WHO recommendations on health promotion interventions for maternal and newborn health

2015

World Health Organization

WHO recommendations on health promotion interventions for maternal and newborn health

2015

World Health Organization

WHO Library Cataloguing-in-Publication Data

WHO recommendations on health promotion interventions for maternal and newborn health.

Contents: main report – appendixes – supplemental material

1.Maternal Health Services. 2.Reproductive Health Services. 3.Perinatal Care.
4.Infant, Newborn. 5.Counselling. 6.Health Promotion. 7.Guideline. I.World Health Organization.

ISBN 978 92 4 150874 2 (NLM classification: WA 310)

Contents

Supplemental material

The evidence tables have been published in a separate document entitled *WHO recommendations on health promotion interventions for maternal and newborn health: evidence base*, which can be accessed online at http://www.who.int/maternal_child_adolescent/documents/health-promotion-interventions/en/.

Acknowledgements

The Department of Maternal, Newborn, Child and Adolescent Health of the World Health Organization (WHO/MCA) gratefully acknowledges the contributions that many individuals and organizations have made to the guideline development process on health promotion interventions for maternal and newborn health. We would particularly like to thank the members of the Guideline Development Group and the technical resource persons for their serious and dedicated effort. Sincere thanks are extended to Mike Mbizvo for chairing the technical consultations. The names of the different contributors involved in this guideline are listed in Appendices 1 and 2.

Special recognition is given to the researchers who conducted the systematic reviews and the authors of the background papers used in this guideline. Anayda Portela of WHO/MCA, Helen Smith of the University of Manchester and Cicely Marston of the London School of Hygiene and Tropical Medicine drafted this document.

We are grateful to the Norwegian Agency for Development Cooperation, the United States Agency for International Development and a H4+ grant from the Department of Foreign Affairs, Trade and Development Canada.

Acronyms

ANC	Antenatal care
ANM	Auxiliary nurse-midwife
BF	Breastfeeding
BPCR	Birth Preparedness and Complication Readiness
CI	Confidence interval
C/I	Care-seeking for complications or illness in women and newborns
EmOC	Emergency obstetric care
FB	Facility birth
FCI	Family Care International
FGM	Female genital mutilation
GDG	Guideline Development Group
GRADE	Grading of Recommendation, Assessment, Development and Evaluation
IFC	WHO Working with individuals, families and communities Framework
ITS	Interrupted Times Series
LAC	Latin America and Caribbean
MAPEDIR	Maternal and Perinatal Death Inquiry and Response Project
MASCOT/ MH-SAR	Multilateral Association for Studying Health Inequalities and Enhancing North-South and South-South Cooperation
WHO/MCA	WHO Department of Maternal, Newborn, Child and Adolescent Health
MCH	Maternal and Child Health
MDSR	Maternal Death Surveillance and Response
MM	Maternal mortality
MI	Male involvement
MN	Maternal and newborn
MNH	Maternal and newborn health
MoH	Ministry of Health
MWH	Maternity waiting home
NGO	Nongovernmental organization
NM	Neonatal mortality
OR	Odds ratio
PM	Perinatal mortality
PN	Postnatal care
PP	Postpartum care
RCT	Randomized controlled trial
RR	Relative risk
SB	Stillbirth
SBA	Skilled birth attendant
SRH	Sexual and reproductive health
TBA	Traditional birth attendant
UN	United Nations
UNICEF	United Nations Children's Fund
UNFPA	United Nations Population Fund
USD	United States dollar
WHO	World Health Organization

Executive summary

Introduction

In 2003 the World Health Organization (WHO) published *Working with individuals, families and communities to improve maternal and newborn health*,[1] the IFC Framework that promotes integrating the health promotion approach set out in the Ottawa Charter into national maternal and newborn health strategies. More than 10 years after the original framework was published, it is time to update the evidence for the key interventions and for community participation, using the methods set out by the WHO Guideline Review Committee. In June 2012 a steering group met for the first time to discuss the IFC Framework, propose priority research questions, define priority outcomes, and discuss methods for searching, retrieving, and synthesizing the evidence likely to be available for the research questions.

This guideline was developed in accordance with the procedures outlined in the WHO *Handbook for guideline development*,[2] including a Technical Consultation held with a Guideline Development Group (GDG), made up of an international group of experts. The first meeting of the GDG was held in July 2013 at the WHO headquarters in Geneva, Switzerland. At that time the priority research questions were reviewed, key methods for the systematic reviews were presented and discussed and key outcomes were defined. After a second virtual meeting in November 2013, a recommendation was made on community mobilization through facilitated participatory learning and action cycles with women's groups for maternal and newborn health.[3]

A third meeting was held in July 2014 at the WHO headquarters in Geneva. At this Technical Consultation, the evidence for the remaining priority research questions was reviewed and recommendations were developed and adopted by the GDG. These recommendations are listed in Box A. For each recommendation, the quality of the supporting evidence is graded as very low, low, moderate or high. The participants then decided on the strength of these recommendations by taking into account the quality of the evidence, the values and preferences of stakeholders, the balance of benefits and possible harms, resource use and implementation considerations. Research gaps were also identified. The reader is urged to consult the full version of this guideline to better understand the interventions reviewed and the important considerations for implementation identified.

Although recommendations were made for individual interventions, the GDG recognizes that these interventions are best implemented as part of a broader strategy that addresses different levels, including individual, family, community, services and policy, as outlined in the original IFC Framework. The recommendations set forth will help countries to establish if the single intervention should be part of a broader package to reach the objectives to increase individual, family and community capacity to contribute to maternal and newborn health (MNH) improvements and to increase use of skilled care during pregnancy, for childbirth and after birth.

Preamble

Human rights and community participation principles are fundamental to maternal and newborn health strategies, as recognized in a number of legal instruments and key WHO policy documents and as set out within the IFC Framework and WHO and other UN strategies. The interventions considered here can be viewed as ways to apply these principles. They aim to increase access to timely and appropriate health care, to address underlying determinants of health, to address gender and equity and to achieve community participation in programme planning and in improving services.

This guideline reiterates the importance of human rights and the right to participate and aims additionally to inform country programmes about the extent to which specific interventions can affect maternal and newborn health.

The interventions are expected to be interrelated in practice; however, they are separated here for the purposes of examining the evidence. As detailed in the IFC Framework, the specific interventions should

[1] Working with individuals, families and communities to improve maternal and newborn health. Geneva, World Health Organization; 2010 (http://www.who.int/maternal_child_adolescent/documents/who_fch_rhr_0311/en/, accessed 26 November 2014).

[2] Handbook for guideline development. Geneva: World Health Organization; 2012 (http://www.who.int/kms/guidelines_review_committee/en/) accessed 26 November 2014).

[3] WHO recommendation on community mobilization through facilitated participatory learning and action cycles with women's groups for maternal and newborn health. Geneva, World Health Organization; 2014 (http://www.who.int/maternal_child_adolescent/documents/community-mobilization-maternal-newborn/en/, accessed 27 November 2014).

be implemented as part of a package of multiple interventions addressing the different factors that affect use of care and the ability of women and families to improve care practices in the home. These recommendations indicate specific interventions that can be considered by country programmes within the packages of interventions.

It is important to note that any intervention designed to increase access to health services should be implemented in tandem with strategies to improve health services. Where the quality of services is poor, women may understandably choose not to use them despite mobilization efforts.

This guideline sets out the importance of context and local conditions for the success or appropriateness of the interventions. Local stakeholders should consider how the context may affect any proposed intervention. The GDG noted that all of these interventions require adaptation to national and local contexts prior to implementation. Dialogue with key stakeholders including women, families and communities is recommended with careful consideration of local values and preferences, potential harms and potential obstacles to implementation. For some of the interventions below, this participatory process is particularly important and this is highlighted within the specific recommendation.

The monitoring and evaluation of implementation efforts is crucial and rarely carried out adequately. Even where it is carried out, it is often not published in a form where it may contribute to international evidence-gathering efforts, such as those presented here. Available evidence, e.g., was insufficient to inform recommendations about how to deliver the interventions. As information about mode of delivery is of vital importance to countries, this must be addressed in ongoing research.

Box A lists the recommendations for the health promotion interventions sorted by the strength of recommendation. For those with a strong recommendation, the GDG is confident that any desirable effects outweigh any undesirable effects. Conditional recommendations are only applicable to certain settings; the GDG concludes that the desirable effects of adherence probably outweigh the undesirable effects. A research recommendation was made when the GDG concludes that there is insufficient information currently available, therefore additional research should be conducted.

BOX A. Recommendations for health promotion interventions for maternal and newborn health

STRONG RECOMMENDATIONS

Birth Preparedness and Complication Readiness

Intervention description

Birth Preparedness and Complication Readiness (BPCR) is an intervention included by WHO as an essential element of the antenatal care (ANC) package. It is often delivered to the woman by the health care provider in antenatal care or initiated or followed up through a visit to the home of the pregnant woman by a community health worker. In addition to working with an individual pregnant woman, programmes often address efforts to her family and the broader community to increase awareness on BPCR or to improve health workers' skills to provide BPCR as part of ANC. Programmes often provide education materials or other visual aids with BPCR information or may implement mass media campaigns with BPCR messages.

A BPCR plan contains the following elements: the desired place of birth; the preferred birth attendant; the location of the closest facility for birth and in case of complications; funds for any expenses related to birth and in case of complications; supplies and materials necessary to bring to the facility; an identified labour and birth companion; an identified support to look after the home and other children while the woman is away; transport to a facility for birth or in the case of a complication; and identification of compatible blood donors in case of complications.

Recommendation

BPCR interventions are recommended to increase the use of skilled care at birth and to increase the timely use of facility care for obstetric and newborn complications.

The quality of evidence was very low.

BOX A (continued)

Male involvement interventions for MNH

Intervention description

Different programmes have directed efforts to harness the support and active involvement of men for improved MNH outcomes. There are different models and rationales for seeking to involve men, including a view of men as gatekeepers and decision-makers for prompt access to MNH services both at the household and community levels; men as responsible partners of women and as an important sub-population within the community; the need to address men's own sexual and reproductive health needs; and men's preference to be involved as fathers/partners. Interventions often include mass media campaigns, community and workplace-based outreach and education for men only or for men and women together, home visits and facility-based counselling for couples, groups or men only.

Recommendation

Interventions to promote the involvement of men during pregnancy, childbirth and after birth are recommended to facilitate and support improved self-care of women, improved home care practices for women and newborns, improved use of skilled care during pregnancy, childbirth and the postnatal period for women and newborns, and increase the timely use of facility care for obstetric and newborn complications.

These interventions are recommended provided that they are implemented in a way that respects, promotes and facilitates women's choices and their autonomy in decision-making and supports women in taking care of themselves and their newborns. In order to ensure this, rigorous monitoring and evaluation of implementation is recommended.

The quality of evidence was very low.

Partnership with Traditional Birth Attendants (TBAs)

Intervention description

While WHO and partners move forward in the promotion of skilled birth attendants and skilled care for childbirth, in those countries and areas where they currently are providers of childbirth care, the responsibility of TBAs in MNH must be specified. Due to their cultural and social acceptability, knowledge and experience, TBAs are considered an important ally for health education and social support and can provide a positive link between women, families, communities and the formal health care system.

Recommendation

Where TBAs remain the main providers of care at birth, dialogue with TBAs, women, families, communities and service providers is recommended in order to define and agree on alternative roles for TBAs, recognizing the important role they can play in supporting the health of women and newborns.

The quality of evidence was very low.

The GDG also endorsed the recommendations from an existing WHO guideline, *WHO OptimizeMNH: Optimizing health worker roles for maternal and newborn health*.[a]

The use of lay health workers including trained TBAs is recommended for promoting the uptake of a number of maternal and newborn-related health care behaviours and services, providing continuous social support during labour in the presence of a skilled birth attendant and administering misoprostol to prevent postpartum haemorrhage.

The use of lay health workers including trained TBAs to deliver the following interventions is recommended, with targeted monitoring and evaluation: the distribution of certain oral supplement-type interventions to pregnant women (calcium supplementation for women living in areas with known low levels of calcium intake; routine iron and folate supplementation for pregnant women; intermittent presumptive therapy for malaria for pregnant women living in endemic areas; vitamin A supplementation for pregnant women living in areas where severe vitamin A deficiency is a serious public health problem); and the initiation and maintenance of injectable contraceptives using a standard syringe.

Providing culturally appropriate skilled maternity care

Intervention description

The need for culturally appropriate health facilities is core to WHO's mandate on Health For All and considered pertinent to care during pregnancy, childbirth and in the postnatal period. Different programmes have adapted models of service delivery or service practices to incorporate acceptable and respectful care, trained service providers, employed mediators and interpreters, and used participatory approaches to engage in dialogue with communities in order to address cultural factors that affect use of care.

[a] WHO recommendations – OptimizeMNH: Optimizing health worker roles for maternal and newborn health. Geneva: World Health Organization; 2012 (http://apps.who.int/iris/bitstream/10665/77764/1/9789241504843_eng.pdf, accessed 7 January 2015).

BOX A (continued)

Recommendation

Ongoing dialogue with communities is recommended as an essential component in defining the characteristics of culturally appropriate, quality maternity care services that address the needs of women and newborns and incorporate their cultural preferences. Mechanisms that ensure women's voices are meaningfully included in these dialogues are also recommended.

The quality of evidence was very low.

Companion of choice at birth

Intervention description

The companion of choice who accompanies a woman during labour and birth in the facility is defined slightly differently in different contexts and studies, but primarily refers to the person who accompanies women during the active stages of labour and/or in birth. The companions in different settings can vary; sometimes labour companions or doulas provide support or a female relative or husband may be present. Companions may be trained to provide support to women or have little or no training.

Recommendation

Continuous companionship during labour and birth is recommended for improving women's satisfaction with services.

The GDG also endorsed the recommendations from an existing WHO guideline, *WHO recommendations for augmentation of labour.*[b]

Continuous companionship during labour and birth is recommended for improving labour outcomes.

The quality of evidence was moderate.

Community mobilization through facilitated participatory learning and action cycles with women's groups

Intervention description

Community mobilization through facilitated participatory learning and action cycles with women's groups involves a four-phase participatory process facilitated by a trained facilitator, in which women's groups collectively decide priority actions and try to organize activities accordingly. The cycle is structured as follows: Phase 1, identify and prioritize problems during pregnancy, childbirth and after birth; Phase 2, plan activities; Phase 3, implement activities to address the priority problems; and Phase 4, assess the activities.

Recommendation

The GDG endorsed the recommendation from an existing guideline, *WHO recommendation on community mobilization through facilitated participatory learning and action cycles with women's groups for maternal and newborn health.*[c]

The implementation of community mobilization through facilitated participatory learning and action cycles with women's groups is recommended to improve maternal and newborn health, particularly in rural settings with low access to health services.

The implementation of facilitated participatory learning and action cycles with women's groups should focus on creating a space for discussion where women are able to identify priority problems and advocate for local solutions for maternal and newborn health.

The quality of evidence was moderate.

Community participation in quality-improvement processes

Intervention description

Improving the quality of facility-based health care services and making quality an integral component of scaling up interventions to improve health outcomes of mothers, newborns and children is crucial in current WHO work. The perspectives of women, families and communities on the quality of maternity care services influence decisions to use this care. Nearly all quality improvement frameworks include the community/user perspective as a key element. Community members may participate in reviews of quality as informants or in discussions about health care information to identify ways to improve services. Levels of participation can vary, e.g., providing views versus full decision-making and interventions can also vary, such as consultations with communities, community representation on health facility management committees, and meetings between community representatives, service managers and providers.

[b] WHO recommendations for augmentation of labour. Geneva: World Health Organization; 2014 (http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/augmentation-labour/en/, accessed on 7 January 2015).

[c] WHO recommendation on community mobilization through facilitated participatory learning and action cycles with women's groups for maternal and newborn health. Geneva, WHO; 2014 (http://www.who.int/maternal_child_adolescent/documents/community-mobilization-maternal-newborn/en/, accessed on 14 January 2015).

BOX A (continued)

Recommendation

Community participation in quality-improvement processes for maternity care services is recommended to improve quality of care from the perspectives of women, communities and health care providers.

Communities should be involved in jointly defining and assessing quality. Mechanisms that ensure women's voices are meaningfully included are also recommended.

The quality of evidence was very low.

Community participation in programme planning and implementation

Intervention description

Community participation is broadly defined as members of a community getting involved in planning, designing, implementing and monitoring strategies and interventions. Levels of participation can vary, e.g., providing views versus full decision-making. Interventions can also vary, such as consultations with communities, community representation on health facility management committees and meetings between community representatives, local authorities and health service managers.

Recommendation

Community participation in programme planning, implementation and monitoring is recommended to improve use of skilled care during pregnancy, childbirth and the postnatal period for women and newborns, increase the timely use of facility care for obstetric and newborn complications and improve maternal and newborn health. Mechanisms that ensure women's voices are meaningfully included are also recommended.

The quality of evidence was very low.

CONDITIONAL RECOMMENDATIONS

Maternity waiting homes (MWHs)

Intervention description

MWHs are organized as lodgings/accommodations close to a health facility. Women residing in a MWH can then easily access the health facility for essential childbirth care or care for obstetric complications. MWHs are generally established in inaccessible areas to facilitate the timely movement from home to health facility by diminishing the barriers that inhibit access to care such as distance, geography, seasonal barriers or the time of day, infrastructure, means of transportation, the cost of transport or communication between referral points. MWHs are established and maintained by governments and/or NGOs, sometimes with support from community groups.

Recommendation

MWHs are recommended to be established close to a health facility where essential childbirth care and/or care for obstetric and newborn complications is provided to increase access to skilled care for populations living in remote areas or with limited access to services.

The quality of evidence was very low.

Community-organized transport schemes

Intervention description

Distance to a facility is often highlighted as a reason why women do not reach skilled care for birth or reach a facility in the case of complications. The availability of transport to reach care is closely related and an important factor in access. Maternal health programmes have often promoted the mobilization of communities to organize solutions to lack of transport, particularly for obstetric complications.

Recommendation

Community-organized transport schemes are recommended in settings where other sources of transport are less sustainable and not reliable. However, measures should be taken to ensure the sustainability, efficacy and reliability of these schemes while seeking long-term solutions to transport.

The quality of evidence was very low.

BOX A (continued)

RESEARCH RECOMMENDATIONS

Interventions to promote awareness of human, sexual and reproductive rights and the right to access quality skilled care

Intervention description

Maternal and newborn health programmes support the principle that women who are aware of their sexual and reproductive rights are in a better position to exercise their reproductive choices and determine how they negotiate family and community dynamics, how they are able to access health care and how they are treated by health services. Families, communities, health providers and other stakeholders who know and respect human rights, in particular sexual and reproductive health and rights, will support women in better taking care of themselves and their children. Therefore, in addition to working with an individual pregnant woman, programmes often address her family, the broader community, service providers, managers and other health systems stakeholders to increase awareness of the right to health and to access quality skilled care. Programmatic inputs include education materials or other visual aids, mass media campaigns and working with groups or public meetings and often focus on what should be improved to ensure quality services.

Recommendation

Because of the paucity of evidence available, additional research is recommended.

The GDG supports as a matter of principle the importance for MNH programmes to inform women about their right to health and to access quality skilled care and to continue to empower them to access such care.

Community participation in Maternal Death Surveillance and Response

Intervention description

Maternal Death Surveillance and Response (MDSR) includes routine identification and timely notification of maternal deaths, reviews of maternal deaths and implementation and monitoring of steps to prevent similar deaths in the future. Community participation in this process may help provide more accurate information on number of deaths, and where and why the women died. Community participation in analysing information and in identifying possible solutions may help address social determinants, meet community needs and incorporate a range of actors in the response. Members of the community may participate as family informants for maternal (and perinatal) death inquiries or in presentations of summary data to identify ways to improve health outcomes. Levels of participation can vary, e.g., providing views versus full decision-making. Delivery mechanisms can include involving community representatives in the MDSR coordinating group or holding community group meetings to discuss maternal deaths, their causes, and possible solutions.

Recommendation

Because of the paucity of evidence available, additional research is recommended.

The GDG affirms as a matter of principle the importance of sharing information on pregnancy-related deaths with communities including discussion of the different factors causing these deaths and affecting access to skilled care.

Future research

Research gaps were identified for each intervention. These included questions about the evidence base needed to demonstrate the efficacy of the intervention, the need for implementation research to better understand the different modes of delivery and the systems adaptations necessary to be able to implement the interventions in different contexts. For all interventions, information was scarce if not absent on potential harms, benefits, values, preferences and resource use.

As well as gaps in the evidence for each individual intervention, a broader question about how best to research health promotion interventions also emerged clearly during the process. The diversity of the research gathered per intervention and the generally low quality of the body of evidence led the GDG to recommend that efforts be undertaken to guide and strengthen future research. The GDG also called for further reflection to refine frameworks and methods for assessing evidence for complex interventions that rely on social and behavioural sciences.

The key points are summarized in the report.

1. Background

In 2003 the World Health Organization (WHO) published *Working with individuals, families and communities to improve maternal and newborn health*,[4] the IFC Framework that promotes integrating the health promotion approach set out in the Ottawa Charter[5] into national maternal and newborn health (MNH) strategies.

The IFC Framework was developed in response to analysis and global statements indicating that as well as strengthening services, MNH strategies need to improve the capacity of individuals, families and communities to provide appropriate care for pregnant women, mothers, and newborns in the home. It also addresses the reasons – over and above what happens in clinical services – why women do not reach good quality skilled care during pregnancy, childbirth and after birth. The Ottawa Charter's health promotion components[6] were translated into MNH programme language and 12 promising interventions – identified through reviews of country experiences and the literature – were categorized into four priority areas.[7] Community and intersectoral participation was recommended to guide implementation. Exact interventions to be adapted by country programmes were to be identified through local assessment; however, the framework highlighted the need for interventions to address all four priority areas at the same time. All six WHO Regions integrated this guidance into the regional maternal mortality reduction strategies.

More than 10 years after the original framework was published, it is time to update the evidence for the key interventions and for community participation,[8] using the methods set out by the WHO Guideline Review Committee, as outlined below.

In addition to the key interventions identified in the original framework in 2003, the technical secretariat was open to emerging evidence on other related interventions. A specific question about the effectiveness of community mobilization through participatory learning and action cycles with women's groups was added to the prioritized research questions. This was included because of the interest generated by research on this topic, including a published systematic review and meta-analysis of randomized controlled trials.[9]

This report summarizes the final recommendation and the process for developing this guideline, *WHO Recommendations on health promotion interventions for improved maternal and newborn health*. The process included the discussions and conclusions of the Guideline Development Group held in July 2013 at the WHO office in Geneva, a virtual meeting held in November 2013, a second meeting at the WHO office in Geneva in July 2014 and a final virtual discussion in September 2014.

Objective of the guideline

To consolidate the evidence and make recommendations for effective health promotion interventions to improve maternal and newborn health outcomes, particularly to increase seeking skilled care during pregnancy, childbirth and after birth.

[4] Working with individuals, families and communities to improve maternal and newborn health. Geneva: World Health Organization; 2010 (http://www.who.int/maternal_child_adolescent/documents/who_fch_rhr_0311/en/index.html, accessed 30 March 2014).

[5] The Ottawa Charter for Health Promotion [website]. Geneva: World Health Organization; 1986 (http://www.who.int/healthpromotion/conferences/previous/ottawa/en/, accessed 30 March 2014). The Charter was developed in the first International Conference on Health Promotion, held in Ottawa in November 1986 and presents actions to achieve Health for All by the year 2000 and beyond.

[6] For brevity, "health promotion as set out in the Ottawa Charter" will be referred to as "health promotion" in the remainder of this document. "Health promotion is the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy life-styles to well-being." (First International Conference on Health Promotion, Ottawa, 21 November 1986).

[7] The four priority areas are developing capacities to stay healthy and make healthy decisions; increasing awareness of the rights, needs, and potential problems related to MNH; strengthening linkages for social support and with the health services; improving quality of care from the women and community perspective; and the interactions of services with women, families and communities.

[8] Intersectoral participation is being addressed through work being carried out by the Department of Noncommunicable Diseases.

[9] Prost A, Colbourn T, Seward N, Azad K, Coomarasamy A, Copas A et al. Women's groups practising participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis. Lancet. 2013;381(9879):1736–46. doi:10.1016/S0140-6736(13)60685-6.

Target audience

The primary audience for this guideline is health programme managers in governmental and nongovernmental organizations and policy-makers who are responsible for designing maternal and newborn health programmes, primarily in low-income settings. The guideline is also aimed at health providers and teaching institutions, to increase knowledge of interventions important for: (i) increasing access to and use of skilled care during pregnancy, childbirth and after birth; (ii) improving the care practices provided within the household by women and families; (iii) increasing community support for maternal and newborn health; and (iv) improving maternal and newborn health. Development programmes and organizations supporting women's empowerment and rights will also find this guideline of use.

2. Methods

This guideline was developed using standard operational procedures in accordance with the process described in the WHO *Handbook for guideline development*.[10] The process included: (i) identification of priority questions and critical outcomes; (ii) retrieval of the evidence; (iii) assessment, synthesis and grading of the evidence; (iv) formulation of recommendations; and (v) planning for dissemination, implementation, evaluation and updating of the guideline.

Two technical groups were formed to support the development of the MNH health promotion guidelines. First, a Guideline Steering Group was constituted with WHO staff from the Department of Maternal, Newborn, Child and Adolescent Health (WHO/MCA), the Department of Reproductive Health and Research (WHO/RHR), the Department of Prevention of Noncommunicable Diseases (WHO/PND) and the Department of Gender, Equity and Human Rights (WHO/GER), as well as a technical adviser to WHO/MCA for the development of these guidelines, Cicely Marston of the London School of Hygiene and Tropical Medicine. In June 2012 the group met to discuss the guideline process in light of the WHO IFC Framework, propose an initial list of priority research questions, define priority outcomes and discuss methods for searching, retrieving, and synthesizing the evidence likely to be available. Additional external experts were invited to this discussion including Belinda Burford, independent consultant and GRADE[11] methodologist and experts with expertise in community-oriented interventions and participation, Lisa Howard-Grabman (Training Resources Group, Inc.) and Carlo Santarelli (Enfants du Monde).

The group agreed that the critical outcomes for the interventions identified in the IFC Framework were care-seeking for birth with a skilled birth attendant[12] or institutional birth, as well as care-seeking during pregnancy and after birth for the woman and newborn. Important outcomes where measured should include maternal mortality and morbidity and newborn mortality and morbidity. The rationale is that these interventions are designed to impact on care-seeking or on care practices in the home and so care-seeking is a more direct measure of their effect. In contrast, the major determinant in mortality and morbidity reduction would be quality of care in the facility and the ability of the services to respond to need, which are not directly addressed by the interventions of interest.

The group also agreed that the primary source of evidence could not be limited to randomized controlled trials (RCTs) but that WHO should consider study designs appropriate for these interventions. Thus it was suggested that all study designs be included provided they report on an assessment of the outcome of an intervention and fulfil these criteria. For quantitative studies, the study outcome reported must be compared with the outcome in any comparison group, with at least one data collection point prior to the intervention and one during or after the intervention. For qualitative studies, attitudes or experiences of women, families,

[10] Handbook for guideline development. Geneva: World Health Organization; 2012 (http://www.who.int/kms/guidelines_review_committee/en/, accessed 30 September 2014).

[11] Grading of Recommendation, Assessment, Development and Evaluation – a system for assessing the quality of evidence [website]. GRADE working group. (http://www.gradeworkinggroup.org/, accessed 7 January 2015).

[12] WHO defines an SBA as someone "trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns". Making pregnancy safer: the critical role of the skilled attendant: a joint statement by WHO, ICM and FIGO. Geneva: World Health Organization; 2004.

communities or service providers related to the intervention should be included.

Finally, several participants cited the importance of considering the links between the context and different social and health system factors that affect implementation for these types of interventions. Qualitative research relating to the interventions included should also be sought to provide information about context, conditions, values and preferences. It was suggested that for each priority question, in addition to a systematic review of the literature, it would be important for the GDG in its weighing of the evidence to consider a summary of contextual factors that influenced implementation. Based on this recommendation it was decided that for each priority research question, an additional background paper detailing the context and conditions of the included studies would be commissioned.

A Guideline Development Group (GDG) was set up to support the guideline development process. This larger group was made up of external experts, including specialists in health promotion, gender and equity, community mobilization, health education and MNH programmes. Experts from WHO Regional offices and from UN Sister Agencies and other partner agencies also participated as part of the GDG throughout the process. The suggestions provided by the Guideline Steering Group summarized above were reviewed and confirmed by the GDG in a meeting in July 2013 where they also further refined the priority research questions and expanded the critical and important outcomes.[13] The initial search strategies were also shared at that time. In addition to advice on the guideline development process, their tasks were to appraise the evidence used to inform the guidelines, advise on the interpretation of this evidence and to formulate the final recommendations.

The priority research questions and the critical and important outcomes are noted for each recommendation in the section below. The prioritized questions were included in the scope of this document for evidence searching, retrieval, grading and formulation of recommendations. Note that the search and retrieval procedures for the priority research question related to the WHO recommendation on community mobilization through facilitated participatory learning and action cycles with women's groups for maternal and newborn health differed slightly from the methods described below. We encourage the reader to consult with the publication available on the WHO website for more information.[14]

For the retrieval of the evidence, WHO/MCA established collaboration with a study led by the Centre for Health Policy, University of Witwatersrand, South Africa under the European Union's Multilateral Association for Studying Health Inequalities and Enhancing North-South and South-South Cooperation (MASCOT) project and the MH-SAR project (Maternal Health South Africa-Rwanda, funded by the Netherlands Organization for Scientific Research). The study, which involved a systematic mapping of maternal health literature published between 2000 and 2012, focused on health system and community-based interventions for improving maternal health and for reducing maternal health inequities in low and middle-income countries. WHO/MCA provided technical and financial support during the mapping for reviewers to identify articles addressing the priority research questions relevant for these guidelines.[15]

For the MASCOT/MH-SAR mapping, primary evidence published in peer-reviewed literature was systematically identified and data extracted into standardized data forms and then analysed. Original studies of maternal health interventions were included, as well as systematic reviews on maternal health. All study designs that provided evidence to answer the review question were included, provided that they reported an outcome of an intervention.

External teams were contracted to conduct the systematic reviews to respond to the priority research

[13] In addition, further interventions to be reviewed had been identified but are not addressed here: health education and social accountability interventions.

[a.] Health education interventions/behaviour and social change communication interventions – these are embraced in various WHO recommendations. A scoping exercise revealed that several systematic reviews or extensive literature mapping exist. An expert group met in July 2013 and discussed many aspects of health education, including the role of the setting, the potential impact and challenges of rights-based and dialogical approaches to education, and whether or not such approaches could be compared with didactic/information-providing approaches, which the group considered sometimes useful but likely limited in impact. The group particularly noted the potential for dialogue-based approaches and was interested in how these might be implemented in practice. Sufficient resources were not available at this time to appropriately undertake the effort. This area has been flagged as a priority for future work.

[b.] Interventions to increase or support mechanisms for social accountability and the effect of these on MNH outcomes – an initial scoping of the literature confirmed that this is a small but rapidly growing area of research. The group determined that it would be useful to delay the analysis for two to three years until more published evaluations emerge.

[14] WHO recommendation on community mobilization through facilitated participatory learning and action cycles with women's groups for maternal and newborn health. Geneva, World Health Organization; 2014 (http://www.who.int/maternal_child_adolescent/documents/community-mobilization-maternal-newborn/en/, accessed on 14 January 2015).

[15] The final database for the MASCOT/MH/SAR mapping including the protocol is available at http://eppi.ioe.ac.uk/webdatabases4/Intro.aspx?ID=11.

questions. Guiding documents (or protocols) for the systematic reviews including inclusion and exclusion criteria were completed and submitted to different GDG members and two external experts for peer review. Each document had at least two peer reviewers. Many of the priority research questions could be addressed using existing systematic reviews conducted in the two years prior to the GDG review. Where applicable, these existing reviews were assessed and supplemented with additional literature identified through the MASCOT/MH-SAR mapping or with additional reviews. All the reviews included studies using RCTs as well as any other quantitative design that included (as a minimum) studies with at least one data collection point prior to the intervention and one during or after the intervention. Studies reporting qualitative data were also included. All studies had to provide information on the outcomes of interest to be included. Adaptations for individual priority research questions are discussed in the corresponding section per question below.

The data was extracted by the respective research teams and for most of the reviews, the data was extracted and managed in EPPI-Reviewer 4.[16] In three studies, the data was instead extracted into tables in Microsoft Excel. The quality of individual studies was assessed using the Effective Public Health Practice Project (EPHPP) quality assessment tool for quantitative studies[17] and a quality assessment tool for qualitative studies, based on criteria developed by Walsh and Downe (2006).[18]

All the systematic reviews could include cluster randomized trials as well as various non-randomized and observational study designs (except companion of choice during labour and community mobilization with women's groups, which were meta-analyses of RCT data). Methodological diversity[19] and variation in risk of selection bias, consideration of confounding in the analysis, poor design and conduct, as well as diversity in the interventions and comparisons, the measurement of outcomes, and the contexts and conditions of implementation, meant it was not possible to pool data. Thus a narrative synthesis was conducted for each review (excluding companionship during labour and community mobilization with women's groups).

The GRADE criteria were used to assess the overall quality of and confidence in evidence for outcomes of interest included in the systematic reviews. The preparation of the GRADE tables was led by Helen Smith from the University of Manchester, who also served as the GRADE methodological adviser throughout the process of developing these guidelines.

Each GRADE table relates to one specific priority question, and the narrative summaries were used as the basis for judgements about the quality of evidence.[20] In the GRADE approach, the overall level of confidence in the evidence for the outcomes of interest is expressed as high, moderate, low or very low, reflecting the extent to which one can be confident that the estimate of effect is adequate to support recommendations.[21] (See Table 1). The following criteria were used in the GRADE assessment:

- Study design: What study design was used? For instance, individual or cluster randomized controlled trials (RCTs), observational studies.
- Risk of bias: What is the overall risk of bias for the group of studies under consideration? To assess this, the following are examined: data collection methods (validity and reliability); allocation concealment in RCTs; comparability of groups in observational studies; risk of measurement bias (e.g., the use of blinding and of objective outcomes); extent of loss to follow-up; and appropriateness of analysis (e.g., intention to treat, adjustment for cluster randomization in cluster RCTs and adjustment for confounding in observational studies).
- Directness: Are there important differences between the population, intervention and comparator to the intervention and outcomes in the included studies and the review question?
- Consistency: Are the studies consistent? Are results similar across the set of available studies? E.g., did most studies show meaningful benefit or did some show benefits and others harm? Were benefits of similar magnitude in the different studies?

[16] EPPI-Reviewer 4 is the EPPI-Centre's comprehensive online software tool for research synthesis. It is a web-based software programme for managing and analysing data in literature reviews and has been developed for all types of systematic review such as meta-analysis, framework synthesis and thematic synthesis (http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=2914).

[17] Effective Public Health Practice Project (1998). Quality assessment tool for quantitative studies. Hamilton, ON: Effective Public Health Practice Project (http://www.ephpp.ca/index.html).

[18] Walsh D and Downe S. Appraising the quality of qualitative research. Midwifery. 2006;22(2):108–119. DOI: 10.1016/j.midw.2005.05.004.

[19] The following publication was used to ensure a consistent taxonomy of designs : Deeks JJ, Dinnes J, D'Amico R, Sowden AJ, Sakarovitch C, Song F, et al. Evaluating non-randomised intervention studies. Health Technol Assess 2003;7(27).

[20] The full evidence tables have been published in a separate document entitled WHO recommendations for health promotion interventions for maternal and newborn health: evidence base (http://www.who.int/maternal_child_adolescent/documents/health-promotion-interventions/en/)

[21] Guyatt GH, Oxman AD, Kunz R, Vist GE, Falck-Ytter Y, Schünemann HJ; GRADE Working Group. Rating quality of evidence and strength of recommendations: What is "quality of evidence" and why is it important to clinicians? BMJ. 2008;336(7651):995–8. doi:http://dx.doi.org/10.1136/bmj.39490.551019.BE.

- Precision: For the systematic reviews without pooled data, we judged similarity of results based on narrative summaries and were unable to judge the magnitude or precision of effects.

When grading quality, RCTs start with a 'high' quality rating and observational studies with a 'low' quality rating. Reasons for downgrading were explicit and related to risk of bias, indirect comparisons and variation in results across studies. No observational studies were graded upwards as they all had methodological weaknesses, important limitations in design and conduct and were susceptible to selection bias and lack of control for confounding.

TABLE 1

Levels of evidence summarized

LEVEL OF EVIDENCE	SUMMARY
High	Further research is very unlikely to change confidence in the estimate of effect.
Moderate	Further research is likely to have an important impact on confidence in the effect.
Low	Further research is very likely to have an important impact on estimate of effect and is likely to change the estimate.
Very low	Any estimate of effect is very uncertain.

The external researchers and GRADE methodologists met with WHO in June 2014 at the University of Manchester to peer review the preliminary results of the systematic reviews, the "context and conditions" papers commissioned to examine contextual factors likely to be important for each intervention and the GRADE. They worked with WHO/MCA to develop draft recommendations related to each priority research question.

Members of the GDG and additional experts from WHO Regional Offices and UN Agencies then attended a WHO technical consultation on health promotion interventions for MNH in Geneva, Switzerland from 15 to 17 July 2014. The narrative summaries of the evidence, the context and conditions papers and the grading of evidence quality for outcomes in each review were made available to the participants in advance. Draft recommendation tables were presented during the technical consultation to summarize the level of evidence, the values and preferences, harms and benefits and other judgements made to arrive at the recommendations (see Appendix 3 for a summary).

The GDG requested additional information and analysis related to several of the priority research questions. The responses were prepared and a virtual meeting was convened on 2 September 2014 to review the responses and revisit the recommendations. The wording of the recommendations were revised. Additional concerns related to the priority research question on male involvement interventions and on the wording of the recommendation on the promotion of awareness of human rights interventions were raised and these were resolved by email.

Declaration of interests by participants at the WHO technical consultation

According to WHO regulations, all external advisers must declare their relevant interests before participating in WHO meetings. All GDG members were required to complete a declaration of interest form before the meeting, which was reviewed by WHO staff. The GDG members also verbally declared interests including intellectual and potential conflicts of interest. No participants had commercial or financial interests to declare; however, most indicated that they were involved in academic, programmatic or intellectual work directly related to the topics of the meeting. Full participation in the GDG meeting discussions was deemed appropriate for all.

Decision-making during the technical consultation

The programme for the Technical Consultation was designed to allow participants to review and discuss the results from the systematic reviews, context and conditions background papers, GRADE tables, the draft recommendation tables and the wording of the recommendations. In addition to this, implementation considerations were identified during the course of discussions. Group consensus was used to reformulate the proposed draft recommendations. The definition of group consensus that applied was that the majority agreed and those that disagreed did not have any strong objections. When the participants were unable to reach a consensus, the decision was put to a vote with a simple majority deciding, although any strong disagreements were to be recorded and noted in the final guideline. WHO staff, the external methodologists and the observers at the meeting were not eligible to vote. For those votes related to a systematic review conducted by any of the participants, the participant in question was allowed to participate in the discussion but was not allowed to vote on the particular issue.

The participants of the technical consultation determined the level of evidence and the strength

TABLE 2

Assessment criteria for the strength of the recommendation

STRENGTH OF RECOMMENDATION	RATIONALE
Strong	The GDG is confident that the desirable effects of adherence to the recommendation outweigh the undesirable effects. The recommendation can be adapted as a policy in most situations.
Conditional	The GDG is less confident that the desirable effects of adherence to the recommendation outweigh the undesirable effects or if local adaptation has to account for a greater variety in values and preferences or when resource use makes the intervention suitable for some, but not for other locations. The recommendation is only applicable to a specific group, population or setting and there is a need for substantial debate and involvement of stakeholders before this recommendation can be adopted as a policy.
Weak	The GDG concludes that the desirable effects of adherence to a recommendation probably outweigh the undesirable effects. However, new evidence may result in changing the balance of risk to benefit or the benefits may not warrant the cost or resource requirements in all settings.
Research recommendation	Insufficient evidence is available. Further research is required.

of each recommendation. In deciding whether the recommendation is for or against the intervention, the group looked at the quality of evidence across all critical outcomes and the balance of benefits and harms. Although all critical outcomes represent benefits, and there are no likely harms, in most cases the studies were very low quality and so the level of evidence remains very low. In deciding on the strength of the recommendations, the GDG considered values and preferences as well as resource implications. (See Appendix 3 for a summary of considerations related to the strength of the recommendations.) The GDG used the assessment criteria described in Table 2.

Document preparation and peer review

After the meeting WHO staff worked with the technical advisers and methodologists to develop the guideline to reflect the final recommendations and the deliberations of the technical consultation and subsequent discussions. The revised draft was sent to WHO staff, the GDG members and five external reviewers for their input. Each external reviewer was asked to read the Executive Summary and specific sections of the document based on their expertise. Concerns arose as to the wording of one of the recommendations, which was discussed and agreed with the GDG by email correspondence. Once approved, the WHO Guideline Review Committee reviewed the draft guideline document and provided feedback. The Guideline Steering Group reviewed the comments and made appropriate modifications, respecting where needed the decisions of the GDG. The members of the GDG, WHO staff and the external reviewers are listed in Appendices 1 and 2.

3. Results

The 12 recommendations put forth by the GDG were informed by nine systematic reviews commissioned by WHO/MCA (unpublished at the time the recommendations were made); one systematic review conducted in collaboration with WHO/MCA (unpublished at the time the recommendations were made); one published systematic review; one existing Cochrane systematic review; and 10 background papers, commissioned by WHO/MCA, that outlined factors that affect implementation for the reviewed interventions. Recognizing that reviews for health promotion interventions are often criticized for not including a variety of study designs, as mentioned above, all WHO-commissioned reviews include not only RCTs for studies reporting quantitative data, but also study designs with a comparison group. Studies reporting qualitative data were also included.

In the sections below we present in a preamble some key points that the GDG considered important to highlight related to the body of evidence identified and the implementation of these interventions. The formulation of the recommendations is also presented, including key implementation considerations per intervention and research gaps per intervention. A summary of considerations related to the strength of each recommendation is presented in Appendix 3. The GRADE tables to assess the quality of the evidence have been published in a separate document.[22] An overarching reflection on research gaps for health promotion interventions follows this section.

Preamble

Human rights and community participation principles are fundamental to maternal and newborn health strategies, as recognized in a number of legal instruments and key WHO policy documents, and as set out within the IFC Framework and WHO strategies. The interventions considered here can be viewed as ways to apply these principles. They aim to increase access to timely and appropriate health care, address underlying determinants of health, address gender and equity and achieve community participation in programme planning and in improving services.

[22] WHO recommendations for health promotion interventions for maternal and newborn health: evidence base (http://www.who.int/maternal_child_adolescent/documents/health-promotion-interventions/en/)

This guideline reiterates the importance of human rights and participation principles and aims additionally to inform country programmes about the extent to which specific interventions can affect maternal and newborn health.

The interventions in practice are expected to be interrelated; however, they are separated here for the purposes of examining the evidence. As detailed in the IFC Framework, the specific interventions should be implemented as part of a package of multiple interventions addressing the different factors that affect use of care and the ability of women and families to improve care practices in the home. These recommendations indicate specific interventions that can be considered by country programmes within the packages of interventions.

It is important to note that any intervention designed to increase access to health services should be implemented in tandem with interventions to improve health services. Where the quality of services is poor, women may understandably choose not to use them despite mobilization efforts.

In this guideline, the importance of context and local conditions for success or appropriateness of the interventions is set out. Local stakeholders should consider how the context may affect any proposed intervention. The GDG notes that all of these interventions require adaptation to national and local context prior to implementation. Dialogue with key stakeholders including women, families and communities is recommended with careful consideration of local preferences, potential harms and potential obstacles to implementation. For some of the interventions below, this participatory process is particularly important, and this is highlighted within the specific recommendation.

The monitoring and evaluation of implementation efforts is crucial and rarely carried out adequately. Even where it is carried out, it is often not published in a form where it may contribute to international evidence-gathering efforts, such as those presented here. Available evidence, for example, was inadequate to inform recommendations about how to deliver the interventions. As information about delivery mechanisms is of vital importance to countries, this must be addressed in ongoing research.

Evidence and recommendations

The WHO Technical Consultations adopted 12 recommendations covering prioritized questions related to health promotion interventions for MNH, considered within the WHO IFC Framework. For each recommendation, we indicate the overall quality of evidence (high, moderate, low or very low) and we indicate the strength of the recommendation (strong, conditional or research recommendation). A description of the intervention and the priority research question are provided. We then present a narrative synthesis of the quality of the supporting evidence for the critical and important outcomes. Considerations to be taken into account for implementation identified by the GDG based on the additional background paper detailing the context and conditions of the included studies are noted as are the gaps in research identified per recommendation. Please see Appendix 3 of this report which summarizes the different considerations taken into account to determine the strength of the recommendation. A table with the characteristics of the studies included in the Systematic Reviews to respond to the priority research questions is available in Appendix 4. We also refer the reader to the supplemental material, which includes the GRADE tables per output for each recommendation.[23]

RECOMMENDATION 1

Birth Preparedness and Complication Readiness

Introduction

Birth Preparedness and Complication Readiness (BPCR) is an intervention included by WHO as an essential element of the antenatal care package.[24] It is often delivered to the pregnant woman by the health care provider in antenatal care or initiated or followed up through a visit to the home of the pregnant woman by a community health worker. In addition to working with an individual pregnant woman, programmes often address efforts to her family and to the broader community to increase awareness on BPCR or to improve health workers' skills to provide BPCR as part of ANC. Programmes often provide education materials or other visual aids with BPCR information, or may implement mass media campaigns with BPCR messages.

A birth and complications preparedness plan contains the following elements: the desired place of birth; the preferred birth attendant; the location of the closest facility for birth and in case of a complication; funds for any expenses related to birth and in case of complications; supplies and materials necessary to bring to the facility; an identified labour and birth companion; an identified support to look after the home and other children while the woman is away; transport to a facility for birth or in the case of a complication; and the identification of compatible blood donors in case of emergency.[25]

To be able to be prepared for birth and possible complications, women, families and communities need to know about signs of onset of labour as well as danger signs during pregnancy and after birth for the woman and newborn. BPCR interventions have evolved and while originally programmes focused largely on care-seeking for the woman, in recent years, programmes have recognized the value of discussing care-seeking for newborn complications.

We asked the question:

What interventions used to implement BPCR are effective for increasing use of skilled birth attendants and for improving other maternal and newborn health outcomes?

RECOMMENDATION

Birth Preparedness and Complication Readiness interventions are recommended to increase the use of skilled care at birth and to increase the timely use of facility care for obstetric and newborn complications.

(Strong recommendation, very low quality of evidence)

Additional research is required.

Evidence summary

Evidence on birth and complications readiness was extracted from a systematic review conducted by Solnes Miltenburg et al. (forthcoming)[26,27] of 33 studies which summarized the findings from 21 different programmes. The study designs reported in the studies included one

[23] The full evidence tables have been published in a separate document entitled *WHO recommendations for health promotion interventions for maternal and newborn health: evidence base* (http://www.who.int/maternal_child_adolescent/documents/health-promotion-interventions/en/)

[24] Carroli G, Piaggio G, and Khan-Neelofur D. WHO systematic review of randomised controlled trials of routine antenatal care. Lancet. 2001; 357(9268):1565-70. doi:10.1016/S0140-6736(00)04723-1.

[25] Counselling for maternal and newborn health care: A handbook for building skills. Geneva: World Health Organization; 2013 (http://apps.who.int/iris/bitstream/10665/44016/1/9789241547628_eng.pdf?ua=1, accessed on 8 January 2015).

[26] Protocol: Miltenburg AS, Roggeveen Y, van Elteren M, Shields L, Bunders J, van Roosmalen J, et al. A protocol for a systematic review of birth preparedness and complication readiness programs. Systematic Reviews. 2013; 2:1-8. doi:10.1186/2046-4053-2-11.

[27] See Appendix 2.

RCT, three cluster RCTs, seven pre and post comparative studies with a control group, three pre and post studies, seven one group before and after evaluations of which two had a qualitative component, and one qualitative study. The 21 programmes were implemented in Bangladesh, Burkina Faso, Cambodia, Eritrea, Guatemala, India, Indonesia, Kenya, Nepal, Pakistan and Tanzania. The BPCR interventions largely focused on promoting birth with a skilled birth attendant (SBA), with the exception of seven, which were primarily aimed to increase use of skilled care for obstetric complications.[28]

The programmes implemented different strategies including house visits by volunteers who provided education on BPCR, training of health workers in facilities to provide BPCR as part of ANC, provision of education materials or other visual aids with BPCR information, community mobilization activities to increase awareness on BPCR and mass media campaigns with BPCR messages. There was not sufficient evidence to determine which of these strategies or which combination of strategies were most effective.

A description of the key relevant characteristics of the studies examined in this recommendation is in Appendix 4.

For the outcome of birth with a skilled birth attendant or facility birth, the quality of the evidence ranged from very low to low.

- One RCT (Mullany, Becker and Hindin, 2007) of a single BPCR intervention using facility education sessions with poor women and husbands in a maternity hospital in urban Nepal reported a non-significant increase in the use of a skilled birth attendant at birth in both intervention groups (the husband and wife or wife alone received health education) compared with control (the wife receives no education). Low-quality evidence.
- 13 studies reported on this outcome, including four quasi-experimental studies (FCI Kenya, 2007; FCI Tanzania, 2007; Hounton et al., 2008; Turan, Tesfagiorghis and Polan, 2011) and one pre and post study with a control group (Sood et al., 2004 Indonesia); seven were one group before and after evaluations (Fonseca-Becker and Schenck-Yglesias, 2004; Hodgins et al., 2010; McPherson et al., 2006; Moran et al., 2006; Mushi, Mpembeni and Jahn, 2010; Sinha, 2008; Sood et al., 2004 Nepal); and one qualitative feasibility study (Skinner and Rathavy, 2009). Three quasi-experimental studies (FCI Tanzania, 2007; Hounton et al., 2008; Turan, Tesfagiorghis and Polan, 2011) and one pre and post study with a control group (Sood et al., 2004 Indonesia) report significant improvements in the primary outcome in the intervention area (SBA or facility births); the other quasi-experimental study reports a higher increase in SBA in the control area (FCI Kenya, 2007). Four of the one group before and after studies report significant improvements in SBA or facility birth (Fonseca-Becker and Schenck-Yglesias, 2004; Moran et al., 2006; Mushi, Mpembeni and Jahn, 2010; Sinha, 2008); the other three report slight improvements from baseline (Hodgins et al., 2010; McPherson et al., 2006) and greater improvement in SBA in the unexposed group at endline (Sood et al., 2004 Nepal). The qualitative feasibility study which includes pre- and post-facility data indicates an increase in the number of women giving birth with a midwife, but this is based on data from all villages linked to 10 health centres and not just the villages where the intervention occurred (Skinner and Rathavy, 2009). Very low-quality evidence.
- For those studies whose focus was increasing access to skilled care for complications:
  - Two cluster RCTs (Darmstadt et al., 2010; Midhet and Becker, 2010) report the percentage of women giving birth at a facility was significantly higher in the intervention arms compared to the control. In another cluster RCT (Kumar et al., 2010), facility births were higher and more women gave birth with a qualified attendant in the intervention arm, but these were not significant differences. Very low-quality evidence.
  - A quasi-experimental study (Hossain and Ross, 2006) reports significant increases in facility birth in the intervention and the comparison areas baseline to follow-up, but not in the control area. Another quasi-experimental study (Baqui et al., 2008) reports significant improvement in use of skilled birth attendants in a health facility or at home from baseline to endline in the intervention district. In the pre-post study (Ahluwalia et al., 2003), there was a reduction in births assisted by a health provider. Very low-quality evidence.

For the outcome of care with a skilled birth attendant or in a facility in case of complications/illness in women and newborns, the quality of the evidence was rated as very low.

- Four studies report on this outcome. The before and after studies report more women seeking skilled care for complications between baseline and follow-up (Fonseca-Becker and Schenck-Yglesias, 2004;

[28] In these seven studies the intervention contributed to ensure safe birth practices at home while the focus of the BPCR messages was on care-seeking for complications. The studies are Ahluwalia et al. (2003); Ahluwalia et al. (2010); Baqui et al. (2008); Darmstadt et al. (2010); Hossain and Ross (2006); Kumar et al. (2012); and Midhet and Becker (2010).

McPherson et al., 2006) and increases between baseline and endline in percentage of respondents seeking care following recognitions of danger signs in newborns, in pregnancy and at delivery (Hodgins et al., 2010). One quasi-experimental pre and post study with a control group (FCI Tanzania, 2007) reports a significant increase in women with complications seeking treatment at a facility in the intervention group. Very low-quality evidence.

- For those studies whose focus was increasing access to skilled care for complications:
  - Three cluster RCTs report on this outcome. One cluster RCT (Midhet and Becker, 2010) reports significant increases in women with complications seeking care in pregnancy and after birth, but no significant difference between study arms for care-seeking for birth complications. Another cluster RCT (Kumar et al., 2012) reports that significantly fewer women with complications went to unqualified practitioners; and the other RCT (Darmstadt et al., 2010) reports that care-seeking from a qualified provider for neonates with complications increased significantly more in the intervention arm than comparison. Very low-quality evidence.
  - A quasi-experimental study (Hossain and Ross, 2006) reports a significant increase in women seeking care for complications in the intervention and comparison groups but not control. Both the pre and post study (Ahluwalia, 2003) and the follow-up evaluation (Ahluwalia, 2010) report increases in number of women with complications seeking hospital care but only the follow-up study (Ahluwalia, 2010) estimates what percentage this represents (based on old surveillance data). There is no comparable data from a control group of women who did not receive the intervention. Very low-quality evidence.

For the outcome of maternal mortality, the quality of the evidence ranged from very low to moderate.

- One quasi-experimental study (Hounton et al., 2008) reports a lower mortality risk in the intervention group and a decline over time but this is not significantly different to the non-intervention area or control area. Very low-quality evidence.
- For those studies whose focus was increasing access to skilled care for complications:
  - One RCT (Kumar et al., 2012) reports a non-significant downward trend in maternal mortality ratio (MMR) in the intervention arm compared to control. Low-quality evidence.

For the outcome of neonatal mortality, the quality of the evidence was rated as very low to low.

- The pre and post evaluation (Hodgins et al., 2010) showed fewer neonatal deaths over time but there was no separate comparison group. Low-quality evidence.
- For those studies whose focus was increasing access to skilled care for complications:
  - One cluster RCT (Kumar et al., 2012) reports significantly lower neonatal mortality in the BP intervention group. The other two cluster RCTs (Darmstadt et al., 2010; Midhet and Becker, 2010) report no significant difference in neonatal mortality by study arm. Very low-quality evidence.
  - The quasi-experimental study (Baqui et al., 2008) showed no difference in neonatal mortality rates between the intervention and comparison groups or from the baseline and endline. Low-quality evidence.

Considerations to be taken into account for implementation

Implementation considerations were informed by a background paper on context and conditions and factors that affect implementation prepared by Solnes Miltenburg and Roggeveen (2014).[29] In addition to the studies retrieved in the systematic review, a further 20 papers were identified for this review. Below are key points highlighted by the GDG to be considered when implementing BPCR interventions.

- Implementation of BPCR should include preparedness for birth and complications for mother and newborn; as opposed to focusing either only on planning for birth, only on planning for complications or only on the mother.
- Use of a skilled birth attendant during childbirth or facility birth increased primarily under circumstances where BPCR interventions were part of a multiple package of interventions. Co-interventions which seemed to have a positive impact include community participation, the involvement of male partner and of other household decision-makers in discussions (with the woman's consent) and concurrent efforts to improve the quality of service delivery.
- Factors that limited the impact of the interventions include health system barriers such as shortage of health professionals, lack of resources and poor quality of care; cultural factors that affected the use of care, including perceptions of what skilled care is; and high costs for seeking care which relate to out-of-pocket expenditures.

[29] See Appendix 2.

- In settings with extremely low use of SBA for birth and where facility birth is not feasible, BPCR should include the following actions: choosing an SBA to attend the birth in the home; preparing the place of birth at home; preparing for clean birth with essential materials and supplies such as a birth kit; planning for emergency transportation; essential newborn care preparedness (delayed first bathing, drying of newborn before the delivery of the placenta, initiation of breastfeeding within one hour after birth, safe cord care); and a companion who will stay with the woman for at least 24 hours after birth.

Research gaps

It would be useful to have further studies of robust design that measure the contribution of BPCR interventions to increase skilled care at birth and care-seeking for maternal and newborn complications. In addition, the GDG identified some research gaps specific to BPCR interventions.

- Agreement on priority BPCR actions and/or which combination of essential actions should be further tested.
- Whether BPCR interventions that include care-seeking for the newborn in case of complications have had an impact on this outcome.
- Studies that better measure the effect on care-seeking outcomes for pregnant women and newborns of including men and other key decision-makers at the household level in the discussions on preparations and in the corresponding decisions.
- Both quantitative and qualitative enquiries are needed.

RECOMMENDATION 2

Male involvement (MI) interventions for MNH

Introduction

There has been increased recognition of the need to include men in MCH programmes since the mid-1990s, given the important role men have as partners/husbands, fathers and community members and as a way of promoting egalitarian decisions about reproductive and maternal health.[30] Chapter IV Section C of the ICPD Programme of Action calls for an understanding of the joint responsibilities of men and women so that they become equal partners in public and private lives and to encourage and enable men to take responsibility for their sexual and reproductive behaviour.

Different programmes have directed efforts to harness the support and active involvement of men for improved MNH outcomes. There are different models and rationales for seeking to involve men, including a view of men as gatekeepers and decision-makers for prompt access to MNH services both at the household and community levels; men as responsible partners of women and as an important sub-population within the community; the need to address men's own health needs; and men's preference to be involved as fathers/partners. Strategies often include mass media campaigns, community and workplace-based outreach and education for men only or for men and women together, home visits, facility-based counselling for couples, groups or men only.

We asked the question:

What interventions used to increase male involvement have been effective in increasing care-seeking behaviour during pregnancy, for childbirth and after birth for women and newborns and in improving key maternal and newborn health outcomes?

RECOMMENDATION

Interventions to promote the involvement of men during pregnancy, childbirth and after birth are recommended to facilitate and support improved self-care of the woman, improved home care practices for the woman and newborn, and improved use of skilled care during pregnancy, childbirth and the postnatal period for women and newborns.

(Strong recommendation, very low-quality evidence)

These interventions are recommended provided that they are implemented in a way that respects, promotes and facilitates women's choices and their autonomy in decision-making and supports women in taking care of themselves and their newborns. In order to ensure this, rigorous monitoring and evaluation of implementation is recommended

Additional research is required.

Note: In their discussions on this recommendation in the July meeting, the GDG members recognized the importance of efforts to involve men but also recognized the potential harms, including those that can undermine women's autonomy, rights and decision-making, if efforts are not designed properly to promote gender equality and are not monitored closely. The panel at that time indicated that the benefits and harms are

[30] Davis J, Luchters S and Holmes W. Men and maternal and newborn health: benefits, harms, challenges and potential strategies for engaging men. Melbourne: Centre for International Health, Burnet Institute; 2012 (http://www.men-care.org/data/Men%20and%20Maternal%20and%20Newborn%20Health%20-%20Australia.pdf, accessed 12 January 2015).

balanced and that harms could be mitigated through effective implementation approaches. It was clear that it was not possible to recommend any one strategy for male involvement, as there was insufficient evidence. Two additional studies were identified to be included and, in a subsequent virtual meeting of the GDG held in September 2014, the recommendation was revisited with the four studies added to the GRADE. At that time there was discussion over the strength of the recommendation (conditional or strong). Through a subsequent email exchange the group decided on strong but with mention of the need for rigorous monitoring and evaluation in order to ensure that approaches to male involvement did not harm or undermine women's choices, autonomy and decision-making and reinforce gender inequality. The GDG felt that any strategy to involve men would require local adaptation and discussion; however, some form of strategy would be beneficial in almost all settings, with rigorous monitoring and evaluation for the critical and important outcomes. There was one dissenting participant, which we agreed would be noted.

Evidence summary

Evidence on interventions for male involvement in pregnancy, childbirth and the postnatal period was extracted from a systematic review conducted by Tokhi et al. (forthcoming)[31] of 13 studies, including one RCT, three cluster RCTs, one cohort analytic study, four pre-post designs, three repeat cross-sectional and one programme evaluation using data from the health information system. Three of these studies report qualitative findings. The 13 studies were conducted in Bangladesh, Eritrea, India, Indonesia, Nepal, Pakistan, South Africa, Tanzania and Turkey.

Male involvement strategies are employed as a means to support women to access care, address the influence of gender inequality on MNH and promote men's positive involvement as partners and fathers.

Four studies did not measure the critical outcome of birth with a skilled birth attendant or facility birth; three studies were primarily aimed to increase use of skilled care for obstetric complications.[32]

The modes of interventions in the 13 studies included mass media campaigns, community-based outreach and education for men only or for men and women together, home visits, facility-based counselling for couples or for groups or for men only and workplace-based education for men. There was not sufficient evidence to determine which of these strategies or which combination of strategies were most effective.

A description of the key relevant characteristics of the studies examined in this recommendation is in Appendix 4.

For the outcome of birth with a skilled birth attendant or facility birth, the quality of the evidence ranged from very low to low.

- In one RCT (Mullany, Becker and Hindin, 2007) the impact of the intervention on SBA and facility birth is unclear. Low-quality evidence.
- Six observational studies (Mushi, Mpembeni and Jahn, 2010; Purdin, Khan and Saucier, 2009; Sinha, 2008; Sood et al., 2004 Indonesia; Sood et al., 2004 Nepal; Turan, Tesfagiorghis and Polan, 2011) reported some benefit for male involvement either for the presence of an SBA/facility birth or both. In one before and after study (Mushi, Mpembeni and Jahn, 2010) there was a statistically significant increase in presence of an SBA for the intervention group and most of these births were at facilities. Two studies using a pre and post intervention design reported a statistically significant increase in facility birth for the intervention group (Sinha 2008, Turan Tesfagiorghis and Polan, 2011); no SBA data were reported. The programme evaluation study using a health information system (Purdin, Khan and Saucier, 2009) observed an increase in births in an EmOC facility among refugee women. In a repeat cross-sectional study (Sood et al., 2004 Indonesia) women (and husbands) reported a statistically significant increase of use of SBA and facility birth for the exposed group. In the final study (Sood et al., 2004 Nepal), women not exposed to the intervention were more likely than the exposed group to report giving birth at a hospital and reported being assisted by a doctor. This contrasts with data from husbands; a higher percentage of those exposed than not exposed to the intervention reported their wives had given birth in hospital and gave birth assisted by a doctor. Very low-quality evidence.
- For those studies whose focus was increasing access to skilled care for complications:
  - The cluster RCT (Midhet and Becker, 2010) showed a statistically significant increase in facility birth at the district hospital and a non-significant increase in birth with an SBA or trained TBA for the intervention groups. Moderate-quality evidence.
  - In one quasi-experimental study (Hossain and Ross, 2006) facility birth increased statistically in the intervention group. Low-quality evidence.

[31] See Appendix 2.

[32] In these three studies the intervention contributed to ensure safe birth practices at home while the focus of the messages was on care-seeking for complications. The studies are Fullerton J, Killian R, and Gass (2005), Hossain and Ross (2006) and Midhet and Becker (2010).

For the outcome of care with a skilled birth attendant or in a facility in case of complications/illness in women and newborns, the quality of the evidence ranged from low to moderate.

- One non-equivalent control group study (Varkey et al., 2004) reports an increase in visiting the dispensary in the intervention group, but not for attending hospital during presence of danger signs. Low-quality evidence.
- For those studies whose focus was increasing access to skilled care for complications:
  - One cluster RCT (Midhet and Becker, 2010) showed a statistically significant increase in women accessing hospital for treatment of problems during pregnancy but unclear impact during delivery, immediately after delivery or during the postpartum period. Moderate-quality evidence.

For the outcome of use of antenatal care (one or four visits), the quality of the evidence ranged from very low to low.

- One RCT (Mullany, Becker and Hindin, 2007) reported no difference between the study groups in use of more than three ANC visits. Low-quality evidence.
- Six observational studies (Mushi, Mpembeni and Jahn, 2010; Purdin, Khan and Saucier, 2009; Sinha, 2008; Sood et al., 2004 Indonesia; Sood et al., 2004 Nepal; Turan, Tesfagiorghis and Polan, 2011) reported data on antenatal visits. One study using a pre and post intervention design (Sinha, 2008) and one programme evaluation using a health information system (Purdin, Khan and Saucier, 2009) showed more women made three or more ANC visits between baseline and follow-up. Another pre and post study (Mushi, Mpembeni and Jahn, 2010) showed a non-significant increase in four or more ANC visits. A one group before-and-after evaluation (Sood et al., 2004 Nepal) found no significant differences between exposed (post-intervention) and unexposed (pre-intervention) groups in four or more ANC visits. Two pre and post intervention studies with control groups (Sood et al., 2004 Indonesia; Turan, Tesfagiorghis and Polan, 2011) showed women and husbands exposed to the intervention were significantly more likely to report four or more ANC visits than those unexposed, but no baseline data are provided (Sood et al., 2004 Indonesia) and a statistically significant increase in more than one and more than four visits (Turan, Tesfagiorghis and Polan, 2011). Very low-quality evidence.
- For those studies whose focus was increasing access to skilled care for complications:
  - One cluster RCT (Midhet and Becker, 2010) showed significantly more pregnant women in the intervention arms in comparison to the control arm received adequate prenatal care (visits to qualified health care provider solely for the purpose of routine medical check-ups during first or second trimester of pregnancy) but the differences between intervention arms were not significant. Moderate-quality evidence.

For the outcome of breastfeeding, the quality of the evidence was assessed as very low to low.

- One cluster RCT (Kunene et al., 2004) shows that the percentage of women commencing mixed feeding at six months was higher in the intervention group than the control group. The results were not statistically significant. Low-quality evidence.
- In one non-equivalent control group study design in which three dispensaries provided the intervention while three others functioned as control sites (Varkey et al., 2004), significantly more women in the control group continued exclusively breastfeeding for six months in comparison to the intervention group. Very low-quality evidence.
- In one cohort analytic study (Sahip and Turin, 2007), men in the intervention group reported a significant increase in their wives breastfeeding at three months. Very low-quality evidence.
- One repeat cross-sectional study (Fullerton, Killian, and Gass, 2005) found a significant increase in women who breastfed within one hour of birth following the male involvement intervention. Very low-quality evidence.

For the outcome of postpartum care visits for women, the quality of the evidence ranged from low to very low.

- One randomized controlled trial (Mullany, Becker and Hindin, 2007) showed women assigned to the couples group were significantly more likely to attend the postpartum visit than those assigned to the control group or women-alone group. Low-quality evidence.
- Two observational studies report on postpartum check-ups for mothers. In one cohort analytic study (Sahip and Turan, 2007), there was no significant difference between men in the control and intervention groups reporting whether their wife had a postpartum check-up. A programme evaluation (Purdin, Khan and Saucier, 2009) showed an increase in postpartum care within 72 hours of birth post intervention. Very low-quality evidence.

Additional outcomes not identified as critical and important were reported by some of the studies

including birth preparedness and complications readiness, male partners accompanying women to antenatal care, increased support for women and interaction between couples. In addition, information was available from those studies that reported on maternal nutrition, maternal death, stillbirths, perinatal mortality and neonatal mortality.[33] These were discussed in the meeting and considered by the GDG in its decision on the strength of the recommendation.

Considerations to be taken into account for implementation

Implementation considerations were informed by a background paper on context and conditions and factors that affect implementation prepared by Khanna (2014).[34] The 13 studies included in the systematic review were reviewed as well as two other reviews of studies on the topic.

As indicated above, male involvement interventions include a range of activities such as facility-based individual and group couple or men's counselling, community mobilization and mass media. Integrated interventions that work at multiple levels to shift social/community norms and values at the same time as individual's knowledge attitudes and practices are considered to be more effective.

As mentioned above, the GDG deliberated at length on this recommendation and recognized the potential for male involvement programmes to undermine or harm women's autonomy, choices and decision-making unless they are undertaken with efforts to promote gender equality and egalitarian decision-making between couples. They also recognized the importance of the quality of the implementation and the ability of programmes implementing these to respond to the changing social environment, and therefore recommended rigorous monitoring and evaluation. Below are key points highlighted by the GDG to be considered when implementing male involvement strategies.

- Male involvement strategies for MNH should primarily be targeted to support women's care-seeking and decision-making for their own health and the health of their children. Their implementation should not reduce women's autonomy (in care-seeking and decision-making in relation to their own health and the health of their children). It is necessary to avoid reinforcing gendered stereotypes of men as the decision-makers.
- Additionally, male involvement strategies should be linked to other efforts to implement gender transformative programming (e.g., programmes that promote egalitarian gender norms and women's empowerment) and should promote the positive role that men can play as partners and fathers.
- Reflecting on the balance of benefits versus harms, the balance depends on the strategy to be employed and the context. In contexts where intimate partner violence is high, male involvement through facility-based male involvement strategies need to be implemented with caution with due attention to not compromising women's safety and confidentiality.
- Harms/risks can be mitigated through implementation approaches that train health providers and programme staff in gender-sensitive programming that promotes egalitarian decision-making between couples and respects women's rights and autonomy along with close monitoring and evaluation for adverse impacts on women's rights and autonomy.
- It is important to recognise the diversity in women's values and preferences. Programmes should be designed having undertaken qualitative research and dialogue with women.
- When considering interventions such as couples counselling or facility-based interventions where the male partner is invited to accompany the woman for antenatal care, it is extremely important to obtain woman's autonomous consent and in discuss in detail the aspects in which she wants him to be involved. Tailored and nuanced care is essential. There will be some women who want their male partners involved and they should be supported. There will be other women who do not want their male partners involved and this should be respected. If the woman does not wish to involve her male partner or is not able to engage with him, his involvement should not be conditional for providing services. Perhaps the most important implementation consideration noted was the need to ensure women's permission, consent and perspective on male involvement before inviting men to be involved.
- The diversity of pregnant women's partnership and family arrangements, including women without partners, needs to be considered in promoting male involvement interventions.
- Male involvement in clinical care around the time of pregnancy, childbirth and after birth should be contingent on the approval or request of women. Women should be consulted, in private, as to which aspects of care they would like to be confidential. This

[33] See Tokhi et al. (forthcoming).
[34] See Appendix 2.

is particularly relevant to potentially sensitive clinical services, such as postpartum family planning.

- Health facilities should be male-friendly and health systems should be oriented towards dealing with men as well as women around the time of pregnancy, childbirth and after birth. However, access to quality care for women and newborns must not be contingent on men's attendance or involvement.
- Many health services are not set up for men to accompany their partners. Physical infrastructure and the capacity of health providers to work with men and couples through gender-sensitive approaches need to be addressed.

Women should be involved in the design and monitoring of male involvement interventions. This includes pilot testing key messages with women and asking women about their experiences of male involvement.

Interventions to promote male involvement around the time of pregnancy, childbirth and after birth should be implemented with reference to broader actions and strategies, implemented across the life course, to improve gender equality and increase women's capacity to make decisions that support their own health.

The importance of male involvement as a support to women making their decisions should be introduced with young men and women to build social changes and consciousness towards gender equality in younger generations.

Research gaps

It would be useful to conduct further studies of robust design which measure the contribution of male involvement strategies within a package of interventions to increase skilled care before, during and after birth, to improve care-seeking for maternal and newborn complications and to improve care practices in the home. In addition to this, the GDG identified some research gaps specific to male involvement interventions.

- Studies that are designed and powered to measure the effect of including men together with women in discussions and decision-making about MNH. Studies that measure the separate effects of including men and other key household decision-makers are also required.
- Studies of male involvement interventions that systematically record qualitative as well as quantitative information about the values and preferences of women and men relating to changes in men's behaviours. In particular, qualitative information that relates to women's bodily autonomy and autonomy in decision-making, gender stereotypes and power dynamics within relationships or households should be recorded. Existing studies that report on men's or couple's behaviours without reporting on women's and men's values and preferences relating to these behaviours risk obscuring differences between harmful and positive gender outcomes.
- Context-specific investigations of how interventions to promote male involvement influence intra-household dynamics, including relationships between mothers-in-law and daughters-in-law, and between grandparents and newborns/infants.
- The cost implications of making and sustaining health system changes that support the involvement of men around the time of pregnancy, childbirth and after birth, such as developing male-friendly health facilities and training health workers to respond to men and couples as well as women. Research addressing this gap should also consider the quality of health services.
- Assessments of the influence of male involvement interventions implemented at the level of local government on priority setting and resource allocation at the community level.
- Research on male involvement in MNH that integrates lessons extrapolated from the larger body of literature that exists on working with men and boys on gender equality and for other sexual and reproductive health topics.

RECOMMENDATION 3

Interventions to promote awareness of human, sexual and reproductive rights and the right to access quality skilled care

Introduction

Human rights are considered as a guiding principle of the IFC Framework and within WHO strategies as a fundamental component of maternal and newborn health. Sexual and reproductive health (SRH) programmes and MNH programmes support the principle that women who are aware of their sexual and reproductive rights are in a better position to exercise their reproductive choices and determine how they negotiate family and community dynamics, how they are able to access health care and how they are treated by health services.[35]

[35] Birth rights: New approaches to safe motherhood. London: Panos Institute; 2001 (http://panos.org.uk/wp-content/files/2011/03/birth_rights0TJZQL.pdf, accessed 26 November 2014).

Families, communities, health providers and other stakeholders who know and respect human rights, in particular sexual and reproductive health and rights, will support women in better taking care of themselves and their children. Therefore, in addition to working with an individual pregnant woman, programmes often address her family, the broader community, service providers, managers and other health systems stakeholders to increase awareness of the right to health or to skilled care. Programmatic inputs include education materials or other visual aids, mass media campaigns and work with groups or public meetings and often focus content on what should be improved to ensure quality services.

Respecting women's human rights, their sexual and reproductive health and rights and their rights to access quality care are part of human rights-based approaches to health that are affirmed and recommended by national governments and international consensus agreements, including those endorsed by WHO and the United Nations more broadly, such as the Programme of Action of the International Conference on Population and Development (1994) and the Beijing Declaration and Platform of Action (1995). Considering the Office of the High Commissioner for Human Rights' Technical guidance on a human rights-based approach to maternal mortality and morbidity[36] as well as the UN Commission on Information and Accountability, the importance of considering interventions that promote awareness of rights for women as a fundamental part of maternal newborn health is timely.

We asked the question:

What interventions to promote awareness of human rights or sexual and reproductive rights or right to access to quality care are effective in increasing birth with a skilled birth attendant and in improving other key maternal and newborn health outcomes?

RECOMMENDATION

Because of the paucity of evidence available, additional research is recommended.

The GDG affirms as a matter of principle the importance for MNH programmes to inform women about their right to health and to access quality skilled care and to continue to empower them to access such care.

[36] Technical guidance on the application of a human-rights based approach to the implementation of policies and programmes to reduce preventable maternal morbidity and mortality. New York: United Nations Human Rights Council; 2012 (http://www2.ohchr.org/english/issues/women/docs/A.HRC.21.22_en.pdf, accessed 7 January 2015).

Evidence summary

Evidence on interventions to promote awareness of human rights, sexual reproductive rights and/or the right to quality skilled care was extracted from a systematic review conducted by George, Branchini and Portela (forthcoming).[37] In the literature many studies were found mentioning rights or discussing a rights-based approach. Most references discussed the importance of rights or the violation of rights or interventions but few documented promoting awareness of rights. Documents that did detail promoting awareness of rights largely did so without any explicit methodology or any tracking of effects on health outcomes. Three studies were found to have health outcome data to evaluate the effects of interventions to promote awareness of human rights and/or sexual reproductive rights and/or the right to quality skilled care. These include two cluster RCTs and one before and after study. Two of these studies report qualitative findings. There was not sufficient evidence to determine which of the modes of delivery of the intervention were most effective. Outcome measures for two of the studies included birth in a facility and all studies reported on use of antenatal care.

A description of the key relevant characteristics of the studies examined in this recommendation is in Appendix 4.

For the outcome of birth in a facility, the quality of the evidence ranged from very low to moderate.

- One cluster RCT (Bjorkman and Svensson, 2009) conducted in Uganda reports a significant increase in facility births, reported as additional births at the facility on average per month. Moderate-quality evidence.
- One pre-post programme evaluation (Sinha, 2008) reported on a significant increase in the number of women giving birth in primary health centres and government hospitals, with a significant decrease in births at private clinics. Very low-quality evidence.

For the outcome of use of antenatal care, the quality of evidence was rated as very low.

- Two cluster RCTs had varied results. One trial in Uganda (Bjorkman and Svensson, 2009) reports a non-significant increase in additional ANC visits per month on average. The other in India (Pandey et al., 2007) reports a significant increase in prenatal examinations at year 1. Very low-quality evidence.
- One pre-post programme evaluation (Sinha, 2008) reports improved ANC care-seeking with significant differences between baseline and endline in women

[37] See Appendix 2.

who made at least one and women who made more than three visits. Very low-quality evidence.

Considerations to be taken into account for implementation

Implementation considerations were informed by a background paper prepared by George and Branchini (2014)[38] on context and conditions and factors that affect implementation. Apart from the three studies with health outcome data, the review draws from 22 other documented experiences, 15 of which were related directly to MNH care-seeking and seven related to other areas of SRH. Some of these did not explicitly state that they were promoting rights, but either discussed promoting awareness of entitlements and/or power relations and had awareness of rights as outcomes. A few studies explicitly avoided using the language of rights in their intervention for strategic and contextual reasons but also had rights outcomes.

Interventions to promote awareness of rights to access quality care for maternal health included a range of activities such as the distribution of printed materials, convening of public meetings and other mass media communication methods; the forming of committees and groups to raise awareness through training and dialogue; the development of action plans and service standard charters; and the monitoring of action plans and service quality and utilization. Interventions to raise awareness of rights were directed at various stakeholders at multiple levels of the health system and included women, family members, youth, communities, elected representatives, grassroots and civil society organizations, health workers, managers and policy-makers.

Many of the GDG members discussed their experiences with the promotion of rights, and several felt there was a broad experience in Latin America, albeit not documented. In these countries rights were often learned because of instances where violation of rights occurred. Lessons learned included the need to talk about rights and responsibilities and the importance of working at various levels including policy-makers.

Other important implementation considerations highlighted included:

- Promotion of awareness of rights may be better documented for some areas of SRH including family planning, post-abortion care, FGM and the right to have children for women living with HIV. Lessons learned could be reviewed from these areas and applied to MNH programmes.
- Awareness-raising on human rights should be an ongoing process involving women, families and communities through the life course and not limited only to the period of pregnancy, childbirth and after birth.
- Information regarding human rights should be provided in language and formats accessible to them and should target women both at the facilities and at the community level. Learning how to put rights awareness into practice is necessary, i.e., either through peer-counselling and/or practising to gain skills in negotiation, etc.
- Materials used to raise awareness of rights do not necessarily raise awareness by themselves. They are effective when they act as tools to foster interactive learning and dialogue within a specific context.
- Rights awareness-raising efforts may need the flexibility to embed themselves strategically within existing broader approaches that may already be facilitating community demand for services.
- To link the promotion of awareness of rights to realizing change in terms of access to maternal and newborn health services, it is vital for initiatives to be grounded in concrete actions and operational plans, with adequate follow-up and monitoring and evaluation to ensure that they realize goals and are not solely aspirational. Monitoring and accountability mechanisms oriented to rights promotion should be available within the health systems to review and respond to changes as needed.
- Awareness of rights is not just about stakeholders being more informed, but is also about supporting a critical consciousness that builds individual and collective capacity to support actions that realize rights to more accessible and responsive care. Initiatives therefore need to support the capacity of both rights holders and rights bearers.
- Creating partnerships and negotiating strategic alliances are neither easy nor predictable processes: they require fostering a common language and clarifying the rules of engagement to counter power imbalances. Nonetheless, those efforts that pursue multi-level, stakeholder and sectoral pathways to underpin the promotion of rights awareness are likely to build synergies that sustain and transform awareness into critical consciousness and action that supports improved access to quality services and better health outcomes.
- Training and capacity-building of health care providers on human rights is essential to ensure promotion and protection of the human rights of

[38] See Appendix 2.

women to ensure women's access to quality of care. Health teams need to understand the meaning of the right to quality of care and the right to health. A situation analysis to understand the context in which providers work in is essential, as the lack of time, lack of structural inputs and large patient loads can inhibit provider motivation and ability to support promotion of rights awareness.

- It is important to motivate health care providers to integrate a rights perspective in their own practice as a means of promoting the right to health for the population but also to improve the work environment.

Research gaps

While lessons learned should be collected and extrapolated from the larger body of literature that exists on promotion of rights for other sexual and reproductive health topics, further studies of robust design are also required to measure the contribution of interventions that promote awareness of rights as one element of increasing access to quality skilled care for women during pregnancy, birth and postpartum. A number of elements need to be standardized and defined so that future research contributes to building a body of evidence that can inform future guidance for policy-makers, program managers and civil society members.

- Further consideration of the opportunity to explicitly integrate promoting awareness of rights and compliance with rights into current health promotion efforts is warranted. Unless one is not using the explicit language of rights due to strategic reasons, many projects that build individual and community capacity to improve demand for and access to quality maternal health services can lend themselves to also promoting awareness of rights and measure its effect as part of this package. The mapping of potential intervention combinations that need to be further explored and evaluated is recommended. Based on this mapping, prioritization of a research agenda and operational steps to fulfil it are required.
- Currently the evidence base for how this intervention supports improved health outcomes is limited to rural populations: primarily India and one study in Uganda. We need research evaluating experiences from other regions of the world, in different settings (e.g., urban) and with varied populations that may face particular forms of discrimination and oppression (migrants, nomadic groups, young people, institutionalized populations, people with disabilities, etc.) in order to better understand how to reach these populations.
- Qualitative research on values and preferences regarding interventions that promote awareness of rights, particularly on how these rights are understood, how they are adapted or not and applied to settings where rights may not be understood or rights may have different meanings is needed. Further examination of harms, benefits, unintended consequences and ethical issues that arise when promoting awareness of rights that contest existing power relations is required.
- Existing interventions that promote awareness of rights need to be better described. Projects must improve documentation of how they promoted awareness of rights, with whom and in what contexts. Numerous projects stated they were promoting awareness of rights but had very little description of how this was done. Guidance on supporting process evaluations and case studies for this type of interventions would be helpful. This would include the application of theories of change informed by on the ground experience and theoretical frameworks that help us to better understand the pathways, inputs and adaptations required for this kind of intervention.
- Funding and partnerships need to facilitate more and better quality evaluations of interventions that promote awareness of rights. Many examples of promoting awareness of rights for quality maternal health services exist but they are not always evaluated or, if evaluated, not in ways that support quality evidence generation. Standardizing measures used for the monitoring and evaluation of interventions that promote rights awareness, specifying the range of health and social outcomes that are of interest is critical so that evidence is comparable across studies. Improved capacity-building and support for the development of research methodologies more suited to these types of interventions that tracks change longitudinally, in participatory ways, that understands complexity and takes into consideration equity concerns is necessary.

RECOMMENDATION 4

Maternity waiting homes (MWHs)

Introduction

Many developing countries have introduced MWHs to improve access to care for labour and complications of pregnancy. MWHs are organized as lodgings/accommodations close to a health facility. Women residing in the MWH can then easily access the health facility for essential childbirth care or care for obstetric complications. Once labour starts the woman moves to the health facility so that labour and birth can be assisted there by a skilled birth attendant. These strategies are typically designed for inaccessible areas to facilitate

the timely movement from home to health facility by diminishing barriers that inhibit access to care such as distance, geography, seasonal barriers or the time of day, infrastructure, transport, the cost of transport or communication between referral points. Their structure, financing and organizational issues are not uniform between countries or even between different districts in the same country. MWHs are established and maintained by government, NGOs, and sometimes also have support from community groups.

We asked the question:

What strategies for maternity waiting homes are effective in increasing birth with a skilled birth attendant/institutional birth and improving other key maternal and newborn health outcomes?

RECOMMENDATION

Maternity waiting homes are recommended to be established close to a health facility, where essential childbirth care and/or care for obstetric and newborn complications is provided, to increase access to skilled care for populations living in remote areas or with limited access to services.

(Conditional recommendation, very low-quality evidence)

Additional research is required.

Evidence summary

Evidence on maternity waiting homes was extracted from a systematic review conducted by Chersich and Portela.[39] Four different existing systematic reviews were identified[40] in the literature including a Cochrane Review completed in 2012. These existing reviews were assessed and supplemented with additional literature identified through the MASCOT/MH-SAR mapping. A total of 14 studies were included, including eight hospital-based cohort studies, two hospital-based before and after studies, one hospital-based cross-sectional survey, one community-based cohort study, one household-level cross-sectional survey and one review of maternal death records.

The 14 studies were conducted in Eritrea, Ethiopia, Mongolia, South Africa, Timor-Leste, Zambia and Zimbabwe.

The studies reported on different modes of interventions and different outcome measures. There was not sufficient evidence to determine which of these strategies or which combination of strategies were most effective.

A description of the key relevant characteristics of the studies examined in this recommendation is in Appendix 4.

For the outcome of birth with a skilled birth attendant or facility birth, the quality of the evidence was rated as very low.

- Four studies (Andemichael, 2008; Tumwine and Dungare, 1996; van den Heuvel et al., 1999; Wild et al., 2012) reported on this outcome. Components of the MWH varied greatly (even within studies) in size, location, facilities, length of stay prior to birth, provision of food and additional services provided (ANC services, health education, reduced fee for instrumental delivery and caesarean section). All studies compared MWH with standard care prior to direct facility admission. All studies reported some benefit from MWH for facility birth. Two hospital-based before and after studies (Andemichael, 2008; Wild et al., 2012) and one hospital-based cross-sectional survey (van den Heuvel et al., 1999) showed there was an increase in facility birth after maternity waiting homes were implemented. The hospital-based cohort study (Tumwine and Dungare, 1996) reported that all childbirths in the study occurred in hospital. No SBA data were reported. Very low-quality evidence.

For the outcome of maternal mortality, the quality of the evidence was rated as very low.

- Seven observational studies reported on this outcome (Andemichael, 2008; Chandramohan, Cutts and Chandra, 1994; Gaym, Pearson and Soe, 2012; Kelly et al., 2010; Poovan, Kifle and Kwast, 1990; Tumwine and Dungare, 1996; van Lonkhuijzen et al., 2003). All studies were conducted in sub-Saharan Africa; all studies stated the setting was remote. All studies showed some benefit for MWH but only one hospital-based cohort study (Kelly et al., 2010) was powered to detect a significant reduction in maternal mortality. Very low-quality evidence.

[39] See Appendix 2.

[40] (1) van Lonkhuijzen L, Stekelenburg J, and van Roosmalen J. Maternity waiting facilities for improving maternal and neonatal outcome in low-resource countries. Cochrane Database of Systematic Reviews. 2009; 8(3): Art. No.: CD006759. doi: 10.1002/14651858.CD006759.pub3. (2) Hussein J, Kanguru L, Astin M, and Munjanja S. The effectiveness of emergency obstetric referral interventions in developing country settings: a systematic review. PLoS Medicine. 2012;9:1–12. doi: 10.1371/journal.pmed.1001264. (3) Lee AC, Lawn JE, Cousens S, Kumar V, Osrin D, Bhutta ZA, et al. Linking families and facilities for care at birth: what works to avert intra-partum related deaths. International Journal of Gynaecology and Obstetrics. 2009;107(Suppl 1):S65–85, S86–8. doi: 10.1016/j.ijgo.2009.07.012 (4) Reaching emergency obstetric care: overcoming the 'second delay'. Melbourne: Burnet Institute on behalf of Compass: the Women's and Children's Health Knowledge Hub; 2010 (http://www.wchknowledgehub.com.au/sites/default/files/pdf/mnrh_1_2_briefingpaper_Reaching_emergency_obstetric_care_2009.pdf, accessed 27 November 2014).

For the outcome of maternal morbidity (prolonged/obstructed labour, uterine rupture), the quality of the evidence was rated as very low.

- Six hospital-based cohort studies reported on this outcome; all studies were conducted in sub-Saharan Africa. Five hospital-based cohort studies (Chandramohan, Cutts and Chandra, 1994; Gaym, Pearson and Soe, 2012; Kelly et al., 2010; Millard, Bailey and Hanson, 1991; Poovan, Kifle and Kwast, 1990) reported a decreased rate of maternal morbidity for women attending MWHs. The remaining hospital-based cohort study showed an increase (van Lonkhuijzen, 2003). Very low-quality evidence.

For the outcome of stillbirth, the quality of the evidence was rated as very low.

- Six studies (Chandramohan, Cutts and Millard, 1995; Gaym, Pearson and Soe, 2012; Kelly et al., 2010; Millard, Bailey and Hanson, 1991; Poovan, Kifle and Kwast, 1990; Tumwine and Dungare, 1996) reported on this outcome; all showed some benefit for MWH. Very low-quality evidence.

For the outcome of perinatal mortality, the quality of the evidence was rated as very low.

- Four hospital-based cohort studies (Chandramohan, Cutts and Chandra, 1994; Millard, Bailey and Hanson, 1991; Tumwine and Dungare, 1996; van Lonkhuijzen et al., 2003) and one hospital cross-sectional survey (Larsen and Muller, 1978) reported on this outcome. All studies were conducted in sub-Saharan Africa; all stated the setting was remote. All studies reported perinatal mortality rates were lower in women admitted to hospital via MWH. Very low-quality evidence.

For the outcome of neonatal mortality, the quality of the evidence was rated as very low.

- Three observational studies reported on this outcome (Chandramohan, Cutts and Chandra, 1994; Millard, Bailey and Hanson, 1991; Tumwine and Dungare, 1996). All studies reported neonatal mortality rates were lower in women admitted to hospital via MWH. Very low-quality evidence.

Considerations to be taken into account for implementation

Implementation considerations were informed by a background paper on context and conditions and factors that affect implementation prepared by Hussein and Munjanja (2014).[41] 29 papers were reviewed.

The GDG notes that the design of the intervention requires local and national discussion to ensure the definition and adaptation of an ideal model as per the context. Dialogue with key stakeholders including women, families and communities is recommended with careful consideration of local preferences, potential obstacles to use and potential harm.

User fees for MWHs are rare but other costs influence women's and families' decisions to use the MWH such as supplies, food, transport to the MWH and accommodation of accompanying family members. Some factors considered to facilitate the successful use of MWHs include the availability of food, the congruence with social and cultural preferences, and the involvement of the community in the organization, maintenance and promotion of the availability of the MWH services. Factors that may impede use include cost, the potential duration of the stay, the lack of community involvement and the organization, comfort and hygiene of the physical facility. Other potential points to be discussed and confirmed with local preferences include:

- Women's ability to reach the MWH including distance, terrain, available transport and costs.
- Resistance from the woman and family to the woman moving away from the family and if other family members can accompany her.
- What should be supplied to the woman during her stay in the MWH, including food or cleaning supplies.
- The range of facilities that should be offered, such as kitchen, bathrooms, water and firewood.
- The ideal duration of stay prior to and after birth.
- Who should be targeted to facilitate the household decision-making processes to decide if the woman will use the MWH.
- The cultural preferences, including the potential role of TBAs in the local area, that would enhance the use of the MWH.
- The types of community support that can be requested.
- How to ensure the safety of the home for the women and for staff, particularly at night.
- The training that should be offered to providers to ensure quality and respectful care of women and family members in the MWH.

Research gaps

It would be useful to have further studies of robust design that measure the contribution of MWHs within a package of interventions to increase skilled care at birth

[41] See Appendix 2.

and improve birth outcomes. Nonetheless, a number of research elements need to be standardized and defined so that future research contributes to a body of evidence rather than disperse studies. These are:

- Key issues to document for implementation research in order to understand the different modalities of delivering the intervention
- Standardized definitions for MWH and some of the outcome measures allowing for the possibility of local contextualization
- Clear and common indicators for monitoring and evaluation of MWH and standardized measures of these, including the impact on use of SBA at birth, on reducing the second delay and on maternal and newborn morbidity and mortality
- Agreement on priority actions and/or which combination of essential actions should be further tested
- The need for a study of ideal MWH versus current MWH or none at all to answer the basic question of whether the MWH effectively reduces the second delay and improves birth outcomes
- Study the impact of availability of MWHs on the "first delay" – the delay in the decision to seek care, including on decision-making in the household
- The need for a study in which barriers have been reduced and enabling factors have been addressed to study whether MWHs are a cost-effective way to improve MNH outcomes
- Whether the MWH should target particular women based on factors such as distance, vulnerability and obstetric risk
- Whether the training of providers is effective in ensuring respectful care of women and family members in the MWH
- The need for multi-site studies to make the results generalizable
- Study of the cost of averting deaths and morbidity (maternal and neonatal) for the MWH intervention and compare this to other interventions (e.g., community transport schemes) to address the second delay
- Study whether the cost of the MWH less than cost of attending the complications
- Compare different models and costs per model as well as costs for the woman and family
- Document how services dealt with increasing demand as a result of the MWH and how this impacted on the quality of care provided
- Ongoing monitoring and evaluation to understand women's perceptions of the quality of care received in the MWH and how this influences subsequent use

RECOMMENDATION 5

Community-organized transport schemes

Introduction

Distance to a facility is often highlighted as a reason why women do not reach skilled care for birth or a facility for complications.[42] The availability of transport to reach care is closely related and an important factor in access. Maternal health programmes have often promoted the mobilization of communities to organize solutions to transport, particularly for obstetric complications.

We asked the question:

What community-organized transport schemes are effective in increasing birth with a skilled birth attendant/institutional birth and improving other key maternal and newborn health outcomes?

RECOMMENDATION

Community-organized transport schemes are recommended in settings where other sources of transport are less sustainable and not reliable. However, measures should be taken to ensure the sustainability, efficacy and reliability of these schemes while seeking long term solutions to transport.

(Conditional recommendation, very low-quality evidence)

Additional research is recommended.

Evidence summary

Evidence on community-organized transport schemes was extracted from a systematic review conducted by Chersich and Portela.[43] The intervention was defined as community groups organizing transport to support pregnant women in seeking skilled care for birth or for a complication. Three different existing systematic reviews were identified[44] in the literature. These

[42] The Millennium Development Goals Report. New York: United Nations; 2007 (http://www.un.org/millenniumgoals/pdf/mdg2007.pdf).

[43] See Appendix 2.

[44] (1) Hussein J, Kanguru L, Astin M, and Munjanja S. The effectiveness of emergency obstetric referral interventions in developing country settings: a systematic review. PLoS Medicine. 2012;9:1–12. doi: 10.1371/journal.pmed.1001264. (2) Lee AC, Lawn JE, Cousens S, Kumar V, Osrin D, Bhutta ZA, et al. Linking families and facilities for care at birth: what works to avert intra-partum related deaths. International Journal of Gynaecology and Obstetrics. 2009;107(Suppl 1):S65–85, S86–8. doi: 10.1016/j.

existing reviews were assessed and supplemented with additional literature identified through the MASCOT/MH-SAR mapping. A total of five studies were identified, including a cluster RCT, a pre and post intervention study and a post-project assessment of the same programme, and two other pre and post community-based case control studies. Three had a qualitative component.

The five studies were conducted in Indonesia, Malawi, Pakistan and Tanzania. All of the studies focused on providing emergency transport.

The studies reported on different modes of interventions and different outcome measures. There was not sufficient evidence to determine which of these strategies or which combination of strategies were most effective. In all studies, the transport scheme was one of multiple interventions implemented.

A description of the key relevant characteristics of the studies examined in this recommendation is in Appendix 4.

For the outcome of birth with a skilled birth attendant or facility birth, the quality of the evidence ranged from very low to moderate.

- One cluster RCT in Pakistan (Bhutta et al., 2011) reported that women exposed to the multifaceted intervention with a small community-organized emergency transport component are more likely, but not significantly, to report giving birth in a facility. Moderate-quality evidence.
- A pre and post case control study in Indonesia (Sood et al., 2004) and a community-based case control study in Malawi (Lungu et al., 2001) reported differently on this outcome. Sood et al. (2004) report that women in communities exposed to the BPCR campaign where under one component, community members were encouraged to organize transport, were significantly more likely to report giving birth at a hospital and a greater proportion of women using an SBA at baseline compared with endline, as well as greater use of SBAs reported by women exposed to the intervention than those not exposed. The study in Malawi reports that community transport plans were associated with a significantly greater decrease in home births than bicycle ambulances (Lungu et al., 2001). Very low-quality evidence.

For the outcome of care with a skilled birth attendant or in a facility in case of complications/illness in women, the quality of the evidence was rated as very low.

- One pre and post study (Ahluwalia et al., 2003) and one evaluation of the same intervention (Ahluwalia et al., 2010) measured the results of the same intervention, in rural poor communities in Tanzania. The intervention was multiple and complex; transport planning was a small component. The pre and post evaluation reports an increase in the number of pregnant women attending the district hospital treated for obstetric complications, and in 10 villages with functional transport systems at least 36 women with obstetric emergencies had used the transport systems to seek hospital care (Ahluwalia et al., 2003). The follow-up survey reports six villages with functioning transport systems provided transport to 29 pregnant women with obstetric difficulty, and estimates that this represents 22% of pregnant women potentially in need of EmOC; estimates are based on surveillance data from 1998 (Ahluwalia et al., 2010). Very low-quality evidence.

For the outcome of maternal mortality, the quality of the evidence was rated as moderate.

- One cluster randomized trial in Pakistan (Bhutta et al., 2011) reported fewer deaths among women exposed to a multiple intervention that consisted of more than community-organized transport. Moderate-quality evidence.

For the outcome of stillbirth, the quality of the evidence was rated as moderate.

- One cluster randomized trial in Pakistan (Bhutta et al., 2011) where the number of stillbirths is lower and the mortality risk ratio showed stillbirths significantly lower among women exposed to a multiple intervention that comprised more than community-organized transport. Moderate-quality evidence.

For the outcome of perinatal mortality, the quality of the evidence was rated as moderate.

- One cluster randomized trial in Pakistan (Bhutta et al., 2011) where the number of perinatal deaths is lower and the mortality risk ratio showed perinatal deaths were significantly lower among women exposed to a multiple intervention that comprised of more than community-organized transport. Moderate-quality evidence.

For the outcome of neonatal mortality, the quality of the evidence was rated as moderate.

- One cluster randomized trial in Pakistan (Bhutta et al., 2011) where neonatal mortality was significantly lower in intervention clusters and seemed lower in

ijgo.2009.07.012(3) Reaching emergency obstetric care: overcoming the 'second delay'. Melbourne: Burnet Institute on behalf of Compass: the Women's and Children's Health Knowledge Hub; 2010 (http://www.wchknowledgehub.com.au/sites/default/files/pdf/mnrh_1_2_briefingpaper_Reaching_emergency_obstetric_care_2009.pdf, accessed 27 November 2014).

areas covered by lady health workers (LHWs) than in areas not covered. The intervention was a multiple intervention that comprised more than community-organized transport. Moderate-quality evidence.

Considerations to be taken into account for implementation

Given the considerations outlined below, the GDG noted that the design of the intervention requires local and national discussion to ensure adaptation and the definition of an ideal model as per the context. This intervention can be recommended in the context of larger plans to develop a transport system but is deemed ineffective as just a temporary scheme. Dialogue with key stakeholders including women, families and communities is recommended with careful consideration of local preferences, potential harms and potential obstacles to use. Potential harms need to be considered in the local context when designing the intervention and are contingent on the type of transport including waiting times, travel time, options that are painful for the woman being transported, and inadequate options as per terrain and weather and safety concerns for the driver and for the women. Cultural considerations also affect the decision as to which type of transport is selected.

Implementation considerations were informed by two published systematic reviews on the topic,[45] which included findings from 22 papers. Community-organized transport is intended as a means to overcome the factors that contribute to the "second delay" (i.e. delay in reaching care). Many transport forms were used to access facilities or skilled care in lower and middle-income countries. Non-motorized transport included carrying, animals, bicycles and walking. Motorized transport included cars, taxis, motorcycles, public and commercial transport and ambulances. Various forms of water transport were used. Most studies discussed transport for obstetric complications rather than for birth.

It was clear from the reviews that increasing transport in order to increase health care accessibility and impact on maternal and newborn health may not succeed unless attention is paid to key proximal and distal factors including distance, geography, seasonal barriers or the time of day, infrastructure, transport, the cost of transport or communication between referral points.

Costs depended on the type of transport. However, several programmes report costs which may be substantial in low resource settings, particularly when considering initial purchases, maintenance and recurring costs. The GDG noted that organized transport can also be used for other health-related emergencies.

Measures should be taken to ensure the safety, efficacy and reliability of community transport schemes. The optimal means of emergency transport would need to be capable of travelling at reasonable speed, and would reach women rapidly to ensure timely transport. This could vary between geographical locations and across seasons and cultures. Local discussion is required to ensure the selection of options compatible with the terrain and climatic conditions. Sufficient attention should be paid to the management of the system including costs, maintenance and repair, drivers, and regulations regarding the use of vehicles for other purposes.

The community transport schemes are often linked to community mobilization efforts, community finance efforts and the organization of local committees. In the included studies, poor functioning of local committees meant that the transport schemes were often neither organized well nor maintained over time. Where funds were involved for either organizing transport or for maintenance, an additional level of complexity is involved. Trust and transparency are considered essential to the success of schemes.

GDG noted that communities were often responding in the absence of government action to improve roads or transport. Community mobilization for transport might include advocating to the government to resolve transport or organizing the community to fix roads.

Ongoing local and national intersectoral discussions should continue to search for sustainable solutions for roads and transportation systems. In some cases schemes were organized by NGOs and links with government services are needed in the event that external support sources terminate. A more long-term vision of improving roads can have wide-reaching health, education, social and economic benefits for communities. The health sector should engage with and advocate for multi-sector investment in infrastructure. Interventions should also address transport options beyond community transport schemes and the needs of other areas of health.

[45] (1) Wilson A, Hillman S, Rosato M, Skelton J, Costello A, Hussein J, et al. A systematic review and thematic synthesis of qualitative studies on maternal emergency transport in low-and middle income countries. International Journal of Gynecology and Obstetrics. 2013;122(3):192–201. doi:10.1016/j.ijgo.2013.03.030; (2) Reaching emergency obstetric care: overcoming the 'second delay'. Melbourne: Burnet Institute on behalf of Compass: the Women's and Children's Health Knowledge Hub; 2010 (http://www.wchknowledgehub.com.au/sites/default/files/pdf/mnrh_1_2_briefingpaper_Reaching_emergency_obstetric_care_2009.pdf, accessed 7 January 2015).

Research gaps

It would be useful to conduct further studies of robust design which measure the contribution of community transport schemes within a package of interventions to increase skilled care at birth, in those circumstances where other options to resolve transport are not feasible or are being planned. Nonetheless, a number of elements need to be standardized and defined so that future research contributes to a body of evidence which builds on existing knowledge rather than repeating similar work. These are:

- Optimal study design and important process issues to document for implementation research to understand the effect of the different modalities of delivering the intervention.
- Standardized definitions for the outcome measures, allowing for the possibility of local contextualization.
- Clear and common indicators for monitoring and evaluation and standardized measures of these, including the impact on use of SBA at birth, on reducing the second delay and on maternal and newborn morbidity and mortality.
- Agreement on priority actions and/or which combination of essential actions should be further tested.
- Documentation of how transport was organized for other health areas and beyond community transport schemes.
- Documentation with a broader look at the transport and stabilization of women and considering the standard for referrals and the links.

RECOMMENDATION 6

Partnership with Traditional Birth Attendants (TBAs)

Introduction

As stated in the original IFC framework concept and strategy paper,[46] while WHO and partners move ahead in the promotion of skilled birth attendants and skilled care for childbirth, the responsibility of TBAs in MNH in those countries and areas where they currently are providers of childbirth care must be specified. Due to their cultural and social acceptability, knowledge and experience, TBAs can be considered an important ally for health education and social support and a positive link between women, families, communities and the formal health care system.[47]

Recent WHO guidance *WHO OptimizeMNH*[48] recognized that a more rational distribution of tasks and responsibilities among the cadre of health workers may improve access to maternal and newborn care. In reviewing the evidence on which tasks could be assumed by lay health workers, trained TBAs were considered and defined as a person who assists the mother during childbirth and who initially acquired their skills by attending births themselves or through an apprenticeship to other TBAs. Trained TBAs have received some level of biomedical training in pregnancy and childbirth care.

We asked the question:

What new roles for TBAs within the formal health system are effective for increasing childbirth with a skilled birth attendant/institutional birth and for improving other key maternal and newborn health outcomes?

RECOMMENDATION

Where TBAs remain the main providers of care at birth, dialogue with TBAs, women, families, communities and service providers is recommended in order to define and agree on alternative roles for TBAs, recognizing the important role they can play in supporting the health of women and newborns.

(Strong recommendation, very low-quality evidence)

Additional research is required.

The GDG also endorsed the recommendations from the existing WHO guideline *WHO OptimizeMNH*.[49]

The use of lay health workers including trained TBAs is recommended for promoting the uptake of a number of maternal and newborn-related health care behaviours and services, providing continuous social support during labour in the presence of a skilled birth attendant and administering misoprostol to prevent postpartum haemorrhage.

[46] Working with Individuals, Families, and Communities to Improve Maternal and Newborn Health. Geneva, World Health Organization; 2010 (http://www.who.int/maternal_child_adolescent/documents/who_fch_rhr_0311/en/, accessed 26 November 2014).

[47] Making pregnancy safer: the critical role of the skilled attendant. A joint statement by WHO, ICM and FIGO. Geneva: World Health Organization; 2004 (http://whqlibdoc.who.int/publications/2004/9241591692.pdf?ua=1, accessed 28 January 2015).

[48] OptimizeMNH: Optimizing health worker roles for maternal and newborn health. Geneva: World Health Organization; 2012 (http://apps.who.int/iris/bitstream/10665/77764/1/9789241504843_eng.pdf, accessed 7 January 2015).

[49] OptimizeMNH: Optimizing health worker roles for maternal and newborn health. Geneva: World Health Organization; 2012 (http://apps.who.int/iris/bitstream/10665/77764/1/9789241504843_eng.pdf).

The use of lay health workers including trained TBAs to deliver the following interventions is recommended, with targeted monitoring and evaluation: distribution of some oral supplement-type interventions to pregnant women (calcium supplementation for women living in areas with known low levels of calcium intake, routine iron and folate supplementation for pregnant women, intermittent presumptive therapy for malaria for pregnant women living in endemic areas and vitamin A supplementation for pregnant women living in areas where severe vitamin A deficiency is a serious public health problem); and initiation and maintenance of injectable contraceptives using a standard syringe.

Evidence summary

Evidence on interventions to find new roles for TBAs with in the formal health system was extracted from a systematic review, conducted by Chersich, et al.[50] Two existing systematic reviews were identified in the literature.[51] These existing reviews were assessed and supplemented with additional literature identified through MASCOT/MH-SAR mapping. A total of six studies were identified.

Different strategies were employed to develop collaborative relationships with TBAs. There was not sufficient evidence to determine which of these strategies or which combination of strategies were most effective.

A description of the key relevant characteristics of the studies examined in this recommendation is in Appendix 4.

For the outcome of birth with a skilled birth attendant or facility birth, the quality of the evidence was rated as very low.

- Six observational studies reported on this outcome in low and middle-income countries; two studies were of refugee/internally displaced women only. The interventions varied and were multiple and complex. It is difficult to distinguish the effect of individual component(s) from the overall programmes or programme from existing safe motherhood initiative activities. Overall, the studies report improvements in use of SBA following implementation of the interventions compared with data in the period before the interventions were put in place. Two studies show a trend towards more women reporting SBA over time: one in Indonesia shows a trend towards substantial improvement over time (Frankenberg et al., 2009) and the other study from Myanmar shows more women reported being assisted by an SBA from baseline to follow-up (Mullany et al., 2010). Two other studies, one in Peru and the other in Indonesia (Gabrysch et al., 2009; Ronsmans et al., 2001), indicate an increase in SBA over time, one significantly (Ronsmans et al., 2001). One exception is a study in Bangladesh (Fauveau et al., 1991), where out of the 15% of registered women who requested a midwife to be present, only 9% actually had a midwife assist the birth. Hospital births also increased over time in a study in Pakistan where EmOC provision was part of the intervention in a refugee population (Purdin, Khan and Saucier, 2009) and in the culturally adapted birth model (Gabrysch et al., 2009). Very low-quality evidence.

For the outcome of ANC use (one to four visits), the quality of the evidence was rated as very low.

- Three observational studies reported on this outcome. A longitudinal panel survey (Frankenberg et al., 2009) showed use of ANC increased over time following the implementation of a TBA intervention. A retrospective pre and post analysis (Purdin et al., 2009) reported complete antenatal care coverage (three or more visits) increased baseline to endline; and a pre and post intervention study (Mullany et al., 2010) reported coverage of four or more visits increased significantly from baseline to endline. There were larger relative improvements in ANC use over time where TBA interventions were implemented in settings with Afghan refugee women in Pakistan (Purdin, Khan and Saucier, 2009) and internally displaced women in Eastern Myanmar (Mullany et al., 2010). Very low-quality evidence.

For the outcome of postnatal visits for woman and baby, the quality of the evidence was rated as very low.

- Four observational studies reported on this outcome. Only one study (Mullany et al., 2010) specified that the postnatal visit was for the mother and baby. All four studies showed that postpartum visits to women increased over time following the implementation of a TBA intervention (Fauveau et al., 1991; Ronsmans et al., 2001; Purdin, Khan and Saucier, 2009; Mullany et al., 2010). There were larger relative improvements in women receiving postpartum visits within 72 hours after birth where TBA interventions were implemented in settings with Afghan refugee women in Pakistan (Purdin, Khan and Saucier, 2009) and

[50] See Appendix 2.

[51] (1) Byrne A and Morgan A. How the integration of traditional birth attendants with formal health systems can increase skilled birth attendance. International Journal of Gynaecology and Obstetrics. 2011; 115:127–34. doi: 10.1016/j.ijgo.2011.06.019.; and (2) Vieira C, Portela A, Miller T, Coast E, Leone T, and Marston C. Increasing the use of skilled health personnel where traditional birth attendants were providers of childbirth care: a systematic review. PLoS ONE. 2012;7(10):e47946. doi:47910.41371/journal.pone.0047946.

significant improvements in internally displaced women in Eastern Myanmar (Mullany, et al., 2010). Very low-quality evidence.

Considerations to be taken into account for implementation

Implementation considerations were informed by a background paper on context and conditions and factors that affect implementation prepared by Miller (2014).[52] 16 additional references identified during the original literature retrieval and mapping procedure were reviewed. These 16 articles included countries not already represented in the systematic review and different intervention experiences.

Interventions to support countries to transition from birth with a TBA to birth with an SBA are particularly important in light of priority strategies to increase SBAs and the human resource challenges in achieving this goal. Recent task shifting work has focused on the roles lay health workers including TBAs can assume. As noted above, interventions of interest for purposes of this review were those where TBAs were providers of childbirth care and efforts were made to increase childbirth with an SBA. This included interventions where TBAs were linked with formal health services to raise SBA/facility births; interventions to increase partnerships or teamwork with TBAs; or to find new roles for TBAs within the formal health system. Most of the strategies implemented focused on establishing partnership with TBAs.

Exact costs are not available. We could infer from the different studies only limited information about costs incurred. These were dependent on the intervention type, including provision of payments to TBAs to take on new roles such as referring pregnant women, accompanying them to the facility, reimbursing transport costs or other costs associated with assuming a new role.

A multifaceted approach is recommended to prepare TBAs and others for new roles, including the training of TBAs to strengthen their knowledge and skills to enable them to be able to assume new roles, the sensitization of health providers, communities, women and their families and TBAs to ensure mutually respectful dialogue and to establish trusting relationships, and the integration of other stakeholders to contribute to a support system for the transition period.

It is clear that there may be settings such as in remote areas, humanitarian situations or overloaded health centres where TBAs attending births are considered necessary. However, this should be done under supervision and alongside steps which facilitate the groundwork for TBA transition.

Research gaps

It would be useful to conduct further studies of robust design that measure the contribution of TBAs within a package of interventions to increase skilled care at birth. Nonetheless, a number of elements need to be standardized and defined so that future research meets design and reporting criteria and can contribute to a body of evidence:

- Optimal study design and monitoring of important processes of implementation in order to be able to understand the effect of the different modes of delivering the intervention.
- Standardization of some outcome measures allowing for the possibility of local contextualization.
- Clear and common indicators for monitoring and evaluation and standardized measures of these with agreement at international level on priority actions and/or which combination of essential actions should be further tested.
- The need for studies to explore and record the preferences articulated by those providing and receiving care in more detailed and rigorous ways.
- The need for more detailed data on the transition phase as new roles for TBAs are introduced and implemented.
- Better reporting of intervention details and outcomes so that other programmes/countries can decide to replicate/implement.
- The need for systematic monitoring of interventions over time.
- Case studies of countries who have implemented policies to ban TBAs and the effect of these policies as well as those countries who have experience in implementing strategies but which may not yet be documented in the literature, such as in Latin America.
- Discussion of innovative study designs including different disciplines and methods in order to improve the breadth of the evidence base.
- Potential of TBAs in MDSR.
- Design of programmes which can better capture and evaluate individual components in multiple interventions.

[52] See Appendix 2.

RECOMMENDATION 7

Providing culturally appropriate skilled maternity care

Introduction

The need for culturally appropriate health facilities is core to WHO's mandate on Health For All[53] and cultural competencies of providers and services were identified as a key area of intervention in the WHO IFC Framework.[54] A recent qualitative systematic review confirms the importance of cultural factors in the decisions of women and families to use skilled care at birth.[55] Different programmes have adapted models of service delivery or service practices to incorporate acceptable and respectful care, trained service providers, employed mediators and interpreters and used participatory approaches to engage in dialogue with communities in order to address cultural factors that affect use of care.

We asked the question:

What strategies to provide culturally appropriate skilled maternity care lead to an increase in use of skilled maternity care before, during and after birth?

RECOMMENDATION

Ongoing dialogue with communities is recommended as an essential component in defining the characteristics of culturally appropriate, quality maternity care services that address the needs of women and newborns and incorporate their cultural preferences.

Mechanisms that ensure women's voices are meaningfully included in these dialogues are also recommended.

(Strong recommendation, very low-quality evidence)

Additional research is required.

Evidence summary

Evidence on interventions to provide culturally appropriate maternity care was extracted from a systematic review conducted by Coast, Jones and Lattof (forthcoming).[56] The review was based on literature identified through a systematic mapping conducted by Coast et al.[57] and also through the MASCOT/MH-SAR mapping. This literature was supplemented with hand-searches of the reference lists of relevant reviews and items included in the mapping, as well as further recommendations from experts. The review sought interventions designed primarily and explicitly to provide culturally appropriate skilled maternity care for defined ethno-linguistic or religious groups. Examples of interventions considered include those that adapt models of service delivery (e.g., the service setting, practices, materials and/or language) to provide culturally appropriate or acceptable care, interventions to provide staff training and interventions that employ service providers or mediators who share cultural characteristics with the relevant population. As suggested by the GDG, in this case we also searched for studies from high-income countries as it was felt that lessons could be learned from experiences with different ethnic groups in these settings.

A total of 14 studies were identified as meeting our inclusion criteria. The studies were conducted mostly in high-income countries, where they focused on sub-populations in Australia, Canada, Israel, the United Kingdom and the United States of America (USA). One study was conducted in Peru.

Interventions included selecting and/or changing a service provider to match the cultural characteristics of the study population, changing the service social setting, introducing and/or changing service practices, changing the language of services, changing the location of service delivery, using a participatory model in designing the intervention, providing staff training and changing the physical setting of the service. There was not sufficient evidence to determine which of these strategies or which combination of strategies were most effective.

A description of the key relevant characteristics of the studies examined in this recommendation is in Appendix 4.

For the outcome of birth with a skilled birth attendant or facility birth, the quality of the evidence was rated as very low.

[53] Maternal mortality in 2005: estimates developed by WHOUNICEF, UNFPA, and the World Bank. Geneva: World Health Organization; 2005 (http://www.who.int/whosis/mme_2005.pdf, accessed on 7 January 2015).

[54] Working with Individuals, Families, and Communities to Improve Maternal and Newborn Health. Geneva, World Health Organization; 2010 (http://www.who.int/maternal_child_adolescent/documents/who_fch_rhr_0311/en/, accessed 26 November 2014).

[55] Bohren MA, Hunter EC, Munthe-Kaas HM, Souza JP, Vogel JP, and Gülmezoglu AM. Facilitators and barriers to facility-based delivery in low-and middle-income countries: a qualitative evidence synthesis. Reproductive Health. 2014;11(1):71. doi:10.1186/1742-4755-11-71.

[56] See Appendix 2.

[57] Coast E, Jones E, Portela A, and Lattof SR. Maternity care services and culture: a systematic global mapping of interventions. PLoSONE. 2014;9(9): e108130. doi:10.1371/journal.pone.0108130.

- Two observational studies reported on this outcome: one was a prospective cohort study conducted with an Indigenous population in Australia (Panaretto et al., 2005); the other was a pre and post comparative study conducted with poor indigenous Quechua communities in Peru (Gabrysch et al., 2009). The new childbirth care model in Peru reports increases in the percentage of births with an SBA and births in the health centre over time. A new ANC model in Australia showed that more women attending the programme gave birth at the hospital. Very low-quality evidence.

For the outcome of care with a skilled birth attendant or in a facility in case of complications/illness in women, the quality of the evidence was rated as very low.

- Two retrospective studies with control groups reported on this outcome. Parsons and Day (1992) measured the effect of health advocates on care-seeking among Turkish and Asian women in the UK, while Thompson et al. (1998) examined the effect of nursing case management and home visits on care-seeking among high-risk low-income Mexican-American women in the USA. Both studies report on antenatal admissions and length of stay but provide no data on use of a skilled birth attendant at birth. In Parsons and Day (1992), length of stay was significantly lower in the health advocates' intervention group, but there was no difference between the groups in the Thompson et al. (1998) study. There were too few antenatal admissions to calculate statistical differences in the Thompson et al. (1998) study but the study found more inpatient admissions and emergency room visits in the intervention group. In the Parsons and Day study (1992), antenatal admissions remained the same with the health advocates intervention and increased in the control group. Very low-quality evidence.

For the outcome of use of ANC, the quality of the evidence was rated as very low.

- Eleven observational studies reported on this outcome. All studies were conducted in high-income countries with ethnic minority women: five in Australia with Indigenous Aboriginal and Torres Strait Islander populations (Jan et al., 2004; Kildea et al., 2012; Nel and Pashen, 2003; Panaretto et al., 2005; Panaretto et al., 2007;); three in the US with minority groups including pregnant adolescents at high risk of poor outcomes (Julnes, 1994; Jewell and Russell, 2000; Thompson, Curry and Burton, 1998); two in the United Kingdom with Asian and Turkish women (Parsons and Day, 1992; Mason, 1990); and one in Israel with Bedouin women (Bilenko, Hammel and Belmaker, 2007). Interventions included health advocacy, liaison, linkage or brokerage for women; the employment of Indigenous health staff; group or individual support; home or clinic-based visits; and transport services. Overall results indicate a positive effect of culturally appropriate interventions on ANC use. Eight studies showed improvement on various measures of antenatal care utilization, including indexes of the adequacy of ANC, increases in the number of visits, or increases in women having at least six ANC visits (Bilenko, Hammel and Belmaker, 2007; Jan et al., 2004; Jewell and Russell, 2000; Julnes, 1994; Kildea et al., 2012, Nel and Pashen, 2003; Panaretto et al., 2005; Panaretto et al., 2007). Three report no difference in ANC use between those receiving the intervention and controls (Mason, 1990; Parsons and Day, 1992; Thompson, Curry and Burton, 1998). Very low-quality evidence.

For the outcome of postpartum care visits for women, the quality of the evidence was rated as low.

- One RCT study (Marsiglia, Bermudez-Parsai and Coonrod, 2010) reported on this outcome in low-income Latina/Hispanic pregnant women in the USA. Results show a benefit of the cultural broker: attendance at the postpartum visit was 2.5 times more likely in the intervention group and women who met with the prenatal partners (cultural brokers) more often were more likely to attend the postpartum visit. Low-quality evidence.

Considerations to be taken into account for implementation

Implementation considerations were informed by a background paper prepared by Coast, Lattof and Jones (2014)[58] on context and conditions and factors that affect implementation.

The GDG requested that, despite the wording of the recommendation, the implementation of this intervention should not be limited to dialogue (communication) but should also offer the opportunity to participate and to transform the way services are offered and community-health services relations.

Different interventions were employed in the 14 identified studies to provide culturally appropriate maternity care services. Most studies implied that these adjustments lead to increased satisfaction with services. These interventions might include one or a combination of the following elements: establishing, enhancing and evaluating dialogue between communities, policy-makers, institutions and service providers; using cultural brokers as mediators; integrating culturally matched health staff (lay and skilled); adapting service practices

[58] See Appendix 2.

to the cultural context where appropriate and feasible; and using and making respectful approaches central to dialogues between and within communities, institutions, service providers and policies.

Only three studies reported on costs and the same were very context specific.

Given that cultural beliefs and behaviour are impossible to isolate from the social and economic context in which they occur, interventions are likely to be most sustainable when they employ a participatory approach. Measures should be taken to support women, community members and groups, providers and institutions to establish and maintain respectful dialogue.

For service providers, the promotion of dialogue with communities should be embedded in their training and supported and evaluated over their career. Policies at the national and local level should be in place to establish an enabling environment and support dialogue with communities.

Culture is not static, and its dynamism needs to be recognized, anticipated and incorporated into maternity care services. The potentially harmful consequences of cultural stereotyping need to be avoided. Services designed for specific populations should take into account the potential harm of associated stigma. Efforts should be made to understand the cultural factors affecting use of care in the relevant context through prior studies and/or community participation in the design of the intervention.

In establishing respectful dialogue with communities, the following considerations were highlighted by the GDG:

- Recognize and address power dynamics
- Make links to respectful maternity care
- Vulnerated populations are not vulnerable
- Recognize gender hierarchies in institutions
- Pre-service and in-service training of providers needs to take into account cultural competencies and clinical training sites should model these practices
- Language is an important part of cultural considerations
- Support government health services in strengthening skills as a mediator in bringing together a broad array of actors for dialogue with communities

Research gaps

It would be useful to conduct further studies of robust design that measure the contribution of cultural dialogue within a package of interventions aimed at increasing access to skilled care at birth. Nonetheless, a number of elements need to be standardized and defined so that future research contributes to a body of evidence rather than disparate studies:

- Studies should aim for optimal design and should document important process issues for implementation research to understand the effect of the different modalities of delivering the intervention.
- Studies should standardize some of the outcome measures, allowing for the possibility of local contextualization and for additional measures beyond the traditional health outcomes, including women's satisfaction with services, strengthening of services and community relations.
- Studies should include clear and common indicators for monitoring and evaluation and standardized measures of these and should use standard methods for capturing the opinions of women, the community and health staff on health services and quality.
- Agreement is needed on priority actions and/or which combinations of essential actions should be further tested.
- Intervention studies that provide strong(er) evidence of impact are needed.
- Where interventions are complex, these should be supplemented with qualitative and/or other studies that may isolate which components of the intervention are responsible for the outcomes.
- Studies should examine and present information on resource use where possible.
- Studies in low and middle-income countries should be prioritized.
- Where an intervention is designed explicitly to address cultural factors, sufficient detail should be provided in reporting for the audience to understand how the cultural factors were addressed and how the intervention was implemented.
- When writing up studies, authors should provide more detailed information on the content of the interventions and how the interventions were implemented.
- Progress has been made in some regions (e.g., LAC) to develop and include policies and standards of care with an intercultural approach. Case studies of these programmes should be developed to extract lessons learned.
- A review of curricula and training programmes for health professionals should be undertaken to determine the extent to which cultural sensitivity and competencies have been included. An expert

group can establish core cultural competencies that can be adapted at the national and local levels and incorporated into training or curricula for health professionals.

- The intercultural dialogue approach can be used as a base to promote collaborative research towards simultaneous studies and/or multi-site studies, with guidance to funders.

RECOMMENDATION 8

Companion of choice at birth

Introduction

A companion of choice to accompany a woman in the facility during labour and birth has been the subject of a recent review in the *WHO recommendations for the augmentation of labour.*[59] In these guidelines the intervention referred to continuous companionship during labour and birth. We adapt this terminology in this guideline. The recommendation was made looking at improved labour outcomes and is copied herein. Given the focus of these guidelines on health promotion interventions for MNH, priority was given to two other outcomes: use of skilled care for birth/birth in a facility (for the subsequent birth) and women's satisfaction with care.

We asked the question:

Does allowing a woman to have a companion of choice to accompany her during labour and birth in the facility or in the presence of a skilled birth attendant lead to an increase in births with a skilled birth attendant/ institutional births and to improvements in perceptions of quality of care?

RECOMMENDATION

Continuous companionship during labour and birth is recommended for improving women's satisfaction with services.

(Strong recommendation, moderate quality of evidence)

The GDG also endorsed the recommendations from an existing WHO guideline, *WHO recommendations for augmentation of labour.*[60]

Continuous companionship during labour and birth is recommended for improving labour outcomes.

(Strong recommendation, moderate quality of evidence)

Evidence summary

Evidence on the effect of continuous companionship during labour was extracted from a Cochrane systematic review of 22 trials (>1500 women).[61] The trials were conducted in low, middle and high-income countries across the world (Australia, Belgium, Botswana, Brazil, Canada, Chile, Finland, France, Greece, Iran, Guatemala, Mexico, Nigeria, Sweden, South Africa, Thailand and the USA). Hospital routines and facilities varied considerably in the different settings. Continuous support was defined slightly differently in the different trials but mainly women were accompanied at least during the active stages of labour. The companions in different trials varied: sometimes labour companions or doulas provided support while in other trials a female relative or husband was present throughout labour.[62] Companions could be trained to provide support to women, or have little or no training.

For the outcome of subsequent birth with a skilled birth attendant or facility birth

- No studies reported on this outcome. No recommendation was made.

For the outcome of satisfaction with the birth experience, the quality of the evidence was rated as moderate.

- 11 RCTs reported on this outcome. Women who had continuous one-to-one support during labour were less likely to have reported negative rating of or negative feelings about childbirth experience. (11 trials, n = 11,133, average RR 0.69, 95% CI 0.59 to 0.79, I^2 63%, τ^2 0.03).[63] The effectiveness of continuous support in reducing the likelihood of dissatisfaction with or negative views of the childbirth experience appeared to be stronger in settings in which epidural analgesia was not routinely available and when

[59] WHO recommendations for augmentation of labour. Geneva: World Health Organization; 2014 (http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/augmentation-labour/en/,accessed, 7 January 2015).

[60] WHO recommendations for augmentation of labour. Geneva: World Health Organization; 2014 (http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/augmentation-labour/en/,accessed, 7 January 2015).

[61] Hodnett ED, Gates S, Hofmeyr GJ and Sakala C. Continuous support for women during childbirth. Cochrane Database of Systematic Reviews 2013;(7): CD003766. doi: 10.1002/14651858.CD003766.pub5.

[62] See recommendation 12, page 32 of WHO recommendations for augmentation of labour. Geneva: World Health Organization; 2014 (http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/augmentation-labour/en/,accessed, 7 January 2015).

[63] Hodnett ED, Gates S, Hofmeyr GJ and Sakala C. Continuous support for women during childbirth. Cochrane Database of Systematic Reviews 2013;(7): CD003766. doi: 10.1002/14651858.CD003766.pub5.

the provider was neither a staff member nor part of the woman's social network. The control group varied somewhat: five studies compared continuous support with intermittent support (Breart et al., 1992 Belgium; Breart et al., 1992 France; Hodnett et al., 2002; Hofmeyr et al., 1991; Kennell et al., 1991); two with routine care (not fully described) (Langer et al., 1998; Morhason-Bello et al., 2009); or no companion present (Bruggemann et al., 2007; Torres et al., 1999); and one study (Dickinson et al., 2002) stipulated no midwife and the women were encouraged to have an epidural. In the final study women were allowed to have a support person of their own choosing (Campbell et al., 2006).

Considerations to be taken into account for implementation

The following points were identified by the GDG from the *WHO recommendations for augmentation of labour.*[64]

- The GDG acknowledged that continuous psychosocial support may not necessarily reduce the need for labour augmentation but made the recommendation on the basis of other substantial benefits for women and their babies.
- The GDG noted that countries and policy-makers are often reluctant to implement this intervention in practice in spite of the supporting evidence, which has been available for many years. The group agreed that extra efforts are needed to encourage potential implementers at various levels of health care delivery.
- The GDG discussed the issues of privacy, cultural inclinations and resource use often raised as concerns to implementing this intervention and agreed that simple measures to allow female relatives to accompany women during labour could be used as cost-effective and culturally sensitive ways to address these concerns.
- The evidence supports the use of any type of culturally appropriate companion, including husbands and lay professionals, such as doulas.

The following points were identified by the GDG from the WHO recommendations for health promotion interventions for MNH:

- Regarding the last bullet above, continuous support from a person who is present solely to provide support, is not a member of the woman's social network and has at least a modest amount of experience/training appears to be most beneficial. In comparison with having no companion during labour, support from a chosen family member or friend appears to increase women's satisfaction with their childbearing experience. Each decision should be made according to/depending on the context and should be the choice of the woman.
- It is important to define the training, if any, that the companion should receive. While the evidence did not indicate training was necessary for the effectiveness of the interventions, the GDG noted that there are different approaches taken by different countries such as an orientation session, tutorials or instructive cards.
- Women's birth environments should be empowering, non-stressful, respectful of privacy and communicate respect and the valuing of women's preferences for companionship. The application of this intervention requires supporting facility policies and reflection and action on privacy considerations, possible modification of physical space in the facility, sensitization and training of health workers to increase acceptance and modes to orient the companion of choice.
- A sensitization strategy towards acceptance of the companion by the health professionals, the community and women should be concurrently implemented.
- Women should be able to choose the companion. This has major importance and should be clearly stated.
- The functions of the companion should be clearly stated when they are a family member as there could be some difficulties between health professionals and the companion.

Research gaps

Future research should focus on implementation and introducing a companion at birth in specific settings to help countries adapt the policy and scale it up to a national level. The GDG identified some additional research gaps specific for this intervention.

- Compile lessons learned from countries where this has already been implemented.
- Establish common indicators to measure the success of the companion intervention on maternal and newborn health outcomes and on women's satisfaction with care received.
- Measure the different costs involved including the training of personnel and the companion, the adjustment of the physical space, etc.

[64] WHO recommendations for augmentation of labour. Geneva: World Health Organization; 2014 (http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/augmentation-labour/en/, accessed on 7 January 2015).

- Assess the impact on care-seeking behaviour for subsequent births.

RECOMMENDATION 9

Community mobilization through facilitated participatory learning and action cycles with women's groups

Introduction

In addition to the key interventions identified in the original IFC Framework in 2003, the technical secretariat was open to emerging evidence on other related health promotion interventions for MNH. One specific question about the effectiveness of community mobilization through participatory learning and action cycles with women's groups was added to the prioritized research questions. This was included because of the interest generated by research on this topic, including a published systematic review and meta-analysis of randomized controlled trials.[65]

Community mobilization through facilitated participatory learning and action cycles with women's groups involves a four-phase participatory process facilitated by a trained facilitator, in which women's groups collectively decide priority actions and try to organize activities accordingly. The cycle is structured as follows: Phase 1, identify and prioritize problems during pregnancy, childbirth and after birth; Phase 2, plan activities; Phase 3, implement strategies to address the priority problems; and Phase 4, assess the activities.[66]

We asked the question:

What are the impacts on MNH of community mobilization through facilitated participatory learning and action cycles with women's groups?

A recommendation was made by a GDG in 2013 and published in early 2014. (For a full description of the methods, please see *WHO recommendation on community mobilization through facilitated participatory learning and action cycles with women's groups for maternal and newborn health.*)[67]

[65] Prost A, Colbourn T, Seward N, Azad K, Coomarasamy A, Copas A et al. Women's groups practising participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis. Lancet. 2013;381(9879):1736–46. doi:10.1016/ S0140-6736(13)60685-6.

[66] Prost A, Colbourn T, Seward N, Azad K, Coomarasamy A, Copas A et al. Women's groups practising participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis. Lancet. 2013;381(9879):1736–46. doi:10.1016/ S0140-6736(13)60685-6.

[67] WHO recommendation on community mobilization through facilitated participatory learning and action cycles with women's groups for maternal and newborn health. Geneva, World Health Organization; 2014 (http://www.who.int/maternal_child_adolescent/documents/community-mobilization-maternal-newborn/en/, accessed on 14 January 2015).

RECOMMENDATION

Implementation of community mobilization through facilitated participatory learning and action cycles with women's groups is recommended to improve maternal and newborn health, particularly in rural settings with low access to health services.

(Strong recommendation, moderate quality evidence)

Implementation of facilitated participatory learning and action cycles with women's groups should focus on creating a space for discussion where women are able to identify priority problems and advocate for local solutions for maternal and newborn health.

Evidence about the positive effect of the intervention on newborn mortality was clearer than the evidence of its effect on maternal health and on care-seeking outcomes. More research is needed to improve our understanding of the effects on these other outcomes and the effects in different contexts.

The GDG recommended that this intervention be implemented with close monitoring and evaluation to ensure high-quality implementation and with prior adaptation to the local context. Any intervention designed to increase access to health services should be implemented in tandem with strategies to improve health services. Where the quality of services is poor, women may understandably choose not to use them despite mobilization efforts.

Evidence summary

Evidence was provided through two main sources, all produced by linked research groups.[68] The first was a published systematic review and meta-analysis of randomized controlled trials of women's groups practising participatory learning and action.[69] Seven trials conducted in Bangladesh, India, Malawi and Nepal were included in the systematic review. The second was an additional unpublished meta-analysis of secondary outcomes (institutional birth, birth with a skilled birth attendant, any antenatal care and recommended number of antenatal care visits), carried out by Tim Colburn and Audrey Prost of University College London.

[68] The seven studies included in the meta-analysis were conducted and published by members of the same team that also conducted the systematic review and meta-analysis.

[69] Prost A, Colbourn T, Seward N, Azad K, Coomarasamy A, Copas A et al. Women's groups practising participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis. Lancet. 2013;381(9879):1736–46. doi:10.1016/S0140-6736(13)60685-6.

This used the same methods as the original review and was conducted at the request of WHO.

In their published meta-analysis, Prost et al. (2013) divided the studies into high coverage (>30% of pregnant women in the intervention area reached by the intervention) and low coverage trials (the other studies) for some analyses. We retained the terminology here.

For the outcome of birth with a skilled birth attendant or facility birth, the quality of evidence ranged from very low to low.

- The unpublished meta-analysis by Prost et al. (2013) of non-mortality outcomes (using the same methods as their published meta-analysis) found no evidence of an effect of the intervention with women's groups on the odds of giving birth in an institution or with an SBA.

For the outcome of ANC use, the quality of evidence ranged from very low to low.

- There was also no effect on use of antenatal care (receiving any/receiving recommended number of visits).

For the outcome of maternal mortality, the quality of evidence was very low.

- There was a reduction in maternal mortality with confidence intervals close to no effect (OR: 0.63, 95% CI: 0.32–0.94). Also, only two out of the four high-coverage trials (studies where >30% of pregnant women in the intervention area were reached by the intervention) showed an effect on maternal mortality.

For the outcome of neonatal mortality, the quality of evidence was moderate.

- There was a reduction in neonatal mortality (OR: 0.77, 95% CI: 0.65–0.90). All four high coverage trials (where >30% of pregnant women in the intervention area were reached by the intervention) report effects on this outcome.

Considerations to be taken into account for implementation

The following considerations were identified by the GDG from the WHO recommendations on community mobilization through facilitated participatory learning and action cycles with women's groups for maternal and newborn health.[70]

Implementation considerations were informed by an additional background document detailing the context and conditions in which the seven trials were conducted that was produced by members of the same research group (Rosato, Prost and Costello, 2014).[71] This document highlighted factors that influence implementation and outcomes and was updated following the July meeting and a request by the GDG to address more explicitly the potential harms and benefits and the implementation process in two sites.

The GDG recommended that this intervention be implemented with close monitoring and evaluation to ensure high-quality implementation and with prior adaptation to the local context. Any intervention designed to increase access to health services should be implemented in tandem with strategies to improve health services. Where the quality of services is poor, women may understandably choose not to use them despite mobilization efforts.

The GDG also noted that this recommendation should be considered in conjunction with the implementation considerations indicated below.

- To have an impact, the time period of the intervention should be no shorter than three years.
- There needs to be adequate coverage of the intervention in terms of density of groups in the population. There is some evidence that the intervention might be more successful where more than 30% of pregnant women participate; however, the evidence at present is not definitive. The effect may also vary by context, e.g., may depend on the prior existence, strength and cohesion of local social networks.
- High-quality facilitators are key in establishing and maintaining groups and helping them to be effective; good training and support of facilitators is therefore essential.
- Although a community intervention, like any intervention at large scale, it must be supported by appropriate structures, systems and processes. E.g., each facilitator should be responsible for no more than 8-10 groups per month to act effectively and resources must be in place to support this.
- Implementation should include awareness of the potential harms (gender violence, conflict with health providers or other community members, etc.). Potential harms should be monitored throughout implementation so that they can be managed.
- Political support at the national and local levels is essential.

[70] WHO recommendation on community mobilization through facilitated participatory learning and action cycles with women's groups for maternal and newborn health. Geneva, World Health Organization; 2014 (http://www.who.int/maternal_child_adolescent/documents/community-mobilization-maternal-newborn/en/, accessed 27 November 2014).

[71] See Appendix 2.

- The intervention must be adapted to reflect each country's context, specific capacities and constraints.
- Implementing the intervention as part of national community health developmental strategies/plans or other community development structures is likely to enhance coverage and sustainability.
- The women's groups should not operate in isolation. To be effective they need the cooperation of other social groups, e.g., recognizing the value of maternal and newborn health, and providing responsive and accountable health services. Cooperation from non-health sectors may be crucial for implementing group plans, e.g., road maintenance.
- Specific local factors that might be relevant to implementation include:
  - The history of participation in the communities and the existence of other groups. Local decision-making structures and processes should be taken into account in design/implementation.
  - Data are needed on local barriers and facilitators of implementation and the acceptability of the intervention to women.
  - Implementation should consider the role of men and other members of the community (e.g., religious groups, mothers-in-law) and how and when they participate in the process.
  - The design of the process used with groups should be adapted according to the groups in question, e.g., accounting for levels of literacy/numeracy, preferences for oral versus visual methods, etc.
  - Ethnic group mix, religion, caste and other social categories affecting group dynamics need to be considered in developing the approach, e.g., how and where groups are formed.

Research gaps

Evidence about the positive effect of the intervention on newborn mortality was clearer than the evidence of its effect on maternal health and on care-seeking outcomes. More research is needed to improve our understanding of the effects on these other outcomes and the effects in different contexts. It would be useful to have more information about:

- this intervention in urban areas
- this intervention in conjunction with stronger quality-improvement measures for health services and the impact on care-seeking behaviour
- participatory learning and action cycles with other population groups (i.e., men, grandmothers, etc.)
- additional non-health benefits
- potential harms of these types of interventions
- strategies to address potential tension with men in those contexts where there is sensitivity to women's gatherings or potential harms
- barriers and facilitators for implementation
- acceptability of the intervention to women
- whether or not the intervention causes an increased value to be placed on women by women themselves and by the broader society
- processes and quality (e.g., facilitation) of implementation
- whether or not a certain proportion of pregnant women need to participate in the groups in order for them to have an impact on maternal and newborn health
- sustainability, such as how long external inputs are required and the processes for scaling-up

It was suggested that qualitative data, e.g., from process evaluations, could be synthesized. The synthesis might help answer some of the outstanding questions about this intervention.

RECOMMENDATION 10

Community participation in Maternal Death Surveillance and Response (MDSR)

Introduction

As indicated in the IFC Framework concept and strategy paper,[72] it is recognized that in order to assume a role in improving MNH, communities need information regarding local maternal and newborn health needs. There are different methodologies and tools designed for health systems to gather information regarding maternal and newborn death and morbidity. Several of these recognize the value of the community as a source of information.

In recent years, particularly under the UN Secretary-General's Global Strategy for Women's and Children's Health[73] and the Commission on Information and Accountability, increased attention has been given to Maternal and Perinatal Death Surveillance and Response

[72] Working with individuals, families and communities to improve maternal and newborn health. Geneva: World Health Organization; 2010 (http://www.who.int/maternal_child_adolescent/documents/who_fch_rhr_0311/en/index.html, accessed 15 March 2015).

[73] UN Secretary-General Global Strategy for Women's and Children's Health. Geneva: World Health Organization; 2010 (http://www.who.int/pmnch/topics/maternal/20100914_gswch_en.pdf?ua=1, accessed 26 November 2014).

TABLE 3

Type of community participation by study characterized using the Spectrum of Participation[74]

OUTREACH	CONSULT	INVOLVE	COLLABORATE	SHARED LEADERSHIP
	UNICEF (2008)	Hossain and Ross (2006)		
		UNICEF (2008)		

Modified from the International Association for Public Participation, 2004.

as it contributes to better information for action by promoting routine identification and timely notification of maternal deaths, review of maternal deaths, and implementation and monitoring of steps to prevent similar deaths in the future.

Community participation in this process may help provide more accurate information on the number of deaths and where and why the women died. Community participation in analysing information and in identifying possible solutions may help address social determinants, meet community needs, and incorporate a range of actors in the response. Members of the community may participate as family informants for maternal (and perinatal) death inquiries or in presentations of summary data to identify ways to improve health outcomes. Levels of participation can vary, e.g., providing views versus full decision-making. Delivery mechanisms can include involving community representatives in the MDSR coordinating group, or holding community group meetings to discuss maternal deaths, their causes and possible solutions.

We asked the question:

What strategies to involve communities in the analysis and dissemination of information from maternal and perinatal death reviews are effective in increasing birth with a skilled birth attendant/institutional birth and improving other key maternal and newborn health outcomes?

RECOMMENDATION

Because of the paucity of evidence available, additional research is recommended.

The GDG affirms as a matter of principle the importance of sharing information on pregnancy-related deaths with communities including discussion of the different factors causing these deaths and affecting access to skilled care.

Summary of evidence

Evidence on interventions to involve communities in the analysis and dissemination of information from maternal and perinatal death reviews was extracted from a systematic review conducted by Marston et al. (forthcoming).[75] The review was based on literature identified through the MASCOT/MH-SAR mapping and through two different existing systematic reviews identified.[76] Two studies were included. One study[77] took place in Dinajpur, Bangladesh and included reviews as part of a broader intervention where general facts about maternal mortality and the results of a community diagnosis that included in-depth interviews with consenting families that had recently experienced a maternal death were shared in community meetings in order to understand what factors may have contributed to the death. This programme aimed to increase use of skilled care for obstetric complications. The other study[78] was specifically on maternal and perinatal death reviews using a detailed verbal autopsy questionnaire that took place in six states of India. As seem from the

[74] Over the past several decades, community participation practitioners and researchers have developed numerous frameworks to illustrate qualitative differences in how communities participate in their own development and development programmes. More recently, WHO/MCA adapted a framework developed by the International Association for Public Participation (2004) for use in the health sector. The spectrum includes five levels: outreach, consult, involve, collaborate and shared leadership, described in the supplemental material. See (https://www.iap2.org.au/documents/item/84, accessed 23 January 2015).

[75] See Appendix 2.

[76] (1) Lee AC, Lawn JE, Cousens S, Kumar V, Osrin D, Bhutta ZA, et al. Linking families and facilities for care at birth: what works to avert intra-partum related deaths. International Journal of Gynaecology and Obstetrics. 2009;107(Suppl 1):S65–85, S86–8. doi: 10.1016/j.ijgo.2009.07.012.; (2) Marston C, Renedo A, McGowan CR and Portela A. Effects of community participation on improving uptake of skilled care for maternal and newborn health: a systematic review. PLoS ONE. 2013;8(2): e55012. doi:10.1371/journal.pone.

[77] Hossain J and Ross, SR. The effect of addressing demand for as well as supply of emergency obstetric care in Dinajpur, Bangladesh. International Journal of Gynaecology and Obstetrics. 2006;92(3):320–8. doi:10.1016/j.ijgo.2005.09.029.

[78] Maternal and Perinatal Death Inquiry and Response: Empowering communities to avert maternal deaths in India. New Delhi: United Nations Children's Fund; 2008 (http://www.unicef.org/india/MAPEDIR-Maternal_and_Perinatal_Death_Inquiry_and_Response-India.pdf, accessed 26 November 2014).

table below, on a spectrum of community participation, whereby community members are increasingly involved in health-related actions in their community, the type of community participation in each study was characterized as involved.

A description of the key relevant characteristics of the studies examined in this recommendation is in Appendix 4.

For the outcome of birth with a skilled birth attendant or facility birth, the quality of the evidence was rated as very low.

- Only one study in Bangladesh (Hossain and Ross, 2006) reported on this outcome. The study design is not clearly stated, but it seems to be a quasi-experimental pre and post study with a control group. The intervention was multiple and included community mobilization as well as quality of care interventions. Births in a facility are reported and imply significant increases in facility births in the intervention and comparison areas, but not in the control area. Very low-quality evidence.

For the outcome of care with a skilled birth attendant or in a facility in case of maternal complications, the quality of the evidence was rated as very low.

- One study reported on this outcome (Hossain and Ross, 2006); as described above the design is not clearly stated. The intervention involved multiple components. Results imply significant increases in the number of women expected to have obstetric complications who actually receive care in an EmOC facility in the intervention and comparison areas, but not the control area. There are errors in the outcome data reported, and it is unclear how many women were surveyed. Very low-quality evidence.

Considerations to be taken into account for implementation

Implementation considerations were informed by an additional background document detailing the context and conditions by Howard-Grabman (2014)[79] in which the programmes described in the studies were reviewed. There are many lessons learned from MDSR processes in general that need to be taken into account, and community participation in these processes adds another layer of complexity. The key lessons highlighted by the GDG are as follows:

- Maternal death reviews can be a helpful approach to raise awareness of pitfalls and challenges on the pathway to survival and can stimulate discussion and proposals for solutions to address them.
- Community members may participate in the review as family informants for maternal and perinatal death inquiries and in presentations of summary data to identify ways in which to improve health outcomes and take action to implement proposed solutions.
- The "three-delays" framework/pathway to survival and verbal autopsy are helpful tools to use in maternal death reviews.
- It is important to ensure the confidentiality of all those involved in cases of maternal deaths. Using summaries of multiple cases was an effective strategy to do this in both studies reviewed.
- Notification of maternal deaths can be a challenge. This may improve over time as the community becomes aware of interest in collecting this information. Both health providers and communities will require preparation to work together and it will be a learning process. Community involvement may heighten fear of recrimination for providers. Communities may have strong beliefs about death and pregnancy and initially may be reluctant to discuss these.
- Where countries have advanced in maternal and perinatal death reviews, near-miss reviews should be added to determine how communities can best be involved in preventing future problems. This should be done sensitively, taking into account the circumstances of the death and the cultural practices of the community around the time of pregnancy and childbirth.
- Processes evolve and often improve over time as experience increases and confidence builds, so it may be best to start more simply at first with maternal death reviews, then add perinatal death reviews, then progress to near-miss reviews.
- All partners should be made aware that better reporting may result in apparently higher mortality as the programme improves notification systems.
- Mapping deaths according to physical location can help to target programme attention and interventions.

Research gaps

Despite the fact that there was not sufficient evidence to make a recommendation, the GDG felt that this intervention is promising, particularly in the context of the need for improved accountability. There is still a need to research how best to implement the intervention in different contexts and it would be useful to have more research on its processes and effects.

- Areas for investigation identified as being of interest include better understanding of the interaction

[79] See Appendix 2.

between interviewer and respondent for gathering information on deaths, particularly who should be collecting the information, how the community may best be involved, and how the information can best be gathered and communicated to facilitate community participation in the discussions.

- Lessons could be applied from what is already known about community involvement in review of neonatal deaths. A review of this would be helpful.
- Any planned intervention needs to address the possibility that health care providers may fear recrimination if there is community involvement in the reviews.

RECOMMENDATION 11

Community participation in quality-improvement processes

Introduction

Improving the quality of facility-based health care services and making quality an integral component of scaling up interventions to improve health outcomes of mothers, newborns and children is vital, according to recent WHO work.[80] The perspective of women, families and communities on the quality of maternity care services influences decisions to use this care.[81] Nearly all quality-improvement frameworks include the community/user perspective as a key element. In the case of maternity services, women's and community perspectives are essential components when defining what a good quality service should be. This intervention also links with the general interest in increased accountability. As mentioned in Recommendation 10, ensuring that communities participate in analysing information and identifying solutions can help services respond better to community needs.

Community members may participate in reviews of quality as informants or in discussions about health care information to identify ways to improve services. Levels of participation can vary, e.g., providing views versus full decision-making and interventions can also vary, e.g., consultations with communities, community representation on health facility management committees and meetings between community representatives, service managers and providers.

[80] WHO statement. The prevention and elimination of disrespect and abuse during facility-based childbirth. Geneva, World Health Organization; 2014 (http://apps.who.int/iris/bitstream/10665/134588/1/WHO_RHR_14.23_eng.pdf?ua=1, accessed 23 January 2015).

[81] Bohren MA, Hunter EC, Munthe-Kaas HM, Souza JP, Vogel JP, and Gülmezoglu AM. Facilitators and barriers to facility-based delivery in low-and middle-income countries: a qualitative evidence synthesis. Reproductive Health. 2014;11(1):71. doi:10.1186/1742-4755-11-71.

We asked the question:

What interventions to involve communities in quality-improvement processes for maternity care services are effective in increasing birth with a skilled birth attendant/ institutional birth and improving other key maternal and newborn health outcomes?

RECOMMENDATION

Community participation in quality-improvement processes for maternity care services is recommended to improve quality of care from women's, communities' and health care providers' perspectives.

Communities should be involved in jointly defining and assessing quality. Mechanisms that ensure women's voices are meaningfully included are also recommended.

(Strong recommendation, low-quality evidence)

Additional research is required.

Summary of evidence

Evidence on interventions to involve communities in quality-improvement processes was extracted from a systematic review conducted by Marston et al. (forthcoming).[82] The review was based on literature identified through the MASCOT/MH-SAR mapping and through an additional systematic review conducted by Marston et al. (2013).[83] Five studies were included. One study was primarily aimed at increasing use of skilled care for obstetric complications.[84]

Participation processes and mechanisms varied between studies. There was not sufficient evidence to determine which of the strategies or which combination of strategies were most effective. Table 4 summarizes the characteristic of participation within each included study.

Weak evidence was reported for the key outcomes, although qualitative evidence points to some positive effects of the intervention. Some studies examine the effect of packages including some evidence of community participation in quality improvement but do not necessarily examine participation effects on their own.

[82] See Appendix 2

[83] Marston C, Renedo A, McGowan CR, and Portela A. Effects of community participation on improving uptake of skilled care for maternal and newborn health: a systematic review. PLoS ONE. 201;38(2): e55012. doi:10.1371/journal.pone.

[84] In Hossain (2006) the intervention contributed to ensure safe birth practices at home while the focus of messages were on care-seeking for complications.

TABLE 4

Type of community participation by study characterized using the Spectrum of Participation[85]

OUTREACH	CONSULT	INVOLVE	COLLABORATE	SHARED LEADERSHIP
Purdin, Khan and Saucier (2009) with some consultation (feedback)	Gabrysch et al. (2009)	Hossain and Ross (2006)	Bjorkman and Svensson (2009) (with some elements of shared leadership)	Bjorkman and Svensson (2009) (some villages)
			Sinha (2008) (most villages)	Sinha (2008) (some villages)
			Gabrysch, et al. (2009) development and implementation of QI strategies	
			Kaseje et al. (2010)	

Modified from the International Association for Public Participation, 2004

A description of the key relevant characteristics of the studies examined in this recommendation is in Appendix 4.

For the outcome of birth with a skilled birth attendant or facility birth, the quality of the evidence ranged from very low to moderate.

- One cluster RCT (Bjorkman and Svensson, 2009) conducted in Uganda reports a significant increase in facility births. Moderate-quality evidence.
- Four observational studies also report increases in facility births. In three studies the increase is significant: a pre and post study in Peru (Gabrysch et al., 2009) reports an increase in births in the health centre between baseline and follow-up and an increase in SBA; a controlled before and after study in Kenya (Kaseje et al., 2010) reports significant increases in facility births at intervention sites; and a pre and post study in India (Sinha, 2008) reports significant increases in births at primary health centres and government hospitals. A before and after study (Purdin, Khan and Saucier, 2009) reports the proportion of births in an EmOC facility increased following the intervention in a refugee population in Pakistan. Very low-quality evidence.[85]
- For those studies whose focus was increasing access to skilled care for complications:
  - A study in rural Bangladesh (Hossain and Ross, 2006) reports significant increases in the intervention and comparison groups but not in the control group. The study design is not clearly stated, but it seems to be a quasi-experimental pre and post study with a control group. Very low-quality evidence.

For the outcome of care with a skilled birth attendant or in a facility in case of maternal complications, the quality of the evidence was rated as very low.

- One study conducted in rural Bangladesh (Hossain and Ross, 2006) reports significant increases in the intervention and comparison groups; the control group also shows a very small increase. As described above the design is not clearly stated.

For the outcome of ANC attendance, the quality of the evidence ranged from very low to moderate.

- One cluster RCT (Bjorkman and Svensson, 2009) conducted in Uganda reports a non-significant increase in ANC use. Moderate-quality evidence.
- Three observational studies report increases in ANC visits: a controlled before and after study in Kenya (Kaseje et al., 2010) reports increases in four or more visits but no significant differences between control and intervention sites, a pre and post study in India (Sinha, 2008) where the difference in the number of women who made at least one and more than three visits is significant between baseline and endline, and a retrospective before and after study reports complete ANC coverage (three or more visits) increased from baseline to endline in Afghan refugee women in Pakistan (Purdin, Khan and Saucier, 2009). Very low-quality evidence.

For the outcome postpartum visits for women, the quality of the evidence was rated as very low.

- Purdin, Khan and Saucier (2009) showed that coverage of postpartum care within 72 hours of birth increased over time following the intervention in a setting with Afghan refugee women in Pakistan. Very low-quality evidence.

[85] See Iap2 public participation spectrum. Wollongong, Australia: International Association for Public Participation; 2014 (https://www.iap2.org.au/documents/item/84, accessed 23 January 2015).

In addition to the critical and important outcomes, the GDG had requested information on the effect of the intervention on woman's satisfaction with services. Only one study (Gabrysch et al., 2009) reported on women's satisfaction using qualitative interviews.

Considerations to be taken into account for implementation

Implementation considerations were informed by an additional background document detailing the context and conditions by Howard-Grabman (2014)[86] in which the programmes described in the studies were reviewed. One additional study was also considered.[87] There are many lessons learned from quality-improvement processes that need to be taken into account, and community participation adds another layer of complexity. Community participation in quality can take various forms including participation in stakeholder quality-improvement committees or facilitated dialogue sessions involving representatives from both the community and health services.

The key lessons highlighted by the GDG are as follows:

- Collaboration among community members and service providers to jointly define and improve quality can be an effective approach when a supportive dialogue process is facilitated well and involves and takes into account the perspectives of all diverse participants.
- It is important to ensure that pregnant women have a voice and that there is adequate diversity in perspectives of both community members and service providers in quality-improvement processes.
- Quality-improvement committees can be an effective structure to support ongoing collaboration among communities and service providers when all members understand and are committed to the purpose of the group, roles and responsibilities are clear and acceptable to all members and group governance practices support participation.
- Joint assessment of health services and care is helpful to support informed decision-making. Ongoing monitoring of data helps to inform adaptation of strategies as necessary for continual improvement and accountability.
- Health facility leadership that supports collaboration with communities is necessary for this approach to be effective.
- Discussion at national and local levels is required for adaptation to context and to ensure a meaningful degree of decentralization so that an appropriate level of budget and resources are assigned to support the process.
- This intervention should be seen as a dynamic process. It takes time to build trust between the different actors and the capacity of the different actors to plan together and to work together will develop over time.
- Data must be presented in ways that can be understood by all participants, taking care to communicate health issues effectively to those within and outside of the health sector with varying levels of education and experience.
- While NGOs may have experience in facilitating and organizing community involvement, the work should be linked to government services and embedded in ongoing processes, when and where they exist.
- It is important to include voices and perspectives from diverse groups in the community.

Research gaps

The GDG identified several areas that would be useful to have more information about. These are as follows:

- Dialogue between community and health services and the dynamics of the community–service interface in various settings (decentralized, centralized, conflict/fragile states).
- Community/provider action planning processes, such as how strategies are agreed upon and how they change over time.
- Data for decision-making to support joint quality-improvement efforts and accessible ways of presenting data to highlight progress and trends.
- Community feedback on services and the role of communities in holding services accountable for quality care. Similarly, mechanisms for providers to provide feedback to communities on aspects within individual, family and community control to improve quality care.
- Advocacy and its role in improving the quality of services (either the community alone or jointly with service providers to obtain resources, change management practices, etc.).
- The effects of participation in quality improvement on community dynamics, self-efficacy, identity, power relations, etc.
- The role of evolving technologies to support community participation in improving quality

[86] See Appendix 2.

[87] Barbey A, Faisel AJ, Myeya J, Stavrou V, Stewart J and Zimicki S. Dinajpur SafeMother Initiative: Final Evaluation Report. Boston: Harvard School of Public Health; 2001 (http://www.mhtf.org/wp-content/uploads/sites/17/2013/02/Publication_6871971.pdf, accessed 12 January 2015).

of care (improved access to information, better communication through mobile devices, data collection possibilities, etc.).

- How to ensure confidentiality when sharing data for decision-making.
- Assessing the impact of experiences in high-income countries and identifying the lessons learned.

RECOMMENDATION 12

Community participation in programme planning and implementation

Introduction

Community participation is recognized in a number of legal instruments and key WHO policy documents and is considered within the IFC Framework and other WHO strategies to be a fundamental component of MNH strategies. Yet evidence is limited about the effect of community participation, here broadly defined as members of a community involved in planning, designing, implementing and monitoring strategies and interventions. Levels of participation can vary, e.g., providing views versus full decision-making. Interventions can also vary, e.g., consultations with communities, community representation on health facility management committees and meetings between community representatives, local authorities and health service managers.

We asked the question:

What interventions to involve communities in MNH programme planning are effective in increasing birth with a skilled birth attendant/institutional birth and improving other key maternal and newborn health outcomes?

RECOMMENDATION

Community participation in programme planning, implementation and monitoring is recommended to improve use of skilled care during pregnancy, childbirth and the postnatal period for women and newborns, increase the timely use of facility care for obstetric and newborn complications and improve maternal and newborn health.

Mechanisms that ensure women's voices are meaningfully included are also recommended.

(Strong recommendation, very low-quality evidence)

Additional research is required.

Summary of evidence

Evidence on interventions to involve communities in MNH programme planning and implementation was based on literature identified through the MASCOT/MH-SAR mapping, through a systematic review conducted by Marston et al. (2013)[88] and through an additional supplementary search conducted by Marston et al. (2014)[89] to capture newborn health programmes. 12 studies were included.[90] One programme was primarily aimed at increasing use of skilled care for obstetric complications.[91]

Participation processes and mechanisms varied between studies. There was not sufficient evidence to determine which of the strategies or which combination of strategies were most effective. On the scale of types of participation, most of the studies fell into the level of involving communities. Two others worked at sharing leadership between the community and the services.

In summary, mixed quantitative evidence was found, often from studies with weak designs. Participation in planning takes many different forms, and it is difficult to compare the different strategies. Some interventions involved a package of measures including participation, and in these cases, the specific effects of participation cannot be separated out. However, the GDG noted that while the evidence was assessed as very low quality and inconsistent, there is positive reporting from different programmes in different contexts and on different outcomes, which provides an indication that there is potential for participation in planning to have an impact on care-seeking outcomes.

A description of the key relevant characteristics of the studies examined in this recommendation is in Appendix 4.

For the outcome of birth with a skilled birth attendant or facility birth, the quality of the evidence was rated as very low.

- Two cluster RCTs (Bjorkman and Svensson, 2009; Bhutta et al., 2011) and one quasi-experimental study (reported in Malhotra et al., 2005) reported on this outcome. Both cluster RCTs report increased facility

[88] Marston C, Renedo A, McGowan CR and Portela A. Effects of community participation on improving uptake of skilled care for maternal and newborn health: a systematic review. PLoS ONE. 2013;8(2): e55012. doi:10.1371/journal.pone.

[89] See Appendix 2.

[90] Studies related to participatory learning and action cycles with women's groups while relevant were not included because they were examined extensively elsewhere. See Recommendation 9 of this report and for the full report, see http://www.who.int/maternal_child_adolescent/documents/community-mobilization-maternal-newborn/en/.

[91] In Ahluwalia (2003) and Ahluwalia (2010) the intervention contributed to ensure safe birth practices at home while the focus of messages were on care-seeking for complications.

TABLE 5

Type of community participation by study characterized using the Spectrum of Participation[92]

OUTREACH	CONSULT	INVOLVE	COLLABORATE	SHARED LEADERSHIP
Ahluwalia et al. (2003, 2010) (families, pregnant women)	Ahluwalia et al., (2003, 2010)	Ahluwalia et al. (2003, 2010) (committee members)	Bjorkman and Svensson, (2009) (with some elements of shared leadership)	Malhotra et al. (2004) (and collaboration at times)
Bhutta et al. (2011)		Harkins et al. (2008)	Harkins et al. (2008)	Fonseca-Becker and Schenck-Yglesias, (2004)
Purdin, Khan and Saucier (2008) with some consultation (feedback)		Kaufman, Liu and Fang (2012) with some collaboration by demo households	Kaseje et al. (2010)	
		Paxman et al. (2005) (evolved later toward collaboration)		
		Sood et al. (2004)		

Modified from the International Association for Public Participation (2004)

births, statistically significant in rural communities of Uganda (Bjorkman and Svensson, 2009) and not statistically significant in rural communities in Pakistan (Bhutta et al., 2011). The quasi-experimental study conducted with adolescents in Nepal (Malhotra et al., 2005) reports an increase in facility births at both sites but a greater increase at the control site than the study site. Very low-quality evidence.[92]

- Five observational studies also report on this outcome. Two controlled before and after studies report significant increases in facility births in Kenya and China (Kaseje et al., 2010 Kaufman, Liu and Fang, 2012); the before and after studies report increased facility births following the intervention in Peru (Harkins et al., 2008); and in Pakistan, births in an EMoC facility increased in a refugee population (Purdin, Khan and Saucier, 2009). In Indonesia (Sood et al., 2004), study findings indicate facility births were significantly more likely in the group exposed to the intervention. Harkins et al. (2008) also reports an increase in use of skilled attendants at last birth in Honduras following a participation intervention. The community participation interventions are diverse and the level of participation in planning, implementing and evaluating programmes varies across the studies. Very low-quality evidence.
- For those studies where the focus was increasing access to skilled care for complications:
  - The pre and post intervention follow-up study in rural, poor communities in Tanzania (Ahluwalia et al., 2010) reports significant increases in births assisted by a trained person and occurring at a health facility over the three-year follow-up period. Very low-quality evidence.

For the outcome of care with a skilled birth attendant or facility in case of maternal complications, the quality of the evidence was rated as very low.

- Only the pre and post intervention study in Tanzania (Ahluwalia et al., 2003) reported on this outcome. In this programme, community mobilization was a small component of a larger more complex programme focused on training TBAs, preparing women for birth with a TBA, and mobilizing communities to understand danger signs. The study reports an increase in the number of pregnant women attending the district hospital treated for obstetric complications. Very low-quality evidence.

For the outcome of ANC use, the quality of the evidence was rated as very low.

- Two cluster RCTs (Bhutta et al., 2011; Bjorkman and Svensson, 2009) and one quasi-experimental study (Malhotra et al., 2005) reported on this outcome. The two cluster RCTs report non-significant increases in four or more visits in Pakistan (Bhutta et al., 2011) and number of ANC visits at the facility per month in Uganda (Bjorkman and Svensson, 2009). The quasi-experimental study of adolescents in Nepal (Malhotra et al., 2005) reports a decrease in mean percentage of women receiving ANC in the intervention group. Very low-quality evidence.

[92] See Iap2 public participation spectrum. Wollongong Australia: International Association for Public Participation; 2014 (https://www.iap2.org.au/documents/item/84, accessed 23 January 2015).

- Seven observational studies also reported on this outcome. The controlled before and after studies report increases but no significant differences between control and intervention sites (Kaseje et al., 2010; Kaufman, Liu and Fang, 2012). The before and after studies all report increased ANC use following the intervention (Ahluwalia et al., 2010; Paxman et al., 2005; Sood et al., 2004; Harkins et al., Peru, 2008; Purdin, Khan and Saucier, 2009). Studies were conducted in a range of countries from low income (Tanzania, Kenya) to middle income (Pakistan, Indonesia, China, India, Peru) and with varying populations including rural poor communities (Ahluwalia et al., 2010; Kaseje et al., 2010; Kaufman, Liu and Fang, 2012; Paxman et al., 2005; Sood et al., 2004), peri-urban migrant poor (Harkins et al., Peru 2008) and Afghan refugee women (Purdin, Khan and Saucier, 2009). The community participation interventions are diverse and the level of participation in planning, implementing and evaluating programmes varies across the studies. In some studies community participation is one small component of larger safe motherhood or maternal and newborn health programmes (Ahluwalia et al., 2010; Harkins et al., 2008; Paxman et al., 2005; Purdin, Khan and Saucier, 2008; Sood et al., 2004), while in others community participation was the main focus of the intervention, specifically community-based monitoring via report cards (Bjorkman and Svensson, 2009), community dialogue (Kaseje et al., 2010) or more general participatory approaches to improve services for specific groups (Kaufman, Liu and Fang, 2012). All studies report ANC use but use different measures. Some report number of women reporting four or more visits (Harkins et al., 2009; Kaseje et al., 2010; Sood et al., 2004), others report complete ANC (defined as three or more visits) (Paxman et al., 2005; Purdin, Khan and Saucier, 2009), one reports prenatal care before 20 weeks (Ahluwalia et al., 2010) and other descriptive measures (Kaufman, Liu and Fang, 2012). Very low-quality evidence.

For the outcome of postpartum visits for women, the quality of the evidence was rated as very low.

- Purdin, Khan and Saucier (2009) showed that coverage of postpartum care within 72 hours of birth increased over time following the intervention in a setting with Afghan refugee women in Pakistan. Very low-quality of evidence.

In addition to the critical and important outcomes, the GDG had requested information on the effect of the intervention on woman's satisfaction with services. Three studies implied improved satisfaction but only one assessed satisfaction and determined it could not be attributed to the intervention.

Considerations to be taken into account for implementation

Implementation considerations were informed by an additional background document detailing the context and conditions by Howard-Grabman (2014).[93] In addition to the studies included in the systematic review, a study by Mathur, Mehta and Malhorta (2004) provided further implementation on the programme in Nepal reported in Malhotra et al. (2005). There are decades of experience in this area that can be transferred across settings. The key lessons for implementation highlighted by the GDG are as follows:

- Participation in programme planning should ideally be implemented through either existing or adapted structures and platforms that enable planning at the local level (reflecting the local reality/needs) and input to planning at higher levels, with monitoring and evaluation and ongoing planning/replanning.
- Discussion at the national and local levels is required for adaptation to context and to ensure a meaningful degree of decentralization and the appropriate level of budget and resources assigned to support the process.
- Community participation in planning and implementation of MNH programmes is a dynamic process that can strengthen community capacity in many ways such as helping communities to effectively identify their assets, needs, and problems; plan together as a group; obtain and manage resources; problem-solve; use data to monitor progress and make decisions; and resolve or manage conflict. It takes time to build trust and for community members to develop the skills and processes necessary to plan and implement effectively as a group. However, once relationships and trust have been established and skills have been learned, they can be applied to address other community priorities. When engaging in these types of processes, those in supporting roles need to be aware of the changing context and adjust their support accordingly.
- Strategies that have been pre-determined by programmes that then mobilize communities to implement them risk not being owned by communities and may be abandoned in the future. This approach also limits opportunities for communities to learn how to identify emerging priority challenges over time and plan together to address them to improve MNH and other health issues.

[93] See Appendix 2.

- It is essential to have linkages between the different levels of the health system and between the different institutions involved in planning, implementation, monitoring and evaluation.
- An enabling/supportive environment is considered a key facilitator of implementation where the public sector/local government is involved in the multi-organization partnership.
- NGOs, which often have experience facilitating and organizing community involvement, can facilitate the process and provide technical support to develop communities' capacity to plan and implement interventions. The work should be linked to government services and embedded in ongoing processes, as appropriate to the local context.
- Community health workers can also play a vital role in linking communities and health services.
- Ensuring women's participation is extremely important as women are key stakeholders and directly affected by the issues discussed. Innovative mechanisms may be needed to ensure inclusion of women and other key stakeholders who may otherwise be excluded. This may require reflection on existing power dynamics to find appropriate and effective ways to address any power imbalances that would prevent their voices being elicited or heard.
- Facilitation of the process to ensure the discussion and interaction between the different actors and stakeholders is important. Programme implementation should include training facilitators in key MNH topics, data interpretation, communication, conflict resolution and management.
- Data presentation must be comprehensible and the communication of health issues should be adapted for the audience, who may have no previous health sector experience. For instance, culturally appropriate materials available in a local language suitable for individuals with low literacy/numeracy skills should be developed where needed.
- Health committees exist in many countries and can prove effective for monitoring progress, identifying and solving problems and re-planning as necessary. The purpose of the committee should be clear to all members and basic good group processes should be in place. It is important to review existing committees to see how they can become more effective, taking into account the extent to which community members are involved and how they can strengthen their planning and monitoring processes.
- Formal written action plans should be developed, setting out clearly assigned roles and responsibilities to clarify agreements and hold communities and services accountable for their activities.

Research gaps

The GDG identified several areas for future research:

- Community participation is often one intervention in a complex package of interventions. While RCT design may be helpful to determine effectiveness and outcomes, alternative designs are needed to look at processes and to understand change.
- Determining the most effective ways to share data that are accessible to those with low literacy and numeracy skills.
- Establishing the gender considerations that are necessary in planning processes, such as when and how do men and women participate and under what circumstances and in what contexts it might be useful to have single sex versus mixed sex groups.
- How cultural beliefs and practices influence the planning processes (e.g., how issues such as causality are perceived).
- How and when to share strategies that have been found to be effective in other settings with community planning groups.
- How and when to include community participation at the programme design stage.
- Determining the social effects of programmes where household decision-makers participate at a higher level while the pregnant women's level of participation is only to receive key messages.
- Establishing the values and preferences of community members who participate in the planning and implementation of MNH programmes.
- Assessing the impact of experiences in high-income countries and identifying the lessons learned.

4. Research implications

As detailed above, research gaps were identified for each intervention. These included questions about the evidence base needed to demonstrate the efficacy of the intervention, the need for implementation research to better understand the different modes of delivery, and the systems adaptations necessary to be able to implement the interventions in different contexts.

As well as gaps in the evidence for each individual intervention, a broader question about how best to research health promotion interventions also emerged clearly during the process. The diversity of the research gathered per intervention and the generally low quality of the body of evidence led the GDG to recommend that efforts be undertaken to guide and standardize future research.

Health promotion intervention reviews are frequently criticized for not including designs other than RCTs because this dramatically reduces the potential evidence available. For this reason, all the WHO/MCA supported reviews included, for studies reporting quantitative data, not only studies using RCT designs, but also any other design which included (as a minimum) studies with at least one data collection point prior to the intervention and one during or after the intervention. Qualitative studies were also included. We wished to be more inclusive and avoid systematic reviews which contradict knowledge in countries where ongoing programmes exist by indicating that no evidence is found. We accepted the inclusion of comparatively weak designs in the evidence base relying on the GRADE process and the experts to be clear that we cannot be as confident in the quantitative estimates of effect in these studies as we can with stronger designs. For this reason it is important when using the reviews to distinguish carefully between types of design used and the impact of study design on confidence in the effect.

Conclusions in study reports would be improved if they were always fully supported by the results presented. When the study design does not allow certain conclusions to be drawn, this should be made clear in the report. For instance, the significant limitations of designs with no comparison groups should be discussed if such designs are employed. It would be useful to have a broader consensus on optimal study designs for the priority interventions. If certain designs are not possible, research questions need to be reformulated accordingly.

Quantitative studies to evaluate the efficacy of an intervention should be well designed. It is clearly possible to conduct well designed quantitative studies in the field of health promotion as demonstrated by the RCTs of women's groups interventions.[94] Where RCTs are considered not to be desirable, for instance because of ethical or practical concerns, where provider and/or user beliefs and preferences are important[95] or because the research question does not require such a design, it should be clear in the report why the alternative design was chosen.

In addition to good quantitative studies, we also need a clearer focus on the social context and processes that help explain implementation barriers or facilitators of the intervention, examine in depth the ways the intervention operates in situ, can help identify unintended or unexpected positive and negative consequences of the intervention, and that can provide information that will allow implementers to assess what adaptations they might need to make to accommodate differences in their contexts. At present very few such studies exist. Qualitative methods used well alongside quantitative methods or alone can shed light on key areas including processes, values and preferences that affect the implementation and action of the intervention, and unanticipated harms and benefits.

During the guideline development process, it was clear that implementers were interested in the **how** as much as the **what**; in other words, which delivery modes were most effective and other implementation considerations. With this in mind, the GDG provided some specific guidance about future work on health promotion interventions evaluation and implementation research as follows:

1. Provide a clear description of the intervention.
    a. It is not always possible to ascertain from current studies what exactly the intervention involved. Even if there is not space within journal articles for this, a detailed protocol for the intervention could be published online so that others can follow what was done.
    b. It would be helpful to develop some agreed terminology to designate intervention type.

[94] Prost A, Colbourn T, Seward N, Azad K, Coomarasamy A, Copas A et al. Women's groups practising participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis. Lancet. 2013;381(9879):1736–46. doi:10.1016/S0140-6736(13)60685-6.

[95] Black N. Why we need observational studies to evaluate the effectiveness of health care. BMJ. 1996; 312(7040): 1215–18. doi: http://dx.doi.org/10.1136/bmj.312.7040.1215.

(For instance, the wide variation in participation terminology made searches hard to define, e.g., community participation versus community involvement versus numerous other terms.)

2. Standardize terminology for common outcome measures.
    a. Comparison between different interventions or the same interventions in different contexts is difficult. It becomes even more challenging when there are also differences in the outcome measures used.
    b. Use direct as well as indirect outcome measures. Most outcome measures were indirect for these interventions, e.g., measures of neonatal or maternal mortality. Because the causal pathway between the interventions and mortality outcomes may well be mediated by the quality of healthcare services available, which the interventions do not generally address directly, it is more useful to measure outcomes that directly reflect the promoted behaviours of interest, such as care-seeking or care practices in the home.
    c. Specify key outcome measures carefully. A good example is how the conditions of the birth are recorded; e.g., some studies measure place of birth (such as within or outside a healthcare facility), while some studies measure the provider of care at birth (such as skilled or unskilled, etc.). Studies were often unclear about how different types of providers were classified. For instance, was the person categorized as a skilled birth attendant as per the WHO definition[96] or a national definition? Some studies included trained TBAs as skilled providers, which would not fit under the WHO definition. The exact definition used should be specified and any differences from standard definitions explained. Additionally, some studies measured the proportion of all births attended by a skilled birth attendant, some studies measured the proportion of births in facilities, while others only measured the proportion of births with complications in facilities.
3. There should be critical analysis of the relationships between the intervention and the outcomes measured, with careful attention to the nature of the hypothesized relationships, which may not be linear.
    a. Health promotion interventions are often complex and have complex and varying effects depending on mode of delivery and contextual factors such as the characteristics of the existing health system, the social mores of the community where the intervention takes place, and prevailing secular trends. These should be considered in the analysis.
    b. Interventions are often implemented as part of a package of interventions and it is not always possible to determine whether a specific part of the package was beneficial. It would be useful to test different packages more explicitly and ensure that qualitative research is included in any evaluation to examine why as well as whether certain effects occurred.
4. Care should be taken to avoid biases in design and reporting of studies.
    a. Publication bias is likely to be a major problem in this area: with some notable exceptions, almost all studies reported positive findings. Stronger designs for the quantitative enquiries might improve reporting, e.g., because of trial registration requirements.
    b. Study designs very likely to bias results should be avoided and more care taken to ensure designs will measure what is intended. RCTs are sometimes immediately dismissed without due consideration to the limitations of whatever is chosen to replace this design.
5. There should be more reflection within the reports on factors that might be useful to implementers elsewhere.
    a. It is clear that communities are different and that even the same community changes over time. However, it is likely that certain lessons will be useful elsewhere. For instance, if the community was involved in designing the intervention, how did this work in practice? Was it useful? In what ways? What were some of the challenges faced? How were they addressed? What could have made the intervention work better?
    b. Be clear about complexities arising that may have affected the study. For instance, projects often suffer setbacks but these are rarely recorded, even when they are likely to affect the study results. New methods for handling complexity are being developed within the field of implementation science and should be employed here. Observed complexities that affect the implementation of the intervention or interpretation of the study should be recorded.

[96] Making pregnancy safer: the critical role of the skilled attendant. A joint statement by WHO, ICM and FIGO. Geneva: World Health Organization; 2004 (http://whqlibdoc.who.int/publications/2004/9241591692.pdf?ua=1, accessed 28 January 2015).

6. At present in this field, there is an assumption that the intervention leads to the outcomes and that the evaluation measures this. In practice, this is unlikely to be so straightforward. The interrelationships between the evaluators and implementers, and the evaluation and the programme need to be considered.
    a. What is the relationship between the evaluation and the implementation team? Who paid for the study? Did the act of evaluating the intervention change it? In what ways? For instance, evaluation teams may request documentation about theories of change, which might prompt the intervention team to think about this for the first time, which might in turn affect how the implementation is carried out. Being studied might affect the teams and change their behaviour. Evaluation teams may become complicit in concealing less-than-desirable practices for political or social reasons.
    b. The study team should reflect on the roles their personal characteristics (gender, wealth, ethnicity) might have played in decisions about study design, relationships while the study was underway and effects on the study participants (for instance, were interviews done by local people or by outsiders? What effects might this have had? Did the evaluation team speak the local language? If not, how were potential translation discrepancies handled?).
    c. Was there any participation from the study population in the design, analysis or write-up of the study? If so, what effects did this have? If not, how might this have affected the interpretation of the findings?
7. There was a major gap with respect to costs in the reports considered in the guideline process. Very few studies reported on costs in any way at all and even fewer had conducted cost-effectiveness analyses. This reduces their usefulness for policy-makers.

5. Planned dissemination of guidelines

WHO/MCA has developed a plan to disseminate the recommendation put forward here. The immediate plan is first to distribute the guidelines to WHO regional and country offices and key partners and to place them on the World Wide Web. Second, a steering committee will be formed to support the development of an intervention module on community mobilization using methods for participatory learning and action. This will focus on mobilizing actions by women and community groups to improve maternal, newborn and child health as part of the WHO and UNICEF package *Caring for the newborn and child in the community*. This guideline will also be used as the basis for future work with key partners to strengthen the evidence base for health promotion interventions for reproductive, maternal, newborn and child health and to develop a complementary publication to the existing publication *Essential interventions, commodities and guidelines for reproductive, maternal, newborn and child health*, which focuses largely on clinical interventions.[97]

[97] Essential Interventions, Commodities and Guidelines for Reproductive, Maternal, Newborn and Child Health: A global review of the key interventions related to reproductive, maternal, newborn and child Health. Geneva, The Partnership for Maternal Health, Newborn and Child Health and the Aga Khan University, 2011 (http://www.who.int/entity/pmnch/topics/part_publications/essential_interventions_18_01_2012.pdf?ua=1, accessed 28 January 15)

6. Review and update of the recommendations

These recommendations will be updated after five years as more evidence becomes available. WHO and partners intend to seek funds to work with key partners to address further interventions identified but not reviewed (please see footnote 16 above), prioritize research questions addressing the research gaps indicated in this report, determine the most effective methods for studying the prioritized questions, standardize reporting criteria and develop protocols and support research to address the evidence and information gaps identified by the GDG.

References

Ahluwalia IB, Schmid T, Kouletio M, and Kanenda O. An evaluation of a community-based approach to safe motherhood in northwestern Tanzania. International Journal of Gynecology and Obstetrics. 2003; 82(2):231–40. doi:10.1016/S0020-7292(03)00081-X.

Ahluwalia IB, Robinson D, Vallely L, Gieseker KE, and Kabakama A. Sustainability of community-capacity to promote safer motherhood in northwestern Tanzania: what remains?. Global Health Promotion. 2010; 17(1): 39–49. doi:10.1177/1757975909356627.

Andemichael G. Maternity waiting homes: a panacea for maternal/neonatal conundrums in Eritrea. Journal of the Eritrean Medical Association. 2008;4:18–21.

Azad K, Barnett S, Banerjee B, Shaha S, Khan K, Rego AR, et al. Effect of scaling up women's groups on birth outcomes in three rural districts in Bangladesh: a cluster-randomised controlled trial. Lancet. 2010;375:1193–202. doi: 10.1016/S0140-6736(10)60142-0.

Baqui A, Williams EK, Rosecrans AM, Agrawal PK, Ahmed S, Darmstadt GL, et al. Impact of an integrated nutrition and health programme on neonatal mortality in rural northern India. Bulletin of the World Health Organization. 2008;86:796–804.

Barbey A, Faisel AJ, Myeya J, Stavrou V, Stewart J and Zimicki S. Dinajpur SafeMother Initiative: Final Evaluation Report. Boston: Harvard School of Public Health; 2001 (http://www.mhtf.org/wp-content/uploads/sites/17/2013/02/Publication_6871971.pdf, accessed 12 January 2015).

Bhutta ZA, Soofi S, Cousens S, Mohammad S, Memon ZA, Ali I, et al. Improvement of perinatal and newborn care in rural Pakistan through community-based strategies: a cluster-randomised effectiveness trial. Lancet. 2011;377(9763):403–12. doi: 10.1016/S0140-6736(10)62274-X.

Bilenko N, Hammel R, and Belmaker I. Utilization of antenatal care services by a semi-nomadic Bedouin Arab population: evaluation of the impact of a local maternal and child health clinic. Maternal Child Health Journal. 2007;11:425–30. doi: 10.1007/s10995-007-0193-4.

Björkman M and Svensson J. Power to the people: evidence from a randomized field experiment on community-based monitoring in Uganda. The Quarterly Journal of Economics. 2009;124:735–69. doi: 10.1162/qjec.2009.124.2.735

Black N. Why we need observational studies to evaluate the effectiveness of health care. BMJ. 1996; 312(7040): 1215–18. doi: http://dx.doi.org/10.1136/bmj.312.7040.1215.

Bohren MA, Hunter EC, Munthe-Kaas HM, Souza JP, Vogel JP, and Gülmezoglu AM. Facilitators and barriers to facility-based delivery in low-and middle-income countries: a qualitative evidence synthesis. Reproductive Health. 2014;11(1):71. doi:10.1186/1742-4755-11-71.

Breart G, Garel M, and Mlika-Cabanne N. Evaluation of different policies of management of labour for primiparous women. Trial B: Results of the continuous professional support trial. In: Kaminski M editor(s). Evaluation in Pre, Peri, and Post-natal Care Delivery Systems. Paris: INSERM,1992:57–68.

Bruggemann OM, Parpinelli MA, Osis MJ, Cecatti JG, and Neto AS. Support to woman by a companion of her choice during childbirth: a randomized controlled trial. Reproductive Health. 2007;4:5. doi:10.1186/1742-4755-4-5.

Reaching emergency obstetric care: overcoming the 'second delay'. Melbourne: Burnet Institute on behalf of Compass: the Women's and Children's Health Knowledge Hub; 2010 (http://www.wchknowledgehub.com.au/sites/default/files/pdf/mnrh_1_2_briefingpaper_Reaching_emergency_obstetric_care_2009.pdf, accessed 27 November 2014).

Byrne A and Morgan A. How the integration of traditional birth attendants with formal health systems can increase skilled birth attendance. International Journal of Gynaecology and Obstetrics. 2011; 115:127–34. doi: 10.1016/j.ijgo.2011.06.019.

Campbell DA, Lake MF, Falk M, and Backstrand JR. A randomized control trial of continuous support in labour by a lay doula. Journal of Obstetric, Gynecologic, and Neonatal Nursing. 2006;35:456–64. doi: 10.1111/J.1552-6909.2006.00067.x.

Carroli G, Piaggio G, and Khan-Neelofur D. WHO systematic review of randomised controlled trials of routine antenatal care. Lancet. 2001; 357(9268):1565–70. doi:10.1016/S0140-6736(00)04723-1.

Davis J, Luchters S and Holmes W. Men and maternal and newborn health: benefits, harms, challenges and potential strategies for engaging men. Melbourne: Centre for International Health, Burnet Institute; 2012 (http://www.men-care.org/data/Men%20and%20

Maternal%20and%20Newborn%20Health%20-%20Australia.pdf, accessed 12 January 2015).

Chandramohan D, Cutts F, and Chandra R. Effects of a maternity waiting home on adverse maternal outcomes and the validity of antenatal risk screening. International Journal of Gynecology and Obstetrics. 1994; 279–84. doi: 10.1016/0020-7292(94)90406-5.

Chandramohan D, Cutts F, and Millard P. The effect of stay in a maternity waiting home on perinatal mortality in rural Zimbabwe. Journal of Tropical Medicine and Hygiene. 1995;98:261–7.

Church-Balin C. Behavior change interventions for safe motherhood: common problems, unique solutions; the MNH program experience. Baltimore: JHPIEGO; 2004 (http://www.jhpiego.org/files/bcireport.pdf, accessed 7 January 2015).

Coast E, Jones E, Portela A, and Lattof SR. Maternity care services and culture: a systematic global mapping of interventions. PLoS ONE. 2014;9(9): e108130. doi:10.1371/journal.pone.0108130.

Colbourn T, Nambiar B, Bondo A, Makwenda C, Tsetekani E, Makonda-Ridley A, et al. Effects of quality improvement in health facilities and community mobilization through women's groups on maternal, neonatal and perinatal mortality in three districts of Malawi: MaiKhanda, a cluster randomised controlled effectiveness trial. International Health. 2013;5(3):180–95. doi: 10.1093/inthealth/iht011.

Darmstadt, GL, Choi, Y, Arifeen, SE, Bari, S, Rahman, S.M, Mannan, I, Seraji, HR, et al. Evaluation of a cluster-randomized controlled trial of a package of community-based maternal and newborn interventions in Mirzapur, Bangladesh. PloS one. 2010;5(3):e9696. doi:10.1371/journal.pone.0009696.

Dickinson JE, Paech MJ, McDonald SJ and Evans SF. The impact of intrapartum analgesia on labour and delivery outcomes in nulliparous women. Australian and New Zealand Journal of Obstetrics and Gynaecology. 2002;42(1):59–66. doi: 10.1111/j.0004-8666.2002.00065.x.

Quality assessment tool for quantitative studies. Hamilton, ON: Effective Public Health Practice Project; 1998 (http://www.ephpp.ca/index.html, accessed on 7 January 2015).

Testing approaches for increasing skilled care during childbirth : key findings from Homabay and Migori Districts. Nairobi, Kenya: Family Care International Kenya; 2007 (http://www.familycareintl.org/UserFiles/File/SCI%20Kenya%20Summary%20Report%20-%2030Oct07.pdf, accessed 7 January 2015).

Testing approaches for increasing skilled care during childbirth : key findings from Igunga district. Tanzania: Family Care International; 2007 (http://www.familycareintl.org/UserFiles/File/SCI%20Tanzania%20Report%20March%202008.pdf, accessed 7 January 2015).

Fauveau V, Stewart K, Khan SA, and Chakraborty J. Effect on mortality of community-based maternity-care programme in rural Bangladesh. The Lancet. 1991;338: 1183–1991.

Fonseca-Becker F and Schenck-Yglesias. Measuring the effects of behavior change and service delivery interventions in Guatemala with population-based survey results. Baltimore: JHPIEGO; 2004 (http://pdf.usaid.gov/pdf_docs/PNADA611.pdf, accessed 7 January 2015).

Fottrell E, Azad K, Kuddus A, Younes L, Shaha S, Nahar T, et al. The effect of increased coverage of participatory women's groups on neonatal mortality in Bangladesh: a cluster-randomised trial. Journal of the American Medical Association. 2013;167(9):816–25. doi: 10.1001/jamapediatrics.2013.2534.

Frankenberg E, Buttenheim A, Sikoki B, and Suriastini W. Do women increase their use of reproductive health care when it becomes more available? evidence from Indonesia. Studies in Family Planning. 2009;40(1):27–38. doi: 10.1111/j.1728-4465.2009.00184.x.

Fullerton J, Killian R, and Gass PM. Outcomes of a community-and home-based intervention for safe motherhood and newborn care. Health Care for Women International. 2005;26:561–76. doi: 10.1080/07399330591004881.

Gabrysch S, Lema C, Bedriñana, Bautista MA, Malca R, Campbell OM, et al. Cultural adaptation of birthing services in rural Ayacucho, Peru. Bull World Health Organ. 2009;87:724–9. doi:10.2471/BLT.08.057794.

Ganju S, Khanna R, Taparia M, and Hardikar N. Promoting accountability for maternal health through report card. COPASAH Communique. 2014;8:3–5,33.

Gaym A, Pearson L, and Soe KW. Maternity waiting homes in Ethiopia – three decades experience. Ethiopian medical journal. 2012;50(3):209–19.

Grading of recommendation, assessment, development and evaluation – a system for assessing the quality of evidence [website]. GRADE Working group. (http://www.gradeworkinggroup.org/, accessed 7 January 2015).

Guyatt GH, Oxman AD, Kunz R, Vist GE, Falck-Ytter Y, Schünemann HJ; GRADE Working Group. Rating quality of evidence and strength of recommendations: what is "quality of evidence" and why is it important to

clinicians? BMJ. 2008;336(7651):995–8. doi: http://dx.doi.org/10.1136/bmj.39490.551019.BE.

Harkins T, Drasbek C, Arroyo J, and McQuestion M. The health benefits of social mobilization: experiences with community-based Integrated Management of Childhood Illness in Chao, Peru and San Luis, Honduras. Promotion and Education. 2008;15(2): 15–20. doi: 10.1177/1025382308090340.

Hodgins S, Mcpherson R, Suvedi BK, Shrestha RB, Silwal RC, Ban B, et al. Testing a scalable community-based approach to improve maternal and neonatal health in rural Nepal. Journal of Perinatology. 2010;30(6):388–95. doi:10.1038/jp.2009.181.

Hodnett ED, Lowe NK, Hannah ME, Willan AR, Stevens B, Weston JA et al. Effectiveness of nurses as providers of birth labor support in North American hospitals: a randomized controlled trial. The Journal of the American Medical Association. 2002;288(11):1373–81. doi:10.1001/jama.288.11.1373.

Hodnett ED, Gates S, Hofmeyr GJ and Sakala C. Continuous support for women during childbirth. Cochrane Database of Systematic Reviews 2013;(7): CD003766. doi: 10.1002/14651858.CD003766.pub5.

Hofmeyr GJ, Nikodem CV, Wolman WL, Chalmers BE, and Kramer T. Companionship to modify the clinical birth environment: effects on progress and perceptions of labour, and breastfeeding. British Journal of Obstetrics and Gynaecology. 1991;98:756–64. doi: 10.1111/j.1471-0528.1991.tb13479.x.

Hossain J and Ross SR. The effect of addressing demand for as well as supply of emergency obstetric care in Dinajpur, Bangladesh. International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics. 2006;92(3):320–8. doi:10.1016/j.ijgo.2005.09.029.

Hounton, S, Menten, J, Ouédraogo, M, Dubourg, D, Meda, N, Ronsmans, C, Byass, P, et al. Effects of a skilled care initiative on pregnancy-related mortality in rural Burkina Faso. Tropical medicine and International Health. 2008;13 Suppl 1:53–60. doi:10.1111/j.1365-3156.2008.02087.x.

Hussein J, Kanguru L, Astin M, and Munjanja S. The effectiveness of emergency obstetric referral interventions in developing country settings: a systematic review. PLoS Medicine. 2012;9:1–12. doi: 10.1371/journal.pmed.1001264.

Iap2 public participation spectrum. Wollongong, Australia: International Association for Public Participation; year (https://www.iap2.org.au/documents/item/84, accessed 23 January 2015).

Jan S, Conaty S, Hecker R, Bartlett M, Delaney S, Capon T. An holistic economic evaluation of an Aboriginal community-controlled midwifery programme in Western Sydney. Journal of Health Services Research and Policy. 2004;9:14–21. doi: 10.1258/135581904322716067.

Jewell NA and Russell KM. Increasing access to prenatal care: an evaluation of minority health coalitions' early pregnancy project. 2000;17(2):93–105. doi: 10.1207/S15327655JCHN1702_4.

Julnes G. Community-based perinatal care for disadvantaged adolescents: evaluation of the resource mothers program. Journal of Community Health. 1994; 19(1):41–53. doi: 10.1007/BF02260520.

Kaseje D, Olayo R, Musita C, Oindo CO, Wafula C, and Muga R. Evidence-based dialogue with communities for district health systems' performance improvement. Global Public Health. 2010;5(6): 595–610. doi: 10.1080/17441690903418969.

Kaufman JL, Liu Y, and Fang, J. Improving reproductive health in rural China through participatory planning. Global Public Health. 2012;7(8): 856–68. doi: 10.1080/17441692.2012.674958.

Kelly J, Kohls E, Poovan P, Schiffer R, Redito A, Winter H, and MacArthur C. The role of a maternity waiting area (MWA) in reducing maternal mortality and stillbirths in high-risk women in rural Ethiopia. BJOG : an international journal of obstetrics and gynaecology. 2010;117(11):1377–83. doi: 10.1111/j.1471-0528.2010.02669.x.

Kennell J, Klaus M, McGrath S, Robertson S, and Hinkley C. Continuous emotional support during labor in a US hospital: a randomized controlled trial. The Journal of the American Medical Association. 1991;265(17):2197–2201. doi:10.1001/jama.1991.03460170051032.

Kildea S, Stapleton H, Murphy R, Low NB, and Gibbons K. The Murri clinic: a comparative retrospective study of an antenatal clinic developed for Aboriginal and Torres Strait Islander women. BMC Pregnancy and Childbirth. 2012;12:159. doi:10.1186/1471-2393-12-159.

Kumar V, Mohanty S, Kumar A, Misra RP, Santosham M, Awasthi S, et al. Effect of community-based behaviour change management on neonatal mortality in Shivgarh, Uttar Pradesh, India: a cluster-randomised controlled trial. Lancet. 2008; 372:1151–62. doi: 10.1016/S0140-6736(08)61483-X.

Kumar V, Kumar A, Das V, Srivastava NM, Baqui, AH, Santosham M., and Darmstadt GL. Community-driven impact of a newborn-focused behavioral intervention on maternal health in Shivgarh, India. International Journal of Gynaecology and Obstetrics. 2012;117(1):48–55. doi:10.1016/j.ijgo.2011.10.031.

Langer A, Camper L, Garcia C, and Reynoso S. Effects of psychosocial support during labour and childbirth on breastfeeding, medical interventions, and mothers' wellbeing in a Mexican public hospital: a randomised clinical trial. British Journal of Obstetrics and Gynaecology. 1998;105(10):1056–63. doi: 10.1111/j.1471-0528.1998.tb09936.x.

Larsen JV and Muller EJ. Obstetric care in a rural population. South African Medical Journal. 1978; 54(27):1137–40.

Lee AC, Lawn JE, Cousens S, Kumar V, Osrin D, Bhutta ZA, et al. Linking families and facilities for care at birth: what works to avert intra-partum related deaths. International Journal of Gynaecology and Obstetrics. 2009;107(Suppl 1):S65–85, S86–8. doi: 10.1016/j.ijgo.2009.07.012.

Lewycka S, Mwansambo C, Rosato M, Kazembe P, Phiri T, Mganga A, et al. Effect of women's groups and volunteer peer counselling on rates of mortality, morbidity, and health behaviours in mothers and children in rural Malawi (MaiMwana): a factorial, cluster randomised controlled trial. Lancet. 2013;381:1721–35. doi: 10.1016/S0140-6736(12)61959-X.

Lungu, Kamfosa V, Hussein J, and Ashwood-Smith H. Are bicycle ambulances and community transport plans effective in strengthening obstetric referral systems in Southern Malawi? International Journal of Gynecology and Obstetrics. 2001;12(2):16–8. doi: 10.1016/S0020-7292(00)85200-5.

Malhotra A, Mathur S, Pande R and Roca E. Nepal: the distributional impact of participatory approaches on reproductive health for disadvantaged youths. Washington, D.C.: The World Bank, 2005 (https://openknowledge.worldbank.org/bitstream/handle/10986/13687/324190HNP0NepalMalhotraFinal.pdf?sequence=1, accessed 7 January 2015).

Manandhar DS, Osrin D, Shrestha BP, Mesko N, Morrison J, Tumbahangphe KM, et al. Effect of a participatory intervention with women's groups on birth outcomes in Nepal: cluster randomised controlled trial. Lancet. 2004;364(9438):970–79.

Marsiglia FF, Bermudez-Parsai M and Coonrod D. Familias Sanas: An intervention designed to increase rates of postpartum visits among Latinas. Journal of Health Care for the Poor and Underserved. 2010;21(3):119–31. doi: 10.1353/hpu.0.0355.

Marston C, Renedo A, McGowan CR and Portela A. Effects of community participation on improving uptake of skilled care for maternal and newborn health: a systematic review. PLoS ONE. 2013;8(2): e55012. doi:10.1371/journal.pone.

EPPI-Reviewer 4 [online database]. London: MASCOT/MH-SAR Map of Maternal Health Research (http://eppi.ioe.ac.uk/webdatabases4/Intro.aspx?ID=11, accessed 7 January 2015).

Mason E. S. The Asian mother and baby campaign (the Leicestershire experience). Journal of the Royal Society of Health. 1990;110(1): 1–4, 9. doi: 10.1177/146642409011000101.

Mathur S, Mehta M and Malhotra A. Youth reproductive health in Nepal – is participation the answer? Washington, D.C.: International Center for Research on Women, EngenderHealth; 2004 (http://www.icrw.org/files/publications/Youth-Reproductive-Health-in-Nepal-Is-Participation-the-Answer.pdf, accessed 12 January 2015).

McPherson RA, Khadka N, Moore JM, and Sharma M. Are birth-preparedness programmes effective? Results from a field trial in Siraha district, Nepal. Journal of Health, Population and Nutrition. 2006;24(4):479–88.

Midhet F and Becker S. Impact of community-based interventions on maternal and neonatal health indicators: results from a community randomized trial in rural Balochistan, Pakistan. Reproductive health. 2010:7(1):30. doi:10.1186/1742-4755-7-30.

Millard P, Bailey J, and Hanson J. Antenatal village stay and pregnancy outcome in rural Zimbabwe. The Central African Journal of Medicine. 1991;37:1–4.

Miltenburg AS, Roggeveen Y, van Elteren M, Shileds L, Bunders J, van Roosmalen J, et al. A protocol for a systematic review of birth preparedness and complication readiness programs. Systematic Reviews. 2013; 2:1–8. doi:10.1186/2046-4053-2-11.

Moran AC, Sangli G, Dineen R, Rawlins B, Yaméogo M, and Baya B. Birth-preparedness for maternal health : findings from Koupéla district, Burkina Faso. Journal of Health, Population and Nutrition. 2006;24(4):489–497.

More NS, Bapat U, Das S, Alcock P, Patil S, Porel M et al. Community mobilization in Mumbai slums to improve perinatal care and outcomes: a cluster randomised controlled trial. PLoS Med. 2012;9:e1001257. doi: 10.1371/journal.pmed.1001257.

Morhason-Bello IO, Babtunde OA, Ojengbede OA, Olayemi O, Oladokun A, and Fabamwo AO. Assessment of the effect of psychosocial support during childbirth in Ibadan, south-west Nigeria: A randomised controlled trial. Australian and New Zealand Journal of Obstetrics and Gynaecology. 2009;49:145–50. doi: 10.1111/j.1479-828X.2009.00983.x.

Muir HA, Hodnett ED, Hannah ME, Lowe NK, Willan AR, Stevens B et al. The influence of continuous labor support on the choice of analgesia, ambulation and obstetric outcome. Anesthesiology. 2002;96(Suppl 1):P44.

Mullany LC, Lee TJ, Yone L, Lee CI, Teela KC, Paw P, et al. Impact of community-based maternal health workers on coverage of essential maternal health interventions among internally displaced communities in eastern Burma: the MOM project. PLoS Medicine. 2010;7(8): 1000317. doi:10.1371/journal.pmed.1000317.

Mushi D, Mpembeni R, and Jahn A. Effectiveness of community based safe motherhood promoters in improving the utilization of obstetric care. The case of Mtwara rural district in Tanzania. BMC Pregnancy and Childbirth. 2010;10:14. doi:10.1186/1471-2393-10-14.

Nel P and Pashen D. Shared antenatal care for Indigenous patients in a rural and remote community. Australian Family Physician. 2003;32(3):127–31.

Panaretto KS, Lee HM, Mitchell MR, Larkins SL, et al. Impact of a collaborative shared antenatal care program for urban Indigenous women: a prospective cohort study. Medical Journal of Australia. 2005;182(10):514–9.

Panaretto KS, Mitchell MR, Anderson L, Larkins S, Manessis V, Buettner PG, et al. Sustainable antenatal care services in an urban Indigenous community: the Townsville experience. Medical Journal of Australia. 2007;187(1):18–22.

Pandey P, Sehgal AR, Riboud M, Levine D, and Goyal M. Informing resource-poor populations and the delivery of entitled health and social services in rural India: a cluster randomized controlled trial. The Journal of the American Medical Association. 2007;298:1867–75. doi: 10.1001/jama.298.16.1867.

Birth rights: new approaches to safe motherhood. London: Panos Institute ; 2001 (http://panos.org.uk/wp-content/files/2011/03/birth_rights0TJZQL.pdf, accessed 26 November 2014).

Parsons L and Day S. Improving obstetric outcomes in ethnic minorities: an evaluation of health advocacy in Hackney. Journal of Public Health Medicine. 1992;14(2):183–91.

Paxman JM, Sayeed A, Buxbaum A, Huber SC and Stover C. The India local initiatives program: a model for expanding reproductive and child health services. Studies in Family Planning. 2005;36(3): 203–20. doi: 10.1111/j.1728-4465.2005.00062.x.

Poovan P, Kifle F, and Kwast BE. A maternity waiting home reduces obstetric catastrophes. World Health Forum.1990; 11(4):440–5.

Prost A, Colbourn T, Seward N, Azad K, Coomarasamy A, Copas A et al. Women's groups practising participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis. Lancet. 2013;381(9879):1736–46. doi:10.1016/S0140-6736(13)60685-6.

Purdin S, Khan T, and Saucier R. Reducing maternal mortality among Afghan refugees in Pakistan. International Journal of Gynecology and Obstetrics. 2007;105(1):82–5. doi:10.1016/j.ijgo.2008.12.021.

Ronsmans C, Endang A, Gunawan S, Zazri A, Mcdermott J, Koblinksky M, et al. Evaluation of a comprehensive home-based midwifery programme in South Kalimantan, Indonesia. Tropical Medicine and International Health. 2001;6(10):799–810. doi: 10.1046/j.1365-3156.2001.00780.x.

Sahip Y and Turan JM. Education for expectant fathers in workplaces in Turkey. Journal of Biosocial Science. 2007; 39: 843–60. doi: 10.1017/S0021932007002088.

Simonet F, Wilkins R, Labranche E, Smylie J, Heaman M, Martens P, et al. Primary birthing attendants and birth outcomes in remote Inuit communities—a natural "experiment" in Nunavik, Canada. Journal of Epidemiology and Community Health. 2009;63(7):546–51. doi:10.1136/jech.2008.080598.

Sinha D. Empowering communities to make pregnancy safer: an intervention in rural Andhra Pradesh. New Delhi: Population Council; 2008 (www.popcouncil.org/uploads/pdfs/wp/India_HPIF/005.pdf?origin=publication_detail, accessed 7 January 2015).

Skinner J and Rathavy T. Design and evaluation of a community participatory, birth preparedness project in Cambodia. Midwifery. 2009;25(6):738–43. doi:10.1016/j.midw.2008.01.006.

Sood S, Chandra U, Mishra P and Neupane S. Measuring the effects of behavior change interventions in Nepal with population-based survey results. Baltimore: JHPIEGO; 2004 (http://pdf.usaid.gov/pdf_docs/PNADA614.pdf, accessed 7 January 2015).

Sood S, Chandra U, Palmer A and Molyneux I. Measuring the effects of the SIAGA behavior change campaign in Indonesia with population-based survey results. Baltimore: JHPIEGO; 2004 (http://pdf.usaid.gov/pdf_docs/PNADA613.pdf, accessed 7 January 2015).

Spaans WA, van Roosmalen and van Wiechen CMAG. A maternity waiting home experience in Zimbabwe. International Journal of Gynecology and Obstetrics. 1998;61(2):179–80.

Thompson M, Curry MA, and Burton D. The effects of nursing case management on the utilization of prenatal care by Mexican-Americans in rural Oregon. Public Health Nursing. 1998;15(2): 82–90. doi: 10.1111/j.1525-1446.1998.tb00326.x.

Torres J, Kopplin E, Peña V, Klaus M, Salinas R, and Herrera M. Impacto del apoyo emocional durante el parto en la disminucion de cesareas y gratificacion del proceso. Rev Chil Obstet Gincol. 1999;64(5):405–12 (in Spanish).

Tripathy P, Nair N, Barnett S, Mahapatra R, Borghi J, Rath S, et al. Effect of a participatory intervention with women's groups on birth outcomes and maternal depression in Jharkhand and Orissa, India: a cluster-randomised controlled trial. Lancet. 2010;375:1182–92. doi: 10.1016/S0140-6736(09)62042-0.

Tumwine JK and Dungare PS. Maternity waiting shelters and pregnancy outcome experience from a rural area in Zimbabwe. Annals of Tropical Paediatrics. 1996;16:55–9.

Turan, J, Tesfagiorghis, M, and Polan, M. Evaluation of a community intervention for promotion of safe motherhood in Eritrea. Journal of Midwifery & Women's Health. 2011;56(1), 8–17. doi:10.1111/j.1542-2011.2010.00001.x.

Technical guidance on the application of a human-rights based approach to the implementation of policies and programmes to reduce preventable maternal morbidity and mortality. New York: United Nations Human Rights Council; 2012 (http://www2.ohchr.org/english/issues/women/docs/A.HRC.21.22_en.pdf, accessed 26 November 2014).

Maternal and perinatal death inquiry and response: empowering communities to avert maternal deaths in India. New Delhi: United Nations Children's Fund; 2008 (http://www.unicef.org/india/MAPEDIR-Maternal_and_Perinatal_Death_Inquiry_and_Response-India.pdf, accessed 26 November 2014).

van den Heuvel OA, de Mey WG, Buddinigh H and Bots ML. Use of maternal care in a rural area of Zimbabwe: a population-based study. Acta Obstetricia et Gynecologica Scandinavica. 1999;78(10):838–46.

van Lonkhuijzen L, Stegeman M, Nyirongo R, and van Roosmalen J. Use of maternity waiting home in rural Zambia. South African Journal of Reproductive Health/La Revue Africaine de la Santé. 2003; 7:32–6. doi: 10.2307/3583343.

van Lonkhuijzen L, Stekelenburg J, and van Roosmalen J. Maternity waiting facilities for improving maternal and neonatal outcome in low-resource countries. Cochrane Database of Systematic Reviews. 2009; 8(3): Art. No.: CD006759. doi: 10.1002/14651858.CD006759.pub3.

Varkey LC, Mishra A, Das A, Ottolenghi E, Huntington D, Adamchak S et al. Involving men in maternity care in India. Frontiers in Reproductive Health Program Population Council; 2004 (http://www.popcouncil.org/uploads/pdfs/frontiers/FR_FinalReports/India_MIM.pdf, accessed 12 January 2015).

Vieira C, Portela A, Miller T, Coast E, Leone T, and Marston C. Increasing the use of skilled health personnel where traditional birth attendants were providers of childbirth care: a systematic review. PLoS ONE. 2012;7(10):e47946. doi:47910.41371/journal.pone.0047946.

Walsh D and Downe S. Appraising the quality of qualitative research. Midwifery. 2006;22(2):108–119. DOI: 10.1016/j.midw.2005.05.004.

Wild K, Barclay L, Kelly P, and Martins N. The tyranny of distance: maternity waiting homes access to birthing facilities in rural Timor-Leste. Bull World Health Organ. 2012;90:97–103. doi:10.2471/BLT.11.088955.

Wilson A, Hillman S, Rosato M, Skelton J, Costello A, Hussein J, et al. A systematic review and thematic synthesis of qualitative studies on maternal emergency transport in low-and middle income countries. International Journal of Gynecology and Obstetrics. 2013;122(3):192–201. doi: 10.1016/j.ijgo.2013.03.030.

The Ottawa Charter for Health Promotion [website]. Geneva: World Health Organization; 1986 (http://www.who.int/healthpromotion/conferences/previous/ottawa/en/, accessed 30 March 2014).

Making pregnancy safer: the critical role of the skilled attendant. A joint statement by WHO, ICM and FIGO. Geneva: World Health Organization, 2004 (http://whqlibdoc.who.int/publications/2004/9241591692.pdf?ua=1, accessed 28 January 2015).

Maternal mortality in 2005: estimates developed by WHO,UNICEF, UNFPA, and the World Bank. Geneva: World Health Organization, 2005 (http://www.who.int/whosis/mme_2005.pdf, accessed on 7 January 2015).

UN Secretary-General global strategy for women's and children's health. Geneva: World Health Organization; 2010 (http://www.who.int/pmnch/topics/maternal/20100914_gswch_en.pdf?ua=1, accessed 7 January 2015).

Working with individuals, families, and communities to improve maternal and newborn health. Geneva: World Health Organization, 2010. (http://www.who.int/maternal_child_adolescent/documents/who_fch_rhr_0311/en/, accessed 26 November 2014).

Essential interventions, commodities and guidelines for reproductive, maternal, newborn and child health: a global review of the key interventions related to reproductive, maternal, newborn and child Health. Geneva, The Partnership for Maternal Health, Newborn and Child Health and the Aga Khan University, 2011. (http://www.who.int/entity/pmnch/topics/part_publications/essential_interventions_18_01_2012.pdf?ua=1, accessed 28 January 15).

WHO Recommendations – OptimizeMNH: optimizing health worker roles for maternal and newborn health. Geneva: World Health Organization; 2012. (http://apps.who.int/iris/bitstream/10665/77764/1/9789241504843_eng.pdf, accessed 7 January 2015).

Counselling for maternal and newborn health care: a handbook for building skills. Geneva: World Health Organization; 2013. (http://apps.who.int/iris/bitstream/10665/44016/1/9789241547628_eng.pdf?ua=1, accessed on 8 January 2015).

WHO handbook for guideline development. Geneva, World Health Organization, 2013. (http://apps.who.int/iris/bitstream/10665/75146/1/9789241548441_eng.pdf, accessed 30 March 2014).

Accountability commission for health of women and children. Geneva: World Health Organization; 2014. (http://www.who.int/topics/millennium_development_goals/accountability_commission/en, accessed on 15 December 2014).

WHO recommendations for augmentation of labour. Geneva: World Health Organization; 2014. (http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/augmentation-labour/en/, accessed 7 January 2015).

WHO recommendation on community mobilization through facilitated participatory learning and action cycles with women's groups for maternal and newborn health. Geneva, World Health Organization, 2014. (http://www.who.int/maternal_child_adolescent/documents/community-mobilization-maternal-newborn/en/, accessed 27 November 2014).

Yadamsuren B, Merialdi M, Davaadorj I, Requejo JH, Betrán AP, Ahmad A, et al. Tracking maternal mortality declines in Mongolia between 1992 and 2007: the importance of collaboration. Bull World Health Organization. 2010;88:192–8. doi:10.2471/BLT.08.061747.

APPENDIX 1

External experts and WHO staff involved in the preparation of the guideline

Guideline Development Group – 2014

Ernestina Coast
London School of Economics
London, UNITED KINGDOM
Email: E.Coast@lse.ac.uk

Liz Comrie-Thomson
Centre for International Health
The Macfarlane Burnet Institute for Medical Research and Public Health
Melbourne, Victoria, AUSTRALIA
Email: lcomriethomson@burnet.edu.au

Sue England
World Vision International
Sydney, NSW, AUSTRALIA
Email: sue_england@wvi.org

Asha George
Bloomberg School of Public Health
Johns Hopkins University
Baltimore, MD, USA
Email: ageorg22@jhu.edu

Steve Hodgins (co-Chair)
Saving Newborn Lives,
Save The Children
Washington, DC, USA
Email: shodgins@savechildren.org

David Houeto
Independent consultant
Cotonou, BENIN
Email: dhoueto@yahoo.fr

Lisa Howard-Grabman
Training Resources Group, Inc.
Arlington, USA
Email: lhowardg@trg-inc.com

Tamar Kabakian
American University of Beirut
Beirut, LEBANON
Email: tk00@aub.edu.lb

Mike Mbizvo – Chair
University of Zimbabwe Medical School
Avondale, Harare, ZIMBABWE
Email: mmbizvo@uz-ucsf.co.zw

Raul Mercer
CISAP (Centre for Research in Population Health)
Hospital Durand
Buenos Aires, ARGENTINA
Email: raulmercer@gmail.com

Tina Miller
Oxford Brookes University
Oxford, UNITED KINGDOM
Email: tamiller@brookes.ac.uk

Stephen Munjanja
University of Zimbabwe
Harare, ZIMBABWE
Email: spmunjanja@gmail.com

Janet Perkins
Enfants du Monde
Grand-Saconnex, SWITZERLAND
Email: janet.perkins@edm.ch

Lars Åke Persson
International Maternal and Child Health Department
Uppsala University
Uppsala, SWEDEN
Email: Lars-ake.persson@kbh.uu.se

Ishwori Devi Shrestha
Ministry of Health and Population
Government of Nepal
Kathmandu, NEPAL
Email: ishworids@yahoo.com

Andrea Solnes Miltenburg
Women-Centered Care Project (WCCP)
Mwanza, REPUBLIC OF TANZANIA
Email: a.solnesmiltenburg@gmail.com

UN Agencies

Alma Virginia Camacho (co-Chair)
United Nations Population Fund
Latin America and the Caribbean Regional Office
Panama City, PANAMA
Email: vcamacho@unfpa.org

Luc de Bernis / Lucia Di Rosa
United Nations Population Fund
Châtelaine, SWITZERLAND
Email: debernis@unfpa.org

Molline Marume
UN Women
Harare, ZIMBABWE
Email: molline.marume@unwomen.org

Observers

Helga Fogstad
Norwegian Agency for Development Cooperation
Oslo, NORWAY
Email: Helga.Fogstad@norad.no

Allisyn Moran
USAID/Bureau for Global Health
Washington, DC, USA
Email: amoran@usaid.gov

Technical Secretariat

Cicely Marston
London School of Hygiene and Tropical Medicine
London, UNITED KINGDOM
Email: cicely.marston@lshtm.ac.uk

Helen Smith
University of Manchester
Manchester, UNITED KINGDOM
Email: helen.smith-4@manchester.ac.uk

Guideline Development Group – 2013

Isabelle Cazottes
Saint Laurent
Gaillac, FRANCE
Email: cazottes.isabelle@wanadoo.fr

Anthony Costello (Resource Person for Day 1)
UCL Institute for Global Health
London, UNITED KINGDOM
Email: anthony.costello@ucl.ac.uk

Jessica Davis
Women's and Children's Health Knowledge Hub
The Macfarlane Burnet Institute for Medical Research and Public Health Ltd
Melbourne, Victoria, AUSTRALIA
Email: jdavis@burnet.edu.au

Asha George
Bloomberg School of Public Health
Johns Hopkins University
Baltimore, MD, USA
Email: asgeorge@jhsph.edu

David Houeto
Cotonou, BENIN
Email: dhoueto@yahoo.fr

Lisa Howard-Grabman
OD Consultant/Trainer
Training Resources Group, Inc.
Arlington, VA, USA
Email: lhowardg@trg-inc.com

Eleri Jones
London School of Economics
London, UNITED KINGDOM
Email: E.W.Jones@lse.ac.uk

Mike Mbizvo – Chair
UZ-UCSF Programme on Women's Health,
Department of Obstetrics and Gynaecology,
University of Zimbabwe Medical School,
Avondale, Harare, ZIMBABWE
Email: mmbizvo@uz-ucsf.co.zw

Raul Mercer
CISAP (Center for Research in Population Health)
Hospital Durand
Buenos Aires, ARGENTINA
Email: raulmercer@gmail.com

Omrana Pasha
Departments of Community Health Sciences and Family Medicine
Aga Khan University
Karachi, PAKISTAN
Email: omrana.pasha@aku.edu

Lars Åke Persson
International Maternal and Child Health Department
Uppsala University
Uppsala, SWEDEN
Email: Lars-ake.persson@kbh.uu.se

Audrey Prost – (Resource Person for Day 1)
Faculty of Population Health Sciences
UCL Institute for Child Health
London, UNITED KINGDOM
Email: audrey.prost@ucl.ac.uk

Carlo Santarelli
Enfants du Monde
Grand-Saconnex, SWITZERLAND
Email: secretairegeneral@edm.ch

Rachmalina Soerachman
Centre for Public Health Intervention Technology,
National Institute of Health Research and Development
Ministry of Health
Jakarta, INDONESIA
Email: rachmalina.soerachman@kemkes.go.id

Mesfin Teklu
World Vision International
Nairobi, KENYA
Email: mesfin_teklu@wvi.org

UN Agencies

Kim Dickson
United Nations Children's Fund
New York, NY, USA
Email: kdickson@unicef.org

Observers

Carolyn Blake
Swiss Centre for Health
Swiss Tropical and Public Health Institute
Basel, Switzerland
Email: Carolyn.Blake@unibas.ch
Technical Secretariat

Naira Kalra
Geneva, SWITZERLAND
Email: nairakalra@gmail.com

Cicely Marston
Faculty of Public Health and Policy
London School of Hygiene and Tropical Medicine
London, UNITED KINGDOM
Email: cicely.marston@lshtm.ac.uk

Josephine Kavanagh
Social Science Research Unit and EPPI Centre,
Institute of Education, University of London
Frodsham, UNITED KINGDOM
Email: J.Kavanagh@ioe.ac.uk

Loveday Penn-Kekena
Centre for Health Policy
University of Witwatersrand
Wits, SOUTH AFRICA
Email: Loveday.Penn-Kekana@lshtm.ac.uk

WHO staff involved in the preparation of the guidelines

Regional Office for Africa – AFRO

Seipati Mothebesoane-Anoh
World Health Organization
Regional Office for Africa
IST West Africa
Ouagadougou, BURKINA FASO
Email: mothebesoanea@who.int

Regional Office for the Americas – AMRO

Pablo Duran
Regional Office for the Americas
Centro Latino Americano de Perinatología (CLAP/SMR)
Montevideo, URUGUAY
Email: duranpa@who.int

Ruben Grajeda
Regional Office for the Americas
Washington DC, USA
Email: grajedar@who.int

Regional Office for South East Asia – SEARO

Martin Weber
Regional Office for South-East Asia
World Health House
New Delhi, INDIA
Email: weberm@who.int

Geneva

Rajiv Bahl
Coordinator, MRD
Department of Maternal, Newborn, Child and
Adolescent Health (WHO/MCA)
Email: bahlr@who.int

Matthews Mathai
Coordinator, EME
WHO/MCA
Email: mathaim@who.int

Nicole Grillon
WHO/MCA
Email: grillonn@who.int

Fran McConville
WHO/MCA
Email: mcconvillef@who.int

Anayda Portela
WHO/MCA
Email: portelaa@who.int

Shamim Ahmad Qazi
WHO/MCA
Email: qazis@who.int

Nigel Rollins
WHO/MCA
Email: rollinsn@who.int

Severin von Xylander
WHO/MCA
Email: xylanders@who.int

Essee Oruma
Intern
WHO/MCA

Gail Robson
Intern
WHO/MCA

Elizabeth Centeno Tablante
Intern
WHO/MCA

Avni Amin
Department of Reproductive Health and Research (WHO/RHR)
Email: amina@who.int

Metin Gulmezoglu
WHO/RHR
Email: gulmezoglum@who.int

Rajat Khosla
WHO/RHR
Email: khoslar@who.int

Susan Norris
Department of Knowledge Management and Sharing Department (WHO/KMS)
Email: norriss@who.int

Kwok-Cho Tang
Department of Prevention of Noncommunicable Diseases (WHO/PND)
Email: tangkc@who.int

APPENDIX 2

Authors of Final Report, Systematic Reviews and Background Papers per Recommendation

Final Report – WHO recommendations on health promotion interventions for maternal and newborn health

Anayda Portela, WHO/MCA coordinated the development of the guideline and drafted this document with Helen Smith, University of Manchester and Cicely Marston, London School of Hygiene and Tropical Medicine.

Helen Smith of the University of Manchester reviewed the evidence and prepared the GRADE Tables, with support from Rebecca Smyth of the University of Manchester. The GRADE Tables were reviewed by Anayda Portela, the following principal researchers of the SRs (Andrea Solnes Miltenburg, Liz Comrie-Thomson, Asha George, Ernestina Coast and Cicely Marston) and in the GDG meeting.

The guideline was reviewed by the GDG members and the principal authors of SRs. All decisions regarding the recommendations were made in consultation with the GDG and with WHO colleagues.

Additional Reviewers who provided substantive input include: Rajiv Bahl, WHO/MCA; Matthews Mathai, WHO/MCA; Rajat Khosla, WHO/RHR; Avni Amin, WHO/RHR; Essee Oruma, intern WHO/MCA; WHO GRC; Julia Hussein, University of Aberdeen; Mona Moore, independent consultant; Ariadna Capasso, Family Care International; Glenn Laverack, independent consultant; and Luc van Lonkhuijzen, Academic Medical Centre in Amsterdam.

Technical Editor: Belinda Glynn

MASCOT/MH-SAR mapping of maternal health research

Health system and community-based interventions for improving maternal health and for reducing maternal health inequalities in low-and middle-income countries: Stage One – identifying and mapping the literature. http://eppi.ioe.ac.uk/webdatabases4/Intro.aspx?ID=11

Supported by the European Union's Seventh Framework Programme (FP7/2007-2013) under grant agreement nº 282507 and NWO/Wotro (Netherlands Organisation for Scientific Research, WOTRO Science for Global Development).

The MASCOT/MH-SAR review team consisted of Ashar Dhana, Duane Blaauw, Elinor Kern, Emily Vargas, Francisco Becerra-Posada, Josephine Kavanagh, Langelihle Mlotshwa, Leon Bijlmakers, Loveday Penn-Kekana, Mari Dumbaugh, Matthew Chersich, Priya Mannava, Siphiwe Thwala and Victor Becerril-Montekio.

Technical and financial support for the coding for health promotion interventions for MNH was provided by WHO/MCA, made possible through a grant received from the Norwegian Agency for Development Cooperation (NORAD).

Coding for the health promotion interventions for MNH was led by Loveday Penn-Kekana, Mari Dumbaugh, Josephine Kavanagh, Anayda Portela and Matthew Chersich. Sapna Magnani and Yeon Lee also provided support as interns to WHO/MCA.

Recommendation 1: BPCR interventions

Systematic review: Solnes Miltenburg A, Roggeveen Y, Shields L, van Elteren M, van Roosmalen J, Stekelenburg J, Portela A. Birth preparedness and complication readiness programmes: a systematic review. (forthcoming).

Soubeiga D, Gauvin L, Hatem M A, Johri M. Birth Preparedness and Complication Readiness (BPCR) interventions to reduce maternal and neonatal mortality in developing countries: systematic review and meta-analysis. BMC pregnancy and childbirth [Internet]. 2014 Jan;14:129. Available from: http://www.ncbi.nlm.nih.gov/pubmed/24708719

Context and conditions paper: Andrea Solnes Miltenburg and Yadira Roggeveen, unpublished, (2014).

Recommendation 2: Male involvement interventions

Systematic review: Tokhi M, Comrie-Thomson L, Portela A, Chersich M and Luchters S. Male involvement for improved maternal and newborn health outcomes: a systematic review. (forthcoming).

Context and conditions paper: Renu Khanna, unpublished, (2014).

Recommendation 3: Interventions to promote awareness of human rights/sexual and reproductive rights and the right to access quality skilled care

Systematic review: George A, Branchini C, Portela A. Interventions that promote awareness of human rights, sexual and reproductive rights and/or rights to access quality care as a means to increase demand for or use of health care to improve maternal and newborn health outcomes: A systematic review. (forthcoming).

Context and conditions paper: Asha George and Casey Branchini, Johns Hopkins University, Bloomberg School of Public Health, unpublished, (2014).

Recommendation 4: Maternity waiting homes

Systematic review: Chersich M and Portela A

Existing systematic review:

- van Lonkhuijzen L, Stekelenburg J and van Roosmalen J. Maternity waiting facilities for improving maternal and neonatal outcome in low-resource countries. Cochrane Database of Systematic Reviews. 2012; (10): CD006759. doi: 10.1002/14651858.CD006759.pub3.
- Hussein J, Kanguru L, Astin M and Munjanja S (2012) The Effectiveness of Emergency Obstetric Referral Interventions in Developing Country Settings: A Systematic Review. PLoS Med. 2012;9(7): e1001264. doi:10.1371/journal.pmed.1001264.

Context and conditions paper: Julia Hussein, University of Aberdeen, and Stephen Munjanja, University of Zimbabwe, unpublished, (2014).

Recommendation 5: Community-organized transport schemes

Systematic review: Chersich M and Portela A

Existing systematic review:

- Hussein J, Kanguru L, Astin M and Munjanja S. The Effectiveness of Emergency Obstetric Referral Interventions in Developing Country Settings: A Systematic Review. PLoS Med. 2012;9(7): e1001264. doi:10.1371/journal.pmed.1001264.

Context and conditions paper: Wilson A, Hillman S, Rosato M, Skelton J, Costello A, Hussein J et al. A systematic review and thematic synthesis of qualitative studies on maternal emergency transport in low-and middle income countries. International Journal of Gynecology and Obstetrics. 2013;122(3):192-201. doi: 10.1016/j.ijgo.2013.03.030.

Recommendation 6: Alternative roles for TBAs

Systematic review: Chersich M, Dhana A, Moore L, Miller T

Existing systematic reviews:

- Byrne A and Morgan A. How the integration of traditional birth attendants with formal health systems can increase skilled birth attendance. International Journal of Gynaecology and Obstetrics. 2011;115(2):127-34. doi: 10.1016/j.ijgo.2011.06.019.
- Vieira C, Portela A, Miller T, Coast E, Leone T and Marston C. Increasing the use of skilled health personnel where traditional birth attendants were providers of childbirth care: a systematic review. PLoS ONE. 2012; 7(10):e47946.doi:47910.41371/journal.pone.0047946.

Existing WHO guideline:

- WHO recommendations: Optimizing health worker roles to improve access to key maternal and newborn health interventions through task shifting. Geneva: World Health Organization; 2012 (http://apps.who.int/iris/bitstream/10665/77764/1/9789241504843_eng.pdf, accessed 12 January 2015).

Context and conditions paper: Tina Miller. Oxford-Brookes University, unpublished, (2014).

Recommendation 7: Cultural adaptation of maternity care services

Systematic review: Coast E, Jones E and Lattof SR. Effectiveness of interventions to provide culturally appropriate maternity care in increasing uptake of skilled maternity care: a systematic review. London School of Economics. (forthcoming).

Existing systematic mapping:

- Coast E, Jones E, Portela A and Lattof SR. Maternity care services and culture: a systematic global mapping of interventions. PLoS ONE. 2014;9(9): e108130. doi:10.1371/journal.pone.0108130

Context and conditions paper: Ernestina Coast E, Sam Lattof and Eleri Jones, London School of Economics, unpublished, (2014).

Recommendation 8: Continuous companionship during labour and birth

Systematic review update for care-seeking outcomes: Chersich M and Luchter S

Existing systematic review:

- Hodnett ED, Gates S, Hofmeyr GJ, Sakala C and Weston J. Continuous support for women during childbirth. Cochrane Database of Systematic Reviews. 2011;(10):CD003766. doi: 10.1002/14651858.CD003766.pub3.

Existing WHO guideline:

- WHO recommendations for augmentation of labour. Geneva: World Health Organization; 2014 (http://apps.who.int/iris/bitstream/10665/112825/1/9789241507363_eng.pdf?ua=1, accessed 12 January 2015).

Recommendation 9: Community mobilization through facilitated participatory learning and action cycles with women's groups

Existing systematic review:

- Prost A, Colbourn T, Seward N, Azad K, Coomarasamy A, Copas A et al. Women's groups practising participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis. Lancet. 2013;381(9879):1736–46. doi:10.1016/ S0140-6736(13)60685-6.

An additional unpublished meta-analysis of secondary outcomes (institutional birth, birth with a skilled birth attendant, any antenatal care, recommended number of antenatal care visits) was carried out by Tim Colbourn and Audrey Prost of University College London.

Context and conditions paper: Mikey Rosato and Audrey Prost, unpublished, (2014).

Recommendation 10: Community participation in the analysis and dissemination of information from maternal and perinatal death surveillance and response

Recommendation 11: Community participation in quality-improvement processes

Recommendation 12: Community participation in programme planning and implementation

Systematic review: Marston C, Sequeira M, Portela A, Cavallaro F, McGowan CR. Systematic Reviews on community participation and maternity care seeking for maternal and newborn health. (forthcoming).

Existing systematic review:

- Marston C, Renedo A, McGowan CR, Portela A (2013) Effects of community participation on improving uptake of skilled care for maternal and newborn health: a systematic review. PLoS ONE 8(2): e55012. doi:10.1371/journal.pone.0055012

Context and conditions papers: Lisa Howard-Grabman, Training Resources Group, Inc. unpublished, (2014).

APPENDIX 3

Summary of considerations related to the strength of the recommendations

INTERVENTION	BPCR INTERVENTIONS	MALE INVOLVEMENT INTERVENTIONS	PROMOTION OF AWARENESS OF HUMAN RIGHTS	MATERNITY WAITING HOMES	COMMUNITY-ORGANIZED TRANSPORT SCHEMES	NEW ROLES FOR TBAS
Included studies	33 studies of 21 programmes: one RCT, three cluster RCTs, seven pre and post comparative studies with a control group, three pre and post studies, seven one group before and after evaluations of which two had a qualitative component, and one qualitative study.	13 studies: one RCT, one cluster RCT, one cohort analytic study, two pre and post studies with a control design, one repeat cross-sectional, three before and after evaluations, one retrospective pre and post analysis and one non-equivalent control group.	Three studies: two cluster RCTs and one one-group before and after evaluation.	14 studies: three hospital-based cohort studies, one hospital-based before and after study, three hospital-based cross-sectional surveys, one community- based cohort study, one cross-sectional survey with qualitative component, one household-level cross sectional survey, one retrospective hospital-based cohort, one cohort analytic study, one before and after study with a qualitative component, and one study with data from the vital registration system.	Five studies: one cluster RCT, one pre and post intervention study using community-based case controls, one pre and post comparative study with a control group; and two pre and post community-based case control studies with a qualitative component.	Six studies: three pre and post intervention studies with one including mixed methods, one interrupted time series, one retrospective pre-post analysis, and one longitudinal panel survey.
Quality of the evidence	☐ High ☐ Moderate ☐ Low ■ Very low	☐ High ☐ Moderate ☐ Low ■ Very low	☐ High ☐ Moderate ☐ Low ■ Very low	☐ High ☐ Moderate ☐ Low ■ Very low	☐ High ☐ Moderate ☐ Low ■ Very low	☐ High ☐ Moderate ☐ Low ■ Very low
Values and preferences[a]	■ No major variability ☐ Some variability ☐ Major variability	☐ No major variability ☐ Some variability ■ Major variability	■ No major variability ☐ Some variability ☐ Major variability	☐ No major variability ☐ Some variability ■ Major variability	☐ No major variability ☐ Some variability ■ Major variability	☐ No major variability ■ Some variability ☐ Major variability

[a] The greater the variability or uncertainty in values and preferences, the more likely a conditional recommendation is warranted.

INTERVENTION	BPCR INTERVENTIONS	MALE INVOLVEMENT INTERVENTIONS	PROMOTION OF AWARENESS OF HUMAN RIGHTS	MATERNITY WAITING HOMES	COMMUNITY-ORGANIZED TRANSPORT SCHEMES	NEW ROLES FOR TBAS
Balance of benefits versus harms[b]	■ Benefits outweigh harms ☐ Benefits and harms are balanced ☐ Harms outweigh benefits	☐ Benefits outweigh harms ■ Benefits and harms are balanced ☐ Harms outweigh benefits	☐ Benefits outweigh harms ■ Benefits and harms are balanced ☐ Harms outweigh benefits	☐ Benefits outweigh harms ■ Benefits and harms are balanced ☐ Harms outweigh benefits	☐ Benefits outweigh harms ■ Benefits and harms are balanced ☐ Harms outweigh benefits	☐ Benefits outweigh harms ◌ Benefits and harms are balanced ☐ Harms outweigh benefits
Resource use	☐ Less resource intensive ☐ More resource intensive ■ Unable to determine	☐ Less resource intensive ☐ More resource intensive ■ Unable to determine	☐ Less resource intensive ☐ More resource intensive ■ Unable to determine	☐ Less resource intensive ☐ More resource intensive ■ Unable to determine	☐ Less resource intensive ☐ More resource intensive ■ Unable to determine	☐ Less resource intensive ☐ More resource intensive ■ Unable to determine
Overall ranking	■ Strong recommendation ☐ Conditional recommendation ☐ Research recommendation	■ Strong recommendation ☐ Conditional recommendation ☐ Research recommendation	☐ Strong recommendation ☐ Conditional recommendation ■ Research recommendation	☐ Strong recommendation ■ Conditional recommendation ☐ Research recommendation	☐ Strong recommendation ■ Conditional recommendation ☐ Research recommendation	■ Strong recommendation ☐ Conditional recommendation ☐ Research recommendation

[b] The larger the difference between the benefits and harms, the more likely a strong recommendation is warranted. The smaller the net benefit and the lower the certainty for that benefit, the more likely a conditional recommendation is warranted.

INTERVENTION	CULTURAL ADAPTATION OF MATERNITY CARE SERVICES	CONTINUOUS COMPANIONSHIP DURING LABOUR AND BIRTH	COMMUNITY MOBILIZATION WITH WOMEN'S GROUPS	COMMUNITY PARTICIPATION IN MDSR	COMMUNITY PARTICIPATION IN QUALITY-IMPROVEMENT PROCESSES	COMMUNITY PARTICIPATION IN PROGRAMME PLANNING AND IMPLEMENTATION
Included studies	14 studies: one RCT, one retrospective record review, one interrupted time series, one qualitative component and two quantitative components, two with unspecified methods, one triangulation mixed-method approach, one case-control, one descriptive study, one prospective cohort study with a historical control and a contemporary control, one prospective cohort with a historical control group, two retrospective studies with control group and one geocoding-based retrospective birth cohort.	22 RCTs.	Seven RCTs.	Two studies: one case study and one quasi-experimental pre and post comparative study with a control.	Six studies: one cluster RCT, one ITS, one quasi-experimental pre and post comparative with a control; one controlled before and after study; one retrospective pre-post analysis; and one group before and after evaluation.	13 studies: two cluster RCTs; one quasi experimental study; two controlled before and after studies; two one-group before and after evaluation; one pre and post comparative study with a control, one pre and post comparative study, two quasi-experimental studies, two pre and post studies with qualitative components and one retrospective pre and post analysis.
Quality of the evidence	☐ High ☐ Moderate ☐ Low ■ Very low	☐ High ■ Moderate ☐ Low ☐ Very low	☐ High ■ Moderate ☐ Low ☐ Very low	☐ High ☐ Moderate ☐ Low ■ Very low	☐ High ☐ Moderate ☐ Low ■ Very low	☐ High ☐ Moderate ☐ Low ■ Very low
Values and preferences	☐ No major variability ■ Some variability ☐ Major variability	■ No major variability ☐ Some variability ☐ Major variability	■ No major variability ☐ Some variability ☐ Major variability	■ No major variability ☐ Some variability ☐ Major variability	■ No major variability ☐ Some variability ☐ Major variability	■ No major variability ☐ Some variability ☐ Major variability
Balance of benefits versus harms	☐ Benefits outweigh harms ■ Benefits and harms are balanced ☐ Harms outweigh benefits	■ Benefits outweigh harms ☐ Benefits and harms are balanced ☐ Harms outweigh benefits	☐ Benefits outweigh harms ■ Benefits and harms are balanced ☐ Harms outweigh benefits	☐ Benefits outweigh harms ■ Benefits and harms are balanced ☐ Harms outweigh benefits	■ Benefits outweigh harms ☐ Benefits and harms are balanced ☐ Harms outweigh benefits	■ Benefits outweigh harms ☐ Benefits and harms are balanced ☐ Harms outweigh benefits

INTERVENTION	CULTURAL ADAPTATION OF MATERNITY CARE SERVICES	CONTINUOUS COMPANIONSHIP DURING LABOUR AND BIRTH	COMMUNITY MOBILIZATION WITH WOMEN'S GROUPS	COMMUNITY PARTICIPATION IN MDSR	COMMUNITY PARTICIPATION IN QUALITY-IMPROVEMENT PROCESSES	COMMUNITY PARTICIPATION IN PROGRAMME PLANNING AND IMPLEMENTATION
Resource use	☐ Less resource intensive ☐ More resource intensive ■ Unable to determine	■ Less resource intensive ☐ More resource intensive ☐ Unable to determine	☐ Less resource intensive ☐ More resource intensive ■ Unable to determine	☐ Less resource intensive ☐ More resource intensive ■ Unable to determine	☐ Less resource intensive ☐ More resource intensive ■ Unable to determine	☐ Less resource intensive ☐ More resource intensive ■ Unable to determine
Overall ranking	■ Strong recommendation ☐ Conditional recommendation ☐ Research recommendation	■ Strong recommendation ☐ Conditional recommendation ☐ Research recommendation	■ Strong recommendation ☐ Conditional recommendation ☐ Research recommendation	☐ Strong recommendation ☐ Conditional recommendation ■ Research recommendation	■ Strong recommendation ☐ Conditional recommendation ☐ Research recommendation	■ Strong recommendation ☐ Conditional recommendation ☐ Research recommendation

APPENDIX 4

Table of characteristics of included studies[a]

STUDY	STUDY DESIGN	SETTING	DESCRIPTION OF INTERVENTION	RECOMMENDATION	OUTCOMES OF INTEREST REPORTED
Ahluwalia et al., 2003	Pre and post study with qualitative component	TANZANIA, rural, Kwimba and Missungwi districts, Mwanza region	Multiple interventions included house visits by volunteers to provide BPCR education to pregnant women and their families. A community surveillance system for pregnancies and community-based plans for transportation to health facilities were also set up. Transport methods included by canoe, oxcart, bicycle/tricycle and stretcher.	BPCR Community-organized transport schemes Community participation in programme planning and implementation	SBA, C/I
Ahluwalia et al., 2010	Pre and post study with qualitative component	TANZANIA, rural, Kwimba and Missungwi districts, Mwanza region	See Ahluwalia et al., 2003 (above)	BPCR Community-organized transport schemes Community participation in programme planning and implementation	FB, C/I, ANC
Andemichael, 2008	Hospital-based before and after study with qualitative component	ERITREA, remote areas of two coastal regions of the Red Sea	11 health facilities with MWH for women living at least 10 km distance from facility. MWHs had an ambulance for referral to higher level facilities for complications. During admission, consumables were provided to women. Community support through supplies.	Maternity waiting homes	FB, MM, NM, PM, SB
Baqui et al., 2008	Quasi-experimental pre and post comparative study with a control group	INDIA, rural districts of Uttar Pradesh	Interventions included house visits by auxiliary nurse midwives (ANMs) or anganwadi workers and change agents to provide BPCR counselling to pregnant women and their families.	BPCR	SBA, FB, NM
Bilenko et al., 2007	Retrospective record review of ANC utilization by pregnant women in two successive pregnancies, before and after the establishment of a local MCH clinic	ISRAEL, Negev Desert	A new MCH clinic in desert areas for semi-nomadic Bedouin extended families living in tribal units, staffed by an Arabic-speaking Bedouin public health nurse.	Cultural adaptation of maternity care services	ANC

[a] Note that we have not included studies from Recommendations 8 and 9. We refer the readers to the published systematic reviews.

STUDY	STUDY DESIGN	SETTING	DESCRIPTION OF INTERVENTION	RECOMMENDATION	OUTCOMES OF INTEREST REPORTED
Bhutta et al., 2011	Cluster RCT	PAKISTAN, rural Sindh	Community-based intervention package principally delivered through lady health workers and community health committees (CHCs). CHCs were encouraged to organize an emergency transport fund and the use of vehicles using local resources.	Community-organized transport schemes Community participation in programme planning and implementation	FB, ANC, MM, NM, PM, SB
Bjorkman et al., 2009	Cluster RCT	UGANDA, rural, 9 districts in 4 regions	Community perceptions of health facilities were summarized into report cards which were then presented back to the community during a meeting. During the meeting, information about health rights was shared and community members made suggestions towards an action plan. Action plans were later developed with community and health service staff, including how the community could monitor the agreement.	Promotion of awareness of rights Community participation in programme planning and implementation Community participation in quality-improvement processes	FB, ANC
Chandramohan et al., 1994	Hospital-based cohort study	ZIMBABWE, rural	Free self-catering temporary accommodation 150 m from labour ward. Women advised to stay at MWH from 36 weeks gestation. Target population was women identified as risk in ANC. MWH offered ANC and health education.	Maternity waiting homes	FB, MM,MB, NM, PM, SB,
Chandramohan et al., 1995	Hospital-based cohort study	ZIMBABWE, rural	See Chandramohan et al., 1994 (above).	Maternity waiting homes	SBA, ANC, NM, PM, SB
Darmstadt et al., 2010	Cluster RCT	BANGLADESH, rural unions in Mirzapur	Antenatal house visits by volunteers who promoted BPCR including for newborn education. CHWs conducted additional postnatal visits to promote preventive newborn care practices and to identify and refer sick neonates. The control group received the usual care services provided by the local and national governments.	BPCR	FB, C/I, NM
Family Care International Kenya, 2007	Quasi-experimental pre and post study	KENYA, Homa Bay and Migori districts, Nyanza province	Behaviour change campaign making use of printed materials including birth preparedness messages through drama and meetings. Materials supplied to health care workers (HCWs) as well as facility upgrades and improving provider skills. The control district received only facility intervention.	BPCR	SBA
Family Care International Tanzania, 2007	Quasi-experimental pre and post study with a control group	TANZANIA, Igunga and Urambo districts, Tabora region	Behaviour change communication and mobilization efforts through participatory meetings at village level and theatre and performing arts. Improvements to the availability and quality of maternity care through strengthening physical infrastructure and improving provider skills. Control district received no intervention.	BPCR	SBA, C/I

STUDY	STUDY DESIGN	SETTING	DESCRIPTION OF INTERVENTION	RECOMMENDATION	OUTCOMES OF INTEREST REPORTED
Fauveau et al., 1991	Pre and post intervention study	BANGLADESH, rural Matlab	Nurse-midwives posted in outposts of programme area. The nurse-midwives' duties included working with CHWs and TBAs to ensure that they were called during labour.	New roles for TBAs	SBA, MM, PP
Fonseca-Becker et al., 2004	One group before and after evaluation	GUATEMALA, north-west and south-west regions	Service delivery improvements and trained health care providers and behaviour change interventions focused on organizing communities to effectively respond to obstetric emergencies and creating demand for the improved services through the use of radio and printed materials. Includes a community action cycle: a five-step participatory cycle consisting of organizing for community action; promoting community dialogue; planning together; collective action; and participatory evaluation. The communities developed their own emergency plans.	BCPR Community participation in programme planning and implementation	FB, C/I
Frankenberg et al., 2009	Longitudinal panel survey	INDONESIA	A village midwife programme where midwives were trained and placed in poor communities far from health centres. Responsibilities included developing collaborative relationships with traditional village midwives.	New roles for TBAs	SBA, ANC, PP
Fullerton et al., 2005	Repeat cross-sectional surveys	INDIA, rural, 42 villages and hamlets of Maitha Block, outside city of Kanpur	These included specific male involvement education activities, e.g., home-based lifesaving skills to teach pregnant women and their primary family caregivers and home birth attendants about maternal and newborn complications and health-seeking behaviours. Community mobilization efforts were designed to reduce delays in transporting women and newborns for complications and to increase use of family planning.	Male involvement	BF, MM, NM
Gabrysch et al., 2009	Pre and post comparative study	PERU, Ayacucho rural Santillana district	A culturally appropriate childbirth care model developed with Quechua communities and health professionals. Key features included a rope and bench for vertical delivery position, inclusion of family and TBAs, use of the Quechua language and health professionals that were respectful of culture.	Cultural adaptation of maternity care services New roles for TBAs Community participation in quality-improvement processes	SBA, FB
Gaym et al., 2012	Hospital-based cohort with a qualitative component	ETHIOPIA, rural	9 MWHs, conditions within each varied. Activities included outreach to increase community awareness of MWHs.	Maternity waiting homes	MM, MB, SB

STUDY	STUDY DESIGN	SETTING	DESCRIPTION OF INTERVENTION	RECOMMENDATION	OUTCOMES OF INTEREST REPORTED
Harkins et al., 2008	Pre and post comparative study Peru: Informal baseline and endline survey Honduras: Baseline and endline surveys	PERU, peri-urban area of Chao, Viru province HONDURAS, rural agricultural area, San Luis	Social mobilization campaigns. Community integrated management of childhood illnesses (IMCI) includes a participatory community diagnosis of health issues with a diverse array of partners. In Peru, consensus-building strategy multi-partner health committees with officials and community-based organizations to address community health concerns. Local committees also formed in communities where health facilities are located. They organized and supported logistics for training of various members of the community training of various members of the community and community groups. In Honduras, IMCI committees created in each region with representatives of local institutions. The committees then led training of different social actors and networks.	Community participation in programme planning and implementation	Peru: FB Honduras: SBA, ANC
Hodgins et al., 2009	One group before and after evaluation	NEPAL, rural, Jhapa and Banke districts	House visits by volunteers who provide BPCR education to pregnant women and family members, making use of pictorial handouts.	BPCR	FB, C/I, NM
Hossain et al., 2006	Quasi-experimental study pre and post comparative study with a control group	BANGLADESH, rural, Birampur region	Interventions included facility upgrades, quality of care and BPCR and community mobilization. SBAs, fieldworkers and village doctors were trained to disseminate BP messages that were also incorporated into a variety of visual aids during home visits, group discussions at clinics and village meetings. Additionally, the development of community support systems formed including emergency funds for EmOC, emergency transportation for referral to another health facility, identification of volunteers to accompany women to facilities or to provide financial support, and a list of volunteers who are available to donate blood in case of emergency. Improvement of quality of care through a participatory approach and training of staff took place. A stakeholder quality of care committee was formed that included community members to solicit community opinions and suggestions in improving health service provision. The stakeholder committee met regularly and monitored service cleanliness and client perceptions of services, as well as reviewed maternal death or near-miss cases. BPCR intervention was quality of care improvements through a participatory approach and training of staff; community diagnosis and case studies developed of recently experienced maternal deaths; and results discussed in communities and committees where support systems formed.	BPCR Male involvement Community participation in quality-improvement processes Community participation in MDSR	SBA, FB, C/I

STUDY	STUDY DESIGN	SETTING	DESCRIPTION OF INTERVENTION	RECOMMENDATION	OUTCOMES OF INTEREST REPORTED
Hossain et al., 2006 (continued)			Men were addressed in health education for BPCR component (described above) and in community meetings to mobilize the community to establish a community support system to support women in reaching care for birth or complications. Men were also consulted on quality of care in the facility and involved in a stakeholder committee to monitor elements of quality. Comparison district received facility upgrade but no community intervention; control district received no intervention.		
Hounton et al., 2008	Quasi-experimental pre and post study with a control group	BURKINA FASO, rural	Behaviour change and community mobilization through participatory theatre and songs. Upgrading of health facilities and improving the referral system. Control district was also provided with facility upgrades but not the behavioural change component.	BPCR	MM
Jan et al., 2004	One qualitative component and two quantitative components (one economic and one that appeared similar to a retrospective cohort study)	AUSTRALIA, western Sydney	Daruk Aboriginal Medical Service, a community-controlled health service with a midwifery programme staffed by a team including an Aboriginal health worker. Features included regular ANC, transportation and home visits. Cultural awareness sessions were also provided for hospital staff.	Cultural adaptation of maternity care services	ANC
Jewell et al., 2000	Retrospective comparison of birth certificate data of infants born to project mothers and those born to non-project mothers	USA, Indiana	Minority health coalitions developed projects to increase access to early ANC for minority women through community outreach and addressing cultural factors that affect use of care. Strategies included use of minority professional and paraprofessional staff, social support, advocacy, and referrals for health education and transportation.	Cultural adaptation of maternity care services	ANC

STUDY	STUDY DESIGN	SETTING	DESCRIPTION OF INTERVENTION	RECOMMENDATION	OUTCOMES OF INTEREST REPORTED
Julnes, 1994	Retrospective comparison of women in the programme area in the intervention group with women who attended a clinic-based, multi-disciplinary programme and women who had no ANC, using a database constructed from monthly reports of births in the programme area, based on birth certificate information.	USA, Norfolk, Virginia	Norfolk Resource Mothers Program is a community outreach programme using resource mothers or lay people, often sharing cultural background with the adolescents, to assist with non-medical dimensions of pregnancy and childcare, including getting ANC and acting as a liaison between the adolescents and public agencies.	Cultural adaptation of maternity care services	ANC
Kaseje et al., 2010	Controlled before and after study	KENYA, Nyanza province	Evidence-based dialogue. A dialogue process among managers, service providers and community representatives using data from the health facilities and the community. Dialogue aims to reach consensus on what needs to be improved, what actions to take, and targets to be achieved before the next dialogue session. Relevant health facility data posted on chalkboards with community-based information. Client satisfaction analysed monthly through use of suggestion boxes and questionnaires. Dialogue sessions held to discuss improvement for the community and health facilities.	Community participation in quality-improvement processes Community participation in programme planning and implementation	FB, ANC
Kaufman et al., 2012	Controlled before and after study	CHINA, Zhenning County, Guizhou Province	The Gender and Health Equity Network (GHEN) set out to address the need for more responsive local health planning for women's health and to increase women's participation in health planning. GHEN provided financing to support services and interventions identified as priorities by the groups. Efforts also made at the household level to improve prevention and care in the home. Links from demonstration household to village to township health promotion groups allowed information on local health to be relayed up the decision-making chain.	Community participation in programme planning and implementation	FB, ANC
Kelly et al., 2010	Retrospective hospital-based cohort	ETHIOPIA, rural	40-bed MWH located within hospital grounds. High-risk women spend last few weeks of pregnancy in MWH. No direct costs to women.	Maternity waiting homes	MM, MB, SB

STUDY	STUDY DESIGN	SETTING	DESCRIPTION OF INTERVENTION	RECOMMENDATION	OUTCOMES OF INTEREST REPORTED
Kildea et al., 2012	A triangulation mixed method approach including mother and infant audit data, and routinely collected data from hospital databases	AUSTRALIA	Murri clinic – an antenatal clinic established in a tertiary hospital to provide antenatal services to Aboriginal and Torres Strait Islander women. Services include an Indigenous midwife and Indigenous liaison officers who helped families feel welcome, provided support for women in rural and remote areas and served as cultural brokers.	Cultural adaptation of maternity care services	ANC
Kumar et al., 2012	Cluster RCT	INDIA, rural Shivgarh, Uttar Pradesh	Intervention package including home visits, community meetings and folk-song meetings, maternal and newborn health stakeholder meetings and meetings for community volunteers. Control clusters received standard care.	BPCR	SBA, C/I, MM, NM
Kunene et al., 2004	Cluster RCT	SOUTH AFRICA, rural and urban	Clinic-based couple counselling (in groups); distribution of educational materials; and upgrading of services at facility.	Male involvement	BF
Larsen et al., 1978	Hospital cross-sectional survey	SOUTH AFRICA, rural	MWH for high-risk women.	Maternity waiting homes	PM
Lungu et al., 2001	Pre and post intervention studies using community-based case controls.	MALAWI, Tengani in Nsanje district	Villages provided with a bicycle ambulance or developed a community transport plan (CTP) in order achieve emergency transfer of women seeking obstetric care from village to nearest maternity unit.	Community-organized transport schemes	Home births
Malhotra et al., 2005	Quasi-experimental	NEPAL, urban and rural sites	Youth-centred participation. An extensive needs assessment was conducted at study sites using triangulated methodologies, followed by action planning with the community to design the programme. At the control sites, a more limited needs assessment was conducted, and based on current knowledge and standard practice in the reproductive health field, a set of three interventions was implemented. At the study sites community members identified a broader set of eight integrated interventions that addressed sexual and reproductive health needs of young people, as well as broader social needs.	Community participation in programme planning and implementation	FB, ANC
Marsiglia et al., 2010	RCT	USA, Phoenix, Arizona	The Familias Sanas intervention was designed to bridge the cultural gap between Latinas and the health care system by using bilingual, bicultural Prenatal Partners who served as cultural brokers, providing ongoing ANC education and support services. They showed participants how to navigate the health system and helped them improve communication with health care providers.	Cultural adaptation of maternity care services	PP

STUDY	STUDY DESIGN	SETTING	DESCRIPTION OF INTERVENTION	RECOMMENDATION	OUTCOMES OF INTEREST REPORTED
Mason, 1990	Case-control	UNITED KINGDOM, Leicestershire, England	The Asian Mother and Baby Campaign was directed towards Asian women. Link workers, able to speak fluent English and at least one Asian language, worked alongside health professionals in the hospital and community setting as facilitators and interpreters while fulfilling an educative role.	Cultural adaptation of maternity care services	ANC
McPherson et al., 2006	One group before and after evaluation	NEPAL, Siraha rural district	Community health workers (CHWs) used a BP package with flip charts and distributed key chains to pregnant women containing BP messages through monthly discussions in women's groups. Facility-based CHWs counselled women who used facility-based services.	BPCR	SBA, C/I
Midhet et al., 2010	Cluster RCT	PAKISTAN, rural, Khuzdar district, Balochistan province	Women and their husbands received pictorial booklets and audio cassettes, training of birth attendants in early recognition of obstetric danger signs, and providing telecommunication and transportation services for women in need of emergency obstetric and neonatal care. The intervention group consisted of a woman's only and a couples group. Additionally, TBAs were trained for clean home delivery and owners of local vehicles were trained for referral. Healthcare providers in intervention and control arms received clinical training.	BPCR Male involvement	FB, C/I, ANC, NM
Millard et al., 1991	Hospital-based cohort study	ZIMBABWE, rural, Kilifi district	A MWH with a two-minute walk from maternity ward. Open to all women.	Maternity waiting homes	MB, NM, PM, SB
Moran et al., 2006	One group before and after evaluation	BURKINA FASO, Koupela	Community and facility-based HCWs and SBAs provided one-on-one counselling with pregnant women and families on key messages focused on BPCR using a flip chart. These messages were reinforced through district-based radio messages and theatre plays. Facilities were upgraded and HCWs were provided with additional training.	BPCR	SBA, FB
Mullany et al., 2007	RCT	NEPAL, Kathmandu	Intervention group consisted of couples and women alone who received health education (two sessions) provided by health educators. The control group received no education, only a brief flyer designed to resemble and standardize the health education of normal care provided.	BPCR Male involvement	SBA, FB, ANC

STUDY	STUDY DESIGN	SETTING	DESCRIPTION OF INTERVENTION	RECOMMENDATION	OUTCOMES OF INTEREST REPORTED
Mullany et al., 2010	A pre and post intervention study (2-stage cluster-sampling surveys before and after programme implementation)	MYANMAR, Shan, Mon, Karen, and Karenni regions	A community-based project, collaboration to improve coverage of maternal health services in vulnerable communities. Strategy of a 3-tiered network of community-based providers: TBAs created links between community member and senior workers, HWs strengthened links between TBAs and lead health workers, and MHWs, who oversaw the work of TBAs and other HWs.	New roles for TBAs	SBA, ANC, PP
Mushi et al., 2010	One group before and after evaluation	TANZANIA, rural, Mtwara region	Training of safe motherhood promoters to educate and raise awareness on maternal health aspects for pregnant women, husbands and community members through home visits. Training of safe motherhood promoters and education interventions at home and in community for pregnant women, their husbands and key community members.	BPCR Male involvement	SBA, FB
Nel et al., 2003	Descriptive study (pre-post comparison)	AUSTRALIA, remote northern and western Queensland	Following consultations with health providers and Aboriginal communities, the programme includes features such as a separate Indigenous medical centre managed by a community board and staffed by Indigenous people, home visits, provision of transportation and the involvement of family in ongoing care.	Cultural adaptation of maternity care services	ANC
Panaretto et al., 2005	Prospective cohort study with a historical control group and a contemporary control group	AUSTRALIA, Townsville, north Queensland	Collaboration with Indigenous communities produced an integrated model of antenatal shared care, delivered from the community-controlled Townsville Aboriginal and Islander Health Service. Strategies included the use of Aboriginal health workers, continuity of care, and a family-friendly environment.	Cultural adaptation of maternity care services	FB, ANC
Panaretto et al., 2007	Prospective cohort study of women attending the trial maternal child health programme compared with a historical control group	AUSTRALIA, Townsville, north Queensland	See Panaretto et al., 2005 (above)	Cultural adaptation of maternity care services	ANC
Pandey et al., 2007	Cluster RCT	INDIA, rural, Uttar Pradesh	Public meetings were held in target villages to disseminate information about entitled health and education services and village governance.	Promotion of awareness of rights	ANC
Parsons et al., 1992	Retrospective study with control group	UNITED KINGDOM, Hackney, East London	The Multi-Ethnic Women's Health Project – a health advocacy programme introduced at a hospital to meet the needs of non-English speaking women. Health advocates interpreted and mediated between service users and professionals to ensure an informed choice of health care.	Cultural adaptation of maternity care services	C/I, ANC

STUDY	STUDY DESIGN	SETTING	DESCRIPTION OF INTERVENTION	RECOMMENDATION	OUTCOMES OF INTEREST REPORTED
Paxman et al., 2005	One group before and after evaluation	INDIA	Local initiatives programme. Community involvement in health care through formation of local committees including influential community members and health volunteers to create partnerships with other agencies and to take responsibility for different activities.	Community participation in programme planning and implementation	ANC
Poovan et al., 1990	Hospital-based cohort study	ETHIOPIA, rural	MWH with 15 beds near hospital delivery unit. Built in the style of a local house. Women accompanied by a relative, supply own food and buy firewood locally. High-risk women asked to come two weeks before due date.	Maternity waiting homes	MM, MB, SB
Purdin et al., 2009	Programme evaluation using health information system/retrospective pre-post analysis	PAKISTAN, Hangu district, Afghan refugee camp	Male involvement interventions relating to safe motherhood, services established, and training provided to different community actors including TBAs to raise awareness of services and reproductive health issues. Outreach and community input. Each refugee camp has a health committee with community representatives and health service staff that meet bi-monthly to discuss project activities and provide feedback to health workers on health services provided. Basic emergency obstetric care facilities, community-based education provided to key community representatives including CHWs, female health workers, women of reproductive age, men, health committee members (all men), teachers, religious leaders and private practitioners.	New roles for TBAs Community participation in programme planning and implementation Community participation in quality-improvement processes Male involvement	FB, ANC, PP
Ronsmans et al., 2001	A pre and post intervention study, including mixed methods	INDONESIA, three districts in South Kalimantan	A midwife placed in each village and at least one doctor with obstetric skills in each district. Financial access was facilitated for the poor. Village midwives were encouraged to work side by side with TBAs. TBAs supported to refer women with a complication and to work in collaboration with village midwives.	New roles for TBAs	SBA
Sahip et al., 2007	Cohort analytic study	TURKEY, urban, large workplaces (>1000 employees) in Istanbul	Workplace-based education programme for expectant fathers, run by trained workplace physicians.	Male involvement	BF, PP
Simonet et al., 2009	A geocoding-based retrospective birth cohort study	CANADA, remote Nunavik	Midwife-led maternity care was conducted primarily in the Inuit language whereas physician-led care was conducted primarily in French and English.	Cultural adaptation of maternity care services	NM, PM, SB

STUDY	STUDY DESIGN	SETTING	DESCRIPTION OF INTERVENTION	RECOMMENDATION	OUTCOMES OF INTEREST REPORTED
Sinha, 2008	One group before and after evaluation	INDIA, rural, Andhra Pradesh, Rangareddy district	Village meeting and community activities were held to increase demand for quality pregnancy-related services. The intervention involved awareness raising and community support for pregnant women through local government and youth committees; involvement of their families (particularly husbands) in pregnancy-related care through monthly meetings; and bi-monthly home visits by a community organizer who worked with families to create a birth preparedness plan and support access to care A system was established whereby the local government (gram panchayat) members held regular meetings to review performance of public health providers and facilities. Representatives of local organizations were invited to attend, and the activities of each institution were reviewed at the meeting.	BPCR Male involvement Promotion of awareness of rights Community participation in quality-improvement processes	FB, ANC
Skinner et al., 2009	Qualitative	CAMBODIA, Kampong Chhnang	Dissemination and discussion of visual aids on danger signs and BP with families and communities.	BPCR	SBA
Sood et al., 2004	Pre and post comparative study with a control group	INDONESIA, West Java	Social mobilization campaigns. The Suami SIAGA (alert husband) campaign delivered through the following mass media campaigns: The Warga SIAGA encouraged community members to be alert and prepared for births within the community. The Bidan SIAGA promoted the midwife as preferred maternal healthcare provider. The Desa SIAGA campaign encouraged villages to establish lifesaving systems for women with obstetric emergencies.	BPCR Community participation in programme planning and implementation Community-organized transport schemes Male involvement	SBA, FB, ANC
Sood et al., 2004	One group before and after evaluation	NEPAL, rural, districts of Bagalung and Lalitpur	Social mobilization campaigns. SUMATA was a multi-media behavioural change strategy that addressed husbands and mothers-in- law.	BPCR Male involvement	SBA, FB, ANC
Spaans et al., 1998	Community-based cohort study	ZIMBABWE, Mberengwa district	MWHs established on premises of 4 of the 5 hospitals in district and cover 22 clinics offering maternity services. Any users of services could stay free of charge.	Maternity waiting homes	FB, MM, MB, PM
Thompson et al., 1998	Retrospective study with control group	USA, rural Oregon	The Rural Oregon Minority Prenatal Program blended culturally appropriate care with outreach by using bilingual and bicultural workers with strong links to their Mexican heritage, nursing case management and home visitation to facilitate access to ANC and community services.	Cultural adaptation of maternity care services	C/I, ANC

STUDY	STUDY DESIGN	SETTING	DESCRIPTION OF INTERVENTION	RECOMMENDATION	OUTCOMES OF INTEREST REPORTED
Tumwine et al., 1996	Hospital-based cohort study	ZIMBABWE, rural, Chimanimani district	MWH is close to the hospital and is free of charge. It is a simple house with shared rooms, toilet and shower. Firewood and water are provided and women supply their own food and utensils. Women stay during the last month of gestation but are transferred to hospital if complications develop or labour begins.	Maternity waiting homes	MM, NM, PM, SB
Turan et al., 2011	Quasi-experimental pre and post study with non-equivalent control group	ERITREA, one district in the Red zone and another in the Anseba zone	Training of community members (women and men) to become maternal health volunteers and lead participatory education sessions making use of materials developed. Skills training for health care providers was also conducted.	BPCR Male involvement	FB
UNICEF, 2008	Case study	INDIA, rural	A detailed verbal autopsy questionnaire captures missing links in officially recorded data so as to reconstruct the sequence of events and pinpoint the exact cause of a maternal death. The Maternal and Perinatal Death Inquiry and Response (MAPEDIR) initiative sensitizes communities and health officials to issues concerning maternal health and galvanizes them into taking long-term action to reduce maternal deaths.	Community participation in MDSR	
van den Heuvel et al., 1999	Household-level cross-sectional survey	ZIMBABWE, rural, Gutu district	No intervention description. Local policy that a hospital birth is indicated when a risk factor is present before or during pregnancy.	Maternity waiting homes	SBA, FB
van Lonkhuijzen et al., 2003	Hospital-based cohort study	ZAMBIA, rural, Eastern Province	MWH next to maternity ward. Small building accommodates 10-15 women. Women with high-risk pregnancies were referred during the last weeks of pregnancy. Hospital provides food for women at MWH. Hospital charges US$ 3 for those who stay in MWH versus US$ 6 for those who do not stay in MWH. ANC and health education also provided.	Maternity waiting homes	MM, MB, PM
Varkey et al., 2004	Non-equivalent control group study	INDIA, urban, New Delhi	These included couples counselling, women-only counselling (in groups or individually), and men-only counselling (in groups or individually).	Male involvement	BF, C/I
Wild et al., 2012	Hospital-based before and after study	TIMOR-LESTE, rural, in Lautern east of country and in Manuhafi in south	Small MWHs next to facility. There is no kitchen or space for family to sleep. All women stay together in a large room with food provided. All women who gave birth in the facility used the MWH. Childbirth facilities moved to MWH. Women informed about MWHs at mobile clinics and during ANC visits.	Maternity waiting homes	FB
Yadamsuren et al., 2010	Data from vital registration system	MONGOLIA	MWH implemented as one intervention in a broader safe motherhood programme.	Maternity waiting homes	MM

This report summarizes the final recommendations and the process for developing the guideline on the effectiveness of health promotion interventions for maternal and newborn health.

Department of Maternal, Newborn, Child and Adolescent Health
World Health Organization
20 avenue Appia
1211 Geneva 27, Switzerland
E-mail: mncah@who.int
www.who.int/maternal_child_adolescent/en/

World Health Organization

ISBN 978 92 4 150874 2