



IOCH
Immunization and Other Child Health Project

**Vaccination Coverage Survey of the
Mymensingh Municipality**

July 2002

Survey Report No. 74

**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**

House 1, Road 23, Gulshan 1, Dhaka 1212, Bangladesh
Tel: 8828596, 8829279, 8813611, 8813410
Fax: 880-2-8826229
E-mail: ioc@citechco.net

September 2002

Table of Contents

List of tables and charts	2
Acronyms	3
Terminology	4
Summary Results	5
Background	5
Objectives	5
Methodology	5
Routine immunization coverage levels of children	6
Routine TT immunization coverage levels of women	7
Coverage levels of the 10 th NID campaign	8
Comparison with previous survey results	8
Problems detected	8
Suggested solutions	9
Map showing the locations of the selected clusters	11
Tables and Charts	12
Annexures	
Annex A: List of selected clusters for the survey	21
Annex B: List of never vaccinated children by clusters	21
Acknowledgements	22
List of IOCH reports	23

List of Tables

- Table 1:** Routine immunization coverage levels of the children
Table 2: Routine immunization coverage levels of the children by gender
Table 3: Invalid doses of immunization provided to the children
Table 4: Missed opportunities by antigens
Table 5: EPI cards availability and retention
Table 6: Distance between child's home and the vaccination site
Table 7: Reasons for non-immunization and partial immunization of the children
Table 8: Interval between TT1 and TT2, TT2 and TT3, TT3 and TT4 and TT4 and TT5
Table 9: Children born protected against tetanus
Table 10: Knowledge about number of TT doses required for life-long protection against tetanus
Table 11: Age distribution of women who never received TT vaccine
Table 12: TT cards availability and retention
Table 13: Reasons for non-immunization and partial immunization for TT of the women
Table 14: Coverage of the 10th NID Campaign
Table 15: Sources of OPV during the 10th NIDs
Table 16: Reasons for not receiving OPV from the NID sites during the 10th NIDs
Table 17: Comparison of the results of the coverage evaluation surveys conducted in Mymensingh Municipality by year of surveys

List of Charts

- Chart 1:** Drop-out rate for childhood immunization
Chart 2: Sources of child immunization services
Chart 3: Knowledge about required visits to immunization centers
Chart 4: Routine immunization coverage levels for TT of the women 15-49 years
Chart 5: TT immunization dropout rate among women 15 – 49 years
Chart 6: Providers of TT immunization
Chart 7: Sources of information about the 10th NID Campaign

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
FWC	Family Welfare Center
IOCH	Immunization and Other Child Health
Mahallah	Smaller localities (smaller than a village)
MOHFW	Ministry of Health and Family Welfare
Mouza	Smallest administrative locality in an Upazila
MSH	Management Sciences for Health
NGO	Non Governmental Organization
NID	National Immunization Day
OPV	Oral Polio Vaccine
TT	Tetanus Toxoid
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 plus history. In the calculation process, first the rate of validity is calculated based on cards only, then this rate is applied to history cases too. 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.

Dropout cases refer to the children/women who have initially received at least one dose of any antigen and then failed to receive the subsequent doses to get fully immunized. Dropout rate implies the inability of the EPI to follow-up and protect the cohort of children initially reached out.

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*.

SUMMARY RESULTS

Background

The routine EPI program in the municipalities is carried out by a variety of private and public providers at fixed (hospitals, clinics, dispensaries, etc.) and at outreach sites. NGOs and private practitioners also provide immunization services in many places. The municipal authorities are primarily responsible for providing and/or coordinating primary health care including routine EPI services in municipal areas. However, in the absence of an effective management information system and reliable service statistics at municipal level, it is often difficult to assess the level of immunization coverage of the municipalities. In view of this situation, the IOCH decided to conduct a series of coverage evaluation surveys in the selected municipal areas to assess the level of immunization coverage in these municipal areas. As a part of this effort, the IOCH conducted a coverage evaluation survey in the Mymensingh Municipality in July 2002.

Objectives

The overall objective of the survey was to assess the level of immunization coverage in the Mymensingh Municipality. The specific objectives were to:

- a) assess the level of routine immunization coverage of the children (12-23 months) and find out the reasons for non-immunization and partial immunization;
- b) assess the level of TT immunization coverage among women of 15-49 years of age, irrespective of their marital status, and find out the reasons for non-immunization and partial immunization; and
- c) assess the coverage levels of OPV and Vitamin A administered during the 10th NID campaign.

Methodology

The survey employed the WHO recommended 30-cluster survey methodology that has been widely used in many developing countries to assess immunization coverage. In all, 30 clusters were randomly selected from the Mymensingh Municipality following PPS sampling procedures. A list of the selected clusters is provided in Annex- A and their locations are shown on the maps in page 10. From each cluster, 7 children 12 – 23 months and 7 women of reproductive age (15 – 49 years) irrespective of their marital status were selected following 30 cluster survey methodology to ascertain their routine immunization coverage. Also, 7 children < 5 years (0 – 59 months) were selected to assess the immunization coverage of the 10th National Immunization Campaign.

The WHO standard questionnaires were used for documenting the routine immunization status of the children and women. Also, separate questionnaires were used to collect data on NIDs and reasons for non-immunization and dropouts. The data were collected by the experienced Field Investigators of the Survey Team of the IOCH. Data processing and analysis were done by the Monitoring & Evaluation Unit of the IOCH using COSAS 4.41¹ and EpiInfo.

¹ COSAS (Coverage Survey Analysis System) is a dedicated software for analyzing coverage evaluation survey data.

Coverage levels for the routine immunization of children

Access to child immunization: Based on crude data (card plus history), 96% children received at least one dose of antigen (DPT 1st dose in this case) from routine immunization sessions. 2% children did not receive a dose of any antigen.

Crude coverage between 12-23 months: 98% children received BCG, 90% children received three doses of OPV, 90% received three doses of DPT and 80% received measles vaccine. 80% children were fully immunized.

Valid coverage between 12-23 months: 98% children received BCG, 83% children received three doses of OPV, 83% received three doses of DPT and 79% received measles vaccine. 76% children were fully immunized.

Valid coverage by 12 months: 98% children received BCG, 80% children received three doses of OPV, 80% received three doses of DPT and 73% received measles vaccine. 68% children were fully immunized.

Routine immunization coverage by sex: There was no significant sex differential in terms of access to immunization services. Boys' access to immunization, as measured by the crude coverage of DPT1, was similar to that of the girls (96% for boys and girls each). However, the proportions of invalid doses of OPT2/OPV2 and DPT3/OPV3 were higher for girls than for boys, resulting in lower valid FIC (fully immunized children) for the girls than that for the boys (79% valid FIC for boys vs. 73% valid FIC for girls).

Dropout rates: Although access to child immunization was high (96% for DPT1), the dropout rates for different antigens were high too. There was 6% dropout from DPT1 to DPT2 and 17% from DPT1 to measles.

Invalid doses: There were a number of invalid doses due to early immunization and/or inadequate interval between the doses. 1% of the DPT1 doses were administered before 6 weeks, and 1% measles doses before 38 weeks of age of the children. In addition, 2% of the DPT2 doses and 1% of the DPT3 doses were invalid as they were given before the 4 weeks interval between the doses.

Missed opportunities: Total missed opportunities (uncorrected plus corrected) for different antigens ranged from 2% to 8%. However, the prevalence of uncorrected missed opportunities for different antigens was low, ranging from 0 to 3%. The composite index for total missed opportunities was as high as 66, reflecting poor quality of screening during vaccination sessions.

EPI card retention: 97% of the children interviewed were ever given EPI cards; however, EPI cards were available with 54% of the respondents at the time of interview. EPI card retention rate was 55% only, which means that 45% of the EPI cards were lost.

Knowledge about required visit to immunization center for full immunization: 32% of women did not have any idea about how many times a child is required to be taken to an immunization center to get fully immunized; while 23% had wrong idea about it. Only 45% of the women

could mention correctly the number of times (i.e. 4 times) a child is required to visit immunization center to get fully immunized.

Source of immunization services and distance of vaccination centers: Childhood immunization in this area was provided mostly by the municipal outreach centers (39%), followed by the NGO clinics (23%) and GOB clinics (16%). GOB outreach centers and private clinics provided EPI services to 12% and 5% of the cases respectively. Almost all the EPI outreach centers were located within 10 minutes walking distance from homes of the children.

Reasons for non-immunization and partial immunization or dropout of children: The primary reasons for non-immunization of children cited by the parents were sickness of the children (40%), fear of adverse reaction (40%) and lack of awareness of need and importance of immunization (20%). The reasons for partial immunization or dropout included: sickness of the children (42%) and lack of knowledge about the need of subsequent doses to get fully immunized (11%).

Coverage levels for the routine TT immunization of women

TT immunization coverage: Access to TT immunization for the women 15 – 49 years was fairly good. 85% of the women received TT1. The corresponding figures for TT2, TT3 and TT4 were 82%, 63% and 40% respectively. Only 30% of the women received TT5, which provide lifelong protection against tetanus. 15% of the women never received any TT vaccine.

TT immunization dropout rates: TT immunization dropout rates were high. The dropout rate for TT2 to TT3 was 23%. The corresponding rates for TT3 to TT4 and TT4 to TT5 were 37% and 26% respectively. The dropout rate for TT1 to TT5 was as high as 65%, indicating that 65% of the women who received first dose of TT did not complete 5 doses TT immunization schedule.

Invalid TT doses: A considerable proportion of TT doses were invalid as they were administered before the minimum required interval between the doses. 37% of the TT3 doses were given before 6 months interval between TT2 and TT3, and as such were invalid. Over one-third of the TT4 doses (37%) were invalid, since they were given before one year interval between TT3 and TT4; similarly 56% of the TT5 doses were invalid for the same reason.

Protection against tetanus at birth: 95% of the newborn babies were found protected against tetanus, indicating that 5% newborn babies were still not protected against tetanus at birth.

TT card retention: 81% of the women were ever given TT cards; however, TT cards were available with 21% of the women only at the time of interview. TT card retention rate was 26% only, which means that 74% of the TT cards were lost.

Knowledge about full TT immunization: 92% of the women did not have correct knowledge about the number of TT doses required for a woman for full immunization. Only 8% women could correctly mention that a woman was required to receive 5 doses of TT vaccine for full immunization for lifelong protection against tetanus.

Sources of TT immunization: Majority of the women received TT vaccine from the municipal outreach centers (32%), followed by GOB clinics (22%) and GOB outreach centers (20%). Private clinics and NGO clinics provided TT immunization to 12% and 10% cases respectively.

Age distribution of women never receiving TT immunization: The younger, as well as older women are less likely to receive TT vaccine. Half of the women under 20 years and 36% of the women over 35 years of age had never received any dose of TT vaccine; while the corresponding figures for women of other age-groups ranged 8% - 12%.

Reasons for non-immunization and partial immunization of women: The primary reasons for non-immunization of TT cited by majority of the women were lack of awareness of need and importance of TT immunization (39%) and fear of injection (45%); while 16% reported that the TT immunization was not introduced when they had their pregnancies. The primary reasons for partial immunization or dropout were that the women were not aware of the need of subsequent doses to get fully immunized against tetanus (26%), health worker did not specify the date for next dose (17%) or they were told by the health workers that 2 or 3 doses of TT were enough for them for their pregnancies, and they were not advised (by health worker) for full immunization (25%).

Coverage levels for the 10th NID Campaign

OPV and Vitamin A coverage: 99% of the children <5 years received OPV in both the rounds of the 10th NIDs. The coverage for OPV in each of the rounds was 99%. Vitamin A capsules were given to 96% of the eligible children (12 months – 59 months of age). Besides, Vit. A was given to 2 ineligible children (out of 210 surveyed) who were less than one year of age.

Sources of OPV during the 10th NIDs: Almost all the children received OPV from the NID sites (99% in 1st round and 98% in 2nd round). Only 1% children in the 1st round and 2% in the 2nd round were provided OPV at their homes by the health workers/volunteers during child-to-child search.

Sources of information of the 10th NIDs: Majority of the parents learned about the 10th NID campaign from relatives and friends (53%), followed by television (36%). 27% of the parents came to know about the NIDs from municipal workers and 13% from GOB workers. Mobile miking as a source of information was cited by 28% of the parents.

Reasons for not receiving vaccines from the NID sites: The primary reasons for not receiving OPV from the NID sites of the 10th NIDs were: lack of information of NIDs (25% in 1st round and 17% in 2nd round), child was away from home (33% in the 2nd round) and child waited at home for the health workers to come during child-to-child search (25% in 1st round and 17% in 2nd round).

Comparison with previous survey results

In April 2000, a coverage evaluation survey was conducted in the Mymensingh Municipality by the IOCH. A comparison of the results of that survey with those of this one reveals that there has not been noticeable improvement in the coverage of routine child immunization over the past two years; but the proportion of invalid doses has significantly decreased, indicating some improvement in quality of immunization services over the period. (Invalid doses of DPT1 and measles have reduced from 7% and 5% in April 2000 to 1% and 1% in July 2002 respectively). However, routine TT immunization, as well as NID coverage has significantly improved over the past two years. The coverage of TT1 has increased from 71% in April 2000 to 85% in July 2002

and TT5 coverage from 22% to 30%. The coverage of OPV during NIDs has increased from 96% in both rounds of the 6th NIDs in 1999 to 99% in both rounds of the 10th NIDs in 2002. Similarly, the Vitamin A coverage has increased from 71% in the 6th NIDs to 96% in the 10th NIDs.

Problems detected

Access to child immunization was good (96% for crude DPT1); but this high access dropped to 81% for fully immunized children because of high dropout rates of different antigens. (Dropout rate for DPT1 to DPT3 was 6% and DPT1 to measles was 17%). Similarly, access to TT immunization for the women 15 – 49 years was also good. 85% of the women interviewed received the first dose of TT; but TT dropout rate was very high (65% for TT1 to TT5), resulting in very low coverage of TT5 (30%), which provides lifelong protection against tetanus. Such high dropout rates imply inability of the EPI program to follow-up and protect the cohort of children/women initially reached out.

There were many invalid doses in child immunization (1% for DPT1, 2% for DPT2, 1% for DPT3 and 1% for measles), which further reduced the crude full immunization coverage of 80% to 76% when validity of doses was taken into account. Total missed opportunities for different antigens were also high (8% for DPT1 and 3% for DPT2 and measles). Also, a very high proportion of TT doses were invalid (37% for TT3, 37% for TT4 and 56% for TT5). These high rates of invalid doses and missed opportunities reflect service providers' inability to screen the clients properly.

EPI card (child immunization card) and TT card play an important role in ensuring good quality of immunization services. It helps the mothers to adhere to immunization schedule, as well as assists the service providers to screen properly the children for specific doses of specific antigens. Unfortunately, the retention rates of both the EPI cards and TT cards were low, 55% and 26% respectively.

Women/mothers have a poor understanding of full immunization. 55% of the women could not mention how many times a child was required to be taken to EPI center to get fully immunized. Similarly, 92% of the women interviewed did not know how many TT doses were required for a woman for lifelong protection against tetanus.

1% of the children <5 years did not receive two doses of OPV during the 10th NIDs. Also, 4% of the children 12 – 59 months did not receive Vitamin A. Besides, Vitamin A was wrongly provided to 2 ineligible children (out of 210 surveyed) who were less than 1 year of age on the day of the 1st round of the 10th NIDs.

Suggested solutions

1. Programmatic strategies must be undertaken to reduce the existing high dropout rates in both child immunization and TT immunization. The program should focus on quality of counseling of mothers/women (on immunization) by the service providers. The service providers at the first contact must counsel the mothers/women properly to motivate her to return and to get herself and/or her child fully immunized.
2. Program managers and field supervisors should ensure that EPI sessions are held as per plan, and at a regular and adequate interval (more than 28 days).

3. The service providers should be given refresher training to improve their technical skills on counseling of mother/women on immunization.
4. In order to reduce existing high rate of invalid doses (particularly for TT immunization) and missed opportunities, emphasis should be given on screening of clients for both child and TT immunization. The service providers should be given refresher training to improve their technical skills on screening of clients for immunization.
5. The pregnant mothers should be motivated (by the service providers and/or by the BCC activities through mass media) to receive the required number of TT doses necessary to protect their newborn babies.
6. Mothers should be explained (by the service providers) the benefits and importance of EPI cards/ TT cards for immunization of themselves and their children.
7. Mothers should be asked to preserve the EPI card safely until their children are 5 years old, and to bring the cards with them whenever they comes to the clinic/ EPI center for immunization of their children. They should also be asked to carefully preserve their TT cards, and to bring the cards with them whenever they come to clinic/ EPI center for TT immunization.
8. In the case of loss of EPI card/TT card, it should be provided over and over, and the history of the earlier vaccinations accurately recorded again and again, if necessary.
9. During IPC between the mothers and the service providers and/or at the first contact, the mothers should be clearly explained the importance of full immunization of children and women, and of the immunization schedule for full immunization for both children and women.
10. The program should strengthen BCC activities to inform the community of importance of immunization in general, and to motivate the mothers to get themselves and their children fully immunized. Very selective and focused mass media campaign may also be conducted to achieve this end.
11. Area specific innovative strategies suitable to local situation have to be undertaken during the next NIDs to reach to the left out children.
12. More attention should be given to high risk areas and traveling population during next NIDs.
13. Communication activities need to be strengthened through mass media, such as television, as well as through IPC by the health workers, to inform the communities of the next NID campaign.
14. Parents should be encouraged to attend the fixed NID sites/centers and discouraged to wait for home visits by the service providers during child-to-child search.
15. For distribution of Vitamin A capsules during NID, special attention should be given to the exact age group to limit shortage (through better screening for age) and no Vitamin A capsule should be given to the parents to administer them to their children either at NID site or in their homes.



TABLES AND CHARTS

Table 1: Routine immunization coverage levels of the children

Name of the Vaccine	Coverage (%) Immunization of 12-23 months age group		Coverage (%) Immunized by 12 months of age
	Crude data (Access)	Valid data	Valid data
BCG	98	98	98
OPV1	96	95	95
OPV2	93	87	87
OPV3	90	83	80
DPT1	96	95	95
DPT2	93	87	87
DPT3	90	83	80
Measles	80	79	73
Fully immunized	80	76	68
Zero Dose	2	-	-

Table 2: Routine immunization coverage levels of the children by gender

Name of the vaccine	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	98	97	98	97	98	97
OPV1	96	96	95	96	95	96
OPV2	94	92	88	85	88	85
OPV3	93	87	87	79	82	77
DPT1	96	96	95	96	95	96
DPT2	94	92	88	85	88	85
DPT3	93	87	87	79	82	77
Measles	80	79	79	79	72	73
Fully immunized	80	79	79	73	69	67
Zero dose	2	3	-	-	-	-

Chart-1: Drop-out rate for child immunization

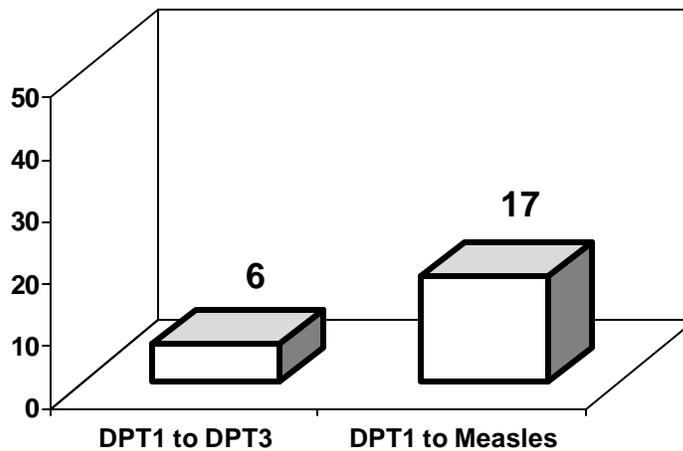


Table 3: Invalid doses of immunization provided to the children

Antigens	Percentage
DPT1	1
DPT2	2
DPT3	1
Measles	1

Table 4: Missed opportunities by antigens

Name of the vaccine	Uncorrected		Corrected		Total		
	Number	Percent	Number	Percent	Number	Percent	
BCG	3	1	3	1	6	2	
DPT1	6	3	10	5	16	8	
DTP2	1	1	5	2	6	3	
DPT3	0	0	5	2	5	2	
OPV1	6	3	10	5	16	8	
OPV2	1	1	5	2	6	3	
OPV3	0	0	5	2	5	2	
Measles	2	1	4	2	6	3	
*Index						66	

* The idea is to propose one composite index reflecting the quality of screening during vaccination sessions.

Table 5: EPI cards availability and retention

Card Status	Number	Percentage
EPI card available	113	54
EPI card ever given	204	97
EPI card retention	113	55

Chart-2: Sources of child immunization services

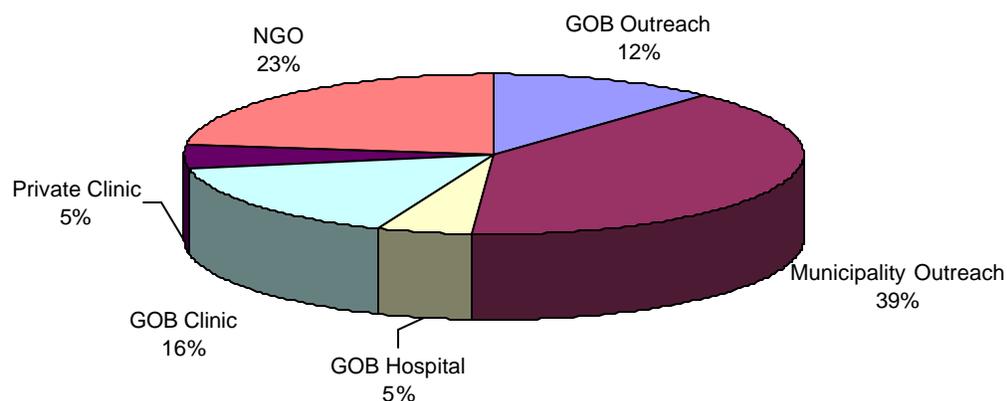


Table 6: Distance between the child's home and the vaccination site

Time (Minutes)	Number	Percentage
1-5 Min.	135	64
6-10 Min.	70	33
11-30 Min.	5	2

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

Reasons for non-immunization or partial immunization	Non-immunized (%) (N=5)	Partially immunized (%) (N=38)
Did not know about need of immunization	20	-
Did not know about need of second dose	-	11
Did not know when to return for 2 nd /3 rd dose.	-	3
Did not know about importance of measles vaccine	-	8
Did not know about place and time of immunization	-	3
Family problem/mother sick	-	3
Child was sick and not taken to immunization center	20	37
Child was sick and was taken to immunization center but not given by vaccine	20	5
Fear of adverse reaction	40	5
Mother was busy with other work	-	3
Future plan to vaccinate the child	-	3
Vaccinator not friendly	-	3
Child was not at home	-	3
Painful for the children	-	8
Others	-	5

Chart 3: Knowledge about required visits to immunization centers for full immunization

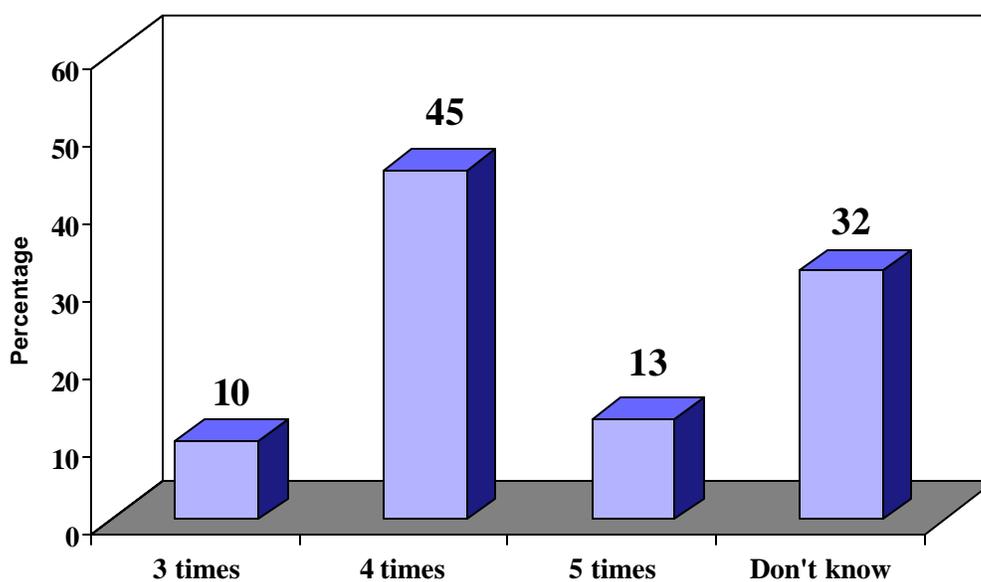


Chart 4: Routine immunization coverage levels for TT among women 15-49 years

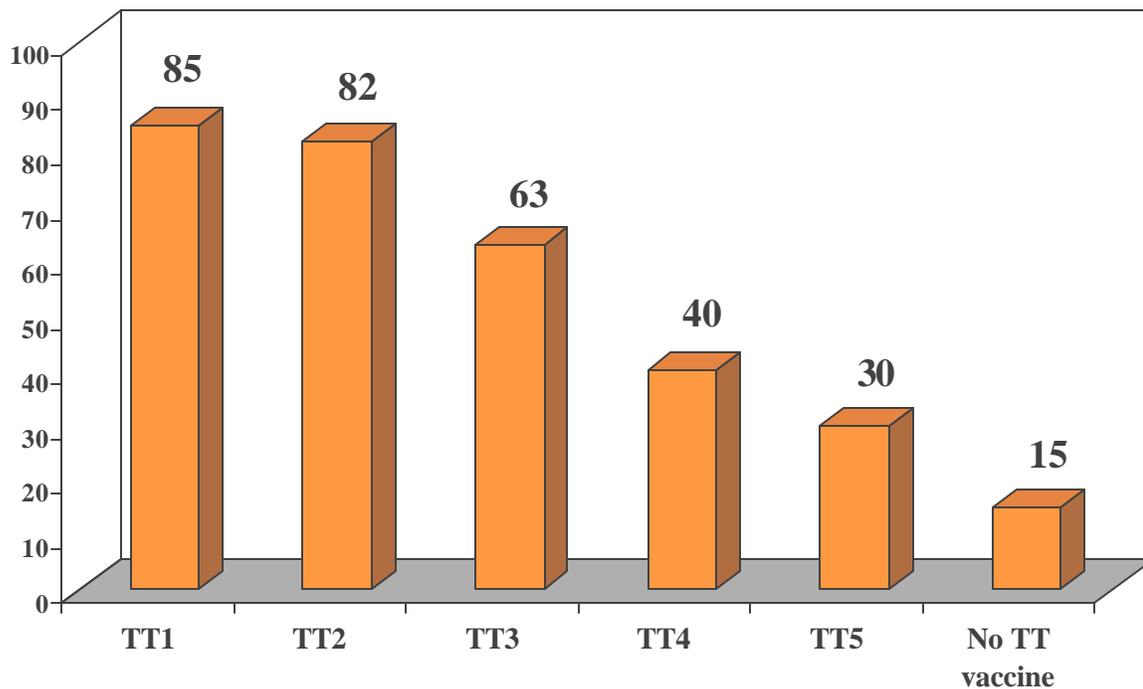


Chart 5: TT Immunization drop-out rate among women 15-49 years

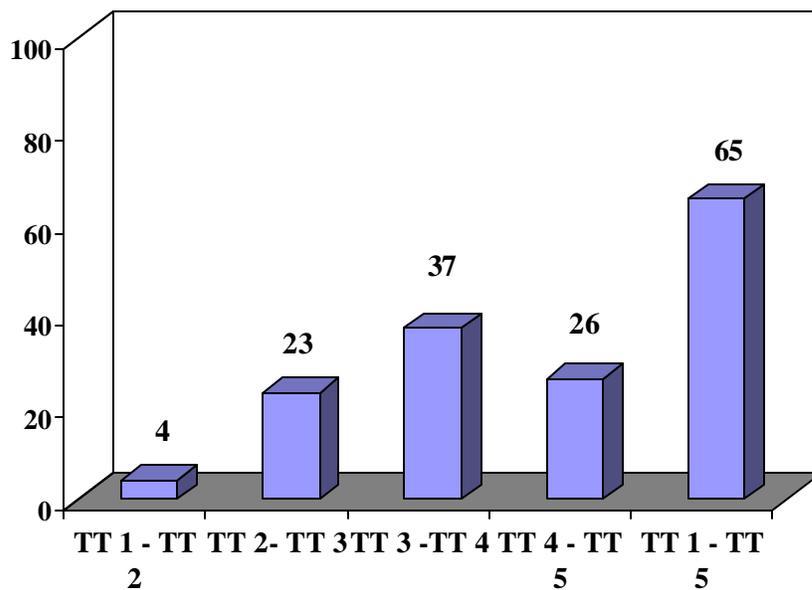


Table 8: Interval between TT1 and TT2, TT2 and TT3, TT3 and TT4, TT4 and TT5 doses

Interval between dose	<1 months		1 months+		<6 months		6 months+		<1 year		1 year +		Total	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
TT1-TT2	1	1	146	99	-	-	-	-	-	-	-	-	147	100
TT2-TT3	-	-	-	-	41	37	69	63	-	-	-	-	110	100
TT3-TT4	-	-	-	-	-	-	-	-	24	37	41	63	65	100
TT4-TT5	-	-	-	-	-	-	-	-	25	56	20	44	45	100

Table 9: Children born protected against tetanus

Status of children born protected	Number	Percentage
Protected	199	95
Not Protected	11	5

Table 10: Knowledge about number of TT doses required for lifetime protection against tetanus

Answers	Number	Percentage
5 doses	17	8
Don't know/ no idea	193	92

Table 11: Age distribution of women who never received TT vaccine

Age group	Received		Never received		Total	
	#	%	#	%	#	%
15-19	13	50	13	50	26	100
20-25	59	92	5	8	64	100
26-30	69	95	4	5	73	100
31-35	29	88	4	12	33	100
36-45	9	64	5	36	14	100
Total	179	85	31	15	210	100

Table 12: TT card availability and retention

Card Status	Number	Percentage
TT card available	44	21
TT card ever given	171	81
TT card retention	44	26

Chart 6: Providers of TT immunization

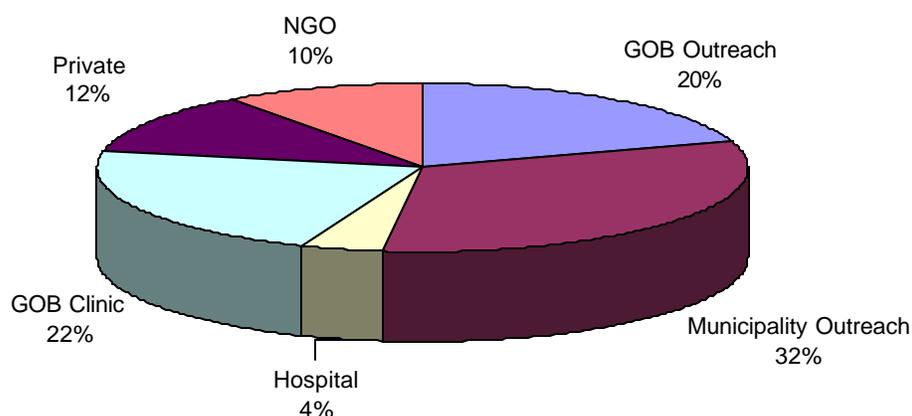


Table 13: Reasons for non-immunization and partial TT immunization

Reasons	Non-immunized (%) (N=31)	Partially immunized (%) (N=117)
Next dose is not yet due	-	23
Don't feel need for immunization	39	-
Health worker did not specify the next dose	-	17
As per HW advice 2/3 TT is enough during the pregnancy	-	25
Unaware of need of next dose	-	26
Postponed until another time	-	3
No faith in immunization	-	1
In our times, TT immunization was not in practice	16	-
Fear of injection	45	2
Fear of adverse reactions	-	2
Busy with household work	-	1

Table 14: Coverage of the 10th NID Campaign

Round	OPV (%)	Vit. A (%)
1 st round	99	96
2 nd round	99	-
Both rounds	99	-
Any round	100	-

Table 15: Sources of OPV during the 10th NIDs

Sources of OPV	1 st Round		2 nd Round	
	#	%	#	%
NID site	206	99	204	98
Child to child search	2	1	5	2
Total	208	100	209	100

Chart 7: Source of information about the 10th NID campaign

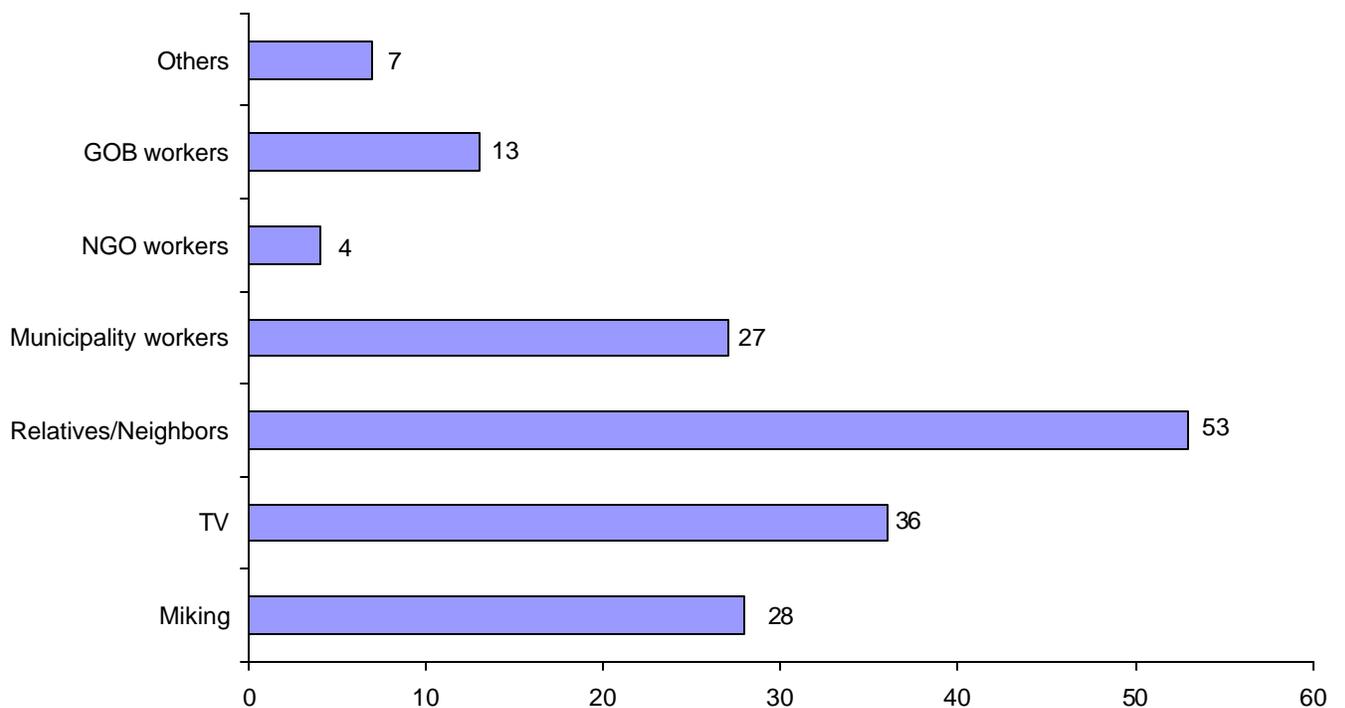


Table 16: Reasons for non-immunization of OPV from NID sites during 10th NID campaign

Reasons	1 st Round (%) (N=4)	2 nd Round (%) (N=6)
Did not know about NID	25	17
Forgot the date	25	-
Child was sick	-	17
Waited for house visit	25	17
Child away from home	-	33
Others	25	16

Table 17: Comparison of the results of the coverage evaluation surveys conducted in Mymensingh Municipality by year of surveys

Variable	Results of the Surveys	
	Survey in 2000* (%)	Survey in 2002 (%)
Child immunization:		
Access (DPT1, crude data)	99	96
FIC (crude data)	82	80
FIC (valid data)	71	76
FIC by 1 yr. (valid data)	66	68
Dropout rate:		
DPT1 to DPT3	10	6
DPT1 to Measles	16	17
Invalid doses:		
DPT1	7	1
Measles	5	1
TT immunization:		
TT1	71	85
TT5	22	30
NID coverage:		
OPV in both rounds	96	99
Vitamin A	71	96

* Source: Vaccination Coverage Survey of the Mymensingh Municipality - April 2000 conducted by IOCH/MSH

Annex-A**List of Selected Clusters for the Survey**

Ward	Mouza name	Mahalla name	Total Population	Cluster. No
1	Golapzan Road	Golapzan Road	2297	1
	Golgonda	Golgonda	5670	2
	Jail Area	Jail Area	2050	3
	Kasor	Kasor	5313	4
	Shaheb Quarters	Shaheb Quarters	2867	5
2	Goalkandi	Goalkandi	7949	6
	Golki Bari	Golki Bari	1870	7
	Shanki Para	Shanki Para	6678	8
	Uttar Akua	Uttar Akua	9781	9, 10
3	Gobindo Ganguly Road	Gobindo Ganguly Road	1291	11
	Kalibari Road	Kalibari Road	4160	12
	Moharaja Road	Moharaja Road	1074	13
	S. Kanto Hospital	S. Kanto Hospital	1145	14
4	Horijon Polli	Horijon Polli	880	15
	Rk Mission Road	Rk Mission Road	5855	16
	Sharada Ghosh Road	Sharada Ghosh Road	3773	17
5	Charpara	Charpara	8097	18
	Dakshin Shahera	Dakshin Shahera	4474	19
	Maskanda	Maskanda	5769	20
6	Bagmara	Bagmara	6291	21
	Krishtapur	Krishtapur	6532	22
	Patgudam Road	Patgudam Road	5629	23
	Purohit Para	Purohit Para	5868	24
	Railway Station Staff	Railway Station Staff	1209	25
	Uttar Shahera	Uttar Shahera	3463	26
7	Balashpur	Balashpur	5400	27
	Satrapur	Satrapur	2037	28
	Kewathkali	Kewathkali	8614	29
	Rakta	Rakta	640	30

Annex-B**List of Never Vaccinated Children Identified by Clusters**

Ward	Mouza name	Mahalla name	Total Population	Cluster No.	Never Vaccinated Children
1	Golgonda	Golgonda	5670	2	1
	Jail Area	Jail Area	2050	3	1
2	Uttar Akua	Uttar Akua	9781	9*, 10	1*
3	S. Kanto Hospital	S. Kanto Hospital	1145	14	2

Acknowledgements

Survey coordination:

Mr. Md. Mafizur Rahman, Monitoring and Evaluation Specialist, IOCH/MSH

Survey management:

Mr. Jagadindra Majumder, Field Survey Manager, IOCH/MSH

Data analysis:

Mr. Md. Mafizur Rahman, Monitoring and Evaluation Specialist, IOCH/MSH

Ms. Shahida Akhtar Ripa, PEF Monitoring, IOCH/MSH

Report writing:

Mr. Md. Mafizur Rahman, Monitoring & Evaluation Specialist, IOCH/MSH

Report review:

Dr. Pierre Claquin, Chief of Party, IOCH/MSH

Digital map preparation:

Mr. Din Mohammed, Monitoring and Evaluation Assistant, IOCH/MSH

Cover photo:

Dr. Pierre Claquin, Chief of Party, IOCH/MSH

Survey Team members, IOCH/MSH:

Mr. Md. Abdul Hamid, Field Investigator

Mr. Md. Saiful Islam, Field Investigator

Ms. Krishna Rani Shil, Field Investigator

Ms. Khaleda Akhter, Field Investigator

Ms. Mahamuda Parveen, Field Investigator

Ms. Aung Ma Ching Marma, Field Investigator

Ms. Niva Rani Taju, Field Investigator

List of IOCH Survey/Research/Technical Reports

Survey Reports

1. Vaccination Coverage Survey of the Slums of Rajshahi City Corporation - January 2000. Survey Report No. 1, May 2000
2. Vaccination Coverage Survey of the Selected Unions along the North-western Border of Bangladesh - February 2000. Survey Report No. 2, June 2000
3. Vaccination Coverage Survey of the Selected Unions along the South-west Border of Bangladesh - February 2000. Survey Report No. 3, July 2000
4. Vaccination Coverage Survey of the Slums of Khulna City Corporation - January 2000. Survey Report No. 4, July 2000
5. Vaccination Coverage Survey of the Slums of Chittagong City Corporation - January 2000. Ward Number 1 to 18. Survey Report No. 5, July 2000
6. Vaccination Coverage Survey of the Slums of Chittagong City Corporation - January 2000. Ward Number 19 to 41. Survey Report No. 6, July 2000
7. Vaccination Coverage Survey of the Dinajpur Municipality - January 2000. Survey Report No. 7, July 2000
8. Vaccination Coverage Survey of the Noakhali Municipality - January 2000. Survey Report No. 8, July 2000
9. Vaccination Coverage Survey of the Slums of Dhaka City Corporation - January 2000. Dhaka Slums of Zones 1, 2 & 4. Survey Report No. 9, July 2000
10. Vaccination Coverage Survey of the Slums of Dhaka City Corporation - January 2000. Dhaka Slums of Zones 5, 6 & 7. Survey Report No. 10, July 2000
11. Vaccination Coverage Survey of the Slums of Dhaka City Corporation - January 2000. Dhaka Slums of Zones 3, 8, 9 & 10. Survey Report No. 11, July 2000
12. Vaccination Coverage Survey of the Tribal and Non-tribal Populations in the North-east Border Areas of Bangladesh. Survey Report No. 12, August 2000
13. Vaccination Coverage Survey of the Sylhet Municipality - January 2000. Survey Report No. 13, August 2000
14. Vaccination Coverage Survey of the Kishoreganj Municipality - April 2000. Survey Report No. 14, September 2000
15. Vaccination Coverage Survey of the Rangpur Municipality - May 2000. Survey Report No. 15, September 2000
16. Vaccination Coverage Survey of the Greater Faridpur Municipalities - June 2000. Survey Report No. 16, September 2000
17. Results of Coverage Evaluation Survey of Routine EPI and August 2000 OPV + TT (NNT) Campaign, Chittagong, Khulna and Rajshahi City Corporation Slums - September 2000. Survey Report No. 17, November 2000
18. Results of Coverage Evaluation Survey of Routine EPI and August 2000 OPV + TT (NNT) Campaign, Dhaka City Corporation Slums - September 2000. Survey Report No. 18, November 2000
19. Results of Coverage Evaluation Survey of Routine EPI and August 2000 OPV + TT (NNT) Campaign, Slums of selected 27 Municipalities - September 2000. Survey Report No. 19, November 2000
20. Results of Coverage Evaluation Survey of Routine EPI and August 2000 OPV + TT (NNT) Campaign, Hard-to-reach and High-risk rural areas - September 2000. Survey Report No. 20, November 2000
21. Vaccination Coverage and Other Health Care Practices Survey in the Pabna Char Areas - August 2000. Survey Report No. 21, January 2001
22. Vaccination Coverage Survey of the Mymensingh Municipality - April 2000. Survey Report No. 22, February 2001
23. Vaccination Coverage Survey of the Jessore Municipality - October 20 - 30, 2000. Survey Report No. 23, February 2001
24. Vaccination Coverage Survey of the Comilla Municipality - October 1 - 9, 2000. Survey Report No. 24, February 2001
25. Vaccination Coverage Survey of the Pabna Municipality - July 2000. Survey Report No. 25, February 2001
26. Vaccination Coverage Survey of the Sirajganj Municipality - July 2000. Survey Report No. 26, February 2001
27. Vaccination Coverage Survey of the Bogra Municipality - February 2001. Survey Report No. 27, April 2001
28. Vaccination Coverage Survey of the Peri-urban Areas of DCC - November 2000 (Peri-urban Area Survey-1). Survey Report No. 28, July 2001
29. Vaccination Coverage Survey of the Peri-urban Areas of DCC - November 2000 (Peri-urban Area Survey-2). Survey Report No. 29, July 2001
30. Vaccination Coverage Survey of the Patuakhali, Jhalokathi and Pirojpur Municipalities - August 2000. Survey Report No. 30, July 2001
31. Vaccination Coverage Survey of the Bandarban, Rangamati and Khagrachari Municipalities - January 2001. Survey Report No. 31, July 2001
32. Vaccination Coverage Survey of the Naogaon Municipality - February 2001. Survey Report No. 32, July 2001
33. Vaccination Coverage Survey of the Tongi Municipality - March 2001. Survey Report No. 33, July 2001
34. Vaccination Coverage Survey of the Tangail Municipality - March 2001. Survey Report No. 34, July 2001
35. Vaccination Coverage Survey of the Savar Municipality - May 2001. Survey Report No. 35, July 2001
36. Vaccination Coverage Survey of the Rangpur District - June 2001. Survey Report No. 36, July 2001
37. Vaccination Coverage Survey of the Nawabganj Municipality - June 2001. Survey Report No. 37, July 2001
38. Vaccination Coverage Survey of the Expanded Areas of the Proposed Barisal City Corporation - June 2001. Survey Report No. 38, July 2001

39. Vaccination Coverage Survey of the Barisal Municipality - June 2001. Survey Report No. 39, July 2001
40. Vaccination Coverage Survey of the Kadam Rasul Municipality - July 2001. Survey Report No. 40, August 2001
41. Vaccination Coverage Survey of the Jamalpur Municipality - July 2001. Survey Report No. 41, August 2001
42. Vaccination Coverage Survey of the Brahmanbaria Municipality - June 2001. Survey Report No. 42, September 2001
43. Vaccination Coverage Survey of the Gazipur Municipality - July 2001. Survey Report No. 43, September 2001
44. Vaccination Coverage Survey of the Narsingdi Municipality - August 2001. Survey Report No. 44, September 2001
45. Vaccination Coverage Survey of the Hard-to-Reach Unions of Dewanganj, Raumari and Rajibpur Upalizas - July 2001. Survey Report No. 45, September 2001
46. Vaccination Coverage Survey of the Satkhira Municipality - September 2001. Survey Report No. 46, September 2001
47. Vaccination Coverage Survey of the Barguna Municipality - October 2001. Survey Report No. 47, November 2001
48. Vaccination Coverage Survey of the Bhola Municipality - October 2001. Survey Report No. 48, November 2001
49. Vaccination Coverage Survey of the Kushtia Municipality - October 2001. Survey Report No. 49, November 2001
50. Vaccination Coverage Survey of the Chandpur Municipality - October 2001. Survey Report No. 50, December 2001
51. Vaccination Coverage Survey of the Bhairab Municipality - November 2001. Survey Report No. 51, December 2001
52. Vaccination Coverage Survey of the Jhenaidah Municipality - November 2001. Survey Report No. 52, December 2001
53. Vaccination Coverage Survey of the Chuadanga Municipality - November 2001. Survey Report No. 53, December 2001
54. Vaccination Coverage Survey of the Sherpur Municipality - November 2001. Survey Report No. 54, December 2001
55. Vaccination Coverage Survey of the Mongla Municipality - December 2001. Survey Report No. 55, January 2002
56. Vaccination Coverage Survey of the Ishwardi Municipality - January 2002. Survey Report No. 56, March 2002
57. Vaccination Coverage Survey of the Munshiganj Municipality - January 2002. Survey Report No. 57, March 2002
58. Vaccination Coverage Survey in the Tea Gardens Owned by the Foreign Companies - February 2002. Survey Report No. 58, March 2002
59. Vaccination Coverage Survey in the Tea Gardens Owned by the National/Local Companies - February 2002. Survey Report No. 59, March 2002
60. Vaccination Coverage Survey and Other Health Care Practices Survey in the Villages Bordering the Sundarbans - December 2001. Survey Report No. 60, April 2002
61. Vaccination Coverage Survey and Health Seeking Behavior of the Slum Residents of the Mirpur Area of Zone 8 of Dhaka City Corporation - March 2002. Survey Report No. 61, June 2002
62. Vaccination Coverage Survey in the Slums of Dhaka City Corporation - March 2002. Survey Report No. 62, August 2002
63. Vaccination Coverage Survey in the Slums of Chittagong City Corporation - April 2002. Survey Report No. 63, August 2002
64. Vaccination Coverage Survey in the Slums of Khulna and Rajshahi City Corporations - April 2002. Survey Report No. 64, August 2002
65. Vaccination Coverage Survey in the IOCH Supported 91 Municipalities - April 2002. Survey Report No. 65, August 2002
66. Vaccination Coverage Survey in the Peri-urban Areas of Dhaka City Corporation (Sultanganj and Harirampur Unions) - April 2002. Survey Report No. 66, August 2002
67. Vaccination Coverage Survey in the Peri-urban Areas of Dhaka City Corporation (Demra, Matuail, Shyampur, Beraid, Dakshinkhan and Satarkhul Unions) - April 2002. Survey Report No. 67, September 2002
68. Vaccination Coverage Survey of the Kurigram Municipality - May 2002. Survey Report No. 68, September 2002
69. Vaccination Coverage Survey of the Dinajpur Municipality - May 2002. Survey Report No. 69, September 2002
70. Vaccination Coverage Survey of the Narayanganj Municipality - June 2002. Survey Report No. 70, September 2002
71. Vaccination Coverage Survey of the Cox's Bazar Municipality - June 2002. Survey Report No. 71, September 2002
72. Vaccination Coverage Survey of the Rangpur Municipality - May 2002. Survey Report No. 72, September 2002
73. Vaccination Coverage Survey of the Homeless Children in Dhaka City Corporation - March 2002. Survey Report No. 73, September 2002

MNT - 2001 Survey Reports

1. Vaccination Coverage Survey of Routine EPI and 2001 MNT Campaign in the Slums of Dhaka City Corporation. MNT Survey Report No. 1, March 2002
2. Vaccination Coverage Survey of Routine EPI and 2001 MNT Campaign in the Slums of Chittagong, Khulna and Rajshahi City Corporations. MNT Survey Report No. 2, March 2002
3. Vaccination Coverage Survey of Routine EPI and 2001 MNT Campaign in the Selected 27 Municipalities. MNT Survey Report No. 3, March 2002
4. Vaccination Coverage Survey of Routine EPI and 2001 MNT Campaign in the Rural Areas of Chittagong, Khulna and Barisal Divisions. MNT Survey Report No. 4, March 2002
5. Vaccination Coverage Survey of Routine EPI and 2001 MNT Campaign in the Rural Areas of Dhaka, Rajshahi and Sylhet Divisions. MNT Survey Report No. 5, March 2002

6. Vaccination Coverage Survey of Routine EPI and 2001 MNT Campaign in the Brahmanbaria District. MNT Survey Report No. 6, March 2002
7. Vaccination Coverage Survey of Routine EPI and 2001 MNT Campaign in the Kishoreganj District. MNT Survey Report No. 7, March 2002

Unicef & IOCH Survey Reports

1. Vaccination Coverage Survey of the Teknaf and Ukhia Upazilas - February 2000. Survey Report No. 1, August 2000
2. Vaccination Coverage Survey of the Brahmanbaria Sadar Upazila - February 2000. Survey Report No. 2, August 2000
3. Vaccination Coverage Survey of the Debidwar Upazila - February 2000. Survey Report No. 3, August 2000
4. Vaccination Coverage Survey of the Madaripur Upazila - February 2000. Survey Report No. 4, August 2000
5. Vaccination Coverage Survey of the Maulvi Bazar District - February 2000. Survey Report No. 5, August 2000
6. Vaccination Coverage Survey of the Raumari Upazila - February 2000. Survey Report No. 6, August 2000
7. Vaccination Coverage Survey of the Gangachara Upazila - February 2000. Survey Report No. 7, August 2000
8. Vaccination Coverage Survey of Chittagong Hill Tracts - February 2000. Survey Report No. 8, October 2000

Technical Report

1. Joint National/International Review of EPI Program in Urban Areas of Bangladesh - 23 January - 3 February 2000. Technical Report No. 1, July 2000
2. Joint Review of the Expanded Program on Immunization (EPI) in the Areas of Rural service Delivery Partnership (RSDP), April 2001. Technical Report No. 2, May 2002

Additional copies of any of these reports, if needed, will be provided free of cost on request to:

Mamunul Haque, Communications Advisor, IOCH. E-mail: mh@citechco.net