

Draft for discussion

MATERNAL AND CHILD HEALTH

Evidence from Systematic Reviews to Inform Decision-Making Towards Achieving the Millennium Development Goals For Reducing Maternal and Child Mortality

**A Background Document prepared for An International Dialogue on
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Contributors

Details are provided in Appendix 1

Coordination and writing: Meetali Kakad, Andrew D Oxman

Maternal mortality overview: Mario Festin, Antonia E. Habana, Felix Eduardo R. Punzalan, Maria Vanessa V. Sulit, Meetali Kakad

Child mortality overview: Meetali Kakad, Meenu Singh, Mukesh Dhokaria, Nusrat Shafiq, Gunn Vist, Vigdis Underland, Jan Odgaard-Jensen

Lay health worker review: Simon A Lewin, Susan M Babigumira, Xavier Bosch Capblanch, Godwin Aja, Brian van Wyk, Claire Glenton, Inger Scheel, Merrick Zwarenstein, Karen Daniels

Quality improvement and governance overview: Fernando Althabe, Eduardo Bergel, Luz Gibbons, Agustín Ciapponi, Alicia Alemán, Lisandro Colantonio, Alvaro Rodríguez Palacios

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Address for correspondence

Dr. Andy Oxman
Norwegian Knowledge Centre for the Health Services
P.O. Box 7004, St. Olavs plass N-0130 Oslo, Norway
Email: oxman@online.no

Executive summary

BACKGROUND

Making well-informed decisions about how best to achieve the MDGs for maternal and child mortality depends on public policy makers accessing the best available evidence about what is known to work and what could be potential useful, and findings ways to integrate these solutions into complex and often under-resourced health systems. Evidence is thus needed about: 1. What services and programmes to offer or cover; 2. How to deliver those services; 3. Financial arrangements; 4. Governance arrangements, and 5. How to bring about change. In this brief we summarize relevant evidence from systematic reviews in each of these five key domains. The aim of this report is not to address all questions relevant to each of domain. Instead, we illustrate how systematic reviews can be used to inform decisions for key questions within each domain.

METHODS

Overviews of systematic reviews of interventions to reduce maternal and child mortality

Two teams of reviewers (one for maternal and one for child mortality) identified potentially relevant interventions by reviewing published overviews of the effectiveness and cost-effectiveness of interventions to reduce maternal or child mortality; the WHO Reproductive Health Library; and by consulting experts. They identified systematic reviews by searching the Cochrane Database of Systematic Reviews (CDSR), the Database of Abstracts of Reviews of Effects (DARE), PubMed and the reference lists of published overviews up to October 2006. They assessed the quality of reviews using specified criteria, prepared GRADE evidence profiles for relevant interventions, and addressed considerations of applicability, equity and scaling up using a brief checklist for each of these considerations.

Overview of interventions to prevent mother-to-child transmission of HIV

Medline, Embase, CDSR, DARE and 10 other databases were searched up to January 2006 for systematic reviews, randomized controlled trials (RCTs) and cohort studies, placing emphasis on systematic reviews of RCTs and large RCTs. Smaller RCTs and systematic reviews of non-controlled studies were considered if large RCTs were unavailable. GRADE evidence profiles for each recommendation were prepared.

Systematic review of using lay health workers to deliver MCH

The review team updated a Cochrane review published in 2005. Medline, Embase and six other databases for RCTs were searched up to August 2006. Two of the authors assessed independently the relevance of all titles, abstracts and the full text of retrieved articles. The risk of bias for each included study and extracted data was also evaluated. Following this, studies were grouped into nine categories and, where feasible, results of the included studies were combined to obtain an overall estimate of effect using meta-analysis.

Systematic review of strategies for integrating services

The authors searched the register of the Cochrane Effective Practice and Organisation of Care (EPOC), Medline, Embase and seven other databases up to September 2005 for RCTs, interrupted time series analyses and controlled before-after studies of integration strategies in LMICs. Two authors assessed independently the relevance of studies and the risk of bias for included studies and extracted data.

Systematic reviews of four financial mechanisms for improving access

PubMed, Embase the EPOC register and 22 other databases up to January 2006 were searched for RCTs, interrupted time series analyses and controlled before-after studies of the effects of four financial mechanisms on access to healthcare. Grey literature using websites and online resources of relevant international organizations and networks were also searched. Two authors assessed independently the relevance of the studies selected, as well as the risk of bias for included studies and extracted data.

Systematic review of methods of consumer involvement

The Cochrane Consumers and Communication Review Group's register; Medline; Embase; and nine other databases were searched up to January 2006 for RCTs, interrupted time series analyses and controlled before-after studies that assessed methods of involving consumers in developing healthcare policy, clinical practice guidelines, patient information material or healthcare research. Two authors assessed independently the relevance of the studies selected and the risk of bias for included studies and extracted data.

Overview of systematic reviews of QI interventions

The EPOC register of systematic reviews was searched up to October 2006. Reviews included examined the effects of QI interventions or governance arrangements on professional practice or healthcare outcomes, and could be applied to MCH in LMICs. Two

authors assessed independently the relevance of reviews, assessed the quality of relevant reviews, and extracted data related to the focus, inclusion criteria, main results and conclusions of the included reviews.

RESULTS

1. Programmes and services offered or covered

Interventions to reduce maternal mortality

Maternal mortality is generally rare and the reliable measurement of reductions in rigorous trials of interventions is difficult. The only intervention for which a statistically significant reduction in maternal mortality was reported was that of magnesium sulphate for the management of eclampsia. Trials of prophylactic antibiotics to prevent infection following caesarean section found a statistically significant reduction in the combined outcome of serious infectious morbidity or death. Other interventions found to be effective for major causes of maternal morbidity included: antibiotics for the preterm rupture of membranes; anti-malarial drugs, external cephalic version for breach presentation; a reduced number of antenatal visits with specific activities for low risk pregnancy; active management in the third stage of labour; normal delivery by skilled attendants; surgical procedures to evacuate incomplete abortion; umbilical vein injection for management of retained placenta; and treatment of postpartum haemorrhaging.

Interventions to reduce child mortality

Interventions found to reduce child mortality included: antenatal corticosteroids in preterm delivery; antimalarial intermittent preventive treatment in pregnancy; case management of pneumonia; insecticide-treated bed nets; tetanus toxoid; vitamin A for treating measles; and zinc supplementary therapy for treating diarrhoea. Promising interventions included: chemoprophylaxis or intermittent treatment against malaria; interventions to improve water quality and sanitation; Haemophilus influenza b immunization and measles immunization. Other interventions have been found to be effective for major causes of child mortality, but evidence of their impact on child mortality is lacking. This is a rapidly evolving field and recent emerging evidence has not yet been systematically reviewed.

Interventions to prevent mother-to-child transmission of HIV

ARV therapy reduces MTCT of HIV, but the most effective regimen in terms of the choice of agent(s), timing of introduction and postpartum use, has not been established. One RCT in Kenya found formula feeding which incorporated access to clean water and health education, when compared with breastfeeding, reduced the incidence of HIV in infants at 24 months without increasing mortality from other causes. Other trials are currently underway. There is limited evidence that elective caesarean section can reduce the incidence of HIV in infants compared with vaginal delivery. Studies of the effects of immunotherapy, vaginal microbes and vitamin supplements have not found significant effects on MTCT of HIV.

2. Delivery arrangements

Options to ensure that effective interventions are delivered to those who need them, include: community-based approaches; training (see the QI and governance arrangements reviewed below); expanded roles for nurses, midwives, pharmacists and other health professionals (see the IDEAHealth human resources for health policy brief); the use of lay health workers; promotion of self-care; changes in the setting or site of service delivery; and the integration services. Systematic reviews of two of these strategies are included in this policy brief.

Lay health workers

LHWs can effectively promote breastfeeding, reduce mortality and morbidity from common health conditions in children, and improve tuberculosis treatment outcomes. LHWs can also effectively promote immunization uptake in children and provide support to mothers of sick children in high-income settings – findings that may be transferable to LMICs. Evidence is still needed for other interventions including: LHWs compared to health professionals for delivering similar interventions, alternative training strategies, and strategies for sustaining LHW interventions.

Integration of services

There are few good quality studies of strategies to promote service integration in LMICs. Reproductive health is a popular area for studies of integration, but the evidence thus far is inconclusive. Integration may not, in fact, improve service delivery. If strategies to achieve integration are used, their impact should be evaluated, including evolving strategies for implementing and sustaining IMCI.

3. Financial arrangements

Features characteristic of healthcare financing in LMICs include that of a low tax base that limits government financing; the presence of donor financing; a number of different care providers in the public and private sectors; and a large proportion of out-of-pocket spending on finance health care. Systematic reviews of five financial mechanisms to improve access are included in this policy brief. These are: (1) the introduction, removal or change in the level of user fees; risk protection mechanisms, including (2) community-based insurance (3) social insurance; (4) contracting out and other forms of privatization or use of private sector providers to improve access to care; and (5) demand-side interventions such as vouchers or conditional cash transfers (CCT).

There is low quality evidence of the effects of user fees on utilization and a lack of evidence related to health or other socioeconomic effects. The available evidence supports the assumption that user fees reduce utilization. Though their social and health impacts are uncertain, they may reduce the use of essential as well as non-essential services, especially for disadvantaged populations. Reducing or removing user fees can increase utilization.

There is little evidence of the effects of community-based health insurance (CBI), social health insurance (SHI) or contracting out of services to the private sector. CBI schemes may increase inequities. If initiated, their impact on the population at large should be

evaluated. Contracting, although widely used, has been poorly evaluated and needs further assessment and evaluation. The potential benefits of contracting may be limited by a lack of competition, the capacity to manage a contract and monitor service delivery, and the difficulties governments face in redeploying public funds to private providers. SHI is a form of compulsory insurance that aims to provide universal coverage. SHI is intended to provide coverage to every household. Every citizen is required to make contributions, although governments may do so on behalf of the poorest and the unemployed; employers usually also contribute on behalf of their employees. Capacity issues are equally important for CBI and SHI: both depend on adequate health systems to ensure that services are provided to remote and rural populations.

There is good quality evidence of the effects of conditional cash transfers (CCT) in Latin America. CCT programmes have effectively increased the uptake of preventive services, encouraged particular preventive behaviours, and had positive effects on health status. However their applicability, sustainability and desirability in more deprived settings is uncertain.

4. Governance arrangements

There are few systematic reviews of the effects of different governance options for health systems such as centralizing versus decentralizing responsibility; or locating responsibility for health delivery in government versus for-profit versus non-profit organizations; or closed versus open and participatory governance structures.

Systematic review of methods of consumer involvement

There is almost no evidence from comparative studies of the effects of different methods to involve consumers or stakeholders in healthcare decisions about healthcare systems. There is very low quality evidence that face-to-face group meetings and interviews engage consumers better than surveys when setting priorities for community health goals. Such approaches may result in different priorities being set. There is also a lack of research evaluating methods to recruit consumer or stakeholder representatives, alternative degrees of involvement, forums for communication, ways of providing training and support, and degrees of financial support for involvement.

5. Bringing about change

There are important gaps in the quality of care reported in all countries where this has been examined. In LMICs ensuring the delivery of effective MCH services to those who need them most is a major challenge.

QI interventions

Passive dissemination strategies are unlikely to achieve change. Most active strategies that have been examined, including interactive educational meetings, outreach visits and the use of reminders, have the potential to achieve moderate but important changes in professional practices. Tailored interventions, in theory at least, offer particular promise and there are logical arguments for adjusting interventions to address specific problems. However, there is uncertainty concerning how best to diagnose possible underlying problems and how to select interventions likely to be most effective in addressing specific

problems. Regulatory strategies, as well as educational strategies are likely to play an important role, although there is limited evidence of their effects and, like other interventions, may have unwanted effects. Financial incentives are also likely to play an important role. But these have not been well evaluated, may be difficult to apply, can be costly and may even have perverse effects. Organisational strategies are likely to play a critical role and warrant further evaluation..

DISCUSSION

There is evidence of high or moderate quality for the effectiveness of preventive and therapeutic interventions for the major causes of maternal and child mortality. However, these interventions are often not delivered to the mothers and children who need them most. Interventions delivered by lay health workers have been found to reduce mortality as well as morbidity from common health conditions in children. Reducing user fees is likely to increase utilization. Several QI strategies are effective, including interactive training, outreach visits and reminders. Decisions about how best to deliver, finance and govern MCH services need to be made, despite the lack of evidence for other strategies considered in this brief. Given the uncertainty about their effects, it is important to monitor and evaluate their impact.

This document illustrates that it is possible to prepare a policy brief quickly relying largely on existing systematic reviews. However, a weakness of this report is that it has only addressed a limited number of strategies for which systematic reviews were available or could be updated (for lay health workers) or completed (for financing).