

Anadya Portela
Jennifer Stevenson
Rachael Hinton
Marianne Emler
Stella Tsoli
Birte Snilstveit

Social, behavioural and community engagement interventions for reproductive, maternal, newborn and child health

An evidence gap map

December 2017

Evidence
Gap Map
Report 11

Health



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About this evidence gap map report

This report provides the supporting documentation for an evidence gap map on social, behavioural and community engagement interventions for reproductive, maternal, newborn and child health, produced by the World Health Organization and 3ie, with funding support from the Partnership for Maternal, Newborn & Child Health, the Norwegian Agency for Development Cooperation and the United States Agency for International Development. WHO has produced the original version, which is available [here](#). Both reports are substantially the same. All of the content of this report is the sole responsibility of the authors and does not represent the opinions of 3ie, its donors or its Board of Commissioners. Anayda Portela is a staff member of the World Health Organization. She alone is responsible for the views expressed in this publication and they do not necessarily represent the decisions, policy or views of the World Health Organization. Any errors and omissions are also the sole responsibility of the authors. Please direct any comments or queries to the corresponding author, Jennifer Stevenson at jensstevenson@gmail.com.

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Executive editors: Edoardo Masset and Beryl Leach

Production manager: Angel Kharya

Assistant production manager: Akarsh Gupta

Cover design: John F McGill and Akarsh Gupta

Social, behavioural and community engagement interventions for reproductive, maternal, newborn and child health: an evidence gap map

Anayda Portela
World Health Organization (WHO)

Jennifer Stevenson
International Initiative for Impact Evaluation (3ie)

Rachael Hinton
Independent Consultant

Marianne Emler
Independent Consultant

Stella Tsoli
University College London (UCL)

Birte Snilstveit
3ie

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Summary

Women's and children's health has seen significant progress in recent decades, however, gains have been uneven and inequalities persist. The Every Woman Every Child (EWEC) Global Strategy for Women's, Children's, and Adolescents' Health (2016-2030), released in parallel with the United Nations Sustainable Development Goals 2030 (SDGs) in September 2015, calls for action towards three objectives: Survive (end preventable deaths), Thrive (ensure health and well-being) and Transform (expand enabling environments).

Achieving these objectives will depend on successfully scaling-up programmes that go beyond clinical and service delivery. Social, behavioural and community engagement (SBCE) interventions that address the capabilities of individuals, families and communities to contribute to improving their own health, are fundamental to the realization of these objectives. Their role in programmes has possibly been neglected in the past due to a lack of evidence of their effectiveness.

Decision makers considering SBCE interventions need high-quality evidence on intervention effectiveness, particularly where, as is true of this domain, global guidance is limited but growing. A large number of research studies are produced every year but these are scattered across subjects, sources and locations. Research evidence needed to inform policies and programmes may be difficult to find and it is not clear which areas need further or new research.

To address these issues, the World Health Organization (WHO) worked with the International Initiative for Impact Evaluation (3ie) to conduct an exercise to develop an evidence gap map of selected SBCE interventions related to reproductive, maternal, newborn and child health (RMNCH) in low- and middle-income countries. The purpose was to identify existing and ongoing impact evaluations and systematic reviews of selected SBCE interventions to inform RMNCH programmes and identify evidence gaps where new impact evaluations, systematic reviews and WHO guidelines could add value. This report provides information on the methods used to develop the evidence gap map and summarises the key findings. It is based on a systematic search of a large number of academic databases and websites covering the period 2000-2016. Included studies were classified using three key characteristics: health topic, intervention and outcome. These characteristics were defined through consultations with WHO teams and the expert advisory group. Data visualization of these key characteristics has been used to display the findings. An interactive platform that visually presents the findings can be found at this [link](#).

Main findings

Of documents meeting inclusion criteria, 142 were completed systematic reviews and 457 were completed impact evaluations. A further 38 ongoing impact evaluations and 13 ongoing reviews were also identified. From the year 2000, the number of published impact evaluations has increased incrementally, with a notable increase in the number of studies published after 2011. However, although the total number of systematic reviews of SBCE interventions for RMNCH continues to increase, the number of new reviews published per year was greatest in 2013 and has declined since.

Impact evaluations are unevenly distributed across intervention areas. The included studies were predominantly randomised control trials (76%). There is a heavy focus on interpersonal communication and health education activities, followed by demand-side financing approaches and community mobilisation, delivered alone or packaged with other SBCE approaches. There were relatively few evaluations of mass media and entertainment education programmes, social media and m-health and social marketing. There have also been fewer evaluations of interventions involving community participation in health service planning and programmes and social accountability.

The most frequently measured outcomes were health-related outcomes, including child growth and development (n = 155), morbidity (n = 103), mortality (n = 60) and care practices (n = 221) and care-seeking (n = 171). Very few evaluations measured community capacity, participation in health programming, or outcomes related to household communication, social norms and gender equity. Few studies reported on knowledge and attitudes of health providers for engagement or provider communication and engagement skills, despite the large proportion of studies examining interpersonal communication and health education activities. Over 60% of the impact evaluations considered equity; most considered place of residence, typically a rural area, or socio-economic status. Ethnic group, language, culture, and disability were rarely considered.

Impact evaluations are also unevenly distributed across regions and countries. While most were performed in Africa and South-East Asia, reflecting the highest regional burdens of maternal and neonatal mortality, studies are concentrated within a fairly small number of countries in those regions. Over half of the studies (n = 270) come from 10 low- and middle-income countries. There were countries with high burdens of both maternal and neonatal mortality where no studies could be identified, particularly in West Africa.

The systematic review evidence base is large, but unevenly distributed, similar to the uneven distribution of identified impact evaluations. A large proportion (76%) of the reviews focused on interpersonal communication and health education approaches, particularly home visits and group approaches. It may be helpful to conduct a 'review of reviews' in this area to help identify more specific lessons learned and gaps in the knowledge.

Many of the included systematic reviews were assessed to have methodological limitations. In particular, for healthy timing and spacing of pregnancy, there were few reviews rated as 'high confidence' across all intervention areas. There are a large number of reviews, rated low or medium confidence, of social media and m-health, despite the relatively low number of impact evaluations. Thus, more systematic reviews in this area may not contribute much to the knowledge base in this domain until new impact evaluations are published. There are several areas where new systematic reviews could be of value, including community mobilisation packages for water, sanitation and hygiene, infant feeding and nutrition, and early child development.

The outcomes assessed in the systematic reviews are largely inline with the outcomes assessed in impact evaluations. The most commonly included outcomes measures are health outcomes – mortality, morbidity and child growth and development (n = 163). The outcomes least mentioned include community capacity, participation and accountability,

parenting skills, joint decision-making in the household and crosscutting outcomes like status of women or social cohesion. The majority of systematic reviews (75%) did not consider equity.

Conclusions and implications

Use of SBCE interventions will be critical to achieving the global objectives set by the SDGs and the EWEC Global Strategy. Therefore, it is likely that investments in SBCE interventions will increase in the next decade. It is important to take stock before making additional investments. This evidence gap map aims to identify impact evaluations and systematic reviews on SBCE interventions for RMNCH, outlining key trends and gaps. It provides decision makers, researchers and programme managers with a collection of studies on priority SBCE interventions in key RMNCH topics and interested parties can go more in depth on topics of interest.

The findings from this evidence gap map highlight a number of gaps, as outlined above, that could be addressed in future impact evaluations and systematic reviews, subject to more in-depth analysis and consensus on priorities. We also identify a number of implications for research. When commissioning and designing new studies, implementers and researchers should consider the following:

- Adopting common intervention frameworks to expand the usefulness of studies evaluating the effects of SBCE interventions to improve RMNCH.
- Measuring intermediate and broader social outcomes that are objectives of the new EWEC Global Strategy for Women's, Children's and Adolescents' Health, including household communication around RMNCH, social norms in the community, women's and community perceptions of services, social accountability, community participation in health planning and programming.
- More studies to fill an important gap in measuring interventions to meet the needs of vulnerable populations. This includes more consistently incorporating considerations of equity (including gender, education, socio-economic status, place of residence, ethnicity, culture and disability). The map identified gaps in targeting these populations and measuring direct and differential effects on them would be important for meeting global agendas.
- Targeting research in high-burden countries where no studies were identified, including francophone Africa.
- Conducting mixed-method impact evaluations (and systematic reviews) with causal chain analysis, process evaluation and cost data.
- Ensuring that new impact evaluations and systematic reviews adopt commonly agreed best practice approaches for study conduct and reporting, including documentation of intervention design, context and implementation.

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Abbreviations and acronyms

EWEC	Every Woman Every Child
EGM	Evidence gap map
IPC	Interpersonal communication
L&MIC	Low-and middle-income country
RCT	Randomised controlled trial
RMNCH	Reproductive, maternal, newborn and child health
SBCE	Social, behavioural and community engagement
SDGs	Sustainable Development Goals
USAID	United States Agency for International Development
WASH	Water, sanitation and hygiene
WHO	World Health Organization

1. Introduction

Women's and children's health has seen significant progress in recent decades (IGME 2015). However, health gains have been uneven and inequalities persist due to social and economic factors, such as gender, education and income, along with geographical and structural determinants (Marston et al. 2016)

The need for a broader vision to improve women's and children's health has been addressed by more recent global policies, notably the Every Woman Every Child (EWEC) Global Strategy for Women's, Children's, and Adolescents' Health (2016-2030) (referred to as the 'EWEC Global Strategy' from hereon. The EWEC Global Strategy was released in parallel with the United Nations Sustainable Development Goals 2030 (SDGs) (UN 2014) in September 2015. Both strategies promote establishment of an enabling environment for women and children to realise health and well-being, calling for interventions that go beyond service delivery.

The EWEC Global Strategy calls for action towards three objectives for health: Survive (end preventable deaths), Thrive (ensure health and well-being) and Transform (expand enabling environments). To reach the three objectives, strategies need to be built on evidence-based, effective and sustainable interventions from both the biomedical and the social sciences. Women, children and adolescents are recognised as potentially the most powerful agents for improving their own health and achieving prosperous and sustainable societies (EWEC 2015).

The health impact of efficacious clinical and health system interventions must be maximised while simultaneously addressing inequity, the needs of underserved groups and a sustainable transformative approach to health that includes strengthening the capabilities of individuals, families and communities to contribute to improved health (Marston et al. 2016; WHO 2003). The EWEC Global Strategy calls for an enabling environment, a concept that has been embraced and defined over the years in different global frameworks. For example, in 1986 the Ottawa Charter put forward a concept of the enabling environment as one where all people had access to information, life skills and opportunities for making healthy choices. People cannot achieve their fullest health potential unless they are able to take control of those things which determine their health, for both women and men (Ottawa Charter for health promotion 1986).

Social, behavioural and community engagement (SBCE) interventions that address the capabilities of individuals, families and communities to contribute to improving their own health, are fundamental to realization of these global objectives. A number of different terms have been used to refer to SBCE interventions including health promotion, demand creation, empowerment, social and behaviour change. In this publication, the term SBCE interventions is used to capture the breadth of the different dimensions these interventions address.

1.1 Evidence to guide investments in SBCE interventions

Given the global priorities set by the SDGs and the EWEC Global Strategy, it is likely that investments in SBCE interventions will increase in the next decade. However, to date, investment in SBCE interventions, has varied and is poorly documented. A search

for information on past investment in SBCE, within international aid and development assistance funding revealed no such specific information. We reviewed national health expenditure on SBCE interventions for reproductive, maternal, newborn, child and adolescent health by the 16 countries currently working with the [Global Financing Facility](#), using expenditure on information, education and communication programmes as a proxy. Data showed that only six of the 16 countries provided any information on this item. Of those countries reporting, expenditure varied from 0.26% of total health expenditure in Cameroon to 11% in the Democratic Republic of Congo, with three countries spending less than 0.50% (American Association for the Advancement of Science 2017). Other reports also suggest that funding in this area is insufficient (WHO 2015).

Decision makers choosing where and how to spend funds and other resources need access to high-quality evidence to support the selection and implementation of effective and sustainable programmes that include SBCE interventions. Social, behavioural, structural, and economic interventions to help address the enabling environment have been in use for decades, however, policy makers often underestimate their value, and their inclusion in national strategies and programmes is lacking. This may be partly due to a weak and scattered evidence base that does not give policy makers the information needed to make decisions. At the same time funding for social science research to inform such intervention strategies has been consistently low over the past several decades compared to other science areas, particularly biomedical research (USAID, 2015).

To date there has been no attempt to map the evidence on SBCE interventions across RMNCH. Further, comparatively few guidelines have been developed for these types of interventions (see Appendix D for a list of SBCE-related guidelines available to date). This report takes stock of effectiveness research relating to SBCE interventions, identifying what research exists, gaps and areas to be prioritised for new research.

The report is intended to complement two previous publications produced by the World Health Organization (WHO) and the Partnership for Maternal, Newborn & Child Health: (1) an overview of the evidence on key interventions and policies for RMNCH (PMNCH 2011) focusing on essential clinical and service delivery interventions provided at different levels of the health system; and (2) a publication summarizing existing policies (PMNCH and WHO 2014). Although structural and policy changes are essential SBCE interventions, given the scope of the WHO's and the Partnership's policy compendium for RMNCH, such interventions have not been addressed in this SBCE map.

1.2 What is an evidence gap map?

An evidence gap map provides an overview of existing impact evaluations and systematic reviews, and categorises the key characteristics of included studies, facilitating access to the research and highlighting gaps (Snilstveit et al. 2016). It does not address the same questions as a systematic review and does not provide details on the findings of each study nor the overall effectiveness of interventions studied.

Mapping the evidence combines use of a systematic method to identify current evidence with data visualization and an interactive platform developed by 3ie that allows users to

explore the available studies and access user-friendly summaries and links to the full text of included studies.

1.3 Objectives

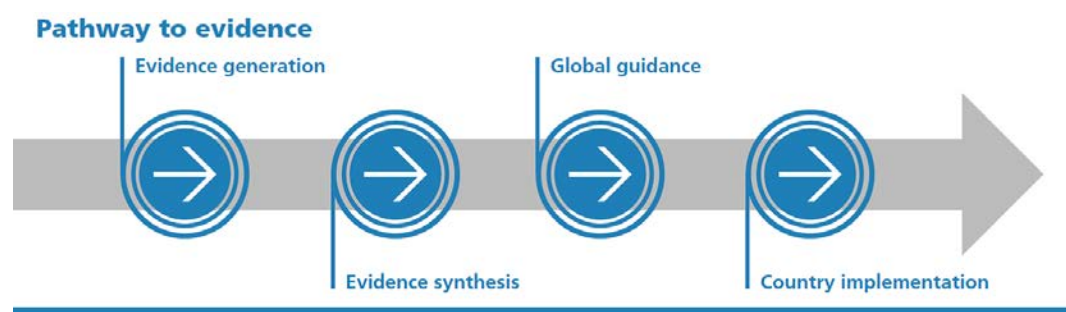
The overall aim of this exercise is to identify, map and describe existing empirical evidence on the effects of key SBCE interventions to strengthen individual, family and community capabilities for RMNCH. Specific major objectives of this SBCE evidence gap map are:

1. To identify existing and ongoing impact evaluations and systematic reviews on the effects of SBCE interventions that can be used to inform policy and programmes for RMNCH; and
2. To identify gaps where new evaluations, systematic reviews and/or the development of WHO guidance could add value.

1.4 Who should use this evidence gap map?

This document is primarily intended for RMNCH policy-makers and development practitioners that require evidence to inform policies and programmes. However, different audiences will have different uses for this evidence gap map. National and local governments and their key partners can use it to identify existing research related to interventions of interest; universities and evidence searchers can identify areas suitable for evidence synthesis; researchers can better prioritise research needs and move away from areas which may be saturated; partners advocate that governments apply SBCE interventions can refer to the map to identify successful experiences. For researchers and research-funders the evidence gap map provides a better understanding of the existing research landscape, explicitly identifying gaps in knowledge. It can thus support prioritization of better-targeted impact evaluations and evidence syntheses. For WHO and partners, the map can help identify where a substantial body of evidence needed to inform guideline development exists and could be synthesised. The pathway to evidence in Figure 1 below highlights the points at which the SBCE evidence gap map can inform decision makers and researchers.

Figure 1: Pathway to evidence



1.5 Report structure

Section 2 of the report describes the scope of the evidence gap map. Section 3 provides a brief overview of the methods, which are described in more detail in Appendix A. In section 4, the results of the search are described, as well as a description of the main characteristics of the evidence base for impact evaluations and systematic reviews. The

main gaps in the evidence base are presented, including a break down by reproductive, maternal, newborn and child health. Section 4 presents conclusions and implications for research.

2. Scope

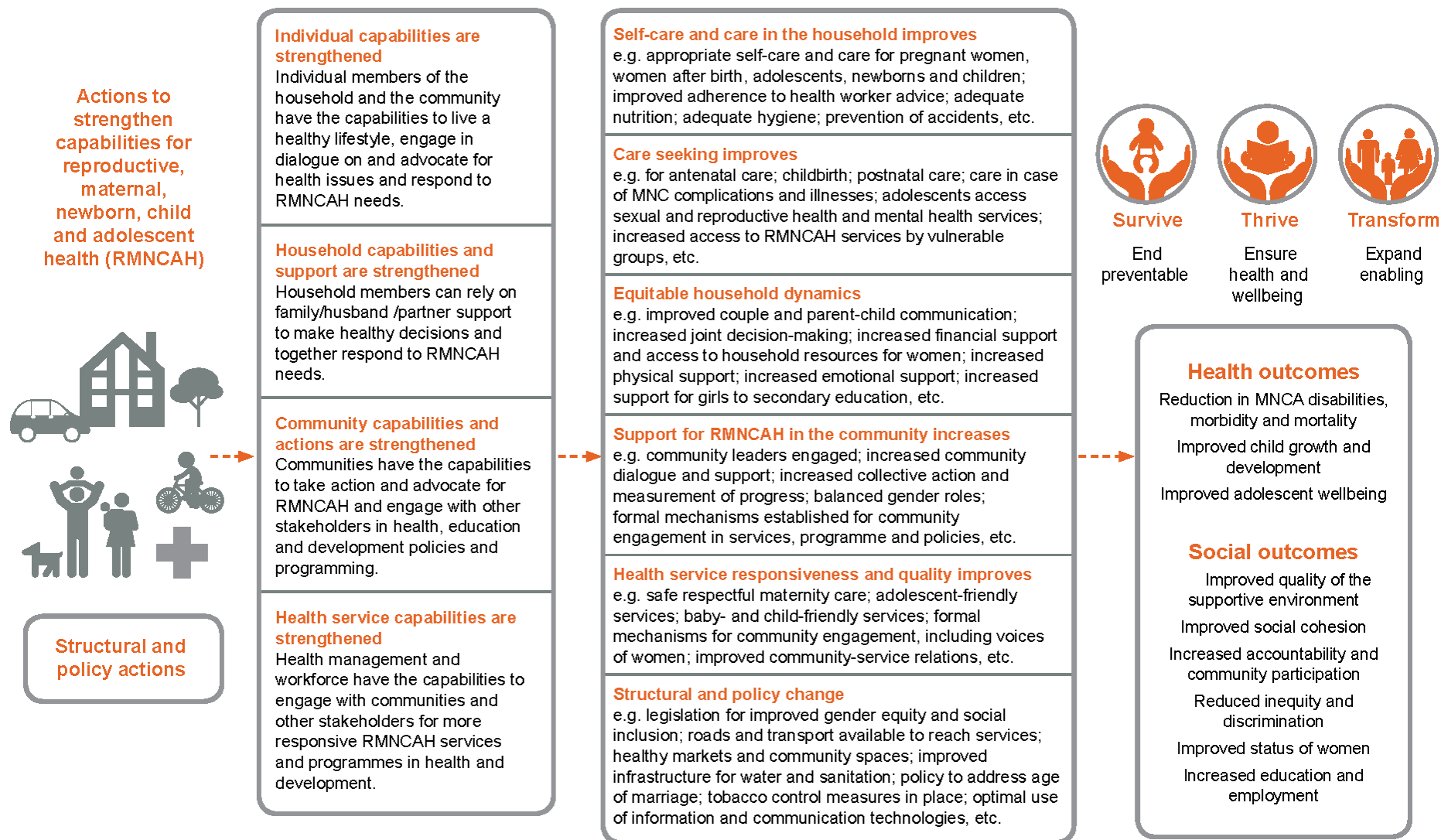
2.1 A conceptual framework for SBCE interventions

It is increasingly recognised that SBCE interventions are essential elements of health strategies for women, children and adolescents (Marston et al. 2016), by aiming to:

- strengthen the capabilities of individuals to take better care of themselves, including appropriate care-seeking and practices in the home;
- increase household capabilities and support for RMNCH needs, including more equitable household dynamics;
- strengthen community capabilities and actions for improved health;
- improve the capabilities of health services to engage with communities and provide more responsive services.

The conceptual framework below illustrates how SBCE interventions can contribute to achieving EWEC Global Strategy objectives. We outline the specific interventions, outcomes, study designs and health topics covered in this map below, with full details and definitions in Appendix A.

Figure 2: Conceptual framework



2.2 Overview of the scope of the SBCE evidence gap map

This evidence gap map (EGM) is an overview of impact evaluations and systematic reviews for a selected set of SBCE interventions for RMNCH, specifically:

- Reproductive health interventions that addressed the timing and spacing of pregnancies
- Maternal health interventions that addressed pregnancy, childbirth and 28 days after birth
- Newborn health interventions that addressed the period from birth up to 28 days after birth
- Child health interventions that addressed the period 28 days after birth to 10 years of age

Adolescent health interventions were not included because a separate evidence gap map on adolescent sexual and reproductive health conducted by the International Initiative for Impact Evaluation (3ie) had already been published (see Box 1).

Our objective was to map impact evaluations and systematic reviews of select SBCE interventions to improve select RMNCH outcomes, focusing on interventions of relevance to the conceptual framework above. The substantive scope of the EGM study is delineated along three key categorizations: health topics, interventions and outcomes. To keep the scope manageable, it was not possible to include all RMNCH topics or all SBCE interventions in the EGM. We outline the key categories below, with detailed definitions in Appendix B.

Included studies were limited to impact evaluations and systematic reviews of effectiveness and focused on quantitative and mixed methods research. Qualitative research is particularly useful for illuminating the reasons why interventions did or did not work in different contexts, but it is outside the scope of this map.

Box 1: Evidence mapping for adolescent health. What happened to the A?

The life course includes reproductive health, pregnancy, childbirth and postnatal care, as well as child health and development and adolescent health and development. This evidence gap map looks at reproductive, maternal, newborn, child health (RMNCH) only. We refer the reader to the Brief, *Mapping the evidence on Social, Behavioural, and Community Engagement for Reproductive, Maternal, Child, Newborn and Adolescent Health*, that was produced as a complementary publication to this report. The Brief integrates the findings from a recent 3ie publication on Adolescent Sexual and Reproductive Health (Rankin et al. 2016) with the findings from this RMNCH SBCE evidence gap map. More comprehensive work on adolescent health and SBCE interventions has been published in other sources, including the Lancet Commission on Adolescent Health and Well-being (Patton et al. 2016) and the [WHO Global Accelerated Action for the Health of Adolescents \(WHO 2017a\)](#).

Development of this evidence gap map began with a scoping exercise. A preliminary mapping of the academic and global policy literature was performed by the WHO team. The team developed a draft framework drawing on existing literature, and in particularly *The Social and Behavior Change Interventions Landscaping Study: A Global Review*

(Storey et al. 2011) and the 'Behavior Change Framework' developed by the United States Agency for International Development (USAID 2015). In consultation with an expert group, intervention and outcome categories were agreed and used to set the scope. The expert group was composed of WHO staff from relevant departments and external experts who were programme implementers, policy makers, academics and funders.

Experts were consulted at four key stages:

- at the inception stage to define the scope of the mapping and review a draft conceptual framework (meeting in December 2015);
- for review of a draft method guide for the EGM and a revised conceptual framework (virtual consultation through May 2016);
- for review of preliminary results (meeting November 2016); and
- for review of the draft report (virtual consultation in May 2017).

The full list of WHO and external experts participating in different steps of the process is provided in Online Appendix F.

2.2.1 RMNC health topics

To keep the scope manageable, it was not possible to include all RMNCH topics or all SBCE interventions in the evidence gap map, thus the WHO team selected priority topics based on policy and guideline documents. Key references included the 'Behavior Change Framework' developed by the United States Agency for International Development (USAID 2015), which identifies behaviours with highest potential for preventing maternal, newborn and child deaths. The sections below provide further detail about the RMNCH and SBCE interventions selected for inclusion in the evidence gap map.

Table 1 presents the RMNCH topics selected for coverage in the evidence gap map and links them to the specific health areas. More detail and definitions of the topics and interventions are provided in Appendix A.

Table 1: Reproductive, maternal, newborn and child health topics

Health topic	Relevant health area
Healthy timing and spacing of pregnancy	Reproductive health
Care during pregnancy, childbirth and after childbirth	Maternal and newborn health
Care-seeking for newborn illness	Newborn health
Infant / child feeding and nutrition	Newborn and child health
Immunisations	Maternal, newborn and child health
Care-seeking for childhood illnesses	Child health
Malaria	Maternal, newborn and child health
Pneumonia	Newborn and child health
Diarrhoea	Newborn and child health
Water, sanitation and hygiene	Child health
Early child development	Newborn and child health

2.2.2 Interventions

The selected health topics were then used to focus the evidence gap map on a group of selected SBCE interventions. Because the overall scope was very broad - covering four different health areas and eleven health topics - it was not feasible to include all SBCE interventions. The preliminary selection of interventions was based on a review of relevant academic and policy literature, including, *The Social and Behavior Change Interventions Landscaping Study: A Global Review* (Storey et al. 2011) and consultation with the expert group. The aim was to identify the SBCE interventions most commonly included in government and nongovernmental organisation (NGO) portfolios. Definitions and more detail are provided in Appendix A.

Table 2: Intervention categories

Intervention category	Intervention	Intervention definition
Interpersonal communication and educational activities (IPC)	Home visits	Provision of education, information and counselling in the home by a health professional or trained volunteer/ peer
	Facility-based IPC and counselling	Provision by health worker/health professional of education, information and/or counselling to individuals in a facility
	Group IPC – any setting	Provision of information, education and/or counselling to a group rather than one-to-one, in any setting
Mass and social media	Mass media and entertainment education	Use of a diverse set of technologies, including the internet, television, print materials film and radio, capable of simultaneously reaching audiences on a large scale
	Social marketing	Using marketing concepts — product design, appropriate pricing, sales and distribution, and communication - to influence behaviours that benefit individuals and communities
	Social media and m-health	Use of a variety of web-based and mobile technologies and software applications that enable users to engage in dialogue and share information
Interventions to address financial barriers	Demand-side financing	A supplementary model to supply-side financing of health care in which some funds are instead channelled through, or to, prospective users
	Community-based health insurance	A form of micro-insurance used to help low-income households manage risks and reduce their vulnerability to financial shocks
Community mobilisation and participation activities	Community mobilisation	Interventions to encourage community individuals, groups (including in schools), or organisations plan, carry out, and evaluate activities on a participatory and sustained basis to improve their health and other needs

Intervention category	Intervention	Intervention definition
	Community participation (in health service planning and programmes) and social accountability	Activities to create ongoing relationships between community members and health service delivery. The objective is to institutionalise community participation in decision-making within health services and programmes
SBCE service and programme strengthening activities	Provider training and service delivery adjustments	Training of health providers, and other service providers, such as teachers and pharmacists, in skills and techniques related to communication, health education and community engagement and any adjustments made to service provision based on community perspective of quality, i.e. hours for service delivery
SBCE packages	Mixed IPC approaches (more than one IPC and educational activity)	See definitions above
	Community mobilisation packages	See definitions above
	IPC and educational activities and mass media and education entertainment	See definitions above
	IPC and educational activities and social media and m health	See definitions above
	IPC and educational activities and social marketing	See definitions above
	IPC and educational activities and demand-side financing	See definitions above
	IPC and educational activities and community participation in health service and programmes delivery and social accountability	See definitions above

In some cases, SBCE interventions were implemented with non-SBCE interventions. Non-SBCE components refer to any intervention component in a package that does not fall into one of the categories of interventions included in this map. These are typically a health service delivery component or a policy or structural intervention.

Common packages are discussed further in Appendix A. When interventions studied did not fit neatly into the categories in the table above, they were placed in the intervention category that most closely matched the intervention description in the study report. The study team noted this when it occurred.

2.2.3 Outcomes

Table 3 presents outcomes selected and included in the evidence gap map. The outcomes are structured along the causal chain, as portrayed in the conceptual

framework. These include intermediate outcomes, as well as social and health outcomes, of relevance to the topics covered by the map. Definitions and more detail are provided in Appendix A.

Table 3: Broad outcome categories and outcomes

Broad outcome category	Outcome
Knowledge and attitudes	Knowledge and attitudes of individuals and members of the households regarding RMNCH Social norms in the community for RMNCH Knowledge and attitudes of health providers for community engagement
Household dynamics/ communication Care practices	Couple / mothers / mothers-in law /parent-child communication Parenting skills Joint decision-making in the household Self-care practices (prevention and treatment) Family planning method use Caregiver practices (prevention and treatment) Household environmental practices
Care-seeking behaviour Quality of care/ satisfaction	Routine care-seeking behaviour Care-seeking for complications/illness Perception of quality of care / Satisfaction with services Provider communication and engagement skills
Community participation and accountability Health	Community capacity Participation in planning and programmes Social accountability Maternal, newborn and child morbidity and disability Maternal, newborn and child mortality Child growth and development
Cross-cutting	Gender equity / status of women Social cohesion Cost

2.2.4 Study designs

Inclusion criteria specific to impact evaluations

Impact evaluations may be published (e.g. as a journal article, book chapter) and unpublished (e.g. as a report or working paper). They are defined as programme evaluations or field experiments that use experimental or observational data to measure the effect of a programme relative to a counterfactual situation representing what would have happened to the same group in the absence of the programme (3ie 2012). Impact evaluations may also test different programme designs.

Impact evaluations were included in the evidence gap map if they had the following study designs:

- randomised controlled trial (RCT);
- regression discontinuity design;

- controlled before and after study using appropriate methods to control for selection bias and confounding, such as propensity score matching or other matching methods, instrumental variable estimation (or other methods using an instrumental variable, such as the Heckman two step approach), difference-in-difference or a fixed- or random-effects model with an interaction term between time and intervention for baseline and follow-up observations;
- cross-sectional or panel studies with an intervention and comparison group using methods to control for selection bias and confounding as described above;
- interrupted-time series – a study that uses observations made at a minimum of three time points before and after an intervention (the ‘interruption’);
- mixed method approaches that combine any of the above designs with qualitative research

Efficacy trials were excluded because these determine whether an intervention produces the expected result under ideal circumstances, whereas effectiveness trials aim to measure the degree of beneficial effect in ‘real world’ settings. Other study types excluded were qualitative studies that were not combined with a quantitative method, observational studies with a comparison group but no control for confounding, non-systematic literature reviews and opinion pieces. Finally, studies addressing questions other than intervention effects (e.g. risk factors, epidemiology, implementation) were also excluded.

Additional inclusion criteria for systematic reviews

Published or ongoing systematic reviews were included in the evidence gap map that were either explicitly described as a systematic review, or described methods used for the search, data collection and synthesis, as per the protocol for the 3ie database of systematic reviews (Snilstveit et al. 2014).

Although the general inclusion criteria specified that studies should be performed in low- and middle-income countries, systematic reviews which may have reviewed studies in high-income countries were included if these reviews also contained studies performed in low- or middle-income countries. If a review only considered studies of interventions implemented in high-income countries, it was excluded.

Non-systematic literature reviews, systematic reviews of efficacy trials, qualitative reviews and reviews addressing questions other than intervention effects (e.g. risk factors, epidemiology, implementation) were also excluded.

3. Methods

The evidence gap map is based on a comprehensive search for impact evaluations and systematic reviews corresponding to the framework of interventions, outcomes and health areas outlined above. It draws on 3ie methodology for evidence gap maps (Snilstveit et al. 2016; Snilstveit et al. 2016). Inclusion criteria and search, screening and data extraction methods are described in brief below and in detail in Appendix A.

3.1 Overview of inclusion criteria

When the scope and interventions had been agreed and clearly defined, these were used to set the inclusion criteria for the map. The methods guide, intervention and

outcome categories were later revised, following consultation with the expert advisory group in 2016. They are described in detail in section 2 above.

Studies were included if they met all the following criteria:

- Correspond to at least one reproductive, maternal, newborn and/or child health topic of interest and at least one of the sub-topics defined in Table 1;
- Evaluate SBCE intervention(s) as defined in Table 2;
- Measure at least one of the outcomes in Table 3;
- Assess intervention effects using either impact evaluations techniques or systematic reviews of such studies (as defined below);
- Published between January 2000 and July 2016¹;
- Conducted in a low- and middle-income country as defined by the World Bank Country and Lending Groups (World Bank 2017) - except for systematic reviews
- Published in any language;
- Are completed studies, protocols and ongoing studies meeting all other agreed inclusion criteria.

3.2 Procedures for search, screening, data extraction and analysis

An information specialist assisted the team to develop a detailed search strategy covering a combination of academic databases, organisational websites, libraries of impact evaluations and systematic reviews, and citation tracking. The detailed search strategy is provided in Appendix A. All search results were imported to Eppi-Reviewer (Version 4) (Thomas et al. 2014). The expert group provided information about potential additional studies and sources of potentially relevant studies. Impact evaluations were also identified via the bibliographies of systematic reviews.

Text mining software was used to prioritise results according to relevance. After double screening a sample of studies, relevant records were screened by one person, first at abstract and then at full text. Whenever the first screener was uncertain about inclusion/exclusion of a study, it was allocated to a second person for assessment. Questions and problems were resolved through group discussion. A random selection of included and excluded references was reviewed for quality control. Finally, all studies identified for inclusion were screened by a second person before being added to the EGM.

A standardised data extraction form was used to extract descriptive characteristics of included studies. The research team tested the form on a small number of studies to ensure consistency in coding and to resolve any issues or ambiguities. Data extraction was then completed by a single coder, with the majority of data reviewed by a second coder. All included systematic reviews were appraised using an appraisal tool² and were classified according to the confidence in findings using a traffic light system. The appraisal was conducted by one person, and reviewed by two others.

¹ These dates allow for the inclusion of studies and reviews published within the past 15 years.

² Checklist available on the 3ie website:

http://www.3ieimpact.org/media/filer_public/2012/05/07/quality_appraisal_checklist_srdatabase.pdf

Data was analysed using descriptive statistics and the 3ie data visualization platform for evidence gap maps. Initial data was reviewed by an expert group in November 2016. Following this review, the searches were verified using bibliographic checking and review of studies submitted by experts. The coding of data was verified and modified to improve the categorization and presentation of data for users. The detailed search strategy, data extraction form and coding decisions are outlined in Appendix A.

4. Findings

This section presents the findings of the evidence gap map. We discuss the characteristics of the included impact evaluations and systematic reviews across RMNCH. We also present an analysis of the quality of the included systematic reviews. More detailed analysis on each health area: reproductive, maternal, newborn and child health, is available online in Online Appendix E.

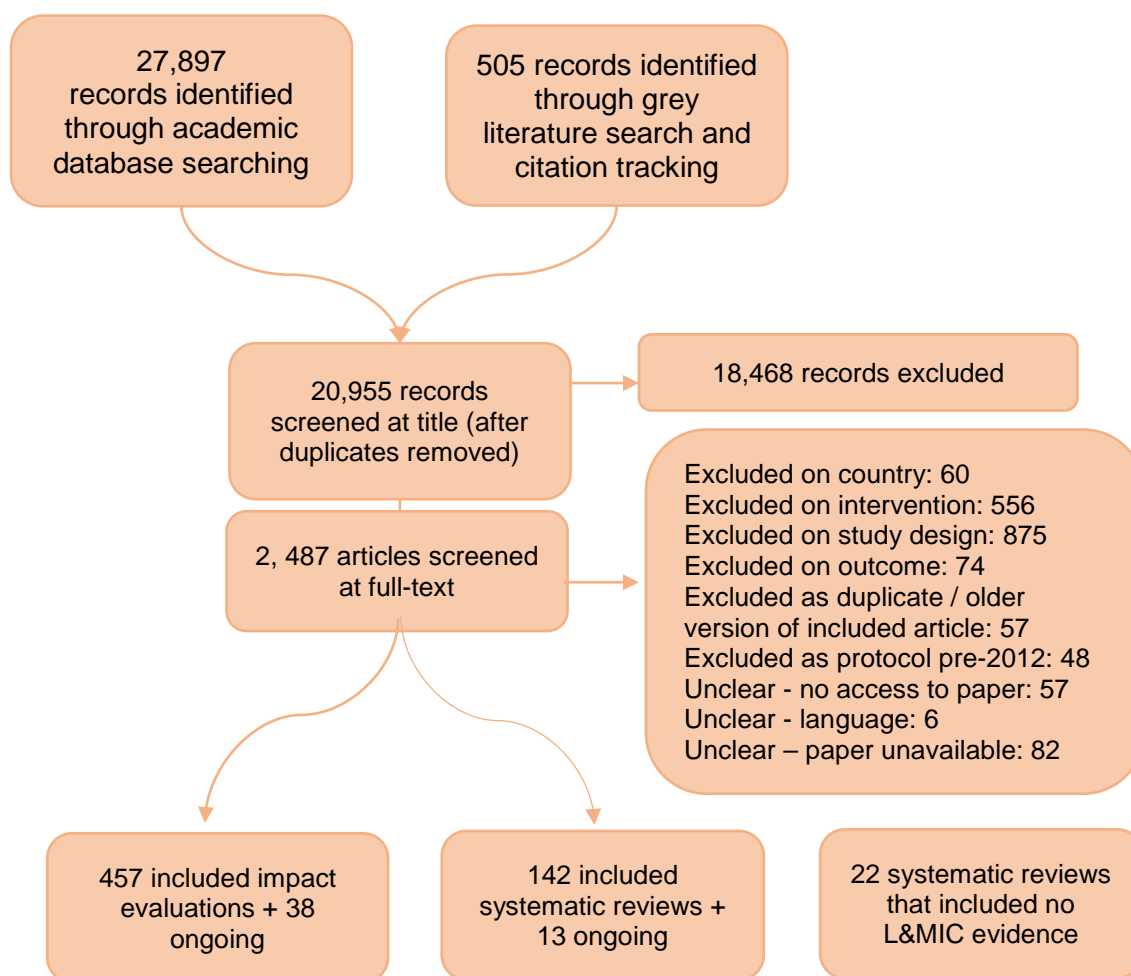
4.1 Search results

As described in the PRISMA diagram (see Figure 3 below), of 28,402 records initially identified, 20,955 records were retained for screening at title and abstract after removal of duplicate records. Most did not meet inclusion criteria leaving 2,487 full texts. The main reasons for exclusion were study design (35%) and intervention (22%).

After screening, 457 completed impact evaluations, including 25 multi-arm trials, and 38 ongoing impact evaluations were included. For multi-arm trials, each comparison arm was treated as an individual study for the coding of interventions - therefore multi-arm trials yielded 491 unique comparisons. The number of impact evaluations identified includes 17 linked pairs of evaluations. Studies were considered linked if there were multiple papers by the same study team on the same impact evaluation reporting different outcomes or different follow-up periods. If they reported the same information, the study was excluded as a duplicate.

In addition, 142 systematic reviews and 13 ongoing systematic reviews were identified. An additional 22 systematic reviews met all the inclusion criteria, but included no evidence from low- and middle-income countries. Thus, although their inclusion criteria specified studies from low- and middle-income countries, they failed to find any such studies. These 22 reviews are included in a list provide in Online Appendix E, but were not coded and therefore not included in the findings below.

Figure 3: PRISMA Diagram

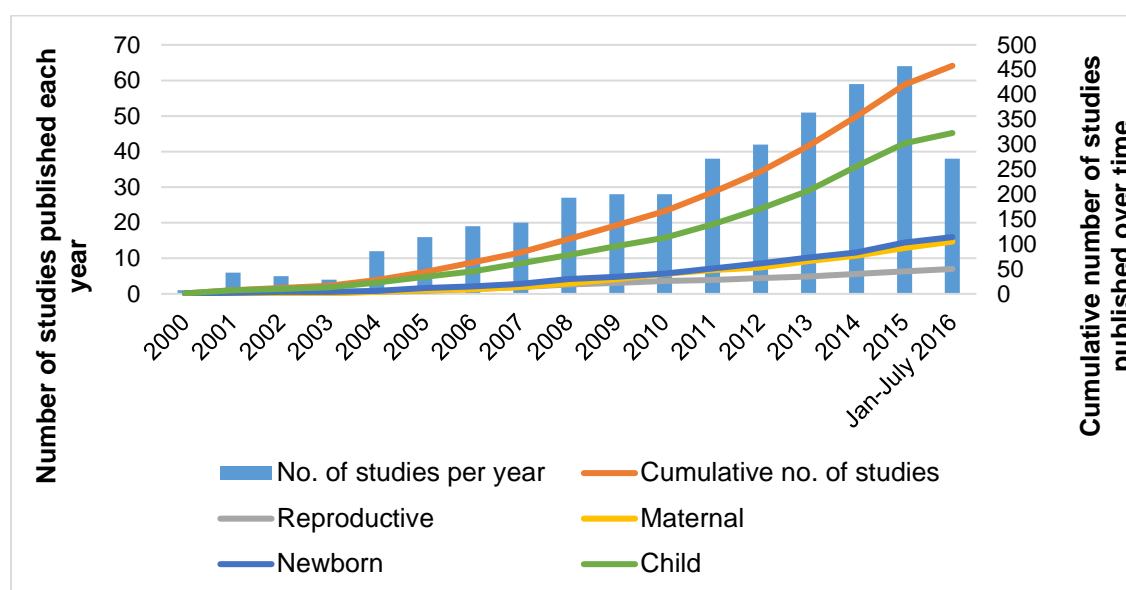


4.2 Volume and characteristics of the impact evaluation evidence base

4.2.1 Publication of impact evaluations over time

The graph in Figure 4 shows the number of impact evaluations covering SBCE interventions for RMNCH published each year between 2000 and 2016. Each blue bar represents the number of studies published in that year while the orange line represents the cumulative increase in impact evaluations over the period. Since 2000, there has been a year-on-year increase in the number of published impact evaluations, going from just one impact evaluation published in 2000 to 63 new studies published in 2015. There was a notable increase in the number of studies published between 2010 and 2011, a jump from 28 to 38 studies. Indeed, 290 of the included studies were published in 2011 or after. The search was conducted in July 2016, and thus only captures studies available in the first half of 2016. Nevertheless, the number of studies published by July 2016 (n = 39) suggests that this growth trend will continue.

Figure 4: Trends in the publication of impact evaluations of RMNCH over time

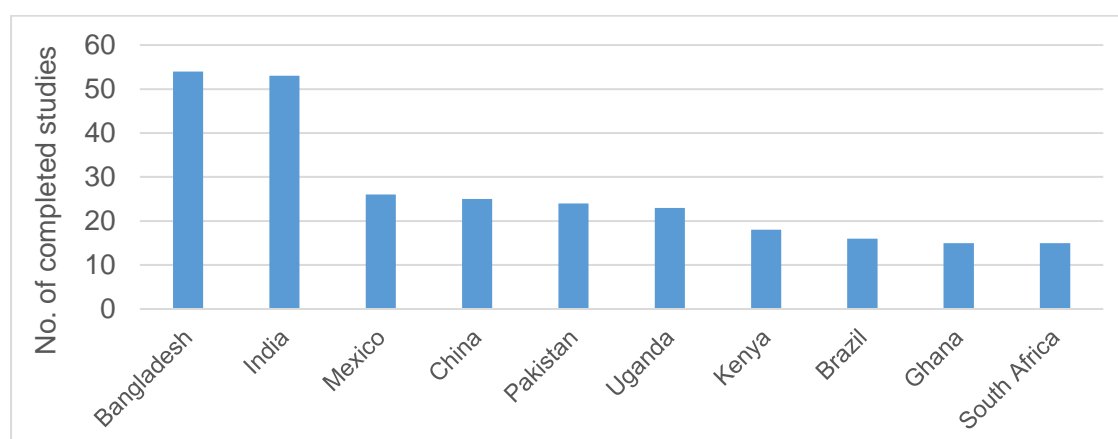


4.2.2 Geographical location of impact evaluation studies

Impact evaluations were performed in 61 different low- and middle-income countries (L&MIC), but their distribution across WHO regions is relatively uneven. However, this distribution corresponds to the burden of RMNCH mortality and morbidity. Most studies are from either the African Region (n = 154) or the South-East Asia Region (n = 137); with 84 studies from the Region of the Americas, 42 from the Eastern Mediterranean Region and 40 from the Western Pacific Region. There were only seven studies from the European Region, most of them one country - Turkey, with a study each from Armenia and Belarus.

Impact evaluations are more unevenly distributed by country. Over half of the studies (n = 270) come from 10 L&MICs. These are, in order of frequency: Bangladesh, India, Mexico, China, Pakistan, Uganda, Kenya, Brazil, Ghana, and South Africa (see Figure 5 below). There were no studies from several countries with high levels of maternal and child mortality. Of the 19 countries with highest estimated maternal mortality ratios in 2015, (all in sub-Saharan Africa) (22), only nine countries were represented in the included studies.

Figure 5: Countries with the largest number of impact evaluations



4.2.3 Impact evaluation study designs

The majority of included studies were RCTs (n = 351), including 25 multi-arm trials, while about one third of studies (n = 106) used a quasi-experimental design. Two of these studies used a regression discontinuity design, while the rest combined data on treatment and comparison groups (cross-sectional or panel) with one or more analysis methods to address selection bias and confounding. This included 72 that used difference-in-difference, 41 that used a matching method, five that used instrumental variables and three that used another method to control for confounding and selection bias. Only 15 of the 458 impact evaluations combined a quantitative impact evaluation with a qualitative component.

4.2.4 Distribution of impact evaluations by health area

A relatively large number of impact evaluations were identified but they are unevenly distributed across health areas. As can be seen from Table 4 below, more than two thirds of studies cover child health interventions, possibly reflecting the larger number of child health topics included in the scope. Also, studies identified as water, sanitation and hygiene (WASH) often targeted the household level, such as household uptake of latrines or hand washing. Rather than coding the study for each of maternal, newborn and child, these studies were coded as child as most water and sanitation interventions are evaluated primarily for benefits for young children.

A study could target multiple health areas and health topics, for example, an intervention targeting exclusive breastfeeding, complementary breastfeeding and diarrhoea. In this case the study would be coded as newborn and child health as well as the sub topics. These combinations are discussed in more detail in the individual health area report provided in Appendix B. It is fairly common for multiple health areas to be targeted within one SBCE programme: of the 457 evaluations, 109 targeted multiple RMNCH areas.

Table 4: Distribution of impact evaluations by health area

	Reproductive health	Maternal health	Newborn health	Child health
Impact evaluations	50	105	114	322
Ongoing impact evaluations	6	4	6	30

Note: a study may cover more than one health area

4.2.5 Studies by health topic

Table 5 below details the number of studies per health topic. The area with the largest number of studies is infant and child feeding and nutrition (n = 195), covering a range of caregiver practices including early initiation of breastfeeding, introduction of complementary foods and provision of appropriate management and treatment for malnutrition. A large number of studies targeted care during pregnancy, childbirth and after childbirth (n = 131), covering behaviours, such as attendance by pregnant women at antenatal care visits with a skilled professional, having a birth preparedness and complications plan, birth in a health facility, and care-seeking after birth for the mother and newborn. There are fewer studies on the remaining topic areas: 50 studies targeted healthy timing and spacing of pregnancy, 29 on care seeking for childhood illness, 22 on care seeking for newborn illness and 22 studies across intervention areas targeting pneumonia.

Table 5: Impact evaluation studies by health topic

Health Topic	No. of Studies
Healthy timing and spacing of pregnancy	50
Care during pregnancy, childbirth and after childbirth	131
Care-seeking for newborn illness	22
Infant feeding and nutrition	195
Immunisations	37
Care-seeking for childhood illnesses	29
Malaria	33
Pneumonia	22
Diarrhoea	30
Water, sanitation and hygiene (WASH)	54
Early child development	49

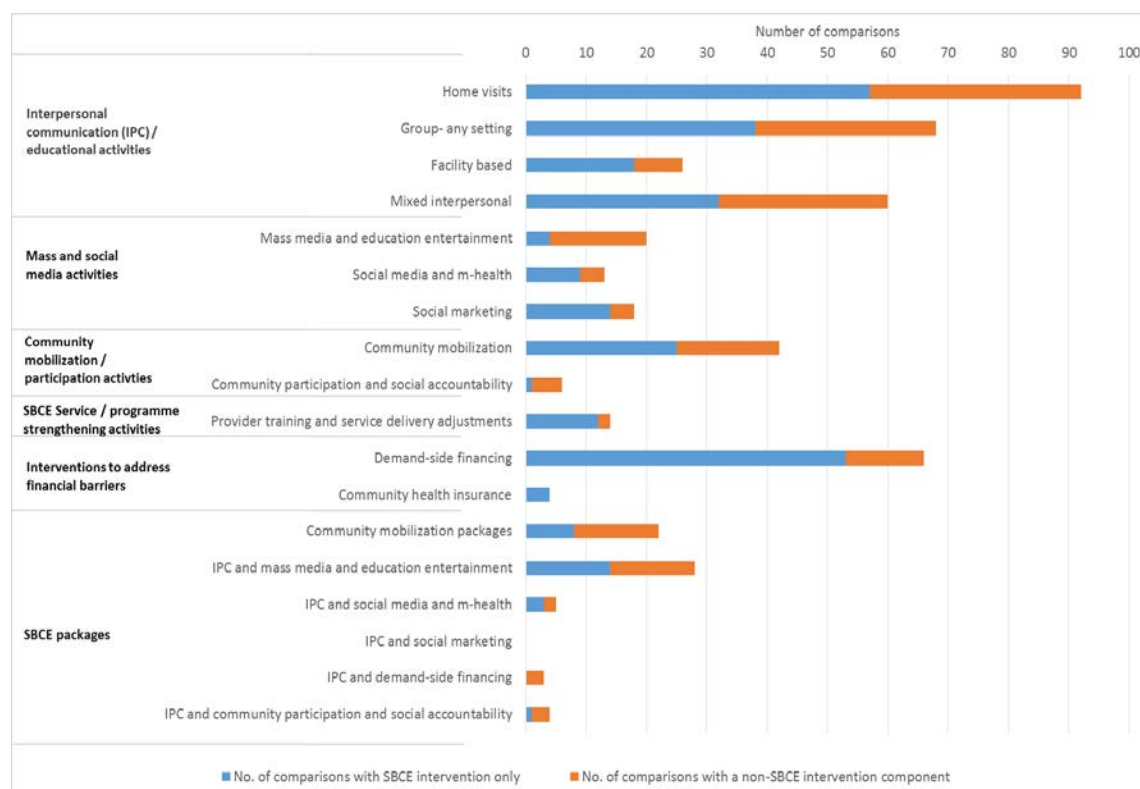
4.2.6 Impact evaluation studies by intervention area

The graph in Figure 6 presents the distribution of impact evaluations³ according to the 18 SBCE interventions (singular interventions and packages of SBCE interventions), disaggregated by whether the intervention also included a non-SBCE component. Non-SBCE components are those that do not fit into any of the categories included in this map- typically a health service delivery component or a policy or structural intervention.

Half of the studies (286) focus on interpersonal communication and health education activities, delivered as a single intervention (n = 186), as a mixed package of interpersonal communication and education approaches (n = 60) or as a package with other SBCE interventions (n = 54). This includes 92 evaluations of home visit interventions, 68 evaluations of group approaches, 26 evaluations of facility-based approaches and 60 evaluations of interventions using a combination of the three approaches (home visits, groups, facility-based). Interpersonal communication and health education activities were frequently combined with a non-SBCE intervention component (n = 132), and were also often combined in packages with other SBCE interventions: interpersonal communication some form of mass media (n = 28), interpersonal communication with a social media or m-health approach (n = 5) and interpersonal communication with community participation and social accountability approaches (n = 4).

³ For this section of the report, numbers refer to the number of comparisons, reflecting the inclusion of a number of multi-arm trials testing different SBCE interventions – thus N=491.

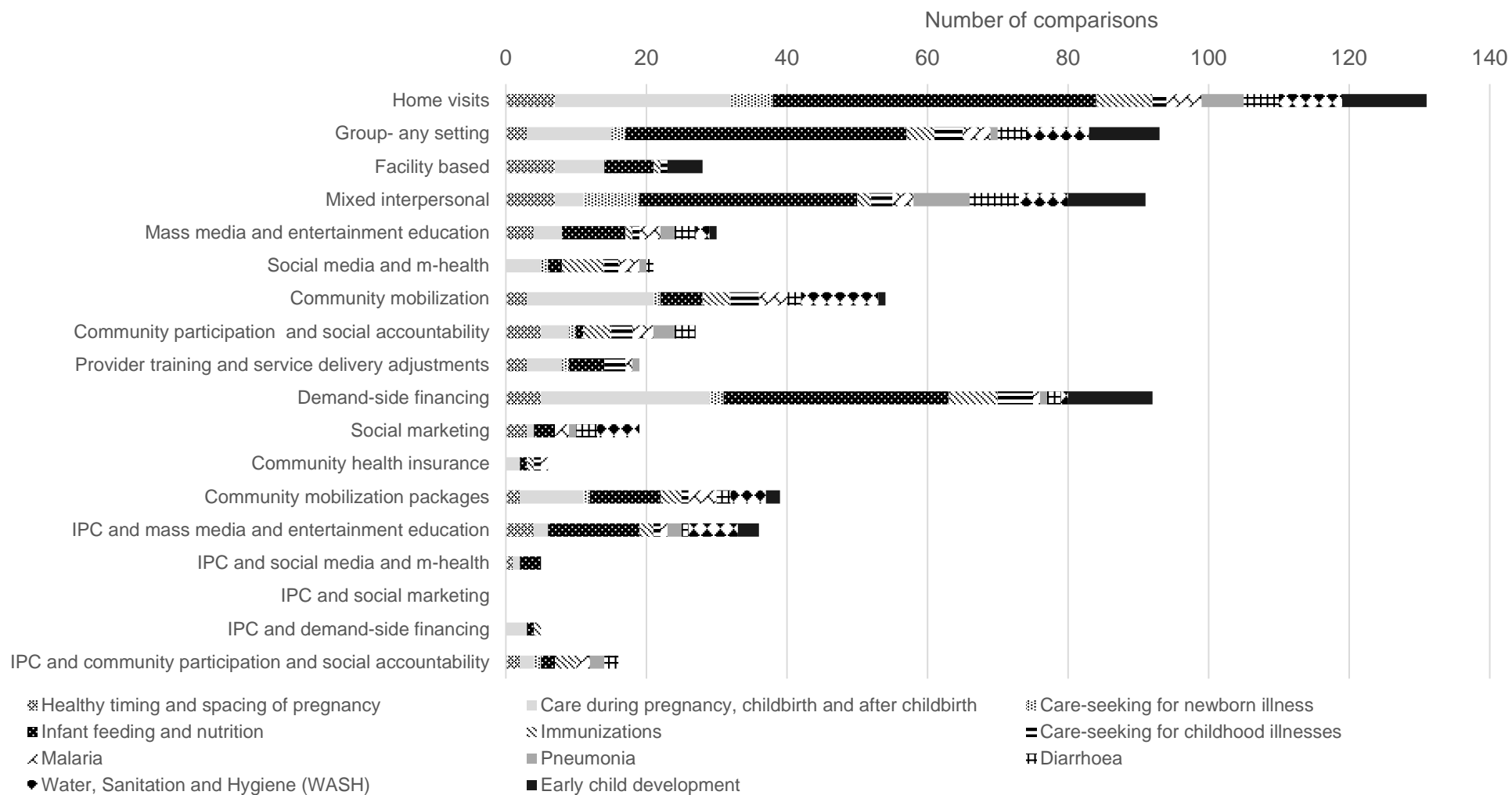
Figure 6: RMNCH: Distribution of impact evaluations by intervention category



Note: reflects studies/ comparisons for which each covers one intervention area

A large number of the evaluations assess demand-side financing interventions (n = 66), predominately conditional cash transfer programmes. Only three evaluations address demand-side financing as part of a package. Many studies evaluate community mobilisation activities (n = 42) as well as community mobilisation activities combined with another SBCE approach (community mobilisation packages, n = 22). Nearly half of the community mobilisation and community mobilisation packages (48%) were combined with non-SBCE interventions. There were relatively few evaluations of social media and m-health interventions (n = 13), social marketing (n = 18) and mass media and education-entertainment (n = 20) and very few evaluating community participation and social accountability interventions focusing on RMNCH (n = 6). Figure 7 presents the number of studies disaggregated by SBCE intervention and health topic area.

Figure 7: RMNCH: Distribution of impact evaluations by intervention area and health topic



Note: a study / comparison covers only one intervention area but may cover more than one health topic

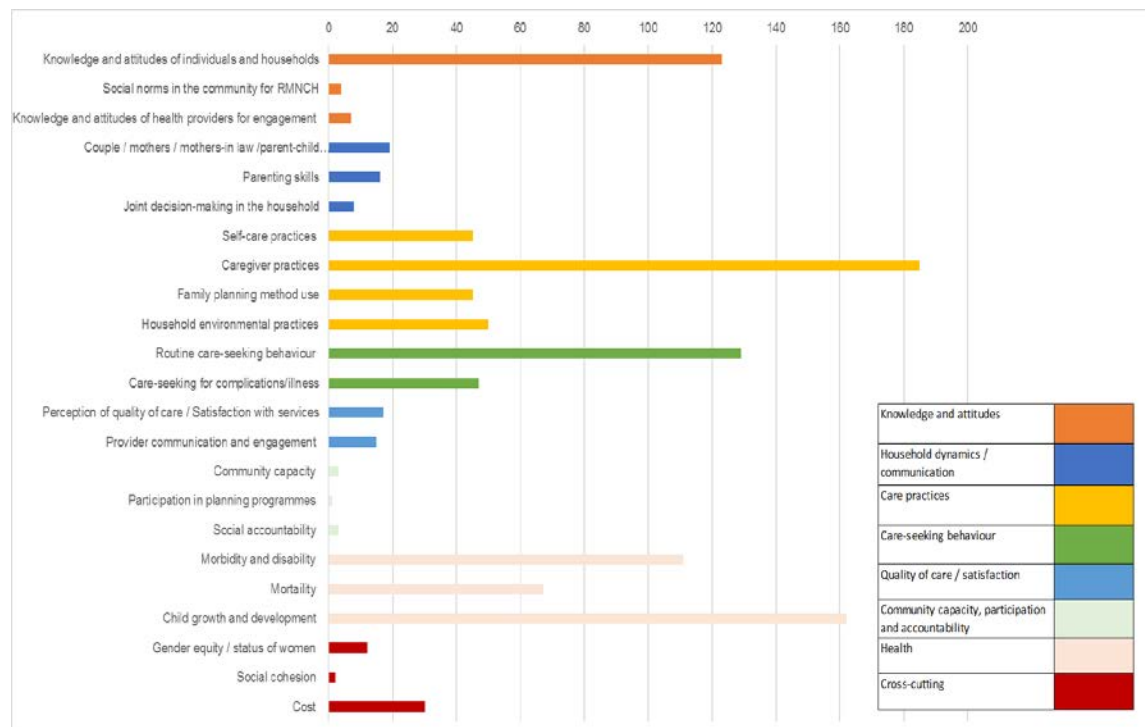
Box 2: Male involvement

Studies addressing male involvement were evenly distributed across different health areas (28 in total – none were multi-arm trials). Male involvement was addressed in 10 studies on maternal health, five for newborn health, 10 for child health and in 11 studies on reproductive health. Most interventions focused on the provision of interpersonal communication and health education either through individual and/or group health education with men (as husbands or a parent), or couple counselling. Group, couple and individual counselling and education interventions were provided in the home, in the community and in the facility. Interventions, such as group education, dialogue, seminars and workshops, were undertaken in a community setting. Seven studies explicitly targeted male community leaders and decision makers. We also found eight systematic reviews that included interventions involving males.

4.2.7 Impact evaluation outcomes assessed

The most commonly measured health outcomes were child growth and development (n = 155), morbidity (n = 103) and mortality (n = 60), (see Figure 8 below). Other commonly studied outcomes were care practices, either by a caregiver (n = 177) or for self-care (n = 44). Forty-three studies reported on use of a family planning method. Routine-care seeking behaviour, such as use of antenatal care and the uptake of immunisations, is also a commonly measured outcome (n = 124). Knowledge and attitudes of individuals and households are also frequently measured (n = 119).

Figure 8: Distribution of impact evaluations by outcome area



Note: a study may cover more than one outcome

Several outcomes were measured less frequently. Few impact evaluations measured community capacity (n = 3), social accountability (n = 3) or measures of community participation in planning or programmes (n = 1). A limited number of studies reported on

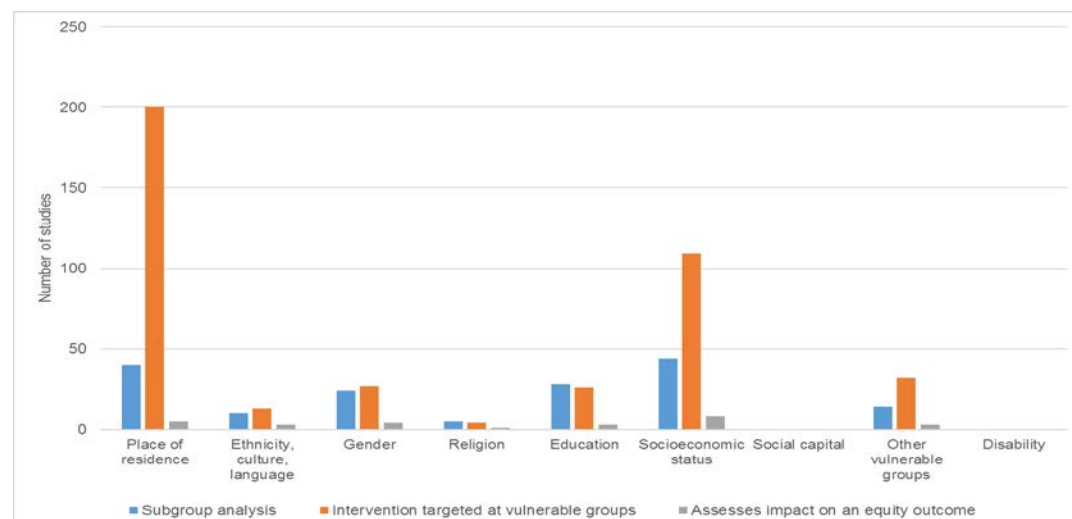
gender equity or indicators of the status of women (n = 12). Similarly, few studies measured household dynamics and communication, such as couple / mothers / mothers-in-law / parent-child communication (n = 18) and joint-decision-making in the household (n = 8). Very few studies measured how interventions affect social norms at the community level (n = 5). Only seven studies measured knowledge and attitudes of health providers for community engagement and only 15 measured provider communication and engagement skills, even though many studies included some form of interpersonal communication or community engagement. Finally, only 25 impact evaluations presented any cost data.

4.2.8 Consideration of equity

Over 60% of the impact evaluation studies consider equity in some way (n = 279). Figure 9 presents data on how studies consider equity, and for which population characteristics. The majority of studies are classified as considering equity because the intervention is targeting a specific disadvantaged group or population (n = 258). Most of these studies are of interventions targeting groups living in rural areas and/or far from health facilities or the beneficiaries are of low socio-economic status.

A smaller number of studies undertook a subgroup analysis by one of the dimensions of equity (n = 72). The most common dimensions of equity considered in subgroup analyses were place of residence (n = 40), socio-economic status (n = 44) and education level (n = 28). Few studies assessed the effect of an intervention on equity of outcomes, for example inequities in neonatal mortality or equity in vaccination coverage. Disability and level of social capital, referring to relationships and social networks, are not considered in any of the included studies.

Figure 9: Consideration of equity



Note: a study may cover more than one equity component

4.2.9 Overview of ongoing impact evaluations

There were 38 ongoing impact evaluations across the RMNCH areas, including seven multi-arm trials, thus yielding 45 unique comparisons coded for interventions in the evidence gap map. Unlike completed studies, very few of the identified ongoing studies (only two) have a quasi-experimental design; the rest are RCTs. Although this may

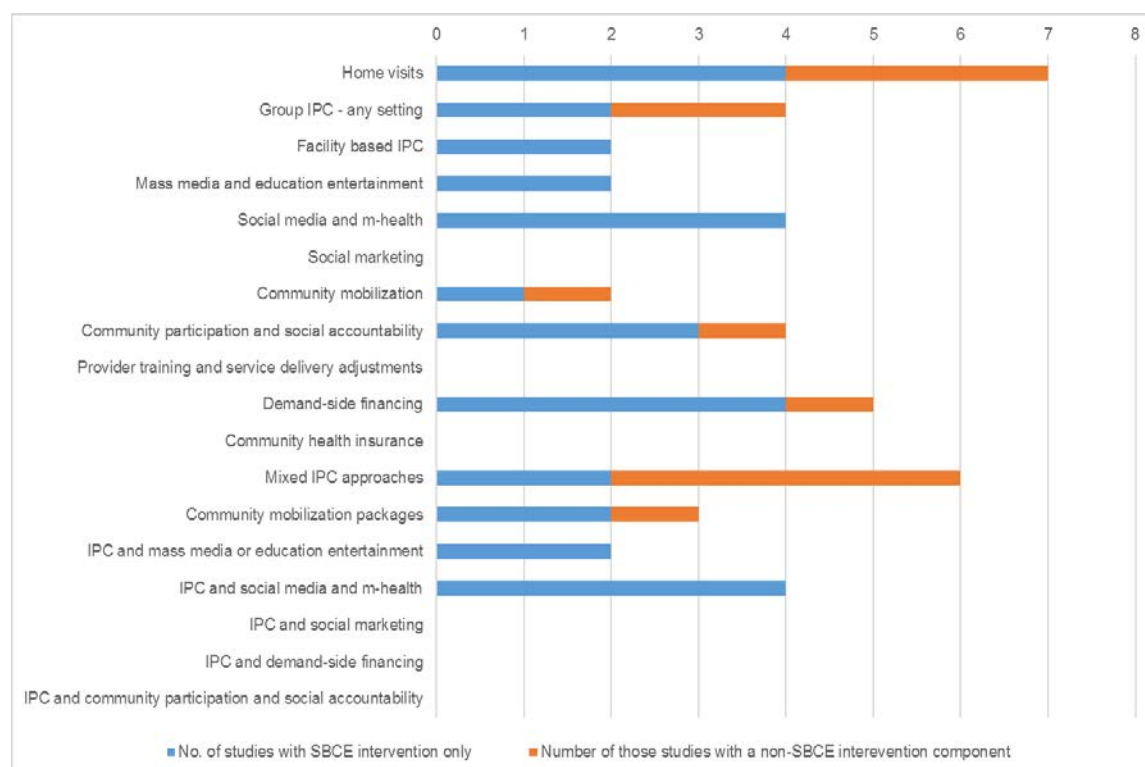
represent a trend in current study design, it is probably because RCT protocols are more often published prior to commencement of the study.

The geographic spread of the ongoing studies is similar to that of the published studies. The highest number of ongoing studies are taking place in the African Region (n = 16), 14 are taking place in the South East Asian region, five are taking place in the Western Pacific and only one is in the Region of the Americas. There were no ongoing studies in the European Region.

The distribution of studies across health areas is relatively consistent with that for completed studies. Most studies are targeting child health (n = 30), with fewer than 10 on reproductive health (n = 6), maternal health (n = 4) and newborn health (n = 6).

Figure 10 presents the number of ongoing studies by intervention area. Studies of interpersonal communication and educational activities continue to be well represented in the map (n = 27), including seven studies involving home visits, four of group approaches, two facility-based studies, and 14 combining multiple approaches. As with the completed impact evaluations, these different approaches are often compared with a non-SBCE intervention (11 of 27). A comparatively high number of ongoing studies are evaluating the impact of social media and m-health interventions, either as an individual SBCE intervention (n = 4) or combined with interpersonal communication and education activities (n = 4). This is an intervention area with few completed impact evaluations, so these new studies will contribute to addressing this gap. Of the ongoing studies identified, none were evaluating half of the 18 intervention areas of interest to this evidence gap map, including, social marketing, provider training and service delivery adjustment and community health insurance.

Figure 10: Ongoing impact evaluations by intervention area



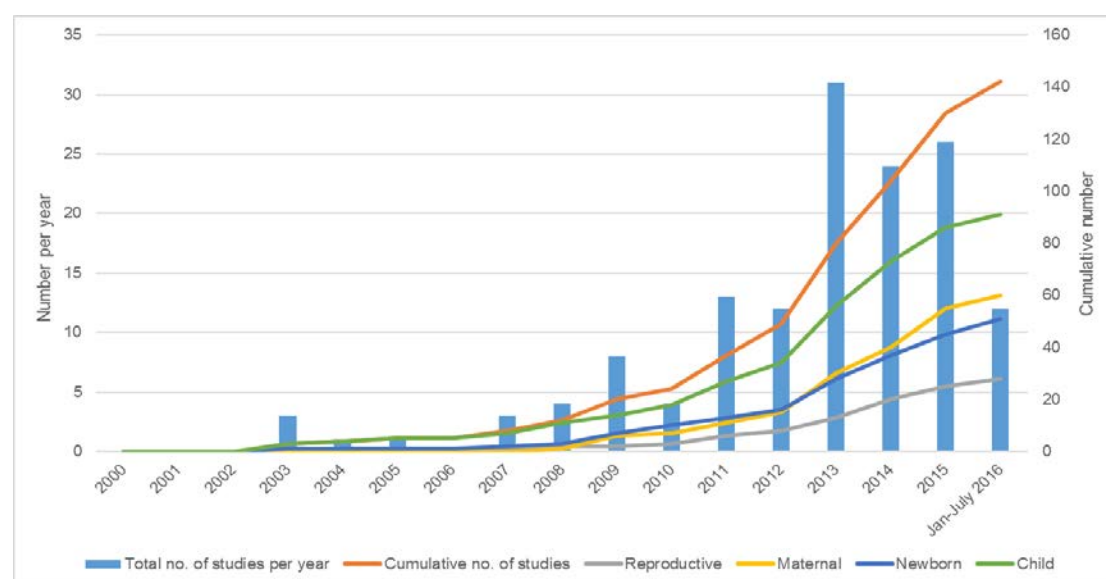
Note: reflects studies/ comparisons for which each covers one intervention area

4.3 Volume and characteristics of the systematic review evidence base

4.3.1 Trends in the publication of systematic reviews by health area over time

Figure 11 shows the number of completed systematic reviews covering SBCE interventions for RMNCH published each year between 2000 and 2016. The number of systematic reviews on SBCE interventions for RMNCH peaked in 2013, with 30 systematic reviews published. Since then the number has dropped, with 24 published in 2014 and 27 in 2015. Child health was the area most often reviewed (91 reviews), many of which have been published since 2013. We found 60 reviews of maternal health, 51 reviews of newborn health and 28 of reproductive health.

Figure 11: Trends in the publication of systematic reviews of RMNCH over time



4.3.2 Distribution of systematic reviews by health area

Table 6: Numbers of systematic reviews in each health area

	Reproductive health	Maternal health	Newborn health	Child health
Systematic reviews	28	60	51	91
Ongoing systematic reviews	3	6	3	8

As mentioned above, 142 systematic reviews and 13 ongoing systematic reviews were identified. An additional 22 systematic reviews met all the inclusion criteria, but included no evidence from low- and middle-income countries. Thus, although their inclusion criteria specified studies from low- and middle-income countries, they failed to find any such studies. These 22 reviews are included in a list provided in Appendix C, but were not coded and therefore not included in the findings below.

The systematic reviews are unevenly distributed across health areas, as can be seen from Table 6 above. Almost 65% of the reviews cover child health interventions, possibly reflecting the larger number of child health topics included in the scope. As for the impact evaluations, reviews identified as WASH were coded as child. We identified 60 reviews covering maternal health and 51 reviews of newborn health topics. The health area with

the smallest number of reviews was reproductive health, with 28 reviews. A review could also target multiple health areas and health topics; of the 142 completed systematic reviews, 61 targeted multiple RMNCH areas.

4.3.3 Systematic reviews by health topic

Most of the systematic reviews were concerned with care during pregnancy, childbirth and after childbirth. The next most common categories were infant feeding and nutrition, healthy timing and spacing of pregnancy and malaria. Pneumonia, care-seeking for childhood illness and early child development were the topics least covered by systematic reviews.

Table 7: Systematic reviews by health topic

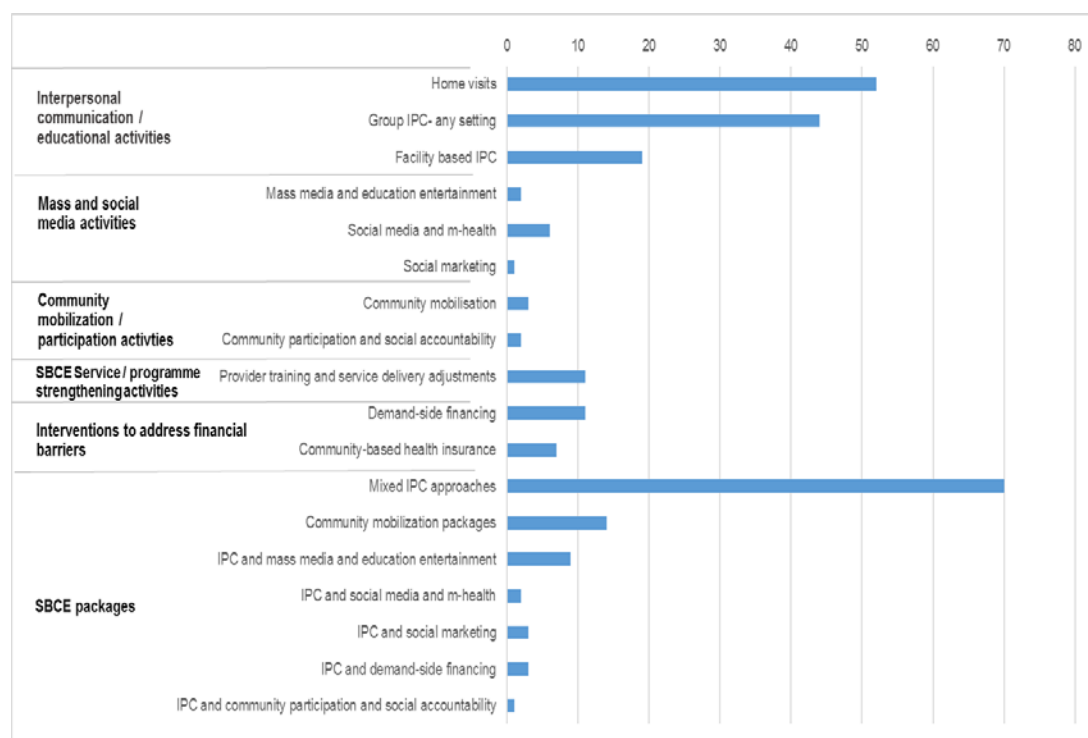
Health Topic	No. of Reviews
Care during pregnancy, childbirth and after childbirth	70
Infant feeding and nutrition	53
Immunisations	34
Healthy timing and spacing of pregnancy	28
Malaria	25
Diarrhoea	17
Water, Sanitation and Hygiene (WASH)	17
Care-seeking for newborn illness	16
Care-seeking for childhood illnesses	10
Early child development	11
Pneumonia	9

4.3.4 Distribution of interventions in systematic reviews

The intervention category most often considered in the systematic reviews was interpersonal communication/health education activities and packages that included interpersonal communication (home visits, $n = 52$; group approaches, $n = 44$; facility-based approaches, $n = 19$; mixed interpersonal approaches, $n = 70$; interpersonal communication and educational activities with other interventions, $n = 17$)⁴. The next most studied intervention category is demand-side financing interventions ($n = 34$), followed by community mobilisation interventions and packages ($n = 33$ and $n = 14$, respectively). There is a relatively smaller number of reviews of mass media and education entertainment interventions ($n = 20$), social media and m-health interventions ($n = 12$), followed by SBCE provider training and service delivery adjustments ($n = 11$) and social marketing ($n = 11$). Packages of interventions are considered in fewer reviews, including interpersonal communication and mass media and entertainment education ($n = 9$), interpersonal communication and social marketing ($n = 3$) and intervention communication and social media and m-health ($n = 2$). There are seven reviews covering community-based health insurance and seven reviews of community participation in health programming and social accountability.

⁴ Interventions were coded according to the particular review's inclusion criteria. When the inclusion criteria were not clear, the relevant interventions captured in the included studies in the review were coded. Many reviews covered multiple interventions.

Figure 12: Distribution of systematic reviews by intervention area



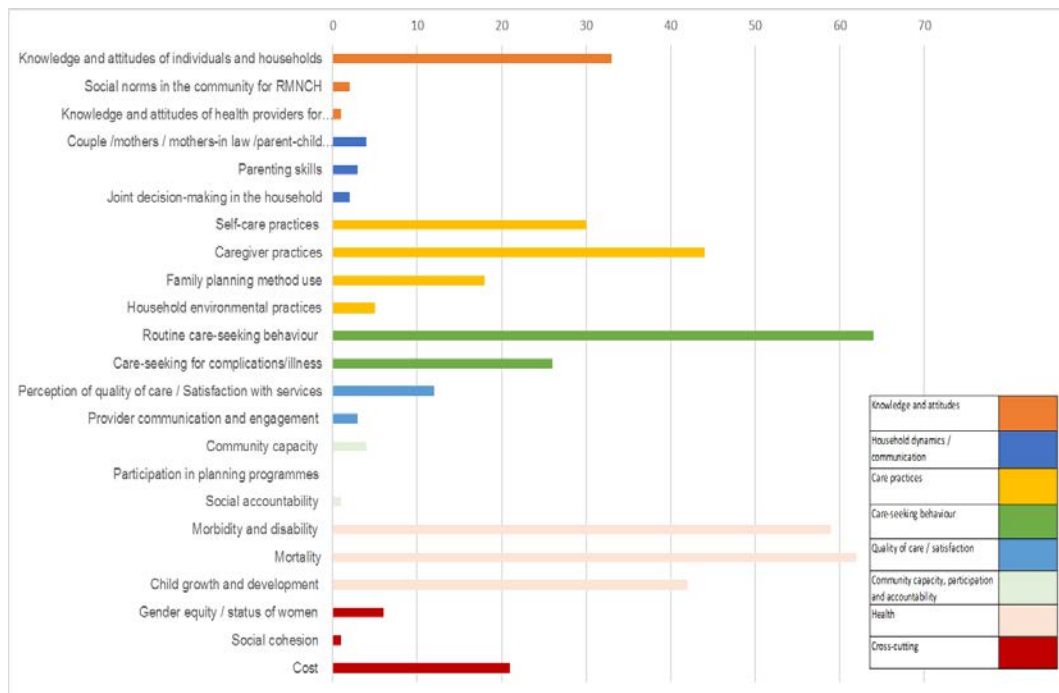
Note: one review may report on multiple interventions.

4.3.5 Outcomes assessed in systematic reviews

The outcomes assessed by the systematic reviews are largely in line with the outcomes assessed in the impact evaluations.⁵ The most commonly included outcome measures are health outcomes (n = 163), that is mortality (n = 62), morbidity and disability (n = 59) and child growth and development (n = 42). These are followed by care-seeking behaviour (for routine, n = 64; for complications, n = 26) care practices outcomes, either caregiver (n = 44) or self-care practices (n = 30). The outcomes least mentioned include community capacity, participation and accountability, parenting skills, joint decision-making in the household and crosscutting outcomes like status of women or social cohesion.

⁵ As with interventions, outcomes were coded according to the particular review's inclusion criteria. When the inclusion criteria were not clear, the relevant outcomes captured in the included studies in the review were coded. Many reviews covered multiple outcomes.

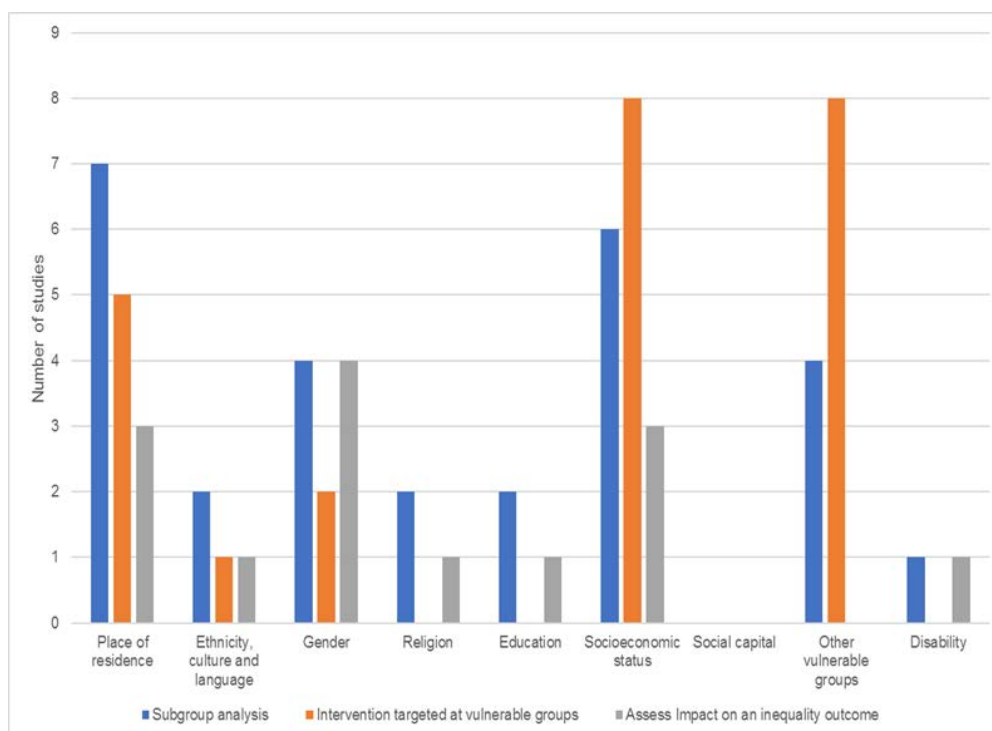
Figure 13: Distribution of systematic reviews by outcomes



4.3.6 Consideration of equity in systematic reviews

Most systematic reviews (75%) did not consider equity (n = 107). A small number explicitly considered interventions that targeted a vulnerable group (n = 17) or undertook a subgroup analysis by populations (n = 13) typically either place of residence (such as living in rural areas) or socioeconomic status. Six of the systematic reviews included studies that assessed an outcome measure of equity (or inequity).

Figure 14: Consideration of equity in systematic reviews



4.3.7 Rating confidence in the systematic reviews

Each included systematic review was appraised for confidence in the methods and findings, based on a standardised checklist (for detail see Appendix A). The checklist assesses methods used to identify, include and appraise studies in the review. Just over a quarter of the studies were rated as high confidence in the findings based on the methodological approach (n = 40). There were a similar number of reviews of medium and low confidence (n = 44 and n = 58, respectively).

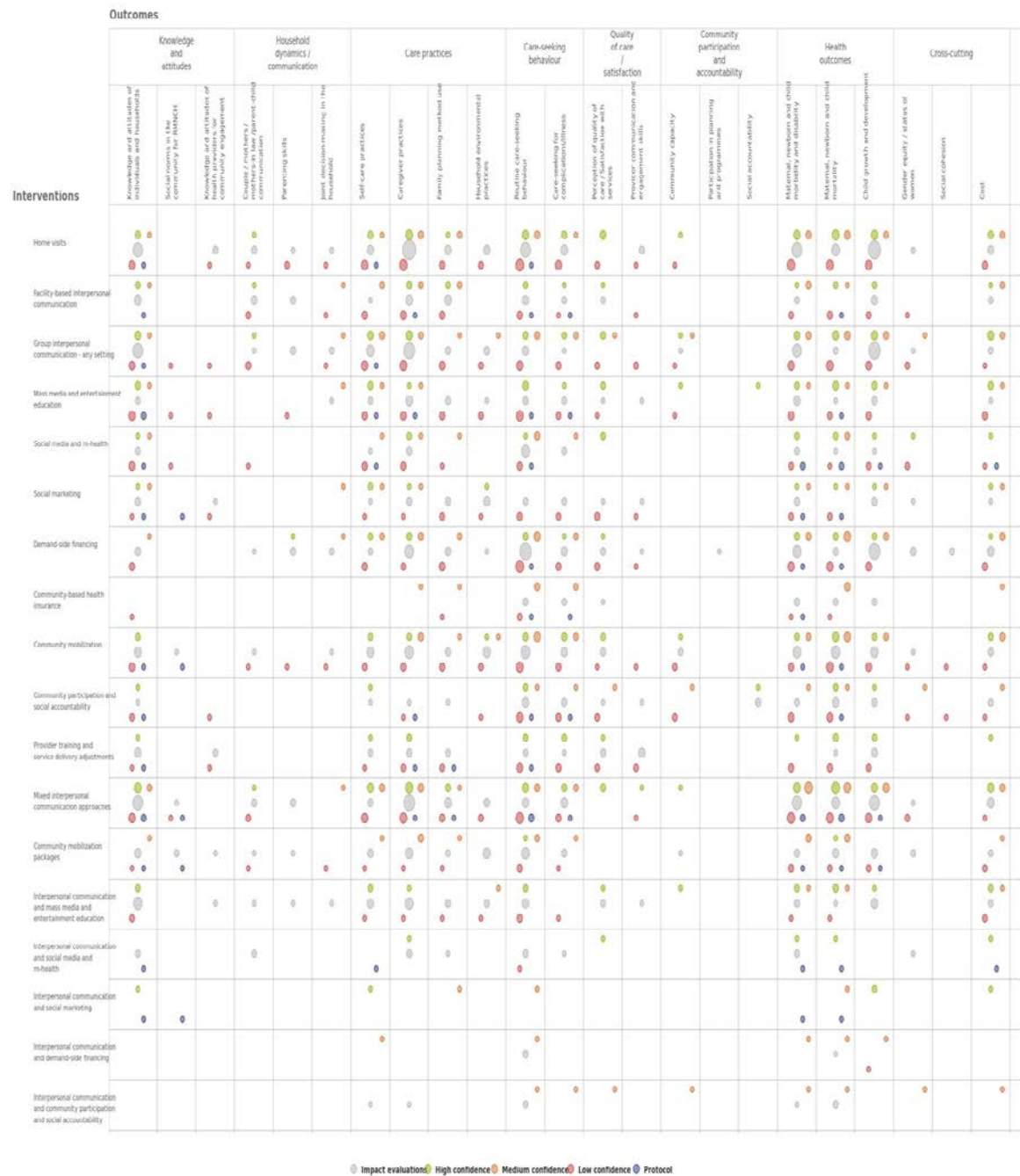
Most reviews had clear inclusion criteria (92%), had reasonably comprehensive searches, including searching the minimum required number of relevant databases to identify studies (82%), and included both published and unpublished literature (85%). Common reasons for reviews being assessed as medium or low confidence were: not reporting any independent screening of studies at full text to reduce bias in the selection of studies (35%), not reporting any independent data extraction by two or more reviewers to reduce bias in the extraction of data (34%), including studies of differing risks of bias, but not reporting or analysing the findings separately according to risk of bias status (61%) or using vote counting to synthesise findings, based on the direction of effect or statistical significance (15%).

While most reviews reported some sort of quality assessment of included studies (85%), 47% did not report the full results of the quality assessment and 35% did not make it clear which evidence was subject to low or high risk of bias.

4.4 What are the major gaps in the evidence?

Figure 15 displays all the included impact evaluations and systematic reviews, with each study mapped according to the intervention/outcome intersection(s) they cover. Grey bubbles represent impact evaluations, while the coloured bubbles represent systematic reviews, with different colours corresponding to the level of confidence in the review. The size of each bubble indicates the relative size of the number of studies for each intersection. The evidence gap map reveals two types of gaps: gaps in the impact evaluations, where few or no studies have been conducted, and synthesis gaps, where up-to-date, high-quality systematic reviews are lacking. An interactive platform that visually presents the findings can be found at this [link](#).

Figure 15: Evidence gap map of SBCE interventions



4.4.1 Key findings for impact evaluations

Interventions

The distribution of impact evaluations across intervention areas is uneven. There is a heavy focus on interpersonal communication and health education activities, specifically, home visits and group-based approaches. A large number of studies combined several of the interpersonal communication approaches or combined one or more of these approaches with mass media. A similarly large number of evaluations of demand-side financing approaches, typically conditional cash transfers, were identified. Community mobilisation, either alone or packaged with other SBCE approaches, has also been commonly studied.

There are, however, relatively few impact evaluations in the mass and social media activities intervention category and very few evaluations of mass media and entertainment education programmes.⁶ Moreover, there were few completed evaluations of social-media and m-health interventions targeting RMNCH. This is surprising given the growth in programmes piloting these approaches around the world (Chersich et al. 2016). A number of ongoing m-health evaluations were identified, however, they are concentrated in one health topic, mainly introducing vaccination reminders. Few evaluations of social marketing programmes were found.

There are few evaluations of community participation in health service planning and programmes and social accountability programmes for RMNCH, either alone or combined with an interpersonal communication approach, although some may be captured under community mobilisation. Finally, we identified relatively few studies of community based health insurance programmes.

In terms of the health topics targeted in the identified evaluations of SBCE interventions we find a relatively uneven distribution between the 11 topics we focused on. Infant feeding and nutrition and care during pregnancy, childbirth and after childbirth are by far the most frequently targeted health topics in the interventions assessed in included studies. There is a smaller number of studies targeting immunisations, healthy timing and spacing of pregnancy, Water, Sanitation and Hygiene (WASH) and early child development. There are also relatively few evaluations of SBCE interventions targeting pneumonia, most of which use interpersonal communication and educational activities, care-seeking for newborn illness and care-seeking for childhood illness.

Reproductive health

The trends in studies targeting reproductive health are similar to the high-level trends in interventions across RMNCH described above, although this is the health area with the fewest number of impact evaluations overall. There is a focus on interpersonal communication and health education approaches, including home visits, facility-based and mixed approaches to interpersonal communication around reproductive health. There is a small number of studies of social marketing, mass media and education entertainment and provider training and service delivery adjustments targeting this area. However, there are several intervention gaps specific to reproductive health. We did not identify any evaluations social media or m-health programmes targeting reproductive health, although there is one ongoing RCT of a mass media programme to promote uptake of family planning services in Burkina Faso. There are also relatively few community mobilisation programmes targeting reproductive health. The large number of evaluations of demand-side financing programmes typically target maternal or child health, with fewer targeting use of family planning methods. Finally, there are relatively few evaluations of packages of SBCE interventions targeting reproductive health.

Maternal health

The trends in the studies of interventions targeting maternal health largely follow the trends across RMNCH described above. A large proportion of the maternal health

⁶ Expert consultation on this issue suggested that a number of mass media evaluations were published before the publication date cut-off (the year 2000). Alternatively, a number may have been excluded from the map due to study designs that would not meet the inclusion criteria, such as a before and after comparison without a control group.

studies focus on interpersonal communication and health education approaches, demand-side financing or community mobilisation, either alone or packaged with other SBCE interventions. A small number of studies evaluate mass media and education entertainment, social media and m-health, community participation and social accountability interventions and provider training and service delivery adjustments for maternal health. One difference of note is the number of social marketing studies, where we identify just one study targeting maternal health.

Newborn health

Also for studies of interventions targeting newborn health, we see a trend largely consistent with the trends across RMNCH, although there is an especially heavy focus in the newborn health area on interpersonal communication and health education approaches, particularly home visits and mixed interpersonal communication approaches. A number of studies also evaluate community mobilisation, either alone or packaged with other SBCE interventions. Few studies evaluate mass media and education entertainment, social media and m-health, community participation and social accountability interventions and provider training and service delivery adjustments. We identified just one social marketing study targeting newborn health.

Child Health

Child health is the health area with the largest number of included impact evaluations, with child health targeted in 70 percent of the included studies. The intervention types that have been studied follow the trends mentioned for the other health areas. A large proportion of the child health studies focus on interpersonal communication and health education approaches, particularly home visits or group-based approaches, demand-side financing or community mobilisation, either alone or packaged with other SBCE interventions. Few studies evaluate mass media and education entertainment, social media and m-health, community participation and social accountability interventions and provider training and service delivery adjustments around child health. However, there are some differences of note. There are a relatively large number of child health studies that use an interpersonal communication approach combined with mass media and education entertainment. In addition, almost all of the included social marketing programmes targeted child health, including around WASH, malaria and infant and child feeding issues.

Outcomes

The most frequently measured outcomes were health-related outcomes, such as mortality and child growth and development, care-seeking and care practices. This is in line with the focus of the Millennium Development Goals on mortality and care-seeking, which coincided with the years of our inclusion criteria (2000 to 2016). Using the terminology of the EWEC Global Strategy, this would also correspond to the focus on the Survive agenda, with knowledge and care-seeking for RMNCH interventions being on the pathway to reaching the final health outcomes.

There are several gaps in the outcomes studied. Very few evaluations measured outcomes, such as community capacity or participation in health programming. Outcomes related to household communication, social norms and gender equity were also rarely reported. Finally, few studies reported on knowledge and attitudes of health providers for engagement or on provider communication and engagement skills, despite

the large proportion of studies that involve interpersonal communication and health education activities. The role of these types of outcomes for achieving important health and social development goals is now better understood. There is, therefore, a need for well-designed studies to address these in the future.

The distribution of outcomes studied at the individual health area level largely reflects the distribution of outcomes at the aggregate RMNCH level. These findings highlight the need for the global health community to consider how research can better capture outcome, equity and human rights issues associated with the Thrive and Transform agendas in the EWEC Global Strategy.

Other findings

Studies are unevenly distributed across regions and countries. Although most studies took place in Africa and South East Asia, the regions with highest maternal and neonatal mortality, studies are concentrated within a fairly small number of countries. Almost 60% of the included studies come from just 10 countries. There were no studies in several countries with a high maternal and infant mortality, notably Sierra Leone, Cote D'Ivoire, Liberia, Angola and Chad. This finding is largely consistent across the different health areas, although a greater proportion of the reproductive health studies take place in Africa than the other health areas.

Most studies were RCTs, with a relatively small proportion of quasi-experimental studies. However, there are relatively more quasi-experimental studies of maternal and reproductive health interventions than of newborn and child health. Few of the studies included qualitative components, process evaluation and information on costs or cost effectiveness, potentially leaving important questions around programme design, implementation and affordability unanswered. As the focus on sustainability will be even stronger in the era of the SDGs, the demand for studies to consider costs of interventions may increase.

Of the small proportion of impact evaluations that considered equity - by targeting the interventions at a vulnerable group, undertaking subgroup analysis or assessing an equity outcome - most targeted place of residence, typically a rural area, or socioeconomic status. Other important dimensions of equity, such as ethnic group, language, culture, or disability were rarely considered in impact evaluations. This trend is consistent across reproductive, maternal, newborn and child health.

Although not systematically captured in the results, the study team noted a lack of detailed information on interventions in the included impact evaluations. This made coding difficult, but more importantly reduces the potential for learning from what has already been studied. Work is underway to improve reporting on context and implementation issues (Kågesten et al. 2017), however, publication limitations and accessibility of the information will remain a challenge.

4.4.2 Key findings for systematic reviews

There are a large number of systematic reviews, spread across the different health topics. The distribution of those reviews is however uneven, similar to the impact evaluation evidence base. A large proportion of the reviews focused on interpersonal communication and health education approaches, particularly home visits and group approaches. This includes a large number of high confidence reviews. There is also a

large number of reviews of demand-side financing interventions, and also a number of reviews that cover community mobilisation or community mobilisation packages.

Surprisingly, considering the low number of impact evaluations of social media and m-health interventions across the health areas, a large number of reviews were identified. Many of these are of low or medium confidence, however. Commissioning more systematic reviews in this area is unlikely to contribute much to the knowledge base until new impact evaluations are published.

Although there are a number of high confidence systematic reviews that include some evaluations of community mobilisation approaches, many of these have broad intervention inclusion criteria without a specific focus on systematically capturing the community mobilisation literature. New systematic reviews focusing on community mobilisation or community mobilisation packages for the different health topics covered by the map, particularly WASH and infant feeding and nutrition where there are a number of impact evaluations and no high or medium confidence systematic reviews, may therefore be of value.

Similarly, while we identify a small number of high confidence reviews that include some evaluations of provider training and service delivery adjustments, and a small body of impact evaluation literature in this area, these reviews often provide only a cursory analysis of this intervention and it is not clear if they comprehensively cover the literature. There are no high or medium confidence reviews focusing exclusively on systematically covering this literature across any of the health topics.

There are fewer systematic reviews in the reproductive health area and only a small proportion were assessed as high confidence. The high confidence reviews are focused on key areas, such as interpersonal communication and health education approaches for family planning method use after birth.

There are several intervention areas where there are small bodies of impact evaluations but no high confidence systematic reviews. These include demand-side financing, group-based interpersonal approaches, community mobilisation and community mobilisation packages.

Early child development is an area of growing interest. Several high confidence reviews have assessed outcomes including child growth and development and knowledge and attitudes of households. However, there are several gaps where new systematic reviews could be beneficial including those considering demand-side financing, specifically conditional cash transfers and their effect on child growth and development outcomes, as well as a review looking at parenting skills.

Outcomes, such as parenting skills, household dynamics, community participation and social accountability, were rarely assessed, reflecting the fact that these outcomes are rarely assessed in primary studies.

A significant proportion of the systematic reviews identified had methodological limitations. The issue is not necessarily a call for more reviews, but a call for better designed, conducted and reported reviews. Consideration should be given to ways of improving the quality of reviews to address the most important concerns. Reporting was

often poor and in many cases, it was difficult to determine the scope of the review as the basic review inclusion criteria were not clearly presented. Limitations in reporting can be addressed by future studies adhering to reporting guidelines, such as PRISMA (Moher et al. 2009).

4.5 Limitations of the evidence gap map

This evidence gap map provides a rich source of information on existing impact evaluations and systematic reviews of RMNCH SBCE interventions, but as with any such exercise, there are limitations.

Time, financial and human resource constraints meant that key health areas and interventions had to be prioritised over others, thus some health areas, interventions, and outcomes were not addressed.

The search strategy was systematic, but not as comprehensive as it would be for a specific systematic review. Studies may have been missed but several steps were taken to reduce this risk. The search of eight academic databases/ portals using a detailed search strategy was supplemented by a search of grey literature databases. Along with expert verification, other methods, such as reference checking of included systematic reviews and other literature reviews, were used to pick up additional papers. For example, the search strategy did not include terms that captured any interrupted time series studies. The expert group pointed out some key studies that they thought were missed in the search, including interrupted time series, however these studies were not included as they did not meet the other study inclusion criteria.

This map includes studies published from 2000 to 2016. The expert group pointed out several studies which were not included due to the date of publication.

Individual reviewers conducted the majority of the abstract and full text screening. While we introduced measures to limit error, such as involving a second reviewer in the case of uncertainty and having a second reviewer screen a random proportion of articles, having two reviewers independently assess articles for inclusion would have made the screening more robust.

Finally, it was often difficult for the study team to categorise interventions. In many cases this was due to insufficient reporting of intervention characteristics in included studies. Therefore, categorizations were made based on the information that we had available which in some cases required some assumptions about the intervention in question.

5. Conclusions and implications

Use of SBCE interventions will be critical to achieving the global objectives set by the SDGs and the EWEC Global Strategy. Therefore, it is likely that investments in SBCE interventions will increase in the next decade. Given the increasing importance of SBCE interventions to RMNCH, this evidence gap map becomes available at an important moment to respond to the need to take stock of what evidence exists to better inform future efforts and to begin to reflect on what we know and do not know across health areas. This evidence gap map provides an overview of the impact evaluation and systematic review evidence base of select SBCE interventions for RMNCH. The map

provides a starting point for decision makers, researchers and programme managers to explore the available research on the effectiveness of priority SBCE interventions in key RMNCH topics.

Because this map is limited to identifying and describing the evidence base of included studies and reviews, it is not a systematic review and does not synthesise the evidence, so the map does not provide conclusions as to the effectiveness of the interventions included.

We identified 457 impact evaluations and 142 systematic reviews published since 2000, with the trend for impact evaluations being one of year on year growth in publication of new studies. With a rapidly growing evidence base, it is important to take stock before making additional research investments to ensure that scarce resources go to address gaps in our knowledge of these interventions.

Overall, the map identified a large and growing body of effectiveness research on SBCE interventions, however the distribution of the evidence base is uneven across interventions, outcomes, health topics and geography. The majority of studies measured health outcomes, but they do not assess the effects of interventions on broader social outcomes. There is a lack of studies considering equity, in particular, the effects on vulnerable populations. Those studies that considered equity, most only considered targeting of an intervention to rural areas, or by socioeconomic status, and important dimensions of equity were rarely or never considered (such as ethnicity, language, culture, disability).

The intervention and outcome categories used for this evidence gap map were oriented by the policy literature and frameworks available at the time we began this exercise (PMNCH 2011). However, new frameworks continue to be developed, for example in a recent publication by Kaufman and colleagues (2017), which provides another categorization of interventions and outcomes, specifically for childhood vaccination communication (Kaufman et al. 2017). To be able to draw lessons from the existing research, it would be useful for global organisations, country partners and researchers to start building common frameworks and terminology for SBCE across RMNCH areas.

The evidence gap map can be explored in more depth by health topics of interest. The online EGM visualization, list of references for each topic area, summary of systematic reviews appraisals, as well as links to the article pdfs will facilitate access to and use of the research. Key findings of the SBCE evidence gap map around the impact evaluation and systematic review evidence base are summarised below.

5.1 Findings for impact evaluations

There is a heavy emphasis in past impact evaluations on interpersonal communication and health education activities. Many of these activities were delivered by community health workers, often via home visits and were part of a package of interventions. Demand-side financing and community mobilisation were also frequently studied. Interventions related to community participation and social accountability, mass media and edutainment, social media and m-health, social marketing, community based health insurance and provider training and service delivery adjustments were less studied.

The most frequently measured outcomes included mortality and child growth and development, with other more intermediate outcomes, such as care-seeking and household care practices. Using the terminology of the EWEC Global Strategy, this corresponds to the important focus on the Survive agenda, with knowledge and care-seeking for RMNCH interventions being on the pathway to reaching the final health outcomes. These will continue to be important, but future research will need to consider outcomes important to the Thrive and Transform agendas as well.

Few studies measured outcomes, such as those related to the enabling environment, for example, health provider attitudes and communication skills, household communication, changes in social norms, perceptions of quality of health services and participation and accountability outcomes. As we move to the SDGs era and embrace the goals of the EWEC Global Strategy, there is a need for research to measure effects on broader social, health and development objectives. This includes more impact evaluations to assess gender transformation and equity, in particular for vulnerable populations.

Studies are concentrated in Africa and South-East Asia, reflecting the highest regional burdens of maternal and neonatal mortality. However, over half of the studies come from only 10 LMICs: Bangladesh, India, Mexico, China, Pakistan, Uganda, Kenya, Brazil, Ghana, and South Africa. There are countries with a high burden of maternal and infant mortality where we identified no studies, particularly in West Africa. Future SBCE research should consider studies in high-burden countries where no studies were identified, including francophone Africa.

The studies included in this evidence gap map were predominately RCTs, and a few quasi-experimental studies. This suggests that there may be potential for more high-quality quasi-experimental studies in the RMNCH area. Moreover, few studies include qualitative components, process evaluation and information on costs.

Finally, the study team noted a lack of detailed information on the interventions studied in the impact evaluations. When interventions are not described well, it is difficult for readers to understand what was done, how it was done and how this links to observed effects. This had direct implications for the SBCE map (making coding difficult) and has broader implications for the usefulness and quality of studies, as well as the feasibility of undertaking systematic reviews. Therefore, future impact evaluations should prioritise mixed-method studies that carefully describe intervention design and include assessment of process, implementation and costs.

5.2 Findings for systematic reviews

The systematic review evidence base is large but unevenly distributed, mirroring the distribution of identified impact evaluations. A large proportion focus on interpersonal communication and health education, including a number of high confidence reviews. It may be helpful to conduct a review of reviews of these to identify more specific lessons learned and gaps in the knowledge. Given the large number of existing impact evaluations and reviews for these interventions, there may be opportunities to use these to develop global guidance. Where feasible, guidance and reviews should attempt to look across health areas to determine the key intervention components and implementation characteristics.

A significant share of the systematic reviews were assessed to have methodological limitations, particularly those on healthy timing and spacing of pregnancy. There is also a considerable number of low or medium confidence systematic reviews of social media and m-health interventions, despite the low number of impact evaluations identified in this area. Additional systematic reviews in this area would not contribute much to the knowledge base until new impact evaluations are published.

There are several areas where new systematic reviews could be of value, however, including community mobilisation packages for WASH, infant feeding and nutrition, and early child development.

5.3 Implications for future research

This mapping exercise is the first step in identifying priority areas for rigorous impact evaluations and systematic reviews of SBCE interventions for RMNCH and key outcomes for the next five years. Based on the findings, a systematic research prioritization exercise should now be undertaken. We identify initial next steps that will help improve and advance research on SBCE interventions:

- It would be useful for global and country partners to work together to identify common intervention categories for SBCE interventions across RMNCH areas, highlighting specificities of particular health areas/topics as needed. Having common frameworks and drawing lessons learned across RMNCH and different health areas, where possible, may expand the usefulness of the lessons we are drawing from the current research and implementation experiences.
- Efforts could then follow to achieve consensus on priority areas for research and evidence synthesis. Where research priority areas are identified further consensus on optimal study designs, key intervention components and key outcomes would be useful so that an evidence base can be built and synthesised over the next five to ten years.
- Future research on SBCE interventions should consider the measurement of distal and process outcomes, carefully considering what the core contributions SBCE interventions are making toward achieving the social, health and development goals.
- Research on SBCE interventions can also measure their contributions to the broader social outcomes aspired to in the new EWEC Global Strategy for Women's, Children's and Adolescents' Health, including community participation and social accountability. The link to improved health may come from contributions to the enabling environment and improvement of social determinants as well as from direct health outcomes.
- More studies are needed to fill an important gap in measuring interventions to meet the needs of vulnerable populations. This includes more consistently incorporating considerations of equity (including gender, education, socio-economic status, place of residence, ethnicity, culture and disability). The map identified gaps in targeting these populations and measuring direct and differential effects on them would be important for meeting global agendas. This also includes more studies in high-burden countries, where no studies were identified, including francophone Africa.

- Future research should also consider the use of mixed-method impact evaluations and systematic reviews, and studies that involve causal chain analysis and process evaluation techniques, to provide a more in-depth understanding of how change occurs. The evidence for SBCE would also benefit from more studies that include cost data.
- Further research can be undertaken to complement the findings from this evidence map, including on additional health areas (for example, expanding sexual and reproductive health); on other SBCE interventions and approaches that were not included; and with study designs that were not included, specifically qualitative research and research related to implementation and delivery mechanisms.
- Reporting of intervention implementation needs to improve in order for the quality of reviews to be improved, a problem encountered in this mapping exercise. WHO has recently released [Programme reporting standards](#) for sexual, reproductive, maternal, newborn, child and adolescent health, specifically intended to support programmes to better document key contextual and implementation factors (WHO 2017b).

Appendix A: Methods

Databases and other literature searched

Three main types of source information were searched as outlined below.

1. Publication database searches:
 - Cochrane Library (Wiley)
 - Econlit (Ovid)
 - Global Health (CABI) – Ovid
 - Global Health Library
 - Medline
 - Popline
 - Web of Science
 - Scopus
 - WHO Reproductive health library

2. Topical databases and organisation searches: Targeted searches of specialist websites and databases, in particular, established online repositories of systematic reviews and impact evaluations on topics relevant to the research question were conducted as listed below:
 - Systematic reviews
 - 3ie database of systematic reviews
 - Centre for Reviews and Dissemination DARE database
 - Campbell Collaboration Library
 - Department for International Development (DFID) – R4D (can also be searched for impact evaluations)
 - EPPI-Centre
 - Google Scholar
 - Health Evidence.org
 - IDEAS/RepEC
 - Joanna Briggs Institute
 - International prospective register of systematic reviews (PROSPERO)
 - World Bank - (can also be searched for impact evaluations)
 - MASCOT: <http://eppi.ioe.ac.uk/webdatabases4/Intro.aspx?ID = 11>
 - Impact evaluation repositories
 - Innovations for Poverty Action (IPA)
 - J-Poverty Action Lab: <http://www.poverty-action.org/project-evaluations>
 - International Impact Initiative (3ie) repository of impact evaluations
 - 3ie RIDIE (Registry for International Development Impact Evaluations): <http://ridie.3ieimpact.org/>
 - Inter-American Development Bank Evaluations: <http://www.iadb.org/en/office-of-evaluation-and-oversight/evaluations,1578.html>
 - USAID Development Experience Clearing House: <https://dec.usaid.gov/dec/content/search.aspx>

3. Bibliographic and expert searches: Bibliographies of reviews identified through the scoping exercise were screened for any other studies meeting the inclusion

criteria. Reverse searching of the study bibliographies of included systematic reviews was also performed. Citation tracking was not performed for included impact evaluations due to the large number of included studies. Finally, experts, including the advisory group were asked to nominate additional studies

Search Strategy

An information specialist assisted with development of a search strategy designed to identify studies meeting the inclusion criteria. A search string for searching online publication databases and search engines was compiled using an initial set of English search terms relevant to different components of the research question (interventions, populations, study designs). The search strategy was then adapted for each individual database. An example is provided below. The search strategies for additional databases are available on request from the authors.

Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present> - Searched 16th July 2016

- 1 community health services/ or "early intervention (education)"/ or maternal-child health services/ or community health nursing/ or home health nursing/ or family planning services/ or home nursing/ or maternal health services/ or perinatal care/ or postnatal care/ or preconception care/ or prenatal care/ or reproductive health services/ or rural health services/ or rural nursing/ or women's health services/ or preventive health services/ or primary health care/ or child health services/ (209368)
- 2 ((maternal or women* or reproductive or "family planning" or child* or infant* or newborn* or neonatal or preventive or primary) adj health service*).ti,ab. (4050)
- 3 (community* or communities* or village* or local or rural or non-urban).ti,ab. (971622)
- 4 or/1-3 (1130014)
- 5 Birth Intervals/ or Pregnancy Rate/ or Reproductive Behavior/ or Contraception Behavior/ or Pregnancy Outcome/ (56996)
- 6 ((birth or pregnan* or reproductive) adj3 (interval* or spacing or rate* or outcome* or behavio* or control or contracepti* or "family planning")).ti,ab. (80078)
- 7 child mortality/ or infant mortality/ or maternal mortality/ or perinatal mortality/ (35010)
- 8 ((child* or infant* or newborn* or neonatal or perinatal or maternal or mother*) adj2 (mortality or death* or survival)).ti,ab. (63853)
- 9 Child Development/ (38719)
- 10 (child* adj2 develop*).ti,ab. (31028)
- 11 Hand Hygiene/ (586)
- 12 (hand* adj2 (wash* or hygiene)).ti,ab. (5646)

- 13 Infant Food/ or Breast Feeding/ or Infant Formula/ or Bottle Feeding/ (41606)
- 14 ((infant* or child* or baby or babies or neonat* or newborn*) adj2 (food or feed* or breast feed* or breastfeed* or formula* or bottle feed* or bottle-feed* or supplement* or nutrition*)).ti,ab. (26977)
- 15 immunisation programs/ or immunisation/ or primary prevention/ (70750)
- 16 (immuniz* or immunis* or vaccinat*).ti,ab. (217005)
- 17 child welfare/ or child care/ or infant welfare/ or maternal welfare/ (31937)
- 18 exp Diarrhea/ec, pc [Economics, Prevention & Control] (4088)
- 19 (diarrhea* or diarrhoea*).ti,ab. (87304)
- 20 exp Malaria/ec, pc [Economics, Prevention & Control] (14131)
- 21 ((malaria* adj3 (prevent* or prophylaxis)) or antimalarial* or mosquito net* or bed net* or bednet* or bed-net* or insecticide-treated net* or ITNs).ti,ab. (19477)
- 22 (pneumonia adj2 (prevent* or control*)).ti,ab. (1090)
- 23 Pneumonia/ec, pc [Economics, Prevention & Control] (2563)
- 24 Information Seeking Behavior/ or Help-Seeking Behavior/ or Health Promotion/ (62669)
- 25 (health* adj2 (promot* or behavio* or educat* or counseling or counselling or information or care-seeking)).ti,ab. (122360)
- 26 ((Consumer* or patient* or communit*) adj3 (participat* or involv* or engage* or motivat* or mobilis* or mobiliz* or outreach or dialog*)).ti,ab. (94821)
- 27 consumer participation/ or patient participation/ (35129)
- 28 Mass Media/ (9655)
- 29 (mass media or telecommunication* or mass communication).ti,ab. (7382)
- 30 "marketing of health services"/ or social marketing/ (16611)
- 31 (marketing or advocacy or advertis*).ti,ab. (42476)
- 32 Electronic Mail/ or Internet/ or Text Messaging/ or Communication/ or Telemedicine/ (140199)
- 33 (email or e-mail or electronic mail or audiovisual or internet or telemedicine).ti,ab. (51888)
- 34 ((phone adj3 call*) or ((cell* or mobile or smart or google or nexus or iphone) adj3 (phone* or telephone*)) or smartphone* or smart-phone* or (blackberr* not extract) or (black-berr* not extract) or ((mobile adj3 health) not (van* or unit*)) or mhealth or m-health or e-health* or ehealth* or (electronic adj health) or (mobile adj3 technol*) or

((mobile or smartphone or smart-phone or phone or software) adj3 app*) or MMS or multimedia messaging service or SMS or short messag* service or (text* adj messag*) or text-messag* or voice messag* or interactive voice response or IVR).ti,ab. (38610)

35 Advertising as Topic/ (13610)

36 House Calls/ (2794)

37 ((house* or home) adj2 (call* or visit*)).ti,ab. (9032)

38 hotlines/ or communications media/ or audiovisual aids/ or radio/ or cell phones/ or television/ (29750)

39 (hotline* or radio or television or TV or phone* or telephon* or mobiles or campaign* or advert* or boards or newspaper* or maga?in* or brochure* or leaflet* or pamphlet* or cinema* or (mass adj (communication or media)) or internet or social media or blog* or facebook or twitter or instagram or podcast* or broadcast* or audiovisual or film* or movie* or edutainment).ti,ab. (367188)

40 teaching materials/ (6149)

41 (teach* adj2 material*).ti,ab. (924)

42 Social Media/ (2854)

43 Capacity Building/ (1303)

44 (capacity adj2 build*).ti,ab. (4139)

45 Community Health Aides/ (3861)

46 Home Health Aides/ (552)

47 Allied Health Personnel/ (10597)

48 Voluntary Workers/ (8351)

49 ((lay or voluntary or volunteer? or untrained or unlicensed or nonprofessional? or non professional?) adj5 (worker? or visitor? or attendant? or aide or aides or support\$ or person\$ or helper? or carer? or caregiver? or care giver? or consultant? or assistant? or staff or visit\$ or midwife or midwives) adj3 (information or outreach or train* or educat* or capacity building)).ti,ab. (720)

50 ((paraprofessional? or paramedic or paramedics or paramedical worker? or paramedical personnel or allied health personnel or allied health worker? or support worker? or home health aide?) adj3 (information or outreach or train* or educat* or capacity building)).ti,ab. (880)

51 (trained adj3 (volunteer? or health worker? or mother?)).ti,ab. (1400)

52 ((community or village?) adj3 (health worker? or health care worker? or healthcare worker?)).ti,ab. (3364)

53 (community adj3 (volunteer? or aide or aides or support)).ti,ab. (5402)

- 54 ((birth or childbirth or labor or labour) adj (attendant? or assistant?)).ti,ab. (1768)
- 55 (peer adj (volunteer? or counsel\$ or support or intervention? or educator*)).ti,ab. (3293)
- 56 (outreach or (home adj (care or aide or aides or nursing or support or intervention? or treatment? or visit\$)) or ((care or aide or aides or nursing or support or intervention? or treatment? or visit\$) adj3 (lay or volunteer? or voluntary))).ti,ab. (36852)
- 57 Consumer Advocacy/ (3159)
- 58 ((consumer* or patient* or communit*) adj2 advoca*).ti,ab. (3694)
- 59 social responsibility/ or moral obligations/ (21720)
- 60 ((communit* or social) adj2 (monitor* or particip* or empower* or control* or develop* or governanc* or superv* or "report* card*" or audit* or (informat* adj3 campaign*) or scorecard* or "score card*" or accountab* or watchdog* or democrati* or "people power" or responsibility or obligation*)).ti,ab. (32818)
- 61 Healthcare Financing/ (302)
- 62 ((financial or cash or pay\$ or monetary or money) adj3 (transfer\$ or measure\$ or incentive\$ or reward* or allowance\$ or exclu\$ or reform\$ or gain\$ or credit\$1 or benefit\$1)).ti,ab. (12288)
- 63 (((health* or medical) adj2 (financ* or budget* or cost* or insur*)) or ((social or community) adj3 (insurance? or financ\$))).ti,ab. (76716)
- 64 Insurance, Health/ (31419)
- 65 Maternal-Child Health Centres/ (2274)
- 66 ((maternal or maternity or mother*) adj2 (waiting home* or birth* home*)).ti,ab. (41)
- 67 ((communit* or village* or rural) adj2 transport*).ti,ab. (182)
- 68 or/5-67 (1638720)
- 69 ((match* adj3 (propensity or coarsened or covariate)) or "propensity score" or ("difference in difference*" or "difference-in-difference*" or "differences in difference*" or "differences-in-difference*" or "double difference*") or ("quasi-experimental" or "quasi experimental" or "quasi-experiment" or "quasi experiment") or ((estimator or counterfactual) and evaluation*) or ("instrumental variable*" or (IV adj2 (estimation or approach))) or "regression discontinuity").ti,ab,kw. (20023)
- 70 (((experiment or experimental) adj2 (design or study or research or evaluation or evidence)) or (random* adj4 (trial or assignment or treatment or control or intervention* or allocat*))).ti,ab,kw. (335510)
- 71 Randomised Controlled Trial/ or Randomised Controlled Trials as Topic/ or random allocation/ or Propensity Score/ or Models, Econometric/ or Quasi-Experimental Studies/ (604293)

- 72 Program Evaluation/ or Evaluation Studies/ (266259)
- 73 ((impact adj2 (evaluat* or assess* or analy* or estimat* or measure)) or (effectiveness adj2 (evaluat* or assess* or analy* or estimat* or measure))).ti,ab,kw. (113059)
- 74 ("program* evaluation" or "project evaluation" or "evaluation research" or "natural experiment*" or "program* effectiveness").ti,ab,kw. (9122)
- 75 meta analysis/ (71057)
- 76 ((systematic* adj2 review*) or "meta-analy*" or "meta analy*").ti,ab,kw. (155565)
- 77 or/69-76 (1254820)
- 78 Developing Countries.sh,kf. (77224)
- 79 Africa/ or Asia/ or Caribbean/ or West Indies/ or South America/ or Latin America/ or Central America/ (66295)
- 80 (Africa or Asia or Caribbean or West Indies or South America or Latin America or Central America).tw. (136466)
- 81 (Afghanistan or Albania or Algeria or Angola or Argentina or Armenia or Armenian or Azerbaijan or Bangladesh or Benin or Byelarus or Byelorussian or Belarus or Belorussian or Belorussia or Belize or Bhutan or Bolivia or Bosnia or Herzegovina or Hercegovina or Botswana or Brazil or Bulgaria or Burkina Faso or Burkina Fasso or Upper Volta or Burundi or Urundi or Cambodia or Khmer Republic or Kampuchea or Cameroon or Cameroons or Cameron or Camerons or Cape Verde or Central African Republic or Chad or China or Colombia or Comoros or Comoro Islands or Comores or Mayotte or Congo or Zaire or Costa Rica or Cote d'Ivoire or Ivory Coast or Cuba or Djibouti or French Somaliland or Dominica or Dominican Republic or East Timor or East Timur or Timor Leste or Ecuador or Egypt or United Arab Republic or El Salvador or Eritrea or Ethiopia or Fiji or Gabon or Gabonese Republic or Gambia or Gaza or Georgia Republic or Georgian Republic or Ghana or Grenada or Guatemala or Guinea or Guiana or Guyana or Haiti or Honduras or India or Maldives or Indonesia or Iran or Iraq or Jamaica or Jordan or Kazakhstan or Kazakh or Kenya or Kiribati or Korea or Kosovo or Kyrgyzstan or Kirghizia or Kyrgyz Republic or Kirghiz or Kirgizstan or Lao PDR or Laos or Lebanon or Lesotho or Basutoland or Liberia or Libya or Macedonia or Madagascar or Malagasy Republic or Malaysia or Malaya or Malay or Sabah or Sarawak or Malawi or Mali or Marshall Islands or Mauritania or Mauritius or Agalega Islands or Mexico or Micronesia or Middle East or Moldova or Moldovia or Moldovian or Mongolia or Montenegro or Morocco or Ifni or Mozambique or Myanmar or Myanma or Burma or Namibia or Nepal or Netherlands Antilles or Nicaragua or Niger or Nigeria or Muscat or Pakistan or Palau or Palestine or Panama or Paraguay or Peru or Philippines or Philipines or Phillipines or Phillippines or Papua New Guinea or Romania or Rumania or Roumania or Rwanda or Ruanda or Saint Lucia or St Lucia or Saint Vincent or St Vincent or Grenadines or Samoa or Samoan Islands or Navigator Island or Navigator Islands or Sao Tome or Senegal or Serbia or Montenegro or Seychelles or Sierra Leone or Sri Lanka or Solomon Islands or Somalia or Sudan or Suriname or Surinam or

Swaziland or South Africa or Syria or Tajikistan or Tadzhikistan or Tadjikistan or Tadzhiik or Tanzania or Thailand or Togo or Togolese Republic or Tonga or Tunisia or Turkey or Turkmenistan or Turkmen or Uganda or Ukraine or Uzbekistan or Uzbek or Vanuatu or New Hebrides or Venezuela or Vietnam or Viet Nam or West Bank or Yemen or Zambia or Zimbabwe).tw. (767010)

82 exp africa/ or exp africa, northern/ or algeria/ or egypt/ or libya/ or morocco/ or tunisia/ or exp "africa south of the sahara"/ or africa, central/ or cameroon/ or central african republic/ or chad/ or congo/ or "democratic republic of the congo"/ or equatorial guinea/ or gabon/ or africa, eastern/ or burundi/ or djibouti/ or eritrea/ or ethiopia/ or kenya/ or rwanda/ or somalia/ or south sudan/ or sudan/ or tanzania/ or uganda/ or africa, southern/ or angola/ or botswana/ or lesotho/ or malawi/ or mozambique/ or namibia/ or south africa/ or swaziland/ or zambia/ or zimbabwe/ or africa, western/ or benin/ or burkina faso/ or cape verde/ or cote d'ivoire/ or gambia/ or ghana/ or guinea/ or guinea-bissau/ or liberia/ or mali/ or mauritania/ or niger/ or nigeria/ or senegal/ or sierra leone/ or togo/ or americas/ or exp caribbean region/ or exp west indies/ or exp central america/ or belize/ or costa rica/ or el salvador/ or guatemala/ or honduras/ or nicaragua/ or panama/ or panama canal zone/ or latin america/ or mexico/ or exp south america/ or argentina/ or bolivia/ or brazil/ or chile/ or colombia/ or ecuador/ or french guiana/ or guyana/ or paraguay/ or peru/ or suriname/ or uruguay/ or venezuela/ or asia/ or asia, central/ or kazakhstan/ or kyrgyzstan/ or tajikistan/ or turkmenistan/ or uzbekistan/ or exp asia, southeastern/ or borneo/ or brunei/ or cambodia/ or timor-leste/ or indonesia/ or laos/ or malaysia/ or mekong valley/ or myanmar/ or philippines/ or singapore/ or thailand/ or vietnam/ or asia, western/ or bangladesh/ or bhutan/ or india/ or sikkim/ or middle east/ or afghanistan/ or bahrain/ or iran/ or iraq/ or israel/ or jordan/ or kuwait/ or lebanon/ or oman/ or qatar/ or saudi arabia/ or syria/ or turkey/ or united arab emirates/ or yemen/ or nepal/ or pakistan/ or sri lanka/ or far east/ or china/ or beijing/ or macau/ or tibet/ or korea/ or mongolia/ or taiwan/ or indian ocean islands/ or comoros/ or madagascar/ or mauritius/ or reunion/ or seychelles/ or pacific islands/ or exp melanesia/ or exp micronesia/ or polynesia/ or pitcairn island/ or exp samoa/ or tonga/ or prince edward island/ or west indies/ or "antigua and barbuda"/ or bahamas/ or barbados/ or cuba/ or dominica/ or dominican republic/ or grenada/ or guadeloupe/ or haiti/ or jamaica/ or martinique/ or netherlands antilles/ or puerto rico/ or "saint kitts and nevis"/ or saint lucia/ or "saint vincent and the grenadines"/ or "trinidad and tobago"/ or united states virgin islands/ or oceania/ (863952)

83 ((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 or state*)).ti,ab. (70868)

84 ((developing or less* developed or under developed or underdeveloped or middle income or low* income) adj (economy or economies or population*)).ti,ab. (1685)

85 (low* adj (gdp or gnp or gross domestic or gross national)).tw. (186)

86 (low adj3 middle adj3 countr*).tw. (6495)

87 (lmic or lmics or third world or lami countr*).tw. (4229)

88 transitional countr*.tw. (125)

89 or/78-88 (1286167)
90 4 and 68 and 77 and 89 (9916)
91 limit 90 to yr = "2000-Current" (7551)

Screening and data extraction

Screening

Manual screening and text mining were used to assess studies for inclusion at the title and abstract stage. To ensure consistent application of screening criteria all screeners assessed the same sample of 100 abstracts. Any discrepancies were discussed within the team and inclusion criteria were clarified as necessary. When all screeners had been trained, a random sample of 1000 abstracts was screened as a quality control exercise.

An initial set of 2825 records was screened to permit text-mining training, permitting prioritisation of studies according to relevance. Text-mining technology was used through EPPI Reviewer to prioritise studies for screening based on relevance. One researcher screened each title/ abstract.

Due to time and resource constraints, full text papers were not screened independently by two people. But to minimise bias and human error a sample of studies was double-screened. Following this, any study where the first screener was uncertain about inclusion/ exclusion was allocated to screening by a second person. Finally, all studies identified for inclusion were screened by a second person before being added to the EGM.

Data extraction

A standardised data extraction form was used to extract metadata from all studies meeting the inclusion criteria. Data extracted included bibliographic details, intervention type, outcome type and definition, study design, geographical location and intervention scale.

The data extraction form was tested on a small subset of studies by everyone in the research team to ensure consistency in coding and to resolve any issues or ambiguities. Data extraction was then completed by a single coder, with the majority of data reviewed by a second coder.

In addition, the following coding rules were applied:

- a) RMNCH area was coded by looking at the effect of the intervention and not who the intervention was targeting. For example, interventions related to breastfeeding were coded as maternal, newborn and child. Where relevant, these have been coded to only newborn and/or child (effect of intervention), and not maternal (target of the intervention).
- b) Several studies which included WASH or cookstove interventions targeted the household level, such as household uptake of latrines and hand washing. These studies were initially coded as maternal, newborn and child, but were recoded as child. WASH colleagues in the expert group were consulted and agreed with this option,

as many water and sanitation interventions are primarily evaluated by assessing the benefits for young children.

c) To avoid multiple coding of interventions, the categorization of interventions was revised to yield single interventions, as well as 'packages' of interventions. If a study looked at the effect of more than one intervention, e.g. interpersonal communication (IPC) and mass media vs a control group, the study would show only once in the EGM, that is under the package '(IPC) and mass media'. If the study had an additional arm, such as (IPC) and mass media vs mass media alone, vs control group, the study would show in the package '(IPC) and mass media' as well as in the category of 'mass media'. Not all interventions fit neatly into the categories, but they were placed where they fitted best.

d) Intervention categories were reviewed to make the distinction between some of the categories clearer and to split very broad intervention categories into more useful and descriptive categories. For example, community participation and social accountability; interpersonal communication and education conducted in groups and community mobilisation; and provider SBCE training and SBCE service delivery adjustments. Some intervention categories were also merged when the advisory group suggested there was too much overlap distinction was made between interpersonal communication and education conducted as home visits, one-on-one in a facility and interpersonal communication and education conducted in groups. A distinction was also made between community mobilisation, which is a process of motivating collective action, and the intervention 'group interpersonal communication and education' which includes group discussions for health education and information sharing only.

e) Systematic reviews were coded by their 'intent', i.e. what the systematic review intended to look for, rather than their findings. For example, if the intent was to search for effects of home visits on maternal, newborn and child health, the systematic review was coded as M, N, C (health area) and home visits (intervention), regardless of whether the systematic review identified studies for these areas.

When the systematic review intent was not clear and the intervention description was very broad e.g. interventions to improve child survival, we looked at the studies identified in the SR and coded the interventions accordingly.

Equity coding

3ie is piloting 'equity-sensitive EGMs' which identify to what extent and how current research practice incorporates equity (Masset and Snilstveit, 2016). For this reason, data was extracted on the extent to which the existing evidence incorporates groups considered vulnerable in this context, was extracted either because they may have less access to services or because programme benefits may be differently distributed. The PROGRESS-PLUS framework was used to identify the relevant groups we drew on.

The following groups were considered:

- Place of residence: location of household e.g. distance from health facility; distinctions such as living in more remote areas
- Ethnicity, culture and language: Any targeting or sub-group analysis, including for instance ethnic minority communities living in rural/remote areas.

- Gender: any studies undertaking a gender analysis, such as decision-making between men and women in the household; female/male participation on health committees
- Socioeconomic status: this may be measured in different ways, including grouping results by income level or defining people as poor.
- Other vulnerable group: Open category, to be used iteratively to record details of any vulnerable groups identified a-priori.

It was planned that age disaggregation be captured in the coding. However, given that the EM addressed multiple health areas, i.e. reproductive, maternal, newborn and child, it was deemed that differentiating by age would not be useful. In addition, adolescent health has already been captured in a separate EM.

Studies were coded according to whether they:

- Assess a programme targeting a specific group considered vulnerable;
- Assess a programme aiming to reduce inequity or inequality;
- Use a subgroup analysis to assess the effects on different groups. If a subgroup analysis was conducted, we assessed whether the sample size was sufficiently large for such an analysis.

Detailed definitions of health topics, interventions and outcomes

Health topics/ accelerator behaviours

Health topic	Sub-topic
Healthy timing and spacing of pregnancy	<p>Sexually active men and women, who do not intend pregnancy use a modern contraceptive until they are desirous of pregnancy</p> <p>After a live birth, women or their partners use a modern contraceptive method to avoid pregnancy for at least 24 months</p> <p>After a miscarriage or induced abortion, women or their partners use a modern contraceptive method to avoid pregnancy for at least six months</p>
Care during pregnancy, childbirth and after childbirth	<p>Pregnant women attend antenatal care visits with a skilled health professional within the first trimester of pregnancy</p> <p>Pregnant women attend at least four antenatal care sessions with a skilled health professional</p> <p>Pregnant women receive timely basic vaccinations</p> <p>Pregnant women do not consume alcohol or smoke during pregnancy</p>

Health topic	Sub-topic
	<p>Pregnant women have a birth preparedness and complications plan</p> <p>Pregnant women give birth at a health facility or in the presence of a skilled health professional</p> <p>After an uncomplicated vaginal birth in a health facility, healthy mothers and newborns should receive care in the facility for at least 24 hours after birth. If birth is at home, women and their newborn should receive postnatal care within 24 hours of birth</p> <p>Women and their newborns attend postnatal care with a skilled health professional on day 3 (48–72 hours), between days 7–14 after birth, and six weeks after birth</p> <p>Members of the household and the community recognise that smoking and second-hand smoke harm health and take appropriate measures</p>
Care seeking for new-born illness	Caregivers seek prompt and appropriate care for signs and symptoms of newborn illness
Infant and child feeding and nutrition	<p>Early initiation of breastfeeding (within one hour) after birth</p> <p>Mothers continue to exclusively breastfeed for six months after birth</p> <p>Mother's and care givers introduce appropriate complementary foods at 6 months, while continuing to breastfeed up to or beyond 2 years</p> <p>School-age children achieve adequate daily intake of diverse, fresh fruit and vegetables and receive supplementary foods when at risk of undernutrition</p> <p>School-age children undertake sufficient physical activity to reduce chance of obesity</p> <p>Mothers and caregivers provide appropriate management and treatment for malnutrition</p>
Immunisations	Caregivers seek a full course of timely basic vaccinations for infants and children e.g. rotavirus, measles, pneumococcal conjugate vaccine, haemophilus influenzae type b (Hib), pertussis, DTP1, DTP3, OPV, IPV)

Health topic	Sub-topic
Care seeking for childhood illnesses	<p>Caregivers recognise when sick children need treatment outside the home and seek care from appropriate providers</p> <p>Caregivers follow health worker's advice about treatment, follow up and referral</p>
Malaria and dengue fever	Members of the household take up malaria / dengue fever prevention and control interventions, such as the use of insecticide treated bed nets (ITNs), in malaria-endemic areas
Pneumonia	<p>Caregivers adopt preventive behaviours as reflected in infant feeding and nutrition and immunisation health areas, as well as take measures to reduce household air pollution</p> <p>Members of the household and the community recognise that smoking and secondhand smoke harm health and take appropriate measures</p>
Diarrhoea	<p>Caregivers adopt preventive behaviours, as reflected in infant feeding and nutrition, immunisation and WASH health areas</p> <p>Caregivers provide appropriate treatment for children with diarrhoea at onset of symptoms</p>
Water, Sanitation and Hygiene (WASH)	<p>Members of the household dispose of faeces safely, including children's faeces, and handwash with soap at critical times (i.e., after defecation, after changing diapers and before food preparation and eating).</p> <p>Members of the household drink safe water</p>
Early child development	Caregivers promote mental and social development by responding to a child's needs for care, and through talking, playing and providing a stimulating environment

Interventions

Intervention category	Intervention	Intervention description
Interpersonal communication and educational activities	Home visits	The primary objective of home visits is to bring RMNCH education, information and counselling directly to the home via a health professional or trained volunteer/ peer. Contact with the

Intervention category	Intervention	Intervention description
		<p>household may be provided face-to-face or indirectly by phone. Those delivering the household outreach may be physicians, nurses, midwives, paraprofessionals, traditional providers, cadres, trained peer-educators, other health workers and volunteers.</p> <p>These types of interventions may include the provision of print or electronic materials as part of the home visit. They also often include an element of training for the provider undertaking the household outreach / home visits.</p>
	Facility-based interpersonal communication and counselling	<p>These interventions involve a health professional of some kind providing RMNCH education, information and/or counselling one-on-one to individuals in a facility, such as a health centre. As above a key element of these interventions is the face-to-face interaction between the health professional and clients and may also include the provision of written and electronic educational aids, such as pamphlets, posters, cd rom and so on.</p> <p>These types of interventions may include the provision of print or electronic materials as part of the facility interpersonal communication and counselling. They also often include an element of training for the provider undertaking the interpersonal communication</p>
	Group – any setting	<p>Group-based interventions involve the provision of RMNCH information, education and/or counselling in a group-setting rather than one-to-one. Interventions can include meetings with a select group (e.g. pregnant women), village health clubs, community dialogue, client-provider forums, workshops, fairs and other events in</p>

Intervention category	Intervention	Intervention description
		<p>different settings such as schools, health facilities and community settings., These interventions may also include the provision of written and electronic educational aids, such as pamphlets, posters, video and so on. Those delivering the group-based interventions may be physicians, nurses, midwives, paraprofessionals, traditional providers, cadres, trained teachers, trained peer-educators, other health workers and volunteers.</p> <p>These types of interventions may include the provision of print or electronic materials as part of the group interpersonal communication and counselling. They also often include an element of training for the provider undertaking the interpersonal communication</p>
Mass and social media	Mass media and entertainment education	<p>Mass media refers to the use of a diverse set of technologies including the internet, television, print materials (e.g. newspapers, posters and leaflets), film and radio, which are capable of simultaneously—almost instantaneously—reaching audiences on a large scale, often over considerable distance. Such media may or may not have interactive capabilities. Mass media programmes are often theory-based and target a large population.</p> <p>For the purpose of this evidence gap map mass media also includes other types of written materials such as a letter to parents or spouse, pamphlet on breastfeeding and MNCH booklets and home based records. Like print materials, these can serve to inform, remind, educate and motivate people about specific RMNCH topics.</p>

Intervention category	Intervention	Intervention description
		<p>Mass media are often used to deliver entertainment-education programmes or materials. These interventions have educational, motivational or persuasive messages delivered through an entertaining format, such as a radio health drama or health messages inserted into the storyline of a popular television programme. These interventions can use film, television, radio, comic books, traditional storytelling forms, as well as the internet to provide information and messages.</p>
	Social marketing	<p>Social marketing strategies use marketing concepts — product design, appropriate pricing, sales and distribution, and communications — to influence behaviours that benefit individuals and communities. Social marketing involves coordinating many communication forms and approaches to reinforce and complement each other. These can include:</p> <ul style="list-style-type: none"> - advertising - social franchising - public relations - internet communication - community mobilisation - counselling - print and electronic materials - network marketing <p>All forms communicate the same content associated with the “product” and behavioural outcomes.</p>
	Social media and m-health	<p>These interventions refer to a variety of web-based and mobile technologies and software applications permit users to engage in dialogue with each other, often over great distances and share information. These interventions may take an individual, one to one approach, (e.g. SMS reminder of an upcoming</p>

Intervention category	Intervention	Intervention description
		<p>appointment) or attempt to connect with people on a large scale (e.g. social media).</p> <p>Interventions can include:</p> <ul style="list-style-type: none"> - mHealth/mobile phone such as smartphone/ feature phone/tablet/personal data assistant (PDA) /other mobile devices, Short Message Service (SMS), Multimedia Messaging Service (MMS), Interactive Voice Response (IVR) - Helpline, hotlines - eHealth/eLearning/websites - Information Communication Technology - Digital Media - Social Media (e.g. Facebook and Twitter)
Interventions to address financial barriers	Demand-side financing	<p>Demand-side financing offers a supplementary model to supply-side financing of health care in which some funds are instead channelled through, or to, prospective users. Demand side financing schemes to increase maternity healthcare utilization and promote maternal, perinatal, neonatal and infant health outcomes include (1):</p> <ul style="list-style-type: none"> - unconditional cash transfers - conditional cash transfers - short-term payment to offset costs of access - vouchers for maternity services - vouchers for merit goods
	Community health insurance	<p>Community-based health insurance schemes are a form of micro-insurance used to help low-income households manage risks and reduce their vulnerability in the face of financial shocks (2) Other schemes can include rural health insurance, mutual health insurance, revolving drug funds and community involvement in user-fee</p>

Intervention category	Intervention	Intervention description
		management.
Community mobilisation and participation activities	Community mobilisation	<p>Community mobilisation is a community capacity-strengthening process through which community individuals, groups (including in schools), or organisations plan, carry out, and evaluate activities on a participatory and sustained basis to improve their health and other needs, either on their own initiative or stimulated by others (3). Community capacity refers to the skills, knowledge, and expertise of community members which individually and collectively constitute a community's ability to identify and address its needs (3). The objective of these approaches can include (4):</p> <ul style="list-style-type: none"> - developing the general capacity of community members and groups to work effectively together as an end in itself, regardless of any particular aim or goal (for example, supporting leadership, governance, management, problem solving) - developing the technical knowledge and skills of community members to carry out a specific task or function (e.g. developing advocacy skills to advocate for a change in local government health policy), supporting communities to strengthen both their technical knowledge and skills and general capacity to work effectively together to achieve a common goal or results, such as maternal and child health <p>Community mobilisation activities can be strategically integrated across different levels: households,</p>

Intervention category	Intervention	Intervention description
		<p>communities, service delivery systems and the political environment.</p> <p>Community mobilisation can often also involve use of the following activities:</p> <ul style="list-style-type: none"> - participatory learning and action cycles (e.g. women's groups) - community dialogue and working with community leaders, religious leaders, health service providers, Traditional Birth Attendants (TBAs) - stakeholder groups - participatory research and assessment - rapid rural appraisal - strength based strategies such as positive deviance approaches - community advocacy activities - community organised transport schemes - engaging school children as agents of change <p>Note: many of these activities can overlap with community participation in planning and programmes. The intervention was coded based on the description provided in the studies but there is potential overlap for some studies</p>
	<p>Community participation in health service planning and programmes and social accountability</p>	<p>Interventions to increase community participation in planning and programmes involve activities to create ongoing relationships between community members and health service delivery. The objective is to institutionalise community participation in decision-making within health services and at the district and national levels to ensure the interests of the community are represented.</p> <p>Approaches to involve communities in decision-making around planning and programmes include:</p> <ul style="list-style-type: none"> - health facility management committees

Intervention category	Intervention	Intervention description
		<ul style="list-style-type: none"> - village health committees - participatory planning and budgeting processes (allowing communities to have a say in how budgets for their locality are spent) - participatory monitoring and evaluation processes, such as community dialogue and collective planning (e.g. through interactive public events). <p>Social accountability refers to the broad range of actions and mechanisms that community members can use to hold the state, public officials and service providers to account for their obligations, as well as actions on the part of government, civil society, media and other societal actors that promote or facilitate these efforts (5).</p> <p>Approaches include:</p> <ul style="list-style-type: none"> - community monitoring - social audits - public hearings and community meetings - citizen report cards and community scorecards - verbal and social autopsies - partnership defined quality - other client feedback mechanisms - citizen-led budget advocacy - community participation in verification/validation of data for results-based financing
Service and programme strengthening activities	Provider training and service delivery adjustments	<p>Provider training focuses on the training of health providers, and other service providers, such as teachers and pharmacists, in skills and techniques related to communication, health education and community engagement for example (6):</p> <ul style="list-style-type: none"> - community participation and engagement - interpersonal communication - intercultural skills - gender and human rights

Intervention category	Intervention	Intervention description
		<p>- counselling</p> <p>Service delivery adjustments are the changes made to service delivery and programmes in response to community perceptions of quality of care or to improve community perceptions of quality of care</p>
Other	Non-SBCE interventions	<p>Includes activities, such as clinical services, programme adjustments, household technology provision (e.g. WASH, cookstoves), other commodity provision (e.g. soap, fuel), livelihood activities and policy activities.</p> <p>These types of intervention are only included when combined with another included intervention and are coded for information only. They will not appear in the evidence gap map.</p>

Outcomes

Broad outcome category	Outcome	Outcome definition
Knowledge and attitudes	Knowledge and attitudes of individuals and members of the households regarding RMNCH	Knowledge and attitudes of individuals and members of the household regarding care practices (self-care and caregiver) and care-seeking behaviour
	Social norms in the community for RMNCH	Social norms / normative beliefs in the community in relation RMNCH, particularly related to care practices and care-seeking

Broad outcome category	Outcome	Outcome definition
	Knowledge and attitudes of health providers for community engagement	Health provider knowledge and attitudes regarding communication, health education and community engagement, including: <ul style="list-style-type: none"> - community participation and engagement - interpersonal communication - intercultural skills - gender and human rights - counselling
Household dynamics / communication	Couple / mothers / mothers-in law /parent-child communication	Communication between women and their partners / mothers / mothers-in-law in the household about RMNCH-related issues, particularly related to care practices and care-seeking Parent and caregiver communication and interaction with children in their care
	Parenting skills	Parenting style and parenting skills of parents and caregivers
	Joint decision-making in the household	Joint decision-making by members of the household (e.g. woman and her partner) on RMNCH-related issues, particularly related to care practices and care-seeking
Care practices	Self-care practices (prevention and treatment)	Individual and household self-care practices for the purpose of prevention and treatment

Broad outcome category	Outcome	Outcome definition
	Caregiver practices (prevention and treatment)	Prevention and treatment practices by caregivers for children under their care
	Household environmental practices	Individual / household adoption and use of environmental/infrastructure interventions to address for example, air pollution (e.g. cook stoves), mosquito breeding (covering containers), water, sanitation and hygiene (e.g. latrines; water jars)
Care-seeking behaviour	Routine care-seeking behaviour	Routine care-seeking by individuals and caregivers, such as antenatal care, postnatal care, skilled care at birth, family planning and childhood immunisation
	Care-seeking for complications/illness	Individual and caregiver care-seeking for illness and complications, such as childhood illness or complications during pregnancy and childbirth.
Quality of care / satisfaction	Perception of quality of care / Satisfaction with services	Individual and community satisfaction with quality of care provided Individual and community satisfaction with provider communication and/or level of respect shown for their choices and preferences
	Provider communication and engagement skills	Health service provider interpersonal and intercultural competencies, counselling skills, skills in community participation and engagement

Broad outcome category	Outcome	Outcome definition
Community capacity, participation and accountability	Community capacity	<p>In addition to outcomes for care-seeking behaviour and quality, other outcomes for community capacity include:</p> <p>Capacity for collective action: (7)⁷</p> <ul style="list-style-type: none"> • Learning opportunities and skills development • Resource mobilisation • Leadership • Partnerships/linkages/networking • Participatory decision-making • Sense of community • Communication • Organisational development
	Participation in planning and programmes	<p>In addition to outcomes for community capacity and social accountability, other outcomes for community participation in planning and programmes include: programme design and service delivery that responds to the priorities and needs of communities</p>
	Social accountability	<p>In addition to outcomes for community capacity and community participation in planning and programmes, other social accountability outcomes include: improved efficiency of service delivery, governance processes and resource allocation decisions, or claiming rights</p>

⁷ Adapted from Table 3

Broad outcome category	Outcome	Outcome definition
Health	Maternal, newborn, and child morbidity and disability	Maternal, newborn and child morbidity and/or disability
	Maternal, newborn, and child mortality	Maternal, newborn and/or child mortality
	Child growth and development	Physical, socio-emotional, language and cognitive development, nutrition
Cross-cutting	Gender equity / status of women	Differences in participation, benefits, outcomes, and impacts for women, men, boys, and girls Changes in gender relations (positive or negative) between men and women, and between girls and boys
	Social cohesion	The extent to which people feel included in their society, that they can participate in and contribute to their community
	Cost	Examination of the cost of interventions

Appendix B: Coding tool

Data extraction tool for impact evaluations

Category		Answer
Descriptive information	ID	Open answer – RMNCHxxx
	Title	Open answer
	Full title	Open answer
	Author Citation	Open answer
	Publication date	Open answer
	Map	Maternal, reproductive, neonatal and child health evidence gap map
	Regions (3ie)	<ul style="list-style-type: none"> – East Asia and Pacific – South Asia – Europe – CIS – Middle East and North Africa – Sub-Saharan Africa – Latin America and the Caribbean
	Regions (WHO)	<ul style="list-style-type: none"> – African region – Western Pacific region – South East Asia region – Eastern Mediterranean region – European region – Region of the Americas
	Country	See relevant country list
	Study design (broad)	<ul style="list-style-type: none"> – Randomized Controlled Trial (RCT) – Quasi-experiment
	Study design / analysis	<ul style="list-style-type: none"> – Randomized Controlled Trial (RCT) – Difference-in-Differences (DID) – Instrumental Variables (IV) – Regression Discontinuity Design (RDD) – Propensity Score Matching (PSM) and other matching – Other
	Comments on study design	Open answer – any relevant information on the impact evaluation study design and analysis methods
Mixed methods?	Yes/No	
RMNCH topics / sub topics	Broad RMNCH topic	<ul style="list-style-type: none"> - Reproductive - Maternal - Newborn - Child
	Sub-topic	- Refer to Table 1
Intervention/ outcome	Category of Intervention	- Refer to Table 2

Category		Answer
	Interventions	– Refer to Table 2
	Intervention(s) description	Open answer. <i>N.B. This refers to the intervention description given by the review authors rather than the descriptions of interventions in each primary study included in the review.</i>
	Intervention includes non-SBCE component?	Yes/No
	Intervention targets male involvement?	Yes/No
	Outcomes	– Refer to Table 3
Outcome definitions	Definitions of Knowledge and attitudes Measures	Open answer <i>N.B. These refer to the outcome definitions given by the review authors rather than the descriptions of outcomes in each primary study included in the review. Applies to each outcome definition question for SRs.</i>
	Definitions of Household dynamics / communication Measures	Open answer
	Definitions of care practice outcome measures	Open answer
	Care-seeking behaviour	Open answer
	Quality of care / satisfaction	Open answer
	Community participation and accountability	Open answer
	Health outcomes	Open answer
	Cross-cutting	Open answer
Equity Data	How does this study consider equity	<ul style="list-style-type: none"> – Assesses impact on a disadvantaged group – Intervention aimed at reducing inequality – Undertakes subgroup analysis – Not applicable
	Dimension of equity/ Population group	<ul style="list-style-type: none"> – Place of residence – Ethnicity, culture and language – Gender – Religion – Education

Category		Answer
		<ul style="list-style-type: none"> - Socioeconomic status - Social capital - Other vulnerable groups - Age - Disability
	Dimension of equity/ Population description	Open answer
Access	Link	Open answer (if already on 3ie database, please use this link)
	On 3ie database (yet)?	Yes/No
	Publication status	<ul style="list-style-type: none"> - Journal Article - Published Working Paper - Book or Book Chapter - Conference Paper - Dissertation - Published Report - Unpublished Paper

Data extraction tool for systematic reviews

Category		Answer
Descriptive information	ID	Open answer - RMNCHSRxxx
	Title	Open answer
	Full title	Open answer
	Author Citation	Open answer
	Publication date	Open answer
	Maps	Maternal, reproductive, neonatal and child health evidence gap map
	Regions (3ie)	<ul style="list-style-type: none"> - East Asia and Pacific - South Asia - Europe - CIS - Middle East and North Africa - Sub-Saharan Africa - Latin America and the Caribbean - North America - Global - Unclear
	Regions (WHO)	<ul style="list-style-type: none"> - African region - Western Pacific region - South East Asia region - Eastern Mediterranean region - European region

Category		Answer
		<ul style="list-style-type: none"> - Region of the Americas - Unclear
	SR includes studies from high-income countries?	Yes/No
	Number of impact evaluations included (Systematic review only)	Open answer
RMNCH topics / sub topics	Broad RMNCH topic	<ul style="list-style-type: none"> - Reproductive - Maternal - Newborn - Child
	Sub-topic	- Refer to Table 1
Intervention/ outcome	Category of Intervention	- Refer to Table 2
	Interventions	- Refer to Table 2
	Intervention(s) description	Open answer. <i>N.B. This refers to the intervention description given by the review authors rather than the descriptions of interventions in each primary study included in the review.</i>
	SR covers non-SBCE interventions	Yes/No
	SR covers interventions targeting male involvement	Yes/No
	Outcomes	- Refer to Table 3
Outcome definitions	Definitions of Knowledge and attitudes Measures	Open answer <i>N.B. These refer to the outcome definitions given by the review authors rather than the descriptions of outcomes in each primary study included in the review. Applies to each outcome definition question for SRs.</i>
	Definitions of Household dynamics / communication Measures	Open answer
	Definitions of care practice outcome measures	Open answer
	Care-seeking behaviour	Open answer
	Quality of care / satisfaction	Open answer
	Community participation and accountability	Open answer
	Health outcomes	Open answer
	Cross-cutting	Open answer

Category		Answer
Equity Data	How does this study consider equity	<ul style="list-style-type: none"> - Assesses impact on a disadvantaged group - Intervention aimed at reducing inequality - Undertakes subgroup analysis - Not applicable
	Dimension of equity/ Population group	<ul style="list-style-type: none"> - Place of residence - Ethnicity, culture and language - Gender - Religion - Education - Socioeconomic status - Social capital - Other vulnerable groups - Age - Disability
	Dimension of equity/ Population description	Open answer
Review confidence	Confidence in review (taken from quality appraisal from the adapted version of the SURE checklist) - (Systematic review only)	<ul style="list-style-type: none"> - High - Medium - Low
	If high confidence, summary of findings - (Systematic review only)	Open answer
Access	Link	Open answer (if already on 3ie database, please use this link)
	On 3ie database (yet)?	Yes/No

Online Appendix C: Impact evaluations and systematic reviews included in the EGM

The full references for all included studies and reviews is available online. Click [here](#) to access it.

Appendix D: Recent SBCE-related WHO guidance (up to May 2017)⁸

General

Healthy timing and spacing of pregnancy

World Health Organization, 2015. *Medical eligibility criteria for contraceptive use, Fifth edition*, Geneva. Available at:

http://www.who.int/reproductivehealth/publications/family_planning/MEC-5/en/

World Health Organization, 2016. *Selected practice recommendations for contraceptive use*, Geneva. Available at:

http://www.who.int/reproductivehealth/publications/family_planning/SPR-3/en/.

World Health Organization, 2014. *Ensuring human rights in the provision of contraceptive information and services*, Geneva. Available at:

http://www.who.int/reproductivehealth/publications/family_planning/human-rights-contraception/en/.

World Health Organization, 2011. *Preventing early pregnancy and poor reproductive outcomes among adolescents in developing countries*, Geneva. Available at:

http://www.who.int/maternal_child_adolescent/documents/preventing_early_pregnancy/en/.

Care during pregnancy, childbirth and after childbirth

World Health Organization, 2013. *WHO recommendations on postnatal care of the mother and newborn*, Geneva. Available at:

http://www.who.int/maternal_child_adolescent/documents/postnatal-care-recommendations/en/.

World Health Organization, 2014. *WHO recommendation on community mobilisation through facilitated participatory learning and action cycles with women's groups for maternal and newborn health*, Geneva. Available at:

http://www.who.int/maternal_child_adolescent/documents/community-mobilisation-maternal-newborn/en/.

World Health Organization, 2015. *WHO recommendations on health promotion interventions for maternal and newborn health 2015*, Geneva. Available at:

http://www.who.int/maternal_child_adolescent/documents/health-promotion-interventions/en/.

World Health Organization, 2016. *WHO recommendations on antenatal care for a positive pregnancy experience*, Geneva. Available at:

<http://www.who.int/nutrition/publications/guidelines/antenatalcare-pregnancy-positive-experience/en/>.

World Health Organization, 2010. *WHO technical consultation on postpartum and postnatal care*, Geneva. Available at:

http://www.who.int/maternal_child_adolescent/documents/WHO_MPS_10_03/en/.

⁸ Includes recommendations approved by the WHO Guideline Review Committee

World Health Organization & UNICEF, 2009. *Home visits for the newborn child*, Available at: http://www.who.int/maternal_child_adolescent/documents/who_fch_cah_09_02/en/.

Infant/child feeding and nutrition

World Health Organization, 2011. *Guidelines on optimal feeding of low birth-weight infants in low- and middle-income countries*, Geneva. Available at: http://www.who.int/maternal_child_adolescent/documents/infant_feeding_low_bw/en/.

World Health Organization, 2009. *Infant and young child feeding*, Geneva. Available at: http://www.who.int/maternal_child_adolescent/documents/9789241597494/en/.

World Health Organization, 2016. *Infant feeding in areas of Zika virus transmission*, Geneva. Available at: http://www.who.int/nutrition/publications/guidelines/infantfeeding_zikavirus_transmission/en/.

World Health Organization, 2013. *Essential Nutrition Actions Improving maternal, newborn, infant and young child health and nutrition*, Geneva. Available at: http://www.who.int/nutrition/publications/infantfeeding/essential_nutrition_actions/en/.

World Health Organization, 2009. *Interventions on diet and physical activity: what works: summary report*, Geneva. Available at: http://www.who.int/dietphysicalactivity/publications/physical_activity_9789241598248/en/.

World Health Organization, 2010. *Communicable diseases and severe food shortage*, Geneva. Available at: http://www.who.int/diseasecontrol_emergencies/publications/food_shortage/en/.

World Health Organization, 2010. *Global recommendations on physical activity for health*, Geneva. Available at: <http://www.who.int/dietphysicalactivity/publications/9789241599979/en/>.

World Health Organization, 2013. *Updates on the management of severe acute malnutrition in infants and children*, Geneva. Available at: http://apps.who.int/iris/bitstream/10665/95584/1/9789241506328_eng.pdf?ua=1.

World Health Organization & UNICEF, 2009. *Baby-Friendly Hospital Initiative*, Available at: http://www.who.int/nutrition/publications/infantfeeding/bfhi_trainingcourse/en/.

Pneumonia

World Health Organization, 2014. *Indoor air quality guidelines: household fuel combustion*, Geneva. Available at: <http://www.who.int/indoorair/publications/household-fuel-combustion/en/>.

Malaria and dengue fever

World Health Organization, 2009. *Dengue: guidelines for diagnosis, treatment, prevention and control*, Geneva. Available at: http://www.who.int/csr/resources/publications/dengue_9789241547871/en/.

Online Appendix E: Results for individual health areas

These results are available online by clicking [here](#).

Online Appendix F: External experts and WHO staff involved in development of the EGM

This list is available online by clicking [here](#).

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Storey D, Lee K, Blake C, Lee H and De Pasquale N, 2011. Social and behavior change interventions landscaping study: A global review. Baltimore: Center for Communication Programs, John Hopkins Bloomberg School of Public Health.

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The following papers are available from <http://www.3ieimpact.org/en/publications/3ie-evidence-gap-map-report-series/>

A map of evidence maps relating to sustainable development in low- and middle-income countries, 3ie Evidence Gap Map Report 10. Phillips, D, Coffey, C, Tsoli, S, Stevenson, J, Waddington, H, Evers, J, White, H, and Snilstveit, B, 2017.

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Intimate partner violence prevention: An evidence gap map. 3ie Evidence Gap Map Report 8. Picon, M, Rankin, K, Ludwig, J, Sabet, SM, Delaney, A, and Holst, A (2017)

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Examining the evidence base for forest conservation interventions, 3ie evidence gap report 4. Puri, J, Nath, M, Bhatia, R and Glew, L (2016)

Land-use change and forestry programmes: Evidence on the effects on greenhouse gas emissions and food security, 3ie evidence gap report 3. Snilstveit, B, Stevenson, J, Villar, PF, Evers, J, Harvey, C, Panfil, S, Puri, J and McKinnon, MC (2016)

Youth and transferable skills: an evidence gap map, 3ie evidence gap report 2. Rankin, K, Cameron, DB, Ingraham, K, Mishra, A, Burke, J, Picon, M, Miranda, J and Brown, AN, 2015.

Evidence for peacebuilding: evidence gap map, 3ie evidence gap report 1. Cameron, DB, Brown, AN, Mishra, A, Picon, M, Esper, H, Calvo, F and Peterson, K (2015)

This report outlines the main findings of an evidence gap map (EGM) on social, behavioural and community engagement interventions (SBCE) related to reproductive, maternal, newborn and child health programmes in low and middle-income countries. It describes the characteristics of both impact evaluations and systematic reviews, highlighting where evidence exists and where there are gaps. Identified evidence gaps include a lack of measurement of outcomes related to the enabling environment, communication skills and social norms; and a lack of analysis of how SBCE interventions effect marginalised populations. The authors also identify an absence of evidence from francophone Africa and the Middle East. The authors note that the usefulness of impact evaluations and systematic reviews is frequently limited by inadequate reporting, and they make recommendations for how to address this problem.

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International Initiative for Impact Evaluation
202-203, 2nd Floor, Rectangle One
D-4, Saket District Center
New Delhi – 110017
India

3ie@3ieimpact.org
Tel: +91 11 4989 4444



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