacco use and alcohol abuse could help the developing countries to reduce their future disease burden.

D. New and infectious diseases

41. Even before the age of commercial air travel, diseases could travel quickly. Swine flu in 1918-1919 managed to circumnavigate the world five times in 18 months, killing 22 million people, 500,000 in the United States. Today, half a billion passengers board airline flights every year.[12] This is a time of great movement: people move from rural areas to cities, refugees cross international boundaries, truck drivers can cover great distances. In many cases these movements can facilitate the spread of disease, as when poor rural people are congregated in cities that lack adequate sewer systems and safe water. The task of public health authorities in monitoring health conditions, vaccinating the population and preventing outbreaks of known and treatable diseases would itself be daunting in these circumstances. Sometimes, economic crisis has broken down the health delivery system and has led to the re-emergence of diseases that were previously thought to be conquered. Because immunization against diphtheria was not maintained in the former Soviet Union, there was an outbreak in 1990 in the Russian Federation, which subsequently spread to 15 countries.[13] Only now does it appear to be stabilizing.

42. Yet, as the AIDS epidemic has shown, diseases are emerging that prove incurable by known medicines. In the past 20 years about 30 new diseases have emerged. Emerging diseases are those whose incidence in humans has increased in the past 20 years, or threatens to do so in the near future, newly appearing infections or infections which have spread to new geographical areas, and diseases which were easily controlled by chemotherapy and antibiotics, but which have developed antimicrobial resistance. In addition to AIDS, emerging diseases include drug-resistant malaria, tuberculosis, multidrug-resistant pneumococcal pneumonia, cholera (both classic strains and new varieties), E-coli, dengue and its severe complications, cryptosporidiosis, and hantavirus pulmonary syndrome. In 1995 the world saw outbreaks of cholera, diphtheria, plague and Ebola haemorrhagic fever. This last disease was confined to a relatively small corner of Zaire because of a rapid national and international response, with staff from WHO headquarters in Geneva and the regional office in Brazzaville, Congo, arriving at the site of the epidemic within 24 hours of notification. Diagnosis of the disease was confirmed at the WHO Collaborating Centre on Arboviruses and Viral Haemorrhagic Fevers at the Centers for Disease Control and Prevention in Atlanta, Georgia, United States of America. This prompt action confirmed the importance of strengthening national, regional and global efforts to detect and contain similar threats from emerging diseases.

Notes

[1] *World Population Prospects: The 1996 Revision* (United Nations publication, forthcoming).

[2] It should be stressed that these figures for life expectancy are only estimates and are subject to continual revision, as countries adopt more effective measures to prevent the spread of AIDS.

[3] For instance, the population per doctor was 210 in the Russian Federation and 450 in Eastern Europe, whereas it was 440 in the OECD countries. See United Nations Development Programme, *Human Development Report 1996* (New York, 1996), p. 191.

[4] For instance, in 1985-1990 the life expectancy of women in the Russian Federation at 74.3 years was 10 years above that of men at 64.3.

[5] State Committee of the Russian Federation on Statistics, *The Demographic Yearbook of Russia* (Moscow, 1995), p. 474.

[6] Figures from WHO quoted in *The Economist* (5 October 1996), p. 50.

[7] In Romania, for example, the incidence of trichinosis caused by parasites in pork has risen in parallel with the development of the private unregulated food market. It more than doubled between 1989 and 1993 from 4.1 to 9.4 per 1,000. See UNICEF, International Child Development Centre, Regional Monitoring Report No. 2 (August 1994), p. 47.

[8] A telling example is offered by Hungary, where time series for the transition period clearly indicate that the decline in alcohol consumption and in the number of registered alcoholics masks a staggering increase in excessive alcohol consumption: the estimated number of alcohol-addicted persons estimated using the Jelinek formula based on the number of deaths by liver cirrhosis increased from 588,000 in 1990 to 1.048 million in 1994. The number of deaths from liver cirrhosis increased from 4,080 in 1990 to 7,277 in 1994. See Központi Statisztikai Hivatal, *Magyar statisztikai évkönyv* (Hungarian Statistical Yearbook, 1994) (Budapest, 1995), p. 309.

[9] A comparison of health statistics before and after the transition is complicated by the fact that deaths in the Soviet Union were generally underregistered and that different definitions were used.

[10] In the previous system emphasis was placed on expensive, hospital-based specialized care. The new system is actively being developed by Hungary and the Russian Federation.

[11] This third reform has been implemented in Hungary by separating health and pension payments from the central budget and setting up the Health Fund and the Social Security Fund.

[12] Laurie Garrett, "The return of infectious diseases", *Foreign Affairs* (January/February 1996), p. 69.

[13] World Health Organization, *The World Health Report 1996: Fighting Disease, Fostering Development* (Geneva, World Health Organization, 1996), p. 26.