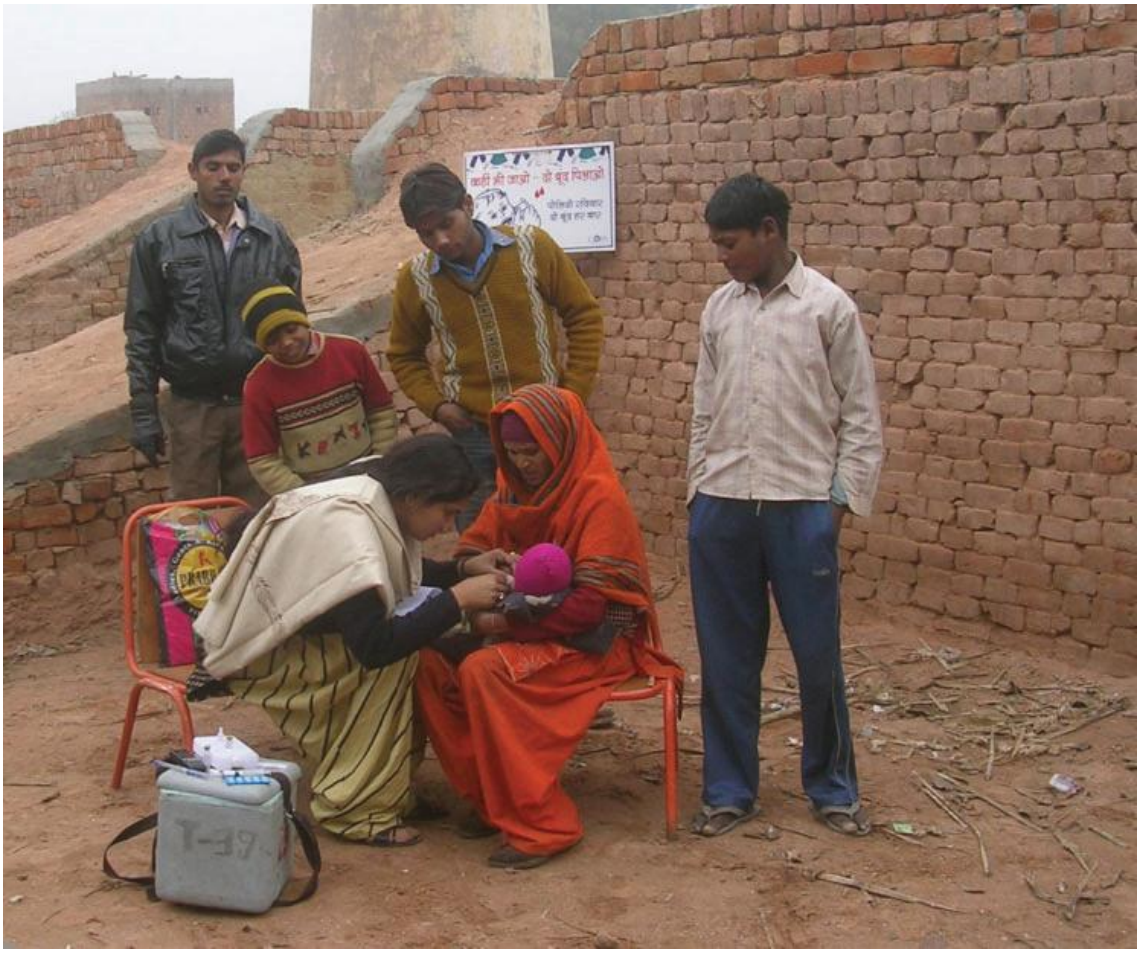

Evaluation of Social Mobilization Network (SMNet)

- FINAL REPORT

ANNEXURES

January 2014

Deloitte.

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ANNEXURE I

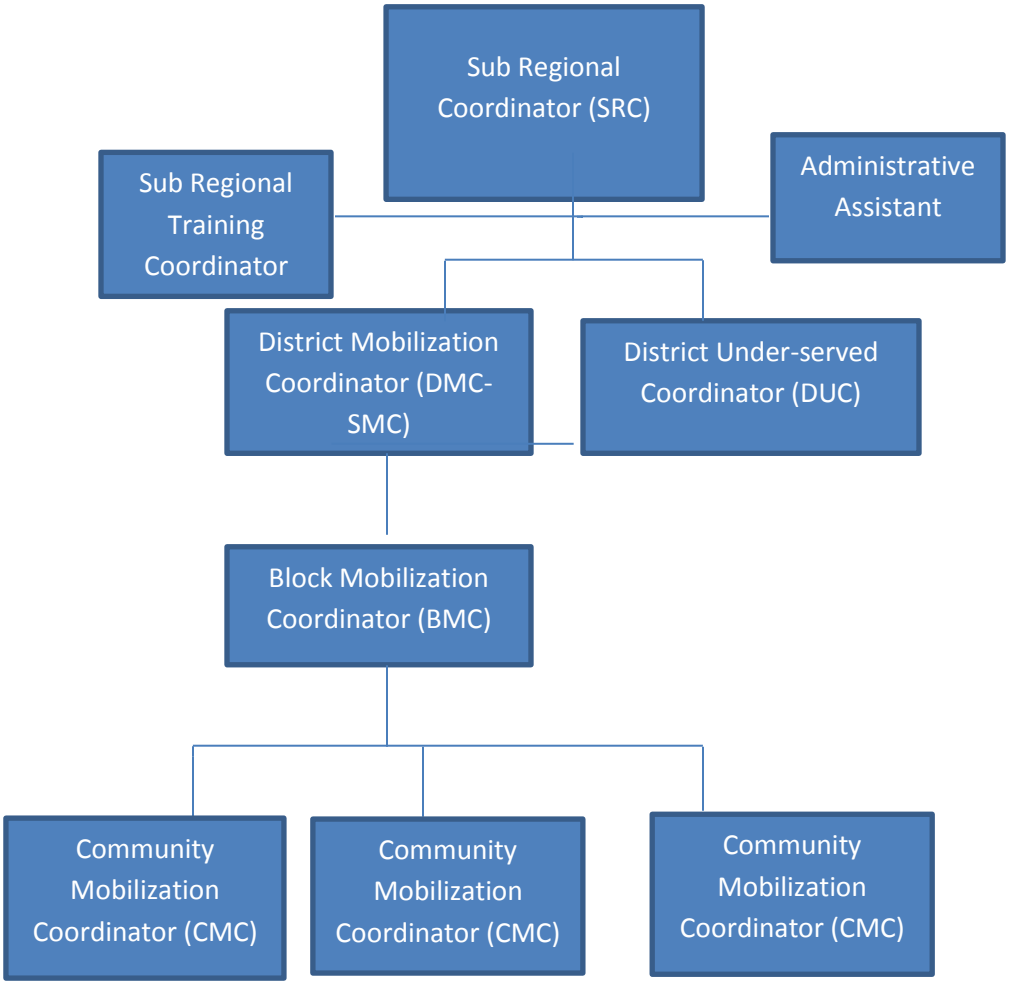
TERMS OF REFERENCE

TERMS OF REFERENCE- EVALUATION OF SOCIAL MOBILIZATION NETWORK

1. Background

Historically, Uttar Pradesh (UP) and Bihar have been the key reservoirs for wild poliovirus (WPV) transmission in India. The UNICEF-supported Social Mobilization Network (SMNet) was established in UP in 2002 to engage the often resistant communities to accept oral polio vaccine (OPV) every time an SIA was conducted. In 2005, the SMNet was launched in Bihar with Angwanwadi Workers (AWWs) deployed to reach the most under-served communities, especially in the difficult-to-access Kosi river basin and in pockets of high-refusal areas in urban Patna. The SMNet is designed as a three-tiered structure with personnel at community, block and district levels.

The SMNet currently includes about 5398 members across the 46 districts of Uttar Pradesh and 1349 members across 19 districts of Bihar. The organogram of the SMNet can be presented as follows:



Note: The Polio SMNet is managed by a third-party human resources agency in collaboration with the UNICEF State offices.

In the past two years, the SMNet has supported the 107 Block Plan to combat polio by tackling the underlying factors contributing to polio transmission: these factors include low routine immunization rates, poor nutrition, lack of sanitation facilities and safe water and a high incidence of diarrhea. In 2012 the SMNet is working in 53 of the identified 66 highest-risk blocks in UP and 41 blocks in Bihar.

The SMNet is made up of more than 6,500 dedicated community mobilization coordinators (CMCs) from local communities in HRAs for polio, (covering up to 400 households each) who go house-to-house in their designated areas. CMCs engage with households and community leaders on polio-plus topics and accompany vaccination teams to immunize children under five during polio immunization campaigns. CMS also maintain lists of families, pregnant mothers and newborns to enlist for routine immunization (RI) as part of their duties.

Block Mobilization Coordinators (BMCs) are in place to supervise CMS. BMC responsibilities include overall management of CMCs (supportive supervision, training, etc), networking and advocacy at the block level to motivate and mobilize *Panchayats*, religious leaders, schools, *Anganwadis* and other local influencers in areas where there has been low acceptance of OPV delivered through SIAs. BMCs are supervised by District Mobilization Coordinators (DMCs, also known as Social Mobilization Coordinators SMCs in Bihar) who support the District Task Force in developing and implementing a district-specific social mobilization plan for polio eradication and routine immunization. They also coordinate partnership activities in the programme at the district level.

At the district level, District Underserved Coordinators (DUCs) work in close coordination with DMCs to provide technical assistance in building strong alliances with Muslim institutions, developing influencer networks, working with NGOs, charities and individuals at the community level. When necessary DUCs work at the block and district levels to provide support in identifying and immunizing every missed child. Part of the DUC contribution is the preparation of a resource map outlining under-served groups that can be engaged constructively to assist in polio immunization. In Bihar, the SMCs perform similar functions but with more focus on migrant workers, nomadic and *Mahadalith* (Schedule caste) populations and slum dwellers.

At sub-regional level, a Sub-Regional Coordinator (SRC) is placed as the overall supervisor of three/four to five/seven districts, and is responsible for managing communication and social mobilization activities in the region, supporting District Taskforce Meetings in mapping out communication gaps/issues and reporting to the state level. There is also a Sub-regional Training Coordinator (SRTC) who plans and implements all capacity development activities of the SMNET and other partners' front line workers for polio plus interventions.

The UNICEF state offices in Lucknow and Patna are responsible for overall management of SMNet programming in the high-risk districts in close coordination with the World Health Organization's National Polio Surveillance Project (NPSP) and State Health Department. UNICEF's Delhi office provides technical assistance on communication reviews, media and advocacy, monitoring, research and evaluation, capacity building initiatives and IEC materials.

2. Rationale for the Research Activity

India's last case of polio was recorded on 13 January 2011 and in February, 2012, the World Health Organization struck India off the list of remaining polio-endemic countries. While UP and Bihar have not reported any case for more than two years, it is essential that very high childhood immunity to polio is maintained to guard against any potential re-importation which could lead to devastating outbreaks, and thus the performance of SMNet remains a key factor in maintaining community level demand for OPV until India is no longer at risk. It is also essential that UNICEF evaluate the strategies and approaches of the SMNet, and the impact that it has had in generating community demand for OPV, trust in health service delivery and the ability of the SMNet to deliver on broader child survival and development initiatives in order to guide next steps in transforming the extensive infrastructure that has been built up in and around the SMNet for the continued benefit of children in these high risk areas, or for replication in other areas.

The India polio programme is considered to be a global gold standard, and UNICEF has been charged by the Independent Monitoring Board (IMB) of the Global Polio Eradication Initiative (GPEI) to document its innovations, lessons learned and best practices to be replicated in other contexts. With Pakistan, Afghanistan and Nigeria having recently replicated the principles of the SMNet in their own contexts to meet similar needs for community engagement, a thorough evaluation of the SMNet in a post-polio India and an evaluation of its potential transition is timely for both the Indian situation and to help serve as a model for other polio programmes and for other public health initiatives that could benefit from such an investment.

The evaluation will generate evidence to determine the impact of the SMNet on activities including coverage of polio immunization activities and support for RI, the capacity to deliver on other child survival and development interventions and efficiency and effectiveness of its management and structure, and determine the key lessons learned.

2.1 Specific Objectives of the Evaluation

- Assess the *relevance* of SMNet, i.e. whether the design and interventions of SMNet were in line with community needs—was this correct intervention for the needs of the programme at the time it was introduced?
- Assess the *effectiveness*, i.e. the extent to which the objectives of the network have been achieved—knowledge and awareness of OPV, routine services and other interventions as appropriate for the context, community trust in health services, demand for OPV and routine and adoption of key behaviors such as taking children to immunization services when offered;
- Assess the *efficiency*, i.e. evaluating whether its resources have been used economically and within the specified timeframe; ; and cost of the programme for comparison
- Assess the *sustainability*, i.e. what systems are in place or are required to sustain the approaches and tools of SMNet?
- Assess the *impac*t i.e. the extent to which the SMNet has contributed to the success and results of the polio eradication programme in India.

3. Use of the findings

It is expected that the evaluation will deliver a thorough analysis of the SMNet's work in supporting

polio and routine immunization activities, its successes, failures and shortcomings in both programmatic relevance and its HR structure. The evaluation will provide recommendations to be considered for determining the future of the SMNet in both UNICEF's new 2013-2017 Country Programme and for replication of similar networks for polio eradication or other public health initiatives.

The evaluation will also provide information to guide improvements to the programme management and structure, determine whether there are any untapped alternatives, unintended outcomes and whether the programme goals are appropriate and useful.

The findings will also demonstrate the potential roles the SMNet could play in supporting other child survival and development programmes.

Finally, the evaluation will provide lessons to the remaining endemic countries where structures similar to the SMNet have been put in place (Nigeria, Afghanistan and Pakistan) to guide strategies, management and subsequent evaluations of these investments.

- **Scope of evaluation activity**

The evaluation will examine the impact of the SMNet on various outputs, including intended and unintended outcomes. The evaluation will determine the impact of the SMNet on the reduction of refusal households and increase in coverage in access-affected areas. The evaluation will take place in randomly selected blocks in the highest-risk districts of UP and Bihar. The evaluation will cover the period from 2001 to the present in all aspect of the evaluation.

Specifically, the scope of evaluation will include:

4.1 Assess the *Relevance* of SMNet,

- Whether the design and interventions of SMNet were in line with community needs
- Whether the SMNet approach has been relevant to achieve the results of the polio eradication programme?
- Were the contextual realities in the programming environment taken into account in the design and implementation of strategies/interventions? With what success?
- To what extent were the objectives of SMNet achieved / are likely to be achieved (support social mobilization for polio and routine immunization) for polio?
- Whether and how the SMNet intervention / approach have responded to priorities or programme strategies that may have changed over the years?
- The extent to which the expected results of SMNet are consistent with the results in the context of the polio eradication programme in India.
- To what extent SMNet has been able to mobilize the community for polio in UP and Bihar and the convergence agenda in the high risk areas (HRA) of Uttar Pradesh

4.2. **Assess the *Effectiveness***

- The extent to which the objectives of the network have been achieved—knowledge and awareness of OPV, routine services and other interventions as appropriate for the context, community trust in health services, demand for OPV and routine and adoption of key behaviors such as taking children to immunization services when offered;
- Whether and how SMNet intervention have contributed to reaching the worst-off groups.
- The extent to which the SMNet intervention has contributed to the results of polio eradication

programme
    - What is the community perception of CMCs as an important front-line worker for IPC on Polio and RI?
    - What is the role of the SMNet (notably the CMCs) as the major source of information for Polio and RI?
    - How much can the reduction in refusal rates of OPV doses by communities are ascribed to the role played by SMNet notably the CMC?
- What were the major factors influencing the achievement or non-achievement of the objectives?
- What difficulties/constraints did the SMNet encounter? Are there any gaps in the operational model?
- How effective were the strategies adopted by the SMNet in addressing resistance to replicate other programme intervention?

4.3 Assess the *Efficiency*

The evaluation will measure how economically resources/inputs (funds, expertise, third party management of human resources, time and resources invested in capacity development / training etc) contributed to programme results-i.e. eradication of polio in India. More specifically the evaluation will address the following questions:

- Did the polio programme use resources in the most economical manner to achieve polio eradication results?
- Were any economical alternatives feasible? How did the third party management of human resources contribute to polio eradication objective?
- How costs for reaching the ultimate mile (most excluded communities for polio and RI) compare with alternative systems to deliver?
- Were the outputs (benefits) of SMNet in line with inputs (costs) provided? What are the benefits and cost of the programme for comparison?

4.4 Assess the *Impact*

The evaluation will assess the impact of the SMNet in terms of primary and secondary long term effects of their operation in terms of the components of the convergence plan in 107 high risk blocks of 65 districts in UP and Bihar (both high risk and non- high risk blocks).

- The extent to which the SMNet has contributed to the results of the polio eradication programme in India.
- To what extent has the SMNet driven behavior change by addressing refusal to OPV in HRAs
- Positive changes in knowledge, attitude and practice related to polio and RI
- To what extent have the knowledge level of communities on polio vaccination/OPV increased?
- To what extent the SMNet contributed in reaching high risk and chronically missed population such as the Kosi River operational plan to reach access-compromised communities?

Secondary data analysis is suggested for districts with and without SMNet for some key indicators where data is comparable to see impact, i.e

- Decrease in resistance (XR) for OPV in HRAs.
- Increase in booth coverage and house to house coverage.
- Improvement in full immunization rate.

- Coverage of HRGs and underserved populations
- Update and implementation of micro-plan for Polio and RI.
- Increase in involvement of local influencers in Polio and RI.

4.5 Assess the *Sustainability*

- To assess the acceptance and ownership by community of the role of CMCs as a front-line worker for IPC on polio and RI
- To assess the acceptability of service providers and other stakeholders on CMCs as a first contact for polio and RI in the community and as a change agent; and,
- To understand the links between government functionaries ANMs, ASHAs and AWWs with CMCs and whether CMCs' role is complementary to these functionaries.
- To what extent can the SMNet be replicated in other contexts/countries/for other child health interventions? (Materials, tools, strategies, approaches and interventions to the context)
- Can front-line Government workers (ANMs and ASHAs) adopt the tools and supportive supervision aspects of the SMNet?

5. Methodology

The research will be requiring a mixture of quantitative and qualitative analysis. Quantitative analysis, including desk reviews, will look at changes in social-cognitive variables that contribute to OPV coverage and uptake of RI in SMNet and non SMNet areas. Qualitative research will uncover attitudes and perceptions among SMNet workers, other health service sectors and in communities about the strengths and weakness of the SMNet.

5.1 Desk review

The evaluation suggests a thorough desk review of available documents/literature including programme documents, process documents, progress reports/presentations and secondary data analysis.

As a part of the secondary data analysis, it is proposed to:

a. Conduct analysis for output-level data available from SIA monitoring in intervention districts (with SMNet presence) and non-interventions districts (without SMNet presence) to determine the impact;

b. Conduct meta-analysis of various KAP studies available till date in SMNet interventions areas to determine impact; and,

c. Conduct a cost benefit analysis (evaluation) of the SMNET in selected districts/blocks of Uttar Pradesh and Bihar for both the polio programme and an additional intervention (Routine Immunization suggested). This will provide data on the relevance of the SMNet and its possible use to support other programs.

5.2 Qualitative assessment

A qualitative assessment will be conducted, including in-depth interviews with representatives of key stakeholders at all levels - National, State, District and Sub-district, including partner agencies (Union

and State Governments, Rotary, CORE and WHO-NPSP) and UNICEF staff.

This desk review will help to understand the function and management of the SMNet, its strengths and weaknesses, its operational and management issues, etc, which will feed into the final report of the evaluation.

In the second stage of this qualitative assessment, it is suggested to conduct in-depth interviews (IDIs) among Front-Line Workers Anganwadi Workers (AWWs), Auxiliary Nurse Midwives (ANMs) and Accredited Social Health Activist (ASHAs) and some block-level and district level functionaries, if required. The objective is to determine their perception of the work of the CMC, and evaluate the support from, coordination with, and relevance of the SMNet.

The methodology suggested here will be further detailed in consultation with the agency and suitable modifications may be incorporated as per need.

For the evaluation, an advisory group, composed of relevant internal and external experts on polio and related research, will be established to provide substantive guidance to the evaluation process.

6. Schedule of Tasks & Timeline

The evaluation needs to be completed in 18 weeks from the date of signing the contract; the tentative starting date is 14 January 2013. Suggested schedule of activities is given below:

Task	Tentative Timeline	Deadline
1. Inception report, including revision of research questions, identification of indicators, need for additional data collection and finalization of tools (after which field research can start as described in task 5)	3 weeks	
2. Secondary data analysis (Meta-analysis of KAP) and SIA data analysis and Cost benefit analysis (Task 1 and 2 will be done simultaneously)	3 week	
3. Draft report on secondary data analysis (task 2)	1 week	
4. Feedback from Advisory group on draft report	1 week	
5. Qualitative assessment with key stakeholders (IDI with community level stakeholders and partners)	4 weeks	
6. Preparation of first draft of evaluation report and PowerPoint (covering desk assessment, and field research, tasks 2 and 5)	3 weeks	

7. Feedback on draft evaluation report	2 weeks	
8. Revision and submission of final evaluation report	2 weeks	
9. Presentation of findings to Advisory Group and other stakeholders	2 weeks	
Remark: Some of these task can be done simultaneously, such as tasks 1 and 2 to save time. The timeline above indicates which tasks need to be sequential.		

- **Deliverables**
- Inception Report including final research design, methodologies, sample questionnaire and other tools to be used during the evaluation and timeline, (task 1)
- Draft secondary data analysis report including meta -analysis of KAP and SIA data (task 3),
- Draft report of the evaluation - approx. 40 pages (task 6)
- Final Evaluation Report outlining the Status, Progress, Constraints, and Success, key recommendations (not more than 50 pages excluding attachments) (task 8)
- PowerPoint presentation of the findings and recommendations of the Evaluation to the management in Advisory Group and UNICEF (task 9)
- All the data from conception to end of assignment is the property of UNICEF. The evaluation institution should had over all completed questionnaires, records and electronic data bases (in excel or SPSS) to UNICEF along with final report

Structure of Evaluation Report:

The evaluation report should consist of following:

- Title page
- Forward
- Table of contents
- Acknowledgement
- Executive summary with the purpose of the evaluation, key findings, conclusions and recommendations in priority order
- Introduction
- Purpose of evaluation
- Key questions and scope of the evaluation with information on limitations
- Approach and methodology, including limitations
- Findings and conclusions, including evidence of potential impact
- Recommendations linked with findings
- Lessons
- In addition, the final report should contain the following annexes;
- Terms of reference for the evaluation
- Itinerary
- List of meetings attended
- List of persons interviewed
- List of document reviewed
- Any other relevant material

ANNEXURE II

ADDENDUM TO TERMS OF REFERENCE

ADDENDUM TO TERMS OF REFERENCE

The specific changes agreed between Deloitte and UNICEF during the Inception Phase are as follows:

1. *The evaluation will take place in **randomly selected blocks** in the highest-risk districts of UP and Bihar*. [Page 4 of 14; paragraph on Scope of Evaluation Activity] –
   The suggested change is - *The evaluation will take place in blocks of the highest-risk districts of UP and Bihar, selected on the basis of an appropriate sampling design as per the study methodology required to answer the research questions.*

2. *The evaluation will cover the period from **2001** to the present in all aspects of the evaluation.* [Page 4 of 14; paragraph on Scope of Evaluation Activity] – This shall be changed as continuous data is not available for the two states since 2001, for all relevant indicators. For example, XR to P conversion data (in continuous form) is available at the block level only since 2008 in Bihar. While data since 2001 will feed into the analysis (as far as the fidelity to the methodology permits), different aspects of the evaluation may be based on different time periods as per the data made available.
   The suggested change is: *The evaluation will cover the period from 2001 to the present to whatever extent continuous and relevant data is available.*

3. *Assess the efficiency, i.e. evaluating whether its resources have been used economically and within the specified timeframe; and **cost of the programme for comparison*** [Page 4 of 14; paragraph on Scope of Evaluation Activity]
   *Were the outputs (benefits) of the SMNet in line with inputs (costs) provided? What are the **benefits and costs of the programme for comparison**?* [Page 5 of 14; Point c. Assess the Efficiency: 4th point]
   *Update and implementation of **micro*-plan *for Polio and RI*** [Page 5 of 14; Point d. Assess the Impact: paragraph on Secondary Analysis: 5th point]
   *Increase in involvement of **local influencers in Polio and RI*** [Page 5 of 14; Point d. Assess the Impact: paragraph on Secondary Analysis: 6th point]
   *Conduct a cost benefit analysis (evaluation) of the SMNet in selected districts/blocks of UP and Bihar **for both the polio programme and an additional intervention (Routine Immunization suggested)*** [Page 6 of 14; Paragraph on Desk Review: point c.]

   In all the above 5 points, the cost-benefit comparison of SMNet with the Routine Immunization (RI) programme of the Government of India shall be removed. The objectives of the RI programme is primarily public service delivery whereas the SMNet is a behavior change communication programme which is complementary to the RI programme. Therefore the two programmes are not really comparable from the view point of Cost Benefit. Additionally, the costs of the RI programme are mostly reported as lumpsum in government budgets, without any granular break-ups/allocations necessary for cost-benefit analysis. Also, the RI programme delivers immunization services for 9 diseases, and a calculation of "benefit" of these 9 diseases on the basis of DALYs or other parameters are not comparable to the "benefit" of the DALYs of just polio (addressed by SMNet), (or will lead to a false negative result by far exceeding the benefits of SMNet). Hence, the evaluation will undertake a cost-benefit analysis of SMNet (to the extent of data shared by UNICEF), without comparison with any other programme. The comparison with RI may be drawn, where relevant, in terms of programme implementation, but not on costs and benefits.

The suggested changes are:

Assess the efficiency, i.e. evaluating whether its resources have been used economically and within the specified timeframe [Page 4 of 14; paragraph on Scope of Evaluation Activity]
Were the outputs (benefits) of the SMNet in line with inputs (costs) provided? What are the ***benefits and costs of the programme****?* [Page 5 of 14; Point c. Assess the Efficiency: 4th point]
Update and implementation of ***micro*-plan *for Polio and RI (as far as data is available)*** [Page 5 of 14; Point d. Assess the Impact: paragraph on Secondary Analysis: 5th point]
Increase in involvement of ***local influencers in Polio and RI (as far as data is available)*** [Page 5 of 14; Point d. Assess the Impact: paragraph on Secondary Analysis: 6th point]
Conduct a cost benefit analysis (evaluation) of the SMNet in selected districts/blocks of UP and Bihar [Page 6 of 14; Paragraph on Desk Review: point c.][1]

4. *Draft report on secondary analysis* [Page 7 of 14; Paragraph on Tasks: point c.] – as per earlier discussions and agreement, this shall be removed. Since this evaluation is a mixed-method study, the secondary and primary analyses will be triangulated to capture the complexity and comprehensiveness of SMNet. The secondary analysis will be used throughout the main evaluation report, and will have separate chapters when relevant, for example, chapters on meta-analysis and on cost-benefit analysis.
   The suggested change is removal of this point.

5. *Feedback from advisory group on draft report* [Page 7 of 14; Paragraph on Tasks: point d.] – since feedback from the advisory group is contingent on its formation by UNICEF, this shall not be listed as Deloitte's task. Deloitte will share the agreed upon deliverables with UNICEF (the identified contact person for this engagement). It will be UNICEF's prerogative to share it further with other groups/individuals.
   The suggested change is removal of this point.

Action to be taken for contract revision

The technical language of the new contract numbered 43140536, issued by UNICEF, can be changed as suggested above by making the above changes in the contract itself and sending us a revised version or by issuing an addendum/note to reflect the evolved conceptualization of the engagement based on the iterations between Deloitte and UNICEF in the past few months.

After these changes are officially confirmed by you and the revised contract/ addendum sent to us by Unicef, Deloitte will sign and return a copy of the new contract to UNICEF.

Cost benefit Analysis

Due to the unavailability of data, the proposed cost benefit analysis was not undertaken and instead a value for money analysis was undertaken.

[1] Based on further discussion the CBA was substituted with a VFM analysis, the rationale for which has been provided in Annexure IV.

Meta Analysis

The KAP sample studies shared with Deloitte for meta-analysis are 4 surveys (2009, 2010, 2011 and 2012). The survey in 2009 had used indicators different from the following 3 years; hence the scope of the meta-analysis in this evaluation will be limited to the 3 surveys – 2010, 2011 and 2012. These studies are not impact assessment, comparing the effect of SMNet versus non-SMNet, but are project data collected 3 years in SMNet areas of both states.

Based on a detailed literature review, a method called "cross temporal meta-analysis" will be used for the meta-analysis in this evaluation. This method has been used for psychological research to study differences across time/generations on personality traits/behaviours etc. The relatively small sample of the Meta analysis will be stated in the evaluation report as a limitation

Secondary data analysis

In addition to KAP, Inputs/Activities, Outcome level & Impact level data is also provided as per list given below, to be used for desk review & triangulation of results from various datasets

- OPV doses NP-AFP by block, by age, Religion etc. 2002-2013 for both states
- WPV cases in both states (Impact)over the years for both states
- Mobilisation Activities & personnel data from both states

ANNEXURE III

INFORMATION CHECKLISTS

A. In-depth Interview Guide for UNICEF Programme Head

Key Discussion Points	
Design of intervention and Role of SMNet	• What was the context in which the SMNet intervention was envisaged and developed? • Were contextual realities taken into account at the time of designing the intervention? a. Were community needs taken into account at the time of designing the intervention? b. How was the need established? c. Were any baseline studies undertaken before designing the intervention strategy? • What was the objective behind setting up of the SMNet? • What is the approach followed by the SMNet to achieve its objectives? • What have been the main activities of the SMNet since its inception? • To what extent have these activities led to the intervention achieving its objectives? • What is the human resources structure of the SMNet? Has this structure helped in achieving the aims of the SMNet? If so, how? • Have there been any capacity building initiatives and supportive supervision provided to members of the SMNet? a. Support from the UNICEF National/State Office b. Trainings • Is the current HR structure the most efficient use of resources to meet the aims and objectives of the intervention? Can this structure be improved/made more efficient? How? • Has the SMNet approach been relevant to achieving the stated objectives? To what extent have the objectives of the SMNet been achieved? [Probe for] a. Knowledge and awareness about polio and its spread b. Knowledge and awareness about OPV c. Uptake of immunization services – for polio and routine immunization d. Reaching vulnerable communities and minorities, especially high risk groups • How were the states chosen for SMNet intervention? • Has the SMNet approach been relevant to the states chosen? • Has the design of the intervention changed over the years? How has it changed? [Probe for] a. What has led to a change in design? b. How has the intervention design changed due to changes in context c. Did the intervention design change lead to objectives being achieved in a more efficient/effective manner? • What have been the major challenges to achieving the objectives of the SMNet?
Interaction with Government system	• What was the support required by the intervention from the public health system? How was government buy-in achieved for the intervention? What were the government's perceptions about the intervention and its objectives? • Was the SMNet intervention complementary to the government programmes for the eradication of polio? • What were the gaps in the government polio eradication programmes? How did the SMNet address gaps in government polio eradication programmes?

	• What are the linkages of the SMNet with the public health system? a. Government programmes- NRHM/ICDS b. Frontline workers- AWW/ANM/ASHA • What has been the involvement of the public health sector (department officials, programme managers, frontline workers etc.) in designing and implementing the activities of the SMNet? • Has the government's perception/engagement with the SMNet changed over time? If so how? What do you think were the main reasons for these changes? • Were there any challenges in working with the government/public health system? If so, what were these? How were these challenges overcome?
Impact of SMNet	• What has been the impact of the SMNet intervention? a. Output b. Outcome • To what extent has the SMNet intervention contributed to the results of polio eradication programme in the state/district? • To what extent has SMNet been successful in reaching high-risk groups? a. Muslims b. Migrants/Nomads c. Scheduled Castes/Tribes • Has there been any un-intended results/impact of the SMNet intervention? [Probe for] a. Increase in RI b. Better WASH indicators c. Increase in breastfeeding d. Changes in diarrhoea management e. Any other
Challenges and Critical Success Factors	• What have been the major constraints and challenges to the activities of the SMNet? [Probe for gaps in] a. Intervention design b. Operational model c. Implementation d. Training and capacity building • How were these challenges overcome? / What would be the best way to overcome these challenges? • What were the main facilitating factors for the activities of the SMNet?
Funding and Monitoring	• What are the resource requirements for the functioning of the SMNet? • What is the budgetary support provided by UNICEF? Please provide details. • Do you believe that the utilization of resources is efficient for the programme? • How can the resource utilization be made more efficient? • What are the reporting/monitoring mechanisms followed by the SMNet intervention?
Sustainability and	• Were any advocacy efforts undertaken to replicate the SMNet intervention in other states?

Replication	• Were any advocacy efforts undertaken for the government to take ownership of the intervention? • What is the role of the SMNet intervention now that polio has been successfully eradicated? • To what extent can the SMNet be replicated? [Probe for] a. In other contexts/countries b. For other child health interventions • What are the system requirements to ensure sustainability of the approaches and tools of the SMNet? • How far do you think government frontline workers can adopt the tools and supportive supervision aspects of the SMNet? • What are the key learnings from SMNet in UP/Bihar that can be used to replicate the intervention? • Are there any changes you would like to make to the role/structure/activities of the SMNet in case of replication in other contexts/for other child health interventions?

B. In-depth Interview Guide for UNICEF State Head

Key Discussion Points	
Design of intervention and Role of SMNet	• What was the context in which the SMNet intervention was envisaged and developed? • What was the objective behind setting up of the SMNet? • How were the states chosen for SMNet intervention? • Has the SMNet approach been relevant to the states chosen? • Has the design of the intervention changed over the years? How has it changed? [Probe for] a. What has led to a change in design? b. How has the intervention design changed due to changes in context c. Did the intervention design change lead to objectives being achieved in a more efficient/effective manner? • What is the approach followed by the SMNet to achieve its objectives? • What have been the main activities of the SMNet since its inception? • To what extent have these activities led to the intervention achieving its objectives? • What is the human resources structure of the SMNet? Has this structure helped in achieving the aims of the SMNet? If so, how? • Is the current HR structure the most efficient use of resources to meet the aims and objectives of the intervention? Can this structure be improved/made more efficient? How? • Has the SMNet approach been relevant to achieving the stated objectives? To what extent have the objectives of the SMNet been achieved? [Probe for] a. Knowledge and awareness about polio and its spread b. Knowledge and awareness about OPV c. Uptake of immunization services – for polio and routine immunization d. Reaching vulnerable communities and minorities, especially high risk groups • What have been the major challenges to achieving the objectives of the SMNet?
Interaction with Government system	• What was the support required by the intervention from the public health system? How was government buy-in achieved for the intervention? What were the government's perceptions about the intervention and its objectives? • Was the SMNet intervention complementary to the government programmes for the eradication of polio? • What were the gaps in the government polio eradication programmes? How did the SMNet address gaps in government polio eradication programmes? • What has been the involvement of the public health sector (department officials, programme managers, frontline workers etc.) in designing and implementing the activities of the SMNet? • Has the government's perception/engagement with the SMNet changed over time? If so how? What do you think were the main reasons for these changes? • Were there any challenges in working with the government/public health system? If so, what were these? How were these challenges overcome?
Impact of SMNet	• What has been the impact of the SMNet intervention? a. Output

	b. Outcome • To what extent has the SMNet intervention contributed to the results of polio eradication programme in the state/district? • To what extent has SMNet been successful in reaching high-risk groups? a. Muslims b. Migrants/Nomads c. Scheduled Castes/Tribes • Has there been any un-intended results/impact of the SMNet intervention? [Probe for] a. Increase in RI b. Better WASH indicators c. Increase in breastfeeding d. Changes in diarrhoea management e. Any other
Challenges and Critical Success Factors	• What have been the major constraints and challenges to the activities of the SMNet? [Probe for gaps in] a. Intervention design b. Operational model c. Implementation d. Training and capacity building • How were these challenges overcome? / What would be the best way to overcome these challenges? • What were the main facilitating factors for the activities of the SMNet?
Funding and Monitoring	• What are the resource requirements for the functioning of the SMNet? • What is the budgetary support provided by UNICEF? Please provide details. • Do you believe that the utilization of resources is efficient for the programme? • How can the resource utilization be made more efficient? • What are the reporting/monitoring mechanisms followed by the SMNet intervention?
Sustainability and Replication	• Were any advocacy efforts undertaken to replicate the SMNet intervention in other states? • Were any advocacy efforts undertaken for the government to take ownership of the intervention? • What is the role of the SMNet intervention now that polio has been successfully eradicated? • To what extent can the SMNet be replicated? [Probe for] a. In other contexts/countries b. For other child health interventions • What are the system requirements to ensure sustainability of the approaches and tools of the SMNet? • How far do you think government frontline workers can adopt the tools and supportive supervision aspects of the SMNet? • What are the key learnings from SMNet in UP/Bihar that can be used to replicate the intervention? • Are there any changes you would like to make to the role/structure/activities of the SMNet in case of replication in other contexts/for other child health interventions?

C. In-depth Interview Guide for M&E Officer

Key Discussion Points	
Design of intervention and Role of SMNet	• What was the context in which the SMNet intervention was envisaged and developed? • Were contextual realities taken into account at the time of designing the intervention? a. Were community needs taken into account at the time of designing the intervention? b. How was the need established? c. Were any baseline studies undertaken before designing the intervention strategy? • What was the objective behind setting up of the SMNet? • What is the approach followed by the SMNet to achieve its objectives? • What have been the main activities of the SMNet since its inception? • To what extent have these activities led to the intervention achieving its objectives? • What is the human resources structure of the SMNet? Has this structure helped in achieving the aims of the SMNet? If so, how? • Have there been any capacity building initiatives and supportive supervision provided to members of the SMNet? a. Support from the UNICEF National/State Office b. Trainings • Is the current HR structure the most efficient use of resources to meet the aims and objectives of the intervention? Can this structure be improved/made more efficient? How? • Has the SMNet approach been relevant to achieving the stated objectives? To what extent have the objectives of the SMNet been achieved? [Probe for] a. Knowledge and awareness about polio and its spread b. Knowledge and awareness about OPV c. Uptake of immunization services – for polio and routine immunization d. Reaching vulnerable communities and minorities, especially high risk groups • How were the states chosen for SMNet intervention? • Has the SMNet approach been relevant to the states chosen? • Has the design of the intervention changed over the years? How has it changed? [Probe for] a. What has led to a change in design? b. How has the intervention design changed due to changes in context c. Did the intervention design change lead to objectives being achieved in a more efficient/effective manner? What have been the major challenges to achieving the objectives of the SMNet?
Funding	• What are the resource requirements for the functioning of the SMNet? • What is the budgetary support provided by UNICEF, especially towards monitoring and evaluation? Please provide details. • Do you believe that the allocation of resources for monitoring and evaluation of the SMNet, and their utilization is efficient for the programme? • Do you recommend any changes in these aspects?

Impact of SMNet	• What has been the impact of the SMNet intervention? a. Output b. Outcome • To what extent has the SMNet intervention contributed to the results of polio eradication programme in the state/district? • To what extent has SMNet been successful in reaching high-risk groups? a. Muslims b. Migrants/Nomads c. Scheduled Castes/Tribes • Has there been any un-intended results/impact of the SMNet intervention? [Probe for] a. Increase in RI b. Better WASH indicators c. Increase in breastfeeding d. Changes in diarrhoea management e. Any other
Monitoring & Evaluation	• What are the reporting/monitoring mechanisms followed by the SMNet intervention at each level? • What are the financial reporting/monitoring mechanisms followed by the SMNet intervention at each level? • What is the frequency of reporting/monitoring followed at each level? • Please provide details of monitoring checklists and formats being used at each level of the intervention. How were these checklists and formats developed? • Please provide details of supportive supervision activities at each level. • Have the monitoring/supportive supervision activities led to any changes in the design/strategy/activities of the intervention? If so, please provide details. • Have there been any evaluation/impact studies conducted for the intervention? If so, please provide details. • Do you think the monitoring and evaluation activities undertaken within the SMNet have been sufficient? Would you recommend any change? If yes, what are these changes?
Challenges and Critical Success Factors	• What have been the major constraints and challenges to the SMNet? [Probe for gaps in] a. Intervention design b. Operational model c. Implementation d. Monitoring and evaluation • How were these challenges overcome? / What would be the best way to overcome these challenges? • What were the main facilitating factors for the SMNet?
Sustainability and Replication	• Were any advocacy efforts undertaken to replicate the SMNet intervention in other states? • Were any advocacy efforts undertaken for the government to take ownership of the intervention? • What is the role of the SMNet intervention now that polio has been successfully eradicated? • To what extent can the SMNet be replicated?

	[Probe for] a. In other contexts/countries b. For other child health interventions • What are the system requirements to ensure sustainability of the approaches and tools of the SMNet? • How far do you think government frontline workers can adopt the monitoring/reporting tools and other interventions of the SMNet? • What are the key learnings from SMNet in UP/Bihar that can be used to replicate the intervention? • Are there any changes you would like to make to the role/structure/activities of the SMNet in case of replication in other contexts/for other child health interventions?

D. In-depth Interview Guide for Mission Director, NRHM

Key Discussion Points	
Immunization status	• What is the status of maternal and child health in the state? • What is the immunization coverage in the state? [Probe for] a. Routine Immunization b. Polio Immunization • What are the challenges in achieving 100% immunization coverage in the state? • How far has the pulse polio campaign been successful in achieving its objectives in the state? • What were the major challenges faced to achieving these objectives? Has there been a change in the nature of challenges faced over time? • How were these challenges overcome?
SMNet	• Are you aware of the SMNet intervention? • What was the objective behind setting up of the SMNet? • Are you aware of the approach followed by the SMNet to achieve its objectives? What have been the main activities of the SMNet since its inception? • Has the SMNet approach been relevant to the state? • How far has the SMNet intervention been relevant to achieving its stated objective? What have been the major challenges to achieving these objectives?
Linkage of SMNet with public health system	• How did the SMNet contribute to the government polio eradication programmes? • What were the government's perceptions about the intervention and its objectives? • What are the linkages of the public health system with the SMNet? a. Government programmes- NRHM/ICDS b. Frontline workers- AWW/ANM/ASHA • What has been the involvement of the public health sector (department officials, programme managers, frontline workers etc.) in designing and implementing the activities of the SMNet? • Has the government's perception/engagement with the SMNet changed over time? If so how? What do you think were the main reasons for these changes?
Impact of SMNet	• What has been the impact of the SMNet intervention? a. Output b. Outcome • To what extent has the SMNet intervention contributed to the results of polio eradication programme in the state/district? • To what extent has SMNet been successful in reaching high-risk groups? a. Muslims b. Migrants/Nomads c. Scheduled Castes/Tribes • Has there been any un-intended results/impact of the SMNet intervention? [Probe for]

	a. Increase in RI b. Better WASH indicators c. Increase in breastfeeding d. Changes in diarrhoea management e. Any other • Do you think the SMNet was a success? What were the main facilitating factors for the success of the SMNet intervention? • What are the main challenges for the SMNet programme?
Funding and Monitoring	• What are the resource requirements for the functioning of the SMNet? • What is the budgetary support provided by UNICEF? • Do you believe that the utilization of resources is efficient for the programme? How can the resource utilization be made more efficient?
Sustainability and Replication	• Can the SMNet intervention be sustained and replicated now that polio has been successfully eradicated? • To what extent can the SMNet be replicated? [Probe for] a. In other contexts/countries b. For other child health interventions c. Routine Immunization • What are the system requirements to ensure sustainability of the approaches and tools of the SMNet? How far do you think government frontline workers can adopt the tools and supportive supervision aspects of the SMNet? • What are the key learnings from SMNet in UP/Bihar that can be used to replicate the intervention? • Are there any changes you would like to make to the role/structure/activities of the SMNet in case of replication in other contexts/for other child health interventions?

E. In-depth Interview Guide for RCH Officer/ Routine Immunization Officer

Key Discussion Points	
Immunization status	• What is the status of maternal and child health in the state? • What is the immunization coverage in the state? [Probe for] a. Routine Immunization b. Polio Immunization • What are the challenges in achieving 100% immunization coverage in the state? • How far has the pulse polio campaign been successful in achieving its objectives in the state? • What were the major challenges faced to achieving these objectives? Has there been a change in the nature of challenges faced over time? • How were these challenges overcome?
SMNet	• Are you aware of the SMNet intervention? • What was the objective behind setting up of the SMNet? • Are you aware of the approach followed by the SMNet to achieve its objectives? What have been the main activities of the SMNet since its inception? • Has the SMNet approach been relevant to the state? • How far has the SMNet intervention been relevant to achieving its stated objective? What have been the major challenges to achieving these objectives?
Linkage of SMNet with public health system	• How did the SMNet contribute to the government polio eradication programmes? • What were the government's perceptions about the intervention and its objectives? • What are the linkages of the public health system with the SMNet? a. Government programmes- NRHM/ICDS b. Frontline workers- AWW/ANM/ASHA • Has the SMNet intervention been complementary to government polio eradication programmes? Has the SMNet helped in overcoming the challenges of achieving 100% polio immunization coverage? • What has been the involvement of the public health sector (department officials, programme managers, frontline workers etc.) in designing and implementing the activities of the SMNet? • Has the government's perception/engagement with the SMNet changed over time? If so how? What do you think were the main reasons for these changes?
Impact of SMNet	• What has been the impact of the SMNet intervention? a. Output b. Outcome • To what extent has the SMNet intervention contributed to the results of polio eradication programme in the state/district? • To what extent has SMNet been successful in reaching high-risk groups? a. Muslims b. Migrants/Nomads c. Scheduled Castes/Tribes

	• Has there been any un-intended results/impact of the SMNet intervention? [Probe for] a. Increase in RI b. Better WASH indicators c. Increase in breastfeeding d. Changes in diarrhoea management e. Any other • Do you think the SMNet was a success? What were the main facilitating factors for the success of the SMNet intervention? • What are the main challenges for the SMNet programme?
Funding and Monitoring	• What are the resource requirements for the functioning of the SMNet? • What is the budgetary support provided by UNICEF? • Do you believe that the utilization of resources is efficient for the programme? How can the resource utilization be made more efficient?
Sustainability and Replication	• Can the SMNet intervention be sustained and replicated now that polio has been successfully eradicated? • To what extent can the SMNet be replicated? [Probe for] a. In other contexts/countries b. For other child health interventions c. Routine Immunization • What are the system requirements to ensure sustainability of the approaches and tools of the SMNet? How far do you think government frontline workers can adopt the tools and supportive supervision aspects of the SMNet? • What are the key learnings from SMNet in UP/Bihar that can be used to replicate the intervention? • Are there any changes you would like to make to the role/structure/activities of the SMNet in case of replication in other contexts/for other child health interventions?

F. In-depth Interview guide for Sub-Regional Coordinator / District Mobilization Coordinator

	Key Discussion Points
Design of intervention and Role of SMNet	• What was the objective behind setting up of the SMNet? • What is the approach followed by the SMNet to achieve its objectives • Has the SMNet approach been relevant to achieving the stated objectives? To what extent have the objectives of the SMNet been achieved? What have been the major challenges to achieving these objectives? [Probe for] a. Knowledge and awareness about polio and its spread b. Knowledge and awareness about OPV c. Uptake of immunization services – for polio and routine immunization d. Reaching vulnerable communities and minorities, especially high risk groups • How did the SMNet address gaps in government polio eradication programmes? • Were contextual realities taken into account at the time of designing the intervention? a. Were community needs taken into account at the time of designing the intervention? b. How was the need established? c. Were any baseline studies undertaken before designing the intervention strategy? • Has the design of the intervention changed over the years? [Probe for] a. What has led to a change in design? i. Change Context ii. How has the intervention design changed due to changes in context b. Did the intervention design change lead to objectives being achieved in a more efficient/effective manner • What is the human resources structure of the SMNet? Has this structure helped in achieving the aims of the SMNet? If so, how? • Have there been any capacity building initiatives and supportive supervision provided to members of the SMNet? a. Support from the UNICEF National/State Office b. Trainings i. Design ii. Duration iii. Topics covered iv. Are trainings organized on a regular basis/one-time activity • Is the current HR structure the most efficient use of resources to meet the aims and objectives of the intervention? Can this structure be improved/made more efficient? How? • How was government buy-in achieved for the intervention? What was the support required by the intervention from the public health system? What were the government's perceptions about the intervention and its objectives? • What are the linkages of the SMNet with the public health system? a. Government programmes- NRHM/ICDS b. Frontline workers- AWW/ANM/ASHA [Probe for] i. Trainings provided by the SMNet intervention to frontline workers

	ii. Is the SMNet HR structure at the grassroots level complementary to these functionaries? • Have there been any issues/challenges in working with the public health system? How have these challenges been overcome?
Activities of SMNet	• What have been the main activities of the SMNet since its inception? • What has been the involvement of the public health sector (department officials, programme managers, frontline workers etc.) in designing and implementing the activities of the SMNet? • To what extent have these activities led to the intervention achieving its objectives? • Have the activities of the SMNet changed over time? How? What has driven the change?
Impact of SMNet	• What has been the impact of the SMNet intervention? a. Output b. Outcome • To what extent has the SMNet intervention contributed to the results of polio eradication programme in the state/district? • To what extent has SMNet been successful in reaching high-risk groups? a. Muslims b. Migrants/Nomads c. Scheduled Castes/Tribes • Has there been any un-intended results/impact of the SMNet intervention? [Probe for] a. Increase in RI b. Better WASH indicators c. Increase in breastfeeding d. Changes in diarrhoea management
Challenges and Critical Success Factors	• What have been the major constraints and challenges to the activities of the SMNet? [Probe for gaps in] a. Intervention design b. Operational model c. Implementation d. Training and capacity building • How were these challenges overcome? / what would be the best way to overcome these challenges? • What were the main facilitating factors for the activities of the SMNet?
Funding and Monitoring	• What are the resource requirements for the functioning of the SMNet? • What is the budgetary support provided by UNICEF? Please provide details. • Do you believe that the utilization of resources is efficient for the programme? • How can the resource utilization be made more efficient? • What are the reporting/monitoring mechanisms followed by the SMNet intervention?

Sustainability and Replication	• What is the role of the SMNet intervention and the trained HR now that polio has been successfully eradicated? • To what extent can the SMNet be replicated? [Probe for] a. In other contexts/countries b. For other child health interventions • What are the system requirements to ensure sustainability of the approaches and tools of the SMNet? • What are the key learnings from SMNet in UP/Bihar that can be used to scale up the intervention? • Are there any changes you would like to make to the role/structure/activities of the SMNet in case of replication in other contexts/for other child health interventions? • How far do you think government frontline workers can adopt the tools and supportive supervision aspects of the SMNet?

G. In-depth Interview guide for Sub-Regional Training Coordinator

Key Discussion Points	
Overview of the SMNet intervention	• What was the objective behind setting up of the SMNet? • What is the approach followed by the SMNet to achieve its objectives • Has the SMNet approach been relevant to achieving the stated objectives? To what extent have the objectives of the SMNet been achieved? What have been the major challenges to achieving these objectives? [Probe for] a. Knowledge and awareness in the community about polio and its spread b. Knowledge and awareness about OPV in the community c. Uptake of immunization services – for polio and routine immunization in the target group d. Reaching vulnerable communities and minorities, especially high risk groups • How did the SMNet address gaps in government polio eradication programmes? • What have been the main activities of the SMNet since its inception? • To what extent have these activities led to the intervention achieving its objectives? • Have the activities of the SMNet changed over time? How? What has driven the change? • What is the human resources structure of the SMNet? Has this structure helped in achieving the aims of the SMNet? If so, how? • Is the current HR structure the most efficient use of resources to meet the aims and objectives of the intervention? Can this structure be improved/made more efficient? How?
Training and Capacity Building	• Have there been any capacity building initiatives and supportive supervision provided to members of the SMNet? a. Support from the UNICEF National/State Office b. Trainings i. Design/Approach ii. Duration/structure iii. Topics covered iv. Are trainings organized on a regular basis/one-time activity • Are trainings provided to members at all levels of the intervention? If so, is there any difference in the content and approach for training different cadres? How? • To what extent have the trainings and capacity building of the frontline workers helped the intervention meet its objectives? • Have the training and capacity building activities changed over the years? If so, how? [Probe for] a. What has led to a change in design? i. Change Context ii. How has the design of the trainings changed due to changes in context b. Did the change in design and capacity building activities lead to objectives being achieved in a more efficient/effective manner • What are the linkages of the SMNet with government frontline workers - AWW/ANM/ASHA? • What kind of support was provided by the intervention to the frontline workers? What were the training and capacity building activities undertaken for the frontline workers?

	[Probe for] a. Design b. Duration c. Topics covered d. Are trainings organized on a regular basis/one-time activity • Are there any other capacity building/supportive supervision activities (for SMNet members and frontline workers) that would have led to the intervention achieving it's aims in a more efficient and effective manner?
Challenges and Critical Success Factors	• What have been the major constraints and challenges to the training and capacity building activities of the frontline wrokers/CMCs of the SMNet? [Probe for gaps in] a. Intervention design b. Operational model c. Implementation • How were these challenges overcome? / What would be the best way to overcome these challenges? • What were the main facilitating factors for the activities of the SMNet?
Funding and Monitoring	• What are the resource requirements for the training and capacity building activities of the SMNet? • What is the budgetary support provided by UNICEF? Please provide details. • Do you believe that the utilization of resources is efficient for the programme? • How can the resource utilization be made more efficient? • What are the reporting/monitoring mechanisms followed for the training and capacity building activities of the intervention? • To what extent do you believe the monitoring and supportive supervision followed helped achieved the objectives of the intervention?
Sustainability and Replication	• What is the role of the SMNet intervention and the trained HR now that polio has been successfully eradicated? • To what extent can the SMNet be replicated? [Probe for] a. In other contexts/countries b. For other child health interventions • What are the key learnings from SMNet in UP/Bihar that can be used to scale up the intervention? • Are there any changes you would like to make to the training and capacity building activities of the SMNet in case of replication in other contexts/for other child health interventions? • How far do you think government frontline workers can adopt the tools and supportive supervision aspects of the SMNet?

H. In-depth Interview Guide for District Underserved Coordinator

Key Discussion Points	
Design of intervention and Role of SMNet	• Are there any underserved population groups in this district? If yes, which are these population groups? How were the identified? • What are the challenges to increasing immunization coverage in these population groups? [Probe for] a. Connectivity b. Cultural barriers c. Psychological barriers • What was the objective behind setting up of the SMNet? • What is the approach followed by the SMNet to achieve its objectives? Has the SMNet approach been relevant to achieving the stated objectives? To what extent have the objectives of the SMNet been achieved? What have been the major challenges to achieving these objectives? [Probe for] a. Knowledge and awareness about polio and its spread b. Knowledge and awareness about OPV c. Uptake of immunization services – for polio and routine immunization d. Reaching vulnerable communities and minorities, especially high risk groups • Has the SMNet approach been relevant to this district, especially in case of underserved communities? • What have been the main activities of the SMNet since its inception? • Have activities differed for different high risk groups? If so, how? • What is the strategy followed by the SMNet to reach underserved communities? [Probe for] a. Linkages with community leaders b. Linkages with community based organizations/NGOs c. Any other • How did the SMNet address gaps in government polio eradication programmes, especially in case of underserved communities? • Has the design of the intervention changed over the years? [Probe for] a. What has led to a change in design? i. Change Context ii. How has the intervention design changed due to changes in context b. Did the intervention design change lead to objectives being achieved in a more efficient/effective manner, especially to reach underserved communities? • What is the human resources structure of the SMNet? Has this structure helped in achieving the aims of the SMNet? If so, how? • Have there been any capacity building initiatives and supportive supervision provided to members of the SMNet? a. Support from the UNICEF National/State Office b. Trainings

	i. Design ii. Duration iii. Topics covered iv. Are trainings organized on a regular basis/one-time activity • Is the current HR structure the most efficient use of resources to meet the aims and objectives of the intervention? Can this structure be improved/made more efficient? How? • How was government buy-in achieved for the intervention? What was the support required by the intervention from the public health system? What were the government's perceptions about the intervention and its objectives? • What are the linkages of the SMNet with the public health system? a. Government programmes- NRHM/ICDS b. Frontline workers- AWW/ANM/ASHA [Probe for] i. Trainings provided by the SMNet intervention to frontline workers ii. Is the SMNet HR structure at the grassroots level complementary to these functionaries? • Have there been any issues/challenges in working with the public health system? How have these challenges been overcome?
Impact of SMNet	• What has been the impact of the SMNet intervention? a. Output b. Outcome • To what extent has the SMNet intervention contributed to the results of polio eradication programme in the state/district? • To what extent has SMNet been successful in reaching high-risk groups? a. Muslims b. Migrants/Nomads c. Scheduled Castes/Tribes • Has there been any un-intended results/impact of the SMNet intervention? [Probe for] a. Increase in RI b. Better WASH indicators c. Increase in breastfeeding d. Changes in diarrhoea management e. Any other
Challenges and Critical Success Factors	• What have been the major constraints and challenges to the activities of the SMNet in addressing the unique needs of the underserved communities? [Probe for gaps in] a. Intervention design b. Operational model c. Implementation d. Training and capacity building • How were these challenges overcome? / What would be the best way to overcome these challenges? • What were the main facilitating factors for the activities of the SMNet?

Funding and Monitoring	• What are the resource requirements for the functioning of the SMNet? • What is the budgetary support provided by UNICEF? Please provide details. • Do you believe that the utilization of resources is efficient for the programme? • How can the resource utilization be made more efficient? • What are the reporting/monitoring mechanisms followed by the SMNet intervention?
Sustainability and Replication	• Were any advocacy efforts undertaken for the government to take ownership of the intervention? • What is the role of the SMNet intervention now that polio has been successfully eradicated? • To what extent can the SMNet be replicated? [Probe for] a. In other contexts/countries b. For other child health interventions • What are the system requirements to ensure sustainability of the approaches and tools of the SMNet? • How far do you think government frontline workers can adopt the tools and supportive supervision aspects of the SMNet? • What are the key learnings from SMNet in UP/Bihar that can be used to replicate the intervention? • Are there any changes you would like to make to the role/structure/activities of the SMNet in case of replication in other contexts/for other child health interventions?

I. In-depth Interview Guide for CDMO/BMO

Key Discussion Points	
Immunization status	• What is the status of maternal and child health in the state? • What is the immunization coverage in the state? [Probe for] a. Routine Immunization b. Polio Immunization • What are the challenges in achieving 100% immunization coverage in the district/block? • How far has the pulse polio campaign been successful in achieving its objectives in the district/block? • What were the major challenges faced to achieving these objectives? Has there been a change in the nature of challenges faced over time? • How were these challenges overcome?
SMNet	• Are you aware of the SMNet intervention? • What was the objective behind setting up of the SMNet? • Are you aware of the approach followed by the SMNet to achieve its objectives? What have been the main activities of the SMNet since its inception? • Has the SMNet approach been relevant to the district/block? • How far has the SMNet intervention been relevant to achieving its stated objective? What have been the major challenges to achieving these objectives?
Linkage of SMNet with public health system	• How did the SMNet contribute to the government polio eradication programmes? • What were the government's perceptions about the intervention and its objectives? • What are the linkages of the public health system with the SMNet? a. Government programmes- NRHM/ICDS b. Frontline workers- AWW/ANM/ASHA • Has the SMNet intervention been complementary to government polio eradication programmes? Has the SMNet helped in overcoming the challenges of achieving 100% polio immunization coverage? • What has been the involvement of the public health sector (department officials, programme managers, frontline workers etc.) in designing and implementing the activities of the SMNet? • Has the government's perception/engagement with the SMNet changed over time? If so how? What do you think were the main reasons for these changes?
Impact of SMNet	• What has been the impact of the SMNet intervention? a. Output b. Outcome • To what extent has the SMNet intervention contributed to the results of polio eradication programme in the state/district? • To what extent has SMNet been successful in reaching high-risk groups? a. Muslims b. Migrants/Nomads c. Scheduled Castes/Tribes

	• Has there been any un-intended results/impact of the SMNet intervention? [Probe for] a. Increase in RI b. Better WASH indicators c. Increase in breastfeeding d. Changes in diarrhoea management e. Any other • Do you think the SMNet was a success? What were the main facilitating factors for the success of the SMNet intervention?
Funding	• What are the resource requirements for the functioning of the SMNet? • What is the budgetary support provided by UNICEF? Please provide details. • Do you believe that the utilization of resources is efficient for the programme? • How can the resource utilization be made more efficient?
Sustainability and Replication	• Can the SMNet intervention be sustained and replicated now that polio has been successfully eradicated? • To what extent can the SMNet be replicated? [Probe for] a. In other contexts/countries b. For other child health interventions c. Routine Immunization • What are the system requirements to ensure sustainability of the approaches and tools of the SMNet? How far do you think government frontline workers can adopt the tools and supportive supervision aspects of the SMNet? • What are the key learnings from SMNet in UP/Bihar that can be used to replicate the intervention? • Are there any changes you would like to make to the role/structure/activities of the SMNet in case of replication in other contexts/for other child health interventions?

J. In-depth Interview Guide for Block Mobilization Coordinator

Key Discussion Points	
Design of intervention and Role of SMNet	• What was the objective behind setting up of the SMNet? • What is the approach followed by the SMNet to achieve its objectives? • Has the SMNet approach been relevant to this block? • Are there any underserved population groups in this district/block? If yes, which are these population groups? How were the identified? • What are the challenges to increasing immunization coverage in these population groups? [Probe for] a. Connectivity b. Cultural barriers c. Psychological barriers • What is the strategy followed by the SMNet to reach these population groups? [Probe for] a. Linkages with community leaders, PRI members etc. b. Linkages with community based organizations/NGOs c. Any other • Has the SMNet approach been relevant to achieving the stated objectives? To what extent have the objectives of the SMNet been achieved? What have been the major challenges to achieving these objectives? [Probe for] a. Knowledge and awareness about polio and its spread b. Knowledge and awareness about OPV c. Uptake of immunization services – for polio and routine immunization d. Reaching vulnerable communities and minorities, especially high risk groups • How did the SMNet address gaps in government polio eradication programmes? • Were contextual realities taken into account at the time of designing the intervention? a. Were community needs taken into account at the time of designing the intervention? b. How was the need established? c. Were any baseline studies undertaken before designing the intervention strategy? • Has the design of the intervention changed over the years? [Probe for] a. What has led to a change in design? i. Change Context ii. How has the intervention design changed due to changes in context b. Did the intervention design change lead to objectives being achieved in a more efficient/effective manner

HR structure of SMNet a	• What is the human resources structure of the SMNet? Has this structure helped in achieving the aims of the SMNet? If so, how? • Have there been any capacity building initiatives and supportive supervision provided to members of the SMNet? a. Support from the UNICEF National/State Office b. Trainings i. Design ii. Duration iii. Topics covered iv. Are trainings organized on a regular basis/one-time activity v. Who organizes the trainings? • Is the current HR structure the most efficient use of resources to meet the aims and objectives of the intervention? Can this structure be improved/made more efficient? How?
Linkages with public health system	• What are the linkages of the SMNet with the public health system? a. Government programmes- NRHM/ICDS b. Frontline workers- AWW/ANM/ASHA [Probe for] i. Trainings provided by the SMNet intervention to frontline workers ii. Is the SMNet HR structure at the grassroots level complementary to these functionaries? • Have there been any issues/challenges in working with the public health system? How have these challenges been overcome?
Impact of SMNet	• What has been the impact of the SMNet intervention? a. Output b. Outcome • To what extent has the SMNet intervention contributed to the results of polio eradication programme in the state/district? • To what extent has SMNet been successful in reaching high-risk groups? a. Muslims b. Migrants/Nomads c. Scheduled Castes/Tribes • Has there been any un-intended results/impact of the SMNet intervention? [Probe for] a. Increase in RI b. Better WASH indicators c. Increase in breastfeeding d. Changes in diarrhoea management e. Any other
Challenges and Critical Success Factors	• What have been the major constraints and challenges to the activities of the SMNet? [Probe for gaps in] a. Intervention design b. Operational model c. Implementation d. Training and capacity building

	• How were these challenges overcome? / What would be the best way to overcome these challenges? • What were the main facilitating factors for the activities of the SMNet?
Funding and Monitoring	• What are the resource requirements for the functioning of the SMNet? • What is the budgetary support provided by UNICEF? Please provide details. • Do you believe that the utilization of resources is efficient for the programme? • How can the resource utilization be made more efficient? • What are the reporting/monitoring mechanisms followed by the SMNet intervention?
Sustainability and Replication	• What is the role of the SMNet intervention and the trained HR now that polio has been successfully eradicated? • To what extent can the SMNet be replicated? [Probe for] a. In other contexts/countries b. For other child health interventions • What are the system requirements to ensure sustainability of the approaches and tools of the SMNet? • How far do you think government frontline workers can adopt the tools and supportive supervision aspects of the SMNet? • What are the key learnings from SMNet in the block that can be used to scale up the intervention? • Are there any changes you would like to make to the role/structure/activities of the SMNet in case of replication in other contexts/for other child health interventions?

K. In-depth Interview Guide for Community Mobilization Coordinator

Key Discussion Points	
Overview of intervention	• How long have you been working here? • How did you start working as a CMC in this area? [Probe for] a. How was s/he introduced to the concept of CMC b. How and why s/he decided to work as a CMC • What are your main responsibilities? • What is the immunization status in this area? [Probe for] a. Polio immunization b. Routine immunization • Who are the high risk population groups in this area? • What are the challenges to increasing immunization coverage in these population groups? [Probe for] a. Connectivity b. Cultural barriers c. Psychological barriers • What has been the main approach of the SMNet? • Has the SMNet approach been relevant to achieving the stated objectives? To what extent have the objectives of the SMNet been achieved? What have been the major challenges to achieving these objectives? [Probe for] a. Knowledge and awareness about polio and its spread b. Knowledge and awareness about OPV c. Uptake of immunization services – for polio and routine immunization d. Reaching vulnerable communities and minorities, especially high risk groups •
Training and Capacity Building	• Have you been provided any training during the time you have worked as a CMC? [Probe for] a. What the trainings covered b. How often are trainings held c. Who organizes trainings d. Is there any supportive supervision provided • Do you feel the trainings have been of value to you in your work? If so, how? • How can these trainings be further improved to help you in your work?

Activities	• What are the main activities performed by you as a CMC? [Probe for] a. Social mobilization activities b. BCC activities c. Accompanying families for immunization d. Tracking and following up with missed children e. Conducting house to house immunization f. Building linkages with community leaders, PRI members, religious leaders and institutions etc. g. Working along with government frontline workers h. Any other • What are the main messages communicated by you to the community? [Probe for] a. Polio immunization b. Routine Immunization c. Hand washing practices d. Sanitation e. Breastfeeding f. Diarrhoea management • Have these activities changed over time? How and why? • Do you believe these activities have led to any changes in the immunization status in this area? • What have been the major challenges to these activities?
Linkages with public health system	• Do you work closely with government system and personnel (frontline workers, MOs, programme managers etc.)? • What has been your experience working along with the public health system? • What are the challenges you have faced while working with the public health system? • How have these challenges been overcome?
Impact	• Have you seen a change in the polio immunization KABP of the high risk population groups in this area? • How far do you think this has been due to the activities of the SMNet? • What has been the impact of the SMNet approach and activities? a. Output b. Outcome • Do you think the programme has contributed to achieving the aims of the polio eradication programme in the area? • To what extent has SMNet been successful in reaching high-risk groups? a. Muslims b. Migrants/Nomads c. Scheduled Castes/Tribes • Has there been any other results/impact of the SMNet intervention? [Probe for] a. Increase in RI

	b. Better WASH indicators c. Increase in breastfeeding d. Changes in diarrhoea management •
Challenges and Critical Success Factors	• What have been the major constraints and challenges to the activities of the SMNet? [Probe for gaps in] a. Intervention design b. Operational model c. Implementation d. Training and capacity building • How were these challenges overcome? / what would be the best way to overcome these challenges? • What were the main facilitating factors for the activities of the SMNet?
Sustainability and Replication	• What is the role of the SMNet intervention and the CMCs now that polio has been successfully eradicated? • To what extent can the SMNet be replicated? [Probe for] a. In other contexts/countries b. For other child health interventions • What are the system requirements to ensure sustainability of the approaches and tools of the SMNet? • What are the key learnings from SMNet in UP/Bihar that can be used to scale up the intervention? • Are there any changes you would like to make to the role/structure/activities of the SMNet in case of replication in other contexts/for other child health interventions?

L. In-depth Interview Guide for Frontline Workers

Key Discussion Points	
Overview of intervention	• How long have you been working here? • What are your main responsibilities? • What is the immunization status in this area? [Probe for] a. Polio immunization b. Routine immunization • Who are the high risk population groups in this area? • What are the challenges to increasing immunization coverage in these population groups? [Probe for] a. Connectivity b. Cultural barriers c. Psychological barriers • Are you aware of the SMNet intervention/CMC in this area? If so, o What has been the main approach of the SMNet? o Has the SMNet approach been relevant to achieving the stated objectives? To what extent have the objectives of the SMNet been achieved? What have been the major challenges to achieving these objectives? [Probe for] a. Knowledge and awareness about polio and its spread b. Knowledge and awareness about OPV c. Uptake of immunization services – for polio and routine immunization d. Reaching vulnerable communities and minorities, especially high risk groups
Training and Capacity Building	• Have you worked with the SMNet intervention? • Have you been provided any training by the SMNet intervention? If yes, [Probe for] a. What the trainings covered b. How often are trainings held c. Who organizes trainings d. How are these trainings different from any trainings provided by the government? e. Is there any supportive supervision provided f. Do you feel the trainings have been of value to you in your work? If so, how? g. How can these trainings be further improved to help you in your work?

Activities	• What are the main activities performed by the CMC in this area? Is it different from the activities performed by you? [Probe for] a. Social mobilization activities b. BCC activities c. Accompanying families for immunization d. Tracking and following up with missed children e. Conducting house to house immunization f. Building linkages with community leaders, PRI members, religious leaders and institutions etc. g. Working along with government frontline workers h. Any other • What are the main messages communicated by you to the community? Are these different from the messages communicated by the SMNet workers/CMC? [Probe for] a. Polio immunization b. Routine Immunization c. Hand washing practices d. Sanitation e. Breastfeeding f. Diarrhoea management • Have these activities changed over time? How and why? • Do you believe these activities have led to any changes in the immunization status in this area? • What have been the major challenges to these activities?
Impact	• Have you seen a change in the polio immunization KABP of the high risk population groups in this area? How far do you think this has been due to the activities of the SMNet? • Is there a difference in the polio immunization KABP of the community in areas which are covered by the CMCs compared to other areas in this block? • What has been the impact of the SMNet approach and activities? a. Output b. Outcome • Do you think the programme has contributed to achieving the aims of the polio eradication programme in the area? • To what extent has SMNet been successful in reaching high-risk groups? a. Muslims b. Migrants/Nomads c. Scheduled Castes/Tribes • Has there been any other results/impact of the SMNet intervention? [Probe for] a. Increase in RI b. Better WASH indicators c. Increase in breastfeeding

	d. Changes in diarrhoea management
Challenges and Critical Success Factors	• What have been the major constraints and challenges to increasing immunization coverage in this area? • How were these challenges overcome? / what would be the best way to overcome these challenges? • What were the main facilitating factors for eradicating polio / increasing immunization coverage in this area?
Sustainability and Replication	• What is the role of the SMNet intervention and the CMCs now that polio has been successfully eradicated? • To what extent can the SMNet be replicated? [Probe for] a. In other contexts/countries b. For other child health interventions

M. Focused Group Discussion Guide for Parents Groups

Key Discussion Points	
Overview of health status and polio awareness	• Do you have any children in the age group 0-5? • Where did you have your delivery? • Was your baby given any medicines/immunization drops/injections immediately after delivery? • Are you aware about polio? [Probe for] a. Knowledge about the virus and how it is spread b. Who is susceptible to the virus c. Symptoms d. Ways of prevention e. Cure f. Awareness about OPV and the need for multiple dosage i. How were you made aware about the OPV • Are you aware of any instances of polio in this area? [Probe for] a. How many instances of polio b. When the last instance of polio was seen/heard of c. Medical assistance sought in case of polio infection • What are your perceptions about the OPV? [Probe for] a. Reluctance amongst community to get their children immunized i. Reasons for reluctance b. Awareness for the need for multiple dosages and compliance • Has your child been immunized against polio? [Probe for] a. How many times b. Where was the OPV administered c. Who convinced you to get your child immunized
SMNet awareness and impact	• Are you aware of the Community Mobilization Coordinator? • Have you been approached by the CMC? What are the messages conveyed by the CMC? [Probe for] a. Immunization- RI and OPV b. Breast feeding c. Hand washing d. Sanitation e. Diarrhoea management • What are your perceptions of the role of the CMC? [Probe for]

	a. Acceptability of the CMC b. Faith and trust in the CMC c. Difference between CMC and other frontline workers • Have you ever contacted the CMC? For what purpose? • Have you changed your opinion about health seeking behaviours? Who has influenced you to change your opinion? [Probe for] a. Immunization- RI and OPV b. Breastfeeding c. Hand washing d. Sanitation e. Diarrhoea management • What made you change your mind? [Probe for] a. Material used- calendars/games/posters/flip chart etc. b. Influence of religious/other community leaders • Perceptions about the CMC reaching marginalized communities

N. Focused Group Discussion Guide for Community Leaders

	Key Discussion Points
Overview of health status and polio awareness	• What is the maternal and child health status in this area? • What is the immunization status in this area? • Are you aware about polio? [Probe for] a. Knowledge about the virus and how it is spread b. Who is susceptible to the virus c. Symptoms d. Ways of prevention e. Cure f. Awareness about OPV and the need for multiple dosage i. How were you made aware about the OPV • Are you aware of any instances of polio in this area? [Probe for] a. How many instances of polio b. When the last instance of polio was seen/heard of c. Medical assistance sought in case of polio infection • What are your perceptions about the OPV? [Probe for] a. Awareness for the need for multiple dosages and compliance b. Reluctance amongst community to get their children immunized i. Reasons for reluctance • What are the major challenges to achieving 100% immunization in this area? a. Routine immunization b. Polio immunization
SMNet awareness and impact	• Are you aware of the SMNet intervention? Are you aware of the Community Mobilization Coordinator? • Have you been approached by the CMC? What are the messages conveyed by the CMC? [Probe for] a. Immunization- RI and OPV b. Breast feeding c. Hand washing d. Sanitation e. Diarrhoea management • What have been your interactions with the CMCs? • What are your perceptions of the role of the CMC? [Probe for] a. Acceptability of the CMC b. Faith and trust in the CMC

	c. Difference between CMC and other frontline workers • Have you ever contacted the CMC? For what purpose? • Have you changed your opinion about health seeking behaviours? Who has influenced you to change your opinion? [Probe for] a. Immunization- RI and OPV b. Breastfeeding c. Hand washing d. Sanitation e. Diarrhoea management • What made you change your mind? [Probe for] a. Material used- calendars/games/posters/flip chart etc. b. Influence of religious/other community leaders • Has the presence of the CMC helped to reach people otherwise ignored by the public health system? If so, how? • Do you believe the CMC has been successful in helping achieve the aims of the polio eradication programme in this area? How? What were the major success factors? What were the major challenges? How were these challenges overcome?

ANNEXURE IV

VALUE FOR MONEY ANALYSIS

VALUE FOR MONEY ANALYSIS

1. The concept of value for money (VfM) has been central to health policy and the delivery of healthcare for some time. VfM represents the ratio of some measure of valued health system outputs to the associated expenditure. The underlying intention in any VfM analysis is to offer insight into how resources are successfully transformed into valued outcomes. Value for money (VfM) can be defined in general terms as the relationship between the outcomes resulting from programs or interventions and the resources expended on them. Value for money can therefore be increased by cutting expenses, but also by spending more on highly effective interventions. Value for money is closely related to cost-effectiveness, but the latter term is typically applied to particular interventions, while value for money is also used in assessments of entire programs and takes into account the choice of interventions, strategies for delivering them, and overall management and administration. The main reasons for an interest in VfM relate to accountability: to reassure payers/donors, that their money is being spent wisely, and to reassure users/patients that their claims on the health system are being treated fairly and consistently.

2. There have been numerous efforts to implement VfM measurement schemes. These include whole-system productivity estimates, as attempted by the World Health Organization (WHO) in the World health report (WHR) 2000 and by the Office for National Statistics (ONS) in UK trends over time. These comprehensive, whole-system measures are experimental methods. More practical approaches have offered useful but incomplete indicators of VfM. All efforts have encountered severe methodological challenges and lack of data in key domains. Because of data limitations, many VfM analyses are forced to rely on measures of outputs (quantities of activities) rather than measures of the eventual outcomes for patients and society. This can be unproblematic if the outputs are known to lead to good eventual outcomes and there is known to be little variation in quality of providers. However, it clearly can be seriously misleading if this is not the case. In addition to the challenges in specifying inputs, outputs and outcomes, assessment of VfM in healthcare is often further complicated by the need to take into account influences on performance that lie outside organizational control, such as - differences in the characteristics of citizens being served; the external environment like, geography, culture, and economic conditions; the activities of other related agencies; the quality of resources being used, including the capital stock; previous organizational efforts in prevention and health promotion.

3. Properly used, however, VfM offers a unifying concept with which to evaluate healthcare interventions, inform the allocation of resources within a health system/programme, and assess the performance of components of the health system/programme.

Methodology

4. The initial plan of this evaluation was to undertake a cost-benefit analysis for SMNet as a comprehensive programme. However, the data demands of a full cost-benefit analysis are prohibitive. There were severe gaps – in both input (cost) and output data – for the SMNet programme. Continuous cost data for disaggregated allocations for the specified budgetary/expenditure heads (such as human resources, programme intervention, third-party management fees) was made available only from 2007 to 2012 for the two states. Output related data points were made available for only one year - from only

2011 to 2012 - for Bihar, although this was available for UP from 2007 onwards, albeit with gaps for certain geographical units.

5. Based on the nature of data available and the disaggregated analysis required, the revised plan was to undertake a VfM. Unlike a cost-effectiveness or cost benefit analysis, VfM gives a more nuanced understanding of where efficiencies lie, rather than a more opaque encompassing metric. In a complex programme like SMNet, with lack of continuous data and external influences with potential impact on the outcomes, VfM is a better analysis. VfM has the advantage of providing partial indicators that cost-effectiveness or cost-benefit analyses often do not.

6. The second stage of design was to select the appropriate method for VfM. There are primarily 2 broad approaches used - (i) statistical methods, mainly stochastic frontier analysis (SFA), based on the conventional econometric regression models; and (ii) descriptive methods based on a class of techniques known as data envelopment analysis (DEA).

7. In the context of discontinuous data available for the current evaluation, techniques like SFA face constraints that are similar to undertaking a cost-benefit analysis described above. Therefore, a VfM based on the descriptive approach - ***data envelopment analysis (DEA)*** was adopted as the most appropriate methodology for the current evaluation.

Descriptive Data Envelopment Analysis (DEA)

8. DEA is applicable for programmes that 'envelop' various cost efficiency parameters on the basis of a composite estimate of VfM, using partial/process indicators. Compared to SFA, DEA has some attractive features. It requires none of the restrictive assumptions required to undertake regression methods. It can handle multiple inputs and multiple outputs simultaneously, and it requires none of the stringent model testing that is required of statistic techniques. However, from the point of view of benchmarking, DEA has the profound drawback that it permits flexibility in the valuation weights attached to each output. The method is agnostic about the valuation of outputs in the sense that it allows each aspect of the programme to be judged using valuations that show it in the best possible light. Thus DEA measures technical efficiency, not overall cost-effectiveness. This appears to contradict the principle that organizations should be evaluated on a consistent basis, and has also exposed the technique to criticism (Stone, 2002). For this reason, many commentators advocate the use of DEA as a useful tool for exploring large and complex datasets but not as regulatory device for passing judgments or setting VfM targets.

9. This analysis focuses on retrospective VfM measurement, emphasizing technical efficiency as well as different aspects of management and allocative efficiency. The aim of the VfM was to measure the ratio of SMNet coverage for eradication of polio (in terms of reaching the last mile), to the expenditure incurred by UNICEF on the programme. The static VfM assumes that contemporary inputs give rise to contemporary outcomes. However, in most health interventions, especially in case of complex programmes like SMNet, there is a need to adopt a longer time perspective. Some of today's outcomes arise from interventions in previous periods. And some of today's endeavours affect outcomes only at some time in the future. This is particularly relevant for disease eradication – which involves an

unspecified future time horizon, and the potential cost (economic and social) of missing out even one case is effectively a failure of the entire programme. Therefore, when analyzing the VfM of SMNet, this evaluation has adopted a longer time horizon – 10 years post the evaluation period i.e. 2022. This is done by adopting the financial modeling or scenario analysis technique of calculating Present Value (PV) for the future 10 years.

10. VfM can be examined in a number of ways, including:

- the economy with which physical inputs are targeted
- the extent to which the chosen inputs are combined in an optimal mix
- the allocative efficiency of the programme's chosen inputs
- the administrative efficiency with which the programmes is managed to produce desired outputs
- the technical efficiency with which physical inputs are converted into physical outputs

11. Each of these concepts scrutinizes a particular aspect of the transformation process. All these measures give important diagnostic information because they allow us to pinpoint where inefficiencies are arising.

Final Data

12. Based on the data made available to the evaluation team, the following input and output data points were considered for VfM

Table 4.1: Input data for VfM (all figures in INR million)

INPUT DATA

Total costs on SMNet, disaggregated by states, including costs incurred at country office and state offices, and payments towards third party management at the state and decentralized levels (from 2007-12)

Disaggregated cost data for UP and Bihar by allocations on human resources, third party management and IEC activities (from 2007-12)

Disaggregated data for UP and Bihar for administrative costs, including human resources at national and state levels, administrative costs at state levels, management fees to third party management agency (from 2007-12)

	2007	2008	2009	2010	2011	2012
National Office						
Human Resources	**18.33**	**18.70**	**19.08**	**19.47**	**19.87**	**20.27**
Uttar Pradesh						
Human Resources	**11.55**	**13.90**	**14.41**	**15.08**	**15.84**	**16.38**
Third Party Management	**152.40**	**169.77**	**185.69**	**223.179**	**234.54**	**106.15**
IEC Activities	**8.05**	**9.37**	**8.91**	**10.85**	**10.62**	**5.36**
Miscellaneous	**5.80**	**9.72**	**10.35**	**30.67**	**39.15**	**166.42**
Total per year	**177.81**	**202.77**	**219.37**	**279.79**	**300.17**	**294.33**
Total 2007-2012	**1,474.27**					
Bihar						
Human Resources	**9.80**	**12.05**	**12.50**	**13.07**	**13.72**	**14.19**
Third Party Management	**57.23**	**95.18**	**104.26**	**104.90**	**142.90**	**139.98**
IEC Activities	**43.85**	**48.71**	**45.36**	**55.78**	**65.78**	**58.87**
Miscellaneous	**3.85**	**17.34**	**8.31**	**12.33**	**2.50**	**1.89**
Total per year	**114.74**	**173.28**	**170.44**	**186.11**	**224.92**	**214.95**
Total 2007-2012	**1,084.46**					
Total Human Resources per year	**39.68**	**44.65**	**46.00**	**47.64**	**49.44**	**50.85**
Total human resources 2007-2012	**278.29**					
Total Third Party Management per year	**209.64**	**264.95**	**289.95**	**328.08**	**377.45**	**246.14**
Total Third Party Management 2007-2012	**1,716.24**					
Total miscellaneous per year	**9.65**	**27.06**	**18.67**	**43.00**	**41.66**	**168.32**
Total miscellaneous 2007-2012	**308.38**					

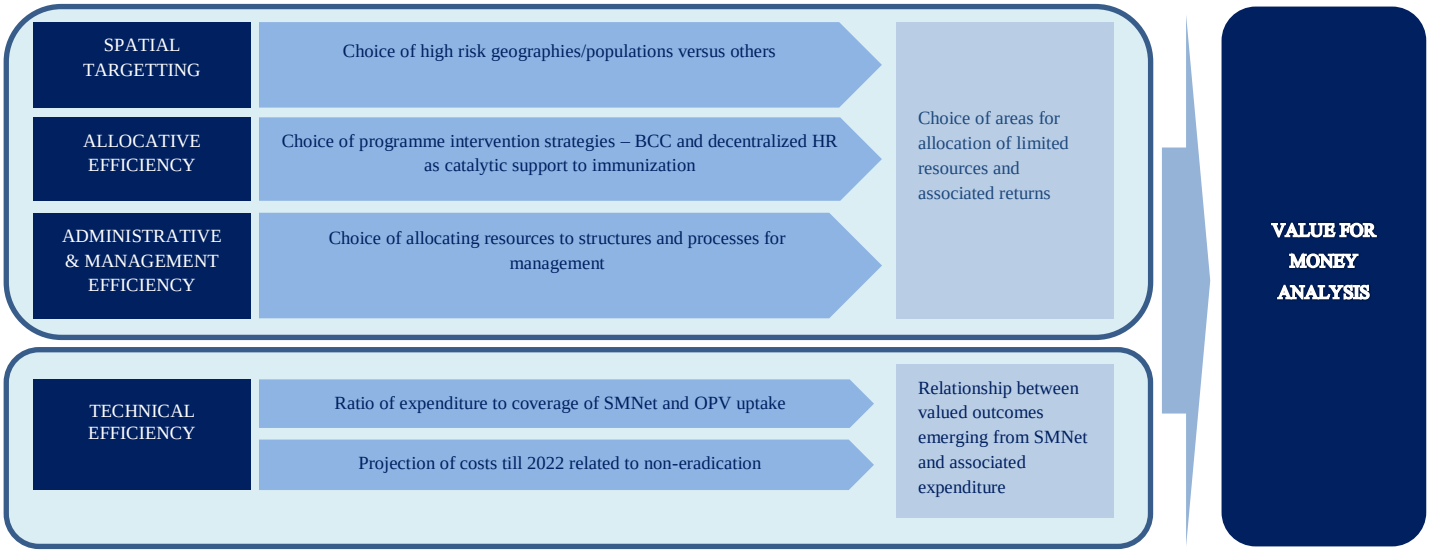
Table 4.2: Output data for VfM (in million)

OUTPUT DATA						
Coverage of SMNet as represented by CMC presence for households (2007-12 for UP and 2011-12 for Bihar)						
OPV uptake in SMNet areas as represented by the total number of children immunized (2007-12 for UP and 2011-12 for Bihar)						
	2007	**2008**	**2009**	**2010**	**2011**	**2012**
Households covered by SMNet						
Uttar Pradesh	1.75	1.83	1.84	1.90	1.96	2.23
Bihar					0.26	0.34
Children Immunized						
Uttar Pradesh	1.65	1.68	1.61	1.63	1.60	1.72
Bihar					0.27	0.35

Indicators chosen for Analysis

13. On the basis of document review and interviews with stakeholders from UNICEF about the evolution of SMNet, it is evident that the programme reflects a series of choices made by UNICEF in terms of budget allocation during planning and implementation. These choices can be organized into a simple hierarchy, which is in turn, used as a useful framework for analyzing value for money.

Exhibit 4.3: Framework for Value for Money (VfM) Analysis



Limitations of the Study

14. The study focused on technical efficiency or performance assessment of VfM. In contrast to allocative efficiency measurement, the performance assessment role of VfM is underdeveloped. There has hitherto been a reliance on partial indicators of VfM. Incompleteness was of two forms: omission of some aspects of the transformation from resources to valued outcomes (for example, no health impact

data), or omission of some of the intended functions of the intervention (for example, no specified/disaggregated outcome data for different interventions).

15. Continuous cost data for disaggregated allocations for the specified budgetary/expenditure heads (such as human resources, programme intervention, third-party management fees) was made available only from 2007 to 2012 for the two states. This reduced the accuracy of VfM analysis for SMNet since its inception.

16. Output related data points were made available for only one year - from 2011 to 2012 - for Bihar. Although this was available for UP from 2007 onwards, there were gaps for some of the districts. In consultation with UNICEF, it was decided that these districts will not be included for the analysis and the total sample will be adjusted accordingly. These data gaps limited the accuracy of output estimation for calculation of technical efficiency of SMNet.

17. As cost data for the initial years of the programme were not made available for VfM, the capital expenditure in terms of purchase of infrastructure/related goods, equipment, etc. have not been accounted for in this analysis. This reduces the estimation of inputs for VfM, thereby overestimating a positive value for money.

18. Disaggregated data on budgets and expenditures for the third party organization contracted by UNICEF to operationally manage SMNet in UP and Bihar were not made available for this evaluation. Additionally, disaggregated costs under the 'miscellaneous' budget head were not available to the evaluators. This limited the ability to sensitively analyze allocative and management efficiencies.

Results and Discussion

19. Based on the framework of descriptive DEA, a VfM analysis for the different parameters for SMNet as mentioned in Exhibit 4, are presented in this section.

Spatial Targeting

20. One of the first decisions that donors have to make is *where* to intervene. These choices - *spatial targeting* – have significant implications for VfM, since resources are limited and their investment in one area versus another will determine the relative outputs or "value" that emerges, as a dollar of donor money could have very different impact in different countries, depending on the burden of the disease, the tools available, and the commitment and capacity of the recipient governments.

21. In theory, at least, this heterogeneity in socio-cultural contexts, prevalence and transmission of polio represents an opportunity to get better value for money by improving the targeting of interventions and by better tailoring the mix of interventions to local conditions. It is seen SMNet has successfully capitalized on this variation in transmission risk to reduce expenditure, and therefore, increase value for money by targeting high-risk-areas (HRAs) and high-risk-groups (HRGs).

22. Being a resource intensive programme in terms of intervention strategies, SMNet has focused its efforts on certain regions – UP and Bihar which are the two most endemic areas with the highest WPV

prevalence in India at the time of initiation in 2001-02, and the most affected 107 districts within these two states. In terms of population groups, SMNet has adopted a HRG strategy and focused on high risk groups like migrant workers, construction workers, brick-kiln workers, nomads and residents of urban slums. Details of this Underserved Strategy are presented in the section on Effectiveness. These careful targeting strategies have led to important gains to the regions or populations where the programme can do the greatest good, with the fixed amount of investment.

Allocative Efficiency

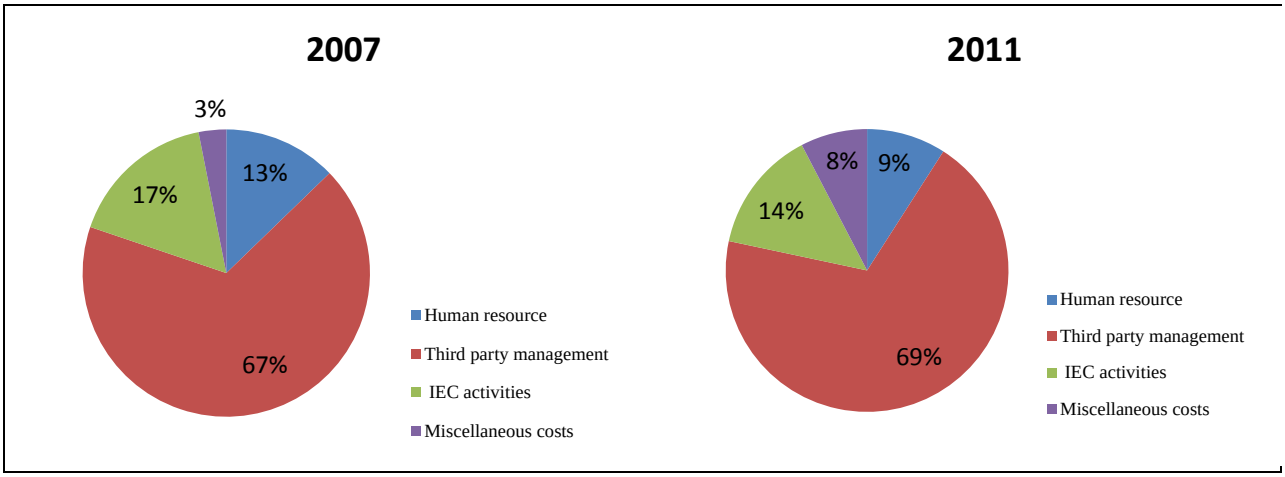
23. From a value-for-money perspective, choices about the allocation of resources among interventions and across regions and populations contribute to allocative efficiency. Allocative efficiency indicates the extent to which limited funds are directed towards purchasing the correct mix of services/interventions in line with the preferences of users or to achieve the stated objectives of the programme. To increase value for money, programs should spend money on particular interventions only if they are effective in a particular setting. The potential for efficiency gains from better choice of interventions thus depends on the availability of interventions that can substitute to some degree for one another. Some important activities influence value for money by making other prevention or treatment interventions more effective or less costly. Behavior change communication (BCC) has been proven to be one such catalytic intervention.

24. Based on the strategy of SMNet, focusing on BCC to increase the acceptance of OPV, it is evident that such positive value-for-money decisions were made. SMNet uses a resource-intense strategy, but the increases in effectiveness that it derives as a catalytic intervention to reduce resistance towards OPV – the only effective way to prevent polio – have positive implications for VfM. The reductions in refusal rates and in resistance to OPV in communities are clearly presented in Exhibits 7, 8, 23 and 25 in the sections on Effectiveness and Impact.

25. Another strategy that SMNet has adopted is the addition of its interventions to the already existing public immunization programme, rather than duplicating any service. For all house visits, each CMC is attached to the existing teams (teams A and B) formed under NPSP. This enhances the quality of household contacts by adding the behavioral change aspect to the already present surveillance personnel of the teams. In Bihar, before the polio outbreak in 2009, the model of SMNet leveraged the existing cadre of AWWs in ICDS, rather than introducing CMCs. This enhanced convergence with the public system, as well added to a positive VfM, as the catalytic nature of the SMNet strategy is reinforced and the consequent gains in OPV uptake and delivery through the public health system are significant.

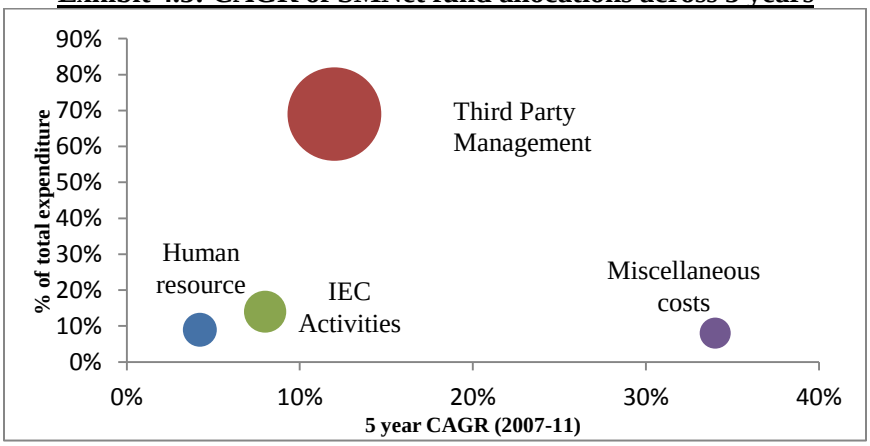
26. Allocative efficiency also pertains to how the funds within SMNet were allocated amongst different heads. The following exhibits present the allocations and changes from the considered base year to the current year.

Exhibit 4.4: Comparison of fund allocation within SMNet



27. From the above exhibit it is seen that the majority of funds within the SMNet programme have been allocated towards 'third party management'. This head includes the actual implementation of the programme – with costs of frontline workers (the CMCs, BMCs, DPCs and DUCs) who are the primary functionaries. The allocation under this head has not changed significantly between 2007 and 2011. The state level human resource costs have also remained almost the same between the two comparison years – indicating that SMNet has efficiently managed the programme with available HR. The slight decrease in this head in 2011 may be explained by the reduction of human resource positions within the programme at the state and national levels in preparation for project- closure and sustainability. IEC activities indicated here are additional to all the social mobilization activities and BCC interventions that are undertaken within the third party management category of allocations. Again, IEC allocations have remained constant between the two comparison years, indicating a consistent level of inputs to field level interventions. Allocations under 'miscellaneous' have increased between 2007 and 2011.[2] However, reasons for this are not clear due to the lack of disaggregated data under this head.

Exhibit 4.5: CAGR of SMNet fund allocations across 5 years



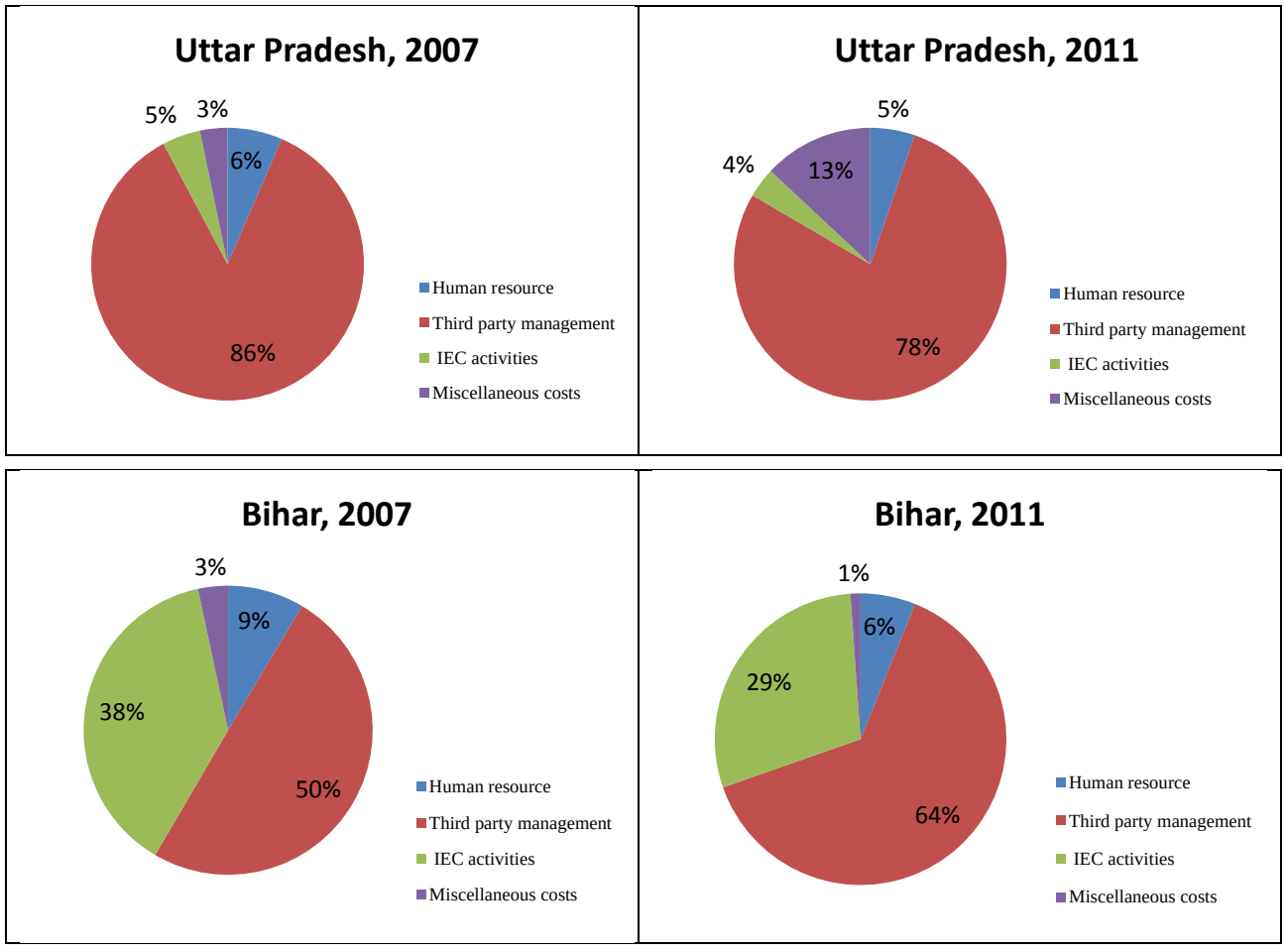
[2] The allocation under 'miscellaneous' in Uttar Pradesh was 57% in 2012. This was a significant increase compared to the previous years' average of 7% in the state. Disaggregated data related to this was not made available for this analysis. Due to this, 2011 is considered as the cut-off year for analyzing allocative efficiency.

28. The compound annual growth rate (CAGR) was calculated for the 5 years (2007 – 11), taking the allocations for the current year (2011) into consideration. CAGR is not the actual return in reality, but an imaginary number that describes the rate at which an investment would have grown if it grew at a steady rate. The compound annual growth rate is calculated by taking the nth root of the total percentage growth rate, where n is the number of years in the period being considered – in this case, 5. The formula used for CAGR was:

$$CAGR = \left(\frac{\text{Ending Value}}{\text{Beginning Value}}\right)^{\left(\frac{1}{\#\text{ of years}}\right)} - 1$$

29. From exhibit 6 it is seen that the CAGR for third party management grew the maximum, followed by the allocations towards IEC activities. This shows a positive VfM for SMNet since both these allocations are primarily towards operational and implementation activities, rather than administration. For a public health intervention in a resource-poor context, a higher growth in investment towards actual services – such as the deployment of CMCs and costs of BCC interventions – is the most cost-efficient.

Exhibit 4.6: Comparison of fund-allocation within SMNet in Uttar Pradesh and Bihar



30. From the above exhibit it is seen that in both states the majority of funds within the SMNet programme has been allocated towards 'third party management'.

- In UP, the decrease in 2011 in this allocation head, compared to 2007, is due to the reduction in scope of the field level interventions – mainly reduction in the number of frontline workers and in the number of direct BCC activities in areas that have shown improvement. In contrast to UP, the allocation in Bihar under this head has increased in 2011 to 64% from 50% in 2007. This increase is due to an increase in the number of CMCs deployed in the state after the 2010 outbreak of polio.
- The Bihar model of SMNet had earlier focused on social mobilization and behavior change communication through Anganwadi Workers from the ICDS rather than recruit CMCs like the UP model. However, after 2010, additional CMCs were deployed in Bihar, leading to increase in costs towards the 'third party management' head. Unlike the operational level HR, the state level human resource allocations are very similar in the two states, and have also remained almost unchanged over the years.

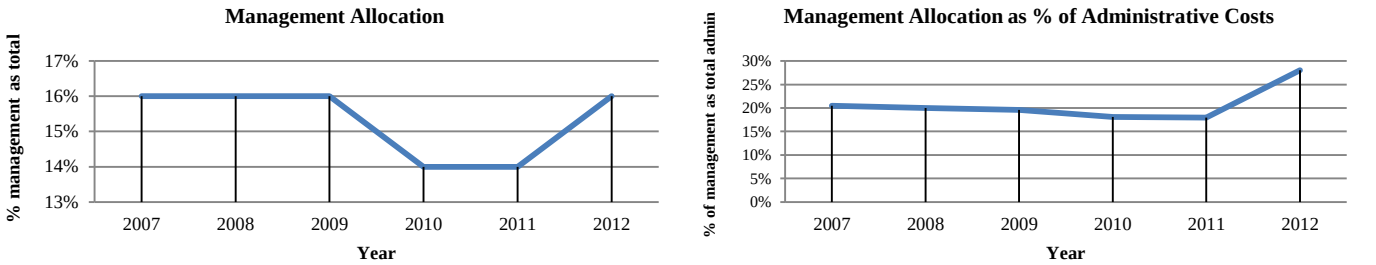
31. IEC activities constitute a significant proportion of fund allocation in Bihar in comparison to UP (where it was negligible), although this has decreased from 38% in 2007 to 29% in 2011. However, it may be noted here that in absolute terms, the IEC expenditure in Bihar has increased from 2007 to 2011. The allocative decrease of IEC is mainly due to the increase in expenditure for third party management as a proportion of total expenditure (See exhibit 1.6 above). Compared to UP, the context and strategy of SMNet in Bihar was different. In Bihar, SMNet/UNICEF incurs the costs of IEC activities related to the National Polio Campaign on behalf of the state government. Although the Government of Bihar has now started covering a part of these costs, this still contributes to the relatively larger IEC allocation in the state. As the programme has been preparing for an end, and field level activities are being pared down, the allocations under IEC has decreased. Simultaneously, Bihar has also recruited more CMCs over the years and this has added to the third party management allocations. Allocations under 'miscellaneous' have increased by 10% between 2007 and 2011 in UP. The reasons for this increase have not been made available. This may be explained by the fact that the programme is preparing for an end, and in order to sustain some of the activities during this closing/transition phase, expenses have been categorized under this head. In contrast, these allocations have reduced in 2011 in Bihar.

32. From the above analysis, it is seen that the two states – UP and Bihar – have managed the allocations differently, and have also responded to the transitions for project closure needs in different ways. This indicates that the states had the flexibility and mandate to adapt to contextual needs, and therefore, maximize allocative efficiencies by being adaptive to local realities. This analysis is not sufficient to conclude which state had better allocative efficiency.

Administrative and Management Efficiency

33. Allocating resources appropriately, purchasing commodities, and delivering interventions require planning and management at many levels. Thus *administrative and management efficiency* is a crucial determinant of value for money, although it is difficult to define and harder to measure. It is not enough to consider the share of total expenditure going to overhead although reducing administrative expenses might free resources to be spent on actual interventions, spending more on management and training might in some cases improve planning and implementation and thus increase overall efficiency. For this reason it is difficult to determine the "right" amount to spend on program management.

Exhibit 4.7: Management allocation within SMNet across 6 years



34. The management head for the purpose of this VfM includes HR costs for UNICEF national and state offices along with management fees for third party management (excluding salaries of the community mobilizers at operational levels i.e. district and sub-district). Administrative costs include all three heads as well as salaries of the community mobilizers at operational levels. From the graphs in Exhibit 8, it is seen that the allocation of costs to management expenditures have been similar across the 6 years (2007-12) – at an average allocation of 15% of the total budget to management heads. A similar trend is seen in the analysis of management allocation as a percentage of administrative costs. The allocations have remained almost constant (an average of 19%) without significant variations from 2007 to 2011. This is a positive implication for VfM, indicating that programme expansions have been managed without increase in administrative costs– thus making it more sustainable and feasible for continuation in the current system or replication in other contexts. Finally, as SMNet and polio eradication programmes rely heavily on donor funding, the way these resources are provided has important implications for value for money. The way SMNet has managed its administrative costs can provide lessons for improved allocation of donor money to allow more of the resources to reach the field and to reduce the administrative burdens that they impose on national polio programmes. A point to be noted here is that the capital costs incurred in SMNet have not been included due to the unavailability of data, potentially leading to an overestimation of cost efficiencies.

35. However, from exhibit 4.7, it is seen that there has been a rise in management costs in 2012 to 28% of administrative allocations going towards this head. This is mainly contributed by the increase in management fees to the third party organization. From a Value-for-money and sustainability of cost efficiency point of view, the increase in management allocation is not a good trend since the programme is in its end-phase and is preparing for mainstreaming/replication.

Technical Efficiency

36. Technical efficiency indicates the extent to which a provider/donor is securing the minimum cost for the maximum quality in delivering its agreed outputs. The prime interest in technical efficiency is in operational performance assessment and the extent to which resources are being wasted. The main focus of technical efficiency is therefore retrospective. The resource allocation role of VfM measurement is relatively well understood, albeit mainly in the context of individual treatments. By contrast, the performance assessment role of VfM measurement is underdeveloped.

37. Technical efficiency estimates the relationship between the benefits emerging from SMNet and its associated costs. For the purpose of this VfM analysis, the 'input' is considered as the costs incurred

by SMNet. For quantifying 'outputs' as a proxy for emerging benefits of the programme, 2 indicators have been considered – (i) coverage of SMNet, and (ii) uptake of OPV. As mentioned above, these are partial/process indicators (as opposed to impact indicators) used for the adopted DEA method for estimating technical efficiency. In this section, we have calculated the ratio of cost to each of these outputs.

Coverage of SMNet

38. This was calculated by the total number of rounds in SMNet areas in both states for each of the 6 years under consideration – 2007 to 2012 (as seen in Table 9 above. Since the number of CMCs varied across years, especially in case of Bihar, the median number of CMCs was considered. The median coverage of households and of children in SMNet areas for both the states was used in order to take a representation and account for variations across years. Adjusting for the median number of missed children in each of the 6 years for both the states, the total estimated coverage of children in the 0-5 years age group was calculated. Total cost data as shared by UNICEF for all the 6 years (2007-2012) was considered as 'input' data. The value for money was estimated as the cost of covering each household and each child for both states. This cost amounted to INR 132.00 per household covered per year in UP and INR 774.00 per household covered per year in Bihar. The average cost to coverage ratio for each child for UP was 167.50 and 726.76 for Bihar. The significantly higher costs incurred in Bihar may be explained by the limited number of CMCs deployed in Bihar (since the strategy was primarily to involve AWWs). Since data for the number of AWWs in SMNet areas with inputs from the programme (in terms of disaggregation for trainings, IEC/BCC material etc.) were not available, the proxy of SMNet coverage of median number of CMCs and of households/children covered were an underestimation of output. In addition, for a mean coverage estimation, while in case of UP, the costs incurred by the programme have shown a higher coverage due to the availability of data for 6 years (2007-12), in Bihar the outputs appear limited due to the concentration of coverage data for only 2 years, for comparable amounts of costs incurred by the programme.

39. Given the limitations with the Bihar data, the costs to coverage ratio for UP is considered for a more realistic VfM analysis. In the absence of comparable data available for programmes similar to SMNet, the average cost of providing OPV in high prevalence countries (like India) estimated by the Global Polio Eradication Initiative (GPEI) – of $3.26 per child per year[3] – was considered. Although this is the cost of immunizing a child with OPV, the catalytic nature of the SMNet strategy renders a positive value for money. Coverage in case of a programme like SMNet, is not restricted to OPV alone, but to a range of other behaviours and practices that can be improved in the community through regular contact of a trained resource person at a sub-block/village level. These may include routine immunization, breast-feeding and child nutrition, maternal health, sanitation and hygiene to name a few. In view of the potential scope of the CMC and supportive structures of SMNet, the closest comparison can be the ASHA of the NRHM. Although there has been no conclusive costing of the ASHA Programme (including all of its associated costs), from a broad budget allocation, the cost per ASHA per year is approximately INR 82,000.00 (INR 10,000.00 for each state towards training, drug kit, other resource material and uniforms, etc. and INR 72,000.00 that may be earned as incentives by a ASHA in a year, considering an amount of INR 6000.00 per month). With a normative coverage of 1000 people i.e. 250

[3] GPEI.2012. Economic Case for Eradicating Polio.

households, the cost per ASHA per year is INR 328.00.[4] Compared to this, the strategy of CMCs within SMNet appears to have cost-efficiencies and a higher value for money.

OPV Uptake

40. This was calculated by the number of children in the 0-5 years age group who were immunized with OPV. Considering that the main objective of SMNet was to increase the uptake of OPV in order to eradicate polio, immunization was one of the main outputs of the programme. The cost to reach each child was calculated with total costs of SMNet (provided by UNICEF) and the number of children receiving OPV for the two states. The cost was INR168.00 in UP and INR743.00 in Bihar. Again, the amount in Bihar is an overestimation, due to the lesser number of CMCs present and therefore, lesser coverage of children.

Projection of costs for the next decade and costs of non-eradication

41. Calculation of projected costs is particularly relevant for disease eradication – which involves an unspecified future time horizon, and the potential cost (economic and social) of missing out even one case is effectively a failure of the entire programme. The projection of present value was undertaken to derive an estimation of the cost of implementing SMNet with the intervention strategies and inputs deployed in the current year (2012) over the next 10 years – till 2022. This was done by adopting the financial modeling or scenario analysis technique of calculating Present Value (PV).

42. The real growth is the percentage change in the total cost of SMNet. Inflation data has been taken at the actual rate of inflation for the historical cost data (from 2007-12). For the projected cost data, inflation has been considered at 9% (for 2013) with a declining trend to reach 5% in 2022. This is the accepted practice for projecting present values for developing economies. The nominal growth is the sum of real growth and the rate of inflation. The forecasted value of sustaining SMNet at the current level of intervention for the next 10 years till 2022 is INR 8.11 billion. The total amount of money spent by SMNet from 2007 to 2012 is INR 2.67 billion. Based on this figure, the projected costs of continuing SMNet at the current resource level may be comparable in nominal terms to the money that has already been spent by the programme for a similar time period.

43. This report offers a forward-looking perspective on the benefits of eradication using updated cost inputs. A detailed review of published literature and document review was undertaken to estimate the extrapolated costs and consequent benefits of polio eradication. The findings of this VfM analysis are also consistent with available literature on polio eradication, establishing core economic arguments for continuing to invest in this area. Two alternatives to eradication were considered: relying solely on the existing routine immunization (RI) infrastructure, and a control policy aimed at keeping the number of polio cases below a certain annual level. Consistent with past research,[5,6] relying on current levels of

[4] All calculations of ASHA incentives (the maximum amount that an ASHA can earn through incentives), household coverage norms, and disaggregated values under components of the ASHA Programme have been sourced from State Programme Implementation Plans (PIPs), national guidelines and budgets from the Ministry of Health and Family Welfare.

[5] Duintjer Tebbens RJ, Pallansch MA, Cochi SL, Wassilak SGF, Linkins J, Sutter RW, Aylward RB, Thompson KM. Economic analysis of the Global Polio Eradication Initiative. Vaccine 2011;29(2):334-343. This study estimated total net benefits of $40-50 billion for the 104 countries that benefit from the GPEI over the period of 1988-2035, with an additional $17 billion or more arising from delivering Vitamin A as part of polio vaccine campaigns.

routine immunization would lead to a rapid resurgence of polio cases and result in hundreds of thousands of paralyzed children annually within a number of years. Pursuing a strategy of control may be less expensive than eradication in the next few years, but the cumulative costs of this approach over time (operational costs, but also productivity losses and treatment costs) would quickly overtake the costs of eradication. Evidence suggests that compared to the alternatives available, eradicating polio is the most cost-effective choice based on the benefits from eradicating polio alone.[7] Also, these benefits would apply to all the countries where UNICEF supports SMNet or other contextualized BCC programmes for polio and do not take into account the additional benefits possible over a longer time period globally.

44. The second core argument demonstrates the potential benefits that SMNet will bring to other health programmes. In the past, these contributions were largely opportunistic. With the use of CMCs and other SMNet functionaries in public health programmes, or as an addition to the ASHA under NRHM, the cost-efficiencies are significant. The section on coverage of SMNet under technical efficiency supports this argument. According to evidence, the Bihar polio program not only achieved eradication but simultaneously contributed to increasing RI coverage from 19% in 2005 to 67% in 2010.[8] These increases have contributed to significant economic benefits, cost efficiencies and sustainability.

45. While the economic benefits of investing in eradication are clear, experience has shown that gains in the battle against polio are precarious. Until eradication is completed, the world remains at risk of the disease reemerging, resulting in tragic, avoidable health outcomes as well as the potential for increased costs. Eradication will require a concerted, focused effort, along with full investment. Relying on routine immunization is the least expensive option in terms of operational costs. However, the current immunization infrastructure is insufficient to create enough population immunity against the poliovirus in high-risk geographies. This would lead to resurgence in the disease to 200,000 cases of paralysis a year within five years (as per an estimate of GPEI). When fully accounting for treatment expenses and the economic losses associated with these cases, the cumulative costs of relying on RI over the next 20 years exceed $35 billion. The net benefit of eradication would thus be $19-25 billion over the same period.[9]

46. It has been suggested that funds spent on polio eradication could instead be directed at strengthening the routine immunization infrastructure in countries where it is weak. However, it would take years to strengthen systems in India and in most other endemic countries sufficiently. Relying on current levels of routine immunization, particularly in the countries most at risk for polio, would lead to a rapid resurgence of polio cases and result in hundreds of thousands of paralyzed children annually within a number of years. According to government estimates, immunization coverage in India is only

[6] Thompson KM, Duintjer Tebbens RJ. Eradication versus control for poliomyelitis: An economic analysis. The Lancet 2007;369 (9570):1363-71. This prospective economic analysis of eradication versus control demonstrated that pursuing a policy of control in perpetuity implied greater health and financial costs than eradication.

[7] Thompson KM, Duintjer Tebbens RJ. Eradication versus control for poliomyelitis: An economic analysis. The Lancet 2007;369 (9570):1363-71. This prospective economic analysis of eradication versus control demonstrated that pursuing a policy of control in perpetuity implied greater health and financial costs than eradication.

[8] GPEI.2012. Economic Case for Eradicating Polio.

[9] GPEI.2012. Economic Case for Eradicating Polio.

61%.[10] In such contexts, to keep polio incidence low, supplemental immunization activities (SIAs) would still be required – involving significant financial resources.

47. Therefore, eradication efforts through universal coverage of OPV reinforced with BCC/social mobilization interventions to sustain the community based acceptance and access of the vaccine appears to be the most appropriate way forward till such time that the RI infrastructure is suffieciently strengthened.

Key findings from Value-for-Money Analysis

- SMNet has harnessed positive value for money through **spatial targeting** –with focused interventions for high risk areas and high risk groups, to achieve the highest impact.
- SMNet has shown **allocative efficiency** in:
  - Selection of highly effective interventions (based on evidence)
  - Allocating resources within programme components – particularly focusing on operations/implementation while keeping administration to minimum
- SMNet has shown **management efficiency** by keeping associated management costs under control. However, the management allocations as a component of administrative costs have increased in 2012 – a concern for cost-efficiency and sustainable mainstreaming/replication of the programme.
- SMnet has shown **technical efficiency** in:
  - Cost to coverage ratio of reaching households
  - Cost to coverage ratio of OPV uptake and number of children immunized
- Based on **cost projections** for the next 10 years, and triangulating with literature review/existing evidence, SMNet supports the case for polio eradication interventions and continuation of comparable activities in order to prevent a resurgence of polio cases in India as well as to account for the global benefits of eradicating the disease.

[10] Ministry of Health and Family Welfare, 2012. Accessed from http://pib.nic.in

ANNEXURE V

META-ANALYSIS

META-ANALYSIS

1. In order to allow for an objective appraisal of the evidence available, a meta-analysis was undertaken to synthesize empirical evidence retrieved from the sample of studies.

2. A meta-analysis systematically combines relevant qualitative and quantitative study data from selected studies to develop a conclusion that has greater statistical power. This conclusion is statistically stronger than the analysis of any single study, due to increased numbers of subjects, greater diversity among subjects and accumulated effects and results. The integration of the results of different independent studies helps determine the trajectories of the awareness, practice and the communication intervention.

3. The TOR issued by UNICEF for this evaluation included carrying out a meta-analysis of relevant KAP studies undertaken in UP and Bihar. The aim was to understand the composite outcome/effect of the SMNet interventions on knowledge, attitudes, behaviours and practices (KABP) in the communities.

METHODOLOGY

Final Sample

4. Based on the TORs, 4 KABP studies were identified by UNICEF for the Meta Analysis. These were conducted in the specified high-risk areas during 2009, 2010, 2011 and 2012.

5. The characteristics of these studies are:

- The studies had been conducted within the SMNet intervention duration, i.e. 2001-2012
- The study samples included high-risk areas for polio in Uttar Pradesh and Bihar
- The studies used randomization for sampling
- The study samples were not been less than 4000 individuals
- The studies measured community level SMNet intervention, and knowledge, attitudes, behaviours and practices about polio
- The studies had a 95% confidence interval

6. The study conducted in 2009 had to be excluded from the final sample due to gaps in data – this did not measure the presence of frontline workers (such as the Anganwadi Worker of the ICDS or the Community Mobilization Coordinator of SMNet), and the community's interaction with these workers regarding polio.

7. The final sample, therefore, included 3 studies from 2010, 2011 and 2012.

8. An examination of the sample revealed the following limitations:

- Due to the absence of impact evaluation through an experimental design, the meta-analysis was unable to compare KABP before and after intervention. The sampled studies were surveys on KABP and SMNet interventions in communities, and none of them studied the impact of SMNet interventions on any indicator of KABP or of polio prevalence/OPV coverage. Hence, impact scores or means of intervention and non-intervention groups (experimental versus control studies

or randomized control trials) or time periods (baseline- endline comparisons of the experimental group) were not available. This did not allow for tests of effect size or difference of means (the Student's t-test) to be calculated meaningfully indicating impact.

- Data for the study from 2009 did not measure the intervention, and therefore, had to be excluded.
- The number of total studies (N) for the meta-analysis was only 3, which was less than 6 - the minimum N for calculation of an effect size.

9. Due to this context, as mentioned earlier in this report, the ***cross-temporal meta-analysis*** method was chosen, given this nature of the data.

Table 5.1: Characteristics of the Final Sample

Characteristics of the studies included in the Final Sample	
Study design	Household surveys with structured questionnaires
Sampling	Without-replacement random sampling of households for each survey
Geographical areas covered	
Sampling for 2012	654 HRAs from 53 blocks in 18 districts in UP 1839 HRAs from 41 blocks in 19 districts in Bihar
Sampling for 2011	108 HRAs from 35 blocks in 18 districts in UP 114 HRAs from 29 blocks in 19 districts in Bihar
Sampling for 2010	69 HRAs from 35 blocks in 18 districts in UP 84 HRAs from 29 blocks in 19 districts in Bihar
Demographic groups covered	Parents of children in the 0-59 months age group
Sample size	Higher than 10000 respondents for each survey across the two states

Cross-Temporal Meta-Analysis

10. The methodology undertaken for this study is a cross-temporal meta-analysis (also known as a within-scale meta-analysis) which examines the change in mean scores of the indicators chosen over a period of time. A cross temporal meta-analysis allows for comparison over different indicators (awareness and attitudes; behaviors and practices; indicators measuring interventions etc.) over a period of time while considering a constant sample (from high risk areas).

11. The meta-analysis considers three relevant studies[11] undertaken between 2009-2012 looking at underlying public perceptions of the polio campaign, risk factors (such as the strength of myths about vaccine safety), and perceptions about community level workers as sources of information on the polio virus and measures for prevention.

12. Before conducting the meta-analysis, each study was analyzed for formulating the indicators of KABP and SMNet interventions at the grassroots level. From the entire list of queries in the 3 surveys,

[11] These studies include:

- Concurrent Knowledge Attitude, Behavior & Practices (KABP) Study For Polio Eradication, 2009
- KAP Study on Polio and Routine Immunization- 2011
- KAP Study on Polio and Routine Immunization 2012

the most pertinent ones were chosen. This selection was based on the stated aims of the SMNet intervention in the area of KABP.

13. Due to overlap of queries in the surveys, "knowledge and awareness" (KA) were combined with specific sub-indicators such as awareness about polio, about the modalities of spread, whether it is preventable and curable, etc. Similarly, "behaviours and practices" (BP) were combined with specific sub-indicators about whether the respondent immunized his/her child in the last pulse polio round and where OPV is accessed from, in case a dose is missed. The SMNet intervention sub-indicators included the number of respondents that reported the CMC as the source of information about polio, the AWW as the source of information about polio, and the number of visits by the CMC in the last month (from the date of data collection in the survey).

14. The sub-indicators were combined to form three distinct variables – (i) knowledge and awareness (KA), (ii) behaviours and practices (BP), and (iii) community's access to and interaction with frontline workers (FW). The list of indicators is shown in Table 6. The mean scores and standard deviations for each of these variables were calculated for each of the surveys.

15. These values were then used to conduct the meta-analysis.

16. The cross-temporal meta-analysis determined the following:

- How knowledge and awareness (KA) about polio and OPV (measured by the different studies) have changed over time, primarily by examining correlations between the mean scores for this indicator and the year of data collection.
- How behaviors and practices (BP) related to accessing OPV for targeted children (measured by the different studies) have changed over time, primarily by examining correlations between the mean scores for this indicator and the year of data collection.
- How the community's access to and interaction with frontline workers (AWW and CMC) for OPV or information about polio (FW) has changed over time, primarily by examining correlations between the mean scores for this indicator and the year of data collection.
- How knowledge, awareness, behaviors and practices have changed over time, in relation to the community's access to frontline workers (AWW and CMC) for OPV or information about polio, primarily by examining the correlation between the combined mean scores of each of the two sets of indicators (knowledge-attitudes and behaviors-practices) with the mean score for community's access to and interaction with frontline workers, for all three years.

17. The correlations were weighted by sample size, as well as by inverse of variance (w) of each study to better estimate the population mean. The **inverse of variance** includes the within-study standard deviation and sample size, and is the usual weight applied in meta-analysis. Shadish and Haddock (1994) provided weights for the aggregated data, and the modified technique for cross-temporal meta-analysis (Twenge et al. 2004) was used in this case.

18. To compute the variance in this study, the within-study standard deviation (σ) was squared and multiplied by 1/n of the individual study. The variance was then inverted (1/v) to make the weighing variable (w).[12]

$$v = \sigma^2 \text{ X } (1/n) \text{ and } w = 1/v$$

19. Each correlation value was then compared with Cohen's effect-size conventions for r.[13] These conventions outlined a number of criteria for gauging small, medium and large effect sizes in different metrics, as follows:

$$r \text{ effects: small} \geq .10, \text{ medium} \geq .30, \text{ large} \geq .50$$

20. The correlation (r) was calculated using Pearson's Product Moment Correlation equation:

$$r = \frac{\sum XY - \frac{\sum X \sum Y}{N}}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}}$$

21. Where, r is the correlation coefficient, X and Y are the two variable correlated.

Indicators chosen for analysis

22. The cross-temporal meta-analysis aims to measure the knowledge, awareness, behavior and practices of caregivers in high risk areas and to find a correlation with the community level interventions of front line workers (Anganwadi workers from the public health system and CMCs from the SMNet intervention). The data collected through the shortlisted studies was analyzed and the indicators chosen to be included for meta-analysis were:

Table 5.2: Indicators

I.	**Knowledge/Awareness**
a.	Awareness about how polio is spread (some/partial understanding)
b.	Awareness about children <5 being at high risk for polio
c.	Awareness that polio can be prevented through OPV
d.	Awareness that polio is not curable
e.	Awareness about need for repeated dosage of OPV
f.	Awareness that there are no side effects to the OPV
II.	**Behaviors/Practices**
a.	OPV to be taken from AWW/health facility/RI session if a dose is missed
b.	Immunization of child during last pulse polio round
III.	**Community level intervention**
a.	CMC as the source of information for polio
b.	AWW as the source of information for polio
c.	Visit of CMC/AWW in last month[14]

23. A composite score for each indicator was established by calculating the mean of the sub-indicators weighted by sample size.

[12] This method was used in Lipsey and Wilson, 2001; Twenge and Campbell, 2001; and Twenge et al, 2004.
[13] Cohen, *J. 1988. Statistical Power Analysis for the Behavioral Sciences.*
[14] The survey combined the question on visits by CMCs and AWW in the last month

24. To carry out the cross temporal meta-analysis, the standard deviation of each composite indicator was analyzed and correlation of each indicator with the intervention years as well as with other indicators was developed. Further, a regression was run for each indicator over the years.

Results and Discussion

25. Based on the results of the cross-temporal meta-analysis, knowledge-awareness (KA) has increased over time, as shown by the positive correlation between KA scores and year (Table 7). The increase is positive and linear (r=0.38). This indicates a positive correlation of medium strength (using Cohen's conventions for correlation coefficients). The slight decrease from 2010 mean scores to 2011 mean scores led to the medium strength of the relationship. This shows that there was a positive change in the knowledge and attitudes of the communities regarding polio, specifically on awareness about how polio is spread, that polio is preventable through OPV and not curable, about high risk age groups, that OPV does not have any side effects, and about the need for repeated OPV doses for prevention of polio.

26. Behaviours-practices (BP) scores show a much stronger and steeper correlation (r = 0.98), indicating a large effect size (Cohen's convention). This can be interpreted as a consistent and significant increase in BP indicators i.e. immunization of children in 0-5 years age group during the last pulse polio round, and the practice of administering OPV from AWW/health facility or Routine Immunization in case the dose was missed during the last pulse polio round.

27. This indicates that behaviors and practices of actually seeking immunization and OPV among communities have increased more than their increase in knowledge and attitudes about polio and OPV across years. This may be interesting for programming, as it may show that due to the very high frequency of pulse polio rounds and the reiteration from numerous sources about the importance of immunization for children, parents may access this service, without fully understanding the causal pathways of polio or the medical necessity of OPV/immunization. Behaviors in communities also get reinforced through observed actions of others in the same community, even though some members may not have logically reasoned it. This may be another explanation for the large increase in behaviors and practices compared to that in knowledge and attitudes.

28. The third indicator - community's access to and interaction with frontline workers (FW), again show a strong positive correlation over the years (r = 0.97). This indicates that SMNet interventions in terms of coverage of areas through deployed human resources/frontline workers were effectively undertaken.

29. While correlation coefficients show the direction of change (positive and linear in both cases), to calculate the magnitude of change in KA and BP over time, regression equations and the average standard deviation of the individual samples were used. The regression equation followed the formula:

$$y = Bx + C$$

where, y = mean score, B = the unstandardized beta or the slope of the regression line, x = the year, and C= the constant or the intercept or the point at which a line intersects the y-axis using the best-fit regression line.

30. The average σ was obtained by averaging the within-sample standard deviations, thus reflecting the average variance of the measure in a sample of individuals.

31. It is important to note here that the method used here uses standard deviation to capture the variance in the sample. This may result in somewhat higher effect sizes, as it does not account for variance across groups. Nevertheless, it is the most straightforward way to quantify the magnitude of change over time.

32. From this analysis it is seen that in 2010 the mean percentage of respondents who had desired knowledge and positive attitudes (based on the KA sub-indicators identified for this study) was around 70%. This decreased to 66.14% in 2011 and then increased to 81.11% in 2012. With an average σ of 1569, across the three studies, mean KA in the community has increased 2.3 SDs over the three years. This is a very large effect size (using Cohen's conventions).

33. This can be interpreted as an increase in knowledge and awareness about polio and OPV in the communities over time, which may be linked to the strengthening of SMNet interventions over these years since these were areas of focus for this programme. Other potential determinants of this increase like education and income levels in this community during this period did not change significantly, thus, strengthening the hypothesis that this increase was linked to SMNet.

34. In the case of BP, the regression analysis and average variance shows that in 2010 the mean percentage of respondents who immunized their children during pulse polio rounds and who accessed OPV from health facilities/programmes in case of missed dose, was around 50%. This consistently increased to 56.8% in 2011 and to 70% in 2012. With an average σ of 2731, across the samples, mean BP in the area has increased 0.93 SDs over the three years. Again, this is a large effect size, and indicates a possible linkage with the strengthening of SMNet interventions, like in the case of KA.

35. To investigate this possible linkage, FW was considered as a proxy indicator for SMNet interventions. Correlating both KA and BP with the access of communities to frontline workers and CMC visits, it is seen that the linkage is linear and strong (r = 0.51 for KA and r = 0.90 for BP). Additionally, FW has itself increased over the years, through higher number of respondents accessing polio related information from frontline health workers like the AWW and the CMC and an increased number of visits by CMCs to community households (r = 0.97 for FW with years). These strengthened SMNet inputs may have contributed to the similar increasing trend for knowledge, attitudes, behaviors and practices in the communities.

Table 5.3: Correlations

Indicator	Correlation with year	Correlation with FW
Knowledge and awareness	0.38	0.51
Behaviour and practice	0.98	0.90
Access to frontline workers for polio related information	0.97	NA

Key findings from Meta-Analysis

- There was a positive change in the **Knowledge and Attitudes** of the communities regarding polio over time, which may be linked to the strengthening of SMNet interventions over these years since these were areas of focus for this programme, specifically on:
    - Awareness about how polio is spread
    - That polio is preventable through OPV
    - That polio is not curable
    - About high risk age groups
    - That OPV does not have any side effects
    - About the need for repeated OPV doses for prevention of polio

- There was a consistent and significant increase in **Behaviors and Practices** indicators:
    - Immunization of children in 0-5 years age group during the last pulse polio round
    - The practice of administering OPV from AWW/health facility or Routine Immunization in case the dose was missed during the last pulse polio round

- There is a strong linear positive correlation between both Knowledge and Attitudes and Behaviors and Practices with the access of communities to **Frontline Workers and CMC visits**. Frontline Worker presence (the proxy indicator for SMNet interventions) has increased over the years and its effect is shown through higher number of respondents:
    - Accessing polio related information from frontline health workers like the AWW and the CMC
    - Increased number of visits by CMCs to community households.

ANNEXURE 6

HIGH RISK DISTRICTS AND BLOCKS IN THE KOSI BASIN

HIGH RISK DISTRICTS AND BLOCKS IN THE KOSI BASIN

Districts	Blocks
Begusarai	Bakhri
	Balia
Darbhanga	Goraboram
	Kiratpur
	Kusheshwarasthan East
	Kusheshwarasthan West
Khagaria	Alauli
	Beldaur
	Gogari
	Sadar/urban
Madhepura	Alamnagar
	Chausa
	Udaikishanganj
Saharsa	Mahishi
	Salkhua
	Smribakhtiyarpur
Samastipur	Bithan
	Hasanpur
	Singhia