F. MORTALITY IN DEVELOPING COUNTRIES

Ian Timæus reviewed existing evidence on mortality trends in sub-Saharan Africa, a region characterized by the highest mortality levels in the world. There were several reasons to be pessimistic about the future evolution of mortality in the region, including the economic difficulties that many countries in the region were experiencing, the negative effects of structural adjustment programmes on social development and on the functioning of the health sector, the spread of the AIDS epidemic, and the prevalence of internal conflict or outright war. However, there were also some reasons for optimism, including the fact that some countries were experiencing economic growth; that the democratization of South Africa was contributing to the stability of the Southern part of the continent; that conflicts had been or were being resolved in Angola, Ethiopia and Mozambique; and that considerable advances had been made in combatting childhood diseases through, among other things, immunization campaigns such as those promoted by UNICEF.

Timæus noted that the availability of data allowing the estimation of mortality in sub-Saharan Africa was dismal. Among mainland countries, none had an adequate vital registration system and only in South Africa were a sufficient number of deaths registered at the national level so as to allow the indirect estimation of mortality. Consequently, for most countries of sub-Saharan Africa mortality had to be estimated on the basis of information obtained through censuses or sample surveys, which were more likely to record data allowing the estimation of mortality in childhood than those needed to estimate adult mortality. Essentially, only three types of data were useful for the indirect estimation of adult mortality: the number of deaths occurring over a specified period (usually a year); information on the survival of parents; or information on the survival of siblings. All could be obtained through large-scale sample surveys and the first two could also be gathered through censuses.

Timæus reviewed the evidence regarding levels and trends of child mortality in sub-Saharan Africa, paying particular attention to countries that had carried out Demographic and Health Surveys. He concluded that under-five mortality in the region tended to be high, with only a few countries having an under-five mortality below 100 deaths per 1,000 births. Although in most countries with data available under-five mortality had tended to decline during the 1980s, improvements of child survival appeared to have tapered off in Botswana, the Central African Republic, Côte d'Ivoire, Kenya, Malawi, Rwanda and Zimbabwe, and mortality had stagnated or increased in Nigeria and Zambia. Timæus argued that the AIDS epidemic was an important factor leading to a slowdown in the mortality decline experienced by a number of African countries but by no means in all, since some showed signs of stagnation before the epidemic took hold. Other factors, therefore, had to be considered in explaining the adverse trends experienced by some countries.

Estimates of adult mortality could be obtained for 22 out of the 43 countries in sub-Saharan Africa. A quarter of the estimates referred to the first half of the 1980s, half to the rest of the decade and a quarter to the period 1990-1992. The indicator used to measure mortality levels was the probability of surviving between exact ages 15 and 60, and it was derived using indirect estimation techniques applied to data on deaths over a period preceding a census, data on the prevalence of orphanhood, or that on the survival of siblings. According to the estimates obtained, adult mortality levels varied widely among the countries of sub-Saharan Africa. Thus, in the Central African Republic, Mali (towards the mid-1980s) and Uganda, about half of all persons aged 15 were expected to die before age 60, whereas in Ghana, Kenya and, by the end of the 1980s, Senegal the equivalent proportion was 20 per cent. In most of sub-Saharan Africa, adult men had higher mortality than women, but in Malawi women's mortality was higher than that of men. Data allowing an assessment of trends in adult women's mortality showed that it declined rapidly in Cameroon, Niger and Senegal, but that the decline slowed down or that mortality increased in Botswana, the Central African Republic, Lesotho, Malawi,

Uganda, the United Republic of Tanzania and Zimbabwe. Estimates derived from the survival of siblings showed that both male and female adult mortality increased markedly in Uganda and Zimbabwe and slightly less so in the Central African Republic and Malawi, mostly during the 1990s. The onset of the AIDS epidemic was considered a major factor underlying such increases. Thus, the evolution of mortality in sub-Saharan Africa showed that the increase of survivorship was not an irreversible process, though the full set of factors leading to the reversals observed remained to be explored. In particular, the role that economic difficulties had had in slowing down reductions in mortality demanded further attention.

Juan Chackiel discussed mortality trends in Latin America and the Caribbean. He noted that censuses had been carried out systematically in most countries of the region since the 1950s, but that there had been a deterioration of their quality and completeness of coverage. Furthermore, five countries in the region had not carried out a census during the 1990 round. With regard to data on deaths, most countries of the region had an operating system of death registration, but its completeness of coverage varied widely, with Chile, Costa Rica and Cuba having virtually complete registration of deaths and the Dominican Republic, Nicaragua, Paraguay and Peru registering less than 60 per cent. Furthermore, even in countries where the completeness of death registration was judged to be high, the data were not free from other errors, including age misreporting, changes in the completeness of registration by age, and problems in the reporting of cause of death.

Estimates for 1990-1995 showed that, among all developing regions, Latin America and the Caribbean as a whole had the highest life expectancy (69 years), having experienced an increase of 18 years since 1950-1955. Given the constraints imposed by data availability, mortality trends were analysed in detail for three countries with very low mortality (Chile, Costa Rica, Cuba), four with low to intermediate mortality (Argentina, Mexico, Uruguay and Venezuela) and one with high mortality (Guatemala). Among those countries, Chile, Costa Rica and Cuba had a life expectancy of about 75 years, similar to that of developed market-economy countries, whereas Guatemala's life expectancy was 63 years. Mortality was higher among men than among women and, especially in countries with intermediate or high mortality levels, the sex differentials in mortality were increasing. Focusing on mortality rates over the age range 15-44, male mortality was found to be considerably higher than female mortality (in some cases twice as high) and the differentials between the two showed a tendency to increase over time. The major causes of death in that age range were external causes (injuries and violence) among men and neoplasms among women. Mortality among those aged 45-64 ranged mostly between 65 and 80 deaths per 1,000 among women and between 120 and 145 deaths per 1,000 among men, but in Guatemala the equivalent rates were 126 and 172 deaths per 1,000 for men and women, respectively. The main causes of death for both men and women in that age group were cardiovascular disease and cancer. The same causes predominated among older persons (aged 65 or over), whose mortality levels had nevertheless been declining steadily since 1950. Gains in survivorship had tended to be higher among elderly women than among elderly men.

The data for the 8 Latin American countries considered confirmed that they had all experienced a decline of mortality due to communicable diseases. However, Chackiel noted that the data available did not allow an assessment of the likely impact of the AIDS epidemic in the region (countries with high prevalence of HIV infection had deficient mortality data) and that the re-emergence of certain infectious diseases, such as cholera, seemed to have increased morbidity rather than mortality. He emphasized the need for morbidity statistics or information on the health status of the population to assess the stage of the epidemiological transition in which different populations found themselves. He also discussed the relevance of considering the health and mortality experience of different socio-economic groups since, given the marked inequalities that characterized Latin American societies, differentials in

mortality by socio-economic status were expected to be revealing and useful tools for planners.

The discussion contrasted the experiences of sub-Saharan Africa and Latin America and the Caribbean, underscoring the fact that data availability in the latter regions was considerably better than in Africa. However, data deficiencies were also common among Caribbean countries, since only Cuba could be included in the in-depth study undertaken. Particular emphasis was put on the lack of adequate data on adult mortality trends in sub-Saharan Africa and on the problems involved in trying to estimate trends from data on the survival of siblings which, being obtained through surveys, were subject to sampling variability and might moreover be affected by reporting errors. Despite data deficiencies, it was agreed that countries in Latin America and the Caribbean had been considerably more successful in reducing mortality than those in sub-Saharan Africa. Yet, the two regions showed certain similarities. Thus, countries that had embarked earlier in the epidemiological transition, such as Argentina and Uruguay in Latin America or Ghana and Kenya in sub-Saharan Africa, had been experiencing a reduction of the rate of mortality decline in recent periods (since the 1970s). Cuba was another country where the pace of mortality decline had slowed since the mid-1970s. Senegal, however, was an exception, since it had maintained a rapid rate of improvement of the survivorship chances of its population since the 1970s.

The discussion noted that there were sufficient elements to infer that the decline of mortality had stagnated or even been reversed among both children and adults in several of the sub-Saharan countries affected by the AIDS epidemic. The fact that the estimates of child mortality for those countries did not always show clearly increasing trends might be due to the underestimation of mortality levels stemming from respondent bias: HIV-positive mothers who had died would not have been able to report their dead children. Nevertheless, some scepticism was expressed about the high prevalence levels of HIV infection reported for certain countries, especially if they were derived from testing women who sought pre-natal care. Being pregnant, those women were more likely to have been exposed to infection than women who were not pregnant, and pregnant women seeking pre-natal care were more likely to be sick than other pregnant women who did not seek medical attention. Consequently, prevalence levels of HIV infection among pregnant women attending pre-natal care programmes probably overestimated the prevalence among the whole female population. It was argued, however, that a counterbalancing mechanism might also be in operation if HIV-positive women were less likely to become pregnant than other women did. Despite these concerns about the accuracy of existing indicators, it was agreed that HIV infection was almost certainly a major contributor to the increases of adult mortality experienced by some countries of sub-Saharan Africa, especially since in the African context the progression between HIV infection, full-blown AIDS and death was more rapid than in developed market-economy countries where complex drug therapy was available. Given the rapid spread of the disease in some contexts, the expectation was that the chances of survival in several countries would keep on deteriorating for some time. However, there were some hopeful signs, such as reports suggesting that the prevalence of HIV infection had been declining in Uganda.

The possible contribution of deteriorating economic conditions to the stagnation or increase of mortality was discussed but no firm conclusions were reached. It was argued that the mortality of adults (persons aged 15 to 64) was more likely to be affected by economic conditions than that of children since studies of the impact of severe recessions in Latin American countries, Eastern and Central European countries, and England and Wales during the 1930s had shown that they did not necessarily lead to stagnant or rising mortality in childhood. However, it was noted that the work of Murphy and Dyson had shown that, over the long-term, changes in GDP had an impact on child mortality. In sub-Saharan Africa, as a result of structural adjustment programmes, user-fees had been

introduced by the health services and less people were resorting to such services. Furthermore, because of the stringent economic conditions, the nutritional status of both adults and children had been deteriorating. However, the impact of such changes on mortality was not expected to be immediate. An intensive study in a small region of Zambia, for instance, had shown that there was at least a two-year lag between the deterioration of economic conditions and its measurable impact on mortality. The need for more studies of that type was stressed.

It was suggested that one way of establishing the causes of mortality stagnation or its increase was by a process of elimination. If a country was not highly affected by the AIDS epidemic, if it had programmes in place to combat mortality in childhood, and if it had not experienced internal conflict or war, the most likely cause left would be a stagnating or deteriorating economy. However, in a country such as Botswana, where the economy was growing, other factors had to account for the stagnation observed since the 1970s and it was not clear which. In fact, it was argued that the exact factors leading to a mortality decline were also difficult to identify. Thus, in the case of mortality in childhood, evaluation of the interventions generally credited for reducing it showed that they were not as efficacious as thought. Oral rehydration therapy, for instance, did not seem to have a major impact in Africa. As for the vaccination programmes adopted in most countries of the region, only the immunization against measles was geared to combatting a major cause of death in childhood. There were, however, some interventions that had been successful in reducing overall morbidity, including those geared to combat sleeping sickness, to eradicate smallpox, to provide vitamin A supplementation, or to foster the use of nets impregnated with insecticide so as to combat malaria. But it was agreed that a multifaceted approach was needed to sustain and improve the gains in survivorship recorded in sub-Saharan Africa and that the evidence suggested that once a moderate mortality level was achieved, the strategy needed to achieve further reductions was not always clear.

There were several attempts to draw parallels between the situation in Latin America and the Caribbean or sub-Saharan Africa with that in Eastern and Central European countries. In particular, the issue of whether developing countries that were winning the battle against communicable diseases would be faced by stagnating or increasing mortality due to non-communicable diseases was raised. With respect to most of sub-Saharan Africa, such situation was considered unlikely since communicable diseases were still major causes of death and detrimental changes in lifestyles were yet to take hold. Most inhabitants of sub-Saharan Africa were still consuming relatively small amounts of meat and other sources of saturated fats, they engaged in sufficient physical exercise (walking, working etc.) and, although the level of smoking and alcohol consumption was rising, it was still at relatively low levels. Nevertheless, in some low-mortality countries of the region, there were worrying signs regarding the evolution of mortality among the male population. Thus, in the Republic of South Africa, adult men were experiencing mortality rates similar to those of their Russian counterparts and the incidence of cardiovascular disease was high. In Latin America and the Caribbean, the case of Cuba was not considered to be similar to that of Eastern and Central European countries since, although there was in Cuba a very low decline in the mortality of men aged 15-64 between 1970-1975 and 1985-1990, that slowdown seemed to be caused more by the very low levels already achieved than by a deterioration of male health. However, it was recognized that the country was facing a health care crisis because its health services were not sustainable and the country's poor economic performance during the 1990s was affecting the nutritional status of the population. As for the causes of the relatively small advances made in reducing mortality in Argentina and Uruguay, it was suggested that resistance to change within the health system and the maintenance of risky behaviours, such as excessive fat intake and the prevalence of smoking, contributed to such trends. In general, Latin American countries characterized by moderate to low mortality levels needed to put more emphasis on the

prevention of non-communicable disease by, among other things, promoting the dissemination of information and undertaking concerted campaigns designed to reduce high-risk behaviours, if further advances in increasing life expectancy were to be made.

Lastly, the importance of considering not only indicators of mortality but also those related to health status was stressed. Data on the prevalence of specific diseases would probably provide better indicators of the advances being made in Africa, especially as immunization campaigns continued. More detailed information about morbidity patterns was necessary to assess whether countries were advancing in the epidemiological transition and what directions they might be taking. Important findings might be possible even if the data available did not achieve national coverage. It was suggested, for instance, that efforts be made to obtain the publication of data on deaths from the registration systems operating in some of the capital cities of Africa. Similarly, the study of the health situation of particular sub-populations was recommended, especially of slum dwellers in the cities of developing countries. Because the populations of most countries were heterogeneous, the development of adequate programmes for different segments of the population required information about their particular health needs. Use of diverse sources of data, some of which have not been traditionally exploited to study the health status of a population, was recommended as a first step to identify such needs