



Department  
for International  
Development



EFFECTIVENESS OF BEHAVIOUR CHANGE  
COMMUNICATION (BCC) INTERVENTIONS IN  
DELIVERING HEALTH MESSAGES ON ANTENATAL CARE  
FOR IMPROVING MATERNAL AND CHILD HEALTH (MCH)  
INDICATORS IN A LIMITED LITERACY SETTING: AN  
EVIDENCE SUMMARY OF SYSTEMATIC REVIEWS

PROTOCOL, AUGUST 2016

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## LIST OF ABBREVIATIONS USED

ANC	Antenatal Care
ARV	Ante-retroviral
BCC	Behavior Change Communication
EBP	Evidence Based Practice
e-health	Electronic Health
EPPI-Centre	Evidence for Policy and Practice Information and Coordinating Centre
HIV	Human Immunodeficiency Virus
LMICs	Low and Middle Income Countries
MCH	Maternal and Child Health
MDG	Millennium Development Goals
MMR	Maternal Mortality Ratio
m-health	Mobile health
PMTCT	Prevention of Mother to Child Transmission of HIV
PNC	Post-Natal Care
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analysis
R-AMSTAR	Revised Assessment of Multiple Systematic Reviews

## 1. BACKGROUND

### 1.1 DESCRIPTION OF THE PROBLEM

Maternal and child health (MCH) outcomes have remained poor in low and middle income countries (LMICs) (UNICEF (2009)). Maternal Mortality Ratio (MMR) sturdily reflects the overall effectiveness of health systems and is found to be high in many LMICs. About 95 per cent of the world's maternal deaths occur in Africa and Asia (UNICEF (2009)). Also, many indicators used to measure improvement in maternal health [Millennium Development Goal (MDG)-5] (UN (2015)) and reduce child mortality (MDG-4), are either off track or slow in progress. Improvement in reducing MMR has been nearly non-existent in countries of sub-Saharan Africa (UNICEF (2009)). The coverage of antenatal care (ANC) (at least four visits during pregnancy), one of the indicators of maternal health, is 56% in the South Asian region, with specifically lower coverage (than average) in Bangladesh (25%), Pakistan (37%) and Nepal (50%) (WHO, 2015). Based on the National Family Health Survey-3 (2006-2007) of India, 52% of the women received 3 or more ANC visits. Also the uptake of antiretroviral (ARV) prophylaxis among Human Immunodeficiency Virus (HIV) infected pregnant women to prevent mother to child transmission (PMTCT) of HIV and ARV therapy for women who are treatment eligible was 13.8% and 17.6%, respectively, in the year 2013 in South Asian region (WHO, 2015).

Receiving appropriate ANC can be considered as a foundation of MCH. Many important MCH issues such as educating women regarding importance of skilled attendance at birth, exclusive breastfeeding for six months, appropriate contraceptive methods for child spacing, importance of child immunization, antenatal HIV screening, PMTCT of HIV, emergency obstetric care when necessary and post-natal care (PNC) for mothers and babies can be addressed during this period. Therefore improving ANC coverage and uptake of services is essential for improving MCH outcomes (UNICEF, 2009).

### 1.2 DESCRIPTION OF THE BEHAVIOUR CHANGE COMMUNICATION INTERVENTIONS

One of the most cost effective ways of targeting the issues of MCH is through Behavior Change Communication (BCC) (UNICEF, 2009). It is the whole range of processes and methods used to encourage positive health outcomes by making planned and strategic usage of communication to strengthen health seeking behaviours through health literacy, and can be either focused at the community or individual level. Also, it can be targeted at different levels of communities such as local, regional, and national levels, through wide varieties of mechanisms delivered by different modes of channels and forms (Riboli- Sasco et al., 2015). BCC can be used for community mobilization, health education, and different public outreach programs (Riboli- Sasco et al., 2015).

BCC is defined as “a research-based consultative process of addressing knowledge, attitudes and practices through identifying, analysing and segmenting audiences and participants in programmes by providing them with relevant information and motivation through well-defined strategies, using an audience-appropriate mix of interpersonal, group and mass-media channels, including participatory methods” (UNICEFROSA, 2005, Pg 6).

BCC in public health includes interventions that focus on communicating health messages to individuals, households or communities through various mediums and in ways that can tangibly impact health behaviour.

BCC can be delivered in a diversity of ways to individuals and communities, through Inter Personal Communication (IPC)/counseling or group discussions; mid-media or edutainment such as songs, folk dances, street shows, dramas, and the multifarious use of the fine and performing arts, and, mass media including print media such as newspapers, posters, flyers, leaflets, booklets etc., electronic media including radio, television and online/digital platforms and the Internet.

A major channel for BCC in contemporary human society is via the digital or electronic mode such as mobile phones (m-health), internet, social media, blogs, chat rooms (e-health), video games, health apps (Riboli- Sasco et al., 2015, Everett et al., 2011, Leslie et al., 2013 & Free et al., 2010), computer-mediated delivery of individual healthcare advice (e.g. online physicians), face-to-face educational sessions (Bailey et al., 2010) etc. These newer technologies such as e-platforms and mobile phones can be effectively used for BCC. Lack of accessibility to internet (due to various barriers) restricts the reach and impact of health communication in LMIC's, but it is evident that the usage of mobile phones is growing phenomenally in these countries too. The mobile phone gives favorable opportunities to deliver health messages through text messages to a widespread audience (Riboli- Sasco et al., 2015).

Theories and models help explain how behaviour change occurs. Various theories that are the most established in offering theoretical constructs for BCC are the Social Cognitive Theory, the Theory of Reasoned Action, Theory of Planned Behaviour and the Protection Motivation Theory among others. The literature (primary studies as well as systematic reviews) suggest that there are efforts to incorporate these theories while designing the BCC intervention. For example, an Amharic-language radio serial drama 'Yeken Kignit' ("looking over once daily life") in Ethiopia used several theories including Bandura's social learning theory to design the structure of the messages, the setting and the plot to motivate people to use contraceptive services and undertake HIV testing (USAID, 2008). However, examples of such theoretical grounding of BCC interventions and their documentation thereof, are few and far between in the Indian and south Asian settings.

Recently there are also efforts through systematic reviews to understand the role of theory in promoting positive behaviour change (Thomson, et al, 2015; Lopez, et al, 2011). Some systematic reviews assessing the effectiveness of BCC strategies also have considered if the intervention is based on theories or not (Lau, et al, 2011,). For example, a recent systematic review by Poorman et al (2014) on use of text messaging on maternal and child health suggest that the interventions that are based on established theory of behaviour change and use motivational as opposed to informational language are more likely to be successful (Poorman, et al, 2014). This increase in the efforts to understand the role of theories in BCC could also be partly related to the increase in evidence that simply increasing knowledge and awareness about the issues does not necessarily lead to behaviour change and that the behavioural and socio-cultural factors (social determinants) play a significant role in determining behaviour change (Lamstein, et al, , 2014)

Many interventions for social and behaviour change communication might be based on some theories with or without the explicit knowledge of the people designing the interventions. However, for the purpose of evidence synthesis theory based BCC intervention can be considered as those interventions that are explicitly designed by using the concepts of one or more theories or models and wherein systematic reviews the authors have clearly mentioned that the interventions are theory based or not while assessing the effectiveness of these interventions. It is also important to note that, simply claiming that the intervention is theory based is not helpful while synthesising the evidence. More critical evaluation of the applied theory would be needed for better understanding of the usefulness and effectiveness of the BCC interventions.

### 1.3 RATIONALE

Evidence-based practice (EBP) is a meticulous and judicious use of existing best evidence in concurrence with scientific expertise and patient ethics to guide health care verdicts (Hughes, 2008). A systematic review attempts to assemble all empirical evidence that meets all pre-specified eligibility criteria in order to answer a specific research question, and also is rigorously executed to minimize the bias for providing more consistent outcomes from which the interpretations are drawn and decisions are made (Higgins & Green, 2011).

Synthesizing the existing evidence in the form of evidence summaries often become important especially for topics that are thematically broad and might include a range of interventions such as the BCC interventions. The strategies implemented under BCC interventions may use a whole range of communication methods and media, such as interpersonal communication, mid and mass media, and more recently the use of mobile health technology. There are several factors that would further impact the form and impact of these interventions, such as the design and messaging, duration of the intervention and its intensity, and the level at which it is focused, despite dealing the same issue. It is also important to look at the evidence of the barriers and facilitators for implementing the intervention in a particular geographic, social and cultural context. For example, a systematic review by Poorman et al (Poorman, et al, 2014) report about the use of text messages for maternal and child health. In another systematic review by Aranda-Jan et al. (Aranda-Jan, et al, 2014) factors limiting or challenging the implementation of mHealth in Africa are reviewed. However the socio-economic and cultural context could significantly vary in differently countries. Systematically synthesizing the evidence from these reviews would be useful not only for understanding the effectiveness of mHealth interventions but also understanding the evidence on challenges in implementation of these interventions. There could also be systematic reviews individually carried out for interventions implemented at different levels for example individual, community (Schiffman, et al., 2010) and population level (Balster, et al, 2014,). Synthesizing evidence about the intervention at different level will further aid in the understanding of effectiveness and usefulness of the intervention. Sometimes the evidence from different systematic reviews could be conflicting. In these situations, synthesising the evidence, while also, considering the contextual factors will help in understating the effectiveness of the intervention. Considering these specific contributions of synthesizing the evidence from systematic review, on a diverse topic such as BCC, there is a need for evidence summary specific to LMIC's. If possible the evidence can also be summarized at a country level by taking into considering the differences in the

socio-cultural context that might impact the effectiveness of the intervention or might be related to implementation of the effective strategy. In order to consider these contextual factors, narrative synthesis of the existing evidence is important.

This evidence summary aims to examine existing evidence regarding the effectiveness of BCC interventions for improving ANC indicators. We would also like to find out what works and what does not for BCC specifically making an attempt to examine the effectiveness of theory based BCC interventions compared to non-theory based when the authors have explicitly made this comparison. Considering the burgeoning literature on the effectiveness of technologies such as mobile phones text messages, use of internet and social network sites for BCC (Poorman, et al, 2014; Aranda-Jan et al, 2014), specific efforts would be made to summarize the evidence on role of communication technologies in improving the MCH indicators.

#### 1.4 RESEARCH QUESTIONS

We propose to answer the following research questions through this evidence summary;

- What are the different types and mediums of BCC interventions aimed at improving ANC coverage and uptake of ANC services in low literacy settings?
- Which are the most effective BCC interventions to improve ANC coverage and uptake of ANC services?
- What is the effectiveness of theory based BCC as compared to non-theory based BCC?



## 2. METHODOLOGY

### 2.1 USER INVOLVEMENT: APPROACH AND RATIONALE

Involvement of end users in evidence summary can help to ensure that reviews deal with topics and outcomes relevant to a particular population. In order to ensure the pertinence and scope of the evidence summary, we have established a multidisciplinary review team and advisory group members. The advisory team members include two members from DFID as well as include Dr. Pavitra Mohan, MBBS, MD, MPH and Dr. Dr. B. Unnikrishnan, MBBS, MD (CV attached as an Appendix 1).

Advisory members were involved in developing and finalising the protocol. Their feedback and comments were valuable. We planned to engage them to review the different stages of the project and get their valuable comments such as on, search terms, screening, data extraction tool, synthesis, final report writing and dissemination of study findings.

### 2.2 DEFINING RELEVANT REVIEWS: INCLUSION CRITERIA

#### LANGUAGE:

Since this is a time bound project, we would like to restrict to systematic reviews published in English language.

#### TYPES OF STUDIES:

We will include all systematic reviews that synthesise the effect of BCC intervention to improve ANC coverage and uptake of services. Systematic reviews will be included irrespective of the study designs of the primary studies they considered. In this evidence synthesis, we would like to define systematic review as those reviews which have searched at least two bibliographic databases and should have explicitly stated inclusion and exclusion criteria's. However, we will include only such systematic reviews which have first-hand data on outcomes of our interest.

#### TYPES OF POPULATION:

We will include systematic reviews of BCC interventions targeted at women, family members, lay carers such as traditional birth attendants, skilled attendants at birth, midwives, members of village health committees, community health workers, social workers, health volunteers. There will not be any restriction on type of settings from where the participants are recruited (population-based or facility-based) but would be from LMICs. LMICs would be defined as per the World Bank data. (World Bank, 2015). By focusing on LMIC's than limited literacy setting will help us to identify many important systematic reviews which otherwise we would have missed. Our experience with a preliminary scoping search also revealed that "limited literacy setting" terminology has not been used very often in studies. However during search, in case we get enough number of systematic reviews

of limited literacy settings, we will carry out a narrative synthesis of the same. We will exclude systematic reviews in which BCC interventions have been targeted on health professionals only.

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#### TYPES OF INTERVENTION:

We will include systematic reviews that synthesise any type of BCC interventions (single or a combination of BCC interventions) which are designed for improvement of ANC coverage and uptake of services. Interventions may range from interpersonal communication to community oriented communications such as mass media campaign, mid media and combination. There will not be any restriction on type of media through which the communication is established and who delivers the intervention. Newer tools and technologies such as mobile health (m-health), electronic-health (e-health), text messages, social media, and help-lines will also be included. Those interventions which are targeted only on training of health professionals will be excluded.

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#### TYPES OF COMPARISON:

We will include all systematic reviews irrespective of they had a comparison group or not.

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#### TYPES OF OUTCOME:

ANC indicators are very potent measures to determine the positive impact of interventions aimed at improving maternal and child health. However, receiving the attention of decision-makers and leadership in governance, academia and civil society on such issues, particularly for populations in limited literacy settings, has always been a challenge. Therefore, the knowledge translation and dissemination of this summary of evidence regarding the effectiveness of BCC interventions for improving ANC indicators [specifically ANC coverage, Uptake of ANC services and ARV prophylaxis among HIV infected pregnant women to prevent HIV transmission and ARV therapy for [pregnant] women who are treatment-eligible] will be a significant aspect of the activities under the overall effort. Therefore, we would like to include the systematic reviews which have focused on at least one of the following outcomes.

a. ANC coverage (antenatal check-up at least once during pregnancy)

b. Uptake of ANC services which includes but not limited to

- Knowledge and attitude regarding screening for high risk pregnancy.
- Uptake of screening for high risk pregnancy.
- Uptake of iron and folic acid.
- Uptake of tetanus toxoid immunization.
- Improvement in dietary practices.

c. Uptake of ARV prophylaxis among HIV positive pregnant women to prevent HIV transmission and ARV therapy for pregnant women who are eligible for treatment.

Inclusion and exclusion criteria's have been separately attached as an Appendix 2.

## 2.3 IDENTIFYING REVIEWS: SEARCH STRATEGY

### ELECTRONIC DATABASES:

During the protocol workshop, the project team, consultant and advisors had extensive debate on databases to be searched and potential key words to be used for this evidence summary. Thus developed lists of databases and key word are provided as an Appendix 3 and 4 respectively. We will further circulate these documents to core team as well as other members to obtain additional inputs. Based on thus obtained final set of key words we will develop a search strategy and search all electronic databases which are mentioned in the table attached as an Appendix 3. Initial search strategy will be developed for Ovid Medline which will then be tailored to other databases. We seek expert advice from EPPI Centre regarding the suitability of the developed search strategy. Search strategies of major databases have been attached as Appendix 5.

Time frame: We will search databases from their inception till October 2015. We will consider systematic reviews irrespective of peer reviewed or non- peer reviewed.

### SEARCHING OTHER RESOURCES:

We anticipate most of relevant systematic reviews would be appeared in electronic databases and captured them. References of the included reviews will be searched for relevant systematic reviews. Due to time restraint, we would like to exclude conference proceedings. Also we anticipate that any valuable systematic review presented in a conference would have later appeared in an electronic database and hence we won't be losing relevant article.

## 2.4 SCREENING REVIEWS: APPLYING INCLUSION AND EXCLUSION CRITERIA

The team members have already undergone training in EPPI reviewer 4 from EPPI centre, UK. All citations obtained during search will be exported to EPPI reviewer. Further, duplications will be removed using EPPI reviewer. Thus obtained final list of citations will be used for further screening.

A three stage screening process will be adopted to select systematic reviews. First stage involves screening of all titles for its eligibility to be included which will be done by a single investigator. During this screening, all titles seem to be eligible and titles in doubt will be included for next step screening. We will be more inclusive in screening. In the second stage the abstracts of the included titles will be obtained and screened for eligibility. Here also all seem to be eligible and doubtful abstracts will move to the third stage screening. Unlike primary studies, mostly, the titles and abstracts of systematic reviews does not provide the detail information on the outcomes, hence we would be more liberal at these stage and include such systematic reviews for full text screening. Also, those abstracts which are not available will be included for full text screening.

Finally the full texts of the included abstracts in the second stage will be retrieved and screened. In the second and third stage, screening will be carried out by two investigators independently and the third investigator

usually senior investigator will be involved in case of a discrepancy to arrive at a decision. A PRISMA (preferred reporting items for systematic reviews and meta-analysis) diagram will be prepared in order to keep track of the search process.

## 2.5 DATA EXTRACTION

The data extraction will be carried out independently by two investigators with a predesigned data extraction tool. The data extraction tool contains details of authors, year of publication, relevant information related to research questions and PICOS (population, intervention, comparison, outcome and study design) etc. will be developed and tested for its suitability and usability. Opinion of advisory group members also will be sought to finalise the data extraction tool. Data extraction tool have been attached as an Appendix 6. Change in outcome can be attributed to other factors in addition to BCC. In such case we will extract data not only on effectiveness of BCC but also on other factors which can influence uptake and coverage of ANC where possible. We will deepen the study by incorporating the information on effectiveness of BCC interventions, not only from the outcomes, but also the effectiveness of BCC interventions which are not measured but mentioned in the discussion section of the included systematic review. At this stage, we plan to develop a separate code to extract the effectiveness of BCC in the data extraction sheet. However, we will get more clarity on this in due course of the study.

## 2.6 QUALITY ASSURANCE PROCESS

We plan for two level quality assurance process for this overview. First level, the core team will be divided into two sub teams led by PI and Co-PI and independently do an evaluation of each major activity of the overview namely search strategy, database finalisations, key words, data extraction sheet, structure of possible summary tables and summarization process. Once the team reaches a consensus, feedback of the advisory group and the EPPI-centre team will be sought to have a final draft. This will be the second level in the quality assurance. The protocol for the evidence summary also will be subjected to peer review by EPPI-centre and advice would be taken from advisory group members. Abstract and full text screening will be completed independently by two overview investigators. We will also pilot test the data extraction form.

The quality of included reviews will be assessed using the Revised Assessment of Multiple Systematic Reviews (R-AMSTAR) instrument (attached as an Appendix 7) (Shea et al., 2007 & Kung et al., 2010) independently by two overview investigators. Disagreements will be resolved by discussion or the opinion of third overview investigator will be considered. Risk of bias (ROB) of primary studies will be reported as given by authors of systematic review.

## 2.7 METHODS FOR SYNTHESIS

Towards the end of data extraction, the project team will have a brainstorming on the process of analysis, structure and categorization of tables. We will take advice from advisory members and EPPI-Centre team also. The analysis and reporting strategy will be finalised during this debate.

We will prepare a table on characteristics of included reviews, table on types of BCC interventions and its detail; if possible country specific tables will be made. Based on the availability of data, we attempt to make appropriate categorizations of results in terms of region (rural/urban), population (based on the subgroup of population defined in the population), types & methods of interventions and outcomes. We aim to synthesise evidence and contextualize it to South Asian countries. In this review the South Asian region is understood as comprising of India, Pakistan, Afghanistan, Bangladesh, Nepal, and Myanmar.

Result of overview of systematic reviews will be presented in narrative synthesis. We will follow the standard procedure as given by Cochrane handbook for Systematic Reviews of Interventions (Higgins & Green, 2011); Campbell collaboration and EPPI-Centre review. We will summarize the result based on the type of BCC, medium of BCC, outcome, quality of evidence etc. We may also classify the interventions as per the South Asian countries. Summary of findings table of included systematic reviews will be made which will be useful tool for the policy makers and the development partners. The strategy for the analysis and summarizations will be discussed with the advisory group; their comments will be amalgamated in the analysis. A discussion meeting will be conducted with the review team to finalize the summarization strategy.

We will attempt to apply our expertise in qualitative methods to summarise and thematically categorise interventions as well as effect of interventions. This will be done by coding the relevant parts of the text in the systematic reviews in EPPI reviewer 4. The codes would be mainly deductive, guided by our PICO, research questions and data extraction sheet with some inductive codes related to the context and the mechanisms through which the BCC interventions were explained to be effective. The narrative synthesis would involve closely examining the coded text and understanding the inter-relationships. Being an evidence summary, we will mainly focus on summarizing and thematically categorizing the intervention and its effectiveness and will not take more interpretative approach during synthesis which is typically used in the analysis of primary qualitative studies.

## **2.8 ADVOCACY, PUBLIC ENGAGEMENT AND DISSEMINATION TO FACILITATE AND MOBILISE ACTION BASED ON THE EVIDENCE SUMMARY**

The project team will be developing a specific communication and advocacy strategy detailing key activities and timelines for the same. We propose to conduct these activities in two categories, first during the project period and second beyond the project period. This is suggested keeping in mind the fact that such activities may be most impactful only after the final evidence summary is prepared, and final and coherent messages based on strong research evidence utilised. The post-project advocacy would also be critical because advocacy-related change and reform is a time-taking and laborious process that often gets influenced by several extraneous factors.

During the project period, some of the indicative advocacy and dissemination activities to be conducted may include:

- **Internal Project Discussions with Key Collaborators (EPPI-Centre, DFID):** For finalisation of the major objectives of the advocacy for the findings of the evidence summary; Developing Contextualisation Framework for all the countries under the study.
- **Mapping Major Advocacy Stakeholders:** Key stakeholder mapping to identify specific target groups for the advocacy and public engagement dissemination exercise and
- **Creating Knowledge Products:** The creation of policy briefs and call-to-action docket for key stakeholder groups of decision-makers, influencers and opinion leaders
- **Interactions and Mobilisation:**
  - One-to-one and group meetings to effectively disseminate all findings as relevant to policy and programme reform
  - Advocacy meetings and liaison with major institutions/departments/media as appropriate in terms of the overall agenda for change

## 2.9 TIMELINE OF THE PROJECT

The project will be carried out for a period of seven months, starting from October 1, 2015. Timeline of the project is attached as an Appendix 8 and deliverables as an Appendix 9.

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## APPENDIX 1: CV'S OF ADVISORY GROUP MEMBERS

- 1. Dr.B.Unnikrishnan, (MBBS, MD)** is presently working as Associate Dean & Professor of Community Medicine at Kasturba Medical College (Manipal University), Mangalore, India. He is a member of Manipal University Ethics Committee. Has published more than 150 articles including two systematic reviews in peer reviewed indexed journals. Has got Department for International Development (DFID), UK Fellowship in 2009 at South Asian Cochrane Center , CMC, Vellore, India for developing systematic reviews.

Has worked extensively in the area of Maternal & Child health at the community level and was an advisor for the Indian Institute of Public Health and Karolinska University, Sweden collaborative research project on “ Evidence for Policy & Implimentation – Intensifying efforts to achieving health related Millenium Development Goals related to Maternal and Child Health in 4 countries “ also was Co PI on 2 ICMR project on Maternal and Child Health and has conducted many non funded research projects on MCH related to Antenatal Care, Delivery of MCH services and Immunization.

Presently the member of the Standing Expert Peer Committee (SEPC) for Public Health Research Initiative (PHRI) Research grant, under the Dept of Science & Technology, Govt of India the PI for many research projects funded by ICMR, MOHFW, Govt of Karnataka, University of Alabama, University of Arizona, and NIH, USA.

Internal Mentor & Supervisor for the ASCEND Research network (Asian Collaboration for Excellence in Non-Communicable Disease) a US NIH Millennium Promise Award to support the development of an Asian Non-Communicable disease (NCD) Research Network over five years (2010 – 2014). Is an External expert for ICMR extramural research projects Health Systems Research.

- 2. Dr. Pavitra Mohan, MBBS, MD, MPH.** He is a founder of Basic Health Care Services(Not for profit organization), which promotes models of high quality, low cost primary care health services in underserved areas. He worked as Director, Health Services, Aajeevika Bureau in setting up models of primary healthcare for migrant communities, since 2013; and as faculty in Paediatrics, Udaipur Medical College; coordinated research and child health programs at ARTH; and has led child health systems at the UNICEF India Country Office. He has a degree in MBBS, a residency program in Paediatrics, and a MD from the University of Delhi; and Master of Public Health from University of North Carolina at Chapel Hill.

## APPENDIX 2: INCLUSION AND EXCLUSION CRITERIA'S

<b>Type of study</b>	<ul style="list-style-type: none"> <li>• Systematic review of any study design</li> <li>• Systematic review should have searched at least two databases</li> </ul>	<ul style="list-style-type: none"> <li>• Primary studies (observational or experimental)</li> <li>• Systematic reviews if searched only one database</li> <li>• Systematic reviews if not explicitly stated inclusion and exclusion criteria's</li> <li>• Conference proceedings</li> </ul>
<b>Language</b>	<ul style="list-style-type: none"> <li>• Systematic reviews of English language.</li> </ul>	<ul style="list-style-type: none"> <li>• Non- English systematic reviews.</li> </ul>
<b>Population</b>	<ul style="list-style-type: none"> <li>• Systematic reviews which have targeted on women, family members, lay carers such as traditional birth attendants, skilled attendants at birth, midwives, members of village health committees, community health workers, social workers, health volunteers.</li> </ul>	<ul style="list-style-type: none"> <li>• Systematic reviews which have targeted only on health professionals.</li> </ul>
<b>Intervention</b>	<ul style="list-style-type: none"> <li>• Systematic reviews which have considered any one or combination of behaviour change communication interventions.</li> <li>• Interventions may range from interpersonal communication to community oriented communications such as mass media campaign, mid media and combination.</li> <li>• There will not be any restriction on type of media through which the communication is established and who delivers the intervention.</li> </ul>	<ul style="list-style-type: none"> <li>• Systematic reviews which have exclusively considered interventions other than BCC intervention.</li> </ul>
<b>Comparison</b>	<ul style="list-style-type: none"> <li>• Include all systematic reviews irrespective of they had a comparison group or not.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
<b>Outcome</b>	<p>a. ANC coverage</p> <p>b. Uptake of ANC services which includes but not limited to</p> <ul style="list-style-type: none"> <li>• Knowledge and attitude regarding screening for high risk pregnancy.</li> </ul>	<p>a. Systematic reviews which doesn't include at least one outcome of our interest.</p>

	<ul style="list-style-type: none"><li>• Uptake of screening for high risk pregnancy.</li><li>• Uptake of iron and folic acid.</li><li>• Uptake of tetanus toxoid immunization.</li><li>• Improvement in dietary practices.</li></ul> <p>c. Uptake of ARV prophylaxis among HIV positive pregnant women to prevent HIV transmission and ARV therapy for pregnant women who are eligible for treatment.</p>	
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### APPENDIX 3: LIST OF ELECTRONIC DATABASES PROPOSED TO BE SEARCHED

ONLINE DATABASES
PUBMED
OVID MEDLINE
Cochrane database of systematic reviews
EMBASE
EMERALD
EBSCO
EPISTAMONIKAS
PROSPERO
CINAHL
PsycINFO
Web Of Science
Science Direct
SPRINGER LINK
SCOPUS
Research Gate
Sage online
SYSTEMATIC REVIEW DATABASES
Joanna Briggs Institute database of SRs
Campbell Collaboration library of systematic reviews

3ie/DFID systematic review database
EPPI-centre evidence library
The Environment evidence library of Systematic Reviews
Evidence aid
Health system evidence
WHO reproductive health library
<b>REGIONAL DATABASE</b>
IndMed
<b>GREY LITERATURE</b>
<a href="http://www.ahrq.gov">www.ahrq.gov</a>
kff.org
<b>LIBRARIES OF ORGANIZATIONS</b>
Research for development (DFID)
WHO
JOLIS(WORLD BANK LIBRARY DATABASE)
JSTOR
John Hopkins Centre for Communication Studies(POPLINE)
USAID/IDIA-BCC Activities And Achievements-Lesson Learned Best Practices-Promising Approach
<b>CONTACT EXPERTS AND AUTHORS</b>

APPENDIX 4: KEYWORDS IDENTIFIED DURING THE PROTOCOL WORKSHOP

Participants	Intervention	Outcomes	Study design
<p>“mother”, “maternal”,  “women”, “female”,  “maternal welfare”,  “maternal and new born  health”, “pregnant  women” “prenatal”, “lay  carers”, “prenatal lay  care givers”, “family  care providers”,  “gestational care  givers”, “community  health worker”, “health  promotion groups”,  “women’s groups”,  “traditional birth  attendants”, “skilled  attendants at birth”,  “midwives”, “members  of village health  committees”, “village  health workers”, “social  workers”, “health  volunteer”, “community  health volunteers”,  “safe motherhood”,  “health work force”,  “LMIC”, “low and  middle income  countries”, limited  literacy settings, “low  literacy settings”, “low  formal education”</p>	<p>“Behaviour change  communication”,  “education”, “awareness  programs”, “health  promotions”,  “counselling”,  “communication”, “group  counselling”, “couple  oriented counselling”,  “IEC”, “information  education  communication”, “health  behavior”, “health  behaviour”, “knowledge  attitude and practices”,  “BCC”, “behavior  change”, “behaviour  change impact”,  “behavior centred”,  “communication  channels”, “care group”,  “community outreach”,  “intrapartum care  strategy”, “primary health  care” , “referral level  facilities”, “cash transfer  programme” , , “task  shifting”, “skill mix  change”, “delivery  platform”, “care  management”, “health  intervention”, “health  education” “nutrition  policy”, “health</p>	<p>“Antenatal care  coverage”, “HIV”, “AIDS”,  “eMTCT”, “PMTCT”,  “anaemia”, “malaria”,  “blood tests”, “antenatal  screening”, “high risk  pregnancy”, “ANC  package”, “trimester  specific antenatal care”,  “iron supplements”, “IFS”,  “tetanus”, “health  outcome”, “national  family health survey”,  “care seeking behavior”,  “birth preparedness  package”, “family  community care package”,  “maternal care package”,  “perinatal outcome”,  “antepartum care”, ,  “perinatal mortality”, ,  “health planning  methods”, “antenatal  services”, “pregnancy  screening, uptake of high  risk pregnancy screening,  “high risk pregnancy”,  “iron supplementation”,  “tetanus toxoid  immunization”, “antenatal  check-up”, “diet during  pregnancy”, “nutritional  diet”, “ARV”, “MTCT”,  “uptake of antiretroviral</p>	<p>“systematic review”  or “systematic-  review”, “meta-  analysis” or “meta-  analysis”, “review”,  “overview”,  “evidence-based”,  “systematic evidence  synthesis”, “narrative  synthesis”</p>

	<p>planning”, “information services”, “mass media”, “radio”, “television”, “narratives communication”, “entertainment education”, “edutainment”, “birth spacing”, “participatory learning”, “community mobilization”, “home visit”, “mass media campaign”, “mobile health”, “health literacy”, “m health”, “e health”, “electronic health”, “community- based health programme”, “health education programme”, “health communication”, “social and behavioural communication change”, “SBCC”, “audio messages”, “video messages”, “text messages”, “books”, “pamphlets”, “posters”, “leaflets”, “telephone”, “motivational interviews”, “helplines”, “pictures”, “animation videos”, “radio”, “television”, “group counselling”, “peer counselling”, “participatory communication”, “social</p>	<p>prophylaxis” “ ante-retroviral therapy”</p>	
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	marketing" "mid media", "folk art", "folk dances", "street plays", "dramas", "traditional media", " traditional arts", " visual media"		
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## APPENDIX 5: SEARCH STRATEGIES OF MAJOR DATABASES

### 1. PUBMED

mother\* OR maternal OR "maternal health" OR pregnant women OR lay carer\* OR family care provider\* OR "Gestational care giver\*" OR "community health worker\*" OR health promotion group OR traditional birth attendants)OR midwives OR village health worker\*OR health volunteer OR health work force OR "HIV positive pregnant women" OR "maternal or newborn health" OR maternal welfare OR women's group OR safe motherhood OR "maternal and child health"

AND

interventionOR promotion or initiative\* OR "behavior?r adj change" OR "health adj education" OR strategies OR "behaviour change communication" OR "behavior?r change intervention"

television OR radio OR community radio OR narratives OR mhealth OR ehealth OR text messages OR edutainment OR mid media OR mass media OR street play OR community mobilization OR mobile health OR health literacy OR sbcc or motivational interviews OR folk dances OR traditional media OR posters or pamphlets OR leaflets OR "information education communication" OR IEC or knowledge attitude and practiceOR communication channels OR care group OR community outreach OR intra partum care strategy Or primary health care OR referral level facilities OR task shifting OR skill mix change OR delivery platform OR care management OR health intervention OR health education OR nutrition policy OR health planning OR information services OR birth spacing OR participatory learning OR home visit OR inter personal communicationOR "social and behavior\*r change communication" OR SBCC OR audio messages OR video messages OR books OR helpline or pictures OR animation videos OR diet advise

AND

high risk pregnancy OR "antinatal care coverage" OR antinatal care coverage[TIAB] OR EMTCT OR PMTCT OR anemia OR malaria OR antenatal screening OR "ANC package" OR ANC package OR trimester care OR iron suppliment OR IFS OR health outcome OR tetanus OR "care seeking behavior\*r OR birth preparedness package OR birth preparedness OR maternal care package OR perinatal outcome OR ARV OR "antiretroviral prophylaxis" OR "antepartum care" OR HIV OR AIDS OR "national family health survey" OR blood test\* OR antenatal services OR pregnancy screening or antenatal checkup OR atenatal services OR antinatal care[tw] OR perinatal care[TIAB]. OR gestational care[TW] OR prenatal care[tw] OR prenatal CARE

### 2. OVID MEDLINE

1. exp Meta-Analysis/
2. meta analy\$.tw.
3. metanaly\$.tw.
4. metaanaly\$.tw.
5. meta-analysis.pt.
6. (systematic adj (review\$ or overview\$1)).tw.
7. exp review/
8. 1 or 2 or 3 or 4 or 5 or 6 or 7
9. (((((intervention or promotion or initiative\$ or behavio?r) adj change) or health) adj education) or strategies or "behavio?r change communication" or "behavio?r change intervention").mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
10. (mother\$ or maternal or "maternal health" or "pregnant women" or "lay carer\$" or "family care provider\$" or "gestational care giver\$" or "community health worker\$s" or "health promotion group" or "traditional birth attendants" or midwives or "village health worker\$" or "health volunteers" or "health work force").mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
11. (audio messages or video messages or books or helpline or pictures or animation videos or (diet adj advise)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
12. (television or radio or "community radio").mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
13. (narratives or mhealth or ehealth).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
14. (text messages or midmedia or mass media campaign).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
15. (street play or community mobilization).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
16. (mobile health or health literacy).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
17. (sbcc or motivational interviews or folk dances or traditional media).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
18. (posters or pamphlets or leaflets or information education communication or IEC).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
19. ((knowledge attitude and practice) or communication channels or care group).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
20. (community outreach or intra partum care strategy or primary health care).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
21. (referral level facilitie or task shifting or skill mix change or delivery platform or care management).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
22. (inter personal communication or (social and behaviour change communication)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
23. (nutrition policy or health planning or information services or birth spacing or participatory learning or home visit).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]

24. 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23

25. 9 and 24

26. 8 and 10 and 25

27. ("antenatal care" or "antenatal care strategy" or "prenatal care" or "perinatal care" or "maternal care" or "maternal health" or "maternal and child health").mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]

28. 26 and 27

29. 10 and 27

30. 8 and 25 and 29

31. 8 and 9 and 29

32. 9 or 24

33. 8 and 29 and 32

### 3. COCHRANE

Wiley Online Library



**Cochrane  
Library**

Trusted evidence.  
Informed decisions.  
Better health.

Logged In: **rathiv**  
[My Profile](#) [Institutional Login](#) [Log Out](#)

Search

Search Manager

Medical Terms (MeSH)

Browse

strategy final

To search an exact word(s) use quotation marks, e.g. "hospital" finds hospital; hospital (no quotation marks) finds hospital and hospitals; pay finds paid, pays, paying, payed)

[Add to top](#)

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[-](#) [Edit](#) [+](#) #1

("maternal health" or "pregnant women" or lay carer\* or family care provider\* or Gestational care giver\* or community health worker\* or health promotion group or traditional birth attendants or midwives or village health worker\* or health volunteers or health work force or HIV positive pregnant women or maternal welfare or women's group or "safe motherhood" or "maternal and child health")

18576

[-](#) [Edit](#) [+](#) #2

(television or radio or community radio or narratives or m-health or e-health or text messages or edutainment or mid media or mass media or street play or community mobilization or mobile health or health literacy or sbcc or motivational interviews or folk dances or traditional media or posters or pamphlets or leaflets or information education communication or IEC or knowledge attitude and practice or communication channels or care group or community outreach or intra partum are strategy or primary health care or referral level facilities or task shifting or skill mix change or delivery platform or care management or health intervention or health education or nutrition policy or health planning or information services or birth spacing or participatory learning or home visit or inter personal communication or "social behavior next change communication" or SBCC or audio messages or video messages or books or helpline or pictures or animation videos and diet next advise)

1246

with Sexually Transmitted Infections Group, Public Health Group, Fertility Regulation Group, Developmental, Psychosocial and Learning Problems Group, Depression, Anxiety and Neurosis Group, HIV/AIDS Group, Menstrual Disorders and Subfertility Group, Hypertension Group, Methodology Review Group, Neonatal Group, Effective Practice and Organisation of Care Group or Consumers and Communication Group in Review Groups

[-](#) [Edit](#) [+](#) #3

(intervention or promotion or initiative\* or behavior?r next change or health next education or behavior?r next change communication or strategies or behavior?r change intervention)

1142

with Pregnancy and Childbirth Group, Sexually Transmitted Infections Group, Public Health Group, Menstrual Disorders and Subfertility Group, Hypertension Group, Methodology Review Group or Neonatal Group in Review Groups

<input type="button" value="-"/> <input type="button" value="Edit"/> <input type="button" value="+"/>	#4	(high risk pregnancy or antenatal care coverage or EMTCT or PMTCT or anemia or malaria or antenatal screening or ANC package or trimester care or iron supplement or IFS or health outcome or tetanus or care seeking behavior or birth preparedness package or maternal care package or perinatal outcome or ARV or (antiretroviral prophylaxis) or antepartum care or HIV or AIDS or national family health survey or blood test* or antenatal services or pregnancy screening or antenatal checkup or diet next advise or antenatal services or antenatal care or perinatal care or gestational care or prenatal care)	<input type="button" value="1102"/>
with Pregnancy and Childbirth Group, Sexually Transmitted Infections Group, Public Health Group, Menstrual Disorders and Subfertility Group, Methodology Review Group or Neonatal Group in Review Groups			
<input type="button" value="-"/> <input type="button" value="Edit"/> <input type="button" value="+"/>	#5	LMICS or LMIC or low and middle income countries or limited literacy or low literacy or south asia or low formal education or pakistan or bengladesh or afghanistan or nepal or west africa or developing countries	<input type="button" value="9990"/>
<input type="button" value="-"/> <input type="button" value="Edit"/> <input type="button" value="+"/>	#6	#2 or #3	<input type="button" value="1779"/>
<input type="button" value="-"/> <input type="button" value="Edit"/> <input type="button" value="+"/>	#7	#1 and #6 and #4	<input type="button" value="747"/>

Wiley Online Library



**Cochrane**  
Library

Trusted evidence.  
Informed decisions.  
Better health.

Logged In: rathi v  
[My Profile](#) [Institutional Login](#) [Log Out](#)

Search	Search Manager	Medical Terms (MeSH)	Browse
<b>BCC strategy</b>			
To search an exact word(s) use quotation marks, e.g. "hospital" finds hospital; hospital (no quotation marks) finds hospital and hospitals; pay finds paid, pays, paying, payed			
Add to top			<a href="#">View all lines</a> <input type="button" value="Print"/>
<input type="button" value="-"/> <input type="button" value="+"/>	#2	MeSH descriptor: [Education, Nonprofessional] explode all trees	<input type="button" value="13755"/>
<input type="button" value="-"/> <input type="button" value="+"/>	#3	MeSH descriptor: [Patient Education as Topic] explode all trees	<input type="button" value="6763"/>
<input type="button" value="-"/> <input type="button" value="Edit"/> <input type="button" value="+"/>	#4	#1 and #2	<input type="button" value="252"/>
<input type="button" value="-"/> <input type="button" value="Edit"/> <input type="button" value="+"/>	#5	#1 and #3	<input type="button" value="186"/>
<input type="button" value="-"/> <input type="button" value="Edit"/> <input type="button" value="+"/>	#6	#4 and #5	<input type="button" value="7"/>
with Pregnancy and Childbirth Group, Public Health Group, Depression, Anxiety and Neurosis Group, Menstrual Disorders and Subfertility Group, Infectious Diseases Group, Hypertension Group, Methodology Review Group, Neonatal Group, Effective Practice and Organisation of Care Group or Drugs and Alcohol Group in Review Groups			

#### 4. EMBASE

((('mother'/exp or 'maternal welfare'/exp or 'maternal care'/exp or 'pregnant woman'/exp or 'nursing home personnel'/exp or 'childbirth educator'/exp or 'health auxiliary'/exp or 'health care personnel'/exp) and (((('behavior change'/exp or 'behavior change' or 'health promotion'/exp or 'health promotion') or 'behaviour change communication') or ('television'/exp or 'television') or ('telecommunication'/exp or 'telehealth'/exp or 'health literacy'/exp or 'mass medium'/exp or 'visiting nursing service'/exp or 'dancing'/exp or 'medical information'/exp or

'interpersonal communication'/exp or 'facilitated communication'/exp or 'book'/exp or 'health care policy'/exp)) and ('maternal care'/exp or 'prenatal care'/exp)) and ('systematic reviews'/exp or 'systematic reviews')

#### 5. EMERALDINSIGHT

("antenatal care" or "prenatal care" or "maternal health" or "pregnancy screening" or "pregnant women") and ("behaviour change communication" or communication or counselling or "mass media" or "social media" or training) and "systematic review"

#### 6. EBSCO "communication and mass media complete"

("antenatal care" or "prenatal care" or "maternal health" or "pregnancy screening" or "pregnant women") and ("behaviour change communication" or communication or counselling or "mass media" or "social media" or training) and "systematic review"

#### 7. PROSPERO

Used keywords antenatal care coverage, antenatal care ,anc,prenatal care,perinatal care,maternal health,maternal welfare,pregnancy screening,pregnant women,uptake,hiv positive pregnant women,maternal newborn health,behavior change,behaviour change,systematic review,meta analysis

#### 8. CINAHL

( mother or maternal or "maternal health" or "pregnant women" or lay carer or "family care provider" or "Gestational care giver or "community health worker" or health promotion group or "village health workers" or Health volunteer or healthworkforce or HIV positive pregnant women traditional Birthattendants or midwives or pregnant women or maternal and newborn health or maternal welfare women group or safemotherhood or(maternal and child health))

AND

interventionOR promotion or initiative\* OR "behavio?radj change" OR "health adj education" OR strategies OR "behaviour change communication" OR "behavio#r change" AND systematic review or systematic-review or Meta-Analysis or meta analy? ormetanaly? ormetaanaly? ormeta analysis or meta-analysisin or systematic N(review? or overview ) or evidence based or evidence-based or systematic evidence synthesis or narrative synthesis or rct or randomised controlled trial?

#### 9. PSYCINFO

**1. Any Field:** "prenatal care" *OR Any Field:* "antenatal care" *OR Any Field:* "ANC coverage" *OR Any Field:* "perinatal care" *OR Any Field:* "pregnancy screening" *OR Any Field:* "uptake of services" *AND Any Field:* "awareness programme" *OR Any Field:* behaviour NEAR change *OR Any Field:* "behaviour change communication" *OR Any Field:* "mass media campaign" *OR Any Field:* "community outreach" *OR Any Field:* counselling *AND Any Field:* "family care provider" *OR Any Field:* "maternal and child health" *OR Any Field:* "health promotion groups" *OR Any Field:* "community health worker\*" *OR Any Field:* "nonprofessionals" *OR Any Field:* "traditional birth attendants" *OR Any Field:* midwives *OR Index Terms:* "social workers" *AND Index Terms:* "voluntary health workers" *AND Any Field:* "lay carer" *AND Methodology:* Systematic Review *AND Population Group:* Human *AND Methodology:* Systematic Review

**2. ndex Terms:** "prenatal care" *OR Index Terms:* "antenatal care" *OR Index Terms:* "ANC COVERAGE" *OR Index Terms:* "PREGNANCY CARE" *OR Index Terms:* "GESTATIONAL CARE" *AND Methodology:* Systematic Review *AND Methodology:* Systematic Review *AND Population Group:* Human

#### 10. WEB OF SCIENCE

**TOPIC:** ("high risk pregnancy" or "antenatal care coverage" or "antenatal care coverage". or EMTCT or PMTCT or anemia or malaria or antenatal screening or ANC package or "trimester care" or "iron supplement" or IFS or "health outcome" or tetanus or "care seeking behavio?r" or "birth preparedness package" or "maternal care package" or "perinatal outcome" or ARV or "antiretroviral prophylaxis" or "antepartum care" or HIV or AIDS or "national family health survey" or blood test\* or antenatal services or pregnancy screening or antenatal checkup or "diet NEXT advise")

*Timespan=All years*

Search language=Auto

AND

**TOPIC:** (television OR radio OR "community radio" OR narratives OR mhealth OR ehealth OR "text messages" OR edutainment OR midmedia OR mass media OR "street play" OR "community mobilization" OR "mobile health" OR "health literacy" OR sbcc or "motivational interviews" OR folk dances OR "traditional media" OR posters OR pamphlets OR leaflets OR "information education communication" OR IEC or "knowledge attitude practice" OR "communication channels" OR care group OR "community outreach" OR "intrapartum care strategy" OR "primary health care" OR "referral level facilities" OR "task shifting" OR "skill mix change" OR "delivery platform" OR "care management" OR "health intervention" OR "health education" OR" nutrition policy" OR "health planning" OR "information services" OR birth spacing OR "participatory learning" OR "home visit" OR "interpersonal communication" OR "social and behavior?r change communication" OR SBCC OR audio messages OR video messages OR books OR helpline or pictures OR "animation videos" OR "diet advise")

Timespan=All years

Search language=Auto

AND

**TOPIC:** (mother\* OR maternal OR "maternal health" OR pregnant women OR lay carer\* OR family care provider\* OR "Gestational care giver\*" OR "community health worker\*" OR "health promotion group" OR traditional birth attendants OR midwives OR "village health worker\*" OR health volunteer OR "health work force" OR "HIV positive pregnant women" OR "maternal or newborn health" OR maternal welfare OR women's group OR "safe motherhood" OR "maternal and child health")

Timespan=All years

Search language=Auto

#### 11. SPRINGER

("antenatal care" or "prenatal care" or "maternal health" or "pregnancy screening" or "pregnant women") and ("behaviour change communication" or communication or counselling or "mass media" or "social media" or training) and "systematic review"

#### 12. SCOPUS

(( television OR radio OR {community radio} OR narratives OR {m health} OR {e health} OR {text messages} OR edutainment OR {mass media} OR {street play} OR {community mobilization} OR {mobile health} OR health literacy OR {motivational interviews} OR folk dances OR {traditional media or posters} OR {health intervention} OR {health education} OR {nutrition policy} OR {health planning} OR {information services} OR {birth spacing} OR {participatory learning} OR {home visit} OR {interpersonal communication} OR {behav\* pre change communication} OR {audio messages} OR {video messages} OR books OR helpline OR pictures OR {animation videos} OR {diet pre advise})) AND (( ALL (maternal OR {maternal health} OR {pregnant women} OR {lay carer\*} OR {family care provider\*} OR {gestational care giver\*} OR {community health worker\*} OR {health promotion group} OR {traditional birth attendants} OR midwives OR {village health worker\*})) OR ( ALL ({health volunteers} OR {health work force} OR {HIV positive pregnant women} OR maternal welfare OR {women's group} OR {safe motherhood} OR {maternal and child health}))) AND ((( ALL ( {care seeking behavior?r} OR {birth preparedness package} OR {maternal care package} OR {perinatal outcome} OR arv OR {antiretroviral prophylaxis} OR {antepartum care} OR hiv OR aids)) OR ( ALL (anemia OR malaria OR {antenatal screening} OR {ANC package} OR {trimester care} OR {iron supplement} OR ifs OR {health outcome} OR tetanus OR {high risk pregnancy} OR {antenatal care coverage} OR {antenatal care} OR emtct OR pmtct)

#18) AND ( LIMIT-TO ( DOCTYPE , "re" ) )

<b>13. RESEARCHGATE</b>
<u>("antenatal care" or "prenatal care" or "maternal health" or "pregnancy screening" or "pregnant women") and ("behaviour change communication" or communication or counselling or "mass media" or "social media" or training) and "systematic review"</u>
<b>14. JOANNABRIGS</b>
<u>("antenatal care" OR "prenatal care" OR "maternal health" OR "pregnancy screening" OR "pregnant women") AND ("behaviour change communication" OR communication OR counselling OR "mass media" OR "social media" OR training) NOT breast feeding</u>
<b>15. DOPHER</b>
<u>&gt;("antenatal care" OR "prenatal care" OR "maternal health" OR "pregnancy screening" OR "pregnant women")AND ("behaviour change communication" OR communication OR counselling OR "mass media" OR "social media" OR training)&lt;/AND"systematic review"</u>
<b>16. WHO REPRODUCTIVE DATABASE</b>
<u>"SYSTEMATIC REVIEW" AND "PRENATAL CARE" OR "MATERNAL HEALTH" OR "ANTENATAL CARE" OR "PERINATAL CARE"</u>
<b>17. WHO</b>
Used keywords antenatal care coverage, antenatal care ,anc,prenatal care,perinatal care,maternal health,maternal welfare,pregnancy screening,pregnant women,uptake,hiv positive pregnant women,maternal newborn health,behaviour change communication,behaviour change,behavior change,systematic review,meta analysis
<b>18. JOLIS</b>
<u>Searched with keywords ---- antenatal care coverage, antenatal care ,anc,prenatal care,perinatal care,maternal health,maternal welfare,pregnancy screening,pregnant women,uptake,hiv positive pregnant women,maternal newborn health,behaviour change communication,behaviour change,behavior change,systematic review,meta analysis</u>

## APPENDIX 6: DATA EXTRACTION SHEET

1. Full text screening sheet.
2. Data extraction sheet for the included full text of systematic reviews
3. Data extraction for individual studies included from systematic reviews

### 1. Full text screening sheet

<b>Screening</b>	<b>Full text</b> <input type="checkbox"/>	
<b>Study ID:</b>	<b>Data extractor ID</b> : eg: H1, S1, T1,R1	Date form completed:
First author:	Year of study:	
Citation:		

#### 1.1. General Information

Publication type	Journal Article <input type="checkbox"/>	Conference presentation <input type="checkbox"/>	Other (specify e.g. book chapter) _____
Funding source of the systematic review:			
Potential conflict of interest from funding? Y / N / unclear			
Title:			
Aim/ Objectives:			
Setting (Low or high literacy setting or LMICs): LMIC			
Search period:			

#### 1.2. Systematic review eligibility

Systematic review Characteristics		Page/ Para/ Figure #
<b>Type of study</b> (Review authors to add/remove designs based on criteria specified in protocol)	Is it a Systematic Review : Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear <input type="checkbox"/> Description	
<b>Population</b>	Specify the Population (as mentioned in systematic review) included:	
	Does the population meet the criteria for inclusion? Yes <input type="checkbox"/> No <input type="checkbox"/> → <b>Exclude</b> (if health professionals) Unclear <input type="checkbox"/>	



<b>Intervention</b>	Intervention included:		
	<i>Do the intervention meet the criteria for inclusion?</i> Yes <input type="checkbox"/> No <input type="checkbox"/> → <b>Exclude</b> Unclear <input type="checkbox"/>		
<b>Outcome measures</b>	Tick mark outcome(s) mentioned in systematic review: 1. ANC coverage 2. Uptake of ANC services which includes but not limited to <ul style="list-style-type: none"> <li>• Knowledge and attitude regarding screening for high risk pregnancy.</li> <li>• Uptake of screening for high risk pregnancy.</li> <li>• Uptake of iron and folic acid.</li> <li>• Uptake of tetanus toxoid immunization.</li> <li>• Improvement in dietary practices.</li> </ul> 3. Uptake of ARV prophylaxis among HIV positive pregnant women to prevent HIV transmission and ARV therapy for pregnant women who are eligible for treatment.	Other outcomes: List the outcomes as defined in the systematic review	
	<i>Do the outcome measures meet the criteria for inclusion?</i>	Yes <input type="checkbox"/> No <input type="checkbox"/> → <b>Exclude</b> Unclear <input type="checkbox"/>	

### 1.3. Summary of Assessment for Inclusion

<b>Include in overview</b> <input type="checkbox"/>		<b>Exclude from overview</b> <input type="checkbox"/>	
Independently assessed, and then compared? Yes <input type="checkbox"/> No <input type="checkbox"/>		Differences resolved by discussion Yes <input type="checkbox"/> No <input type="checkbox"/> , Not applicable <input type="checkbox"/>	
Differences resolved by considering opinion of third investigator Yes <input type="checkbox"/> , Not applicable <input type="checkbox"/>		Third investigator ID:	
Request further details? Yes <input type="checkbox"/> No <input type="checkbox"/>		Contact details of systematic review authors:	
Any reply from the systematic review authors			
<b>Reason for exclusion/ inclusion</b>			

## 2. Data extraction sheet for the included full text of systematic reviews

\* Table 2.1 to table 2.3 is common for systematic review with quantitative analysis and systematic review with qualitative analysis.

<b>Study ID:</b>	<b>Data extractor ID :</b>	Date form completed:
First author:	Year of study:	
Citation:		

### 2.1. General Information

Publication type <input type="checkbox"/> Journal Article <input type="checkbox"/> Conference presentation <input type="checkbox"/> Other (specify e.g. book chapter) _____
Funding source for the study:
Potential conflict of interest from funding? Y / N / unclear
Country (ies):
Setting (whether limited literacy setting/high or LMICs):
Title:
Aim/Objectives:
Relevant references from the systematic reviews to be traced: 1. 2. 3.
<b>Inclusion and Exclusion criteria's of Systematic review</b>
Study designs:
Participants:
Intervention:
Comparison:
Outcome:
Study design included and number of studies:

### 2.2. Participants

Participants	Information for each group	Page/ Para/ Figure #
Participants	Specify the Population (as mentioned in systematic review) included:	
no: of participants in the review		

Area covered e.g. households or districts		
Rural or urban		
no: of participants considered for analysis of the review		
Age (provide mean or median or range)		
Gender & Mean (% of women)		
Pregnant and non pregnant (%)		
Literacy level	High literacy/ low literacy (if mentioned in the review):	

### 2.3. Intervention: Intervention 1:

<b>Intervention:</b>	Interventions that promote awareness of rights to increase use of maternity care services	<b>Page/ Para/ Figure #</b>
Description of interventions (as defined in the systematic review)		
Co-interventions if any	<i>Any other intervention apart from BCC</i>	
Theoretical basis (include key references)	<i>Is theoretical framework for designing the intervention explicitly mentioned? No</i>  <i>If yes, whether intervention include single theoretical framework or multiple frameworks are grouped together.</i>  <i>Which theories are used? [include with references]</i>	
Did the intervention include strategies to address diversity/disadvantage?	<i>if yes, describe:</i>	
Level at which intervention delivered –	Interpersonal/group/community	
Place where intervention delivered:	(setting; Facility/institution; home; community etc)	
Duration of delivery	<i>Length (in minutes)=</i> <i>Frequency (per week) =</i> <i>Duration (in weeks)=</i>	
Medium of delivery		
Subgroups	<i>Describe if any subgroup is considered in the review.</i>	
Control/comparison		
Other factors (given along with the BCC) which can influence outcome		

\* This table will extend if there are more interventions in the systematic review

**Context (to be used only for qualitative systematic review)**

		Page/ Para/ Figure #
<p>In qualitative reviews domains considered under context will vary depending on the objective of the review; Some of the commonly considered domains are</p> <p>Cultural-subcultural factors</p> <p>Contextual details of the geographic regions considered [other than income categorization; for example language, means of subsistence etc]</p> <p>Details about specific setting; institutions, communities</p> <p>*The data on context can be extracted if the systematic review specifically considered it and explicitly mentions about it.</p>		

**2.4. Outcomes:**

**List the outcomes assessed by systematic review:**

- a. ----
- b. ----
- c. ----
- d. ----
- e. ----

**Outcome 1:**

Question		Page/ Para/ Figure #
Analytic framework applied (if any)		
Outcome defined		
No. of studies included in systematic review specific to this outcome		
No. of participants specific to this outcome		
At which level the outcome (individual/ group level) is measured		

Time points measured		
Time points reported		
How is the outcome reported? Self or study assessor		

\* This table will extend if there are more outcomes in the systematic review

## 2.5. Analysis

Quantitative analysis	If Yes refer to 2.5.1.
Qualitative analysis	If Yes refer to 2.5.2.

### 2.5.1. Quantitative analysis

#### Outcome Number 1:

<b>Results</b>			<b>Page/ para no:</b>
<b>Whether meta-analysis performed</b>	Yes <input type="checkbox"/> , No <input type="checkbox"/>		
If no meta-analysis reasons for the same			
If meta-analysis performed, effect measures			
<b>Heterogeneity</b>	identified/not identified	test used and results	
<b>Homogeneity</b>	identified / not identified	test used and results	
<b>GRADE</b>			
<b>ITI (intention to treat analysis)</b>	yes/ No	<b>description</b>	
<b>If no meta-analysis, describe the result</b>			
<b>Conclusion</b>			

\* This table will extend if analysis is performed for more than one outcome.

### 2.5.2. Qualitative analysis (Systematic reviews which includes qualitative studies)

			<b>Page/ para no:</b>
<b>Process of synthesizing studies</b>	<b>Clearly mentioned</b>		

	<b>Describe</b>		
<b>Type of analysis</b>	<b>Thematic analysis</b> <b>Meta-ethnography</b> <b>Realist review</b> <b>Any other (Specify)</b>		
<b>Authors conclusions</b>			
<b>Level of credibility</b>	<b>Unequivocal</b> (evidence beyond reasonable doubt)  <b>Credible</b> (logically inferred from the data and plausible in light of theoretical framework)  <b>Not supported:</b> when most notable conclusions are not supported by the data or when the process of synthesis is not clear and transparent.		
<b>Reviewers comments</b>			

### 2.6. Methodological quality

<b>R O B</b>	<b>Tool used</b>		
	<b>Description</b>		

<b>Effectiveness of BCC if mentioned in the discussion section</b>		
<b>Conclusion of Systematic review</b>		
<b>Recommendations</b>		

### 3. Data extraction for individual studies included from systematic reviews

<b>Study Characteristics</b>		<b>Page/ Para/ Figure #</b>
<b>Study id</b>		

<b>Investigator ID</b>		
<b>Title</b>		
<b>Author of the individual study included</b>		
<b>Type of study</b> (Review authors to add/remove designs based on criteria specified in protocol)	<input type="checkbox"/> Randomised Controlled Trial (RCT) <input type="checkbox"/> Cluster Randomised Controlled Trial (cluster RCT)	<input type="checkbox"/> Controlled Before and After (CBA) study <ul style="list-style-type: none"> <li>• Contemporaneous data collection</li> <li>• Comparable control site</li> <li>• At least 2 x intervention and 2 x control clusters</li> </ul>
	<input type="checkbox"/> Other design (specify):	
<b>Participants</b>	Describe the participants included:	

<b>Types of intervention</b>	Strategies included in the intervention		
	Focus of the intervention		<i>Description</i>
	Theoretical basis (include key references)		
<b>Duration of intervention (if included)</b>	length :	frequency:	duration:
<b>Types of outcome measures</b>	List outcomes:		
<b>Comparison</b>			
<b>Results</b>			

*\*This table will extend if more primary studies are considered from the included systematic review.*

## APPENDIX 7: REVISED ASSESSMENT OF MULTIPLE SYSTEMATIC REVIEWS

Items
<b>1. Was an 'a priori' design provided?</b>
(A) 'A priori' design
(B) Statement of inclusion criteria
(C) PICO/ PIPO research question (population, intervention, comparison, prediction, outcome)
<b>2. Was there duplicate study selection and data extraction?</b>
(A) There should be at least 2 independent data extractors as stated or implied
(B) Statement of recognition or awareness of consensus procedure for disagreement
(C) Disagreements among extractors resolved properly as stated or implied
<b>3. Was a comprehensive literature search performed?</b>
(A) At least 2 electronic sources should be searched
(B) The report must include years and databases used (e.g. CENTRAL, MEDLINE, EMBASE)
(C) Keywords or MESH terms (or both) must be stated AND where feasible the search strategy outline should be provided such that one can trace the filtering process of the included articles
(D) In addition to the electronic databases (PubMed, MEDLINE, EMBASE), all searches should be supplemented by consulting current contents, reviews, textbooks, specialized registers, or experts in the particular field of study, and by reviewing the references in the studies found
(E) Journals were "hand-searched" or "manual searched" (i.e. identifying highly relevant journals and conducting a manual, page by- page search of their entire contents looking for potentially eligible studies)
<b>4. Was the status of publication (i.e. grey literature) used as an inclusion criterion?</b>
(A) The authors should state that they searched for reports regardless of their publication type
(B) The authors should state whether or not they excluded any reports (from the systematic review), based on their publication status, language, etc.



(C) "Non-English papers were translated" or readers sufficiently trained in foreign language
(D) No language restriction or recognition of non-English articles
<b>5. Was a list of studies (included and excluded) provided?</b>
(A) Table/list/figure of included studies, a reference list does not suffice
(B) Table/list/figure of excluded studies, either in the article or in a supplemental source (i.e. online). (Excluded studies refers to those studies seriously considered on the basis of title and/or abstract, but rejected after reading the body of the text)
(C) Author satisfactorily/ sufficiently stated the reason for exclusion of the seriously considered studies
(D) Reader was able to retrace the included and the excluded studies anywhere in the article bibliography, reference or supplemental source
<b>6. Were the characteristics of the included studies provided?</b>
(A) In an aggregated form such as a table, data from the original studies should be provided on the participants, interventions AND outcomes
(B) Provide the ranges of relevant characteristics in the studies analysed (e.g. age, race, sex, relevant socioeconomic data, disease status, duration, severity or other diseases should be reported)
(C) The information provided appears to be complete and accurate (i.e. there was a tolerable range of subjectivity here. Is the reader left wondering? If so, state the needed information and the reasoning)
<b>7. Was the scientific quality of the included studies assessed and documented?</b>
(A) 'A priori' methods of assessment should be provided (e.g. for effectiveness studies if the author(s) chose to include only randomized, double-blind, placebo controlled studies, or allocation concealment as inclusion criteria); for other types of studies alternative items will be relevant
(B) The scientific quality of the included studies appeared to be meaningful
(C) Discussion/ recognition/ awareness of level of evidence
(D) Quality of evidence should be rated/ranked based on characterized instruments. (Characterized instrument is a created instrument that ranks the level of evidence, e.g. GRADE (Grading of Recommendations Assessment, Development and Evaluation))

<b>8. Was the scientific quality of the included studies used appropriately in formulating conclusions?</b>
(A) The results of the methodological rigor and scientific quality should be considered in the analysis and the conclusions of the review
(B) The results of the methodological rigor and scientific quality were explicitly stated in formulating recommendations
(C) To have conclusions integrated/ drives towards a clinical consensus statement
(D) This clinical consensus statement drives towards revision or confirmation of clinical practice guidelines
<b>9. Were the methods used to combine the findings of studies appropriate?</b>
(A) Statement of criteria that were used to decide that the studies analysed were similar enough to be pooled?
(B) For the pooled results, a test should be done to ensure the studies were combinable, to assess their homogeneity (i.e. Chi2 test for homogeneity, I2 statistic)
(C) Is there a recognition of heterogeneity or lack of thereof
(D) If heterogeneity exists a “random-effects model” should be used or the rationale (i.e. clinical appropriateness) of combining should be taken into consideration (i.e. is it sensible to combine?), or stated explicitly (or both)
E) If homogeneity exists, author should state a rationale or a statistical test
<b>10. Was the likelihood of publication bias (a.k.a. “file drawer” effect) assessed?</b>
(A) Recognition of publication bias or file drawer effect
(B) An assessment of publication bias should include graphical aids (e.g. funnel plot, other available tests)
(C) Statistical tests (e.g. Egger regression test)
<b>11. Was the conflict of interest stated?</b>
(A) Statement of sources of support
(B) No conflict of interest. This is subjective and may require some deduction or searching
(C) An awareness/ statement of support or conflict of interest in the primary inclusion studies

## APPENDIX 8: TIMELINE OF THE PROJECT

Tasks	Description	Start date	End date
Title registration		01/10 /2015	15/10/2015
Preparation of research protocol	Protocol development and report along with Protocol workshop with the team and advisory group	01/10/2015	31/10/2015
Research protocol submitted for review	Review will be done by QAT (The EPPI-Centre), SARH (DFID) and/or sector experts.	01/11/2015	30/11/2015
Study Search	Identifying key words, developing search strategy and search	01/11/2015	20/11/2015
Assessment of study relevance	Screening of titles, abstracts and full texts.  Tracing full texts.	21/11/2015	05/12/2015
Data extraction and quality assessing	Data extraction and quality assessing.	6/12/2015	10/01/2016
Summarizing the evidence	Data analysis.	06/01/2016	10/02/2016
Drawing implications of findings for policy, program and future research	Advisory group meeting: reviewing findings and developing discussions.	11/02/2016	16/02/2016
Preparation of draft evidence summary and contextualization document	Preparation of overview draft and contextualization document.	11/02/2016	25/02/2016

Tasks	Description	Start date	End date
Draft evidence summary and contextualization document submitted for review to EPPI-centre		26/02/2016	31/03/2016
Fact sheets and reports	Preparation of fact sheets and reports.	26/02/2016	31/03/2016
Dissemination of draft evidence summary/ findings	Expert group meeting to review findings, reach consensus on conclusions and approaches to presenting findings.  Meetings with the policy makers.	01/04/2016	15/04/2016
Final evidence summary and contextualization document submitted	Final evidence summary.  Presentations on key findings.	16/04/2016	28/04/2016

## APPENDIX 9: DELIVERABLES

Deliverables	Due date
Draft evidence summary protocol	01/11/2015
Draft evidence summary and contextualization document	26/02/2016
Final evidence summary	28/04/2016