Moser, KA; Leon, DA; Gwatkin, DR (2005) How does progress towards the child mortality millennium development goal affect inequalities between the poorest and least poor? Analysis of Demographic and Health Survey data. BMJ (Clinical research ed), 331 (7526). pp. 1180-1182. ISSN 0959-8138 DOI: 10.1136/bmj.38659.588125.79

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improvements in safe water, sanitation, and indoor air quality, will also impact on child health. A major challenge in the achievement of millennium development goal 4 will be to find a sustainable intersectoral solution to reducing malnutrition in children and to tackle the root causes of poverty, lack of education, and sex inequality.

Contributors: See bmj.com.

Funding: None.

Competing interests: None declared.

Ethical approval: Not required.


How does progress towards the child mortality millennium development goal affect inequalities between the poorest and least poor? Analysis of Demographic and Health Survey data

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The millennium development goals (MDGs) have been widely accepted as a framework for improving health and welfare worldwide. Child mortality is one of the most crucial and avoidable global health concerns. In many low income countries, 10-20% of children die before reaching 5 years (compared with, for example, 0.7% in England and Wales). The child mortality MDG (to reduce the under 5 mortality rate by two thirds between 1990 and 2015) is formulated as a national average. The World Health Report 2003 posed an important question: how does progress towards the MDGs affect equality? We investigated this by examining, across a range of settings, how inequality in the under 5 mortality of the poorest and least poor changes as progress is made towards the MDG.

Participants, methods, and results

Using published data we examined changes in inequalities in under 5 mortality within 22 low and lower middle income countries (11 in Africa, five in Latin America or the Caribbean, and six in Asia) each with two Demographic and Health Surveys between 1991 and 2001 (www.measuredhs.com). These countries encompass high and lower mortality situations, varied sociodemographic conditions, and in 2000 they accounted for 27% of the world's population. Under 5 mortality was estimated, using standard methods, from information on births in the 10 years preceding the survey derived from birth histories collected from women of reproductive ages. Socioeconomic position was described using an index of household wealth calculated from information on ownership of household assets (for example, a radio), housing characteristics (for example, floor materials), drinking water source, toilet facilities, and availability of electricity. The method is described elsewhere.2 Households, ranked by wealth index, were split into five groups each containing 20% of individuals and representing the poorest to the least poor quintiles of the population. Under 5 mortality rates (deaths under age 5 per 1000 live births) were calculated for each quintile and the rate ratio (ratio of mortality in poorest and least poor quintiles) was used to describe relative inequality. Inequality was considered to have increased or decreased over time if the rate ratio changed by at least ±10%.

National under 5 mortality rates vary between 30 and 250 deaths per 1000 live births (table). In all surveys mortality is highest in the poorest as compared with the least poor quintile. Most rate ratios lie within the range 1.5 to 3.0 and almost all the 95% confidence intervals exclude 1.0. Thirteen countries had statisti-
cally significant declines in overall under 5 mortality between surveys. Despite this, in only four of the 13 countries did the rate ratios decrease; five saw increasing rate ratios. None of the changes over time in the rate ratios were statistically significant.

Comment

We confirm that there are large and persistent inequalities in under 5 mortality within many low and lower middle income countries and show that improvements in national under 5 mortality, in line with the MDG, do not necessarily bring about decreasing inequalities in mortality between the poorest and least poor in society. Indeed, such society-wide improvements seem as likely to be accompanied by increasing as decreasing inequalities. This finding indicates the importance of monitoring under 5 mortality among different socioeconomic groups. It also argues for reformulating the child mortality MDG to incorporate an equity dimension and thus provide an impetus to adopt policies that tackle health inequalities.

For most countries considered here the Demographic and Health Surveys give the only nationally representative data on child mortality and are thus widely used for that purpose. However, as shown by the width of the confidence intervals in our analysis, these surveys often detect little or no improvement in under 5 mortality, so should be avoided for selecting interventions.
Progress is being made in some low and lower middle income countries towards achieving the millennium development goal on under-5 mortality. National improvements in under-5 mortality, in line with the millennium development goal, are as likely to be accompanied by increasing as decreasing inequalities in child mortality within countries; adding an equity dimension to this goal would give an impetus to adopting policies that tackle health inequalities.

A version of this paper was presented at the Global Forum for Health Research, Mexico City, November 2004. We thank Eldaw Abdalla Suliman and Agbessi Amouzou for supplying us with the standard error data used in calculating the confidence intervals.

Contributors: The idea was developed by KAM in discussion with DRG and DAL. KAM analysed the data and drafted the paper. All authors contributed to the interpretation of the data and the development and writing of the final manuscript. KAM is guarantor.

Funding: KAM was supported by the Dreyfus Health Foundation. Members of the Health Metrics Group of the Dreyfus Health Foundation had access to all data and were involved in all aspects of the analysis, reporting, and interpretation of the data. KAM received financial support from the Waterfront Trust and from the Dreyfus Health Foundation for travel and accommodation expenses related to the project. The analysis was independent of the funding bodies.

Competing interests: None declared.

Ethical approval: Not needed.

What is already known on this topic

What this study adds


doi 10.1136/bmj.38659.588125.79

A memorable patient

We saw the look of despair in his eyes as his trolley was wheeled out of the anaesthetic room. After a long wait, the news had come from the intensive care unit that his operation had to be postponed because, as often happens, no bed was available. Unfortunately, the last bed had been claimed for a patient who had taken an overdose. We trainees, too, had our reasons to be disappointed at the postponement, since this was to be the first laparoscopic radical gastrectomy for distal gastric malignancy performed in our hospital. However, the patient’s look as he was wheeled past us suggested much deeper feelings than mere disappointment.

We met him later on the ward. He was an extraordinary man whose wartime experiences fascinated us. “It was 60 years ago, and I was in the RAF” he began. “On Friday 13 January 1944, after being evacuated from Singapore, our ship was torpedoed by a Japanese submarine. We tried to make a raft out of hatches, but when we got it into the water it rolled over, and so we hung onto it, half submerged in the deep sea. It was 18 hours later when an Australian ship spotted us and started collecting the scattered crew members from the ocean. It appeared that hope and a second chance at life was sailing towards us, but then suddenly it changed its direction and started sailing away. ‘Oh Lord, no. You show us mercy and then take it away.’ Then, when all seemed lost, the ship changed its direction and started coming back. We were rescued. I was told later by one of the ship’s crew that if they had turned back.”

He said, “Today that feeling of life ebbing away came back and I relived the experience as I was being sent back from theatre. I have cancer, and I felt as though my salvation, my operation, like then turned back.”

The old man spoke from his heart, and we thought about how often we never take time to think about what goes on inside the minds of our patients. We had failed to appreciate how a casual postponement could equate to a struggle to survive while starving, cold, and weary in the dark waters of adversity.

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