Increasing immunisation in Ogun State, Nigeria: a formative evaluation of a participatory action research intervention

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Formative evaluation report

Accepted by 3ie: March 2019

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About this formative study

This formative evaluation was submitted in partial fulfilment of the requirements of grant TW10.1054 awarded under the Innovations in Increasing Immunisation Evidence Programme. 3ie is publishing this report on our website as we received it from the authors. It has not been copy-edited.

The 3ie quality assurance team for this report comprises Monica Jain, Radhika Menon, Avantika Bagai and Sayak Khatua, with overall supervision by Marie Gaarder.

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3ie received funding for the Innovations in Increasing Immunisation Evidence Programme from the Bill & Melinda Gates Foundation.

Suggested citation: Akwataghibe, N, Ogunsola, E, Popoola, O, Emeji, A and Dieleman, M, 2019. *Increasing immunisation in Ogun State, Nigeria: a formative evaluation of a participatory action research intervention, 3ie Formative Evaluation Report.* New Delhi: International Initiative for Impact Evaluation (3ie). Available at: https://doi.org/10.23846/TW10FE04

Acknowledgements

We wish to acknowledge 3ie and BMGF for the funding of this formative evaluation. We are grateful to 3ie for their technical review and support throughout the study.

We also acknowledge the AHPSR / UNICEF and GAVI for the funding of the PAR project and for their support.

We appreciate the support of Ms Liezel Wolmarans in the endline quantitative data analysis and Dr Ibukun Adepoju in the endline qualitative analysis. The support of Dr Tolu Oladele in the cost effectiveness analysis is also acknowledged with thanks. The research team was also supported by Mr. Olukayode Runsewe, the M&E coordinator for the team, Mr. Adedoyin Oniyitan, the coordinator of study data collection, Miss Olanike Fapohunda, the project administrator and logistics supervisor and Abiodun Adegbenro, data editor and statistician. We value their contributions towards the success for this study.

Executive Summary

Importance and relevance of the research topic

In 2005, Nigeria adopted the Reach Every Ward (REW) strategy to improve vaccination coverage for children of 0-23 months. By 2015, Ogun state had an immunization coverage of 107% in 12 of its 20 local government areas (LGAs). However, in 8 LGAs there were pockets of unimmunized children and Remo-North appeared especially problematic with 23% of the children not immunized. Factors contributing to this high number were not known. A participatory evaluation and action research (PAR) was introduced to provide context specific solutions to factors hampering immunization in Remo-North. PAR was considered a relevant approach as it aims to empower local people to voice their opinions, join in decision-making to address challenges, in implementing locally relevant actions for change and in monitoring and evaluation of change. This formative evaluation assessed the relevance, efficiency, effectiveness and opportunities for sustainability of the PAR and identified lessons learned.

Key outcomes of interest

The key outcomes of interest included increased utilization of immunization services by different) community groups in Remo-North; and collaboration between local government officials, health workers and community representatives to improve access to and quality of immunization services.

Intervention design and delivery

The intervention was implemented in the best (Ipara) and worst (Ilara) performing wards in Remo-North. Results of a situational analysis were validated by community members, health workers and local government officials. These results were subsequently used in dialogues, between these groups, to develop Joint Action Plans (JAPs) for change. JAPS were implemented in a first action phase of 4 months. The cycle was repeated in a second round of dialogues/action phase and an endline assessment was carried out after one year.

Evaluation design and method

A pre-test / post-test study was carried out using mixed methods. Quantitative methods included a household survey (HHS) targeted at caregivers responsible for the vaccination of under-five children; secondary analysis of the National Health Management Information Systems (NHMIS) data; and a cost-effectiveness analysis. Qualitatively, at base- and endline, in-depth interviews with policy makers, local government officials, community leaders, health workers and PAR participants; and focus group discussions with community members were carried out.

Results

The collaboration of the community members, health workers and local government officials resulted in the strengthening of the community links to immunization both in Ilara and Ipara. The Ward Development Committee (WDC) in Ilara was revitalized from its defunct state at baseline. The collaboration between the Joint Action Committee (JAC)

and the WDC was perceived as effective in the implementation of the JAPs. The involvement of WDC and Social Mobilization Committee members in the dialogues and action eased the integration of the PAR into these existing community structures and promoted a sense of ownership.

Immunization coverage, assessed by card only in the HHS, increased significantly at endline (90.9%) compared with 60.7% at baseline for both wards. Assessment with the HMIS showed that coverage increased significantly In Ilara ward (from 26% to 59%). For Ipara coverage for all the antigens except measles remained high. Significant decline in measles coverage (76% to 59%) was ascribed to recording patterns in the HMIS, persisting cultural barriers and reduction of clientele to the Ipara facility due to the revitalization of the Ilara facility. Consequently, when based on the GDP threshold, the PAR intervention was found to be highly cost-effective in improving immunization coverage in Ilara but not in Ipara.

A key benefit of the PAR intervention noted in this study was its value in health systems strengthening. Health facility conditions appeared during the baseline to be crucial for women to attend immunization services. The revitalization of the Ilara health facility and reinstitution of antenatal care and delivery services were the most important drivers of immunisation utilisation in the ward. Significantly more caregivers visited fixed government health facilities for immunization services at endline (83.2%) than caregivers at baseline (54.2%) in both wards.

There were no financial incentives given to the community members, health workers or local government officials yet there was evidence of commitment and ownership among the three groups, indicating an opportunity for sustainability. Additionally, the intervention was led by a policy maker and was fully integrated into the activities of the National Programme of Immunization in the two focal wards.

Though we did not see much changes in the existing power dynamics between the three groups, there were interesting shifts between the Ilara community members (who now played a monitoring role in the health facility) and the health workers who displayed increased social accountability in their availability and behaviour. Leadership of the JAC appeared to be more effective in the more cohesive and rural setting (Ilara) and conflict within the Ipara group appeared to contribute to its under-performance in the PAR.

Conclusion

The joint learning and action approach achieved contextual solutions to problems identified by communities in both Ilara and Ipara but the question is: what made it work so well in improving immunization coverage in Ilara but not in Ipara? Though we have provided several insights in this evaluation, we were limited by the short time frame of the study. A longer time of PAR implementation accompanied by research with careful attention to design and possibly including a sound and relevant counterfactual, will enable the answer to this question, in addition to explaining the effectiveness of the PAR intervention and its transferability

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Abbreviations and acronyms

AEFI	Adverse Events Following Immunization
BCG	Bacille Calmette Guerin
CDA	Community Development Association
CEA	Cost effectiveness Analysis
CHEW	Community Health Extension worker
CI	Confidence Interval
DHIS	District Health Information System
EU Sign	European Union Support for immunization and governance in Nigeria
FGD	Focus Group Discussions
GIVS	Global Immunization Vision and Strategy
HHS	Household Survey
HMIS	Health Management Information Systems
IDI	In-depth Interviews
JAC	Joint Action Committee
JAP	Joint Action Plan
KII	Key informant interviews
KIT	Koninklijk Instituut voor de Tropen (Royal Tropical Institute, the Netherlands)
LCDA	Local Council Development Authority
LGA	Local Government Area
LIO	Local Government Immunization Officer
MCV	Measles Vaccine
MOH	Ministry of Health
NDHS	National Demographic Health Survey
NHMIS	National Health Management Information System
NPC.	National Population Commission
NPHCDA	National Primary Health Care Development Agency
NPI	National Programme on Immunization

OR	Odds Ratio
OGSPHCDB	Ogun State Primary Health Care Development Board
OPV	Oral Polio Vaccine
PAR	Participatory action research
PCV	Pneumococcal Conjugate Vaccine
PHC	Primary Health Care
PI	Principal Investigator
PMOH	Principal Medical Officer of Health
REW	Reach Every Ward
RI	Routine Immunization
RMA	Reflexive Monitoring in Action
SE	Standard Error
SIO	State Immunization Officer
SMC	Social Mobilization Committee
SPSS	Statistical Package for the Social Sciences
TOC	Theory of Change
UNICEF	United Nations Children's Fund
WCBA	Women of child bearing age
WDC	Ward Development Committee
WFP	Ward Focal Person on immunization
WHO	World Health Organization

1. Introduction

1.1 Problem Description

Immunization is described as one of the most potent and cost-effective of all health interventions, with a major effect on the reduction of mortality and critical to the reduction of deaths among children under five years old (WHO, UNICEF, World Bank, 2009). The global immunization trends over the years have been positive, with about 86% (116 million) of infants receiving 3 doses of diphtheria-tetanus-pertussis (DTP3) vaccine in 2015 (WHO and UNICEF, 2016). However, the number of children under one year of age who did not receive DTP3 immunization worldwide was 19.4 million in 2015 compared to 26.3 million in 2006. Majority (60%) of those children live in ten countries and one of those countries – Nigeria - is the focus of this study.

Nigeria is the most populated country in Africa with a projected population of about 182 million (2017) and an annual growth rate of 2.83% (National Population Commission, 2017). It is the second largest contributor to the under–five mortality in the world (UNICEF, 2015) . According to the 2013 National Demographic Health Survey (NDHS), only 25% of children aged 12 to 23 months completed a full course of prescribed routine immunization (National Population Commission, 2014). However, there are marked inequalities across geopolitical zones with immunization completion ranging from about 50% in the South West to 10% in the North West. Various studies identify factors responsible for this poor performance especially at community level (Antai, 2011), (Fatiregun and Etukiren , 2014) – these include medical mistrust driven by socio-political factors (Chen, 2004, Jegede, 2007), weak health systems with poor patronage by clients, hostile attitudes of health workers, work conflicts between competing programmes and even routine and supplemental immunisation activities (NPHCDA, 2012).

In 2005, Nigeria adopted the Reach Every Ward (REW) strategic approach to improve routine vaccination coverage. The strategy has as its key elements, community mobilization and outreaches conducted by health facilities to under-served or hard-to-reach areas in the wards The REW strategy has structures in place for community linkages to service delivery. They include the Social Mobilization Committees (SMC) at the local government level – focused specifically on supplemental immunization activities and the Ward Development Committees (WDC) – focused broadly on primary health care issues at the ward level.

Since 2009, Ogun state in Nigeria has recorded consistent increase in routine immunization coverage across its twenty Local Government Areas (LGAs) with coverage of up to 107%. However, out of 58,636 children - the cumulative target population for routine immunizations in the state - about 9,394 (16%) were unimmunized in 2015. The burden of unimmunized children in the eight affected LGAs was highest in Remo-North LGA (23%). Since factors responsible for this trend was not known, a research consortium was established to develop and implement a Participatory Evaluation and Action Research (PAR) to address the problem of poor immunization utilization and coverage in parts of Ogun state. The rationale was that using methods that involve iterative processes of reflection and action carried out jointly with communities, health

workers and local government officials would likely provide insight into the relevant problems and their realistic, context specific solutions.

1.2 Overview of the report's structure

The subsequent sections of this report present details of the context in which the PAR has taken place; the Intervention description, logic, monitoring plan and theory of change; the formative evaluation questions and methodology. The study timeline, the evaluation findings, discussions and implication of the findings are detailed. The report culminates in descriptions of major challenges experienced in the formative evaluation, discussions of findings and reflections on lessons learnt.

2. Context

2.1 Justification of Evaluation

Several studies have used the PAR methodology successfully in Kenya and Zambia (Othieno, Kitazi and Mburu 2009 pp.18-19; Mbwili-Muleya et al., 2008; Maalim 2006 pp. 178-188) but not specifically for immunization.

Several theoretical concepts led to the emergence of this type of research referred to as 'interactive', 'participative' or 'transdisciplinary (Gibbons et al., 1994; Nowotny et al., 2001; Klein et al. , 2001). They are broadly based on the principle that complex, persistent or unstructured problems cannot be adequately addressed by more traditional research, which does not adequately address the underlying social, political, economic, cultural and ethical aspects of the problem (Schon and Rein , 1994; Rittel et al. 1973 pp.155–169; Hisschemöller and Hoppe 1996 pp. 40-60; Adam, 2004; Mintzberg, Raisinghani and Théorêt. 1976 pp. 246-275).

PAR emphasizes collective inquiry and research, based on experience and societal history (Reason and Bradbury, 2008) and broadly consists of a cyclical process of fact-finding, action and evaluation (Lewin, 1946 pp. 34–46). A common ideology in all designs of PAR is that research and action must be done 'with' people and not 'on' or 'for' people (Brock and Pettit, 2007; Chevalier and Buckles, 2013; Heron, 1995; Kindon, Pain and Kesby, 2007; Swantz, 2008 pp.31-48) and involves self-reflective enquiry carried out by participants in social situations. (McTaggart, 1994). The PAR approach is based on empowering local people to voice their opinions, join in decision-making to address challenges, in implementing locally relevant actions for change and in monitoring and evaluation of change.

2.1.1 Knowledge gaps to be addressed

There is little known about if and how PAR leads to change of immunization seeking behaviour at community level. The basic assumption was made in this study that communities together with health workers and local government officials would actively participate in the PAR process and take joint ownership– and we hypothesised that this would enable the development and implementation of contextually relevant solutions to problems related to access to and use of immunization services. especially for children of 0-23 months. The key research question of the PAR was: *Can a PAR approach be used to strengthen community links in the REW strategy in order to facilitate an*

increased uptake of immunization in Ogun state of Nigeria? A formative study of this approach was considered necessary to gain more insight into if and how this could work.

The overarching evaluation questions are:

- What is the effectiveness and outcome of the PAR intervention in relation to immunization coverage in Remo North LGA?
- What lessons have been learned in using a PAR approach to improve immunization services for Nigeria?
- Does the PAR approach present opportunities for a sustainable solution to immunization utilization and coverage in Nigeria?

2.2 Current health infrastructure for delivering immunisation in Remo-North LGA

Vaccinations in the wards in Remo -North LGA are given at the health centres on specific routine immunization (RI) days and at various homes or community outreaches which comprise proactive community level visits (including schools, churches and mosques) by health workers. The state government distributes vaccines to the local government, notifying the local government immunization officer (LIO). The responsibility of the LIO is to deliver them to a central location in Isara, the LG headquarters, from where the health workers from the various wards collect the vaccines on RI days and for outreaches. Leftover vaccines are returned to Isara for accountability. However, some facilities that are far from the local government store have solar refrigerators and can keep their allocated vaccines for days before use.

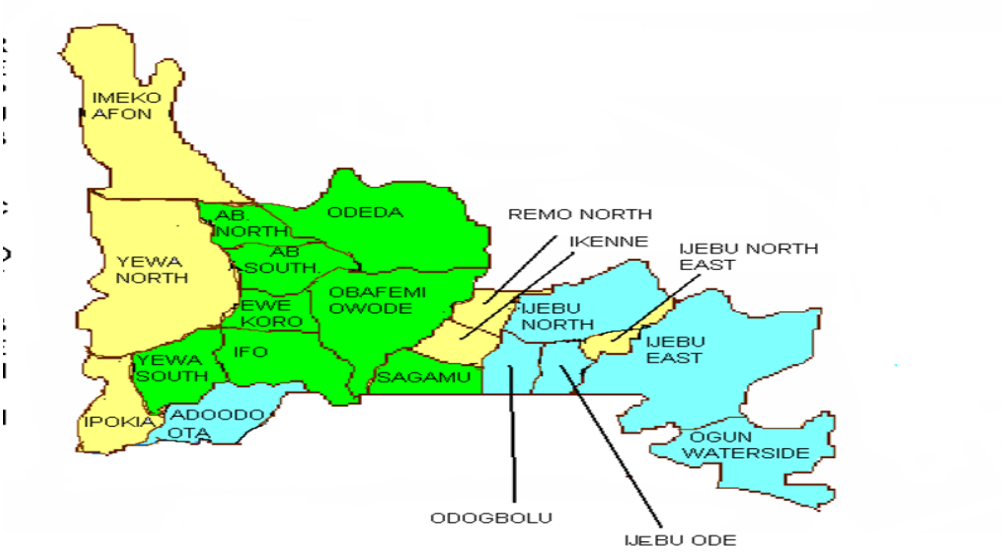
2.3 The geography, health and socio-economic characteristics of the population

Remo-North LGA, which has the highest burden of unimmunized children in Ogun State was purposively selected for this study. The LGA has a projected population of about 80,243 and a land mass of 247sq. km. The major occupations of the residents include peasant farming and trading. A few of them do fishing. About 10% of the populations are civil servants, most of whom do not stay in the LGA. Within the LGA, two focal wards were purposively selected based on performance (Ipara and Ilara, best and worst performing respectively) in immunization utilization and coverage in 2015.

Remo-North is shown in the map of Ogun State below. An overview of the wards in Remo-North and their population sizes is given in Annex 1

Figure 1: Ogun state in South West Nigeria

Figure 2: Remo – North LGA in Ogun state



Not much data is available on the health, geographic and socio-economic characteristics of the two wards. It was therefore not possible to compare with national averages. However, during the situational analysis at baseline, key attributes of the wards were gleaned.

Majority of the respondents in the in-depth interviews (IDI) and focus group discussions (FGD) in Ilara stated that Ilara was marginalized within Remo North LGA. This contrasted with their Ipara counterparts who perceived Ipara as a progressive ward. In terms of geographical characteristics, Ilara is more remote and rural than Ipara. Furthermore, the access road is bad thus limiting human and commercial activities. Ilara is more of a farm settlement and is on the outskirts of Remo-North LGA.

The population of Ilara is less (6,512 – 2017) than that of Ipara (9,100 – 2017). It is easy to navigate Ilara because the people live in clusters. The communal lifestyle of the people also makes for easy access to their king – the prime traditional ruler of the Ilara

ward. Ipara is perceived to have more educated and enlightened people. It was described as a semi-rural ward and has a more organized structure with numbered streets. It is also a linear town - located close to the Lagos – Ibadan express way, the main road connecting the northern part of the country with the economic capital (Lagos,). Many of the trucks carrying goods from the north have stopovers at Ipara and other surrounding towns. This makes Ipara more economically vibrant compared with Ilara and health workers are more easily retained. The community members are relatively less dependent on their king though traditional protocols are still observed. Each ward has one primary health facility.

The PAR took place in 2016 -2017 - at a time of economic recession in Nigeria. There was marked inflation in the country and many state governments could not afford to pay workers' salaries. In Ogun state, salaries were paid regularly but with significant reductions of some personal benefits of workers. Personal savings of workers deducted monthly, at source, from their salaries were not remitted to the relevant financial institution by the state government; so, the workers were unable to access those funds. By October 2016 the government owed about 15 months of such savings. Additionally, the local government workers did not receive their salaries on time – usually one month behind the state workers. The paucity of funds was due largely to the economic recession which had in turn affected the monthly allocation accruing to the state from the federal government. All these lowered the morale of the local government officials including health workers in the LGA especially against the backdrop of health workers' shortage, a prevailing problem at all levels of government in Nigeria.

Despite the financial constraints at the local government level, vaccines were readily available since they were usually procured by the federal government with the support of donor organizations. The WHO, UNICEF and GAVI are the main external stakeholders influencing immunization through capacity building, provision of resources and strategic support. The European Union Support for immunization and governance in Nigeria (EU Sign) is also an important stakeholder providing cold chain infrastructure support in the state as well as capacity building. Local level non-governmental organizations like the Rotary club also support immunization activities.

There was a general workers' strike in Ogun State in October 2016 which lasted for about three weeks. Workers were demanding from government the payment of the backlog of the deductions from their salaries. During the strike, there was a temporal service disruption in the health sector.

3. Intervention description, intervention logic, monitoring plan and the theory of change

The intervention aimed to deliver the REW strategy using the PAR mechanism with community members, health workers and local government officials. The three groups identified the contextual problems and developed Joint Action Plans (JAPs) for change as well as implementation plans to execute the JAPs. In essence, they planned, implemented, monitored and evaluated together. This process aimed at addressing the social (relating more to the community members) and structural (relating more to health system factors) determinants influencing immunization coverage.

3.1 Key intervention programme components and activities

The validation of the situational analysis results and the first round of dialogues took place in the period of 4th to 9th July 2016. The PAR process was presented by the research team to the three groups of stakeholders and discussions held about the issues involved in consensus building and power equalization (the main power holders are in the area of immunization and health care in general – primarily the local government (LG) officials, then the health workers). The dialogues took place first within the three stakeholder groups – 10 selected community members, each in Ipara and Ilara wards, health workers in their respective wards and Remo-North LG officials. The dialogues were facilitated by members of the PAR team -mainly research assistants from the state primary health care development board.

The participants in the dialogues had been nominated by their broader groups and accepted the nominations voluntarily. Based on the results of the situational analysis a guiding checklist used by the research team. For the community members, the checklist (adhered to) for the nominations and volunteering included: Christians, Muslims, at least one traditionalist, at least one person from Cotonou (Benin republic), at least one person from the Igede tribe, 5 women and 5 men per ward in all dimensions of age – older men/women; young men/women. The aim was to ensure diversity in the groups.

For the community members in each ward, the women held their dialogues separately from the men and each group developed their action plans. They then nominated three representatives each to form joint dialogues for men and women. Six community men and women in each ward then had dialogues to identify priorities and hold discussions on actions. Through negotiations and consensus building they arrived at a common community action plan in each ward.

In total, at the initial phase, the stakeholders developed five action plans: combined action plans of community men and women for each ward, plans by health workers in both wards and Remo LGA officials. All the dialogues were recorded and the processes observed and captured using observation checklists. Facilitators and observers had been trained earlier in the use of the checklists. The observation checklists aimed to capture information on communication dynamics during the dialogues. Examples are: who starts a new topic, who dominates discussions, disagrees, proposes solutions, insists on a point, interrupts others etc. After the discussions on actions by each stakeholder group, they were asked to nominate representatives for further dialogues. To manage the imbalance of power between the three groups of stakeholders, more community members (6-7) per ward were nominated; the two health workers in Ilara and three health workers in Ipara were nominated and the local government nominees were only two per ward. Those representatives were fully aware and knowledgeable about what had been agreed in their sub-groups. Follow-up dialogues were organized between these representatives of the groups for Ilara and Ipara and they collaborated and developed JAPs for change for their respective wards.

The joint group dialogues in each ward took place in the Yoruba Language. The two joint groups developed Memorandums of Understanding on how they would proceed - what was expected of each member of the team, distribution of responsibilities and how conflicts would be resolved. The group in each ward selected a chairman (a community

member) and a secretary (health worker); they also nominated women leaders responsible for leading the mobilization of young women (caregivers). In each ward, the actions and plans formulated per group were compared and discussed within the joint dialogue groups so as to have JAPs for change. The JAPs were presented on the 8th of July 2016 to the larger body of PAR participants in each ward using visualization techniques developed by the joint group dialogue participants who now referred to themselves as the Joint Action Committees (JAC). Discussions and clarifications were carried out and the JAPs were accepted and ratified by the larger bodies of the PAR participants in both Ilara and Ipara. All the PAR participants from both wards then had separate sessions to develop their implementation plans including setting specific target dates and sharing tasks and responsibilities.

The First Action Phase commenced on Monday the 11th of July 2016 and lasted for four months. In Ilara, the WDC, the main community link in the REW strategy at ward level, was re-established and made functional as one of the targets of the first JAP since the committee was defunct at the time of the situational analysis. In both wards, the JAC and WDC collaborated to implement the JAPs. They held monthly meetings together and both bodies were under the chairmanship of the JAC chairmen in the respective wards. Several monitoring visits were carried out in the wards to ascertain progress on the implementation of the JAPs.

Results of secondary analysis of the National Health Management Information Systems (NHMIS) and information obtained during monitoring visits were compiled into a progress report and presented to the two PAR groups in Ilara and Ipara for validation at the end of the first action phase. The progress report validation and the second round of dialogues took place from the 1st to the 3rd of December 2016 and the proceedings mirrored that of the first round of dialogues. Dialogues took place first within the three groups and then between them in the joint group dialogues. Second JAPs were developed and presented to the broader groups and then implementation plans were developed in both wards. The second action phase lasted from the 3rd December to the 3rd of April 2017.

Annexes 2 and 3 present descriptive tables of the JAC members in Ilara and Ipara respectively, detailing their gender, occupations, functions in the committee as well as the type of power /influence they wielded. Annex 4 details the implementation plans for the first and second JAPs highlighting the roles and responsibilities of the JAC members and findings during monitoring visits in the first and second action phase. More general roles and responsibilities of the various governmental and community stakeholders involved in the delivery of the intervention are detailed in Annex 5 and the organogram in Annex 6 displays the reporting structure of the government stakeholders. A detailed list of key activities for components of the intervention relevant to the formative evaluation is presented in a logical framework (see Annex 7).

Financial Incentives were not provided to encourage participation, adherence of the health personnel and intended beneficiaries in the intervention activities but transportation costs to sites of dialogues and workshops were reimbursed. Monthly meetings of the JAC/WDC were held in the respective health facilities and transportation costs for these were considered minimal or non-existent (more in Ilara than Ipara) and were not reimbursed by the project.

3.2 The PAR Monitoring System

The PAR was tracked quantitatively and qualitatively.

Tracking of implementation of the JAPs and outcomes

A monitoring tool was developed - deduced from the JAPs and the implementation plans which had detailed tasks and responsibilities for the JAC members with specific target dates for the delivery of assigned tasks. This monitoring tool was a checklist that assessed the level of implementation of the JAPs and consisted of four thematic areas: planning and coordination; logistics and cold chain; community linkages; and implementation status. Four monitors were recruited as part of the research team, trained and deployed for monitoring in both wards. The monitoring checklist is detailed in Annex 8.

Indicators used in tracking the feasibility and acceptance of the intervention among caregivers were related to utilization of health and immunization services by this group from the start to the end of the action phases. These were tracked via the NHMIS and the household surveys (HHS) at baseline and endline. The NHMIS was further used to track the uptake of specific antigens in the National Programme on immunization (NPI) in the two focal wards.

Tracking of the PAR process

Several monitoring indicators were used in tracking the feasibility and acceptance of the intervention among community members, health workers and local government authorities. They include the number and main characteristics of representatives of the different groups (communities, health workers, LG officials) that participated; the number and characteristics of the representatives of the different groups that continued participating through to the end; the number of meetings held regularly and the progress in achieving the tasks in the JAPs according to the set time and targets and by the JAC members to whom they were assigned. Additionally, information on the acceptance of the intervention was gathered through IDI. The monitoring findings are articulated in annex 4 and in the results section of this document.

Composition of the community members in the PAR were put into consideration and during the situational analysis, the FGD was used to map vulnerable groups in the communities. These groups were clearly identified and defined and their representatives were involved in the dialogues and action process. Indicators such as consensus building, decision making, level of participation and shifts in dynamics within and between the groups in the PAR were tracked through observations during dialogues and other meetings and via interviews with the participants during monitoring visits and endline data collection.

A visual representation of the PAR and its monitoring and evaluation is shown in figure 3 below.

Figure 3: Monitoring and evaluation of the PAR

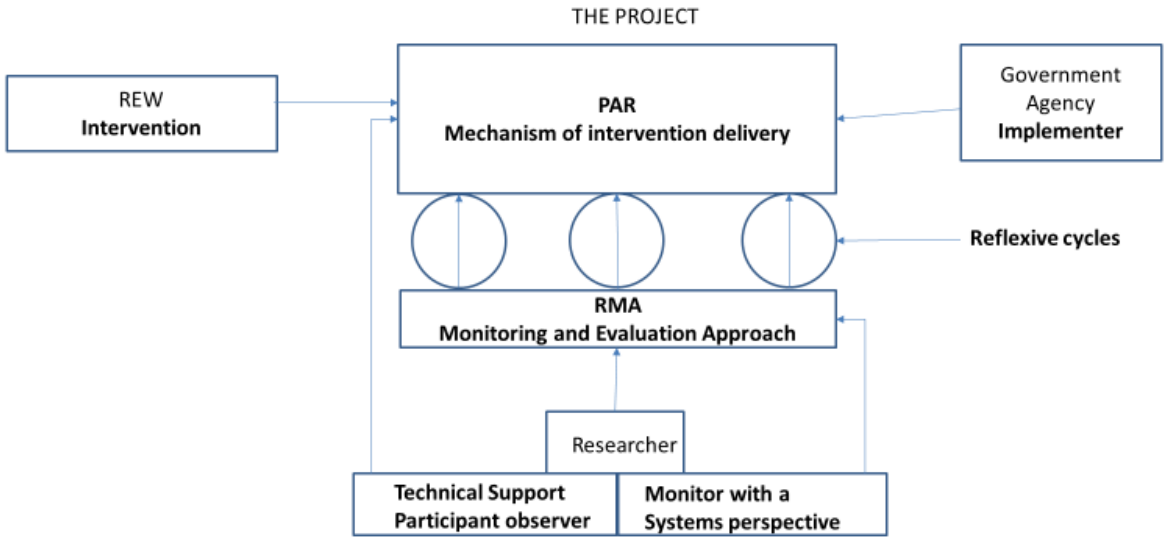


Fig. 3

Reflexive Monitoring in Action (RMA), *an approach developed by researchers in Wageningen University and the Vrije University Amsterdam in the Netherlands*[1] *was used throughout the projects' cycles, providing a platform for several reflective cycles of learning and evaluation between researchers/evaluators, communities, health workers and local government (see Fig 1). In addition to learning, RMA enabled the project to learn to tackle the challenges that were encountered by developing possible solutions jointly. This was expected to allow this system innovation project to contribute to the structural changes that are needed for sustainable development. The RMA tools used for this project include system analysis, actor analysis, causal analysis and dynamic learning agenda. The first three tools were also used to formulate the challenges of the PAR project while the dynamic learning agenda was used to identify those challenges quickly, link them to actions, track the changes in the identified challenges and document the learning process of the three groups of stakeholders and the researchers.*

3.3 The Theory of Change

The PAR approach is focused on collaboration between the three stakeholders and empowering local people to voice their opinions, join in decision-making and in monitoring and evaluation of change. The basic assumption was made that the communities, in particular families with young children including their extended families, local governments and health workers would actively participate in the process and take ownership– which would enable the development and implementation of contextually relevant solutions to problems related to access to and use of immunization services that have been identified by them. Other assumptions made were that different groups in the community would be able to voice their views openly regarding immunization services and their views would be heard by health workers and local government; and that local government and health workers' capacity in the participatory approach would be built and improved upon as a result of these dialogues.

[1] Barbara van Mierlo and Barbara Regeer (2010) Reflexive Monitoring in Action – A guide for monitoring system innovation projects. Wageningen/ Amsterdam: Communicatie en Innovatiestudies, WUR;Athena Instituut, VU

In order to evaluate the effectiveness and outcome of the PAR intervention, the steps were interpreted as follows:

Process: Dialogues take place within and between groups of health workers, communities and local government

Outputs: Key challenges in access to and utilisation of immunization service; awareness, knowledge and acceptability of immunization services by communities; implementation of immunization policies and services are identified. Solutions are jointly identified and consensus built within and among the three groups; contextually relevant solutions are developed by the groups in a JAP for change. The JAP is implemented by communities, health workers and local government; challenges and facilitating factors to implementation of JAP are identified; solutions developed and JAP revised or changed

Effects: Changes in behaviour of health workers – health workers are more responsive to the communities; changes in behaviour of communities towards immunization – communities are more responsive to change; different groups in the community are able to keep voicing their views openly regarding immunization services and their views are being heard by health workers and LG in a sustainable way; local government and health workers' capacity in the participatory approach are built and improved in a sustainable way; and demonstration of feelings of ownership and responsibility for action and action-oriented behaviour in the groups are sustainable

Outcomes: Increased access to immunization services to different groups in the communities; Increased utilization of immunization services by communities; increased immunization coverage; improved immunization policy environment by the review of policy by the Ministry of Health (MOH); communities empowered to take action on issues beyond immunization; Health Benefits - Reduced incidence of vaccine preventable diseases

"Spill-over" of health workers' responsiveness and improved capacity into other areas of health service provision was a desired outcome of this intervention. The theory of change (TOC) is illustrated in Annex 9.

To a limited extent, the formative evaluation tested the assumptions underpinning the PAR approach, at least in the process. We considered that though 8 months of implementation of the JAP would provide some effects and perhaps some outcomes such as increased utilization, we would not be able to assess others (such as power changes) as outcomes.

3.4 Anticipated time trajectory over which the intervention activities will offer primary outcomes of interest.

In estimating a time trajectory over which the intervention activities will offer primary outcomes of interest, we examined results of the HHS presented later in the report. The percentage of fully immunized children (by card only) aged 9-11 months of 92.3% could be a promising indication of the potential intervention outcomes as these children were most likely born during the intervention period, but the numbers were too low to data mine this group sufficiently. An impact evaluation focusing on children in this age group and the next (12-23 months) could address effectiveness. This translates into an

intervention period of 24 months or 2 years before outcomes of interest are likely to be illustrated; an ideal time trajectory is 3 years of intervention.

4. Formative study evaluation questions and primary outcomes

The formative evaluation aimed to assess the relevance, efficiency, effectiveness and opportunities for sustainability of the PAR intervention in Remo-North of Ogun state in Nigeria; to identify and document successes, challenges and lessons learnt; and to provide recommendations to guide the implementation of a possible follow up programme cycle and/or scale-up of the intervention as well as inform decision making by policy makers on immunization issues.

Evaluation Questions:

1. What is the effectiveness and outcome of the PAR intervention in relation to immunization coverage in Remo North LGA?
2. What is the relevance of the PAR mechanism in relation to immunization utilization and coverage in Remo-North LGA?
3. How efficient was the PAR in the delivery of the REW strategy in Ipara and Ilara?
4. What lessons have been learned in using the PAR approach to improve immunization services for Nigeria?
5. Does the PAR approach present opportunities for a sustainable solution to immunization access, utilization and coverage in Nigeria?

The key was to understand “what works, why, where and for whom” and for that reason, we started the evaluation by discussing the TOC with the project team, its partners and important stakeholders.

The primary outcomes of interest include:

Increased access to immunization services to different groups (including the vulnerable groups) in the communities in Ipara and Ilara wards; increased utilization of immunization services by community members for their children; reduction in the number of unimmunized children in Ipara and Ilara wards, increased immunization coverage and communities empowered to take action on issues on immunization and beyond.

5. Formative study evaluation design and methods

5.1 Evaluation Design

A Pre-test / Post-test approach was used in the formative evaluation. The baseline and endline studies were carried out in the two focal wards using mixed methods. A zero-draft evaluation framework was developed at the start of the project, detailing the evaluation sub-questions, primary and secondary indicators and how data would be collected and analysed (see Annex 10)

Quantitative - a **survey** at household level targeted at caregivers responsible for the vaccination of at least one under-five child; and **secondary analysis of NHMIS** data to assess utilization of immunization and coverage. To appreciate the **cost-effectiveness** of the PAR intervention, financial data collection on inputs and expenses were carried

out at project- and site levels, to provide an indication of the costs at which the eventual results were delivered.

Qualitative – IDI of key stakeholders including policy makers at state levels, local government officials, community leaders and health workers including the PAR participants were used to find out if the PAR intervention worked in the context and with the planned implementation structures and processes. FGD with community members was used to explore the uptake of the PAR intervention by the communities. Monitoring and observational data also provided further insight into the PAR process and the implementation of the JAPs.

Quantitative and qualitative data collection instruments are detailed in Annex 11

5.2 Sampling Sizes and Procedures

Quantitative

The survey sampling was conducted using the WHO modified cluster sampling method[2] This two-stage cluster sampling method was deployed across the two wards. We first identified naturally occurring clusters from the immunisation field activity. The population of these clusters was also collated. Thirty clusters were selected across the two wards with the number of cluster in each ward being proportional to its relative population. This exercise derived a need to select 12 wards in Ilara and 18 in Ipara. Using probability proportional to size techniques, we identified the clusters for the study. To identify households, in each cluster an arbitrary but central starting point was identified. One under-5 child was selected from households in seven consecutive homes. Where more than one eligible child was present in a household, one was selected using a table of random generated numbers. All eligible children were selected in the 7th household of each cluster as required by this method. The respondents in this study were caregivers of children under 5 in the selected wards. Individuals were eligible if they were currently domiciled in the ward. We excluded individuals with speech and perceptual challenges. Using this methodology obviates the need for formal sample size calculation. To estimate the difference between the proportion of unimmunized children which is estimated at 23% at present based on HMIS data and an endline estimate of 10% (alpha of 5% and power of 80%) would have derived a sample size of 127 children. However, we aimed to study a minimum of 210 children (at least 7 children from each of the 30 clusters) across the two selected wards. The study collected information from 210 adults relating to 215 children at baseline and information from 210 adults relating to 213 children at endline.

Qualitative

For the qualitative side of the research, purposive sampling was employed to select appropriate respondents for IDI and FGD. At baseline and endline, a total of 14 key informant interviews (KII) were carried out with stakeholders at national, state, local government and ward level. Stakeholders interviewed at the state level include State

[2] Hoshaw-Woodard S. Description and comparison of the methods of cluster sampling and lot quality assurance sampling to assess immunization coverage. Geneva: Department of Vaccines and Biologicals, World Health Organization, 2001.

Immunization Officer (SIO), Health Educator and Cold Chain/Logistics Officer. Stakeholders interviewed at the local government level were LIO, Principal Medical Officer of Health (PMOH), Social Mobilization Committee (SMC) members and the Cold Chain/Logistics Officer. 10-12 IDI of community stakeholders were also carried out at baseline and endline. These included interviews with prime traditional rulers, community leaders, WDC and Community Development Committee (CDA) members and religious leaders in both Ilara and Ipara wards. Health workers involved in immunization service delivery were purposively selected from the health facilities. A total of 4 frontline health workers were interviewed in both wards at baseline and a total of 6 at endline. Also at both stages, 16 FGD were held with community members of the two focal wards. At endline, IDI were conducted with 24 PAR participants from both wards who were in the JAC.

5.3 Training

Coaching of the PAR core team and of three research assistants on PAR was assured by KIT. The coaching was conducted in a structured manner at intervals - at baseline and during the two dialogue phases. Additionally, training of 22 enumerators and qualitative data collectors was carried out at baseline and endline. The sessions were facilitated by the evaluation team. A field work manual had been developed and sent for distribution to the research assistants before the training in order to familiarize them with the study and the tools.

5.4 Pre-Test

A pre-test of the quantitative and qualitative instruments was conducted on Saturday, 7th May 2016 at Obada – Oko, Ewekoro LGA, a rural community at the outskirt of Abeokuta at baseline. At endline, pre-testing of the tools took place at Laderin community in Kuto ward in Abeokuta south LGA on April 1st, 2017. These were different LGAs from the intervention LGA. Review meetings were held afterwards for both the quantitative and qualitative data collection teams and feedback from the process was discussed; and instruments were adjusted based on the feedback.

5.5 Data Collection

Data collection was carried out by a team of three experienced researchers - the Lead Principal Investigator (PI), the PI and the PI (implementation); two trained research assistants functioned as coordinators for Ilara and Ipara respectively and a third coordinated all administrative and logistic processes. 14 enumerators and 8 qualitative research assistants were involved in the survey and qualitative data collection respectively.

5.6 Data Processing and Analysis

Quantitative - Questionnaires were checked daily on the field for errors and ambiguity. These were then entered into SPSS version 21. Qualitative variables were summarized as proportions and quantitative variables as means with standard deviations. A wealth index was derived using productive and non-productive household assets, household amenities and other measures of household living standard. The primary study outcome was immunization completeness. Immunization was assessed as complete if an

immunization card was sighted and three doses of DPT/Pentavalent vaccine as well as measles and yellow fever had been recorded as administered. Descriptive statistics were calculated for each indicator using a survey design adjusted logistic generalized linear model. To assess the association between covariate factors and the immunization coverage, univariate models were fit to the data and crude odds ratios were determined for each variable. Details of the quantitative data analysis are presented in the research protocol in Annex 12.

Cost effectiveness Analysis - The specific objectives of the Cost effectiveness Analysis (CEA) were to assess the costs and effectiveness of the intervention and to estimate incremental cost effectiveness ratio. Estimates of the direct costs associated with the PAR process were derived from the perspective of the provider, Ogun State PHCDB. The health outcomes considered in the analysis were the additional number of children fully immunized, the additional number of children immunized per vaccine antigen according to the national immunization schedule and the percentage increase in the average monthly coverage. Effectiveness was measured using the number of additional children vaccinated per vaccine and the percentage difference in the average monthly coverage at baseline compared with endline.. Data was analyzed using Microsoft Excel 2013. Details of the CEA analysis are presented in Annex 13.

Qualitative -The qualitative data analysis was carried out using NVivo 11. A grounded theory approach (identifying emerging themes through coding and labelling qualitative data) was followed. The IDI and FGD were analysed using an interactive process with a three pronged approach: "noticing, collecting, and thinking."[3] Triangulation of data was carried out to compare data sources for reliability and to identify areas of agreement and disagreement across groups of respondents and within groups of respondents.

5.7 Ethical Considerations

Ethical permission and oversight for the PAR and formative evaluation were obtained from the University of Ibadan/University College Hospital Ibadan Ethics Board, the WHO Ethical Review Board and the Federal Medical Centre, Ogun State Ethics Board. Ethical approvals were obtained following the satisfactory review of study protocols and were given for an initial period of one year. The ethical requirements of justice, beneficence, non-maleficence and autonomy for this study were addressed.

The research protocol is presented in Annex 12 and provides more details of the data collection instruments, training of enumerators and research assistants, data collection, management, processing and analysis; quality assurance, study validity and ethical considerations. A summary table of data collection methods used to answer specific evaluation questions is presented in table 1 below.

[3] Qualitative data analysis. Seidel JV. Qualis Research, 1998

Table 1: **Summary table of data collection methods used to answer specific evaluation questions**

Evaluation Questions	Data Collection Method	Outcome of Interest
1. What is the effectiveness and outcome of the PAR intervention in relation to immunization coverage in Remo North LGA?	NHMIS HHS – Caregivers of under-five year olds FGD – Community men and women IDI – PAR participants, state level policy makers, health workers, local government officials, community and religious leaders, WDC and SMC members	*Change in Immunization utilization and coverage* *Change in awareness and knowledge of immunization in the communities* *Changes in behaviour of the communities towards immunization*
2. What is the relevance of the PAR mechanism in relation to immunization utilization and coverage in Remo-North LGA?	FGD – Community men and women IDI – PAR participants, state level policy makers, health workers, local government officials, community and religious leaders, WDC and SMC members Monitoring data Observation check list	*Active participation of the three groups and Participatory decision making* *Usefulness of the collaboration between the three groups of stakeholders*
3. How efficient was the PAR in the delivery of the REW strategy in Ipara and Ilara?	Cost effectiveness Analysis (CEA) Monitoring data IDI – PAR participants	*Cost-effectiveness of the PAR approach* *Whether the PAR was implemented as intended*
4. What lessons have been learned in using the PAR approach to improve immunization services for Nigeria?	NHMIS HHS – Caregivers of under-five year olds FGD – Community men and women IDI – PAR participants, state level policy makers, health workers, local government officials, community and religious leaders, WDC and SMC members	*Lessons Learned*
5. Does the PAR approach present opportunities for a sustainable solution to immunization access, utilization and coverage in Nigeria?	Monitoring data IDI – PAR participants, state level policy makers, health workers, local government officials, community and religious leaders, WDC and SMC members	*Acceptability of the intervention to health providers at different levels of government.* *Demonstration of feelings of ownership and responsibility for action and action-oriented behaviour in the groups*

5.8 Formative Evaluation Report Validation workshop with stakeholders

A validation workshop with relevant stakeholders at state, local government and ward levels was organized at endline for the ratification of the results of the formative evaluation. The workshop was facilitated by the evaluation and implementation teams. It was attended by community members, community leaders, health workers in Remo North especially Ilara and Ipara; state and local government officials including the Secretaries of the LG representing the Executive Chairmen. Also in attendance were representatives of the NPHCDA, EU Sign and WHO. The endline study results were presented to all the stakeholders and were discussed in a participatory session and findings were validated.

5.9 Limitations of the study

5.9.1 HH Survey

1. Due to the need to understand perspectives on immunization among mothers of under-five children broadly, this study did not limit the immunization completeness assessments to children aged 11-23 months as is frequently practiced. Consequently, the precision of estimates of immunization coverage was compromised. However, coverage was triangulated from HMIS data and we expect that the increased scope of understanding across the broader age group compensates for the loss of immunization completeness precision.

2. Most participants reported routine immunization but could not provide cards to verify this information. This was a constraint to obtaining a very accurate assessment of immunization utilization and completeness in the survey.

3. Modelling variations in vaccination coverage across different social, demographic and economic factors was greatly constrained by the relatively small sample size used in this study, thus limiting the power to detect significant differences in vaccination coverage. The use of cluster sampling further reduced the effective sample size as individual observations taken within the same cluster are likely to be correlated. As the observed differences in vaccination coverage, knowledge of immunization function and practice across the two wards are generally small, accurate differences might not be detected due to type II errors resulting from reduced power. Stratified sampling, increasing precision, and enlarging the sample size in future surveys are expected to reduce type II errors and to allow the statistical detection of true differences between wards.

5.9.2 Qualitative

1. Recruitment of the respondents for the FGD was done in collaboration with the community leaders who were the gatekeepers. Some respondents may have given socially desirable answers in questions relating to immunization utilization and to collaboration among the different groups in the wards as a result.

6. Formative study timeline

The formative evaluation timeline closely followed the intervention timeline. Both projects commenced in May 2016 and the endline assessments were carried out in April 2017. Annex 14 illustrates the formative evaluation timeline.

7. Analysis and findings from the formative evaluation

7.1 Background and Respondents' Characteristics

HH Survey: These results profile, at endline, 213 children and their caregivers (210) studied across 210 households in the study area. This is a different sampled population from that at baseline. More households (60.5%), proportional to size were included from Ipara which is the more populated of the two wards. Most respondents were Yoruba (84.3%); 82.4% were Christians and 15.2% Muslims. Most respondents were female (95.7%), most aged 21–40 years (82.4%). Over 93% had attended school in some form with the majority of these completing primary (21%) or secondary education (59%). Nevertheless, about a third of the respondents were unable to read the basic sentence provided and should be considered functionally illiterate. Almost 1 out of 5 respondents did not have any form of income (or were unemployed), whilst almost 40% indicated that they were traders, and a further 29.6% were artisans. Half of the sampled children were older than 2 years of age and almost 51% were male.

Similar, at baseline, 215 children and their 210 caregivers were studied across 210 households in the study area. The same sampling strategy delivered 59% of households from Ipara and 41% from Ilara. Most respondents were Yoruba (89.5%); 82.4% were Christians and 13.8% Muslims. A comparison of background and respondent characteristics per ward, for baseline and end line surveys, is tabled below in table 2.

Analysis showed similar distributions across wards, religion, ethnicity, employment, literacy levels, sex and age (for both children and their caregivers). Some statistically significant differences between baseline and end line, namely higher percentages of uneducated caregivers at baseline (15.7% vs 6.2% respectively) and higher percentages of educated caregivers at endline (13.8% vs 6.7%) were observed. At baseline, significant and slightly more caregivers under the age of 20 years; 8.6% as opposed to 3.8% at endline were included in the study. Moreover, age distributions for caregivers above the age of 20 years were similar over the 2 rounds of surveys. Therefore, all subsequent multivariate analysis will include education levels as a covariate to correct or take into account for the difference in educational distribution.

Table 2: Background and respondent characteristics - household survey

Variables		Caregivers' Background and Respondent Characteristics (N=420)							
		Baseline (N=210)				Endline (N=210)			
		Ilara (n=86)		Ipara (n=124)		Ilara (n=83)		Ipara (n=127)	
		Count	N %	Count	N %	Count	N %	Count	N %
Religion	Christianity	74a	86.0%	99a	79.8%	69a	83.1%	104a	81.9%
	Islam	7a	8.1%	22b	17.7%	10a	12.0%	22a	17.3%
	Others	5a	5.8%	3a	2.4%	4a	4.8%	1a	0.8%
Ethnicity	Yoruba	75a	87.2%	113a	91.1%	64a	77.1%	113b	89.0%
	Others	11a	12.8%	11a	8.9%	19a	22.9%	14b	11.0%
Employed	No	16a	18.6%	26a	21.0%	17a	20.5%	24a	18.9%
Highest level of Education	None / Pre-School	22a	25.6%	11b	8.9%	6a	7.2%	7a	5.5%
	Primary	31a	36.0%	42a	33.9%	18a	21.7%	26a	20.5%
	Secondary	29a	33.7%	61b	49.2%	51a	61.4%	73a	57.5%
	Higher	4a	4.7%	10a	8.1%	8a	9.6%	21a	16.5%
Literacy	Cannot read at all	30a	34.9%	39a	31.5%	30a	36.1%	36a	28.3%
	Able to read only parts of sentence	21a	24.4%	23a	18.5%	15a	18.1%	27a	21.3%
	Able to read whole sentence	32a	37.2%	61a	49.2%	38a	45.8%	64a	50.4%
	Other	3a	3.5%	1a	0.8%	0[1]	0.0%	0[1]	0.0%
Age of Respondent (Years)	<= 20	10a	11.6%	8a	6.5%	3a	3.6%	5a	3.9%
	21-30	34a	39.5%	50a	40.3%	37a	44.6%	55a	43.3%
	31-40	26a	30.2%	53a	42.7%	26a	31.3%	55a	43.3%
	41-50	10a	11.6%	10a	8.1%	13a	15.7%	10a	7.9%
	>= 51	6a	7.0%	3a	2.4%	4a	4.8%	2a	1.6%
		Baseline (N=215)				Endline (N=213)			
		Ilara (n=88)		Ipara (n=127)		Ilara (n=84)		Ipara (n=129)	
Sex of Child	Female	42a	47.7%	61a	48.0%	38a	45.2%	67a	51.9%
	Male	46a	52.3%	66a	52.0%	46a	54.8%	62a	48.1%
Age of Child (months)	0-11	23a	26.1%	28a	22.0%	21a	25.0%	29a	22.5%
	12-23	23a	26.1%	36a	28.3%	21a	25.0%	34a	26.4%
	24-59	42a	47.7%	63a	49.6%	42a	50.0%	66a	51.2%

Note: Values in the same row and subtable not sharing the same subscript are significantly different at p< .05 in the two-sided test of equality for column proportions. Cells with no subscript are not included in the test. Tests assume equal variances.[2]

1. This category is not used in comparisons because its column proportion is equal to zero or one.
2. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

FGD: For the FGD at endline, the participants were separated into different groups based on age and gender –WCBA (young women) and older women; young men and older men. Respondents in each group were usually 6-8 in a group. The young men and women category consisted of participants who were mostly from 18 – 39 years old, with two outliers of 16 and 45 years in two of the groups. The Older women and men category consisted of participants mostly aged from 40 – 65 with an outlier of 73. There

were more Christians than Muslims but both religious groups were well represented. One traditionalist participated in the interviews and was male. Among the different types of occupation mentioned, most of the participants were traders, and some were farmers (mostly men), hair stylists (all women), tailors (all women), carpenters (all men) professional drivers (all men); several men described themselves as having double jobs: teacher/trader (2) , farmer/fashion designer, pensioner /farmer and farmer/printer. Many of the older women were grandmothers and all the women had children. For the young men and women the number of children ranged from 1-5 and for the older men and women the number of their children ranged from 2-6. All the participants were married.

IDI: A total of 24 PAR participants (12 in each ward) were interviewed in both Ilara and Ipara. Preference was given to those who had taken part in both the first and second joint group dialogues but in a few cases, those who took part in only the second joint group dialogues were interviewed. Two of the LG staff – LIO and Cold Chain Officer CCO who were involved in the first round joint dialogues were redeployed outside Remo-North LGA before the second round of dialogues and their replacements were involved in the second round of dialogues. Additionally in Ilara, the health worker in charge of the health facility who was also the ward focal person on immunization (WFP) during the first round of dialogues was replaced by a new in-charge and WFP. However, the previous WFP participated in both rounds of dialogues since she remained a health worker in the Ilara facility. The composition of the community members in both wards remained the same throughout the PAR period. The noted age range of the participants was between 27-69 years. 16 out of the 24 JAC members interviewed were female.

IDI were also carried out with key informants - health workers and policy makers at state and local government levels. In total there were 14 respondents, 9 of whom were female. Most of the respondents had been interviewed at baseline except in a few cases where new people had been deployed to the LGA and the ward. Policy makers interviewed at endline were those focused on immunization service delivery. More health workers (6) were interviewed at endline compared to baseline (4). This is because at endline there were more health workers available in the health facilities due to deployments that had taken place in the past year. Some of the health workers and LG officials were also interviewed as PAR participants. The noted age range of the health workers, policy makers and local government officials was 25 years to 57 years. Table 3 below details the stakeholders:

Table 3: IDI participants at different levels of government and in both wards

Ogun State Policy makers	Remo- North Local Government Officials	Health Workers at ward facilities	Community Stakeholders - Ipara	Community stakeholders - Ilara
State Immunization Officer (SIO)	Principal Medical Officer of Health (PMOH)	Health Worker In-Charge - Ipara	WDC Chairman	WDC Chairman
State Cold Chain Officer	Local Government Immunization Officer (LIO)	Health Worker 1 (Ward focal person), Ipara	WDC Secretary	WDC member
State Health Educator	Cold Chain / Logistics Officer (CCO)	Senior Community Health Extension worker (CHEW) – Ipara	Foremost traditional leader – Ipara Baale	Foremost traditional leader – Ilara Kabiyesi
	Social Mobilization Committee Chairman	Health Worker In-Charge - Ilara (Ward Focal Person for immunization)	Religious leader - Pastor	Religious leader - Pastor
	Social Mobilization Committee Secretary	Health worker 1 , Ilara	Religious leader - Imam	Religious leader - Imam
		Health worker 2 (CHEW), Ilara		

For the community stakeholders linked to the immunization programme, a total of 10 key informants were interviewed (see table 3 above). Their ages ranged from 40 to 78 years. All the WDC members had played their roles in Ipara for 2-10 years and for Ilara, they had played roles in other community committees for about 2 - 5 years but in the re-established WDC for the past one year. The community and religious leaders had all played those roles from between 10- 50 years. The Ilara King or Kabiyesi and Ipara Baale are the foremost traditional rulers and principal gatekeepers as well as paramount over the council of chiefs in Ilara and Ipara respectively. They are patrons/members of the WDC. One of the WDC members interviewed in Ilara was female and one of the religious leaders also interviewed in Ilara was female. The rest of the community stakeholders interviewed were men. An overview of gender distribution in the IDI is found in the table 4 below.

Table 4: Overview of IDI and respondents' characteristics

Stakeholder Group	Number of Interviews		Gender	
	Ilara Ward	Ipara Ward	Female	Male
Community leaders (Traditional & religious)	3	3	1	5
Health workers	3	3	6	0
WDC	2	2	1	3
Local Government	5		3	3
State policy makers	3		0	3

Subsequent sections in this report detail the study findings.

7.2 The PAR dialogues process

We examined the PAR process and the dynamics within and between the three groups of stakeholders mainly via interviews with the PAR participants. This section focuses on how they were selected for the dialogues and what happened in the dialogues. Annex 15 provides details of how decisions were made, the participants' comfort levels in expressing themselves, how consensus was built, how conflicts were resolved; and how they worked together in the PAR.

7.2.1 Selection for participation in dialogues

In order to select participants in the dialogues, the core research team with KIT support developed criteria for who should be part of the dialogues and action based on the findings in the situational analysis. This criterion was presented by the policy maker to the community leaders and the local government. The Ipara and Ilara community leaders, WDC and CDA leaders nominated people that could be part of this. The local government authorities nominated all the frontline health workers and key LG stakeholders involved in immunization service delivery. The key was to ensure that participants in the PAR process were equipped (in terms of links and knowledge of immunization as well as representation of their various groups) to really address the key reasons why certain groups did not bring their children for immunization. We are not sure how this process of selection (nomination) helped or hampered this aim. Since the various authorities related to the three groups made the decisions of who should participate there is the chance that they could have chosen within their comfort zones (usual *suspects*). So to gain more insight into this process, we asked about the JAC members in both wards, their perception of how and why they were selected to represent their various groups. The Ilara JAC community members gave several reasons for being nominated and for volunteering. One participant perceived that this was due to being a retired health worker and therefore considered to be more knowledgeable about the immunization programme than others; another considered herself a hard worker who was already involved in mobilizing community members for immunization and therefore trusted enough to be nominated; another considered himself a well- known person to the community leaders and the local government authorities having once been a supervisor of health at the Local Government and with the ideas and experience to be valuable to the program – this particular respondent also referred to having access to discuss immunization issues at political party levels in order to promote interest (an influence which would be important to the policy makers) ; another was nominated because he was the chairman of the CDA (and now WDC). Another participant considered his industry and literacy as the assets that had stimulated his nomination by the community leaders.

All the health workers indicated that they had to be part of the PAR by virtue of their functions as frontline health workers in immunization service delivery in Ilara. Similarly, local government officials stated that their roles in implementation of the NPI necessitated their participation.

In terms of their perceptions of diversity of the PAR participants in Ilara, the respondents described that the three religious groups in the communities were represented, and there was gender (more females than males), age and SES diversity. This diversity was described as positive by the PAR participants.

For the JAC, we are four men in the group with ten people, but for the ward development committee, we have five men - a bike man, farmer, driver, me, and one other person, the other ten members are women. - Chairman JAC/WDC Ilara

I can vividly see that (the diversity) is working really well because there are kids (young people) in our midst who did not have an idea of what was going on but we have come together and they have been enlightened as regards the development relating to immunization in the community. That is what I have observed. - Community member 3 – PAR participant Ilara

Similarly in Ipara, the community members also gave several reasons for being nominated by the community leaders and for volunteering. One participant considered that this was due to her being an active member of the CDA and another reported that his position as a pastor (a CAN representative) motivated his nomination. Another stated that because of his past work with the WDC, he was considered valuable. A respondent that did not have any prior community involvement experience was the Igede representative who said there was no preceding reason for choosing him, he was called upon to join by the WDC chairman, and he did. Another respondent indicated the voluntary nature of their participation while another considered his experience, forceful personality and oratory skills his assets to ensure that the communities' perspectives would be articulated well in the joint dialogues.

"The people we can select to participate in a dialogue with the government workers are those who are calm and those who can also speak fluently, those who know how things are going and how things are. Those who can talk to the government and health workers." -Community member 3 – PAR participant, Ipara

The health workers and local government officials all indicated that they had been chosen due to their roles in immunization service delivery. One of the local government officials reported that she was chosen by default as she replaced the vacancy for a participant.

In terms of diversity among the groups, the respondents reported that different groups within the community were represented in the dialogues including traditional rulers, religious leaders, various occupations, different tribal groups as well as males and females of different ages.

"What we did was is if we had any challenge with any group we brought them into the committee, because once they are in it will be difficult for them to work against the interest of the committee."- LG Official- 3 – PAR participant, Ipara

7.2.2 What happens in single group dialogues?

In both wards, the health workers and local government single group dialogues were described in greater detail than the community single group dialogues. The health workers in Ilara an described the participation of all the frontline health workers in the dialogues, issues were raised and discussed together in order to reach a conclusion. Similarly, their Ipara counterparts described their discussions of immunization issues and challenges, assessing their capacity and brain storming to find solutions. The local government officials also described a similar process in their single group dialogues and noted that having the opportunity to brainstorm in this way was an 'enjoyable' exercise

for them because of their knowledge of immunization issues. A moderator was chosen by each group of health workers or LG officials and decisions made according to the general consensus. An additional element described by an LG official was that the LG officials met after the joint group dialogues to discuss what had been said by the three groups in Ilara and Ipara and to evaluate and encourage themselves.

"Everybody participates. When you bring out an issue, you hear the view of others then we come together to reach a conclusion. Like what are the ways forward following what we have discussed?" -Health worker 2 – PAR participant, Ilara

"Hmmm . .. participation has been helpful. You know we have different set of people there and they know much more about immunization; they are elites. So the dialogue has been wonderful. Of course it is welcoming suggestions, getting ideas from each other that has been helping. You know we work in the same place so we understand each other." --LG Official 1- PAR participant, Ilara

For the community member dialogues, in Ilara, the community participants described a process of discussing and listening to each other. They emphasized that no one was looked down upon regardless of their status and age. In Ipara, the community participants expressed that the focus of their single group dialogue was to discuss issues related to immunization and find out the perception of the community on those issues. Participants in both wards expressed that they did not fight during the meetings:

"The dialogue is smooth because when we mean up it is always up and if we mean down it is always down. We agree with each other's opinions and we don't look at how small a person maybe and disobey him or her, we will crosscheck anything that has been said. There is nothing like we shouting or fighting. You can't even hear any talk unless a contribution is being made or we are laughing, we are one." - Community member 4 - PAR participant, Ilara

It was interesting that only the community participants mentioned not fighting during the meetings , it appears that for the health workers and local government participants, this was not perceived as relevant. Analysis of the observational check lists used in the single group dialogues confirmed this ease of discussions among the homogenous groups – community (both men and women), health workers and local governments. However, in the community single group dialogues, some participants (usually 2-3 who were more educated or influential or more used to being part of committees) were more active in the discussions than others. However the more passive ones still contributed to the discussions especially when asked directly. Contributions to discussions was partly determined by people's experience and knowledge - the Igede representatives for instance, could contribute more relating to their group; the chairman in Ipara for instance could contribute a lot on the work done by the WDC, what was working or not; some other members could talk more about issues relating to the status of community members and their attitudes towards immunization. There were a few arguments during the prioritization of issues to be included in the common action plan (derived from the action plans) of the community men and women. The women single group dialogues in Ilara and Ipara had nominated women whom they considered could talk more boldly to be part of the dialogues with the men – so they were able to negotiate.

7.2.3. What happens in the joint group dialogues?

The joint group dialogues were more structured than the single group dialogues. The ground rules were set by the participants before the dialogues started – regarding procedures and how they would respect each other's rights to talk and contribute – an informal Memorandum of Understanding (MoU). They elected officials during the first round of dialogues – the chairman, secretary, women leader, representatives for mobilization of different groups. And they described themselves as the Joint Action Committees (JAC). The joint group dialogues were facilitated by the JAC chairmen and proceedings were recorded in writing by the JAC secretaries in both wards. When asked about the joint group dialogues, majority of the PAR participants reported that deliberations and negotiations were carried out sometimes with arguments. However, the dialogues were free of conflicts and issues were generally resolved or they "agreed to disagree". Majority votes on decisions were carried forward as group decisions.

These perceptions were confirmed by the observation checklists. To their credit and maybe partly because ground rules were established early in the first round of dialogues, the groups all tended to listen to each other in the deliberations. In addition, for health workers and community members there appeared to be increasing ease in expressing their opinions from the first to second round of dialogues. Local government officials tended to provide direction to the discussions - more at the first round than the second round. However, the community participants appeared to have more voice in Ipara than Ilara at the first rounds but by the second rounds the community participants in Ilara appeared to be more comfortable and used to interactions with the local government officials and health workers and therefore more vocal during the dialogues.

7.2.4 Gender participation in the dialogues

During the PAR, efforts were made through the criteria given to the three groups for selection of participants to ensure diversity in sex, gender, religion, SES and tribe. However, in terms of actual participation of women in the discussions, we were aware that cultural barriers exist in the way women would contribute to discussions in the presence of men. Several things were put in place to ensure that the views of women were sufficiently captured. During the single group dialogues, the women in each ward had their own dialogues and developed their own action plans then they had to choose representatives to team up with the men to develop the community action plan. They generally chose a mix of older and young women and aimed at ensuring that the more vocal women in the group represented them – for instance, women that had leadership roles in the community and were used to such interactions with men; an example is a Traditional Birth Attendant (TBA) in Ilara who also happened to be a woman leader. However some young women were chosen since immunization was considered more relevant to this group. It was obvious during the first round of dialogues that they had to overcome the social norms of keeping quiet before their elders and the men. This had been discussed during several presentations (by the research team) to the PAR participants - specifically, the importance of everyone having a voice and how that would impact the success and acceptability of their plans and implementation of actions decided. An LGA stakeholder described having to motivate the young women to speak during the dialogues:

I: So there has never been any time when different socio-economic status, religion, sex . . . has come between the dialogues?

R: I first noticed that of sex. So there was this day, we were having a meeting and I just observed the younger women were not talking, I had to tell them, "you should talk"; but you know in our tradition women don't just talk anyhow. It is only those of us that are elites that can talk anyhow. In their own gathering, they don't talk anyhow . . . not until I asked the men, "Men in the house, are you telling these women no to talk?" The said "no, they can contribute" and immediately they (the young women) started contributing. -- LGA Official 1- PAR participant, Ilara

During the second round of dialogues, there was a noticeable difference in the comfort level of the women, especially the younger women in expressing their opinions as well as their willingness to talk and express their wishes – and sometimes challenging issues raised during the dialogues.

"I think the willingness to speak has improved especially among the women,. Especially at Ilara- the women are docile, they don't like to speak but now it has improved. Even on the street they call me Doctor this and this and that, so I think it has helped them to put on a bit of courage to say whatever they have in mind." --LG Official 2 – PAR participant

7.2.5 Leadership and Participation within dialogues

The joint group dialogues were seen as a positive development by the many of the community members in the PAR and was perceived as an activity that would lead to community development; and they stated that this encouraged their active participation. Several people were recognized by participants as playing leadership roles during the dialogues – taking charge of the discussions. These included the chairmen of the JAC in both wards, the health workers who were the WFP in immunization, the TBA in Ilara and the local government PMOH. These people already had leadership roles in their daily functioning in the communities. The PAR participants in Ilara were clear that some people had more influence over the proceedings than others but that everyone participated. According to some respondents, the more reticent ones were asked for their opinions and then became involved in the discussions as a result.

R: Like the chairman ward development committee has influence on the decision making. I, as a focal person (in health) have influence on decision making and the community members too, because they have the right to say no to even what pertains to their health. They have right to their health. So they can take the decision that they don't want this thing. - Health worker 2- PAR participant, Ilara

Many of the dialogues participants in both wards reported that they considered everyone important in the groups and also felt that they themselves were important members of the group. The input of the community participants including the Igede and Cotonou representatives were regarded as valuable because of their understanding of the contexts; and that of the LG and health workers because of their understanding of the immunization programme and the government policies. Some of the health workers and local government officials in Ilara were of the opinion that the decisions made during the dialogues would only hold if the Kabiyesi did not disagree with them. They emphasized the support of the Kabiyesi as being critical though he was not directly involved in these proceedings.

I: Is Kabiyesi part of this?

R: He is not but it is his own community. Whatever we discuss here, some of his people are there so he hears about it and if we are taking a decision that is not right for his community, he may say no, the meeting that you have done over there is not for my community members. So there is nothing we can do, ..because he owns his community so he can take decisions. - Health worker 2 - PAR participant, Ilara

Nevertheless, there was clearly some influence exerted by some of the community members in the PAR. This may be because in the mix of the community members that volunteered for the PAR, some had held leadership positions before the PAR (for instance both JAC chairmen, the CAN representative, the TBA) and were respected by the LG and health workers.

I: Do certain individuals have more influence over the decision making process than others both in the Local Government dialogue and in the joint group dialogue?

R: Hmmm . . . All I think is that . . . yes they do have. But they use it in a very positive way. You know sometimes when you are fed up and tired, you don't want to go along, there are some members of the community that will cheer you up. So of course they influence you and you respect them.

I: Why do you think this is easier for those people?

R: Because of their class.

- LG Official 1 - PAR participant, Ilara

7.3 Effectiveness of using the PAR approach to deliver the REW strategy

Were the intended outcomes achieved?

In order to assess if the intended outcomes had been achieved in the focal wards, we explored changes that occurred over the past year (since the PAR intervention) relating to immunization utilization and coverage, health and immunization services, community members' attitudes and immunization seeking behaviour as well as changes that have occurred in the three groups of stakeholders involved in the PAR as a result of working together in this way.

7.3.1 Immunization Utilization and Coverage in Ipara and Ilara wards

In assessing immunization coverage, a child was said to be fully immunized if he or she had received all of the following vaccines: a dose of BCG, three doses of oral polio vaccine (OPV), three doses of Pentavalent vaccine (Penta) and one dose of measles vaccine (MCV). Secondary analysis of the HMIS data showed that in 2015, immunization coverage in Ilara was remarkably low – with only 26% of children fully immunized. The trend showed an extraordinary drop of coverage from 78% in 2014. During the formative study baseline, it was discovered that the significant drop in coverage in Ilara coincided with the demise of the WDC in Ilara which occurred due to reported political interferences and the withdrawal of the support of the Ilara Kabiyesi (king). Ipara ward had performed much better at baseline compared with Ilara - with 76% of children fully immunized, lagging slightly behind the NPI's acceptable minimum of 80%.

By the end of 2016 - end of the first action phase (mid-way of the PAR), the proportion of fully immunized children in Ilara had risen to 59% but in Ipara a remarkable drop was seen to 59%. This was caused specifically by a drop in the measles vaccine utilization (59%) since all the other antigens were utilized well above minimum acceptable limits (88-93%) in Ipara. In Ilara, immunization coverage improved significantly across all antigens though all were still below the acceptable minimum of 80%. Figures 4 & 5 shows details of the trend of immunization coverage in both wards from 2014 to 2016.

Different dropout rates were examined: Penta 1-Penta 3 (((Penta 1 – Penta 3)/Penta 1) *100) dropout rate which is regarded as a good measure of delivery system effectiveness[4] reduced in Ipara from 4% in 2015 to -5% in 2016 and decreased in Ilara from 36% in 2015 to 0% in 2016 – suggesting excellent delivery system effectiveness in both wards. However, the Global Vaccine Action Plan currently recommends “Penta 1 to Measles first dose dropout rate (Penta 1-MCV1)” as a preferred measure given the longer time interval between doses.[5] This dropout rate is also considered as reflecting overall programme effectiveness.[7] Penta 1-MCV1 dropout rates increased from 25% in 2015 to 33% in 2016 in Ipara, displaying a problem with dropout not seen with the previous measurement and showing that the problem of dropout in Ipara had increased from baseline. This was also obvious from the considerable Immunization gap (BCG – Measles) in Ipara ward increasing from 24% in 2015 to 30% in 2016. Conversely in Ilara, there was a negative Penta 1-MCV1 rate (-2% in 2015 and -5% in 2016) showing that drop-outs are not a problem and becoming even less so in this ward. An interesting feature in Ilara remains that more children were immunized with measles vaccine than BCG – a feature also seen at baseline – suggesting a systematic error in the HMIS, or more people were convinced to immunize their children after birth or that children from the previous year’s cohort who had missed some doses completed them in the year under review.

[4] Informal Consultation of Developing a Monitoring and Accountability Framework for the Global Vaccine Action Plan. The Monitoring and Evaluation/Accountability Framework for the Global Vaccine Action Plan – The Monitoring Indicators. 2012. [Last accessed on 2014 Sep 20]. Available from:http://www.who.int/immunization/.../1_MA_Framework_overview_final.pdf .

[5] Global Vaccine Action Plan. Strategic Advisory Group of Experts on Immunization. Assessment Report 2013. Available from URL: http://www.who.int/immunization/global_vaccine_action_plan/sage_dov_gvap_progress_report_2013.pdf

Figure 4: Trend of immunization coverage in Ilara ward

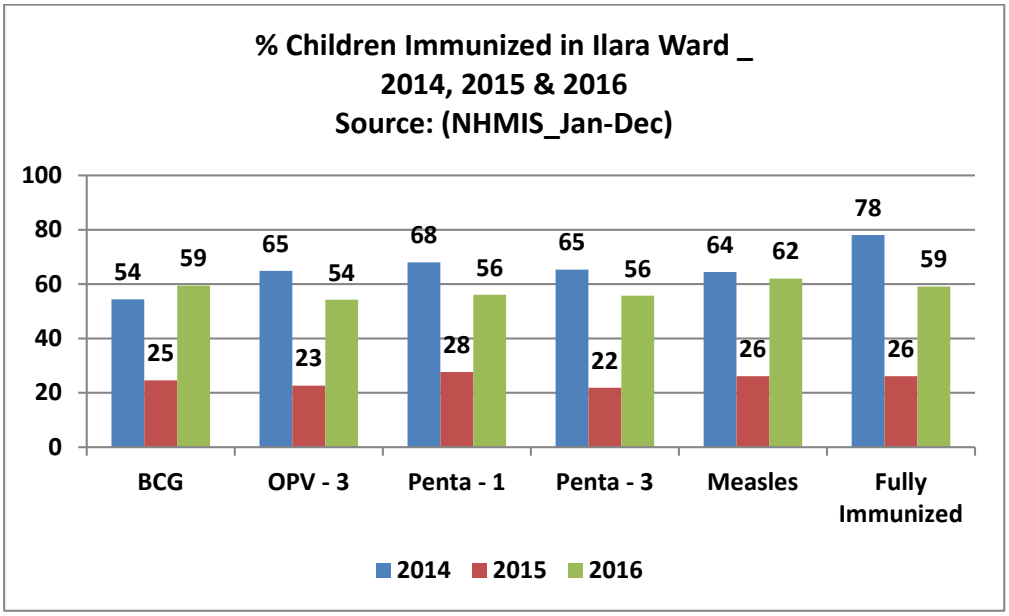
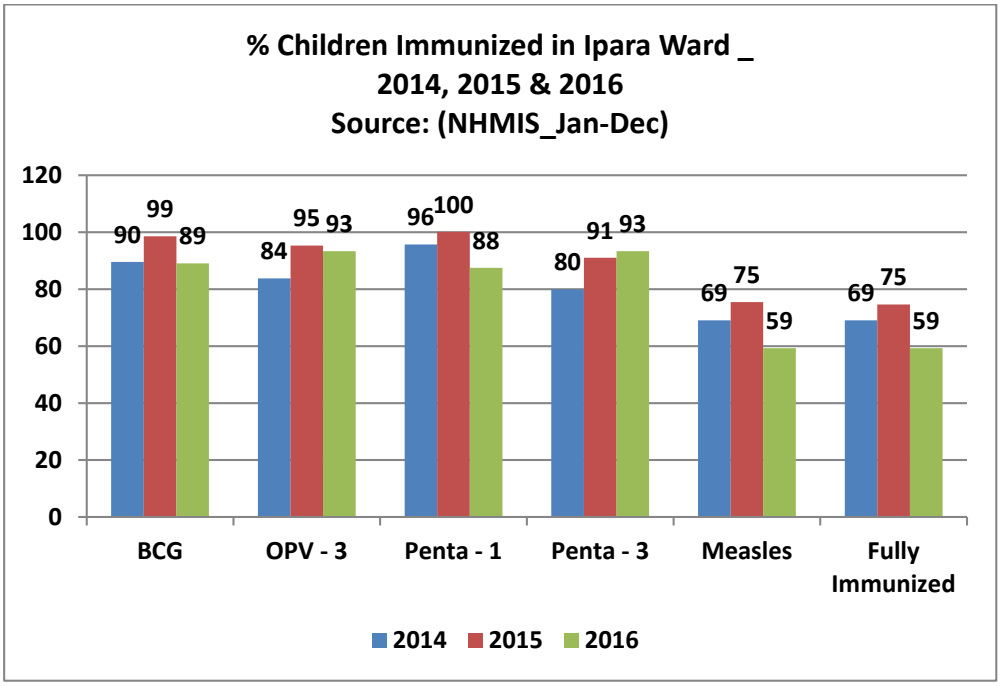


Figure 5: Trend of immunization coverage in Ipara ward



We examined the Penta 3 utilization trend from 2015 to 2017 (Figures 6 & 7), in an effort to gain more insight into the utilization pattern in both wards. From the HMIS data, Penta 3 utilization remained fairly steady from November 2015 to April 2016 in Ipara, but coverage began to drop from May 2016 (before the JAP implementation in the wards). Penta 3 utilization was low by the first round of dialogues in July and started rising thereafter only to experience another drop in October 2016. This drop coincided with the general workers' strike in Ogun state which affected health service delivery. The drop in utilization continued till about January (this period was the early part of the second action phase soon after the second round of dialogues) after which it has been rising

consistently. Another possible reason that could have contributed to the drop in utilization in Ipara is the conflict between the Chairman of the JAC and some community members and health workers which was finally resolved just before the second round of dialogues. It was however interesting to note that the drop in utilization had started before the dialogues and could have been due to reasons captured during the baseline study or a less apparent cause.

Examining the same trend in Ilara showed a sharp rise in Penta 3 utilization after the first round of dialogues in July which dropped around September though was still much higher than the months before the PAR. Similar lower utilization levels were apparent from October to January with a consistent rise during the second action phase. It does appear that the general workers' strike in October had an important effect on immunization utilization in both wards – though experienced more in Ipara than Ilara, suggesting that the added element of conflict may have accentuated the effect of the strike in Ipara.

Figure 6: Penta 3 utilization in Ipara ward

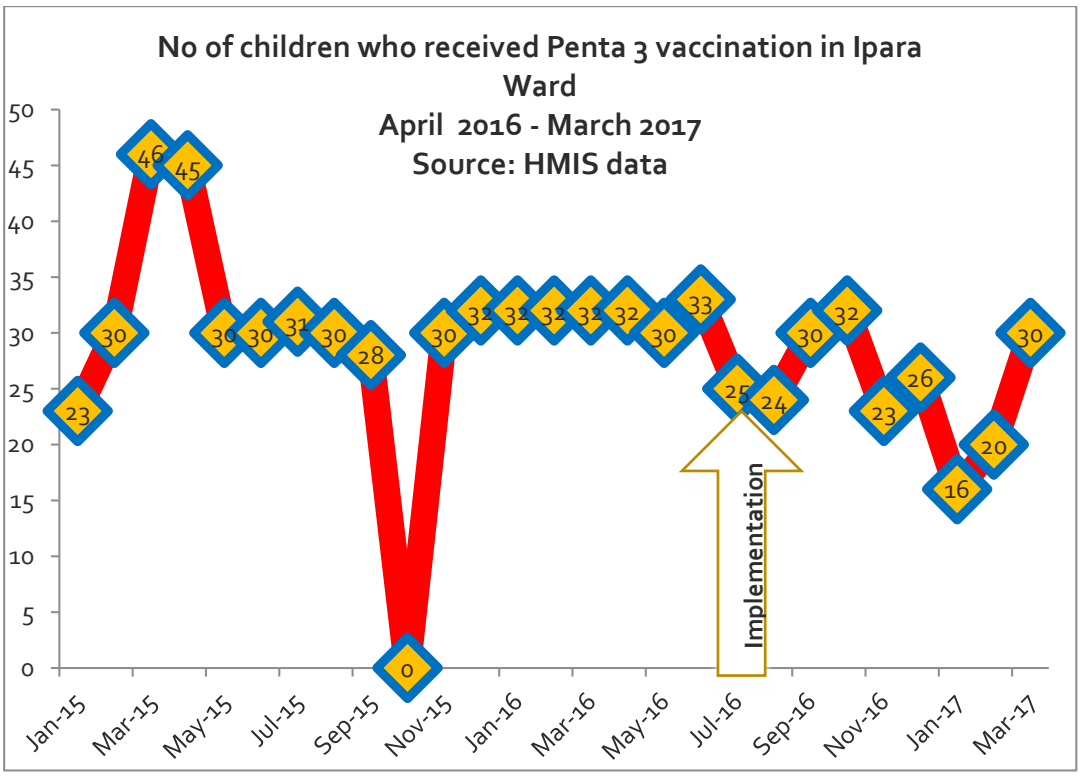
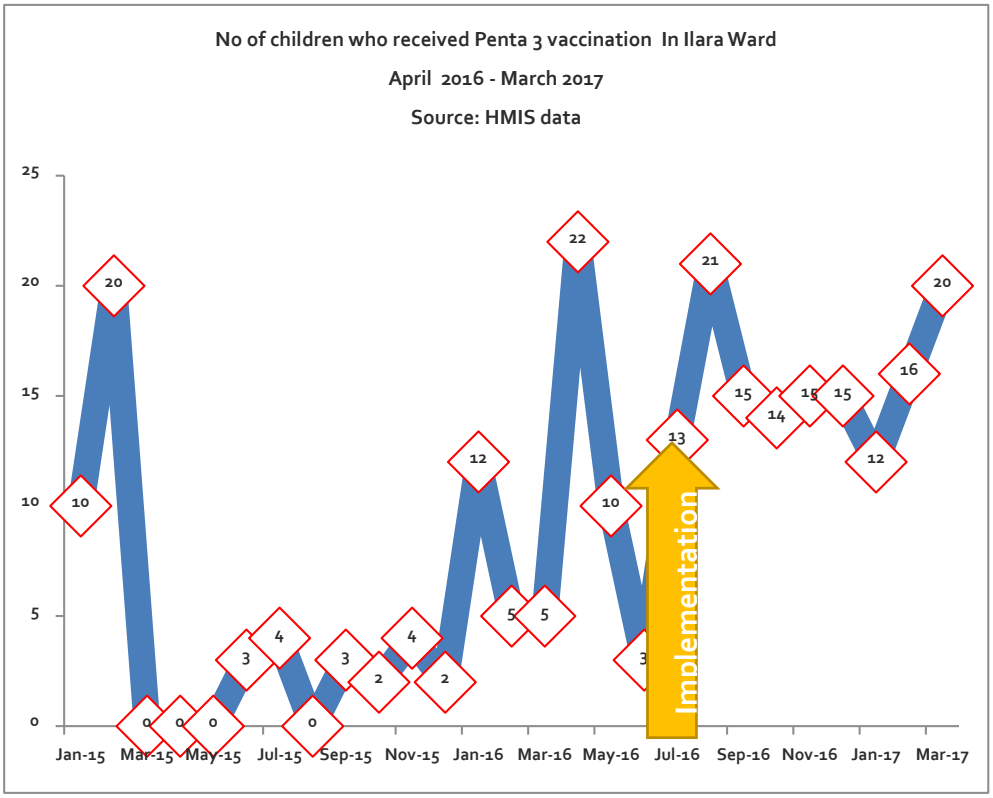


Figure 7: Penta 3 utilization in Ilara ward



The HH survey results showed the utilization of immunization at baseline and at endline. The routine immunization schedule in Nigeria administers the final antigens (measles and yellow fever vaccines) at nine months of age. The analysis of immunization completeness encompasses all children older than 9 months who should have plausibly achieved this outcome. Only 56 children (32.6%) over 9 months of age (n=172) at baseline had immunization cards available for inspection. Availability of cards for assessment improved (and was statistically significant) to 88 children (52.4%) of 168 children above 9 months at endline. This finding was confirmed by the qualitative interviews described in more detail later in this section. At baseline, assessment by card only, further revealed 6 in every 10 children over 9 months (60.7%) (50% in Ilara, 67.7% in Ipara) received all vaccinations at some time (refer to Table 5 for details). At endline, assessment by card for children above 9 months revealed an encouragingly and statistically significant increase to 90.9% (90.6% in Ilara, 91.1% in Ipara) to have received all vaccinations. However, when immunization status was assessed by card and recall 146 (84.9%) of the 172 children over 9 months were assessed as fully immunized at baseline. Statistically significant differences in figures were observed between Ilara (79.3%) and Ipara (88.1%). At end line, similar figures, albeit a bit lower, but not statistically significant, of complete immunization occurred, namely 136 (81.0%) of the 168 children above 9 months, with 72.3% in Ilara and 86.4% in Ipara. Statistical differences between wards at both intervention levels were further established and confirm Ipara as the better performing ward when it comes to complete immunization.

The utilization figures reported by recall were most likely not reliable - caregivers cannot be expected to recall number of immunization doses with precision and this figure may approximate immunization commencement rather than completion. Poor availability of immunization cards (which featured prominently as a problem in the FGD and IDI at

baseline but interestingly not at all, in the qualitative interviews at endline) was a constraint to achieving an accurate assessment of immunization utilization in this survey. Though estimation of immunization coverage by maternal recall is an accepted practice in developing and developed countries (Langsten and Hill, 1998; AbdelSalam and Sokal, 2004 pp. 83-85), it is documented as not ideal and prone to errors and recall bias (Suarez, Simpson and Smith, 1997; Liu, Liao and Xu, 2017 pp. 92-95)

Table 5: Immunization utilisation and coverage in wards, household survey

Variables		Immunisation Utilisation children above 9 months (N=340)											
		Baseline (N=172)						Endline (N=168)					
		Ilara (n=69)		Ipara (n=103)		Total		Ilara (n=65)		Ipara (n=103)		Total	
		Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Card Availability	No cards	7_a	10.1%	15_a	14.6%	22_a	12.8%	7_a	10.8%	3_b	2.9%	10_b	6.0%
	Cards assessed	22_a	31.9%	34_a	33.0%	56_a	32.6%	32_a	49.2%	56_a	54.4%	88_b	52.4%
	Cards not assessed	40_a	58.0%	54_a	52.4%	94_a	54.7%	26_a	40.0%	44_a	42.7%	70_b	41.7%
Vaccination completed by card		(n=22)		(n=34)		(n=56)		(n=32)		(n=56)		(n=88)	
	No	11_a	50.0%	11_a	32.4%	22_a	39.3%	3_a	9.4%	5_a	8.9%	8_b	9.1%
	Yes	11_a	50.0%	23_a	67.6%	34_a	60.7%	29_a	90.6%	51_a	91.1%	80_b	90.9%
Vaccination completed by card and recall		(n=69)		(n=103)		(n=172)		(n=65)		(n=103)		(n=168)	
	No	15_a	21.7%	11_b	10.7%	26_a	15.1%	18_a	27.7%	14_b	13.6%	32_a	19.0%
	Yes	54_a	78.3%	92_b	89.3%	146_a	84.9%	47_a	72.3%	89_b	86.4%	136_a	81.0%

Note: Values in the same row and subtable not sharing the same subscript are significantly different at p< .05 in the two-sided test of equality for column proportions. Cells with no subscript are not included in the test. Tests assume equal variances.[1]

1. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

Multivariate logistic regression was performed for children above the age of 9 months to further explore and identify factors associated with completion of immunization based on assessment of cards and recall. Intervention levels, ward, age and sex of child, employment status and highest level of education of caregiver, and wealth quintile of the household were taken into account in this analysis. 95% Confidence Intervals (Cis), lower and upper Cis (LCI and UCI), Odds Ratios (OR), Standard Errors (SE) and P values (p) of the variables included in the model are presented. Please take note that careful interpretation of this data is advised as the sample size is small. A rule of thumb is the existence of 10 cases per variable (including breakdown or levels per categorical variable) included in the model. Statistically significant factors were location (ward) and caregiver's education (See Table 6).

The likelihood of complete immunization for children above 9 months in Ipara was 2.72 (CI 1.45-5.109, p=0.002) compared to children in Ilara. Caregivers with higher level education were 5.09 times (CI 1.32-19.62, p=0.018) more likely to fully immunize their children than uneducated caregivers. This linear trend continued: caregivers with secondary and primary education were respectively 4 times (CI 1.66-9.64, p=0.002) and 2.93 times (CI 1.19-7.24, p=0.02) more likely than uneducated caregivers to fully immunize their children. The percentage of fully immunized children, when collating base and endline data, was 61.9%, 83.2%, 87% and 88.2% for uneducated caregivers, caregivers with primary, secondary and higher level of education respectively.

The intervention did not demonstrate a statistically significant change; in fact, slightly lower percentages were observed at endline (81%) than at baseline (84.9%) for immunization utilization reported by cards and recall. This could be due to relative short duration of around 8 months of action phases. However, the high percentage of fully immunized children aged 9-11 months of 92.3% reported by cards only (see Table 6) could be a promising indication of the value of the PAR approach in immunization

service delivery, as these children were most likely born during the intervention period. Nonetheless, the numbers were too low to mine this group further.

Interestingly, though children from poor households were 1.56 times more likely to be fully immunized than children from the poorest households, the odds for children from middle/average, rich and richest households were the same or lower than the odds of children from the poorest households to be fully immunized. Although this result is not statistically significant, it points to some degree of equity in the uptake of the intervention but raises the question about if there is a specific group that is still not adequately covered by the intervention.

Table 6: Multivariate logistic regression results on determinants of complete immunization, household survey

Variable	Vaccination coverage by card and recall (Children above 9 months) (N=340)							
	Category	N	% Complete Immunisation	OR	SE	95% C.I.(OR)		p value
						Lower	Upper	
Intervention								
	Baseline	146	84.9%					
	Endline	136	81.0%	.564	.337	.291	1.093	.090
Location								
	Ilara	101	75.4%					
	Ipara	181	87.9%	2.719	.320	1.451	5.095	0.002*
Chid age group (months)								
	9-11	12	92.3%					
	12-23	91	79.8%	.378	1.099	.044	3.258	.376
	24-59	179	84.0%	.488	1.091	.058	4.138	.511
Sex of child								
	Female	139	82.2%					
	Male	143	83.6%	1.020	.319	.546	1.907	.951
Caregiver's Employment Status								
	No	51	79.7%					
	Yes	229	84.2%	1.106	.399	.506	2.415	.801
Caregiver's highest level of Education								
	None / Pre-School	26	61.9%					
	Primary	79	83.2%	2.930	.461	1.187	7.236	0.02*
	Secondary	147	87.0%	3.997	.449	1.658	9.639	0.002*
	Higher	30	88.2%	5.093	.688	1.322	19.624	0.018*
Wealth Quintile								
	Poorest	55	83.3%					
	Poor	64	87.7%	1.558	.523	.559	4.345	.397
	Average	54	79.4%	.626	.476	.247	1.592	.326
	Rich	54	85.7%	1.000	.530	.354	2.828	1.000
	Richest	52	82.5%	.691	.511	.254	1.881	.469

In the qualitative interviews, majority of the respondents had the view that immunization utilization by caregivers in both Ipara and Ilara wards for their children had improved. It was interesting that the drop in utilization in the HMIS of Ipara was not reported or noticed by any group of stakeholders in the interviews. The HMIS showed that there were marginal drops across three antigens that could easily be missed but the drop in measles vaccine utilization in 2016 was quite remarkable and should have been mentioned at least in the interviews with the health workers and local government officials. Nevertheless, the progress in utilization during the second action phase of the PAR (Dec 2016 to April 2017) may have been responsible for these responses at endline. Furthermore, the HHS showed a significant increase in utilization and coverage assessed by cards only – in both wards – an important finding in this study. Policy makers and implementers commented (as seen in the quotes below) that the coverage data from Remo North now showed less of red and yellow indicators- an indication that the number of unimmunized children was declining and immunization-seeking behaviour had increased. The SIO remarked that no case of non-adherence was recorded in Remo North in March 2017, a period not covered by the 2016 HMIS above. Likewise, majority

of the respondents reported that immunization services were more accessible in the last year in both wards and they perceived that these services were being utilized more by community members.

"Ilara has moved from category 4 to 2 now on routine immunization (RI). It's very encouraging."

-LG PAR participant 2 - Ilara.

7.3.2 Awareness and knowledge of the value of immunization

Respondents in the survey and FGD were asked about their own awareness and knowledge of immunization; and more in-depth questions about perceptions of respondents about the communities' awareness and knowledge of immunization were asked in the IDI.

In the HHS, at baseline, the majority (95.7%) (90.7% and 99.2% in Ilara and Ipara respectively) of caregivers in the HH survey stated that immunization prevents diseases, with polio and measles being the vaccine preventable diseases that they were most aware of. This remained similar at endline (96.1%) (96.4% and 96.1% in Ilara and Ipara respectively). The knowledge of immunization to prevent yellow fever, improved statistically significantly from 27.2% at baseline to 37.1% at endline. This finding was also consistent within wards. Caregivers' awareness of the prevention of DPT remained low at baseline (14.1%) and at endline (16.7%). However, about 1 in 10 caregivers in Ipara, statistically significantly lower than the 1 in 5 caregivers in Ilara knew of DPT at baseline. Knowledge of DPT improved slightly to 1 in 6 caregivers at endline (in Ipara).

In the FGD in both wards, many respondents were able to mention diseases prevented by immunization in the interviews similar to the baseline findings; but there were still a few mentions of malaria and malnutrition as vaccine preventable diseases at endline in both wards,. Community members (all four groups) in both wards were able to talk about the importance of immunization, who needed the vaccines, specific diseases prevented by immunization, with polio being the most frequently mentioned (the same as in baseline). Many young men and women in both wards also talked about adverse events following immunization (AEFI). They expressed the views that most people in the communities know the importance of vaccination though some still refused to take immunization for their children due to AEFI and being too busy with income generating activities (like farming). All the groups in the FGD indicated the value of immunization but a notable difference at endline was that the young women groups in the FGD in Ipara and Ilara spoke more knowledgably about immunization and contributed more vibrantly to the discussions than at baseline when more information was obtained from the older women. Many of the young women at endline also displayed more awareness of REW activities especially in relation to the activities of the JAC/WDC. This finding was supported by the HHS which showed more knowledge of SMC and WDC members among the young women in the survey (detailed in the section below) and supports the findings in the FGD and all the IDI of intensified community sensitization and mobilization primarily geared towards the young mothers in the communities in the past one year. It was not quite clear to what extent this increased knowledge and awareness among young women influenced the utilization of immunization given that men are still the primary decision makers in the household.

7.3.3 Sources of information on immunization

Respondents at baseline were asked about their main sources of information regarding immunization and who they considered the most important source. Findings were mostly similar in the survey and qualitative interviews with few variations in the ascribed weight/value of information from different sources. Health facilities were the predominant sources of information on child health (91% - Ilara 87.2% and Ipara 93.5%) similar to baseline (91%). The SMC was adjudged to be the most active in immunization via raising awareness and mobilization of the community. Provision of information was reported to be the most important function of the WDC by a little over 40% of respondents. One in five caregivers knew a SMC member at baseline (17.4% in Ilara, 22.6% in Ipara, not statistically significant) and almost 1 in 4 knew a WDC member (20.9% in Ilara, 31.5% in Ipara, not statistically significant). Knowledge of SMC members increased significantly at endline from 20.5% to 48.1% and knowledge of WDC members also increased significantly from 27.1% to 52.4%. Similar figures were reported across wards. Multivariate logistic regression showed that children above the age of 9 months were 3.68 times more likely to be fully immunized when caregivers were knowledgeable of SMC members with an OR of 3.68 (CI 1.436-9.456) For the WDC, even though not statistically significant, an OR of 1.20 (CI 0.527, 2.722) was produced.

In the qualitative interviews, similar to the baseline, FGD respondents got information on immunisation mostly from the health workers. The young women in Ilara and Ipara reported more frequently at endline that the dates and times for RI were indicated on the immunization cards by the health workers. This was supported by findings in the HHS where significantly more children aged 9-11 months had immunization cards available for inspection.

At endline, there were more frequent reports from the young women in both wards about passing on information about immunization to their neighbours. In Ipara and Ilara, the leaders of the non-indigenous groups were reported to provide information on immunization to their respective groups. This information usually related to the dates and times of information, value of immunization and the need to immunize their children as well as information on AEFI. The content of the information was provided by the health workers and the language barrier was overcome by the use of these mediators. In the Ilara FGD, at endline, there was more reference to the PAR participants, especially the chairman of the JAC/WDC, as sources of information (and playing mediatory roles) on immunization to all the groups including the indigenous Yoruba tribe.

When asked where they go if they had questions about immunization, the health workers were most frequently mentioned in the Ipara FGD but in Ilara, the health workers and the chairman JAC were most frequently mentioned by all groups in the community interviews. It appeared that the level of interaction between the Chairman JAC and other PAR participants in Ilara with the caregivers in the community was relatively higher than in Ipara during the action phases of the PAR.

7.3.4 Current Immunization services in the wards

Caregivers in the survey were asked the last time they took their children for vaccination and where, as well as their opinion on costs, perception on services received and the adequacy of information given, both at base – and endline. Detailed results are reflected in Annex 16. All the caregivers were asked about their most recent immunization visit. In

Ipara significantly more caregivers with children under 24 months had an immunisation visit in the last year than in Ilara (95% vs 81%). Significantly more caregivers visited fixed government health facilities for immunization services at endline (83.2%) than caregivers at baseline (54.2%). Another interesting statistical difference was higher utilization of mobile or outreach services at baseline (34.8%) than at endline (10.6%). In view of the increased community sensitization and mobilization reported in the qualitative interviews (more in Ilara than Ipara) it appears the sensitization encouraged more facility use by the caregivers. However, significantly higher proportion of caregivers in Ipara (88.7%) accessed RI at fixed government facilities than in Ilara (75%) at endline. Caregivers in Ilara indicated significantly shorter distances (in fact, very short distances) than caregivers in Ipara for the most recent visit, and this was the case at base - (61.6% in Ilara, 41.1% in Ipara) and (59.5% in Ilara, 38.9% in Ipara) endline. Significantly more caregivers indicated that services were free at baseline (61.4%) than at endline (33.3%). On the other hand, more caregivers were of the opinion that services were very cheap (38.1%) at endline than at baseline (16.2%). In Ipara, significantly more caregivers (94.4%) were also of the opinion that they were informed of what to do at home if the child had a problem after vaccination, than caregivers in Ilara (85.2%), at endline.

Majority of the respondents in the qualitative interviews expressed that immunization services were accessible to and utilized well by the caregivers of young children in both Ipara and Ilara wards. Outreaches were still mentioned at endline by health workers in both wards as the most important strategy for reaching vulnerable populations especially the poor, disabled and those in hard to reach areas. Key differences at endline were that majority of the respondents reported intensified efforts on community mobilization with the JAC/WDC members; and health workers were described as more motivated in these activities. According to the community members including the young women in both wards (more in Ilara than Ipara), the health workers were more responsive to the communities' immunization needs since the past year – immunization was carried out on time, health workers and vaccines were described as being available. Health workers in Ilara described their strategy: a health worker who lives in Isara usually collects the vaccines from the headquarters on the morning of the RI before coming to work. The Ilara health facility funds an Okada ride for him in order to reduce the transportation time. This process was aimed at ensuring vaccine availability on RI days and reducing waiting time for the caregivers of little children. Other efforts were described in Ilara: before RI days, the names of defaulters, phone numbers and addresses were collected from the register and the PAR participants (community members and health workers) traced the defaulters to their homes then used the opportunity to educate the husbands, neighbours etc. This was credited as resulting in a steady increase in the number of people coming for RI.

FGD respondents in the male and female groups described improved relationships between the health workers and the community members (more in Ilara than Ipara) within the past year - relating to both health and immunization services. Some of the respondents were aware of the study and attributed these improvements to the dialogues and action:

"One woman is in my house that fell sick around 1a.m in the midnight, they took her to the health centre and they attended to her. If it was before, as at last year it was not like

that but we thank God. So the relationship between the committee and the community has brought about good result." -*Young man, Ilara"*

In Ipara, many PAR participants explained that improved responsiveness of the health workers contributed to increased utilization of services by young mothers for their children. Efforts made by the health workers included looking for babies in need of immunization and 'capturing' them, and also ensuring the availability of vaccines (they collected from the local government) when needed. An LG official described the improved attitudes of health workers toward the community members:

…In the past, community members always complained of the attitude of the health workers - that they were too harsh and not accommodating, that they talked to anybody anyhow. it's not like that now." - LG Official 1– PAR participant , Ipara

and indicated that health workers were making "personal and professional sacrifices" to ensure that immunization services were made available in the communities. It is interesting that these activities which are part of the health workers' responsibilities were viewed as sacrifices. It is possible that because of the perception of not enough support provided by the local government to ensure vaccine availability in the health facilities, the efforts of the health workers in trying to overcome these logistical challenges were quite appreciated.

Improved availability of vaccines for RI was frequently mentioned by majority of the FGD and IDI respondents in Ilara and Ipara as positive developments in the past year. However, in both FGD sessions, young women in Ilara mentioned occasions where the large turn-out of the community members exhausted the supply of vaccines that had been brought by the health workers for the RI and the health workers had to go back to Isara to get more vaccines in order to meet up with the demand. Indirect costs of immunization seem to have remained the same at endline as in the baseline - young women in Ilara and Ipara frequently reported that they still contribute 100 Naira towards the transportation cost of the vaccines from Isara to Ilara. A health worker also related that due to the economic recession and inflation, the cost of transportation from Isara to Ilara had increased. Nevertheless, a few JAC community members in Ilara reported that they helped with the transportation of the vaccines by using their bikes during the outreaches, making the process easier.

Access was reported by many of the young women and men in both Ipara and Ilara to have improved because the health workers and mobilizers now conducted more house-to house visits.

You mean in the last one year?...There has been huge difference…Immunization is now being brought closer because some people used to say that they don't have transport fare. We are now having area-to-area and house to house. We decided on this during our meeting -Community member 2 – PAR participant, Ipara

Utilization of immunization services was reported frequently by PAR participants to have increased among the indigenous Yoruba tribe (more in Ilara than in Ipara) and among the Igedes and Cotonous (more in Ipara than in Ilara). These perceptions were common to majority of the respondents in all the community FGDs and IDI. Similar to the baseline, the indigenous Yoruba were perceived as utilizing immunization the most in both wards.

The change in utilization among non-indigenes was attributed by many of the JAC members to the JAC/WDC attending several village level meetings of both groups to talk to the tribal men and women and mainly to the inclusion of their representatives in the JAC/WDC in both wards. The access of non-indigenes to immunization information delivered in their own languages through a kinsman was considered a motivating factor. Nevertheless, some of the respondents in the FGD and IDI stated that though there were obvious gains in utilization by the non-indigenous groups there were still difficulties in persuading some of them to immunize their children. Indeed, LG officials in the JAC in both wards were more cautious in their descriptions of the improved attitudes among the non-indigenes. According to an LG PAR participant in Ilara:

"Their attitude is a little bit changing towards immunization uptake."

7.3.5 Changes in the behaviour and attitudes of community members towards immunization

Community men and women in the FGD (more in Ilara than Ipara) reported improvements in the attitudes and immunization seeking behaviour of many caregivers in the communities. Reasons given for this include increased sensitization, knowledge and awareness of the community members due to the increased community mobilization activities that had taken place in the past year. In Ilara, young mothers were described as so motivated about immunization that they would show up at the health facility for immunization without reminders and even take on the responsibility of mobilizing their neighbours. Though more mention was made in Ipara of improved attitudes of the non-indigenes towards immunization, there were frequent reports that this applied also to the indigenous Yoruba tribe.

An important reason given for improved attitude and immunization seeking behaviour among the caregivers in both wards was the lessened fear over AEFI. In the FGD, the views expressed were somewhat different than at baseline – particularly in Ilara. While at baseline, especially the young men in Ilara were very clear that they were distressed about AEFI experienced by their children and pregnant wives and for that reason were usually not willing to allow them to continue receiving immunizations, at endline, the tone of the responses given to the questions on AEFI was different - with respondents (including young men) proffering more mellow and tolerant views of AEFI and many of the FGD respondents in young men / women categories reporting that after the vaccinations, their children had suffered no adverse events. An important change was that even though respondents frequently acknowledged that these adverse events sometimes happened, they stated that it was not a reason to stop the vaccinations. A few of the young men felt that this was due the community members' renewed confidence in the immunization services. Additionally, according to some young men in Ilara, an important motivator of their decisions to utilize immunization for their young children despite AEFI was the noticeable government's support of immunization which led to the confidence that it must then be "good." The reported increased presence of the local government officials during community mobilization and in JAC/WDC meetings may likely have led to this perception of more visible government's support for immunization.

Furthermore, according to the FGD and IDI respondents, health talks on AEFI were given in the health facility in Ilara during RI days and before outreaches by the health educator in Ipara and these appeared to have enlightened some community members.

Health workers and PAR participants in Ilara also stated that home visits by health workers especially in the course of tracking defaulters provided opportunities for the husbands to be educated about AEFI. These visits were now also carried out by the health workers in-charge of the facilities not just the CHEWs who had this activity as their official mandate.

Nevertheless, some respondents especially young women in both wards still commented that AEFI could be distressing and discouraging and that they still had questions about it:

R1: Going for immunization doesn't take anything. It's just the issues that arise after. Like the sleepless nights. Not being able to sleep till morning

R2:When my case happened, it really affected my child. I had to tell the chairman.

R3: Truly, immunization is good for children. It helps to cure the diseases in the children. The only issue is that the arm they are injected gets swollen and is filled with pus. Why is that?

- Young women, Ilara

7.3.6 The issue of measles vaccination uptake

It was interesting to note (as earlier mentioned) that the health workers and local government officials in Ipara did not observe the significant drop in measles coverage. The focus on the vulnerable groups may have been responsible for this. The utilization by Igedes and Cotonous increased and this may have given an impression of overall increase. Similarly, at endline, issues regarding aversion of community members both in Ipara and Ilara to the measles vaccine were hardly mentioned by the FGD or IDI participants. The issue of measles was discussed further in the validation workshop with stakeholders. According to the community PAR participants from Ipara, cultural barriers were responsible for the problem in utilization of the measles vaccines by the community members. They detailed that many Ipara community members still believe that measles vaccine worsens the measles disease and that traditional remedies were better. Additionally, there is also the belief that measles vaccination causes mental problems in children. They stated clearly that cultural issues related to measles vaccine were not yet resolved. However, it was interesting to note in the workshop that in Ilara where similar cultural beliefs about measles exist, utilization of that antigen had increased along with the others– and Ilara and Ipara now had the same level (59%) of measles coverage.

The question also remained about what had led to uptake of 75% at baseline and what had worsened in the period between baseline and endline regarding the uptake of the measles vaccine by caregivers of young children in Ipara and why; especially considering that the stakeholders in all the qualitative interviews detailed intense mobilization and sensitization of community members and improved immunization seeking behaviour among community members. The fact that Ipara actually recorded very high utilization across the other antigens made the answers to these questions even more important. The issues of inconsistencies in the HMIS came out at this point from the workshop participants. According to the health worker in-charge of the Ipara health facility, a major problem they had regarding measles was in reaching critical mass on RI days. The measles vial comes in 10 doses and allowance is made for up to 50% wastage by the NPI. If less than five children are present for immunization, the vaccines

have to be taken from the local government health facility at Ode and in that case, the vaccine utilization is recorded to Ode and not to Ipara. What this means is that the utilization would not be reflected against the Ipara target population for measles.

Additionally, during the PAR policy dialogue, the chairman of the Remo-North LECD stated that the improvements seen in the Ilara facility had impressed a neighbouring ward and had led to advocacy efforts which resulted in the revitalization of their own moribund facility. The state policy makers at the workshop noted that caregivers from Ilara and surrounding wards had utilized the Ipara facility for immunization of their children before the PAR –the implication is that improvements in the Ilara and any other facility would lead to a drop in coverage in Ipara.

7.3.7. Changes in the health services

Changes in the health services reported by FGD and IDI respondents are summarized in table 7 below.

Table 7: Perceived changes in the health services

Ilara	Ipara	Statements
At baseline, majority of the community members in Ilara had expressed great dissatisfaction with their health facility - it had poor environmental conditions, functioned poorly and did not provide antenatal and delivery services. **At endline,** bushes around the facility had been and chemicals sprayed to impede their growth; the toilet in the facility had been fixed; temporary measures to ensure water availability had been instituted. More health workers and midwives had been deployed to the health facility, final year medical students on their community medicine posting were also deployed to the facility; antenatal and delivery services had commenced and drugs were frequently reported as now available in the facility. Health workers were described as very responsive to the community members especially the young mothers and many expressed their utilization of the health and immunization services as a result of a "revitalized" health facility.	**At baseline**, community members in Ipara were more (but not completely) satisfied with their health facility. Young mothers in Ipara were happy with delivery services but wanted the facility to be upgraded to also take deliveries for women in their first pregnancies. **At endline,** many stakeholders in Ipara reported that the health facility now takes deliveries for women in their first pregnancies.	*Formally we only have one staff available here and after two weeks, we won't see the staff again and the facility will be locked, but now thing aren't like that anymore, whenever you come it is either you meet one or two or three persons on duty.* ***-Young woman, Ilara*** *One woman is in my house that fell sick around 1 am they took her to the health centre and they attended to her. If it was before, as at last year, it was not like that; but we thank God for the relationship between the joint action committee and the community, it brings about good results."* ***- Older man, Ilara***
Health workers were now usually found at the health centre and in a rare event where they were not available, the JAC community members were notified and the issue addressed. The health workers were described to be so responsive to the community members that they sometimes followed up pregnant women through home visits.	Many respondents in Ipara reported more availability of health workers and more numbers as well. However, some older men and women, asked for more "professionals" to be sent to their centre.	R: *Health workers are not enough. Where there are supposed to be three people doing a job, we find only one person.* *I: Do you always meet the ones available on ground?* *R: Yes, but they are not*

		enough. ***- Older women, Ipara***
At endline, a recurring area of discontentment frequently mentioned by many respondents in the FGD and IDI in Ilara was the issue of a water source in the health facility. This was a target in the Ilara JAP that had not been met due to financial constraints. All the measures used at endline to obtain water in the health facility were temporary and usually were reported as funded by the chairman JAC and the health workers.	**At baseline**, unavailability of running water in the Ipara health facility was a source of discontentment among many community respondents. **By endline**, an arrangement had been made to route water from the borehole in the adjacent compound (belonging to the Ipara Development Committee) to the health centre, so water was now available in the facility. This development which was an achieved target in the Ipara JAP, was frequently mentioned by Ipara respondents in the FGD and IDI as a source of joy to community members and the health workers	*The issue of water is already solved. We have been able to connect water to the health facility and with that health workers are happier and mothers are happier to know that they would not have to bring buckets of water to the facility.* ***- Chairman JAC, Ipara***

7.4 Relevance of the PAR approach

In this section, we present the findings on the relevance of the PAR approach to achieve the desired outcomes – these were captured mainly through the qualitative interviews.

7.4.1 Relevance of the PAR in strengthening the community links in immunization

The PAR was perceived by all the participants as useful in strengthening the WDC. The JAC and WDC planned activities for community awareness ahead of time, information was disseminated through existing community networks and PAR participants had the view that each person played their part in ensuring “no stone was left unturned”. Many of the FGD respondents in all the groups mentioned the JAC, and the WDC as major stakeholders involved in immunization service delivery. Holding regular meetings together and implementing the JAP together was achieved with no friction mentioned in the two wards. This appeared to be because the WDC /CDA chairmen at the time of the situational analysis were involved in the dialogues and action and were still selected by the PAR participants in their wards to play those leadership roles in the JAC. This seemed to have enabled the seamless collaboration between the two committees since they essentially saw themselves as the same and working towards a common goal.

SMC members were involved in the dialogues and action and were perceived by care givers (in the HHS) in Ilara and Ipara as very active in immunization. However, the SMC (at endline) was described by a few respondents in the KII and IDI as not so active

because of financial limitations attributed to the economic recession and other governmental factors:

"Usually, under normal circumstances, the SMC are supposed to come to all the wards to mobilize people but because of the present government, economic recession and everything, there is no fund to move around so we do it by ourselves."- Health Worker 2- PAR participant

The Ilara Chairman of the JAC /WDC was described as an active change agent in the PAR. He was the most frequently mentioned stakeholder in the FGD in Ilara – this was notable given that the Kabiyesi (the king of Ilara) was the most frequently mentioned stakeholder at baseline in the Ilara interviews. Though the Kabiyesi was reported in the IDI of the PAR participants as robustly supporting the JAC, the community members in Ilara appeared to associate anything related to immunization to the JAC chairman and spoke of him with a lot of appreciation and approval. However, the older men groups in Ilara still mentioned the Kabiyesi most frequently as the key stakeholder in immunization.

"The chairman tries really hard. Even when some people refuse to take their children for immunisation he persuades them. I, for one, sometimes don't want to go but he always insists and because of him, I take my children."- Young woman, Ilara

The health workers and the local government PAR participants also appreciated the support provided by the Ilara JAC Chairman describing him as a model.

7.4.2 Perceptions of active participation and achievements of the PAR participants

Perceptions of active participation and achievements of the JAC members are detailed below.

Table 8: Perceptions of active participation and achievements

Perception of active participation of the different groups	
• All the PAR participants continued participation till the end of the intervention except one Ipara health worker and two LG officials who were redeployed during the period. • Activities perceived to be participatory by the JAC community members, health workers and LG officials include procurement of the megaphone, outreaches, mobilization, creating awareness, conducting home visits , providing vaccines, the joint meeting discussions and promoting increased immunization services utilization by caregivers of young children. • Majority of the respondents felt that all stakeholder groups were actively involved in the PAR process and turnout for meetings was encouraging.	*"At least most times we have 80% of the members coming for the meeting and when they come they talk."* - LGA PMOH
• The community members were deemed by many of the respondents in both wards as the most active of all three groups.	*"I have said the local government has really really improved because with presence of their new PMOH…in fact, that woman I give it to her - she is a leader*

• Active participation by the local government was noted as facilitating, as well as removing barriers to implementation of the JAPs. • The LG PMOH who was part of the Ilara JAC was regarded as an active change agent by the health workers and policy makers and was also mentioned frequently by young women in the FGD in Ilara as being very active in the communities along with the chairman JAC.	*and she tries to make things work and any bottle necks she is ready to remove and any meeting.. you will see her there and that is the quality of a good leader ."* - State health educator
Perception of usefulness of the PAR	
Many of the FGD respondents, especially the young women and young men in Ilara could describe activities of the JAC and mentioned the names of some active members of the JAC especially the chairman. The JAC committee members in Ilara were credited with: • Improving knowledge and understanding of immunization issues. • The revitalization of the WDC in Ilara. • 'Killing the fear' of AEFI in the care givers and other stakeholders in the Ilara communities. • The revival of the health centre in Ilara The JAC committee members in Ipara were credited with: • Enhancing a more cordial relationship between the health workers, LG and the community members. • Provision of water in the health facility - a highly appreciated change. • Purchase of megaphone for community mobilization activities	*"(The PAR) is highly useful because by voicing out these are things we need it becomes obvious to everybody; government will be able to know what they are planning for. If they need A attention is not directed to B."* - State CCO *"It has helped our community a lot since we listened to each other … it has made people listen to us in the community."* – JAC/WDC Chairman, Ilara

7.5 Efficiency of the PAR approach

We examined efficiency in two ways: The efficiency of using the PAR to deliver the REW strategy and efficiency in using the PAR to improve immunization utilization and coverage specifically. The first was assessed qualitatively and via monitoring data and the second was assessed using CEA.

7.5.1 Was the PAR implemented as intended?

By endline, activities in the JAPs had been implemented as planned to a large extent in both Ipara and Ilara. The activities in the implementation plans that had not been carried out were either those that would need collaboration with a higher level of government or those that were limited by financial constraints. According to the JAC members, financial contributions by the PAR participants had enabled the successful implementation of many of the activities in the JAP. PAR participants used their influences at all levels to achieve some goals. For instance, LG officials had influenced the posting of health workers and midwives to both the Ipara and Ilara facilities; and the community participants in Ilara had been highly instrumental to the renovation of the health centre and clearing of the facility environment. Participants also detailed using their personal resources to ensure that implementation of activities was successful:

“ There are times when I do come out with my own motorcycle, with a passenger who will be announcing with megaphone as we move round the town doing publicities about immunization exercise.- Community member 2- PAR participant, Ilara.

Many of the respondents mentioned being motivated by the usefulness of the work they were doing for the communities to the extent that they were willing to contribute towards them. In Ilara, financial support had been sought from philanthropists in the ward through the king but that had not yet yielded results:

“It is because of the economic recession. Because the people that want to help us now. . do not have enough with them and their businesses are not going on well as before. Now that the economy has changed, it has been difficult for to get support.” *Health worker 2 – PAR participant, Ilara*

In Ipara, many of the respondents credited the successes in implementing most planned activities to their attitude of not waiting for the government but taking the initiative to change things by themselves through the platform provided by the PAR.

“If not for the joint action plan, we wouldn’t have got water supply. This is because we would still have been waiting for government. But thorough this programme we found a way around the problem.” -Health worker 1- PAR participant, Ipara

Barriers described by majority of the PAR participants to the implementation of the JAP include financial constraints and lack of political will of the government to assist with some of the issues that has been tabled before the government representatives. However further limitations due to the traditional protocols were described by an LG official as creating delays in implementation in Ilara:

“ Even though you know a philanthropist on your own, you have to go through the king. It’s their tradition. And I told you before that their culture, their beliefs and values, standards must be respected... However, going through the king; it is a big problem. You know sometimes you want to go to the king and they say the king is not around. You want to do this but the king is not around . . . those are part of the hindrances we’ve been facing.”- LGA Official 1 – PAR participant, Ilara

Common limitations noted by both the groups in Ipara and Ilara were specifically issues related to health worker shortage. During the dialogues and action, this had been addressed by the deployment of ‘youth corper’ midwives, – newly graduating midwives performing their one-year national service. However, the implication was that more midwives would need to be deployed to the wards after their service year.

When asked to provide examples of identifying problems and providing solutions, many of the examples given were related to the immunization exercise, especially but not limited to the mobilization of the community members. For the vulnerable groups especially the poor, JAC members in Ilara mentioned frequently that contributions towards the transportation of vaccines were waived for them or provided through other sources.

I: What do you do about those that can’t afford the 100 naira contribution for the transportation of the vaccines?

R: We tell them to come, but they shouldn't disclose it to other community members; we sometimes end up paying the money ourselves. - Chairman Ilara JAC, Ilara

Problems also arise due to some PAR participants not showing up for activities when they were meant to. The activities were usually carried out by those available and issues later addressed in meetings. An example given occurred during the renovations in the Ilara health facility – more room was provided at another available building to create spaces for a new out-patient clinic and maternity including delivery rooms. The old clinic room had to be cleared out and the furniture moved into the renovated building in the health facility compound:

R: For instance when we were to clear the room for the health centre, because I led them there, I was part of those that carried debris on my head; I am not supposed to carry anything on my head as an anointed man of God, I didn't tell anyone so as not to sound proud. We addressed this in the following meeting.

I: What was the outcome of this?

R: They pleaded with us, that they were not available.- Chairman JAC, Ilara.

In contrast to their Ilara counterparts majority of the participants in Ipara in answering this particular question referred mainly to conflicts that arose within the groups as a result of implementation of the JAP not being carried out as planned and how such conflicts were resolved. During the first action phase, the JAC chairman had disagreements with fellow community JAC members because he did not follow the assignments as planned in the first implementation plan in detail. He attempted to delegate some of his assigned duties to other team members but they considered this a shift from decisions that had been made during the dialogues and therefore unacceptable. Also, when a monitoring visit that had necessitated a meeting of the JAC members had occurred close to the regular monthly meetings, he had a disagreement with the health worker – who felt the regular meeting should still be convened. The chairman however thought this unnecessary and refused to convene the meeting and was accused of waning cooperation by members. However, all these were noted as resolved before the 2nd round of dialogues.

7.5.2 Cost effectiveness of the PAR approach

The average monthly coverage in Ilara for the all different vaccines increased following implementation of PAR process (see Table 9). These increases were all statistically significant.

Table 9: Average monthly coverage Ilara – Pre & Post PAR

Vaccine Antigen	Pre PAR	Post PAR
Pentavalent 1	28 % (6.25)**	59% (13)**
Pentavalent 3	23% (5.17)	63% (14)
Measles	28% (6.33)	70% (16)
BCG	22% (4.91)	73% (17)
OPV 3	24% (5.42)	66% (15)
FIC	25% (5.67)	89% (20)

** ( ) average number of children immunised monthly

However, such a situation was not seen in Ipara following implementation of PAR. There was a decrease in the average monthly coverage in Ipara and in the number of the under-five fully immunised following the implementation of the PAR for all the vaccine antigens (Table 10). The decrease in coverage observed on the vaccines was however not statistically significant.

Table 10: Average monthly coverage Ipara – Pre & Post PAR

Vaccine Antigen	Pre PAR	Post PAR
Pentavalent 1	94 % (30) **	81% (25)
Pentavalent 3	90% (28)	82% (26)
Measles	67% (21)	55% (17)
BCG	94% (29)	92% (29)
OPV 3	90% (28)	82% (28)
FIC	66% (21)	55% (17)

** ( ) average number of children immunised monthly

7.6.2.1 Incremental cost effectiveness analysis - Ilara

The additional cost of increasing the average monthly coverage by 1% for the different vaccines ranged from $297.12 to $603.82. The highest incremental cost for increasing average monthly coverage by 1% was for 1st dose of Pentavalent and the least incremental cost was $297.12 for fully immunised child at the end of PAR process. In terms of cost of an additional child receiving vaccine, the additional cost was $220 for 1st dose of Pentavalent and $109 for a fully immunised child. According to the WHO commission on Macroeconomics and Health (2001) cost effectiveness threshold when costs are less than three times the national annual GDP per capita they are considered cost–effective, whereas one that costs less than once the national annual GDP per capita is considered highly cost–effective. Ogun state has a GDP per capita of $2,472 per annum. This therefore implies that the PAR had been highly cost effective in Ilara.

It was of note that the major cost drivers for the process were wages and venue hiring. Venue hiring accounted for 37% of the total expenditure followed by wages which accounted for 32% of the cost. Planning was a crucial part of the design of the intervention requiring repeated meetings and gathering of people. The decision to move the venue of dialogues away from the wards to a more neutral location, in order to avoid local political interference was responsible for this level of expenditure on venues. Details of the CEA are in Annex 13.

7.6 Opportunities for Sustainability

7.6.1. Acceptability of the intervention to health providers at different levels of government.

The PAR has the advantage that it is a policy maker – led implementation research (the PI is the Director of the state PHCDB) and therefore enjoys the ownership and support of the state and national governments. The local government officials are PAR participants and the PMOH of the LG Health Department was reported frequently in the interviews as an active change agent in the PAR. The health workers considered their selection for participation as due to their functions and reported that the PAR has helped them in their work. All the health workers in the health facilities are LG staff and the support from the LG makes them see the approach as mandatory.

7.6.2 Perceptions of sustainability without external support

The PAR stakeholders in both wards were generally of the opinion that there were opportunities for a sustainable process without support but that certain limitations exist. Majority of the respondents in Ilara were of the opinion that their efforts would enable the dialogues and action to continue without external support but some were of the view that the government's role was important for sustainability of the approach. Health workers in Ilara were of the view that planning with the community members in the PAR was vital to the sustainability of the approach:

I told you the other time that planning for people cannot work. If you plan with them, they will realize that this programme is their own. Planning with them gives success and makes it last longer. Because now in Ilara no philanthropist is donating anything anywhere … the people are coming in to contribute something towards the programme . . . then the people are monitoring it to see that this thing goes as it is supposed to go. - Health worker 2–PAR participant, Ilara

PAR participants in Ipara were more detailed in reporting their perceptions of what would be needed to ensure the sustainability of the approach: a few expressed that people would have to be committed even with personal finances in order to achieve sustainability of the approach; and one reported the need to compensate community members financially in other to keep them motivated and ensure sustainability. Another community member opined that a report was necessary for incoming workers (in the face of regular deployments) in order for the processes in place to be sustained. An LG official in contrast expressed that external help was needed to support sustainability of the PAR approach:

If there is no outside help, that one will be difficult, you mean if there is no support from other agencies to the local government on immunisation? I don't pray that should happen because to reach the rural areas is not easy. -LG Official 2- PAR participant, Ipara

Many of the policy makers, local government officials and community leaders in the IDI were of the view that the PAR intervention was still a relatively new approach and would still require some support moving forward till capacity was fully built in the three groups of stakeholders. However a few felt confident that the positive changes and the active participation and interest of all stakeholders (health workers, community and government) would generally be sustained for a long time:

""We can do it without them (i.e. the donors), if we have manpower and if our community, the WDC is standing by us. We can sustain it." - LGA, PMOH

Some policy makers at the state level however worried that without continued community engagement, people would be forced to view it as just another program that had come to an end. It was therefore recommended to start planning for the inevitable end of the donor-supported phase in order to position the community and other stakeholders to embrace a sustainable transition. This would effectively allow the technical team to "leave as if no one has left" - vis-à-vis creating a transition scenario instead of the typical vacuum common with donor exit. With the exception of two respondents who suggested a 3-year timeline, there was no concrete estimation of how much time would be needed to effect a smooth transition.

Although many government representatives affirmed their interest in continuing with the PAR approach, potential barriers to sustainability as remarked by policy makers included inadequate resources or logistics and transfers of health workers- risking a loss of capacity due to improper handover. To avoid such situations continuous re-orientation of staff was proposed.

It is important to mention the concern raised by a few respondents on the negative impact of political transitions on the PAR process and especially as related to sustained governmental participation. A recommendation was therefore made to establish the PAR approach under a policy umbrella, such that it would not be easily changed by an incoming government or political group. The importance of this threat to PAR sustainability was further reflected in a remark that in the past, some political undertones associated with immunization strategies had demotivated active community participation.

"I said there are changes in immunization now. People used to see it on party lines, they politicize it and some people are not accepted. But that is no longer the case. It is now strictly issues of health." -Religious leader, Ilara

Nevertheless, while majority of community representatives from both wards vowed their commitment to sustaining the dialogues and action, some were clear that there was still need to support the process.

"I have not seen anywhere in the world where such a project will be abandoned and left to the community entirely, not so much in Nigeria where we are experiencing low levels in economic and social life, I will say that for now, let the support continue until the sponsors themselves will know that if they stop here there will be no problem because there is no point for you to start something and abandon it only for it to get worse." - Community leader, Ilara

7.6.3 Perceptions of sense of ownership (demonstrations of ownership and capacity to self-support)

Majority of the community men and women reported feeling empowered by the dialogue and action process. They indicated taking the initiative to take care of their health facilities. Indeed the JAC community members in Ilara were frequently reported both in the FGD and IDI as actively monitoring activities in the health facility:

The community members have demonstrated ownership because this is a health programme which is under their jurisdiction so they monitor us. They have to monitor it so that it will not collapse. They are the owner of the programme especially the chairman, ward development committee. In fact you call him anytime, he is there. - Health worker 2– PAR participant, Ilara

A lady wanted to give birth, no nurse was around, I was like - after all the training we have undergone, why won't there be anybody at the facility? I was so annoyed that nobody was around in the facility. I went to see our chairman, and before that I was told that the health attendant went to the toilet and the Chairman had been summoned already, so I was angry because I was told initially that the health attendant was not around in the first place.- Community member 4– PAR participant, Ilara

However a few community members in the Ilara FGD expressed concerns that sometimes community members "tend to get fed up easily" and stated that continued support by the local government would help fuel zeal in the people. This view was supported by some community members in the Ipara FGD who expressed the opinion that the approach would not be possible without government support. Nevertheless, affirmation of community ownership was reported by many participants as demonstrated by the persistence in accomplishing goals despite limited financial resources and low governmental input. A policy maker reiterated that the community rather than the government was the key driver of success in health interventions:

"If the community should take ownership of something, that thing will not die oo. Communities are there they are buying NEPA (electricity) poles, they are building gutters and bridges themselves without the government. So why is it in health, that they will need to wait for government before they get good health?" - State health educator

7.7 Considerations related to the intervention implementation

7.7.1 Deviations of the implemented intervention from what was originally planned and why.

The implemented intervention adhered closely to the plan but a few changes were made to the process. For sustainability purposes, we planned to use youth corpers (fresh graduates on one-year national service) serving in Ogun state and Remo North LGA for monitoring the implementation of the JAPs. This was supposed to be the model for routine monitoring but due to delays in commencing the PAR, the national youth service year did not coincide with the project year and after the first action phase the youth corpers had to be replaced with other monitors. Junior PHCDB staff (also graduates) were trained to take over this process. This was seen as a more sustainable model since they are more permanent staff and their involvement has the support of both the state and local government stakeholders.

The initial plan for the venue of the dialogues was in Ilara and Ipara wards for the respective dialogue groups but in an attempt to avoid undue local political and traditional interference and encourage more openness of the community members in voicing their views away from the elders and traditional rulers who were noted during the situational analysis as being very influential, the Town hall in Ode which has ample spaces was considered to be an appropriate neutral venue for the dialogues. This had the advantage

of providing opportunities for shared learning since it was easy to have certain discussions about progress in plenary sessions with the two groups. Indeed, one of the benefits of this as noted in the monitoring report was that the Ilara participants adopted Ipara's strategy of engaging the non-indigenes. Furthermore, it was easier for the research team to monitor the dialogues since they were held in close vicinity of each other. However, cost effectiveness analysis of the PAR showed that venue for dialogues and meetings was an important cost driver for the project. In going forward with this study, the implementing partners will aim to reduce this cost by sourcing free or cheap venues – more likely to be found in the respective wards.

7.7.2 Did the assumptions made in the TOC hold?

The assumptions made in the TOR mostly held: community members in the focal wards including caregivers of young children, local government officials and health workers participated actively in the PAR process and took ownership to varying extents. This enabled the development and implementation of contextually relevant solutions to problems related to access to and use of immunization services that have been identified by them. The community participants also reported being able to voice their views openly regarding immunization services and that their views were heard by health workers and local government (see Annex 15 for more details of group dynamics). The three groups of stakeholders also reported that their capacities in the participatory approach had been built and improved upon as a result of the dialogues and action process. Nevertheless, this evaluation showed that active participation of the three groups was affected by certain elements - contextual, leadership style and presence or absence of conflict. Other elements in the broader health system such as workers' strikes also influenced performance of the PAR.

Community ownership comes out in the study more in Ilara than Ipara perhaps because of investments made by the community members in the revitalization of the health facility which also appeared to make them expect that the health workers should be on ground to play their part. This monitoring element showed a shift in the dynamics of power between those two groups but the structures between the three groups remained essentially the same. However, this was not necessarily a disadvantage - indeed the power wielded by the LG stakeholders in the PAR resulted to solutions being put in place for the long standing problem of health worker shortage, albeit temporarily for one year before the next postings of the health workers on national service.

8. Implications of formative study findings

8.1 Implications for the intervention

8.1.1 Revised study design

Researching the impact of PAR requires the use of mixed methods, as was done in this case. Additionally, it requires implementing the PAR, accompanied by research, over a longer period of time. We propose an adaptation of the present study design - we suggest to keep the PAR (dialogues and action) design and mixed methods, but regarding the quantitative component, to increase the sample size. In order to better track changes of key indicators at 5% or 10% level of statistical significance from before to after the intervention, in both intervention and counterfactual areas, appropriate sample sizes including the number of clusters will be determined to distinguish

differences at various levels (intervention and counterfactual areas, wards, wealth quintiles, education, ethnicity etc.) The current intervention focused on children under five years since the emphasis at this stage was on gaining a good understanding of the context and understanding perspectives of caregivers on immunization issues. A consequence is that the precision of estimates of immunization coverage was compromised. We propose to focus on children 9-23 months.

8.1.2 Revised theory of change

The formative evaluation of the PAR gave preliminary insight into *what worked* regarding the intervention, and if collaboration between the three groups of stakeholders in the existing REW strategy could influence performance and utilization of immunization services in the focal wards. Although explanatory linkages between the PAR intervention and the effects as outlined in the TOC were not yet strong enough to be established quantitatively at this formative stage, we have strong indications from the qualitative component of the research of these linkages and we have gleaned some useful insight into pathways that led to outcomes.

For instance, because capacity in the PAR approach was built in all stakeholder groups there were indications of “power sharing” between groups; the LG officials showed willingness to allow community members steer decision-making and health workers’ were responsive by listening to the community members and acting on issues raised. Furthermore, progress with executing planned tasks on their JAPs may have given JAC community members a sense of self-efficacy and motivation which stimulated demonstrations of ownership and responsibility for action and action oriented behaviour. Furthermore, lleadership of the JAC came out in this study as an important factor. This appears to be easier in contexts where group members are more cohesive and responsive followers such as the more rural Ilara. In addition, social pressure from the JAC community members also drove utilization of health and immunization services by caregivers for their young children and social accountability by the health workers appears to have increased.

However, these findings are only indicative. We recognize these adaptations in the theory of change as pathways that need to be tested in future: mobilization of the three groups, and capacity building in working together in the PAR leads to community members taking greater role in immunization services, leading to social pressure of families in a rural context (as in Ilara) to take their children for immunization and for health workers to feel socially accountable for their presence and behaviour. It appeared that this worked less in a less cohesive environment but more evidence is needed to assert this. Based on these insights and other findings in the study, a revised TOC is presented in Annex 17. Modifications are identified in bold red font.

8.2 Implications for further research

Although this study asserted the outcomes for best and worst performing wards in a LGA, no analyses of a counterfactual was possible due to the nature and design of the study. Since the evaluation demonstrated to some degree that the intervention worked and made a difference, an impact evaluation, with careful attention to design and possibly a sound and relevant counterfactual, will solidify and explain the effectiveness of the PAR intervention and its transferability and is therefore proposed.

Assessment by card only provided promising results; a statistically significant improvement in complete immunization for children above 9 months from baseline to endline was demonstrated. Whether the intervention improved availability of cards through various means (i.e was it just because of improved provision of immunization cards at the health facility level or did caregivers' knowledge and awareness of services, as well as presence and visibility of JAC, WDC and SMC members etc. contribute?) is not entirely clear and therefore possibly warrants further exploration over a longer period.

We also suggest further research into group dynamics (between LGA officials and health workers, LGA officials and community groups; health workers and community groups; and within different community groups etc.) This would provide more insight into social pressure and the emerging social accountability, into the perceptions of the different representatives regarding their position and collaboration and the relation of these new structures (dialogues) with the existing ones. We can look into "spill over effects" – whether these structures developed have been used for other issues: if so which ones, if not, why not etc.

Wealth quintile results showed that children from poor households were 1.58 times more likely to be fully immunized than children from poorest households, whilst the odds for children from middle/average, rich and richest households were the same or lower than the odds of children from the poorest households to be fully immunized. Although this result is not statistically significant, a follow up study with a clear definition of equity and purposively sampling these different groups can provide more clarity into equity of immunization access to the various quintiles and how to increase access for the poorest households.

At baseline, we found that gender relations played important roles in household decision making on immunization. At endline, we did not examine this gender interplay since we are aware that social norms do not change so quickly. More implementation time is needed for further exploration of this element – we can review the processes that have been set up in the PAR and how these played out in decision –making regarding the JAPs, and the roles and responsibilities of men and women in their implementation. In light of the intention to not only justify the usefulness of the PAR in addressing sub-optimal immunization coverage, but to also adopt it as a vehicle for addressing other health-related and development challenges, a robust impact evaluation will be most useful to provide the evidence needed by policy-makers, funders and implementers on the effectiveness, cost-effectiveness and equity of this model.

The intervention was found to be highly cost-effective in Ilara but not in Ipara. There is a need to explore further what factors may be responsible for the limited effectiveness of the intervention in Ipara. There may be contextual factors responsible for this considering the weaker social cohesion in Ipara compared to Ilara. It would be useful to conduct the study for a longer period of time and determine its cost effectiveness under such circumstances.

Although often randomized controlled trials (RCT) are proposed to demonstrate impact and establish cause-effect as from a methodological perspective, this is the strongest research design, it is important to be cautious in deciding to plan for RCTs in assessing health systems interventions (Victora CG, Habicht JP, Bryce J, 2004) (Victora et al.,

2004 pp 400-405). Complex health system interventions, such as PAR, do not follow simple linear pathways from input to outcome; and cause-effect cannot easily be demonstrated in such complex interventions. In order to understand what changes were achieved and why, this complexity needs to be understood. Alternative research designs to RCT have been suggested (Hanson, pp 254 in (Gilson 2011)) Including:

- **Measures of intended and unintended outcomes** and **identifying contextual factors** in traditional study designs in order to explain success or failure of an intervention and its implementation (de Savigny D and Adam T , 2009)
- **Theory-based evaluations**, which includes the development and use of a program theory, to evaluate what outcome was achieved for which groups and under what conditions (Pawson R and Tilley N , 1997).
- **Plausibility designs**, which include observational design and a control group (Victora et al., 2004)

Health systems and policy research needs to gain more experience in these different types of designs to research complex interventions.

9. Major challenges experienced in the study

1. **Ethical approvals** were obtained from three institutional review boards, two of which granted approval at first review; for the third, a few details had to be adjusted first. There was relative ease in this process but the time needed for the reviews to occur delayed the commencement of the PAR by approximately five months. Going forward, the research team will make more allowance for delays by ethical review boards.
2. There were some **redeployments of staff** towards the end of 2016, midway into the implementation of this project. The health officers in charge of Ilara and Ipara were replaced by those from other wards. The LIO and the CCO of Remo-North LGA were also redeployed. All the new health workers and local government officials replaced their predecessors in the PAR and took part in the second round of dialogues and action. This brought to the fore the need to ensure that there is preservation of institutional memory of the PAR process at health facility and local government levels in order to ensure smooth transitions in case of attrition and replacement of staff whose capacities have been built up in the PAR approach.
3. There was a **local government election** within the PAR year as well as **restructuring of Remo-North LGA.** The implication of this was that the Chairman of the LGA who had been engaged at the start of the PAR and had given his support to the project was replaced by two other elected LGA / LCDA Chairmen. Since this transition was expected, the LGA PMOH and the PI Implementing Agency ensured the early engagement of the new Chairmen. This experience showed us the importance of early and continuous engagement of the government and political stakeholders as well as the need of maintaining an awareness of political developments in the country in order to ensure preparedness for changes that can occur due to the mobility of critical stakeholders.
4. The PAR highlighted **weaknesses in the HMIS** - the actual coverage in Ipara at baseline was masked by the immunization utilization by care givers from

surrounding wards credited to it. It appears that the coverage seen in the HMIS at endline is a more realistic reflection of the Ipara situation. Also, during the course of the secondary analysis of data, it was observed that there was some level of inconsistency in data reporting. Data collected at the health facility levels varied to some degrees from the one transmitted to the LGA level and also on the DHIS platform. Physical visits for data quality assurance were done to ensure correctness of the data to be used. The above made it imperative to advise the state government to improve the quality of HMIS and DHIS data.

5. The PAR project witnessed some **financial setbacks** as the country went through a major **economic recession** compounded by inflation of prices of goods and services, thereby making the cost of implementation of research higher than planned. Nevertheless it was notable that the three key groups of stakeholders in the PAR were able to achieve most of their planned activities even with limited or no support from the philanthropists and governmental sources they were counting on for financial assistance.
6. A few reasons resulted in **shifts in the planned timeline** for the formative evaluation: delays in the ethical review of the PAR and delay in the release of funds to the PAR by its donors resulted in postponements of some project activities, ultimately causing some delays in the formative evaluation timeline.
7. **Data collection issues** - At baseline, enumerators experienced some difficulties in locating households in some clusters. For the endline study, more time was given to the NPC to enable them do a thorough job and identify inconsistencies with the mapping and listing exercise early enough. Community members very familiar with the wards were recruited at the start of data collection to support enumerators in locating the households. During the HHS, household member absence was sometimes a challenge especially in Ilara which is more remote than Ipara. Majority of the primary respondents in the households work or trade in neighbouring wards, so the team members were sometimes not able to meet them at scheduled times. Many enumerators had to return at dusk or sometimes dawn the following day to administer the questionnaires. At baseline, there was a challenge with the young men; many of whom were okada (bike) riders. To overcome this, the interview team had to visit them at their okada post and organize interviews there. At endline, no difficulty was experienced with recruiting this group. The Chairman of the JAC in Ilara is an okada rider and a lot of sensitization and mobilization on immunization had already occurred with this group during implementation activities.

10. Discussions and Reflections on lessons learnt

This report describes the qualitative in-depth exploration of issues in Ipara and Ilara wards and the consistency of many of the findings with the quantitative component of the study thereby providing additional evidence of validity due to this mixed methods approach. Respondent validation has further been used to strengthen data quality.

The PAR represents one of the first attempts at delivering immunization services via this approach in Nigeria and several insights have been gleaned and lessons learned. The use of the best and worst performing wards enabled the capturing of two different contexts in which the PAR was implemented and has displayed that context can and

does interact with the approach to produce different outcomes. Thereby emphasizing the value of understanding the setting in the implementation of this type of intervention.

The purpose of the PAR intervention in Ogun state was to determine whether collaboration between the three groups of stakeholders and strengthening community linkages in the REW strategy would lead to increased immunization coverage in the focal wards. The formative evaluation focused on assessing the effectiveness, relevance, efficiency of the PAR in achieving its purpose as well as if the intervention presents opportunities for a sustainable approach to increasing immunization utilization and coverage in Ipara and Ilara wards. This discussion will be driven by these foci.

10.1 Collaboration between the stakeholders and strengthening community links to immunization

There is evidence that the PAR strengthened the community links both in Ilara and Ipara. The key to this achievement was the collaboration of the community members, health workers and local government officials in the dialogues and actions. The WDC in Ilara was re-established – an achievement of a target in the first action plan- and was functional throughout the action phases. The collaboration between the JAC and the WDC in both wards was perceived as effective in the implementation of REW strategic activities such as community mobilization as well as in implementing the JAPs. Furthermore, SMC members were part of the dialogues and action process and were perceived as active especially by caregivers in the communities though policy makers and health workers noted financial limitations in the funding of their mobilization activities. Knowledge of SMC and WDC members by the caregivers in the HHS increased significantly at endline thereby supporting the qualitative findings. Furthermore, this study showed that children above the age of 9 months were 3.68 times more likely to be fully immunized when caregivers were knowledgeable of SMC members (and 1.20 times more likely with knowledge of the WDC members) indicating an important connection from the strengthening of these community links to increase in immunization utilization among caregivers in the communities. This finding is also supported by other studies that show a connection between community links to immunization service delivery and uptake of immunization by community members (Sagar, Taneja and Jain , 2011; Crocker-Buque et al., 2017). The involvement of WDC and SMC members in the dialogues appeared to have eased the integration of the PAR into these previously existing community structures and to promote a sense of ownership. Since they helped to develop the JAPs, they were also committed to implementing them and did not see them as something separate from their respective committee activities.

10.2 Effectiveness and Efficiency

In terms of the effectiveness of the PAR in improving immunization utilization, household survey results showed that coverage assessed by card only, increased significantly at endline (90.9%) compared with 60.7% at baseline. Though the numbers were small, this was encouraging for two reasons –significantly more cards were available for inspection at endline; and these were probably children born during the PAR period suggesting effectiveness among this group. Furthermore, in analyzing the HMIS, the PAR approach was quite effective in improving utilization of immunization in Ilara ward, with coverage

increasing by more than twice the levels at baseline for all the antigens by the end of the first action phase (December 2016). However, coverage was still sub-optimal. Though Ipara remained the better performing ward, the PAR was not so effective in improving utilization and indeed a significant decline was experienced in measles coverage. Though some reasons – cultural barriers, recording procedures in the HMIS and reduction in size of clientele due to the improved functioning of the Ilara facility - were proffered by stakeholders for the reduced measles coverage level in the ward, there is still a need for more understanding of the 'reasons why' especially considering that utilization for all the other antigens remained well above acceptable limits.

An important association with immunization utilization in this study is the education of the mother. Caregivers with higher level education were 5.09 times more likely to fully immunize their children than uneducated caregivers. This reflects the findings in similar studies (Singh, Badole and Singh, 1994; Yiğitalp and Ertem, 2008 pp.277-284; Odusanya et al , 2008) This association was stronger at endline than at baseline (the only statistically significant determinant of complete immunization status at baseline included the completion of higher education by parent/caregiver (OR = 1.47, $p<0.0001$)) and displays a need to capture more of the uneducated caregivers. In terms of cultural barriers reported in the qualitative interviews regarding measles utilization, it would have been useful to see which of the groups (educated or uneducated) exhibited this more – but this was not explored in this study.

However, a key benefit of the PAR intervention noted in this study is its value in health systems strengthening. This was seen in a remarkable way in Ilara but also in Ipara. The expectations and needs of the Ilara community members, especially young mothers, expressed at baseline in relation to health and immunization services were matched by endline by the intervention. Indeed, the PAR produced effects that spilled over beyond the immunization program into maternal health services. The revitalization of the Ilara health facility and reinstitution of antenatal care and delivery services were the most important drivers of immunization utilization in the ward. The HHS study showed that significantly more caregivers visited fixed government health facilities for immunization services at endline (83.2%) than caregivers at baseline (54.2%). This finding of health facility utilization as a driver of immunization use is consistent with that from other studies in Nigeria (Adebayo, Oladokun and Akinbami , 2012; Babalola and Lawan , 2009; Oladokun, Lawoyin and Adedokun , 2009) and in other contexts (Sagar, Taneja and Jain , 2011; Luman et al. pp.1204-1211, 2005; Etan and Deressa., 2012). In Ipara, needs expressed at baseline by young mothers and other community members that women in their first pregnancies should be able to deliver in the health centre and not have to be referred to Isara, was also matched during the implementation of the JAPs and resulted in increased utilization of the health facility.

Specifically in immunization service delivery, it was notable that within 8 months of implementation of the JAPs, important strides were made in immunization card availability, health workers and vaccine availability during RI in both wards. The three groups of stakeholders in the PAR exhibited some agency and self-efficacy in their approach to solving problems that had been identified by them. It seemed that the process of dialoguing and reflection that occurred throughout the intervention enabled the community members, health workers and local government to visualize solutions to some long-standing problems via resources that were within their reach, without waiting

for the conventional procedures of government provision. It was interesting that improved availability of immunization cards was not articulated in the JAPs of any of the wards. It appears the PAR intervention had additional benefits – not just in terms of planning and action but in motivating the government stakeholders to make sure that things were working in the focal communities where this was implemented. The progress made on a lot of the problems identified at baseline, within so short a time and without extraordinary funding, displays the prospect that a lot of health system barriers may not be so hard to overcome if the relevant stakeholders involved reflect together upon them with a focus to finding solutions with existing resources. The question is: why did this only happen when outsiders started to ask questions and set up a process to change this situation? And, how important is it to have external researchers and what does this mean in terms of sustainability of the approach? Nevertheless, the fact that the PAR took place during one of the harshest economic recessions ever experienced in the country and was still quite effective attests to the need to understand more about the mechanisms that made this approach work.

Regarding efficiency of the approach - when based on the GDP threshold, the PAR intervention was found to be highly cost-effective in improving immunization coverage in Ilara but not in Ipara. The cost per additional fully immunized child in Ilara ward was $109. While the cost of improving average monthly coverage for a fully immunized child in the ward was $297.21. The process was strongly dominated in Ipara ward for all vaccines. The additional cost of increasing the average monthly coverage in Ilara by 1% for the different vaccines ranged from $297.12 to $603.82. The highest incremental cost for increasing average monthly coverage by 1% was for 1st dose of Pentavalent and the least incremental cost was $297.12 for fully immunized child at the end of PAR process. This was similar to the result of a study done in Kano state of Nigeria (Qadar, 2014) where the cost per healthy life year saved was $472 for polio vaccine. When the WHO Commission on Macroeconomics and Health' cost effectiveness threshold (WHO , 2001) for the African region is considered, both the additional cost per 1 % increase and per fully immunized child are very cost effective. According to the Commission, costs are considered highly cost effective if they are less than the national annual GDP per capita (Ogun state has a GDP per capita of $2,472 per annum); and are still cost effective when less than three times the national annual GDP per capita.

Though we have shared the Commission's focus on GDP-based thresholds, it is important to note that. it is always assumed and intended that other considerations relevant to local settings would be used in decision-making. The addition of single interventions, one at a time, based on incremental analyses, may not result in the optimal use of resources. However, given that many systems already have an existing package of interventions, in some settings there is clearly still a role for incremental analysis. Considering that the PAR intervention was integrated into the existing health system and in the existing community structures and targeted at hard to reach and underserved areas, makes it a worthwhile investment.

The CEA enabled us identify the need to change our venue arrangements since venue hiring was a major cost driver for the PAR process. Though neutral venues outside the location of the wards probably helped community members to be free in expressing their opinions, the PAR has received a good deal of buy-in from the traditional rulers and elders in the community in the course of the project year and in moving forward we will

consider sourcing free (or cheap) venues, that may result in achieving similar outcomes at a lower cost.

10.3 Opportunities for sustainability

The PAR is led by the government implementing agency – state policy makers facilitated the process – they put the health workers, local government officials and community members in the PAR together. KIT provided technical support through coaching, monitoring and observation. At the start, we analyzed the reports of the situational analysis together and formed a checklist to guide the nominations of representatives of the three groups of stakeholders to participate in the dialogues and action, in order to ensure that all the relevant parties were on board. Because the PAR is a government research, it was integrated into the NPI and into the official social mobilization structures (SMC and WDC) linked to the REW strategy. However, it is also important to note that since the government was driving the research, there is a possibility that open dialogue and government critics may have been hindered because of this, though this was not obvious.

There were no financial incentives given to the three groups of stakeholders for participation in this study. However, external facilitation could have motivated the PAR participants to perform better. The monitoring visits by KIT and the opportunity to discuss progress probably motivated the policy makers and the other PAR participants.

There was evidence of commitment among the three groups in the PAR – and indeed much enthusiasm on the part of the community members in both wards. The community members displayed responsibility for action and action-oriented behaviour - exhibited in thinking up strategies including contributing finances, time, material resources and physical effort to address problems. The local government drive to attract health workers to the health facilities displayed their keenness to see the intervention succeed especially since the baseline study clearly detailed the difficulties in attracting health workers to the wards especially Ilara.

The community members in Ilara saw the health facility as their own – a marked change from their baseline perceptions. This may be especially due to their investments on improvements in the facility and the mass drive carried out to encourage the use of the facility by people in the communities. Without being aware of it, they set up a monitoring structure for the health facility which helped to reduce absence of health workers and encourage responsiveness of the health workers to the community members. Complaints about the health facility or issues relating to the expectations of the community members when they visited the facility were directed either to the JAC committee members who related this to the chairman or in most cases to the chairman directly. He was reported to be quite approachable and accessible to the community members and health workers. The Ilara JAC chairman appeared quite empowered by the PAR in that he could convene impromptu meetings with the health workers to discuss and address issues raised by community members.

10.4 Group Dynamics and power shifts

Salvador (2004) in his analysis of power argued that power at the societal level affects the nature of the triangle of relationships that emerges within a participatory research, in his words: “No matter how much trust develops among partners at a personal or group level, the existing power correlations do not change.” In our study (also bearing in mind the short time interval of intervention), we did not see much changes in the existing power dynamics though there were some shifts. While there was more responsibility for action taken by the community members and indications of feelings of being listened to and being heard by the health workers and the local government officials, it was also evident that power did not shift much from the LG to the health workers or the community members though the LG officials were willing to make some concessions for the community members to feel empowered, especially since they understood the community empowerment aim of the PAR approach. More evidence of shifts in dynamics was seen between the community members and the health workers – especially with regard to the monitoring role now played by the community members in Ilara with regards to the health facility. However, the health workers seemed to welcome the increased interest of the community members in both the health facility and the immunization activities, since it enabled them meet their targets more easily.

Nevertheless different types of informal power and influences appeared to be beneficial in achieving the PAR objectives. For instance, the JAC chairman in Ilara was an Okada (bike) rider and could not be described as rich, and though he did not have much formal education, he had social standing and was respected in Ilara as a religious leader and he became (arguably) the most influential immunization stakeholder in the Ilara by endline. Similarly, many of the JAC community members in both wards did not have financial power but they had social and / or political power and this type of influence proved useful in the PAR.

Additionally, this study showed that even when structures are rigid and difficult to change, they can be utilized to achieve desired goals. For instance, the Kabiyesi’s support for the PAR enabled easy acceptance of the process by the community members in Ilara and was probably partly responsible for the elevated profile of the JAC chairman. In a similar vein, the support of the local government was responsible for the successes in addressing many of the health system barriers identified during the baseline study. Nonetheless, these are still assumptions that need to be tested - more time is needed to draw firm conclusions on the structural changes possible.

10.5 Context, Conflict and Leadership

Ilara’s context may have something to do with the more apparent achievements of the PAR in that ward. There was evidence of more cohesion within its more rural context which may have made leadership of the group easier, though not necessarily less complex – though the Ilara JAC chairman appeared to enjoy the followership of not just the committee but many community members, he was not always appreciated by his fellow community members in the JAC, who (albeit only a few) viewed him as ‘hogging the glory’ (the authors’ words) and not always carrying them along with his decisions. In Ipara, the JAC chairman was involved in the community mobilization activities but not as intensely as his counterpart but was recognized as an important stakeholder in the

immunization programme. It may also be that the Ipara JAC chairman perceived at the beginning of the intervention that he did not have much to do except to maintain the already high coverage for most of the antigens in Ipara. Since a major problem identified in the situational analysis was the issue of the non-indigenes – this appeared to be his major focus. Conflict with his fellow community JAC members and health workers in Ipara though eventually resolved may have contributed to the sub-optimal performance of the ward.

A further consideration is that external facilitation (by the research team) aided in conflict resolution. This brings to the fore the limitations in the capacity for conflict management within the groups and poses a question of whether a conflict management workshop is a necessary addition to the PAR. Capacity building in this area would enable them to recognize conflict early and deal with it in such a way that it does not interfere with their JAP implementation.

It was opportune that the PAR took place in two different contexts thereby enabling us to see the possible ways this intervention could play out - something that should be kept in view with regards to transferability to other contexts.

10.6 Social pressure and Social Accountability

Utilization of health and immunization services by caregivers of young children, pregnant women and other community members including the non-indigenes in Ilara and in Ipara appeared to have been driven by increased knowledge and awareness produced by intensified community mobilization activities. However, social pressure applied by the JAC community members supported by the WDC also appeared to have played a role. Additionally, JAC members used their own resources (finance and influence) in the implementation of the JAPs. It seems that engaging influential and possibly wealthier people as part of the dialogues and action may be essential for change. The PAR also seems to have strengthened accountability systems (increased accountability for availability of health workers) but at the same time there may be a risk for burnout and work overload though we did not assess this.

10.7 Continuous reflection

The monitoring and evaluation approach (RMA) enabled continuous reflection with all the three groups of stakeholders (during the dialogues, monitoring visits and different workshops) and allowed the PAR participants to evaluate themselves by reflections during their regular monthly meetings. Inclusion of other stakeholders not directly involved with the projects in the reflections during the data analysis and stakeholder validation workshops added to the validity and usability of our results and built capacity in the three groups of stakeholders. These reflexive cycles enabled a deeper understanding of the health system and the actors and gave more insight into existing and available resources that could be leveraged upon within the communities and at local government levels.

10.8 Managing the tension between being a researcher and an evaluator

In view of the roles of the evaluators in providing technical support to the PAR and evaluating the intervention, we had several discussions related to the implications of

playing these dual roles and how to manage them. The key, we felt, was in our reflexivity throughout the project cycles. First, it was necessary to make the tension between the two roles explicit and be aware of biases that could occur as a result, in order to easily recognise and deal with them at every stage. For instance, during the implementation phase, we had to manage the boundary between closeness and distance relating to the observer and participant roles adopted. During the interpretation of the results of the PAR, peer and participant checking was also useful in ensuring that objectivity was maintained. However an element of self-reporting bias cannot be ruled out though we have gone to great lengths to manage them.

10.9 Limitations of the PAR

It is pertinent to note the boundaries of the PAR approach seen in this study. The PAR cannot change major flaws in the system - for instance, the governance arrangement around the health system is outside the influence of this approach. Additionally, some contextual elements like strike actions and turn-over of staff were outside the control of the PAR.

11. Conclusion

The study represents one of the first attempts in Nigeria to address priority immunization issues using a PAR approach and the findings of this endline assessment therefore represent an important evidence base. This report describes the qualitative in-depth exploration of issues in Ipara and Ilara wards and the consistency of many of the findings with the quantitative component of the study thereby providing additional evidence of validity due to this mixed methods approach. Respondent validation which is a strong component of this study has further been used to strengthen data quality. We acknowledge that the sample size of the quantitative study is small and that reporting bias may have confounded some responses in the qualitative interviews but a good number of our findings are supported by similar studies thereby suggesting external validity.

The joint learning and action approach achieved contextual solutions to problems identified by communities in both Ilara and Ipara but the PAR approach was more effective in driving immunization utilization and coverage in Ilara, a more cohesive and rural context. The significant increase in immunization coverage assessed by card only at endline and the more than doubling of the proportion of fully immunized children in Ilara within 8 months of the implementation of the JAPs are important indications of the potential usefulness of this approach in tackling immunization issues.

Perhaps, even more important are the strides related to health systems strengthening seen in both wards. The improvements in immunization and health (especially maternal) services were important drivers of use of immunization particularly in Ilara. However, the approach was not as effective in Ipara especially in terms of measles coverage which actually declined during the intervention period. Reasons given for this performance including the reduction of clientele at the Ipara facility due to the revitalization of the Ilara facility and the recording patterns in the HMIS suggests a need for improving clarity in measles coverage related to the actual target population in Ipara.

This study highlights the need for a deeper understanding of the interaction between the context and the PAR. Though we have provided several insights in this assessment regarding social cohesiveness of the context, leadership of the JAC, presence or absence of conflict, social pressure from the JAC community members driving utilization of health and immunization services and increased social accountability by the health workers, we were limited by the short time frame of the study and have not yet been able to provide clearer answers relating to the causal chain between the context, mechanisms and outcomes of the PAR. A longer time of PAR implementation accompanied by research with careful attention to design and possibly including a sound and relevant counterfactual, could enable the answer to this question in addition to explaining the effectiveness of the PAR approach and its transferability.

Annex 1: Wards in Remo-North LGA

Name of wards	Total Population	Target Population (0-11 months)	No of health facilities	No of Settlements	Hard to reach settlements
ISARA I	8969	359	1	20	-
ISARA II	7254	290	0	12	-
ISARA III	6274	251	1	13	-
IYANKAN/IMAGBON	9309	372	1	92	5
ILARA	6512	260	1	23	-
AKAKA	6673	267	1	25	2
IPARA	9100	364	1	32	-
ORILE OKO	9703	388	2	36	6
ODE I	8839	354	1	20	-
ODE II	7610	304	1	11	-
TOTAL	80243	3210	10	284	13

Annex 2: Ilara JAC members

Sn	Name	Age (Yrs)	Sex	Function in the Health Sector / LGA / Community	Role in the JAC	Occupation	Type of Influence Social/financial/Religious/ Political power
1	Apostle Oyebanjo Segun	45	M	Community Member **(WDC Chairman)**	Chairman	Clergyman / Farming	Social influence; limited financial power. Religious leader
2	Miss Oyefeso Fatimo	27	F	Community Member	Member	Hairdressing	Limited social influence
3	Mr. Ogunsanya Segun	NA	M	Community Member	Member	Native Doctor	Social influence
4	Mrs. Adeniyi Bukky	32	F	Community Member	Member	Trading	Limited social influence
5	Mr. Salami Ifatola	47	M	Community Member	Member	Security Man / Farming	Limited social influence
6	Mr. Ogunfuwa Gbenga	NA	M	Community Member	Member	Farming	Limited social influence
7	Mrs. Ogunbowale Esther	38	F	Health Worker (formerly in-charge)	Secretary	Government Worker / Health Worker	Official mandate
8	Mrs. Sotunbo Comfort	57	F	Facility Health Worker	Member	Government Worker / Health Worker	Official mandate
9	Mrs. Sodunola Magaret	69	F	Traditional Birth Attendant	Women leader	Government Worker / Health Worker	Social and political influence
10	Dr. E. Ogunsilu	44	F	Medical Officer of Health	Member	Government Worker / Health Worker	Official power; managing staff; control over information; policy influence
11	Mrs. Ayantayo B. Temilola	45	F	Health Worker in-charge / ward focal person on immunization	Member	Government Worker / Health Worker	Official; managing staff
12	Mrs. Mustapha F.O	38	F	LGA DSNO Officer	Member	Government Worker / Health Worker	Official; control over information; policy influence

Annex 3 – Ipara JAC members

Sn	Name	Age (Yrs)	Sex	Function in the Health Sector / LGA / Community (Occupation)	Role in the JAC	Occupation	Type of influence Social/financial/Religious/Political power
1	Alhaji Salami Ikeoluwa	57	M	Community Member **(WDC Chairman)**	Chairman	Retired Teacher	Social influence; political power;
2	Pastor J.O. Idowu	42	M	Community Member	Member	Clergy / Farming	Social and religious influence
3	Pastor M. B. Ogundehin	69	M	Community Member (CAN representative	Member	Clergy / Farming	Social and religious influence
4	Alhaja I. T Soyemi	NA	F	Community member	Women leader	Trading	Social influence and political power;
5	Mrs. Onihale C. F.	53	F	Facility Health Worker (matron-in-charge)	Member	Government Worker / Health Worker	Official; control over information
6	Mrs. Soga - Soyemi Abiodun	NA	F	LGA Health Worker	Member	Government Worker / Health Worker	Official; control over information; policy influence
7	Mrs. Alli Oluwakemi	42	F	Facility Health Worker	Member	Government Worker / Health Worker	Official; control over information
8	Mr. Jona Doga	43	M	Community Member **(Igede)**	Igede Rep.	Trader / Farmer	Social influence especially among the Igedes
9	Mrs. Odunukan F. O.	53	F	LGA Local Government Immunization Officer (LIO)	Member	Government Worker / Health Worker	Official; control over information; policy influence
10	Mrs. Sotunbo Dolapo	42	F	Community Member	Member	Trading	Limited social influence
11	Mrs. Sonaike Fanike	48	F	Community Member	Member	Trading	Limited social influence
12	Mr. Adenuga Adeleke	55	M	LGA Health Educator	Member	Government Worker / Health Worker	Official; control over information; policy influence

Annex 4: Implementation Plans and Monitoring findings

A. Implementation Plans of the first Joint Action Plans

Table 1: Implementation Plan developed by the PAR participants in Ilara Ward

S/N	Specific tasks and activities	Responsible Person	Time frame
1	Create more awareness on immunization and involvement of community members	**Health workers:** Mrs. Ogunbowale Mrs. Sotunbo **Community Members:** Mr. Oyebanjo, (Apostle) Mrs. Bukola Adeniyi Mr. Salami Mr. Ogunsanya, Mrs. Oyefeso, Mr. Ogunfunwa	11th July, 2016
2	Advocacy visit to the King on clearing of the health facility surroundings/ environment	**Community Members:** Mr. Oyebanjo, Mr Salami, Mr Ogunsanya, Mr Ogunfunwa, Mrs Adeboye, Mrs Olusoga.	12th July, 2016 14th July, 2016
3	Recruitment of an Indigene as Health attendant.	**Ward Development Committee (WDC)** Mrs. Bukola Adeniyi	July, 2016
4	Advocacy visit to the King for the provision of amenities such as fencing of the facility, digging of borehole, and provision of modern toilet facilities.	Mr. Oyebanjo Mr. Ogunbowale Mrs Sodunola, (HW) Mrs Ogunbowale,	12th July, 2016

5	Request for Ultra-Sound Scanning Machine	**LGA Medical Officer of Health (MOH):** Dr. Ogunsilu	July - September, 2016
6	Letter of request to the Local Government Service Commission (LGSC) Chairman to increase the number of health workers **(Nurses, CHEWs, JCHEWs, health attendants)** in the health facility.	**LGA, HW and Community** Mr Oyebanjo, Hon. Sowunmi, Mrs Sodunola	July, 2016
7	Re-establishment of Ward Development Committee (WDC)	**Community Members:** Mr. Oyebanjo Mrs. Sodunola	July, 2016
8	Monthly meeting of the WDC	**WDC members**	Last Wednesday of every month
9	Intensifying mobilization and Increasing awareness creation through existing community and LGA structures Home Visiting	**WDC members /** **Community Members** **Health workers:** Mrs. Sodunola	July 2016 -

Table 2: Implementation Plan developed by the PAR participants in Ipara Ward

S/N	Specific Task / Activities	Responsible Person	Time Frame
1.	Purchase of Megaphone in creating awareness and publicity.	**Ward Development Committee (WDC) members** -. Mrs. Sonaike -. Pastor Idowu (Asst.)	31st August, 2016
2.	Advocacy / Writing of letters and follow –up to community philanthropists for digging of Deep Well in the health facility.	**Community Leaders** -. Alhaji Salami -. Mrs. Sonaike (Asst.)	17th August, 2016
3.	Letters to the Local Government Chairman for the release of Youth Corps Member Doctors to the health facility	**LGA Team / Health Worker** -. Matron Onihale	14th July, 2016

4.	Follow – up on the release of Youth Corps Member Doctors to the health facility	**Ward Development Committee (WDC**) -. Alhaji Salami -. Alhaja Soyemi (Asst.)	14th July – September, 2016
5.	Involvement of the Igedes and the Coutonous in Immunization	-. Mr. Jonah **(Igede)** -. Mr. Sunday Ewesu (Coutonou)	Every Sundays
6.	Letter of request to the LGA Chairman to increase the number of health workers **(Nurses, CHEWs, JCHEWs, Health Attendants)** in the health facility.	**LGA Team / Health Worker** -. Matron Onihale	July – August, 2016
7.	Advocacy / Follow – up visit to the LGA Chairman to increase the number of health workers **(Nurses, CHEWs, JCHEWs, Health Attendants)** in the health facility.	-. Pastor Oduntan -. Mrs. Ogunnoike -. Alhaji Salami	14th July, 2016
8.	Monthly meeting of the Ward Development Committee (WDC)	Ward Development Committee (WDC) members	3rd Wednesday of every month
9.	Intensifying mobilization and Increasing awareness creation through existing community and LGA structures Home Visiting	**Publicity Officers** -. Mrs. Sotunbo -. Pastor Ogundein **Health Worker:** -. Mrs. Oso	3rd Mondays & 3rd Tuesdays Once a week

B. Monitoring findings - First Action Phase

The First Action Phase commenced on Monday the 11th of July 2016 and lasted for four months. Several monitoring visits were carried out in the wards to ascertain progress on the implementation of the JAPs. The table below details the findings during the monitoring visits in the first action phase.

Table 3: Monitoring findings – first action phase

Monitoring (Perspectives of the Community members - PAR participants) - First Action Phase		
Progress on the JAP	IPARA	ILARA
What worked?	1) Revitalization of the outreaches – this used to be carried out twice a month in Ipara but had been stopped. The JAC, the WDC and the health workers mobilized the communities for those outreaches again – they first informed the communities in Ipara that in addition to the routine immunizations on Thursdays, they can also receive immunizations for their children on the first and last Tuesdays of the month through outreaches. 2)Two of the JAC members were in charge of collaborating with the Ohoris, Igedes and the Cotonous. Though farming affected meeting with those groups, the participants reported more friendly interactions because of the Igede and Cotonou representatives in the JAC who gave direct reports to their groups. 3) Since the first action phase, vaccines were regularly available at the facilities for routine immunizations – they were brought from the LGA HQ and kept in the solar freezers for use the next day. However, waiting time still existed because critical mass had to be reached before vaccinations commenced. However, all who came for vaccines received them whether critical mass was achieved or not (they were not asked to come back later anymore). 4) One megaphone for use in outreaches had been bought, and the second that had been promised was outstanding.	1) Sensitization of the communities was taking place – the JAC chairman volunteered his bike and went around regularly with the health workers to sensitize the communities. 2) The JAC contributed money to clear the bushes around the health facility. Clearing the facility environment removed the fear of snakes and scorpions and encouraged free movement of community members to the health centre and improved use of health and immunization services. The king bought the chemicals which were sprayed to stop the grasses from growing. A community member donated the spraying equipment. 3) The king repaired the water tank at the facility and there was water now in the health facility (however still no running water, just rain water and water fetched by volunteers). 4)WDC was revitalized and regular meetings were held by the JAC and WDC – during the meetings, they involved the artisans, hairdressers, traders, okada riders. Committee members went from house to house to tell them that “the status of the health centre has changed.”

		People were more motivated to come to the health centre for immunization. There are not many Cotonous in Ilara – the JAC members believed the change in the attitude of the indigenous Yorubas would influence the other groups. The strategy used was - addressing the whole community. The health workers and the LG officials attend the meetings. 5) Health workers were now regularly available at the health facility and vaccines were regularly available but still had to be transported from the LGA HQ.
What did not work?	1. Regularity of the JAC/WDC meetings – this had been done on a monthly basis after the first round of dialogues but the chairman of the JAC made the decision not to hold the second monthly meeting fixed for the 19th of October because of the monitoring visit that took place on the 12th, despite being asked by the health officer i/c of the facility to convene a meeting. 2)More health workers were still needed – the ones available are over worked and overloaded. 3) Digging of the deep well was not yet done for financial reasons. 4)Letter written to the LG requesting a new youth corper doctor was responded to by the LG chairman who stated that the mandate had to come from the government. It was also noted that the previous youth corper doctor was paid for only 3 months out of the year she spent in Ipara – and this would impact the chances of finding willing doctors since the LG is the arm of government that pays these youth corper doctors.	1) Fencing of the health centre – the king promised to discuss this with the Ilara indigenes in diaspora when he travelled out of the country – to raise the money for the fencing.

Evidence of initiative / new ideas		1) During one of the meetings, a community member mentioned the lack of a sphygmomanometer in the health facility. The community members then decided to contribute money to purchase one – the money had been contributed and someone was given the task to purchase it. The availability and use of the sphygmomanometer in the facility was expected to boost utilization of health services and encourage routine immunization as a result.
Why are things working?	The Igedes and the Cotonous were more involved in immunization – the JAC members sometimes attended their groups meetings to talk to the tribal men and women. “We are more friendly now, we see each other as brothers.” JAC Chairman The WDC has been strengthened by the JAC. Reaching out to more groups – Okadas, tailors, bricklayers, carpenters, hairdressers. The survey and qualitative interviews carried out at baseline sensitized the community people and prepared the ground for the work of the JAC. "It is a commitment." More home visits were carried out.	Cooperation between the JAC members. The support from the researchers in the PAR project – many presentations and a lot of information that have provided enlightenment. Support from the king – “whenever we go to the king, what we get back motivates us to continue with the work.” Changes in the attitudes of the community members – the community members were now willing to go to the primary health centre and register. More home visits were carried out.

Do you think this is sustainable?	"We are ready to take over from here now even without support from the state." "We know it is in our own interest. This research is an eye opener. We have learnt one or two things that have helped us realise the importance of mobilization and education of our people. The number of people may reduce or increase but it will continue."	"What we do, we don't do without the backing of the state; and the king is in support. Due to what we are hearing from the king, we are motivated to champion it (*the PAR*). So even if the state withdraws its support, we are also ready to champion it and continue."
Monitoring (Perspectives of the health workers and LG - PAR participants) - First Action Phase		
Feedback on the JAP implementation	Implementation of the JAP was described as "too slow" The commitment of the community members were initially high but there was some disagreement about tasks assigned in the implementation plan and actual execution.	"Intense" mobilization was taking place in Ilara. The environment around the health centre had been cleared to a significant extent and chemicals sprayed. To address the health worker shortage – three indigenes have been employed as health attendants. Another nurse (ward focal person) has also been deployed to the Ilara facility. The toilet in the facility had been padlocked – was much cleaner and better maintained. Advocacy visits to the king had taken place; the king indicated that he had a lot of projects but that he would contact the diaspora for funds for a fence around the facility.
What is working and why?	1) Outreaches used to be held every twice (2 Tuesdays) in a month but had stopped for logistical reasons but due to the JAP, this was revived. 2) The mobilization of the Igedes was more effective – previously this was carried out by the health workers but was now driven primarily by the Igede	1) The WDC had been re-established in Ilara and regular meetings were taking place with the JAC. The set of people in the JAC and the WDC have influence – they could approach the Kabiyesi

	representative in the JAC. 3) More formal and informal interactions were taking place between the community members and the health workers (and to a lesser extent the LG).	(king) any time. 2) The chairman of the JAC regularly communicated with the local government – he was described as “very active,” “very committed” and an important driver of the JAP implementation. An example by the Medical Officer of health (LG Official) of the commitment of the JAPC Chairman – after routine immunization one morning, he had informed the LG that there were still children in certain households in the communities that needed to be immunized and he had led the health workers and LG to those specific households to ensure that all the children were immunized. 3) A TBA in the JAC had been asked to inform the health workers of all the new babies born and to encourage the mothers also to immunize those children. 4) The commitment of the health workers -they are more available and approachable now that shortage had been addressed to some extent. 5) More formal and informal interactions were taking place between the community members in the JAC, the health workers and the LG Officials. 6. According to the health workers and LG officials – “The community members want it to work.”

What is not working well yet and why?	1) Regular meetings by the JAC needed to be improved. 2) Shortage of health staff (especially due to staff on leave) had negatively affected the number of outreaches carried out.	1)The king repaired the water tank but there was still no running water in the Ilara facility. Rain water was collected in the water tank – since it was rainy season. There was still the need for a better solution such as borehole. 2. Funding was a limitation for fencing of the facility 3. The request for the ultrasound scan made to the state had not yet yielded results.

C. Progress report validation meeting

The progress report validation and the second round of dialogues took place from the 1st to the 3rd of December 2016 and the proceedings mirrored that of the first round of dialogues. Results of secondary analysis of the HMIS and information obtained during monitoring visits were compiled into a progress report and resented to the two PAR groups in Ilara and Ipara for validation. During the validation meeting, the conflict and disagreement between the Chairman JAC Ipara and the health workers as well as some community members came up again. This issue was handled with some facilitation by the researchers. The parties aired their grievances and the issues were discussed. The cause of the conflict was identified as the chairman's deviation from the implementation plan and the matter was resolved with the agreement of all the parties to stick to the activities/tasks and responsibilities detailed in the implementation plan since those were collective decisions made by the group.

After the validation of the progress report, dialogues took place first within the three groups and then between them in the joint group dialogues. Second JAPs were developed and presented to the broader group and then implementation plans were developed together in both wards. The second action phase lasted from the 3rd December to the 3rd of April 2017. The activities of the JAC/WDC however have continued since then with the support of the state and local government officials.

D. Implementation plans of the second Joint Action Plans

Table 4: 2nd Implementation Plan developed by the PAR participants in Ilara ward

Sn	Specific Task / Activities	Responsible Person	Time Frame
1.	Clearing of the Bush. (Some amount of money has been generated for the purchase of chemicals).	- Apostle Segun Oyebanjo (Chairman) - Ogunfunwa Gbenga - Salami Ifatola	December 2016 – March 2017
2.	Advocacy visit to the Igedes and Cotonus	- Mrs. Adewole F.O (LGA) - Tunde Sunday (Igede) - Apostle Segun Oyebanjo (Chairman)	4th December, 2016
3.	Mobilization for Different Groups for Immunization (Church, Mosque, Market)	- Mrs. Adeboye Damilola - Mrs. Olusoga Bose - Mrs. Sodunola Margret	December 2016 – March 2017
4.	Employment of Indigenes as Health Workers	- Apostle Segun Oyebanjo (Chairman).	January – February 2017
5.	Advocacy visit to the King on sinking of Bore – Hole, Facility Fencing, and Toilet	Dr. Ogunsilu, LGA MOH	January, 2017
6.	Follow-up on Ultra Sound Scan Machine	- Director, PHC	January 2017.
7.	Monthly meeting of the Joint Action Plan (JAP) Committee	- WDC / Health Worker	December 2016 – March 2017 (**Last Wednesday of every month)**
8.	Incorporation of Immunization into other Health Programmes (Outreaches)	- RI Focal Person - Malaria Officer - LACA Manager	December 2016 – March 2017 **(2nd Thursday and Tuesday of the Month)**
9	Creation of Fixed Post at the New Market.	Community Members	December 2016
10.	Health Talks on Adverse Events Following Immunization during RI sessions	- Members of Ilara JAC/ Committee Members	December 2016 – March 2017
11.	Tracking of Defaulters.	- Members of Ilara JAC / Committee Members	December 2016 – March 2017

Table 5: 2nd Implementation Plan developed by PAR participants in Ipara

Sn	Specific Task / Activities	Responsible Person	Time Frame
1.	Awareness Campaign for the Benefits of Immunization to Ipara Community.	- Igede Representative - Cotonu Representative - WDC member - Health Workers - LGA Representative	3rd Sunday January 2017.
2.	Government Should make Legislature to Enforce Presentation of Child Health Card before Registration in Public/Private Schools in RNLG.	- PMOH (Dr. Ogunsilu) - Chairman, Ipara JAC Committee	January – February 2017.
3.	Enlist the Igedes and Cotonus in Ad-hoc Duties During Routine Immunizations/Supplementary Immunization Activities.	- Igede Representative - Cotonu Representative	December 2016 – March 2017
4.	Follow-up visit to the LG Chairman to Increase the Number of Health Workers in Ipara Health Centre.	- PMOH (Dr. Ogunsilu) - Chairman, Ipara JAC - Health Workers	December 2016 – January 2017.
5.	Follow-up visit to the LG Chairman for Deployment of Corper Doctors to Ipara Health Centre.	- Dr. Ogunsilu, PMOH Chairman, Ipara JAC - Health Workers	December 2016 – January 2017
6.	Ensure that Outreaches Planned are Conducted, Monitored and Supervised.	- LIO - RI Focal Persons	December 2016 – March 2017
7.	Follow-up visit on Staff Deployment from the LGSC Abeokuta	- PMOH (Dr. Ogunsilu)	December 2016 – March 2017
8.	Ensure that the JAP/WDC Members Meeting Hold Regularly.	- LGA Representative - Community Members, Ipara JAC	December 2016 – March 2017 **(3rd Wednesday of the Month)**
9	Advocate for, and Sponsor a Bill to Enforce Presentation of Child Health Card Before Registration in Public/Private Schools..	- PMOH (Dr. Ogunsilu) - Chairman, Ipara JAC Committee	December 2016 – January 2017.
10.	Write a Letter to the LG Chairman/Follow-up Visits for Provision of SDD/Solar Light at Ipara Health Centre.	- PMOH (Dr. Ogunsilu)	February 2017.
11.	Enlist Interested Nursing Mothers for Annual Baby Shows.	- Health Workers - WDC members	January, 2017

E. Monitoring findings – Second Action Phase

A summary of the findings of the monitoring of the implementation of the 2nd JAP are found below. This is not as detailed as the previous table on monitoring findings because IDI were carried out with all the JAC members, results of which are presented in the main evaluation report.

Table 6: Monitoring findings – second action phase

Summary of progress on 2nd JAP		
Achieved targets	IPARA	ILARA
	Awareness Campaign carried out. JAC/WDC meeting held on the 15th February. Representatives met the Igede community on the 19th February during their group village meeting. More Cotonou and Igede children were now brought to the health facilities for immunization.	Clearing of bush and chemicals sprayed being done - Recurrent activity
	Enlisting Igedes and Cotonous in adhoc activities had been done but not much . This is because most of them left in the mornings for their farms and returned late in the evenings and enlisting them in adhoc activities was not usually feasible. However, once in a while, they helped out in outreaches. The primary platform they used for awareness creation was during their tribal meetings.	Planned advocacy visit to Kabiyesi on procurement of Borehole, Fence, and repair of health facility toilet done.
	Follow up visit to LG Chairman to increase number of health workers carried out. 2 midwives deployed to the health facility. Promise given to deploy one more. 9 final year medical students posted to the facility for 4 weeks.	More patronage of health facilities by the community members achieved (Health facility now offering and delivery services).
	Outreaches are carried out as planned. 1st and 3rd Tuesdays of the month. RI holding on 2nd and last Fridays of the month including immunizations for pregnant women	Specific strategy for the vulnerable groups initiated. The strategy used by Ipara in the first action phase was adopted for the mobilization of the Igedes. An Igede member of the Ilara PAR was now part of the JAC/WDC immunization mobilization team. Advocacy visits to Igedes and Cotonous during their group village meetings had been carried out.
	Follow up with the LG- Proposed transfer of health workers from the facility paused.	Continuous advocacy - JAC Woman leader who is also part of the market women's association confirmed advocacy visits to churches, mosques, markets,

		Christian Association of Nigeria (CAN), Muslim Association.
	Regular meetings of the JAC/WDC holding monthly.	Advocacy visit to the King Toilet in the health facility now functional - the JAC Chairman brought a plumber to fix it.
	Regular water supply to the health facility achieved. The JAC/WDC lobbied the Ipara Development Committee and they connected the deep water (borehole) in the adjacent compound to the tank in the health facility.	Regular monthly meetings of the JAC/WDC held - now last Mondays of the month
		Addressing health worker shortage - Two midwives deployed to the Ilara health facility due to the advocacy by the LG PAR participant. - nine final year medical students posted to work in the health facility for 4 weeks. They also helped with community mobilization.
		Health Talks on Adverse Events Following Immunization carried out by health workers and JAC members; community members now asking questions on AEFI; Talks on AEFI carried out on RI days
		Tracking of Defaulters being done - the Chairman JAC leading the process, also used his phones to call the defaulters
Pending	Advocacy for Government to make Legislature to enforce presentation of Child Health/Immunization Card before Registration in Public/Private Schools in Remo-North LGA. Legislative members were just inaugurated in January and were yet to commence sittings. The JAC Chairman had met with the council member for Ipara and he was happy to propose the bill. The Chairman JAC and the Director MOH intend to meet with the Chairman LG in order to convince him to make it an executive bill	Employment of Indigenes as Health Workers

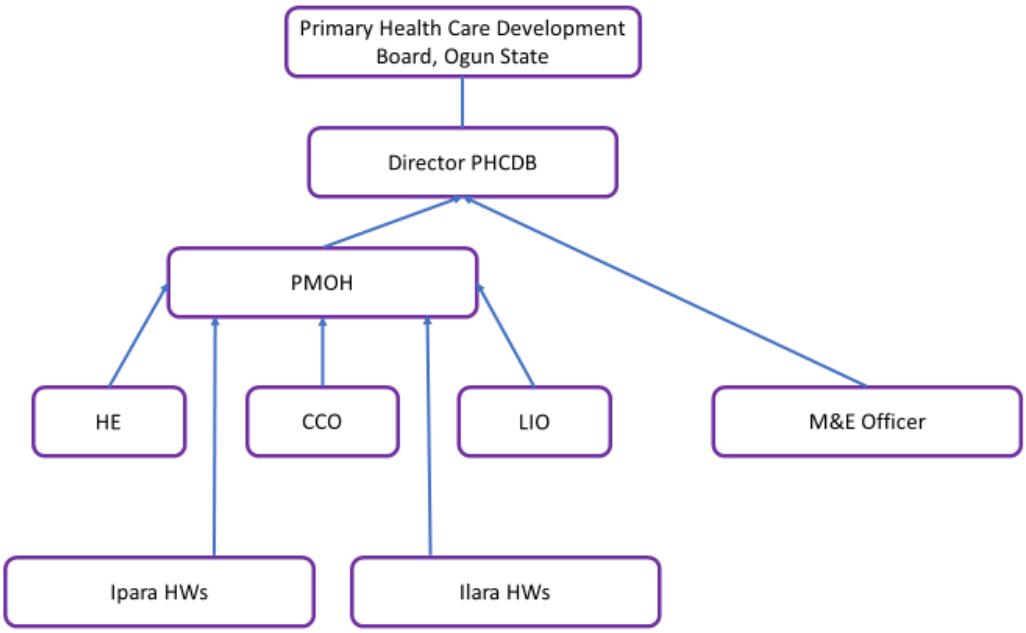
	No youth corper doctor could be sent to Ipara as requested because of the financial constraints at LG level. The maintenance costs - accommodation and supplementary finances needed are not feasible.	Creation of Fixed Post at the New Market. Currently the mobile units are being used in the market. Delay due to financial constraints
	Follow-up Visits to LG Chairman for Provision of SDD/Solar Light at Ipara Health Centre. Got additional information that the SDD/Solar light was provided by an NGO and not government, though state government influences where they are distributed to. Plans now in place to lobby the NGO	Incorporation of Immunization into other Health Outreaches.
	Baby show planned during Christmas period (2017)	Fence - still a problem. Planned visit to Kabiyesi especially after sexual harassment of a new health worker in the facility by a community member
		Regular water supply in the facility still needed- for now health workers and JAC chairman contribute money for water in the facility.

Annex 5 : Roles and responsibilities of health personnel in the intervention

Acronym	Full description	Employer	Position created by intervention	Specific additional task in intervention	Part time / Full Time	Remuneration
Director, PHCDB	Director, Primary Health Care Development Board	Government	No	**Principal Investigator** -Organization and Facilitation of the dialogues - recruitment and training of research assistants and enumerators - organize and facilitate validation workshops - Organize and facilitate data analysis workshops - Organize and facilitate policy dialogue - Stakeholder engagement	Full time	Government paid remuneration
PMOH	Principal Medical Officer of Health, Remo-North LGA	Government	No	**PAR participant** -Participation in the dialogues and action - Stakeholder engagement - Supervision of health workers	Full time	Government paid remuneration
HE	Health Educator, Remo North LGA	Government	No	**PAR participant** -Participation in the dialogues and action - Health Education and Promotion of immunization	Full time	Government paid remuneration
LIO	Local Government Immunization Officer	Government	No	**PAR participant** -Participation in the dialogues and action - In-charge of immunization activities including ensuring vaccine availability at LGA level	Full time	Government paid remuneration

CCO	Local Government Cold Chain Officer	Government	No	**PAR participant** -Participation in the dialogues and action - Vaccine Cold Chain management	Full time	Government paid remuneration
M&E	Monitoring and Evaluation Officer	Government	No	**Coordination of M&E** -Development of monitoring templates for JAPs - Recruitment and training of JAP implementation monitors - Secondary analysis of HMIS - Spot checks of health facility immunization data	Full time	Government paid remuneration
Ipara HWs	**Health workers in the Ipara facility** 1. Matron 2. Ward Focal Person on immunization 3.Health worker / midwife 4. Health Assistant	Government	No	**PAR participants** -Participation in the dialogues and action -Health and immunization service delivery	Full time	Government paid remuneration
Ilara HWs	**Health workers in the Ipara facility** 1. In- charge and Ward Focal Person on immunization 2.Health worker /midwife 3. Health worker/midwife 4. Health Assistant	Government	No	**PAR participants** -Participation in the dialogues and action -Health and immunization service delivery	Full time	Government paid remuneration
Community members	**Ilara and Ipara JAC members**	Community	Yes	**PAR participants** -Participation in the dialogues and action -Community mobilization -Tracking of defaulters	Part - time	Volunteers (not paid)

Annex 6: Organogram – reporting structure – government workers



Annex 7: Monitoring & Evaluation and Logical Framework for PAR Intervention in Ogun State

Activity:

Increasing the utilization of Immunization in Ogun State of Nigeria using participatory evaluation and action research

Goal:

To increase immunization coverage in Ogun State through community participation and engagement in Remo-North LGA using Participatory and Evaluation Research (PAR) approach.

General Objectives:

To implement a PAR process in order to assess whether and how community links in the REW strategy influences performance of immunization services and their utilization in Remo-North LGA in order to inform policy makers.

Specific Objectives:

- To determine the appropriateness of the REW strategy in addressing the immunization needs of different groups in Remo-North.
- To assess the process of consensus building on immunization issues among health workers, communities and local government.
- To assess the use and effect of the developed Joint Action Plans in aligning the REW strategy to the unmet needs for immunization in Remo North LGA.
- To identify opportunities for a sustainable process using participatory evaluation and action to match REW strategy to the needs in Remo-North

Duration:

May 2016 – April 2017 (12 Months)

Methodology:

The research questions were answered using **mixed methods**. This is to collect data to ensure a rigorous scientific methodology which will help to gain insight into coverage and utilization as well as obtaining in-depth knowledge on "reasons why" there is low immunization uptake. Also, different groups of respondents were used to ask the same questions which allowed for triangulation.

Outcome:

Utilization of Immunization services in Ipara and Ilara Wards of Remo North LGA Increase

Log Framework – Intervention Activities

Sn	Activities	Indicators	MOV	Assumptions
	Inception Meeting with key stakeholders	• No of meetings held • No and main characteristics of representatives of groups communities, health workers, LG officials participating	• Minutes of Meetings held • Pictures	Provided there is no strike action in the State
	Training of research team and research assistants – interview and survey skills, ethics, recording, transcription.	• No of trainings held • No RAs & enumerators recruited	• Report of training • Availability of ethical approval • Pictures	
	Research review meeting to assess tool adjustment needs. Editing and standardization of tools	• No of meetings held	• Minutes of meetings held • Availability of standardized tool for data collection	
	Field Work – Baseline Study Data Collection –survey and qualitative interviews;	• No of HH questionnaire filled • No of FGDs conducted • No of IDI conducted	• Availability of recorded FDGs • Availability of recorded IDI • Filled questionnaires seen • Pictures	Community members cooperated with the research assistants.
	Data Entry and Transcription; Compilation of PADev reports	• No of household questionnaire entered • No of FDGs transcribed • No of IDI transcribed	• Availability of Analyzed HH data • FDG transcriptions seen • IDI transcriptions seen	

	Data Analysis and Report writing	• No of household questionnaire analyzed	• Availability of Analyzed data • Report seen	
	Situational Analysis Report	• No of written reports	• Written report seen.	
	Validation of Situational Analysis report and First Round of Dialogues	• No of participants present during report validation • No and main characteristics of representatives of groups communities, health workers, LG officials participating in the dialogues and action • No and main characteristics of representatives of groups communities, health workers, LG officials that continued participating in the dialogues and action	• Report of validation meeting and first round of dialogue • Pictures	
	First Joint Action Plan	• No and main characteristics of representatives of groups communities, health workers, LG officials	• Report of joint Action Plan meeting • Availability of developed Joint Action Plan • Pictures	

		involved in the development of Joint Action Plan		
	First Action Phase	• No of JAC/WDC meetings held • No of participants attending regular meetings • No of monitoring visits conducted	• Minutes of meetings of JAC/WDC • Report of monitoring visits conducted	
	Secondary Analysis of HMI/S	• % children immunized on monthly basis by antigen • % drop out on monthly basis • % children fully immunized	• Report of NHMIS Analysis available.	
	Validation of Progress report Second Round of Dialogues	• No of participants present during report validation • No and main characteristics of representatives of groups communities, health workers, LG officials participating • No and main characteristics of representatives	• Report of validation meeting and 2nd round of dialogue • Pictures	

		of groups communities, health workers, LG officials that continued participating in the dialogues and action		
	Second Joint Action Plan	• No and main characteristics of representatives of groups communities, health workers, LG officials involved in the development of Joint Action Plan	• Minutes of meetings of JAC/WDC Report of monitoring visits conducted	
	Second Action Phase	• No of JAC/WDC meetings held • No of participants attending regular meetings • No of monitoring visits conducted	• Minutes of meetings of JAC/WDC • Report of monitoring visits conducted	
	Validation of Endline report	• No of participants present during report validation • No and main characteristics of representatives of groups communities,	• Report of validation meeting and 2nd round of dialogue • Pictures	

		health workers, LG officials that continued participating till the end of the project		

Annex 8: Monitoring template – JAP implementation

INCREASING IMMUNIZATION COVERAGE IN REMO NORTH LOCAL GOVERNMENT AREA OF OGUN STATE USING PARTICIPATORY EVALUATION AND ACTION RESEARCH (PAR)

Monitoring & Supervision Checklist for Implementation of Joint Action Plan

Name of LGA: _____ **Date of Visit:** _____

Name of Ward: _____ **Time of Visit:** _____

Name of Facility: _____

Instruction:

1. This checklist is to be filled by the monitors deployed to the Ward to monitor the Implementation of the Joint Action Plan (JAP) developed by all stakeholder (Community, Health Facility and Local Government Council)

2. This checklist will be administered twice in a month to track the implementation if the Joint Action Plan (JAP)

3. Use one checklist per visit.

Sn	Activities				
	A. PLANNING AND COORDINATION	**Yes**	**No**	**NA**	**Remarks**
1	Is there in place a developed Joint Action Plan (JAP)? **If yes ask to see a copy of the developed JAP.**				
2	Is there in place an Implementation Plan (IP)? **If yes ask to see a copy of the Implementation Plan (IP).**				
3	Is there available a copy of Signed MOU for the Implementation of JAP? **If yes, ask to see a copy of the MOU.**				
4	Is the MOU being adhered to strictly by all stakeholders?				

5	Is there in place a Joint Action Plan (JAP) Committee?				
6	Is there a scheduled regular meeting of the Joint Action Plan (JAP) Committee? **If Yes, how often do they meet.**				
7	Is the Joint Action Plan (JAP) Committee meeting as scheduled? **If yes, ask to see a copy of the last minute of meeting.**				
8	Are roles and responsibilities assigned to individuals to perform special tasks in line with the developed Joint Action Plan (JAP)?				
9	Are assigned roles and responsibilities being carried out to the letter?				
10	Is the Joint Action Plan (JAP) being implemented as planned? **If yes probe for the level of implementation.**				
	B. LOGISTICS AND COLD CHAIN				
11	Is there any support from the community to the health facility? **If yes, list some of the support:** **1.** **2.** **3.**				
12	Is there any support from the LGA to the health facility? **If yes, list some of the support:** **1.** **2.** **3.**				
13	Is there any support from the State to the health facility? **If yes, list some of the support:** **1.**				

	2. **3.**				

14	Was Immunization conducted last month? **If yes, how many sessions were conducted:** **Fixed Sessions: …… Outreach Sessions: ….....**				
15	Are Vaccines and other supplies readily available during immunization?				
16	Are the Vaccines in good condition? **If yes, carry out a random check on the VVM of at least 2 vaccines.**				
	C. COMMUNITY LINKAGE				
17	Is there a functional Ward Development Committee (WDC) in place?				
18	Is the Ward Development Committee meeting regularly as planned? **If yes, how often do they meet? (Please ask to see a copy of the last minute of meeting)** **Weekly ( ) Bi - monthly ( ) Monthly ( )**				
	C. LEVEL OF IMPLEMENTATION OF IP	***Completed***	***Partially Completed***	***Not Completed***	***Comment***
19	Create more awareness on immunization and involvement of community members				
20	Advocacy visit to the King on clearing of the health facility surroundings / environment				
21	Recruitment of Indigenes as Health attendant.				
22	Advocacy Visit to the King for the provision of Amenities such as fencing of the facility, digging of borehole, and provision of modern toilet facilities.				
23	Request for Ultra-Sound Scanning Machine				

24	Letter of request to the Local Government Service Commission (LGSC) Chairman to increase the number of health workers (Nurses, CHEWs, JCHEWs, Health Attendants) in the health facility.				
25	Advocacy / Follow – up visit to the Local Government Service Commission (LGSC) Chairman to increase the number of health workers (Nurses, CHEWs, JCHEWs, Health Attendants) in the health facility.				
26	Re-establishment of Ward Development Committee (WDC)				
27	Monthly meeting of the Ward Development Committee (WDC)				
28	Intensifying mobilization and Increasing awareness creation through existing community and LGA structures				
29	Conduct Home Visiting				

Comments: _____

_____

_____

Name of Monitor: _____

Phone No of Monitor: _____

Signature / Date: _____

ILARA

INCREASING IMMUNIZATION COVERAGE IN REMO NORTH LOCAL GOVERNMENT AREA OF OGUN STATE USING PARTICIPATORY EVALUATION AND ACTION RESEARCH (PAR)

Monitoring & Supervision Checklist for Implementation of Joint Action Plan

Name of LGA: __IPARA_____ **Date of Visit:** _____

Name of Ward: _____ **Time of Visit:** _____

Name of Facility: _____

Instruction:
1. This checklist is to be filled by the monitors deployed to the Ward to monitor the Implementation of the Joint Action Plan (JAP) developed by all stakeholder (Community, Health Facility and Local Government Council)
2. This checklist will be administered twice in a month to track the implementation if the Joint Action Plan (JAP)
3. Use one checklist per visit.

Sn	Activities				
	A. PLANNING AND COORDINATION	**Yes**	**No**	**NA**	**Remarks**

1	Is there in place a developed Joint Action Plan (JAP)? **If yes ask to see a copy of the developed JAP.**				
2	Is there in place an Implementation Plan (IP)? **If yes ask to see a copy of the Implementation Plan (IP).**				
3	Is there available a copy of Signed MOU for the Implementation of JAP? **If yes, ask to see a copy of the MOU.**				
4	Is the MOU being adhered to strictly by all stakeholders?				
5	Is there in place a Joint Action Plan (JAP) Committee?				
6	Is there a scheduled regular meeting of the Joint Action Plan (JAP) Committee? **If Yes, how often do they meet.**				
7	Is the Joint Action Plan (JAP) Committee meeting as scheduled? **If yes, ask to see a copy of the last minute of meeting.**				
8	Are roles and responsibilities assigned to individuals to perform special tasks in line with the developed Joint Action Plan (JAP)?				
9	Are assigned roles and responsibilities being carried out to the letter?				
10	Is the Joint Action Plan (JAP) being implemented as planned? **If yes probe for the level of implementation.**				

	B. LOGISTICS AND COLD CHAIN				
11	Is there any support from the community to the health facility? **If yes, list some of the support:** **1.** **2.** **3.**				
12	Is there any support from the LGA to the health facility? **If yes, list some of the support:** **1.** **2.** **3.**				
13	Is there any support from the State to the health facility? **If yes, list some of the support:** **1.** **2.** **3.**				

14	Was Immunization conducted last month? **If yes, how many sessions were conducted:** **Fixed Sessions: ……** **Outreach Sessions: ….....**				

15	Are Vaccines and other supplies readily available during immunization?				
16	Are the Vaccines in good condition? **If yes, carry out a random check on the VVM of at least 2 vaccines.**				
	C. COMMUNITY LINKAGE				
17	Is there a functional Ward Development Committee (WDC) in place?				
18	Is the Ward Development Committee meeting regularly as planned? **If yes, how often do they meet? (Please ask to see a copy of the last minute of meeting)** **Weekly ( ) Bi - monthly ( ) Monthly ( )**				
	C. LEVEL OF IMPLEMENTATION OF IP	***Completed***	***Partially Completed***	***Not Completed***	***Comment***
19	Purchase of Megaphone in creating awareness and publicity.				
20	Advocacy / Writing of letters and follow –up to community philanthropists for digging of Deep Well in the health facility.				
21	Letters to the Local Government Chairman for the release of Youth Corps Member Doctors to the health facility				

22	Follow – up on the release of Youth Corps Member Doctors to the health facility				
23	Involvement of the Igedes and the Coutonous in Immunization				
24	Letter of request to the LGA Chairman to increase the number of health workers (Nurses, CHEWs, JCHEWs, Health Attendants) in the health facility.				
25	Advocacy / Follow – up visit to the LGA Chairman to increase the number of health workers (Nurses, CHEWs, JCHEWs, Health Attendants) in the health facility.				
26	Monthly meeting of the Ward Development Committee (WDC)				
27	Intensifying mobilization and Increasing awareness creation through existing community and LGA structures				
28	Conduct Home Visiting				

Comments: _____

_____

_____

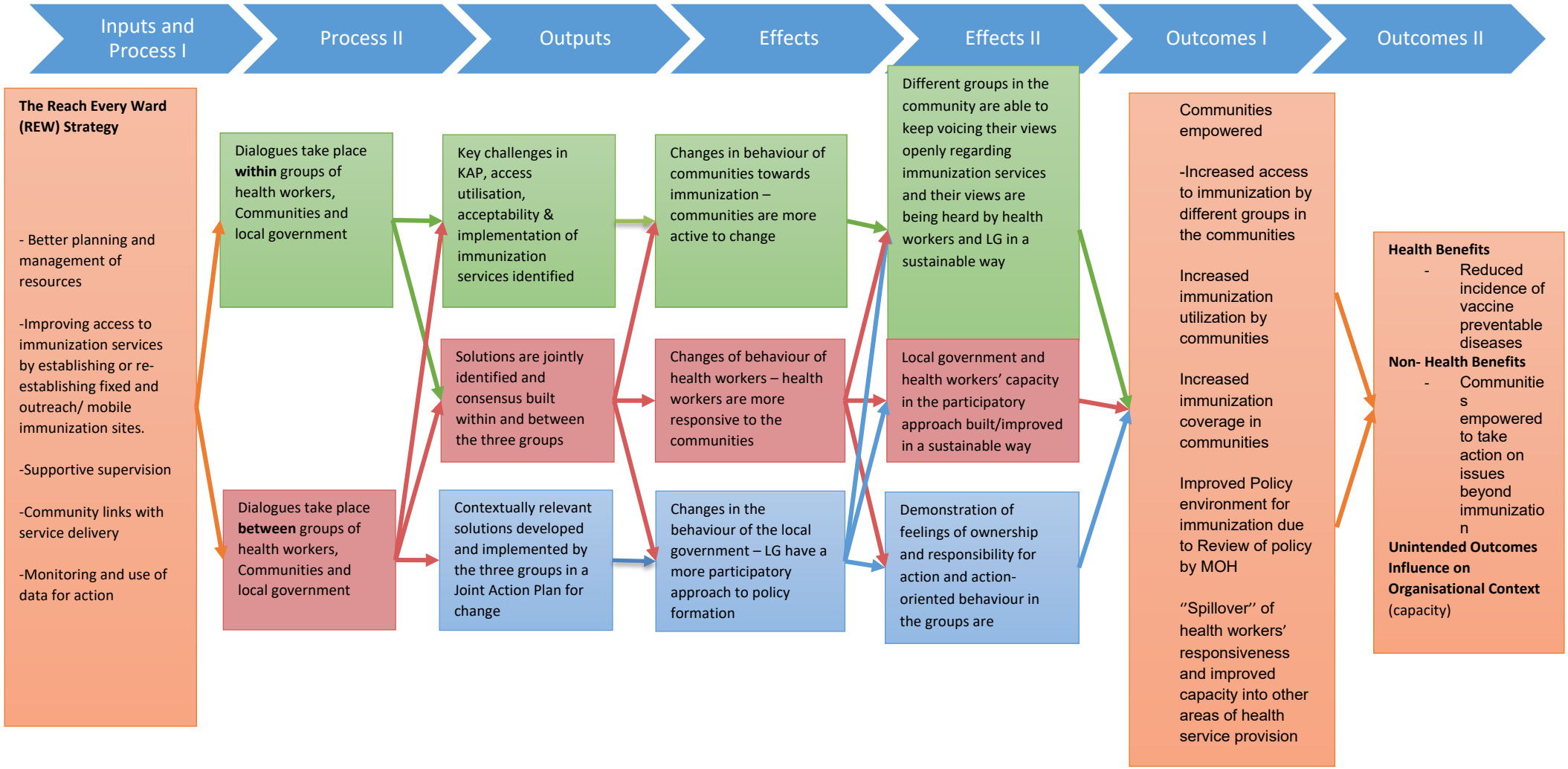
_____

Name of Monitor: _____

Phone No of Monitor: _____

Signature / Date: _____ IPARA

Annex 9: Theory of change



Influence of internal and external Contextual Factors:

Internal: *Organizational factors influencing program implementation*

External: *Drivers of change, enabling environment*

The arrows go in several directions as actions mutually support each other - in PAR, outputs and effects are never linear.

*The **basic assumption** that has been made in the intervention is that the communities, in particular families with young children, local government and health workers will actively participate in the process and take ownership of the process – which could enable the development and implementation of contextually relevant solutions to problems in access to and use of immunization services that have been identified by them.*

***Key assumptions** are that the dialogues will lead to different groups in the community voicing their views openly regarding immunization services and their views being heard by health workers and local government; local government and health workers' capacity in the participatory approach being built/improved; and to demonstration of feelings of ownership and responsibility for action and action-oriented behaviour in the groups.*

***Other assumptions** – stable government partners, secure environment*

Annex 10 - Evaluation Framework – Zero Draft

Key evaluation questions	Specific evaluation questions	Data Collection and sources of information	Data analysis
A Evaluability			
A1 Is a robust evaluation of participatory research and action feasible?	1. Is the initiative based on an approach that is evidence informed and includes an explicit theory of change formulated with country level stakeholders (or MoH?) 2. Is the M&E system able to deliver information over time – and has a baseline study been carried out to provide information on: a) *outcome* based on relevant indicators related to access to and utilisation of immunization services, segregated by (see below)b) the *workings of the intervention*, based on relevant indicators related to the theory of change and result chain, b) segregated by gender, socio-economic class, ethnicity and location c) *costs* based on relevant indicators on required resources (material, time and human) What are internal and external factors that may have influenced the functioning, the outputs and the outcome of programme interventions? 3. To what extent has the M&E system (including supportive supervision) been effective in tracking progress?	Desk review of secondary data – Implementation Research protocol; Project documents and reports, Joint Action Plans, Monitoring and Evaluation data, Baseline surveys and other studies from 2015 -2016, HMIS data from health facilities, program financial documents; Interviews with key stakeholders including Policy makers in MOH, NPHCDA, local government, ward officials, and involved in implementation of the REW strategy	• Review of theory of change in terms of evidence; context; changes over time • Review of availability of M&E data against theory of change and of financial data • Review of strategies in programme documents against theory of change and evidence deriving from national and international literature

B Relevance			
B1 Did the PAR approach enable to adapt immunization activities to meet the needs of the targeted communities, health workers and local governments	1. To what extent is the PAR approach appropriate to achieve the set objectives - To what extent is the project design relevant for reaching and meeting the needs of the targeted communities, especially the poorest and most marginalized groups? - Does the PAR approach enable that communities express their needs and are heard by health workers and local governments? 2. Does the PAR approach achieve active collaboration between the targeted communities, health workers and local governments in the development of the JAP and in the implementation of activities? 3. Did the PAR approach achieve at a real partnership between these different groups? Did it enable active participation of different groups in terms of gender, socio-economic class etc 4. Are the packages of immunization services articulated in the various JAP the most appropriate in view of the three groups involved in its development (in other words- was it built on consensus)? 5. Are the packages of immunization services articulated in the various JAP in line with government policies, priorities and	Desk review of secondary data – Implementation Research protocol; Project documents and reports, Joint Action Plans, Monitoring and Evaluation data, Baseline surveys and other studies from 2015 -2016, HMIS data from health facilities, program financial documents; literature from peer reviewed journals Primary data from - Household survey, using a structured questionnaire - Stakeholders' workshops - In-depth and semi-structured interviews with key informants including - Policy makers in MOH, NPHCDA, local government, ward officials, and involved in implementation of the REW strategy; health facility managers and health workers; and community leaders. Focus group discussions (FGDs, using PADev tool) involving community members including care givers (female and male) of children under five	• Document & Literature Review through a desk review tool • Consultation with stakeholders • Context analysis • Gender analysis • Analysis against Theory of Change • Contribution mapping • Triangulation between different sources of information

	implementation plans at sub national and national levels? 6. What is the relevance of the intervention in terms of contributions to behaviour change in terms of responsiveness in line with needs of different groups of communities, health workers and local governments??		
C Efficiency			
C1 To what extent has the PAR intervention been implemented as intended?	1. Were activities implemented as planned? 2. Were resources (financial, expertise, time) available in time and sufficiently? 3. Did the intervention use the resources available to it in the most efficient manner to achieve its objectives? 4. Were the Joint Action Plans developed used in planning for the subsequent immunization activities? 5. What was the feasibility of the approach in terms of the willingness of the three groups to play their roles and did they facilitate efficient implementation?	Document review of program documents, monitoring reports, annual reports, financial data and reports, baseline surveys and other studies 2015-2016; HMIS data from health facilities Baseline and Endline surveys at Household survey In-depth and semi-structured interviews with key informants including - Policy makers in MOH, NPHCDA, local government, ward officials, and involved in implementation of the REW strategy; health facility managers and health workers; and community leaders.	• Document Review through a desk review tool • Cost effectiveness analysis • Consultation with stakeholders • Context analysis • Contribution mapping • Gender analysis • Analysis against Theory of Change • Triangulation between different sources of information

D Effectiveness			
D1 To what extent have the intended outcomes as identified by the Theory of Change been achieved, and where there any unintended outcomes?	1. To what extent did health workers modify their regular REW strategic practices in line with the JAP 2. To what extent has the PAR interventions been effective in facilitating changes in awareness of REW activities by the communities? 3. To what extent has the PAR interventions been effective in facilitating changes in the skills and responsiveness of health workers? 4. To what extent has the PAR interventions been effective in facilitating changes in the skills and responsiveness of local governments 5. To what extent have the communities improved their immunization behaviour and practices as a consequence of the PAR activities? 6. Has the process of consensus building among health workers, communities and local government worked towards achieving the common goals of increased and sustained positive behaviour towards immunization by the communities and health workers?	Secondary Analysis of HMI/S data, program documents, monitoring reports, annual reports, financial data and reports; Primary data from: Baseline and Endline Surveys at Household level In-depth and semi-structured interviews with key informants including - Policy makers in MOH, NPHCDA, local government, ward officials, and involved in implementation of the REW strategy; health facility managers and health workers; and community leaders. Focus group discussions (FGDs, using PADev tool) involving community members including care givers (female and male) of children under five	• Re-analysis of relevant secondary data, including wealth comparisons • Consultation with stakeholders • Context analysis • Gender analysis • Analysis against Theory of Change • Triangulation between different sources of information

	7. To what extent has the PAR interventions been effective in facilitating changes in access of immunization activities to the poorest and most marginalized groups? 8. To what extent has the PAR interventions been effective in facilitating changes in utilization of immunization facilities and services and for which groups? 9. To what extent has the PAR interventions been effective in facilitating changes in immunization coverage? 10. What were the enabling/constraining factors that facilitated/hindered behavioural change? 11. What is the perception of the beneficiaries of the overall change in immunization utilization in the communities/families? 12. If there were changes in the above mentioned intermediate outcomes: how can these changes been explained? 13. Have there been any unintended outcomes?		

E Sustainability			
E1 How sustainable is the PAR intervention, and to what extent will the achievements be sustained after the withdrawal of external support?	1. Do international partners have an exit strategy for the PAR intervention? 2. What is the level of ownership by government partners of the PAR intervention? 3. To what extent have the MOH, LG, ward authorities, communities, community leaders and health workers demonstrated ownership and capacity to self-support and consolidate the achievements and the possible expansion of the project? 4. To what extent has the JAP been inserted into the REW strategy to encourage ownership by the MOH and to lead to incorporation into national policies and therefore sustainability of results achieved? 5. To what extent are the behavioural changes among the health workers and communities expected to last? 6. What is the added value of the PAR intervention compared to routine immunization activities? 7. To what extent does the initiative build on and expand existing local government and health workers capacities and activities? 8. What are examples of the use of local resources/ capacities and /or networks that are (or can be) effectively used to sustain the achievements of the response?	Document review of program documents, monitoring reports, annual reports, financial data and reports; HMIS data from health facilities In-depth and semi-structured interviews with key informants including - Policy makers in MOH, NPHCDA, local government, ward officials, and involved in implementation of the REW strategy; health facility managers and health workers; and community leaders. Focus group discussions (FGDs, using PADev tool) involving community members including care givers (female and male) of children under five	• Document Review through a desk review tool • Consultation with stakeholders • Case study analysis • Context analysis • Gender analysis • Analysis against Theory of Change • Triangulation between different sources of information

Annex 11: Data Collection Instruments

Quantitative tools

The HHS Questionnaires are found here:

Baseline Questionnaire - PAR

End - Line Household Survey.d

Endline Qualitative Tools

ENDLINE FOCUS GROUP DISCUSSION GUIDE – Community men and women

Study titles	**Increasing the utilization of Immunization in Ogun State of Nigeria using participatory evaluation and action research AND Formative PAR Evaluation**
Date	April 2017
Name of funding organization	3ie and BMGF

Name of Lead Principal Investigator	Dr Ngozi N. Akwataghibe
Institution	Royal Tropical Institute, the Netherlands
Position	Associate/ Health Advisor
Address	Mauritskade 63, 1092AD Amsterdam
Telephone	+2348121184500
Email	n.akwataghibe@kit.nl

Focus group discussion guide for community men and women in Remo North LGA on Immunization issues in Remo North LGA, Ogun State

The overall questions to be answered during these discussions relate to perceptions of communities in Remo-North LGA regarding immunization; how their expectations and needs regarding immunization are being met and to identify perceived changes that have taken place already in the communities as a result of the immunization programme and specifically as a result of the communities being involved in the decision making with the government and health workers

Total participant time: [60-90 mins]

This is a general guide for facilitating focus groups.

Before the group begins, read out the informed consent form and ask permission to continue.

Introduction: [Time]

Good Morning/Afternoon Sirs/Madams, I am [name], working for the Royal Tropical Institute in the Netherlands. We are doing a research – a formative evaluation on **the use of participatory evaluation and action research to increase immunization utilization in Ogun state.**

My assistant(s) [name(s)] will be taking notes and be available to support me if I need help. [Name(s)] will be observing the group or interpreting discussion.

We are conducting this research because we like to understand better what people's experiences are with the use of immunization for their small children and what can be done to improve these services. We intend to use your views to understand if and how the communities developing a plan together with health providers and government will enable them to work better together and to improve the use of immunization for different groups in the community. Your views are important and we appreciate your participation.

The **objectives** of this focus group discussion are:

1. To find out what the communities in Remo North LGA expect and need with regards to the vaccination of their young children
2. To find out how the communities, health workers and local government are working together on immunization issues
3. To find out the changes that have taken place already in the communities as a result of the vaccination programme especially in the last year
4. To understand the reasons for any changes that have taken place

You are invited to participate because we think you know a lot about this, because you take care of young children and you have to make decisions relating to their health. We are inviting different categories of people in the community – young and old, women/men to participate in this study.

It is important that you share your points of view freely. There are no right or wrong answers. We are interested in hearing different perspectives and opinions. We hope you'll feel free to speak openly and honestly. Our discussion will last for about one hour

We would like the discussion to be informal so there is no need to wait for us to call on you to respond. During the discussions, we would please like you to speak loudly and clearly for everyone to hear. Please try not to interrupt or hold side conversations when others are speaking, so that it will be easy for us all to hear everyone clearly

We are here to ask questions, listen to your responses, and ensure that everyone has a chance to speak. If we seem to be stuck on a question, we may interrupt you to

move to the next. If the room becomes quiet, we may call on you to respond. This will enable us to hear from everyone and complete all the questions in a timely manner. If you don't understand a question, please let us know. You may refuse to answer any questions or withdraw from the study at any time.

The information that you give us is completely confidential. We will not associate your name with anything that you say. We ask that you keep each other's identities, participation, and remarks private.

If it is okay with you, we will be recording this discussion. We would like to do this to ensure that we don't miss any of your comments. Only the research team will have access to the tapes and they will be destroyed as soon as we have completed our study. Do we have your permission to record?

Do you have any questions? [Respond to questions]

If you have any questions now or after our discussion has ended, you can always talk to a study team member like me or contact the supervisor whose information is on the consent form you completed.

Do we have your permission to proceed with the discussions? *(Ensure that consent is obtained before proceeding)*

Before we begin, let's learn a bit more about each other by going around the room and introducing ourselves. I'll start.

Introductory Questions

1. (*Establish Rapport*) What have you heard about vaccination of small children? (**Probe for understanding of immunization issues**: what does it mean? For who/ who needs it? What is good and what is not good about it? What happens if children are not vaccinated?)

2. How are vaccination services provided in your community? (**Probe for perception of immunization services**: by who, when and where-ask to show on the map

   And when you have questions about vaccination, who do you go to?

   How do you know when and where vaccination is done? Are there any special activities organised to inform caregivers on vaccination or to make sure that care givers come to have their children vaccinated? **Probe** for perception of access for different groups, facilitating factors and barriers for different groups in the community)

Group Dynamics and Social Network related to immunization

3. How would you describe the role of the community in decision making relating to immunization? **Probe** for who or what group influences vaccination; in what way they influence; what do you think has changed over time? How? **Use visualization** - Would it be possible for us to draw a diagram of the network of influence? (research assistant will help with this) (**Probe** for type of power - formal, informal, financial etc)

4. How would you describe the current relationship between the communities and the health workers?

   - How do you work together at the moment with the health workers?
   - What do these groups do together now?
   - What happens when you meet together to discuss issues such as health/child care etc.?

5. How would you describe the relationship between the communities, health workers and the local government in the new arrangement (*describe the PAR*) that was put in place for immunization delivery? (**Probe** for how much they know about the partnership and whether they have noticed any activities by the communities relating to immunization planning and implementation as a result to the partnership. **Ask for examples**)

   - In your opinion, are there any changes in the level of influence (or power) of the different groups? How? And for which groups?

Relevance of the Communities working together with the local government and health workers in immunization (Whether the PAR approach enabled the adaptation of immunization activities to meet the needs of the targeted communities, health workers and local governments)

6. How would you describe the way immunization issues are addressed by the communities, health workers and local government? (**Probe** for how the three groups are working together and what they are doing together)

    - **Probe** for who does what, who takes decisions, who participates in what – ask relating to all three groups; **Probe** for perceptions of usefulness/importance of what the three groups are doing, ask for reasons; **Probe** for perceived value of the collaboration for the community as a whole and for the marginalized and poorest groups)

7. How would you describe the results of this way of working together?

    - **Probe** for usefulness in the communities expressing their needs

    - In your opinion are the communities heard by health workers and local governments? How? Why so you think this?

    - **Probe** for active participation of different groups in terms of gender, socio-economic class etc

8. What do you think about the willingness of the three groups to play their roles?

Effectiveness - The extent to which the intended outcomes have been achieved, and were there any unintended outcomes?

9. During this past year, how would you describe changes in vaccination services? (**Probe** for **Changes in:** Distance to fixed immunization sites; Distance to outreach/mobile sites**;** Reliability of immunization supplies**;** Availability of health workers who vaccinate**;** Cost of immunization – direct, transportation, indirect)

10. Looking back on this year, how would you describe changes in the community due to vaccination? (**Probe** for **Changes in:** Immunization seeking behaviour for all groups in the community; access of immunization activities especially to the poorest and most marginalized groups. **Probe** for changes in awareness of REW activities by the communities; capacity building of the communities in the participatory approach)

11. How can these changes been explained - what do you think has made it possible for these changes to happen? Why? What else?

12. What do you think has made it difficult for changes to happen? Why? What else?

Opportunities for Sustainability – The extent to which what may have been achieved using the PAR can be sustained after the withdrawal of external support.

In this section ask specifically for the positive changes as a result of the participatory approach that have been described by the respondents in the previous sections

13. In your opinion, what are the things which can make these achievements continue working even if there is no outside help? **(Probe** for examples of the use of local resources/ capacities and /or networks that are (or can be) effectively used to sustain the achievements of the response**. Probe** for the extent to which the community feels as if the immunization planning and work

belong to them? **Ask for examples** of how the community has demonstrated ownership and capacity to self-support in the project)

14. In your opinion how long do you expect that the behavioural changes among the health workers, local government and communities (**ask for each separately**) will last? Why?

15. Do you think this way of working together can last? For how long? Why? Why not?

16. What do you think about introducing this way of working in other areas of health and other sectors? Why? Why not?

Closing:

Let's take a moment to review our work. [Summary of work] This concludes the focus group. Thank you for your time and participation.

Please add some information on characteristics of the group:

Background Characteristics:

Number of women

Number of men

Age range of the women

Age range of the men

No of children

Marital status

Occupation

IN DEPTH INTERVIEW GUIDE – HEALTH WORKERS

Study titles	**Increasing the utilization of Immunization in Ogun State of Nigeria using participatory evaluation and action research AND Formative PAR Evaluation**
Date	April 2017
Name of funding organizations	3ie and BMGF

Name of Lead Principal Investigator	Dr Ngozi N. Akwataghibe
Institution	Royal Tropical Institute, the Netherlands
Position	Associate/ Health Advisor
Address	Mauritskade 63, 1092AD Amsterdam
Telephone	+2348121184500
Email	n.akwataghibe@kit.nl

In-depth interview guide for health workers on Immunization issues in Remo North LGA, Ogun State

The overall questions to be answered during these interviews relate to how the health workers have adapted the REW strategy to match with the expectations and needs of the communities; the perceived value of involving the communities, health workers and local government in participatory planning and implementation of immunization activities; and the changes that have taken place as a result of this way of working together.

Total participant time: [60-90 minutes]

This is a general guide for conducting interviews. This guide may be modified as needed for each interview, and experience conducting interviews will be used to inform subsequent interviews.

Before the interview begins, complete the informed consent form.

Introduction: [Time]

Good Morning/Afternoon Sir/Madam, I am [name], working for the Royal Tropical Institute in the Netherlands. We are doing a research – a formative evaluation on **the use of participatory evaluation and action research to increase immunization utilization in Ogun state.**

We are conducting this evaluation to understand if and how a participatory approach in which the communities develop a plan together with health providers and government will enable them to work better together and to improve the use of immunization for different groups in the community. We would like to understand if and how active participation of the communities, health workers and local government in issues relating to immunization services can occur in a sustainable way what the outcomes will be (are). Your views are important and we appreciate your participation.

The objectives of this interview are:

- To find out how the expectations and needs of the communities regarding immunization are being met by the health workers
- To find out your views of the possibilities and value of the communities, health workers and local government working together in a participatory way in immunization delivery.
- To find out the changes that have taken place as a result of the communities, health workers and local government working together in immunization issues in a participatory way and understand what has made these changes happen (or not)

You were chosen to participate because you are a health worker involved in immunization service delivery in Remo North LGA. Interviews enable us to get more in-depth information about a particular topic. We are very interested to hear your input.

If it is okay with you, I will be recording our conversation. The purpose of this is so that I can get all the details, but at the same time be able to carry on an attentive

conservation with you. Only the research team will have access to the tapes and they will be destroyed as soon as they are transcribed.

The information that you give us is completely confidential. We will not associate your name with anything that you say. If you don't understand a question, please let us know. You may refuse to answer any questions or withdraw from the study at any time.

Do you have any questions? [Respond to questions]

If you have any questions now or after the interview has ended, you can always talk to a study team member like me or contact the Principal Investigator whose information is on the consent form you completed.

I'd like to start by having you briefly describe your role and responsibilities as a health worker in this facility in Remo North LGA.

At Baseline and Endline – Introductory Questions

1. How would you describe use of immunization services by this community?
    - Are there differences for different groups? For the poor?
2. How are immunization services provided in this community? (**Probe** for the stakeholders at all levels including community structures/ committees that are involved in immunization services in this community; Probe for perception of access for different groups; **Probe** for immunization activities by health services, LGA, NGO etc)
3. In your opinion has the immunization programme been responsive to the needs of the community? How? Why?
4. How do you ensure that everyone in the community is reached by the interventions? (**Probe** for equal access to services and information for all groups including the most vulnerable groups)
5. Who in the community are you collaborating with regarding immunization?
    - In what way?
    - What are the experiences with this collaboration?
    - How can this be improved from both sides?

Group Dynamics and Social Network related to immunization

6. How would you describe the roles of the community, health workers and local government in decision making relating to immunization now? (**Ask for each group separately**) (**Probe** for who or what group influences vaccination; in what way they influence; what do you think has changed over time? How? **Use visualization** - Would it be possible for us to draw a diagram of the network of influence? (research assistant will help with this) (**Probe** for type of power - formal, informal, financial etc)

7. How would you describe the current relationship between the communities and the health workers?

    - How do you work together at the moment with the communities?
    - What do these groups do together now?
    - What happens when you meet together to discuss issues such as health/child care etc.?

8. How would you describe the relationship between the communities, health workers and the local government in this new arrangement that was put in place or immunization delivery (**Probe** for group dynamics – what structures are in place eg MoUs etc? How diverse are the participants in the groups in terms of SES, gender distribution, religious and cultural beliefs, etc; How has relations worked between and within the groups? Are there any shifts in power? How? And for which groups?)

Relevance of the Communities working together with the local government and health workers in immunization (Whether the PAR approach enabled the adaptation of immunization activities to meet the needs of the targeted communities, health workers and local governments)

9. In your opinion, what activities do you consider participatory (i.e where everybody took part)?

    - Who participated? And in what way?
    - **Probe** for who does what, who takes decisions - ask relating to all three groups; **Probe** for perceptions of usefulness/importance of what the three groups are doing, ask for reasons; **Probe** for perceived value of the collaboration for the community as a whole and for the marginalized and poorest groups)

10. How would you describe the results of this way of working together?

    - **Probe** for usefulness in the communities expressing their needs
    - In your opinion are the communities heard by health workers and local governments? How? Why so you think this?
    - **Probe** for active participation of different groups in terms of gender, socio-economic class etc

Efficiency - The extent to which the Participatory, evaluation and action approach has been implemented as intended?

11. How did the PAR work?

    - Were there changes in the groups participating in the JAPs and their implementation?
    - Were activities implemented as planned?

- How would you describe the availability of all you needed during the planning and action phase of this project? (**Probe** for resources (financial, expertise, time) - available in time and sufficiently?)

12. How would you describe the use of the developed Joint Action Plans? (**Probe** for the way the JAPs were developed and their use in planning for the subsequent immunization activities)

13. What do you think about the willingness of the three groups to play their roles? In what ways did they facilitate or hinder efficient implementation?

Effectiveness - The extent to which the intended outcomes have been achieved, and were there any unintended outcomes?

14. Looking back on this year, how would you describe changes in the health workers' behaviour due to the participatory approach of working? (**Probe** for changes in skills and responsiveness of the health workers; REW strategy modifications due to the JAPs; capacity in participatory approach;) How? Please give some **examples**

15. During this past year, how would you describe changes in vaccination services? (**Probe** for Changes in: Distance to fixed immunization sites; Distance to outreach/mobile sites; Reliability of immunization supplies; Availability of health workers who vaccinate; Cost of immunization – direct, transportation, indirect)

16. Looking back on this year, how would you describe changes in the community due to vaccination? (**Probe** for Changes in: Immunization seeking behaviour for all groups in the community; access of immunization activities especially to the poorest and most marginalized groups. **Probe** for changes in awareness of REW activities by the communities; capacity building of the communities in the participatory approach)

17. How can these changes been explained - what do you think has made it possible for these changes to happen? Why? What else?

18. What do you think has made it difficult for changes to happen? Why? What else?

19. In your opinion, have there been any unintended outcomes? If yes, please could you elaborate?

Opportunities for Sustainability – The extent to which what may have been achieved using the PAR can be sustained after the withdrawal of external support.

In this section ask specifically for the positive changes that have been described by the respondent in the previous sections

20. In your opinion, what are the things which can make these achievements continue working especially if there is no outside help? **(Probe** for examples of the use of local resources/ capacities and /or networks that are (or can be) effectively used to sustain the achievements of the response**)**

21. How would you describe the extent to which everybody involved has taken ownership of this project? **(Probe** for the MOH, LG, ward authorities, communities, community leaders and health workers – **ask for examples** of

how each group has demonstrated ownership and capacity to self-support in the project)

22. In your opinion how long do you expect that the behavioural changes among the health workers, local government and communities (**ask for each separately**) will last? Why?

Closing:

This concludes the interview. Thank you for your time and participation.

BACKGROUND VARIABLES

(To be filled in by the interviewer)

Male / Female

Age

Profession/Position

No of years of experience overall (and in this facility)

No of years of experience working in immunization

IN DEPTH INTERVIEW GUIDE – POLICY MAKERS

Study titles	**Increasing the utilization of Immunization in Ogun State of Nigeria using participatory evaluation and action research AND Formative PAR Evaluation**
Date	April 2017
Name of funding organizations	3ie and BMGF

Name of Lead Principal Investigator	Dr Ngozi N. Akwataghibe
Institution	Royal Tropical Institute, the Netherlands
Position	Associate/ Health Advisor
Address	Mauritskade 63, 1092AD Amsterdam
Telephone	+2348121184500
Email	n.akwataghibe@kit.nl

In-depth interview guide for policy makers on Immunization issues in Ogun State and Remo North LGA

Overall questions to be answered during these interviews relate to policy issues relating to the REW strategy and its implementation; the group dynamics and the social network of the stakeholders involved in the immunization programme; the receptivity of the PAR approach by government at federal, state and local levels; and the effects of the PAR approach in immunization delivery and utilization.

Total participant time: [60-90 minutes]

This is a general guide for conducting interviews. This guide may be modified as needed for each interview, and experience conducting interviews will be used to inform subsequent interviews.

Before the interview begins, complete the informed consent form.

Introduction:

Good Morning/Afternoon Sir/Madam, I am [name], working for the Royal Tropical Institute in the Netherlands. We are doing a research – a formative evaluation on **the use of participatory evaluation and action research to increase immunization utilization in Ogun state.**

We are conducting this evaluation to understand if and how a participatory approach in which the communities develop a plan together with health providers and government will enable them to work better together and to improve the use of immunization for different groups in the community. We would like to understand if and how active participation of the communities, health workers and local government in issues relating to immunization services can occur in a sustainable way and what the outcomes will be (or are- at endline). Your views are important and we appreciate your participation.

The objectives of this interview are:

- To find out more about policy issues relating to the REW strategy including the community links and issues relating to the implementation of the strategy
- To find out the receptivity of government at federal, state and local levels of enhanced community engagement in immunization planning and delivery through a particpatory approach.
- To find out the changes that have taken place as a result of the communities, health workers and local government working together in immunization issues in a participatory way and the factors responsible for the changes

You were chosen to participate because you are a policy maker involved in immunization service delivery in Ogun state. Interviews enable us to get more in-depth information about a particular topic. We are very interested to hear your input.

If it is okay with you, I will be recording our conversation. The purpose of this is so that I can get all the details, but at the same time be able to carry on an attentive

conservation with you. Only the research team will have access to the tapes and they will be destroyed as soon as they are transcribed.

The information that you give us is completely confidential. We will not associate your name with anything that you say. If you don't understand a question, please let us know. You may refuse to answer any questions or withdraw from the study at any time.

Do you have any questions? [Respond to questions]

If you have any questions now or after the interview has ended, you can always talk to a study team member like me or contact the Principal Investigator whose information is on the consent form you completed.

I'd like to start by having you briefly describe your role and responsibilities as a policy maker in Ogun State.

Introductory Questions

I'm now going to ask you some questions about policy issues relating to the REW strategy and issues relating to the implementation of the strategy. I would like you to answer to the best of your ability. If you do not know the answer, please feel free to say so.

1. How would you describe use of immunization services by this community?

    - Are there differences for different groups? For the poor?

2. What are the main issues you face as a policy maker in terms of immunization?

    - And in the implementation of the REW strategy? (**Probe** for community links to the REW strategy and how the structures work)

3. How would you describe the capability at State/LGA and health facility levels to deliver on expected outputs/ expected/ planned results regarding immunization? (**Probe** for competencies, resources - both financial and human resources; for health facilities also **probe** for staffing and workload, availability of immunization supplies, outreach supplies; probe for support available at different levels)

4. How do you ensure that everyone in the community is reached by the immunization interventions and has equal access to services and information, including the most vulnerable groups? (**Ask** for their opinion of who the vulnerable groups are; **Probe** for any special strategies for vulnerable groups. **Ask for examples)**

Group Dynamics and Social Network related to immunization

5. How would you describe the roles and influence of the different stakeholders involved in decision making relating to immunization now? (**Probe** for influence of stakeholders at State/LG level (government, non-government,

private sector – profit making orgs, community leaders/groups, women inclusion?? **Probe** for type of power – formal, informal, financial etc),

- How do they collaborate? (**Use visualization** - Would it be possible for us to draw a diagram of the network of influence - research assistant will help with this?)

6. How would you describe the relationship between the communities, health workers and the local government in this new arrangement that was put in place or immunization delivery (Probe for group dynamics – what structures are in place e.g. MoUs etc.? How diverse are the participants in the groups in terms of SES, gender distribution, religious and cultural beliefs, etc.; How has relations worked between and within the groups? Are there any shifts in power? How? And for which groups?)

7. How would you describe the roles of the community, health workers and local government in decision making relating to immunization now? (**Ask for each group separately**) What do you think has changed? How?

8. In your opinion, what is the receptivity of the PAR process in immunization service delivery at all three levels of government - federal, state and local levels? How can receptivity be ensured and sustained at all three levels?

    - Who are the relevant stakeholders to engage?

Relevance of the Communities working together with the local government and health workers in immunization (Whether the PAR approach enabled the adaptation of immunization activities to meet the needs of the targeted communities, health workers and local governments)

9. In your opinion, what activities do you consider participatory (i.e where everybody took part)?

    - Who participated? And in what way? **(Probe** for who does what, who takes decisions, who participates in what – ask relating to all three groups; **Probe** for perceptions of usefulness/importance of what the three groups are doing, ask for reasons; **Probe** for perceived value of the collaboration for the community as a whole and for the marginalized and poorest groups)

10. How would you describe the results of this way of working together? (**Probe** for usefulness in the communities expressing their needs)

    - In your opinion are the communities heard by health workers and local governments? How? Why so you think this? (**Probe** for active participation of different groups in terms of gender, socio-economic class etc)

Efficiency - The extent to which the Participatory, evaluation and action approach has been implemented as intended?

11. How do you think the PAR worked?

- Were there changes in the groups participating in the JAPs and their implementation?
- Were activities implemented as planned?
- How would you describe the availability of all that was needed during the planning and action phase of this project? (**Probe** for resources (financial, expertise, time) - available in time and sufficiently?)

12. How would you describe the use of the developed Joint Action Plans? (**Probe** for the way the JAPs were developed and their use in planning for the subsequent immunization activities)

13. What do you think about the willingness of the three groups to play their roles? In what ways did they facilitate or hinder efficient implementation?

Effectiveness - The extent to which the intended outcomes have been achieved, and were there any unintended outcomes?

14. Looking back on this year, how would you describe changes in the health workers' behaviour due to the participatory approach of working? (**Probe** for changes in skills and responsiveness of the health workers; REW strategy modifications due to the JAPs; capacity in participatory approach;) How? Please give some **examples**

15. During this past year, how would you describe changes in vaccination services? (Probe for Changes in: Distance to fixed immunization sites; Distance to outreach/mobile sites; Reliability of immunization supplies; Availability of health workers who vaccinate; Cost of immunization – direct, transportation, indirect)

16. Looking back on this year, how would you describe changes in the community due to vaccination? (Probe for Changes in: Immunization seeking behaviour for all groups in the community; access of immunization activities especially to the poorest and most marginalized groups. Probe for changes in awareness of REW activities by the communities; capacity building of the communities in the participatory approach)

17. How can these changes been explained - what do you think has made it possible for these changes to happen? Why? What else?

18. What do you think has made it difficult for changes to happen? Why? What else?

19. In your opinion, have there been any unintended outcomes? If yes, please could you elaborate?

Opportunities for Sustainability – The extent to which what may have been achieved using the PAR can be sustained after the withdrawal of external support.

In this section ask specifically for the positive changes that have been described by the respondent in the previous sections

20. In your opinion, what are the things which can make these achievements continue working especially if there is no outside help? **(Probe** for examples of the use of local resources/ capacities and /or networks that are (or can be) effectively used to sustain the achievements of the response**)**

21. How would you describe the extent to which everybody involved has taken ownership of this project? **(Probe** for the MOH, LG, ward authorities, communities, community leaders and health workers – **ask for examples** of how each group has demonstrated ownership and capacity to self-support in the project)

22. In your opinion how long do you expect that the behavioural changes among the health workers, local government and communities (**ask for each separately**) will last? Why?

23. What would facilitate buy-in of the government at the different levels?

Closing:

This concludes the interview. Thank you for your time and participation.

BACKGROUND VARIABLES

(To be filled in by the interviewer)

Male / Female

Age

Profession/Position

Level of government (Federal, state of local government)

No of years of experience

In-depth interview guide for - Ward Development and Social Mobilization Committee members

Study titles	**Increasing the utilization of Immunization in Ogun State of Nigeria using participatory evaluation and action research AND Formative PAR Evaluation**
Date	April 2017

Name of funding organizations	3ie and BMGF

Name of Lead Principal Investigator	Dr Ngozi N. Akwataghibe
Institution	Royal Tropical Institute, the Netherlands
Position	Associate/ Health Advisor
Address	Mauritskade 63, 1092AD Amsterdam
Telephone	+2348121184500
Email	n.akwataghibe@kit.nl

In-depth interview guide for Community (Ward Development and Social Mobilization) Committee members on Immunization issues in Remo North LGA, Ogun State

The overall questions to be answered during these interviews relate to the activities of the Community committees (Ward Development committees (WDC) and Social Mobilization committees (WDC/SMC)) in Remo North LGA; the perception of the WDC/SMC members of how the expectations and needs of the communities in Remo North regarding immunization are met and areas for improvement; and to identify perceived changes that have taken place already in the communities as a result of the immunization programme (*and at endline as a result of the communities being involved in the decision making with the government and health workers*)

Total participant time: [60-90 minutes]

This is a general guide for conducting interviews. This guide may be modified as needed for each interview, and experience conducting interviews will be used to inform subsequent interviews. When interviewing specify WDC or SMC as it relates to the respondent.

Before the interview begins, complete the informed consent form.

Introduction:

Good Morning/Afternoon Sir/Madam, I am [name], working for the Ogun State Primary Health Care Development Board. We are doing a formative evaluation on **the use of participatory evaluation and action research to increase immunization utilization in Ogun state.**

We are conducting this research because there are some unimmunized children across eight LGAs in Ogun State and most of them are in Remo-North LGA. We do not know what is responsible for this. A possible reason may be that the communities in those areas are not as involved with immunization services as expected.

We are conducting this research because we like to understand better what people's experiences are with the use of immunization for their small children and what can be done to improve these services. We intend to use your views to understand if and how the communities developing a plan together with health providers and government will enable them to work better together and to improve the use of immunization for different groups in the community. Your views are important and we appreciate your participation.

We expect that the knowledge gained will be used to encourage more active participation of the communities, health workers and local government in immunization issues.

The objectives of this interview are:

- To understand more about how the WDC/SMCs do their work and possible areas of improvement;

- To find out your views of the value of the communities, health workers and local government working together in a participatory way in immunization delivery.

- To find out the changes that have taken place already in the communities as a result of the vaccination programme and especially in the last year; and to understand the reasons for any changes that have taken place

You were chosen to participate because you are a member of the WDC/SMC in Remo North LGA. Interviews enable us to get more in-depth information about a particular topic. We are very interested to hear your input.

If it is okay with you, I will be recording our conversation. The purpose of this is so that I can get all the details, but at the same time be able to carry on an attentive conservation with you. Only the research team will have access to the tapes and they will be destroyed as soon as they are transcribed.

The information that you give us is completely confidential. We will not associate your name with anything that you say. If you don't understand a question, please let us know. You may refuse to answer any questions or withdraw from the study at any time.

Do you have any questions? [Respond to questions]

If you have any questions now or after the interview has ended, you can always talk to a study team member like me or contact the Principal Investigator whose information is on the consent form you completed.

I'd like to start by having you briefly describe your role and responsibilities as a member of the WDC/SMC in Remo North LGA.

At baseline and Endline: Introductory Questions

1. How would you describe use of immunization services by this community?

    - Are there differences for different groups? For the poor?

2. How are vaccination services provided in your community? (**Probe** for the stakeholders including other community structures/ committees that are involved in immunization services in this community; **Probe** for perception of access for different groups; **Probe** for activities of the WDC/SMC - **Probe** for immunization campaigns, community mobilization, conflict resolution relating to immunization issues in the wards; Probe for immunization activities by health services, LGA, NGO etc)

    - When do these activities take place?

    - What do you think about these activities?

Group Dynamics and Social Network related to immunization

3. How would you describe the role of the community in decision making relating to immunization now? **Probe** for who or what group influences vaccination; in what way they influence; what do you think has changed over time? How?

Probe for the position of the WDC/SMC in the power/influence network; **Use visualization** - Would it be possible for us to draw a diagram of the network of influence? (research assistant will help with this) (**Probe** for type of power - formal, informal, financial etc)

- How do you think this influences the work of the WDC/SMC?

4. How would you describe the current relationship between the communities and the health workers?

   - How do they work together at the moment with the health workers?
   - What do these groups do together now?
   - What happens when you meet together to discuss issues such as health/child care etc.?

5. How would you describe the relationship between the communities, health workers and the local government in this new arrangement that was put in place or immunization delivery (Probe for group dynamics – what structures are in place e.g. MoUs etc.? How diverse are the participants in the groups in terms of SES, gender distribution, religious and cultural beliefs, etc.; How has relations worked between and within the groups? Are there any shifts in power? How? And for which groups?)

6. What role has the WDC/SMC been able to play in this new way of working?

   - How has this worked out?
   - Why?

Relevance of the Communities working together with the local government and health workers in immunization (Whether the PAR approach enabled the adaptation of immunization activities to meet the needs of the targeted communities, health workers and local governments)

7. How would you describe the way immunization issues are addressed by the communities, health workers and local government? (**Probe** for whether the three groups are working together and how)

   - **Probe** for who does what, who takes decisions, who participates in what – ask relating to all three groups; **Probe** for perceptions of usefulness/importance of what the three groups are doing, ask for reasons; **Probe** for perceived value of the collaboration for the community as a whole and for the marginalized and poorest groups)

8. How would you describe the results of this way of working together?

   - **Probe** for usefulness in the communities expressing their needs
   - In your opinion are the communities heard by health workers and local governments? How? Why so you think this?

- **Probe** for active participation of different groups in terms of gender, socio-economic class etc

9. What do you think about the willingness of the three groups to play their roles?

Effectiveness - The extent to which the intended outcomes have been achieved, and were there any unintended outcomes?

10. During this past year, how would you describe changes in vaccination services? (**Probe** for **Changes in:** Distance to fixed immunization sites; Distance to outreach/mobile sites**;** Reliability of immunization supplies**;** Availability of health workers who vaccinate**;** Cost of immunization – direct, transportation, indirect)

11. Looking back on this year, how would you describe changes in the community due to vaccination? (**Probe** for **Changes in:** Immunization seeking behaviour for all groups in the community; access of immunization activities especially to the poorest and most marginalized groups. **Probe** for changes in awareness of REW activities by the communities; capacity building of the communities in the participatory approach)

12. How can these changes been explained - what do you think has made it possible for these changes to happen? Why? What else?

13. What do you think has made it difficult for changes to happen? Why? What else?

Opportunities for Sustainability – The extent to which what may have been achieved using the PAR can be sustained after the withdrawal of external support.

In this section ask specifically for the positive changes as a result of the participatory approach that have been described by the respondents in the previous sections

14. In your opinion, what are the things which can make these achievements continue working even if there is no outside help? **(Probe** for examples of the use of local resources/ capacities and /or networks that are (or can be) effectively used to sustain the achievements of the response**. Probe** for the extent to which the community feels as if the immunization planning and work belong to them? **Ask for examples** of how the community has demonstrated ownership and capacity to self-support in the project)

15. In your opinion how long do you expect that the behavioural changes among the health workers, local government and communities (**ask for each separately**) will last? Why?

Closing:

This concludes the interview. Thank you for your time and participation.

BACKGROUND VARIABLES

(To be filled in by the interviewer)

Male / Female

Age

Profession

Position in the WDC/SMC

No of years in the WDC/SMC

In-depth interview guide for community leaders

Study titles	**Increasing the utilization of Immunization in Ogun State of Nigeria using participatory evaluation and action research AND Formative PAR Evaluation**
Date	April 2017
Name of funding organizations	3ie and BMGF

Name of Lead Principal Investigator	Dr Ngozi N. Akwataghibe
Institution	Royal Tropical Institute, the Netherlands
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In-depth interview guide for community leaders on Immunization issues in Remo North LGA, Ogun State

The overall questions to be answered during these interviews relate to the expectations and needs of the communities in Remo North regarding immunization and their use of immunization services; community linkages to the immunization programme; perceived changes that have taken place already in the communities as a result of the immunization programme (*and at endline as a result of the communities being involved in the decision making with the government and health workers*)

Total participant time: [60-90 minutes]

This is a general guide for conducting interviews. This guide may be modified as needed for each interview, and experience conducting interviews will be used to inform subsequent interviews.

Before the interview begins, complete the informed consent form.

Ensure you observe proper protocols with community leaders.

Introduction:

Good Morning/Afternoon Sir/Madam, I am [name], working for the Ogun State Primary Health Care Development Board. We are doing a formative evaluation on **the use of participatory evaluation and action research to increase immunization utilization in Ogun state.**

We are conducting this research because we like to understand better what people's experiences are with the use of immunization for their small children and what can be done to improve these services. We intend to use your views to understand if and how the communities developing a plan together with health providers and government will enable them to work better together and to improve the use of immunization for different groups in the community. Your views are important and we appreciate your participation.

The objectives of this interview are:

- To find out what the communities in Remo North LGA expect and need with regards to the vaccination of their young children and how those expectations and needs are being met.
- To find out your views of the value of the communities, health workers and local government working together in a participatory way in immunization delivery.
- To find out the changes that have taken place already in the communities as a result of the vaccination programme and especially in the last year; and to understand the reasons for any changes that have taken place

You were chosen to participate because you are a community leader in Remo North LGA. Interviews enable us to get more in-depth information about a particular topic. We are very interested to hear your input.

If it is okay with you, I will be recording our conversation. The purpose of this is so that I can get all the details, but at the same time be able to carry on an attentive conservation with you. Only the research team will have access to the tapes and they will be destroyed as soon as they are transcribed.

The information that you give us is completely confidential. We will not associate your name with anything that you say. If you don't understand a question, please let us know. You may refuse to answer any questions or withdraw from the study at any time.

Do you have any questions? [Respond to questions]

If you have any questions now or after the interview has ended, you can always talk to a study team member like me or contact the Principal Investigator whose information is on the consent form you completed.

I'd like to start by having you briefly describe your role and responsibilities as a community leader in Remo North LGA.

Introductory Questions

I'm now going to ask you some questions about how the expectations and needs of the communities in Remo-North LGA regarding immunization are being met and I would like you to answer to the best of your ability. If you do not know the answer, please feel free to say so.

1. How would you describe use of immunization services by this community?
    - Are there differences for different groups? For the poor?
2. How are vaccination services provided in your community? (**Probe** for the stakeholders including other community structures/ committees that are involved in immunization services in this community; **Probe** for perception of access for different groups; **Probe** for immunization campaigns, community mobilization, conflict resolution relating to immunization issues in the wards; Probe for immunization activities by WDC/SMC, health services, LGA, NGO etc)
    - When do these activities take place?
    - What do you think about these activities?
    -
3. What are, according to you, the issues for vaccination in your community?
    - What would you consider the successes?
    - What would you consider the problems?
    - Do different groups have different problems? Please explain and give examples
    - What can community groups do to overcome problems?

Group Dynamics and Social Network related to immunization

4. How would you describe the role of the community in decision making relating to immunization now? **Probe** for who or what group influences vaccination; in what way they influence; what do you think has changed over time? How? **Use visualization** - Would it be possible for us to draw a diagram of the network of influence? (research assistant will help with this) (**Probe** for type of power - formal, informal, financial etc)

5. How would you describe the current relationship between the communities and the health workers?

    - How do they work together at the moment with the health workers?
    - What do these groups do together now?
    - What happens when the communities and health workers meet together to discuss issues such as health/child care etc.?

6. How would you describe the relationship between the communities, health workers and the local government in this new arrangement that was put in place or immunization delivery (**Probe** for group dynamics – what structures are in place eg MoUs etc? How has this worked between and within the groups? Are there any shifts in power? How? And for which groups?)

Relevance of the Communities working together with the local government and health workers in immunization (Whether the PAR approach enabled the adaptation of immunization activities to meet the needs of the targeted communities, health workers and local governments)

7. How would you describe the way immunization issues are addressed by the communities, health workers and local government? (**Probe** for whether the three groups are working together and how)

    - **Probe** for who does what, who takes decisions, who participates in what – ask relating to all three groups; **Probe** for perceptions of usefulness/importance of what the three groups are doing, ask for reasons; **Probe** for perceived value of the collaboration for the community as a whole and for the marginalized and poorest groups)

8. How would you describe the results of this way of working together?

    - **Probe** for usefulness in the communities expressing their needs
    - In your opinion are the communities heard by health workers and local governments? How? Why so you think this?
    - **Probe** for active participation of different groups in terms of gender, socio-economic class etc

9. What do you think about the willingness of the three groups to play their roles?

Effectiveness - The extent to which the intended outcomes have been achieved, and were there any unintended outcomes?

10. Looking back on this year, how would you describe changes in the community due to vaccination? (**Probe** for **Changes in:** Immunization seeking behaviour for all groups in the community; access of immunization activities especially to the poorest and most marginalized groups. **Probe** for changes in awareness of REW activities by the communities; capacity building of the communities in the participatory approach)

11. How can these changes been explained - what do you think has made it possible for these changes to happen? Why? What else?

12. What do you think has made it difficult for changes to happen? Why? What else?

Opportunities for Sustainability – The extent to which what may have been achieved using the PAR can be sustained after the withdrawal of external support.

In this section ask specifically for the positive changes as a result of the participatory approach that have been described by the respondents in the previous sections

13. In your opinion, what are the things which can make these achievements continue working even if there is no outside help? **(Probe** for examples of the use of local resources/ capacities and /or networks that are (or can be) effectively used to sustain the achievements of the response**. Probe** for the extent to which the community feels as if the immunization planning and work belong to them? **Ask for examples** of how the community has demonstrated ownership and capacity to self-support in the project)

14. In your opinion how long do you expect that the behavioural changes among the health workers, local government and communities (**ask for each separately**) will last? Why?

Closing: [Time]

This concludes the interview. Thank you for your time and participation.

BACKGROUND VARIABLES

(To be filled in by the interviewer)

Male / Female

Ward

Community

Title

No of years as a community leader

Annex 12: Research Protocol

Evaluation Design

A Pre-test / Post-test approach was used in the formative evaluation. The baseline and endline studies were carried out in the two focal wards using mixed methods. A zero-draft evaluation framework was developed at the start of the project, detailing the evaluation sub-questions, primary and secondary indicators and how data would be collected and analysed (see Annex 8)

Quantitative - a **survey** at household level targeted at caregivers responsible for the vaccination of at least one under-five child; and **secondary analysis of NHMIS** data to assess utilization of immunization and coverage. To appreciate the **cost-effectiveness** of the PAR intervention, financial data collection on inputs and expenses were carried out at project- and site levels, to provide an indication of the costs at which the eventual results were delivered.

Qualitative – IDI of key stakeholders including policy makers at state levels, local government officials, community leaders and health workers including the PAR participants were used to find out if the PAR intervention worked in the context and with the planned implementation structures and processes. FGD with community members was used to explore the uptake of the PAR intervention by the communities. Monitoring and observational data also provided further insight into the PAR process and the implementation of the JAPs.

Data Collection instruments

Quantitative instruments

Survey 'closed' questionnaires were administered to sampled community members in Remo-North LGA at household level. The instrument for this study was developed from standard survey instruments for community and immunisation surveys in developing countries. In addition to socio-demographic questions (age, education, years of schooling, literacy and occupation/employment of the respondents and their spouses, household structure and characteristics), indicators such as knowledge and utilization of immunization facilities; community links and child immunisation details were collected quantitatively. The questions were mainly closed ended with occasional open-ended items.

NHMIS data - Secondary analysis of Immunization data in both Ipara and Ilara Wards of Remo North LGA was conducted using the NHMIS. This tool is the nationally recognized instrument for immunization data collection in Nigeria. The revised version of the tool (NHMIS Version 2013) was adopted at the state level and is currently used in all the Primary Health Care (PHC) centres in Ogun State. A web-based tool, District Health Information System (DHIS) 2.0 was developed to capture data real time on monthly basis from the health facilities. This Web-based tool has 236 questions on Maternal and Child Health care services including immunization. Secondary analysis was carried out to see the trend of immunization uptake in the Ilara and Ipara wards of Remo North LGA. Some of the indicators analysed include: immunization coverage, dropout rates, immunization gaps (BCG – Measles) and categorization (accessibility & utilization).

Qualitative instruments

IDI was carried out with policy makers and key informants involved in immunization service delivery at state, local government and ward levels

At baseline, IDI were used to gain more insight into the experiences /successes with the REW strategy, collaborations with the community links to immunization service delivery; as well as facilitating factors and barriers to progress. At endline, IDI were used to gain insight into changes that occurred in the past one year in relation to immunization utilization, health and immunization services as well as community members' attitudes and behaviour towards immunization. Additionally, IDI with the PAR participants provided their perceptions of the PAR process including consensus building, decision making within the dialogues, voice and feeling of being heard, trust building, conflict issues, implementation of planned activities, ownership and willingness of the three groups to play their roles.

FGD were carried out with community members. To ensure the free participation of men and women, participants were separated according to gender and age – women of child bearing age (WCBA) and older women; young men and older men. Investigators ensured a blend of socio-economic groups during the sampling of participants and the FGD were conducted until saturation of information was achieved. The FGD (using topic guides) were used to explore whether each group considered the immunization interventions relevant, in what way and how they could have influenced the outcomes. At baseline, changes that had taken place over the past five years due to the immunization programme were explored. The FGD explored the expectations and needs of the communities regarding immunization as well as their perception of health and immunization services and the community linkages to immunization service delivery. Household decision making on immunization as well as community networks of influence on immunization were also explored in the FGD at baseline to gain more insight into which individuals / groups needed to be part of the dialogues. At endline, changes that had taken place over the past year were explored in order to gain insight into the effectiveness of using the PAR mechanism to deliver the REW strategy.

Sampling Sizes and Procedures

Quantitative

Enumeration of households was conducted in the two wards by officials of the National Population Commission (NPC). This exercise derived updated maps of the community, with house and household numbers. This activity also identified houses with children under-five who were the focus of enquiry.

The survey sampling was conducted using the WHO modified cluster sampling method[6] This two-stage cluster sampling method was deployed across the two wards. We first identified naturally occurring clusters from the immunisation field activity. The population of these clusters was also collated. Thirty clusters were selected across the two wards

[6] Hoshaw-Woodard S. Description and comparison of the methods of cluster sampling and lot quality assurance sampling to assess immunization coverage. Geneva: Department of Vaccines and Biologicals, World Health Organization, 2001.

with the number of cluster in each ward being proportional to its relative population. This exercise derived a need to select 12 wards in Ilara and 18 in Ipara. Using probability proportional to size techniques, we identified the clusters for the study.

To identify households, in each cluster an arbitrary but central starting point was identified. A bottle was spun to choose direction of movement. Consecutive houses along this path were visited to identify households eligible for inclusion. If a house had more than one household with eligible children, a household was selected using a table of random numbers. One under-5 child was selected from households in seven consecutive homes. Where more than one eligible child was present in a household, one was selected using a table of random generated numbers. All eligible children were selected in the 7th household of each cluster as required by this method. The respondents in this study were caregivers of children under 5 in the selected wards. Individuals were eligible if they were currently domiciled in the ward. We excluded individuals with speech and perceptual challenges

Using this methodology obviates the need for formal sample size calculation. To estimate the difference between the proportion of unimmunized children which is estimated at 23% at present based on HMIS data and an endline estimate of 10% (alpha of 5% and power of 80%) would have derived a sample size of 127 children. However, we aimed to study a minimum of 210 children (at least 7 children from each of the 30 clusters) across the two selected wards. The study collected information from 210 adults relating to 215 children at baseline and information from 210 adults relating to 213 children at endline.

Qualitative

For the qualitative side of the research, purposive sampling was employed to select appropriate respondents for IDI and FGD. At baseline and endline, a total of 14 key informant interviews (KII) were carried out with stakeholders at national, state, local government and ward level. Stakeholders interviewed at the state level include State Immunization Officer (SIO), Health Educator and Cold Chain/Logistics Officer. Stakeholders interviewed at the local government level were LIO, Principal Medical Officer of Health (PMOH), Social Mobilization Committee (SMC) members and the Cold Chain/Logistics Officer. 10-12 IDI of community stakeholders were also carried out at baseline and endline. These included interviews with prime traditional rulers, community leaders, WDC and Community Development Committee (CDA) members and religious leaders in both Ilara and Ipara wards.

Health workers involved in immunization service delivery were purposively selected from the health facilities. A total of 4 frontline health workers were interviewed in both wards at baseline and a total of 6 at endline.

Also at both stages, 16 FGD were held with community members of the two focal wards.

At endline, IDI were conducted with 24 PAR participants from both wards who were in the JAC.

Training

Coaching of the PAR core team and three research assistants on PAR was facilitated by KIT. At baseline, training of the enumerators and qualitative data collectors was held from the 5th - 7th of May, 2016 at the Conference Hall of the Ogun State Primary Health Care Board, Abeokuta Ogun State. At endline, training was carried out from the 28th - 30th April at the same venue. The sessions were anchored by the evaluation team. A field work manual had been developed and sent for distribution to the research assistants before the training in order to familiarize them with the study and the tools. The field work manual was used as the training workshop reader. Training covered general issues of ethics, introduction of research, data collection and specific understanding of questionnaire items, topic guides and the study process. Training consisted of power point presentations and practical exercises; and was interactive. 22 enumerators and qualitative research assistants were trained at both baseline and at endline.

Pre-Test

A pre-test of the quantitative and qualitative instruments was conducted on Saturday, 7th May 2016 at Obada – Oko, Ewekoro LGA, a rural community at the outskirt of Abeokuta at baseline. At endline, piloting of the tools took place at Laderin community in Kuto ward in Abeokuta south LGA on April 1st, 2017. Review meetings were held afterwards for both the quantitative and qualitative data collection teams and feedback from the process was discussed; and instruments were adjusted based on the feedback.

Data Collection

Data collection was carried out by a team of three experienced researchers - the Lead Principal Investigator (PI), the PI and the PI (implementation); two trained research assistants functioned as coordinators for Ilara and Ipara respectively and a third coordinated all administrative and logistic processes. 14 enumerators and 8 qualitative research assistants were involved in the survey and qualitative data collection respectively. Data collection started in Ilara before progressing to Ipara. This was for ease of supervision and to ensure uniformity of implementation.

Endline data collection started from the 3rd April 2017 and lasted mainly till the 16th April 2017. Research review meetings were held intermittently to discuss experiences on the field and to correct errors seen during data entry and transcription which also took place simultaneously during data collection. Mop-up interviews as a result of adjustments made during review meetings (and follow up of respondents who had travelled) continued until May 2017.

Translations of the tools as well as back translation were carried out - the FGD guides used in the community interviews were developed in English and translated into the Yoruba language. Similarly, the household survey questionnaire was translated into the Yoruba language and administered by enumerators fluent in the language. The final survey questionnaires and interview guides were then used in the two focal wards.

Data Management

Transcription and data entry of survey data took place simultaneously during data collection. Two trained data entry clerks were assigned to the survey. A data editor was

appointed to ensure the monitoring, verification and management of data in order to ensure data quality. At endline, two data editors were used. Two Supervisors conducted spot checks on enumeration teams and observed data collection processes with immediate feedback to the enumerators as required. During data collection, at the end of each day, the supervisors and data editors reviewed the data collection process in plenary. Data editors conducted final questionnaire checks pre-entry with clarification from enumerators and revisits were conducted as required. Three transcribers were used for the qualitative component at baseline and five at endline.

Data Processing and Analysis

1.9.1 Quantitative

Questionnaires were checked daily on the field for errors and ambiguity. These were then entered into SPSS version 21. Qualitative variables were summarized as proportions and quantitative variables as means with standard deviations. A wealth index was derived using productive and non-productive household assets, household amenities and other measures of household living standard. These variables were dichotomized with optimal states/ownership of items coded as 1 and undesirable states/non-ownership coded as 0. These variables were then entered into a principal component analysis which was set to extract and store a single factor (wealth). Variables with factor loadings below 0.3 were then excluded to optimize model variance. The final wealth index derived explained 26% of observed variance. The continuous wealth index scores were then partitioned in quintiles and utilized for further analysis.

The primary study outcome was immunization completeness. Immunization was assessed as complete if an immunization card was sighted and three doses of DPT/Pentavalent vaccine as well as measles and yellow fever had been recorded as administered. A secondary measure of immunization completeness was derived and reported as present for individuals satisfying the primary outcome or reporting ownership of an immunization card (which could not be provided for inspection) and reporting the child had received DPT/Pentavalent, measles and yellow fever vaccines.

Descriptive statistics were calculated for each indicator using a survey design adjusted logistic generalized linear model. This method uses stratified analysis to estimate robust standard errors, taking into account the complex clustered sampling design used in the survey. As the sample framework used a proportion to population sample to assign clusters within wards and to select clusters within wards, the total sample was considered to be self-weighing at the ward level. Therefore, weighing of individual observations proportional to their respective sampling fractions was not applied.

To assess the association between covariate factors and the immunization coverage, univariate models were fit to the data and crude odds ratios were determined for each variable. Adjusted odds ratios correcting for confounding and possible association between individual predictor variables were calculated by fitting a multivariate model, including all covariates, to the data. As clustering of the outcome of interest was expected to reduce the effective sample size we limited the number of factors tested. Based on the design effect of immunization coverage measured in the 2013 Nigeria DHS

survey[7] of 1.62 an effective sample size of 215/162 = 133 was assumed. This sample size allowed for eight factors to be tested for associations with immunization coverage.

Column proportion tests were generated whenever frequency tables were compiled in order to compare categorical variables across wards (Ilara and Ipara) and/or across the levels of the intervention (baseline and endline). Tests were adjusted for all pairwise comparisons within a row of each innermost sub-table using the Bonferroni correction. Values in the same row and sub-table not sharing the same subscript were significantly different at $p < .05$ in the two-sided test of equality for column proportions. Cells with no subscript were not included in the test. Tests further assumed equal variances. Statistically significant differences at intervention level and at ward level were colour coded orange and green respectively to facilitate easier visualisation of results.

1.9.2 Cost effectiveness Analysis

The specific objectives of the Cost effectiveness Analysis (CEA) were to assess the costs and effectiveness of the intervention and to estimate incremental cost effectiveness ratio. Estimates of the direct costs associated with the PAR process were derived from the perspective of the provider, Ogun State PHCDB. These included all technical support from KIT, the associated cost of Ogun State government and field costs incurred in implementing the process. Costs incurred by patient such as time and travel costs were not included. Project research costs were also excluded. Since cost and outcomes were considered over one-year period - the study duration, 0% discount rate was applied to the base analysis. The health outcomes considered in the analysis were the additional number of children fully immunized, the additional number of children immunized per vaccine antigen according to the national immunization schedule and the percentage increase in the average monthly coverage. Effectiveness was measured using the number of additional children vaccinated per vaccine and the percentage difference in the average monthly coverage at baseline compared with endline. The period of May 2015 to April 2016 was considered as baseline. While the period of the intervention was from May 2016 to April 2017. Data was analyzed using Microsoft Excel 2013. In this analysis, cost effectiveness was defined as the ratio of incremental cost to incremental effectiveness as measured by increase in average monthly coverage per vaccine at the end of the PAR process and number of fully immunized children. One-way sensitivity analysis was conducted on the various cost parameters to determine the robustness of the cost effectiveness ratio. The CEA report is presented in Annex 10.

1.9.3 Qualitative

The qualitative data analysis process for this study commenced after the first phase of data collection and transcription and continued through the course of data collection, as more transcripts became available. Baseline assessment data collected from FGD of community members, and IDI of stakeholders were analysed using NVivo 11. Prior to data analysis, audiotaped and noted data collected from FGD and IDI were transcribed and translated from indigenous language (Yoruba) to English to make the data accessible to non-indigenous speaking members of the research team. Data from FGD and IDI that was conducted in English was transcribed without the need for translation.

[7] https://dhsprogram.com/pubs/pdf/FR293/FR293.pdf

For the qualitative analysis, a grounded theory approach (identifying emerging themes through coding and labelling qualitative data) was followed. Transcripts were read by two qualitative researchers, coded and common themes and sub-themes identified according to the research objectives, developed and a third qualitative researcher used this to code a few transcripts in order to ratify the codes and themes/sub-themes identified. Prior to this all the researchers had conducted an initial systematic and independent review of the transcripts, which involved several readings in order to obtain a complete sense of the texts.

The IDI and FGD were analysed using an interactive process with a three pronged approach: "noticing, collecting, and thinking."[8] Triangulation of data was carried out to compare data sources for reliability and to identify areas of agreement and disagreement across groups of respondents and within groups of respondents.

Quality Assurance

- Pre-testing – The quantitative and qualitative research tools were pre-tested and based on the results of the pre-test, the tools were edited and adapted. Quality control requires the design of tools in a participatory manner, the pre-testing of tools by a small sample of potential respondents as well as the translation and back-translation of tools. These were all done in this evaluation.

- Data entry of survey data took place simultaneously during the data collection. Erroneous entries were identified early and allowed for clarifications of entries and cleaning of data simultaneously at the collection phase. The data editors checked entries daily. Consistency checks in terms of skipping patterns, out of range values, missing, incomplete or inaccurate data were catered for.

- Coaching – KIT coached the PAR research team members in the design of the participatory action research, data collection, dialogue and action. KIT also provided technical support, supervision and monitoring throughout the process.

- Training– All the research team members and research assistants were trained in the use of the tools and interviewing skills, coding etc. Clear guidelines were established.

- Supervision – The Lead PI provided the overall supervision of the team during field work and the PI and coordinators assisted in the supervision of the enumerators/ research assistants.

- Qualitative Interviews were audio taped after permission was granted by the respondents and only audio devices of good quality were used.

Study Validity

Statistical conclusion validity refers to the ability to make an accurate assessment about whether the independent and dependent variables are related and about the strength of that relationship. So the two key questions here were: 1) Are the variables

[8] Qualitative data analysis. Seidel JV. Qualis Research, 1998

related? And 2) How strong is the relationship? Typically, null hypothesis significance testing is used to determine whether two variables are related in the population from which the study data were selected. To determine how STRONG a relationship is, effect size indicators are used. For this research, type 1 error for null hypothesis testing was set at 5%. Effects were compared primarily as proportions across groups of interest

External validity has to do with the degree to which the results of a study can be generalized to and across populations of persons, settings, times, outcomes, and treatment variations. A good synonym for external validity is generalizing validity because it always has to do with how well you can generalize research results. In our case, to ensure representative data of the study population (that is: the focal wards where the research is carried out – not the total population of Remo North LGA), we conducted a two-stage cluster design, a sampling scheme thought to be sufficient for most sampling of community health factors. Conceivably these results will probably also remain representative of the larger Remo North LGA as we sampled wards at extremes of functioning.

We aimed to maximize validity in the quantitative component of this evaluation by:

- Selection of study design
- Careful sampling using a two-stage cluster approach
- Develop, pre-test and training of tools
- Control confounding by design and analysis
- Minimize bias through standardization (good forms, clear definitions)
- Training includes validation of instruments
- Careful interpretation and careful analysis of data

We aimed to maximize validity in the qualitative component of this evaluation by:

- Triangulation
    - Different sources
    - Different methods
    - Multi-disciplinary teams
- Collect perspectives from different ‘actors’
- Jointly develop, pre-testing and training of tools
- Peer and participant checking: we validated data continuously in a participatory way with all the groups of stakeholders.

Ethical Considerations

Ethical permission and oversight for the PAR and formative evaluation were obtained from the University of Ibadan/University College Hospital Ibadan Ethics Board, the WHO Ethical Review Board and the Federal Medical Centre, Ogun State Ethics Board. Ethical approvals were obtained following the satisfactory review of study protocols and were given for an initial period of one year. The ethical requirements of justice, beneficence, non-maleficence and autonomy for this study were addressed.

Permission for the study was taken at three levels – from the state at the Primary Health Care Development Board (PHCDB) / MOH, the local government from the chairman of the Remo North LGA through the Primary Health Care Department and from the Community through established Community Development Associations and Community Development Committees and community leaders located in the wards where our research will be conducted. We ensured that in all instances, proper protocols were observed.

We provided simple but comprehensive informed consent forms which detailed the evaluation process and aims. Individuals were required to provide written consent by signing or thumb printing after demonstrating an understanding of the research. Copies of the consent statement were provided to all respondents as well as contact details of the research team to facilitate further enquiry if needed.

Confidentiality of data

Each respondent was informed of their right to cease the interview at any point or refrain from answering specific questions if they so desired. Participants were assured that responses would have no direct adverse consequences and would be treated in strict confidence.

For the dialogues, in order to enable adequate openness, the research team ensured that a "safe space" was created, in which the participants would have the assurance that their utterances would not be used against them, and that they would not suffer any disadvantages if they expressed critical or dissenting opinions. We achieved this by holding the dialogues in the LG town hall in Isara – the rationale noted by some stakeholders was that keeping the community stakeholders in a neutral environment and away from the vicinity of the king and the elders would likely be more comfortable for them and elicit more openness. This was also convenient for the research team members with regards to monitoring.

Beneficence

The study findings will benefit the local population directly given the community participatory nature of the research. Study tools were labelled and stored in secure facilities of the Ogun State PHCDB. Data was also stored on dedicated computer systems with standard security encrypted access. Data access is restricted to only members of the study team.

Non-maleficence

The study is not expected to cause any social harm.

Annex 13: Cost effectiveness analysis of the PAR

Executive Summary

Despite three decades of administering routine immunization to children below the age of five in Nigeria, coverage still remain inadequate in some parts to the country. Low immunization coverage poses a danger to the community through reducing herd immunity. As a means of developing context specific solutions to the various factors responsible for low immunisation coverage, a participatory approach was adopted in improving community linkages. An evaluation of the cost and effectiveness of increasing immunization coverage through strengthening community linkages using the participatory action research (PAR) approach in Remo North Local Government Area of Ogun state, Nigeria was subsequently undertaken.

The incremental cost associated with two rounds of dialogues and joint action plans was $32094.17 in two districts that the projects took place (US $ 14483.3). There was an increase in average monthly coverage for all vaccines considered in Ilara district, with the highest being an increase of 49% among fully immunised children However coverage decreased across all antigens in Ipara except for BCG which had an increase of 22% from baseline. The incremental cost per 1% increase in average monthly coverage for fully immunised children in Ilara was $295.59. The incremental cost effectiveness ratio is most sensitive variations in the cost of personnel and venue hiring.

1. Introduction

1.1 Background

The Global Vaccine Action Plan is the roadmap to preventing million deaths through more equitable access to vaccines sets the targets for national immunisation coverage rate at 90% and at least 80% in every district for the countries by the year 2020. (World Health Organisation, 2017). Three years to the set time, official country estimates for Nigeria in 2015 are still considerable lower than expected. According to Global Alliance for Vaccine and Immunisation (GAVI), the official estimates for Nigeria's DTP3 coverage rates is 74%. (GAVI, 2017). According to WHO, in 2015, an estimated 19.4 million infants worldwide were not reached with routine immunization services such as DTP3 vaccine. About 60% of these children live in 10 countries, one of which is Nigeria. The 2013 National Demographic Health Survey (National Population Commission (NPC) [Nigeria] AND ICF International, 2014) showed that only 25% of children aged 12 to 23 months were fully immunized in accordance to national standards while 21% of children in this age group were not unimmunized. Factors associated with this poor performance include low socio-economic class, low levels of maternal education and rural residence, weak health systems, hostile attitudes of health workers, conflicts between competing programmes (National Primary Health Care Development Agency, 2012)

In order to improve routine immunisation coverage, Nigeria adopted the WHO'S Reaching every District and adapted it as Reach Every Ward (REW) approach in 2005. The approach has five main components.

- Establishment of fixed and outreach/mobile immunization sites where nonexistent and re-establishment of non-viable sites in order to increase access to immunization services.
- Improved planning and management of resources
- Supportive supervision
- Community links with service delivery
- Monitoring and use of data for action

Despite this approach, immunisation coverage in Nigeria still inadequate and with varying levels of coverage across the different geopolitical zones in Nigeria. While fifty-two percent of children in the South East and South South zones are fully immunised, only 10 percent of the children in the North West are immunised (National Population Commission (NPC) [Nigeria] AND ICF International, 2014). This disparity exists across the different states and even within Local Government Areas (LGA) in a state. Among the states, Imo state has the highest percentage of full immunised children (62 percent) while Sokoto has the least percentage (1 percent) (National Population Commission (NPC) [Nigeria] AND ICF International, 2014).

Since 2009 using the REW approach, Ogun state has recorded a steady rise in routine immunization coverage rates across twenty Local Government Areas (LGAs) of its 28 LGAs. Some of these LGAS achieve rates as high as 100% coverage rate. However the remaining eight local government areas have a high burden of unimmuinized children. Remo-North LGA has the highest burden of unimmunized children (23%) while Ifo LGA has the lowest burden (2%).

Low vaccination coverage rates reduces herd immunity putting individuals at risk of an outbreak of vaccine preventable diseases. The case fatality of such diseases are high and the rates of under-five mortality in such communities also high. Those who survive, often suffer significant illness which limit achievement of their full physical and intellectual potentials. The exact factors responsible for the non-effectiveness of the REW strategies in the remaining 8 LGAs despite its effectiveness in 20 other LGAs is not clear. One reason that has been alluded to is poor linkage of communities in the affected LGAs to immunization service delivery. It is with this in mind, the Ogun State Primary Health Care Development Agency with the support of the key partners (Alliance for Health Policy and Systems Research, World Health Organization, Health Systems and Innovation Cluster) decided to conduct a Participatory Action Research to identify the possible reasons and proffer context specific solutions.

Participatory Action Research (PAR) is an approach to public health research based on reflection, data collection, and action that seeks to improve health and reduce health inequities through involvement of the local communities who, in turn, take actions to improve their own health (Fran Baum, October, 2006). It involves iterative cycles of reflection and action in conjunction with members of the affected communities. It is

hoped that using the PAR approach the community mobilization. Aspect will increase the coverage of immunisation

In this project, the research team working together with the members of the local communities - households, healthcare providers and local governments, will collect evidence to understand the factors responsible for low immunization coverage rates and work together to identify appropriate solutions. The use of the PAR approach in improving immunisation coverage is limited in Africa though it has been used in other areas in Africa successfully (Othieno C, 2009) (Mbwili-Muleya C, 2008). (A.D, 2006).

Using PAR has key benefits, these include learning about the local context while facilitating the suitability of the implementation and evaluation of research aims and outcomes for local context; flexibility for the natural evolution of the projects and the potential to realize aims and outcomes not apparent at the beginning of the project (Schneidner). Like every process, PAR has its limitations. These include but are not limited to difficulty in predicting processes and outcomes due to its broad nature; need for great effort, enthusiasm and widespread equal participation over long period of time and lack of clarity about research journey sometimes. It is hoped that the success achieved through this approach will be replicated in other LGAs with poor immunisation coverage rates in Ogun state.

Scaling up public health programs including immunization requires improving performance and ensuring long term financial sustainability. This entails having a knowledge of the required financial resources. Though the PAR approach has been in use for a while, there is a dearth of studies evaluating its economic impact. In a resource limited environment such as Nigeria, it is important to evaluate the financial requirements, more-so in the face of competing priorities before considering a scale up to other LGAS. Therefore we undertook an economic evaluation, cost effectiveness study to determine the incremental cost per each additional child immunized with the use of PAR approach incorporated into the routine REW strategy in one of the local government area council of Ogun state, Nigeria.

1.2 Objective

The objective of this report is to assess the cost and effectiveness of the PAR process over a one year period in strengthening community linkages of the REW Strategy. An understanding of and information on the cost implication and effectiveness of the intervention is necessary for decision making, outlining and planning for sustainable integration of PAR into the immunisation programme in Ogun state. This is also crucial for its reproduction in other states of the country.

The specific objectives of this analysis are:

- Assess the costs and effectiveness of the intervention
- Estimate incremental cost effectiveness ratio

2. Methods

2.1 Target Population

The target population is children under the age of five in Remo North LGA of Ogun state. Despite the increasing immunisation coverage in most LGAs of Ogun state, Remo North has been identified to have the largest burden of unimmunized children (23%). This large population of children constitute a risk to the population of immunised children in the advent of an outbreak of a vaccine preventable disease through reducing the herd immunity in their community.

Two focal wards Ipara and Ilara were chosen based on the availability of health facilities implementing the REW immunisation strategy. Children in these wards under the age of five were studied.

2.2 Study setting and location

The study location and setting are Ipara and Ilara wards of Remo North LGA, Ogun State. These wards have health facilities already implementing the nationally approved REW strategy for immunisation.

Ilara is a remote and rural farm settlement on the outskirts of Remo North LGA. It has a population of 6,949 individuals at 2017. It has poor access road limiting commercial activity. These poor access roads pose a challenge to health workers posted to work there, negatively affecting the retention of health workers. However the community structure is closely knit, with people living more clustered together than in Ipara. There is cohesion in terms of social network.

Ipara, the second ward has a population of 9,711 at baseline. Its population is more educated, a semi-rural community located close to the Lagos – Ibadan expressway. This main road connects the northern part of Nigeria with the economic capital (Lagos). Thus Ipara is more economically vibrant compared to Ilara as it serve as one of the many stopovers for travelers into Lagos. Ipara has better motorable roads however a less close knit social structure.

2.3 Study Perspective

Estimates of the direct costs associated with PAR process were derived from the perspective of the provider, Ogun State Ministry of health (SMOH). These included all financial support from KIT, the associated cost of Ogun State government and field costs incurred in implementing the process. Cost incurred by patient such as time and travel costs were not included. Project research costs were also excluded. These included development of research instruments for both baseline and endline survey, conduct of both surveys-(situational analysis and endline), development of field work manual, and refresher training of research team.

2.4 Intervention

The use of the participatory action research process in strengthening community mobilization of the REW was being explored. (Reach Each Ward Strategy).

Description of the PAR process

The participatory action research process to increasing immunisation coverage involved the conduct of a background analysis of immunisation coverage and utilisation in the two focal wards using a mix of quantitative and qualitative methods. The results of the analysis laid the foundation for the joint dialogue with key stakeholders of the community. The first set of dialogues between 4th of July 2016 to 9th July 2016. The PAR process was presented to all the stakeholders by the research team. The need for ownership of the process, possess a sense of responsibility towards action; and adequately voice their opinions during dialogue was explained. The need to develop realistic and feasible plan was discussed. Conflict resolution, tolerance of differing viewpoints were also made clear.

Dialogues held in the town hall of Isara, a neutral environment to promote openness of participants.

Dialogues held at three levels. First within each stakeholder group, (community members, health workers and local government officials. There were three stakeolder groups – 10 selected community members in Ipara and Ilara wards each, health workers in their respective wards and Remo-North local government officials. The participants of the dialogues were nominated by their broader groups and accepted the nominations voluntarily. Community dialogues held separately for men and women in each ward. For each of the ward, community members then subsequently had dialogues to identify priorities in immunisation coverage and deliberate on actions to increase coverage. An action plan for each ward was developed by each stakeholder group - Ipara, Ilara, Ipara Health workers, Ilara health workers and Remo LGA officials making a total of five action plan. The different dialogues by these five groups and the earlier dialogues by the men and women were all recorded and the process observed and captured using observation checklists. Facilitators and observers had been trained earlier in the use of the checklists. The observation checklists aimed to capture information relating to who starts a new topic, dominates discussions, disagrees, proposes solutions, insists on a point, interrupts others etc. The relevant checklists were developed for the different community groups, the health workers, local government officials and the joint group dialogues.

JOINT GROUP DIALOGUES – ILARA AND IPARA WARDS

After the development of action plan by each stakeholder group, a second series of dialogue was held. Representatives were nominated for inter-group dialogues. This series held between 6-7 community members (6-7) per ward; all the health workers in Ilara (2) and 3 health workers from Ipara and the local government nominees were only 2 per ward. Joint Action Plans for change were then developed for Ilara and Ipara by representatives of the groups for Ilara and Ipara. The joint group dialogues took place in the Yoruba Language. Memorandums of Understanding (MoU) were developed to guide the proceedings and activities of the group. A chairman (a community member), a secretary (health worker) and women leaders were selected in each group.

IMPLEMENTATION PLANS AND MONITORING TOOL

Joint action plans were presented on the 8th of July 2016 to the larger body of PAR participants using visualization techniques developed by the Joint Group Dialogue participants now henceforth known as the Joint Action Committees (JAC). Once JAPs were accepted and ratified by the larger bodies of the PAR participants in both wards, separate sessions were held to develop implementation plans, set specific target dates and sharing of tasks and responsibilities. A monitoring tool covering of four thematic areas: Planning and Coordination, Logistics and Cold Chain, Community Linkages and Implementation Status was developed. Four monitors were recruited, trained and deployed for monitoring in Ipara and Ilara wards of Remo North LGA.

FIRST ACTION PHASE – 4 MONTHS

The First Action Phase commenced on Monday the 11th of July 2016 and ended on October 1st 2016. Monitoring visits were carried out in the wards to ascertain progress on the implementation of the JAPs.

SECOND ACTION PHASE – 4MONTHS

The second action phase commenced on the 1STDecember 2016 to the 1st of April 2016.

2.5 **Time Horizon:** Costs and outcomes were evaluated over the duration of the project, a period of twelve months. This is to allow for comparison of the immunisation coverage before and after the PAR process of strengthening community linkages in the REW strategy.

2.7 Discount Rate

Since cost and outcomes were considered over a one year period - the study duration, 0% discount rate was applied to the base analysis.

2.8 Outcomes

The health outcomes considered in this analysis were the additional number of children fully immunised, the additional number of children immunised per each vaccine antigen according to the National immunisation schedule and the percentage increase in the average monthly coverage

2.9 Measurement of effectiveness

Utilisation of immunisation and its coverage were determined using both primary and secondary data. Primary data was obtained from a survey of caregivers

responsible for the vaccination of at least one child under five. A secondary analysis of the NHMIS data was done to determine immunisation utilisation and coverage both before and after the PAR process. Semi Structured Interviews (SSIs) were also held with major stakeholders - healthcare workers, policy makers, local government officials, community leaders and health workers to evaluate the adaptation and implementation of the REW strategy in Remo-North.

Effectiveness was measured using the number of additional children vaccinated per vaccine and the percentage difference in the average monthly coverage at baseline compared to endline. The period of May 2015 to April 2016 was considered as baseline. While the period of the intervention was from May 2016 to April 2017. Data was analysed using Microsoft Excel 2013.

2.10 Measurement of Cost:

All cost related to the Participatory Action Research was measured from the perspective of the provider – the Ogun state government. Financial reports from the start of the programme to the end of the programme (April 2016 to April 2017) were examined. All cost incurred by the Ogun state government and field costs during the period expended in implementing the project were included.

All costs were presented in US dollars at 2015 prices using consumer price index and at an exchange rate of (N199.13 = US$ 1). The cost included were wages and benefits of the programme personnel involved in the participatory action research, training, stationeries, transportation, equipment and venue hiring. These estimates are the incremental cost of including the PAR process. These are additional costs borne by the Ogun state government. Salaries of healthcare workers at the state, local government area and facility level were excluded. Fixed costs (such as utilities and housing) were excluded as they are jointly shared with other services. Costs associated with research- baseline survey, end-line survey were also not included. However the cost of training the researchers was included. This was assumed to be the cost of training that would be incurred in training of government officials who would implement the programme in other districts if there is a decision to scale-up to other districts. Equipment bought included computers, phones and printers. Using the linear amortization method, capital costs for these equipment were included by their respective costs by their useful life time. Use life time considered for computers was 3 years, phones 2 years and printer 3 years.

In this analysis cost effectiveness was defined as the ratio of incremental cost to incremental effectiveness as measured by increase in average monthly coverage per vaccine at the end of the par process and number of fully immunised children. One way sensitivity analysis was conducted on the various cost parameters to determine the robustness of the cost effectiveness ratio.

3. RESULTS

The total cost of implementing the PAR process in both districts, Ilara and Ipara is N8, 592, 743.14 (36401.00 US 2015 dollars). The cost of implementing PAR in a single district was N4, 296,371.57 (18,200.50 US dollars). Personnel expenses and venue hiring were cost drivers of activities. They both accounted for 67% of the total cost. 35% (6462.68 US 2015 dollars) of the total cost was spent on venue hiring. Equipment accounted for the least 2% (367.14 US 2015 dollars)

The cost items covered are presented in the table below:

Table 1: **TOTAL COST OF IMPLEMENTING PAR IN ILARA AND IPARA DISTRICT**

ITEM	NAIRA	PERCENTAGE	(2015 US$)**
Wages & benefits	2,500,091.46	29%	10,591.01
Transportation & vehicle	1,168,211.06	14%	4948.83
Printing	844,010.05	10%	3575.44
Training	855,966.92	10%	3626.09
Venue hiring	3,051,130.65	36%	12925.35
Equipment	173,333.33	2%	734.38
GRAND TOTAL	8,592,734.14	100%	36,401.00

Table 2: COST OF IMPLEMENTING PAR IN EITHER OF THE DISTRICTS.

ITEM	NAIRA	PERCENTAGE	(2015 US$)**
Wages & benefits	1,250,045.73	28%	5, 295.51
Transportation & vehicle	584,105.53	13%	2, 474.42
Printing	422,005.03	10%	1, 787.72
Venue hiring	1,525,565.33	35%	6, 462.68
Training	427,983.46	10%	1,813.04
Equipment	173,333.33	2%	367.19
GRAND TOTAL	4,418,705.07	100%	18,200.05

** US$ VALUES ARE YEAR 2015 prices

Effectiveness:

The average monthly coverage in Ilara for the all different vaccines increased following implementation of PAR process. These increases were all statistically significant.

Table 3: Average monthly coverage Ilara – Pre & Post PAR

Vaccine Antigen	Pre PAR	Post PAR
Pentavalent 1	28 % (6.25)**	59% (13)**
Pentavalent 3	23% (5.17)	63% (14)
Measles	28% (6.33)	70% (16)
BCG	22% (4.91)	73% (17)
OPV 3	24% (5.42)	66% (15)
FIC	25% (5.67)	89% (20)

** ( ) average number of children immunised monthly

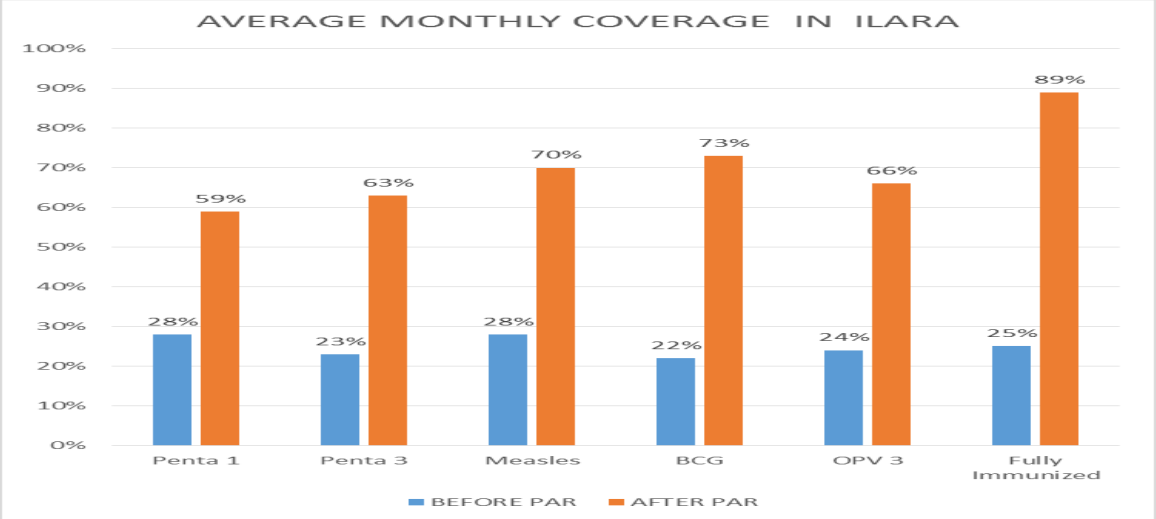


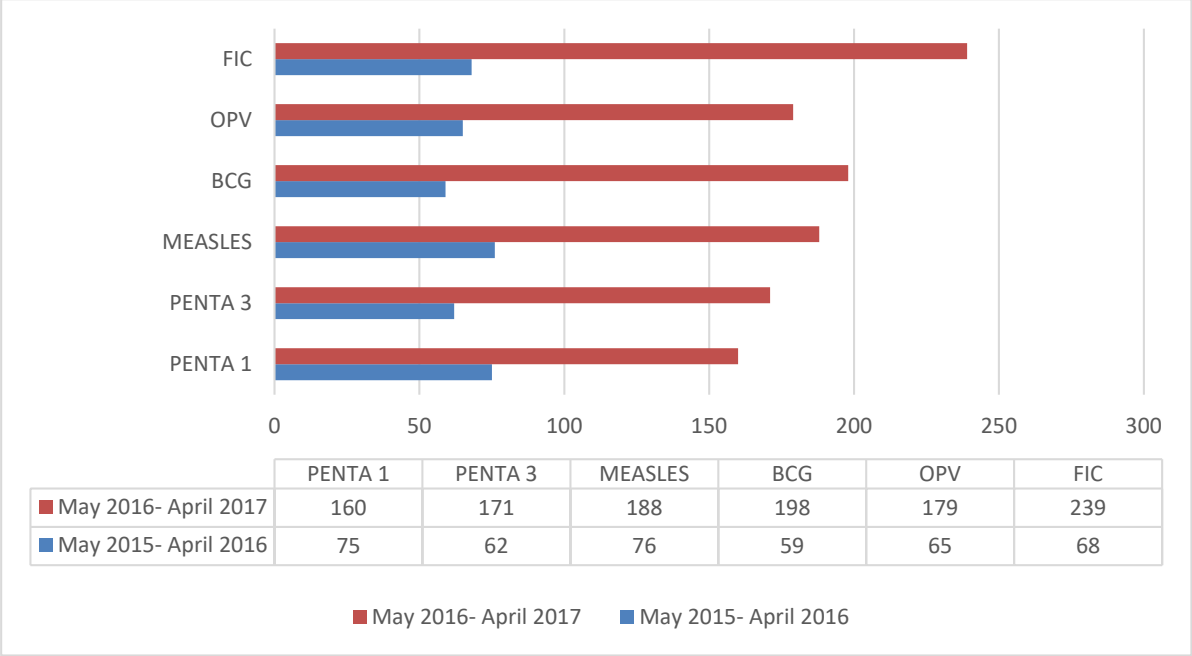
Figure 1: Average monthly coverage in Ilara at baseline and at the end of PAR

However such a situation was not seen in Ipara following implementation of PAR. There was a decrease in the average monthly coverage in Ipara and in the number of children under five fully immunised following the implementation of the PAR for all the vaccine antigens. The decrease in coverage observed on the vaccines was however not statistically significant.

Table 4: Average monthly coverage Ipara – Pre & Post PAR

Vaccine Antigen	Pre PAR	Post PAR
Pentavalent 1	94 % (30) **	81% (25)
Pentavalent 3	90% (28)	82% (26)
Measles	67% (21)	55% (17)
BCG	94% (29)	92% (29)
OPV 3	90% (28)	82% (28)
FIC	66% (21)	55% (17)

** ( ) average number of children immunised monthly



	PENTA 1	PENTA 3	MEASLES	BCG	OPV	FIC
May 2016- April 2017	160	171	188	198	179	239
May 2015- April 2016	75	62	76	59	65	68

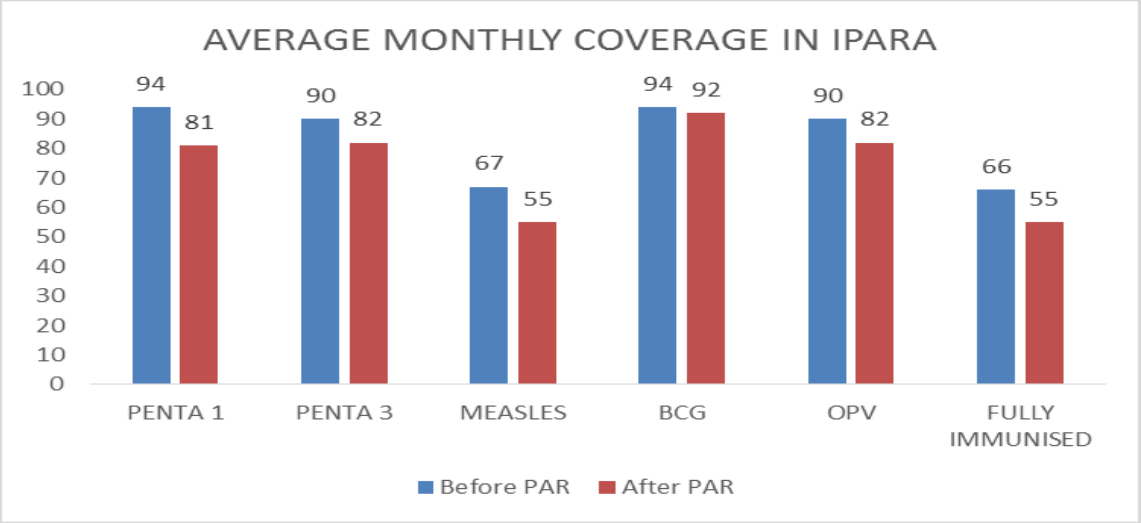


Figure 2: Average monthly coverage Ipara at baseline and at the end of PAR

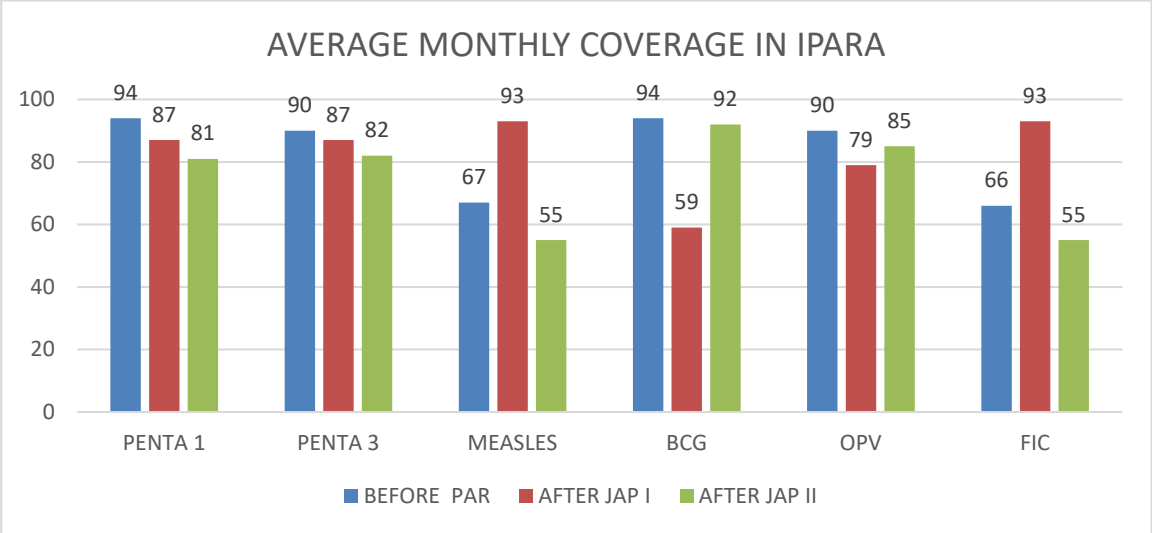


Figure 3: Average monthly coverage at the end of the implementation of each phase of the Joint Action Plan

Incremental cost effectiveness analysis - Ilara

The additional cost of increasing the average monthly coverage by 1% for the different vaccines ranged from $297.12 to $603.82. The highest incremental cost for increasing average monthly coverage by 1% was for 1st dose of Pentavalent and the least incremental cost was $297.12 for fully immunised child at the end of PAR process. In terms of cost of an additional child receiving vaccine, the additional cost was $220 for 1st dose of Pentavalent and $109 for a fully immunised child. Below is a table showing details.

Table 3: Incremental cost of vaccination in Ilara district using the PAR approach

Vaccine	Cost of 1% increase in average monthly coverage (US$)	Cost of an additional child receiving vaccine (US $)
Pentavalent 1	603.83	220
Pentavalent 3	467.97	172
Measles	456.55	167
BCG	367.03	135
OPV3	445.68	164
Fully immunised child	297.12	109

Incremental cost effectiveness analysis - Ipara

In Ipara district, as earlier mentioned the average monthly coverage for all the vaccines dropped. This shows that the intervention was not successful in Ipara. An incremental cost effectiveness ratio (ICER) could not be determined. This is because there is decreased benefit at an increased cost which shows that in Ipara, the intervention is strongly dominated by current practice.

Sensitivity Analysis

A one way sensitivity analysis was performed for Ilara to determine which cost parameters had a great impact on the ICER. For each cost item, a range of ± 25% was applied to estimate the magnitude of potential variation. The costs for wages, transportation, venue hiring had a significant impact on cost effectiveness. Also the discount rate was varied between 3% and 5%. Below is a table showing the result of one-way sensitivity analysis on Ilara.

One –way sensitivity analysis of cost parameters per 1% increase in average monthly coverage of fully immunizing chldren for Ilara district.

ITEM		ICER(US $)** for FIC
Wages		
	High (6619.38)	318.14
	Base (5295.51)	297.21
	Low (3971.63)	276.11
Transportation		
	High (3093.02)	306.94
	Base (2472.42)	297.21
	Low (1855.81)	287.30
Printing		
	High (2234.65)	304.22
	Base (1787.72)	297. 12
	Low (1340.79)	290.03
Venue		
	High (8078.34)	322.77
	Base (6462.68)	297.12
	Low (4847.01)	271.48
Training		

	High (2266.31)	304.32
	Base (1813.04)	297.12
	Low (1359.78)	289.93
Equipment		
	High (1106.72)	300.64
	Base (885.38)	297.12
	Low (664.03)	289.93
Discount rate		
	High (5%)	282.97
	Base (0%)	297.12
	Low (3%)	288.47

The above table shows that the incremental cost ratio was most sensitive to variations in cost of hiring venue and personnel cost.

Discussion

This project is one of the first attempts in Nigeria at improving immunisation coverage using participatory action research approach. The total cost of implementing in the approach in both districts for the study period of a year was US$ 37,437.47* (US$ 18,718.74 per district)*. The cost per additional fully immunised child in Ilara district was $109. While the cost of improving average monthly coverage for a fully immunised child in Ilara district was $297.21. The process was strongly dominated in Ipara district for all vaccines.

The additional cost to the cost of routine immunisation in Nigeria is high. A study done in 2011 in Nigeria puts the cost of routine immunisation in Nigeria at $21 per fully immunised child (Ojo, et al., 2011). Adjusting for inflation would mean a cost of $30 per FIC. However the cost of a 1% increase in monthly coverage appears similar, possibly better when compared to the result of a study done in another part of the country, Kano state () (QADAR ZEESHAN, 2014). The cost per healthy life year saved was $472 for polio vaccine done in Kano state in Nigeria. When the WHO commission on Macroeconomics and Health' cost effectiveness threshold (Shillcutt, et al., 2009) for the African region is considered, both the additional cost per 1 % increase and per fully immunised children are very cost effective. According to the WHO commission on Macroeconomics and Health' cost effectiveness threshold when costs are less than three times the national annual GDP per capita is considered cost–effective, whereas one that costs less than once the national annual GDP per capita is considered highly cost–effective. Ogun state has a GDP per capita of $2,472 per annum.

There have been criticism of the commission's focus on GDP-based thresholds, since "people value life in dimensions that extend beyond income. However, it is important to note that it is always assumed and intended that other considerations relevant to local settings would be used in decision-making. The

addition of single intervention, one at a time, based on incremental analyses, may not result in the optimal use of resources. However, given that many systems already have an existing package of interventions, in some settings there is clearly still a role for incremental analysis. Considering the need that this intervention is targeted at hard to reach and underserved areas, it would be a worthwhile investment. Furthermore, a study in Dhaka Bangladesh aimed at improving immunisation coverage in its urban slums had a programme cost of US$ 3091 to increase mean healthcare performance scores by 1% and costs an average of US$ 797 per district to increase mean immunization session performance scores by 1% during the same period of time.

The major cost drivers for the process was wages and venue hiring. Venue hiring accounted for 37% of the total expenditure followed by wages which accounted for 32% of the cost. Planning was a crucial part of the design of the intervention requiring repeated meetings and gathering of people. Scale up in any other community should consider sourcing free venues, this may result in achieving similar outcomes at a lower cost.

The intervention costs are mainly recurrent and semi-fixed costs and in this situation, not by affected by changes in the number of children vaccinated. Targeting areas with low coverage but of high density should result in more epidemiologic and efficiency gains. Also since in this analysis, the immediate effects of the intervention are captured, there is the possibility of additional positive effects which will cascade further down over the years not considered in the analysis. This analysis was from a provider perspective, estimating the societal perspective would be valuable. This is because seeking vaccinations will impose time and travel costs on patients and caregivers which could impact significantly on the ICER. Considering the differences in the ICER, it might be more cost effective to focus on the number of fully immunised children.

There is a need to explore further what factors may be responsible for the limited effectiveness of the intervention in Ipara. There may be contextual factors responsible for this considering the weak social cohesion in Ipara compared to Ilara. The PAR intervention hinges on community members being able to come and work together as a team. This may impact on communities where the PAR intervention maybe applicable. It is also important to note that the short duration of time which might have affected the study in Ipara. For a semi urban environment with loose social network, there may be need for more to create a more cohesive network needed for the success of PAR.

Some of the limitations of this study is its small size, short duration and the scope of the project may limit the generalizability of the results. With eight months of implementation, attribution of cause and effect is difficult. There is need to conduct the study for a longer period of time and determine its cost effectiveness under such circumstances. However the findings provide a basis for a

comparison to be made in other settings and programmes aiming to improve community linkages in the REW strategy for immunisation.

Annex 14: Evaluation Timeline

N°	Activity	Months												
		1	2	3	4	5	6	7	8	9	10	11	12	n
		May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
1	Finalisation of Evaluation protocol. Finalisation of research instruments. Development of the field work manual. Ethical approval; Preparation of training of research team.													
	Inception Workshop													
2	Coaching of the core research team on Formative Evaluation. Training of research team and research assistants in interview and survey skills, ethics, recording, transcription, data collection, processing and analysis Establishment of clear guidelines													
3	Pilot (pre-testing of research tools)													
4	Research review meeting to assess tool adjustment needs. Editing and standardization of tools													

5	Sampling and recruitment of respondents in the focal wards	
6	Field Work – Baseline Study Data Collection –survey and qualitative data collection Data Entry and Transcription; Compilation of PADev reports	
7	Data Analysis and Report writing	
8	**Baseline Study Report**	
9	**INTERVENTION** - Validation of Situational Analysis report and First Round of Dialogues	
10		
11		
12	**Joint Action Plan** First Action Phase Secondary Analysis of HMI/S and Discussions with representatives of communities, health workers and local government.	
14	Second Round of Dialogues	
15	**Second Joint Action Plan**	
16	Second Action Phase	
	Evaluability Assessment	
	Evaluability Assessment Report	
17	Development of research instruments for endline survey, Training of research team	

18	Field Work – Endline Study Data Collection –survey and qualitative interviews; Data Entry and Transcription; Compilation of PADev reports															
19	Data Analysis and Report Writing															
20	**Draft Report**															
21	Peer Review and Feedback															
22	**Final Report**															
23	**Submission and Dissemination of Formative Evaluation report. Policy Dialogue with relevant stakeholders using formative evaluation report and policy brief as a basis of discussion**															
n																

Annex 15: Consensus Building and Group Dynamics among the three sets of stakeholders

We examined the PAR process and the dynamics within and between the three groups of stakeholders. This section focuses on what happened in the dialogues, how decisions were made, comfort levels in expressing themselves, trust, how consensus was built as well as how conflicts were resolved; and how they work together in the PAR.

How the PAR has worked between and within the three groups

In Ilara, meetings with the single (community) group were held every month – the last Mondays of the month - before the meeting with the JAC. Majority of the community members in the PAR in Ilara considered the chairman quite active and efficient but one of the participants expressed the opinion that he did not always carry them along. The chairman also indicated in his interview that he had encountered resistance from some team members:

"There was a program and I was asked by the doctor (PMOH) to select four people and I chose four community leaders, and I called the lady over there because we are also together for JAC, but she grew angry and refused because she wasn't informed earlier, so I had to replace her with someone else."-Chairman JAC, Ilara

Nevertheless, the PAR participants in Ilara all had positive views about how this had worked between the three groups detailing the cordial relationship the PAR had fostered between the three groups and the value of solving problems and working together to achieve common aims in this way. However, an LGA official noted the requirement of extra time and energy to do this in addition to her normal work:

"We have meetings, we delegate jobs to each other, and we come together to evaluate ourselves. It takes extra time, it just takes extra time and extra energy to do it."- LGA Official 1 – PAR participant, Ilara

The chairman of the JAC in Ilara detailed having meetings with the health workers to discuss the progress of the JAP implementation before the general meeting with the rest of the team members. Health workers, local government officials and community members reported frequently that the chairman worked closely with the health workers and the local government officials in the PAR.

"It is of a mutual understanding because we cannot do it alone and the community member cannot do it alone. We just need to work together to achieve that aim. And the aim is to get all the children under 5 to be immunized. So we have mutual understanding." -Health worker 2 – PAR participant, Ilara

It was interesting to note the chairman's perspective of the local government when asked about the relationship between the communities with the LG:

"The JAP has been able to foster unity between us, the doctors and the health care workers. May the Lord allow the local government to have time for us, they don't have our time, we had to join hands with the matron using our own money to buy more drugs for the center. Most times we transported ourselves to get these drugs because there

wasn't any pharmacy at Ilara then, but now the health center has turned into a pharmacy. Sometime the health workers complain, that the pharmacy is the place they should have used as an office."- Chairman JAC Ilara

It was clear that the chairman regarded the LGA official who he frequently reported working with and who is a doctor linked to the local government as a health worker. He viewed the local government as having the mandate for financial provision for immunization activities, an area where he rated them quite poorly. When asked how his views were listened to – the Ilara JAC chairman detailed that his views were not always received by the members of the committee – and indicated that those that were usually rejected related to finances. He also stated that all the implementation plan activities were not always carried out well by those to whom they had been assigned. However, in his opinion, things usually worked out well eventually. The PAR members in Ilara also frequently mentioned the chairman's efforts including his financial contributions to the implementation activities.

"The chairman is doing his best. He spends his personal money to take care of the hospital." - Community member -1 PAR participant, Ilara

Majority of the health workers and community members in Ilara described that the PAR was working quite well between the three groups and that the relationship between the three groups had been improved by the PAR. The quote below illustrate the views of the health workers:

I: how will you describe the relationship between the community, health workers and local government?

R: Good, good

I: Before this joint action was it so?

R: No, there used to be quarrels, the former health worker was not happy at the job, but mine is different, they are excited to see me every day. There was no relationship before; there is a lot of difference now. - Health worker -1 PAR participant, Ilara

The respondents in Ipara also reported that the JAC meetings were held once a month, and the PAR participants then worked together to implement activities in the community. The health workers explained that as health workers, they were tasked with mobilization, enlightenment and education of community members, using JAC community member and community heads as resources to encourage community at-large to utilize immunization services. They expressed that the groups in the PAR worked well together and were able to implement changes like the provision of water, megaphone for outreaches, etc., One of the health workers noted that these positive changes had also "infected" other community groups such as the WDC, who were then encouraged to improve their processes. One of the LG officials reported that they worked well with other members of the JAC and that the PAR had opened the door for the LG officials to get to know the community better. Most frequently mentioned by the community members in the JAC was the value of discussing issues within the group and finding solutions to them. The community members noted that the joint group worked well because problems where discussed and decisions were made on equal platforms,

where everyone had a say; and some highlighted that they had a good collaborative and working relationship with the health workers and local government. The chairman of the JAC stated that the groups were learning from each other. In contrast, to all that was conveyed by other participants, the Igede representative expressed the view that they did not work with the health workers, rather the health workers informed them of what assistance they needed, like mobilization for immunization, and the community members assist. Furthermore, one of the health workers noted the need for unity:

"Once we ensure that we foster unity in our work the result will be better…" -Health worker 1 – PAR participant, Ipara

Voice

Comfort level expressing opinions, willingness to speak

All the PAR participants in Ilara declared that they were comfortable expressing their opinions and were quite willing to speak during the dialogues. When asked for differences between the first and second round of dialogues, some respondents reported that during the first round of dialogues , some people did not quite understand the process but clarity occurred as the PAR progressed and by the second round of dialogues, the comfort levels in expressing their views and willingness to speak had noticeably increased. However, respondents mentioned that there were a few people who were naturally quiet and more reticent and had to be encouraged to make contributions especially during the first round of dialogues. According to one of the health workers, the use of the local language helped to put a lot of the community members at ease and encouraged their willingness to talk during the dialogues.

"First meeting . . . people used to be shy! They didn't want to speak their mind because maybe they were thinking the discussion is going to bring about problem to their community. But when they realized that it was good for them to speak out what is happening to them and it is going to bring something good for the people in their community and for the children especially, they speak out their mind and they are now very comfortable in speaking out their mind."- Health worker 2– PAR participant, Ilara

"I believe the community people are comfortable because they speak out! They bring out suggestions and when you bring suggestions they tell you that cannot work, this will work."- LG Official 1 – PAR Participant, Ilara

Most of the respondents in Ipara reported that participants were comfortable and free to speak their minds during the meetings and this had increased in the past year but an LG official mentioned that even though it was hard to measure whether willingness to speak had increased or decreased, participants in the group were free to express themselves at the meetings in order to work on improving immunization coverage. According to a health worker, individuals in the meetings spoke their minds, and where there was no such avenue about a year ago, the PAR provided an opportunity for people to talk to one another and discuss immunization issues. Community members expressed that since the tone in the meetings was neutral, participants felt free to express their views, and this led to the ability to find solutions to problems they were facing regarding immunization. Nevertheless, some noted that though it was easy to place ideas on the agenda,

discussions could get heated sometimes, but group members always calmed down and worked on finding solutions together. A reason given by a community member for her ease of expressing herself was her closeness with the health workers, even though she considered that her approach in the past in expressing herself had been ineffective. A few community participants added that some barriers to willingness to participate maybe due to differences in ethnic background, while the motivation to be more willing to participate came from seeing results of the actions implemented by the group. More participants in Ipara than Ilara described occurrences of anger and shouting during dialogues and meetings but stated that they were always resolved amicably:

"*You know that there is no place where there are people… sometimes when we start discussing and maybe the discussion will need money or some other things, everyone will shout at first. However, when we cool down, we observe at last and talk about the benefits of the discussed issue."-Community member 3– PAR participant, Ipara*

"When someone says his idea and the group knows that it might involve money; issues like this might cause shouting at first. We will argue it to the left and right. Then we settle after we calmly talk about the importance of money. It is impossible for arguments to not occur in places where there are new agenda, if I say it doesn't occur then I'm lying…Before I used to get angry, if I say this is what I think we should do and they say no. I tell them "if you know you can't do it my way then sort it out yourselves" but I later had a rethink and after some deliberation, I found out that we started understanding ourselves better." -Community member 4 – PAR participant, Ipara

Feeling of being heard / Feeling of hearing the communities

All the community members in the PAR, both in Ipara and Ilara expressed that they felt heard by the health workers and local government as well as the other community members involved in the dialogues. Respondents emphasized that all the group members regardless of role, listened to each other, and expressed that respect was an important aspect of hearing each other. The participants stated that this helped them feel confident to go on expressing their views because they felt that their opinions mattered. A few community participants in Ilara expressed that though their opinions were not always accepted by the joint group, they perceived that their views were always considered carefully:

"They consider my opinions but before they can accept, they must have spent more time arguing and deliberating on it. They don't want to heed initially but through further pressing and persuasion, they do yield most of times."-Community member 3- PAR participant, Ilara

Similarly, many community participants in Ipara felt their suggestions were considered well by the joint group even if not all were accepted. Some gave examples of suggestions that had been adopted by the group. One community participant in Ipara perceived that he was listened to especially because of the weight of his position as a representative of a religious group:

"They always listen to what I have to say. Considering the CAN representative that I am…I know they carefully listen because nobody will say "Shut up, you speak nonsense"

when they know the people I'm representing. They calm down to hear what I have to say and deliberate on it."Community member – 5 – PAR participant, Ipara

It was interesting to note that though the community participants in the two wards appeared to say similar things in response to this question, the tones of the answers were sometimes different – an instance is displayed in the quote below:

"The best we can do is to listen to one another. The group members are adults so we listen to one another and express our opinions…They have no choice. They have ears. They listen to me and I listen to them too but my suggestion is not binding on anybody. We discuss every suggestion or opinion and once we know that it is going to help the group, we adopt…When we are in the meeting, we listen to one another. I know you are trying to ask if they respect my opinion. They have no choice because I direct the meeting they have to respect my opinion and I respect theirs too. Respect begets respect..."-Chairman JAC - Ipara

Health workers and local government officials in both wards reported that they heard the communities and frequently stated that this was obvious because a lot of the things the communities had expressed that they needed had been done by the health workers and local government.

"Why I said yes is that - It is the community members that said that Ilara Health Centre should come alive again. They came to the local government, they expressed their feelings and that is why we are posted here."-Health worker 2 – PAR participant, Ilara

The health workers and LG officials also felt that the other group members listened to them and appropriated their suggestions during the dialogues. They mentioned the interest the community members took in the topics discussed and the questions they asked for clarifications as evidence that they were listening. An important aspect noted by the health workers of feeling heard by the community members was the cooperation they received from them on issues.

" We listen to them and they listen to us…If they don't hear us out, they wouldn't have made efforts to help us get water supply. They wouldn't have cooperated with us. Even when the water supply had a fault, we both contributed money to fix it. This happens because we understand one another."-Health worker 1 – PAR participant, Ipara

Decision making in dialogues and JAC meetings

Perception of having a voice in decision-making

The respondents in both wards all had the perception that they and the rest of the joint group had a voice in the decision making. Some described the ease of tabling motions for deliberations during the meetings. The LG respondents explained that their voice was not considered above their counterparts and that decisions were made collectively with the views of every member of the joint group put into consideration. The health workers expressed that their voice as well as those of other group members were valuable in the decision making in the PAR.

In Ilara, the younger ones (including the young women) in the joint group dialogues expressed that they felt listened to and considered themselves part of the decision-

making process, though the consideration given to age in the discussions was expressed:

R: If it is a 'Yes' from all, we go by it and if it is a 'No' same. There is no division, we speak and agree in togetherness. Because we all know what we want to achieve.

I: Why do you think that people like the Chairman, after they have given a suggestion, they will still be asking that do you all agree?

R: I think it is because they are Chairman, and that they do consider that they are elderly person and that their ideas should be considered before the younger ones ideas will be looked into. But I will tell them that I want to talk and they will allow me and after that, they will consider everything (both my idea and theirs together) and they will say no problem that they will act on both suggestions. - Community member 4 – PAR participant, Ilara

R: Sometimes when we make a decision that the elderly ones oppose, we tell them 'this is our time; things have changed' and they then agree with us.

I: Do you all listen to each other given the disparity in age?

R: Yes we all do.- Community member 5- PAR participant, Ilara

Participants in both wards were clear that there were democratic processes followed to ensure that everyone had a voice in the proceedings and that nobody in the groups exerted undue influence in decision making. A few participants that considered themselves more reticent than others were also of the view that they had a voice in the decision making process.

"There is no one without an opinion. Once he or she is called upon, We hear him or her out…If it is good we adopt it, if it is not we discard it…We deliberate on all opinions."

-Community member 2 – PAR participant, Ipara

How group decisions are made

PAR participants in both wards noted that decisions had to have the support of the groups' majority in order to ensure ease of implementation. When asked about how long it took the PAR participants during the dialogues to make the decisions – majority of the participants in Ilara and Ipara were of the view that agreements were reached fairly easily in the dialogues or meetings. They reported on the average between one and three hours for decisions to be reached. Many of the participants in the PAR were clear that there were times when they disagreed over issues but they usually were able to come to a common decision which everyone committed to adhere to. Many indicated that the level of influence varied - with some members being more vocal than others. In order to ensure that things are done in an organized way, according to one of the participants – everybody had a chance to give their input about an issue, then the input considered to be better would be selected, carrying the house along in the process. The key question then was 'how were the decisions regarding what input was better made?' It was implied from the answers of some respondents that some of the PAR participants by virtue of their function and knowledge were in the position to steer some of these

decisions – some of those frequently mentioned in Ilara as influential in the decision-making process were the chairman of the JAC, the health worker – the immunization ward focal person and the LG PMOH. In Ipara, respondents mainly mentioned community members like the chairman JAC, the CAN representative and the community member in the SMC as influential in decision making. Nevertheless, many of the respondents in both wards felt that they were influential in decision making because of their knowledge and participation and the fact that they were vocal about their ideas. In some instances, specific people were noticeable not because of their function or position within the groups but because of the quality of their ideas; though this did not necessarily translate to influence.

I: Do certain individuals have more influence over the agenda at group meetings than others?

R: Hmmm . . . yes. Like in our group, there is one man. As young as he is, he gives you good ideas and I can see he is influential in the community. So when you give suggestions, he tells you that cannot work. And you cannot just talk like that if you are not someone that is notable in the community. So I know of one of them.

I: So he has more influence . . .

R: Not that much . . . but he knows virtually everything about their community…

- LG Official 1 – PAR participant, Ilara

Feeling of pressure to go along with decisions

When asked whether they felt pressured sometimes to go along with the decisions of others even if they did not agree, the health workers, LG and community stakeholders in Ilara expressed that they did not feel such pressure. Some of them noted that indeed there are times during their regular monthly meetings (not just dialogues) they disagreed and could not make decisions at a particular meeting but would give themselves a chance to think about it and reconvene to discuss further. This finding was echoed by the Ipara respondents who stated that they did not feel pressured to agree with decisions since no one person had dominance over the agenda. They explained that sometimes it took weeks to arrive at a decision depending on the issues and what was involved in trying to reach a consensus.

We do meeting before meeting. After we do a meeting together, we will go and do another meeting among ourselves before the conclusion. We also communicate with each other on the issues on ground and when we get to the committee we discuss it again. So when the results of these discussions are tendered. Then in the long run, it becomes essential to agree with the group so that things can be done.

-Community member 3 - PAR participant, Ipara

In general, most respondents expressed the view that they were ok with decisions once the majority agreed. However, a few others noted that if they thought the decision was not good they would disagree even if others were in agreement.

Commitment to decisions made by the groups

All the participants in Ilara and Ipara expressed that they were fully committed to decisions made in the joint group dialogues. These decisions were taken very seriously by the participants and they were of the view that not keeping to them would result in conflict.

R: In the dialogue, the final decision is always unanimous even though we might have a lot of arguments before reaching the conclusion. We work based on the final decision without questioning.- Community member 3– PAR participant, Ilara

However one of the participants qualified the commitment, stating that there were differences in the levels of commitment depending on financial involvement :

"They are committed if money is not involved."- Chairman JAC, Ilara

Satisfaction with the decision-making process

In reviewing the satisfaction of the participants with the decision-making process, they were asked about their satisfaction with the time spent during the dialogues. Many of the PAR participants in both wards felt the time expended on the deliberations was reasonable. Time spent reaching consensus in single group dialogues were perceived as slightly shorter than for joint group dialogues which had a more diverse group with varying levels of understanding of the topics discussed. However, a few respondents had a different view:

I: Do you think the time used to reach a final decision is too much or too small?

"The time is much because we always spend more than the slated time for the meeting due to arguments and deliberations."- Community member 3 - PAR participant, Ilara

Nevertheless, majority of the respondents in both Ipara and Ilara expressed satisfaction with the decision making process – usually because of the anticipated benefits of the decisions reached. other frequently mentioned reasons for satisfaction include the process of making the decisions jointly – "due to the fact that no one imposes their will upon the group during decision making" and the knowledge and confidence that the decisions made would be actualized.

"*When a decision is made I tell them I'm not objecting because I want my name to me mentioned that "she was part of the decision making group" I like things like this, it makes me contribute the more. It also makes me feel I have an effect on the whole process." - Community member 4 - PAR participant, Ipara*

Conflict Management and resolution within the groups

How group members listen to each other's points of view, even if they might disagree

When asked how group members listened to each other's point of view even if they might disagree, the respondents in both wards referred to procedures in their memorandum of understanding that helped those discussions to progress easily – the chairman had to give the go-ahead for someone to talk during such deliberations; people were not allowed to interrupt each other; everybody had to be given room to talk; people

indicated by raising their hands sometimes if they wanted to be recognized. Some of the Ilara participants noted the need for patience in order to understand each other's views.

R: If anyone raises their voice, we usually leave them until they get tired, we then ask them to be calm and we also reassure them.- Community member 5- PAR participant, Ilara

A LG participant elaborated that disagreements were sometimes driven by lack of understanding which could usually be resolved by careful explanation of one's point. In Ipara, some respondents reported that disagreements occurred but could always be resolved. One of the respondents expressed that the approaches of some members sometimes brought about the disagreements, but explained (alongside other group members), that the important thing was how the group resolved the issues.

This happens because some people don't know how to start a conversation, it is sometimes when they get to the middle of their talk that we begin to see the relevance. It is true that arguments will be involved but the main thing is how we go about it.

-Community member 4- PAR participant, Ipara

Major points of conflict or disagreement within the group

Majority of the PAR participants in Ilara were of the view that they had no points of conflicts within the group but a few pointed out issues that had generated some disagreements – mainly related to leadership/members interaction and financial contributions. An important cause of discord expressed by one of the participants was the feeling of not being carried along by the chairman of the JAC.

Our chairman does not carry us along, he wants to be the only one perceived to be working and I always tell him that he is not the only one and that he is just privileged to be our chairman and that he needs to involve everyone. - Community member 5 – PAR participant, Ilara

Another important point of conflict noted by a member of the Ilara group and hinted at by some other respondents relates to financial contributions.

Nothing causes fights than maybe if we have just finished a meeting and a suggestion had been made in the meeting that each person should drop a certain amount of money to be used for a project - it is there you see people making different complains like - me, I cannot just sit down here and be giving out money while some will just sit down at home, Usually everybody will be calmed down and they will explain to everyone the positive reasons for the contribution. They conclude by saying whatsoever amount we have, we should give out and they will add to it.- Community member 4- PAR participant, Ilara

While the PAR participants were willing to contribute money to solve some problems at the health facility – examples include weeding the environment around the facilities, contributions geared towards purchase of sphygmomanometer etc. - in some cases, these contributions were complained about. Indeed the chairman of the JAC was clear that these financial contributions sometimes limited the level of commitment by members. Disagreements were also reported to arise sometimes when members felt

others were delaying carrying out their responsibilities especially in the JAC since they had the mandate of ensuring that the JAP is implemented as intended.

In Ipara, respondents listed several major points of conflicts and disagreements within the group: most frequently mentioned was money, then issues relating to the leadership/chairman and decisions that had not been agreed upon by the entire group. One respondent noted that differences in ethnicity could sometimes lead to misunderstandings and discord. Two of the respondents conveyed that there were no (longer any) conflicts among the groups. The quotes below illustrate the perceptions of the Ipara PAR participants regarding disagreements experienced within the group:

In my own view, money is the main cause. Wherever there is money and someone is appointed as head if the person does not succeed, it is compulsory for people to rate that person low. If we send someone to represent us and the person does not come back to report to us, that person will be denied such opportunity later.- Community member 2- PAR participant, Ipara

What causes disagreement most times is the chairman, the reason why I said this is because he is the head. When he says "this is how much we'll contribute" and the members will be like "where should we get that from, do we dig money from the ground?'' issues like this cause disagreement. Wherever money is involved, there will be issue. When money is not involved, the only thing is just to go for meetings and go back home.-Community member 4 – PAR participant, Ipara

An assignment was given to me to lead the group that will meet a philanthropist and I delegated the assignment - so some people believe that once I am not there , nothing can happen. And that should not be the case. Anybody can be in the position of the chairman - but we resolved the issues.-Chairman JAC, Ipara

These references relating to the Ipara JAC Chairman were linked to an issue during the first action phase: the JAC chairman had serious disagreements with fellow community JAC members because he did not follow the assignments as planned in the first implementation plan in detail –he attempted to delegate some of his assigned duties to the team members who were supposed to carry it out with him and they considered this a shift from decisions that had been made during the dialogues and therefore unacceptable. Also, when a monitoring visit that had necessitated a meeting of the JAC members had occurred close to the regular monthly meetings, he had a disagreement with the health worker – who felt the regular meeting should still be convened. The chairman however thought this unnecessary and refused to convene the meeting and was accused of waning cooperation by members. All these were reported to have been resolved before the 2nd round of dialogues.

How conflicts are resolved

According to the respondents in Ilara, resolving conflicts that arise as a result of financial contributions was done by convincing people of the benefits of the projects the participants have undertaken for the communities. The natural leaders among them as well as those in leadership positions in the JAC usually tended to contribute more than the others in order to motivate the group. Majority of the respondents stated that conflicts were always resolved – since participants were usually focused on moving forward.

Conflicts were resolved sometimes at the start of the next meeting before moving on to the agenda of the meeting. According to the participants, where two parties have conflicts, they were usually summoned by the chairman and the issues jointly discussed and resolved. These conflicts sometimes existed directly between the chairman and the community members – one participant in particular was quite vocal about this:

R:Yes. I confronted the chairman recently on an issue where we felt he showed partiality by choosing his wife and not informing any other person for a program. He explained his side of the story and we have settled it. - Community member 5 – PAR participant, Ilara

However, majority of the participants in Ilara stated that they were happy about how conflicts were resolved.

In Ipara, participants offered that after much deliberations, the group usually found a way to resolve issues raised in the meeting, and when conflicts arose among members, there were other members that would step in to assist in resolving the member-to-member conflicts. One of the LG officials in the Ipara group reported one case of conflict among members, that was settled by calling both parties involved and involving other group members to mediate and settle the conflict. An Ilara LG official detailed intervening to solve a case of conflict in Ipara:

“There was a case at Ipara, I think the issue of megaphone - there was a person assigned to that responsibility but when they got back home, it was another person that went to collect that money. That now caused a problem. When we got to know at the LGA we had to intervene because it almost split the Ipara meeting; but we sat back and resolved it . Aside from that we didn’t really have any major occurrence.”- – LG Official 2 -PAR participant, Ilara

All the respondents in Ipara reported that they were satisfied with how problems were resolved within the group.

Annex 16: Caregivers' perceptions of most recent immunization visit, Household Survey

Children (0-24 months)													
Variable		Baseline (N=108)						Endline (N=103)					
		Ilara (n=45)		Ipara (n=63)		Total		Ilara (n=42)		Ipara (n=61)		Total	
		Count	N %	Count	N %	Count	N %	Count	N %	Count	N %	Count	N %
Time since last immuization	<= 1 year	40_a	88.9%	53_a	84.1%	93	86.1%	34_a	81.0%	58_b	95.1%	92	89.3%
	>1 year	0^1	0.0%	0_a	0.0%	0	0.0%	6_a	14.3%	3_a	4.9%	9	8.7%
	No response	5_a	11.1%	10_a	15.9%	15	13.9%	2_a	4.8%	0_a	0.0%	2	1.9%
All Children (0-59 months)													
Variable		Baseline (N=210)						Endline (N=210)					
		Ilara (n=86)		Ipara (n=124)		Total		Ilara (n=83)		Ipara (n=127)		Total	
		Count	N %	Count	N %	Count	N %	Count	N %	Count	N %	Count	N %
Place of last immuization visit	No Response	9_a	10.5%	3_b	2.4%	12	5.7%	2_a	2.4%	0^1	0.0%	2	1.0%
	Fixed site Govt health facility	46_a	53.5%	67_a	54.0%	113	53.8%	62_a	74.7%	111_b	88.7%	173	83.2%

	Fixed site Private health facility	2a	2.3%	2a	1.6%	4	1.9%	3a	3.6%	8a	6.4%	11	5.3%
	Outreach/ mobile sites	26a	30.2%	47a	37.9%	73	34.8%	16a	19.3%	6b	4.8%	22	10.6%
	Other	3a	3.5%	5a	4.0%	8	3.8%	01	0.0%	01	0.0%	0	0.0%
Opinion on distance to the immunization site	No Response	5a	5.8%	2a	1.6%	7	3.3%	4a	4.8%	2a	1.6%	6	2.9%
	Very Short	53a	61.6%	51b	41.1%	104	49.5%	49a	59.0%	49b	38.6%	98	46.7%
	Short	15a	17.4%	50b	40.3%	65	31.0%	16a	19.3%	51b	40.2%	67	31.9%
	Average	8a	9.3%	11a	8.9%	19	9.0%	7a	8.4%	13a	10.2%	20	9.5%
	Long	2a	2.3%	9a	7.3%	11	5.2%	5a	6.0%	9a	7.1%	14	6.7%
	Very long	3a	3.5%	1a	.8%	4	1.9%	2a	2.4%	3a	2.4%	5	2.4%
Opinion on direct cost of services	No Response	6a	7.0%	2b	1.6%	8	3.8%	3a	3.6%	2a	1.6%	5	2.4%
	Free	56a	65.1%	73a	58.9%	129	61.4%	35a	42.2%	34b	26.8%	69	32.9%
	Very Cheap	13a	15.1%	21a	16.9%	34	16.2%	23a	27.7%	58b	45.7%	81	38.6%
	Cheap	4a	4.7%	20b	16.1%	24	11.4%	15a	18.1%	20a	15.7%	35	16.7%
	Average	4a	4.7%	3a	2.4%	7	3.3%	3a	3.6%	8a	6.3%	11	5.2%

	Expensive	3[a]	3.5%	5[a]	4.0%	8	3.8%	3[a]	3.6%	5[a]	3.9%	8	3.8%
	Very Expensive	0[1]	0.0%	0[1]	0.0%	0	0.0%	1[a]	1.2%	0[1]	0.0%	1	.5%
Rating of transportation costs	No Response	4[a]	4.7%	1[a]	.8%	5	2.4%	3[a]	3.6%	3[a]	2.4%	6	2.9%
	Free	58[a]	67.4%	73[a]	59.3%	131	62.7%	50[a]	60.2%	67[a]	52.8%	117	55.7%
	Very Cheap	7[a]	8.1%	17[a]	13.8%	24	11.5%	20[a]	24.1%	32[a]	25.2%	52	24.8%
	Cheap	8[a]	9.3%	22[a]	17.9%	30	14.4%	6[a]	7.2%	11[a]	8.7%	17	8.1%
	Average	3[a]	3.5%	9[a]	7.3%	12	5.7%	2[a]	2.4%	7[a]	5.5%	9	4.3%
	Expensive	5[a]	5.8%	1[b]	.8%	6	2.9%	2[a]	2.4%	7[a]	5.5%	9	4.3%
	Very Expensive	1[a]	1.2%	0[1]	0.0%	1	.5%	0[1]	0.0%	0[1]	0.0%	0	0.0%
Opinion on behavior of health workers	No Response	6[a]	7.0%	1[b]	.8%	7	3.3%	3[a]	3.6%	2[a]	1.6%	5	2.4%
	Very helpful	31[a]	36.0%	50[a]	40.3%	81	38.6%	44[a]	53.0%	52[a]	40.9%	96	45.7%
	Helpful	42[a]	48.8%	59[a]	47.6%	101	48.1%	32[a]	38.6%	50[a]	39.4%	82	39.0%
	Neutral	6[a]	7.0%	8[a]	6.5%	14	6.7%	2[a]	2.4%	14[b]	11.0%	16	7.6%
	Not helpful	1[a]	1.2%	3[a]	2.4%	4	1.9%	1[a]	1.2%	8[a]	6.3%	9	4.3%
	Difficult	0[1]	0.0%	3[a]	2.4%	3	1.4%	1[a]	1.2%	1[a]	.8%	2	1.0%

Availability of vaccines	No Response	4_a	4.7%	1_a	.8%	5	2.4%	5_a	6.0%	2_a	1.6%	7	3.3%
	Yes	81_a	94.2%	117_a	94.4%	198	94.3%	73_a	88.0%	118_a	92.9%	191	91.0%
	No	1_a	1.2%	6_a	4.8%	7	3.3%	5_a	6.0%	7_a	5.5%	12	5.7%
Informed on what to expect at home after vaccination	No Response	6_a	7.0%	1_b	.8%	7	3.3%						
	Yes	75_a	87.2%	118_b	95.2%	193	91.9%	67_a	83.8%	122_b	96.8%	189	91.7%
	No	5_a	5.8%	5_a	4.0%	10	4.8%	13_a	16.3%	4_b	3.2%	17	8.3%
Told what to do if the child had a problem at home	No Response	5_a	5.8%	1_b	.8%	6	2.9%						
	Yes	76_a	88.4%	118_a	95.2%	194	92.4%	68_a	85.0%	119_b	94.4%	187	90.8%
	No	5_a	5.8%	5_a	4.0%	10	4.8%	12_a	15.0%	7_b	5.6%	19	9.2%
Adequately informed about where the child could be vaccinated	No Response	5_a	5.8%	2_a	1.6%	7	3.3%						
	Yes	75_a	87.2%	118_b	95.2%	193	91.9%	73_a	91.3%	122_a	96.8%	195	94.7%
	No	3_a	3.5%	4_a	3.2%	7	3.3%	6_a	7.5%	3_a	2.4%	9	4.4%
	Don't know	3_a	3.5%	0^1	0.0%	3	1.4%	1_a	1.2%	1_a	.8%	2	1.0%
Adequately informed about when the child	No Response	6_a	7.0%	1_b	.8%	7	3.3%						
	Yes	72_a	83.7%	119_b	96.0%	191	91.0%	72_a	90.0%	123_b	97.6%	195	94.7%

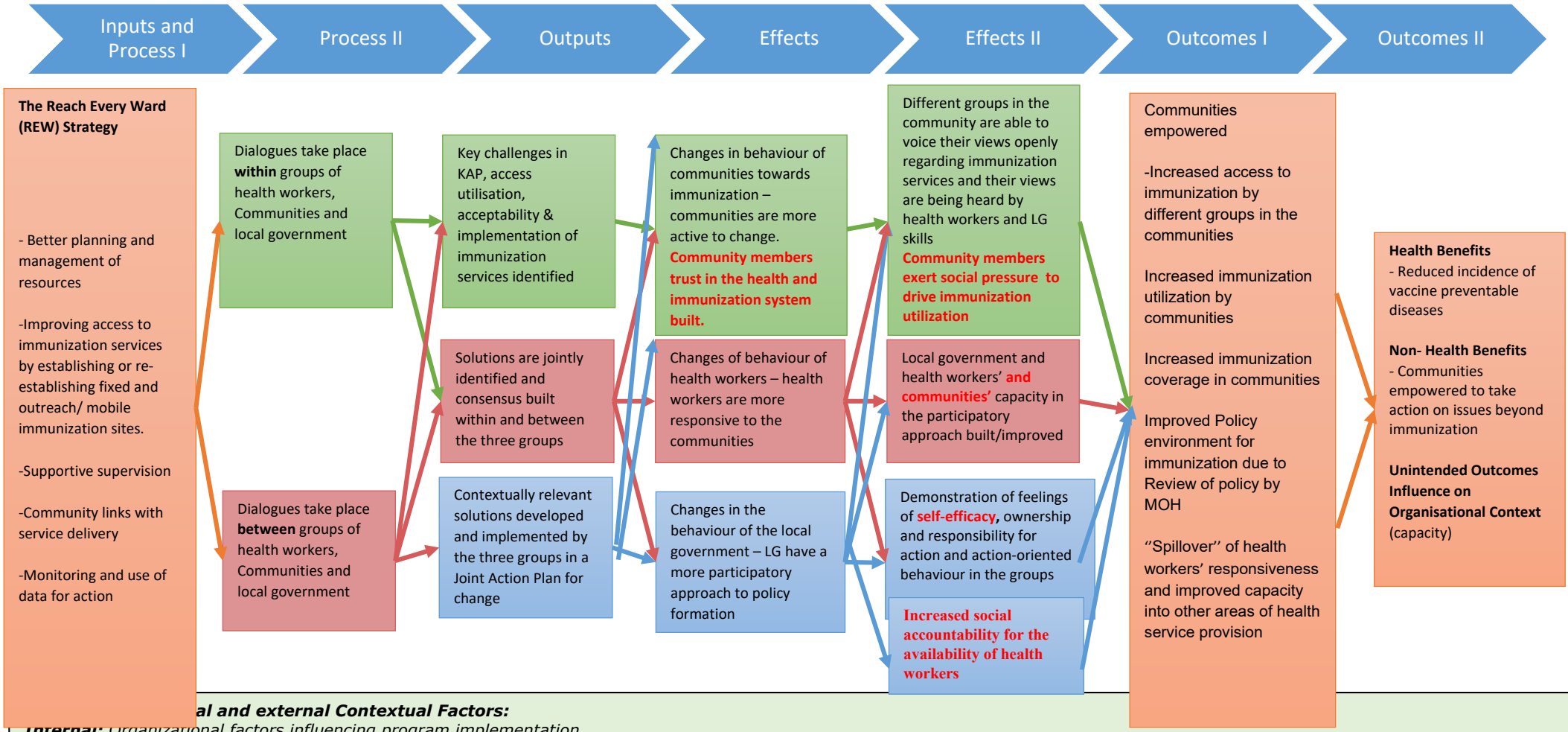
needed to be vaccinated	No	3[a]	3.5%	2[a]	1.6%	5	2.4%	7[a]	8.8%	2[b]	1.6%	9	4.4%
	Don't know	5[a]	5.8%	2[a]	1.6%	7	3.3%	1[a]	1.3%	1[a]	.8%	2	1.0%

Note: Values in the same row and subtable not sharing the same subscript are significantly different at p< .05 in the two-sided test of equality for column proportions. Cells with no subscript are not included in the test. Tests assume equal variances.[2]

1. This category is not used in comparisons because its column proportion is equal to zero or one.

2. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

Annex 17: Revised theory of change



al and external Contextual Factors:
Internal: *Organizational factors influencing program implementation*
External: *Drivers of change, enabling environment*

*The **basic assumption** that has been made in the intervention is that the communities, in particular families with young children, local government and health workers will actively participate in the process and take ownership of the process – which could enable the development and implementation of contextually relevant solutions to problems in access to and use of immunization services that have been identified by them.*
***Other assumptions** – stable government partners, secure environment*

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