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## Access to health: How to reduce child and maternal mortality?



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### Mind the development gaps

Every minute around the world, a woman dies in childbirth. Every year, two million babies die on their first day. In 2005, the maternal mortality ratio in developing countries was at 450 per 100,000 live births, a slight decrease since 1990 ([UNFPA, 2008](#)). Of the 136 million babies born every year, about 4 million die in the first 28 days of life, primarily in developing countries.

A majority of these maternal and neonatal deaths could be prevented with early recognition and proper implementation of required skills and knowledge ([Ray and Salihu, 2004](#)). While the Millennium Development Goals (MDG4 and 5) call for a reduction in maternal mortality by three quarters and child mortality by two thirds, this can only be achieved if health care coverage of mothers and newborns is significantly scaled up.

But has access to health services helped in reducing maternal and neonatal mortality? What kind of approaches have been most successful in increasing health coverage of mothers and newborns? Has scaling up interventions improved the delivery of health services?

### Lessons learned

The most substantial evidence on the impact of access to health services has emerged from a 3ie-supported synthetic review conducted by Lassi *et al.* ([2010](#)). However, all recommendations about which interventions are most effective at scaling up access to Maternal Neonatal and Child Health services (MNCH) are based on evidence from relatively small, localised studies, and Bhutta *et al.* ([2008a](#)) warn that any efforts to scale up interventions will need to take into account contextual factors.

### Overview

Systematic reviews show that access to community-based health services reduces neonatal mortality and still births, but the effect on maternal mortality is harder to detect.

However, the evidence so far has come from small sample size studies, mainly conducted in Asia and with very little information from Sub-Saharan Africa and Latin America. Only a few studies assess Maternal Neonatal and Child Health (MNCH) services at the community level, and focus on interventions at the level of primary care.

More large scale research factoring in specific contexts is particularly needed. Additional investigation on the cost-effectiveness of health services is also required and will help in promoting and scaling up community-based interventions for maternal and newborn care.

**Key words: Maternal and neonatal mortality, community interventions, cost-effectiveness**

**Access to health services can reduce neonatal mortality but has less impact on maternal mortality.** There is evidence to show that 41 to 72 percent of newborn deaths could be prevented by interventions such as Tetanus Toxoid (TT) immunization to mothers; clean and skilled care at delivery; newborn resuscitation; prevention of hypothermia; exclusive breastfeeding; clean umbilical cord care; and management of pneumonia and sepsis. Around half of these prevented deaths are possible through community-based interventions ([Darmstadt et al., 2005](#)). However, current evidence does not provide information whether these interventions can be scaled up and/or will have the same impact if implemented at a larger scale ([Bhutta et al., 2008a](#)).

Similarly, the review by Lassi *et al.* (2010) shows an overall 27 percent reduction in neonatal deaths. Community mobilization played a vital role in reducing neonatal deaths possibly because these groups focused on women in the antenatal period and on newborn care and management.

The review showed no significant impact on the reduction in maternal mortality. However, in the detailed analysis, provision of clean delivery showed a 29 percent decline in maternal mortality ([Lassi et al., 2010](#)).

**Community based health intervention packages can reduce mortality rates.** Interventions bundling multiple approaches and delivered through trained outreach workers can reduce maternal, perinatal and neonatal mortality ([Lassi et al., 2010](#)). Traditional Birth Attendants (TBAs), when successfully linked with other cadres of health system workers can work to reduce neonatal mortality. TBA training, which had not shown an effect on improving maternal outcomes, was associated with 24 percent reduction in neonatal deaths. This finding is consistent with the review by Sibley *et al.* (2007) which reported an overall 29 percent reduction in neonatal mortality following deployment of trained TBAs.

Community support groups and participatory approaches through group sessions and family involvement in care, were especially effective in reducing perinatal deaths. In particular, community-based advocacy or support groups and family involvement in care were especially effective in reducing perinatal deaths – by 21 percent and 27 percent respectively – compared to scenarios where these approaches were not used in the intervention packages. Family involvement in care also showed a positive impact on improving stillbirths by 22 percent ([Bhutta et al., 2010](#); [Kumar et al., 2008](#); [Bang et al., 1999](#); [Azad et al., 2009](#)).

In theory, Community Based Health Insurance (CBHI) also resulted in increasing access to facility based maternal care ([Smith and Sulzbach, 2008](#)). However, these preliminary results are based on cross-sectional data and small sample sizes.

Findings from a review of 54 developing countries suggest that government health expenditure, as a percentage of total health expenditure, also increases the utilization of skilled birth attendants and caesarean sections, but not antenatal care ([Kruk et al., 2007](#)). This suggests that in addition to scaling up community based interventions, 'greater absolute levels of health spending will be required if developing countries are to achieve MDG 5' ([Kruk et al., 2007](#)).

**Cultural factors are crucial in designing behaviour change strategies.** Overall, the effect of interventions on the mother's behavior in seeking healthcare in cases of maternal illnesses is not significant ([Lassi et al., 2010](#)). A potential reason could be that relevant cultural and perceived religious barriers to maternal care are resilient to behavior change communication strategies. Formative research from South Asia also reported that when maternal illness occurs, it often falls on the mother herself to recognise danger signs, and once identified, her mother-in-law and husband can be the bridge or barrier for care seeking at home or beyond ([Jackson and Jackson-Carroll, 1987](#); Mesko et al., 2003; [Syed et al., 2006](#)).

On the other hand, in the case of neonatal illness it is usually the mother who recognises symptoms and seeks care from any source, including traditional sources. A number of studies focused on referrals management of early neonatal illnesses and the majority of planned visits were within the first week of life ([Bang et al., 1999](#); [Bhutta et al., 2008b](#); [Bhutta et al., 2010](#); [Darmstadt et al., 2008](#)). This suggests that behavior change strategies should also target the elimination of a range of possible barriers – whether physical, cultural, and spiritual – which may necessarily involve the entire family.

**No substantial evidence on 'cost-effectiveness' and 'scaling up' interventions.** An investigation of intervention coverage from 68 countries with high maternal and child mortality rates revealed that the implementation, uptake, and extent to which distribution of interventions is equitable varies greatly ([Bhutta et al., 2008a](#)). Current evidence does not provide information on whether effective interventions can be scaled up and/or will have the same impact when implemented at a larger scale.

All recommendations on which interventions are most effective at scaling up access to MNCH services are based on evidence from relatively small, localised studies, and [Bhutta et al. \(2008a\)](#) warn that efforts to scale up interventions will need to take into account contextual factors. A Cochrane review (2006) also concludes that there were only few studies that assessed MNCH care at the community level, and only few that assessed interventions at the level of primary care. Also there was no strong evidence that integrating primary health care services improves the delivery of health services in developing countries ([Bhutta et al., 2008a](#); [Briggs & Garner, 2006](#)).

### Closing the evaluation gap

Overall, improved access to health services reduces neonatal mortality, but the impact on maternal mortality may be less significant. However, the bulk of the studies conducted are from Asia and very limited information is available from Sub-Saharan Africa and Latin America. There is a clear need for additional research and large scale impact evaluations assessing coverage rates and effectiveness of MNCH interventions are needed.

**Very large sample sizes are required to produce reliable estimates of maternal mortality impacts.** Unfortunately, the sample size of most studies was inadequate to detect any meaningful change in maternal mortality.

Most of the reviewed studies did not document the complete characteristics of deployed community health workers. Recording characteristics like the level and amount of

supervision provided to these workers could have helped in identifying the importance of this factor and its association with other outcomes. Additional research at an appropriate scale and with detailed descriptions of each component intervention is thus much required.

Only a few of the reviewed studies reported the actual costs incurred in providing interventions for saving one life or cost of one averted death (Manandhar *et al.*, 2004; [Bang \*et al.\*, 2005a](#); [Bang \*et al.\*, 1999](#); [Baqui \*et al.\*, 2008](#)). More research is required on the cost-effective and affordable ways to prevent disease and promote health in community settings ([Morgan, 2001](#)). Cost effectiveness plays a crucial role in selecting and tailoring intervention packages for scaling up. It is a priority area for research which can identify areas for investment ([Lassi \*et al.\*, 2010](#)).

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