

Sharing learning on evaluations of innovations in increasing immunisation

3ie mid-term learning and synthesis workshop, 11-12 July 2017, New Delhi, India

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Workshop Report

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Note to readers

The International Initiative for Impact Evaluation (3ie), with support from the Bill and Melinda Gates Foundation, hosted a mid-term learning and synthesis workshop for the grantees of 3ie's Immunisation Thematic Window on 11-12 July, 2017 in New Delhi, India. This report is a summary of the discussions that took place during the workshop.

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Please direct all comments or queries to tw10@3ieimpact.org.

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Titles of 3ie-funded immunisation studies

Given below are names of each of the fourteen studies under 3ie's Innovations in Increasing Immunisation Thematic Window and their short titles. In this report, the studies have been referred to using their short titles. For the study description, please click on the hyperlinks provided:

1. **Short title:** [IRC Ethiopia study](#)
Title: Formative evaluation of IRC's 'Fifth Child' color-coded health calendar and defaulter tracing approach to increase immunization coverage in western Ethiopia
2. **Short title:** [IRC Uganda study](#)
Title: Impact and process evaluation of IRC's 'Fifth Child' mReach immunization data platform and community engagement strategy to increase immunization coverage in northern Uganda
3. **Short title:** [VIR Pakistan study](#)
Title: The vaccine indicator and reminder (VIR) band: providing innovative reminder bands to newborns through community health workers for improving vaccination initiation and completion in Pakistan
4. **Short title:** [PATH India study](#)
Title: Community-led video education to increase vaccination coverage in Uttar Pradesh, India: A cluster-randomised controlled trial
5. **Short title:** [PAR Nigeria study](#)
Title: Formative evaluation of a participatory evaluation and action research (PAR) to increase immunisation coverage in the Ogun state of Nigeria
6. **Short title:** [Pastoral Kenya study](#)
Title: Community engagement through the community health strategy for the improvement of immunisation coverage in pastoral and nomadic communities in Kenya
7. **Short title:** [TRL Nigeria study](#)
Title: The effects of engaging communities in decision-making and action through traditional and religious leaders on vaccination rates in Nigeria
8. **Short title:** [SALT India study](#)
Title: Impact assessment of the SALT (Stimulate, Appreciate, Learn, and Transfer) approach of community engagement to increase immunisation coverage through ownership – a mixed method study in Assam, India
9. **Short title:** [HDA Ethiopia study](#)
Title: Formative evaluation of networks of health development army to improve immunization coverage in pastoral communities of Ethiopia
10. **Short title:** [Khushi Baby India study](#)
Title: Cluster randomised controlled trial with nested process evaluation of the Khushi Baby system – digital necklace and voice reminders from pregnancy onwards- to determine effects on timely routine immunization adherence through PENTA3 in Rajasthan, India
11. **Short title:** [VIR Nigeria study](#)
Title: Community distribution of the Vaccine Indicator and Reminder (VIR) band to improve vaccine initiation and completion in Nigeria: formative study of acceptability and feasibility

12. **Short title:** [Checklist Myanmar study](#)
Title: Collaborative community checklists for immunisation: formative evaluation of the use of immunisation quality checklists to engage hard-to-reach communities for improved immunisation in rural Myanmar
13. **Short title:** [J-PAL India study](#)
Title: Evaluating the impact of interventions to improve full immunisation rates in Haryana, India
14. **Short title:** [Incentives Ethiopia Study](#)
Title: Community engagement through supportive feedback and non-monetary incentives: a randomised controlled trial in Ethiopia

Executive summary

International Initiative for Impact Evaluation (3ie), with support from Bill and Melinda Gates Foundation, hosted a mid-term learning and synthesis workshop on 11-12 July, 2017 in New Delhi, India. This workshop brought together all grantees from 3ie's Innovations in Increasing Immunisation Thematic Window (hereafter referred to as just as the Immunisation Programme) to discuss the progress of ongoing studies, preliminary findings, challenges faced, lessons learned and ways to synthesise findings from all the evaluation studies. The workshop comprised three plenary and six breakout sessions. These sessions covered various aspects of designing interventions and conducting their formative and impact evaluations. The key highlights from these sessions are described below and the details are presented in the following sections.

Designing evaluations for immunisation interventions

The panel discussion on 'designing evaluations for immunisation interventions' highlighted that complex interventions such as those being funded under 3ie's Immunisation Programme, could be susceptible to biases stemming from reporting and measurement of immunisation outcomes. This is especially true when study teams use respondent recall of child's immunisation status and they don't have access to reliable routine health data (such as immunisation cards). The possible solutions to mitigate these challenges could be to triangulate survey based immunisation status of sampled children with the information from local health service providers and to use qualitative research to understand the difference between improvement in immunisation due to recall and actual behaviour change.

The discussion also highlighted that the evaluations of immunisation interventions can be prone to other biases, such as those due to treatment heterogeneity and contamination between treatment and control arms. To mitigate these biases, teams used different strategies such as establishing standardised operating procedures for implementation to limit differential exposure to the intervention, and randomising after baseline.

More long-term solutions to these challenges were also proposed, such as having standardised measures to record immunisation across different contexts. For example, having standardised pictures of a child getting immunised to aid mother's recall of immunisation status of the child and using tools such as an event calendar to determine the age of the child by aiding respondent's recall in areas where there is high prevalence of illiteracy.

Designing interventions in diverse, fragile and hard-to-reach contexts

The breakout session on diverse contexts drew attention to the importance of a study team's awareness of the context. A good understanding of context can help in designing effective interventions and making more accurate assumptions about whether an intervention would work or not in a particular setting.

To ensure deep understanding of the context, two methods were discussed: a situational analysis or needs assessment and stakeholder mapping. A systematic needs assessment was suggested to help teams identify nature and causes of the gap that their intervention could address. Stakeholder mapping could be conducted to help teams

identify key stakeholders and engage them to provide contextual insights that can inform the design of the intervention.

The discussion also highlighted the importance of conducting a continuous assessment of the context throughout the design and implementation phase so that the intervention design can be adapted at each stage to contextual changes. Participants also felt that study teams should be cautious about creating parallel systems for the implementation of the intervention as they are likely to be unsustainable in the long run.

Survey design and data collection

This breakout session highlighted the challenges study teams encounter in designing surveys and collecting data for immunisation evaluations. While discussing questionnaire designs, participants listed down some essential modules of an immunisation survey, such as those capturing demographic and socio-economic information, information on immunisation status of the target children, and knowledge, attitudes and practices on immunisation.

The discussion also touched on the roles and responsibilities of a study team in training survey enumerators and ensuring that all data collected during surveys is kept confidential through de-identification and encryption. Systematic collection of data requires creation of proper field protocols for the enumerators. These could include instructions on identification of the default respondent, the procedure to follow if the respondent is unavailable and/or the protocol to follow to record a child's immunisation status in the absence of immunisation cards. These roles and responsibilities also extend to the selection of experienced enumerators who are familiar with context and the vernacular of the area.

Implementing technology-based interventions

The aim of this panel discussion was to understand and address the challenges with implementing technology-driven or technology-based interventions. The general opinion amongst panellists was that the development and procurement phases of these interventions are time intensive. The development phase is an iterative process where any software or hardware being developed is tested several times until it has all the desired add-on features and the intended users are able to operate it without any glitch. At the same time, delays in procurement phase could be due to the time it takes to manufacture and test all procured items, and where required to replace the faulty ones.

The discussion also highlighted that the primary users of these technologies are typically frontline service providers (like frontline health workers), with limited skills and literacy. They might resist any kind of technological intervention due to perceptions of increased workload and/or inability to use the technology. Such concerns can be mitigated by involving them extensively in the development of the technology, training them throughout the project cycle, creating a peer support structure and providing mentoring.

It is also important to have continuous on-ground technical support where any unforeseen issues with the technology can be reported and resolved in real-time. Field workers should also be equipped with properly defined protocols that outline the steps to be taken in the event of technology failure.

Integrating interventions into existing healthcare systems

The discussion during this breakout session drew attention to the challenges related to the integration of an intervention into existing healthcare systems at three levels: human resources, institutional and financial.

It was pointed out that the success of an intervention relies heavily on the health workers' understanding and acceptance of the intervention. It is therefore important that the study teams carefully plan for building capacity of health workers to prepare them for intervention delivery and provide continuous support throughout the project cycle.

The discussion on institutional integration of interventions focused on best ways to integrate intervention processes into existing government programmes. An assessment of the existing healthcare systems could help teams to examine the feasibility of integrating the intervention and identifying the gaps or weaknesses that need to be addressed. This may help the teams channel their limited resources in building institutional capacity in the areas that need strengthening and would avoid creating unsustainable parallel delivery systems.

The discussion on financial integration, which also has implications for the scalability of an intervention, revealed that there are two aspects to it. The first aspect is to prepare policymakers and decision makers for accepting an intervention and if successful, its scale-up. Teams could do this by engaging with key stakeholders and decision makers throughout the design, implementation and evaluation of the intervention in a way that sustains their interest and helps them understand and accept the intervention. The second aspect is to have conversations with policymakers regarding the budgetary implications of an intervention. To inform these conversations, teams should create detailed documentation on all direct and indirect costs associated with an intervention. This will not only help inform a government's decision to scale-up, but also help them prioritise essential and non-essential components of an intervention.

Conducting rigorous qualitative research as a part of impact evaluations

This breakout session aimed at understanding the important components of the qualitative research that the teams have incorporated into their evaluations and the associated challenges and lessons. The discussion highlighted some important benefits of conducting qualitative research, including its potential to add depth to a study by adding another layer of understanding to the quantitative data and to provide understanding of why a programme had worked or not worked.

Study teams were encouraged to go beyond interviews and focus group discussions while planning qualitative research and explore all possible qualitative tools or methods most appropriate for the evaluation. The creation of qualitative tools is an iterative process and it can help teams uncover new themes which were previously unexplored. The discussion also outlined some factors that could influence the quality of qualitative data, such as linguistic nuances, translation, framing of questions and the selection of an interviewer familiar to the context or an outsider.

Stakeholder engagement and communication

The panel discussion on stakeholder engagement highlighted the importance of engaging and building relationships with stakeholders at different levels – local, provincial, national and global. Stakeholder engagement should take place throughout the design, implementation and evaluation of the intervention. At the same time, teams should ensure the engagement is carried out in a manner that does not introduce any bias and preserves the integrity of the study. It is also important to ask researchers about their preferred mode(s) of communications and accordingly customise the communication plan.

The discussion also highlighted how the kinds of stakeholders one would prioritise would vary depending on the type of evaluation. For instance, during a formative or pilot study, the most important stakeholders may be those at the community or district level. However, for an impact evaluation, engagement with regional and national-level stakeholders could be more important from a scale-up perspective.

Synthesis of findings by type of evaluation (formative and full impact evaluations)

The discussions during this breakout session looked at ways in which findings from full impact evaluations and those from formative evaluations can be synthesised. The discussion on synthesis of findings from full impact evaluations highlighted two types of syntheses: a meta-analysis for immunisation outcomes and a cost-effectiveness analysis.

The discussion also covered different types of outcomes indicators, including those related to process and knowledge, attitudes and practice, which a team could track and could be subsequently synthesised. Some of the immunisation outcome indicators suggested were: full immunisation coverage (FIC), timeliness of vaccination, coverage of three doses of DPT/Pentavalent and/or measles as primary outcomes. It was also noted that due consideration should be given to the definition and quality of indicators before undertaking a synthesis, as it might vary across different contexts.

The discussion on synthesising findings from formative evaluations outlined the need for a different synthesis approach and framework compared to that of impact evaluations. It was suggested that it could involve a careful assessment of different aspects of the formative evaluations to identify common threads and lessons across them. Alternatively, one could take some pre-determined themes, such as acceptability and feasibility of an intervention, and synthesise findings from different evaluations along them.

Disseminating findings of 3ie-funded evaluations

In this session the participants brainstormed about various ways in which they can disseminate study findings. Participants said that they face time and resource constraints in carrying out dissemination activities. They requested technical assistance from 3ie for putting together their stakeholder engagement and communication plans. They also thought 3ie could play a bigger role in disseminating study findings by identifying forums and organising networking events.

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List of abbreviations

ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activists
CHW	Community Health Workers
DPT	Diphtheria, pertussis and tetanus vaccine
EPI	Expanded Program on Immunisation
FGD	Focus group discussion
FIC	Full immunisation coverage
HDA	Health Development Army
HEW	Health Extension Worker
IIPH	Indian Institute of Public Health
IRC	International Rescue Committee
JAP	Joint Action Plan
J-PAL	Abdul Latif Jameel Poverty Action Lab
KAP	Knowledge, attitudes and practices
KB	Khushi Baby
KIT	Royal Tropical Institute
LSHTM	London School of Hygiene and Tropical Medicine
NGO	Non-government organization
NHM	National Health Mission (Government of India)
PAR	Participatory Action Research
PHFI	Public Health Foundation of India
SALT	Stimulate, Appreciate, Learn and Transfer
SOP	Standard operating procedures
TRL	Traditional and religious leaders
VHT	Village Health Team
VIR	Vaccine Indicator Reminder

1. Session 1: Designing impact evaluations for immunisation interventions

Panellists: Michelle Desmond, PATH; Justine Landegger and Jane Bruce, IRC; and Saugato

Datta, Ideas42

Moderator: Monica Jain, 3ie

Rapporteurs and contributors: Radhika Menon, 3ie

This plenary discussion aimed at comprehending real-world challenges in designing impact evaluations for immunisation interventions. It brought together four panellists who shared experiences from their studies.

Given below are the highlights of the discussion which outlined four major challenges:

1.1 Measurement of immunisation outcomes

An immunisation card is considered the most reliable source of information on the number of and time schedule for vaccinations a child has received. However, in almost all the contexts, the teams found that a substantial number of households, especially the most marginalised and the target defaulter population, do not have an immunisation card. This raises the issue of how to obtain reliable data on vaccinations received by a child in the absence of immunisation cards.

Drawing from IRC Uganda's study experiences, Jane and Justine highlighted that according to baseline survey, approximately seventy-three per cent of the study population had immunisation cards. They said that the IRC team conducted a Community Health Worker (CHW) mapping exercise to identify and enroll all children in the 0 to 12 months age cohort into the study. The data obtained from this exercise was triangulated from the paper-based EPI (Expanded Program on Immunisation) registers. This step was particularly important for identifying and including eligible children that did not present an immunisation card during the mapping exercise. For endline outcome measurement, Justine said the team will use any official documentation on immunisation status of child (e.g. immunisation card or mother's passport) as well as caregiver's recall.

Michelle talked about the challenges PATH's study team faced in measuring immunisation outcomes in Uttar Pradesh, India. One challenge was that they found a discrepancy between the mothers' recall of the child's age and what was on the immunisation card. The team eventually went with what is on the immunisation card. Another challenge the team faced was that in some households the immunisation card was incomplete. They found that households that migrate temporarily (in the Indian context where mothers go temporarily to their parental home or to visit other relatives) find it problematic to maintain their immunisation cards. For such households, the team used mother's recall along with the immunisation cards for more credible estimates.

Adding to this discussion, Santanu Pramanik from PHFI said that in some contexts both immunisation cards and recall might be unreliable. For example, temporary migration

(mentioned previously) can lead to incomplete immunisation cards. Phrasing the question correctly and customizing it to the local context is important for collecting accurate data. The SALT India study team observed that when the surveyor asked about previous vaccinations or *teekas* (in Hindi), the respondent only recalled the injectable vaccines and not other orally-administered vaccines as the word *teeka* is Hindi word for vaccines but may denote just injections. He concluded that a respondent's ability to recall may vary for different vaccinations and probing in local dialect may have unintended consequences. A participant suggested having standardised photographs of a child getting immunised to aid the mother's recall of the immunisation status of the child.

Another participant brought up the problem of measuring immunisation status of children correctly because of non-existent age records of children, especially in remote areas with high prevalence of illiteracy. It may therefore be helpful to use an event calendar to determine the child's age in such contexts.

1.2 Reporting bias

As previously mentioned, some teams have opted to use respondent recall as the primary information source in the absence of immunisation cards. This raises a concern since some of the immunisation interventions being tested provide reminders to caregivers about timely vaccination of children. This could lead to reporting bias as an increase in immunisation rates in the treatment areas could be partly due to recall that is more accurate rather than an actual increase in immunisation.

Panellists provided examples from their studies to highlight how this is being addressed. The Incentives Ethiopia study team is planning to include a variable in the endline questionnaire to investigate if self-reporting affects the analysis. The PATH study team is conducting qualitative research and a process evaluation to understand the differences between improvement in immunisation due to recall and actual behavior change.

1.3 Treatment heterogeneity

As noted, some of the interventions being tested are highly complex and it is likely that interventions are implemented in different areas differently. This could introduce a bias in the study due to differential exposure to the intervention.

Justine said that the IRC Uganda study team has established standardised operating procedures (SOPs) to provide consistent implementation guidelines to the Village Health Teams (VHTs) in each catchment area. The team is also planning to capture differential exposure to the intervention as a part of its survey.

The PATH team highlighted that the same key maternal and child health messages are being delivered across various treatment villages in Uttar Pradesh, India. The dosage of these messages is kept the same for all villages and the team is enforcing a lot of quality control.

Saugato shared that his team in Ethiopia has added a set of questions to their endline survey that probe the caregiver about how the households were contacted to capture the degree of exposure.

1.4 Power calculations

Most immunisation programmes are managed at a higher administrative level than the clusters chosen for randomisation, like villages, wards, health posts. There could be spillovers and contamination between treatment and controls areas which could bias estimates.

Using the example of the PATH India study, Michelle described how the team randomised after the baseline at the level of community health workers, known as Accredited Social Health Activists (ASHAs) in India, because the intervention is being delivered at their level. The team then developed an algorithm to look at treatment and control areas and chose non-contiguous clusters. The team is also using a social network analysis to track spillovers in control areas.

While concluding this session, Justine highlighted that irrespective of the level of randomisation, it is not possible to blind the district health officials about the research project as they are often tasked with supervision of the intervention. The key is to find the right balance between engaging important stakeholders and preserving the integrity of the study.

1.5 Key highlights of this session

- There is a need for standardised measures to record immunisation across different contexts. For example, having standardised pictures of a child getting immunised to aid mother's recall of immunisation status of the child and using tools such as an event calendar to aid respondent recall and determine the age of the child in areas with high prevalence of illiteracy.
- Qualitative research is important for teasing out nuances of actual behaviour change due to an intervention. Teams can also undertake measures to assess how self-reporting is affecting the overall analysis.
- Study teams should undertake measures to ensure standardisation of their respective interventions processes and capture differential exposure of interventions through the endline survey.

2. Session 2: Designing interventions for diverse populations, those that are hard-to-reach and in fragile contexts

Moderators: Shiferaw Demissie, IRC; Ngozi Akwataghib, KIT; and Radhika Menon, 3ie

Rapporteurs and contributors: Shiferaw Demissie, IRC; Ngozi Akwataghib, KIT; and Arpita Ghosh, PHFI

The purpose of this breakout session was to discuss challenges with designing interventions for diverse and hard-to-reach populations and those in fragile contexts. The participants were divided into three groups (fragile contexts, hard-to-reach populations, and diverse populations) but the issues discussed in these groups were similar.

The groups were asked to identify and list the essential components of designing interventions for diverse populations, those that are hard-to-reach and in fragile contexts:

2.1 Awareness and assessment of the context

The discussions outlined the importance of a study team's awareness of the context. A good understanding of context is important for designing effective interventions and making more accurate assumptions for whether an intervention would work or not in a particular setting.

For instance, a study team working in a fragile situation should define what they mean by fragile context, whether a situation has disrupted the healthcare system of the whole country or only a part of it and what the causes for these disruptions are. Fragile situations could include areas affected by political instability, conflict, insurgencies, severe drought, flooding or other manmade and natural disasters. The disruptions in health systems could manifest themselves as lack or shortages of essential medicines, inadequate number of qualified healthcare providers, and/or poor management of healthcare system.

Similarly, a study team working with hard-to-reach populations should begin with identifying the sub-groups of populations that are truly hard-to-reach and ascertain the reason(s) for their isolation or inaccessibility. These reasons could be related to geographic, social and/or attitudinal barriers.

To ensure proper understanding of the context, two methods were discussed: a situational analysis or needs assessment and stakeholder mapping.

2.1.1 Needs Assessment

A needs assessment can be undertaken to understand the nature and causes of the gap between the current and desired state of immunisation of children. It can inform the design of the intervention and the steps needed to bridge the gap. The causes for this gap might differ across various contexts and may manifest as physical, social, economic or political barriers. For example, in geographically isolated areas, low or stagnating immunisation rates could be due to physical barriers to access to health services. In fragile contexts, it could be due to a disruption of health services. Whereas, in other contexts, such as drought prone areas, access to basic necessities like water sometimes take precedence over immunisation of children.

The PATH India team talked about how their assessment of the local context (during initial implementation phase) led to the identification of socio-economic barriers causing low uptake of the intervention amongst certain groups in the community. The team realised that homes of affluent upper caste people in the village were not suitable as venues for screening of videos, since not everybody in the community was comfortable going there. Instead, the team began conducting screenings at village health centres and other public spaces. The screenings were arranged to accommodate mothers from different caste and religious backgrounds and were organised in a manner that gave mothers the flexibility to attend these screenings.

The Khushi Baby team also gave an example of how an assessment helped them identify certain linguistic barriers that were more deeply rooted in the local context and were not immediately apparent. The team customised one of their intervention components by using the local language, to send voice call reminders to expectant

mothers. This helped them overcome language-related barriers that had been leading to non-participation.

2.1.2 Stakeholder mapping

Stakeholder mapping helps study teams identify *who* the key stakeholders are, *what* the ways to engage them are and *how* their inputs can inform the design of the intervention. Stakeholders would not only include government officials, but also include community groups (from various socio-economic and religious backgrounds) who could play a key role in implementation of the intervention. Mapping can be done at the community, regional and/or national levels depending on the objective of the study.

For example, community level mapping can be helpful in identifying ‘champions’ who could effectively communicate about an intervention to other community members. These champions may be local government officials, frontline health workers, or other community members.

The PHFI team said their stakeholder mapping exercise led to the identification of local NGOs through which they could access hard-to-reach populations. These NGOs played an important role in providing health services by operating boat clinics and catering to marginalised communities living in Assam riverine islands.

2.2 Adapting interventions to changing environments and new contextual information

The discussion also highlighted that assessment of context is an ongoing process and a study team’s comprehension of the situation may change over the course of the project. For instance, sudden or frequent disruptions might hamper the implementation of an intervention. In other scenarios, study teams might discover new contextual information that has implications for the overall intervention design and its implementation. Therefore, the teams need to continuously monitor the context and enhance their awareness. Teams also need to factor in certain degree of contextual uncertainty while designing their interventions to adapt to changing contexts and needs.

One important way to create long-term stability of a project, especially in fragile contexts, could be to integrate the intervention into existing government systems as much as possible. When faced with major disruptions in fragile areas, study teams might be more inclined to set up parallel systems to implement their interventions. However, these parallel systems are likely to be unsustainable in the long run.

Another way to safeguard a study from uncertainty is by creating a strong foothold for the project by engaging with stakeholders at multiple levels. These could be religious leaders, who are an integral part of the community. Alternatively, it could be civil servants, who are in more stable positions, can monitor the changes in the political climate more easily, and can influence the implementation of the intervention even if they are not directly involved with it.

The J-PAL India study team also shared an example of change in the comprehension of the context. Their ongoing review of the context helped the team to assess whether their intervention truly ‘reached’ the intended population. They described the text-messaging component of their intervention, which targets mothers. They found that the mobile

number usually provided by the mother is that of the head of the household or the husband, and sometimes even of the health worker. In such cases, to make sure that the text messages 'reach' the mother, the implementers adopted various measures. On subsequent visits, they tried to get the mobile number of the mother, if possible or of an immediate relative. If the mother did not have a mobile number, then they tried to adjust the timing of the messages – the mother is more likely to have access in the evening than during the daytime. In cases of voice reminders, the reminders were sent one or two days in advance.

2.3 Key highlights from the session

- The teams should define what they mean by a fragile context or hard to reach populations. These definitions may change depending on the context. This is important for designing an effective intervention and supporting the causal hypotheses with realistic assumptions.
- A systematic needs assessment can help teams identify nature and causes of the gap that their intervention could address.
- Stakeholder mapping can help teams identify key stakeholders and engage them to provide contextual insights that can inform the design of the intervention.
- Engagement of stakeholders like religious leaders and civil servants may also increase stability of the intervention as they may directly or indirectly influence its implementation.
- Study teams should continuously assess the context throughout the design and implementation phase so that the intervention design can be adapted at each stage to changes in the context.
- Teams should be cautious about creating parallel systems for the implementation of the intervention as they are likely to be unsustainable in the long run.

3. Session 3: Survey design and data collection

Moderators: Hailay Teklehaimanot, Center for National Health Development in Ethiopia; Saugato Datta, Ideas42; and Angela Oyo-Ita, University of Calabar Teaching Hospital, Nigeria

Rapporteurs and contributors: Maaïke Bijker, J-PAL; Arpita Ghosh, PHFI; and Angela Oyo-Ita, University of Calabar Teaching Hospital

This breakout session provided an opportunity to discuss the challenges faced by study teams with designing surveys and data collection processes for evaluation of immunisation programmes. Break-out groups were organised along three broad topics: 1) Questionnaire design and household consent and confidentiality; 2) Sampling frame and survey selection; and 3) Training of field staff

3.1 Questionnaire design & household consent/confidentiality

The discussions primarily focused on identifying the essential modules of an immunisation survey, challenges related to capturing information through surveys, difficulties with household consent and confidentiality and other challenges with data collection.

3.1.1 Core modules

Participants suggested that essential questions or modules such as those capturing demographic or socio-economic information, information on immunisation status of the target children, and modules on **knowledge, attitudes and practices (KAP)** should be included in an immunisation survey.

It was acknowledged that exploring attitudes and norms in populations with low literacy, is not easy. They suggested asking questions pertaining to KAP in a manner that could elicit genuine responses from caregivers and community members. For example, surveyors can ask caregivers whether they *think* vaccines are good for their child, whether they *expect* the health worker to conduct outreach and administer vaccines. Such questions should be asked using keywords familiar to the study population.

It was also pointed out that teams might come across contexts where people might not be able to articulate their beliefs. Participants suggested that in such areas attitudes, norms and beliefs of a community could be explored by identifying people of influence in the family or community and using them as proxies. While this is not synonymous to the attitudes and beliefs of the whole community, it would still be a reasonable proxy in the absence of other, more accurate ways, to measure KAP in communities where teams have previously faced difficulties in measuring it directly.

3.1.2 Additional modules

Participants suggested having additional questions or a module on decision making structure in the family. The purpose of these questions is to determine the family dynamics, identify primary decision maker in the household for immunisation and the role of the community in this decision making.

Participants said that it would be helpful to have a module to capture other community level factors that may influence immunisation. It could help teams collect information on campaigns promoting immunisation in your community and the role of local or religious leaders in the community and whether they influence decisions of community members. It can also be used to capture details on how information is shared in a community and who are the sources of information on immunisation.

There was a suggestion on having a module to assess *access* to services and functionality of the existing healthcare system, which could have questions relating to distance to the health centre, availability of vaccines, health worker's attitude and behavior, etc.

3.1.3 Consent and confidentiality

It is important to de-identify and encrypt data to ensure confidentiality. The discussion on obtaining consent revealed some challenges and how teams went about addressing them. It was pointed out that in some instances, ethics boards might consider written consent to be mandatory. This might prove to be difficult as in some contexts, respondents may refuse to sign the consent forms. For example, respondents might feel that they are being incriminated. The PATH India study team faced a similar issue and had to revise their strategy where the data collectors were asked to read the consent form and get the verbal approval of the respondent before initiating the interviews.

The proposed solution to this was that where written consent becomes mandatory, researchers should create a very short and concise consent form that still contains all relevant information but does not dissuade people from participating.

3.1.4 Other challenges with data collection

Participants said that sometimes contextual factors such as festivals and migration patterns (temporary and permanent) may lead to lower than anticipated response rate. In such a scenario, teams like PATH India study have had to undertake additional sampling to ensure their sample was not underpowered.

3.2 Sampling frame and survey firm selection

This group's discussion was focused on ways of obtaining sampling frames, listing of households in a selected sample, and selecting survey firms.

3.2.1 Sampling frame

Participants suggested using census data to obtain a sampling frame for clusters. This data may be publicly available, available upon request, or may require payment of fees. It was pointed out that the sampling frame from census may not match with the present situation, such as villages may have become towns or two villages may have been merged. Therefore, sampling frames should be updated to avoid discrepancies.

Participants said that selection of clusters from a sampling frame can be done by random allocation or by stratification. There may be some exclusion criteria before one selects or stratifies. For stratification and inclusion or exclusion of clusters, teams may have set certain criteria which could entail collecting additional data.

3.2.2 Listing of households in a selected sample

The participants discussed pros and cons of using household listing versus existing administrative lists for selection of target beneficiaries within a cluster. Some participants said that teams should use administrative data if available. For example, a participant said that in the Indian context, one can approach the *anganwadi* (government funded rural community centres for mother and child care development in India), block development office, or ASHA for information on eligible households and compile data only on those households to save on data entry costs in the house listing phase. However, most participants stated it is best practice to carry out a house listing exercise to avoid missing out defaulters.

3.2.3 Selection of survey firms

The participants discussed some important criteria that teams should consider while selecting a survey firm responsible for carrying out critical tasks such as household listing and data collection.

The most important criterion is that the review of a survey firm should be based on the interview of the entire survey team and not just some members. It should include an evaluation of the survey firms' capacity to provide field supervision, and whether the team has clear chain of command and a real-time feedback mechanism in place for things to work smoothly in the field. The review must also include a careful check of the financial budget proposed by the survey team to ensure that it tallies with the proposed activities.

Lastly, even after hiring a survey firm, investigators should always maintain regular communication with the team to keep a check on the data collection activities and ensure the quality of data is up to the mark.

3.3 Training of field staff

This group primarily discussed the important things to be kept in mind for training of field enumerators.

3.3.1 Identification of default survey respondent

Participants said that in most study areas about eighty per cent of primary caregivers were mothers and occasionally some households reported grandmothers and aunts as primary caregivers. Hence, it was agreed that enumerators should be instructed to consider mother as the default survey respondent. It was also suggested that if the primary respondent is unavailable, the enumerator should come for a visit later, at a time convenient to the mother and as per protocol.

3.3.2 Protocol to record immunisation information in the absence of immunisation cards

It was highlighted that the protocols created by teams should also specify instructions for enumerators on steps to take in the absence of immunisation cards. In some cases, the card may be in the custody of another family member or could have been deposited with the health worker to prevent mothers from misplacing them. In such instances, the enumerator must always find out the reason the immunisation card is unavailable and make an effort to retrieve it. Another proposed suggestion was that, where possible, information provided by the respondent based on recall should be checked against the information maintained by the health workers in their records.

3.3.3 Using respondent recall to record immunisation information

While exploring ways to capture information on immunisation status of children, participants agreed that a respondent should not be pressured to share or recall information. Instead it would be better to ask questions about the number of times a child has been vaccinated or use visual cues like showing various body parts where vaccines are administered to aid recall.

3.3.4 Training enumerators in local language

The discussion also briefly touched upon the challenges with training enumerators in local language and ways to mitigate the bias in translating the survey responses from local language to English. The discussion led the participants to conclude that it is best to hire data collectors who are experienced and familiar with the context. This way, the field staff does not have to be additionally trained in a language that may be foreign to them and risk misunderstanding the respondents. Enumerators should be instructed to use local names of vaccines and vaccine-preventable diseases to elicit the correct responses from the respondents. The final survey transcripts should be translated from vernacular to English. Teams using app-based data collection methods can also consider using the in-app translation features for different languages.

3.4 Key highlights of this session

- The essential modules in an immunisation survey include those capturing demographic or socio-economic information, information on immunisation status of the target children, and **knowledge, attitudes and practices (KAP)** on immunisation. While census data can be used to obtain a sampling frame, teams should always cross-check it for discrepancies and update it accordingly.
- In the absence of immunisation cards, enumerators should always be instructed to ascertain the reason the cards are not available and take other steps to take to capture the information as reliably as possible.
- Teams should look into hiring experienced enumerators who are familiar with the context and the vernacular of the area.

4. Session 4: Implementing technology-based interventions: challenges and solutions

Panellists: Sudip Mahapatra, PATH; Mohammad Shahnawaz, Khushi Baby Inc.; and Jamila Bello-Malabu, Health Strategy and Delivery Foundation

Moderator: Avantika Bagai, 3ie

This panel discussion aimed to understand how technology-driven or technology-based interventions are implemented in real world scenarios and the kind of challenges teams face while implementing them. Panellists from three different evaluations came together to share their experiences and lessons.

The following points were discussed during this panel:

4.1 Development and procurement of the technological components of intervention

Reportedly, one of the biggest challenges with technology-based interventions is its development and procurement. Many teams have reported that procurement and development of intervention components such as applications, special software, tablets or dashboard can be very time consuming due to repeated iterations for designing the intervention. This in turn has delayed implementation of some interventions.

Drawing from his experiences, Shahnawaz said that the Khushi Baby India study team took approximately six months to do some initial scoping work and requirement gathering to define architectural principles and best practices to ensure consistency and scalability of the system. He further elaborated that technologies such as web or tablet-based applications, need adequate time for making tweaks to the app and/or developing advanced features. In their case, the team spent ten months on developing the app before launch and spent another four months after launch on building advanced features.

Shahnawaz also said that hardware procurement, testing and re-procurement takes additional time, their team had to go through a wait period of two months to obtain the necklaces and received the tablets in smaller instalments over a period of six months. The team tested all the 90 tablets they procured and found half of them to be unsuitable for the field. These subsequently had to be replaced, leading to further delays.

Jamila said that the VIR team(s) had a similar experience. She also talked about factoring in adequate time for testing of hardware like tablets or bands and for follow-up actions. The VIR team(s) did a closed field testing of the procured hardware and found technical faults with the bands. This subsequently led to re-designing of the bands and the procurement of new hardware. The entire procurement process took up to one year, thus delaying the study.

4.2 Optimising usage of technology-based interventions by health workers with low skill level, limited literacy and compliance issues

An important aspect of technology-based interventions is that teams have to identify ways to optimise use of the new technologies by frontline health workers. This is a challenge since health workers may not always be highly literate.

Shahnawaz said that any intervention needs to be designed while keeping the end user in mind and may need to go through several rounds of iterations to cater to illiterate or not very literate users. The Khushi Baby team carried out extensive paper prototyping with the health workers in India, called Auxiliary Nurse Midwife (ANM). The team first created the app-pages on paper and tested those prototypes at the field level. They subsequently created the webpages on the software which also incorporated the user feedback. The application and its back-end formats were developed in Hindi with interactive user interface which is easy to use. He said that they also gave different kinds of training to the ANMs, starting from the initial two-day training, followed by role plays, cluster trainings, etc. The ANMs were also provided with pre-launch practice, on-field support, access to a helpline for troubleshooting as well as training guides and other materials.

Jamila said for both the VIR Pakistan and Nigeria study teams, they realised that the health workers are able to use the intervention with relative ease if they are provided troubleshooting facilities. The teams also provided one-time training along with on ground support for the health workers.

Sudip Mahapatra from PATH India study team spoke about the **challenges with compliance**. Such issues may stem from the fact that health workers might perceive the intervention to be an added burden and increase their workload. Another issue could be resistance to any kind of change. His team experienced such challenges when they began interacting with ASHAs (community health workers in rural India) and training them to deliver the intervention. Most of these ASHAs were in their mid-fifties, not very technically savvy or literate. The team had to provide a lot of handholding and mentorship support and introduce a capacity building programme to overcome these challenges. The study team provided four days of classroom trainings, two days' refresher training and constant mentorship. The team also introduced a grading process of each ASHAs based on their performance in class room training and field observation by the supervisor. High performing ASHAs (Grade A) were portrayed as role models for the low performing ASHAs. This in turn has seemed to improve the ASHAs' handling of technology and record maintenance. This support also improved facilitation skills of the ASHAs to a greater extent.

Shahnawaz also elaborated on the compliance challenges faced by the Khushi Baby. Their field observations revealed that the ANMs all varied in age and not all of them were familiar with using technologies like a tablet or even a smartphone. The team also realised that some of the ANMs were not particularly enthusiastic about a new information recording system. Finally, due to the introduction of the intervention, ANMs in treatment areas had to fill the same data twice, one time on the app and the second time in a government mandated paper-based register. To address these challenges, first, the team introduced a feature in the app that would make it easier for the ANMs to record the data in the register, and therefore, reduce their menial work. Next, the study team counselled the resistant ANMs and communicated the approval of the study by the health officials, including mandatory use of tablets, to them through recorded audio clippings. Finally, the ANMs were provided constant monitoring and field support to ensure that they are complying.

4.3 Measures taken to resolve on-ground technical glitches

Technology-based interventions need some form of on-ground support at all given points of time. Even when an intervention has been tested several times, the hardware and/or software can still be susceptible to technical glitches (even though these are often minimised through repeated iterations). This places additional responsibilities on the study teams to identify ways to resolve issues as they occur.

Jamila explained how the VIR Pakistan and Nigeria teams developed field protocols for health workers to follow in case a VIR band turned out to be faulty. For example, if a band broke at the healthcare centre, then as per protocol, the health workers are supposed to replace it. If the band breaks at home or the time strip stops working, then the caregiver is instructed to bring the band to the centre and exchange the broken band with a health card. In this scenario, the health workers are also mandated to follow up with caregivers to get the child immunised. Since a child will receive a total of three VIR bands throughout their immunisation schedule, even if band 1 or 2 break, the child is still eligible to receive the next one.

Shahnawaz also shared that the Khushi Baby team has deployed fifteen field monitors to support the ANMs. The field monitors observe all the health camps being conducted by the ANMs and report any glitches with the tablet or Khushi Baby pendant to the implementation team. The cloud-based dashboard also keeps track of software crashes and any bugs can be fixed by automatic software updates.

4.4 Feasibility of integrating interventions into existing healthcare systems

Another thing that teams need to consider is that the scale and complexity of an intervention determines how resource intensive it would be. A biased assessment of feasibility can be detrimental to the overall project.

Sudip spoke about PATH's intervention in Uttar Pradesh (India) and how certain components of the model are resource intensive. The major cost seems to be that of the hardware, which in PATH's case is a pico projector¹. Apart from that, activities like data

¹ A pico projector is a small hardware device designed to project content from a smartphone, camera, tablet, notebook or memory device onto a wall or other flat surface. Pico projectors are

management and capacity building also have substantial costs. To make the model more sustainable, PATH introduced pico sharing model, where two ASHAs residing in nearby villages share the same projector and map out the logistic requirements. Similarly, the team has introduced a master trainer model to reduce the costs of training and capacity building activities. The trainings now happen in a small set-up, conducted by fellow ASHAs who have been identified as champions. The National Health Mission (NHM) in Uttar Pradesh has shown a keen interest in the intervention and has asked PATH to submit a concept note with budget for scaling up this model under NHM in the financial year 2018-19 in 7 priority districts. The major challenge might be the approval from Government of India on bulk procurement of electronic gadgets. The other perceived key challenge might be repair and maintenance of the gadgets.

Shahnawaz also spoke on similar lines and called the Khushi Baby (KB) system highly complex with several components like the KB pendant, tablet-based data collection, and setting up a cloud-based dashboard that aggregates all the data collected by frontline health workers. Such a system needs to be integrated with the existing healthcare system at several levels and the intervention acceptability also needs to be explored among various stakeholders at the community, regional and national levels. The system requires additional capacity to support the usage and maintenance of technology, the provision of which is dependent on availability of political will and funding for scale-up.

Jamila, on the other hand, said that while the VIR band technology is relatively simple and the trainings are not very elaborate, procurement of bands at bulk will have financial implications for the government.

4.5 Key highlights of this session

- The timeline for technology-based interventions cannot be very aggressive and rigid. Time for bug-fixing and additional testing of both the software and hardware should be budgeted in the overall timeline.
- Any technology has to undergo prototyping with extensive inputs from frontline health workers and may undergo an extensive iterative process to meet the needs of the primary users.
- Adequate provisions should be made for troubleshooting facilities since not all technical glitches or required add-on features can be anticipated. These are heavily dependent on user-experience and feedback. It is important to have properly defined field protocols in place in the event of technology failure. It may be beneficial to have a centralised system in place to track software-related problems in interventions that are heavily dependent on them.
- Compliance issues cannot be tackled with a linear approach and often the problem needs to be broken down into smaller components which need to be addressed as separate issues. To address compliance issues, study teams often have to use combinations of various solutions such as training support, field support, and mentoring to encourage usage of technology. The teams also have to be cognizant of the additional workload that new technology may bring upon the health workers and to take pre-emptive steps to address them.

also known as pocket, handheld or mobile projectors and they take a number of formats that work in various ways.

- Teams need to make a concentrated effort at documenting the requirements of each intervention component; on how each component is being managed and sustained during the evaluation phase, and assess the physical inputs, capacity building and political will that is required in the implementing agency or government to take over and scale-up.

5. Session 5: Integrating interventions into existing healthcare systems

Moderators: Saugato Datta, Ideas42; Emilie Karafillakis, LSHTM; and Chizoba Wonodi, Health Strategy and Delivery Foundation

Rapporteurs and contributors: Emilie Karafillakis, LSHTM; Chizoba Wonodi, Health Strategy and Delivery Foundation; and Maaïke Bijker, J-PAL

During this breakout session, participants discussed the challenges associated with various aspects of integration of interventions into existing healthcare systems during both the evaluation stage and in preparation for their scale-up, if found successful. The broad topics of discussion for the groups were:

1. Human resource integration, particularly, of frontline health workers
2. Institutional integration of intervention process, especially participatory processes
3. Financial integration

5.1 Human resource integration, particularly, of frontline health workers

The discussion highlighted various challenges that study teams might face while working with frontline health workers, such as finding ways to build the workers' capacity; convincing frontline health workers that the intervention will ease their workload; and providing incentives to motivate them.

5.1.1 Ways to build capacity of frontline health workers

Participants categorised the various kinds of capacity building activities into two phases- pre-implementation and during implementation of intervention.

During **pre-implementation phase**, most capacity building activities occur in the form of training frontline health workers. While designing these trainings, study teams must find ways to make them engaging and interactive, scalable and cost-effective.

Participants highlighted different examples of engaging methods of training such as doing role plays during trainings to give a more realistic and practical experience to the frontline health workers, and using visual training material like videos.

The J-PAL India team said that they used a training model where master trainers provided overall support and champions were identified from within the cohort of frontline health workers to provide peer support. The team identified high performing and senior frontline health workers or government officials, who volunteered to become the trainers and were trained by the study team.

There were also some suggestions regarding provision of additional support to weak performers and conducting spot checks during the trainings to ensure that the quality of trainings is up to the mark.

It was suggested that during **implementation phase**, study teams should provide additional support to frontline health workers in the form of refresher trainings, peer support, mentoring and reference material (like training videos). These support activities could go a long way in ensuring that the knowledge gained from initial trainings does not fade over time. Some participants also suggested collaborating with government counterparts to enforce good practices and assessment of frontline health workers.

5.1.2 Provision of incentives to health workers

Participants broadly classified incentives into two categories- monetary and non-monetary incentives. They defined non-monetary incentives as those that are social in nature and tied directly to the performance, status, and the social capital of the frontline health worker.

It was suggested that for incentives to work, they need to be linked to the health worker's workload. Teams also need to proceed with caution and take into consideration the employment status of the frontline health workers, as they could have different implications for those who work on a voluntary basis from those who are employed on a fixed wage.

The VIR Nigeria team said that in Nigeria there was evidence to suggest that monetary incentives mattered most to the midwives. It was highlighted that while monetary incentives may be the most motivating form of incentive, their sustainability is an issue and the teams should consider alternative and sustainable incentive structures. For example, frontline health workers could be incentivised to take action because they believe in the benefit of the programme. In some contexts, community ownership can act as an effective incentive. The PATH India study members observed this to be the case with ASHAs who felt that participating in the intervention enabled them to better integrate with the community and be a part of it.

5.1.3 Balancing the workload of frontline health workers

A common perception is that the interventions might overburden the health workers. Many teams revealed that most often this is not the case and the intervention itself is not adding to the workload burden, especially if it is flexible. For example, tablet or app-based interventions may be harder to adapt to initially but they aim to eventually reduce the workload of health workers. In order to convince health workers of this, teams have to provide training support (as mentioned above) and invest in building trust between frontline health workers and the team implementing the project. This can go a long way in ensuring frontline health workers' interest and engagement with the project.

5.2 Institutional integration of intervention

This discussion focused on the best ways to integrate intervention processes into existing government programmes. Teams should make an effort to understand government's strategy and policy and find the leverage points for the new intervention. The teams should also carry out a diagnostic of the existing system to identify the demands on and constraints in delivering the current health and immunisation services. This exercise will help study teams in two ways; one, in assessing the feasibility of integrating the technical, financial, institutional and personnel-related requirements of the intervention into the existing system. Two, in identifying the gaps or weaknesses in the

current system, which are important for delivery of the intervention and need to be addressed. This will help the study teams channel their limited resources in building institutional capacity in the areas that need strengthening and avoid creating unnecessary and unsustainable parallel delivery systems. Working with the existing systems will also help in retaining institutional memory in case key individual staff moves on to other opportunities.

It was also noted that even if teams use the existing healthcare systems in place, an intervention will invariably introduce something new and/or improved into them. This makes it the study team's responsibility to plan an *exit strategy* that clearly outlines the plan for transferring the roles and responsibilities of project execution from the study team to their government counterparts. This strategy should be created in consultation with key stakeholders responsible for the implementation and integration of the intervention within existing healthcare system. This information could be of valuable assistance to governments during scale-up of an intervention.

The J-PAL India study team said that as a part of their exit strategy, the team maintains detailed documentation on standard operating procedures (SOP) for two of their intervention components: a data collection application and the training modules developed by the team to train the frontline health workers. These documents contain all the information one would require to scale-up the programme with minimal inputs from the people involved in the evaluation.

5.3 Financial integration of the intervention (if successful for scale-up)

This group discussion highlighted two different aspects of financial integration that teams must consider in order to prepare themselves and the key decision makers for a scale-up of the intervention.

The first aspect of financial integration is preparing policymakers and decision makers for accepting an intervention and if successful, its scale-up. To achieve this objective, key stakeholders and decision makers should be engaged and involved throughout the design, implementation and evaluation of the intervention. However, the teams should be cautious as this engagement may not occur in a coordinated manner because of a disconnect between the researchers and policy-makers. A reason for this could be that academic interests and policy-related interests may not be aligned.

To avoid gaps in communication, teams should identify key decision makers or government counterparts (including officials responsible for healthcare budgeting) and initiate early engagement to educate them about the intervention. The teams should maintain all channels of communication during implementation of the intervention, including more personalised interactions with the policy makers. This would allow the teams to comfortably communicate any project related changes in a timely manner, and in a way that sustains the interest of the government. Towards the end of the evaluation, teams must consider what would be the most effective way to communicate the findings of their studies. For example, they could summarise key points of their study in a policy brief or a two-page note that carries all the essential details about the intervention in a language understandable to government officials and that is easy to read. These briefs can then be used to build on or add to discussions with policy makers in meetings, where

researchers can share small pieces of information that have not been covered in the brief but could be relevant to the policy maker.

Teams can also explore other creative modes of communication and engagement, such as making short videos on the study to communicate key points to engage policy-makers in case of time constraints, and using mass media channels for outreach to capture the attention of policymakers and advocate for a scale-up.

The second important aspect of financial integration of a successful intervention is to discuss its budgetary implications with the policy-makers. This should be preceded by assessment of financial resources available to the government for the scale-up of the intervention. To collect this information, teams should first conduct an assessment of available resources to identify where the intervention might fit in the government's allocations and current budgetary plans and the budgetary cycle. This could be done using analytical approaches such as costing analyses and expenditure reviews.

The study teams must also collection information on cost of the intervention that would be helpful to the government in assessing the financial requirements of scaling up the intervention. To be able to make this assessment, teams must consider the costs associated with all components and processes of the intervention. These could be logistics, human resources, as well as the auxiliary and often overlooked costs, such as technical support, expert guidance or even managerial and supervisory support. This information should be presented in a format that provides component-wise breakdown of costs so that it helps the government to prioritise adoption of essential and nonessential components.

It is important for study teams to reconcile their intervention's financial requirements with the real-world financial constraints. A review of the financial resources available to the government might reveal budget constraints for the governments and limited availability of resources for a potential scale-up. In that case it was suggested that study teams can also explore alternative avenues for funding their projects, such as public-private partnerships, that may help address issues related to financial resource constraints and make government counterparts more inclined to support a scale-up of the intervention.

5.4 Key highlights of this session

- Successful integration of immunisation projects relies heavily on the health workers' understanding and acceptance of the intervention. Study teams should look into building the capacity of health workers to prepare them for intervention delivery and provide continuous support throughout the project cycle.
- Study teams could aim to build a sense of ownership of the project among health workers using social incentives such as community recognition or drawing upon their job or role and leverage that positive association or feeling.
- A diagnostic of the existing healthcare systems will help teams to assess the feasibility of integrating the intervention into the existing healthcare system and identify the gaps or weaknesses that need to be addressed. This will help them channel their limited resources in building institutional capacity in the areas that need strengthening and avoid creating unsustainable parallel delivery systems.

- Key stakeholders and decision makers should be engaged and involved throughout the design, implementation and evaluation of the intervention in a way that sustains their interest and helps them understand and accept the intervention and if successful, its scale-up.
- Study teams should make an effort to document all direct and indirect costs associated with their interventions and provide a component-wise breakdown. This type of information can help inform the governments' decisions to scale-up and also help them prioritise essential and non-essential components of an intervention.

6. Session 6: Conducting rigorous qualitative research as a part of impact evaluations

Moderators: Michelle Desmond, PATH; Sandra Albert, IIPH; and Saugato Datta, Ideas42

Rapporteurs and contributors: Michelle Desmond, PATH; Sandra Albert, IIPH

This breakout session aimed at understanding the important components of the qualitative research that the teams have incorporated into their evaluations and the associated challenges and lessons. The discussion highlighted some important benefits of doing the qualitative research. For example, qualitative research can help teams adapt quantitative survey tools, thereby increasing their sensitivity to the context. It can help in understanding the nuances in the findings and weave stories around the quantitative data. It can also help map out key stakeholders and beneficiaries of an intervention and help put together a complete picture of all social interactions and how those might be modified by the introduction of an intervention. Rest of the discussion from the individual breakouts has been integrated and organised as follows:

6.1 Selecting and customising qualitative research tools to the requirements of a study

It was suggested that teams should consider all available qualitative research tools that can help them weave a relationship between the contextual setting and the quantitative findings that emerge from it. Often a study team has little experience in qualitative research and their tools are limited to interviews and focus group discussions (FGDs). Participants with extensive qualitative research experience shared that teams should consider exploring other methods such as observation, informal conversations, stakeholder mapping exercises, community mapping exercises, case studies, props or emoticons and end user assessments to answer their evaluation questions. They also shared some examples of the techniques that they have used like social mapping, show and tell sessions² and other pictorial methods like drawing different size of circles (these methods are often used to capture decision making structures, inequities in power

² This a technique employed during FGDs where instead of just asking about contraception methods and what they use/not and why, after rapport building different contraceptive methods are displayed in the centre of the circle and ask the participants to look and feel them to identify which ones they have seen or used before.

dynamics, acceptance and aversion, religious beliefs, norms and attitudes that are otherwise difficult to capture).

The participants also highlighted that qualitative tools need to be customised or adapted to a given context using an iterative approach. This makes them more sensitive to the context and opens the possibility of exploring new themes as they emerge.

6.2 Prerequisites for a qualitative research plan

The discussion outlined some essential pre-requisites that teams must keep in mind while drafting a qualitative research plan. Qualitative research should be undertaken keeping existing resources in mind (data collectors, time and budget) and should have a flexible design (it could be a rapid or an elaborate analysis). A team may decide to add or subtract number of interviews/FGDs to adequately answer a question of interest/ until saturation has been achieved. A well-planned analysis needs to have inputs from diverse stakeholders/groups if they are a part of the study. It is important to make sure all stakeholders from one area have been covered rather than distributing stakeholders across different study sites. Since perspectives can vary across different communities, this is a good way to capture all stakeholders and get a complete picture of the situation.

6.3 Factors that may influence the quality of qualitative data

The discussion also highlighted that like quantitative data, qualitative data is also susceptible to certain factors that may influence its quality.

Participants shared that one of the most influential factors is the 'interviewer'. One might have to consider whether someone familiar to the community (an insider) or an outsider would be better for exploring issues within a community. Both have advantages and pitfalls. An insider is likely to gain acceptance easily but can miss exploring some 'intrinsic' beliefs that are accepted as the norm within the community. Here an 'outsider' perspective is helpful as they are inclined to probe more. Having someone with an 'outsider' perspective to debrief and analyse data along with the team in the early stages can help. The participants also said that while making this decision; teams should keep in mind that an interviewer's or researcher's sensitivity and skills can be the deciding factor in the quality of data collected.

The discussion also highlighted that qualitative data is sensitive to language, translation and the manner in which questions have been framed. It was suggested that the teams may want to consider having bilingual and experienced researchers or translators on the team, i.e., interviewer doing transcription and translation can help reduce errors, besides enabling documenting associated emotions to some extent. Another suggestion was to get a proportion of transcripts to be assessed for quality of translation with a more experienced person. On the framing of questions, it was shared that a study team might observe that using the third person approach during interviews elicits more authentic responses from a respondent. The teams can instruct the interviewers that rather than asking 'why don't you immunise your children?', they can ask 'Are there people in the community who do not immunise their children? Why do you think they do not do so?'

6.4 Key highlights of this session

- Qualitative research can add depth to a study by adding another layer of understanding to the quantitative data and providing an understanding of why a programme worked or didn't work. The stories of qualitative research participants can leave a lasting impression.
- Study teams need to carefully assess their study setting and select the appropriate tools to conduct qualitative research. Teams should explore all possible tools or methods such as community mapping, informal conversations, FGDs, observations, etc.
- Creating qualitative tools is an iterative process and teams need to invest time and effort into revision of these tools to make them sensitive to the context. This process can also help teams uncover new themes which were previously unexplored.
- Quality of qualitative data is sensitive to factors such as linguistic nuances, translation, framing of questions and the selection of a suitable interviewer. While selecting an interviewer, teams need to make an informed choice regarding the suitability of selecting an interviewer familiar to the context as opposed to an outsider or vice versa. Besides these, teams also need to consider the linguistic proficiencies of an interviewer.

7. Session 7: Stakeholder engagement and communication

Panellists: Sudip Mahapatra, PATH; Ngozi Akwataghibe, KIT; and Justine Landegger, IRC

Moderator: Radhika Menon, 3ie

Rapporteur: Avantika Bagai, 3ie

The aim of the panel discussion was to understand the importance of stakeholder engagement for promoting ownership of evaluations and increasing the potential for evidence uptake. The discussion brought together panelists who had experiences to share on dealing with the challenges associated with stakeholder engagement.

These are the highlights of the discussion:

7.1 Early engagement with multiple stakeholders

The panellists spoke of the challenges they faced in engaging with different stakeholders. They stressed the importance of engaging early with stakeholders at different levels – local, provincial, national and global.

7.2 Aligning study objectives with the stakeholder priorities

Sudip Mahapatra from PATH noted that it is often difficult to get influential policymakers to spare some time. This is an issue that other study teams have also faced. There was agreement that it was important to have a dynamic engagement plan to address such challenges.

7.3 Making stakeholder mapping an on-going process

Sudip said the PATH study team initially did not think that the Accredited Social Health Activist (ASHA) supervisor (called sanghinis) was an important stakeholder. But when they went to the field, they realised the importance of ASHA sanghinis and included them in their engagement plan.

Ngozi Akwataghibe from KIT said that stakeholders are the best people to tell us about other stakeholders we should be engaging with. They can also offer useful advice on how to engage with stakeholders one may not have previously engaged with e.g. traditional leaders.

7.4 Importance of engaging with stakeholders for designing policy-relevant interventions

Ngozi felt that it is important to work closely with government and other stakeholders to assess their needs and for understanding the nature of the problem we are trying to address through interventions. She thought that this was also a good way of keeping them involved right at the beginning.

Justine Landegger from IRC spoke about how in the Ugandan context the team made sure that their m-health platform had functions that addressed policymakers' needs. The platform was designed on the basis of feedback from intended users. Justine said this was necessary to increase the likelihood of eventual adoption of the platform. Similarly, the IRC intervention in Ethiopia is undergoing changes based on stakeholder feedback.

7.5 Staying humble and showing respect to policymakers

Ngozi said researchers often forget that policymakers are knowledgeable and have different skill sets. She stressed the need for researchers to be humble and stay respectful towards policymakers. Often policymakers don't have a lot of time to spare for interacting with researchers. It is therefore important that researchers remain patient about it as building the ownership of policymakers is essential for ensuring study uptake. She spoke of how she had involved a supportive government official in writing the policy brief for the formative evaluation she was working on.

7.6 Stakeholder engagement will vary depending on the type of evaluation

The team from IRC pointed out how stakeholder engagement varies for formative and impact evaluations. When you pilot an intervention, you have to prioritise district and community-level stakeholders. Whereas, for an impact evaluation, since the intervention is being scaled up, it is also important to engage with regional and national-level stakeholders.

For example, for the Uganda IRC impact evaluation, the IRC team has established an advisory group which includes the director general of health services from the ministry of health in Uganda. They found that coordinating with high-ranking officials is very tough and it also has implications for the overall cost of the study as the research team has to sustain engagement and seek inputs from the advisory group through the study cycle. The team wanted to organise field trips to the study site for some of the government

stakeholders. However, not everyone is available for a field trip and these trips can end up being expensive.

7.7 Balancing stakeholder interest and study integrity

Drawing from IRC's experience in Uganda, Justine highlighted how critical it is to find the right balance between getting key stakeholders engaged at the right stage and preserving the integrity of the study. In some cases, policymakers have to be kept blinded about the intervention to prevent bias or conflict of interest. In other cases, it may not always be feasible to address stakeholder feedback. For instance, government officials may provide inputs on the study or intervention design during an ongoing evaluation when it may not be feasible to implement their suggestions.

7.8 Importance of identifying champions for your study

When the session was opened to the audience, the J-PAL team said it was important to identify a champion within the system who may have the power or the ability to move things in the right direction. They also focused on engaging with government officials at different levels in the hierarchy.

7.9 Communicating and disseminating your study findings

The panellists as well as some people in the audience agreed that it is important to find the right way to communicate and disseminate your findings amongst stakeholders. The suggestions included briefs, power point presentations, regular phone calls and emails – the underlying message being that information flow needed to be continuous. It is also important to keep it simple.

Sandra Albert from IIPH said it is important to understand how stakeholders preferred receiving information so that communication products can be customised accordingly.

Betta Edu, a government official from Nigeria, concluded the discussion by saying that researchers should not beat around the bush when communicating important information. They should get straight to the point.

7.10 Key highlights of this session

- It is important to engage stakeholders at multiple levels - local, provincial and national.
- Researchers need to be humble and respect the policymaker's knowledge and position.
- Stakeholder engagement may vary with the type of evaluation. For a formative or pilot study, the most important stakeholders may be those at the community or district level. Whereas, for an impact evaluation one needs to prepare for a scale-up, if the intervention is successful. Therefore, it is also important to engage with regional and national-level stakeholders.
- Researchers need to maintain a careful balance between getting key stakeholders engaged at the right stage and preserving the integrity of the study.

- It is important for researchers to ask stakeholders their preferred mode(s) of communication and accordingly customise their communication plan.

8. Session 8: How to synthesise findings by type of evaluation (formative and full impact evaluation)

Moderators: Molly Abbruzzese and Amanda Shortell, Gates Foundation; and Avantika Bagai, 3ie

Rapporteurs and contributors: Santanu Pramanik, PHFI; Yachna Srivastava, PATH; and Ngozi Akwataghibe, KIT

In this session, participants were organised into smaller groups to discuss how findings from full impact evaluations and those from formative evaluations can be synthesised.

8.1 Synthesis of findings from full impact evaluations

The following points emerged from the discussions around synthesis of findings from full impact evaluations:

8.1.1 Ways of synthesising findings

Participants discussed and recommended two types of syntheses for impact evaluations: a meta-analysis for synthesis of immunisation outcomes and a cost-effectiveness analysis to understand the incremental benefit of the intervention with respect to incremental cost and potential scalability of different interventions. Moreover, it was suggested that if interventions can be grouped into categories, then the cost-effectiveness can be combined within groups using the meta-analysis approach. This could be helpful in comparing the cost-effectiveness of different types of interventions.

J-PAL India study team offered to share their cost template, which could be adapted and shared with all teams to standardise the measures for capturing data related to cost.

There was another suggestion on synthesising information on some of the implementation processes. Participants suggested that teams could be asked to share/publish their programme's standard operating procedures (SOPs) and selected information from these documents could be thematically categorised and published.

8.1.2 Suggestions on common indicators for a synthesis

The discussion outlined indicators related to immunisation (quantitative and qualitative) for which evidence can be synthesised:

8.1.3 Indicators related to immunisation outcomes

It was noted that full immunisation coverage (FIC) is often considered as an outcome in most immunisation studies as it serves as a composite indicator that covers all important vaccines in the immunisation schedule. However, some participants said we need to be cautious about the definition used for FIC as it may vary across countries, even if slightly, depending on country's immunisation schedule. Moreover, considering FIC as an outcome may mask issues regarding uptake of specific vaccines. For example, lower coverage of FIC may be due to non-compliance to multi-dose vaccines (e.g., three doses of DPT/Pentavalent (DPT3/Penta3) - caregivers may think that one or two doses are

enough). It was suggested that from a policy perspective, it may be worthwhile to consider coverage of three doses of DPT/Pentavalent and/or measles as primary outcomes.

While timeliness of vaccination was also suggested as an important indicator to track, there was wider debate about how teams should be measuring it. It was noted that the literature specifies timely immunisation as children being immunised within 30 days of the recommended age. However, like FIC, definition of timeliness also differs from country to country due to differences in national immunisation schedules. This prompted the participants to underscore the importance of having a more detailed discussion around capturing timeliness and whether standardised measures can be created for age-appropriate immunisation coverage across different contexts.

Other suggestions included measuring drop-out rates for different vaccines along with the reasons for defaulting and capturing sub-group wastages of vaccines. However, most participants were not in favour of the latter suggestion since this information is difficult to capture and may not relate to the overall theory of change.

8.1.4 Other indicators

There were also some suggestions to track indicators on:

- Knowledge, attitudes and practices related to immunisation;
- Key barriers and learnings highlighted in each study along with a list of challenges related to the health system;
- Indicators related to frontline health workers, particularly, those tracking their motivation and work burden.
- Indicators on implementation fidelity that can inform whether intervention procedures are being followed and to what extent. For example, a study team may decide to track fidelity by capturing messages (e.g. on possible side-effects of vaccinations) that are given by the frontline health workers to the caregivers after the child has been vaccinated.

8.2 Information that should be collected and reported by study teams

There was a suggestion that aside from reporting on important immunisation outcomes, all teams must collect and report the data on: cost of the intervention, implementation processes and any changes made to Theory of Change (ToC) based on learning from the implementation of the intervention and its impact evaluation.

Some participants also discussed the possibility of creating a platform or forum where teams can share information on implementation or evaluation failures in any study openly and discuss them without being judgmental.

8.3 Issues to consider before synthesis

It was noted that quality of data might vary across different contexts and needs to be checked before undertaking any kind of synthesis. In particular, for immunisation related studies, completeness and accuracy of vaccination records on cards, authenticity of mother's recall, correct enumeration of child's age (in completed months), all contribute towards reliable inference. In general, electronic data collection methods (e.g., CAPI) are perhaps better compared to paper-based methods as it avoids one level of error that

might happen during electronic entry of data from paper questionnaires. Moreover, data collection becomes a lot simpler and less error-prone because of automatic checks and balances in the software used for data collection³.

It was also highlighted that synthesising process indicators across studies might not be feasible as the intervention process is usually different across interventions. However, proper grouping of interventions may make it somewhat feasible to synthesise process indicators.

8.4 Synthesis of findings from formative evaluations

It was pointed out that formative evaluations are usually qualitative in nature and there is a lack of standardised measures and protocols to guide these evaluations. Therefore, they differ considerably in scope, scale and study methodology and to glean lessons from such diverse studies is quite challenging. A couple of suggestions were made on how to carry out synthesis of findings from such evaluations.

One suggestion was to examine the formative evaluations through the prism of some common questions and to cull out common threads and lessons. The possible questions include:

- How was each study designed?
- How did implementation occur, what did it involve and who was involved?
- How were the stakeholders identified and engaged?
- How did the sample size vary during implementation?
- What were the determinants of success?
- How has the theory of change evolved at the end of the formative evaluation?
- What were the challenges?

Another suggestion was to identify broad themes of interest and then synthesise findings from different studies along them. Suggestions on broad themes included:

- Understanding knowledge, attitude and practices around immunisation and its timeliness
- Access to immunisation services
- Determinants of participation and continued participation in an intervention (acceptability)
- Determinants of feasibility of an intervention
- Determinants of implementation fidelity

Participants also suggested some indicators that can be used for synthesis along broad themes: assessment of access to Penta 1; utilisation of Penta 3; knowledge of community about immunisation service delivery; proportion of defaulter children identified, traced and subsequently immunised; and information on sources of immunisation. There was also a suggestion to track some qualitative indicators (for example, perception of having a voice in decision making) in such a manner that

³ Maulik Chauhan made a presentation on Dobby's digital data collection platform called SurveyCTO and how the platform has features that can support high quality data collection. The presentation can be accessed via this [link](#).

numerical data on those indicators can be obtained. This can be done through primary surveys or by structuring such indicators into the routine monitoring data.

8.5 Key highlights of this session

- The methodology of synthesis of evidence from impact evaluations depends on the type of information being synthesised. For instance, a meta-analysis could be conducted to synthesise effect of different interventions on immunisation outcomes from different studies. A cost-effectiveness analysis on the other hand could be undertaken to understand the incremental benefit of the intervention with respect to incremental cost and potential scalability of different interventions.
- For a synthesis of impact evaluations on immunisation, both FIC and timeliness of vaccination are important outcome indicators. However, at the country-level, these indicators are defined by each country's national immunisation schedule, which may lead to differences in how these have been measured across different studies. As an alternative, it might be more feasible to consider coverage of three doses of DPT/Pentavalent and/or measles as primary outcomes for a synthesis.
- Before undertaking a synthesis, due consideration should be given to the quality of data as it might vary across different contexts. For immunisation related studies, completeness and accuracy of vaccination records on cards, authenticity of mother's recall, correct enumeration of child's age (in completed months), all contribute towards reliable inference.
- A synthesis of findings from formative evaluations would require a different approach and framework from that of impact evaluations. It could involve a careful assessment of different aspects of the formative evaluations to identify common threads and lessons across them. Alternatively, one could take some pre-determined themes, such as acceptability and feasibility of an intervention, and synthesise findings from different evaluations along them.

9. Session 9: Disseminating findings from 3ie-funded evaluations

Moderators: Molly Abbruzzese, Gates Foundation and Monica Jain, 3ie

Rapporteur: Radhika Menon, 3ie

During this session, participants were organised into smaller groups and asked to discuss and brainstorm the various ways in which teams can disseminate study results (with and without support from 3ie). Through these discussions participants provided the following suggestions:

9.1 Support to implement engagement and dissemination strategies

Participants provided an overview of the challenges they face at the time of disseminating findings from their evaluations. They highlighted that stakeholder engagement, especially at the level of policymakers needs bandwidth, time and resources. They also said that engagement with dissemination of results usually happens after 3ie has disbursed the last tranche payment and by then teams have spent most of their money.

To overcome these challenges, participants requested for 3ie's support in implementing their stakeholder engagement and communication plans. This could include having 3ie review the study team's communication products (briefs, journal papers, video content, etc.) to ensure that findings are being communicated clearly and effectively⁴.

It was noted that, this level of support from 3ie would especially prove to be valuable for smaller teams that do not have the internal capacity to carry out communication and outreach.

9.2 Dissemination events and networking

Some participants suggested that 3ie could leverage its institutional position to support the participation of teams in various dissemination events. 3ie could do this by helping with identification of the right forums where teams can present study results and helping them (immunisation grantees) put together panels at such events.

Participants also envisioned 3ie playing a key role in the formation of an immunisation network and in organising meetings and events with professional bodies and organisations such as UNICEF and GAVI (that have been actively working in the area of immunisation and have more leverage in promoting findings).

Another suggestion was that study teams have dissemination events for people who participated in the evaluations (treatment and control groups) and share findings with them through videos, etc.

9.3 Publishing the study results independent of 3ie support

The discussions also highlighted some suggestions on how teams can increase the visibility of findings, independent of 3ie support. Some participants suggested pursuing collaborative efforts to publish joint articles for journals. One type of collaboration could be between two (or more) study teams and the second type could be between a research team and their identified policymaker.

9.4 Key highlights of this session

- Technical support from 3ie can help study teams in creating comprehensive engagement and communication plans and help ensure that adequate time and financial resources have been budgeted to carry out dissemination and outreach activities.
- 3ie should play a more prominent role in planning events and helping grantees identify other external forums where the findings from 3ie-funded studies can be presented.
- 3ie should leverage its position to create networks with other organisations working actively in the area of immunisation to increase the visibility of findings of various 3ie-funded studies.

⁴ For effective communication, participants also emphasised the importance of using the right language to present findings and avoiding the use of negative words.

Appendix A: Workshop agenda



3ie Innovations in Improving Immunisation Thematic Window

Mid-term learning and synthesis workshop

11-12 July 2017

Sheraton Hotel, New Delhi, India

This learning and synthesis workshop has three overarching goals:

- To have productive discussions on the various challenges teams have faced, or may face in the future, in terms of designing and implementing interventions and their evaluations;
- To share experiences on the approaches and strategies that can be used to address these challenges; and
- To discuss how the findings from formative and full impact evaluations can be synthesised.

This will also be an opportunity for grantees to share and receive constructive feedback from peer researchers, programme managers, 3ie, the Gates Foundation and other invited experts.

The 3ie learning workshop is being made possible with the support of the Gates Foundation.

Tuesday 11 July

08:00 – 08:30	Registration
08:30 – 08:45	Welcome remarks and setting the objectives of the workshop Emmanuel Jimenez, 3ie Molly Abbruzzese, Gates Foundation Monica Jain, 3ie
08:45 – 09:40	Session 1: Introduction to interventions focusing on Participatory Approaches Team presentations to introduce the studies (10 minutes each) Team 1: Collaborating with community members to make immunisation checklists in Myanmar Team 2: The Stimulate, Appreciate, Learn and Transfer (SALT) approach in India Team 3: Participatory Action Research in Nigeria Team 4: Using peer networks, incentives and SMS reminders to improve immunisation in India Q&A (15 minutes) Moderator: Radhika Menon, 3ie

09:40 – 11:00	<p>Session 2: Designing impact evaluations for immunisation interventions</p> <p>Panelists: Michelle Desmond, PATH; Jessica Davis, Burnet Institute; and Saugato Datta, Ideas42</p> <p>Q&A (30 minutes)</p> <p>Moderator: Monica Jain, 3ie</p>
11:00 – 11:15	<i>Break</i>
11:15 – 12:00	<p>Session 3: Introduction to interventions focusing on hard-to-reach populations</p> <p>Team presentations to introduce the studies (10 minutes each)</p> <p>Team 5: Increasing Immunisation coverage in pastoral and nomadic communities in Kenya</p> <p>Team 6: Extending Ethiopia's Health Development Army platform to remote, pastoral communities</p> <p>Team 7: Engaging traditional religious leaders to plan, implement and monitor immunisation services in Nigeria</p> <p>Q&A (15 minutes)</p> <p>Moderator: Bhupendra Tripathi, Gates Foundation</p>
12:00 – 12:50	<p>Session 4: Designing interventions for diverse populations, those that are hard-to-reach and fragile contexts</p> <p>Break-out (30 minutes)</p> <p>Reporting back and Q&A (20 minutes)</p> <p>Moderators: Shiferaw Demissie, IRC; Ngozi Akwataghib, KIT; and Careena Otieno, Great Lakes University of Kisumu</p>
12:50 – 13:50	<i>Lunch</i>
14:00 – 15:15	<p>Session 5: How to synthesise findings by type of evaluation (formative and full impact evaluation)</p> <p>Break-out (45 minutes)</p> <p>Reporting back and Q&A (30 minutes)</p> <p>Moderator: Molly Abbruzzese, Gates Foundation</p>
15:15 – 16:15	<p>Session 6: How to conduct high quality process evaluations</p> <p>Presenters: Jane Bruce, LSHTM; Sandra Albert, IIPH; Harini Kannan J-PAL; and Jessica Davis, Burnet Institute</p> <p>Q&A (20 minutes)</p> <p>Moderator: Amanda Shortell, Gates Foundation</p>
16:15 – 16:30	<i>Break</i>
16:30 – 17:30	<p>Session 7: Survey design and data collection</p> <p>Presenters: Maulik Chauhan, Dobility and Harini Kannan, J-PAL</p> <p>Break-out (20 minutes)</p> <p>Reporting back and Q&A (10 minutes)</p> <p>Moderators: Angela Oyo-Ita, University of Calabar Teaching Hospital; Hailay Teklehaimanot, Center for National Health Development in Ethiopia; and Saugato Datta, Ideas42</p>
17:45 – 19:00	One-to-one meetings with grantees
19:15 – 21:15	Dinner will be hosted by 3ie at Mahabelly, DLF Place Saket, New Delhi

Wednesday 12 July

08:30 – 09:25	<p>Session 8: Introduction to interventions focusing on technology Team presentations to introduce the studies (10 minutes each) Team 8: Using digitally encrypted necklaces and voice call reminders to promote maternal and child health seeking behavior, Udaipur, India Team 9: Using Vaccine Indicator Reminder Band to provide visual cues for vaccination due dates to caregivers in Nigeria and Pakistan Team 10: Community-led videos on maternal and child health in Uttar Pradesh, India Team 11: Using m-Health data collection platform for effective defaulter tracing in Uganda Q&A (15 minutes) Moderator: Avantika Bagai, 3ie</p>
09:25 – 10:15	<p>Session 9: Implementing technology-based interventions: challenges and solutions Panelists: Suresh Dalpath, NHM Haryana; Md. Shah Nawaz, Khushi Baby Inc.; and Sudip Mahapatra, PATH O&A (20 minutes) Moderator: Avantika Bagai</p>
10:15 – 10:30	<i>Break</i>
10:30 – 11:15	<p>Session 10: Introduction to interventions incentivising or supporting health workers Team presentations to introduce the studies (10 minutes each) Team 12: Empowering the health workers: immunisation tracking posters and SMS reminders in Ethiopia Team 13: Using Vaccine Indicator Reminder Band to provide visual cues for vaccination due dates to caregivers in Nigeria and Pakistan Team 14: Community-led Health Development Army conducting quality home and outreach visits to promote maternal and child health in Ethiopia Q&A Session (15 minutes) Moderator: Monica Jain, 3ie</p>
11:15 – 12:15	<p>Session 11: Integrating interventions into existing healthcare systems Break-out (35 minutes) Reporting back and Q&A (25 minutes) Moderators: Emilie Karafillakis, LSHTM; Chizoba Wonodi, Health Strategy and Delivery Foundation; and Saugato Datta, Ideas42</p>
12:15 – 13:15	<i>Lunch</i>
13:15 – 14:00	<p>Session 12: Conducting rigorous qualitative research as a part of impact evaluations Break-out (30 minutes) Reporting back and Q&A (15 minutes) Moderators: Emilie Karafillakis, LSHTM; Michelle Desmond, PATH; and Sandra Albert, IIPH</p>
14:00 – 15:00	<p>Session 13: Stakeholder engagement and communication Panelists: Ngozi Akwataghibe, KIT; Sudip Mahapatra, PATH; and Justine Landegger, IRC Q&A session (30 minutes) Moderator: Radhika Menon, 3ie</p>
15:00 – 15:15	<i>Break</i>
15:15 – 16:15	<p>Session 14: How to synthesise findings by type of intervention (participatory, technology-based, hard-to-reach/ fragile) Break-out (40 minutes) Reporting back and Q&A (20 minutes) Moderator: Molly Abbruzzese, Gates Foundation</p>
16:15 – 16:45	<p>Session 15: Wrap-up and next steps Molly Abbruzzese, Gates Foundation and Monica Jain, 3ie</p>

Appendix B: List of participants

S. No.	Name	Organisation
1	Emilie Karafilakis	London School of Hygiene and Tropical M
2	Shiferaw Demissie	International Rescue Committee, Ethiopia
3	Jane Bruce	London School of Hygiene and Tropical Medicine
4	Justine Landegger	International Rescue Committee
5	Michelle Desmond	PATH
6	Sudip Mahapatra	PATH
7	Anil Mishra	PATH
8	Yachna Srivastava	PATH
9	Ngozi Akwataghibe	Royal Tropical Institute (KIT)
10	Ayowole Elijah Ogunsola	Primary Health Care Development Board, Ministry of Health, Ogun State, Nigeria
	Careena Flora Otieno-	
11	Odawa	Nairobi Centre, Great Lakes University of Kisumu
12	Beverly Ochieng	Nairobi Centre, Great Lakes University of Kisumu
13	Angela Oyo-lta	Effective Health Care Consortium, University of Calabar Teaching Hospital.
14	Betta Edu	Cross River State Primary Health Care Development Agency, Cross River State Ministry of Health, Nigeria
15	Sandra Albert	Public Health Foundation of India
16	Arpita Ghosh	Public Health Foundation of India
17	Philip Forth	The Constellation
18	Rituu Nanda	The Constellation
19	Santanu Pramanik	Public Health Foundation of India
	Hailay Desta	
20	Teklehaimanot	Center for National Health Development in Ethiopia
21	Bekana Tolera	Oromia Regional Health Bureau
22	Md. Shahnawaz	Khushi Baby Inc.
23	Pawan Singh	Khushi baby Inc.
24	Chizoba Wonodi	Health Strategy and Delivery Foundation
25	Jamila Bello-Malabu	Health Strategy and Delivery Foundation
26	Jessica Davis	Burnet Institute Australia
27	Aye Aye Myint	Burnet Institute Myanmar
28	Harini Kannan	J-PAL South Asia
29	Maaiké Bijker	J-PAL South Asia
30	Saugato Datta	Ideas42
31	Tolera Disasa	Marie Stopes International
32	Molly Abbruzzese	Gates Foundation
33	Amanda Shortell	Gates Foundation
34	Bhupendra Tripathi	Gates Foundation
35	Joyita Chowdhury	Gates Foundation
36	Maulik Chauhan	Dobility SurveyCTO
37	Daniel Erchick	Global Health Strategies
38	Sumeet Juneja	John Snow Inc.
39	Daya Shankar	UNICEF
40	Harkabir Singh	Clinton Health Access Initiative
41	Supriya Bezbaruah	Global Health Strategies
42	Emmanuel Jimenez	International Initiative for Impact Evaluation (3ie)
43	Monica Jain	3ie
44	Radhika Menon	3ie
45	Avantika Bagai	3ie
46	Durgadas Menon	3ie