

Grand Challenges Explorations Phase I Phase I Final Scientific Report

I. Activities

Background

The Global Routine Immunisation Strategies and Practices (GRISP) 2016 report endorses “community involvement” as one of its nine transformative investments in achieving better immunisation outcomes. Community involvement here refers to “investments in the shared responsibility for immunisation delivery between communities and the immunisation program to reach uniformly high coverage through high demand and quality services.” Centred on community involvement, our intervention has worked over the last 18 months to empower caregivers to seek and fully utilise vaccination services, by engaging these caregivers and communities on Vaccine Preventable Diseases, Immunisation and Social Determinants of Health, using community theatre that showcases real stories. Community theatre here includes a combination of acting, singing, dancing and spoken poetry, performed in town halls, religious houses and other local settings.

In the target localities for this intervention in Bayelsa and Rivers States (Nigeria), all stakeholders including the leadership of the health system, the community leaders, the health workers and community members participated in the design, implementation, monitoring and evaluation of the Community Theatre for Immunisation (CT4I). Rural women and community members act out the play that they have co-created, to increase awareness, rebuild trust and motivate pregnant women and caregivers to actively demand for vaccination services. The solution is flexible, adapted to communities, tells real stories, and has an added advantage of bringing vaccines to the theatre performance with support from the community health workers and the health system, helping people get the shots they needed for them and their kids right after the theatre performance.

Project Hypothesis

Our idea was built to test the hypothesis that caregivers will demand immunisation services as a right, if they are engaged through a human-centred process of trust building, education and social support. Our approach to the planned activities are highlighted in figure 1 below, articulating the iterative and learning nature of the human-centred design (HCD) approach.

The activities and their contributions towards supporting or refuting our hypothesis are reviewed here through the lens of a socio-ecological model for generating demand for vaccination services.

Design-thinking at the Institutional Level

The Health System leadership and the Immunisation program managers benefit from our solution, as a strategy to increase demand for vaccination, contributing to increased utilisation of vaccination services, improving the health and well-being of families and communities. The focal persons in the health system responsible for community engagement and the frontline health workers as well, also benefit from our solution, as a strategy that makes their work of reaching communities with vaccination messages and services easier. They also benefit by leveraging the strategy to strengthen trust between health services and the community, and to increase community involvement in the immunisation programme.

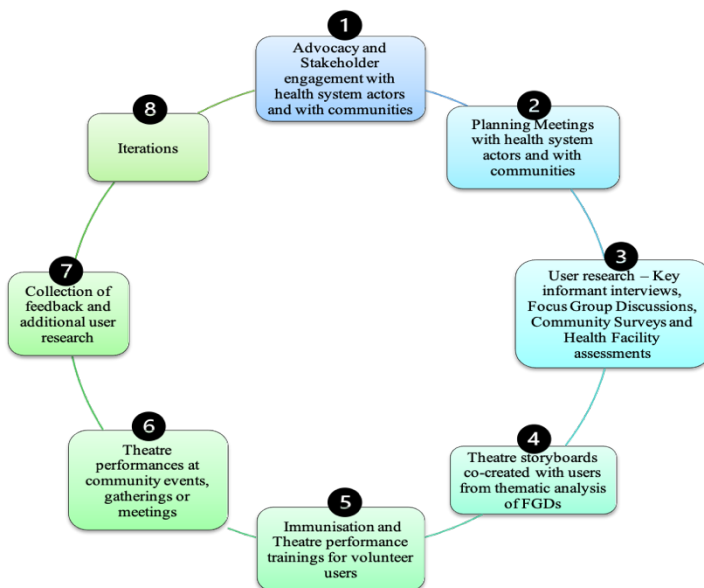


Figure 1: Outline of activities

Our intervention engaged with Government stakeholders of two States and three Local Government Areas (LGAs), to introduce the project to them. Initial engagements included key informant interviews of decision-makers and mid-level managers of the immunisation and primary health care programmes in these locales. The results of these interviews complemented desk reviews of existing national and state immunisation programme reports, to help provide local context of the immunisation programme and highlight both the demand-side challenges and current approaches to solving the problems. Focus activities at this level were the planning and review meetings, held at both State and LGA levels, working in sub-groups with these key stakeholders.

One of the key assumptions that we tested during the planning phase was government buy-in into the intervention. Additionally, as part of our human-centred design, we needed to design with decision-makers and mid-level managers within the health system, towards ensuring that the intervention was participatory and inclusive at the institutional level.

The planning meetings drew on the local knowledge of these institutional players, and resulted in iterations around the schedule for interventions and decisions on alignment with the local calendar of events. The meetings allowed for co-creation with decision-makers and mid-level managers of the immunisation program in those locales, and to secure Government buy-in and create an ownership of the intervention by Government. These meetings were also used to review data and progress in the intervention LGAs. In total, 32 of these planning meetings were held. At the level of the Immunisation Program, we also tested assumptions on health worker buy-in and vaccination service availability at the play.

We succeeded in engaging a total of 56 mid-level managers and decision-makers within the health system, and we secured government buy-in and health worker buy-in. These levels of buy-in were demonstrated by the unbridled access provided to us at the management level to immunisation data and the support provided by the vaccine security and logistics teams to ensure that vaccines were available at intervention health facilities and at the venues of theatre performances. Buy-in was also demonstrated by the State leadership of periodic intervention review meetings and the provision of an opportunity to disseminate the results of the intervention at the Bayelsa Health Summit, where a poster presentation and a performance were part of the summit programme.

Our initial prototype for the intervention included an initial advocacy and stakeholder engagement targeting decision makers, to obtain their endorsement and approval, followed by additional stakeholder engagements with mid-level managers. Through rapid prototyping, this model was not entirely successful in Bayelsa State, leading to an iteration of the prototype to kick-off with preliminary engagements with the mid-level immunisation programme managers. This resulted in the participation of the mid-level managers in Rivers State in the design of the high-level advocacy engagements and in quicker approvals of the intervention across implementation levels in Rivers State that was experienced in Bayelsa State.

Designing with decision-makers and mid-level managers has also seen institutional uptake of the intervention. At the end of 2020, the Rivers State Immunisation programme had included a budget line for CT4I in its other poorest performing LGA, within its community engagement budget and as a strategy to generate demand for vaccination. In April 2021, the National Primary Healthcare Development Agency commissioned the use of CT4I to combat vaccine hesitancy, as part of the strategies for the COVID-19 vaccine introduction in Nigeria. On the 2021 World No Tobacco Day, the World Health Organisation State Office in Bayelsa State commissioned and used community theatre to engage audiences and disseminate anti-tobacco messaging. Bayelsa State also has CT4I as one of its priority interventions in the State's approved GAVI Health Systems Strengthening fund request, targeting high risk and underserved communities.

Design-thinking at the Community Level

Within each LGA, we identified 6 priority communities working with the immunisation managers. These communities were selected using a set of pre-defined criteria that enabled us to test the effectiveness of our solution in rural vs. urban communities, in communities with poor vs. average performance on vaccination uptake, and in high risk communities (hard to reach, security compromised, or frequently affected by floods) which contribute quite significantly to under-immunisation and zero doses in the region.

Priority activities at this level were the initial advocacy engagements with community leaders and the user research – key informant interviews with community leaders, focus group discussions with community members and community surveys. A total of 18 communities were targeted, with advocacy visits conducted to the community and religious leadership of each of the 18 communities, to introduce the project to them. Initial engagements included key informant interviews of community leaders and focus-group discussions with community members to understand the human factors and local contexts that shape demand for vaccines. A total of 59 community, traditional and religious leaders were engaged and 216 community members participated in 18 focus group discussions.

Even with the buy-in of the health worker at the institutional level, there was a need for the health workers in the facility serving intervention communities to lead engagements with community leaders and communities for the user reach. At the level of the community, we tested assumptions on Community and Religious leader buy-in and on Community buy-in. In all identified communities, a pre-implementation survey was conducted (and subsequently a post-implementation survey in the lead up to this interim report), to derive some quantitative data on appropriate immunisation of children before and after interventions in those communities. The pre and post-implementation surveys were conducted through purposive sampling of households with eligible children in intervention communities, starting from the household that was furthest from the health facility, until ten households were sampled. In each sampled household, the survey tool was administered for one eligible child (0 – 24 months) only.

The pre-implementation surveys were followed by a focus-group discussion (FGD) with target users. The selection of participants for the FGD was based on purposive sampling, working with the health care workers and community leaders and using expert knowledge of the population. It was designed to maximise demographic and functional diversity of the participants on the uptake of vaccination services. FGD participants were recruited based on Gender (female), Age (women

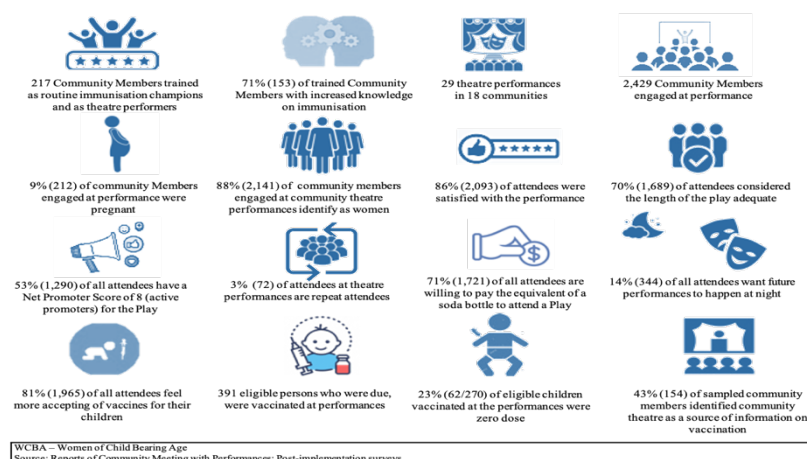
of child bearing age), and residence in community. Participants were also selected to ensure that there was a mix of active caregivers (mother with at least one child between 0-24months), pregnant women and other younger women.

The FGD provided qualitative and experiential insights on the knowledge and perceptions of vaccines and vaccinations, and on the unique barriers to accessing services in a particular community. All standard protocols for facilitation, recording and analysis of an FGD were adhered to. Thematic analysis of the FGD provided the key topics that would form the themes for the story board of the community theatre. For each FGD in each community, at least 7 broad themes were identified.

Conducting community entry early, and working together with the health workers enabled us to secure community acceptance. Community buy-in then paved the way to plan with the communities and iterate our intervention. In designing with the community members, community buy-in was demonstrated in the use of community assets like town halls and community radio to support performances. Impact at the community level was measured through community surveys that were executed at pre-implementation, prior to the interim report and at the end of the project.

Design-thinking at the Inter-personal Level

The inter-personal level is an instrumental level in our approach to deploying our intervention. At this level, the focus was on building the capacities of community members who would then become immunisation champions. These champions would exercise their new responsibilities as champions and their new skills as theatre performers through performing at plays. In applying design-thinking at this level, we were essentially creating a new group of advocates for immunisation within the communities, charged as duty bearers to create social momentum for vaccination among friends and within family units, and across the communities.



Health workers serving the communities led the training of the community cast on Immunisation. The intervention started with a certain level of understanding of our users, but co-creating at this level provided much deeper insights into the daily lives of our users and how their routines intersect with the health facility. It provided an opportunity to iterate theatre performance schedules and vaccination outreaches. It gave a platform to flesh out the storyboards drawn from thematic analysis of the focus group discussions. Co-creation at this level was critical to driving participation and inclusion, and ensuring that CT4I was designed for every day actions.

Figure 2: Overview of results I

The key assumption tested at this level was user willingness to co-create. In co-creating with the community members, we were able to infuse performances with local songs and dance, to develop scripts in the local languages of the different communities and we were able to design costumes that were relevant to the culture and traditions of the community. We saw a strong inclination of users to choose to perform in local languages – Engenni, Ijaw and Pidgin – rather than English, as well as users choosing to include messages on priority concerns for the community in the performances e.g. messages on appropriate refuse disposal. Women Groups and Women Economic Collectives in the communities would also become key drivers, as many of our champions were members of one group or the other, leveraging their networks to mobilise community members to performances. At this interpersonal level, we measured impact through pre- and post-training assessments of champions and through the participation of these champions in actual theatre performances.

Design-thinking at the Individual Level

At the individual level of the individual, we were able to successfully test assumptions on appropriate locations for performances and sustained interest during performances. Individuals typically preferred indoor performances, as well as that performances in religious houses which both showed significantly higher participation and engagement than those in town halls, markets or community centres. Participants stayed throughout the 45-minute duration of performances, and have joined in question and answer sessions on Vaccination as part of the performance.

Our human-centred design approach relies heavily on the collection and use of feedback for iterations of our model. An interesting lesson has been drawn from the high attendance at plays, by children aged 5 - 10 years, which has resulted in deliberate efforts to tap into the opportunities presented by the attendance of children.

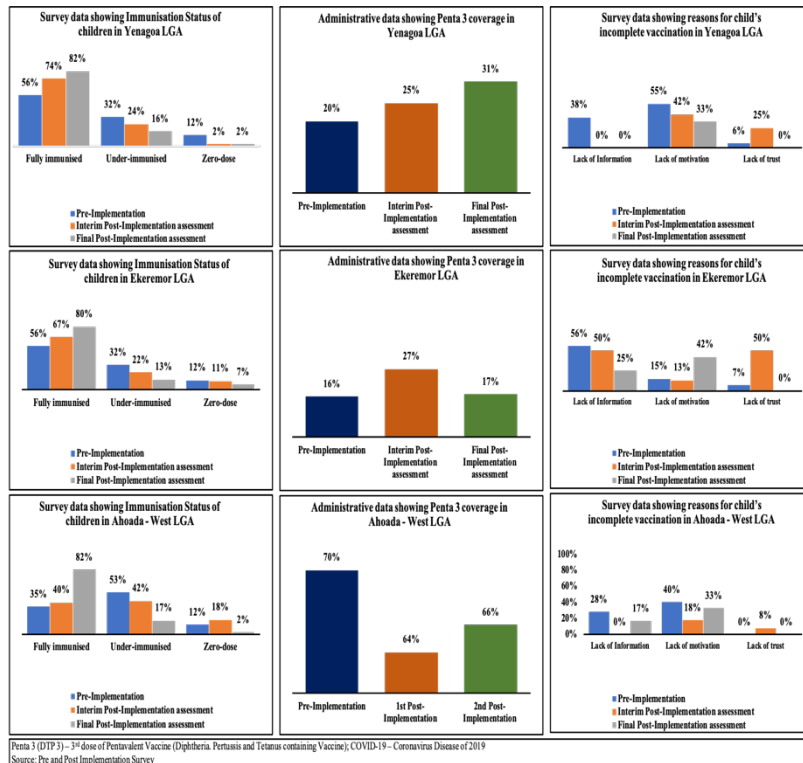


Figure 3: Overview of results II



Figure 4: Sample Pictures from CT4I implementation

During implementation, we applied product design, by researching, ideating, conceptualising and building theatre performances that better fit within the lives of caregivers and communities. This has led to changes in locations where theatre performances occur, with a significantly higher leaning for religious houses and meetings of women groups, complemented by performances at routine community dialogue meetings. Finally, there has been an application of service design in the planning and organising of people, infrastructure, communications, and material components of vaccination outreaches that are conducted at the theatre session, in order to improve the value, convenience, and interaction between health workers and caregivers. This was not part of the original solution, but was the first change made to the solution after initial rounds of user research.

Additional unexpected benefits of the Intervention

The co-creation of one particularly emphatic theatre performance provided a first opportunity for the community health worker to meet with the traditional and community leaders, and engage on vaccination service delivery. This resulted in the development of a play that was focused on the challenges faced by the health worker in their relationships with the community. At the end of the performance, the community leaders summoned a town-hall meeting to discuss and resolve

Messaging has also been infused into performances to support them to engage their parents to vaccinate younger siblings and to function as enthusiasts that pave the way for increased acceptance of HPV vaccine when introduced next year.

As part of solution's human-centred design approach, we applied communication design through strategic engagement with the audience to design how vaccination messages are delivered during performances, in a consistent and engaging way. This resulted in changes from how the delivery of vaccination messages were originally structured – as dialogue, and expanded it to include backdrops during performances and placards held up by children in specific scenes during the performances.

There has also been a need to make changes by now applying experience design, focusing on the level of engagement and satisfaction that viewers derive from the performances while it addresses their needs and context. This has been a key driver of testing the assumptions on repeat attendance, even though it was not a part of the original solution.

on newer mechanism with which the community will support the health worker in the execution of their duties. One such resolution was that the community will convene microplanning meetings for routine immunisation quarterly to support the health worker.

In the course of our planning and review meetings with health workers, we capitalised on the opportunity to build their capacities on interpersonal communication, defaulter tracking and immunisation data entry. These became a key part of our HCD approach. Additionally, we capitalised on the opportunity to develop the capacities of mid-level managers at the LGA level on community engagement and to support the health system to build community resilience through improved relationships with the health system. Although these were not activities that would directly prove or refute our hypothesis, they were incidental opportunities, that arose from designing with these key actors in the health system.

Conclusion



CT4I was built to test **the hypothesis that caregivers will demand immunisation services as a right, if they are engaged through a human-centred process of trust building, education and social support.** Communities were engaged to take the lead in identifying some of the demand side challenges and barriers to demanding immunisation, and these topics formed the foundational themes around which drama episodes were developed. Results from intervention communities clearly demonstrate an increase in knowledge among caregivers who act in the play and an increase in knowledge among attendees at performances. The results demonstrate a reported increased acceptance of vaccination by attendees, and significant declines in proportion of caregivers in intervention communities who report either lack of information, lack of trust or lack of motivation as a reason for their child's incomplete vaccination.

Figure 4: Overview of lessons and future direction

Results also clearly demonstrate important experiential results in deploying theatre, through a human-centred process, with reported satisfaction by attendees, positive net promoter scores and the utilisation of available vaccination services provided at the theatre performances. Ultimately, the intervention leveraged the power of story-telling and the potential role of design thinking in solving global health problems to address the challenge of increasing demand for vaccinations. Our results have been disseminated through abstract presentations at scientific conferences. An academic publication is being prepared for submission to a peer reviewed journal. The success of CT4I provides key lessons, especially with renewed vaccine hesitancy since the COVID-19 pandemic. Replication of the intervention in similar contexts could be key to strengthening community involvement in driving vaccine hesitancy for routine vaccines and for the COVID-19 vaccine. Scaling the intervention through additional technological and social innovation will also be critical to strengthening demand for vaccines.

II. Challenges

Challenges	Strategies deployed to address them
Delay in securing State buy-in in Bayelsa State	In the initial months of implementing the project, there was significant resistance from mid-level program managers in Bayelsa State, as approval to implement the project had been provided by high-level decision-makers without consulting them. This led to major delays in commencing implementation, and to a key lesson for the team. Implementation was commenced in Rivers State, taking the lessons learned from Bayelsa State into cognisance. Advocacy engagements were continued with Bayelsa State and eventually led to consensus and commencement of implementation.
The COVID-19 Pandemic	As a result of the outbreak of COVID-19, there was a need to initially put a pause on planned performances in line with National guidelines. This 3-month delay led to an adjustment of timelines for implementation. There was a need to also invest more resources into securing supplies like face masks, hand sanitisers, Veronica buckets and liquid soap to help continue performances safely. There was an added need to include COVID-19 related issues in FGDs and in performances, especially around behavioural guidelines on how to stay safe and on COVID-19 vaccine-related misinformation.

