EDITORIAL

Revisiting the discourse on accomplishing MDG-4

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Introduction

On 8 September 2000, the heads of state from 147 countries participating in the United Nations Millennium Summit agreed to accelerate efforts to achieve a series of human development goals,1 which since 2001 have been referred to as the Millennium Development Goals (MDG).2 Eight goals were established encompassing 18 targets and 48 indicators.3 The fourth goal (MDG-4, target 5) was ‘to reduce by two thirds, between 1990 and 2015, the under-five mortality rate’ (U5MR),2 also referred to as the child mortality rate. Given its importance, considerable resources and efforts have gone into assessing the progress towards achieving MDG-4 along with determining what interventions are needed to accomplish this goal.3 With less than 1000 days remaining until the 2015 deadline for accomplishing the MDG, there has been renewed visibility around the success (or not) of meeting these targets.4 In this issue of IJE, an editorial raises an important issue that is central to measuring progress towards MDG-4,5 and an article presents an interesting analysis of the type of efforts required to accomplish MDG-4.6

Oestergaard and colleagues argue that annual assessments of a country’s progress towards MDG-4 are problematic as the targets are not constant, and any reliable knowledge of progress (or lack thereof) will only be possible well after 2015.5 In the case of MDG-4, the UN Inter-agency Group on Child Mortality Estimation (UN-IGME) uses the annual rate of change in U5MR to assess whether countries are on track to achieve MDG-4,5 and an article presents an interesting analysis of the type of efforts required to accomplish MDG-4.6

Oestergaard and colleagues argue that annual assessments of a country’s progress towards MDG-4 are problematic as the targets are not constant, and any reliable knowledge of progress (or lack thereof) will only be possible well after 2015.5 In the case of MDG-4, the UN Inter-agency Group on Child Mortality Estimation (UN-IGME) uses the annual rate of change in U5MR to assess whether countries are on track to achieve MDG-4.5 Thus, the MDG targets are ‘moving’ in the sense that with each new release of estimates from UN-IGME, the required rate of change, and thus a country’s target pace to achieve MDG-4, will likely be different. The issue is further complicated by uncertainties around estimation of the baseline rates of U5MR in 1990 in several countries. Whereas the annual rate of change is important in determining a country’s current trajectory toward MDG-4, it does not have much relevance for the ultimate determination as to whether a two-thirds reduction in U5MR will be reached by 2015. As Oestergaard and colleagues argue, tracking of the progress towards MDG-4 could be strengthened both by a direct comparison of whether a country’s annual rate of change is statistically different from the required rate to achieve MDG-4 in a given year, along with an estimate of the probability that a country is on target.5 At the same time, it seems that the issue raised by Oestergaard and colleagues is technical. Simple and effective tracking of the progress towards MDG-4 can be easily accomplished by maintaining the focus on the absolute level of U5MR, as opposed to solely relying on the rate of change.

Meanwhile the article by Amudhan and colleagues examines the effects on rates of institutional deliveries following sequential interventions of a conditional cash transfer scheme and strengthening of primary health centres to provide 24-h access to obstetric care in a rural north Indian setting.6 Their findings suggest that improvements to service delivery are most effective in a population where demand has been strengthened through conditional cash transfer.

These two papers provide a useful segue to broadly discuss and deliberate whether the discourse on, and efforts to, accomplish MDG-4 need to be altered since it is clear that many countries are not on course to meet their targets.8 At the outset, although MDG targets are framed at the global level, action or strategies to meet targets need to be focused within local or country contexts.3 In this editorial, we use India as an example to highlight four critical issues in the context of MDG-4 target-setting as well as efforts to achieve a two-thirds reduction by 2015. It is worth noting that there has been a secular decline in rates...
of U5MR over the past 40 years in India (Figure 1); rates have declined from 189 deaths per 1000 live births in 1970 to 63 per 1000 live births in 2010. The global annual rate of reduction required to achieve MDG-4 is 4.4% over the period 1990–2015.7 For India, the annual rate of reduction was 2.5% from 1970 to 1990, 2.6% from 1990 to 2000 and 3.2% from 2000 to 2010; year-on-year relative changes appear to have been increasing since the mid-1990s.

The unconscionable business of estimating child mortality
A sad, shameful, and scandalous reality of our times is the simple truth that we still do not count every child who is born nor those unfortunate enough to die prematurely. The idea that every child counts remains a well-intentioned rhetoric.9 More than 100 countries lack the most basic birth and death registration systems, and just 34 are able to generate cause-of-death data.10 For the remainder, all we have are ‘estimates’; indeed, there appears to be thriving industry with substantial investments to develop statistical models to derive estimates of U5MR in low- and middle-income countries, with considerable exchanges and disagreements on the pros and cons of estimates produced by various groups.8,11-14 Few high profile and sustained efforts exist to improve the civil and vital statistics systems in countries with some of the greatest burden of U5MR,13 including India. Any estimate of U5MR will always be inferior to vital registration data. Indeed, there is no way to know exactly how many lives have been saved in India by pursuing MDG-4, simply because counts of births and deaths are not available. From the historical trends in child mortality in developed countries, it would appear that the establishment of a comprehensive vital registration system at the country level is a prerequisite for reductions in U5MR.16 Strengthening such systems is likely to empower communities and introduce and improve accountability. Countries where U5MR remains high and/or rates of decline are slow typically lack such comprehensive vital registration systems.15 Given that comprehensive vital registration systems have not been established in India or many of the low- and middle-income countries, it would seem that this remains a crucial gap that will hinder achieving MDG-4 and, even when progress is made, uncertainties will prevail. As we move towards the post-MDG phase, with some momentum gathering for registration systems in many countries,10,17 we hope that the rhetoric that ‘every child counts’ is matched by the action of counting every child.

Need to consider intergenerational perspectives
Many efforts for reducing child mortality have focused on environmental, maternal and socioeconomic conditions.18,19 For example, increasing educational attainment among women has been identified and targeted as a means to achieve rapid progress towards MDG-4.19 While increasing educational attainment should remain an intrinsic goal in improving human development and human capital, its instrumental role in accomplishing MDG-4 necessitates cautious reflection. There is a need to consider the complementary
importance of intergenerational factors for two reasons. First, maternal height, a marker of the early life nutritional and environmental conditions of the mother (i.e., an intergenerational exposure of maternal health stock), is associated with offspring mortality. Second, the effects of maternal education or current household wealth may be at least partially confounded when intergenerational factors are not fully controlled. In an analysis of the timeframe needed to achieve MDG-4, pooled across all countries, it was suggested that interventions with a focus on environment, maternal, and socioeconomic factors may be most applicable among individuals and populations with greater accumulated health through the life course. In short, the role of intergenerational factors in influencing child mortality needs to be considered alongside improvements on maternal education.

Should target setting be for countries and population groups?

An important issue often overlooked in the context of MDG-4 targets is the disparities in U5MR within any country often, along socioeconomic lines, rendering any country-level assessment of progress or achievement misleading or meaningless. For example, whereas the overall U5MR rate in India decreased from 109.3 per 1000 in 1992 to 74.3 per 1000 in 2006 (a 32% reduction and an annual reduction of 2.5%), there was considerable variation in rates across wealth quartiles in 1992 (varying from 142.6 per 1000 in the poorest 25% to 50.0 per 1000 in the richest 25%) and these inequalities have persisted through 2006 (when the U5MR was 100.1 per 1000 in the poorest 25% and 38.9 per 1000 in the richest 25%; Figure 2). The annual rate of change across all wealth groups was similar (from 1.6% to 2.3% per year) and well below the required 4.4% to achieve the MDG-4 target (although the absolute target has been reached for the richest households).

Further, there is also considerable variation between states in India (Figure 3). In 2006, the U5MR varied from as high as 96.4 per 1000 in the state of Uttar Pradesh to as low as 16.3 per 1000 in Kerala. Several states including Kerala, Goa, Tamil Nadu, Manipur and Himachal Pradesh have already achieved the MGD-4 target of 42 per 1000, which was established at the national level. Based on current projections, several other states including Delhi, West Bengal and Jammu & Kashmir will likely achieve this goal whereas Arunachal Pradesh, Assam, Madhya Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Rajasthan and Uttar Pradesh will miss the MDG-4 target by 20 or more percentage points. Indeed, a faster rate of decline among the poorest groups and most disadvantaged regions within countries is needed if the inequality gap is to be narrowed, a notion that is underemphasized in the current context of MDG target setting.

![Figure 2](https://academic.oup.com/ije/article-abstract/42/3/648/914215) Under-5 mortality rate (U5MR) in India by quartiles of household wealth and change from 1992 to 2006. Horizontal line represents India's MDG-4 goal of 42 per 1000. Source: Authors' calculation from Indian national Family Health Surveys.
Role of health systems: inducing demand vs improving supply

Finally, in the context of health systems interventions to achieve MDG-4, disproportionately greater emphasis has been placed on the demand-side factors and considerably less on supply-side factors such as availability and quality of health services. Programmes such as conditional cash transfer are in vogue currently. In 2005, the Government of India launched a conditional cash transfer programme called Janani Suraksha Yojana (JSY), to provide incentives to women living below the poverty line to give birth in a health facility. Such an approach presumes that the primary driver is the mother’s behaviour and that if she could be ‘incentivized’ she would be able to provide improved care for her child. Amudhan and colleagues examine both the demand and supply aspects of the health system with a particular emphasis on the timing. Their results suggest that the combination of demand and supply strategies can be used to increase institutional deliveries (MDG-5) in a rural setting, which in turn is critical to accomplishing MDG-4. Amudhan and colleagues conclude that improvement in health services within areas primed by demand-side interventions such as JSY may increase uptake of institutional deliveries, more than just improving health services and/or implementing JSY. We took the liberty of summarizing the quantitative results of Amudhan and colleagues in Figure 4, which clarifies the effects of improving health services and implementing JSY. The rate of institutional deliveries in the study area demonstrated a modest increase from 42% at baseline to 50% by first time providing upgraded 24-h obstetric and intrapartum care free of cost through a single primary health centre (PHC). A further increase (to 54%) was observed following the introduction of JSY. A substantial increase (to nearly 70%) was not seen until access was improved by...
introducing 24-h intrapartum services in a second PHC following the introduction of JSY throughout the study area. This suggests the importance of both demand- and supply-side factors along with the timing of both. More research of this nature that systematically evaluates the role of supply-side factors, with regard to both availability and quality, and interventions that induce demand, along with their potential interactions, is needed. This becomes even more important in light of efforts to more generally create subsidized health insurance programmes among the informal sector in low- and middle-income countries, which have thus far yielded mixed results.30

Concluding remarks

As the global health community deliberates about the strong likelihood of the MDG-4 targets not being accomplished31 and about the post-MDG era,32 it is important that aspects that were ignored in the discourse over the past decade find emphasis and support. These include sustained efforts to ensure (i) that the birth and death of every single child is counted; (ii) a life-course and intergenerational approach to understanding the determinants of, and thereby methods for reducing, child mortality; (iii) target-setting to recognize population disparities in USMR within countries; and (iv) pursuit of a balanced approach to health system interventions that focuses on both priming the demand and improving the quantity and quality of services provided by the health systems. Thus far, the MDG-4 discourse has focused on what might be considered ‘low-hanging’ fruit. Although these can take us some distance, they will not go the whole way. We hope the post-MDG discourse will be about addressing systematic and structural issues (that every single advanced country has had to tackle, from counting its births and deaths to substantial, equitable and sustained improvements in absolute standards of living) if the public health community and global and national governments are truly serious about avoiding unnecessary child deaths.

References


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