



IOCH

Immunization and Other Child Health Project

**Vaccination Coverage and Other Health Care Practices Survey
in the villages bordering the Sundarbans – December 2001**

Survey Report No. 60

**This survey was conducted by IOCH, a project of Management Sciences for Health,
funded by USAID under AID contract No. HRN-I-01-98-00033-00, Task Order No. 01**

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April 2002

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Acronyms

BCC	Behavior Change Communication
BCG	Bacillus of Calmette and Guerin
CES	Coverage Evaluation Survey
COSAS	Coverage Survey Analysis System
DPT	Diphtheria, Pertussis and Tetanus
EPI	Expanded Program on Immunization
IOCH	Immunization and Other Child Health
Lobon-gur saline	'Lobon' is table salt, 'Gur' is molasses. Labon Gur saline is an oral rehydration fluid prepared with one pinch of table salt, one fist full of molasses and half a liter of water.
MOHFW	Ministry of Health and Family Welfare
MSH	Management Sciences for Health
NGO	Non Governmental Organization
OPV	Oral Polio Vaccine
TT	Tetanus Toxoid
UH&FWC	Union Health and Family Welfare Center
Village doctors	A group of western medicine practitioners who where trained by medical professionals for about a year usually in a Thana Health Complex.
WHO	World Health Organization

Terminology

This provides the meaning of some of the more technical terms used in this report and a brief explanation of their use.

By card: An immunization given to a child is termed as by card if the date of the dose is entered on an immunization card. Only doses recorded by card are treated as valid data in this survey.

By history: Immunization history collected from a parent's recall is termed as by history. Often no date will be mentioned. This information is only included in crude data.

Crude coverage rate is calculated from the doses recorded by card and/or by history. It is not ascertained whether the doses were given at the correct age and/or following the correct interval (where applicable). Crude data however, helps us to understand how much additional coverage could be achieved if all vaccines were given at the optimum age for the child and following the optimum interval. It also provides useful information on access to the EPI program and on the operational aspects of the provision of health services.

Valid coverage rate is calculated from the vaccinations recorded by card. Valid data includes only the doses of vaccines that were given after the minimum date of eligibility and/or after the minimum interval necessary to be effective and to protect the child. There is no maximum interval for a dose and therefore a dose administered after 52 weeks is still regarded as valid. By comparing crude coverage with valid coverage data of any particular antigen, one can determine how much coverage was lost due to the inability to give vaccine at the appropriate time.

Invalid doses are those administered at the wrong age and/or at the wrong interval. Doses administered before the minimum age in the case of DPT/Polio 1st doses and Measles vaccine or with less than four weeks interval in the case of DPT or Polio vaccines are classified as "invalid" doses.

The **criteria for a valid dose** used in this survey is the criteria recognized by the Bangladesh EPI program: minimum age for DPT/Polio 1st dose - 6 weeks old; minimum DPT/Polio interval - 4 weeks; minimum age for Measles vaccine - 38 weeks old.

Program access is measured by the percentage of children surveyed who received DPT 1st dose (crude data – by card and history) in the routine immunization session.

Fully immunized means the child has received all the doses it requires (BCG, OPV 1-3, DPT 1-3 and measles).

Missed Opportunity refers to a visit of a child to a vaccination center for a dose that he received. However at that time he was also eligible for another dose of antigen that he did not receive. If the missed dose was provided at a later date, it is a *corrected missed opportunity*. If not, it is an *uncorrected missed opportunity*.

Executive Summary

Background

The mangrove forest of the Sunderbans is rich in resources and for preservation reasons is forbidden to settlement. Many poor people live at its fringes and derive part of or all their income from the seasonal extraction of the Sunderbans wealth. Living at the periphery and having a significant number of working women may mean that access to health services is more difficult and/or less frequent, translating in large number of unvaccinated children and women and large pools of susceptible. Because no survey has been conducted in the past on such populations, little is known on their vaccination status and the above assumptions may not be correct. In the past IOCH found that the vaccination coverage status of the population living in the char areas of Pabna was no different than the average in Bangladesh while the population of the char areas of the upper Eastern bank of the Jamuna was low.

To assess the situation and provide district and upazila health managers as well as the NGOs under contract with the Biodiversity Conservation project the health information they need to identify gaps and weakness IOCH undertook a 30-cluster coverage survey (with additional questions on health-seeking behavior) in early December 2001.

Objectives

The principal objectives of the survey were:

- a) to assess the levels of routine immunization coverage of children (12-23 months) and to find out the reasons for non-immunization and partial immunization,
- b) to assess the levels of TT immunization coverage in women of child bearing age (15-49 years) regardless of their marital status and to find out the reasons for non-immunization and partial immunization,
- c) to assess the coverage levels of OPV during the 9th round of NID campaign conducted in April and May'2001 and find out the reasons for non-immunization.
- d) to explore health care practices and health care seeking behavior in the areas immediately bordering the Northern part of the Sunderbans.

Coverage levels for the Routine Immunization of Children

Access: 93% of the children received at least one dose of antigen (DPT 1st dose in this case) from routine immunization sessions based on crude data (card plus history). However 6% of the children did not receive any immunization.

Crude coverage between 12-23 months: 94% children received BCG, 79 % received three doses of OPV and DPT and 76 % received measles vaccine.

Valid coverage between 12-23 months: 94 % children received BCG, 67 % received three doses of OPV and DPT and 71% received measles vaccine.

Valid coverage by 12 months: 94% children received BCG, 67 % received three valid doses of OPV and DPT and 69 % received a valid dose of measles vaccine.

Drop out was found to be 16% for DPT1 and DPT3 and 19% for DPT1-measles.

Invalid doses were found low.

Gender differences were found important, not much in initial access but in terms of dropout and of lower attention paid to the girls for screening for early doses. Overall the coverage of girls for all valid antigens at 12 months is much lower (46% versus 70% for boys). This lack of attention to girls is surprising in an economic context where young women contribute significantly to the local economy (collection of shrimp fry).

Source of immunization: Childhood immunization is provided by EPI Outreach centers run by MOHFW in 89 % of the cases. NGO clinics contributed 7%. 81 % of the EPI vaccination centers are within 10 minutes walking distance, 17 % of the centers are between 10-30 minutes walking distance from client's residence.

Reasons for non-immunization and partial immunization of children: The main reasons for non-immunization were the lack of knowledge of the parents/caretakers about the importance of immunization and the fear of adverse reactions. The main reasons for partial immunization were the ignorance that a subsequent dose was needed and to a lesser extent: mother busy, child away from home and child sickness.

Coverage levels for the Routine TT immunization of women

82% of the women of childbearing age (15-49 years) had received a first dose of TT; 71% a 2nd dose of TT but only 16% of the women the five doses of TT vaccine. 18 % never received any immunization.

Reasons for non-immunization and partial immunization of women: The major reason cited for non-immunization was that the women do not feel any need for immunization. A few expressed fear of injections. Whereas the major reasons cited for partial immunization were ignorance of the need for subsequent doses either in general or beyond 2 or 3 doses.

Coverage levels for the 9th NID Campaign

95 % of the 0-5 year children received OPV in the first round of the ninth NIDs 94% in the second round. 97 % of the children received one dose of OPV in any round and 92% received OPV in both rounds of NID campaign. This is a remarkable achievement. 87% only of the eligible children received Vitamin A.

88% of the people aware of the NIDs received their information from GOB local health workers, 10% from a family member or a neighbor. 37% heard miking. These categories are not exclusive.

Access to health care and health-seeking behavior

a) Morbidity

- ? In the past 2 weeks (late November, a cooler season) 23% of the under-five years children (boys insignificantly more than girls) had an episode of illness. Fever without other symptoms (ordinary cold?) occurred in 46% of cases, Diarrhea/Dysentery in 31% and pneumonia in 4%.

b) Access to health care

- ? Among the private health care providers been called upon 36% less than a quarter mile from people, 61% less than half-mile and 88% less than a mile and a half. The mean distance was .83 mile.
- ? 33% of the pharmacists live within a quarter of a mile and all within a mile and a half. The mean distance was .71 mile.
- ? 25% of the people who consulted a GOB health facility live within a quarter mile of it and 75% within a mile.

c) Health Care Practices

- ? In case of a diarrhea/dysentery episode 51 % of the parents give fluids while only 1% stop them. 25% stop giving various types of food. 24% manage to give antibiotics.
- ? Oral Rehydration Saline packets are more popular (85%) than lobon-gur saline (46 %) as a means of home treatment of diarrhea.
- ? 22% of all mothers reported ignoring how to prepare the Lobon-gur solution.
- ? Only 76% of the people who claimed they knew about the correct way to prepare the lobon-gur Saline were correct.

d) Health-seeking behavior

- ? 55 % of the sick children were not taken to any health practitioner during their last episode of illness. 40% consulted a private health care provider, 3% a GOB facility and 2 % went directly to a pharmacist.
- ? The available private health care providers do not include a licensed MBBS doctor. The frequency of the consultations was as follows: 46% for unlicensed allopathic (quack), 28% for homeopaths, 21% for traditional healers and 5 % for Palli Chikitsak
- ? 31% of the patients using a private practitioner went within a day after the onset of the illness, 45% between 2-3 days and 19% after 4-5 days. For GOB facilities 50% went within a day, 25% between 2-3 days and 25% within 4-5 days. For pharmacists 33% consulted within a day and 67% after 2-3 days.
- ? Parents spent as much money for their sons as for the girls (about 35 takas per visit on average) when they take them to private practitioners.

e) Antenatal care during the last pregnancy

- ? 82% of the women did not have any antenatal care, 5% had one visit, 6% two, 4% three and 2% the four recommended visits. A breakdown by year of delivery over the past 5 years did not show any increase in the percentage of ANC.
- ? Among those who had at least one visit 30% never had their blood pressure checked during the ANC session.

Recommendations:

Routine immunization

- ? Although access is 93% and as 58 % of the children receive all doses valid by 12 months of age (higher than the national figures) there is room for improvement, as 6% of children have no contact with the immunization services. A significant effort should be undertaken in all areas to **register all children at birth and to actively seek the missed children. The vaccination register is the key tool to implement this recommendation.** Shyamnagar, Dacope, Mongla and Morolganj upazila have the highest number of zero doses children.
- ? Dropout should be reduced by **explaining to mothers when they should come back and by stressing that unless all 8 doses have been received the child is not protected.** Incomplete immunization does not help the child and the community.
- ? There are too many early doses pointing out to a lack of adequate screening by the vaccinators. 30% of the infants are not vaccinated against measles and will join the pool of susceptible, increasing the chances of an outbreak. **Instructions should be issued to the vaccinators to remind them to:**
 - o **provide and fill the vaccination cards properly.**
 - o **reduce the number of early doses by screening the children for eligibility for a new dose and by having monthly vaccination sessions of at least 28 days intervals.**
- ? The gender difference in coverage is appalling. **Infant girls should be given special attention and actively followed-up.**

TT routine immunization

- ? The 5 doses policy should be actively enforced and the TT immunization program should free itself of the consideration of marriage and pregnancy. All young women over 15 years should enroll in the program and received the 5 doses within a period of three years.

National Immunization days

- ? Despite the 94% coverage many people still claim that they did not know when and where to go for NID. **A systematic mapping and allocation of responsibilities for IPC and miking will help cover all corners.**
- ? 5% of all children are still missed. **Traveling and floating children should be covered by vaccination teams on rivers and at bus stands.**

- ? Vitamin A coverage is low (87%). **Better attention should be given to calculate the needs adequately, distribute the Vitamin A on time and in adequate quantity and to provide Vitamin A only to the eligible age groups.**

Antenatal Care

- ? The areas surveyed are no different from another rural areas of Bangladesh. That 82% of women do not get any ante natal visit before pregnancy and that among the 18% who do only 70% have their blood pressure checked is a disgrace for the MCH services.

lobon-gur solution

- ? 53 % of the mothers were found to have no knowledge or an incorrect knowledge of how to prepare the solution. **A systematic village-by-village refreshing course should be undertaken to** provide this essential knowledge in each bari, despite the apparent preference for ORT package.

Introduction

The Sunderbans mangrove forest, one of the largest such forests in the world, is formed at the delta of the Ganges (called Padma in Bangladesh), Bramaputra (Jamuna) and Meghna rivers on the Bay of Bengal. The site covers 595,000 ha and includes three sanctuaries (Sunderbans West, South and East) with a total area of 140,000 ha. It became a World Heritage site in 1997. The three sanctuaries, intersected by a complex network of tidal waterways, mud flats and small islands of salt-tolerant mangrove forests, present an excellent example of on-going ecological processes, displaying the effects of monsoon rains, delta formation, tidal influence and plant colonization. The Sunderbans are known for their wide range of fauna including 260 bird species, the royal Bengal tiger and other threatened species, such as the estuarine crocodile and the Indian python.

Human settlement is not allowed in the Sunderbans. However for economic reasons large numbers of people live along the borders of the forest on the other side of the rivers. Those who derive the main part of their income from the forest (about 20% of the total population of these unions) are called “extractors”: shrimp fry collectors, *bawalis*, *mawalis* (honey collectors) *galpata* cutters, shell and crab collectors, fishermen, glue collectors, boatmen, *dadanders*, medicinal plant collectors. Moneylenders are ubiquitous. Most of the people are poor and struggle to make a living. Most people drink from the ponds and rely on hanging and on opened latrines.

A recent study¹ by Khulna University found that 22% of the people residing in the border unions lived less than one kilometer from a health facility, 25% between 1-2 kms, 36% between 3-5, 14% between 6-8 kms and 2% more than 8 kms.

There is no published data on the health status, vaccination coverage and health-seeking behavior of the population living along the borders of the Sunderbans forest. Because of its relative isolation by road the population may have limited access to curative and preventive services. To assess the situation IOCH therefore decided to carry out a survey based on the WHO recommended EPI 30 cluster survey method among the population living in the villages along the rivers bordering the northern part of the Sunderbans to obtain data on the status of the routine immunization coverage among children and women, and OPV and vitamin A coverage achieved during 9th round of NID campaign. Health care practices were also assessed among those families, which were identified for childhood immunization survey. Information of 210 families was collected in which there were children of 12-23 months age group. The cumulative population of the unions bordering the Sunderbans was taken as universe and 30 clusters were selected through random sampling method (please see map).

¹ Draft Report on the Socio-economic Baseline Study on the Impact Zone of the Sunderbans, Urban and Rural Planning Discipline, Khulna university, Khulna, Bangladesh June 2001

Objectives

The overall objectives of the survey were to assess the level of routine immunization and 9th NID coverage in the villages bordering the Sunderbans. Apart from immunization data, health care practices data were also collected. The specific objectives were:

- a) to assess the levels of routine immunization coverage of children (12-23 months) and to find out the reasons for non-immunization and partial immunization,
- b) to assess the levels of TT immunization coverage in women of child bearing age (15-49 years) regardless of their marital status and to find out the reasons for non-immunization and partial immunization,
- c) to assess the coverage levels of OPV during the 9th round of NID campaign conducted in April and May'2001 and find out the reasons for non-immunization.
- d) to explore health care practices and health care seeking behavior in the areas bordering the Sunderbans.

Methodology and limitations

The survey followed the WHO recommended 30-cluster survey method which has been widely used in many developing countries to assess immunization coverage. It is relatively simple and can be used at low cost. (The detailed survey methodology and its limitations are presented in **Annex A**). Briefly, the immunization information is collected on a randomly selected group of 210 children/women from 30 clusters (7 children/women per cluster) in a given community. It gives an estimate of immunization coverage to within +/- 10 percentage points of the true population proportion with 95% statistical confidence, assuming a design effect of 2.

In this survey 7 children between 12-23 months (born between December 3rd, 1999 and December 12th, 2000) were selected from each cluster to ascertain their routine vaccination status. Seven women between 15-49 years of age, irrespective of their marital status were selected to ascertain their tetanus toxoid vaccination status in routine immunization. Data on health care indicators were collected from those households where children less than 5 years were found. The first 7 households having 7 children 0-5- years were selected in each cluster to obtain information on the NIDs.

The 30 clusters (villages) were chosen randomly from a list of population of mouzas and villages bordering the forest collected from the concerned Upazila Health and Family Planning Officers of the 3 district of Satkira, Khulna and Bagherhat. 1998 population figures collected by health staff during their household visits (termed as Geographical Reconnaissance) were used to draw the sample. Clusters are listed in **Annex B** and their locations are shown on the map. The WHO standard questionnaire was used in this survey for documenting the routine immunization status of children and women. Separate questionnaire were used for collecting the data on the NID and health care practices indicators.

Data was collected by the IOCH survey team between Dec 2-11. Data entry and analysis was done by IOCH using COSAS 4.3³ and EPI Info programs. The final report was prepared by the Chief of Party of the IOCH/MSH Project.

Limitations of the 30-cluster survey method

Although the 30-cluster survey method is relatively simple, it has several limitations that can be grouped into two types:

Linked to the sampling method:

- ? As an inherent bias in the sampling technique in 30 clusters, bigger villages with dense population are more likely to be selected as a cluster. The survey leaves out scattered small villages, usually with poor access to services. It also does not reflect the lack of uniformity in service availability or the behavior of particular population.
- ? There is a wide confidence interval (+/- 10%). It means that if the result shows that 45% of the children received a valid dose of measles vaccine before 12 months of age, then the 'true' figure of measles immunization of children could be anywhere between $(45-10) = 35\%$ and $(45+10) = 55\%$. This type of survey is useful when the coverage is

low but is less relevant to assess higher coverage or to compare surveys - unless there is a big difference between two surveys.

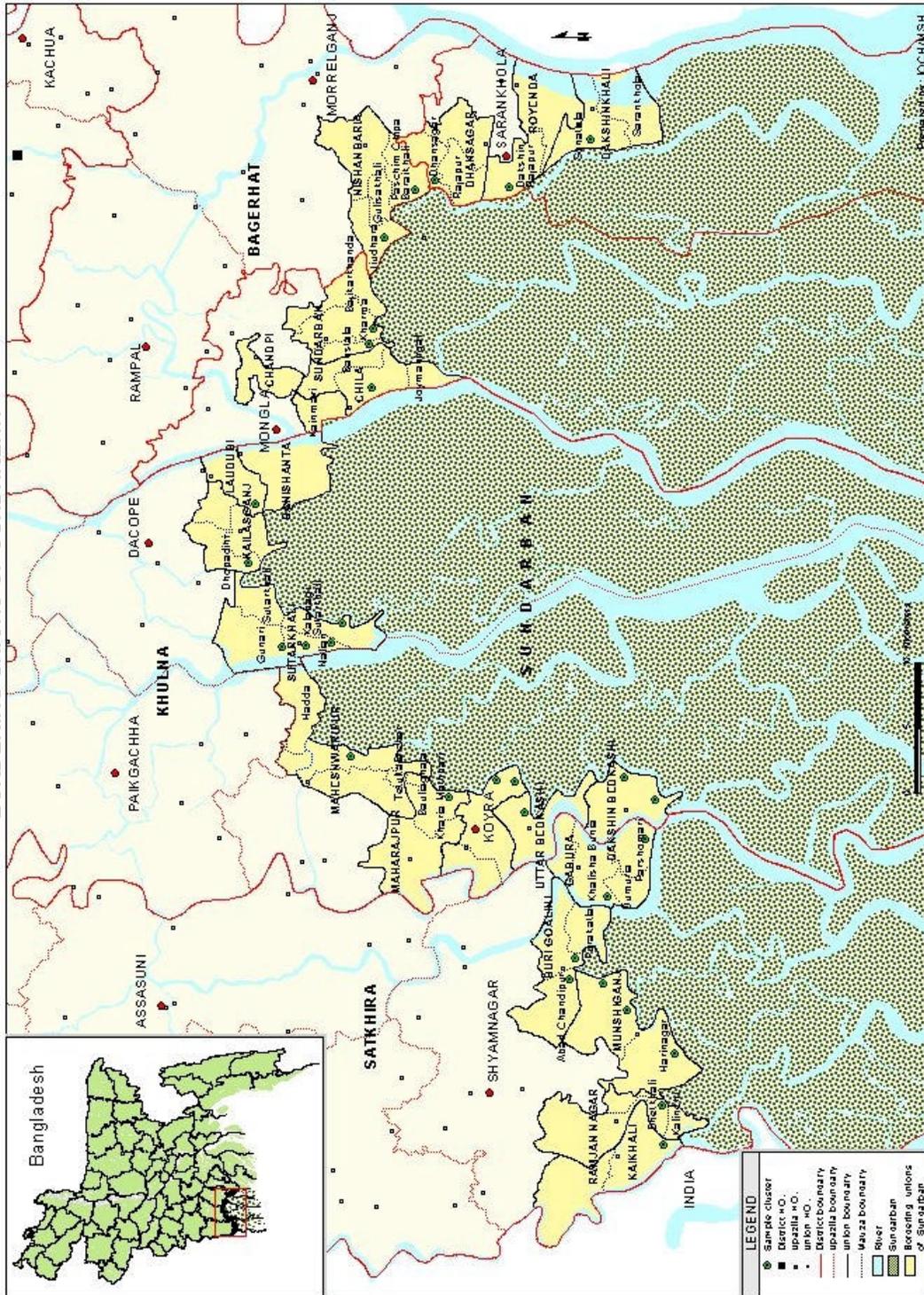
- ? To be relevant the analysis of valid data must apply to a relatively high percentage of available cards.

Linked to the implementation:

- ? The selection of index house is key. Too often the proper method is not followed because the surveyors do not make the effort to number all the houses from their central location to the end of the village along the direction indicated by the bottle or by the pencil.
- ? If a household includes an eligible child who is not at home for few hours, the surveyor often does not return later on but skips the house and substitutes another child. This is of course, an incorrect procedure that introduces a bias.

It is also important to remember that this survey coverage data gives a little information about the current program as it documents the activities of a year earlier.

**SURVEY AREAS FOR VACCINATION COVERAGE AND HEALTH CARE SEEKING PRACTICES, DECEMBER 2001
BORDERING UNIONS OF SUNDARBAN**



Results

A. Routine immunization coverage levels of children

Coverage levels (card plus history data of COSAS analysis)

Table 1 shows the coverage levels of children between 12-23 months of age and their vaccination status at 12 months of age. The crude data figures for the 12-23 months age group indicates that 93% of the children have access to immunization services, 79% of the children received three doses of OPV and DPT and that 76% a dose of measles vaccine. The valid coverage levels are however lower. 67% of the children received three doses of OPV and DPT and 71% were vaccinated against measles. 6% of the children surveyed had not received any dose of vaccine and had therefore no contact with the routine EPI program. Overall 58 % of the children are fully immunized by valid doses by the age of 12 months, a slightly better-than-average result (the national figure is 53%).

Table 1: Routine immunization coverage levels of the children

	Coverage % Immunization of 12-23 months age group		Coverage % Immunized by 12 months
	Crude data (Access)	Valid data	Valid data
BCG	94	94	94
Polio 1	93	87	87
Polio 2	86	78	78
Polio 3	79	67	67
DPT 1	93	87	87
DPT 2	86	77	77
DPT 3	79	67	67
Measles	76	71	69
Fully immunized	73	60	58
Zero dose	6	-	-

Table 1 shows little or no difference between the valid coverage data of immunization in the age group surveyed and their status by 12 months except for DPT/OPV 3rd dose coverage (56% versus 49%) and measles coverage (51% versus 45%).

Routine immunization coverage levels by gender

Among 210 children surveyed there were 101 male children and 109 female children. **Table 2** shows that there is little difference in the initial level of access between boys and girls. However, for valid data by 12 months, there is a considerable difference among the fully immunized children as only 46% of the girls (versus 70% of the boys) are protected. The dropout and the rate of invalid doses are higher among girls.

Table 2: Routine immunization coverage levels by sex of the child

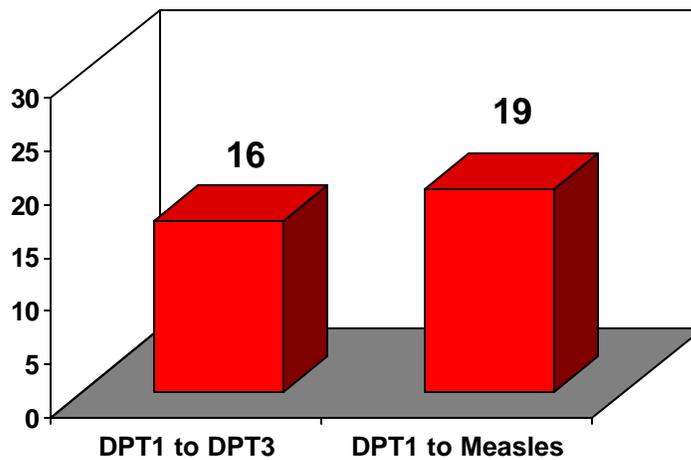
	Coverage % Immunization of 12-23 months age group				Coverage % Immunized by 12 months	
	Crude data (Access)		Valid data		Valid data	
	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)	Female (%)
BCG	95	93	95	93	95	93
OPV1	95	92	91	84	91	84
OPV2	89	84	84	72	84	72
OPV3	85	73	76	59	76	59
DPT1	95	92	91	84	91	84
DPT2	89	83	84	71	84	71
DPT3	85	73	76	59	76	59
Measles	81	71	79	64	79	60
Fully immunized	79	68	70	50	70	46
Zero dose	5	7	-	-	-	-

Program access [percent of children surveyed who received DPT 1st dose, (crude data - by card or history). Access to immunization is good as 93% of the children received a 1st dose of DPT.

Program continuity (dropout rate)

Crude data for antigens received by 12-23 months of age is used for calculating the dropout rate. In this survey, the DPT1 to DPT3 dropout rate is 16% and DPT1 to measles dropout rate 19 % (**Chart 1**).

Chart-1: Drop-out rate for childhood immunization



Program quality

Adherence to immunization schedule-invalid doses

Adherence to immunization schedule is generally considered to be the major indicator of program quality. Invalid doses⁴ of immunization are low although screening should be improved.

Table 3: Invalid doses of immunization provided to the children

Antigens	Percentage
DPT1	6
DPT2	2
DPT3	2
Measles	6

BCG vaccination

93% of the children surveyed received BCG vaccine based on card plus history data. 85% of the children were found with a BCG scar, but in 9% of the cases BCG vaccination did not produce a visible scar. It is usually expected that the failure to produce BCG scar should not be more than 5%.

Missed opportunities for immunization

Overall missed opportunities are low as well as uncorrected missed opportunities

Table 4: Missed opportunities by antigens

Name of the vaccine	Uncorrected		Corrected	
	Number	Percent	Number	Percent
BCG	3	1	1	0.5
DPT1	1	0.5	6	3
DTP2	1	0.5	5	2
DPT3	1	0.5	5	2
OPV1	1	0.5	6	3
OPV2	1	0.5	5	2
OPV3	1	0.5	5	2
Measles	3	1	3	1

Availability of documentation of immunization

Child immunization cards were available in 47% of the cases and were lost in another 47% of the cases. In 11% of the cases the parents said that the card was never issued.

Table 5: EPI card availability and retention

Card Status	Number	Percentage
EPI card available	98	47
EPI card ever given	186	89
EPI card retention	98	53

Source of immunization: Childhood immunization is provided by EPI Outreach centers run by MOHFW in 89 % of the cases. NGO clinics contributed 7%. 81 % of the EPI vaccination centers are within 10 minutes walking distance, 17 % of the centers are between 10-30 minutes walking distance from client's residence.

Chart 2: Sources of childhood immunization services

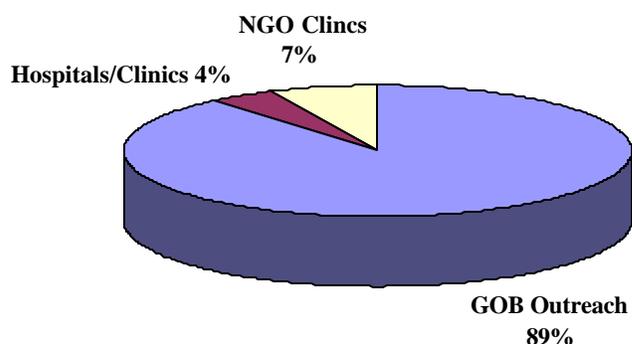


Table 6: Distance between the child’s home and the vaccination site by type of transports

Type of transport	1-5 minutes		6-10 minutes		11-30 minutes		Total	
	#	%	#	%	#	%	#	%
Walk	72	34	98	47	36	17	206	98
Rickshaw	-	-	4	2	-	-	4	2
Total	72	34	102	49	36	17	210	100

Reasons for non-immunization and partial immunization of the children

The main reasons for non-immunization were the lack of knowledge of the parents/caretakers about the importance of immunization and the fear of adverse reactions. The main reasons for partial immunization were the ignorance that a subsequent dose was needed and to a lesser extend: mother busy, child away from home and child sickness.

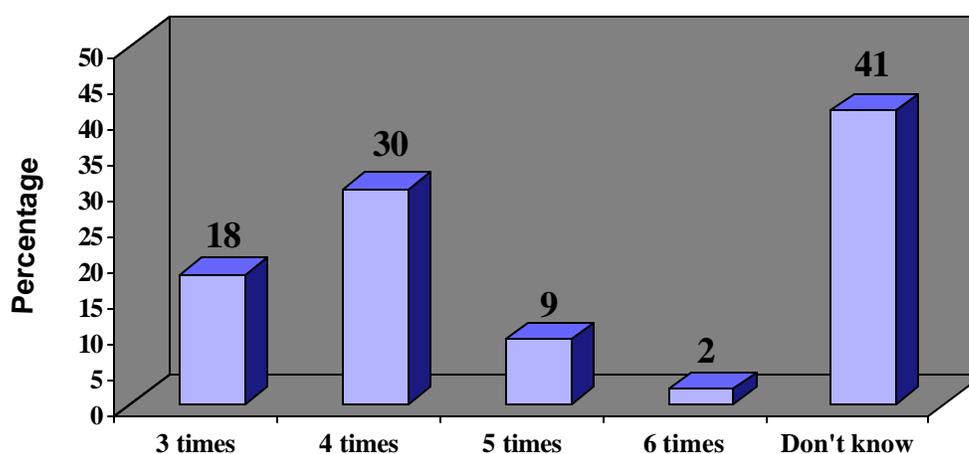
Table 7: Reasons for non-immunization and partial immunization of the children

Reasons	Non-immunized (%) (N=13)	Partially immunized (%) (N=44)
Did not know about need of immunization	31	-
Did not know about need of second dose	-	39
Did not know about importance of measles vaccine	-	5
Unknown of place and time of immunization	-	7
Fear of adverse reaction	23	9
No faith in immunization	8	-
Family problem/mother sick	8	-
Child sick, was not taken to site	8	2
Social/religious barrier	8	2
Mother busy with other works	-	7
Health worker not available at the site	-	5
Vaccine was not available at the site	-	2
Child sick, was taken to the site, but not given	-	7
Pain full for the children	-	7
Child away from home	-	7
Others	15	2

Information of routine childhood immunization

Only 30% of the respondents (parents/caretakers) could mention correctly the number of times a child should be taken to the immunization session ("4 times" - was taken as correct answer

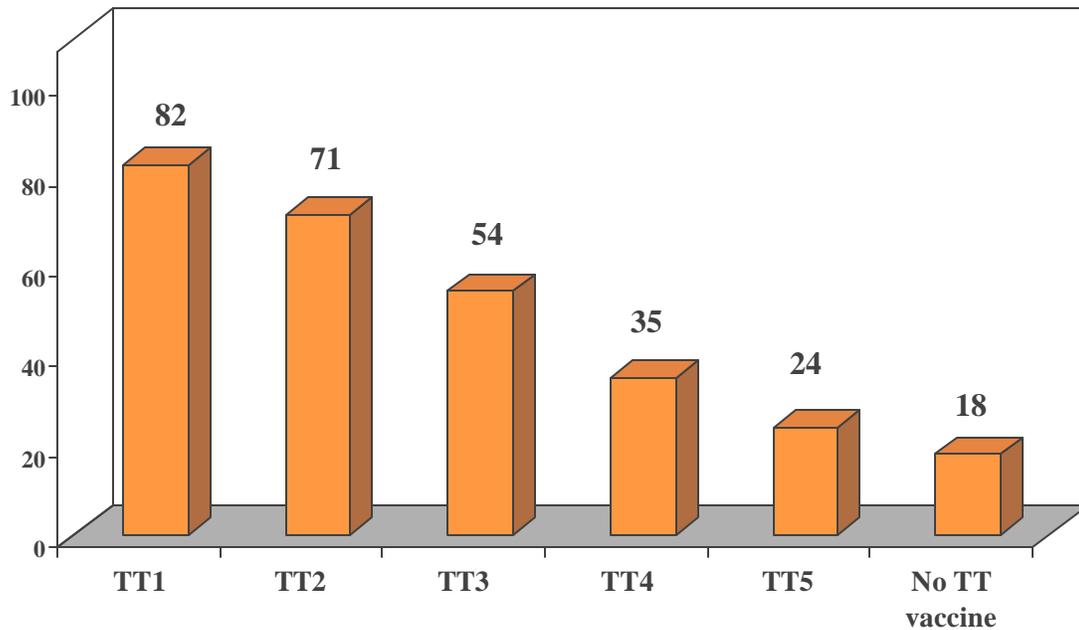
Chart 3: Respondents' knowledge about required visits to immunization centers for full immunization



B. Routine TT immunization coverage levels of the women

82% of the women of childbearing age (15-49 years) had received a first dose of TT; 71% a 2nd dose of TT but only 16% of the women the five doses of TT vaccine. 18 % never received any immunization.

Chart 4: Routine immunization coverage levels for TT of women (15-49 years)



The dropout rate from first dose of TT vaccine to second dose of TT vaccine was 6% and the dropout rate from the first dose of TT vaccine to third dose of TT vaccine was 32% (**Chart 5**). Only 10% of the women had TT immunization cards and they were lost in another 32% cases.

Chart 5: TT Immunization drop-out rate among women 15-49 years

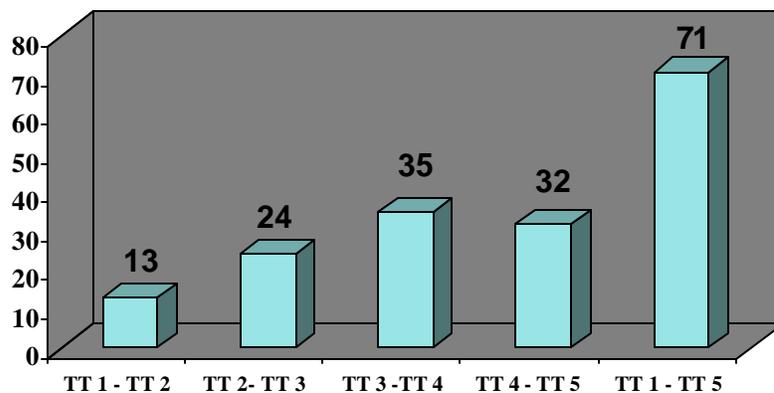


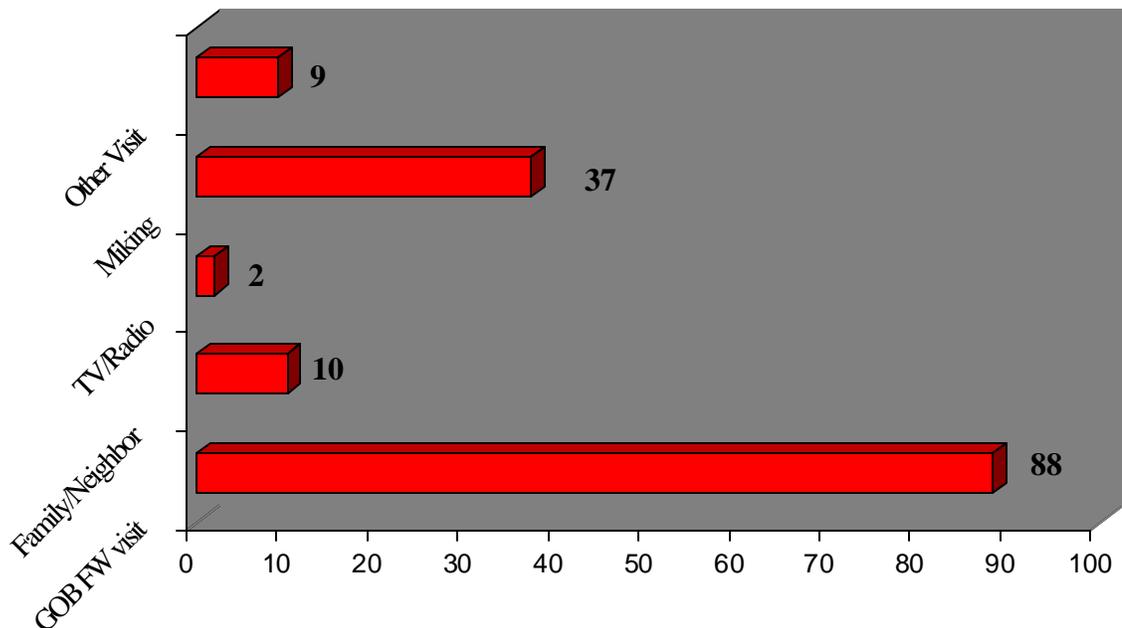
Table 8: Coverage of the 9th NID Campaign

Round	OPV (%)	Vit "A"(%)
1 st round	95	-
2 nd round	94	87
Both rounds	92	-
Any round	97	-

Table 9: Reasons for non-immunization of OPV during 9th NID campaign

Reasons	1 st Round (%)	2 nd Round (%)
Did not know about NID	40	30
Away from home	7	19
Waited for house visit	-	7
Too busy	13	30
Religious/social barrier	13	-
Vaccine not available at the site	7	4
Others	20	11

Chart 6: Source of information about the 9th NID campaign



Antenatal care during the last pregnancy

- ? 82% of the women did not have any antenatal care, 5% had one visit, 6% two, 4% three and 2% the four recommended visits. A breakdown by year of delivery over the past 5 years did not show any increase in the percentage of ANC.

Table 10: Antenatal check-up received during the last pregnancy (N=690)

Number of times	Number	Percent	Cum. percent
No Check	568	82	82
One time	37	5	87
Two times	40	6	93
Three times	29	4	97
Four times	10	2	99
Five times +	6	1	100

Table 10.1: Blood pressure checking done during the last pregnancy (N=122)

Number of times	Number	Percent
No Checked	36	30
One time	34	28
Two times	34	28
Three times	12	10
Four times+	6	4

Table 10.2: Antenatal check up received by year (N=690)

Antenatal Care	Up to 95		1996		1997		1998		1999		2000		2001	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
No check	62	9	13	2	34	5	68	10	75	11	180	26	136	20
One time	1	.1			2	.2	-	-	5	.7	16	2	13	2
Two times	-	-	3	.4	3	.4	2	.2	10	1	12	2	10	1
Three times	1	.1	1	.1	2	.2	1	.1	4	.5	11	2	9	1
Four times	-	-					-	-	1	.1	8	1	1	.1
Five times+							-	-	1	.1	4	1	1	.1
Total	64	9	17	2	41	6	71	10	96	14	231	34	170	25

- ? Among those who had at least one visit 30% never had their blood pressure checked during the ANC session.

Health seeking behavior

Morbidity

- ? In the past 2 weeks (late November, a cooler season) 23% of the under-five years children (boys insignificantly more than girls) had an episode of illness. Fever without other symptoms (ordinary cold?) occurred in 46% of cases, Diarrhea/Dysentery in 31% and pneumonia in 4%.

Table 11: Illness Status of <5 Children (N=613)

Status of Illness	Male		Female		Total	
	#	%	#	%	#	%
Illness	71	49	73	51	144	100
No Illness	207	44	262	56	469	100

Table 11.1: <5 years children suffering from acute illness during last 14 days by type of illness

Type illness	Number	Percent
Diarrhea/dysentery	45	31
Fever alone	66	46
Pneumonia/breathing problem	6	4
Else acute	27	19
Total	144	100

Access to health care

- ? Among the private health care providers been called upon 36% less than a quarter mile from people, 61% less than half-mile and 88% less than a mile and a half. The mean distance was .83 mile.
- ? 33% of the pharmacists live within a quarter of a mile and all within a mile and a half. The mean distance was .71 mile.
- ? 25% of the people who consulted a GOB health facility live within a quarter mile of it and 75% within a mile.

Table 11.2: Type of private Practitioners consulted 1st time (N=58)

Type of practitioners	Number	Percentage
Traditional Healer	12	21
Quack	27	46
Homeopath	16	28
Palli Chickitshak	3	5
Total	58	100

Health-seeking behavior

- ? 55 % of the sick children were not taken to any health practitioner during their last episode of illness. 40% consulted a private health care provider, 3% a GOB facility and 2 % went directly to a pharmacist.
- ? 24% of the children suffering from diarrhea/dysentery did not consult; 89% for fever alone, 83% for pneumonia/breathing problems and 56% for “else acute”.
- ? The available private health care providers do not include a licensed MBBS doctor. The frequency of the consultations was as follows: 46% for unlicensed allopathic (quack), 28% for homeopaths, 21% for traditional healers and 5 % for Palli Chikitsak
- ? 31% of the patients using a private practitioner went within a day after the onset of the illness, 45% between 2-3 days and 19% after 4-5 days. For GOB facilities 50% went within a day, 25% between 2-3 days and 25% within 4-5 days. For pharmacists 33% consulted within a day and 67% after 2-3 days.
- ? Parents spent as much money for their sons as for the girls (about 35 takas per visit on average) when they take them to private practitioners.

Table 12: <5 children who went to health care providers for treatment by type of Health care providers (N=144)

Type	1 st time consulted		2 nd time consulted	
	#	%	#	%
Taken to private practitioner	58	40	3	2
Taken to pharmacist	3	2	1	.6
Taken to GOB Facilities	4	3	-	-
Not taken to any HCP	79	55	-	-
Total	144	100	4	3

Table 12.1: <5 years children suffering from acute illness during last 14 days by type of illness and providers

Type	Taken to private practitioner	Taken to pharmacist	Taken to GOB Facilities	Not taken to any HCP	Total
Diarrhea/Dysentery	30	1	3	11	45
Fever alone	6	-	1	59	66
Pneumonia/breathing problem	1	-	-	5	6
Else acute	12	-	-	15	27

Table 12.2: Interval between onset of illness and 1st time treatment sought by type of health care practices

Interval	Private Practitioners		Pharmacists		GOB Facilities	
	#	%	#	%	#	%
0-1 days	18	31	1	33	2	50
2-3 days	26	45	2	67	1	25
4-5 days	11	19			1	25
6 days +	3	5				
Total	58	100	3	100	4	100

Table 12.3: Health care providers who were 1st time consulted for treatment by expenditure

Number of children taken to private practitioners for 1 st time	All sex	Male children	Female children
	58 (40%)	28 (48%)	30 (52%)
Money spent for seeking help of private practitioners per episode (in taka)			
Maximum	170	170	150
Minimum	0	0	0
Mean	35	35	34
Median	16	15	19

Number of children taken to medicine shops for consultation and buying medicine for 1 st time	All sex	Male children	Female children
	3 (2%)	3 (2%)	-
Money spent for buying medicine from medicine shops			
Maximum	55	55	-
Minimum	12	12	-
Mean	30	30	-
Median	22	22	-

Number of children taken to GOB health facilities for 1 st time	All sex	Male children	Female children
	4 (3%)	2 (1%)	2 (1%)
Money spent for treatment			
Maximum	780	780	0
Minimum	0	0	0
Mean	195	195	-
Median	0	0	-

Health Care Practices

- ? In case of a diarrhea/dysentery episode 51 % of the parents give fluids while only 1% stop them. 25% stop giving various types of food. 24% manage to give antibiotics.
- ? Oral Rehydration Saline packets are more popular (85%) than lobon-gur saline (46 %) as a means of home treatment of diarrhea.
- ? 22% of all mothers reported ignoring how to prepare the lobon-gur solution.
- ? Only 76% of the people who claimed they knew about the correct way to prepare the lobon-gur saline were correct.

Table 13: Usual treatment of children suffering from diarrhea

Type of treatment	Number	Percent
Give fluid	413	51
Stop fluid	11	1
Give some normal food	212	26
Stop some food	199	25
Give ORT package	690	85
Give lobon-gur	369	46
Give medicine (Antibiotic)	197	24
Others	31	4

*Multiple responses were considered

Table 13.1: Mothers who know the preparation of lobon-gur saline (N=808)

Knowledge	Number	Percent
Know the preparation	627	78
Does not know	181	22
Total	808	100

Table 13.2: Correct Knowledge about preparation of Lobon-gur saline (N=627)

Knowledge	Number	Percent
Correct knowledge	477	76
Incorrect knowledge	150	24
Total	627	100

Reference and Resource materials

1. WHO EPI Mid Level Managers module: Evaluate Vaccination Coverage (WHO/EPI/MLM/91.11)
2. Anthony G Turner, Robert J Magnani and Muhammad Shuaib, “A not quick as quick but much cleaner alternative to the Expanded Programme on Immunization (EPI) cluster survey design”, International Journal of Epidemiology, 1996, volume 25, Issue No. 1, pages 198-203.
3. COSAS 4.3 version manual, WHO, November 1991.
4. Training manual on EPI for the field workers of Ministry of Health and Family Planning, 4th edition, 1997.
5. Expanded Program on Immunization, Ministry of Health and Family Welfare, 1997, 1998, 1999 National Coverage Evaluation Survey Report, Dhaka.
6. Needs assessment study of field workers involved in the Expanded Program on Immunization, Executive Report, November 1991, Pages 2, 8, 11.
7. Progotir Pathey, October 1998, UNICEF, Dhaka.
8. Stanley O. Foster, 1996, Information for action: Using data to improve EPI impact, BASICS, Dhaka.
9. Therese Blanchet, Perceptions of childhood diseases and attitudes towards immunization among slum dwellers, Dhaka, June 1989. AID Contract No. DPE-5927-C-50698-00.

Annex A

The following are extracts from **Anthony G Turner, Robert J Magnani and Muhammad Shuaib's** article entitled ***"A not quick as quick but much cleaner alternative to the Expanded Programme on Immunization (EPI) cluster survey design"*** published in the *International Journal of Epidemiology* in 1996, volume 25, Issue No. 1, pages 198-203.

The standard EPI Cluster Survey Design

"The sample design for the EPI Cluster Survey is a two stage design involving the selection of 30 primary sampling units or 'clusters' (usually village or other area units), from which 210 children with a target age range (usually 12-23 months) are chosen, seven children per cluster. The sample size of 210 children (per domain or stratum) is mandated by the desire to estimate the level of immunization coverage to within +/- 10 percentage points of the true population proportion with 95% statistical confidence, assuming a design effect (i.e. *deff*) of 2.0. Based upon prior experience with immunization coverage surveys (primarily in the US), 30 clusters are generally thought to be necessary to yield sufficiently reliable estimate."

"In the standard design, clusters are chosen from a list of primary sampling units (i.e. villages, urban communities, census enumeration areas etc.) through systematic random sampling with probability proportional to estimated size (*ppes*). The latest estimates of cluster population sizes, which are assumed to be proportional to the number of children in the target age group in each cluster, are typically used as measures of size. The 30 clusters so chosen are then visited by survey field staff who carry out the second stage of sample selection and conduct the household interviews. "

"The original EPI design called for sample children to be chosen randomly from a list of all eligible children in each sample cluster. However, because the creation of lists of households and children tends to be time consuming, costly, and unfeasible in some settings, this procedure is only infrequently used in actual practice. Instead, one of several simplified second stage sampling procedures is commonly used. In one variant, children are selected by first choosing a random direction from a central location in a village or community (e.g. by spinning a bottle). The number of households in that direction to the edge of the community is then counted, and one household is randomly chosen to be the first sample household. Subsequent households are chosen by visiting the nearest neighboring households until information has been gathered on seven children. In a yet simpler variant, a direction from a central starting point is randomly chosen as described above and households are contacted as the interviewer moves in the chosen direction until the required information has been gathered for seven children."

"The second stage sampling methods described above are 'quota sampling procedures' and some of the problems resulting from the use of this approach have been noted over the years."

"First, quota sampling does not ensure that every eligible member of the target population has a known, non-zero chance of being selected. Hence, the standard EPI design, as it is usually applied, is not a true probability sample design."

"A second problem concern sampling weights... However, since measures of size in sampling frames are often inaccurate due to census errors and changes in population since the census was taken, application of the standard EPI Cluster Survey method does not automatically result in a self-weighting sample. The survey data must be weighed in order to yield unbiased estimates. However, since selection probabilities are not known in most EPI Cluster Survey applications, sampling weights can not be calculated."

"Thirdly, a computer simulation study demonstrates that the EPI Cluster Survey based upon quota sampling at the second stage of sample selection is considerably more prone to sampling bias than conventional cluster sampling, particularly where immunized children are 'pocketed' within clusters. "

"Finally, there is the issue of how second stage sample selection should proceed in surveys with multiple measurement objectives."

Annex B

List of Selected Clusters for the Survey

District	Thana	Union	Mauza	POP.	Cluster #
SATKHIRA	Shyamnagar	Ramjan nagar 1	Bhetkhali	3514	1
		Munshi gonj	Hari nagar	13396	2
			Munshi gonj	14999	3-4
		Buri goa lini	Abad chandi pur	7442	5
			Buri goa lini	5550	6
		Gabura	Khalisha Bunia	5979	7
			Parshe mari	7403	8
		Kai khali	Kai kali 9	12202	9
		KHULNA	Koyra	Moharaj pur	Karia Mathbaria
Dakshin Bed kashi	Dakshin Bed kashi			15797	11-12
	Maheshwari pur			7730	13
Koyra	Koyra			17047	14-15
Uttar Bedkashi	Uttar Bedkashi			13055	16
KHULNA	Dacope	Sutar khali	Nalian	4943	17
			Kala bagi sutar kholi	9610	18
			Gunari,	6239	19
		Kailas gonj	Dhopa dighi	6343	20
		Lau dubi	Lau dubi	7934	21
		BAGERHAT	Mongla	Sundarban	Bans tala
	Kharma			4653	23
Chila	Chila			7437	24
BAGERHAT	Morol gonj			Nishan baria	Jiu dhara
			Paschim chipa Barai khali	5074	26
BAGERHAT	Saran khola	Rayenda	Dakshin Raja pur	10450	27
		Dakshin khali	Sona tola	12460	28
			Saran khola	12792	29
		Dhan sagor	Dhan sagor	3624	30

Annex C

List of Never Vaccinated Children Identified by Clusters

District	Thana	Union	Mauza	Total Population	Cluster No	Never vaccinated Children
SATKHIRA	Shyamnagar	Kai khali	Kai kali 9	12202	9	2
KHULNA	Dacope	Sutar khali	Nalian 17	4943	17	2
		Lau dubi	Lau dubi 21	7934	21	2
BAGERHAT	Mongla	Sundarban	Bans tala 22	4590	22	2
			Kharma 23	4653	23	1
	Morol gonj	Nishan baria	Jiu dhara 25	4740	25	3
	Saran khola	Dakshin khali	Saran khola 29	12792	29	1

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