

Barriers to Immunization in the Dominican Republic and Mozambique

The CHANGE Project worked with the ministries of health and other partners in the Dominican Republic and Mozambique to carry out national qualitative and quantitative studies on barriers to increasing immunization coverage. The study in the Dominican Republic was undertaken in conjunction with the introduction of pentavalent vaccine. In Mozambique the study was undertaken to fill a gap in understanding of the reasons for current coverage levels. While the official coverage for most antigens was 80 percent or higher, most experts felt that the true figure was at least 15% lower.

Methodology

Based on the experience of numerous similar studies over the past 15 years, the planners of both studies felt that a mix of quantitative and qualitative methods was needed. One reason was the fact that medical decision makers often do not respect the results of purely qualitative studies. Another reason was the possibility of “triangulation” – learning about the same issues through various methods – which in previous studies had shown to be invaluable. The following table summarizes the methods and samples.

	<i>Dominican Republic</i>	<i>Mozambique</i>
<i>When studies done</i>	2001-2002	2002-2003
<i>Who carried out</i>	AlConde research company	CHANGE consultants with MOH and Project HOPE staff and consultants
<i>Research methods and sample</i>	5 FGDs + 600 IDIs in 5 provinces with mothers of children 6 to 16 months old (400 urban and 200 rural)	36 communities in 3 provinces, 1 in each region: 851 IDIs with mothers of children 3-23 months; 299 exit interviews; 32 facility observations; 24 FGDs with mothers of children on-schedule and not on-schedule; 32 IDIs with health workers
<i>Special topics of interest</i>	New pentavalent vaccine, perceptions of Hib and meningitis disease	Timeliness of vaccinations, dropout from services and reasons for dropout, public perceptions of vaccines and vaccine services, quality of service delivery, and IEC needs and opportunities

FGDs = focus group discussions

IDIs = in-depth interviews

The research objectives in the Dominican Republic were to:

- Explore perceptions, experiences and expectations among communities concerning the provision of immunization services (in campaigns and fixed posts).
- Determine specific problems of access to immunization services (time, availability of services, cultural accessibility).
- Identify other barriers to getting immunized in routine services.
- Explore knowledge and perceptions of the immunization card.
- Identify knowledge and perceptions about pentavalent vaccine and motivations to receiving it.

The research objectives in Mozambique were to:

- Explore caregivers' perceptions, experiences and expectations regarding the provision of vaccination services in fixed posts and mobile brigades.
- Describe problems of access to vaccination services in terms of time and quality of services.
- Describe health workers' role in provision of vaccination services in fixed posts and mobile brigades.
- Identify the public's sources of information about vaccinations.
- Identify the extent of missed opportunities for vaccination and reasons for missed opportunities.
- Explore perceptions, understanding and use of the child health card by primary caregivers and health workers.

Findings from the Dominican Republic and Mozambique

Key barriers: vaccine shortages and poor access

The major problem that the Dominican study revealed was the lack of a reliable supply of vaccine in the health facilities, except in the capital, Santo Domingo. The mothers in all of the focus groups mentioned this problem. In interviews, 60% of the mothers (most percentages are rounded off) agreed that “sometimes they don’t have the vaccine that I need.” Although 94% were able to immunize their child the last time they tried, three quarters of the others could not because the facility lacked the vaccine that they needed. What one mother said in a focus group expresses the general opinion on this: when we arrive to have our child immunized, the health staff says, “there is none, come back tomorrow!”

The study found other reasons why many mothers come to immunize their children but cannot do so or can only with difficulty. Mothers said that at times they go to the health post and find it closed when they arrive (25%); 24% say that sometimes the health workers are not there; 69% say that they have to wait a long time; and 40% say that sometimes they do not immunize the child because the child is sick. (This is rarely a legitimate reason not to immunize). Some 50.5% of mothers interviewed had arrived at a health post to get a child immunized but could not.

In Mozambique, there were also many instances reported where no vaccine was available (stockouts), but lack of vaccine did not emerge as a major reason for non-immunization or incomplete vaccination. In fact, mothers said that the major barrier to immunization was the long distance (difficult access) to immunization services. Almost 9% of children at least 12 months old (and over 12% of all children in the study) had not been vaccinated even once. Mothers of these children overwhelmingly said the reason was difficult access to services. This barrier is particularly important in Mozambique due to the destruction of many health facilities during the decades of war that ended in the early 1990s and because of the country's large size. Among mothers of children behind schedule on their immunizations, there was also a fear of side effects and evidence that a significant number did not know when the next vaccination was due.

There were also service-related complaints in Mozambique. Many mothers complained of long waits. Other complaints included: inconsistent and unpredictable hours of service; unreliable and unpredictable outreach team visits; stock ruptures; and missed opportunities. A number of questions explored opportunities to inform and motivate mothers during prenatal visits and opportunities to give BCG after births in a health facility. Many of these opportunities were missed.

Health staff

Many studies on immunization barriers have found that health workers' harsh treatment of mothers is an important reason why they do not return to ensure that their children complete the basic immunization series. In the Dominican Republic study, health workers' treatment of mothers was described as good in most sites; in Mozambique it was extremely variable and not so good overall. Mothers' comments in Mozambique varied from "we are vaccinated like dogs" to a common opinion that they do the best job they can.

In the Dominican Republic, 97% of those interviewed said that they had been treated well or very well and 92% of this group said they were always treated well. There were some communication problems but they did not appear to be serious except in one province. Most mothers felt that health workers were: nice (97%), respectful (95%), willing to give service (95%), kind (91%), and informed about vaccines (83%).

In Mozambique, health workers were given an opportunity to explain their own role in immunization. They described their heavy work loads, low and delayed salary and per diem payments, lack of essential supplies and equipment, limited training opportunities and an almost total absence of supervision. Observations and interviews showed that health workers had low levels of knowledge on immunization; they missed opportunities to vaccinate and educate (only 27% of child health cards examined had a vaccination return date written); and that, particularly in certain locations, they treated mothers poorly (41% of mothers said that during the last vaccination visit a health worker did or said something that made them feel uncomfortable). Virtually none of the health workers interviewed could identify their target

population for routine vaccination, the current year's objective, or coverage for the last year, although many expressed a keen desire to learn such things.

Mothers' opinions of health workers' capabilities

In the Dominican Republic mothers expressed a preference for immunization services in fixed posts and stated that they lacked confidence in the people who vaccinate during campaigns because "they don't know how to give injections" and some of them are not regular health staff.

In Mozambique mothers also felt better about health workers in fixed sites than in outreach sites. Most mothers felt unqualified to judge the health staff's competence and assumed the workers knew their jobs.

In the Dominican Republic, responses indicated that some health staff in fixed posts, as well as during campaigns, follow incorrect contraindications (especially regarding immunizing sick children) and use poor technique in immunizing (various reports of abscesses, of immunizations "poorly given"). In FGDs, some mothers mentioned their fear of health staff who are so poorly prepared that they might give the wrong vaccine.

Knowledge of diseases

Mothers in both countries had very poor knowledge about the diseases prevented by vaccines. However, an equally significant finding is that this low knowledge appeared to have no significant effect on their general enthusiasm to have their children vaccinated.

In Mozambique, only 13% of mothers could correctly name three vaccine-preventable diseases and 57% could not name even one. Only one in five knew that a child is due for measles vaccination at 9 months. Only 64% of over 800 mothers interviewed said that the main purpose of vaccination was to protect people from diseases (others said that immunization cures illness, helps growth, etc.)

- In the Dominican Republic, when asked about pentavalent vaccine, virtually all mothers liked the idea of getting more protection with less effort ("just one jab"). Only a small group (less than 5% in the survey and some mothers in one focus group) were worried that receiving five doses together might be dangerous (too strong, might cause "attacks" or "shock") and cause more side effects.
- The great majority of mothers believed that meningitis is a serious disease and more than 98% wanted their children vaccinated against it and pneumonia. In response to a question on what causes meningitis, over half of respondents said falls or blows to the head and another 30% said they did not know. The principal motivations for seeking the pentavalent vaccine are: protection against diseases, not having to suffer from so many injections, and not having to go so often.

Practical knowledge about services

It is essential that each mother knows where to take her child to be immunized and when it is time for the next dose. In the Dominican Republic, 17% of mothers responded that during their

last visit, the health worker did not inform them about the vaccines. The poorest mothers sometimes had difficulty giving their child's precise age. This could make it more difficult to know when to return for the next immunization.

These problems are more serious in Mozambique. Exit interviews after vaccinations showed: 43% of mothers were not told or could not remember the disease(s) the vaccine was for; only about a third were told about side effects; and a quarter were not told when to return for the next vaccination. A review showed that on only 27% of child health cards had a health worker written the date for the next vaccination.

The child immunization card is supposed to serve as a key channel for information on where, when and which vaccines are due. An important finding of the Dominican Republic study was that without outside assistance many mothers, even literate ones, cannot understand basic information on the card. Eighty percent of the mothers surveyed could read, yet only half of these literate mothers could look at a completed vaccination card and say:

- which vaccines the child had received
- how many immunizations the child had received or
- the date of the next immunization.

This finding is a strong argument for simplifying the card, for teaching mothers how to interpret it and for not depending only on the card to communicate this information.

FGDs in the Dominican Republic indicated that mothers' not bringing the card was a problem. In the survey, 20% said that they had forgotten to take the card at least once (but only 2.5% the last time).

In Mozambique, 87% of children had a child health card, but only about a quarter of mothers can read. Most mothers who said they knew the return date used methods other than the card to remember.

Timeliness of immunizations

The studies revealed problems with timeliness of immunizations in both countries. Of the 428 children with a card at the time of their mothers' interview in the Dominican Republic, 37% had their immunizations up to date.

The Mozambican study developed a definition of "on-time" for immunization (basically giving caregivers one month of leeway after their child was eligible for each antigen). By these definitions, 53% of children who use fixed facilities were on-schedule and 39% who use mobile brigades were on-schedule (49% overall). Immunization drop-out rates ranged from 8% to 13% (WHO considers below 10% as satisfactory).

Mothers' motivation

The vast majority of mothers in both countries were highly motivated to have their children vaccinated, with the understanding that this would protect (prevent, strengthen or cure) them against a number of serious diseases. Although mothers with better knowledge were somewhat more likely to have their children fully immunized, there is no strong evidence that the fact that many mothers did not know *what* diseases or have accurate information about the diseases had a major influence on their motivation.

Recommendations and Follow-up

Based on the study findings, the researchers in Mozambique recommended that the Ministry of Health:

- Prioritize cold chain installation for all fixed facilities
- Strengthen EPI logistics, especially the supply of vaccines and other supplies such as needles, syringes, and fuel
- Continue donor discussions related to expansion of fixed and mobile services
- Intensify capacity-building for health workers, particularly in counseling and forecasting vaccine needs
- Improve monitoring of coverage
- Strengthen IEC efforts (focus on counseling and communicating essential information)
- Intensify the engagement of parents, community leaders and health agents
- Develop national guidelines for vaccination messages (but with scope for local adaptation)
- Support improved information exchange between health workers and mothers
- Focus on improving health card as a tool for health workers, not mothers

The Mozambican Ministry of Health, with support from various partners, has taken action on a number of these steps. Insights from the study were used to develop new communication messages and materials to promote vaccination. In cooperation with other donors, Project HOPE and the CHANGE Project have facilitated improvements in immunization program logistics and procedures, supervision from the national EPI to provinces and districts, and the finalization of an updated EPI manual.

Project HOPE, with support from the CHANGE Project, carried out a follow-up study on the functioning of mobile units for immunization outreach. The study found substantial variation in effectiveness and efficiency and areas for improvement. While the mobile brigades accounted for more than 20% of vaccinations, there were many inefficiencies in planning and implementation. Project HOPE and the CHANGE Project discussed the findings with the Ministry of Health and other partners and drafted simple guidelines for improving mobile brigades. They are currently under MOH technical review.

In the Dominican Republic, the study has been followed up by a number of actions and improvements. The study findings were shared in meetings with health officials throughout the country; in-service training on immunization was given; supervision of immunization was systematized and better funded; and an immunization manual for health workers was completed and distributed.

At the time of the Dominican study, unreliable vaccine supply constituted the most important barrier to improving coverage and maintaining public confidence in the EPI. Since this study was carried out, the reliability of vaccine supply has improved substantially, although it still merits careful monitoring.

Discussion

Both of these studies helped define barriers to higher immunization coverage and provided the national immunization programs with direction for improvements. In both countries, it was useful to employ a combination of qualitative and quantitative methods. Including health workers among the groups interviewed in Mozambique provided a needed outlet for their important voice. Examining the same question with information from various sources and using various methods was very useful. For example, over three fourths of Mozambican health workers claimed to always write the return date in the child health card, yet an examination found such annotations in only a quarter of the actual cards.

In both countries, despite problems with the convenience, reliability and friendliness of services, mothers remained highly motivated to have their children protected against vaccine-preventable diseases. **This finding, which is consistent with those from many other studies, implies that interventions solely aimed at increasing demand – without accompanying improvements in the services offered – are likely to result in only limited increases in vaccination coverage.**

Barriers related to the quality and quantity of services play a large role in keeping coverage low. However, there are feasible solutions to increase quality and consistency of services. The program in the Dominican Republic needs to continue to focus on service quality while the program in Mozambique needs to work on both quality and increasing the number and reliability of fixed and outreach services.

References

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