THE EFFECTIVENESS OF COMMUNITY ENGAGEMENT AND PARTICIPATION APPROACHES IN LOW AND MIDDLE INCOME COUNTRIES: A REVIEW OF SYSTEMATIC REVIEWS WITH PARTICULAR REFERENCE TO THE COUNTRIES OF SOUTH ASIA

An Evidence Summary, December 2017

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Conflicts of interest

There were no conflicts of interest in the writing of this report.

Use of maps

Maps used in this report serve a purely descriptive purpose. The representation of political boundaries in the maps do not necessarily reflect the position of the Government of UK.

Contributions

The opinions expressed in this publication are not necessarily those of the UK Department for International Development, PwC, and the EPPI-Centre. Responsibility for the views expressed remains solely with the authors.

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Picture

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SYSTEMATIC REVIEW SUMMARY

Community engagement and participation approaches continue to be viewed as important, particularly in low resource settings.

Drawing on the general trend in the evidence identified, community engagement and participation approaches have played a role in successful intervention delivery across health system domains and areas of health.

ABOUT THIS SUMMARY

The effectiveness of community engagement and participation approaches in low and middle income countries: a review of systematic reviews with particular reference to the countries of South Asia.

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The aim was to identify, analyse and summarise the findings of existing systematic reviews that have examined the effectiveness of community engagement/participation approaches in improving health, service delivery and sustainability outcomes. The overarching research question of interest was:

How effective are community engagement/participation approaches for delivering better health outcomes, improving service delivery and sustaining benefits?

The following sub- questions were also addressed: (i) What are the different ways that communities in low and middle income countries (LMICs) have engaged or participated in the delivery of health-related interventions or programmes? (ii) In LMICs, which community engagement/participation approaches are associated with improved outcomes? (iii) What are the barriers and enablers of community engagement/participation approaches in delivering better outcome?; and (iv) For which areas of health or health concerns do community engagement/participation approaches work best?

This brief is designed to provide an overview of the key evidence discussed in the evidence summary, to assist policy-makers and researchers in assessing the evidence in this field. The evidence is deeply contextual and this brief provides a broad overview. It is not designed to provide advice on which interventions are more or less appropriate in particular contexts but summarise what is known in response to a question.

SUMMARY

Systematic review methods were used to identify a total of 31 systematic reviews which examined community engagement/participation approaches in improving health (maternal and child health, infectious or communicable diseases, 'other' disease areas), service delivery and sustainability outcomes. There was a wide variation in the aims and objectives, and methods of analysis across the included systematic reviews. In part, this reflected a lack of a standard definition or terminology in how community engagement and participation approaches were described or characterised. The overall strength of the systematic review-level evidence has been categorised as of limited or moderate, however many systematic reviews reported consistent findings.

Community engagement and participation approaches continue to be viewed as important, particularly in LMICs. The general trend in the evidence identified suggests that community engagement and participation approaches have played a role in successful intervention delivery across health system domains and areas of health. However the extent to which community ownership and empowerment is achieved greatly impacts on the sustainability of these approaches and our evidence draws out some key factors for consideration in the delivery of successful community engagement and participation.

APPROACH

Evidence summary comprising an overview of existing systematic reviews based on standard systematic review methodology involving comprehensive literature searching, study selection, data extraction, quality assessment and narrative synthesis.

SUMMARY MAP OF EVIDENCE

The summary table below shows the number of systematic reviews identified which report on health-related effectiveness outcomes. The evidence presented here is classified as 'consistent' if the findings of the systematic reviews suggest similar results, and 'inconsistent' if the results presented across the reviews are dissimilar. The overall strength of evidence is based on the relative size and consistency of each grouping (how many reviews were found, were the results consistent), and evidence is then rated as 'strong', 'moderate', or 'limited'.

With the exception of 'reduction in HIV/STI prevalence' and 'increased tuberculosis preventative treatment completion' each outcome was reported across more than one systematic review. The outcome 'reduction in neonatal mortality' was reported across five

systematic reviews. The consistency of the evidence identified was mainly 'consistent' across the majority of health-related effectiveness outcomes, however, the overall strength of the evidence was 'moderate' or 'limited'. The evidence was 'inconsistent' for the outcomes of 'reduction in maternal mortality' and 'increase in improved care seeking', with the overall strength of the evidence considered as only 'moderate' or 'limited', respectively. The overall strength of the evidence was considered as 'strong' and 'consistent' for just one outcome, 'reduction in neonatal mortality'.

Outcome	Number of systematic reviews	Consistency of review-level findings	Overall strength of evidence
Maternal and child health			
Reduction in maternal mortality	n=3	Inconsistent	Moderate
Reduction in neonatal mortality	n=5	Consistent	Strong
Reduction in early neonatal mortality	n=2	Consistent	Moderate
Reduction in perinatal mortality	n=3	Consistent	Moderate
Reduction in stillbirths	n=3	Consistent	Moderate
Increase in improved care seeking	n=3	Inconsistent	Limited
Infectious or communicable diseases			
Increase in condom use	n=2	Consistent	Moderate
Reduction in HIV/STI prevalence	n=1	Consistent	Limited
Increased tuberculosis treatment success	n=2	Consistent	Limited
Increased tuberculosis preventative treatment completion	n=1	Consistent	Limited

OUTLINE OF EVIDENCE

KEY EVIDENCE FOR HEALTH OUTCOMES

Results suggest that there may be reductions in maternal mortality, neonatal mortality, early neonatal mortality, perinatal mortality, and stillbirths, and that there could be an association with improved care seeking for childhood illnesses. Findings suggest that there could be an increase in condom use among sex workers, but there is insufficient evidence to draw conclusions relating to HIV/STI prevalence. Results also suggest that there may be a small increase in the effectiveness of treatment linked to the involvement of community health workers.

HOW EFFECTIVE ARE COMMUNITY ENGAGEMENT/PARTICIPATION APPROACHES FOR DELIVERING BETTER HEALTH OUTCOMES?

Maternal and child health	
Strong evidence	Evidence from five systematic reviews suggests that various community engagement/participation approaches, such as training of outreach workers, community mobilisation, community health worker interventions, women's groups, and community based behavioural change communication interventions, are associated with statistically significant reductions in neonatal mortality compared to usual care.
Moderate evidence	Evidence from three systematic reviews suggests that there is no statistically significant difference in maternal mortality arising from the training of outreach workers, community mobilisation, and women's groups compared to standard or usual care. However, statistically significant reductions in maternal mortality may be achieved through women's groups when a high proportion of women are engaged. Findings from two systematic reviews suggest that community mobilisation strategies and community based behavioural change communication interventions could significantly reduce rates of early neonatal mortality. Evidence from three systematic reviews suggests that approaches such as training of outreach workers and community mobilisation may be associated with statistically significant reductions in perinatal mortality. Findings from two systematic reviews suggest a statistically significant reduction in stillbirths associated with training of outreach workers, community mobilisation.
Limited evidence	Results from one systematic review suggests that community mobilisation does not impact on maternal health seeking. However, findings from two further reviews suggest there may be statistically significant increases in care seeking for neonatal and childhood illnesses following involvement in community participation/engagement approaches.

Infectious or communicable diseases	
Strong	None of the evidence identified for outcomes relating to infectious or communicable diseases was considered to be strong.
Moderate	Results from two systematic reviews suggest that there may be statistically significant increases in condom use among sex workers associated with community based empowerment approaches, and some evidence to suggest that there may be significantly increased condom use among men who have sex with men who are exposed to community mobilisation approaches.
Limited	Evidence from one systematic review is insufficient to determine the impact of community mobilisation on HIV and STI prevalence among men who have sex with men, young people, and for targeted groups within communities and geographically-bound communities. Two systematic reviews whose primary studies overlapped significantly present evidence to suggest community health worker interventions may be associated with increased treatment success for tuberculosis. Although a statistically significant effect was reported in only one of these systematic reviews. Evidence from one systematic review suggests that community health worker support had little effect on preventative treatment completion for tuberculosis.

KEY EVIDENCE FOR SUSTAINABILITY

Findings from systematic reviews examining the sustainability of community participation approaches identified several themes which are key to successful outcomes: social and cultural norms and perceptions, incentives, gender roles and power relationships, community characteristics, consideration of local priorities, the process by which communities are engaged to participate, government advocacy and support, health system integration, political environment, and locally embedded development agencies. The Table below summarises the key findings from 10 systematic reviews which report on sustainability outcomes.

HOW EFFECTIVE ARE COMMUNITY ENGAGEMENT/PARTICIPATION APPROACHES FOR SUSTAINING BENEFITS?

Theme	Context	Action
Social and cultural norms, knowledge and perceptions	Five systematic reviews; knowledge and perceptions were key influences on individual participation; low levels of education and knowledge can be barriers to participation; important role for health education.	Investigate social and cultural norms, knowledge and perceptions, and use the findings to inform culturally appropriate behaviour change communication as the foundation of community participation and engagement. Consider how to address varying levels of health education needs.
Incentives	Four systematic reviews; not enough pay or lack of incentives may be a barrier; may be diversity of cultures, needs and motivators across communities; need for incentives to be seen as consistent and predictable, and appropriate and fair.	Design locally viable economic or non-monetary incentive systems in partnership with communities and ensure they are culturally appropriate, consistent and fair. (See also *Financial and human resources*)
Gender roles and power relationships	Six systematic reviews; female involvement as community health workers may be an enabling factor in relation to service uptake; greater consideration should be given to women's capacity to act as community health workers.	Give specific consideration to the local factors that may facilitate or hinder the participation and engagement of women and those from marginalised groups.
Community characteristics	Five systematic reviews; need to take account of issues related to economic status, assessibility issues (including issues related to user fees), and rural vs. urban	Programmes should be tailored to geographical, socio-cultural and health system issues and tailored to suit urban and rural contexts.

	implementation; community characteristics can influence whether adequate participation and engagement is achieved.	
Consideration of local priorities	One systematic review; need for consideration of issues related to health, development and economic significance, enhancing 'community fit'.	Identify community needs and priorities and consider how community engagement and participation responds to these priorities.
Process by which communities are engaged to participate	Seven systematic reviews; need for community mobilisation in support of participation and engagement; local recruitment of community health workers and ensuring selection represented the community can lead to better positioning in communities; level at which decision-making occurs may influence community participation and engagement efforts.	Consider how to achieve a balance between centralised and decentralised responsibilities that harness grassroots knowledge and incorporate locally derived strategies for community engagement and participation. Use locally appropriate volunteer selection and recruitment processes. Ensure inclusive selection that reflects the characteristics of the beneficiary community. Consider how communities can be involved in selection processes.
Government advocacy and support	Four systematic reviews; supportive policy making and political commitment is key to legitimising community participation programmes.	Secure government advocacy and support for community engagement and participation.
Health system integration	Three systematic reviews; being closely integrated or embedded in the health system was an enabling factor for community health workers; relationships between health committees, health workers and the health management systems important for achieving sustainability.	Integrate or embed approaches within the broader health system to support community engagement and participation.
Financial and human resources	Six systematic reviews; need for provision of training and consistent and supportive supervision; for community health workers, the provision of intensive training that was relevant, sufficient and of high quality was important.	Ensure adequate training and supervision is available for volunteers and staff at all levels. Provide commitment to longer term capacity building. Ensure financial and human resources are available to build managerial, organisational and technical capacity at the community level.
Political environment	Four systematic reviews; political environment needs to be	Ensure the design of frameworks for community engagement and

	considered in the design of programmes; local factors may influence or condition the nature of community participation.	participation take into account the characteristics of the political environment and of regional approaches to community participation.
Locally embedded development agencies	Three systematic reviews; although not without challenges, involvement of non-governmental organisations (NGOs) in community participation can be beneficial and in some circumstances may be essential.	Embedded NGOs should be engaged to contribute resources to support community engagement and participation.

WHAT ARE THE DIFFERENT WAYS THAT COMMUNITIES IN LMICS HAVE ENGAGED OR PARTICIPATED IN THE DELIVERY OF HEALTH-RELATED INTERVENTIONS OR PROGRAMMES?

The included systematic reviews reported a range of ways in which communities in LMICs have engaged or participated in the delivery of health-related interventions, which include the following:

- Use of community health workers, lay health workers, and traditional birth attendants
- Women's groups
- Participatory learning and action
- Use of volunteers/peers
- Use of local leaders
- Involvement of family members

IN LMICS, WHICH COMMUNITY ENGAGEMENT/PARTICIPATION APPROACHES ARE ASSOCIATED WITH IMPROVED OUTCOMES?

Although many of the included systematic reviews reported improved outcomes, the overall strength of the evidence was mainly moderate or limited and therefore the results should be considered with caution. For maternal and child health, approaches associated with improved outcomes include women's groups, community mobilisation approaches, training of outreach workers and the use of home visits by community health workers. For infectious and communicable diseases, approaches including community empowerment responses and use of community health workers were associated with improved outcomes. Due to the lack of detailed reporting of interventions in the included systematic reviews, and the heterogeneous nature of the evidence it is difficult to interpret these findings and analyse with certainty why some approaches are potentially linked with improved outcomes.

What are the barriers and enablers of community engagement/participation approaches in delivering better outcome?

The included systematic reviews revealed a number of barriers and enablers of community engagement/participation approaches in delivering better outcomes, including:

- Barriers: low levels of education and knowledge level among target communities; not enough pay or incentives; social hierarchies of target communities
- Enablers: community fit; female involvement as community health workers; being closely integrated or embedded in the health system; government support

FOR WHICH AREAS OF HEALTH OR HEALTH CONCERNS DO COMMUNITY ENGAGEMENT/PARTICIPATION APPROACHES WORK BEST?

The strongest evidence identified across the included systematic reviews related to improved outcomes in the area of maternal and child health.

RESEARCH GAPS

Although the review of systematic reviews identified 31 systematic reviews which report on a variety of community participation and engagement approaches in LMICs, there are gaps in the research. There is a lack of research on the role of community engagement and participation approaches used in health areas other than maternal and child health, and in relation to infectious or communicable diseases. To address these gaps, further research is required to understand the role of community engagement in addressing non-communicable disease and injuries in LMICs.

POLICY IMPLICATIONS

The table below summarises policy implications relating to the country contexts of South Asia and Nepal. Policy implications were drawn from a contextual analysis of the Rapid Evidence Assessment and input from Advisory Group members with expertise and knowledge relating to South Asia and particularly Nepal (see Pilkington et al., 2017). Through this process it was identified that the evidence relating to maternal and child health is most relevant to communities in South Asia and Nepal. To ensure the findings are put into practice, non-governmental organisations and their local partners, community members and their representatives are required to take action and enable policy options to be optimised. The following key messages outline the potential policy implications and options that could lead to successful and sustainable community engagement and participation approaches to improving health outcomes. Note that any action taken should consider the socio-cultural, political and religious context of the particular setting.

Policy area	Policy implication(s)
Volunteer related	
Incentives	➢ Volunteers are often poor women who are already overburdened. Research is necessary to find a suitable model in order for volunteers to maintain and sustain community engagement activities. ➢ Design locally viable economic or non-monetary incentive systems in partnership with communities and ensure they are culturally appropriate, consistent and fair. It is important to consider that community health workers may not get paid (as is the case in Nepal) and require incentives to support their daily livelihood. ➢ Good performance of community workers in Asian countries is associated with intervention designs involving a mix of financial and non-financial enticements like provision of incentives, regular supervision, repeated trainings, and strong coordination and communication between community workers and health professionals.
Training and performance	➢ Certain potential facilitating factors of community health workers such as higher education, experience with health conditions to be dealt with, and availability of training has also been shown to improve the health outcomes in South Asia. ➢ Additional factors associated to enhance performance of the community workers in this region are provision of incentives, longer service delivery times, and good co-ordination with other health staff.
Infrastructure	
Government/NGO involvement	➢ To augment support to community engagement and participation approaches in South Asian countries; policies are advocated to limit competition from other service providers like unlicensed pharmacies. Also; funding mechanisms backed by multiple parties (e.g., community, local government, central government) should be developed to lessen dependence on a single funding source. ➢ Secure government advocacy and support for community engagement and participation. ➢ Embedded NGOs should be engaged to contribute resources to support community engagement and participation. In Nepal, the presence of several NGOs and third sector involvement in the mobilisation of community health workers means that coordination is necessary for effective community engagement and participation
Public involvement	➢ To improve the delivery of health services in South Asian countries, strengthening direct involvement of the public, citizens or users should be supported. Also; involvement of NGOs, leaders and local respectable and acceptable people from the community should be promoted. ➢ Assist communities to identify and prioritize their own health concerns. Ensure they are actively involved in all stages of programme planning and implementation (i.e. a 'bottom up' approach). ➢ Use locally appropriate volunteer selection and recruitment processes. Ensure inclusive selection that reflects the characteristics of the beneficiary community. Consider how communities can be involved in selection processes.
Sustainability	➢ Policy-makers, practitioners, and researchers seeking to scale-up and sustain programs through community engagements and

	participation approaches should foster programs that are acceptable to the particular communities served and should amalgamate the program with the larger political, economic, and health system environment. There is a need to develop criteria for identifying cases of scale-up, sustainability, and success of health programs through community engagements and participation in Nepal and other South Asian countries. ➢ Actions should be as specific as possible, and be devised on a case-by-case basis covering policy and planning; service management and delivery; and research priorities. Policy-makers and program managers should be flexible to adapt to changing environments and restraints throughout the development, implementation and ongoing management of programs involving community participation approaches and should regulate health programmes, taking the precise context of the situation in which programmes are to be implemented. ➢ Ensure financial and human resources are available to build managerial, organisational and technical capacity at the community level. Implementation of active community engagement and participation can be challenging and requires resources. ➢ Investigate social and cultural norms, knowledge and perceptions, and use the findings to inform culturally appropriate behaviour change communication as the foundation of community engagement and participation. Consider how to address varying levels of health education needs. ➢ Investigate social and cultural norms, knowledge and perceptions, and use the findings to inform culturally appropriate behaviour change communication as the foundation of community engagement and participation. Consider how to address varying levels of health education needs.
Barriers	➢ Give specific consideration to the local factors that may hinder the engagement and participation of women and those from marginalised groups.

BACKGROUND

This review of systematic reviews has been conducted in response to a call for an evidence summary on community engagement/participation approaches to health programmes by the South Asia Research Hub (SARH), Department for International Development (DFID). This report describes the findings of relevant systematic reviews suited to answering the following research question:

How effective are community engagement/participation approaches for delivering better health outcomes, improving service delivery and sustaining benefits?

COMMUNITY ENGAGEMENT & PARTICIPATION IN HEALTH CARE IN LOW AND MIDDLE INCOME COUNTRIES

Participation of community members in health care is not new (Rifkin, 2014) with many tracing its emergence to the declaration of Alma-Ata in 1978 and earlier (Farnsworth et al., 2014, Rifkin, 2014, Rosato et al., 2008). At a global policy level, community engagement and participation continues to be viewed as important for health improvement and is commonly recommended in international conferences and charters, for example in the World Health Organiazation (WHO) Rio Political Declaration on Social Determinants of Health (World Health Organization, 2011). Community engagement can be considered the 'direct or indirect process of involving communities in decision-making and/or in the planning, design, governance, and delivery of services using methods of consultation, collaboration, and/or community control' (O'Mara-Eves et al., 2013). Different approaches include for example: providing health education through materials, meetings and outreach visits, provision of incentives using community structures, mobilising human resources, involvement of local opinion leaders and spreading messages through mass media (Adhikari et al., 2016, Atkinson et al., 2011, Heintze et al., 2007).

As many low and middle income countries (LMICs) suffered from critical shortages of skilled human resources for health, the WHO considered community participation as an approach to improve access to basic healthcare services for poor populations (World Health Organization, 1979, World Health Organization, 1989). One of the techniques to enhance community participation was through the training and mobilisation of community health workers – usually lay health workers with shorter training (World Health Organization, 2007, p.2). For example, community health workers were widely trained and mobilised in South Asia after the Declaration of Alma Ata in 1978 (Hossain et al., 2004). Community health workers are exclusively assigned to link communities with the health system, playing a role in improving the reach of health systems to hard-to-reach and marginalised groups (McCollum et al., 2016). Because of their ability to reach community members at relatively low cost, community health workers have been proposed and deployed as a means for achieving a wide range of disease prevention and health system strengthening objectives in LMICs (Pallas et al., 2013).

Community participation is a complex social process that is situation specific. What works in one community should not be expected to work in the same way or with the same effect elsewhere

(McCoy et al., 2012). Therefore, it is important to understand the process by which interventions were successful and the context in which these practices took place (McCoy et al., 2012).

DEFINITIONS AND CONCEPTUAL ISSUES

DEFINITION OF COMMUNITY ENGAGEMENT/PARTICIPATION

Researchers have noted that there is no standard definition of 'community' and 'participation'; and therefore Rifkin (2014) argues that community participation is better understood as a process. We therefore drew on the definition of community engagement or participation approaches as those that "decentralise decision-making by including participation of communities in project design, development, contractor selection, project management and supervision". We also drew on the WHO Study Group definition of community involvement in health: "a process whereby people, both individually and in groups, exercise their right to play an active and direct role in the development of appropriate health services."

CONCEPTUAL ISSUES

Although community engagement/participation approaches imply a shift away from "top down" (government only) programme planning and implementation, Atkinson et al. (2011) have described two conceptually different approaches to community participation: (i) the horizontal or 'bottom-up' approach; and (ii) the vertical or 'top-down' approach. In a 'bottom-up' approach communities are assisted to identify and prioritise their own health concerns; also termed the 'empowerment' model. A 'top-down' approach entails centralised development of objectives and action plans following a more 'utilitarian' perspective (termed 'induced participation' by Mansuri & Rao). Draper et al. (2010) suggest that "there are tensions between these differing concepts of and rationales for participation that in part derive from contrasting ideological and political values and also concepts of citizenship". Draper et al. (2010) further note that a key source of tension is the extent to which power is or should be devolved to community members. Consequently, community engagement and participation has been considered to operate at different levels, often represented by a continuum or a 'ladder' (Figure 1) that represents the increasing level of engagement that participants have in the programme ranging from information sharing to full responsibility and ownership (Farnsworth et al., 2014, Rifkin, 2014, Rosato et al., 2008).

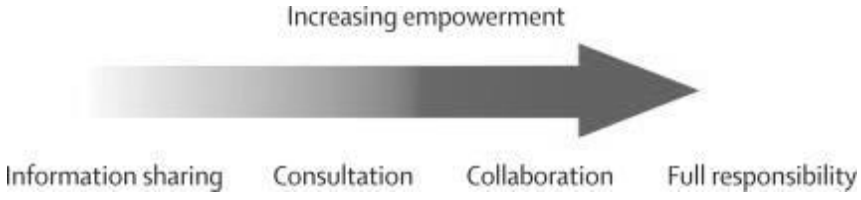

Figure 1. From passive to active community participation

CONCEPTUAL FRAMEWORK

A range of frameworks have been used to describe and assess community participation (e.g. Draper et al., 2010, Farnsworth et al., 2014, Molyneux et al., 2012). We primarily adapted the example provided by (Molyneux et al., 2012) to develop our own conceptual framework to guide the review and contextualisation of the evidence (Figure 2).

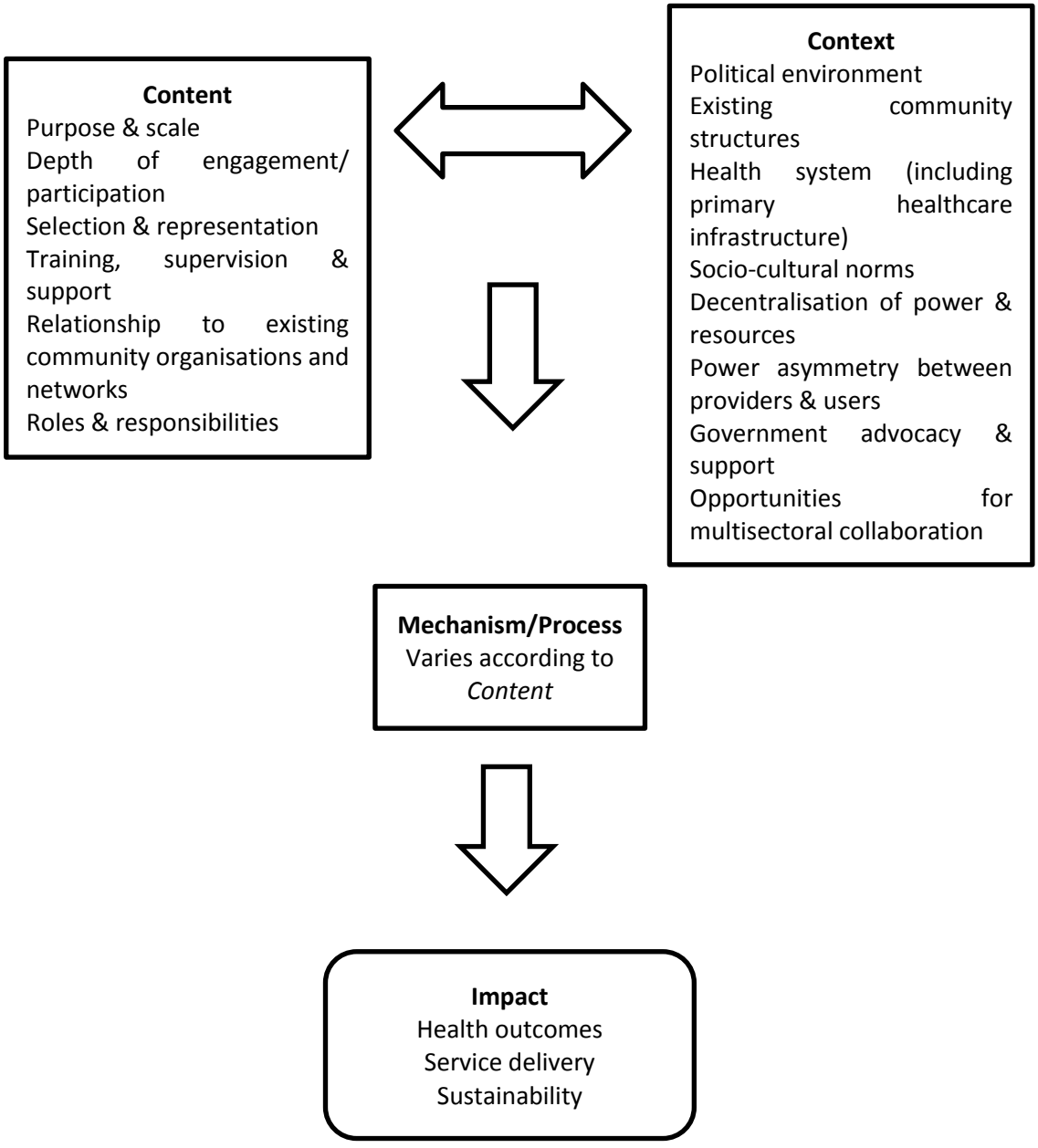

Figure 2. Pathway from community engagement/participation to impact

METHODS

This section focuses on the methods used to select, appraise and synthesise the relevant literature to address the research objectives.

OBJECTIVES

The objectives of the research were to identify, analyse and summarise the findings of existing systematic reviews that have examined the effectiveness of community engagement/participation approaches in improving health, service delivery and sustainability outcomes. The overarching research question of interest was:

1. *How effective are community engagement/participation approaches for delivering better health outcomes, improving service delivery and sustaining benefits?*

The following sub- questions were also addressed:

a. *What are the different ways that communities in low and middle income countries have engaged or participated in the delivery of health-related interventions or programmes?*

b. *In low and middle income countries, which community engagement/participation approaches are associated with (a) improved health outcomes; (b) improved service delivery outcomes; (c) improved sustainability outcomes? How do these approaches lead to improved outcomes?*

c. *What are the barriers and enablers of community engagement/participation approaches in delivering better health outcomes, improving service delivery and sustaining benefits?*

d. *For which areas of health or health concerns[1] do community engagement/participation approaches work best?*

SEARCH STRATEGY

A comprehensive search strategy was developed for each database using keywords and Medical Subject Headings (MeSH) terms combined with appropriate search filters to identify relevant evidence. While no language or date filters were applied, search filters were used to identify research conducted in LMICs and to identify systematic reviews. The search strategy and sources of evidence searched are provided in Appendices 1 and 2. Search results were compiled and held in EndNote®

[1] For example: HIV prevention; communicable disease control; maternal and newborn health.

reference management software, then uploaded to the EPPI-Reviewer review management software for study selection.

STUDY SELECTION

Studies were assessed for inclusion using EPPI-Reviewer through two stages: first, titles and abstracts were independently screened by three reviewers (GP, LJ, SP) to identify potentially relevant articles for inclusion. Second, full-text articles were screened for inclusion by three reviewers (GP, LJ, SP) using the criteria outlined in Appendix 3. Disagreements were resolved through consensus.

DATA EXTRACTION AND QUALITY ASSESSMENT

Data from included systematic reviews were extracted into pre-defined tables by one of four reviewers (GP, LJ, SP, MNK). Data was extracted into predefined data extraction tables, shown in Appendix 4. Data were checked for accuracy by a second reviewer.

The quality of included systematic reviews was assessed using the validated AMSTAR tool (Shea et al., 2007) which is presented in Appendix 5. A second reviewer checked 20% of the assessments for accuracy and to check levels of agreement, the remainder were assessed by one reviewer (GP, LJ, SP).

METHODS OF SYNTHESIS

A narrative synthesis of the data was conducted overall. Synthesis of the available evidence was conducted across multiple stages and included the following steps: (i) identifying patterns in the data through tabulation; (ii) preliminary synthesis of data; (iii) checking the robustness of the synthesis by checking for logic and consistency; and (iv) finalising the synthesis. To provide a consistent presentation format (which summarises findings, and reflects the consistency and strength of the evidence) we developed a format for the representation of key evidence using evidence summary profiles adapted from the GRADE system (Guyatt et al., 2011).

RESULTS OF THE LITERATURE SEARCH

In total 5,037 references were identified through electronic database searches. After deduplication there were 3,133 references which were uploaded to EPPI-Reviewer for screening. A total of 31 full-text articles were included in this review of systematic reviews, as shown in Figure 3. A comprehensive list of full-text articles excluded is available in Appendix 6.

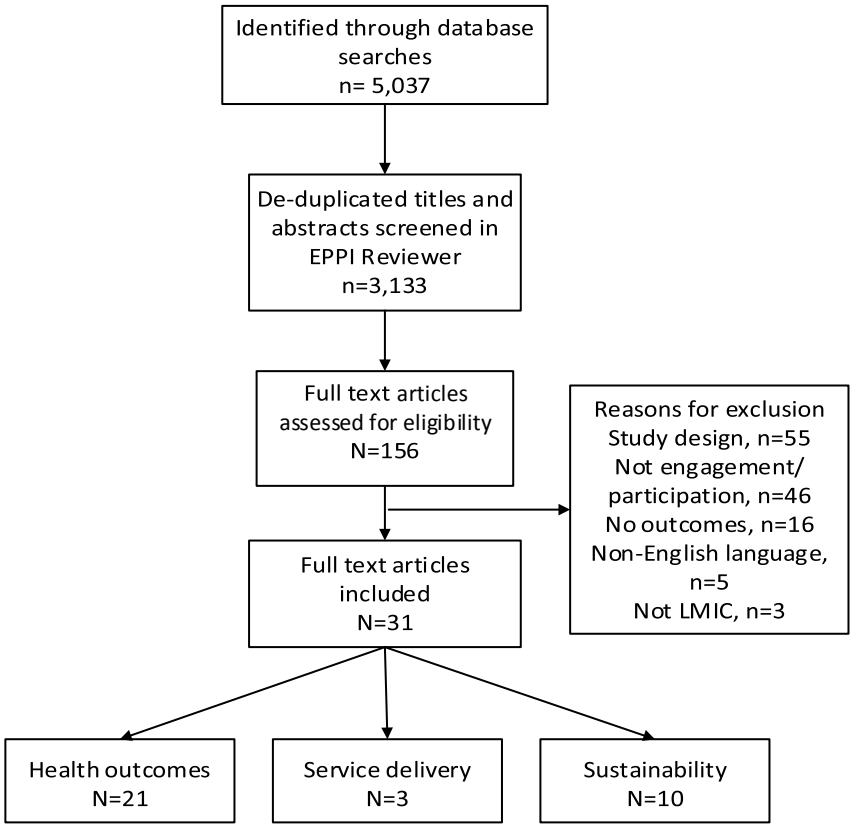

Figure 3. Flow diagram of included studies

RESULTS

We identified 31 systematic reviews which examined the effectiveness of community engagement/participation approaches in improving health, service delivery and sustainability outcomes (Atkinson et al., 2011, Cornish et al., 2014, George et al., 2015a, Glenton et al., 2013, Hopkins et al., 2007, Kane et al., 2010, Kerrigan et al., 2013, Kerrigan et al., 2015, Kok et al., 2015a, Kraft et al., 2014, Lassi et al., 2010, Lassi et al., 2016a, Lassi et al., 2016b, Lee et al., 2009, Lewin et al., 2010, Lodenstein et al., 2017, Marston et al., 2013, McCollum et al., 2016, McCoy et al., 2012, Molyneux et al., 2012, Musa et al., 2014, Pallas et al., 2013, Prost et al., 2013, Schiavo et al., 2014, Schiffman et al., 2010, Semrau et al., 2016, Spangaro et al., 2013, Tilahun and Birhanu, 2011, Tripathi et al., 2016, Wekesah et al., 2016, Winch et al., 2005). The quality of the systematic reviews was assessed using AMSTAR (Shea et al., 2007), the results are presented in Appendix 7. Reporting of methods was often infrequent across the included systematic reviews; 13 of the included systematic reviews were rated as low quality (score 0-5), 12 systematic reviews were rated as moderate (score 6-8), and only six systematic reviews included in this review were rated as high quality (score 9-11).

Appendix 8 details a summary of the characteristics of the included reviews; it should be noted that reporting of study characteristics or study populations and locations was inconsistent across the included reviews. The included systematic reviews varied in terms of approach to and definition of community participation, study populations, the number of primary studies included, the type of primary study included, and approaches to analysis at the meta-level. Although systematic reviews were only included in this review if they explicitly included primary studies conducted in LMICs, this was poorly reported, and the locations of primary studies are often unclear. A number of systematic reviews included primary studies conducted in both LMICs and high income countries (HICs) (Glenton et al., 2013, Lassi et al., 2010, Lewin et al., 2010, Semrau et al., 2016). It should also be noted that there was an element of overlap in terms of systematic reviews including the same primary studies.

In order to make sense of the included studies, we categorised them firstly based on type of outcome reported (improving health outcomes and service delivery, and sustainability), then further categorised the systematic reviews which focused on health outcomes into maternal and child health, infectious or communicable diseases, and those which could not be neatly categorised into a tangible domain and were labelled as 'other'. In totoal, 24 systematic reviews reported outcomes relating to improving health outcomes and service delivery, and 10 systematic reviews reported outcomes relating to sustainability.

HOW EFFECTIVE ARE COMMUNITY ENGAGEMENT/PARTICIPATION APPROACHES FOR DELIVERING BETTER HEALTH OUTCOMES AND IMPROVING SERVICE DELIVERY?

This section reports the findings from 21 included systematic reviews which relate to health outcomes and service delivery (Cornish et al., 2014, Hopkins et al., 2007, Kerrigan et al., 2013, Kerrigan et al., 2015, Kraft et al., 2014, Lassi et al., 2010, Lassi et al., 2016a, Lassi et al., 2016b, Lee et al., 2009, Lewin et al., 2010, Marston et al., 2013, Musa et al., 2014, Prost et al., 2013, Schiavo et al., 2014, Schiffman

et al., 2010, Semrau et al., 2016, Spangaro et al., 2013, Tilahun and Birhanu, 2011, Tripathi et al., 2016, Wekesah et al., 2016, Winch et al., 2005). The results are categorised into maternal and child health (n=12), infectious or communicable diseases (n=7), and other health/disease areas (n=3).

MATERNAL AND CHILD HEALTH

The literature searches revealed a large body of review-level evidence relating to maternal and child health in LMICs. We identified 12 systematic reviews which reported health outcomes and/or improved service delivery with respect to maternal and child health (Kraft et al., 2014, Lassi et al., 2010, Lassi et al., 2016a, Lassi et al., 2016b, Lee et al., 2009, Lewin et al., 2010, Marston et al., 2013, Prost et al., 2013, Schiffman et al., 2010, Tilahun and Birhanu, 2011, Tripathi et al., 2016, Wekesah et al., 2016). The quality of the systematic reviews was mixed; four were rated as low quality (Kraft et al., 2014, Lassi et al., 2016b, Schiffman et al., 2010, Tilahun and Birhanu, 2011), four as moderate (Lassi et al., 2016a, Lee et al., 2009, Marston et al., 2013, Wekesah et al., 2016), and four as high quality (Lassi et al., 2010, Lewin et al., 2010, Prost et al., 2013, Tripathi et al., 2016).

The systematic reviews included data from studies conducted in South Asia, East Asia, South East Asia, the Middle East and South America. Many primary studies were conducted in India, Nepal, Bangladesh and Pakistan, but also included some data from stydies conducted in HICs. The systematic reviews focused on different populations, including women of reproductive age (n=5), neonates (n=4), or no specific population was defined (n=5). The reviews by Lee et al., and Tilahun et al., had significant overlap in terms of the primary studies they included.

The systematic reviews focused on a wide range of community participation/engagement approaches (Kane et al., 2010, Kraft et al., 2014, Lassi et al., 2010, Lassi et al., 2016a, Lassi et al., 2016b, Lee et al., 2009, Marston et al., 2013, Prost et al., 2013, Schiffman et al., 2010, Tilahun and Birhanu, 2011, Wekesah et al., 2016), and two systematic reviews looked at the role of community/lay health workers in improving health outcomes (Lewin et al., 2010, Tripathi et al., 2016). Seven of the systematic reviews presented pooled results from meta-analyses (Lassi et al., 2010, Lassi et al., 2016a, Lee et al., 2009, Lewin et al., 2010, Prost et al., 2013, Tilahun and Birhanu, 2011, Tripathi et al., 2016), and four systematic reviews presented narrative synthesis results (Kraft et al., 2014, Lassi et al., 2016b, Schiffman et al., 2010, Wekesah et al., 2016).

Outcomes presented as meta-analyses included maternal mortality, neonatal mortality, early neonatal mortality, perinatal mortality, stillbirths, institutional birth rates, and improved care seeking for maternal, neonatal, and childhood illnesses. Results can be found in Table 1.

MATERNAL MORTALITY

Three systematic reviews reported on maternal mortality (Lassi et al., 2010, Lassi et al., 2016a, Prost et al., 2013). The community participation approaches included training of outreach workers, community mobilisation, and women's groups. Results from three systematic reviews showed no

statistically significant reduction in maternal mortality. However, in one systematic review (Prost et al., 2013), the proportion of women participating and population coverage of groups were key to effectiveness; subgroup analysis showed a statistically significant (49%) reduction in maternal mortality where at least 30% of participants engaged with the intervention.

NEONATAL MORTALITY

Five systematic reviews reported results for neonatal mortality (Lassi et al., 2010, Lassi et al., 2016a, Lewin et al., 2010, Prost et al., 2013, Tilahun and Birhanu, 2011), including approaches such as training of outreach workers, community mobilisation, community health workers interventions, women's groups, and community based behavioural change communication interventions. Evidence from five systematic reviews showed statistically significant reductions in neonatal mortality, associated with: community mobilization/home visits (Lassi et al., 2016a); training of outreach workers (Lassi et al., 2010); a community-based behavioural change communication intervention (Tilahun et al., 2011); and participatory learning approaches (Prost et al., 2013). Narrative results presented by Schiffman et al., provide further evidence to suggest that community-based intervention packages such as community mobilisation or outreach programmes decrease neonatal mortality.

EARLY NEONATAL MORTALITY

Two systematic reviews reported outcomes for early neonatal mortality (Lee et al., 2009, Tilahun and Birhanu, 2011). Findings suggest community mobilisation strategies and community based behavioural change communication interventions can significantly reduce rates of early neonatal mortality.

PERINATAL MORTALITY

Evidence from three systematic reviews suggest that community participation/engagement approaches such as training of outreach workers and community mobilisation are associated with statistically significant reductions in perinatal mortality (Lassi et al., 2010, Lassi et al., 2016a, Lee et al., 2009). Schiffman et al. (2010) report reductions in perinatal mortality rates in association with community mobilisation interventions.

STILLBIRTHS

Results from two systematic reviews suggest a statistically significant reduction in stillbirths associated with training of outreach workers and community mobilisation (Lassi et al., 2010, Lassi et al., 2016a, Prost et al., 2013). One systematic review (Prost et al., 2013) found no evidence of reductions in still births following participation in women's groups.

IMPROVED CARE SEEKING

Evidence from three systematic reviews (Lassi et al., 2016a, Lewin et al., 2010, Tripathi et al., 2016) report outcomes relating to care seeking for maternal, neonatal and childhood illnesses and non-specified care seeking. Community mobilisation did not have a statistically significant effect on maternal health seeking (Lassi et al., 2016), however home visits by community health workers were associated with a statistically significant increase in non-specified care seeking (Tripathi et al., 2016), and community health worker interventions were associated with a statistically significant increase in care seeking for childhood illnesses (Lewin et al., 2010). Further, a statistically significant improvement in health care seeking for neonatal illnesses was associated with community mobilisation/home visits (Lassi et al., 2016a).

Table 1. Maternal and child health

Community participation intervention/comparator	Reference(s) (AMSTAR score)	No of participants (studies/ design) Location	Quality of Review Level Evidence	Effect size (95% CI)	Overall results (combined)
Maternal mortality					
Training of outreach workers vs standard care	Lassi et al., 2010 (9)	10 studies, n=144,956 India, Bangladesh, Pakistan, Gambia, Nepal, Indonesia	Unclear	RR 0.77 (0.59 to 1.02)*	No statistically significant difference in maternal mortality for training of outreach workers compared to standard care.
Community mobilisation/ home visits vs standard care	Lassi et al., 2016a (8)	8 studies, n=114,196 Asia, Africa	High	RR 0.80 (0.65 to 1.00)*	No statistically significant difference in maternal mortality for community mobilisation/home visits compared to standard care.
Women's groups practising participatory learning and action, compared with usual care	Prost et al., 2013 (10)	7 RCTs Bangladesh, India, Malawi, and Nepal	High	OR 0.77 (0.48 to 1.23)**	No statistically significant difference in maternal mortality for women's groups practising participatory learning and action, compared with usual care.
Women's groups practising participatory learning and action, compared with usual care	Prost et al., 2013 (10)	4 cluster RCTs Bangladesh, India, Malawi, and Nepal	High	OR 0.51 (0.29 to 0.89)	For a subgroup of studies in which at least 30% of women participated in groups, women's groups practising participatory learning and action were associated with a statistically significant reduction in maternal morality compared to usual care.

Community participation intervention/comparator	Reference(s) (AMSTAR score)	No of participants (studies/ design) Location	Quality of Review Level Evidence	Effect size (95% CI)	Overall results (combined)
Neonatal mortality					
Training of outreach workers vs standard care	Lassi et al., 2010 (9)	12 studies, n=136,425 India, Bangladesh, Pakistan, Gambia, Nepal, Indonesia	Unclear	RR 0.76 (0.68 to 0.84)**	Training of outreach workers was associated with a statistically significant reduction in neonatal mortality compared to standard care.
Community mobilisation/ home visits vs standard care	Lassi et al., 2016a (8)	20 studies, n=248,848 Asia, Africa	High	RR 0.80 (0.72 to 0.89)***	Community mobilization/home visits were associated with a statistically significant reduction in neonatal mortality compared to standard care.
Community health worker interventions vs usual care	Lewin et al., 2010 (10)	4 studies India, Nepal, Bangladesh	Low	RR 0.76 (0.57 to 1.02)***	No statistically significant difference in neonatal mortality for community health worker interventions compared to usual care.
Women's groups practising participatory learning and action, compared with usual care	Prost et al., 2013 (10)	7 RCTs Bangladesh, India, Malawi, and Nepal	High	OR 0.80 (0.67 to 0.96)**	Women's groups practising participatory learning and action were associated with a statistically significant reduction in neonatal mortality compared to usual care.

Community participation intervention/comparator	Reference(s) (AMSTAR score)	No of participants (studies/ design) Location	Quality of Review Level Evidence	Effect size (95% CI)	Overall results (combined)
Women's groups practising participatory learning and action, compared with usual care	Prost et al., 2013 (10)	4 cluster RCTs Bangladesh, India, Malawi, and Nepal	High	OR 0.67 (0.60 to 0.75)	For a subgroup of studies in which at least 30% of women participated in groups, women's groups practising participatory learning and action were associated with a statistically significant reduction in neonatal mortality compared to usual care.
Community based behavioural change communication intervention vs usual care	Tilahun et al., 2011 (5)	4 studies Pakistan, India, Bangladesh	Unclear	OR 0.81 (0.75 to 0.88)***	A community based behavioural change communication intervention was associated with a statistically significant reduction in neonatal mortality compared to usual care.
Early neonatal mortality					
Community mobilisation strategies	Lee et al., 2009 (6)	4 studies Locations unclear	Unclear	RR 0.64 (0.48 to 0.85)	Community mobilisation strategies were associated with a statistically significant reduction in early neonatal mortality compared to an unidentified comparator.

Community participation intervention/comparator	Reference(s) (AMSTAR score)	No of participants (studies/ design) Location	Quality of Review Level Evidence	Effect size (95% CI)	Overall results (combined)
Community-based behavioural change communication intervention vs usual care	Tilahun et al., 2011 (5)	4 studies Pakistan, India, Bangladesh	Unclear	OR 0.80 (0.70 to 0.91)***	A community-based behavioural change communication intervention was associated with a statistically significant reduction in early neonatal mortality compared to usual care.
Perinatal mortality					
Training of outreach workers vs standard care	Lassi et al., 2010 (9)	(10 studies, n=110,291) India, Bangladesh, Pakistan, Gambia, Nepal, Indonesia	Unclear	RR 0.80 (0.71 to 0.91)***	Training of outreach workers was associated with a statistically significant reduction in observed perinatal mortality compared to standard care.
Community mobilisation/ home visits vs standard care	Lassi et al., 2016a (8)	15 studies, n=279,618 Asia, Africa	High	RR 0.84 (0.77 to 0.90)**	Community mobilisation/home visits were associated with a statistically significant reduction in perinatal deaths compared to standard care.
Community mobilisation strategies	Lee et al., 2009 (6)	4 studies Locations unclear	Unclear	RR 0.75 (0.59 to 0.96)	Community mobilisation strategies were associated with a statistically significant reduction in perinatal mortality compared to an unidentified comparator.
Stillbirths					

Community participation intervention/comparator	Reference(s) (AMSTAR score)	No of participants (studies/ design) Location	Quality of Review Level Evidence	Effect size (95% CI)	Overall results (combined)
Training of outreach workers vs standard care	Lassi et al., 2010 (9)	(11 studies, n=113,821) India, Bangladesh, Pakistan, Gambia, Nepal, Indonesia	Unclear	RR 0.84 (0.74 to 0.97)**	Training of outreach workers was associated with a statistically significant reduction in observed stillbirths compared to stand care.
Community mobilisation/ home visits vs standard care	Lassi et al., 2016a (8)	11 studies, n=176,683 Asia, Africa	High	RR 0.82 (0.74 to 0.92)**	Community mobilisation/home visits were associated with a statistically significant reduction in stillbirths compared to stand care.
Women's groups practising participatory learning and action, compared with usual care	Prost et al., 2013 (10)	7 RCTs Bangladesh, India, Malawi, and Nepal	High	OR 0.93 (0.82 to 1.05)	No statistically significant difference in odds of stillbirth for women's groups practising participatory learning and action compared to usual care.
Institutional births					
Community mobilisation strategies	Lee et al., 2009 (6)	4 studies Locations unclear	Unclear	RR 1.71 (1.10 to 2.64)	Community mobilisation strategies were associated with a statistically significant increase in institutional births compared to an unidentified comparator.
Community mobilisation strategies	Lee et al., 2009 (6)	3 studies (with 'more intensive and participatory mobilization strategies') Locations unclear	Unclear	RR 2.08 (1.23 to 3.49)	
Improved care seeking for maternal illnesses					

Community participation intervention/comparator	Reference(s) (AMSTAR score)	No of participants (studies/ design) Location	Quality of Review Level Evidence	Effect size (95% CI)	Overall results (combined)
Community mobilisation/ home visits vs standard care	Lassi et al., 2016a	5 studies, n=15,828	Moderate	RR 1.06 (0.92 to 1.22)	No statistically significant difference in care seeking for maternal illnesses for community mobilization/home visits compared to standard care.
Improved care seeking for neonatal illnesses					
Community mobilisation/ home visits vs standard care	Lassi et al., 2016a	9 studies, n=30,572	High	RR 1.40 (1.17 to 1.68)	Community mobilisation/home visits were associated with a statistically significant increase in health care seeking for neonatal illnesses compared to standard care.
Improved care seeking for childhood illnesses					
Community health worker interventions vs usual care	Lewin et al., 2010	3 studies Bangladesh, Nepal	Low	RR 1.33 (0.86 to 2.05)***	No statistically significant difference in care seeking for childhood illnesses for community health worker interventions compared to usual care.
Improved care seeking from health facilities (non-specific)					
Home visits by a community health worker vs no home visits	Tripathi et al., 2016	5 studies Bangladesh, Ghana, India, Pakistan, South Africa, Syrian Republic		RR1.35 (1.15 to 1.58)***	Home visits by a community health worker were associated with a statistically significant increase in care seeking compared to no home visits.

Community participation intervention/comparator	Reference(s) (AMSTAR score)	No of participants (studies/ design) Location	Quality of Review Level Evidence	Effect size (95% CI)	Overall results (combined)
*Moderate heterogeneity (I2=30–60%). **Significant, substantial heterogeneity (I2=50–90%). ***Significant, considerable heterogeneity (I^2=75–100%). CI=conficence interval; RCT=randomised controlled trial; RR=relative risk; OR=odds ratio					

INFECTIOUS OR COMMUNICABLE DISEASES

Seven systematic reviews with outcomes relating to improved health outcomes and/or service delivery focused on infectious or communicable diseases (Cornish et al., 2014, Hopkins et al., 2007, Kerrigan et al., 2013, Kerrigan et al., 2015, Lewin et al., 2010, Musa et al., 2014, Winch et al., 2005). Kerrigan et al., 2015 is a partial update of Kerrigan et al., 2013 and there is significant overlap of included primary studies.

The systematic reviews were scored for methodological quality: two were low quality, four were moderate quality, and one was high quality. The systematic reviews included primary studies conducted in LMICs across Africa, South Asia, South East Asia, the Caribbean, and South America, but also in HICs. In terms of study populations, the included reviews focused on sex workers (n=2), children aged <5 years (n=1), and no specific population (n=4).

Three systematic reviews examined community engagement approaches in relation to HIV prevention (Cornish et al., 2014, Kerrigan et al., 2013, Kerrigan et al., 2015), one systematic review (Hopkins et al., 2007) focused on home-based management of malaria, and two systematic reviews which focused on tuberculosis (Lewin et al., 2010, Musa et al., 2014). One systematic review examined intervention models for the management of children with signs of malaria or pneumonia (Winch et al., 2005).

HIV PREVENTION

Three systematic reviews examined health outcomes related to human immunodeficiency virus (HIV) prevention (Cornish et al., 2014, Kerrigan et al., 2013, Kerrigan et al., 2015), using a range of community participation/engagement approaches. Cornish et al. (2014) examined community mobilisation interventions, defined as community-based initiatives that engaged one or more community groups in concrete participatory activities. Kerrigan et al. (2013) and Kerrigan et al. (2015) both evaluated studies which adopted a community empowerment approach. Across the reviews, a number of outcomes were reported, including condom use and HIV/sexually transmitted infection (STI) prevalence, in LMIC populations of sex workers and men who have sex with men. Summary results are presented in Table 2 and 3.

Evidence from three systematic reviews (Cornish et al., 2014; Kerrigan et al., 2013; Kerrigan et al., 2015) suggests that the effects of community mobilisation and empowerment approaches differ by population. For example, while community empowerment approaches were associated with increased condom use among sex workers, there was limited evidence for whether community mobilisation approaches increased condom use among men who have sex with men.

CONDOM USE

Two systematic reviews reported on condom use among sex workers and men who have sex with men (Cornish et al., 2014; Kerrigan et al., 2015). Results for sex workers suggest a statistically significant association between community based empowerment approaches to HIV and an increase in condom use with regular, new, and all clients. There is some evidence to suggest that community mobilisation approaches are associated with an increase in condom use for men who have sex with men, however, the effects are not consistent across the included studies (Cornish et al., 2014).

HIV/STI PREVALENCE

Evidence from one systematic review (Cornish et al., 2014) is insufficient (reflecting problems with the existing evidence) to determine the impact of community mobilisation on HIV and STI prevalence among men who have sex with men, young people, and for targeted groups within communities and geographically-bound communities.

Table 2. Community participation/engagement approaches for HIV prevention: condom use

Community participation intervention/comparator	Reference(s) (AMSTAR score)	No of participants (studies/ design) Location	Quality of Review Evidence	Effect size (95% CI)	Overall results (combined)
Population: sex workers					
Community empowerment vs. control	Kerrigan et al., 2015 (6)	200 (1 cluster RCT) India	Low	β 0.3447 (p=0·002)	Community empowerment was associated with a statistically significant improvement in condom use with clients compared to control.
Community empowerment-based responses to HIV *Regular clients*	Kerrigan et al., 2015 (6)	420 (1 longitudinal study) Brazil	Very low	OR 1.90 (1.10 to 3.30)	Community empowerment was associated with a statistically significant increase in consistent condom use in the past 30 days with regular clients but an association for condom use with new clients was not statistically significant.
Community empowerment-based responses to HIV *New clients*	Kerrigan et al., 2015 (6)	420 (1 longitudinal study) Brazil	Very low	OR 1.60 (0.90 to 2.80)	
Community empowerment-based responses to HIV *All clients*	Kerrigan et al., 2015 (6)	Not reported (8 cross-sectional studies) India, Brazil	Very low	OR 3.27 (2.32 to 4.62)***	Community empowerment was associated with a statistically significantly higher odds of consistent condom use with new, regular and all clients.
Community empowerment-based responses to HIV *Regular clients*	Kerrigan et al., 2015 (6)	Not reported (6 cross-sectional studies) India	Very low	OR 2.90 (2.22 to 3.78)***	
Community empowerment-based responses to HIV *New clients*	Kerrigan et al., 2015 (6)	Not reported (6 cross-sectional studies) India	Very low	OR 3.04 (1.90 to 4.86)***	

Population: men who have sex with men					
Community mobilisation vs. control or standard care	Cornish et al., 2014 (6)	Not reported (3 'cohort analytic' studies) China, India, Ecuador	Low	Not combined	Authors note that there was some evidence of increase in reported condom use following community mobilisation but that effects were not consistent across studies.
*Moderate heterogeneity (I^2=30–60%). **Significant, substantial heterogeneity (I^2=50–90%). ***Significant, considerable heterogeneity (I^2=75–100%) CI=conficence interval; RCT=randomised controlled trial; RR=relative risk; OR=odds ratio					

Table 3. Community engagement /participation approaches: HIV/STI prevalence

Community participation intervention/comparator	Reference(s) (AMSTAR score)	No of participants (studies/ design) Location	Level of Quality of Review Evidence	Effect size (95% CI)	Overall results (combined)
Community mobilisation vs. standard care HIV	Cornish et al., 2014 (6)	Not reported (1 cross-sectional study) Ecuador	Very low	Not combined	No statistically significant difference in seroprevalence of HIV for community mobilistation compared to standard care
Community mobilisation vs. standard care HSV-2	Cornish et al., 2014 (6)	Not reported (2 cross-sectional studies) India, Ecuador	Very low	Not combined	Authors note that there was an inconsistent effect of community mobilisation on HSV-2 seroprevalence across studies
Community mobilisation vs. standard care Syphilis	Cornish et al., 2014 (6)	Not reported (2 cross-sectional studies) India, Ecuador	Very low	Not combined	Authors note that community mobilisation correlated with a reduced odds of syphilis prevalence

TUBERCULOSIS

There are results from two systematic reviews relating to the treatment of tuberculosis (Lewin et al., 2010, Musa et al., 2014). Musa et al. (2014) evaluated the effectiveness of community health workers in increasing the detection rate and treatment success of tuberculosis cases, and Lewin et al. (2010) reported outcomes relating to the effectiveness of community health workers for improving cure rates and treatment completion. Summary results are presented in Table 4.

Two systematic reviews (Lewin et al., 2010, Musa et al., 2014) presented results for the effectiveness of community health workers in increasing the success of treating patients with tuberculosis. Table 4 details the summary results of two meta-analyses which show that the involvement of community health workers in tuberculosis care was associated with an increase in treatment success rates (Lewin et al., 2010, Musa et al., 2014), but only statistically significantly so in the analyses undertaken by Lewin et al. (2010). In stratified analyses, Musa et al. (2014) find overall that community health worker involvement only resulted in statistically significant increases in treatment success in studies conducted in rural but not urban areas.

Lewin et al. (2010) report that community health worker support did not have a statistically significant effect on preventative treatment completion for tuberculosis.

MALARIA

Hopkins et al. (2007) conducted a systematic review of studies investigating home-based management of malaria in Africa. Due to the heterogeneity of included studies, meta-analysis was not possible, and the evidence base was narrow. The impact on mortality and morbidity were mixed: two studies showed no health impact, and another showed a decrease in prevalence. The systematic review concluded that delivery strategies in investigating home-based management programmes should be tailored to local conditions.

One systematic review categorised intervention models involving community health workers that aim to improve case management of sick children at the household and community levels, focussing on children with signs of malaria or pneumonia (Winch et al., 2005). The review identified seven intervention models, and of those models, one model was highlighted as having the most evidence for effectiveness in reducing mortality. The intervention involved community health workers assessing signs of respiratory infections in children and provindg treatment with antibiotics. The review concludes that interventions to improve the management of sick children at the community-level should ideally be part of a larger package which includes improving quality of care and improvements to health systems.

Table 4. Community health worker approaches to tuberculosis treatment

Community participation intervention/comparator	Reference(s) (AMSTAR score)	No of participants (studies/ design) Location	Level of Quality of Review Evidence	Effect size (95% CI)	Overall results (combined)
Treatment success and cure rates					
Community health workers vs standard facility based tuberculosis care	Musa et al., 2014 (7)	5 RCTs South Africa, Ethiopia, Tanzania	Unclear	RR 1.09 (0.98 to 1.21)*	No statistically significant difference in treatment success rates for community health worker participation in tuberculosis treatment compared to standard care
Community health workers vs standard facility based tuberculosis care in rural areas	Musa et al., 2014 (7)	3 RCTs South Africa, Ethiopia, Tanzania	Unclear	RR 1.12 (1.01 to 1.24)	Stratified analysis showed that, community health worker participation was was associated with a statistically significant increase in treatment success compared to standard care in rural based studies, however no statistically significant difference in treatment success was found across studies conducted in urban areas
Community health workers vs standard facility based tuberculosis care in urban areas	Musa et al., 2014 (7)	2 RCTs South Africa, Ethiopia, Tanzania	Unclear	RR 1.01 (0.91 to 1.13)	
Community health workers vs usual care	Lewin et al., 2010	4 studies Iraq, South Africa, Tanzania	Moderate	RR 1.22 (1.13 to 1.31)*	Community health worker's participation was associated with a statistically significant

	(10)				increase in cure rates (though a small clinical impact) for smear positive tuberculosis patients (new and retreatment) compared to usual care
Support for completing preventative treatment					
Community health workers vs usual care	Lewin et al., 2010 (10)	2 studies USA	Moderate	RR 1.0 (0.92 to 1.09)	No statistically significant difference in preventative treatment completion for tuberculosis for community health worker support compared to usual care
*Moderate heterogeneity (I^2=30–60%). **Significant, substantial heterogeneity (I^2=50–90%). ***Significant, considerable heterogeneity (I^2=75–100%) CI=conficence interval; RCT=randomised controlled trial; RR=relative risk; OR=odds ratio					

OTHER HEALTH/DISEASE AREAS

Three systematic reviews reported health outcomes (Schiavo et al., 2014, Semrau et al., 2016, Spangaro et al., 2013), but could not be neatly classified into categories with the other included systematic reviews.

One systematic review assessed evidence on interventions to communicate risk and promote disease mitigation measures in epidemics and emerging disease outbreak settings, with a focus on LMICs (Schiavo et al., 2014). The review identifies a lack of quantitative evaluations of interventions to communicate health risk and promote disease control measures in LMICs, and therefore there were no definitive conclusions. However, the authors suggest that community-based and participatory interventions are central within epidemic and emerging disease settings. In terms of indicators of improved health service delivery, the evidence was lacking, however effectiveness of interventions were improved when participants were given flexibility over their choice of therapy provider, and that involvement of family members could have positive effects.

One systematic review examined the evidence and experience of service user and caregiver involvement in mental health system strengthening in LMICs (Semrau et al., 2016). The review reported that there is evidence which shows the benefits of service user or caregiver involvement in service delivery and/or support groups, including: the involvement of peer educators, the employment of service users' family members, service user and carer self-help groups, and women's groups led by peer facilitators

Evidence from one systematic review (Spangaro et al., 2013) which examined the extent and impact of initiatives to reduce incidence, risk and harm from sexual violence in conflict, post-conflict and other humanitarian crises, in LMICs suggests that strategies such as 'multiple-component interventions' and 'sensitive community engagement' appeared to contribute to positive outcomes, however there appeared to be a lack of implementation of the interventions and there was evidence that where interventions increased the risk of sexual violence it was due to a lack of protection, stigma and retaliation associated with interventions.

IMPROVED SERVICE DELIVERY

Three systematic reviews presented results which broadly relate to service delivery (Kraft et al., 2014, Lassi et al., 2016b, Wekesah et al., 2016). Kraft et al. (2014) report results for gender accommodating and gender transformative interventions in adolescents, older women, men or couples and the broader community, and while many of the results for effectiveness were mixed, many of the null effects were found to be related to access to services. However, the interventions were found to delay age at marriage, increase the use of family planning, reduce child stunting, and reduce maternal and child mortality. Lassi et al. (2016b) assessed the impact of 'human resources for health' interventions for maternal health delivered by skilled

birth attendants. Studies showed that all the 'human resources for health' interventions implemented individually or in combination had a positive impact on improving maternal health, and importantly, supervision and partnerships improve health systems effectiveness. Wekesah et al. (2016) undertook a systematic review of non-drug interventions that directly or indirectly improved quality of maternal health and morbidity and mortality outcomes in Sub-Saharan Africa, including: mobile and electronic health, financial incentives, health systems strengthening interventions, community mobilisation and/or peer-based programmes, home-based visits, health educational and promotional programmes. The results were varied, however the authors underscore the importance of implementing comprehensive interventions that strengthen different components of the health care systems, both in the community and at the health facilities.

EVIDENCE SUMMARY

To summarise the findings of the reviews which report health outcomes, we have considered both the number of reviews which report specific outcomes, and whether the findings across the reviews are consistent to enable a judgement relating to overall strength of the evidence.

The evidence is classified as 'consistent' if the findings of the systematic reviews suggest similar results and 'inconsistent' if results presented across the reviews are dissimilar. The overall strength of evidence is based on the relative size and consistency of each grouping (how many reviews were found, were the results consistent), and evidence is then rated as 'strong', 'moderate', or 'limited'.

Outcome	Number of systematic reviews	Consistency of review-level findings	Overall strength of evidence
Maternal and child health			
Reduction in maternal mortality	n=3	Inconsistent	Moderate
Reduction in neonatal mortality	n=5	Consistent	Strong
Reduction in early neonatal mortality	n=2	Consistent	Moderate
Reduction in perinatal mortality	n=3	Consistent	Moderate
Reduction in stillbirths	n=3	Consistent	Moderate
Increase in improved care seeking	n=3	Inconsistent	Limited
Infectious or communicable diseases			
Increase in condom use	n=2	Consistent	Moderate
Reduction in HIV/STI prevalence	n=1	Consistent	Limited
Increased tuberculosis treatment success	n=2	Consistent	Limited
Increased tuberculosis preventative treatment completion	n=1	Consistent	Limited

HOW EFFECTIVE ARE COMMUNITY ENGAGEMENT/PARTICIPATION APPROACHES FOR SUSTAINING BENEFITS?

According to Atkinson et al. (2011) the sustainability of community participation in health and development projects may be attributed to the extent to which community ownership and empowerment is achieved. However, it should be noted that even when full engagement is achieved it does not necessarily equate to inclusive participation. Community engagement and participation is best understood as a process (Rifkin, 2014) and this section considers the key factors identified in the literature that support sustainability.

Ten systematic reviews reported outcomes relating to sustainability (Atkinson et al., 2011, George et al., 2015a, Glenton et al., 2013, Kane et al., 2010, Kok et al., 2015a, Lodenstein et al., 2017, McCollum et al., 2016, McCoy et al., 2012, Molyneux et al., 2012, Pallas et al., 2013). Six systematic reviews were of low quality, three of moderate quality, and one was high quality. The populations covered by these reviews were largely not defined (n=7), however one review focused on children and two reviews focused on anyone involved in the intervention.

The majority of systematic reviews included in this section presented narrative syntheses often of qualitative data, as such the results have been presented in thematic categories. Shaded boxes at the end of each theme provide a statement of action inferred from the evidence summarised within that category.

SOCIAL AND CULTURAL NORMS, KNOWLEDGE AND PERCEPTIONS

Five systematic reviews highlighted themes related to cultural norms, social mechanisms, knowledge and perceptions (Atkinson et al., 2011, Glenton et al., 2013, Kok et al., 2015b, McCollum et al., 2016, Pallas et al., 2013). In relation to disease control and elimination campaigns, Atkinson et al. (2011) reported that knowledge and perceptions (including misconceptions) of a disease were key influences on individual participation in preventative and treatment practices. Health education was therefore highlighted as the foundation of any community participation programme. Picking up on this theme, one systematic review that considered the extent of equity in community health worker programmes noted the importance of the community health worker role for health education. Two systematic reviews that examined factors affecting the implementation of community health worker programmes (Glenton et al., 2013, Kok et al., 2015b) reported that education and knowledge level among target communities were barriers to implementation. The consideration of social and cultural norms in the planning and delivery of community engagement and participation was also a common theme across the included reviews. In relation to community health worker programmes, Kok et al. (2015b) identified cultural and social norms as factors that directly influenced the utilisation of community health worker services. Differences in social class between community health workers and the beneficiaries of their services were also an important factor influencing relationships and service uptake. For example, Kok et al. (2015b)

cited an example of social hierarchies being a barrier to community health worker performance in a study in India where female community health workers had faced challenges in influencing the behaviour of women with a lower social status.

Statement of action: *Investigate social and cultural norms, knowledge and perceptions, and use the findings to inform culturally appropriate behaviour change communication as the foundation of community participation and engagement. Consider how to address varying levels of health education needs.*

INCENTIVES

The role of incentives, based on both economic and non-monetary incentive systems, was a key theme across four reviews (Atkinson et al., 2011, Molyneux et al., 2012, Glenton et al., 2013, Pallas et al., 2013). Not enough pay or incentives, and lack of incentives were highlighted as barriers in two reviews (Molyneux et al., 2012, Pallas et al., 2013). However, Atkinson et al. (2011) noted that the diversity of cultures, needs and motivators across communities required that incentive systems were designed to be locally viable and developed in partnership with communities. In relation to community health worker programmes, Glenton et al. (2013) reported the need for incentives to be seen as consistent and predictable, and as appropriate and fair in relation to their tasks and level of training.

Statement of action: *Design locally viable economic or non-monetary incentive systems in partnership with communities and ensure they are culturally appropriate, consistent and fair. (See also Financial and human resources)*

GENDER ROLES AND POWER RELATIONSHIPS

Six systematic reviews (Atkinson et al., 2011, George et al., 2015a, McCoy et al., 2012, Glenton et al., 2013, Kok et al., 2015b, Pallas et al., 2013) reported findings under the theme of gender roles and power relationships. Atkinson et al. (2011) reported that the influence of gender roles and power relationships on participation was primarily focused on women's capacity to act as community health workers. However this theme was not expanded on in the reviews that specifically examined community health worker programmes (Glenton et al., 2013, Kok et al., 2015b, Pallas et al., 2013). Across these reviews the gender of community health workers was noted as an influence on uptake of services, with female involvement reported as an enabling factor for community health worker programmes. Kok et al (2015b) cited examples of studies where male community health workers were limited in their interactions with women and vice versa (i.e. women community health workers limited in their interactions with men). Kok et al. (2015b) also cited examples from studies that suggest a higher drop out rate among male community health workers; linking this to expectations around income generation but also that men may lack "instinct for tender care and tolerance" (Kok et al., 2015b, pg 6). Tackling the issues of gender roles in more detail, Atkinson et al. (2011) focused

on women's capacity to act as community health workers. They suggested that greater consideration should be given to specific issues such as literacy among women, the burden of domestic duties, economic conditions and stability rather than the issues of gender inequalities in traditional social systems *per se*. In their systematic review of the evidence on health facility committees, McCoy et al. (2012) reported that it was not uncommon for health facility committees to reflect hierarchies and patterns of power and patronage, therefore hindering adequate representation of "*those who occupy lower positions in society*".

Statement of action: *Give specific consideration to the local factors* that may facilitate or hinder the participation and engagement of women and those from marginalised groups.*

**For example, local conflicts of interest, opposing political and religious ideologies and group rivalries.*

COMMUNITY CHARACTERISTICS

Five reviews discussed themes related to community characteristics and highlighted the need to take account of issues related to economic status, accessibility issues (including geographic location) and urban versus rural implementation (Atkinson et al., 2011, McCoy et al., 2012, Glenton et al., 2013, Kok et al., 2015b, McCollum et al., 2016). Atkinson et al. (2011) reported that community characteristics can influence whether adequate participation and engagement is achieved. Economic factors were also considered a barrier to participation in health facility committees (McCoy et al., 2012). For community health worker programmes, economic hardship was identified as a factor influencing willingness to become a community health worker (Kok et al., 2015b) and difficult geography was a factor that affected community health worker performance. In their review of equity considerations, McCollum et al. (2016) suggested thatcommunity health worker programme planning should consider geographic location, and for example, consideration given to reducing household numbers per community health worker in communities covering difficult terrain. Access issues related to user fees were also highlighted in two systematic reviews (Kok et al., 2015b, McCollum et al., 2016) and were considered a barrier to equitable access to services (McCollum et al., 2016).

Statement of action: *Programmes should be tailored to geographical, socio-cultural and health system issues and tailored to suit urban and rural contexts.*

CONSIDERATION OF LOCAL PRIORITIES

Atkinson et al. (2011) highlighted the need to consider the full scope of community priorities, for example consideration of issues related to health, development and economic significance in communities, in the planning and delivery of sustainable engagement and participation approaches. Enhancing 'community fit' was also identified as enabler of community health worker programmes in the review by Pallas et al. (2013).

Statement of action: *Identify community needs and priorities and consider how community engagement and participation responds to these priorities.*

PROCESS BY WHICH COMMUNITIES ARE ENGAGED TO PARTICIPATE

The process by which communities were engaged to participate was discussed as a theme across most of the included reviews. Atkinson et al. (2011) highlighted that communities should define their desired level of participation and have opportunities to contribute to programme design, implementation and monitoring and evaluation. Across two reviews (George et al., 2015a, McCoy et al., 2012) that examined engagement and participation through health committees, the need for improving awareness and countering scepticism was identified. McCoy et al. (2012) suggested that wider community mobilisation in support of participation and engagement was needed to tackle such issues. For community health worker programmes, McCollum et al. (2016) suggested that weak community mobilisation could lead to limited demand for community health worker services. Atkinson et al. (Atkinson et al., 2011) advocated for the use of locally appropriate volunteer selection processes for recruitment. A clear theme on the issue of selection emerged from the reviews that examined community health worker programmes. Local recruitment of community health workers, from or by the community, and ensuring that selection reflected the community were identified as important factors across three reviews (Glenton et al., 2013, Kane et al., 2010, McCollum et al., 2016). Kane et al. (2010) suggested that using locally appropriate processes for selection led to better positioning of community health workers within beneficiary communities through the following mechanisms: an anticipation of being valued by the community; a perception of improvement in social status and having a valuable social role; and a sense of relatedness with and accountability to the beneficiaries.

In relation to the design of community participation programmes for disease elimination and control, Atkinson et al. (2011) reported a tension between the importance of central planning and decision-making and the need to consider factors that may be detrimental to community participation efforts. For national disease control and elimination programmes, Atkinson et al. (2011) suggested that the most feasible approach is centralised design with decentralised implementation that "*relies on locally derived strategies for maximising community participation*". In relation to community health worker programmes, Kok et al. (2015b) noted that the level at which decision-making occurs was an influence on community health worker performance. Shifts in responsibility and decentralisation of power require that adequate financial and human resources are available for programme delivery (see Financial and human resources).

Statement of action: *Consider how to achieve a balance between centralised and decentralised responsibilities that harness grassroots knowledge and incorporate locally derived strategies for community engagement and participation. Use locally appropriate volunteer selection and recruitment processes. Ensure inclusive selection that reflects the*

characteristics of the beneficiary community. Consider how communities can be involved in selection processes.

GOVERNMENT ADVOCACY AND SUPPORT

Factors related to the importance of government advocacy and support was identified as a theme across four reviews (Atkinson et al., 2011, Kok et al., 2015b, Lodenstein et al., 2017, Pallas et al., 2013). According to Atkinson et al. (2011), supportive policy making was key to legitimising community participation programmes in addition to "*providing institutional roots from which to sustain community participation*". In relation to social accountability initiatives, Lodenstein et al.(Lodenstein et al., 2017) reported that where governments provided a legal status for citizen mobilisation and monitoring, as well as procedures for grievance redressal, health workers and officials were more likely to respect citizen groups' decisions and respond to their actions. The provision of government support and political commitment was also a clear requisite across the reviews of community health worker programmes (Kok et al., 2015b, Pallas et al., 2013). Ministry of Health or other government support was cited as an enabling factor in the review by Pallas et al. (2013). This manifested itself through financial support and rewards, or advocacy for community health workers (Pallas et al., 2013).

Statement of action: *Secure government advocacy and support for community engagement and participation.*

HEALTH SYSTEM INTEGRATION

Factors related to the integration of community health worker programmes with the broader health system emerged as a clear theme in three reviews of community health worker programmes (Glenton et al., 2013, Kok et al., 2015b, Pallas et al., 2013). Being closely integrated or embedded in the health system was seen as an enabling factor for community health worker programmes across these reviews. Two reviews (Kane et al., 2010, McCollum et al., 2016) reported the need to ensure good referral support or strong referral links existed to support and sustain the effective delivery of community health worker programmes. McCoy et al. (2012) identified that for health committees to be effective they need to be nurtured by the health system. Relationships between health committees, health workers and the health management systems were also important for achieving sustainability and in triggering social accountability mechanisms (Molyneux et al., 2012).

Statement of action: *Integrate or embed approaches within the broader health system to support community engagement and participation.*

FINANCIAL AND HUMAN RESOURCES

Adequate financial and human resources for community engagement and participation was a key factor for sustainability (Atkinson et al., 2011, George et al., 2015a, Glenton et al., 2013, McCollum et al., 2016, McCoy et al., 2012, Pallas et al., 2013). This primarily equated to the

need for provision of training and supervision (Atkinson et al., 2011). For health committees, managerial support and/or external facilitation and support were also important (George et al., 2015a, McCoy et al., 2012).

For community health worker programmes, the need for consistent and supportive supervision was identified as key factor across three reviews (Glenton et al., 2013, McCollum et al., 2016). The provision of intensive training that was relevant, sufficient and of high quality was also important in three (Glenton et al., 2013, Kane et al., 2010, Pallas et al., 2013). Kane et al. (2010) suggested that training for community health workers supported by ongoing mentoring was associated with important outcomes for sustainability, including self-efficacy and self-esteem. Furthermore, two reviews highlighted the need to provide flexible working conditions or schedules for volunteer community health workers (Glenton et al., 2013, Pallas et al., 2013).

Statement of action: *Ensure adequate training and supervision is available for volunteers and staff at all levels. Provide commitment to longer term capacity building. Ensure financial and human resources are available to build managerial, organisational and technical capacity at the community level.*

POLITICAL ENVIRONMENT

According to Atkinson et al. (2011), the political environment needs to be considered in the design of community participation and engagement programmes, including the effects of transitioning political environments. In their review of health committees, George et al. (2015a) identified that social movements and historical factors conditioned the nature of community participation and consequently health committee focus and functionality. Local political dynamics (see also Gender roles and power relationships) were also an influence on health committees according to McCoy et al. (2012). Glenton et al. (2013) reported that while community health worker programmes are embedded in particular socio-political contexts they were not able to explore these factors further.

Statement of action: *Ensure the design of frameworks for community engagement and participation take into account the characteristics of the political environment and of regional approaches to community participation.*

LOCALLY EMBEDDED DEVELOPMENT AGENCIES

Atkinson et al. (2011) highlight that, although not without some challenges, the role of non-government organisations (NGOs) in resource poor settings can be of benefit to community engagement and participation programmes. They suggest that embedded NGOs, who have effective relationships with governments and health authorities are a position to advocate for the promotion of active community engagement and participation. George et al. (2015a) reported examples from the literature where the role of NGOs had been seen as essential for supporting health committees and building community awareness. In their review of equity

considerations, McCollum et al. (2016) found that NGO facilitation had a role to play in the equitable delivery of community health worker programmes.

Statement of action: *Embedded NGOs should be engaged to contribute resources to support community engagement and participation.*

WHAT ARE THE DIFFERENT WAYS THAT COMMUNITIES IN LMICS HAVE ENGAGED OR PARTICIPATED IN THE DELIVERY OF HEALTH-RELATED INTERVENTIONS OR PROGRAMMES?

Communities in LMICs have engaged or participated in the delivery of health-related interventions in improving maternal and child health, TB, HIV prevention, malaria, and health promotion activities in a variety of ways, including:

- Use of community/lay health workers, and traditional birth attendants
- Women's groups
- Participatory learning and action
- Use of volunteers/peers
- Use of local leaders
- Involvement of family members (for example husbands, mothers-in-law)

IN LMICS, WHICH COMMUNITY ENGAGEMENT/PARTICIPATION APPROACHES ARE ASSOCIATED WITH IMPROVED OUTCOMES?

Although many of the included systematic reviews reported improved outcomes, the overall strength of the evidence was mainly moderate or limited and therefore the results should be considered with caution. For maternal and child health, approaches associated with improved outcomes include women's groups, community mobilisation approaches, training of outreach workers and the use of home visits by community health workers. For infectious and communicable diseases, approaches including community empowerment responses and use of community health workers were associated with improved outcomes.

WHAT ARE THE BARRIERS AND ENABLERS OF COMMUNITY ENGAGEMENT/PARTICIPATION APPROACHES IN DELIVERING BETTER OUTCOME?

BARRIERS

- Low levels of education and knowledge level among target communities
- Not enough pay or incentives
- Social hierarchies of target communities

ENABLERS

- Community fit
- Women's involvement as community health workers
- Being closely integrated or embedded in the health system
- Government support

FOR WHICH AREAS OF HEALTH OR HEALTH CONCERNS DO COMMUNITY ENGAGEMENT/PARTICIPATION APPROACHES WORK BEST?

Many of the included systematic reviews reported improved outcomes, however, the overall strength of the evidence was moderate or limited and therefore the results should be considered with caution. The strongest evidence identified across the included systematic reviews related to improved outcomes in the area of maternal and child health.

OVERVIEW OF FINDINGS

The results for the effectiveness of community participation/engagement approaches relating to maternal and child health suggest that there may be reductions in maternal mortality, neonatal mortality, early neonatal mortality, perinatal mortality, and stillbirths, and that there could be an association with improved care seeking for childhood illnesses. Systematic reviews examining community participation/engagement approaches to infectious or communicable disease prevention suggest that there could be an increase in condom use among sex workers, but there is insufficient evidence to draw conclusions relating to HIV/STI prevalence. Results from systematic reviews of community participation/engagement approaches to tuberculosis treatment suggest that there may be a small increase in the effectiveness of treatment linked to the involvement of community health workers. Results relating to malaria were mixed.

Findings from systematic reviews examining the sustainability of community participation approaches identified several themes which are key to successful outcomes: social and cultural norms and perceptions, incentives, gender roles and power relationships, community characteristics, consideration of local priorities, the process by which communities are engaged to participate, government advocacy and support, health system integration, political environment, and locally embedded development agencies.

DISCUSSION AND CONCLUSIONS

This evidence summary has identified, analysed and summarised the findings of 31 systematic reviews that examined the effectiveness of community engagement and participation approaches in improving health, service delivery and sustainability outcomes in low and middle income countries. Results were categorised into maternal and child health, infectious or communicable diseases, and other health/disease areas. There was wide variation in the aims and objectives, and methods of analysis across the included reviews. In part, this reflected a lack of a standard definition or terminology in how community engagement and participation approaches were described or characterised as has been reported in other

summaries of the evidence (George et al., 2015b). Challenges arose in distinguishing between reviews that examined some kind of community participation as opposed to those that were examining community level interventions that only included nominal community involvement. Wide variation in the aims and objectives also reflected diversity in review methods. We identified 'What works?' type reviews that tested causal hypotheses relating to effectiveness but also realist synthesis to understand which mechainsms work in which context, and also reviews based on thematic analysis to understand context and emerging concepts.

However, challenges arose because of a signicant overlap of the primary evidence across reviews and because of the poor quality of the primary evidence. Where results were pooled there was often significant heterogeneity, which likely reflects the highly contextual nature of community participation approaches. This is backed up by the findings of other evidence summaries, which note a lack of experimental designs that test the effectiveness of community participation, but also process evaluations and qualitative research (George et al., 2015b). Rifkin (2014) argues that community participation is better understood as a process, therefore requiring alternative evaluation designs to the RCT. Consequently many call for better quality research to further understand the nature of community participation.

Regardless of the state of the evidence, community engagement and participation approaches continue to be viewed as important, particularly in low resource settings. Drawing on the general trend in the evidence identified, community engagement and participation approaches have played a role in successful intervention delivery across health system domains and areas of health. However the extent to which community ownership and empowerment is achieved greatly impacts on the sustainability of these approaches and our evidence draws out some key factors for consideration in the delivery of successful community engagement and participation.

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APPENDICES

APPENDIX 1. SEARCH STRATEGY

1	Developing Countries/
2	(Africa or Caribbean or "West Indies" or "South America" or "Latin America" or "Central America").hw,kf,ti,ab,cp.
3	(Asia* or "South Asia*" or Afghan* or afg or Pashtun or Pashto or Bangladesh* or Bhutan* or India* or Nepal* or Maldiv* or Pakistan* or "Sri Lanka*").hw,kf,ti,ab,cp.
4	((developing or less* developed or under developed or underdeveloped or middle income or low* income or underserved or under served or deprived or poor*) adj (countr* or nation? or population? or world)).ti,ab.
5	((developing or less* developed or under developed or underdeveloped or middle income or low* income) adj (economy or economies)).ti,ab.
6	(low* adj (gdp or gnp or gross domestic or gross national)).ti,ab.
7	(low adj3 middle adj3 countr*).ti,ab.
8	(lmic or lmics or third world or lami countr*).ti,ab.
9	transitional countr*.ti,ab.
10	or/1-9
11	((global or international) adj3 develop*).in,jn,ti,ab.
12	(global health or tropic*).in,jn,ti,ab.
13	11 or 12
14	10 or 13
15	Consumer Participation/
16	Community Networks/
17	Community Health Services/
18	Community Health Workers/
19	Health Promotion/mt
20	((communit* or commune* or collective* or village* or citizen* or women* or mother* or tribe* or tribal or lay or people or person or public or patient* or "service user*") adj10 health adj10 (engag* or participat* or involv* or delegate* or accountability* or governance or action* or "health program*" or "health service*" or mobilis* or mobiliz* or consult* or inform or informs or informed or educat* or build* or design* or renewal or deliver* or intervent* or approach* or learn* or develop* or committee* or council* or forum* or jury or juries or panel* or partnership* or coalition* or collaborat* or meet* or network* or organisation* or organization* or group* or train* or deploy* or support* or plan or plans or planning or decision* or empower* or worker* or volunteer*)).ti,ab.
21	or/15-20
22	((systematic* adj3 (review* or overview*)) or (methodologic* adj3 (review* or overview*))).ti,ab.
23	(Meta adj3 (analysis* or regression or synthes*)).ti,ab.

24	((integrative adj3 (review* or overview*)) or (collaborative adj3 (review* or overview*)) or (pool* adj3 analy*)).ti,ab.
25	(data synthes* or data extraction* or data abstraction*).ti,ab.
26	(handsearch* or hand search*).ti,ab.
27	(mantel haenszel or peto or der simonian or dersimonian or fixed effect* or latin square*).ti,ab.
28	(systematic review* or biomedical technology assessment* or bio-medical technology assessment*).mp,hw.
29	(medline or cochrane or pubmed or medlars or embase or cinahl).ti,ab,hw.
30	(cochrane or (health adj2 technology assessment) or evidence report).jw.
31	systematic review.tw.
32	((quantitative or realist or rapid or evidence* or effectiveness or mapping or scoping) adj3 (review* or overview* or synthes*)).ti,ab.
33	(research adj3 (integrati* or overview*)).ti,ab.
34	or/22-33
35	14 and 21 and 34

APPENDIX 2. SOURCES OF EVIDENCE

As specified in the protocol, we searched the following electronic databases and evidence respositiories to locate relevant literature (search dates provided in brackets):

- Cochrane Database of Systematic Reviews (Issue 2 of 12, February 2017)
- The Campbell Library (02/02/2017)
- Joanna Briggs Institute database of SRs (19/12/16)
- EPPI-Centre Database of Promoting Health Effectiveness Reviews (DoPHER) (02/02/2017)
- PROSPERO International prospective register of systematic reviews (19/12/16)
- 3ie/DFID systematic review database (19/12/16)
- The Environmental Evidence Library (02/02/2017)
- MEDLINE via Ovid (from 1946 to 02/02/2017)
- Social Science Citation Index via Web of Science (02/02/2017)
- WHO EVIPNET
- SUPPORT summaries (20/12/16)

In addition to the databases listed above:

(i) In January 2016, the team accessed the following additional relevant databases and websites covering systematic reviews and other sources of evidence:

- ELDIS - www.eldis.org
- Epistemonikos - www.epistemonikos.org

- Evidence Aid - www.evidenceaid.org
- Global Health - www.cabi.org
- Health Systems Evidence - www.healthsystemsevidence.org
- IndMED (India) - indmed.nic.in
- Informit Health Collection (Asia Pacific, Australia and New Zealand) - www.informit.com.au/health
- POPLINE - www.popline.org
- Research for Development Outputs - www.gov.uk/dfid-research-outputs
- WHO electronic Library of Evidence for Nutrition Actions (eLENA) -
- www.who.int/elena/en
- WHO Reproductive Health Library - apps.who.int/rhl/en
- Equity in Asia-Pacific Health Systems (Equitap)
- Global Development Network
- Management Sciences for Health
- UK Department for International Development (DFID)
- United States Agency for International Development (USAID)
- World Bank
- United Nations Children's Fund (UNICEF)

(ii) In a deviation from the databases specified in the protocol, the following electronic databases were additionally searched:

- EMBASE via Ovid (from 1974 to 01/02/2017)
- PsycINFO via EBSCOHost (02/02/2017)
- CINAHL via EBSCOHost (02/02/2017)

APPENDIX 3. INCLUSION CRITERIA

Populations of relevance: Systematic reviews including studies from low and middle income countries (LMICs). We will use the World Bank (www.worldbank.org) definition. Our initial analysis of existing systematic reviews suggests that reviews are likely to focus specifically on low and middle country contexts. Our evidence summary will also take into account the social, economic and political context of the populations studied. For systematic reviews including studies from both high income countries and LMICs, the LMIC elements will be screened for inclusion.

Intervention: Health programmes involving community engagement or participation at some level in the programme as defined by the continuum or a 'ladder' of community engagement/participation (see Section 3.2.1). Communities will have been involved in the design, implementation and/or evaluation of the intervention for reviews to be included. We will exclude systematic reviews that examine health programmes where communities are involved only as the ultimate beneficiaries and those which involve only engaging with people who are already trained as practitioners.

Comparison: Community participation/engagement approaches compared to a control (e.g. delivery as usual) or another intervention (including other participatory approaches). Comparators are often very poorly described in systematic reviews (Liberati *et al.*, 2009). Our initial analysis of existing systematic reviews suggests this is likely to be the case in systematic reviews included in the evidence summary. Across the included systematic reviews we will record and describe what the intervention is compared with, and how this feature of PICOS has been addressed by review authors.

Outcomes of relevance: The evidence summary will cover three broad categories of outcomes as specified in the Request for Proposal (RfP): health outcomes; improved service delivery; and sustainability of the intervention and /or benefit. Outcomes will be defined according to the definitions provided by the authors in relevant systematic reviews. Our initial analysis of existing systematic reviews suggests that the majority of reviews examine health outcomes. Across the included systematic reviews we will record and describe how the outcomes being assessed are specified.

Study design: Our approach prioritises the inclusion of published and unpublished systematic reviews of quantitative and/or qualitative research (including outcome or process evaluation studies). Some authors may not explicitly identify their reports as a systematic review (Liberati *et al.*, 2009) and we will be inclusive in the early stages of evidence sifting. Reviews will be judged to be systematic if they report: search strategy details; inclusion and exclusion criteria; and provide means of clearly identifying all included studies. Subsequent assessment using a validated tool (Section II.B.) will highlight the rigour and transparency of the included systematic reviews.

Additional criteria

Year of publication: No date limits will be applied to the inclusion of systematic reviews.

Language: English language publications only.

APPENDIX 4. DATA EXTRACTION FORM

Variables extracted

Study ID		
Initials of reviewer		
Details		P
Study characteristics		
Research aims/objectives		
Population Characteristics/Geographical area		
Intervention/comparator details		

Design and number of included studies (e.g. RCTs)		
Community participation/engagement approach		
Data collection and analysis methods		
Outcomes		
Health outcomes reported		
Service delivery outcomes		
Sustainability outcomes		
Key findings/Recommendations		
Conclusions		

APPENDIX 5. AMSTAR QUALITY ASSESSMENT

Was an 'a priori' design provided?

The research question and inclusion criteria should be established before the conduct of the review.

□ Yes
□ No
□ Can't answer
□ Not applicable

Note: Need to refer to a protocol, ethics approval, or pre-determined/a priori published research objectives to score a "yes."

2. Was there duplicate study selection and data extraction?

There should be at least two independent data extractors and a consensus procedure for disagreements should be in place.

□ Yes
□ No
□ Can't answer
□ Not applicable

Note: 2 people do study selection, 2 people do data extraction, consensus process or one person checks the other's work.

3. Was a comprehensive literature search performed?

At least two electronic sources should be searched. The report must include years and databases used (e.g., Central, EMBASE, and MEDLINE). Key words and/or MESH terms must be stated and where feasible the search strategy should be provided. All searches should be supplemented by consulting current contents, reviews, textbooks, specialized registers, or experts in the particular field of study, and by reviewing the references in the studies found.

□ Yes
□ No
□ Can't answer
□ Not applicable

Note: If at least 2 sources + one supplementary strategy used, select "yes" (Cochrane register/Central counts as 2 sources; a grey literature search counts as supplementary).

4. Was the status of publication (i.e. grey literature) used as an inclusion criterion?
The authors should state that they searched for reports regardless of their publication type. The authors should state whether or not they excluded any reports (from the systematic review), based on their publication status, language etc.

Note: If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." SIGLE database, dissertations, conference proceedings, and trial registries are all considered grey for this purpose. If searching a source that contains both grey and non-grey, must specify that they were searching for grey/unpublished lit.

□ Yes
□ No
□ Can't answer
□ Not applicable

5. Was a list of studies (included and excluded) provided? A list of included and excluded studies should be provided.

Note: Acceptable if the excluded studies are referenced. If there is an electronic link to the list but the link is dead, select "no."

□ Yes
□ No
□ Can't answer
□ Not applicable

6. Were the characteristics of the included studies provided?
In an aggregated form such as a table, data from the original studies should be provided on the participants, interventions and outcomes. The ranges of characteristics in all the studies analyzed e.g., age, race, sex, relevant socioeconomic data, disease status, duration, severity, or other diseases should be reported.

Note: Acceptable if not in table format as long as they are described as above.

□ Yes
□ No
□ Can't answer
□ Not applicable

7. Was the scientific quality of the included studies assessed and documented? 'A priori' methods of assessment should be provided (e.g., for effectiveness studies if the author(s) chose to include only randomized, double-blind, placebo controlled studies, or allocation concealment as inclusion criteria); for other types of studies alternative items

Note: Can include use of a quality scoring tool or checklist, e.g., Jadad scale, risk of bias, sensitivity analysis, etc., or a description of quality items, with some kind of result for EACH study ("low" or "high" is fine, as long as it is clear which studies scored "low" and which scored "high"; a summary score/range for all studies is not acceptable).

□ Yes
□ No
□ Can't answer
□ Not applicable

8. Was the scientific quality of the included studies used appropriately in formulating conclusions?
The results of the methodological rigor and scientific quality should be considered in the analysis and the conclusions of the review, and explicitly stated in formulating recommendations.

Note: Might say something such as "the results should be interpreted with caution due to poor quality of included studies." Cannot score "yes" for this question if scored "no" for question 7.

□ Yes
□ No
□ Can't answer
□ Not applicable

9. Were the methods used to combine the findings of studies appropriate?

For the pooled results, a test should be done to ensure the studies were combinable, to assess their homogeneity (i.e., Chi-squared test for homogeneity, I^2). If heterogeneity exists a random effects model should be used and/or the clinical appropriateness of combining should be taken into consideration (i.e., is it sensible to combine?).

□ Yes
□ No
□ Can't answer
□ Not applicable

Note: Indicate "yes" if they mention or describe heterogeneity, i.e., if they explain that they cannot pool because of heterogeneity/variability between interventions.

10. Was the likelihood of publication bias assessed?

An assessment of publication bias should include a combination of graphical aids (e.g., funnel plot, other available tests) and/or statistical tests (e.g., Egger regression test, Hedges-Olken).

□ Yes
□ No
□ Can't answer
□ Not applicable

Note: If no test values or funnel plot included, score "no". Score "yes" if mentions that publication bias could not be assessed because there were fewer than 10 included studies.

11. Was the conflict of interest included?

Potential sources of support should be clearly acknowledged in both the systematic review and the included studies.

□ Yes
□ No
□ Can't answer
□ Not applicable

Note: To get a "yes," must indicate source of funding or support for the systematic review AND for each of the included studies.

APPENDIX 6. EXCLUDED STUDIES

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Burchett H E Mayhew S H (2009) Maternal mortality in low-income countries: What interventions have been evaluated and how should the evidence base be developed further? *International Journal of Gynecology and Obstetrics,* 105**,** 78-81.

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APPENDIX 7. RESULTS OF QUALITY ASSESSMENT

Reference	Was an 'a priori' design provided?	Was there duplicate study selection and data extraction?	Was a comprehensive literature search performed?	Was the status of publication (i.e. grey literature) used as an	Was a list of studies (included and excluded) provided?	Were the characteristics of the included studies provided?	Was the scientific quality of the included studies assessed and	Was the scientific quality of the included studies used appropriately in	Were the methods used to combine the findings of studies appropriate?	Was the likelihood of publication bias assessed?	Was the conflict of interest included?	Total score
LOW QUALITY (0-5)												
Winch et al., 2005	No	Can't answer	Yes	No	No	No	No	No	No	No	Yes	2
Kraft et al., 2014	No	Can't answer	Can't answer	Yes	No	Yes	No	No	Can't answer	No	Yes	3
Molyneux et al., 2012	No	No	No	Yes	No	Yes	No	No	Can't answer	Can't answer	Yes	3
Pallas et al., 2013	No	No	Yes	No	No	No	No	No	Yes	No	Yes	3
Schiffman et al., 2010	No	Can't answer	Yes	Yes	No	Yes	No	No	Yes	No	No	4
Atkinson et al., 2011	No	Can't Answer	Yes	No	No	Yes	Yes	No	Yes	Can't answer	Yes	5
George et al., 2015a	No	Yes	Yes	Yes	No	No	No	No	Yes	Yes	No	5
Hopkins et al., 2007	No	Can't answer	No	No	Yes	Yes	No	Yes	Yes	No	Yes	5
Kane et al., 2010	No	Yes	Yes	Yes	No	No	No	No	Yes	No	Yes	5
Lassi et al., 2016b	No	Can't answer	Yes	No	No	Yes	Yes	Yes	Can't answer	No	Yes	5

Reference	Was an 'a priori' design provided?	Was there duplicate study selection and data extraction?	Was a comprehensive literature search performed?	Was the status of publication (i.e. grey literature) used as an	Was a list of studies (included and excluded) provided?	Were the characteristics of the included studies provided?	Was the scientific quality of the included studies assessed and	Was the scientific quality of the included studies used appropriately in	Were the methods used to combine the findings of studies appropriate?	Was the likelihood of publication bias assessed?	Was the conflict of interest included?	Total score
McCoy et al., 2012	No	Can't answer	Yes	Yes	No	Yes	No	No	Can't answer	No	Yes	5
Schiavo et al., 2014	No	Yes	Yes	No	No	Yes	Yes	Can't answer	Can't answer	Can't answer	Yes	5
Tilahun et al, 2011	No	Yes	Yes	No	No	Yes	No	No	Yes	No	Yes	5
MODERATE QUALITY (6-8)												
Cornish et al., 2014	No	Can't Answer	Yes	No	No	Yes	Yes	Yes	Yes	Can't answer	Yes	6
Kerrigan et al., 2013	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	No	6
Kerrigan et al., 2016	No	Yes	Yes	No	No	Yes	Can't answer	Yes	Yes	No	Yes	6
Lee et al., 2009	No	Can't answer	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	6
Lodenstein et al., 2016	Yes	Yes	Yes	Yes	No	Yes	No	No	Can't answer	Can't answer	Yes	6
Kok et al., 2015	No	Yes	Yes	Yes	No	Yes	Yes	Can't answer	Yes	No	Yes	7
Musa et al., 2014	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	7
Lassi et al., 2016a	Yes	Yes	Yes	Yes	No	Yes	Can't answer	No	Yes	Yes	Yes	8
Marston et al., 2013	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	8

Reference	Was an 'a priori' design provided?	Was there duplicate study selection and data extraction?	Was a comprehensive literature search performed?	Was the status of publication (i.e. grey literature) used as an	Was a list of studies (included and excluded) provided?	Were the characteristics of the included studies provided?	Was the scientific quality of the included studies assessed and	Was the scientific quality of the included studies used appropriately in	Were the methods used to combine the findings of studies appropriate?	Was the likelihood of publication bias assessed?	Was the conflict of interest included?	Total score
McCollum et al., 2016	Yes	Can't answer	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	8
Wekesah et al., 2016	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	8
Semrau et al., 2016	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Can't answer	Yes	8
HIGH QUALITY (9-11)												
Lassi et al., 2010	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Can't answer	9
Spangaro et al., 2013	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	9
Tripathi et al., 2016	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	9
Glenton et al., 2013	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	10
Lewin et al., 2010	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	10
Prost et al., 2013	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	10

APPENDIX 8. REVIEW CHARACTERISTICS

Reference	Review aims/objectives	Population, intervention/comparator details	Included studies
Maternal and child health			
Kraft et al., 2014	To provide a framework for understanding gender-integrated interventions and explore the extent to which these interventions promote behaviors relevant to child survival and development in low- and middleincome countries	Population: Not defined Intervention: Primary documents included published articles and gray literature reports that evaluated a gender-accommodating or gender-transformative intervention implemented in a low- or middle-income country. The interventions sought to modify relevant behaviors for child survival (i.e., behaviors related to healthy timing and spacing of pregnancy, maternal health, newborn health, child development, nutrition, immunization and malaria)	26 studies Locations unclear, only included LMICs
Lassi et al 2010	To assess the effectiveness of community-based intervention packages in reducing maternal and neonatal morbidity and mortality; and improving neonatal outcomes.	Population: Women of reproductive age group, particularly pregnant women at any period of gestation. Intervention: Packages that included additional training of outreach workers such as lady health workers/visitors, community midwives, community/village health workers, facilitators or TBAs in maternal care during pregnancy, delivery and in the postpartum period; and routine newborn care. Control:	27 publications (18 studies) 1 RCT 13 cluster RCTs 4 Quasi-experimental LMICs: India, Bangladesh, Pakistan, Gambia, Nepal , Indonesia High income countries (HICs): Greece

Reference	Review aims/objectives	Population, intervention/comparator details	Included studies
		Usual maternal and newborn care services from local government and non-government facilities	
Lassi et al., 2016a	To assess the impact of different strategies to improve maternal and neonatal health care seeking in low- and middle-income countries	Population: Pregnant women at any gestation, postpartum women up to 6 weeks after giving birth, and neonates less than 28 days of life Intervention: Information and education for empowerment and change; group meetings or individual one-to-one counselling (home or primary health care facilities) Comparator: Standard/no care NB: In several included studies interventions were provided in packages of different strategies including community mobilization, home visitation, or a combination of two	58 studies Study design: 29 RCTs 15 non-RCTs 14 before-after studies Most of the included studies were conducted in Asia, with very a limited number of studies from other LMIC countries such as Africa
Lassi et al 2016b	This review assessed the impact of HRH interventions for maternal health delivered by skilled birth attendants, and derived lessons, identified research gaps, and formulated recommendations based on the studies from LMICs.	Population: Not defined Intervention: Any HRH interventions related to SBAs in management system, policy, finance, education, partnership, and leadership	25 studies: 4 RCTs 2 Quasi-RCTs 18 Prospective before-after studies 1 Cohort study LMICs: Thailand, Turkey, Philippines, South Africa, Vietnam, Nepal, Ethiopia, Nigeria, Mozambique, Bangladesh, Paraguay, Tanzania, Ghana, Malawi

Reference	Review aims/objectives	Population, intervention/comparator details	Included studies
Lee et al., 2009	To describe the evidence for interventions to link mothers with skilled care during pregnancy, labor, and birth, and to summarize the implications for programs	Population: Pregnant women Intervention: Studies were considered for inclusion if the study design was a randomized controlled trial or quasi-experimental study with replication of intervention and control units, reporting the outcomes of interest (skilled birth attendance, PMR, or ENMR).	Unclear total studies included Locations unclear
Lewin et al., 2010	To assess the effects of lay health worker interventions in primary and community health care on maternal and child health and the management of infectious diseases	Population: No restriction on care recipients Intervention: Any intervention delivered by LHWs and intended to improve maternal or child health (MCH) or the management of infectious diseases.	82 studies LMICs: (n=27) Brazil, China, India, Mexico, Philipines, Thailand, Turkey, and South Africa, Bangladesh, Burkina Faso, Ethiopia, Ghana, Iraq, Jamaica, Nepal, Pakistan, Tanzania, and Vietnam HICs: (n=55) Australia, Canada, Ireland, New Zealand, the UK, and the USA
Marston et al., 2013	To examine whether community participation interventions improve maternal and newborn health outcomes	Population: Any population Intervention: Community participation implemented to improve maternal and newborn health	15 articles (10 interventions) LMICs: Bangladesh, Malawi, Nepal, India, Kenya
Prost et al 2013	To assess the effects of women's groups practising participatory	Population: Women of reproductive age (15–49 years)	7 Cluster RCTs

Reference	Review aims/objectives	Population, intervention/comparator details	Included studies
	learning and action, compared with usual care, on birth outcomes in low-resource settings.	Intervention: Interventions contained the stages of a participatory learning and action cycle	LMICs: Bangladesh, India, Malawi, and Nepal
Schiffman et al., 2010	To identify all published, large-scale, controlled studies that were implemented in a rural setting, included a control group, and reported neonatal and/or perinatal mortality as outcomes	Population: Mothers or newborns within the continuum of care from pregnancy to the post-natal period (28 days after birth of the neonate) Intervention: Largescale controlled trials or program evaluations carried out in a rural setting that implemented a CBIP and included a control group. Only studies that reported neonatal mortality rate (NMR) and/or perinatal mortality rate (PMR) as outcome variables were considered	9 studies 5 cluster RCTs 2 non-RCTs 1 quasi-experimental 1 2-part design LMICs: India, Bangladesh, Pakistan, Nepal
Tilahun et al., 2011	To systematically search, appraise and synthesise the best available evidence on the effect of community based BCC intervention to improve neonatal mortality in developing countries.	Population: Mothers with neonates aged 0 to 27 days, living in developing countries. In this systematic review, mothers were considered as the population to which the interventions were directed and the effectiveness of interventions was observed on neonates‘ health Intervention: Any community based behavioural change communication interventions such as health education, information education and communication, behavioural change communication, social mobilisation, community mobilisation, community conversation, and home based	4 studies LMICs: Pakistan, India, Bangladesh

Reference	Review aims/objectives	Population, intervention/comparator details	Included studies
		counselling to improve neonatal mortality in developing countries Comparator: Those who received conventional behavioural change communication services for newborn care at health facilities level, and interventions through the conventional health system	
Tripathi et al., 2016	To evaluate the effect of home visits by trained community health workers to successfully identify newborns and young infants (up to 59 days of age) with serious illness and improve care seeking from a health facility	Population: Children 59 days of age or less in low- and middle-income countries Intervention: Home visits by community health workers versus no home visits Studies providing specific additional interventions in both intervention and comparison areas were eligible for inclusion, as long as these additional interventions were similar	1 RCT 6 cluster RCTs LMICs: Bangladesh, Ghana, India, Pakistan, South Africa, Syrian Republic
Wekesah et al., 2016	We report on non-drug interventions and their effectiveness to improve outcomes and impact the quality of maternal health care in the region. Findings from this review will provide a basis for the design, delivery, and scale-up of programs aimed at improving the quality of care offered to women in region and	Population: Not defined Intervention: Non-drug interventions – those not related to or involving the use of drugs or medication, and directed to the individual (patient), members of her family, the health care providers, or the health care system with the aim of enhancing quality of care and improving maternal morbidity and mortality outcomes	73 studies LMICs: Sub-Saharan Africa

Reference	Review aims/objectives	Population, intervention/comparator details	Included studies
	consequently their health outcomes		
Infectious or communicable diseases			
Cornish et al., 2014	To present a systematic review of studies of the impacts of CM as a component of complex HIV prevention interventions. The scope of this review is comprehensive in that we do not restrict it to any target group, and we consider the impact on biomedical, behavioural, and social outcome variables.	Population: Not defined Intervention: The reviewed studies aimed to engage communities in one or more of the following: enhancing supportive interpersonal relationships, building within community support and solidarity (bonding social capital), and building bridges between communities and outside support partners (bridging social capital).	20 studies 7 RCTs 13 observational designs LMICs: Africa, India, South East Asia
Hopkins et al., 2007	To summarize the current evidence base for HMM, and to identify areas where further research could guide implementation of HMM in Africa	Population: Not defined Intervention: Inclusion criteria for studies reviewed were as follows: 1) the intervention evaluated consisted of antimalarial treatment administered presumptively for febrile illness; 2) the treatment was administered by local community members who had no formal education in health care; 3) measured outcomes included specific health indicators such as malaria morbidity (incidence, severity) and/or mortality, and/or malariometric indices including parasite rates, hemoglobin or packed cell volume (PCV), and spleen rates	6 studies (8 publications) LMICs: Africa
Kerrigan et al., 2013	To systematically review the peer-reviewed evidence regarding the	Population:	10 studies

Reference	Review aims/objectives	Population, intervention/comparator details	Included studies
	impact of community empowerment as an HIV prevention strategy among sex workers in low- and middle-income countries where the burden of HIV among sex workers is often high	Sex workers (defined as individuals, either male or female or transgendered, who exchange sex for money) Intervention/comparator: Any intervention study involving a pre-post or multi-arm comparison of individuals or groups who received the intervention versus those who did not was considered eligible for inclusion. This could include either individuals or groups who received the intervention versus those who did not (control or comparison group), or individuals or groups before and after receiving the intervention. Studies could have either a control group that did not receive any type of intervention, or a comparison group that received standard of care, an attention-matched intervention on a different topic, a less-intensive form of the empowerment intervention, or a separate intervention unrelated to empowerment	LMICs: Brazil, Dominican Republic, India
Kerrigan et al., 2016	To undertake a systematic review and meta-analysis of the effectiveness of community empowerment in sex workers for key HIV-related outcomes.	Population: Sex workers Intervention: pre or post or multi-group assessments of community empowerment-based HIV prevention interventions in sex workers in low-income and middle-income countries	22 studies Brazil, Dominican Republic, India
Lewin et al., 2010	To assess the effects of LHW interventions in primary and community health care on maternal and child health and the management of infectious diseases	Population: No restriction on care recipients Intervention:	82 studies LMICs: (n=27) Brazil, China, India,

Reference	Review aims/objectives	Population, intervention/comparator details	Included studies
		Any intervention delivered by LHWs and intended to improve maternal or child health (MCH) or the management of infectious diseases.	Mexico, Philipines, Thailand, Turkey, and South Africa, Bangladesh, Burkina Faso, Ethiopia, Ghana, Iraq, Jamaica, Nepal, Pakistan, Tanzania, and Vietnam HICs: (n=55) Australia, Canada, Ireland, New Zealand, the UK, and the USA
Musa et al., 2014	To evaluate the effectiveness of LHWs in increasing detection rate and treatment success outcome of tuberculosis cases.	Population: Not defined Intervention: LHW participation in TB treatment Control: Standard TB care in centralised care setting	5 cluster RCTs 4 RCTs 1 non-RCT 3 cohort studies LMICs: South Africa, Ethiopia, Tanzania, Namibia, Uganda, Brazil, Cambodia
Winch et al., 2005	To categorize and describe Intervention Models involving community health workers that aim to improve case management of sick children at the household and community levels	Population: Children under 5 years of age Intervention: Programmes that employ community health workers, not based at health facilities, to manage malaria or pneumonia	7 intervention models identified Locations unclear
Other			
Schiavo et al., 2014	To identify and assess evidence on interventions to communicate risk and promote disease mitigation measures in epidemics and emerging disease outbreak	Population: Not defined Intervention:	29 studies Locations unclear

Reference	Review aims/objectives	Population, intervention/comparator details	Included studies
	settings. The study focuses on data that are relevant to low and middle-income country (LMIC) settings.	Interventions to communicate risk and promote disease mitigation measures in epidemics and emerging disease outbreak settings	
Semrau et al., 2016	To systematically synthesise the current evidence and experience base for models of involvement of mental health service users/caregivers in mental health policy-making, mental health service development, quality monitoring and evaluation of services, and mental health research in LMICs	Population: Service user and caregivers in mental health system strengthening Intervention: Any kind of study design, which reviewed or reported on evaluation or experience of service user (i.e. service users with any kind of mental health problem, including those with intellectual disabilities, dementia, or child and adolescent mental health problems), family or caregiver (though not community) involvement in LMICs, and which were relevant to mental health system strengthening	20 papers LMICs: Africa and Asia Included 12 studies conducted in upper income countries
Spangaro et al., 2013	To canvas the extent and impact of initiatives to reduce incidence, risk and harm from sexual violence in conflict, post-conflict and other humanitarian crises, in low and middle income countries	Population: Survivors of sexual violence, combatants, peacekeepers, humanitarian workers, community members, camp residents, service providers Intervention: Interventions which aimed at reducing the incidence of or risk of sexual violence, including secondary and tertiary prevention of sexual violence.	40 studies LMICs: Interventions were undertaken in 26 countries, predominantly in Africa and the former Yugoslavia with Liberia, Rwanda and Kenya being the sites with most studies (four each). Three of these studies reported interventions in multiple countries. Apart from these, two studies were undertaken on global

Reference	Review aims/objectives	Population, intervention/comparator details	Included studies
			implementation of initiatives (defined here as more than 5 countries)
Sustainability			
Atkinson et al., 2011	To systematically review the evidence and thematically deconstruct case reports of community participation over the past 60 years in order to arrive at an understanding of the architecture of participation for communicable disease control and elimination and provide guidance for the design of community participation strategies for malaria elimination	Population: Not defined Intervention: Studies investigating the effect of community participation on communicable disease control or elimination; or the effect of the type of programme/strategy used on the level of participation achieved in the programme. In addition, case reports of community participation programmes including those with an evaluation component were also included in this review	60 studies 10 quantitative 50 qualitative Locations unclear
George et al., 2015a	We undertook a narrative review to better understand the contextual features relevant to HCs, drawing from Scopus and the internet	Population: Not defined Intervention: Articles were included if they met the following criteria: (1) contained substantial content on HCs, defined as groups containing some layperson representation, having a formal link to the government, and existing to improve local well-being; (2) are about existing HCs (rather than calls to develop HCs in the future)	44 studies Locations unclear, only included LMICs
Glenton et al 2013	To explore factors affecting the implementation of LHW	Population: Participants could include lay health workers, patients and their families, policy makers, programme managers,	53 qualitative studies

Reference	Review aims/objectives	Population, intervention/comparator details	Included studies
	programmes for maternal and child health	other health workers, or any others involved in or affected by the programmes Intervention: We included studies of programmes that were delivered in a primary or community healthcare setting; that intend to improve maternal or child health; and that had used any type of lay health worker, including community healthworkers, village healthworkers, birth attendants, peer counsellors, nutritionworkers and home visitors	LMICs: Bangladesh, Ethiopia, Gambia, Kenya,Malawi, Nepal, Uganda, Vietnam, Zambia, Zimbabwe, Brazil, Ghana, Guatemala, Honduras, India, Iran, Mexico, Nicaragua, Pakistan, Papua New Guinea, South Africa, Thailand HICs: Australia, Canada, USA, UK
Kane et al 2010	To examine evidence from randomized control trials (RCT) on community health worker interventions in IMCI in LMIC from a realist perspective with the aim to see if they can yield insight into the working of the interventions, when examined from a different perspective	Population: Children aged 1-60 months in LMICs Intervention: Child health interventions delivered by community health workers	6 RCTs 4 cluster RCT LMICs: Philippines, Vietnam, Mexico, Brazil, India, Bangladesh, Pakistan, Ethiopia, Ghana
Kok et al., 2015	We conducted a systematic review with a narrative analysis on contextual factors influencing performance of community health workers, to contribute to the evidence-base on how these influence community health worker or community health worker programme performance.	Population: Community health workers, their clients and their families/ carers, community health worker supervisors, the wider community, policy makers, program managers, other (professional) health workers, and any others directly involved in or affected by community health worker service provision Intervention:	94 studies 42 qualitative 28 mixed methods 24 quantitative LMICs: Africa, Asia, Latin America, Oceania

Reference	Review aims/objectives	Population, intervention/comparator details	Included studies
		quantitative, qualitative, and mixed methods studies about community health workers working in promotional, preventive, or curative primary health care in LMICs	
Lodenstein et al., 2016	To review and assess the available evidence for the effect of social accountability interventions on policymakers' and providers' responsiveness in countries with medium to low levels of governance capacity and quality	Population: Not defined Intervention: Interventions or reform or case that explicitly aimed at strengthening collective citizen engagement (rather than cases of individual patient empowerment) to address weaknesses in health policies or services in the public sector (rather than improving health seeking behaviour)	87 studies Locations unclear
McCollum (2016)	To determine the extent of equity of community health worker programmes and to identify intervention design factors which influence equity of health outcomes	Population: Intervention: Studies which provided an analysis of community health worker programme outcomes (access, utilisation, quality, empowerment); studies which adopted a universal approach to community health i.e. services provided for an entire population; studies from high, middle or low income country; any study where community health worker programme was conducted at primary/ community level	34 publications (32 studies) 29 quantitative 5 mixed method LMICs: Brazil, Bangladesh, India, Philippines, Malawi, Kenya, Pakistan, Guatemala, Zambia, Camodia
McCoy et al., 2012	To review the literature and evidence base concerning the effectiveness of health facility	Population: Intervention:	41 studies (4=primary review, 37=secondary review)

Reference	Review aims/objectives	Population, intervention/comparator details	Included studies
	committees in low- or middle-income countries	Experimental or case-control studies concerning health facility committees, or observational case studies in which there was a structured evaluation and rigorous analysis linking health facility committees to relevant output or outcome measures	Primary review LMICs: Peru, Zimbabwe, Kenya, Uganda
Molyneux et al., 2012	To review community involvement at peripheral facilities in LMICs	Population: Not defined Intervention: Descriptive and evaluation papers focusing on urban or rural primary health care facilities (e.g., health centres, health posts, dispensaries, community pharmacies), where the authors described at least one measure to enhance community accountability that was linked with those facilities	21 studies LMICs: Sub-Saharan Africa, India, Colombia, Mexico, Cuba, Peru, Nepal
Pallas et al., 2013	To provide a systematic review of the determinants of success in scaling up and sustaining community health worker programmes in low- and middle-income countries (LMICs)	Population: Not defined Intervention: Interventions or evaluations which address scale-up or sustainability of community health workers	19 studies LMICs: Zaire, Nigeria, Uganda, Ghana, Mozambique, Botswana, South Africa, India, Pakistan, Nepal, Sri Lanka, Brazil, Colombia, Haiti, Burma, China

ABBREVIATIONS

AMSTAR	A Measurement Tool to Assess Systematic Reviews
DFID	Department for International Development
EPPI-Centre	Evidence for Policy and Practice Information and Co-ordinating Centre
GRADE	Grading of Recommendations Assessment, Development and Evaluation
HIC	High income country
HIV	Human immunodeficiency virus
LMIC	Low and middle income country
NGO	Non-Government Organizations
NICE	National Institute for Health and Care Excellence (UK)
OECD	Organisation for Economic Co-operation and Development
SARH	South Asia Research Hub
STI	Sexually transmitted infection
WHO	World Health Organization