

### Reducing child mortality

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For decades, the focus of international public health concern has been on reducing child mortality, and rightly so. As recently as the mid-1980s, some 15 million children under the age of five years died each year, representing 30% of all deaths worldwide and up to half of all deaths in many countries (1). The vast majority of these deaths were preventable with current technology, as evidenced by the extremely low child mortality risks prevailing in rich countries.

At the start of a new millennium, it is time to take a sober look at the current size of this excess mortality of children, and ask whether we are making real progress in reducing it, and what interventions hold most promise. Concern about high levels of child mortality have stimulated enormous research efforts in pursuit of new technologies to combat disease. Much demographic and epidemiological research has been done as well, on the causes of childhood illness and the pathways through which they act. The work in this area that has most influenced public policy has been the framework proposed by Mosley & Chen (2). In their view, “distal” socioeconomic factors such as education and income affect disease incidence and outcomes through five broad groups of “proximal” determinants of child survival: maternal factors, nutrient deficiency, environmental contamination, injury, and personal illness control. The last one includes both the availability of health services and the capacity to use them.

This issue of the *Bulletin* does some timely stock-taking to assess how fast (and where) child mortality is declining, and the role of several of the proximal factors in the Mosley–Chen framework in bringing this decline about. The issue begins with a review by Ahmad et al. of the demographic evidence on trends in child mortality in the 1990s (pp. 1175–1191). With the expansion of large-scale health survey programmes in developing countries, the evidence on

which to base assessments of the levels and trends in child mortality has improved dramatically. Using data from the Demographic and Health Surveys and other sources, the authors estimate that child deaths worldwide declined by about 2.2 million or by 17–18% during the 1990s. While some uncertainty remains as to the true extent of child mortality in the late 1990s, there is little doubt that child deaths have declined dramatically over the decade, extending the gains made earlier.

Progress has varied markedly from region to region, however. Claeson et al. (pp. 1192–1199) suggest that infant mortality rates have recently stagnated in India, and that further sustained declines will require a new emphasis on multi-disease, multi-sector approaches. There is evidence of stagnation in the rate of decline of child mortality elsewhere as well, most notably in China, and in countries in Africa where HIV seroprevalence is extremely high.

When they were preparing their framework in the early 1980s, Mosely & Chen clearly could not have anticipated the enormous impact of HIV/AIDS, firstly on adult mortality, and subsequently, as Adetunji demonstrates (pp. 1200–1206), on child survival. In parts of Southern Africa where adult seroprevalence levels are in excess of 20%, there is already evidence of an increase in child mortality. This is an ominous sign for African countries in which HIV is spreading rapidly and progress in reducing child mortality has been comparatively modest.

The remaining articles examine the possible contributions of various elements of the Mosley–Chen framework to the decline in child mortality. Rice et al. (pp. 1207–1221) confirm that malnutrition is a critical risk factor, increasing the likelihood of succumbing to major childhood infections, particularly diarrhoea and acute respiratory infections. De Onis (pp. 1222–1233) points out that while there has been real progress in reducing stunting, particularly in Asia and South America, this success has not been enjoyed in all regions, with stunting rising in some parts of Africa since the 1980s. The role of personal illness control in the form of improved health services is reviewed by Claeson & Waldman (pp. 1234–1245) and

by Victora et al. (pp. 1246–1255). Claeson & Waldman trace the evolution of child health programmes in developing countries, and stress the need for the general health services to be more inclusive and active in promoting child health. Where specific technologies are available, and widely and appropriately used, their impact on child mortality is likely to be substantial, as Victora et al. argue with regard to oral rehydration therapy for diarrhoea, and Diamond (p. 1174) with regard to immunization.

Finally, Rutstein (pp. 1256–1270) draws on the most comprehensive and comparable data set available on trends in child mortality to seek possible explanations for reductions in child mortality. His analysis suggests that all the elements of the Mosley–Chen framework have contributed in part to the observed declines, which have been greater in countries where progress against a broad range of exposure was achieved.

What do these papers imply for global public health efforts to further reduce child deaths? Three conclusions may be drawn.

First, although child mortality has declined, 10.5 million children still die each year. That toll is unacceptably large and its reduction must remain a focus of public policy.

Second, we know a lot about the extent and decline of childhood mortality but much less about its causes. The importance of fostering data collection for research on the factors which make for better child survival cannot be overemphasized.

Third, there has been good progress in delivering interventions that work to more and more children who need them. But failure to maintain service delivery and expand it so as to control new threats to child survival, such as HIV/AIDS, could well see these impressive gains stagnate, or, unthinkable, decline. ■

1. Lopez AD. Causes of death in industrial and developing countries: estimates for 1985–90. In: Jamison DT et al. (eds). *Disease control priorities in developing countries*. New York, Oxford University Press, 1994, 35–50.
2. Mosley WH, Chen LC. An analytical framework for the study of child survival in developing countries. *Population and Development Review*, 1984, 10 (Supplement): 25–45.

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