Future Health Systems
Innovations for equity

Research Brief

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Barriers to access immunization services: a study in Murshidabad, West Bengal

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Background

West Bengal, the focus state of the Future Health System research *project*, has demonstrated an impressive record of progress in immunization coverage. According to a recent national survey – the National Family Health Survey (NFHS) - the percentage of fully immunized children in the state has reached about 64 percent in 2005-06 (NFHS-3) from a mere 34 percent in 1990-91 (NFHS-1), compared to the national progress from 36 percent to 44 percent during the same period. About three-fourth of all children in the state received measles vaccine in 2005-06 compared to 42 percent in 1990-91 (the corresponding national figures are: 59% and 42%).

Despite overall achievement in immunization coverage, there is a growing concern among the state's decision-makers about relatively lower performance in several regions within the state. These are typical *difficult pockets* where severe barriers are perceived to exist on the way of accessing public health services. The barriers may manifest in adverse geographical location and/or, absenteeism or inadequacy of grassroots workers, and/or low perceived needs, and so on. Understanding and addressing these barriers are essential steps to reach these difficult pockets and achieve the goal of universal immunization. This research brief attempts to explore the role of these barriers based on the outcomes of a FHS study recently carried out in Murshidabad - one of the most backward districts of India. The brief concludes with a few policy implications on how to overcome those barriers.

Data and method

The study is based on two sets of primary data recently collected from ten administrative blocks of Murshidabad district, West Bengal: (a) a household survey covering 2114 households, and (b) a survey on the frontline health workers. For household survey, the households were selected by using multi-stage 30/7 cluster survey method. At the first stage, 10 blocks were randomly selected from two strata (low and high performing). The second stage involved random selection of 30 village/ urban wards from each block.

Finally, 7 households with at least one child in the age-group 12-35 months were selected from each village/ward. Detailed background information on each of the selected villages / wards was also collected. In total, the survey produced information on the immunization status of 2142 children of 12-35 months age.

For the survey on frontline workers, 50 Auxiliary Nurse and Midwives (ANMs), 10 Block Public Health Nurses (BPHN), and 20 supervisors were interviewed to extract information on various supply side issues.

Results

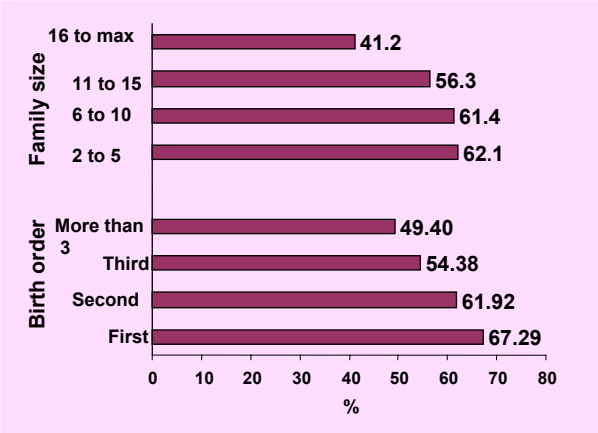
In this study, the barriers were classified and analyzed on three perspectives: a) beneficiaries b) village, and c) providers.

Beneficiaries' perspective

Barriers in this category typically reflect the demand side issues in terms of social, demographic, and economic covariates. There are several areas where substantial disparities and consequent barriers were found to exist. Important among them were (1) family size, (2) birth order, (3) religion, (4) mother's education, and (5) wealth status. For example, a child born in a very large family was much less likely to be fully immunized (41.2%) compared to a child in a small family of 2-5 members (62%). Similarly, higher was the birth order of the child lower was the chance of getting vaccinated (Figure 1). The result reconfirms the strong impact of inequity in distribution of household resources on utilizing public health services.

The evidences suggest that religion plays a key role in determining the immunization status of a child. Muslim children, for example, were less likely to be immunized (55.7%) compared to their Hindu counterpart (68.4%) even though Muslims hold the major share of population in the district. There are several possible explanations in this case: (1) an average Muslim household ranks lower in overall socio-economic status and faces much harder hurdles at the demand side, (2) specific cultural beliefs and practices which may not reflect adequate perceived need, and (3) resistance by the minorities to public health services as a demonstration of social negation or protest (Box 1).

Figure 1. Percentage of fully immunized children, by family size and birth order in Murshidabad, 2008



Source: IHMR FHS Survey 2008

Box 1

Except the last one, neither of the 11 children of Algun Bibi of Jangipur got vaccinated. Her husband is a farmer and holds a BPL card. Both of them are averse to the immunization services because they are not satisfied with the local Public Distribution System (i.e., ration shops). They hardly get anything from the ration shops. "Let them first give us food at low price and save us from hunger..then only we will think of accepting vaccines" Algun Bibi says with a disgruntled voice.

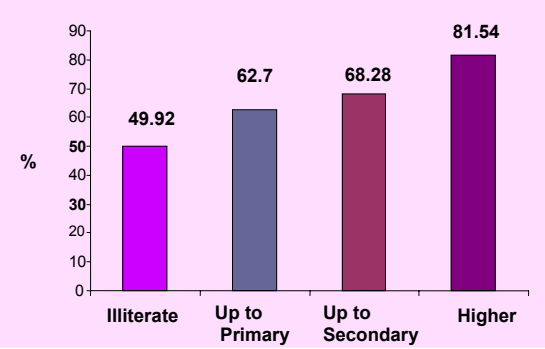
Mother's low educational status could be a crucial barrier in the context of immunization. As Figure 2 shows, the rate of full immunization was abysmally low for a child of an illiterate mother (50%). The rate trends high with respect to the progress in mother's education.

Similar pattern was observed when households were ranked according to the asset quintiles. Figure 3 shows a distinctly positive correlation between the economic status of the households and the status of immunization of their children. Poorer households utilized less of the services indicating the presence of strong barriers to access even for a freely available public health service.

Finally, the study also found a close association between the place of delivering a child and his/her immunization status. A child born at home was less likely to be fully

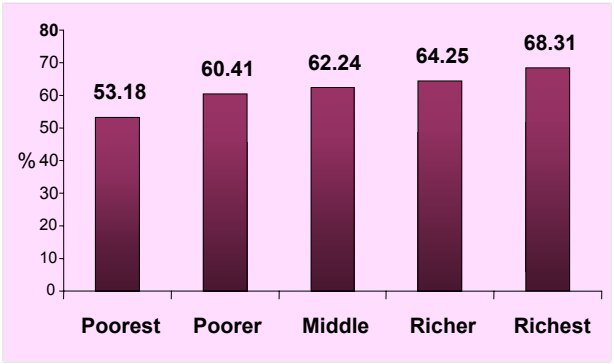
immunized. The full immunization rate worked out to 71.6% and 54.3% for the children who were born respectively at institutions and at home.

Figure 2. Percentage of fully immunized children, by mother's education in Murshidabad, 2008



Source: IHMR FHS Survey 2008

Figure 3. Percentage of fully immunized children, by asset quintile in Murshidabad, 2008



Source: IHMR FHS Survey 2008

Village perspective

How far the households are constrained to access immunization services by the location and infrastructural characteristics of a village they reside in? To answer the question, all villages selected for the household survey (300) were ranked on the basis of a set of village infrastructure (VI) scores, which was derived from a Principal Component Analysis of twenty village level characteristics, such as sources to drinking water, sanitation, proximity to nearest health facility, road condition etc. Finally, the villages were classified in quintiles – ranging from "weakest" to "strongest" - according to the VI scores.

Table 1 indicates that weak infrastructure and / or location disadvantage was indeed a critical barrier on the way of utilizing immunization services. Further scrutiny suggests that much of the variations (across quintiles) could be attributed to the distance from a village to the nearest health facility (one of the characteristics considered to derive the VI score). For example, the mean distance across all villages worked out to about 4 KM; however, the distance was found higher than the mean in about 70% of the villages in the lowest two quintiles. The road condition was another crucial factor - about 60% of all villages and 80% of villages from the lowest two quintiles faced serious transportation problem especially during rainy season.

Table 1. Full immunization coverage by village asset quintile in Murshidabad, 2008

Village quintile	Total no of FI child	% of FI child
Weakest	245	55.6
Weaker	268	61.5
Middle	253	61.0
Stronger	265	62.8
Strongest	285	66.6

Source: IHMR FHS Survey 2008

Providers' perspective

The nature of barriers from the providers' perspective was assessed by interviewing 80 frontline health workers (ANM, BPHN, and Supervisors). Almost all of the perceived barriers were linked to one or other administrative issues. For example, 60% of the workers identified irregular logistic supply as the major problem. Excessive pressure of preparation of various reports and inadequate supervision were the other two principal barriers, as reported respectively by 56% and 31% of the workers.

Availability of ANM or their vacancy was not found to have any direct correspondence with immunization coverage. But what really mattered

was their house visit during the pregnancy period of a mother or after her child birth. According to the household survey, the immunization rate was higher where health workers had visited mothers during their pregnancy period (Table 2). Further, the effectiveness of the persuasion of the health worker was quite evident since the subsequent visits to remind the mothers about immunization improved the coverage further.

Table 2. Percentage of fully immunized children, by health worker's visit in Murshidabad, 2008

% of children	HW visited		HW reminded	
	Yes	No	Yes	No
Fully immunized	66.7	56.8	73.4	54.5
Partially immunized	31.8	37.7	26.0	45.5

Source: IHMR FHS Survey 2008

Policy Implications

The study highlights the urgent need for addressing the barriers to access immunization service. The followings are some clear policy options emerged from the study:

1 There is a strong correlation between some socio-economic indicators and the perceived barriers to immunization. While most of them are linked to overall socio-economic development process, a few may be identified as the focal points for immediate intervention. For example, given the lower coverage among minority population, the social and religious organizations within this section may be actively involved to address the negative resistance problem. In addition, the informal providers of health care in minority–dominated areas may be involved in the existing village level planning process.

2 Geographical barriers are immensely critical especially in districts like Murshidabad where rural infrastructure is weak. It is encouraging to note that the recent health plans of several districts have proposed innovative measures to reach these areas especially for institutional birth delivery (e.g., partnership with NGOs to run birth delivery centers in remote areas of the Sunderban). Strong emphasis should be given to come up with such proposals for immunization services. In many cases, the incremental cost would be negligible if immunization packages are attached to innovative measures undertaken for other purposes.

3 The present system implies more emphasis on providing clinic based services coupled with weekly outreach camps for immunization at the sub-center level. This approach has its own merits; however, it also risks neglect of outreach visits and not sustaining personal contacts. The additional workers (ANM), deployed through a recent administrative drive, should be oriented towards this direction.

4 The barriers act in diverse ways –depending on the strength of their sources, beneficiaries, village, or providers - across different sections of population or different geographical areas. A cost-effective approach would be to *map* the regions within a district according to the nature of dominant barrier (s). The next step would be to adopt appropriate intervention in a region which has the best potential to act against the specific barrier.

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