

#	Addressed to	Question	Response
1	Majdi Sabahelzain	Was 20 IDIs enough sample to suggest such recommendations?	We conducted a qualitative study and reached data saturation with 20 IDI, which means we were able to capture the breadth and depth of perspectives (findings) necessary to inform our recommendations. The recommendations were divided into immediate/quick fixes for short-impact and strategic (medium to long-term) for these crisis contexts.
2	Majdi Sabahelzain	How was coverage determined? nationwide surveys?	We did not measure coverage. Our study was qualitative.
3	Majdi Sabahelzain	Do you think earmarking vaccines for humanitarian settings could be an option	I understand that vaccines are earmarked for acute humanitarian settings. However, these territories have been affected by protracted conflict for years and have not been reached by the traditional health system, which is already fragile. So, the need now is for another modality to reach these missed communities, or even support the current localized practice through policy at global and national levels. I think there is more shifting now to an NGO-led model such as this initiative in Sudan: https://reliefweb.int/report/sudan/gavi-save-children-and-unicef-collaborate-strengthen-immunization-services-sudan
4	Hemel Das	How does the LQAS did analyzed the Unimmunized children and ZD Children.	In our study, zero-dose (ZD) and under-immunized (UI) children are defined as the children who missed Penta-1 and Penta-3 doses respectively. For analysis, we considered all sampled children as denominator in calculating the prevalence of ZD. On the other hand, the children who received Penta-1 were considered as denominator in calculating the prevalence of UI.
5	Hemel Das	any social factors for the ZD/UI community?	We performed a Logistic regression to identify the factors influencing ZD/UI in LQAS sample. It was found that type of study areas (haor, char, coastal, plain, urban), distance from nearest EPI center (<250m, >=250m), availability of EPI card (yes,no), age of caregiver (in years) (18–24, 25–35, >=36), occupation of mother (non-earner, earner), and number of earning member in a household (1 person, >1 person) were significantly associated with ZD/UI. The detail of the findings can be found in https://doi.org/10.1016/j.vaccine.2024.04.018
6	Hemel Das	Curious about overall cost of the LQAS?	LQAS is well-known and cost-effective sampling method and we had to spend a very small amount of money for collecting data using LQAS. However, we did not do cost-effective analysis in this study.

7	Hemel Das	Why you focus on 4.5 to 23 months?	We know that third dose of pentavalent vaccine is scheduled for 3.5 months (14 weeks) of age of a child. We allowed a one-month grace period in which children are still deemed to be on scheduled. Thus, the lower limit was chosen as 4.5 months to ensure that all children under 2 years included had the potential to have received both Penta-1 and Penta-3.
8	Krishna Choudhary	It seems non-Hindu are likely with ZD, is there any reason behind?	See discussion in recording
9	Krishna Choudhary	Did you observe any correlation of ZD/UI vs social factors e.g. economic status, educational level of caregiver, etc.?	See discussion in recording
10	Krishna Choudhary	How was correlation of ZD with service contact?	See discussion in recording
11	Krishna Choudhary	How were the countries with higher zero-dose selected?	See discussion in recording
12	Mohamed Hussein Muhumed	How innovative is the project?	Use of clan-mediated access negotiation was a pioneer approach to reach inaccessible population in Somalia, in this regard the project design is considered innovative. Due to restrictions of armed groups on the use of Smart Phones in the project locations, the health camp teams primarily used hard copy registers and summary tools while the team supervisor periodically travels to the nearest government-controlled area to upload summary forms via online system which then generates dashboards to facilitate data-driven action.
13	Mohamed Hussein Muhumed	Thank you Dr. Mohamed. These findings are great! Have there been any changes to the model since to help address the shortage and stock out challenges?	Yes, the challenge of vaccine stock-out was visible in the first year of the project but later we developed a "traffic-light tracking system" to monitor vaccine consumption reports and stock replenishment which helped us fixed this challenge.
14	Faith Namugaya	How do you manage those whose parents or caregivers are not available during HTH registration?	See discussion in recording
15	Faith Namugaya	Thank you Faith! Any thoughts as to maybe why the data wasn't received at all from the striped sub-counties?	See discussion in recording

16	Seungwoo Kang	Thank you for the presentation! Any data interventions? e.g., to improve the documentation in DHIS2, tracking for follow up, or vaccination/health cards?	See discussion in recording
17	Bahman Shahi	With 80% increase in outreach only 27% increase in vaccination, would you please share the % age of ZD children covered?	See discussion in recording
18	Flavia Najjuma	Nice talk Vivian, where care givers motivated in cash or kind? Any cost associated with the delivery of this P2P intervention engagement session or per locality?	See discussion in recording
19	Flavia Najjuma	What is the implication of peers literacy level?	See discussion in recording
20	Flavia Najjuma	What's the currency?	See discussion in recording
21	Martha Ndiko Ngoe	Nice Talk Anti Martha, 1) what criteria were used to prioritize the 6 selected health areas? 2) I might have missed this, but what was the overall implementation timeframe?	See discussion in recording
22	Yahaya Mohammed	70% not affording right?	Yes, that is right
23	Yahaya Mohammed	Long waiting time is one of the key findings, what is its implication on recommendation?	This highlights the need to have more staff at the service point. Recall we mention the over reliance on volunteers, we have advocate to political leadership in these states to recruit more personnel to reduce the waiting time
24	Viviane Azais	Would you have the data for the different specific components being mentioned?	See discussion in recording
25	Viviane Azais	Thank you for interesting child immunization readiness snapshot analysis, what framework are you using?	See discussion in recording

26	Viviane Azais	It would be interesting to know about use of these results. How do people use this information to course correct e.g., when there is a shock, what are the decisions to respond, who is responsible, etc.?	See discussion in recording
27	Viviane Azais	Really interesting piece Viviane. How did you get access to GAVI's list of ZD priority districts in Madagascar?	See discussion in recording
28	Mira Johri	Thank you for interesting work, how was the result of sensitivity analysis result?	<p>We did three kinds of sensitivity analyses, considering 1) differences in cluster size, 2) child age up to 35 months, and 3) the subcomponents of full immunization with the core basic EPI vaccines (receipt of OPV and DTP3/Penta3). All sensitivity analyses supported the paper insights and conclusions.</p> <p>The most important challenge from a methodological perspective related to cluster size, as the survey clusters are small and estimates have considerable uncertainty. We ran two sensitivity analyses varying cluster sizes (one excluding singleton clusters and one excluding clusters with fewer than five children)- these yielded very similar insights to those from the main analysis, demonstrating that general inferences are robust.</p> <p>For more info, the article is available here: https://doi.org/10.1016/j.lansea.2024.100504</p>
29	Mira Johri	Mira, do we know what might be some of the health system drivers of this variability?	<p>Policy initiatives to strengthen routine immunization in India have largely focused on lagging states and districts. The Intensified Mission Indradhanush (IMI) campaigns have been primarily district-focused, which has helped to bring up lagging districts and may have made the coverages in the districts more similar. These were necessary steps; however, as coverage increases, the results from our study highlight the need to shift the focus at the sub-district level to reach under-vaccinated pockets. These pockets often represent areas that health systems find difficult to reach geographically or to offer services (due to context or lack of personnel), or communities experiencing greater social exclusion, where deeper engagement is required to turn things around.</p>

			<p>For more info, the article is available here: https://doi.org/10.1016/j.lansea.2024.100504</p>
30	Mira Johri	Excellent presentation and revelation. What definition of ZD was used in your study?	<p>We considered three exposure definitions:</p> <ol style="list-style-type: none"> 1. No DTP1: The main analysis followed the IA2030 definition and considered as zero-dose all surviving children aged 12–59 months who did not receive the first dose of diphtheria, tetanus, and pertussis (DTP1) vaccine. 2. No RI: We conducted a sensitivity analysis tailored to the Indian context using an alternative coding of the zero-dose variable that strictly reflected children who receive no routine immunisations (no RI). Any child receiving at least one dose of any vaccine delivered through routine services (BCG, DPT1, DPT2, DTP3, MCV1) was considered vaccinated. Children who received none of these vaccines, including those who received only OPV, were categorised as zero-dose. Children who received only OPV doses were judged to have been vaccinated via Supplementary Immunization Activity (campaign). 3. Unvaccinated: We conducted an additional sensitivity analysis considering children who received none of the 8 recommended basic vaccine doses. <p>For more info, the article is available here: https://doi.org/10.1136/bmjph-2023-000022</p>
31	Mira Johri	How can this study be replicated in other countries to generate evidence from other settings?	<p>It is hard to find similar longitudinal datasets such as the India Health and Development Survey (IHDS) that contain the necessary measures and would allow us to replicate the study. However, within the IHDS dataset and thus our analysis, there is already considerable variation in context, due to the size and complexity of India.</p> <p>In one analysis, we looked only at the results within survey clusters. The findings were very similar, yielding similar messages.</p> <p>While reasoning out of sample is always risky, we cautiously hypothesise that</p>

			<p>general patterns may hold in other settings.</p> <p>For more info, the article is available here: https://doi.org/10.1136/bmjph-2023-000022</p>
32	Amsalu Shiferaw	Thanks for your presentation. Could you give an insight into the slight modification of the Gavi IRMMA framework to the IARMM that you used?	We slightly modified IRMMA to IARMM because of the reason that following the identification of who, where, how many and why ZD and under-vaccinated were not able to start or complete immunization we wanted to show and raise awareness of evidences, barriers and build consensus among stakeholders and get support from the stakeholders as they have stakes/tasks to be done by each stakeholder. Conducting advocacy using the identified situation and challenges will also help to design reach into agreement what needs to be done, who is going to do, how? where and by when to reach ZD and under-vaccinated children and it helps to monitor milestone once consensus is reached
33	Uche Ibe	Thank you very much for this insightful presentation. Vaccination decisions looking at the it from the perspectives of experience of side effects and its associated cost to care givers Was this also considered during the study?	See discussion in recording
34	Brooke Farrenkopf	How were the four services selected to be part of the MZD indicator? Were other services considered when you were creating the indicator?	See discussion in recording
35	Brooke Farrenkopf	Thanks for the MZD presentation. Is this published already? In the DSI project we are implementing, we are already seeing the need for integrated services. It will help to get more insights from your work.	See discussion in recording

36	Brooke Farrenkopf	Thank you for your presentation Dr. Brooke! I would be very much interested in learning more about the country profiles and tailored integration models that you mentioned. When would preliminary insights be available to share?	See discussion in recording
37	Brooke Farrenkopf	At what age did you define a child as ZD or MZD in this study?	See discussion in recording