

**SOCIAL SCIENCE AND IMMUNIZATION :
A PILOT STUDY IN A RURAL AREA OF BANGLADESH**

**(THE FIRST REPORT)
BRAC-ICDDR,B Collaborative Project**

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Introduction:

This report on, "Social Science and Immunization: A Pilot Study in a Rural Area of Bangladesh," includes the background, objectives, methodological issues, scope of the pilot study in relation to the main study, variables/indicators addressed, completeness of the variables/indicators compared to the main study objectives, identifying the gaps, strengths and weakness of the methods and instruments of data collection, validity and repeatability of the methods and instruments for the larger study, data analysis plan adopted and its rationale, short-comings of the study and critical views of the lessons learnt.

Background of the study:

Immunization is an effective way to prevent the young childhood diseases and thus ensure better child survival. Bangladesh has made remarkable strides in the field of immunization recently (De Silva. Herm, 1991). Insufficient research has been initiated in the socio-cultural aspects of vaccine use and delivery. There is an urgent need to use the social science approaches to know more about the difficult social, technical and administrative matters and identify the professional lapses in the national immunization efforts. The goal of this research is descriptive and exploratory. It is expected to be useful in preparing the necessary research instruments for a country study in Bangladesh (Chowdhury. Aziz and Bhuiya, 1995) as well as transnationally. The present study will provide background information of the immunization programme from the point of view of demand (community) sustainability and supply (programmatic) sustainability and help to formulate the Bangladesh country study protocol. While the country study plans to extensively look into five dimensions of sustainability, namely, (1) community (demand), (2) political, (3) programmatic (supply), (4) technical, (5) financial aspects of the problem, this pilot study in other words will emphasize on understanding the providers' (supply) and the consumers' (demand) points of view. This study will help to formulate new hypotheses and gain insights and ideas to be used in the expanded country study in Bangladesh.

In identifying disease prevention practices researchers tend to simplify results to such an extent that the complex network of factors and the human experience of illness is lost in the search for establishing empirical generalizations (Pedersen, 1992). Generally speaking this approach is identified as the quantitative-experimental and deductive model. Hence the tendency to use numbers as a language (hard data), disregarding the subjective and phenomenological human experience. Emphasis is placed on the explanation of phenomena from the point of view of researchers, that is, from the outside (etic approach). At the other extreme, there are those who conduct research using only qualitative methods (Pedersen, 1992). This approach is based on the social sciences paradigm that aims at understanding the human dimensions of the phenomena through qualitative research whose language is mainly verbal (soft data); its methods are non-intrusive, naturalistic and inductive. Emphasis is placed on coming to terms with reality from the actor's point of view, from within (emic approach). In attempting to identify the ways of sustainability of the immunization programme in Bangladesh this study has collected information on the programme by using both the approaches, the etic and the emic.

How immunization can be sustained in the maintenance of health is a concept which encompasses the realm of emotion and symbolic activities in thought and interaction through language (Yunus et. al., 1994). For example, when a person becomes ill his family frequently relates the illness to a behavior which has disregarded the norms of a society, and the prevention and recovery of illness is considered to be dependant on the wishes of God. An amulet is worn by a substantial population of rural people in Bangladesh and throughout South Asia (Maloney et. al., 1981). It is believed, that amulet is power, and it can protect as well as cure diseases. A mother procures an amulet for her child to protect him from an illness. If an infant develops a cold and has difficulty in breathing, then a piece of bone from the throat of a gender is used as an amulet, or a 'consecrated thread' (sutā parā) is used to protect the health of the child. It has been observed that in some places in Bangladesh, when a young child is

attacked by tetanus the care-giver uses a cut-piece of shoe or a piece of broom or iron around the neck of the child to ward off the spirit of tetanus (Personal communication, Aziz).

An understanding of the psychological aspects of the prevention of disease can be gained through a study of the perception of illness. Behavioral scientists who studied the cultural aspects of the community have rarely referred to preventive aspects of health that are constantly being faced by the people (Glasse, 1964). On the other hand, specialists in public health and epidemiology have made effort to identify various risk factors of common preventable childhood diseases but have not given adequate attention to the cultural aspects of the prevention including the past and the current relationship with the people's environment (Yunus et. al.,1994). Thus, preventive aspects of the preventable diseases within the familial and social contexts remain largely unknown.

Each culture includes particular ways of thinking, feeling and responding to preventive aspects of health that are characteristics of a particular society during a particular period. During the past few decades in Bangladesh there have been certain changes in the belief system of the people, particularly with reference to the cares and prevention of certain preventable diseases (Personal communication, Aziz). By using behavioral science methodologies this investigation hopes to be able to pinpoint certain lessons which may be helpful for a more effective implementation of the immunization programme at the community level.

Supernatural causes for preventable diseases recur in many culture (Atanda, 1989; El-Rafie et. al.,1990). Such causes are strongly rooted in the beliefs of the people of many cultural settings. Human beings are most reluctant to question the truth of such beliefs, because of the chaos or vacuum in which disbelief would leave them (Black, 1973). When the perceived causes of preventable diseases relate to supernatural ones, then ethnomedical (magico-religious) rather than biomedical (immunization) approaches of prevention are followed. Under such circumstances, educational messages may be directed to the mothers regarding the

benefits of immunization compared with, magico-religious approaches of prevention. It is expected that persuasion by the health worker would be needed until the benefit of immunization is convincingly demonstrated. Deep-rooted beliefs are likely to be dislodged by demonstrable positive results to be generated by further research by using innovative behavioral science methodologies.

Objectives of the study:

The general objective:

The general objective of this study is to provide the background information of immunization programme from the community (demand) and programme (supply) points of view and prepare the necessary research instruments for a larger study to be carried out in Bangladesh.

The specific objectives:

The specific objectives of the study are to:

- (i) assess immunization coverage among children, their mothers, pregnant women and other women, 15-45 years old;
- (ii) learn about the local terminologies being used for the immunizable diseases;
- (iii) know about mothers'/women's perception, knowledge, beliefs and practices related to the immunizable diseases, their causation, prevention and cure;
- (iv) investigate about mothers'/women's attitude and knowledge about the providers and their performance;
- (v) inquire about the reasons for nonacceptance of immunization and dropouts;
- (vi) assess the prospects of community participation in the immunization programme in respect of cost recovery (cost sharing and voluntary services) by asking mothers'/women's opinion;
- (vii) inquire about the management of EPI in the outreach immunization centres (physical conditions and service delivery) including cold-chain maintenance;

- (viii) learn about the knowledge, attitude and opinion of the local elites (primary school teachers, village elders and Union Parishad officials) about immunizable diseases, their causation, prevention, cure and cost recovery for immunization etc.;
- (ix) study knowledge and attitude of the providers (HAs and FWAs) about EPI and their interactions with mothers/women in the community and in the outreach immunization centres;
- (x) know about providers' training needs, work supervision, problems related to material supply and finance, relationship with Health, Family Planning and other NGO partners with respect to EPI activities and their opinion about cost recovery from the users;
- (xi) investigate about supervisors' involvement in EPI activities, problems of coordination with Health, Family Planning and NGO activities, supply and financial problems and their opinion about cost recovery for immunization from the users and
- (xii) assess staff position, EPI materials/equipments (stock), EPI materials/equipments (supply and consumption) and EPI materials/equipments (through observation and discussion) in the Thana Health complex.

Methodological issues:

The field area of this pilot study comprised of two villages, Charpara and Panchbaria. Charpara had 297 households and Panchbaria 408. They fall under Duptara union of Araihasar thana in Narayanganj district bordering the Dhaka metropolitan city. The distance of Charpara is about 3.5 km and Panchbaria 5 km from Araihasar thana headquarter and about 35 km from the Dhaka city in the south-eastern direction. Both the villages are within two hours of journey by land transport from the Dhaka city to Araihasar thana headquarter. The field work was launched at the end of November, 1995 and completed in the first week of January 1996. The field team for this pilot study consisted of female interviewers having Masters degree level education, a Social Scientist and a

Research Epidemiologist; all of them were staying in the study area. The overall supervision was provided by the Research Investigators who made weekly visits to the study area. The female interviewers were specially responsible to (i) enumerate the eligible households, (ii) immunization coverage among the mothers/women, (iii) children in the study villages; (iv) interview the mothers/women in the immunization exit points, and (v) perform the in-depth interviews and focus group discussion with them. The female interviewers were given a short training and field orientation including rapport building in the village before starting data collection. The Social Scientist and the Research Epidemiologist were responsible for (i) observation in the immunization centres; (ii) interviewing the vaccine providers and their supervisors; and (iii) completing the inventories at the THC and conducting the focus group discussion with the elites (i.e., the primary school teacher, village elders, and officials of the Union Parishad).

The following sequence was followed in data collection:

- 1.(i) Listing of households, mapping and institutions identification in the study area;
- (ii) Identification of the eligible households;
- (iii) Immunization status survey of eligible children and women;
2. Exit point interview with mothers/women in the outreach immunization centres;
- 3.(i) Direct observation in the immunization centres of physical facilities and service delivery;
- (ii) Interview with the HAS/FWAs about field supervision of EPI in the immunization centres;
- (iii) Interview with the HAS/FWAs about record keeping and reporting of EPI in the immunization centres;
- (iv) Interview with the HAS/FWAs about target achievement of immunization coverage and vaccine consumption in the immunization centres;

4. Interview with the HAs/FWAs about programme facilities and EPI related issues in the immunization centres;
5. Interview with the supervisors about programme facilities and EPI related issues in their respective work places;
- 6.(i) Collection of statistics related to EPI coverage for the thana from the THC;
- (ii) Collection of information related to EPI staff position, materials/equipments (stock), materials/equipments (supply and consumption) and EPI materials/equipments (assessment through observation and discussion) at the THC;
7. In-depth interview with mothers of children, 0-11 months, pregnant women and women, 15-45 years with fully, partially and never immunized categories;
8. Focus group discussion with mothers of children, 0-11 months, pregnant women and women, 15-45 years with fully, partially and never immunized categories;
9. Focus group discussion with the elites (primary school teachers, village elders and the members and the chairman of the Union Parishad).

Use of Research Methodologies:

In this pilot study a number of social science methodologies have been used (Appendix). Quantitative (face to face) interview method was used to study (i) immunization status of children and women, (ii) physical facilities and service delivery in the outreach immunization centres observation, (iii) field supervision of EPI, (iv) recording and reporting of EPI, (v) target achievement of immunization coverage including vaccine consumption; and (vi) an inventory of government documents on EPI at the THC. Combination of quantitative and qualitative methodologies were used to investigate on (i) KAP of mothers/women in the immunization centres on the immunizable diseases and related issues; (ii) programme facilities and EPI related issues with respect to the health works and

(iii) programme facilities and EPI related issues with respect to the supervisors. This study also used qualitative methodologies such as (i) individual in-depth interview with mothers/women in one village; and (ii) focus group discussion (FGD) with mothers/women including the local elites in another village to assess their knowledge, attitude and practice of immunizable diseases and other related issues.

Use of Research Instruments:

Check-lists or questionnaire (open-ended or closed) or combination of both and discussion guides, all prepared in simple Bangla language were used for data collection. Data received from the government sources were copied in the specifically prepared formats. The following is an account of how these instruments were utilized in collecting specific types of information:

Instruments for quantitative information:

In the household immunization survey a highly structured format has been used. The interviewers were provided with (i) an instruction manual in simple Bangla language, (ii) events calendar, (iii) personal diaries and (iv) a personal note books, particularly for this purpose. For collecting data from the outreach immunization centres in the study area, a check-list in four segments was used on (i) physical facilities and service delivery based on direct observation; (ii) field supervision of EPI and (iii) record-keeping and reporting of EPI (ii & iii based on interview with HAS/FWAs) and (iv) immunization target achievement and vaccine consumption based on the performance of the day's session. The data received from the government documents at the THC were copied in a highly structured check-list subdivided into four sections on, (i) EPI facilities (human) or staff position, (ii) EPI materials/equipments (stock position), (iii) EPI materials/equipments (supply/consumption) and (iv) EPI materials/equipments (assessment through observation and discussion) at the control room in the THC. Necessary formats were used for completing all these

four sub-sections.

Instruments for quantitative and qualitative information:

A format comprising a check-list and open-ended questions providing collection of data on (i) knowledge, attitude and practice of mothers/women and (ii) their contact and interactions with health workers was used. Separate formats comprising check-lists and open-ended questions were used to collect information about programme facilities and related issues from the health workers and their supervisors.

Instruments for qualitative information:

In-depth interviews and focus group discussions (FGDs) with mothers of fully, partially and never immunized children, 0-11 months; pregnant women and women, 15-45 years were conducted. These categories were identified through the household immunization survey done earlier at the beginning of the study. In-depth interviews were carried out in one village and FGDs with the above categories including the elites (male and female primary school teachers, village elders and the union parishad members and the chairman) were conducted in another village. Common topic guides were used for in-depth interviews and FGDs providing minor variations considering the specific requirements of the three categories. In selecting the respondents for in-depth interviews, age distribution and physical proximity of respondents in the village were considered. Responses of in-depth interviews were recorded in worker's note books and special points recorded in their personal diaries. The proceedings of FGDs conducted by a two-person team, having a facilitator and a recorder, were recorded in special note books designed for the purpose. The respondents for FGDs conducted with the women were drawn from the better and the worse socioeconomic groups which were determined through a rapid rural appraisal (RRA) done in the community for eligible respondents before holding the FGDs. Female workers organized and conducted the FGDs for the women. While grouping the respondents for FGDs age

distribution of the respondents and their physical proximity in the village were given careful consideration. At least one FGD from the better and one from the worse socioeconomic group was attempted. FGDs with the primary school teachers, village elders, and the members and the chairman of the Union Parishad were held by using a separate topic guide. These FGDs were organized and conducted by the male workers. In all cases, earlier appointments were made with the respondents of FGDs.

Scope of the Pilot study in relation to the main study

The pilot study has addressed demand (community) sustainability and supply (programmatic) sustainability which are the two important project components of the core study of the main study: the third component of the core study is the political sustainability. It will help the project implementers with an informed understanding to decide on the methodologies, the areas of enquiry and the research instruments to be employed in the main study. The pilot study has helped to confirm the application of one procedure (ie. the household immunization coverage survey), omit another procedure (ie. interviewing mothers/women in the exit points) and add or include some other procedures (interviewing the providers and their supervisors in greater length through individual in-depth interviews or focus group discussion). In the pilot study investigation was carried out in the community with the mothers/women and key informants (school teachers, village elders and the members and the chairman of the Union Parishad); and the service providers of EPI (HAS/FWAs, THFPO, MO-EPI etc.). Investigation was carried out in the service delivery points and various EPI documents of the Government were utilized to collect information. Various social science methodologies including direct observation in the village immunization centres were used to collect both subjective and objective types of data. The knowledge gained through the pilot study will help to apply the appropriate research methodologies, refine the research instruments, train the field level workers, decide about the variables/indicators used, the proper venue

of investigation and the number and type of respondents to be included in the main study. The lessons learnt through the pilot study will help the investigators to take effective steps and precautions to carry out the field work to its successful completion in the countryside. The pilot study has helped to a great extent the formulation of new hypotheses and gain insights and ideas that will be useful in the expanded study in Bangladesh.

Completeness of the variables/indicators addressed in the pilot study compared to the main study objectives

A. Variables which have been addressed in the pilot study:

1. Immunization coverage has been studied in the households about children, 0-23 months, mothers of children, 0-11 months, pregnant women and women, 15-45 years based on individual interviews verified with the EPI cards. The number of mothers of children 0-11, months and pregnant women were found inadequate when they were categorized as fully, partially and never immunized for the purpose of in-depth interview and focus group discussion subsequently done in the study area.
2. Mothers'/women's knowledge about the local terminologies was included in the questionnaire used in the exit points. This has not been included in the in-depth interviews and FGDs subsequently carried out in the households.
3. Mothers'/women's perception, knowledge, beliefs and practices about the immunizable diseases, their causation, prevention and cure have been enquired in the in-depth interviews and FGDs. These have been included also in the interviews done in the exit points but only nominally as the questionnaire provided.
4. Mothers'/women's attitude and knowledge about the providers (HAs/FWAs) has been covered in the in-depth interviews and FGDs: these issues have been also included in the interviews in exit points but not in detail.

5. Reasons for non-acceptance of immunization and drop-outs have been included in interviews with the providers (HAs/FWAs) in the immunization centres and their supervisors in their respective work places but detail enquiries were not provided.
6. Assessment of the prospects of community participation in immunization programme in respect of cost recovery has been included in most of the investigations with mothers/women in the exit points, in-depth interviews and FGDs. This variable has been addressed in interviews with the Health workers (HAs/FWAs) and their supervisors' but not elaborately.
7. The knowledge, attitude and opinion of the elites (primary school teachers, village elders, and the Union Parishad officials) about the immunizable diseases, their causation, prevention, cure and cost recovery have been enquired in FGDs conducted with these respondents at the community level.
8. The management of EPI including cold-chain maintenance in the outreach immunization centres have been studied in the outreach immunization centres by direct observation of the physical facilities and service delivery and interviews of workers (HAs/FWAs) based on check-lists and tally sheets on (i) field supervision of EPI, (ii) record keeping and reporting of EPI and (iii) target achievement of immunization coverage and vaccine consumption in the immunization centres.
9. Knowledge and attitude of the providers (HAs/FWAs) about EPI and their interactions with mothers/women in the community and in the outreach immunization centres have been enquired by using a check-list cum questionnaire. Detailed enquiries could not be made on these issues in the immunization centres as the instrument did not provide.
10. Providers' training needs, work supervision, problems related to material supply and finance, relationship with Health, Family planning and other NGO partners with respect to EPI activities and their opinion about cost recovery from the users have been investigated in the immunization centres through a check-list cum open-ended questionnaire. The subjective questions

have not been asked in great details as these were not provided in the instrument used.

11. Supervisors' involvement in EPI activities, problems of coordination with Health, Family planning and NGO activities, supply and financial problems and their opinion about cost recovery for immunization from the users have been investigated in supervisors' respective work places by individual interviews on a check-list cum open-ended questionnaire. Detail enquiries on the subjective issues were not provided in the instrument.
12. The assessment of staff position, the EPI materials/equipments (stock), EPI materials/equipments (supply and consumption) and EPI materials/equipments (through observation and discussion) in the Thana Health Complex have been made through inventories done from office documents by using a check-list of items. This has been a long inventory and contained manyfold information on EPI. These has been properly recorded.

B. Variables which have not been addressed in the pilot study:

1. The relationship between demand for immunization, small family norms, socioeconomic factors and gender difference;
2. The role of the private health providers (practitioners) in the field of vaccinations (such as hepatitis B);
3. Comparison between the "infrastructural" and "social mobilization" approach of immunization with respect to coverage and continuity;
4. The various steps taken to reduce the missed opportunities for immunization;
5. Maintenance of surveillance about EPI.

The gaps, strength and weakness of the methods and instruments of data collection:

1. Assessment of immunization status of children, mothers, pregnant women and other women, 15-45 years by conducting interviews in the households and

checked with immunization cards on a structured survey format worked well. The number of respondents from this investigation was found inadequate when they were categorized as fully, partially and never vaccinated for the purpose of conducting in-depth interviews and FGDs subsequently. If considered in a large number of respondent (mother/women) this procedure can be repeated in the larger study.

2. Interview of mothers/women in the immunization exit points on a check-list cum open-ended questionnaire about KAP on immunizable diseases and other related issues was difficult to complete. The check-list with further improvement can be considered for the target study and the open-ended part may be omitted.
3. Direct observation in the immunization outreach centres of physical facilities and service delivery recorded on a check-list and interviews related to (i) field supervision of EPI, (ii) record-keeping and reporting of EPI and (iii) target achievement of immunization coverage and vaccine consumption, all based on tally sheets and recorded on check-lists were found to be appropriate that could be replicated in the larger study.
4. Health workers' (HAs/FWAs) interview in the immunization center on a check-list cum open-ended questionnaire about programme facilities and EPI related issues was found difficult to conduct. The instrument could be split; the check-list may be used in the immunization centres and the open-ended part after adding more information used elsewhere or alternatively, the Health workers could be interviewed in a different place through in-depth interview or FGD. It appears that in-depth interview may be more useful and appropriate.
5. Supervisors (THFPO, MO-EPI etc.) interviewed in their respective work places on a check-list cum open-ended questionnaire about programme facilities and EPI related issues was found to work. However, since the instrument contains collection of subjective data the supervisors could be interviewed by in-depth interview like the Health workers.

6. Inventories made in the THC through filling up check-lists from office documents about (i) EPI staff position, (ii) EPI materials/equipments (stock), (iii) EPI materials/equipments (supply/consumption) and (iv) EPI materials/equipments (assessment through observation and discussion) were found appropriate procedures for data collection. Collection of data from these sources in the already adopted procedures can be continued in the main study.
7. In-depth interviews with the fully, partially and never immunized mothers of children, pregnant and other eligible women, conducted with the help of topic guides worked well. To choose respondents from the small number of mothers/women listed in the earlier completed immunization survey in the households was a problem. Some pregnant women were reluctant to face interviews because of being pregnant: one of them refused interview. With necessary refinement made on some topics in the topic guide and provided for replacements of respondents this method can be repeated in the main study.
8. FGD with the fully, partially and never immunized mothers of children, pregnant and other eligible women, conducted with the help of topic guides was found feasible. The problem of choosing respondents from the small number of mothers/women faced in the in-depth interview was also faced in case of FGDs. One FGD with pregnant women receiving more than two doses of TT could not be organized: all of them refused to show up because of being pregnant. This method can be replicated in the main study after some provision is made to replace one FGD with another.
9. FGD with the local elites (primary school teachers, village elders, UP members and the chairman) conducted with the help of the same topic guide for all of them were completed well. The only problem faced was that the first date fixed for discussion with the school teachers and village elders had to be deferred for the next day while the UP officials were late by several hours to attend in the FGD on the day they agreed to participate

earlier. Proper contact should be made with these kind of groups in the main study considering that they are the key community people.

Data analysis and its rationale:

The goal of the pilot study was descriptive and exploratory. Interview, observation, individual in-depth interview and focus group discussion including information gathered from Government documents were employed in data collection: both quantitative and qualitative types of data have been obtained. Sample size was not considered in this pilot when collecting the quantitative data. The findings from the quantitative information were presented in percentages or in numericals. All data were processed manually. Data generated from the individual in-depth interviews and focus group discussion with mothers/women were analyzed according to immunization status and compared between the two methods (in-depth and FGD) used in two study villages. Data obtained from focus group discussion with the primary school teachers (males and females), the village elders, the members and the chairman of the Union Council were analyzed according to each of these categories.

Shortcomings of the pilot study:

1. Time available to do the field work in six weeks was not enough.
2. Time available for preparation for the study was short.
3. Some of the field workers were not properly trained on the research methodologies and field works.
4. Most of the instruments were not pre-tested.
5. Logistic support was inadequate. Accommodation for the research team in the study area was inconvenient (too crowded): local transport was often difficult to arrange; frequent power suspension hampered home work in the evening; contact with Dhaka was difficult due to the political unrest that was going on in the country.

6. Required cooperation from the local EPI officials was not received spontaneously; local preparation for the NID for OPV was going on then; the officials in the THC were busy with training in the THC or district headquarter and routine meetings.
7. There were too many procedures performed in the immunization centres other than the direct observation related to physical facilities and service delivery. These included (i) field supervision on EPI, (ii) record keeping and reporting of EPI, (iii) target achievement of immunization coverage and vaccine consumption and (iv) programme facilities and EPI related issues of HAS/FWAs and their supervisors. To complete all these procedure through different check-lists, the providers (HAS or FWAs) were interviewed. It will be proper to interview the providers on programme facilities and EPI related issues in appropriate venues since these inquiries involved a check-list cum open-ended questionnaire which is difficult to complete in the immunization centre from the providers who had so many duties to perform.
8. The required number of respondents for conducting the in-depth interviews and the FGDs on the basis of the household immunization status survey that preceded these methods was found inadequate.

Critical views of the lessons learnt:

1. To be culturally acceptable the female vaccinator should vaccinate the women.
2. In case of a women/caretaker intending to be vaccinated along with a child, vaccinating the former followed by the later works better, because that provides scope for the former to take care of the later in case the later cries due to the pain caused from the vaccination.
3. Administering the OPV should precede administration of DPT so that an opportunity is not missed to administer both vaccines which may be difficult if DPT is administered prior to OPV.

4. Shortage of vaccines (particularly, TT) has been often reported. Shortage of vaccines and wastage of vaccine have been confirmed by observation in the immunization centres. Vaccine shortage has been reported by the supervisors in interviews.
5. Use, presentation and retention of immunization cards is not given due importance either by the users or by the providers; shortage of immunization cards have been reported which has been confirmed by observation in the immunization centres as well as in the THC EPI control room.
6. Cold-chain procedure is often not maintained in the outreach immunization centres which take place in the open or semi-open places and sometimes under the shadow of trees.
7. Division of responsibility between workers and sequence between vaccination and registration (or recording) is not strictly followed in the immunization centres.
8. Responsibilities of work between FWAs and the HAs are not coordinated in the immunization centres.
9. It was difficult to interview the women/mothers and the providers (HAs and FWAs) on subjective data in the immunization centres. Interview based on the check-list worked better than that on the open-ended questionnaire. The providers should be interviewed in greater length in appropriate venues as like as the mothers in in-depth interviews or FGDs.
10. The outreach immunization centre is the proper place for direct observation on physical facilities, vaccine delivery and management; assessment of field supervision of EPI, recording and reporting of EPI and target achievement of immunization coverage and vaccine consumption, all on the basis of tally sheets can be objectively examined in this place.
11. The same workers vaccinate in several immunization outreach centres in a union. Observation and investigations carried out in several such centres are likely to be influenced by their repeated presence or they are likely

to be sensitized which may effect the outcome of the research. Outreach centres where some workers repeatedly perform should not be included for observation.

12. Poor immunization coverage of children and women, low level of mothers' knowledge of immunizable diseases, their causation, prevention and cure and poor interactions between the providers and the users (mothers/women) implies inadequacy of health education imparted at the community level. These findings imply the urgency of intensified health education in the community especially targeted to the mothers and women.

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Appendix: Methodological Issues in the Pilot Study

METHODS, RESPONDENTS, TITLE OF ENQUIRY, TYPES AND SOURCES OF INFORMATION, DATA COLLECTION INSTRUMENTS, AND VENUES IN THE PILOT STUDY, "SOCIAL SCIENCE AND IMMUNIZATION"

<u>METHODS</u>	<u>RESPONDENTS/ GROUPS (No.)</u>	<u>TITLE OF ENQUIRY</u>	<u>TYPES OF INFORMATION</u>	<u>SOURCES OF INFORMATION</u>	<u>DATA COLLECTION INSTRUMENTS</u>	<u>VENUES</u>
Interview:	Mothers of Children,0-23m(165) /Pregnant Women(57) /Women,15-45y (670)	Immunization status of children/ women	Quantitative	Individual/ Vaccine Card	Structured	Household survey format
Interview:	Mothers/ Women,15-45y (45)	KAP on immunizable diseases and related issues	Quantitative & Qualitative	Individual	Check-list cum open ended questionnaire	Outreach immunization Centre (exit point)
Observation:	Immunization Centres (4)	Physical facilities and service delivery	Quantitative	Direct observation	Check-list	Immunization Centre
Interview:	HAs/FWAs (5)	Field supervision of EPI	Quantitative	Individual/ Tally sheets	Check-list	Immunization Centre
Interview:	HAs/FWAs (5)	Record keeping and reporting of EPI	Quantitative	Individual/ Tally sheets	Check-list	Immunization Centre
Interview:	HAs/FWAs (5)	Target achievement of immunization coverage and vaccine consumption	Quantitative	Individual/ Tally sheets	Check-list	Immunization Centre
Interview:	Health Workers (HAs/FWAs) (5)	Programme facilities and EPI related issues	Quantitative & Qualitative	Individual	Check-list cum open ended questionnaire	Immunization Centre
Interview:	Supervisors/ Providers (5)	Programme facilities and EPI related issues	Quantitative & Qualitative	Individual	Check-list cum open ended questionnaire	Respective work places

METHODS	RESPONDENTS/ GROUPS (No.)	TITLE OF ENQUIRY	TYPES OF INFORMATION	SOURCES OF INFORMATION	DATA COLLECTION INSTRUMENTS	VENUES
Focus group discussion:	Pregnant Women: > 2 doses of TT (*) 1 dose of TT (1) 0 dose of TT (1)	KAP on immunizable diseases and related issues	Qualitative	Groups	Topic guide	Homestead
	Women. 15-45y: > 2 doses of TT (2) 1 dose of TT (2) 0 dose of TT (2)	KAP on immunizable diseases and related issues	Qualitative	Groups	Topic guide	Homestead
	Elites: Primary School Teachers (4 females)	KAP on immunizable diseases and related issues	Qualitative	Groups	Topic guide	Panchbaria Pry.School
	Primary School Teachers (5 males)					Panchbaria Pry.School
	Village Elders (7)					Panchbaria Pry.School
	UP Members (4) and the Chairman					UP office

*Could not be conducted

<u>METHODS</u>	<u>RESPONDENTS/ GROUPS (No.)</u>	<u>TITLE OF ENQUIRY</u>	<u>TYPES OF INFORMATION</u>	<u>SOURCES OF INFORMATION</u>	<u>DATA COLLECTION INSTRUMENTS</u>	<u>VENUES</u>
Focus group discussion:	Pregnant Women: ≥ 2 doses of TT (*) 1 dose of TT (1) 0 dose of TT (1)	KAP on immunizable diseases and related issues	Qualitative	Groups	Topic guide	Homestead
	Women, 15-45y: ≥ 2 doses of TT (2) 1 dose of TT (2) 0 dose of TT (2)	KAP on immunizable diseases and related issues	Qualitative	Groups	Topic guide	Homestead
	Elites: Primary School Teachers (4 females)	KAP on immunizable diseases and related issues	Qualitative	Groups	Topic guide	Panchbaria Pry. School
	Primary School Teachers (5 males)					Panchbaria Pry. School
	Village Elders (7) UP Members (4) and the Chairman					Panchbaria Pry. School UP office

*Could not be conducted