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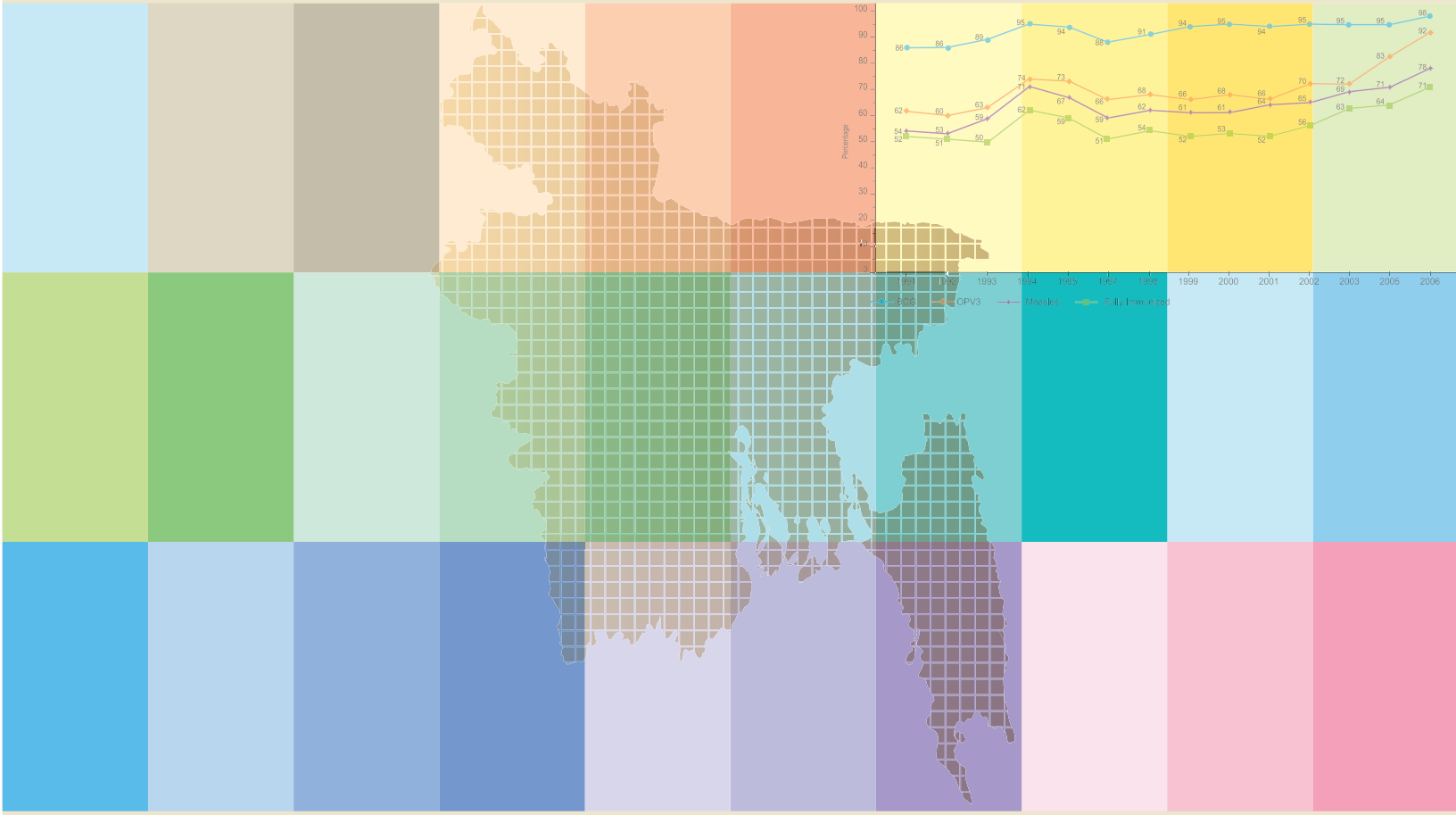
EPI

COVERAGE

EVALUATION SURVEY 2006



EXPANDED PROGRAMME ON IMMUNIZATION
Directorate General of Health Services
Mohakhali, Dhaka-1212

EPI COVERAGE EVALUATION SURVEY 2006

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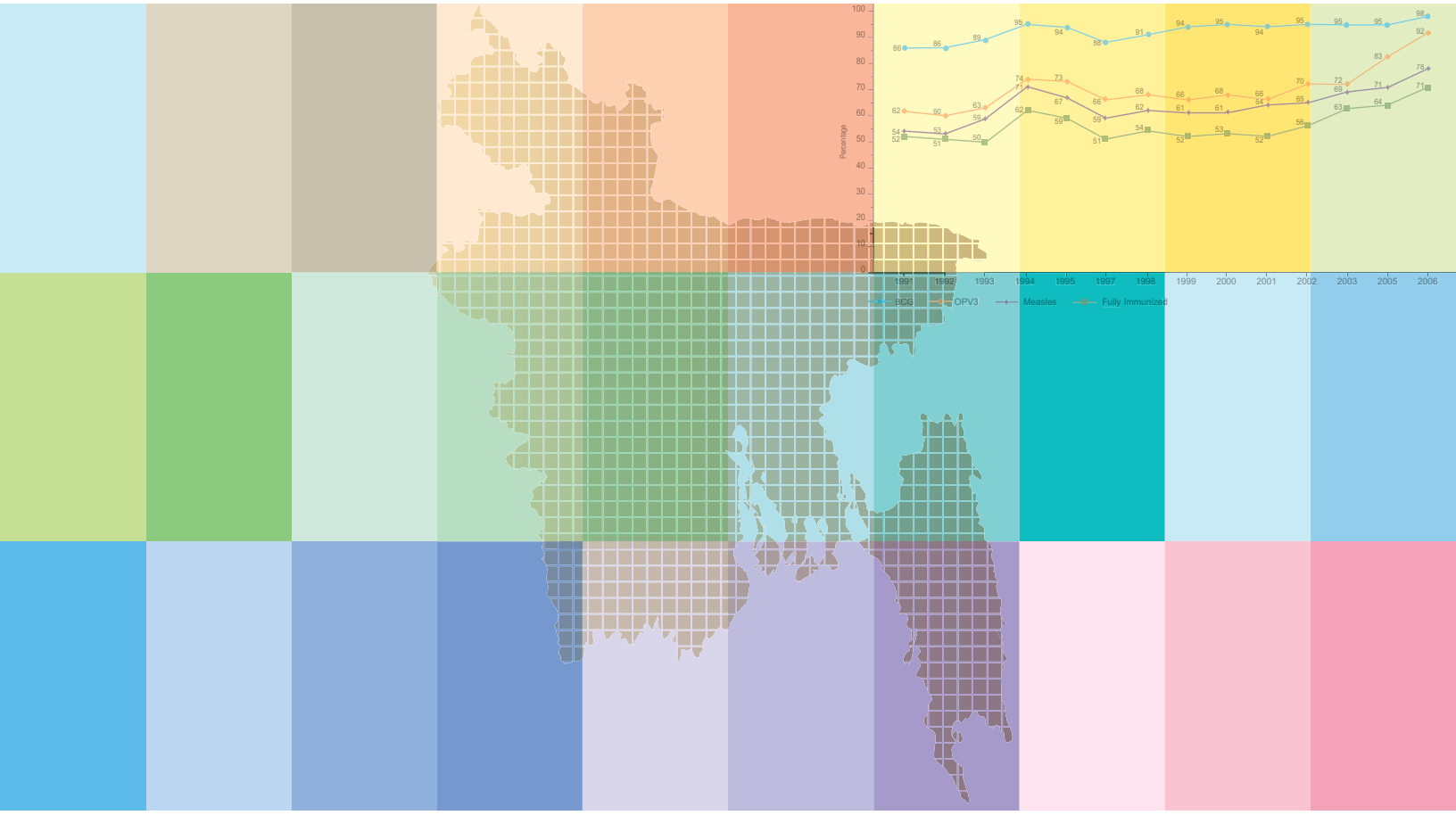

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PREFACE

With an aim to reduce child mortality and morbidity from Vaccine Preventable Diseases (VPDs), the Government of Bangladesh started Expanded Program on Immunization (EPI) in 1979. Till 1984, accessibility to immunization service was limited - in large health facilities at districts and the major municipalities. Under Universal Child Immunization (UCI), EPI services which was started in the year 1985 and completed in 1990 expanded throughout the country to reach whole of the target population.

It is true that a remarkable achievement has been made on child health issue by EPI through the act of reducing morbidity & mortality from vaccine preventable diseases. Annually, the program is saving an estimated 4 million children from premature death and disabilities. In addition, in order to prevent maternal and neonatal tetanus, the program also aims at giving TT vaccines women of childbearing age (CBA) and pregnant women. The survey result shows that despite high accessibility to immunization services, in many districts a good number of children did not complete all doses of vaccines at right time and with right interval although; however, some districts satisfactory progress has been achieved in this regard.

Like CES 2005, EPI Coverage Evaluation Survey (CES) 2006 has undertaken districts and City Corporations following the WHO 30-cluster survey method. CES 2006 provides district and City Corporation-wise information on EPI coverage and qualitative aspects of EPI services such as drop out rates and invalid doses. The report also gives area specific reasons for partial vaccination and never vaccinated children. It would provide an opportunity for planners, policy makers, national and local managers, and field personnel to compare and analyze the situation in terms of EPI coverage and other related information in their respective areas, which would help them to make realistic plan and undertake necessary action for improving the coverage of target districts and City Corporations.

CES 2006 was a joint effort undertaken by GOB and partners. I would like to thank EPI HQ officials, WHO and UNICEF for their support in undertaking the Coverage Evaluation Survey 2006.

Finally, I would like to thank ACNielsen Bangladesh for carrying out this study, which is characterized by high quality in all its stages and measures. I express my profound thanks to the respondents who spent their valuable time for giving information for the survey without which this study would not have been possible.

Dr. Md. Shahjahan Biswas
Director General
Directorate General of Health Services
Mohakhali, Dhaka-1212

December 2006

FOREWARD

It is my great pleasure to write the forwarding note for the EPI Coverage Evaluation Survey (CES) 2006, which has been completed recently. EPI has been conducting national coverage evaluation survey in the country since 1991. This survey serves as a monitoring tool for making an assessment of the performances, achievements and progress of the immunization services in the country.

EPI is considered as a success story in Bangladesh because of its remarkable progress made during the last 20 years. It provides a universal access to immunization services as measured in the light of the percentage of children under the age of one year receiving BCG, which has increased from 2% in 1985 to 98% in 2006. However, from program point of view, the percentage of children under the age of one year receiving all doses of vaccines at the right time and with right interval, is only 71% is due to high dropout rates and invalid doses.

EPI Coverage Evaluation Survey (CES) 2006 is carried over by ACNielsen Bangladesh in collaboration with EPI, WHO and UNICEF. The purpose of conducting CES 2006 is to make an assessment (a) the routine childhood vaccination coverage; (b) TT vaccination coverage; (c) OPV coverage during 13th Special NIDs; (d) TT vaccination coverage among the women aged between 18-25 years; (e) Measles coverage during Measles Catch-up Campaign (2005-2006). The survey was carried out between July and September 2006 and was conducted in all 64 districts and 6 City Corporations (CC). The survey results will give us a clear picture of present situation of the districts and CCs and enable us to analyze the coverage of each individual district and CC, identify the district/s with poor performance and thereby undertake special drives to improve the situation.

I would like to thank all experts who made their valuable contribution to the CES 2006. My sincere thanks go to Dr. Md. Abdul Quader Mian, Program Manager, CH&LCC for his leadership in this survey, I would also like to thank Dr. Md. Tazul Islam, Deputy Program Manager, EPI and Dr. Md Shamsuzzan, Medical Officer, EPI for their valuable contribution in this regard. My sincere thanks to ACNielsen Bangladesh who has conducted the study and preparing this report. I would also like to thank WHO and UNICEF for their technical support and valuable contribution.

I believe the report will serve as a useful monitoring tool for all government and non-government EPI personnel. Finally, I look forward to the widespread use of the CES 2006 throughout Bangladesh

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Director PHC & Line Director ESD
Directorate General of Health Services
Mohakhali, Dhaka-1212

December 2006

ACKNOWLEDGEMENT

As part of monitoring tool, EPI Bangladesh has been conducting national coverage evaluation survey from 1991. A total of 14 Coverage Evaluation Surveys (CES) were conducted in the field of immunization service in the country till date with an aim to monitor the progress made in this field. The survey provides us with information and analysis regarding the performances at the national, divisional, district & City Corporation levels in the country in terms of coverage and quality of EPI services. CES 2006, was conducted in all 64 districts and 6 City Corporations following WHO 30-cluster survey method. The survey results provide us with a clear picture of the districts and City Corporations, which would help us to identify the best and poor performing districts and City Corporations and also guide us to take necessary measures for improving the prevailing situation.

I must acknowledge with a feeling of gratitude for the effort made by all the officials of EPI headquarter, specially Dr. Md. Tazul Islam, Deputy Program Manager, EPI, Dr. Md. Shamsuzzaman, Medical Officer, EPI and Dr. Iqbal Ansary Khan, former Medical Officer, EPI for their support and contribution in planning, organizing and conducting such a huge effort and also reviewing the report of this survey. My sincere thanks go to ACNielsen Bangladesh for supporting the government of Bangladesh by conducting the study and prepare this report. Finally, I would like to express my thanks and gratitude to WHO and UNICEF for their valuable contribution which made this enormous task a success.

I hope this report will be useful to all the concerned persons, groups and organization.

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December 2006

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ACRONYMS

BBS	Bangladesh Bureau of Statistics
BCG	Bacillus Calmette Guerin
BCC	Barisal City Corporation
BDHS	Bangladesh Demographic & Health Survey
CCC	Chittagong City Corporation
CES	Coverage Evaluation Survey
DCC	Dhaka City Corporation
DPT	Diphtheria, Pertussis and Tetanus
EA	Enumeration Area
EPI	Expanded Programme on Immunization
KCC	Khulna City Corporation
NGO	Non Government Organization
NID	National Immunization Days
OPV	Oral Polio Vaccine
PAB	Protected at Birth
PPS	Probability Proportional-to- Size
RCC	Rajshahi City Corporation
RED	Reach Every District
SCC	Sylhet City Corporation
TT	Tetanus Toxoid
UNICEF	United Nations Children's Fund
NVAS	National Vitamin A Supplementation
VAS	Vitamin A Supplementation
WHO	World Health Organization

EXECUTIVE SUMMARY

EPI Coverage Evaluation Survey (CES) 2006 was carried out in collaboration with EPI, WHO, and UNICEF. The purpose of conducting CES 2006 was to assess: (a) the routine childhood vaccination coverage; (b) TT vaccination coverage among mothers under 1 year old children; (c) OPV coverage during 13th Special NIDs; (d) TT vaccination coverage among the women of 18-25 years age; (e) immunization program quantity coverage (valid and crude), and (f) Measles vaccination coverage under Measles Catch-up Campaign, 2005-2006. The survey was carried out between July and September, 2006.

ROUTINE CHILDHOOD VACCINATION COVERAGE

In the CES 2006, nationally 71 percent of the 12-23 months' old children were found fully immunized with valid doses of all antigens by 12 months of age. The antigen-specific valid coverage rate was 98 percent for BCG, 97 percent for DPT1, 95 percent for DPT2, 84 percent for DPT3, 97 percent for OPV1, 96 percent for OPV2, 92 percent for OPV3, and 78 percent for Measles. It was found that urban-rural differences in the vaccination coverage had been reduced compared to that found in EPI CES 2005. The percentage of the children fully immunized, along with valid doses of all recommended antigens by 12 months of age, was 76 percent in the urban areas and 70 percent in the rural areas. Similar patterns of urban-rural variations were also found in the valid coverage of specific antigens. In rural areas, the valid full immunization rate was the highest in Khulna division (76 percent) and the lowest in Sylhet division (61 percent). In urban areas, the valid fully immunization rate was the highest (78 percent) in Khulna City Corporation and Rajshahi City Corporation, being followed by Dhaka City Corporation (76 percent), Sylhet City Corporation (75 percent), Barisal City Corporation(73 percent), and Chittagong City Corporation (73 percent).

The 71 percent valid full immunization at the national level in the CES 2006 was 7 percentage points higher than the CES 2005 (64 percent). It was mostly due to the increase in the valid DPT3 coverage from 77 percent to 84 percent. There was a little improvement in the valid coverage for the other antigen between 2005 and 2006.

Nationally, the crude vaccination coverage rate was found high for BCG and DPT1 among 12-23 months old children which was at 98 percent. But, there were small drops in the crude coverage rate for the subsequent doses/antigens, declining to 96 percent for DPT2, 94 percent for DPT3, but marked drop in Measles (89 percent). Thus, the national rate of crude coverage for fully immunization was found to be only 89 percent among the 12-23 months old children. There was no urban-rural difference in BCG coverage, while the difference was 1 percent regarding DPT3 and 3 percent in case of measles. For full immunization, the crude vaccination coverage rate was found slightly higher (91 percent) in the urban areas than that in rural areas (88 percent).

Nationally, 6.7 percent of the total doses of DPT1 and 5.6 percent of the total doses of Measles vaccines administered to the children surveyed were found to be invalid (Figure C5). There were little or no variations found in the proportions of invalid DPT1 and Measles doses administered between the rural and the urban areas (6.7 percent in the rural and 6.8 percent in the urban areas for DPT1and 5.8 percent in the rural areas against 4.7 percent in urban areas for measles). Overall, 25.6 percent of the all doses of DPT were found invalid nationally, with a little variation between the rural (25.9 percent) and the urban areas (23.4 percent) (Figure C6).

In CES 2006, the national dropout rate for DPT1-DPT3 was 4.1 percent and for DPT1-Measles it was 9.4 percent (Figure C11). These rates were slightly higher in the rural areas compared to those in the urban areas (for DPT1-DPT3, it was 4.1 percent in rural areas against 3.7 percent in urban areas, and for DPT1-Measles it was 9.8 percent in the rural areas against 7.3 percent in urban areas).

The incidence of abscesses following DPT or Measles vaccination was calculated in order to assess the safety of injections for childhood vaccination. This rate was computed as the proportion of the recipients of DPT/Measles vaccine, who had an abscess after receiving any of these antigens. Nationally, 7.7 percent of the children who received DPT/Measles vaccine were reported to have had an abscess after vaccination (Figure C21). The occurrence of abscesses following DPT or Measles vaccination was more prevalent among the rural children (8.1 percent) than those in urban areas (5.3 percent).

Nationally, the most common reason appeared in the survey for a child had never been vaccinated was lack of knowledge of vaccination (24 percent). The other most common reasons were: fear of side effect (18 percent); sickness of the child for which s/he was not taken to the hospital (8 percent); 'the parent's/caregiver's preoccupation with work (8 percent); thought vaccinator will come (8 percent) (Figure D1). There were a little variation in the reasons reported for never having a child vaccinated between the rural and the national samples (Figure D1a).

However, the most common reasons mentioned by the mothers/caregivers for their children not being fully vaccinated were: parents/caregivers reported that the child was sick, and, therefore, was not taken to the site (17 percent); parents/caregivers did not know when they were supposed to go for measles dose (16 percent); parents/ caregivers were too busy to take their child for vaccination (14 percent); parents/caregivers did not know when to go for 2nd /3rd dose (10 percent); and, parents/caregivers thought vaccinator will visit the house (7 percent) (Figure D1). The common reasons for children not being fully vaccinated in the rural areas were: parents/caregivers did not know when they should take their children for measles (17 percent); the child was sick and, therefore, was not taken to the site (16 percent); parents/caregivers were too busy to take the child for vaccination (13 percent), did not know when to go for 2nd/3rd dose (10 percent), and thought that the vaccinator will visit house (7 percent) (Figure D1a). In urban areas, the common reasons for not vaccinating the children fully were : the child was sick and, therefore, was not taken to the site (24 percent); too busy to take the child for vaccination (19 percent); parents/caregivers did not know when to go for 2nd /3rd dose (9 percent) and the parents/caregivers did not know when to go for measles dose (7 percent). The common reasons for never vaccination in the urban areas which were more pronounced: Thought that the vaccinator will visit house (18 percent); the child was sick and, therefore, was not taken to the site (12 percent); too busy to take the child for vaccination (12 percent) (Figure D1b).

Among the children provided with the vaccination cards, only 67 percent were found retaining those nationally - 68 percent in the rural areas and 66 percent in the urban areas (Figure C1). During the time of the survey, the vaccination cards were available with only 65 percent of the children surveyed throughout the country - 65 percent in the rural areas and 64 percent in the urban areas.

The government emerged as the principal provider of childhood vaccination services in Bangladesh. Eighty-nine percent of the children surveyed in the CES 2006 were reported to have received DPT1 from the government outreach sites, another 8 percent from the government hospitals and clinics. Thus, nationally, 97 percent of the surveyed children received vaccination services from the government sources while only 3 percent from all other sources - NGO outreach sites/facilities (2 percent) and private facilities (1 percent) There were remarkable variations between the rural and the urban areas regarding the sources of vaccination. The government was the all provider of vaccination in both the rural (99 percent) and the urban (86 percent) areas. Use of the government outreach services was more common in rural areas (93 percent) than in urban areas (65 percent) while the government hospitals/clinics were used more in urban (21 percent) compared to rural areas (6 percent) (Figure E1).

TETANUS TOXOID (TT) VACCINATION COVERAGE

Nationally, crude coverage for TT1, TT2, TT3, TT4, and TT5 from card+history were 96 percent, 94 percent, 80 percent, 60 percent, and 41 percent respectively. Crude coverage for both TT1 and TT2 were higher by one percentage point in urban areas than that in rural areas (97 percent against 96 percent for TT1) and (95 percent against 94 percent for TT2). The coverage of TT3 in rural areas were 80 percent and

82 percent in urban areas. The coverage of TT4 was slightly higher in rural areas (60 percent) as compared to the urban areas (59 percent) while, there was no difference in coverage of TT5 between the urban and the rural areas (Figure F1).

The nationwide valid coverage for TT1, TT2, TT3, TT4, and TT5 were 96 percent, 94 percent, 72 percent, 41 percent, and 19 percent respectively. The valid TT coverage was almost similar both in the urban and rural areas for every dose. However, nationally the difference was higher between TT3 and TT4 which was 31 percentage points (72 percent against 41 percent) (Figure F2).

Regarding the crude TT coverage in rural areas by divisions, Khulna, Dhaka and Rajshahi appeared to be the highest performing divisions for TT1 (97 percent). TT2 coverage was the highest in Khulna and Dhaka divisions (95 percent) and the lowest in Sylhet division (90 percent). Crude TT5 was the lowest in Rajshahi division (37 percent) and the highest in Sylhet (47 percent) and Chittagong (46 percent) divisions, being followed by Dhaka (43 percent), Barisal (40 percent) and Khulna divisions (38 percent). There were no distinguished patterns in better crude TT coverage performances by divisions. Crude TT3 to TT5 was generally higher in Chittagong division. In Sylhet and Dhaka divisions, similar trends were found in crude TT4 and TT5. While, in Khulna division, the aforesaid trend was found in crude TT3 and TT4. (Figure F10).

Regarding the valid TT coverage in the rural areas by divisions, Chittagong and Dhaka were with better performance for TT3, TT4 and TT5 along with Khulna and Rajshahi divisions for TT3 and TT5. Sylhet division has the lowest coverage among the divisions for TT1, TT2 and TT3 (Figure F11).

In urban areas, RCC and KCC, the crude coverage was similar for both TT1 (99 percent) and TT2 (98 percent) while in DCC and CCC the coverage was same for both TT1 and TT2 which were 97 percent and 96 percent respectively. In BCC, it was 98 percent for TT1 and 97 percent for TT2. Crude TT1 and TT2 was the lowest in SCC (93 percent and 91 percent). Crude TT3 was found to be the highest in KCC (89 percent) and RCC(88 percent), crude TT4 and TT5 was the highest in RCC which was 64 for TT4 and 47 percent for TT5. In contrast, crude TT3 and crude TT4 were found to be the lowest in SCC(74 and 56 percent respectively) and crude TT5 in SCC and BCC (40 percent) (Figure F12).

In case of the valid TT coverage, TT2 was found to be the highest in RCC and KCC (98 percent), which was being followed by BCC (97 percent), DCC, and CCC (96 percent). While it was found the lowest in SCC (91 percent). TT3 coverage was found to be the highest in RCC (83 percent) and the lowest in SCC (69 percent); TT4 coverage was the highest in RCC (58 percent) and the lowest in SCC (31 percent); and the coverage of TT5 was the highest in RCC (34 percent) and the lowest in SCC (13 percent) (Figure F13).

Availability of TT vaccination cards among the surveyed mothers receiving TT vaccine was in general low. Overall, 42 percent of the vaccinated mothers could show their TT cards at the time of the survey which was 43 percent in the rural areas and slightly lower (39 percent) in the urban areas. Nationally, forty- one percent of the mothers reported of losing their TT cards with 8 percentage points variation between rural (40 percent) and urban (48 percent) areas. Thus, the TT card retention rate computed as percentage of TT cards issued was found only 51 percent nationally - 52 percent in rural areas and a slightly lower rate (45 percent) in urban areas (Figure GI).

TT card retention rate in the rural areas was the highest in Rajshahi division (61 percent), which was being followed by Sylhet (56 percent), Khulna (55 percent), Chittagong (54 percent), and Barisal divisions (49 percent). The rate for TT card retention was the lowest in Dhaka division which was 41 percent (Figure G2).

In the urban areas under City Corporations, TT card retention rate was the highest in RCC (55 percent) and the lowest in DCC (31 percent) (Figure G3).

Nationally, the incidence of invalid doses both in rural and urban areas rose steeply for TT3, and it gradually decreased for the subsequent doses. Invalid doses at the national level was negligible(1 percent) for TT2; it jumped up to about 24 percent for TT3; and, then it declined to 22 percent for TT4 and to 19 percent for TT5 (Figure G4).

In the rural areas by divisions, the incidence of invalid TT3 doses was found to be the highest in Sylhet division (36 percent), which was being followed by Chittagong (26 percent) and Dhaka divisions (25 percent). Invalid TT3 doses were similar in Rajshahi and Khulna (21 percent) divisions, which was being followed by Barisal division (24 percent) (Figure G5).

In the urban areas under the City Corporations, incidence of invalid TT3 doses was the highest in DCC and SCC (28 percent) and the lowest in RCC (13 percent) (Figure G6).

CHILDREN PROTECTED AT BIRTH (PAB) AGAINST TETANUS

Nationally, 93 percent of the infants born prior to the CES 2006 were PAB against tetanus. The proportion of the children born PAB was greater in the urban (95 percent) areas than that in the rural areas (93 percent) (Figure G10).

In the rural areas by divisions, the proportion of the infants born PAB was the highest in Dhaka and Khulna divisions (94 percent), which was being closely followed by Barisal (93 percent), Rajshahi, and Chittagong divisions (92 percent). However, the lowest proportion was found in Sylhet division, which was 88 percent (Figure G12).

In the urban areas under the City Corporations and the municipalities, the proportion of children PAB was almost universal (97 percent) in RCC, BCC, and KCC, being followed by DCC and CCC which was 96 percent but it was only 90 percent in SCC (Figure G13).

TT VACCINATION COVERAGE AMONG WOMEN AGED 18-25 YEARS

Nationwide information on TT5 coverage suggests that 15 percent women aged 18-25 years had valid vaccination. The urban- rural differentiation suggests that TT coverage was higher in the urban areas (18 percent) than in the rural areas (14 percent). Similarly, nationwide crude coverage was 27 percent. The urban-rural difference in crude coverage was 2 percentage points (28 percent in the urban areas as opposed to 26 percent in the rural areas) (Figure J2 and Figure J1).

In respect of the geographical divisions by rural areas, the highest valid coverage was in Rajshahi (17 percent), which was being followed by Dhaka (16 percent), Khulna (14 percent), Chittagong (13 percent), Barisal (11 percent), and Sylhet divisions (10 percent) (Figure J4).

In urban areas, crude coverage was the highest in RCC (36 percent) and the lowest (15 percent) in BCC. The valid coverage rate was the highest in RCC (27 percent), which was being followed by DCC (20 percent), CCC (13 percent), KCC, and SCC (12 percent). BCC had the lowest coverage rate (9 percent) (Figure J5 and Figure J6).

Estimates of invalid TT doses are shown in Figure K4. Nationally as well as in the rural and urban areas, only a few of the TT2 doses administered were found to be invalid. The incidence of invalid doses at the

national level as in the rural areas and the urban areas rose steeply for TT3, and, then it gradually decreased for the subsequent doses. For example, while the proportion of invalid doses at the national level was negligible (1 percent) for TT2, it jumped up to about 14 percent for TT3, and, then it declined to 11 percent for TT4 and to 8 percent for TT5.

MEASLES COVERAGE

In the EPI Coverage Evaluation Survey 2006, information was also collected on measles vaccination of the children born between 17-03-1996 and 25-05-2005 in all the districts except Rajshahi district, Rajshahi City Corporation, and Bogra district. In these three areas (Rajshahi district, Rajshahi City Corporation and Bogra district), information about the measles vaccination were collected from the children who born between 23-09-1995 and 03-12-2004. The information collected in this respect suggests that overall, in Bangladesh, 87 percent of the eligible children were covered by measles vaccination under measles catch up campaign 2005-2006. There was little variation in coverage by urban and rural areas, i.e. 87 percent in rural areas as opposed to 88 percent in urban areas (Figure N2). Among all the rural divisions, measles coverage was the highest (91percent) in Barisal which was being followed by Dhaka and Rajshahi (89 percent), Khulna (88 percent), Chittagong divisions (79 percent). It was the lowest in Sylhet division (75 percent). As mentioned above, there was a little difference between rural areas by divisions and urban areas by city corporations and municipalities in respect of measles coverage (Figure N3- N4).

In the urban areas under City Corporations, coverage was the highest in BCC (91 percent) and the lowest in SCC (84 percent). However, for the other City Corporations, the coverage rate was varied from 85 to 87 percent.

REASONS FOR NOT RECEIVING MEASLES VACCINES

Mothers/caregivers of children who did not receive measles vaccines during the period mentioned above were asked to provide reasons for not receiving it. The information is presented in Figure N5. Among those children who didn't receive measles vaccine, about half of their parents (49 percent) mentioned that they did not know about the measles campaign. This argument was followed by some other reasons: parents/care givers did not give importance to measles vaccination (12 percent), they were in travelling (9 percent), parents/caregivers did not know about the place or date (8 percent), and the child was sick, so the parents did not take him/her to the vaccination site (6 percent). More or less, similar patterns were found in urban and rural areas.

SOURCES OF INFORMATION ABOUT MEASLES CAMPAIGN

Nationally, the important sources of information about vaccination were field workers (37 percent), followed by school teachers (30 percent), mobile miking (21 percent), mosque miking (16 percent), and TV (14 percent). The sources of information were the same in rural areas as it was in nationally. In the urban areas, the most frequently stated source of information was TV (38 percent), which was being followed by field workers and school teachers' home visit (30 percent) and mobile miking (28 percent) (Figure N6).

OPV COVERAGE OF THE FIRST THREE ROUNDS OF THIRTEENTH SPECIAL NID

OPV coverage on first three rounds of 13th Special NID was an important part of the CES 2006. The sample size, and selection of the target population were the same as that of the national immunization coverage survey.

In the 13th special NIDs, the national OPV coverage in the 1st round was 97 percent of the targeted children (Figure O4) of which 98 percent were vaccinated at fixed sites and 2 percent at home through child-to-child search. In the 2nd round, the national coverage was 96 percent of them, 98 percent vaccinated at fixed sites, and 2 percent vaccinated at home through child-to-child search. In the 3rd round, the national coverage was 96 percent. Among them, 97 percent were vaccinated at fixed sites and 3 percent vaccinated at home through child-to-child search. Overall, in the 13th special NIDs, 99 percent of the targeted children were given at least one OPV dose and 93 percent all the three OPV doses, with only one percent of the children not reached at all (Figure O2).

The overall OPV coverage in the 13th special NIDs had little variations between rural and urban areas. In the 1st round, 97 percent of the rural children and a slightly higher proportion of the urban children (99 percent) received OPV, while in the 2nd and 3rd rounds, 96 percent of the rural children and a slightly higher (97 percent) proportion of the urban children were given OPV. However, in the third round similar trend was noticed (Figure O4).

In rural areas by division, the OPV coverage in the 13th special NIDs was the lowest in Sylhet division with 95 percent of the children vaccinated both in the 1st and 2nd round. Among the other divisions, OPV coverage in the 1st round was between 95 percent and 98 percent. Khulna and Dhaka divisions had the highest coverage (98 percent). The OPV coverage in 2nd round was found to be the highest in Khulna division (98 percent), which was being followed by Dhaka (97 percent), Barisal, Rajshahi (96 percent), and Sylhet divisions (95 percent). The lowest coverage was found in Chittagong division (93 percent). OPV coverage in the third round was the lowest in Chittagong division (93 percent) and the highest in Khulna division (98 percent). The coverage rate varied from 94 percent to 97 percent in the other divisions (Figure O5).

In urban areas, little variations being found among the six City Corporations with respect to OPV coverage in the 13th special NIDs. In the 1st round, the OPV coverage varied from 98 percent (in BCC) to 100 percent (in RCC and KCC) while for the 2nd round, it varied from 97 percent (in CCC) to 100 percent (in RCC and KCC). In the 3rd round the highest coverage was found in KCC and RCC (100 percent). The lowest coverage was in DCC (95 percent). The percentage of the children receiving OPV doses in all three rounds was the lowest in DCC with 93 percent while the highest in KCC (100 percent). The coverage in other divisions are: 99 percent for RCC, 97 percent for SCC, 95 percent for BCC, and 94 percent for CCC (Figure O6).

VITAMIN A SUPPLEMENTATION COVERAGE AMONG INFANTS, POSTPARTUM WOMEN, AND CHILDREN

The national coverage of vitamin A Supplementation among infants aged 9-11 months was 73 percent. Coverage in the rural areas (73 percent) was lower than in the urban areas (78 percent) (Figure Q1). Vitamin A Supplementation coverage was 5 percentage points lower than valid coverage of measles vaccination (77 percent in rural areas, 81 percent in urban areas, and 78 percent nationally).

In rural regions coverage of vitamin A supplementation in infants ranged between 60 percent in Sylhet division and 82 percent in Khulna division (Figure Q2), and in urban regions the coverage ranged between 75 percent in SCC and 82 percent in RCC (Figure Q3).

The national coverage of vitamin A Supplementation among children aged between 12-59 months during the 3rd round of 13th Special NIDs was 93 percent. Coverage in the rural areas (93 percent) was almost similar to that in the urban areas (94 percent) (Figure Q1).

Among the rural divisions, the coverage was the highest in Khulna (95 percent) and the lowest in Chittagong (89 percent) (Figure Q2). However, Khulna City Corporation had the highest coverage (98 percent), which was being followed by Sylhet (97 percent), Rajshahi (96 percent), Barisal and Chittagong (95 percent), and Dhaka City Corporations (90 percent) (Figure Q3).

The national coverage of vitamin A Supplementation among the postpartum women within 6 weeks of delivery was 29 percent (Figure Q1). Coverage in the rural areas (27 percent) was lower than urban areas (37 percent).

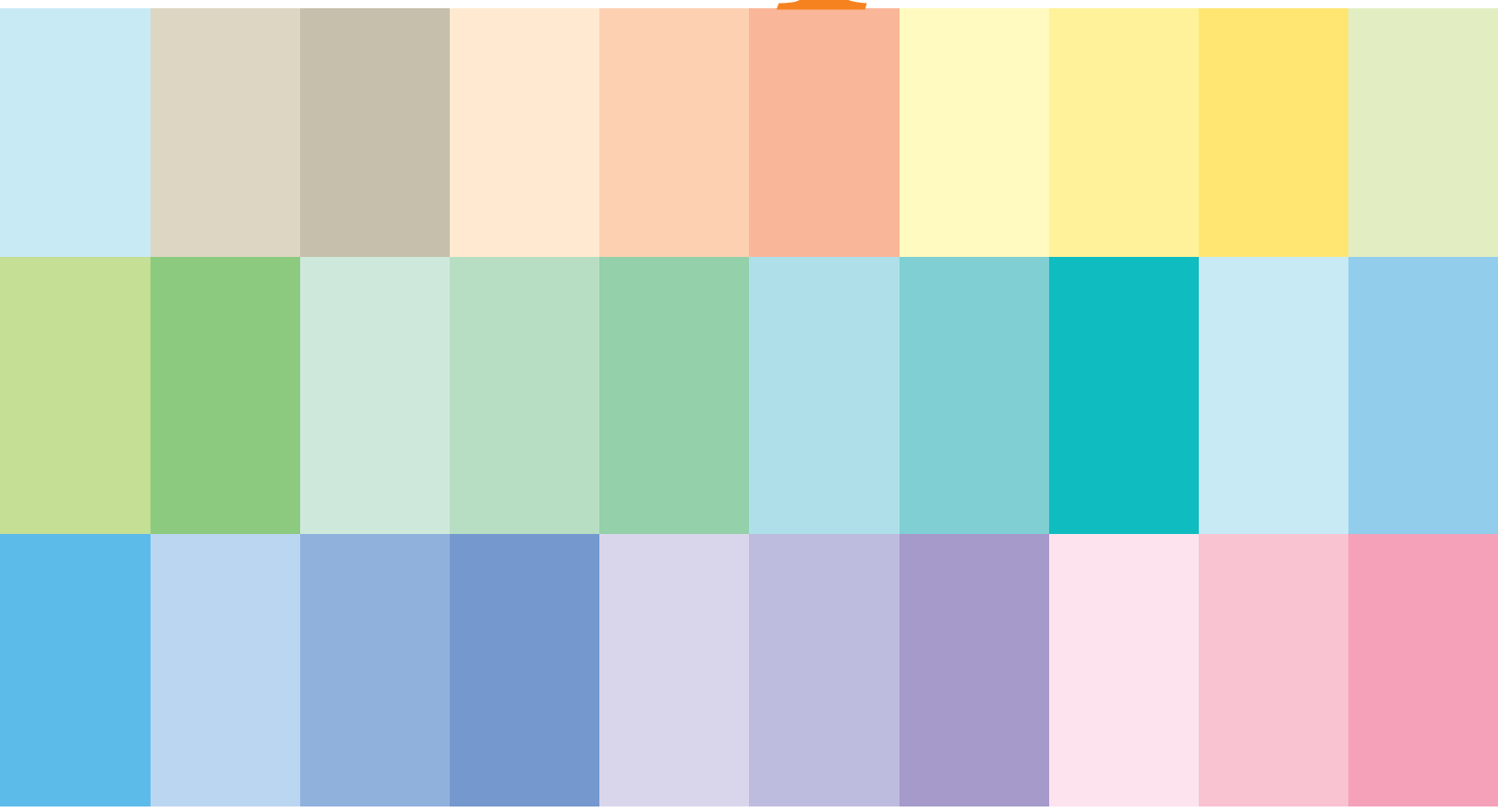
In rural geographical regions, coverage ranged between 21 percent in Sylhet division and 40 percent in Barisal divisions (Figure Q2), and in urban geographical regions, ranged between 24 percent in SCC, and 51 percent in BCC, and KCC respectively (Figure Q3).

ANTHELMINTIC COVERAGE AMONG CHILDREN

The coverage of anthelmintic treatment among children aged 24-59 months during the third round of 13th Special NID in all areas of the country except the districts covered by a filariasis programme was 88 percent (Figure R1). The coverage was similar in urban (89 percent) and rural (88 percent) areas.

In the rural divisions, the coverage of anthelmintic treatment ranged between 84 percent (in Chittagong division) and 91 percent (in Khulna division) (Figure R2). Data on the coverage of anthelmintic treatment was collected in all city corporations except RCC. Since it was covered by filariasis programme. Coverage in the urban areas ranged from 82 percent in DCC to 92 percent in BCC, KCC, and SCC. (Figure R3).

CHAPTER 1



INTRODUCTION

Established in 1991 as a monitoring tool to assess performances, achievements, and progress of Expanded Program on Immunization (EPI) of Bangladesh, the periodic EPI National Coverage Evaluation Surveys, also known as CES, were conducted every year (except in 1996) annually. So far, 15 CESs were carried out; the last one in the series was in 2006.

The CES 2006 was carried out with the following specific objectives:

- To assess the routine EPI coverage among 12-23 months old children (the date of birth from 01-07-2004 to 30-6-2005)
- To assess the TT vaccination coverage among women who gave births between 0-11 months from the survey period (the date of birth from 01-07-2005 to 30-06-2006.)
- To measure the postpartum Vitamin A coverage among the mothers having children less than one year old. The mother has given birth to the child between 01-07-2005 to 30-06-2006.
- To assess the TT5 vaccination coverage among the women of 18-25 year age (the date of birth between 01-07-1981 and 30-06-1988)
- To evaluate the Immunization program quantity (coverage; valid and crude, dropout rates) and quality by selected socio-demographic characteristics (percent of invalid doses, vaccination card retention, post-vaccination abscesses, other AEFI, reasons of left outs and drop outs, etc.) in accordance with the previous surveys for a comparison table.
- To determine trends in vaccination coverage and dropout rates at the national, divisonals and district levels; and also in urban areas.
- To measure Measles coverage among those children who were 09 months to < 10 years old; the date of birth between 17-03-1996 and 25-05-2005 (except in Bogra, Rajshahi and RCC) and between 23-09-1995 and 03-12-2004 for Bogra, Rajshahi, and Rajshahi City Corporation.
- To measure Vitamin A and Anthelmintic treatment coverage among those children who were 12-59 months (for Vit A) and 24-59 months (Anthelmintic) old, at the time of the 3rd round of 13th Special NID held on 11th June 2006.
- To provide information as a basis for making concrete recommendations and planning for improving routine immunization activities.

Conducted by the EPI,DGHS in collaboration with WHO and UNICEF, the CES 2006 was implemented by ACNielsen Bangladesh. The specific survey tasks assigned to ACNielsen included: selecting the sample clusters; assisting the development of questionnaires; pre-testing the questionnaires; finalizing the questionnaires with the approval of the EPI,DGHS; recruiting and providing training to the survey staff; planning and implementing the fieldwork. ACNielsen was also given the responsibilities of processing EPI survey data set, analyzing the data, and writing all the required reports of the survey.

1.1 SURVEY DESIGN

In addition to generating estimates for national level by rural and urban areas, for rural areas by division and for urban areas by City Corporations, the CES 2006 was also intended to provide separate estimates for each of the 70 survey units, which covered the whole population. The 70 survey units were in sixty-four (64) districts and six (6) city corporations; namely, Dhaka City Corporation (DCC), Rajshahi City Corporation (RCC), Chittagong City Corporation (CCC), Khulna City Corporation (KCC), Barisal City Corporation (BCC), and Sylhet City Corporation (SCC). The CES 2006 was implemented using the WHO-approved 30-Cluster Coverage Survey Sampling Technique.

1.2 INDIVIDUAL SURVEYS

CES 2006 consisted of five individual surveys by subject groups. The surveys were: (a) Childhood vaccination coverage survey, or the Child Survey; (b) Tetanus Toxoid vaccination coverage survey, or the TT survey, to measure the protection against birth (PAB) among the mothers having children less than one year old (c) TT vaccination coverage survey among women of 18-25 years age (d) Measles coverage survey (e) OPV coverage survey in 1st three rounds of 13th Special NIDs coverage survey which also include Vitamin A and Anthelmintic coverage. The subjects for the Child Survey were 12-23 months old children, for the TT Survey mothers within 15-49 years age group and having 0-11 months old children, TT vaccination coverage among women of 18-25 years age, Measles coverage 09 months to < 10 years of old children and NID coverage survey among 0-59 months old children. For Vitamin A, the age the child was 12-59 months and it was 24-59 months for anthelmintic coverage.

Objectives of the child survey were to ascertain:

- childhood vaccination coverage including vitamin A among 12-23 months old children
- vaccination card retention rate
- incidence of invalid doses
- incidence of post-vaccination abscesses
- vaccination dropout rates
- reasons for not having children vaccinated fully or at all
- sources of vaccination services.

Objectives of the TT survey were to ascertain:

- TT vaccination coverage among mothers having 0-11 months old children
- rate of TT card retention among these mothers
- incidents of invalid TT doses among these mothers
- sources of TT vaccination for these mothers
- proportion of newborn children of these mothers who were protected against tetanus during their birth
- post partum vitamin A coverage among mothers having 0-11 months children

Objectives of the TT Vaccination coverage of Women aged 18-25 were to ascertain:

- TT vaccination coverage among women between 18-25 years
- rate of TT card retention among these women
- sources of TT vaccination for these women
- reasons for not vaccinating these women with TT.

Objectives of the Measles coverage survey were to ascertain:

- Measles coverage among 09 months to less than 10-years- old children
- Reasons for not having Measles vaccination
- Source of information for measles vaccination

Objectives of the 13th special NIDs survey were to ascertain:

- OPV coverage among 0-59 months old children
- Reasons for not having OPV vaccination
- To assess the Vitamin A and Anthelmintic treatment coverage in the 3rd round
- Reasons for not having vitamin A and Anthelmintic treatment

1.3 SAMPLE SIZE

Using the WHO 30-Cluster Coverage Survey Sampling Technique, 30 clusters were sampled from each survey unit for each district and city corporation. The 30 clusters were selected by using the systematic random sampling technique. For selecting 30 clusters for a district, Mouzas were used as the primary sampling unit. Each Mouza was divided into several clusters. Each cluster has on an average 100 households. The clusters were selected by using systematic random technique. In a cluster, each household was visited to identify the eligible respondents along with information on the age composition of target samples and the total household population. From this information, eligible respondents were listed for the sampling frame. From this sampling frame, 7 eligible respondents of each group were randomly selected for detailed interview. For the CES 2006 Sample, a total of 2,100 clusters were selected from the 70 survey units, i.e. 64 districts and 6 City Corporations. 7 children aged between 12-23 months were treated as subjects in the child sample. Similarly, 7 mothers having 0-11 months old children were treated as subjects in the TT Sample for the TT Survey, 7 children aged between 0-59 months as subjects for NID, 7 children of 09 months to < 10 years old as subjects for Measles, and 7 women aged between 18-25 years as subjects for TT 5. In all, 14,700 subjects were selected for each of these five samples which comprised the 2006 CES Sample. To estimate the coverage of Vitamin A and Anthelmintic treatment, the survey was carried out among the eligible respondents of NID survey. The total sample is presented in Table 1 below.

TABLE 1

The CES 2006 Sample Distribution of Survey Units, Clusters and Survey Subjects by Division/City Corporation Areas

Divisions/ City Corpo-rations	Number of Survey Units	Number of Clusters	Number of 12-23 Months Old Children (The Child Sample)	Number of Mothers with Children of 0-11 Months (The TT and PNVAC Sample)	Number of 18-25 Years Old Women (The TT5 Sample)	Number of 9 months to <10 years Old Children (Measles Coverage)	Number of 0 to 59 Months Old Children (OPV Coverage in 13th Special NIDs)
Dhaka	17	510	3,570	3,570	3,570	3,570	3,570
Rajshahi	16	480	3,360	3,360	3,360	3,360	3,360
Chittagong	11	330	2,310	2,310	2,310	2,310	2,310
Khulna	10	300	2,100	2,100	2,100	2,100	2,100
Barisal	6	180	1,260	1,260	1,260	1,260	1,260
Sylhet	4	120	840	840	840	840	840
City Corporations	6	180	1,260	1,260	1,260	1,260	1,260
Total	**70**	**2100**	**14700**	**14700**	**14700**	**14700**	**4700**

1.4 SELECTION OF SAMPLES

The samples for the CES 2006 were selected using the following procedure. Step-1: 30 Clusters for each sampling unit were selected by using systematic random technique following PPS method. Step-2: Mouzas were used to define a cluster and each defined cluster has on an average 100 households. After selecting each cluster, a sketch map was drawn with land identifications for the selection of clusters easily. Step-3: From each selected cluster, a sampling frame was prepared to identify the target population, and 7 target samples were selected randomly. Step-4: Conduct interviews of the target samples with the help of pre-designed questionnaire.

1.4.1 SELECTION OF SAMPLE CLUSTERS

In each survey unit, i.e. a district/City Corporation, 30 clusters were selected at two stages. For a district/City Corporation unit, clusters were obtained on PPS basis. For each survey unit, 30 clusters were selected. In this way, a total of 2,100 clusters were selected from 70 survey units.

1.4.2 SELECTION OF SAMPLE HOUSEHOLDS

For a sample cluster (EA), all the households were visited (on an average an EA had 100 households) and detailed information for the target samples were obtained. A separate sampling frame was prepared for each target population. From the sampling frame, 7 target samples were randomly selected.

1.5 QUESTIONNAIRES

Following six forms were used for five individual surveys:

i) Household listing form

ii) Child Form administered for obtaining data for the Child Vaccination Coverage Survey

iii) TT Form for obtaining data from mothers to ascertain protection of their children against tetanus during their birth

iv) TT-5 Form administered for women aged between 18-25 years

v) Measles Form administered for 09 months to < 10 years old children

vi) NID Form administered for 0-59 months old children

All the questionnaires used in the CES 2006 are shown in the appendix of this report.

1.6 IMPLEMENTATION OF THE SURVEY

1.6.1 RECRUITMENT

The field staff for the CES 2006 was recruited in July - September, 2006. They included assistant survey coordinators, quality control officers, field supervisors, and interviewers. The recruitment criteria included educational attainment, maturity, group cohesiveness/team spirit, experiences from other surveys, and ability to work away from home for one month. All the field personnel were initially recruited as trainees each of whom was appointed to a particular post, which largely depend on her/his performances during the training. Trainees with best performances were appointed as assistant coordinators/quality control officers; those having second-best performances as supervisors; and those with third-best performances as interviewers. For possible later-replacement of unsuitable recruits, more staff members than it was needed were recruited as trainees.

1.6.2 TRAINING

A total of seven-day comprehensive training program on interviewing was held for the field personnel from 13th to 20th July, 2006. ACNielsen Bangladesh trained the interviewers in three batches each of which comprised 25-30 trainees. The training methods employed included classroom lectures using OHP, demonstration interviews, role-playing, field practices, and problem reviewing. Program Manager, Child Health & Limited Curative Care, Deputy Program Manager, Medical Officers, Training Officer from EPI-DGHS, and key members of the Survey Team imparted the training. Representatives from the partner agencies - WHO and UNICEF - also took part as resource persons in the training program.

1.6.3 FIELDWORK

The fieldwork was carried out from 26th July to 15th September, 2006 with a total of 70 interviewing teams. ACNielsen deployed 70 interviewing teams, each consisting of two field interviewers and one supervisor, thus totaling 210 field personnel. In addition, it fielded 10 quality control teams, each of which comprised two people to check the quality of the fieldwork. Besides, coordinators and assistant coordinators from the firm monitored the fieldwork. Also, representatives from the partner agencies EPI-DGHS, WHO, and UNICEF visited the field for monitoring fieldwork.

1.6.4 DATA MANAGEMENT AND STATISTICAL ANALYSIS

For data analysis, a powerful statistical package called "Quantum" version 5.8 was used. Major research companies use it worldwide. The package is capable of producing any kind of cross-tabs and statistical analysis in conjunction with SPSS.

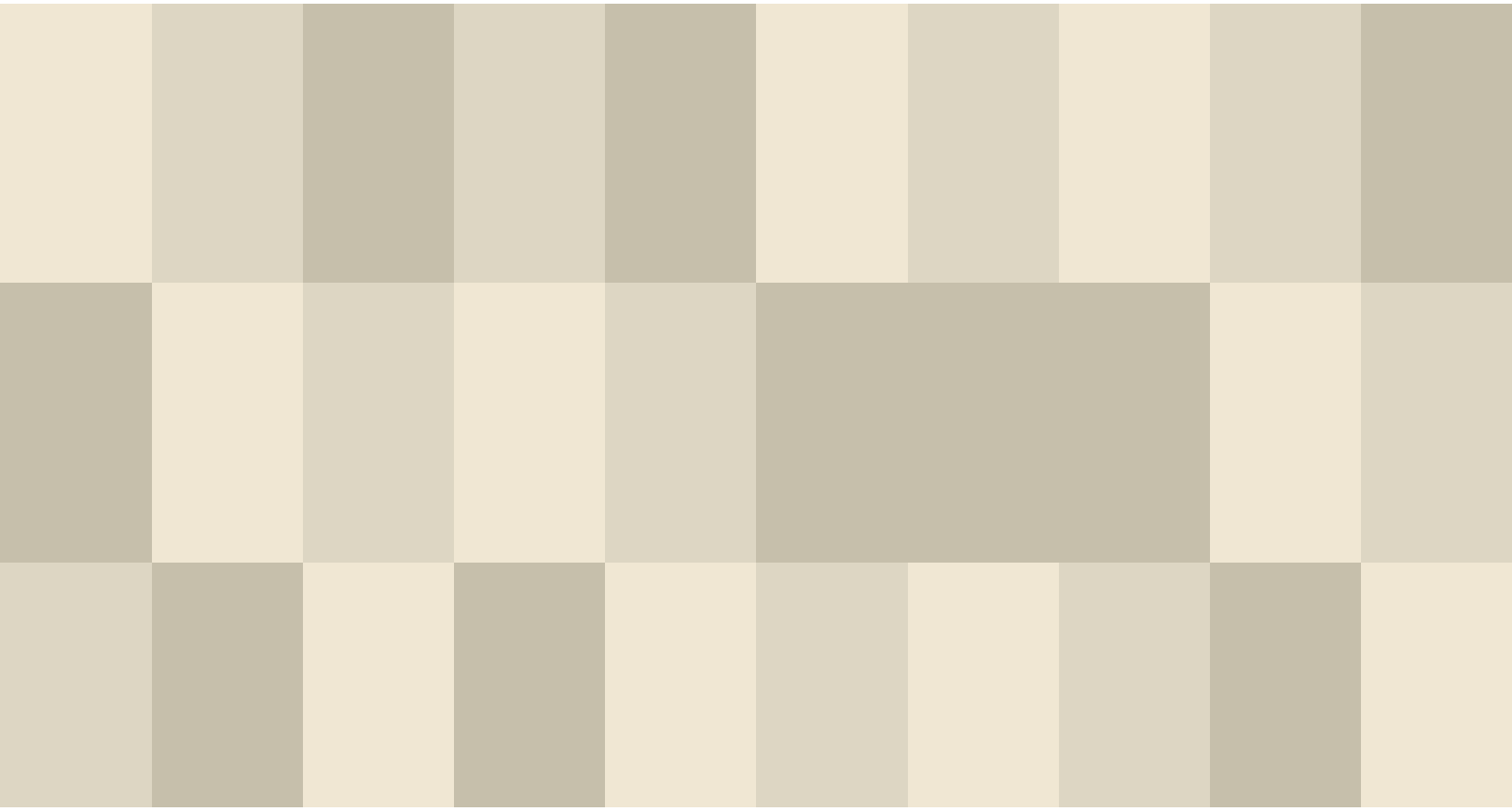
Data processing and analysis included code construction, coders' training, coding, data punching, data verification and quality control, data processing and, finally, the analysis to facilitate the required output generation. Data of CES 2006 has been entered using data base software FOXPRO version 2.6 and cleaned using software clipper version 5.3. Tables were generated using Quantum version 5.8.

1.7 WEIGHTING

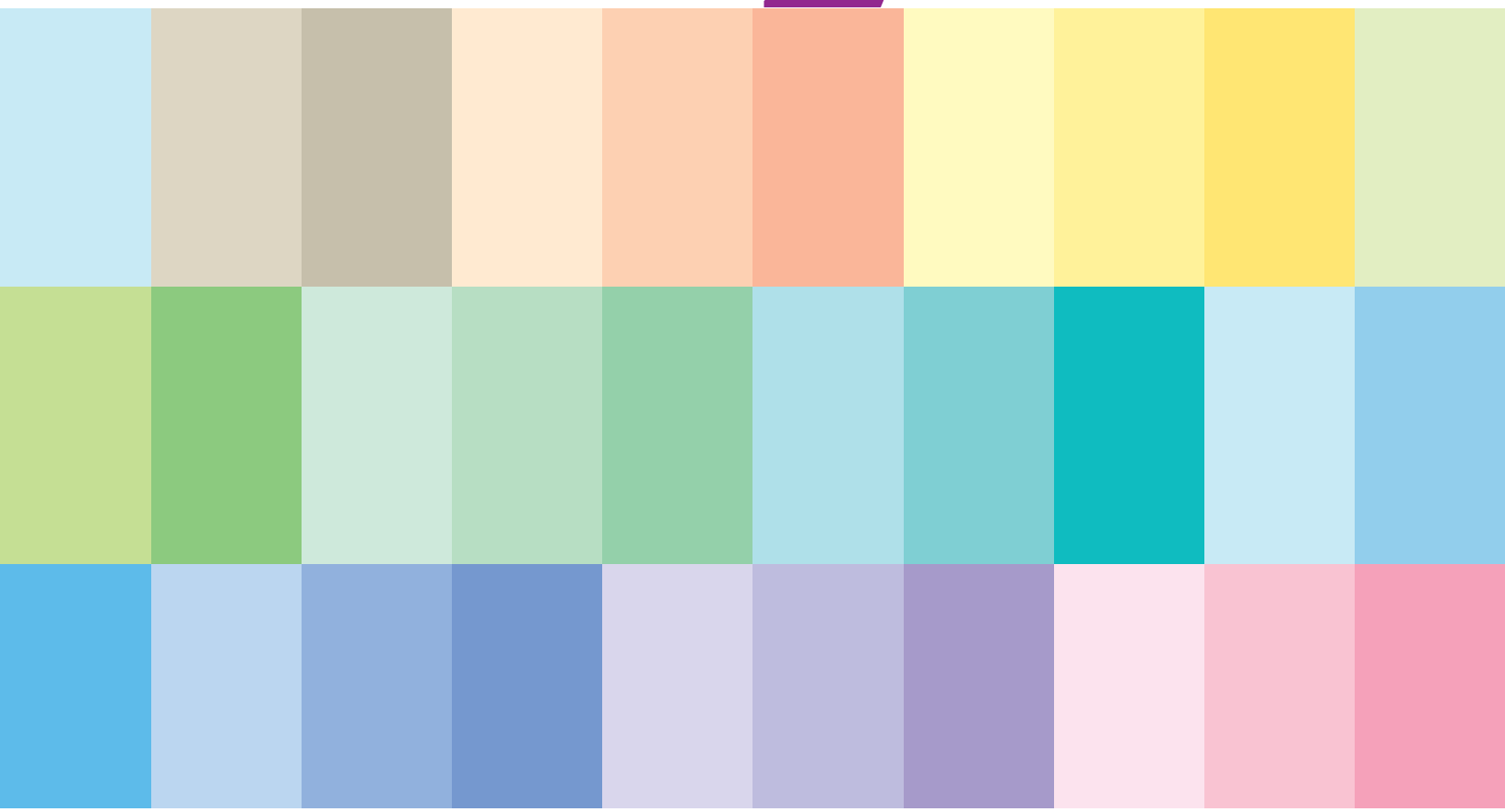
Since the sample of this study has been selected using PPS method, the data of this survey is self-weighted.

1.8 REPORTS

As required by the scope of the CES 2006, a national report and 70 separate unit reports on the 70 survey units were prepared. This National Report consists of seven chapters. Chapter 1 describes the background, objectives, design, and implementation of the CES 2006. Chapter 2 provides an analysis of the findings received from the childhood immunization coverage survey, Chapter 3 that of the TT vaccination coverage survey among mothers with children 0-11 months old, Chapter 4 TT vaccination coverage survey among women aged between 18-25 years, Chapter 5 Measles Coverage, Chapter 6 NID Coverage and Chapter 7 presents discussions and programmatic implications.



CHAPTER 2



CHILDHOOD VACCINATION COVERAGE SURVEY

The Childhood Vaccination Coverage Survey of the CES 2006 was conducted with the objectives - as stated in Chapter 1- to ascertain:

- coverage of childhood vaccination including vitamin A among 12-23 months old children
- vaccination card retention rates
- incidents of invalid doses
- incidents of abscesses following DPT or Measles vaccination
- vaccination dropout rates
- reasons for not having children vaccinated fully or at all
- sources of vaccination services.

2.1
SELECTION OF SAMPLE

The Childhood Vaccination Coverage Survey was implemented over a nationally representative Child Sample of 12-23 months old children who were drawn from the sample clusters in the following manner: Each sample cluster, on an average, 100 households; all the households were visited to identify the target samples; after visiting geographically defined area, a sampling frame of eligible children was listed; from this frame 7 children were randomly selected for detailed interview. If the required number of children were not found in the selected clusters, the remaining sample was covered from the adjacent cluster. Thus, the Child Sample for the Childhood Immunization Coverage Survey comprised 14,700 children throughout the country nationally- 12642 children from rural and 2058 from urban areas, which include city corporations and municipalities.

2.2
THE CHILD FORM

In order to the objectives of the Child Survey, the following data were collected about each surveyed child in the Child Form by interviewing his/her mother/caregiver:

- date of birth of the child
- sex of the child
- whether the child had a vaccination card
- whether the child had ever been issued a vaccination card, if the child did not have the card
- the mother's/caregiver's knowledge as to how many times s/he should take her/his child to the vaccination site/center for receiving all antigens
- date of each antigen/dose of antigen received by the child. This information was copied from the child's vaccination card - if available - or was recorded from the history of vaccination as reported by the mother/caregiver
- whether the child ever had an abscess after receiving a dose of antigen
- where the child had the abscess, if s/he had any
- whether the child was vaccinated fully, partially, or never
- reason for having the child vaccinated partially or never
- place from where the child received the first dose of DPT.

2.3
CHILDHOOD VACCINATION

For protection against the six deadly childhood diseases, i.e. tuberculosis, diphtheria, pertussis (whooping cough), tetanus, polio, and measles, WHO recommends that each child should be vaccinated with one dose of BCG against tuberculosis, three doses of DPT against diphtheria, pertussis, and tetanus, four doses of Oral Polio Vaccine (OPV) against poliomyelitis, and one dose of Measles vaccine against measles and vitamin A (100000 IU) against night blindness. It is also recommended that all the antigens need to be given to the child before his/her first birthday and according to the following schedule: BCG at or after birth; DPT1/OPV1 at an age of six weeks or after; Measles and vitamin A vaccine at the age of 270 days or after completion of 9 months and after. The interval between consecutive doses of DPT/OPV

should be four weeks or more; it means that DPT2/OPV2 should be given after four weeks of DPT1/OPV1, and DPT3/OPV3 should be given after four weeks of DPT2/OPV2. Table A1 shows the schedule of complete childhood vaccination.

TABLE A1
The Childhood Vaccination Schedule

Age of Start	Vaccine	Number of Doses	Interval between Doses	Route of Administration	Vaccination Site
At birth	BCG	1	-	Intradermal	Left upper arm
6 weeks	DPT	3	4 weeks	Intramuscular	Outer part of the thigh
6 weeks	OPV	3	4 weeks	Oral	By mouth
9 months (270 days)	Measles	1	-	Subcutaneous	Outer part of the thigh
	OPV	1	-	Oral	By mouth
	Vitamin A	100,000 IU		Oral	By mouth

NB: DPT1 is given in left thigh; DPT2 is given in right thigh; DPT3 is given in left thigh; and Measles is usually given in right thigh.

2.4
LEVELS OF CHILDHOOD VACCINATION COVERAGE

Two types of childhood vaccination coverage were assessed in this survey – valid coverage and crude coverage. Valid coverage was assessed in terms of the valid dose(s) of any antigens administered to a 12-month old child. A valid dose is a recommended dose of an antigen administered at the recommended age and/or during the interval. Thus, vaccination with all the recommended doses of all the antigens at the recommended age and/or interval by 12 months of age was defined as full immunization. Crude coverage, on the other hand, was assessed in terms of the dose(s) of any antigen - both valid and invalid - that a child received regardless of whether s/he received those by the age of 12 months or after. An invalid dose was one given before the recommended age or interval. Both valid and crude coverages of vaccination were assessed for each specific antigen as well as for all the antigens taken together. Crude coverage, shown against the valid coverage, indicates how much more valid coverage could have been gained, if all the antigens given to children were administered at an appropriate time within his/her age of 12 months. In other words, the comparison between crude coverage and valid coverage shows how much coverage was lost due to the failure in giving antigens to children at an appropriate time.

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Childhood vaccination coverage was assessed using the following information gathered in the survey regarding the vaccination status of each of the 12-23 months old children surveyed: whether the child received any antigen, if s/he had it, date of each antigen/ dose of antigen received; and whether or not the child received all antigens. As has been stated earlier, the information was obtained from the child's vaccination card where it was available and, if it was not available, from the vaccination history reported by the child's mother/caregiver.

2.5
COVERAGE RATES FROM CARD+HISTORY

This section deals with vaccination coverage rates as computed from the vaccination cards of the children as well as from the facts about the children's vaccination status; in short, it is card+history.

2.5.1: LEVELS OF THE VALID COVERAGE

National rates of the valid coverage of routine childhood vaccination obtained from card+history are displayed in *Figure A1* for both specific antigens and for full immunization. Nationally, 71 percent of the 12-23 months old children surveyed received all the valid doses of all the recommended antigens within the age of 12 months and, so, they were considered as being fully immunized. The antigen- specific valid coverage achieved was 98 percent for BCG, 97 percent for DPT1, 95 percent for DPT2, 84 percent for DPT3, and 78 percent for Measles.

The urban-rural gaps in the vaccination coverage are gradually narrowing. The percentage of children fully immunized, with valid doses of all antigens within the age of 12 months, was 76 in the urban areas as compared to 70 in the rural areas. Similar patterns of the urban-rural variation were seen in the valid coverage of specific antigens. It is to be noted here that the urban-rural gap in the valid coverage rate narrowed down with every subsequent antigen dose. The valid coverage rate was same for BCG for both urban and rural areas. For measles vaccine, the coverage for urban and rural areas was 81 percent and 77 percent respectively.

2.5.2: LEVELS OF THE CRUDE COVERAGE

National rates of the crude coverage of routine childhood vaccination from card+history are shown in *Figure A2*. The crude coverage rates are considered as measures of levels of access to vaccination services.

Nationally, the crude coverage rate, i.e., access to vaccination services, was found to be high for BCG at 98 percent and almost equally high for DPT1 at 98 percent. But, there were drops for the subsequent doses/antigens, declining to 96 percent for DPT2, to 94 percent for DPT3, and to 89 percent for measles. Eventually, only 89 percent of the 12-23 months old children surveyed at the national level had access to vaccination services for all the recommended antigens, i.e., full immunization.

Access to EPI services for immunization with every vaccine was found to be more or less the same by urban and rural areas. There was no urban-rural gap in the access to vaccination for BCG, and the gap is

for measles, followed by DPT3/OPV3. For BCG, the crude coverage rate was over 98 percent in both urban and rural areas; for DPT3/OPV3 it was 95 percent as compared to 94 percent, and for measles, it was 91 percent in the urban areas as compared to 88 percent in the rural areas. Overall, for full immunization, the urban and the rural crude coverage rates were 91 percent and 88 percent respectively.

2.5.3 TRENDS IN COVERAGE

Nationally, the crude coverage of childhood vaccination remained almost unchanged between 2001 and 2006 (Figure A5). The national crude coverage rate for full immunization was 75 percent in the CES 2001, 76 percent in CES 2002, 80 percent in CES 2005, and 89 percent in CES 2006. Rates of specific antigens in the two CESs were also close to each other. However, valid coverage rate for full immunization rose by 7 percentage points from 64 percent in CES 2005 to 71 percent in CES 2006 (Figure A1). But, this increase was possibly due to the valid coverage in DPT3 from 77 percent to 84 percent and OPV3 from 77 percent to 92 percent between the two CESs. There were improvements with respect to timely utilization of vaccination services for the other antigens between 2005 and 2006. It is noteworthy that during the 1997-2005 period, annual coverage rates fluctuated; but, eventually these rates increased. With fluctuation, the national valid coverage rate for full immunization rose from 51 percent in 1997 to 71 percent in 2006. Likewise, the national crude coverage rate for full immunization rose from 67 percent in 1997 to 89 percent in 2006. Improvements over this period were noticed in the coverage rates for all antigens, except for BCG, for which coverage became almost universal since 1999.

2.5.4 DIVISIONAL TRENDS IN THE COVERAGE

Since 1997, valid coverage of vaccination of Dhaka division improved considerably. Valid coverage rate for full immunization went up from 39 percent in 1997 to 72 percent in 2006 while the crude coverage rate for full immunization increased from 61 percent to 90 percent over the same period. Corresponding improvements were found in both the valid and crude coverage rates for all antigens over this period (Figures A6 and A7).

Since 1997, remarkable improvements in vaccination coverage rates, also with fluctuations, were noticed in Chittagong and Barisal divisions. In Chittagong division, the valid coverage rate for full immunization increased from 44 percent in 1997 to 66 percent in 2006, and the crude coverage rate for full immunization increased from 59 percent to 83 percent over the same period, together with increases in both the crude and the valid coverage rates for specific antigens (Figures A8 and A9). In Barisal division, between 1997 and 2006, valid coverage rate for full immunization went up from 39 percent to 71 percent and crude coverage rate for full immunization from 61 percent to 90 percent, again together with increases in the rates for specific antigens (Figures A11).

In Dhaka division, valid coverage rate for full immunization rose, also with fluctuations, from 39 percent in 1997 to 72 percent in 2006, along with crude OPV3 coverage rates rising from 73 percent to 95 percent and crude measles coverage rate rising from 62 percent to 90 percent. Valid coverage rate increased remarkably between CES 2005 and CES 2006 from 58 percent to 72 percent. However, crude coverage rate rose also with fluctuations from 61 percent in 1997 to 90 percent in 2006. Difference between CES 2005 and CES 2006 was 14 percentage points (76 percent in CES 2005 and 90 percent in 2006). (Figures A6 and A7).

In Khulna division, valid coverage rate for full immunization rose, also with fluctuations, from 64 percent in 1997 to 77 percent in 2006, along with crude OPV3 coverage rates rising from 86 percent to 96 percent and crude measles coverage rate rising from 81 percent to 93 percent. Valid coverage rate increased

between the CES 2005 and 2006 from 72 percent to 77 percent. However, crude coverage rate rose also with fluctuations from 80 percent in 1997 to 92 percent in 2006. Differences of crude coverage between CES 2005 and CES 2006 was 5 percentage points (87 percent in CES 2005 and 92 percent in 2006) (Figures A12 and A13).

In Rajshahi division, valid coverage rate for full immunization rose, also with fluctuations, from 62 percent in 1997 to 73 percent in 2006, along with crude OPV3 coverage rates rising from 85 percent to 96 percent and crude measles coverage rate rising from 77 percent to 91 percent. Valid coverage rates between the CES 2005 and CES 2006 increased from 67 percent to 73 percent. However, crude coverage rate rose also with fluctuations from 75 percent in 1997 to 91 percent in 2006. Difference of crude coverage rate between CES 2005 and CES 2006 was 6 percentage points (85 percent in CES 2005 and 91 percent in CES 2006). (Figures A14 and A15).

In Sylhet division, valid coverage rate for full immunization rose, also with fluctuations, from 32 percent in 1999 to 64 percent in 2006, along with crude OPV3 coverage rates rising from 69 percent to 87 percent and crude measles coverage rate rising from 62 percent to 80 percent. Valid coverage rates between the CES 2005 and CES 2006 increased from 53 percent to 64 percent. However, crude coverage rate rose also with fluctuations from 57 percent in 1999 to 80 percent in 2006. Crude coverage rate was 9 percentage points higher in CES 2006 than that in CES 2005 (Figures A16 and A17).

2.5.5 LEVELS OF THE RURAL COVERAGE BY DIVISION

Childhood vaccination coverage in the rural areas varied by divisions. Rural valid coverage rate for full immunization - the proportion of the surveyed 12-23 months old rural children vaccinated with all the recommended valid doses of antigens within the age of 12 months- was the highest-76 percent- in Khulna division, and the lowest- 61 percent- in Sylhet division. In four other divisions (Dhaka, Chittagong, Rajshahi and Barisal), the rate ranged between 65 and 72 percent around the rural average. Similar patterns of differentials by divisions were noticed in the rural crude coverage rate for specific antigens (Figure A18). However, the differentials were relatively less pronounced for BCG, with its crude coverage rate at or over 98 percent in all divisions, except in Chittagong and Sylhet where the rates was 96 and 95 percents respectively. Rural valid coverage rates varied by divisions about the same fashion as it did for the rural crude coverage rates. Thus, in terms of both the valid and crude coverage rates, rural vaccination services were found to be the best in Khulna division and the worst in Sylhet division. Rural vaccination performance in the remaining division- Dhaka, Rajshahi and Barisal- were close to the rural coverage level except that in Chittagong division (Figure A19).

2.5.6 LEVELS OF URBAN COVERAGE BY CITY CORPORATION/MUNICIPALITIES

Vaccination coverage in the urban areas varied by City Corporations/Municipalities, while there was no separate 30-cluster sample drawn for the municipalities available as an independent survey unit. Estimates for those areas were developed in the following manner: clusters from all municipalities included in the district sample units; estimates were then derived from this sample as estimates for the municipalities.

As shown in Figure A21, the urban valid coverage rates were usually the highest (78 percent) in Khulna City Corporation (KCC) and Rajshahi City Corporation (RCC), which was being followed by Dhaka City Corporation (DCC) (76 percent), Sylhet City Corporation (SCC) (75) percent), Barisal City Corporation (BCC) (73 percent), and Chittagong City Corporation (CCC) (73 percent).

In terms of crude coverage rates, vaccination coverage was the highest in RCC (95 percent) and KCC (93 percent) than that in other urban units (Figure A 22). Crude coverage rate for full immunization in other city corporations was in the range between 86 and 92 percent. In DCC, crude vaccination coverage was 92 percent and 90 percent in CCC while the range was much lower- 86 percent in SCC. Evidences of better vaccination coverage in RCC and KCC than those in the other urban units was also apparent from the comparisons for specific antigens, thus showing higher crude coverage rates for BCG in RCC and CCC (100 percent), BCC and KCC (99 percent), and the lowest in Sylhet (95 percent). Variations were also pronounced for BCG and OPV1 by city corporations. Valid coverage was also pronounced in RCC (86 percent) and KCC (83 percent) (Figure A 23).

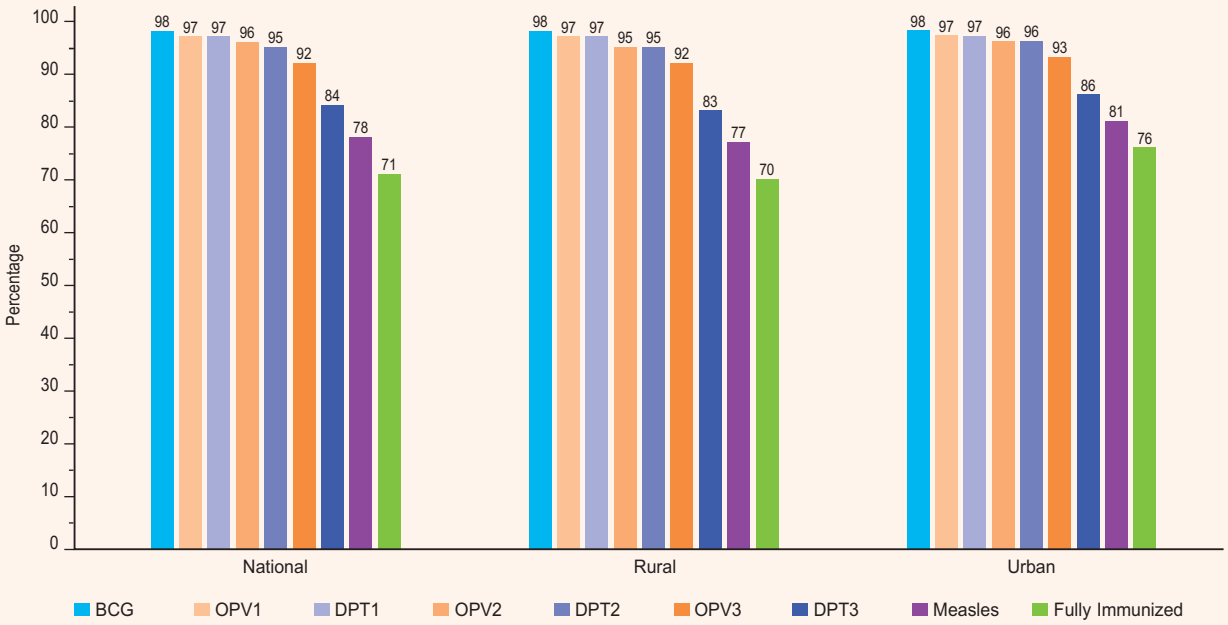
2.5.7 SEX DIFFERENTIALS IN VACCINATION COVERAGE

Differentials in childhood vaccination by sex are displayed in Figures A24 and A25. Among the children surveyed, girls, rather than boys, were found less likely to receive childhood antigens. The variations were apparent from both the crude and valid vaccination coverage rates in CES 2006. In terms of valid coverage rates, 71 percent of the female children were found fully immunized, as compared to a higher proportion of male children at 72 percent. Likewise, crude coverage rate for full immunization for the female children was 88 percent and for the male children it was 90 percent. Variations against girls for every antigen were also found to be similar both in terms of the valid and crude coverage rates. Although the differentials between girls and boys were small, the findings suggest that discrimination against girls in administering childhood vaccines could not be eliminated as yet.

2.5.8 LEVELS OF THE COVERAGE BY SURVEY UNIT

As ready reference, rates of valid vaccination coverage by 12 months of age among 12-23 months old children by District/City Corporation are given in Table 1 in Appendix. Valid full immunization rates by 12 months of age by District/City Corporation according to division are also presented graphically in Figures 1 to 6 in the Appendix.

FIGURE A1
Valid Coverage by Age 12 Months among 12-23 Months Old Children by National, Rural and Urban Areas in 2006 (Card+History)

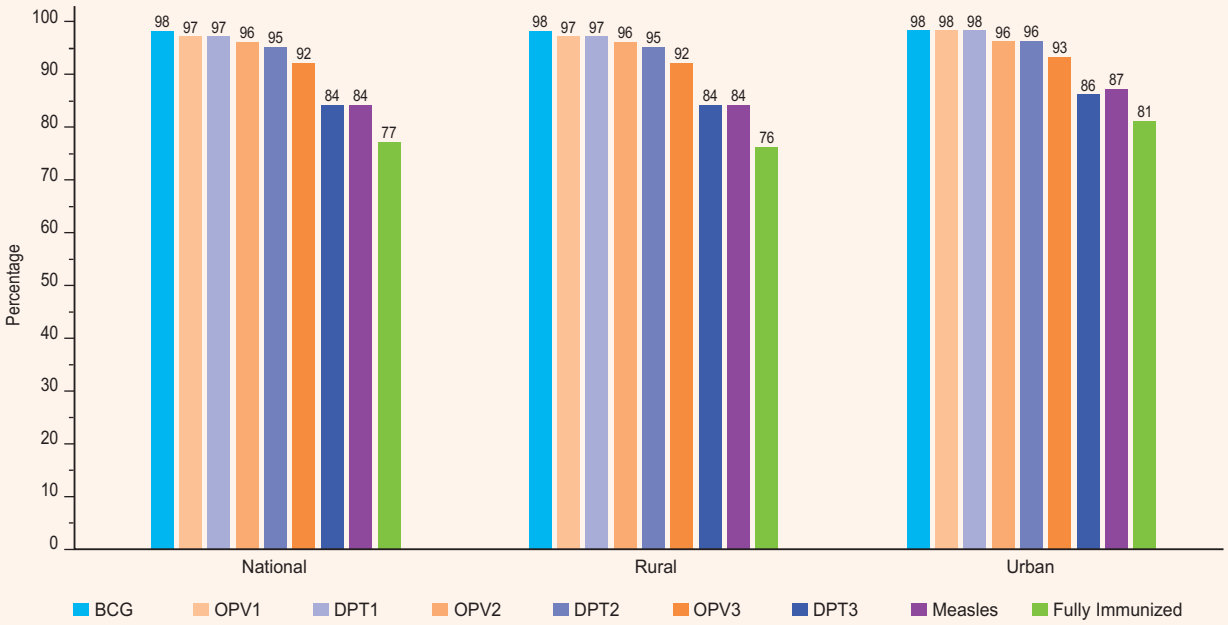


Source: CES 2006

FIGURE A2
Crude Coverage among 12-23 Months Old Children by National, Rural and Urban Areas in 2006 (Card+History)

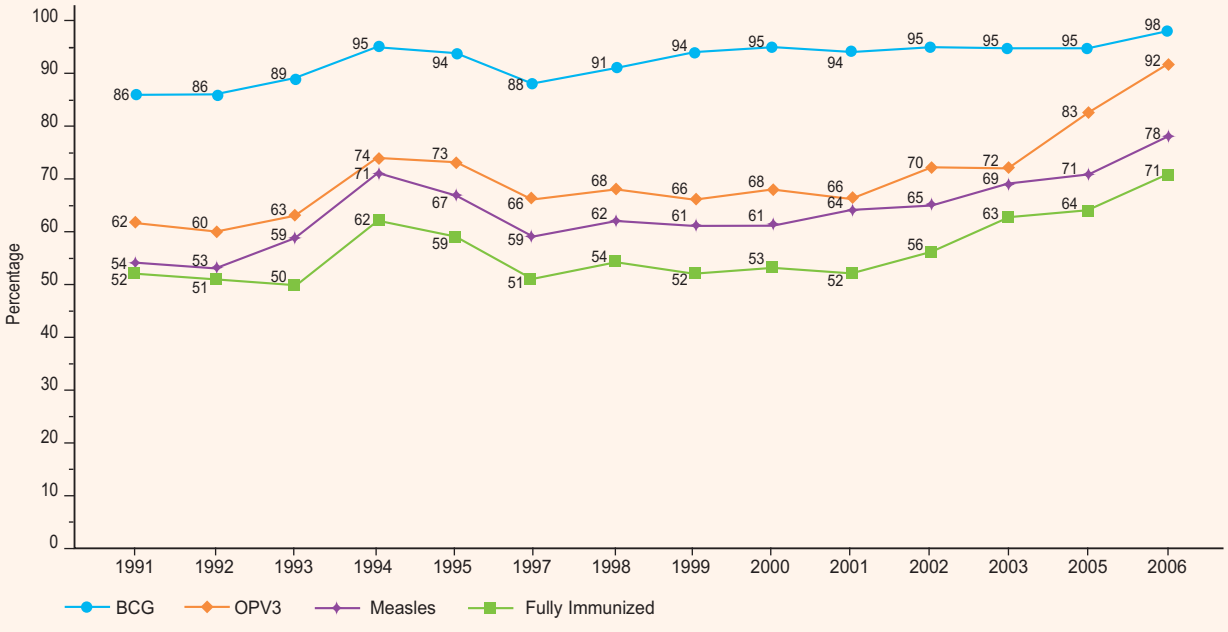
Source: CES 2006

FIGURE A3
Valid Coverage among 12-23 Months Old Children by National, Rural and Urban Areas in 2006 (Card+History)



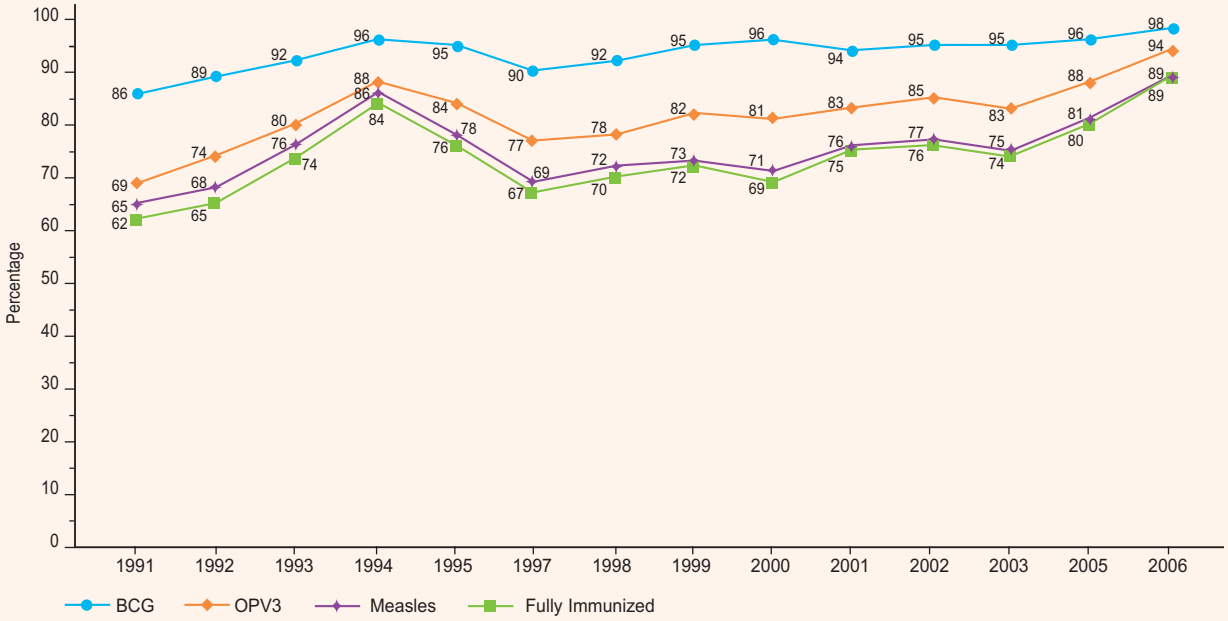
Source: CES 2006

FIGURE A4
Annual Trend of National Valid Coverage by Age 12 Months among 12-23 Months Old Children from 1991 to 2006 (Card+History)



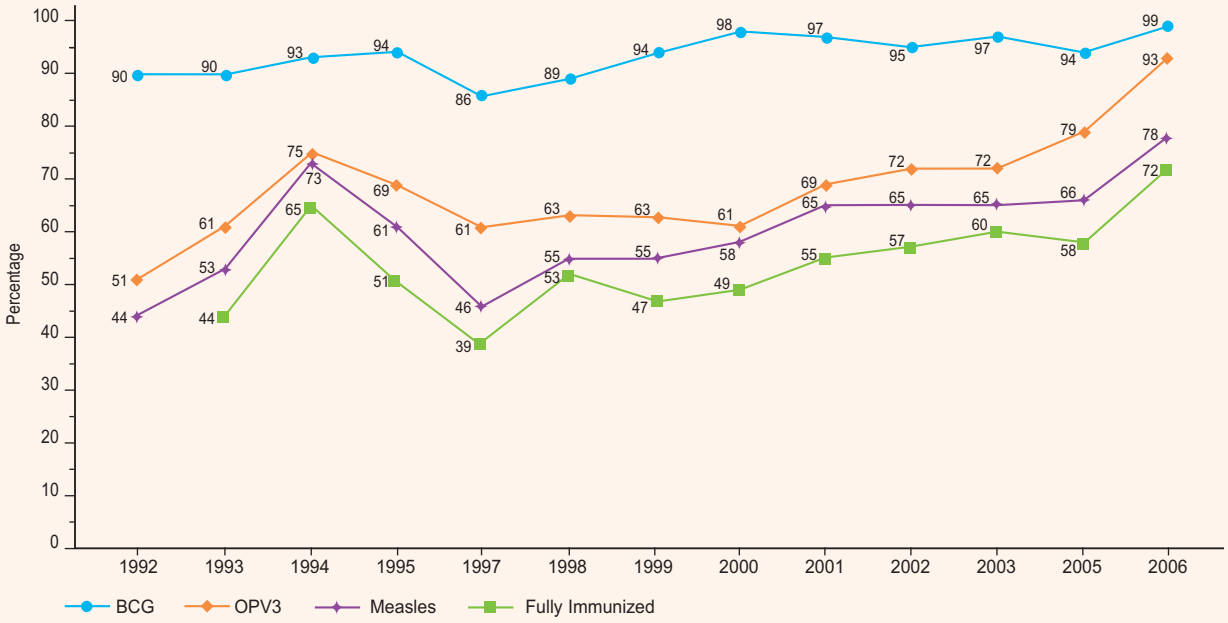
Source: Coverage Evaluation Survey 1991-1995, 1997-2003, 2005 and 2006

FIGURE A5
Annual Trend of National Crude Coverage among 12-23 Months Old Children from 1991 to 2006 (Card+History)



Source: Coverage Evaluation Survey 1991-1995, 1997-2003, 2005 and 2006

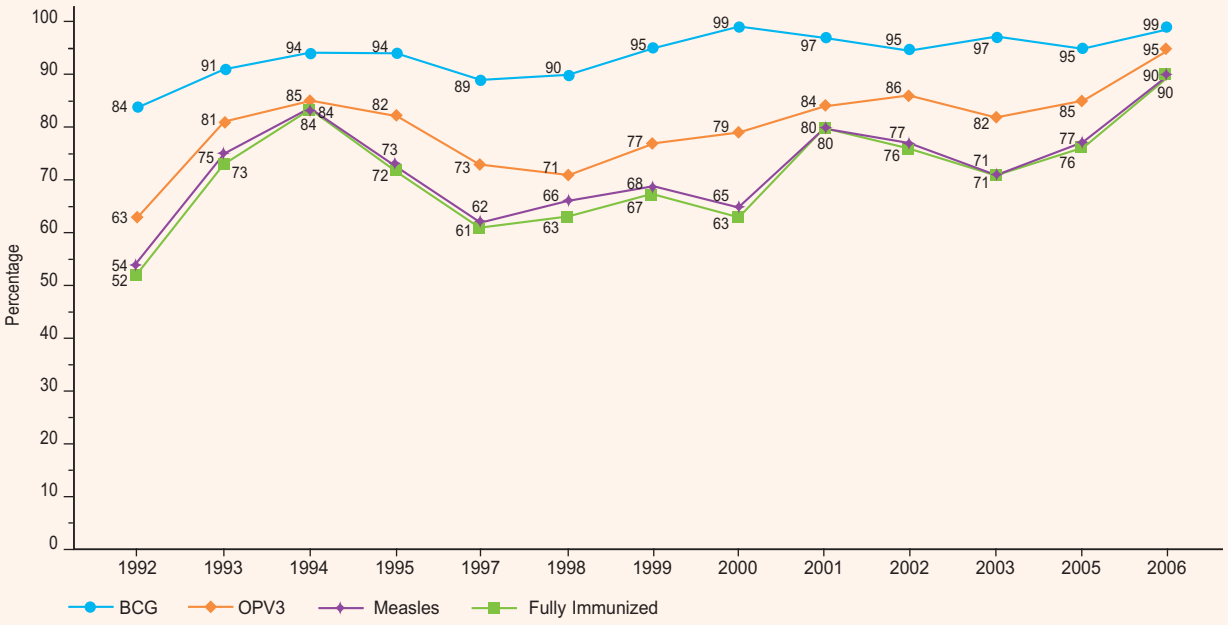
FIGURE A6
Annual Trend of Valid Coverage by Age 12 Months among 12-23 Months Old Children in Dhaka Division from 1992 to 2006 (Card+History)



Source: Coverage Evaluation Survey 1992-1995, 1997-2003, 2005 and 2006

FIGURE A7

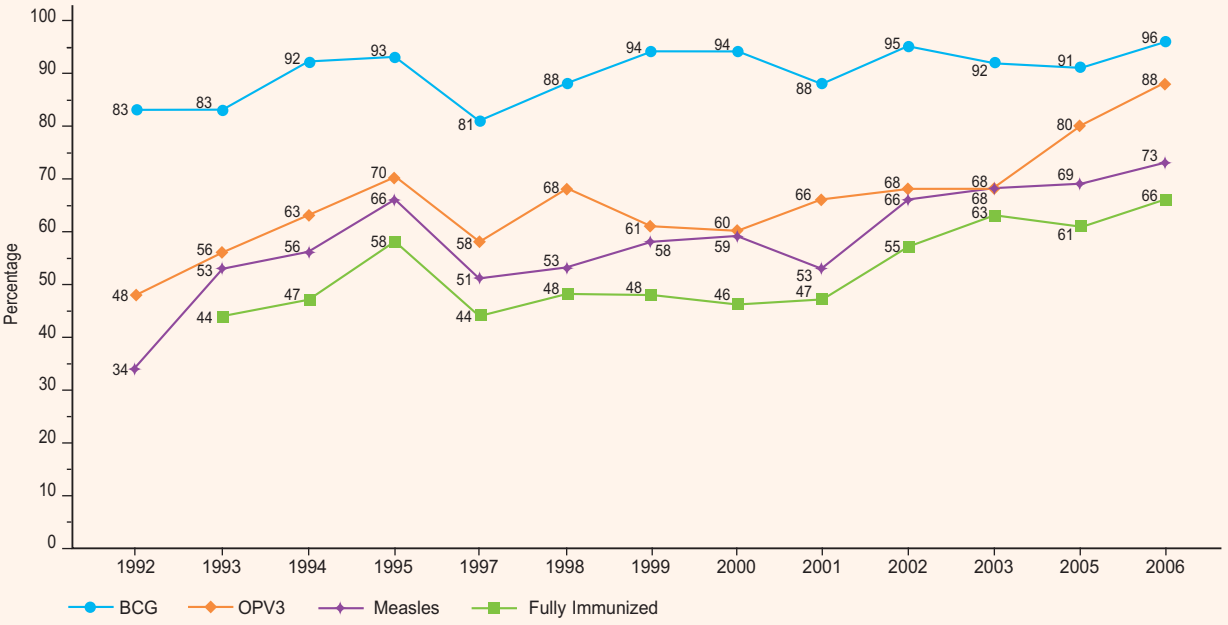
Annual Trend of Crude Coverage among 12-23 Months Old Children in Dhaka Division from 1992 to 2006 (Card+History)



Source: Coverage Evaluation Surveys (CESs) 1992-1995, 1997-2003, 2005 and 2006

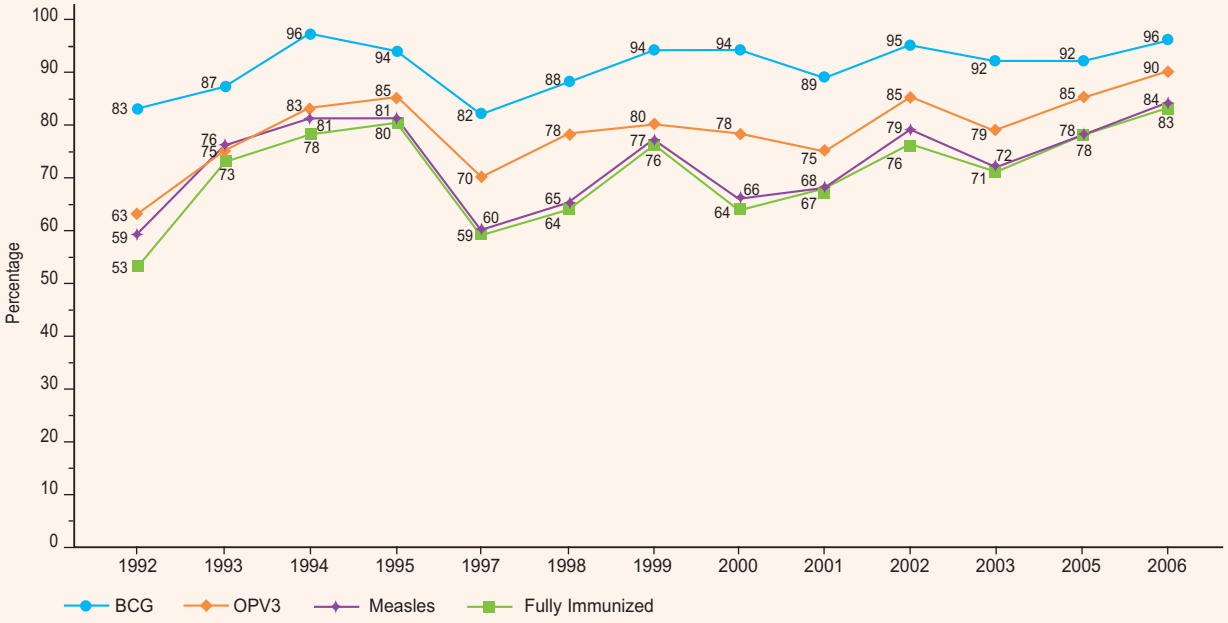
FIGURE A8

Annual Trend of Valid Coverage by Age 12 Months among 12-23 Months Old Children in Chittagong Division from 1992 to 2006 (Card+History)



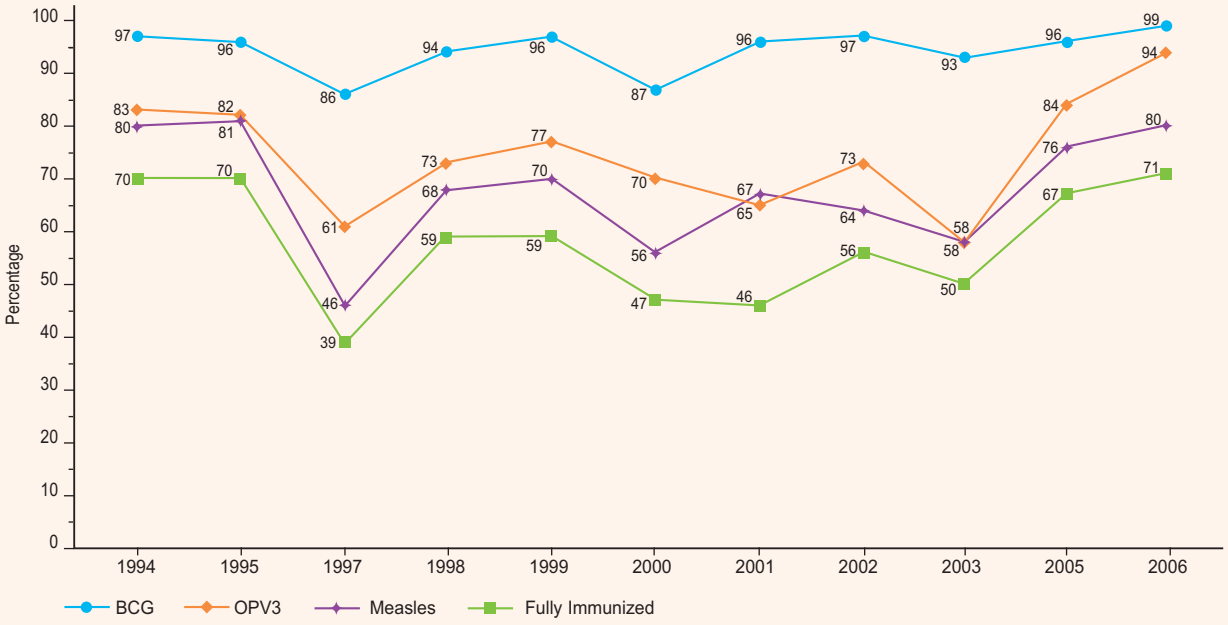
Source: Coverage Evaluation Surveys (CESs) 1992-1995, 1997-2003, 2005 and 2006

FIGURE A9
Annual Trend of Crude Coverage among 12-23 Months Old Children in Chittagong Division from 1992 to 2006 (Card+History)



Source: Coverage Evaluation Surveys (CESs) 1992-1995, 1997-2003, 2005 and 2006

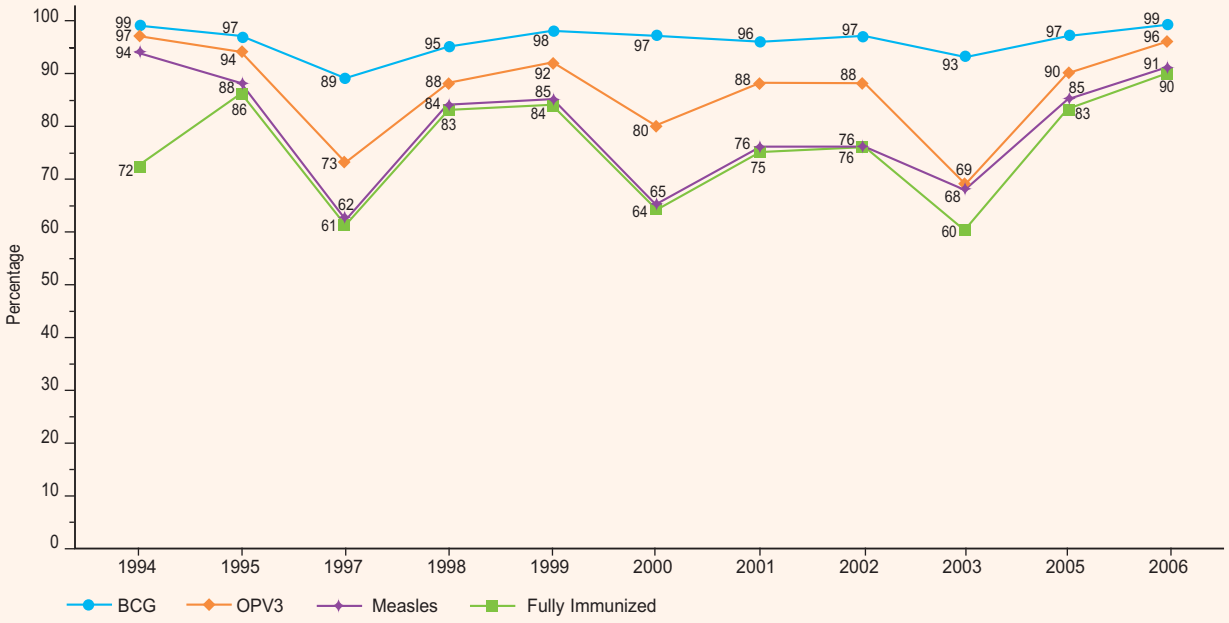
FIGURE A10
Annual Trend of Valid Coverage by Age 12 Months among 12-23 Months Old Children in Barisal Division from 1994 to 2006 (Card+History)



Source: Coverage Evaluation Surveys (CESs) 1994-1995, 1997-2003, 2005 and 2006

FIGURE A11

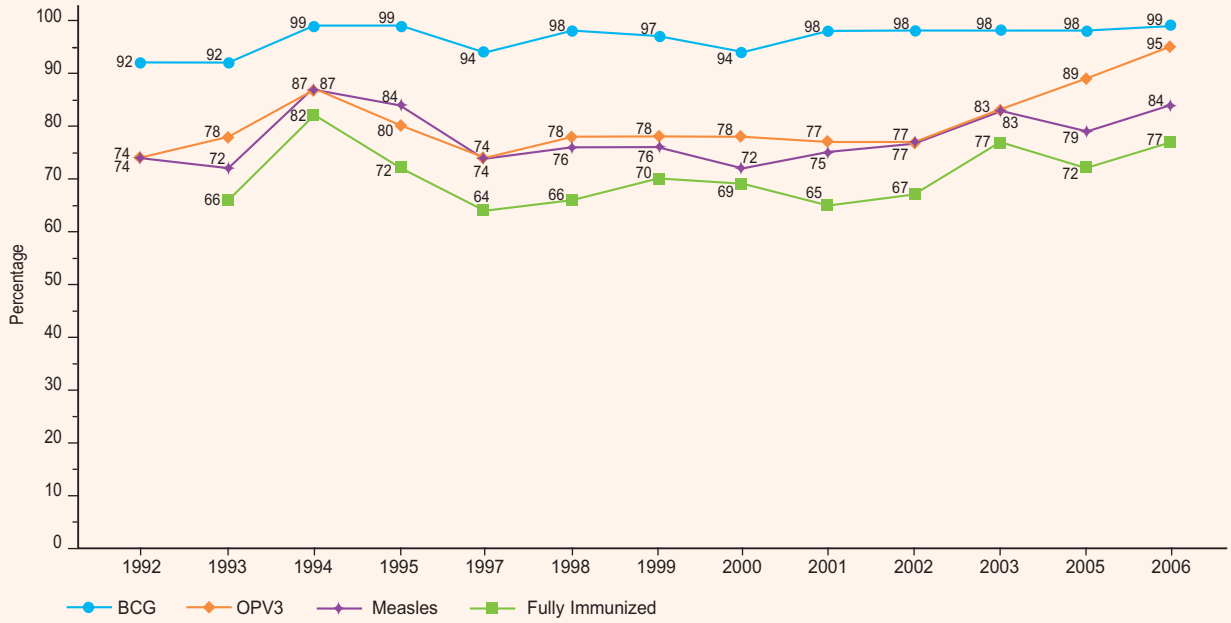
Annual Trend of Crude Coverage among 12-23 Months Old Children in Barisal Division from 1994 to 2006 (Card+History)



Source: Coverage Evaluation Survey 1994-1995, 1997-2003, 2005 and 2006

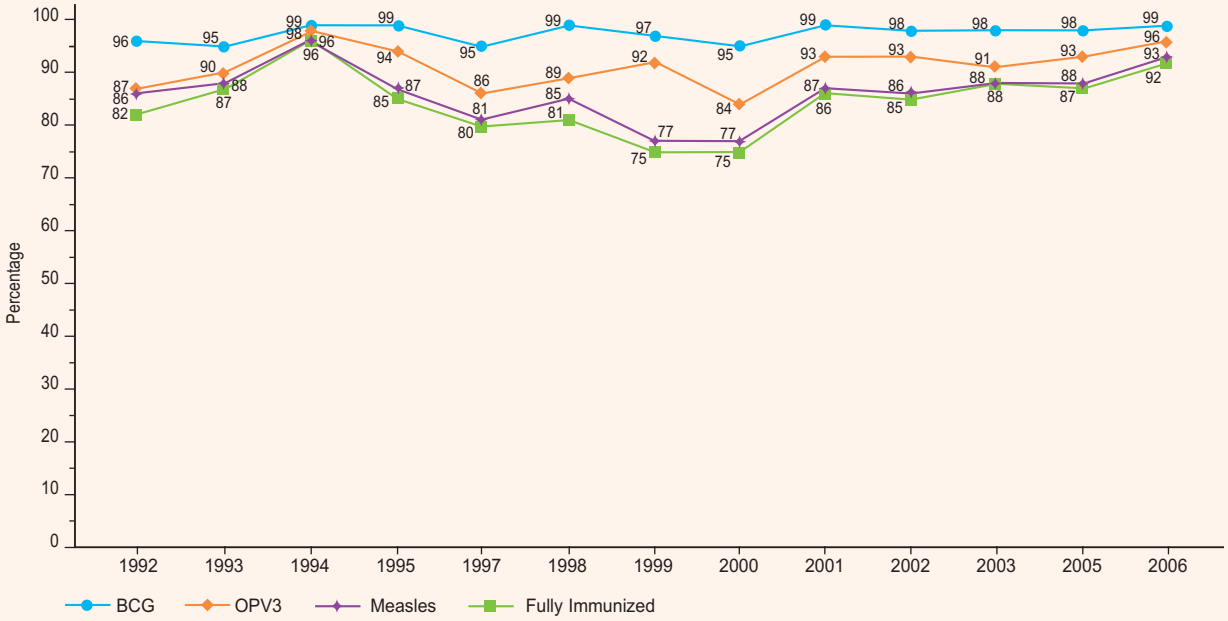
FIGURE A12

Annual Trend of Valid Coverage by Age 12 Months among 12-23 Months Old Children in Khulna Division from 1992 to 2006 (Card+History)



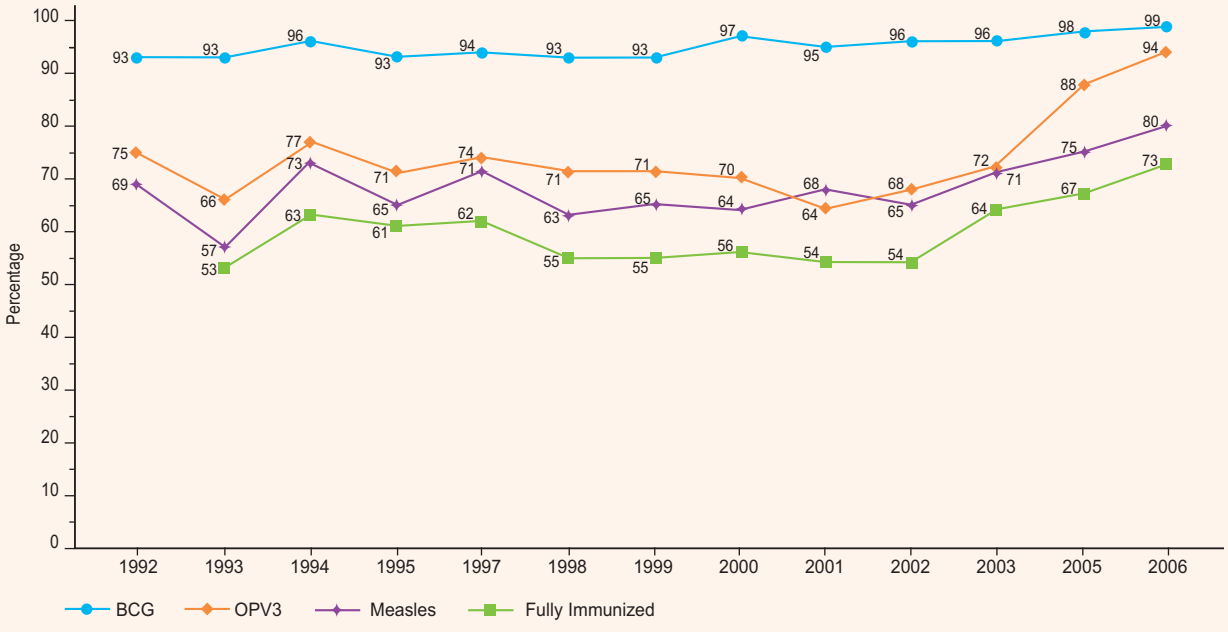
Source: Coverage Evaluation Survey 1992-1995, 1997-2003, 2005 and 2006

FIGURE A13
Annual Trend of Crude Coverage among 12-23 Months Old Children in Khulna Division from 1992 to 2006 (Card+History)



Source: Coverage Evaluation Survey 1992-1995, 1997-2003, 2005 and 2006

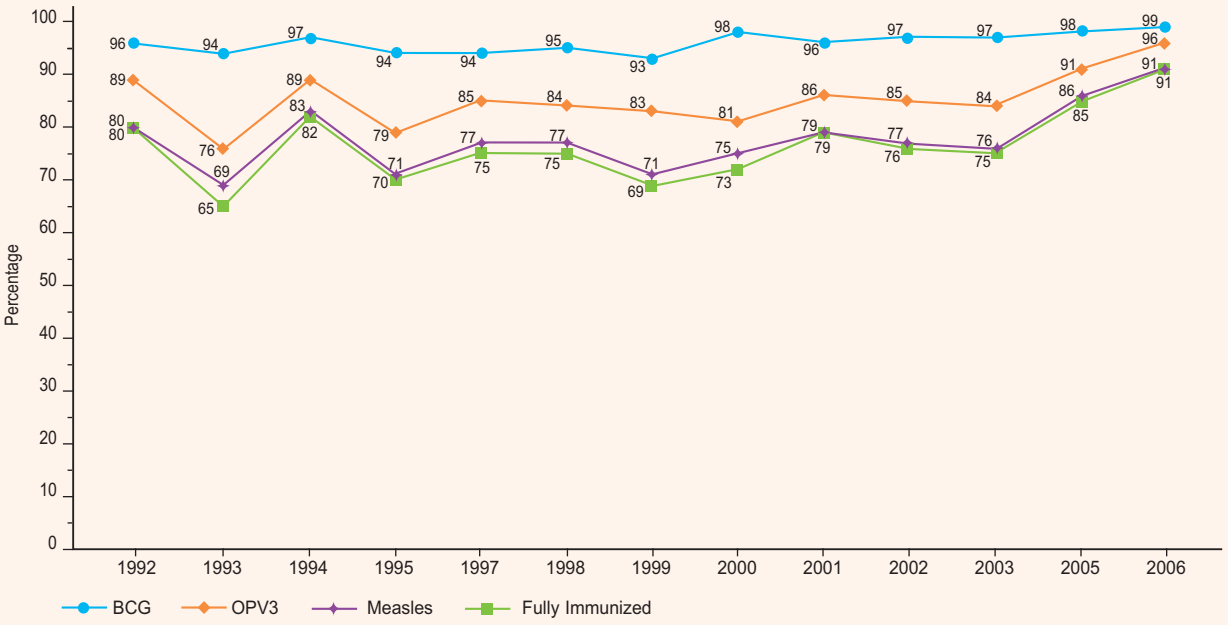
FIGURE A14
Annual Trend of Valid Coverage by Age 12 Months among 12-23 Months Old Children in Rajshahi Division from 1992 to 2006 (Card+History)



Source: Coverage Evaluation Survey 1992-1995 and 1997-2003, 2005 and 2006

FIGURE A15

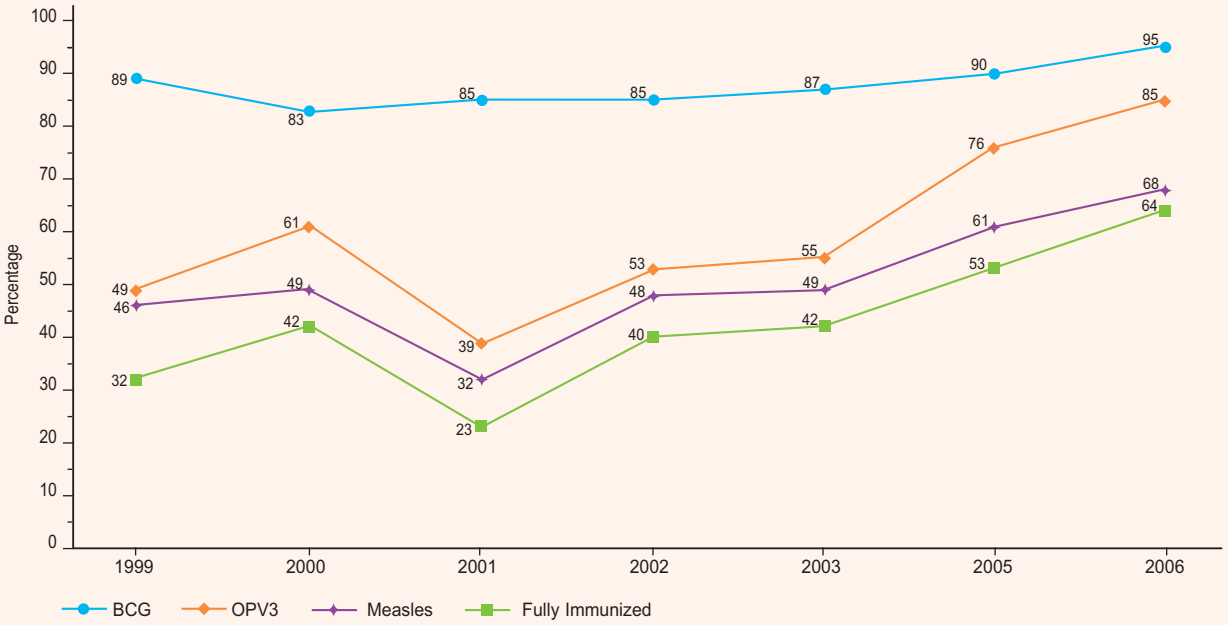
Annual Trend of Crude Coverage among 12-23 Months Old Children in Rajshahi Division from 1992 to 2006 (Card+History)



Source: Coverage Evaluation Survey 1992-1995, 1997-2003, 2005 and 2006

FIGURE A16

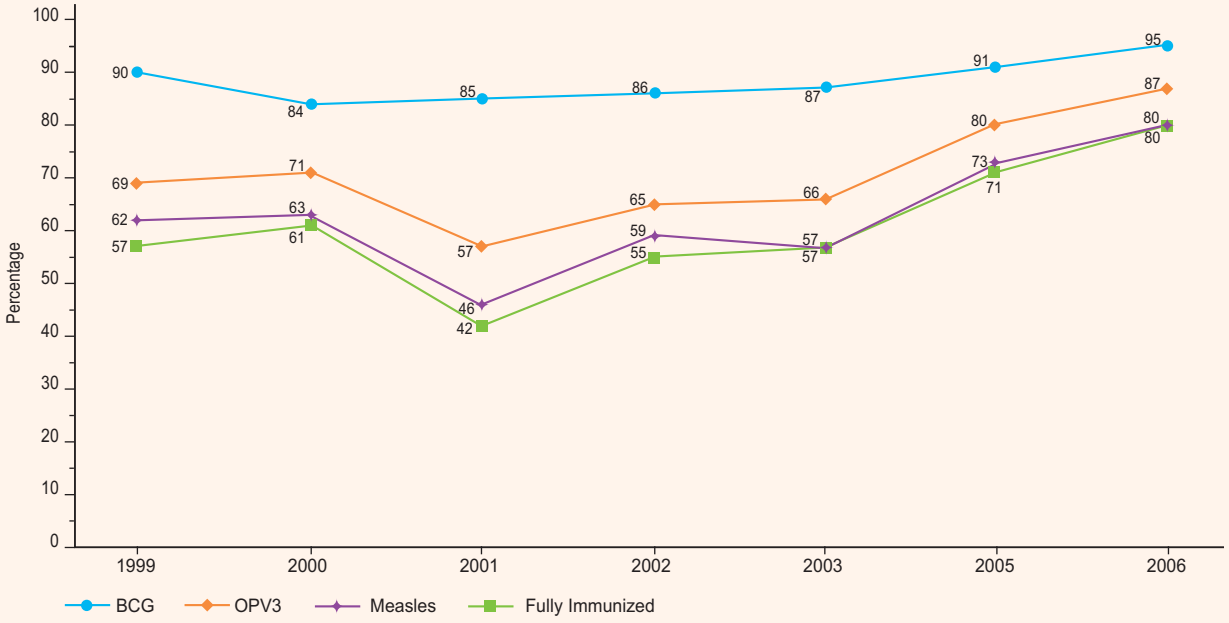
Annual Trend of Valid Coverage by Age 12 Months among 12-23 Months Old Children in Sylhet Division from 1999 to 2006 (Card+History)



* Before 1999, Sylhet division was a part of Chittagong division

Source: Coverage Evaluation Survey 1999-2003, 2005 and 2006

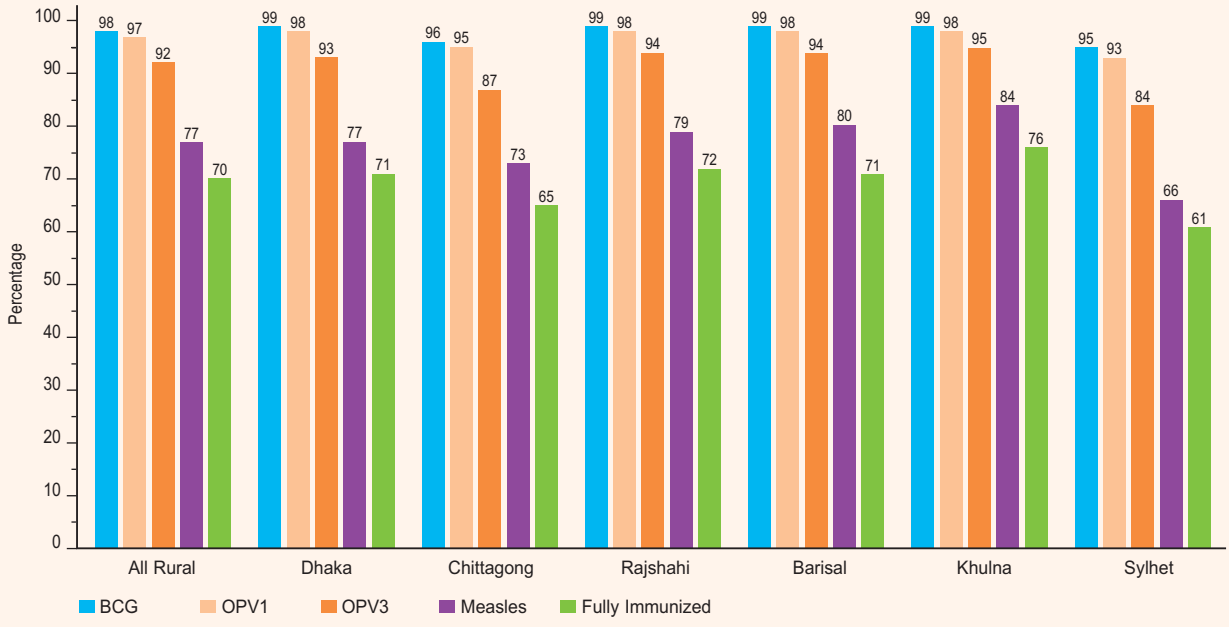
FIGURE A17
Annual Trend of Crude Coverage among 12-23 Months Old Children in Sylhet Division from 1999 to 2006 (Card+History)



* Before 1999, Sylhet division was a part of Chittagong division

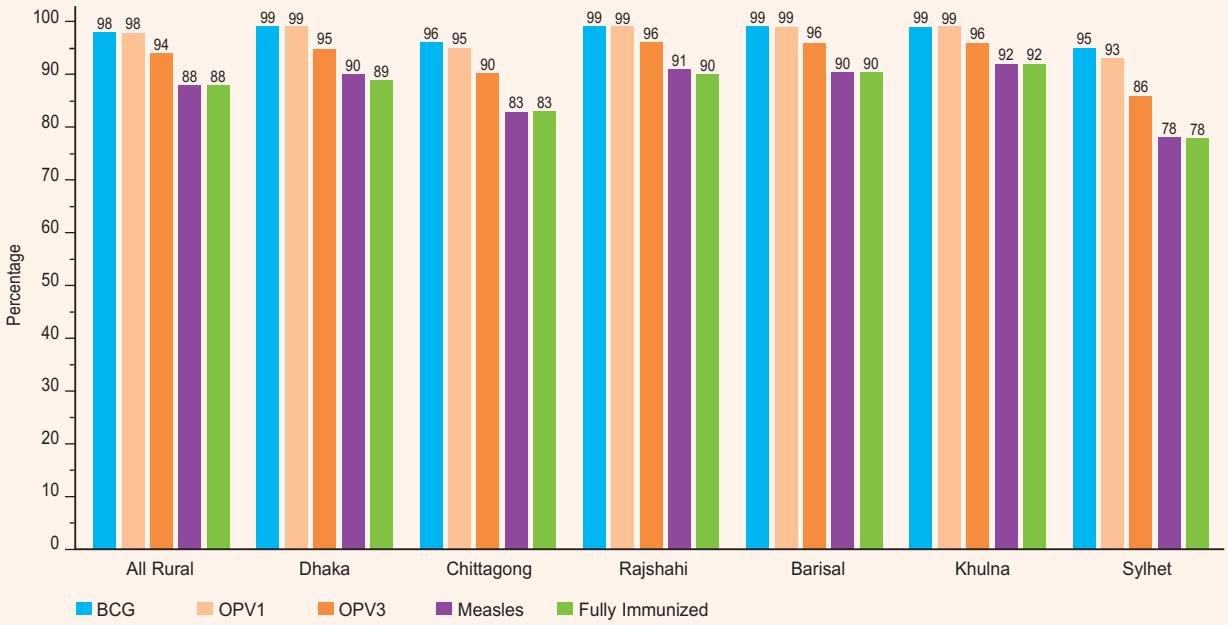
Source: Coverage Evaluation Survey 1999-2003, 2005 and 2006

FIGURE A18
Valid Coverage by Age 12 Months among 12-23 Months Old Children in Rural Areas by Division in 2006 (Card+History)



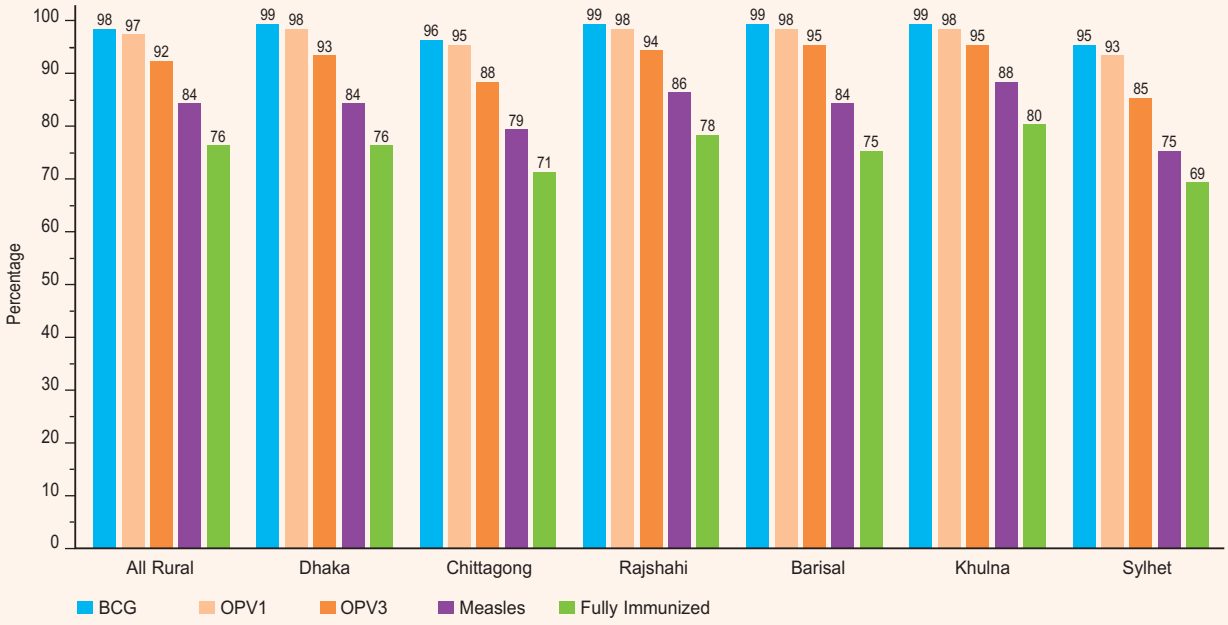
Source: CES 2006

FIGURE A19
Crude Coverage among 12-23 Months Old Children in Rural Areas by Division in 2006 (Card+History)



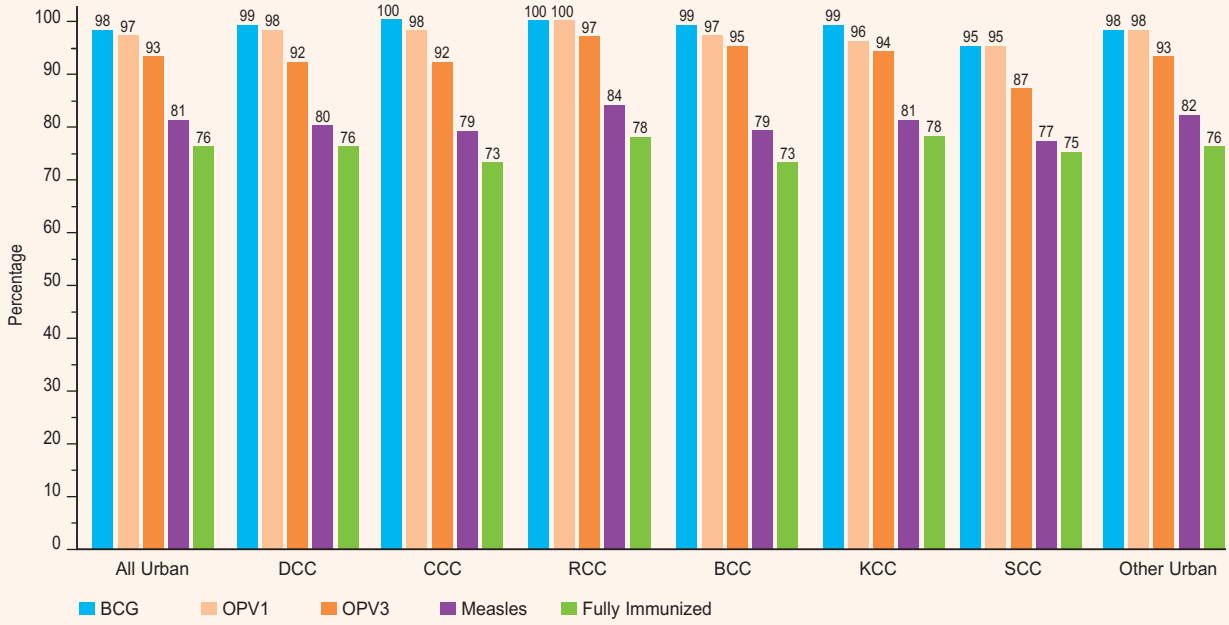
Source: CES 2006

FIGURE A20
Valid Coverage among 12-23 Months Old Children in Rural Areas by Division in 2006 (Card+History)



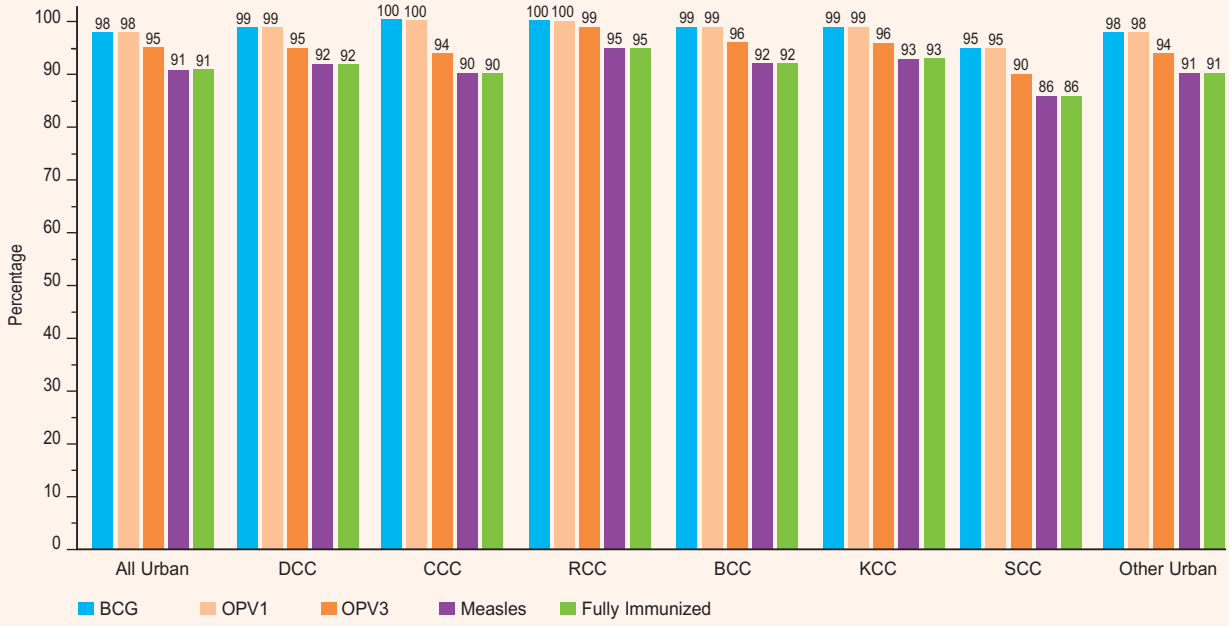
Source: CES 2006

FIGURE A21
Valid Coverage by Age 12 Months among 12-23 Months Old Children in Urban Areas by City Corporation/Municipalities in 2006 (Card+History)



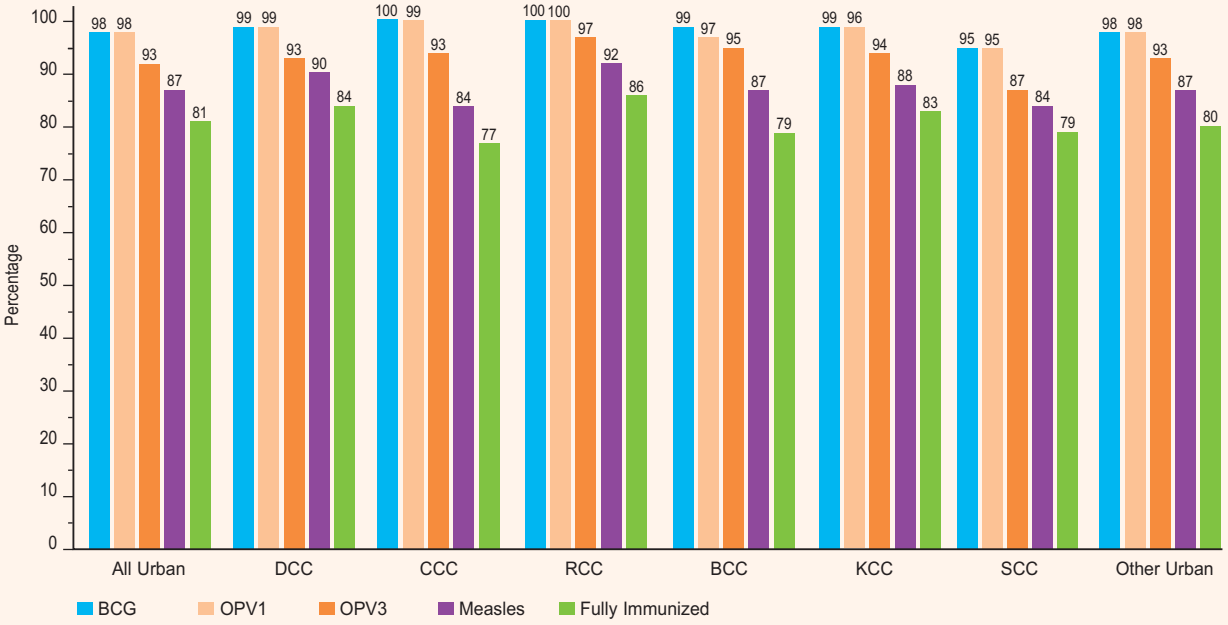
Source: CES 2006

FIGURE A22
Crude Coverage among 12-23 Months Old Children in Urban Areas by City Corporation/Municipalities in 2006 (Card+History)



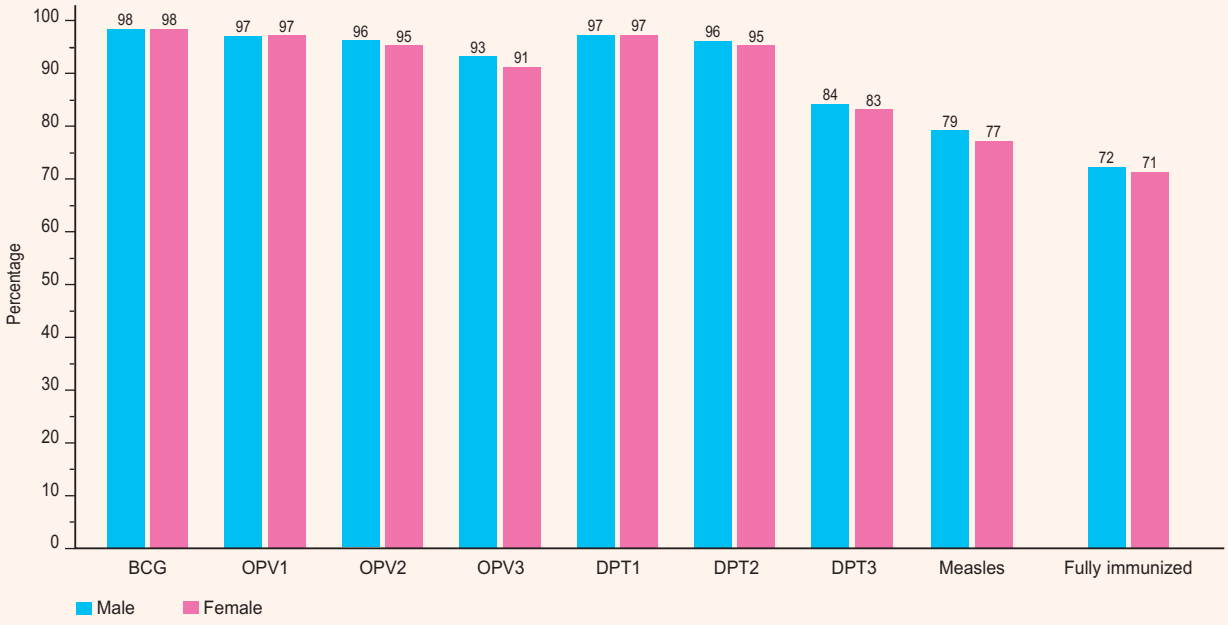
Source: CES 2006

FIGURE A23
Valid Coverage among 12-23 Months Old Children in Urban Areas by City Corporation/Municipalities in 2006 (Card+History)



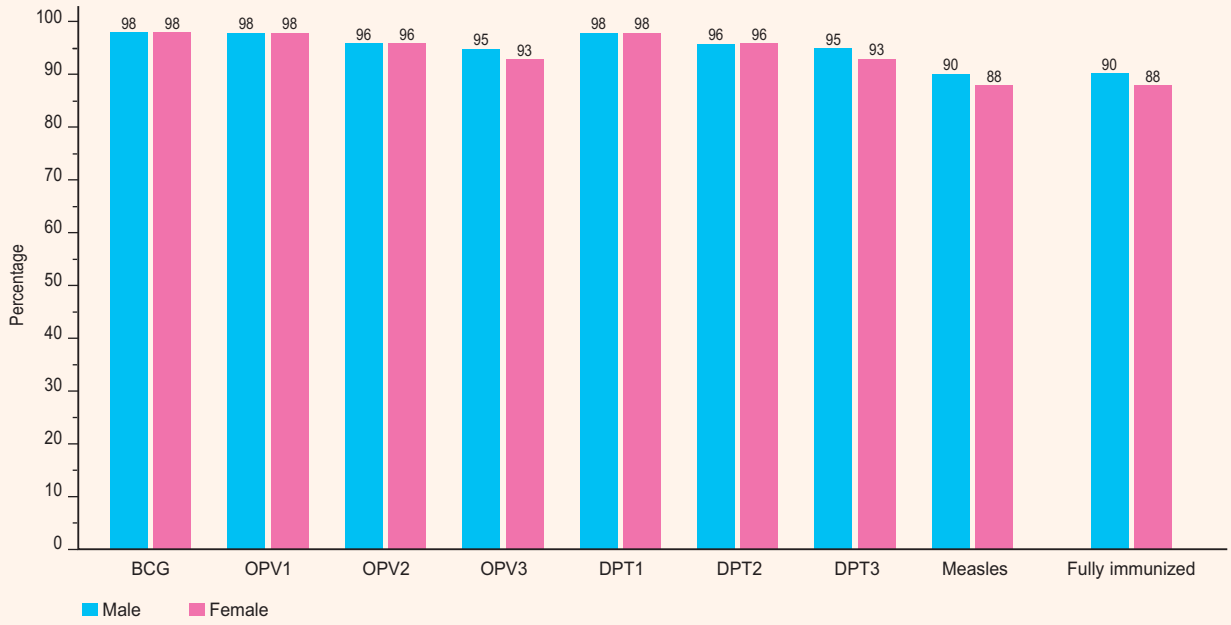
Source: CES 2006

FIGURE A24
National Valid Coverage by Age 12 Months among 12-23 Months Old Children by Sex in 2006 (Card+History)



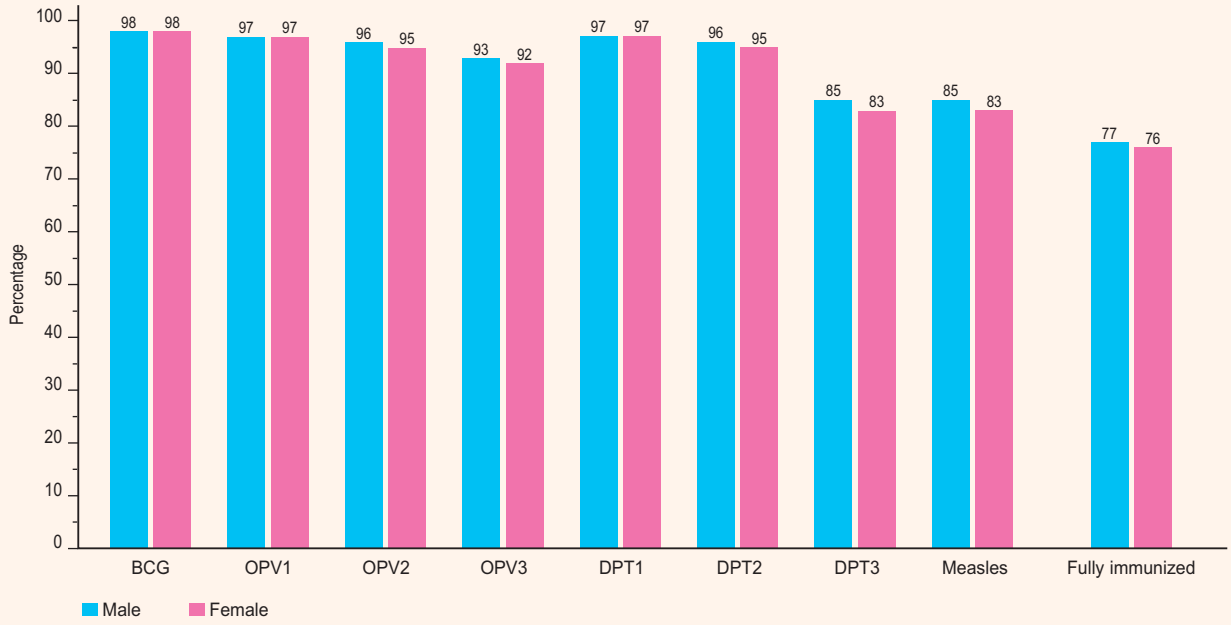
Source: CES 2006

FIGURE A25
National Crude Coverage among 12-23 Months Old Children by Sex in 2006 (Card+History)



Source: CES 2006

FIGURE A26
National Valid Coverage among 12-23 Months Old Children by Sex in 2006 (Card+History)



Source: CES 2006

2.6
COVERAGE RATES FROM CARD-ONLY

This section presents an analysis of vaccination coverage rates as computed from the data collected from the vaccination cards only.

2.6.1 LEVELS OF THE VALID COVERAGE

National valid coverage rates computed from card-only are displayed in Figure B1. Valid coverage rates computed from card-only were found to be consistently higher than those in card+history, thus revealing the fact that children were more likely to receive antigens in valid doses, if they had the vaccination card than that if they did not have it. The national valid coverage rate for BCG calculated from card-only (100 percent) was 2 percent higher than from card+history (98 percent). The difference was even higher in the case of other antigens: DPT1/OPV1, DPT2/OPV2, DPT3/OPV3 and measles vaccine.

Valid coverage rates from card-only as well as from card+history were more or less the same in the rural areas that of the national. However, valid coverage was higher in urban areas than in rural areas; valid coverage rate from card-only was 77 percent in the urban areas while it was 73 percent in the rural areas. For OPV3, the rate was the same being 96 percent in rural and 95 percent in urban areas; for measles vaccine 80 percent in the rural areas and 83 percent in the urban areas.

Differences in the valid coverage rates of card-only was 1 percentage points higher in the urban (77 percent card only and 76 percent card+ history) areas and 3 percentage points higher in the rural areas (73 percent- card only and 70 percent card+ history) than the coverage rate computed from card+history. Rural valid BCG coverage rate was 2 percentage points higher for card-only than for card+history while the corresponding difference for the urban valid coverage was found be 2 percentage point higher than the rural areas. Similarly, from card-only, this difference for the other antigens was also found to be slightly higher.

2.6.2 LEVELS OF CRUDE COVERAGE

National crude coverage rates computed from card-only are shown in Figure B2. Like the valid coverage rates, the crude coverage rates too appeared consistently higher for card-only than for card+history. It was, thus, seen that the children with cards had higher access to vaccination services, as compared to the children without it. For BCG, the crude coverage rate was higher for card-only (100 percent) than card+history (98 percent). This difference was even greater for the other antigens, and, therefore, for full immunization, thus upholding the great advantage of the vaccination card in having access to vaccination services.

As in the valid coverage rates from card-only, a greater likelihood of the urban than the rural children to have access to vaccination services was also evident from the card-only crude coverage rates. For DPT3/OPV3, the crude coverage rate from card-only was similar (97 percent) both in the urban and rural areas; for measles vaccine, 93 percent against 91 percent; thus, for full immunization, it was 93 percent in the urban areas against 91 percent in the rural areas. There were, however, no variations for BCG, DPT1/OPV1 and DPT2/OPV2, with the card-holding children in both the rural areas and the urban areas having universal or almost universal access to vaccination services for those antigens.

2.6.3 LEVELS OF THE RURAL COVERAGE BY DIVISION

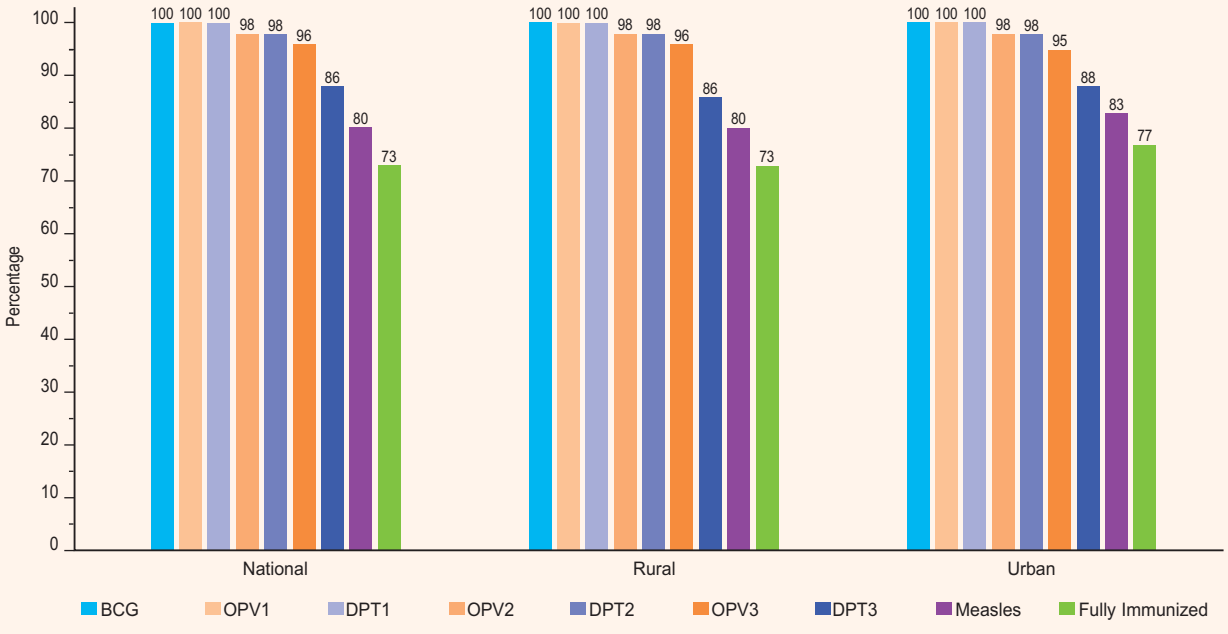
Divisional patterns of variations in the rural coverage of vaccination remained the same for card-only and for card+history. Both the valid and crude coverage rates for card-only as well as for card+history were the highest in Khulna division and the lowest in Sylhet division (Figures B4 and B5).

Valid coverage rate for full immunization was 1 to 8 percent higher for card-only than for card+history. Likewise, crude coverage rate for full immunization was higher for card-only than for card+history. Evidences of similar patterns of differences appeared from the study of comparisons in every other division.

2.6.4 LEVELS OF THE URBAN COVERAGE BY CITY CORPORATION/ MUNICIPALITIES

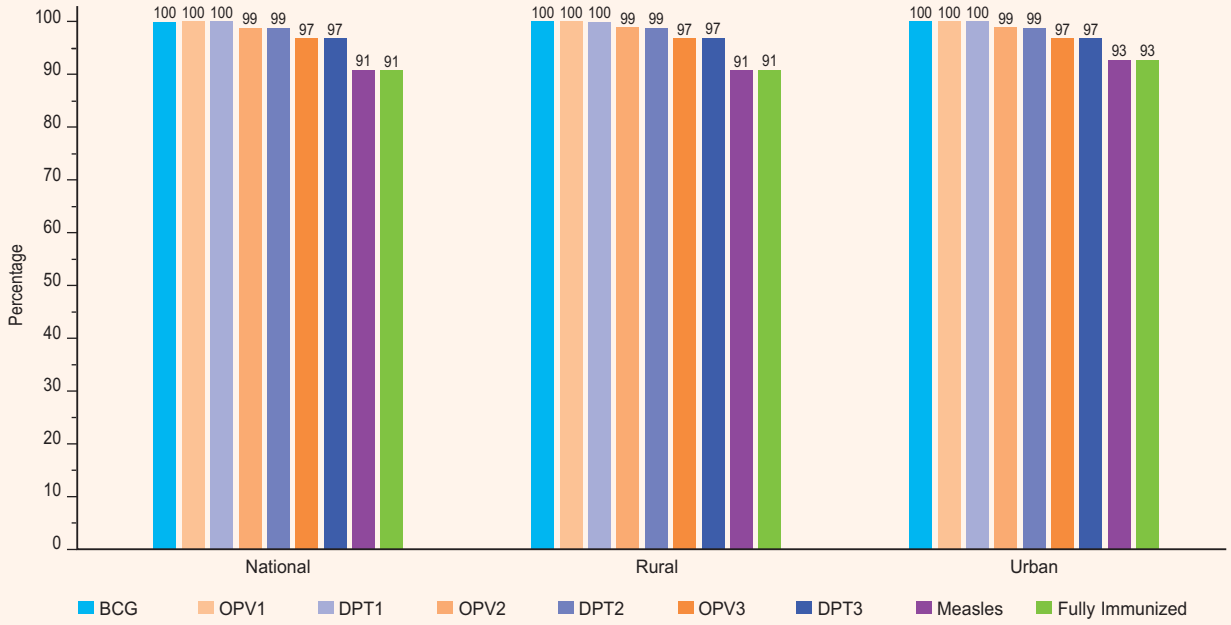
In urban areas, valid coverage rates for full immunization for card-only were found to be the highest in DCC (81 percent), followed by RCC and SCC (79 percent), KCC (78 percent), CCC (75 percent), SCC (79 percent), and other urban areas (77 percent). BCC had the lowest valid coverage rate (74 percent) (Figures B7). However, the crude coverage rate for full immunization for card-only was found to be the highest in DCC and RCC (96 percent) and the lowest in SCC (90 percent), which was being followed by BCC (94 percent), KCC (93 percent), and CCC (92 percent) (Figures B8).

FIGURE B1
Valid Coverage by Age 12 Months among 12-23 Months Old Children by National, Rural and Urban Areas in 2006 (Card-Only)



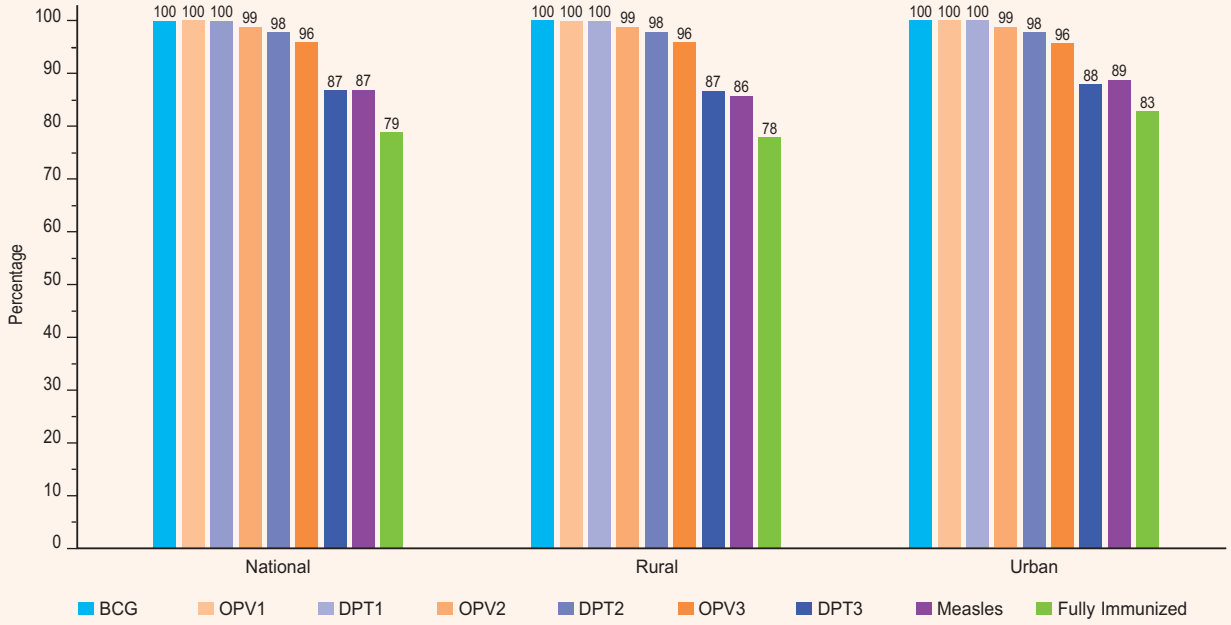
Source: CES 2006

FIGURE B2
Crude Coverage among 12-23 Months Old Children by National, Rural and Urban Areas in 2006 (Card-Only)



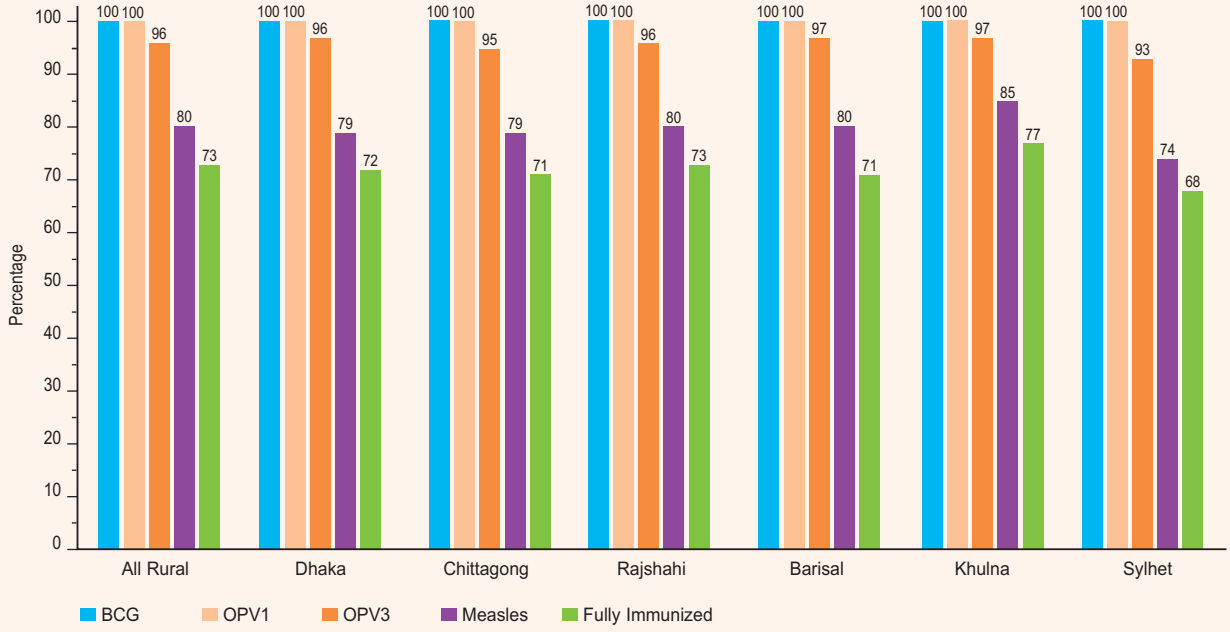
Source: CES 2006

FIGURE B3
Valid Coverage among 12-23 Months Old Children by National, Rural and Urban Areas in 2006 (Card-Only)



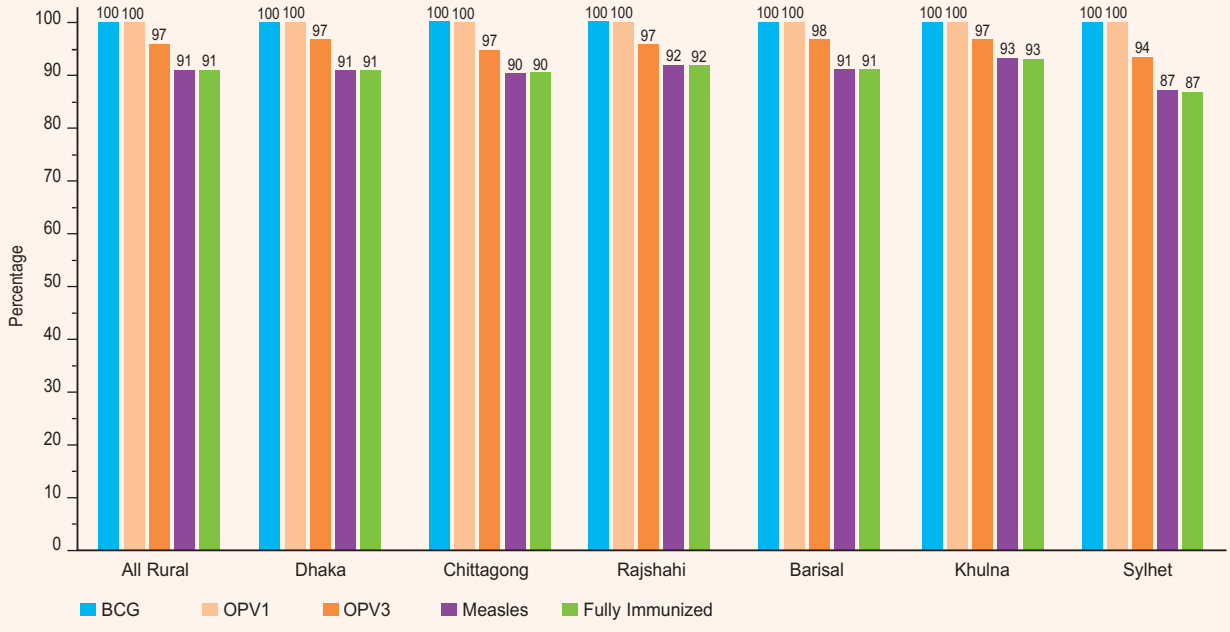
Source: CES 2006

FIGURE B4
Valid Coverage by Age 12 Months among 12-23 Months Old Children in Rural Areas by Division in 2006



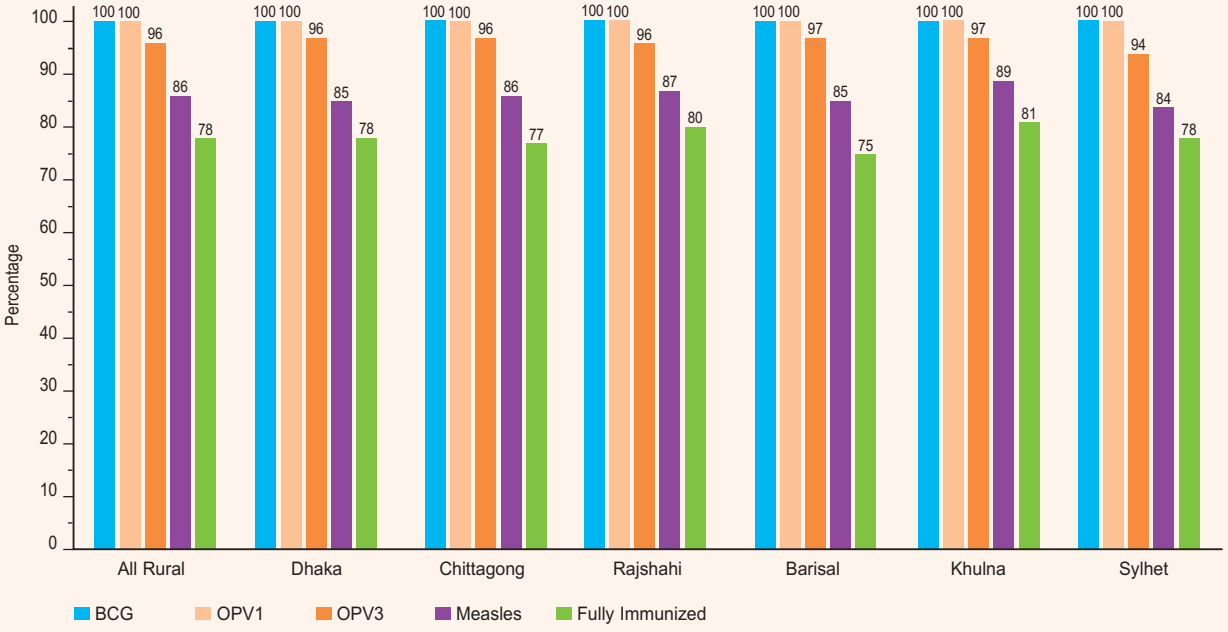
Source: CES 2006

FIGURE B5
Crude Coverage among 12-23 Months Old Children in Rural Areas by Division in 2006 (Card-Only)



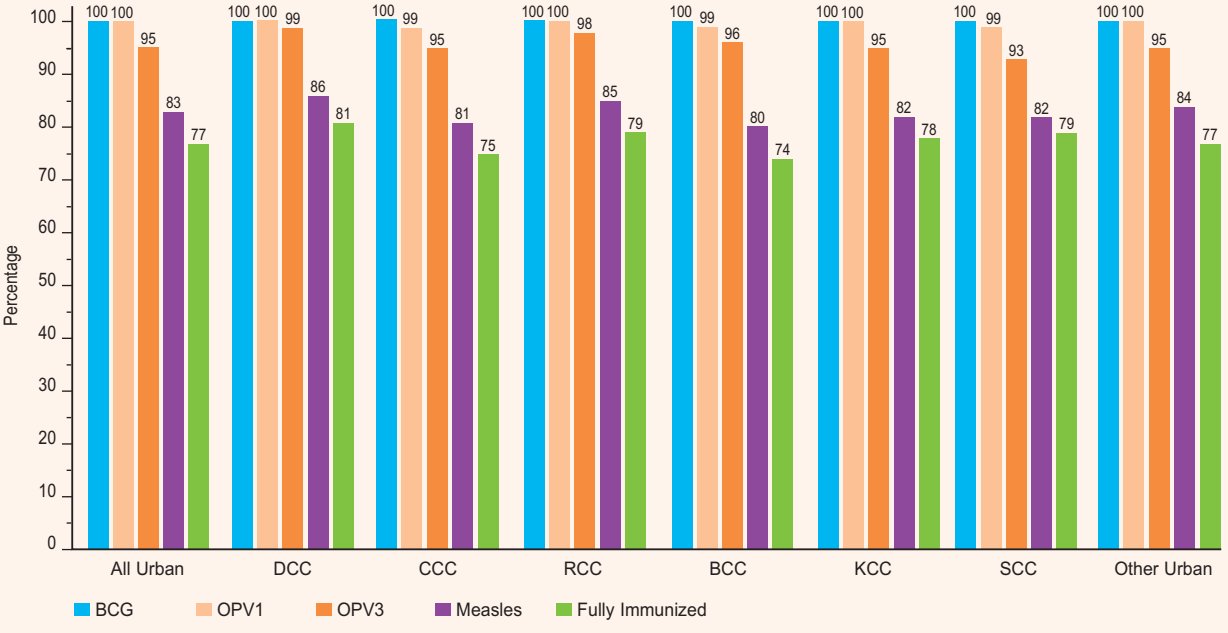
Source: CES 2006

FIGURE B6
Valid Coverage among 12-23 Months Old Children in Rural Areas by Division in 2006 (Card-Only)



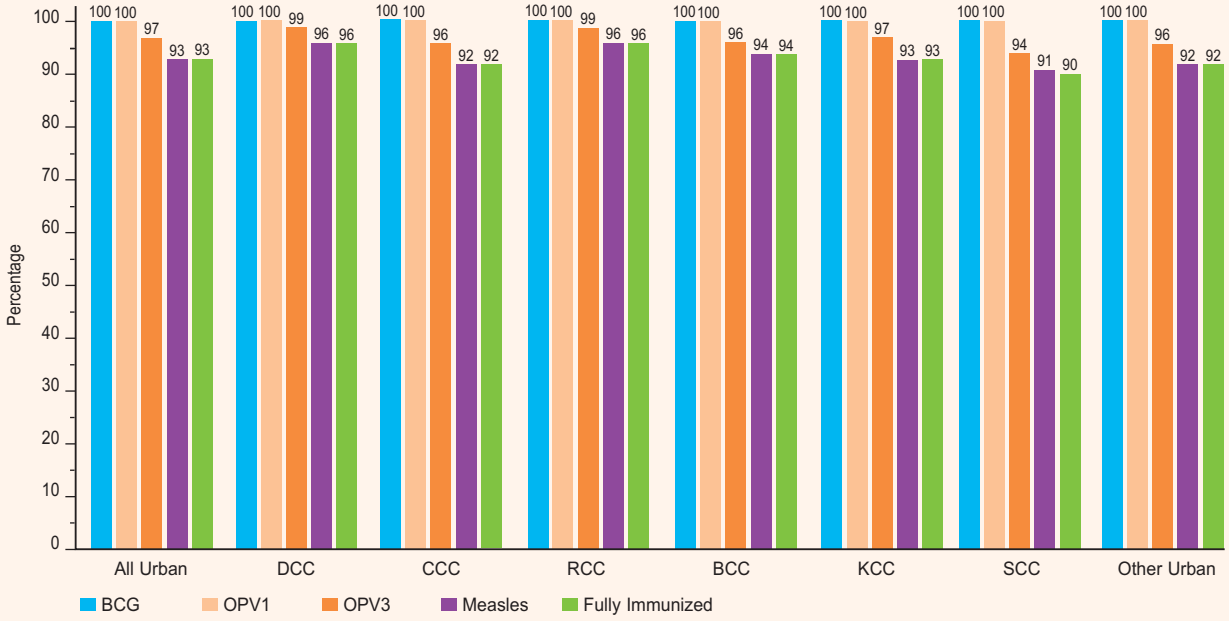
Source: CES 2006

FIGURE B7
Valid Coverage by Age 12 months among 12-23 Months Old Children in Urban Areas by City Corporation/Municipalities in 2006 (Card-Only)



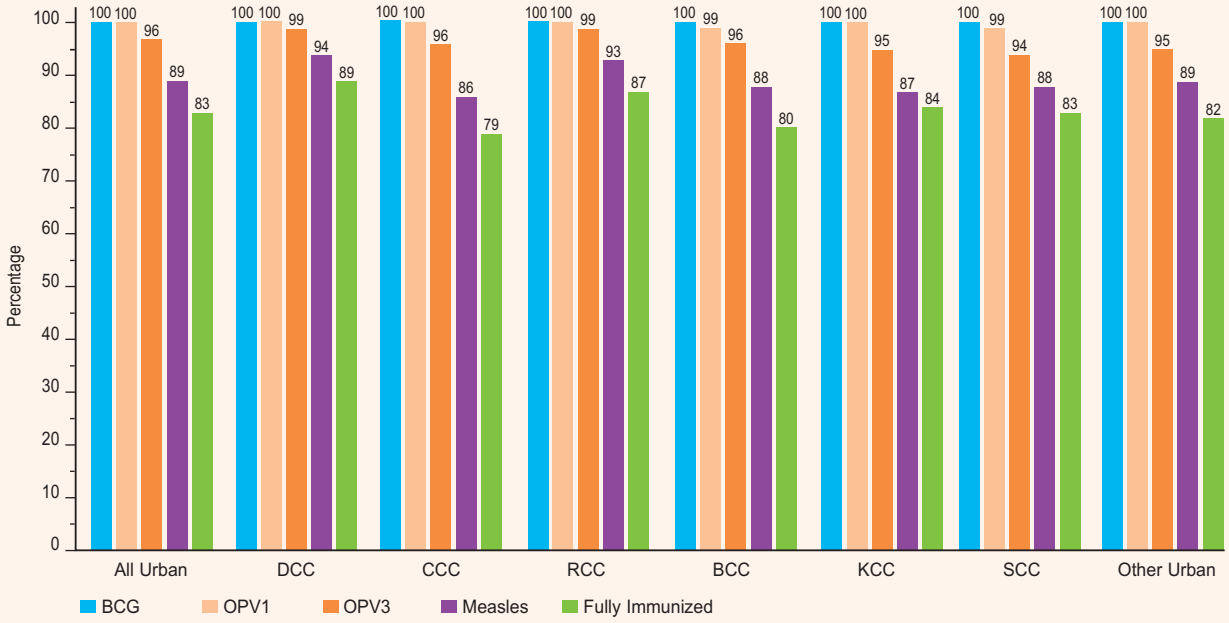
Source: CES 2006

FIGURE B8
Crude Coverage among 12-23 Months Old Children in Urban Areas by City Corporations/Municipalities in 2006 (Card-Only)



Source: CES 2006

FIGURE B9
Valid Coverage among 12-23 Months Old Children in Urban Areas by City Corporation/Municipalities in 2006 (Card-Only)



Source: CES 2006

2.7
PROGRAM QUALITY

The quality of the EPI services was assessed in terms of vaccination card retention rates, incidence of invalid doses, vaccination dropout rates, and occurrences of post-vaccination abscesses.

2.7.1 RETENTION OF VACCINATION CARDS

Among the children provided with the vaccination card-only, 67 percent of them were found to be retaining it throughout the country nationally, 68 percent in the rural areas, and 66 percent in the urban areas (Figure C1). Thus, during the time of the survey, vaccination card was available with only 65 of the surveyed children nationally; 65 percent in the rural areas and a slightly lower rate - 64 percent - in the urban areas.

Availability of cards has increased by 10 percentage points higher than that from 2002 to 2006 (Figure C2). It was only 55 percent in 2002 CES and was increased up to 65 percent. However, the last two surveys show there has been increasing trend in the card retention rate. CES 2003 shows that it increased from 57 percent to 63 percent in 2005. Between 2005 CES and 2006 CES, the increase was two percentage points (i.e. it increased from 63 % to 65%). Necessary efforts should be made to instruct mothers/ caregivers about the importance of the vaccination card and about how the card should be preserved. There was a very high proportion of parents who lost their children's vaccination cards; it was for about one- third of the children nationally, with a little variation between the rural areas and the urban areas.

In the rural areas by division, the card retention rate was the highest in Sylhet (76 percent), which was being followed by Rajshahi (72 percent), and Khulna divisions (71 percent). Card retention rate was the lowest in Dhaka division (60 percent) (Figure C3).

In the urban areas by City Corporations/all Municipalities, card retention rate was the highest in RCC (78 percent), which was being followed by KCC (70 percent), SCC (67 percent), CCC (62 percent), and BCC (60 percent) and it was the lowest in DCC (50 percent) (Figure C4).

2.7.2 INCIDENCE OF INVALID DOSES

An invalid dose of an antigen is a dose administered before the recommended age and/or interval. A DPT1 dose administered before the age of six weeks, or a DPT2 dose during the interval of four weeks after DPT1 has been administered, and a measles dose administered before the age of 270 days are invalid.

Nationally, 6.7 percent of the total DPT1 doses and 5.6 percent of the total measles doses administered to the children surveyed were found invalid (Figure C5). There were a little variations in the proportions of invalid DPT1 and measles doses administered between the rural areas and urban areas (DPT1- 6.7 percent in the rural and 6.8 percent in the urban areas ;measles 5.8 percent in the rural areas as against 4.7 percent in the urban areas). Overall, 6.7 percent DPT1 dose was found to be invalid nationally, with a little variation between the rural areas (6.7 percent) and the urban areas (6.8 percent) (Figure C6).

In the rural areas by division, the highest rate of invalid DPT1 dose was in Barisal division (7.4 percent) and the lowest in Sylhet division (5.7 percent) while for invalid measles dose the highest rate was in Dhaka division (7 percent) and the lowest in Sylhet division (4.7 percent) (Figure C7).

In the urban areas under any City Corporations/all Municipalities, 10.4 percent of the DPT1 doses administered were found to be invalid in CCC, as compared to only 3.8 percent in SCC. The lowest rate of invalid DPT1 dose was in SCC - it was only 3.8 percent. For invalid measles dose, the highest rate was 6.7 percent in CCC and the lowest 2.6 percent in DCC (Figure C9). In general, the rate of invalid any DPT doses was high (30.5 percent) in CCC, while quite low in SCC (14.3 percent). (Figure C10).

2.7.3 VACCINATION DROPOUT RATES

Vaccination dropout rates are defined in the following manner: dropout rate for DPT1-DPT3 gives the proportion of the children receiving DPT1 who fail to receive DPT3; thus, the dropout rate for DPT1-Measles gives the proportion of the children receiving DPT1 who fail to receive the measles vaccine.

In CES 2006, the national dropout rate for DPT1-DPT3 was 4.1 percent, and for DPT1-measles, it was 9.4 percent (Figure C11). These rates were higher in the rural areas than those in the urban areas: for DPT1-DPT3 it was 4.1 percent against 3.7 percent, and for DPT1-Measles 9.8 percent against 7.3 percent.

Over the time, national dropout rates declined substantially. It happened particularly after 2002. The dropout rate for DPT1-DPT3 declined from 21.0 percent in 2003 to 4.1 percent in 2006 and for DPT1-Measles from 13.0 percent in 2003 to 9.4 percent in 2006. A similar declining rate can be observed in the rural and urban divisions and City Corporations. This may be attributed to the act of better monitoring and supervision by the EPI staff at all levels (Figure C12).

In the rural areas by division, dropout rates were the highest in Sylhet division- 8.4 percent for DPT1--DPT3 and 16.3 percent for DPT1-Measles, and the lowest rates were in Khulna division- 3.0 percent for DPT1-DPT3 and 6.9 percent for DPT1-Measles. Intermediate rates were found 3.1 percent in Barisal division and 5.9 percent in Chittagong division for DPT1-DPT3; and, for DPT1- Measles it was 8.8 percent in Barisal and 12.9 percent in Chittagong divisions (Figure C13).

In urban areas under City Corporations/all Municipalities, the dropout rate for DPT1-DPT3 was the highest in SCC (6.0 percent), which was being followed by CCC (5.3 percent), DCC (3.9 percent), BCC (3.4 percent), and KCC(2.9 percent) while that for DPT1-Measles the highest was in CCC and SCC (10.0 percent), which were being followed by DCC (6.8 percent), BCC (6.7 percent) and KCC (6.3 percent) (Figure C14).

Decline in dropout rates between CES 2005 and CES 2006 was noted in almost every division. In Dhaka division, the dropout rate for DPT1-DPT3 went down from 10.7 percent in 2005 to 3.6 percent in 2006; in Chittagong division from 8.0 percent to 5.9 percent; in Rajshahi division from 7.1 percent to 3.4 percent; in Khulna division from 5.3 percent to 3.0 percent; and, in Barisal division from 7.6 percent to 3.0 percent. Likewise, for DPT1-Measles, Dhaka division experienced a decrease in the dropout rate starting from 18.3 percent in 2002 to 9.0 percent in 2006. In Chittagong division it was from 14.6 percent to 12.6 percent; in Rajshahi division from 12.2 percent to 8.4 percent; in Sylhet 19.5 percent to 14.9 percent; in Khulna division from 10.2 percent to 6.8 percent; and, in Barisal division from 12.9 percent to 8.3 percent. (Figures C15 -C20).

2.7.4 INCIDENCE OF POST-VACCINATION ABSCESSES

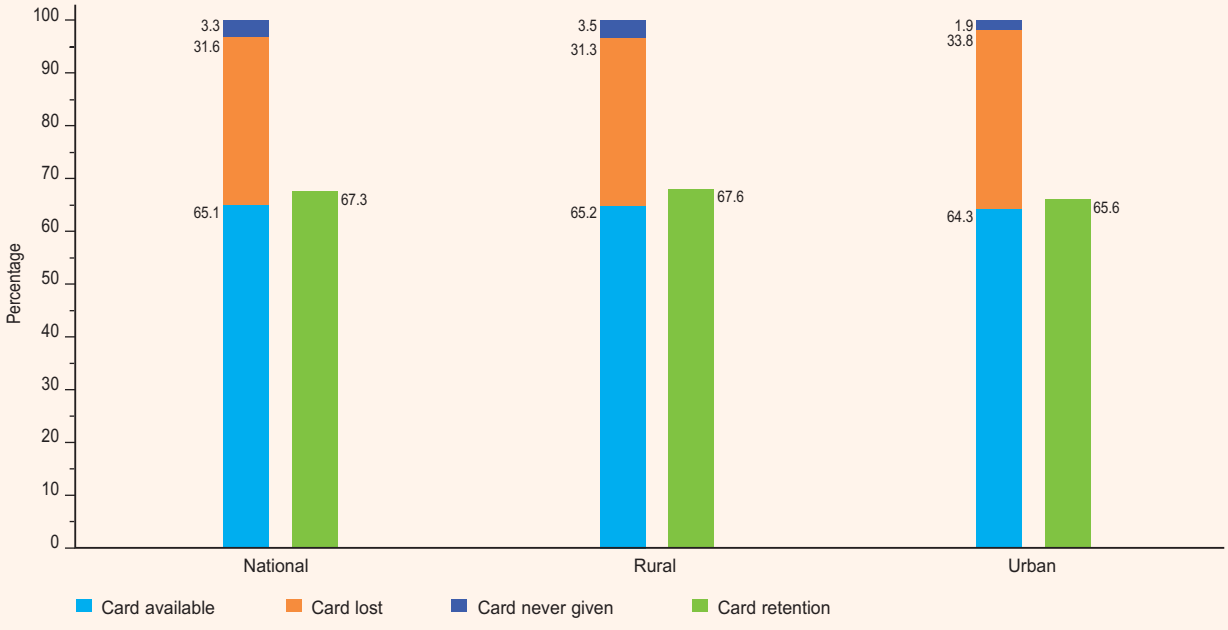
Incidence of abscesses following DPT or measles vaccination was calculated in order to assess the safety of injections for childhood vaccination. This rate was computed as the proportion of the recipients of

DPT/Measles vaccine, who had an abscess after receiving any of these antigens. Nationally, 7.7 percent of the children who received DPT/Measles vaccine were reported to have had an abscess after receiving a DPT dose or the measles vaccine (Figure C21). Occurrences of abscesses following DPT or measles vaccination was more prevalent among the rural (8.1 percent) than among the urban children (5.3 percent).

In the rural areas by division, Sylhet had the highest incidence of abscesses. It was 34.5 percent, which was being followed by Chittagong (11.7 percent), Rajshahi (8.2 percent), and Barisal (7.4 percent) divisions. Khulna division had the lowest abscesses (1.9 percent)) (Figure C22).

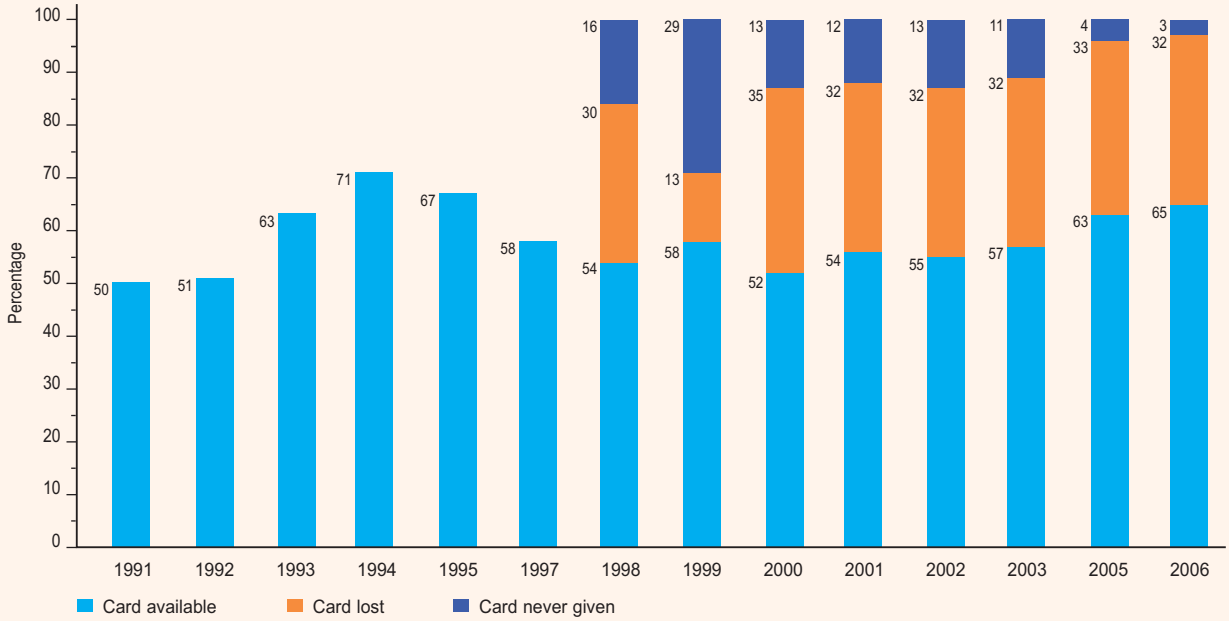
In the urban areas by City Corporations/all Municipalities, incidence of abscesses was unusually high- 14.5 percent in SCC, 3.4 percent in Barisal, and 1.0 percent in RCC. However, incidence of abscess was not found to be reported in KCC (Figure C23).

FIGURE C1
Vaccination Card Status among 12-23 Months Old Children by National, Rural and Urban Areas in 2006



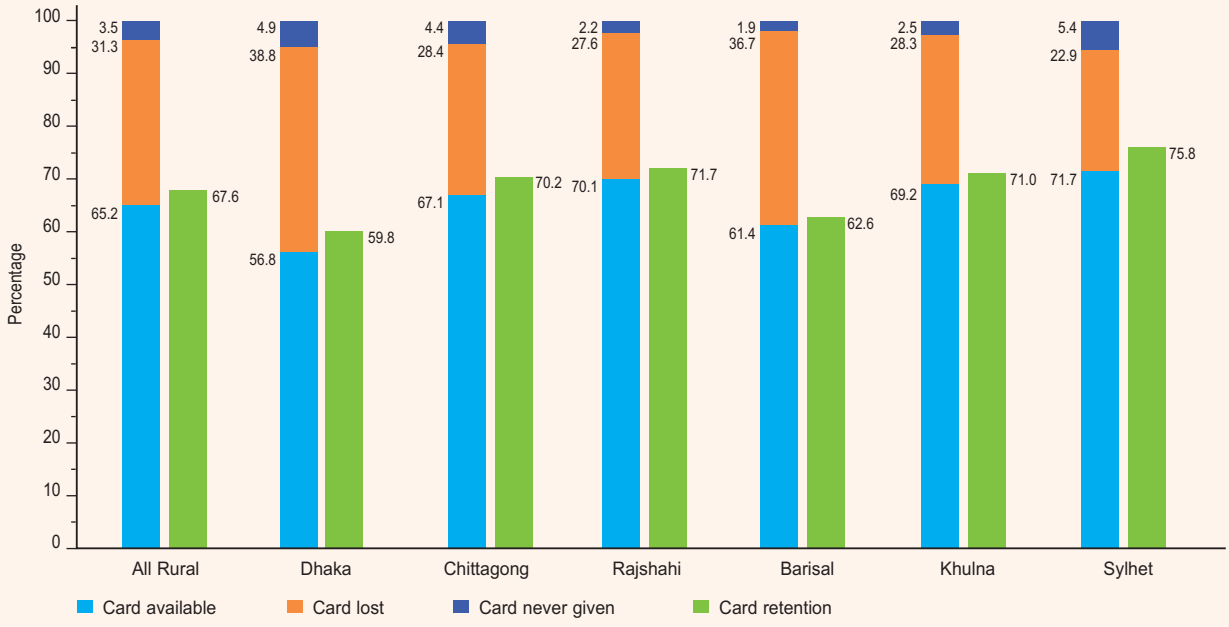
Source: CES 2006

FIGURE C2
Vaccination Card Status among 12-23 Months Old Children at National Level from 1991 to 2006



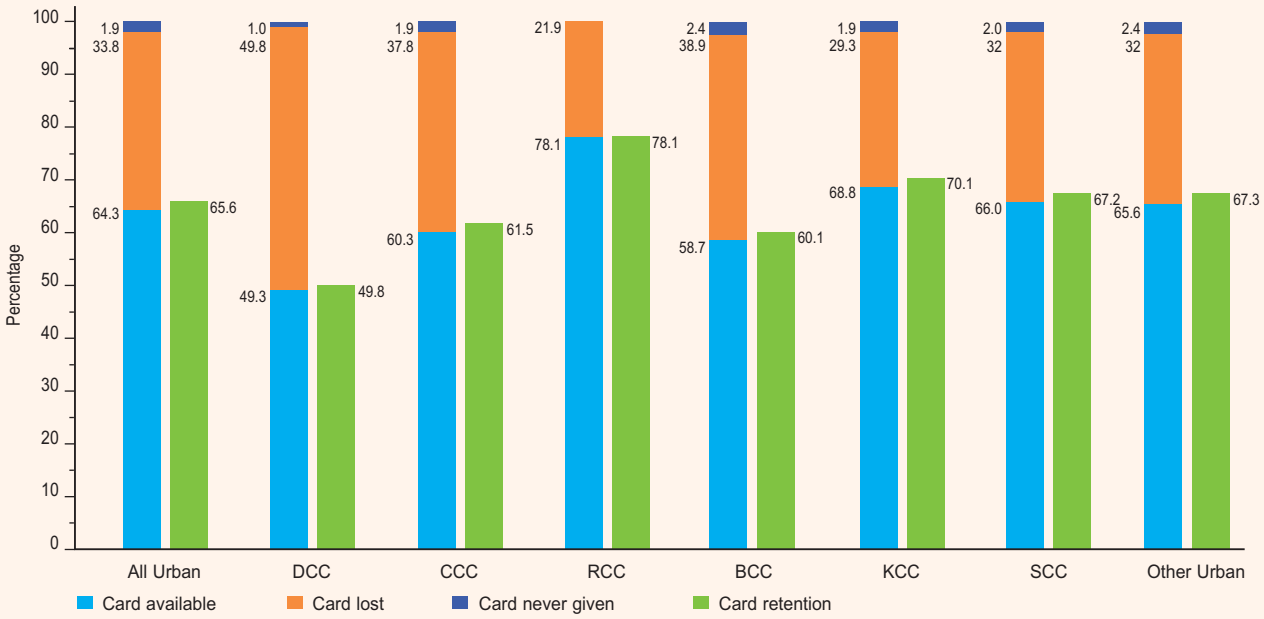
Source: Coverage Evaluation Surveys (CESs) for 1991-1995 and 1997-2000, 2001, 2002, 2003, 2005 & 2006

FIGURE C3
Vaccination Card Status among 12-23 Months Old Children In Rural Areas by Division in 2006



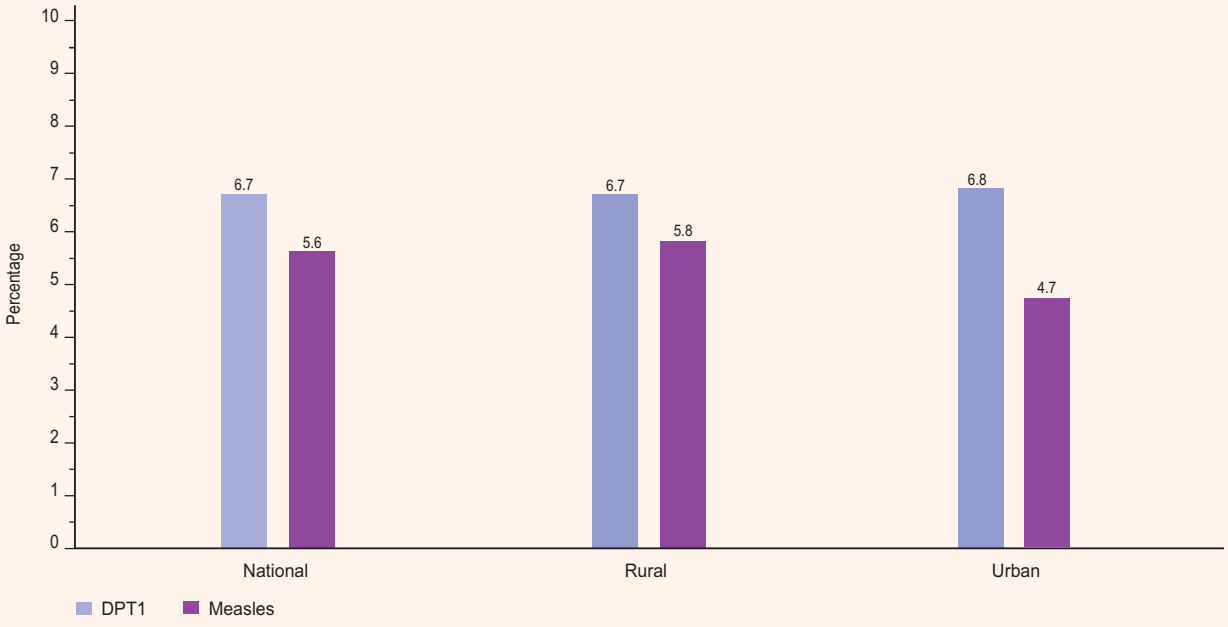
Source: CES 2006

FIGURE C4
Vaccination Card Status among 12-23 Months Old Children In Urban Areas by City Corporation/Municipalities in 2006



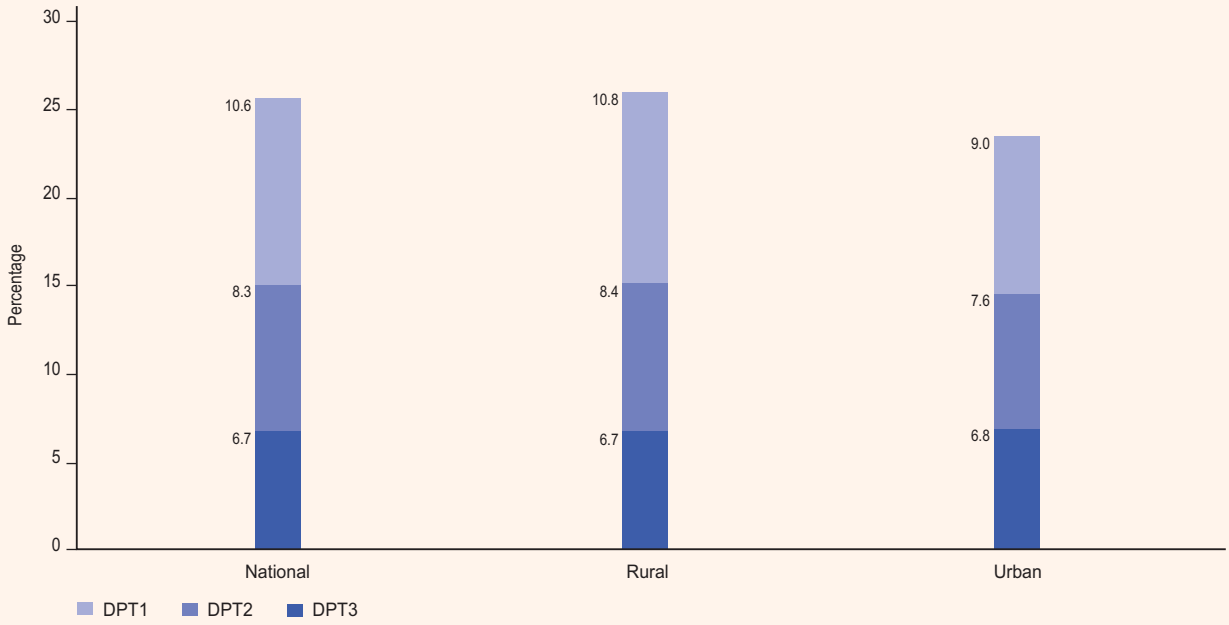
Source: CES 2006

FIGURE C5
Incidence of Invalid DPT1 and Measles Doses by Age 12 Months among 12-23 Months Old Children by National, Rural and Urban Areas in 2006 (Card-Only)



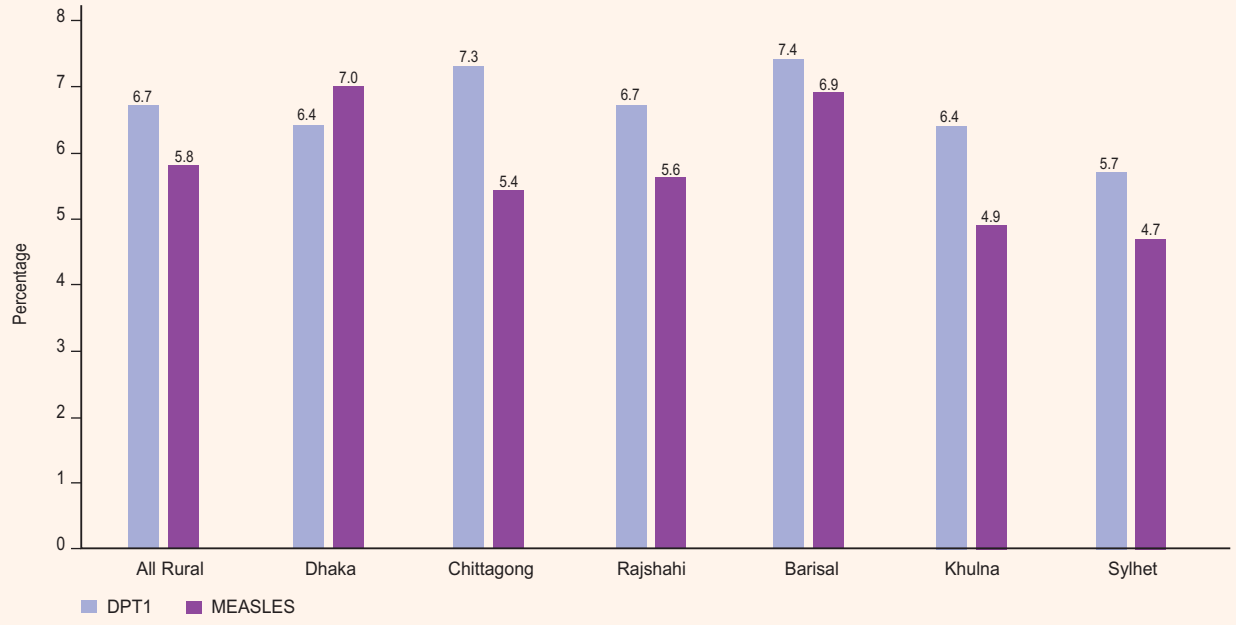
Source: CES 2006

FIGURE C6
Incidence of Invalid DPT1, DPT2 and DPT3 Doses by Age 12 Months among 12-23 Months Old Children by National, Rural and Urban Areas in 2006 (Card-Only)



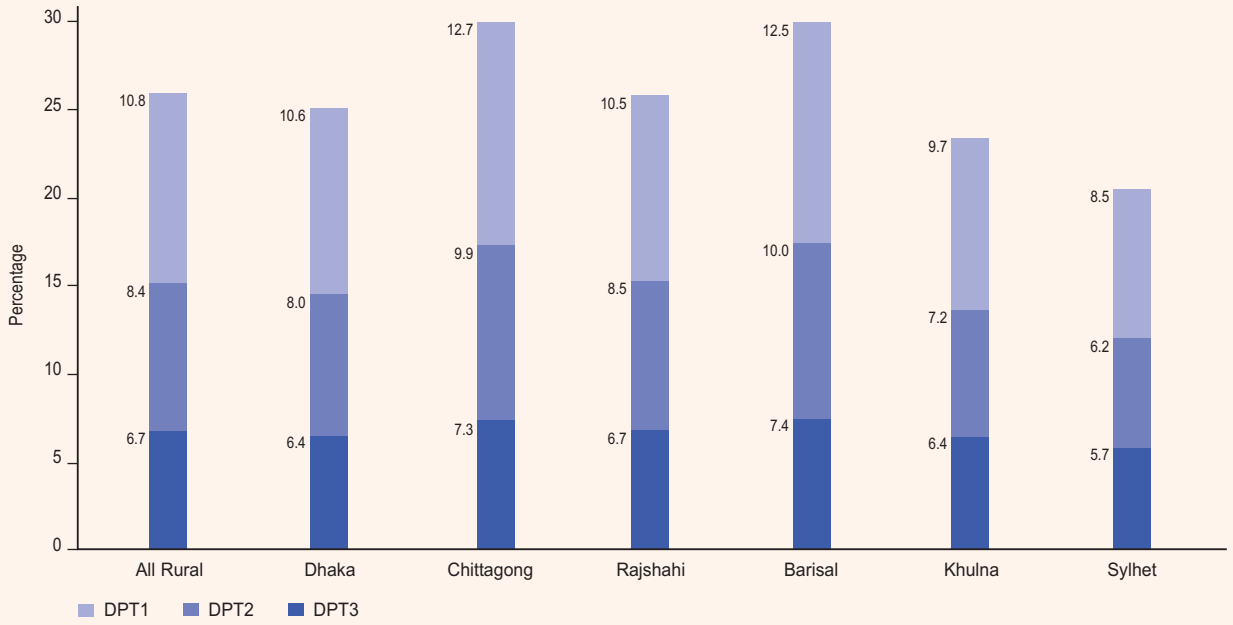
Source: CES 2006

FIGURE C7
Incidence of Invalid DPT1 and Measles Doses by Age 12 Months among 12-23 Months Old Children in Rural Areas by Division in 2006 (Card-Only)



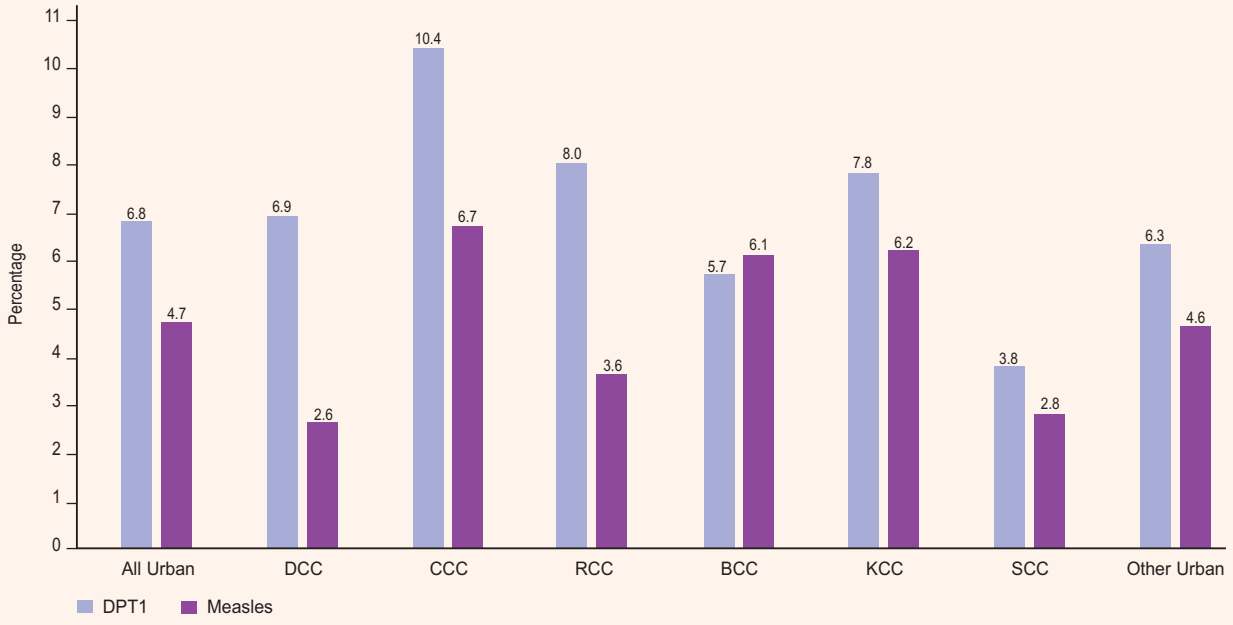
Source: CES 2006

FIGURE C8
Incidence of Invalid DPT1, DPT2 and DPT3 Doses by Age 12 Months among 12-23 Months Old Children in Rural Areas by Division in 2006 (Card-Only)



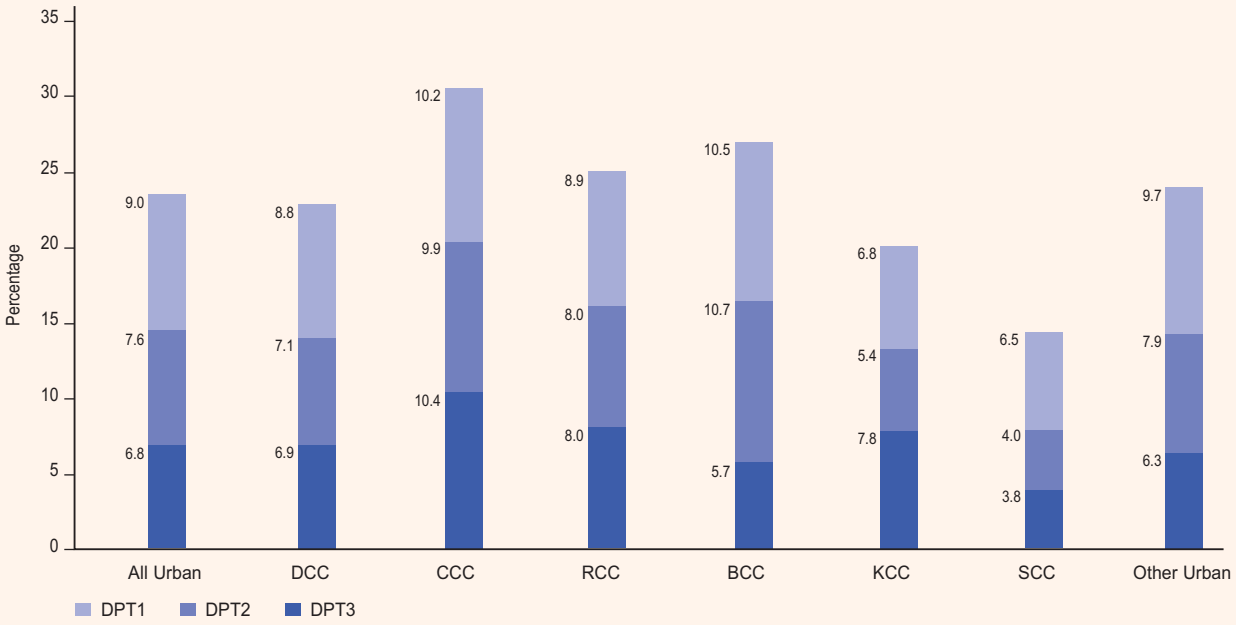
Source: CES 2006

FIGURE C9
Incidence of Invalid DPT1 and Measles Doses by Age 12 Months among 12-23 Months Old Children in Urban Areas by City Corporation/Municipalities in 2006 (Card-Only)



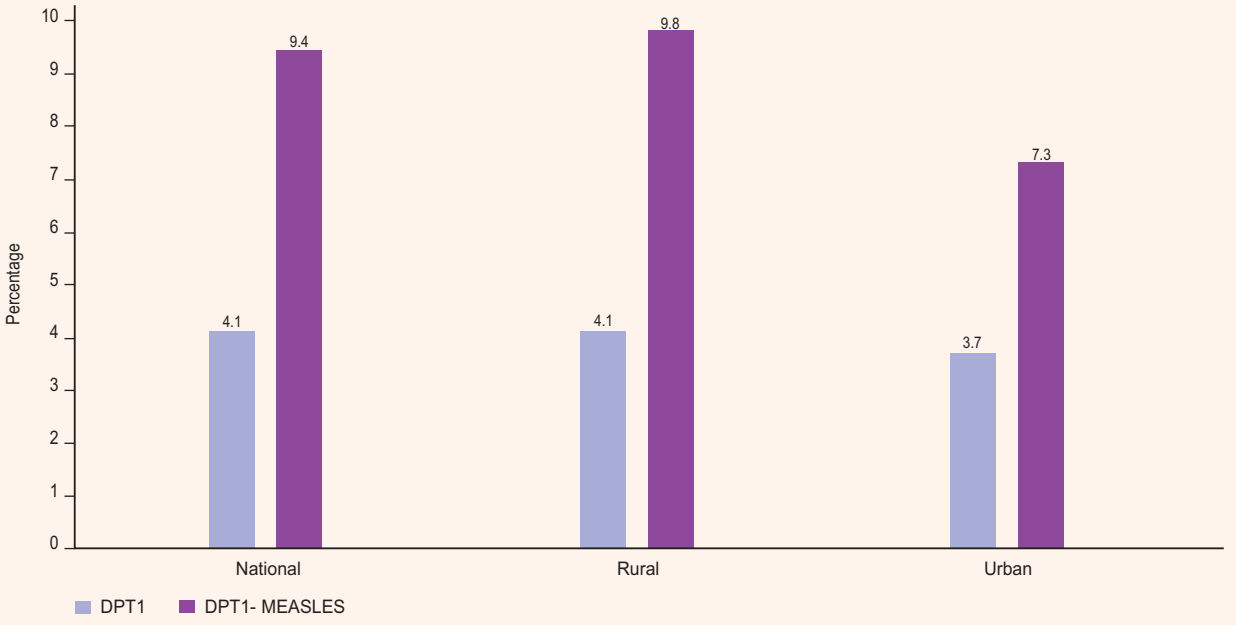
Source: CES 2006

FIGURE C10
Incidence of Invalid DPT1, DPT2 and DPT3 Doses by Age 12 Months among 12-23 Months Old Children in Urban Areas by City Corporation/Municipalities in 2006 (Card-Only)



Source: CES 2006

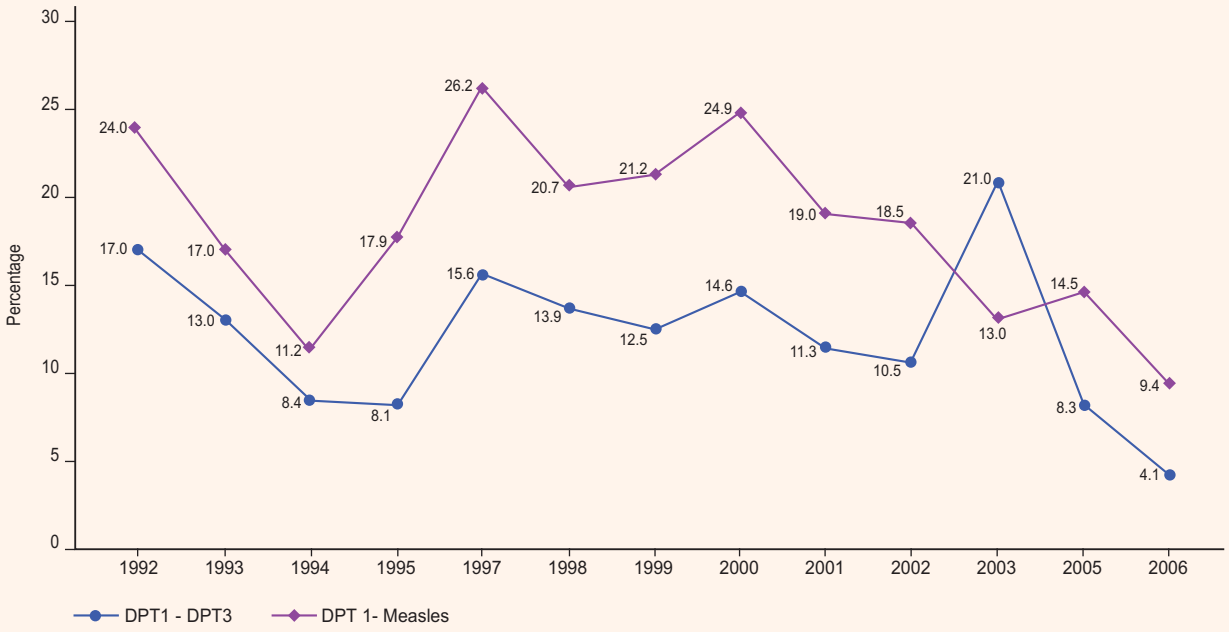
FIGURE C11
Vaccination Dropout Rates for DPT1-DPT3 and DPT1-Measles among 12-23 Months Old Children in Rural and Urban Areas in 2006



Source: CES 2006

FIGURE C12

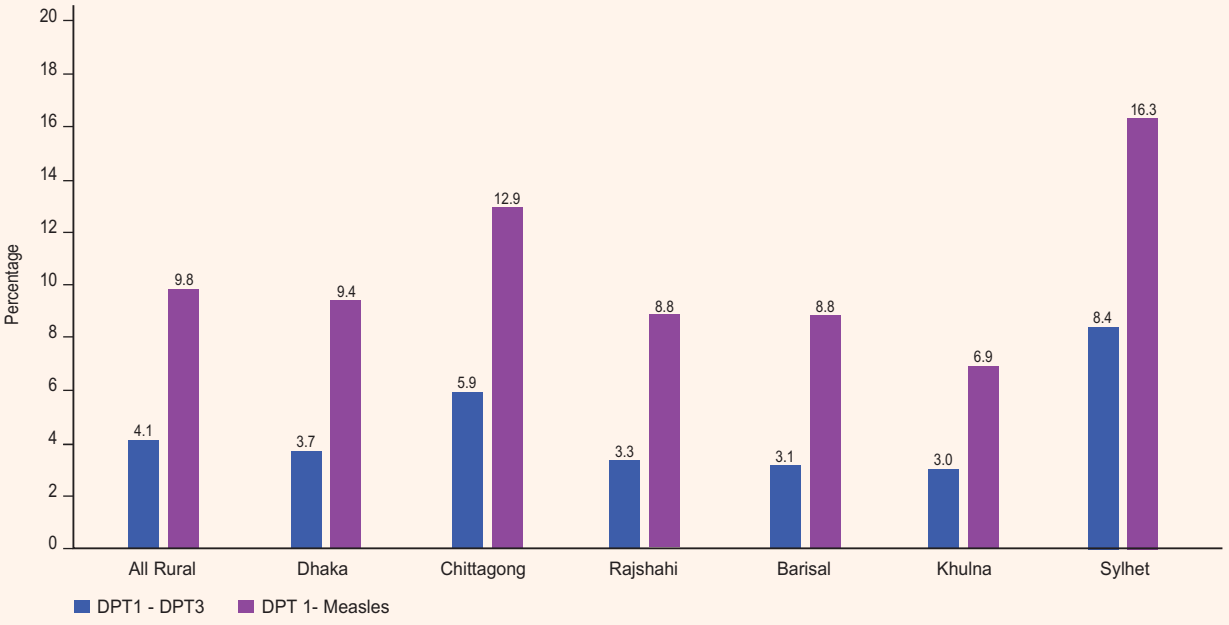
Annual Trend of National Vaccination Dropout Rates for DPT1-DPT3 and DPT1-Measles among 12-23 Months Old Children From 1992 to 2006



Source: Coverage Evaluation Survey 1992-1995 and 1997-2002, 2003, 2005, 2006

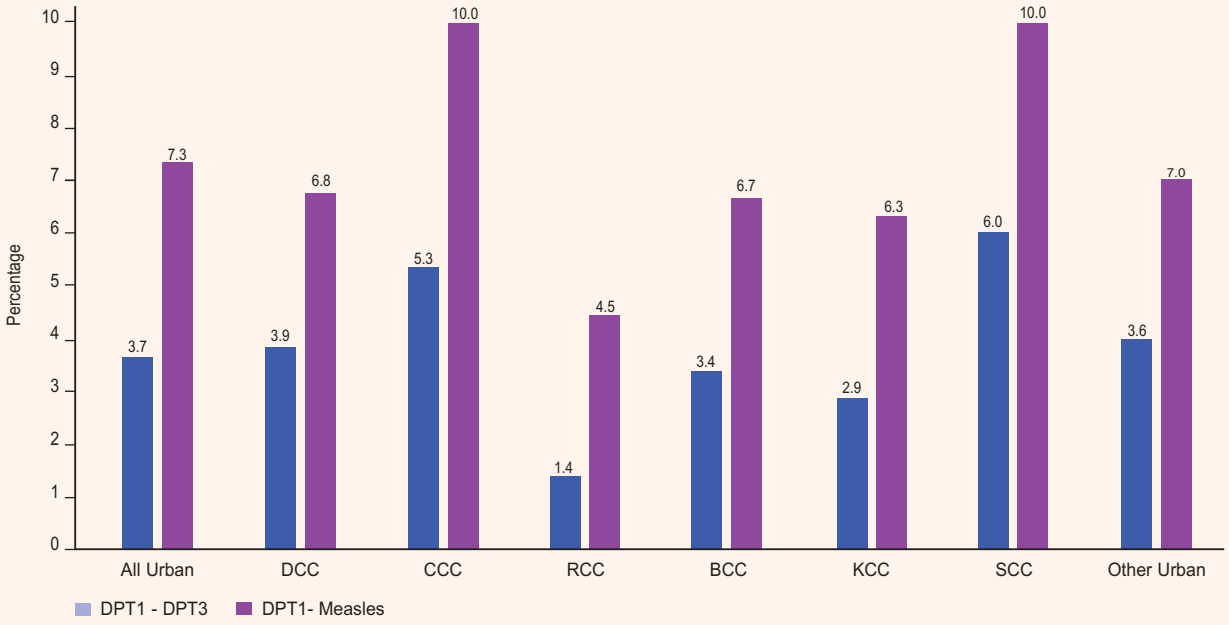
FIGURE C13

Vaccination Dropout Rates for DPT1-DPT3 and DPT1-Measles among 12-23 Months Old Children in Rural Areas by Division in 2006



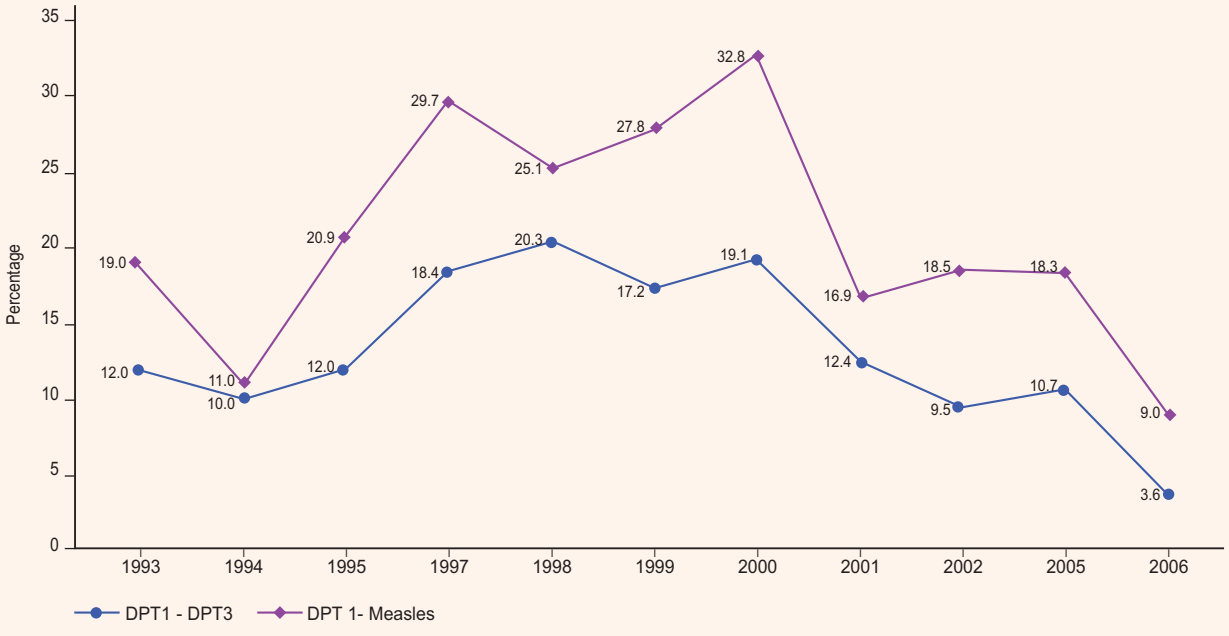
Source: CES 2006

FIGURE C14
Vaccination Dropout Rates for DPT1-DPT3 and DPT1-Measles among 12-23 Months Old Children in Urban Areas by City Corporation/Municipalities in 2006



Source: CES 2006

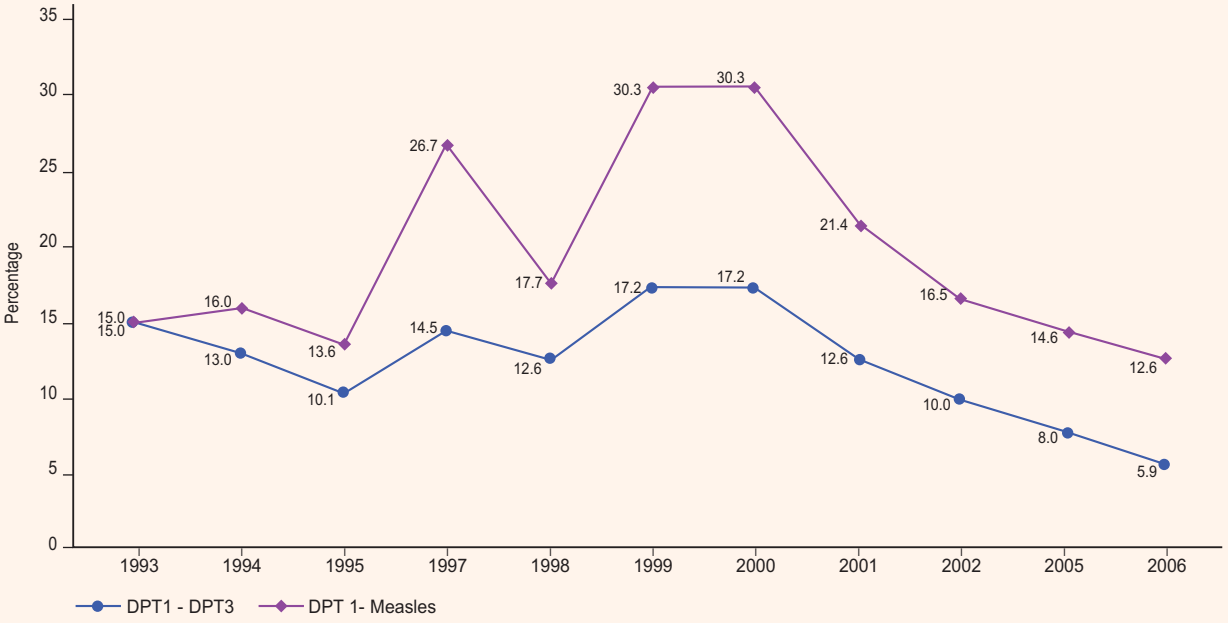
FIGURE C15
Annual Trend of Vaccination Dropout Rates for DPT1-DPT3 and DPT1-Measles among 12-23 Months Old Children in Dhaka Division from 1993 to 2006



Source: Coverage Evaluation Survey 1993-1995 and 1997-2002, 2005, 2006

FIGURE C16

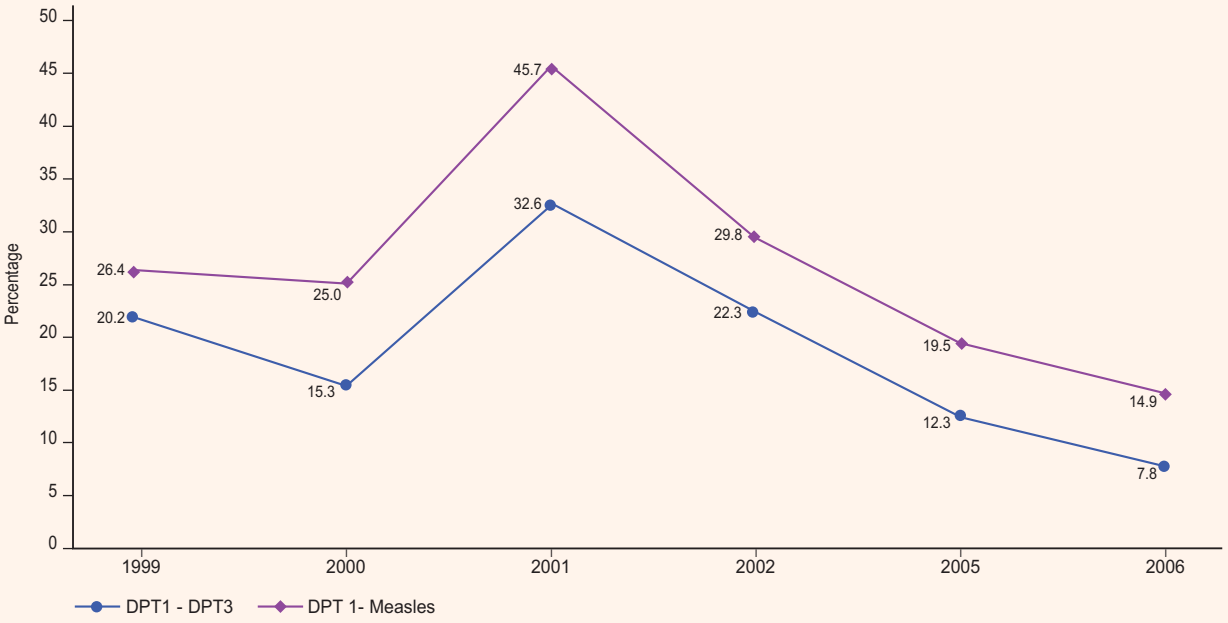
Annual Trend of Vaccination Dropout Rates for DPT1-DPT3 and DPT1-Measles among 12-23 Months Old Children in Chittagong Division from 1993 to 2006



Source: Coverage Evaluation Survey 1993-199 and 1997-2002, 2005, 2006

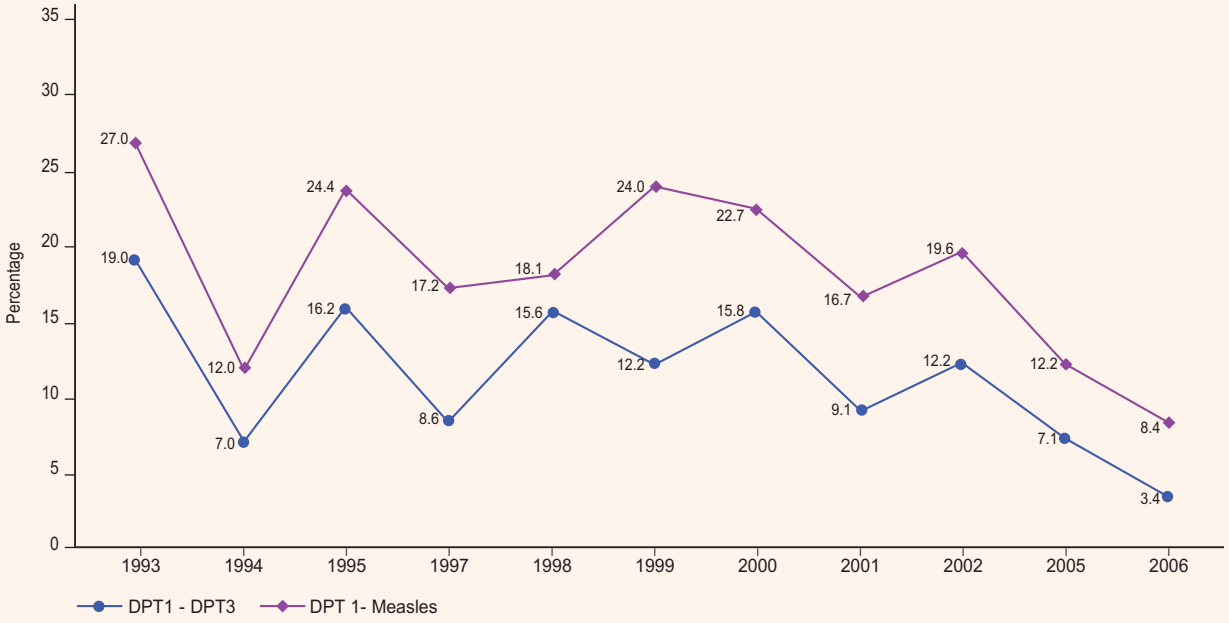
FIGURE C17

Annual Trend of Vaccination Dropout Rates for DPT1-DPT3 and DPT1-Measles among 12-23 Months Old Children in Sylhet Division from 1999 to 2006



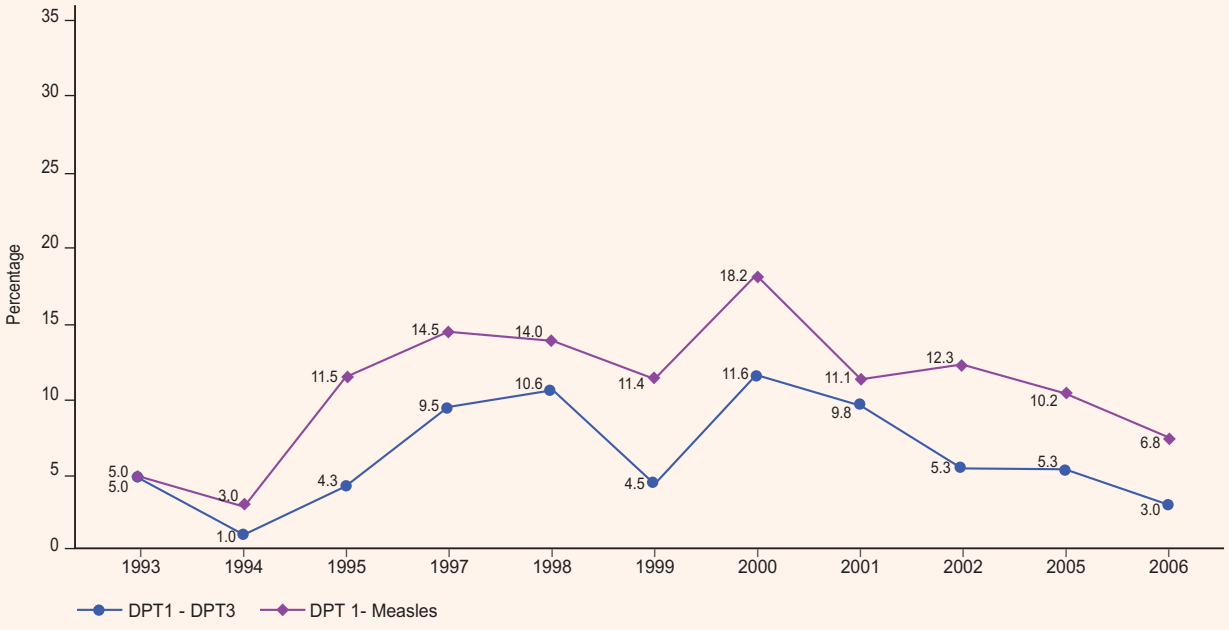
Source: Coverage Evaluation Survey 11999-2002, 2005 and 2006

FIGURE C18
Annual Trend of Vaccination Dropout Rates for DPT1-DPT3 and DPT1-Measles among 12-23 Months Old Children in Rajshahi Division from 1993 to 2006



Source: Coverage Evaluation Survey 1993-1995, 1997-2002, 2005 and 2006

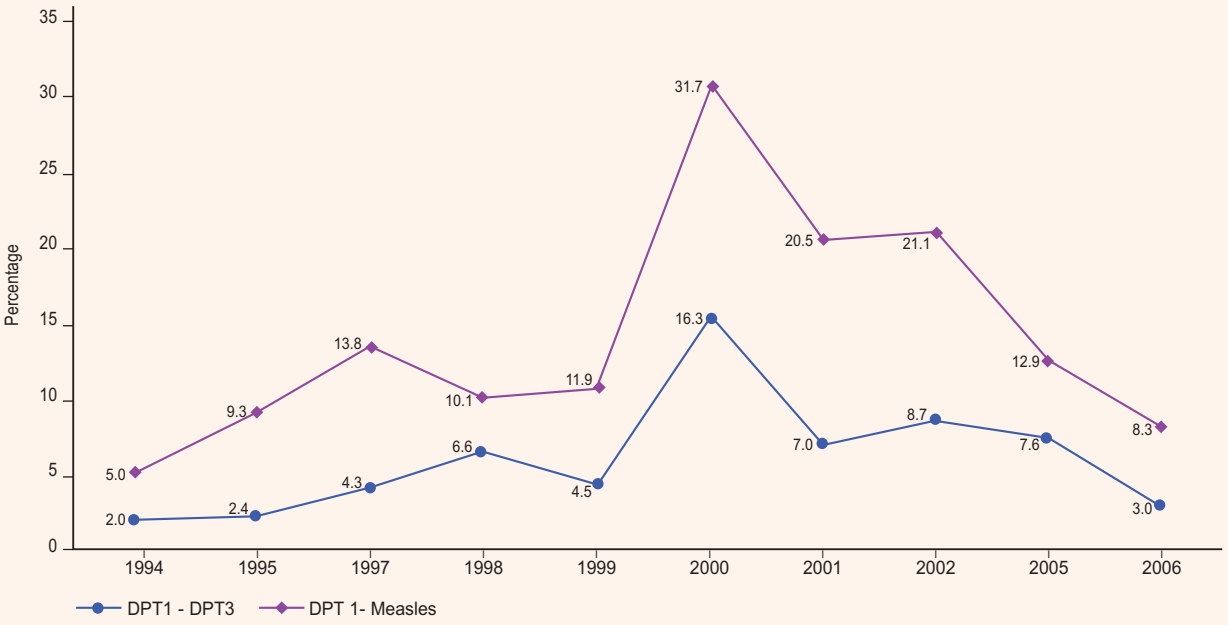
FIGURE C19
Annual Trend of Vaccination Dropout Rates for DPT1-DPT3 and DPT1-Measles among 12-23 Months Old Children in Khulna Division from 1993 to 2006



Source: Coverage Evaluation Survey 1993-1995 and 1997-2002, 2005 and 2006

FIGURE C20

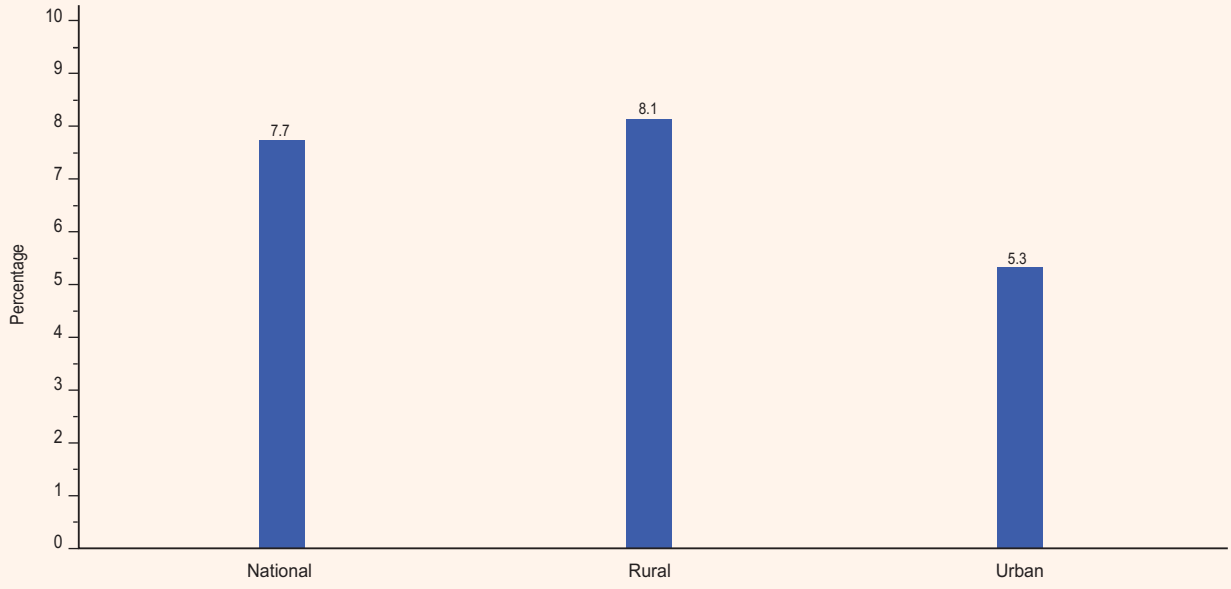
Annual Trend of Vaccination Dropout Rates for DPT1-DPT3 and DPT1-Measles among 12-23 Months Old Children in Barisal Division from 1994 to 2006



Source: Coverage Evaluation Survey 1994-1995 and 1997-2002, 2005, 2006

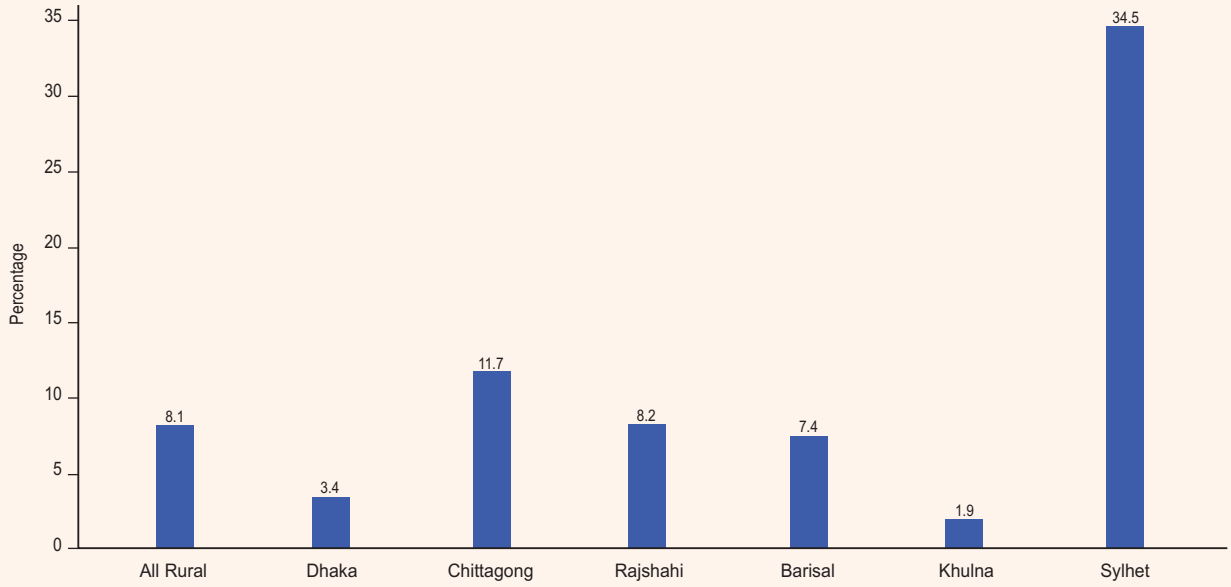
FIGURE C21

Incidence of Abscesses Following DPT or Measles Vaccination among 12-23 Months Old Children by National, Rural and Urban Areas in 2006



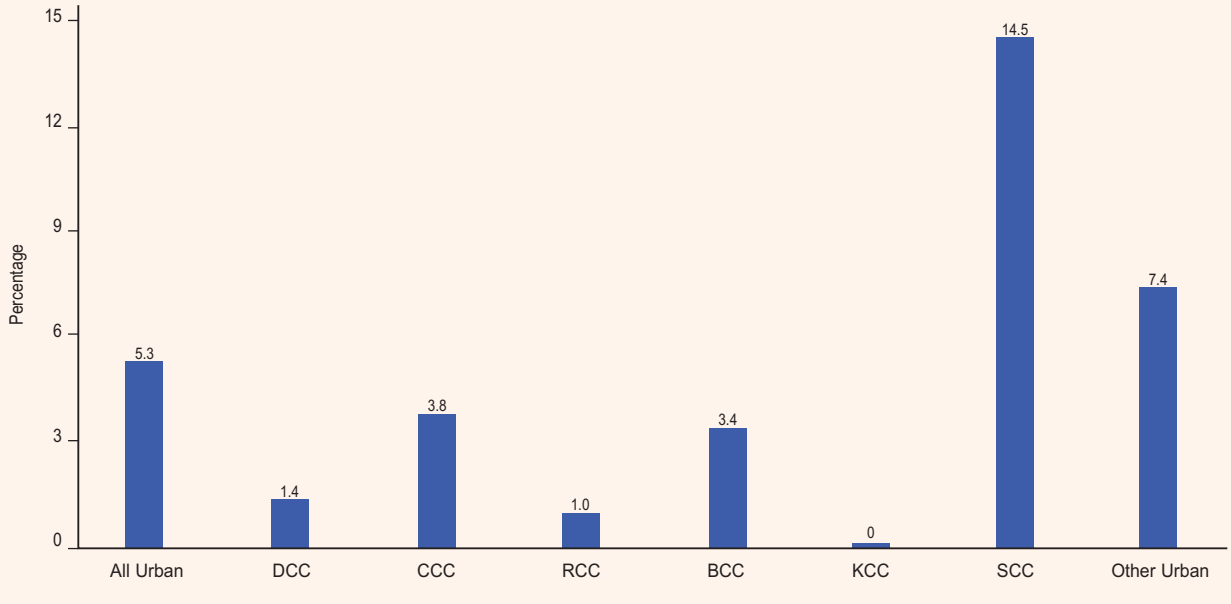
Source: CES 2006

FIGURE C22
Incidence of Abscesses Following DPT or Measles Vaccination among 12-23 Months Old Children in Rural Areas by Division in 2006



Source: CES 2006

FIGURE C23
Incidence of Abscesses Following DPT or Measles Vaccination among 12-23 Months Old Children in Urban Areas by City Corporation/Municipalities in 2006



Source: CES 2006

2.8
REASONS FOR CHILDREN NOT BEING VACCINATED

One of the primary concerns of CES 2006 was to address the reasons for which children were not vaccinated at all or fully. For every surveyed child who was never vaccinated or partially vaccinated, the mother/caregiver was asked the main reason behind it. The reasons shown in Figures D1-D5, are analyzed below in two different sections: Reasons for children never been vaccinated and reasons for children not been fully vaccinated.

2.8.1 REASONS FOR CHILDREN NEVER BEEN VACCINATED

Nationally, the most common reason appeared in the survey for a child never been vaccinated was lack of knowledge of vaccination (24 percent). The other most common reasons mentioned everywhere were (shown in order of mention) fear of side effects (18 percent), sickness of the child for which s/he was not been taken to the hospital (8 percent), parent's/caregiver's preoccupation with work (8 percent), the idea that vaccinator would come (8 percent) (Figure D1). There were a small variations in the reasons reported for never being vaccinated between the rural and the national samples (Figure D2).

2.8.2 REASONS FOR CHILDREN BEING PARTIALLY IMMUNIZED

Nationally, the most common reason appeared in the survey for a child never been vaccinated was lack of knowledge of vaccination (24 percent). The other most common reasons were: fear of side effects (18 percent), sickness of the child for which s/he was not taken to the hospital (8 percent); the parent's/ caregiver's preoccupation with work (8 percent); thought vaccinator will come (8 percent) (Figure D1). There was a little variation in the reasons reported for never having a child vaccinated between the rural and the national samples (Figure D1a).

However, the most common reasons mentioned by the mothers/caregivers for their children not being fully vaccinated were: parents/caregivers reported that the child was sick and, therefore, was not taken to the site (17 percent). It was being followed by some other reasons: parents/caregivers did not know when to go for measles dose (16 percent), parents/ caregivers were too busy to take their child for vaccination (14 percent), parents/caregivers did not know when to go for 2nd /3rd dose(10 percent) and parents/caregivers thought vaccinator would visit the house (7 percent) (Figure D1).

The common reasons for children not being fully vaccinated in the rural areas were: parents/caregivers did not know when to take their children for measles (17 percent). This was being followed by some other reasons: the child was sick and, therefore, was not taken to the site (16 percent); parents/care givers were too busy to take the child for vaccination (13 percent), did not know when to go for 2nd/3rd dose (10 percent) and thought that the vaccinator would visit house (7 percent) (Figure D1a).

In urban areas, the common reasons for not vaccinating the children fully were: the child was sick and, therefore, was not taken to the site (24 percent); parents/caregivers were too busy to take the child for vaccination (19 percent); parents/caregivers did not know when to go for 2nd /3rd dose (9 percent) and parents/caregivers did not know when to go for measles dose (7 percent). The common reasons for never vaccination in the urban areas which were more pronounced: thought that the vaccinator would visit house (18 percent); the child was sick and, therefore, was not taken to the site (12 percent); parents/caregivers were too busy to take the child for vaccination (12 percent) (Figure D1b).

In the rural areas by divisions, the child was taken to the vaccination site, but was not vaccinated as s/he was sick' emerged as a major reason for children not being fully vaccinated in every division (Figure D4). 'Fear of adverse reaction of vaccination' was also one of the major reasons in all divisions. Among the other major reasons cited, the notion 'parents/caregivers were too busy to take the child for vaccination' was more pronounced in Dhaka, Rajshahi, Barisal, and Khulna respectively. Parents/caregivers 'did not know when to return for the Measles vaccination' was more highlighted in Chittagong and Rajshahi divisions. There were no other marked variations noted between the divisions with regard to the reasons for children not being fully vaccinated.

In the urban areas under City Corporations/Municipalities, the major reasons for children not being fully vaccinated in DCC- in order of importance- were: 'the child was sick and, therefore, was not taken for vaccination' and 'parents/caregivers were too busy to take the child for vaccination'. Fear of side effects also emerged as a major reason in CCC for children not being fully vaccinated. (Figure D5).

2.9
KNOWLEDGE OF THE NUMBER OF VISITS REQUIRED FOR COMPLETE VACCINATION

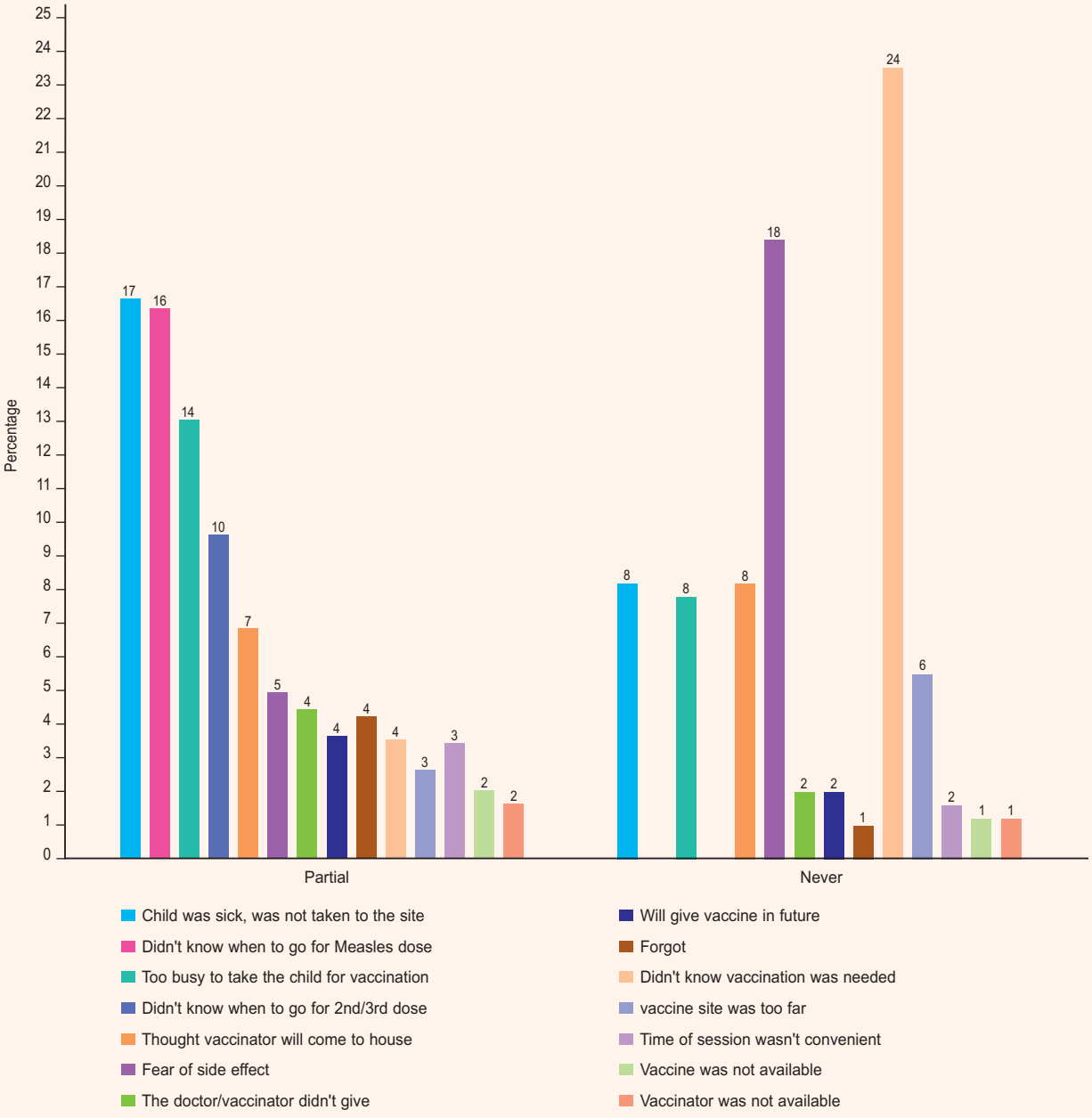
Mothers/caregivers were asked how many visits had to be made by them to a vaccination center for complete vaccination of a child. Nationally, only 21 percent of the mothers/caregivers were found to have proper knowledge about it. The rest of them didn't know that four visits to a vaccination center were required for a child's complete vaccination (Figure D6). Thirty- five percent mothers/caregivers said that they had no idea about the number of visits required while about 37 percent of them mentioned that less than four visits were needed. Proper knowledge about the required number of visits for complete vaccination of a child was slightly higher among the mothers/caregivers in the urban areas than among those living in the rural areas - it was 28 percent against 20 percent.

In rural areas, the proportion of the mothers/caregivers having proper knowledge of the required four vaccination visits was the highest in Barisal division (30 percent) and the lowest in Rajshahi division (16 percent). Percentage of mothers/caregivers having proper knowledge of vaccination visits in other rural divisions ranged from 16 percent to 22 percent (Figure D7).

In the urban areas under City Corporations/Municipalities, proper knowledge about the required four visits for vaccination was least prevalent in KCC (13 percent). It was most prevalent in BCC and CCC (40 percent), which was being followed by DCC (29 percent), RCC (26 percent), and SCC (24 percent) (Figure D8).

FIGURE D1

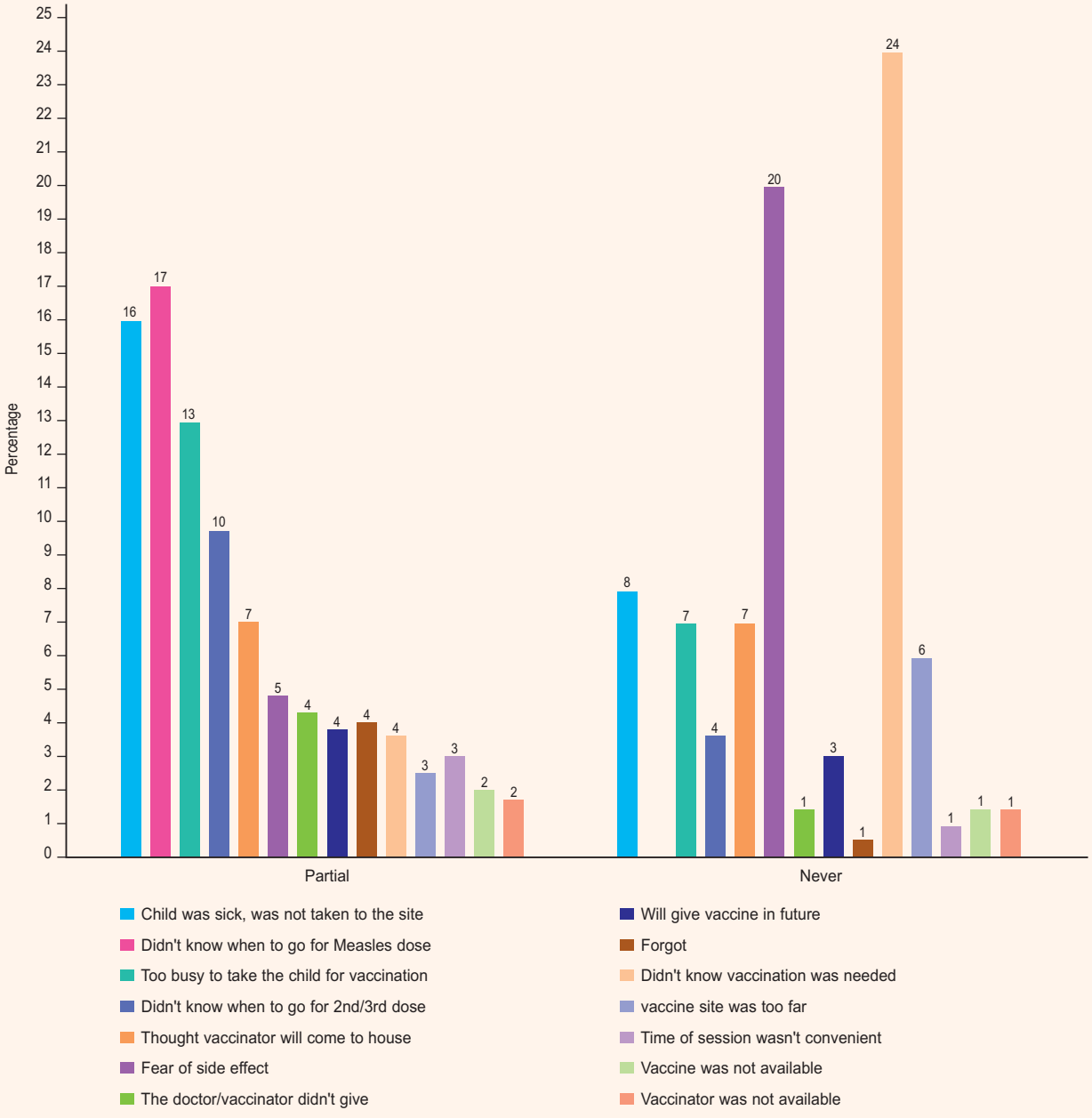
Reasons for Partial or Never Vaccination among 12-23 Months Old Children by National data in 2006



Source: CES 2006

FIGURE D1a

Reasons for Partial or Never Vaccination among 12-23 Months Old Children by Rural Areas in 2006



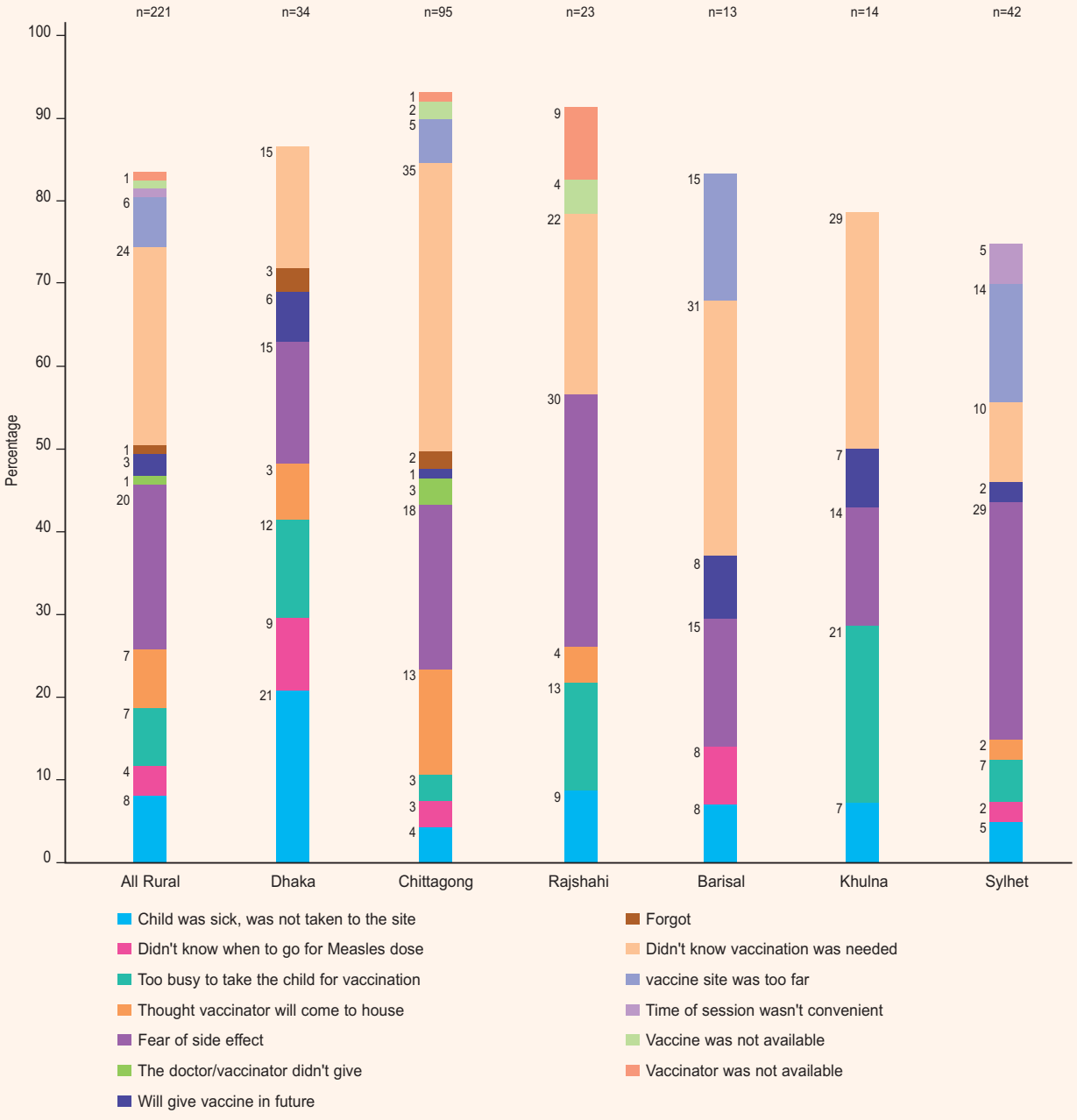
Source: CES 2006

FIGURE D1b

Reasons for Partial or Never Vaccination among 12-23 Months Old Children by Urban Areas in 2006

Source: CES 2006

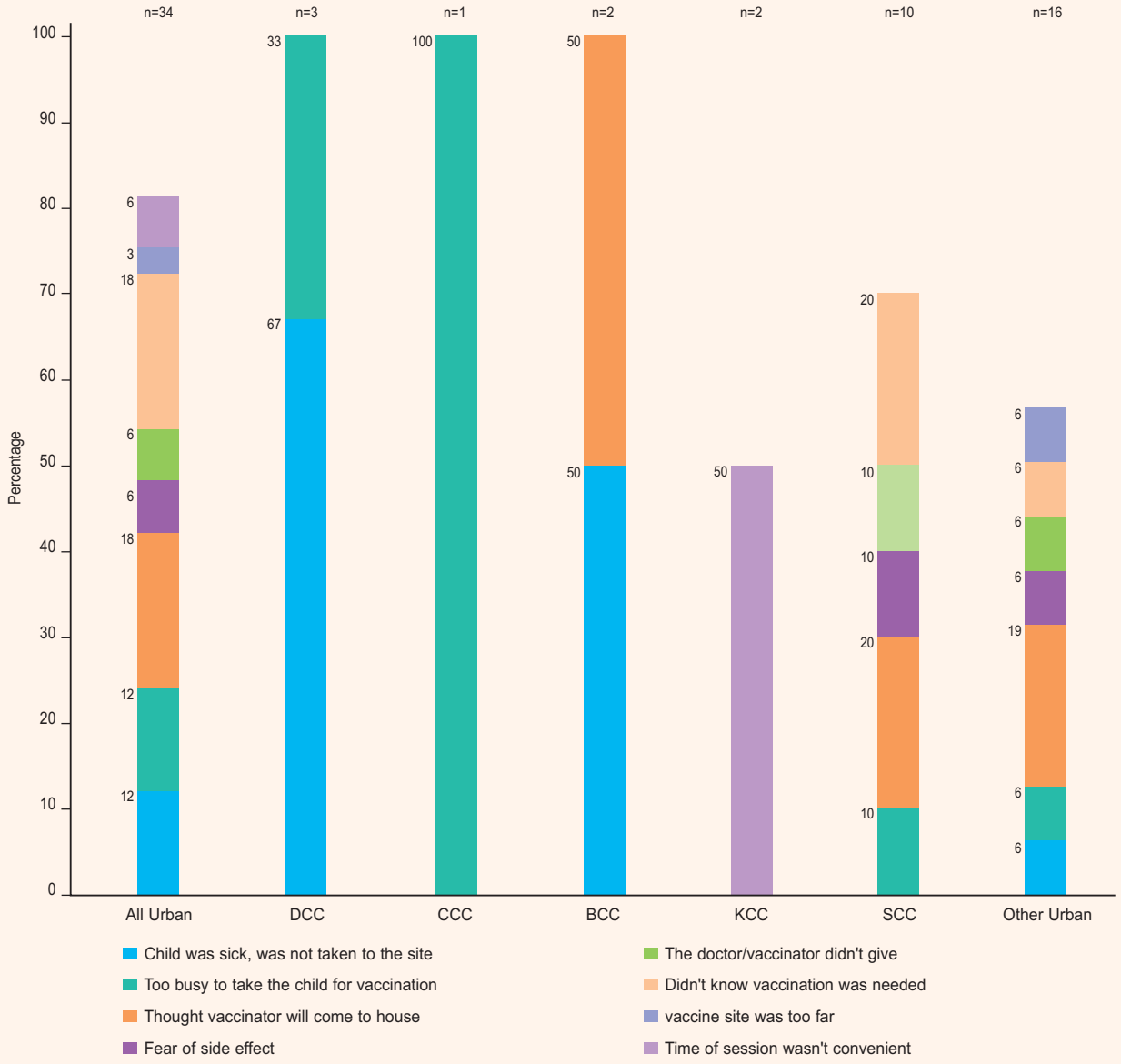
FIGURE D2
Reasons for Never Vaccination among 12-23 Months Old Children in Rural Areas by Division in 2006



Source: CES 2006

FIGURE D3

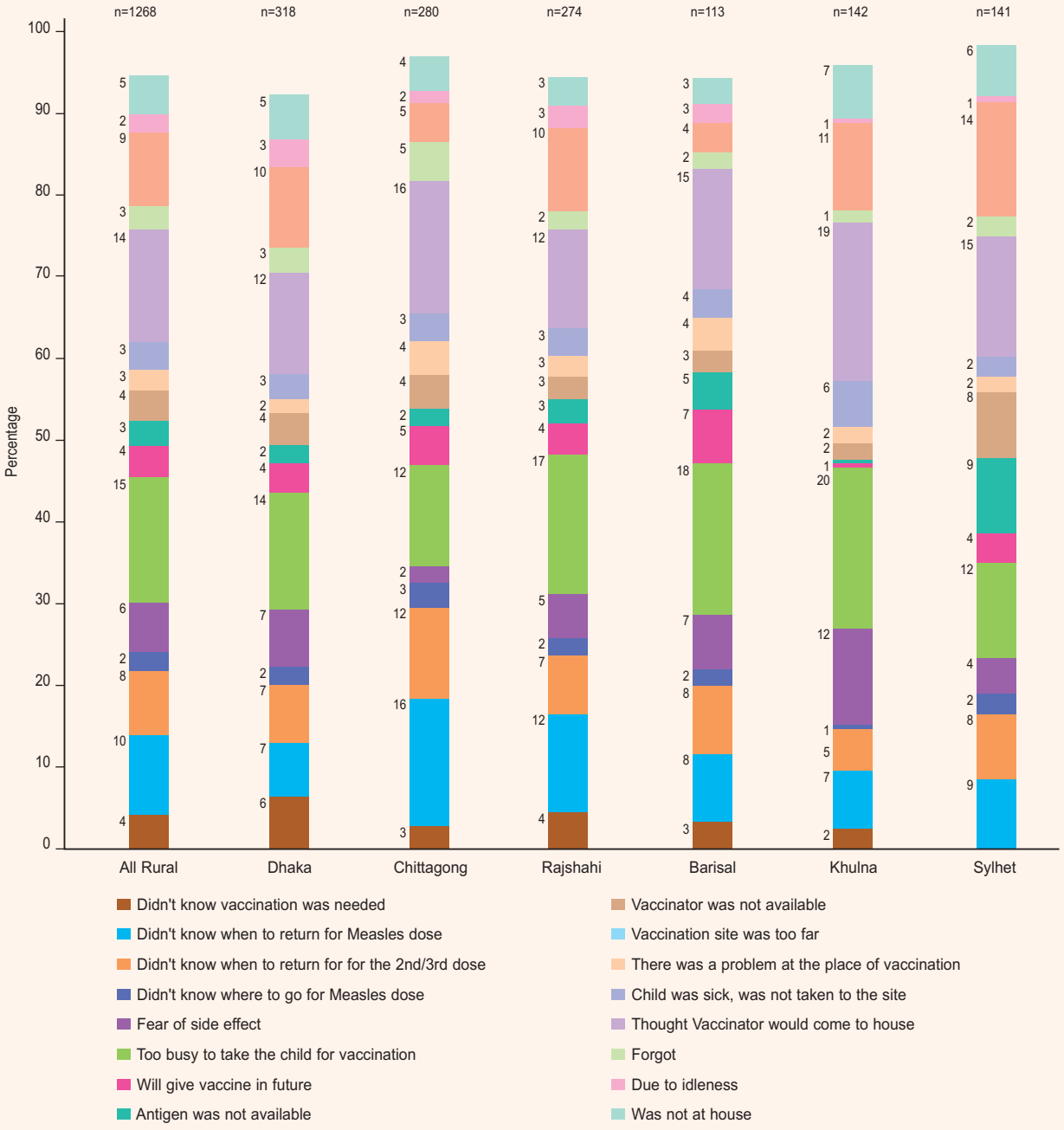
Reasons for Never Vaccination among 12-23 Months Old Children in Urban Areas by City Corporation/Municipalities in 2006



Source: CES 2006

FIGURE D4

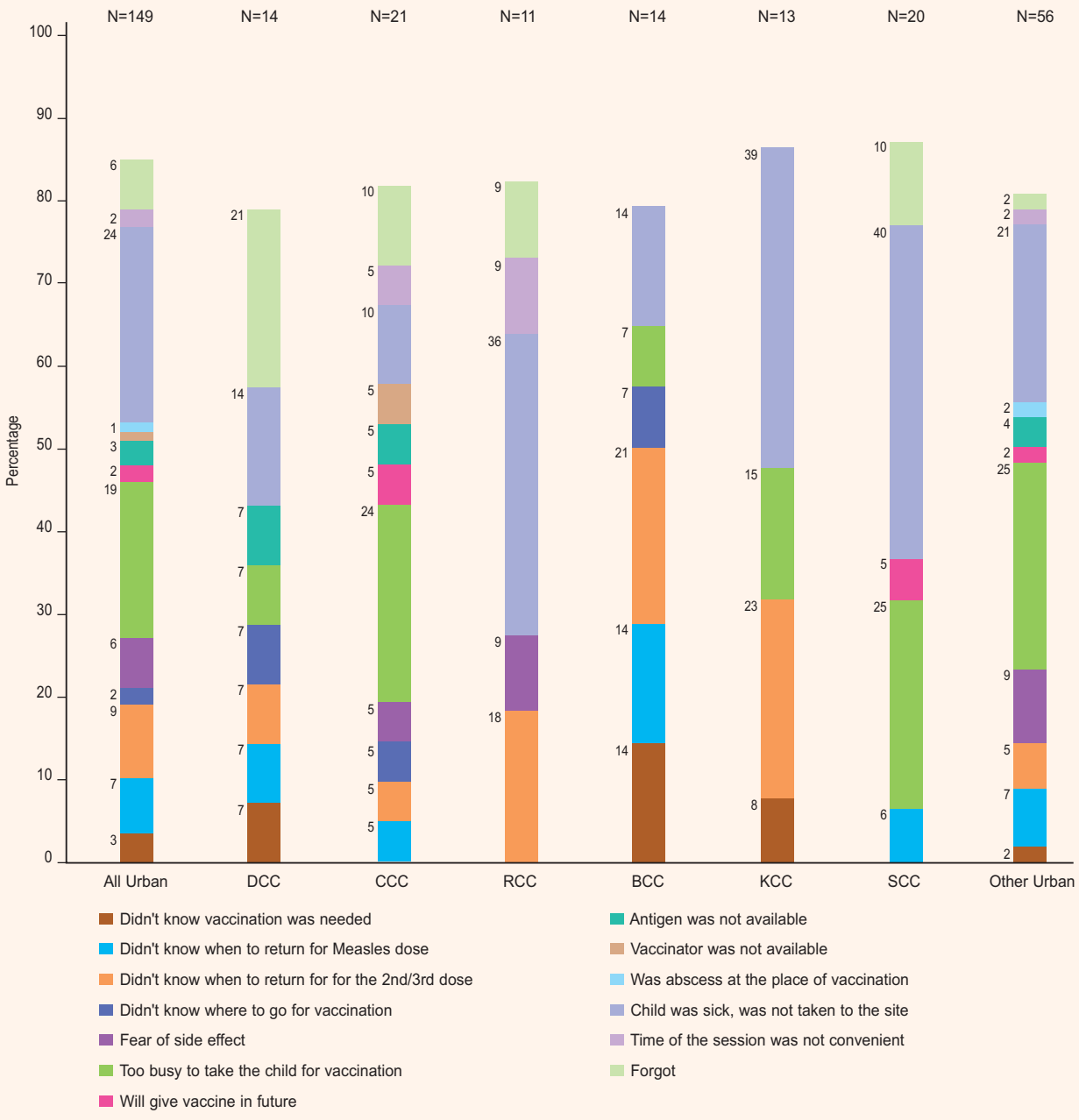
Reasons for Partial Vaccination among 12-23 Months Old Children in Rural Areas by Division in 2006



Source: CES 2006

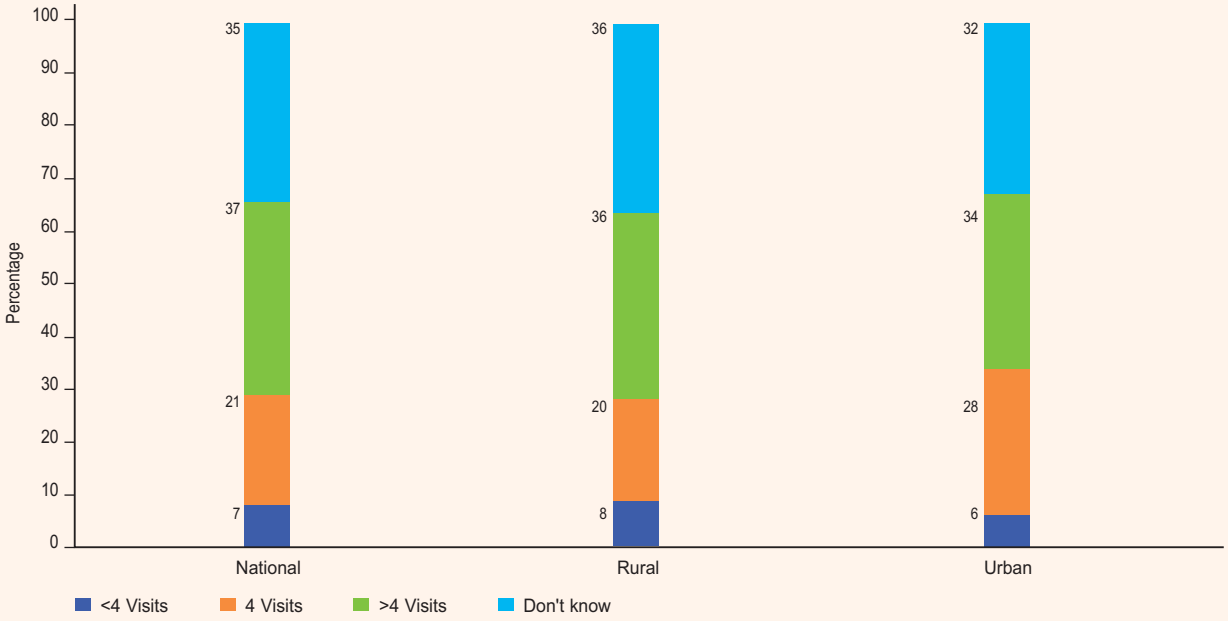
FIGURE D5

Reasons for Partial Vaccination among 12-23 Months Old Children in Urban Areas in 2006



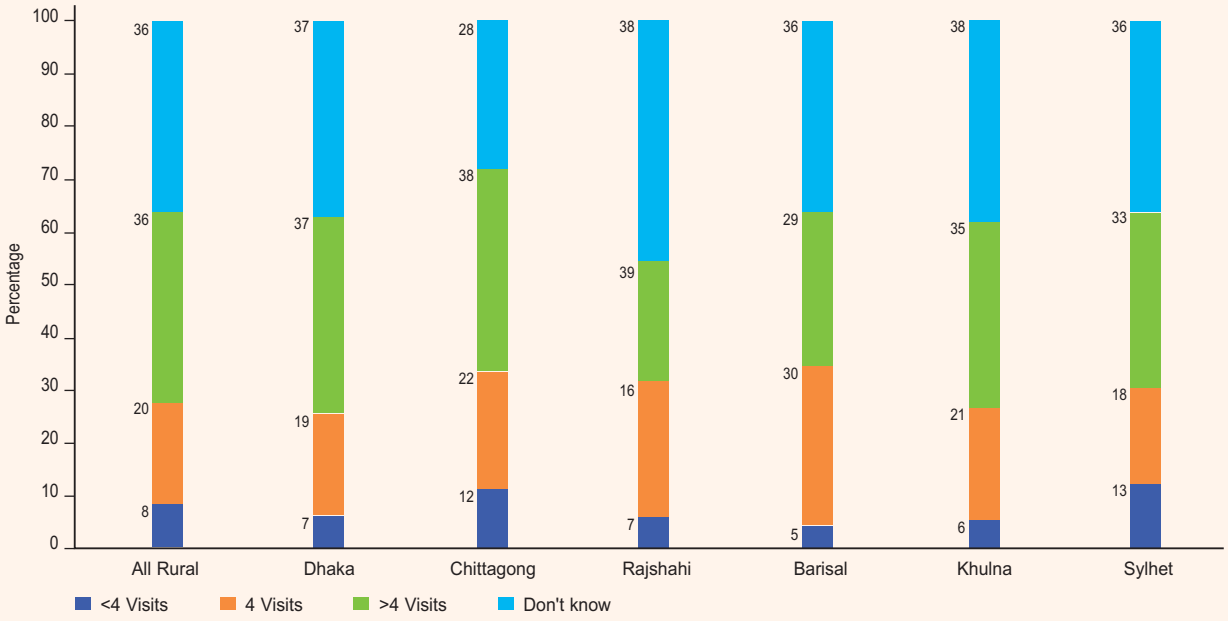
Source: CES 2006

FIGURE D6
Number of Visits Required to Have a Child Fully Vaccinated as Reported by Mother/Caregivers of 12-23 Months Old Children by National, Rural and Urban Areas in 2006



Source: CES 2006

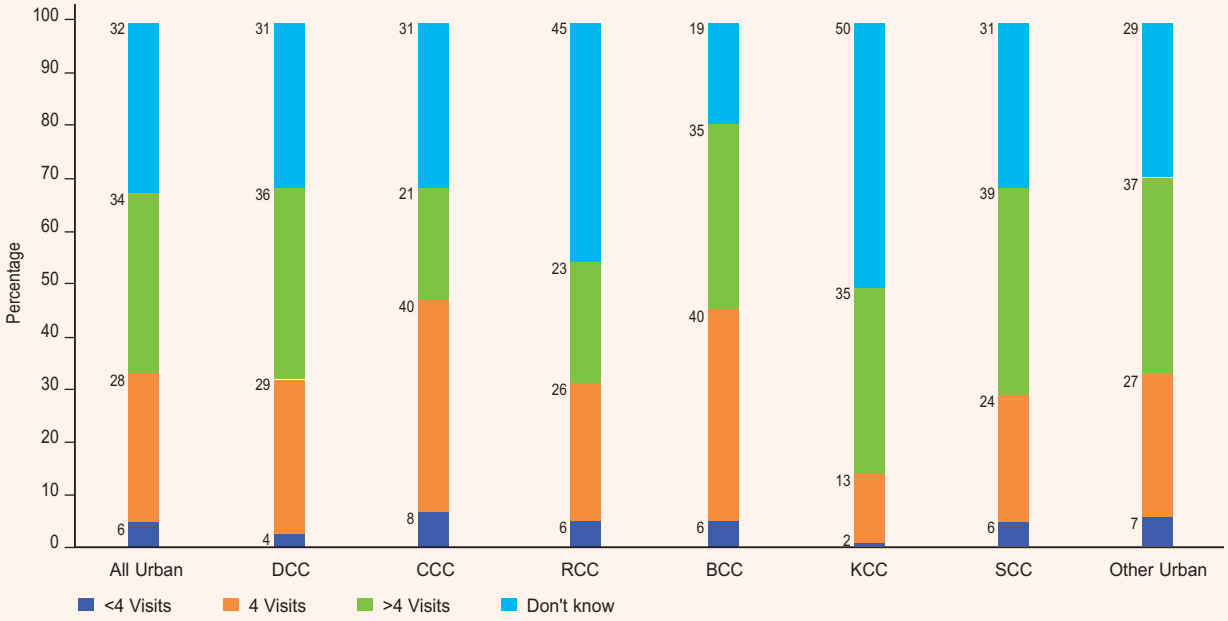
FIGURE D7
Number of Visits Required to Have a Child Fully Vaccinated as Reported by Mother/Caregivers of 12-23 Months Old Children in Rural Areas by Division in 2006



Source: CES 2006

FIGURE D8

Number of Visits Required to Have a Child Fully Vaccinated as Reported by Mother/Caregivers of 12-23 Months Old Children in Urban Areas by City Corporation/Municipalities in 2006



Source: CES 2006

2.10
SOURCES OF CHILDHOOD VACCINATION

The government has emerged as the principal provider of childhood vaccination services in Bangladesh. Eighty-nine percent of the children surveyed in CES 2006 were reported to have received DPT1 from the government outreach sites another 8 percent from government hospitals and clinics. Thus, nationally, 97 percent of the surveyed children received vaccination services from the government sources while only 3 percent from all other sources - NGO outreach sites/facilities (2 percent) and private facilities (1 percent) There were remarkable variations between the rural and the urban areas regarding the sources of vaccination. The government appeared as the major provider of vaccination in both rural (99 percent) and urban (86 percent) areas. Use of the government outreach services was more common in rural (93 percent) than in urban areas (65 percent) while the government hospitals/clinics were more used in urban (21 percent) as compared to rural areas (6 percent) (Figure E1).

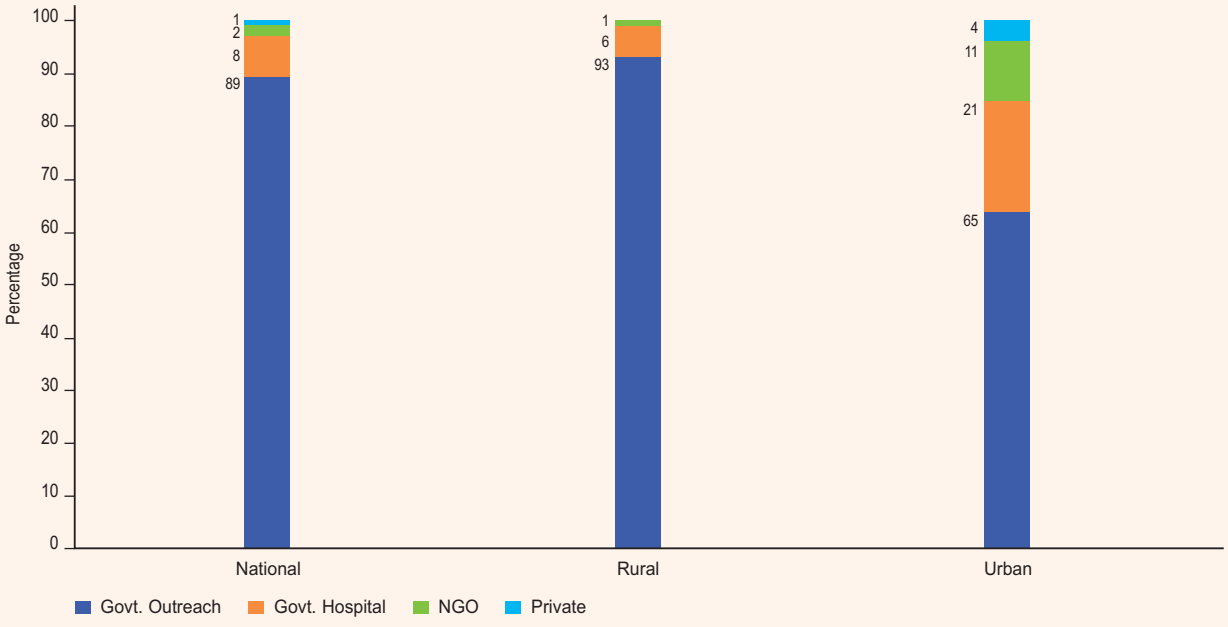
In rural areas by divisions, the government outreach sites were most widely used in all divisions- it ranged between 89 percent in Chittagong division and 97 percent in Sylhet division.

Ninety- seven percent of the children in Sylhet division were vaccinated at the government outreach sites as compared to 89 percent in Chittagong division while the use of these centers was at an intermediate

level in other divisions- 92 percent in Rajshahi and 94 percent in Dhaka divisions (Figure E2). The use of the government hospitals/clinics for vaccination, in contrast, was found to be least common in Chittagong (9 percent) and Rajshahi divisions (7 percent) and the most common in Sylhet division (3 percent). Use of NGO vaccination services was found low in all divisions.

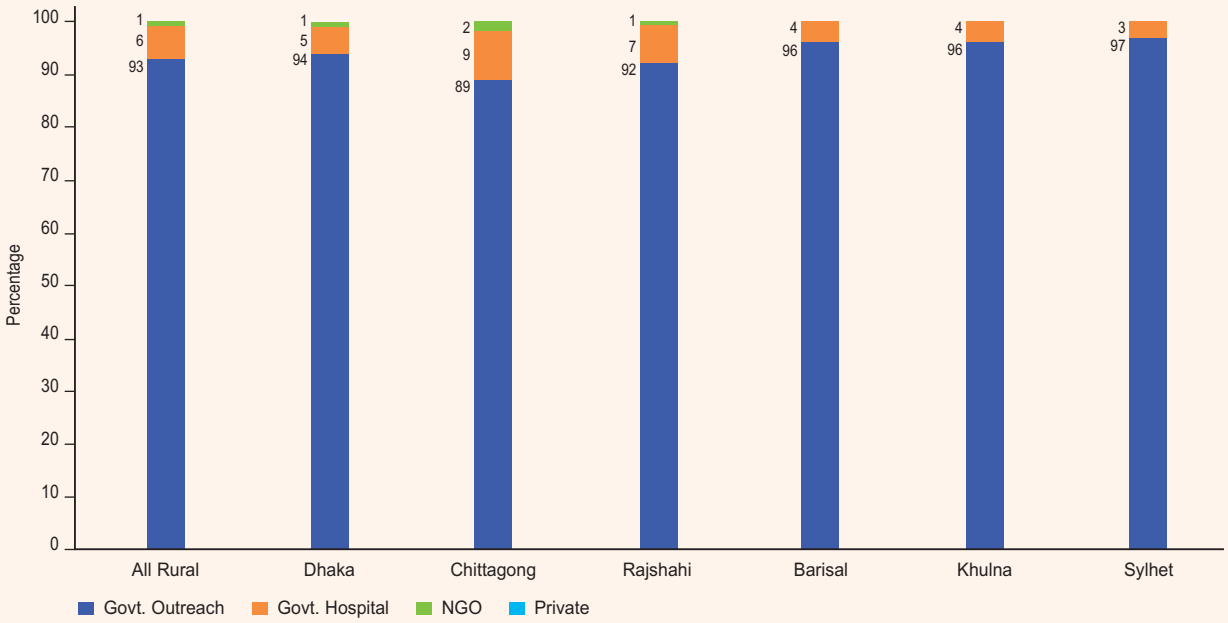
In the urban areas under City Corporations/Municipalities, the government outreach services had the highest coverage - 66 percent in CCC, which was being followed by 65 percent in SCC and 61 percent in both RCC and BCC respectively. The intermediate coverage was between 46 and 65 percent in DCC and KCC respectively (Figure E3). In contrast, vaccination services from the government hospitals/clinics were used most in RCC (36 percent), which was being followed by BCC (29 percent), CCC (18 percent), SCC (15 percent), and KCC (8 percent). Vaccination by NGOs was most discernible in KCC and DCC (26 percent), being followed by SCC (14 percent), CCC (7 percent), and BCC (6 percent). Use of NGO service found to be the lowest in RCC (1 percent)

FIGURE E1
Source of DPT1 Vaccination among 12-23 Months Old Children by National, Rural and Urban Areas in 2006



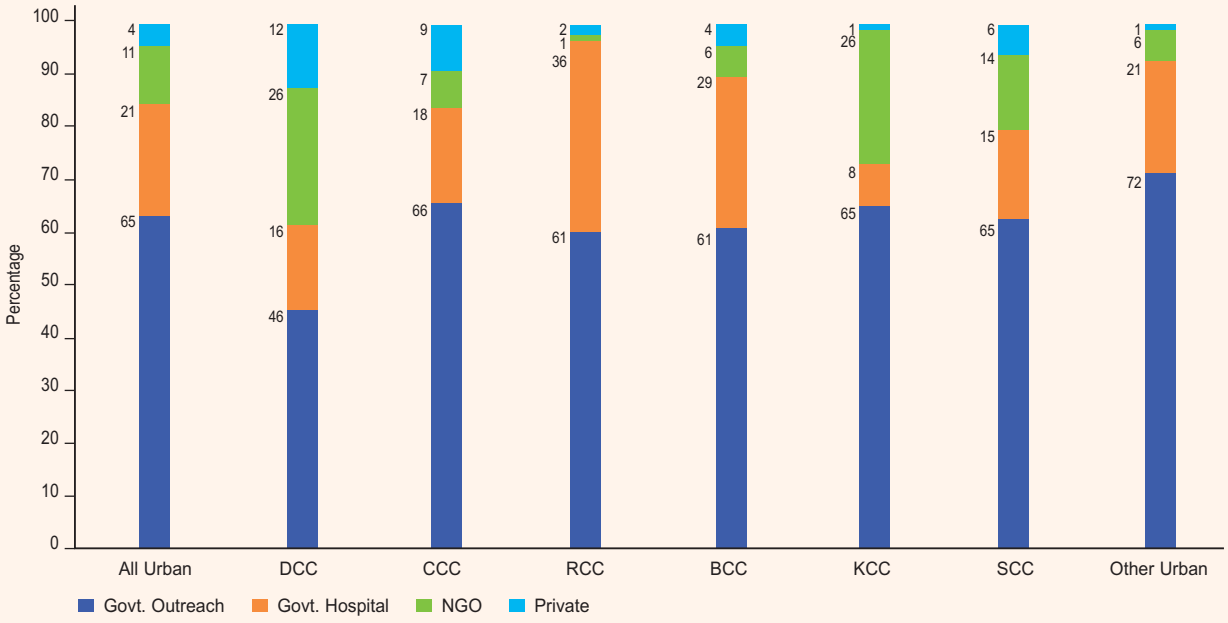
Source: CES 2006

FIGURE E2
Source of DPT1 Vaccination among 12-23 Months Old Children in Rural Areas by Division in 2006



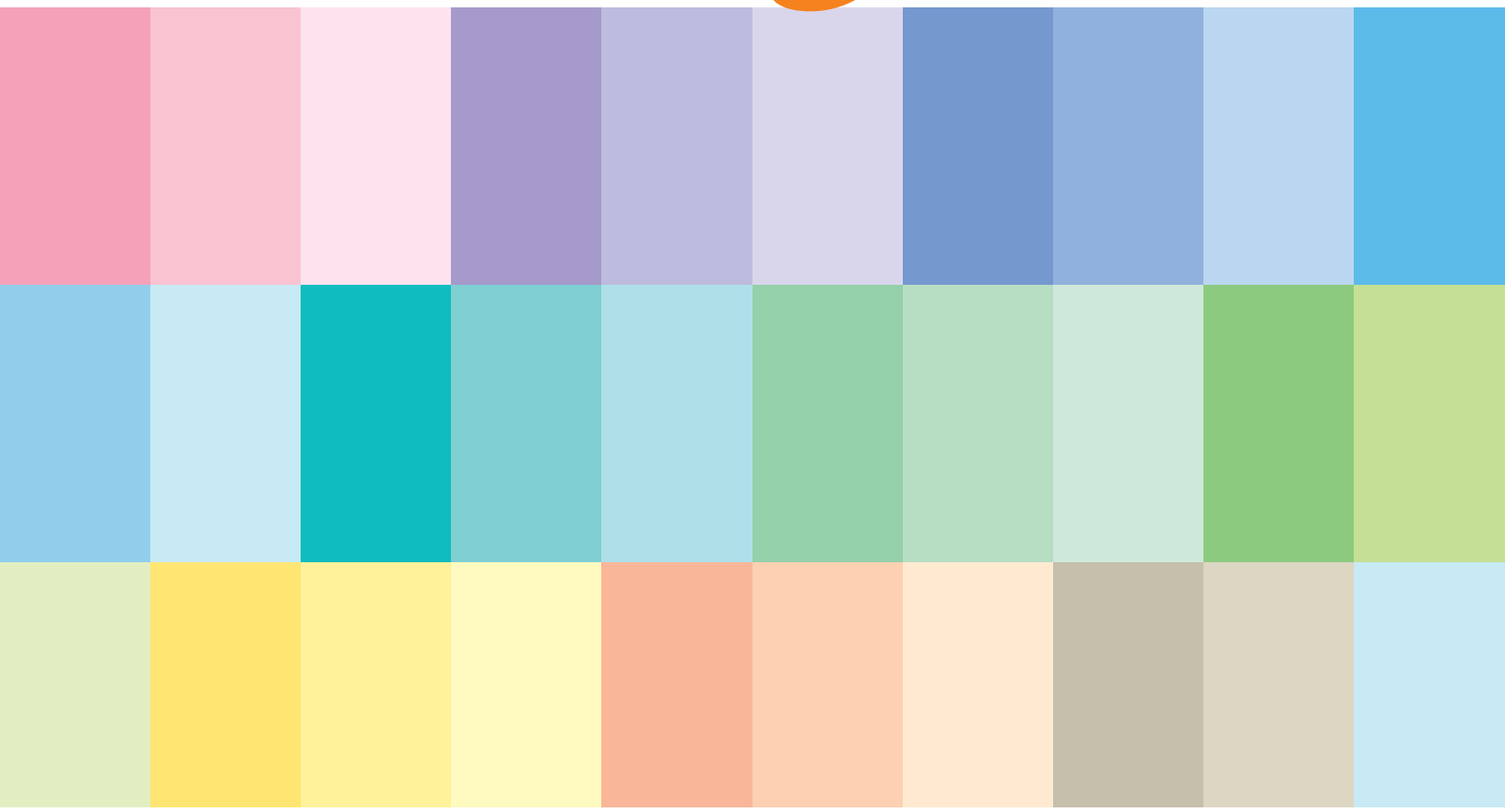
Source: CES 2006

FIGURE E3
Source of DPT1 Vaccination among 12-23 Months Old Children in Urban Areas by City Corporation/Municipalities in 2006



Source: CES 2006

CHAPTER 3



TETANUS TOXOID VACCINATION COVERAGE SURVEY AMONG MOTHERS HAVING 0-11 MONTHS OLD CHILDREN

Tetanus Toxoid (TT) Vaccination Coverage Survey was conducted as a major component of CES 2006. As stated in Chapter 1, the specific objectives of the TT Survey were to ascertain:

- TT vaccination coverage among mothers having 0-11 months old children
- TT card retention rate among these mothers
- incidence of invalid TT doses administered among these mothers
- sources of TT vaccination among these mothers
- proportion of newborns of these mothers, protected at birth against tetanus.
- post partum vitamin A coverage among mothers having 0-11 months old children

3.1 SELECTION OF SAMPLES

TT Survey was implemented over nationally representative samples of mothers who had 0-11 months old children, being drawn from the sample clusters in the same way as with the Child sample selection. First, in the selected cluster a household list is prepared by asking a question as to the sample household had a 15-49- year old mother who had given a live or still birth during the 12 months preceding the survey (between 01-07-2005 and 30-06-2006). All such mothers were listed and randomly 7 mothers were selected for the interview on TT and post partum vitamin A. Thus, the TT sample consisted of 14,700 mothers (210 mothers from each sample unit) being 15-49- year old having 0-11 months old children. Nationally 12,642 mothers from rural areas and 2,058 mothers from urban areas were selected for the survey.

3.2
THE TT FORM

In order to fulfill the TT Survey objectives, the following data were collected in the TT Form from each surveyed mother:

- Whether the mother had a TT card
- If she did not have TT card, whether she had ever had it
- Assessed whether the child was protected from tetanus during birth
- Date of each TT dose received by her, copied from the TT card if available, or obtained from the history of her TT vaccination, if the card was not available
- If ever received the first TT dose, from where the mother had received it
- Whether she ever had an abscess after receiving a TT injection
- Where she had abscess(s), if she had any
- Whether she had received a TT injection when she took her child for vaccination to the center
- Whether the vaccinator checked to make sure if she was eligible for a TT dose, if she had not received
- Number of children she had given birth
- Awareness of numbers of TT doses needed to be received for life-time protection against tetanus
- Whether she had received vitamin A capsule (200000 IU) within 42 days of her delivery.

3.3
TT VACCINATION

Tetanus Toxoid (TT) vaccine is given to women during their childbearing age (15-49 years) for protecting them from tetanus as well as their newborns from neonatal tetanus during their whole reproductive period. Neonatal tetanus is a fatal disease caused by a pathogen transmitted during or after childbirth in unhygienic delivery. A woman needs a total of five TT doses for protection for the whole reproductive period; and, these should be administered according to the following schedule recommended by WHO: TT1- the first dose- as soon as she reaches the age of 15 years; TT2- four weeks after TT1 is given; TT3- six months after TT2; TT4- one year after TT3; and TT5- one year after TT4.

Since only one TT dose does not offer any protection, hence with TT2 duly administered after TT1, a woman with reproductive age gets protection for a period of three years that begins after the administration of TT2. Thus, it is counted with TT3 for five years after the administration of TT3, with TT4 for 10 years after the administration of TT4, and with TT5 for the rest of her reproductive period after administration of TT5. Table A1 below shows a complete TT vaccination schedule.

TABLE A2
TT Vaccination Schedule

TT Doses	Minimum Interval between Doses	Duration of Protection
TT1	Age of 15 years	0
TT2	4 weeks after TT1	3 years after the administration of TT2
TT3	6 months after TT2	5 years after the administration of TT3
TT4	1 year after TT3	10 years after the administration of TT4
TT5	1 year after TT4	Reproductive period

3.4
LEVELS OF THE TT COVERAGE

Like the childhood vaccination coverage, TT vaccination coverage was assessed as valid and crude coverage. The valid TT coverage was assessed in terms of the valid doses that a woman received, and crude TT coverage in terms of all TT doses- both valid and invalid- that a woman received. A TT dose administered before the recommended interval was considered invalid. Thus, a TT3 dose given earlier than the recommended 6-month interval after a valid TT2 dose was enumerated as an invalid TT3 dose. However, the validity of each TT dose was determined regardless of whether the previous dose was valid or not.

TT vaccination coverage was assessed by utilizing the following information gathered from the survey on the TT vaccination status of each of the surveyed mothers having 0-11 months old children: whether she ever had a TT injection; and, if she had any, the date of each injection she received. As has been stated earlier, the information was obtained from a woman's TT card (if available). If it was not available, the information was collected from the woman's vaccination history reported by herself.

Nationally, crude coverage for TT1, TT2, TT3, TT4, and TT5 from card+history were 96 percent, 94 percent, 80 percent, 60 percent, and 41 percent respectively. Crude coverage for both TT1 and TT2 were higher by one percentage point in the urban areas than in the rural areas (97 percent against 96 percent for TT1) and (95 percent against 94 percent for TT2). The coverage of TT3 were 80 percent in rural areas, and 82 percent in urban areas. The coverage of TT4 was slightly higher in rural areas (60 percent) as compared to urban areas (59 percent) while there was no difference in coverage of TT5 between urban and rural areas (Figure F1).

National valid TT coverage rates computed from card+history are presented in Figure F2. Nationally, as well as in rural and urban areas, there were fairly large differences between valid and crude TT3, TT4, and TT5. The differences were, however, very little for TT1. Nationally, valid TT1, TT2, TT3, TT4, and TT5 were 96 percent, 94 percent, 72 percent, 41, percent and 19 percent respectively. Valid TT coverage was consistently higher in urban than in rural areas . Thus, while valid TT2 was higher in the urban than in the rural areas by 1 percentage point (94 percent versus 95 percent), there was no difference for TT5 was (19 percent in both areas).

3.5
TRENDS IN CRUDE TT COVERAGE

Trends in national crude TT coverage are shown in Figure F3. The crude coverage rate for at least two TT doses, or crude TT2, varied 3 percentage points between the 2005 CES (91 percent) and the CES 2006 (94 percent). But, crude TT3 was found to be 80 percent, which was remarkably higher in CES 2006, as compared to 71 percent in 2005 CES. However, longer-term trends from 1997 showed a gradual increase in the crude TT coverage rates: for TT2 from 90 percent in 2002 to 94 percent in 2006 and for TT3 from 65 percent to 80 percent.

Trends in crude TT coverage by division (combining both rural and urban areas) are shown in (Figure F4- Figure F9). Since 1997, a significant increase in crude TT2 was noticed in every division. Between 2005 and 2006, crude TT2 increased from 90 percent to 95 percent in Dhaka division and from 87 percent to 93 percent in Chittagong division. The coverage rate was found similar in Rajshahi division (94 percent) both in CES 2005 and CES 2006. In Barisal division, crude coverage rate increased from 90 percent to 94 percent, in Khulna division from 93 percent to 95 percent, and in Sylhet division from 85 percent to 90 percent between CES 2005 and CES 2006 (Figure F4- Figure F9).

3.6
RURAL COVERAGE BY DIVISION

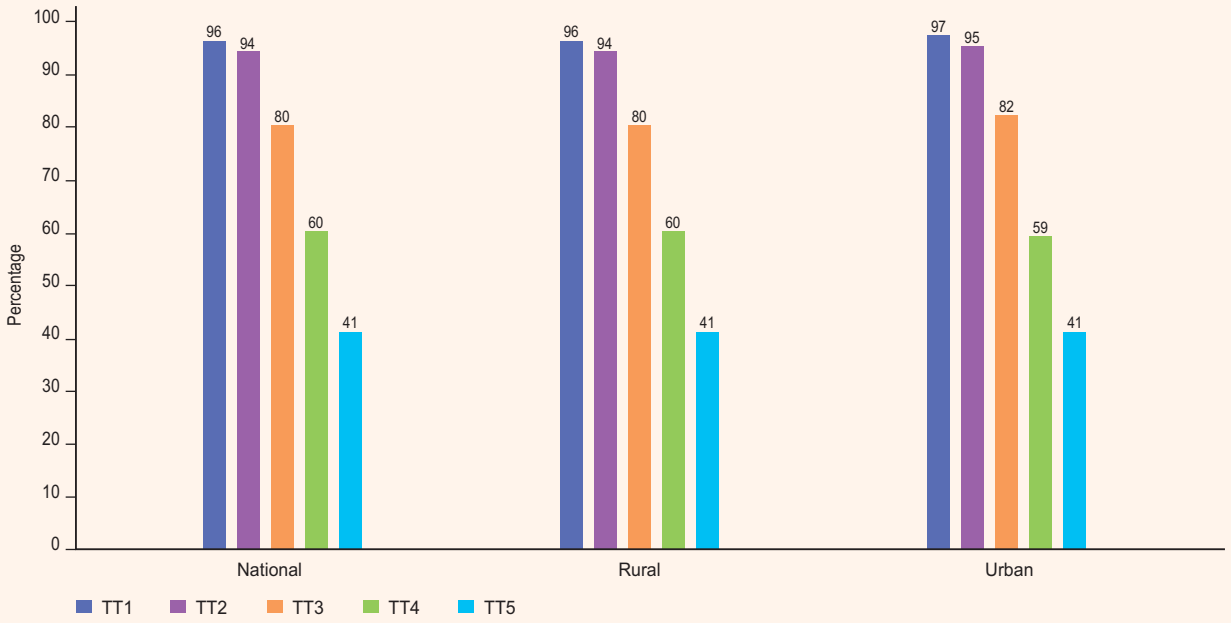
Regarding the crude TT coverage in rural areas by divisions, it should be mentioned that Khulna, Dhaka and Rajshahi were the highest performing divisions for TT1 (97 percent). TT2 coverage was the highest in Khulna and Dhaka divisions (95 percent) and the lowest in Sylhet division (90 percent). Crude TT5 was the lowest in Rajshahi division (37 percent) and the highest in Sylhet (47 percent) and Chittagong (46 percent) divisions, which was being followed by Dhaka division (43 percent), Barisal division (40 percent), and Khulna division (38 percent). There were no distinguished patterns in better crude TT coverage performances by divisions. Crude TT3 to TT5 was generally higher in Chittagong division. In Sylhet and Dhaka divisions, similar trends were found in crude TT4 and TT5, while, in Khulna division, the aforesaid trend was found in crude TT3 and TT4. (Figure F10).

Regarding the valid TT coverage in the rural areas by divisions, Chittagong and Dhaka were with better performance for TT3, TT4, and TT5 along with Khulna and Rajshahi divisions for TT3 and TT5 . Sylhet division has the lowest coverage among the divisions for TT1, TT2, and TT3 (Figure F11).

3.7
LEVELS OF THE COVERAGE BY SURVEY UNIT

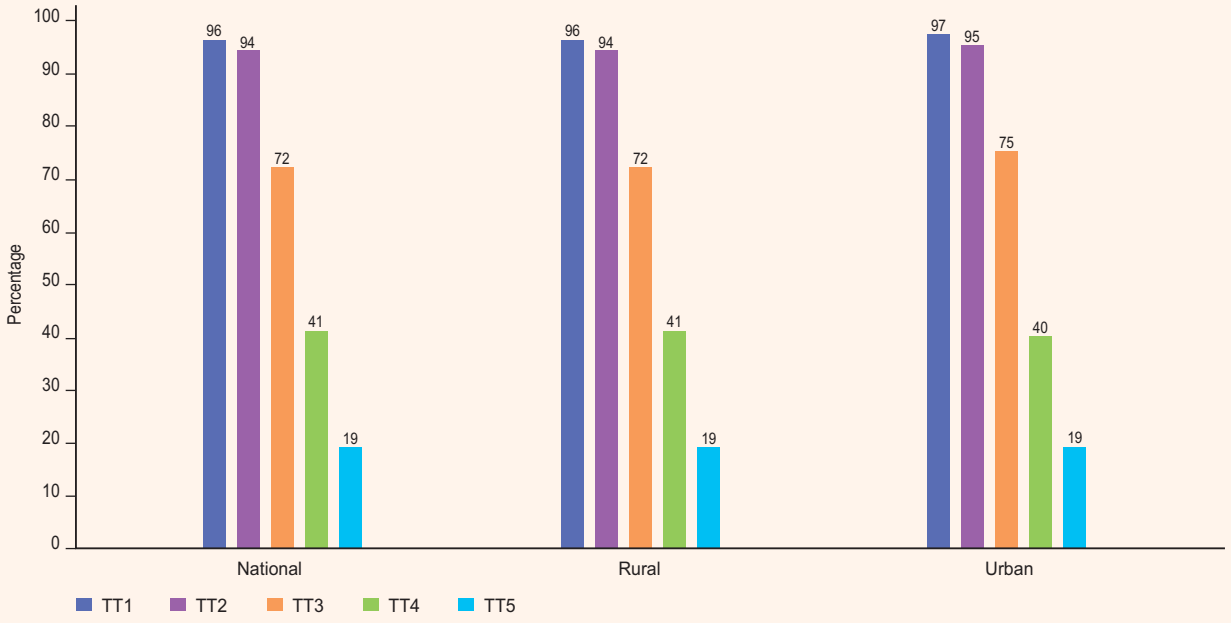
As ready reference, the rates of the valid TT coverage among the women aged between 15-49 years, by Districts/City Corporations according to divisions, are shown in Appendix. Valid TT2 coverage rates among the mothers of 0-11 months old children by Districts/City Corporations according to divisions, are also presented graphically in Figures 7 to 12 in the Appendix.

FIGURE F1
Crude TT Coverage among Mothers of 0-11 Months Old Children by National, Rural and Urban Areas in 2006 (Card+History)



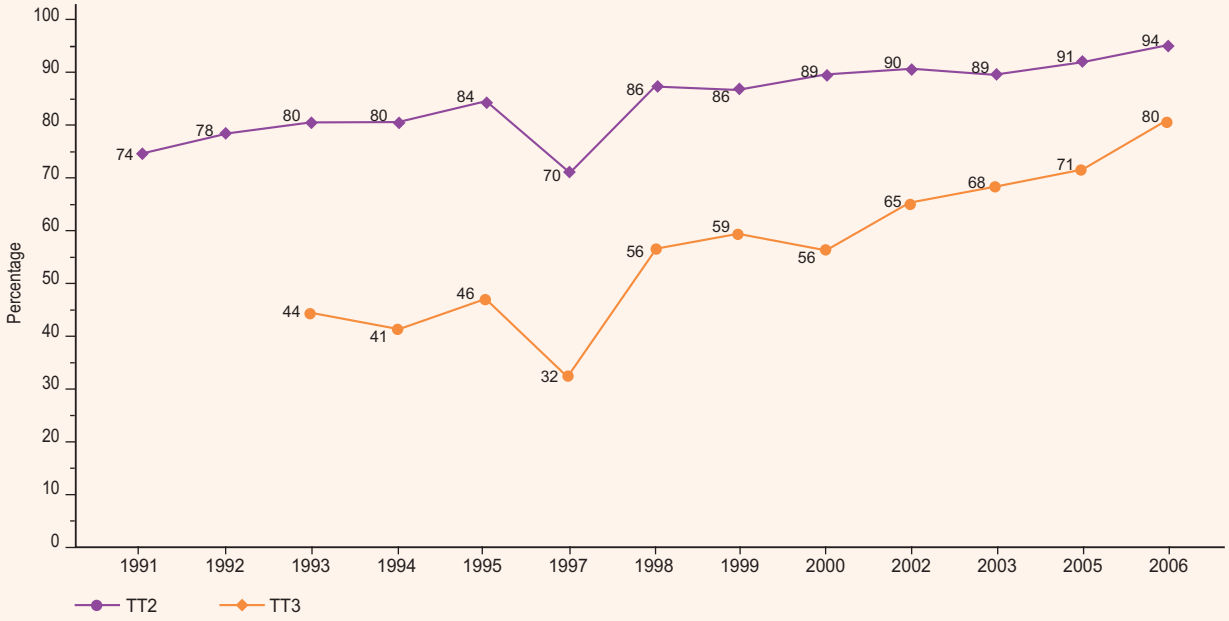
Source: CES 2006

FIGURE F2
Valid TT Coverage among Mothers of 0-11 Months Old Children by National, Rural and Urban Areas in 2006 (Card+History)



Source: CES 2006

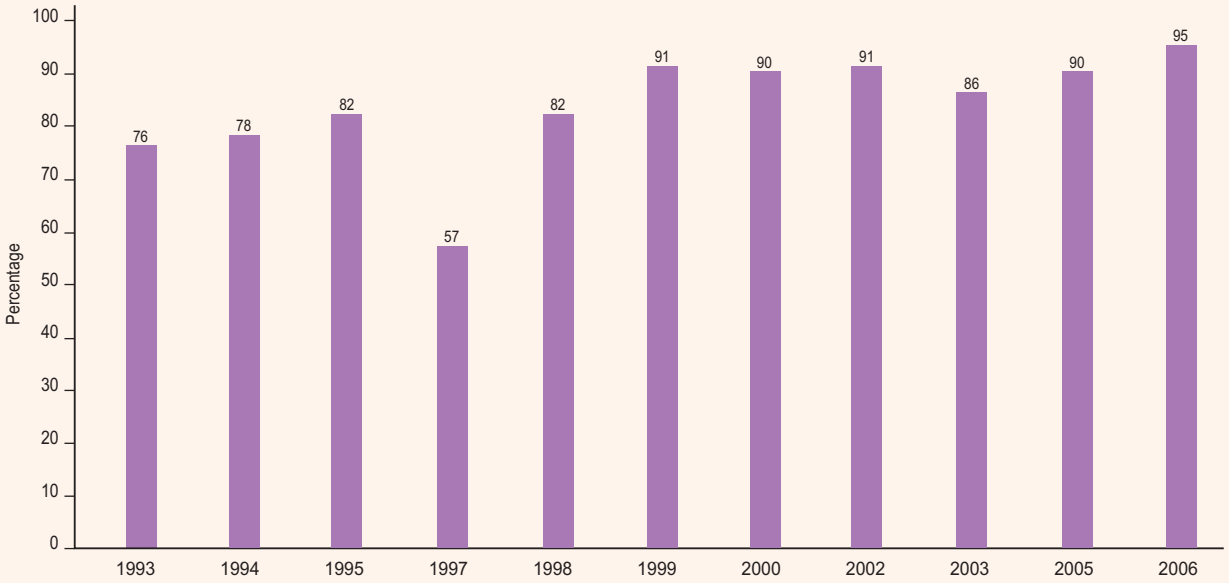
FIGURE F3
Annual Trend of Crude TT Coverage among Mothers of 0-11 Months Old Children at National Level from 1991 to 2006* (Card+History)



Source: Coverage Evaluation Survey 1991-1995, 1997- 2003, 2005 and 2006

* Since the TT3 coverage rate was not available for 1992, it is given from 1993 instead of 1991.

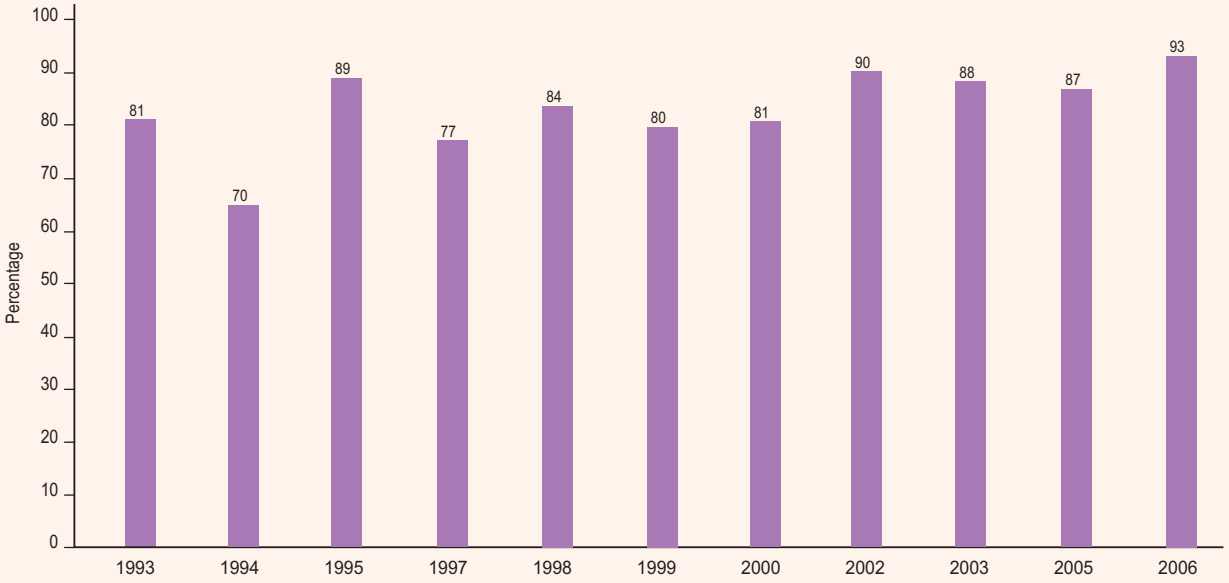
FIGURE F4
Crude TT2 Coverage among Mothers of 0-11 Months Old Children by Dhaka Division from 1993 to 2006 (Card + History)



Source: Coverage Evaluation Surveys (CESs) for 1993-1995, 1997-2003, 2005 and 2006

FIGURE F5

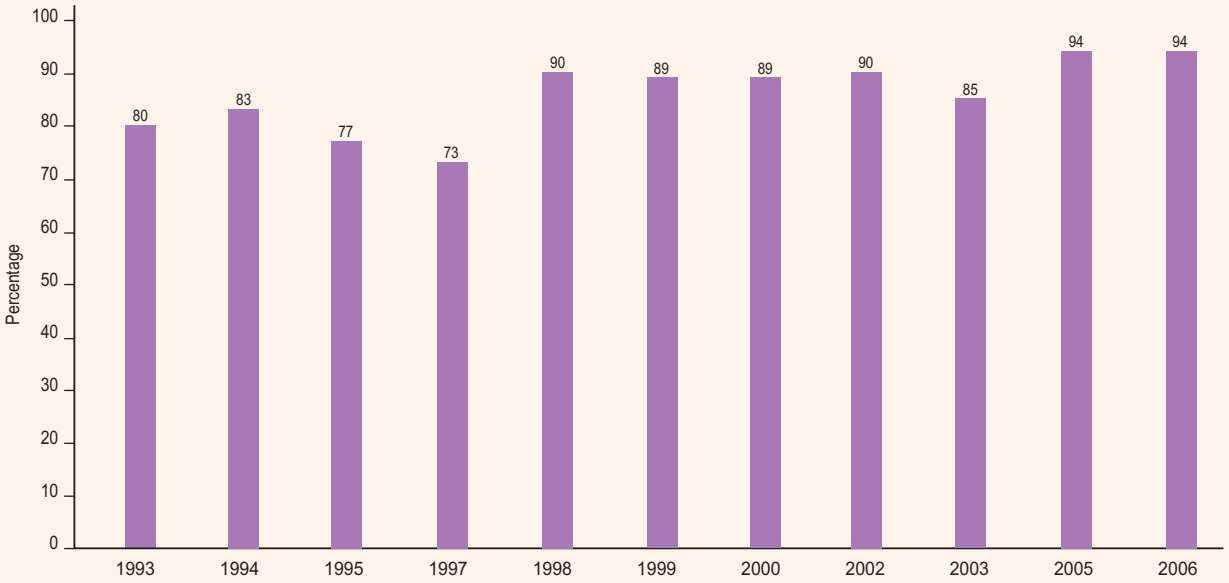
Crude TT2 Coverage among Mothers of 0-11 Months Old Children by Chittagong Division from 1993 to 2006 (Card + History)



Source: Coverage Evaluation Surveys (CESs) for 1993-1995, 1997-2003, 2005 and 2006

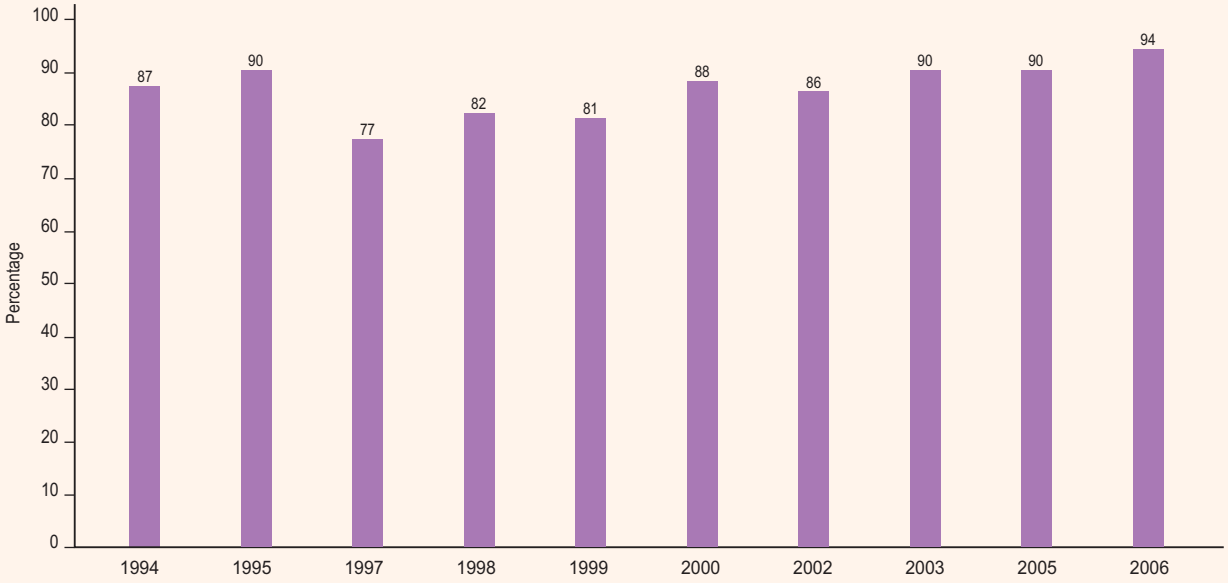
FIGURE F6

Crude TT2 Coverage among Mothers of 0-11 Months Old Children by Rajshahi Division from 1993 to 2006 (Card + History)



Source: Coverage Evaluation Surveys (CESs) for 1993-1995, 1997-2003, 2005 and 2006

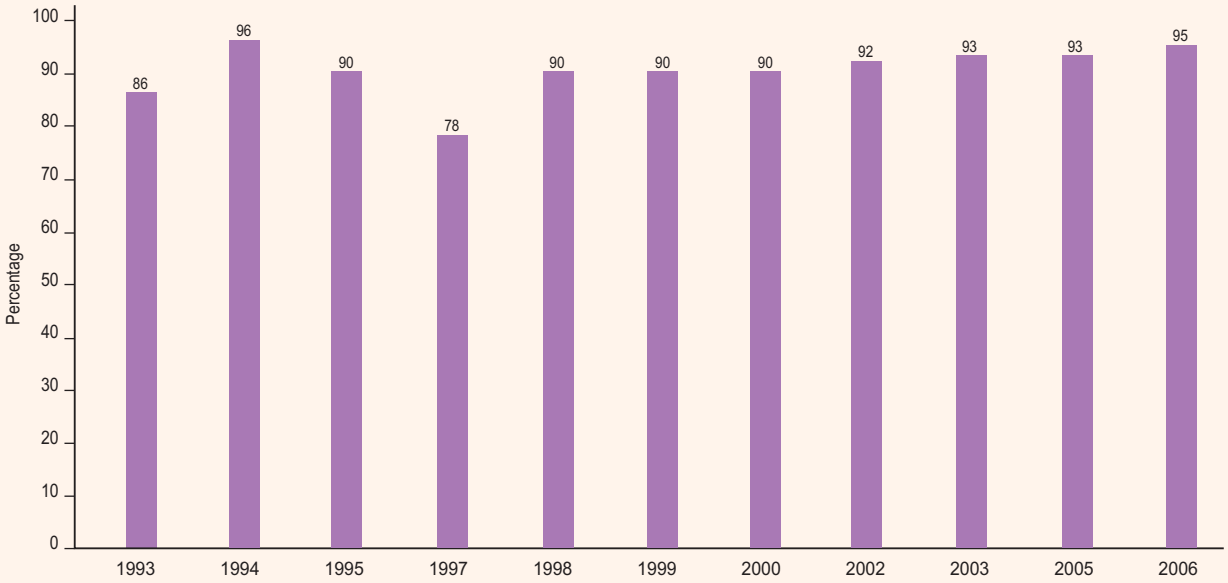
FIGURE F7
Crude TT2 Coverage among Mothers of 0-11 Months Old Children by Barisal Division from 1994 to 2006 (Card + History)



Source: Coverage Evaluation Surveys (CESs) for 1993-1995, 1997-2003, 2005 and 2006

Note: Before 1994, Barisal division was a part of Khulna division.

FIGURE F8
Crude TT2 Coverage among Mothers of 0-11 Months Old Children by Khulna Division from 1993 to 2006 (Card + History)



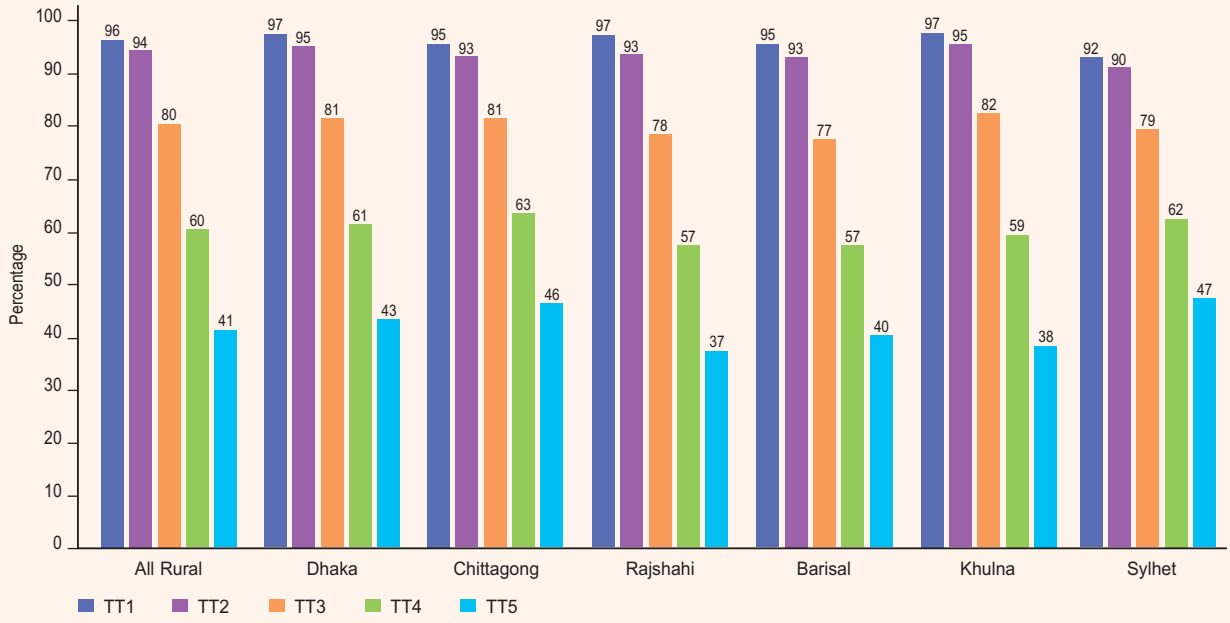
Source: Coverage Evaluation Surveys (CESs) for 1993-1995, 1997-2003, 2005 and 2006

FIGURE F9
Crude TT2 Coverage among Mothers of 0-11 Months Old Children by Sylhet Division from 1999 to 2006 (Card + History)

Source: Coverage Evaluation Surveys (CESs) for 1993-1995, 1997-2003, 2005 and 2006

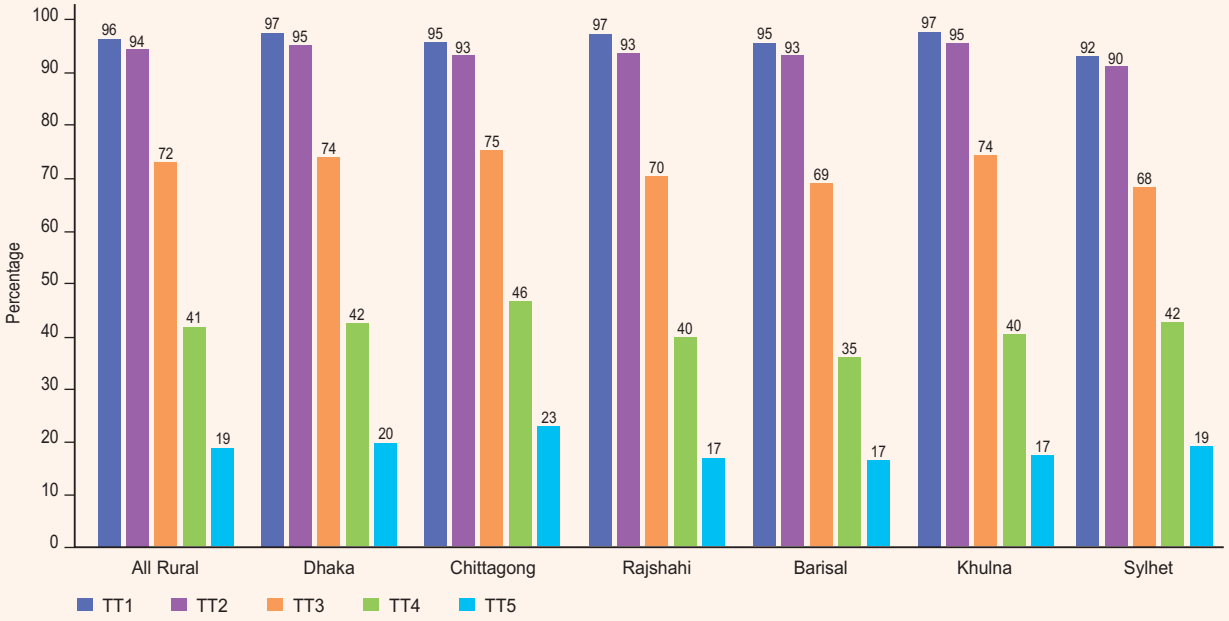
Note: Before 1999, Sylhet division was a part of Chittagong division.

FIGURE F10
Crude TT Coverage among Mothers of 0-11 Months Old Children In Rural Areas by Division in 2006 (Card+History)



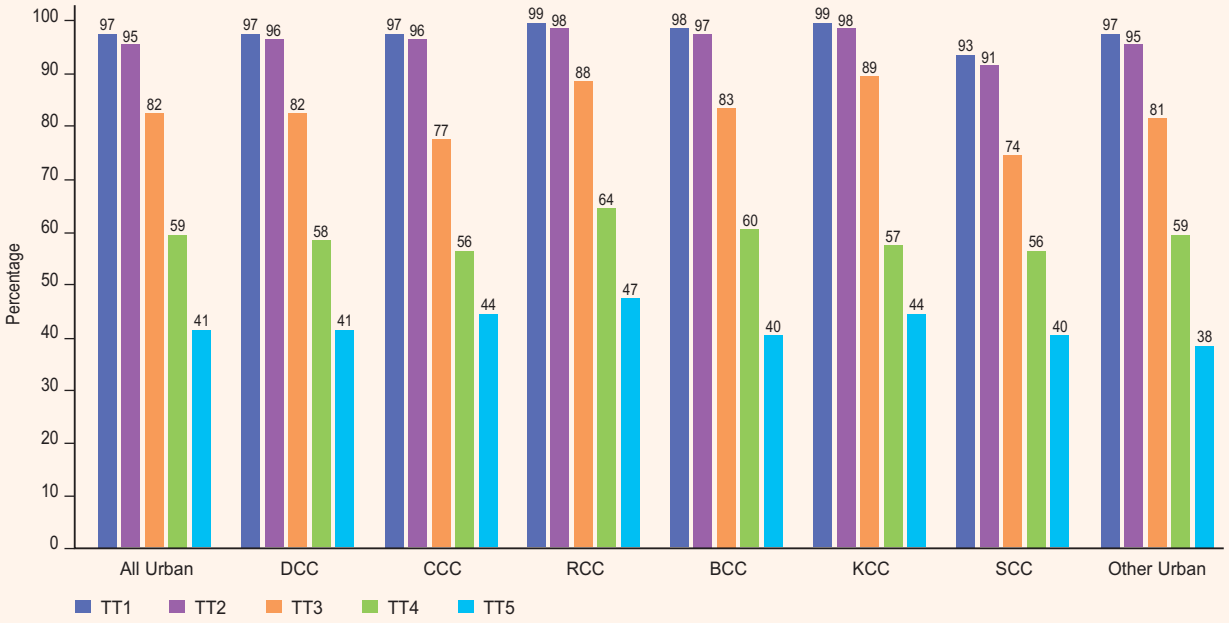
Source: CES 2006

FIGURE F11
Valid TT Coverage among Mothers of 0-11 Months Old Children In Rural Areas by Division in 2006 (Card+History)



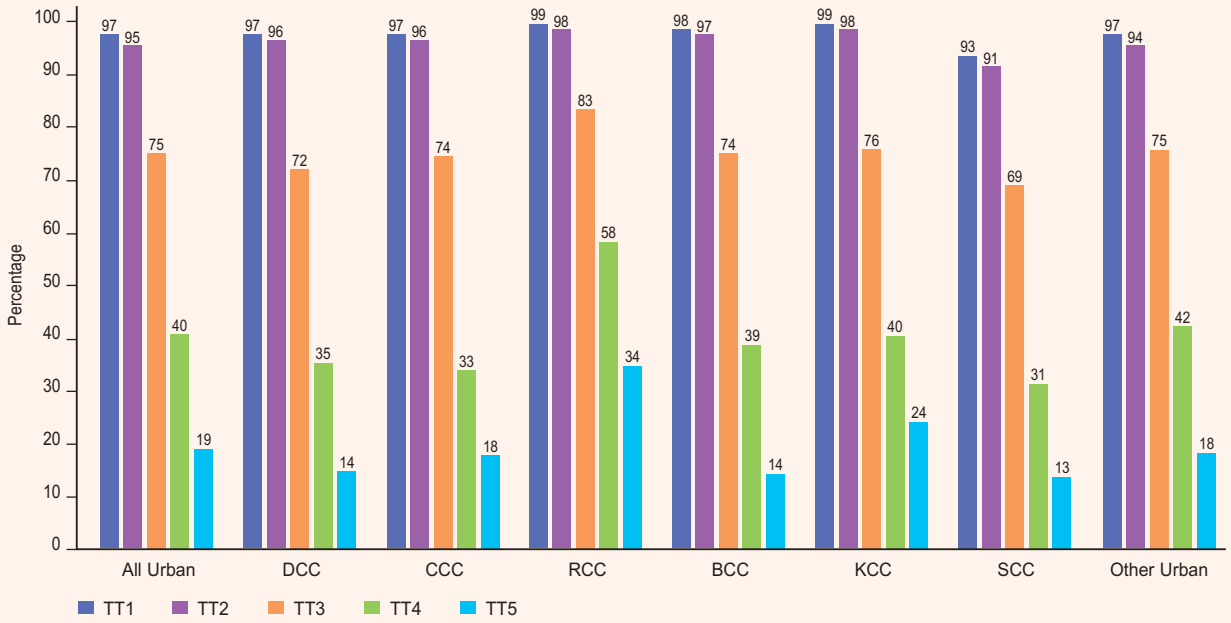
Source: CES 2006

FIGURE F12
Crude TT Coverage among Mothers of 0-11 Months Old Children In Urban Areas by City Corporation/Municipalities in 2006 (Card+History)



Source: CES 2006

FIGURE F13
Valid TT Coverage among Mothers of 0-11 Months Old Children In Urban Areas by City Corporation/Municipalities in 2006 (Card+History)



Source: CES 2006

3.8
URBAN COVERAGE BY CITY CORPORATION

In urban areas - RCC and KCC - the crude coverage was similar for both TT1 (99 percent) and TT2 (98 percent). Similarly in DCC and CCC the coverage was same for both TT1 and TT2 which were 97 percent and 96 percent respectively. In BCC, it was 98 percent for TT1 and 97 percent for TT2. Crude TT1 and TT2 were found to be the lowest in SCC (93 percent and 91 percent). Crude TT3 was found to be the highest in KCC (89 percent) and RCC (88 percent). Crude TT4 and TT5 were found to be the highest in RCC which was 64 for TT4 and 47 percent for TT5. In contrast, crude TT3 and crude TT4 were found to be the lowest in SCC (74 and 56 percent respectively) and crude TT5 in SCC and BCC (40 percent) (Figure F12).

In case of valid TT coverage, TT2 was found to be the highest in RCC and KCC (98 percent),which was being followed by BCC (97 percent), DCC and CCC (96 percent) while, it was found lowest in SCC (91 percent). TT3 coverage was found to be the highest in RCC (83 percent) and the lowest in SCC (69 percent); TT4 coverage was the highest in RCC (58 percent) and the lowest in SCC (31 percent); and the coverage of TT5 was the highest in RCC (34 percent) and the lowest in SCC (13 percent) (Figure F13).

3.9
TT CARD STATUS AMONG MOTHERS

Availability of TT vaccination cards among the surveyed mothers receiving TT vaccine was in general low. Overall, 42 percent of the vaccinated mothers could show their TT cards at the time of the survey which

was 43 percent in the rural areas and slightly lower- 39 percent- in the urban areas. Nationally, forty- one percent of the mothers reported about losing their TT cards with 8 percentage points variation between rural (40 percent) and urban (48 percent) areas. Thus, the TT card retention rate computed as percentage of TT cards issued was found only 51 percent nationally - 52 percent in rural areas and a slightly lower rate (45 percent) in urban areas (Figure GI).

TT card retention rate in the rural areas was the highest in Rajshahi division (61 percent), which was being followed by Sylhet (56 percent), Khulna (55 percent), Chittagong (54 percent), and Barisal divisions (49 percent). The rate for TT card retention was the lowest (41 percent) in Dhaka division (Figure G2).

Within urban areas under City Corporations, TT card retention rate was the highest in RCC (55 percent) and the lowest in DCC (31 percent) (Figure G3).

3.10 INCIDENCE OF INVALID DOSES

Estimates of invalid TT doses are shown in Figure G4. Nationally, the incidence of invalid doses both in rural and urban areas rose steeply for TT3 and gradually decreased for the subsequent doses. Invalid doses at the national level was negligible(1 percent) for TT2; it jumped upto about 24 percent for TT3; and, then it declined to 22 percent for TT4 and to 19 percent for TT5 (Figure G4). For example, while the proportion of invalid doses at the national level was a negligible 24 percent for TT3, it declined to about 22 percent for TT4, and it declined again to 19.

In the rural areas by divisions, incidence of invalid TT3 doses was the highest in Sylhet (36 percent), which was being followed by Chittagong (26 percent), Dhaka (25 percent), and Barisal divisions (24 percent). Incidence of invalid TT3 doses was the lowest in Rajshahi and Khulna divisions (21 percent). Invalid TT4 dose incidence varied between 20 percent- the lowest in Barisal division and 28 percent- the highest in Rajshahi division. And, the invalid TT5 dose incidence ranged between 16 percent in Khulna and Rajshahi divisions and 29 percent in Sylhet division (Figure G5).

In urban areas under the City Corporations/all Municipalities, incidence of invalid TT3 dose was the highest in DCC and SCC (28 percent) and the lowest in RCC (13 percent). Invalid TT3 dose incidence varied between 22 percent and 26 percent among other city corporations. Invalid TT4 doses was the highest in SCC (27 percent) and the lowest in RCC (11 percent). However, incidence of invalid dose was 18 percent in CCC, 20 percent in KCC, 23 percent in DCC, and 25 percent in BCC. Incidence of invalid TT5 was the highest in CCC (26 percent) and the lowest in RCC (7 percent) (Figure G6).

3.11 SCREENING FOR TT VACCINATION OF MOTHERS

Nationally, in CES 2006 31 percent of the mothers were found to be screened for TT vaccination eligibility when they brought their newborn babies to a vaccination center for routine vaccination. Proportions of the screened and non- screened mothers were almost similar both in urban and rural areas (34 percent and 31 percent) respectively (Figure G7).

In the rural areas by division, proportion of the screened mothers was the highest (36 percent) in Chittagong and Sylhet divisions and the lowest (25 percent) in Rajshahi division (Figure G8).

In the urban areas under the City Corporations/all Municipalities, proportion of the screened mothers was high - 56 percent - in KCC and a slightly lower - 44 percent - in CCC, which was being followed by DCC- 36 percent. The lowest was found in SCC- 22 percent (Figure G9).

3.12
CHILDREN PROTECTED AT BIRTH (PAB) AGAINST TETANUS

A child was considered born protected at birth (PAB) against tetanus if the mother had necessary protection during his/her birth by receiving due doses of TT vaccination as per the schedule given in Table A1. The proportion of children, thus, found to be protected at birth (PAB) against tetanus - a result of timely TT vaccination of their mothers - was appreciably high, although much has to be done to reach 100 percent target. Nationally, 93 percent of the infants born prior to the CES 2006 were PAB against tetanus. The proportion of the children born PAB was greater in urban areas 95 percent than that in rural areas (93 percent) (Figure G10).

When trend PAB was examined, the proportion of children born PAB against tetanus was found to have raised a little - from 83 percent in 1999 to 87 percent in 2005. The percentage of children protected at birth against tetanus increased 6 percentage points between 2005 and 2006 (Figure G11).

In the rural areas by divisions, the proportion of the infants born PAB was the highest in Dhaka and Khulna divisions (94 percent), which was being closely followed by Barisal (93 percent), Rajshahi, and Chittagong divisions (92 percent). However, the lowest proportion was found in Sylhet division, which was 88 percent (Figure G12).

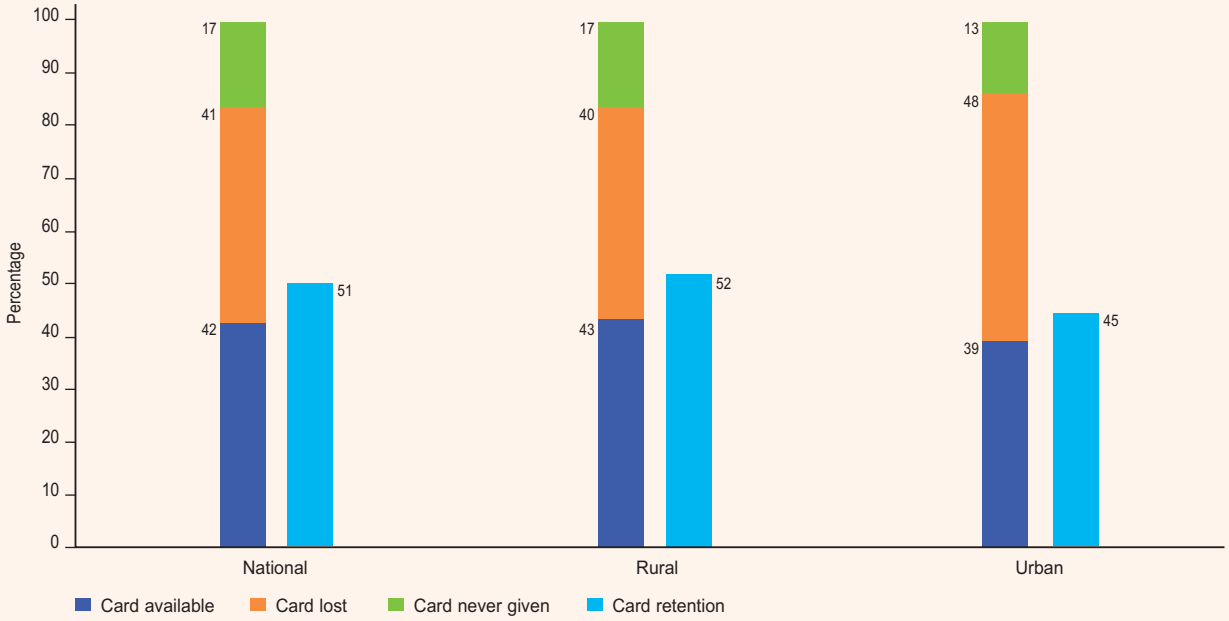
In the urban areas under the City Corporations and municipalities, the proportion of children PAB was almost universal (97 percent) in RCC, BCC and KCC, being followed by DCC and CCC which was 96 percent; but, it was only 90 percent in SCC (Figure G13).

3.13
TT COVERAGE AND PAB STATUS

Distribution of TT2 (proportion of mothers having 0-11 months old children, who received at least two valid TT doses) and PAB status of their infants is presented by the age of the mothers in (Figure G14) in the country as a whole, (Figure G15) in rural areas, and (Figure G16) in urban areas. Nationally, 93 percent children were found to be protected from Tetanus during their birth in CES 2006. PAB status was found to be slightly higher among the age groups 15-19, 20-24, and 25-29 respectively (Figure G14.) Proportions of mothers who are protected in the age group 15-19 was 93 percent, for 20-24 age group 94 percent, and for 25-29 age group 93 percent. However, a gradual decreasing trend was observed among the older age. PAB status was found to be the lowest (83 percent only) for the age group 40 years and above.

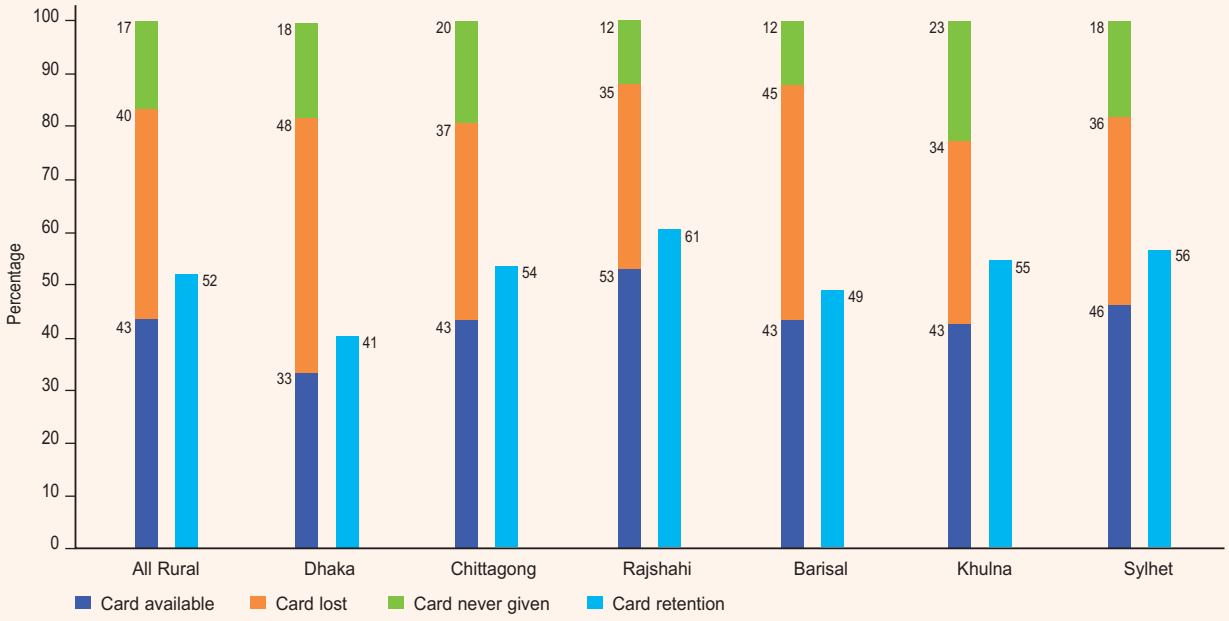
TT2 varied by age of the mothers. Nationally, TT2 remained in the younger age groups (93 percent) in the age group between 15 - 19 years ; 95 percent in the next higher age group between 20-24 years, 94 percent in the age group between 25-29 years. From the peak, TT2 declined in the higher age group and coming down to 84 percent, the lowest, among the oldest age group 40+ years.

FIGURE G1
TT Card Status among Mothers of 0-11 Months Old Children by National, Rural and Urban Areas in 2006



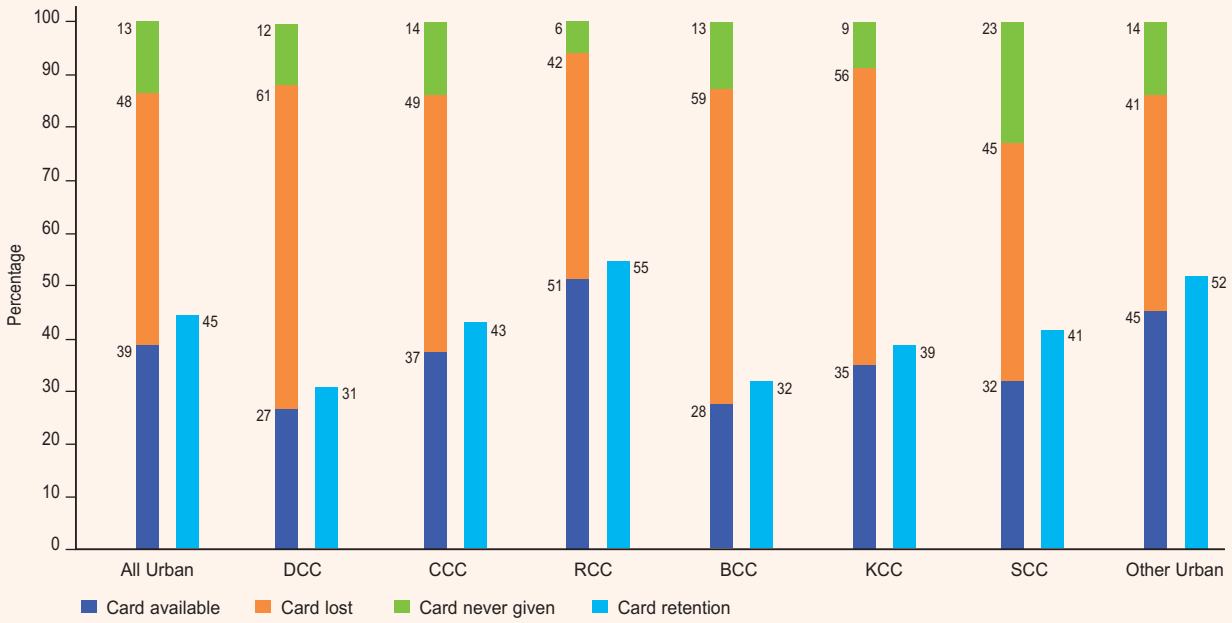
Source: CES 2006

FIGURE G2
TT Card Status among Mothers of 0-11 Months Old Children in Rural Areas by Division in 2006



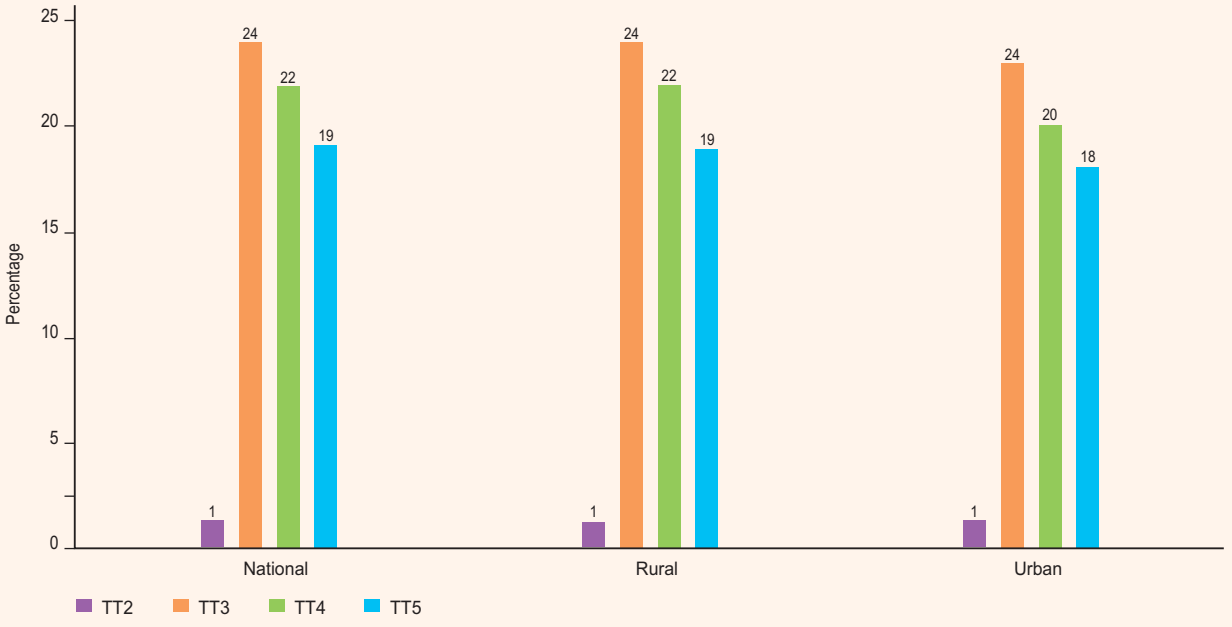
Source: CES 2006

FIGURE G3
TT Card Status among Mothers of 0-11 Months Old Children in Urban Areas by City Corporation/Municipalities in 2006



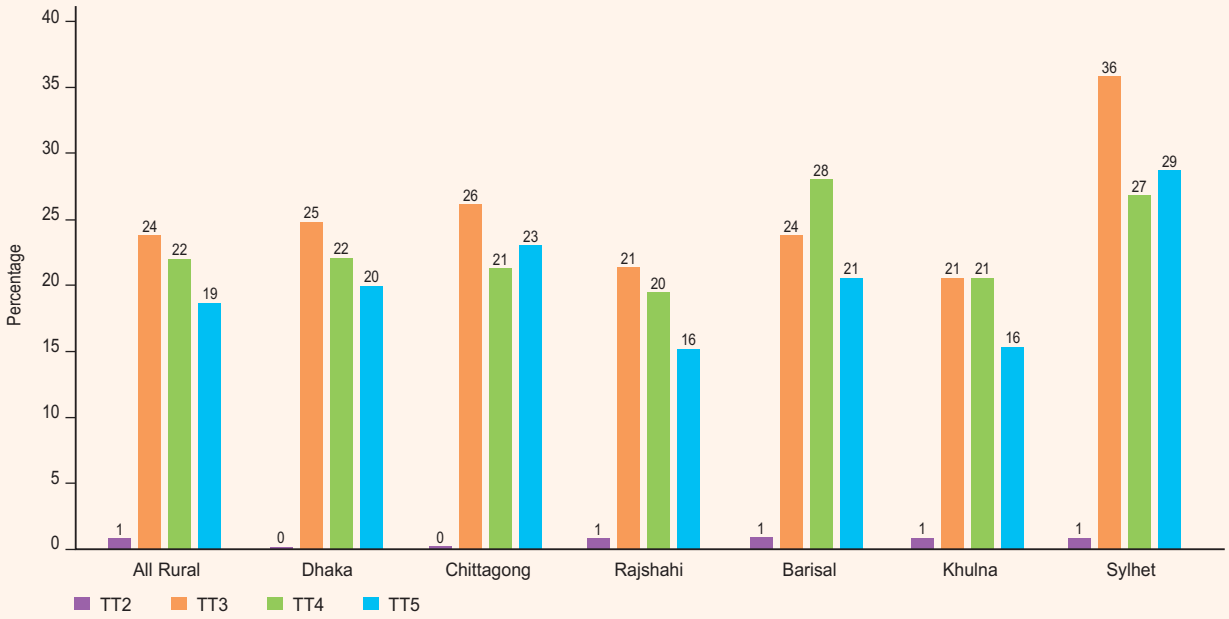
Source: CES 2006

FIGURE G4
Incidence of Invalid TT Doses among Mothers of 0-11 Months Old Children by National, Rural and Urban Areas in 2006 (Card+History)



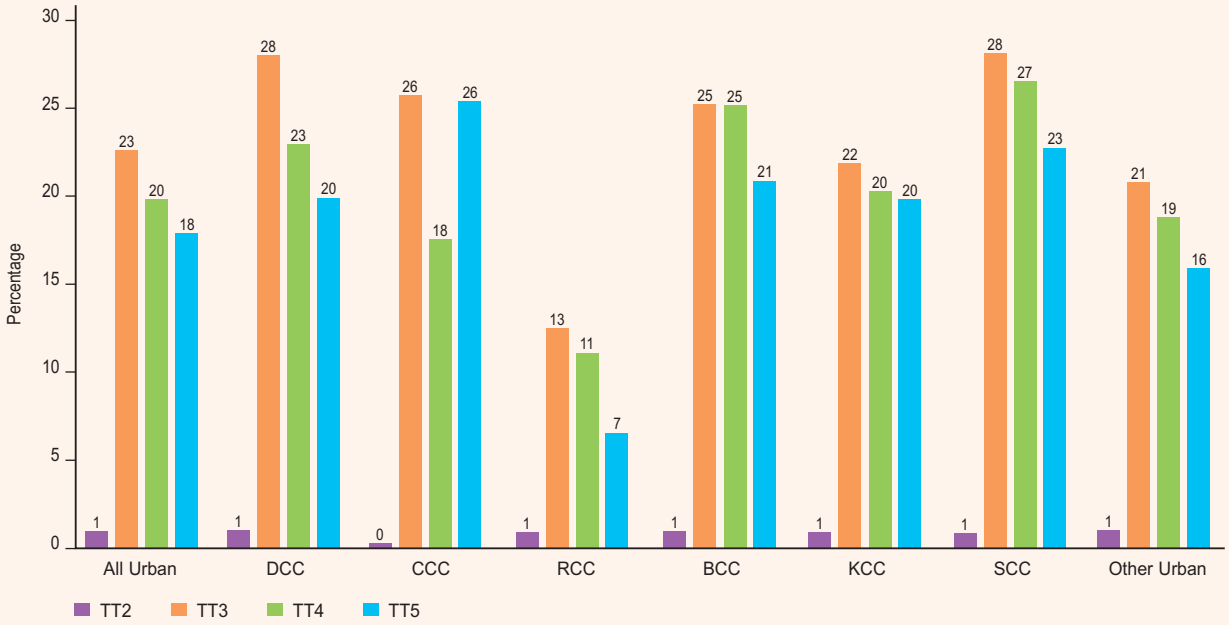
Source: CES 2006

FIGURE G5
Incidence of Invalid TT Doses among Mothers of 0-11 Months Old Children in Rural Areas by Division in 2006 (Card+History)



Source: CES 2006

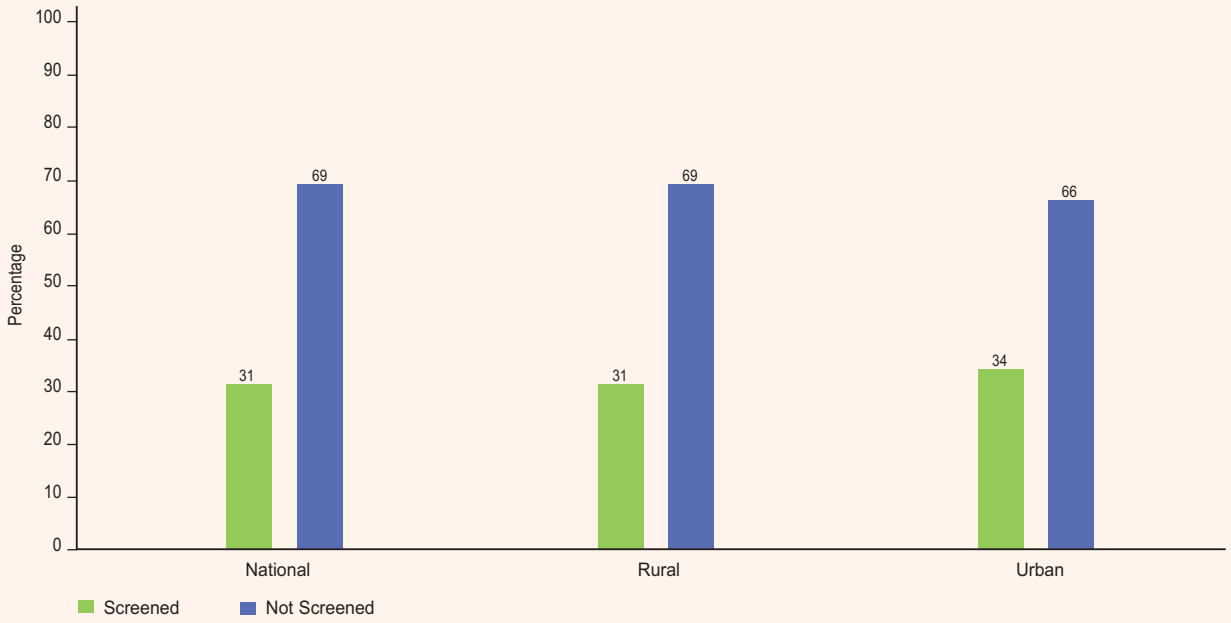
FIGURE G6
Incidence of Invalid TT Doses among Mothers of 0-11 Months Old Children in Urban Areas by City Corporation/Municipalities in 2006 (Card+History)



Source: CES 2006

FIGURE G7

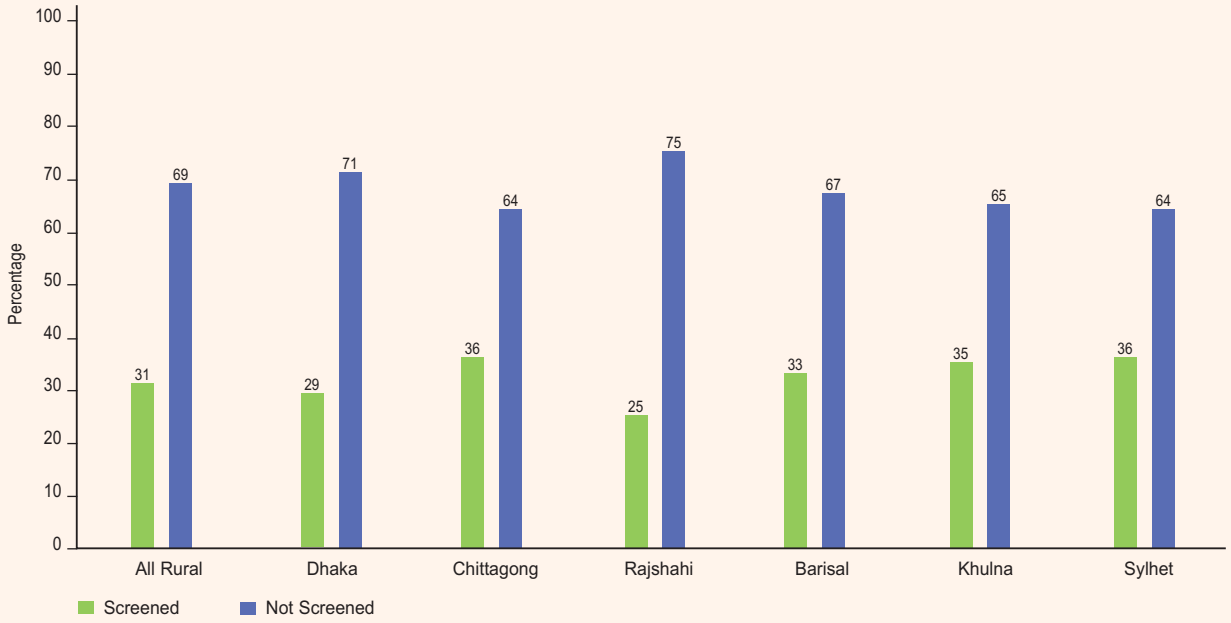
Percentage of Mothers of 0-11 Months Old Children Screened for TT Status during Child's Vaccination by National, Rural and Urban Areas in 2006



Source: CES 2006

FIGURE G8

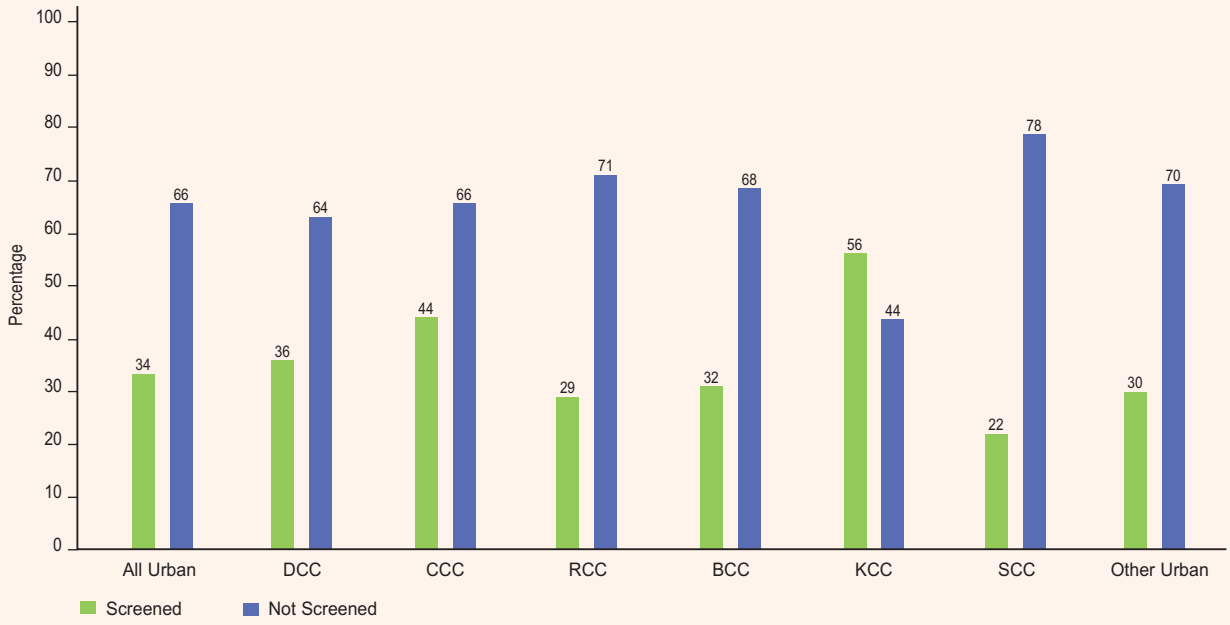
Percentage of Mothers of 0-11 Months Old Children Screened for TT Status during Child's Vaccination in Rural Areas by Division in 2006



Source: CES 2006

FIGURE G9

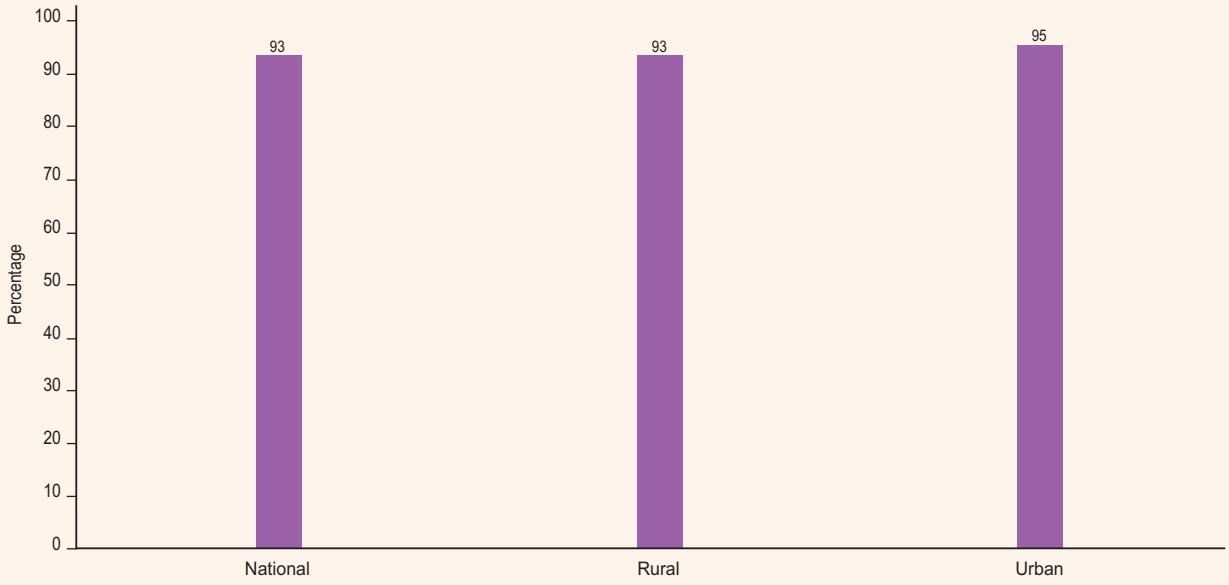
Percentage of Mothers of 0-11 Months Old Children Screened for TT Status during Child's Vaccination in Urban Areas by City Corporation/Municipalities in 2006



Source: CES 2006

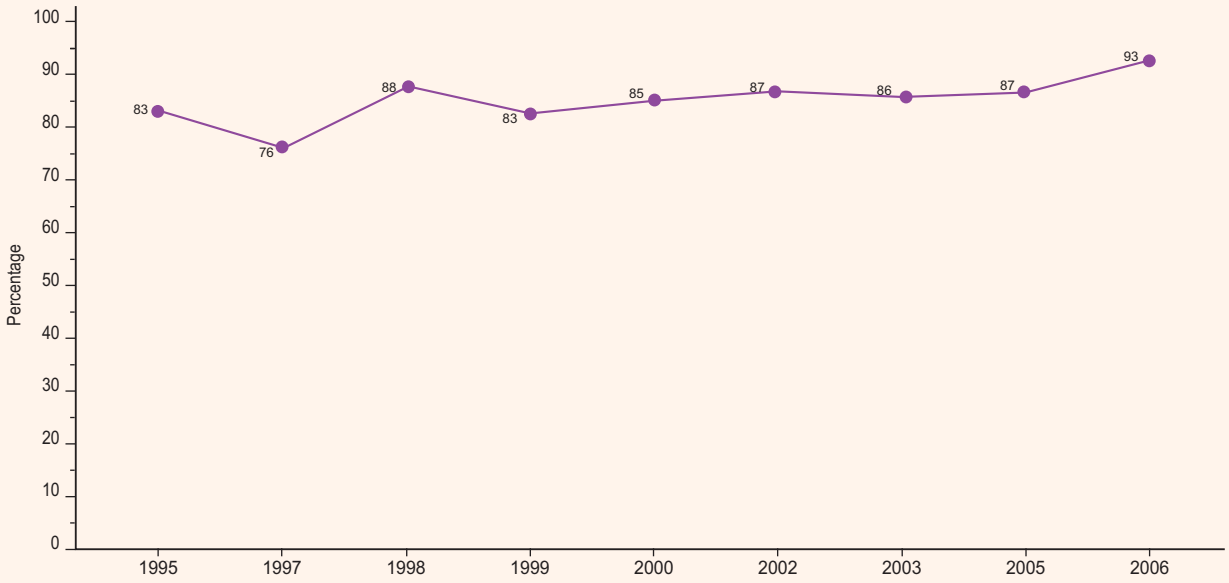
FIGURE G10

Percentage of Newborns Protected at Birth against Tetanus by National, Rural and Urban Areas in 2006



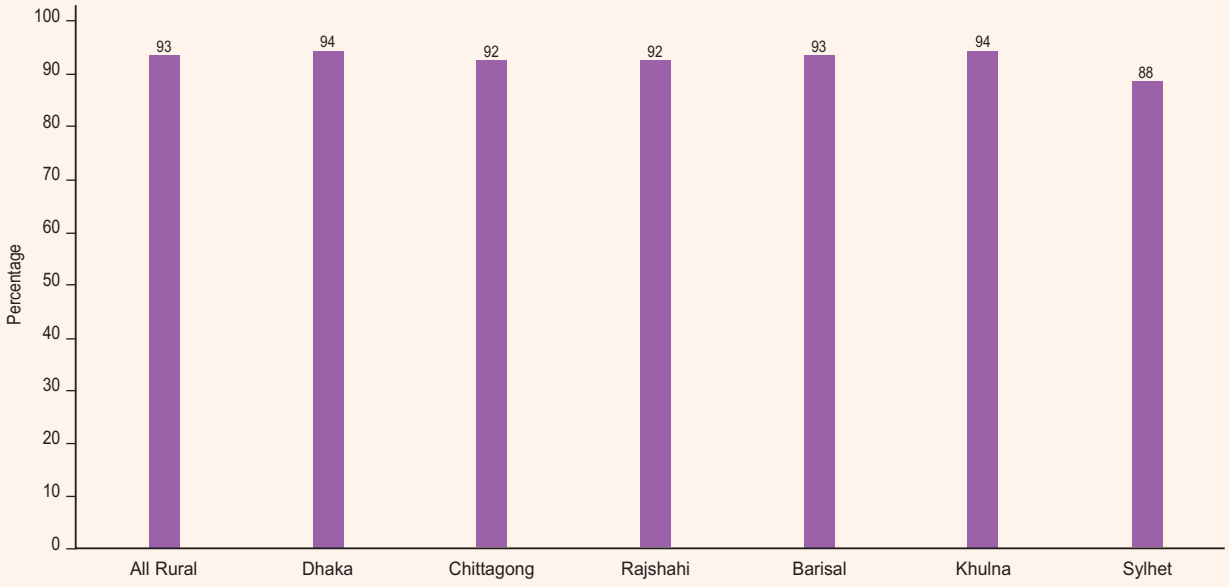
Source: CES 2006

FIGURE G11
Percentage of Newborns Protected at Birth against Tetanus at National Level from 1995 to 2006



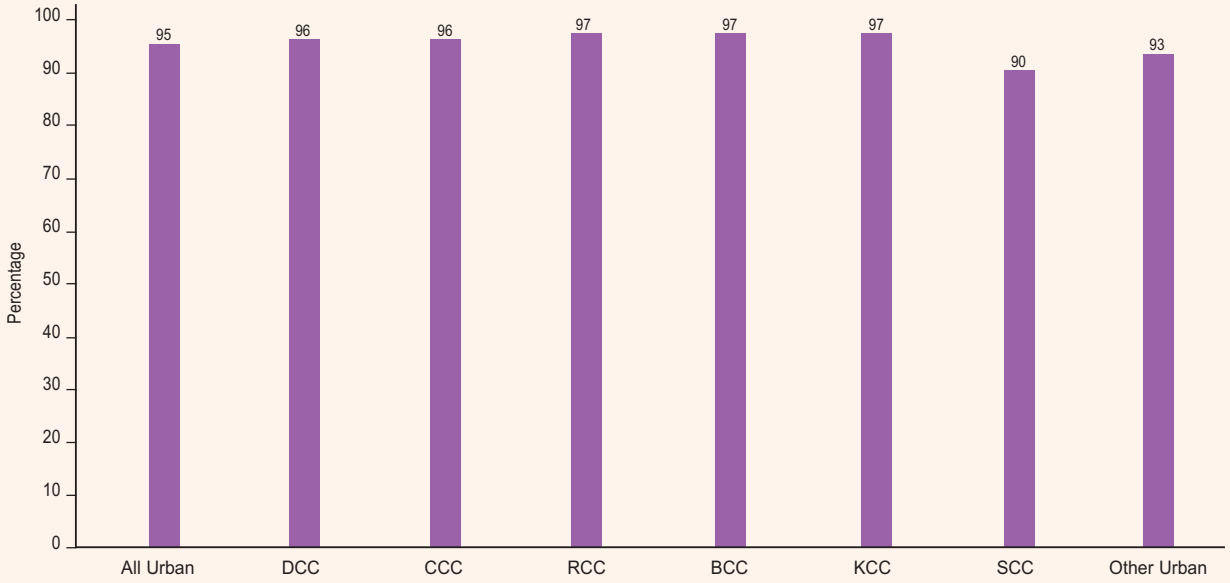
Source: Coverage Evaluation Surveys (CESs) for 1995, 1997, 1998, 1999, 2000, 2002, 2003, 2005 & 2006

FIGURE G12
Percentage of Newborns Protected at Birth against Tetanus in Rural Areas by Division in 2006



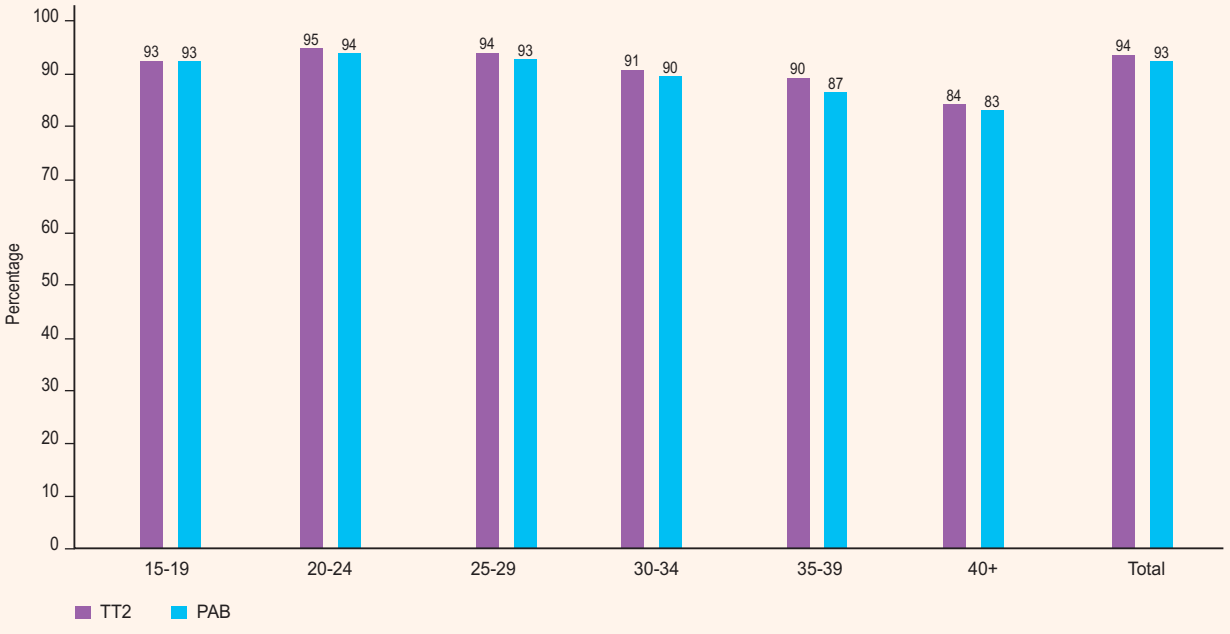
Source: CES 2006

FIGURE G13
Percentage of Newborns Protected at Birth against Tetanus in Urban Areas by City Corporation/Municipalities in 2006



Source: CES 2006

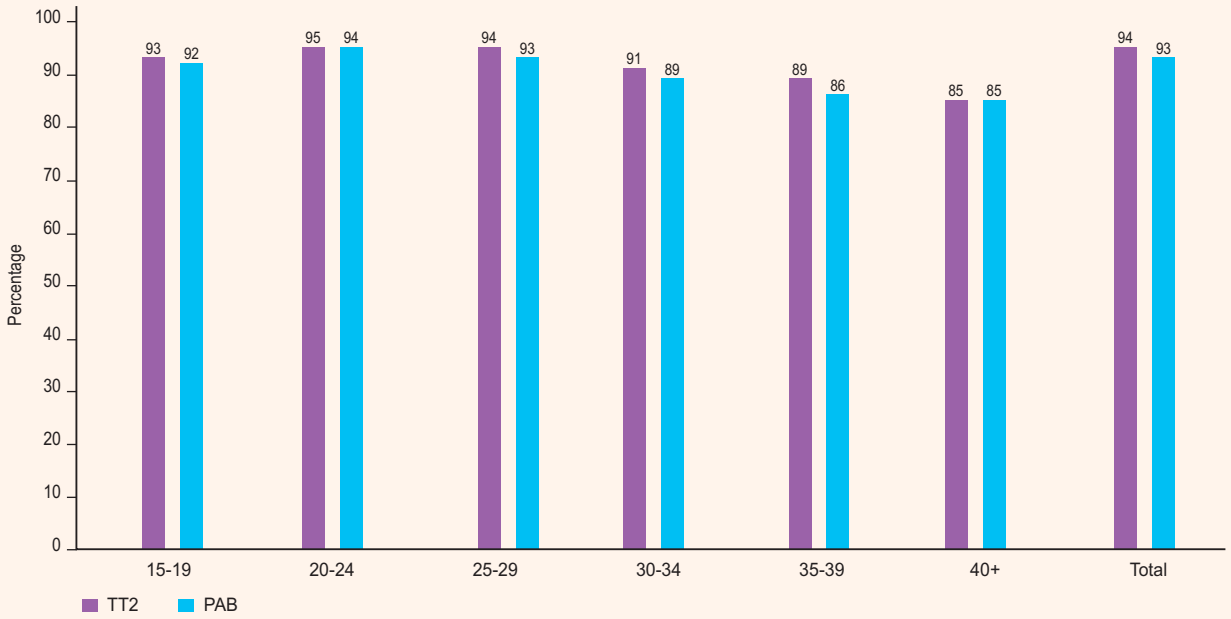
FIGURE G14
Percentage of Mother Received TT2 and Percentage of New Born Protected at Birth by Age Group of Mother in 2006



Source: CES 2006

FIGURE G15

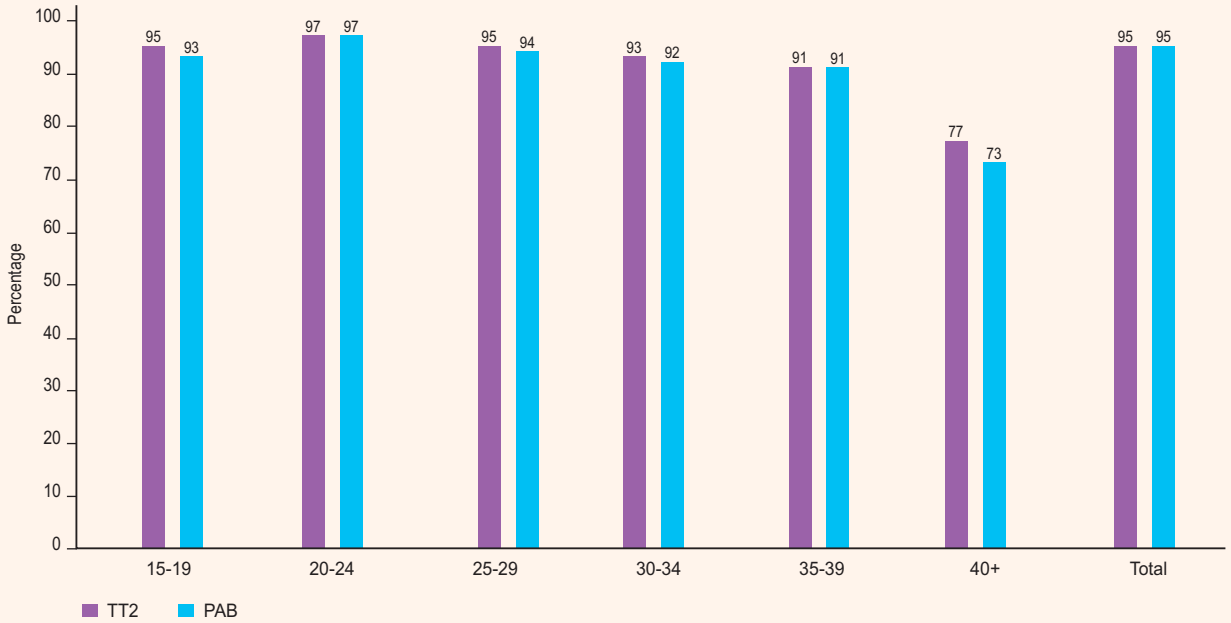
Percentage of Mother Received TT2 and Percentage of New Born Protected at Birth by Age Group of Mother in Rural Areas in 2006



Source: CES 2006

FIGURE G16

Percentage of Mother Received TT2 and Percentage of New Born Protected at Birth by Age Group (15-49 years) of Mother in Urban Areas in 2006



Source: CES 2006

3.14
MOTHERS' KNOWLEDGE ABOUT TT VACCINATION

A woman needs a total of five TT doses for her protection against tetanus during her whole reproductive period. About half (51 percent) of mothers surveyed was found to be ignorant of such an important thing. In response to the question, 'How many times a woman must receive TT injection for protection against tetanus during her whole reproductive period?, five percent of the mothers throughout the country replied that it was less than five doses. Nationally, more than fifty percent (51 percent) mentioned that they did not know about it. Lack of proper knowledge was similar in both urban and rural areas (from 5 percent in rural areas to 4 percent in urban areas) (Figure H1).

In the rural areas by divisions, proportion of the mothers who replied that they required less than five TT doses ranged between 7 percent in Sylhet and Chittagong division, and 4 percent in Rajshahi division (Figure H2).

In the urban areas under the City Corporations/all Municipalities, the proportion was 8 percent- the highest in CCC- and 2 percent- the lowest in BCC and KCC (Figure H3).

3.15
SOURCES OF TT VACCINATION

Sources of TT vaccination among the mothers were investigated by asking each of the surveyed mothers the question 'from where she had received her TT1'. As in the case of childhood vaccination, the government emerged as the major provider of TT vaccination to women in Bangladesh. Nationally, 97 percent of the mothers reported that they had received TT1 from a government facility, 87 percent from a government outreach site, and 10 percent from a government hospital, which was being followed by NGO clinics (2 percent) and private clinics (1percent) (Figure I1).

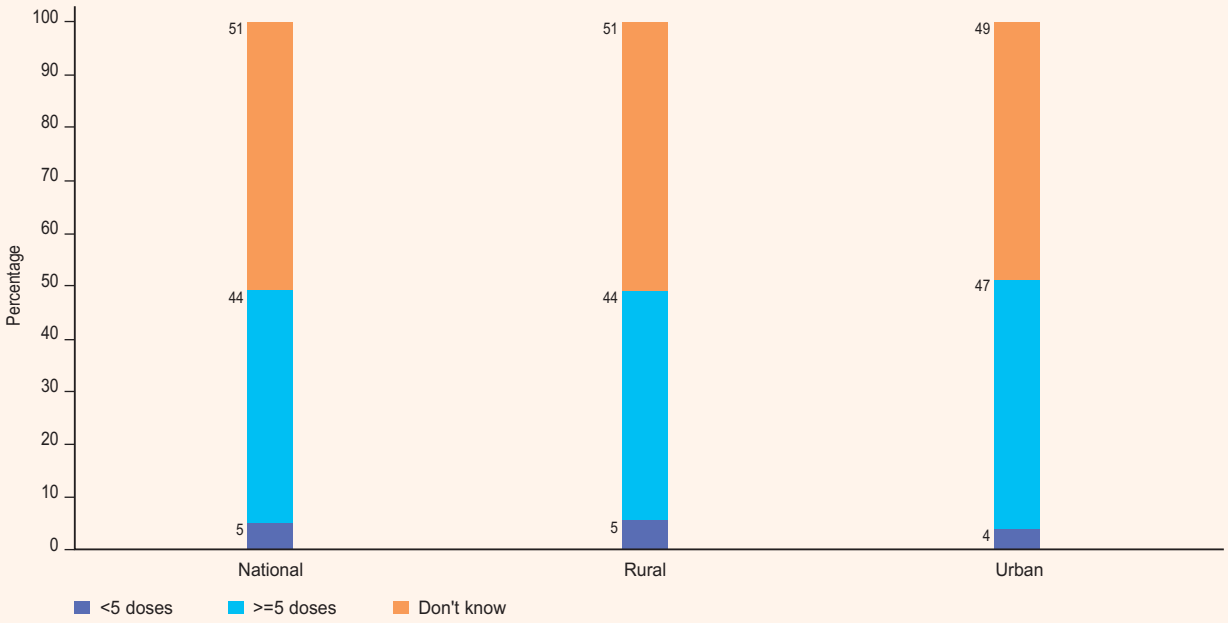
The government being the principal provider of TT vaccination in both rural and urban areas (98 percent and 87 percent respectively), there were considerable variations regarding the specific vaccination sources used in the two areas. The government outreach services were more widely used in the rural than in the urban areas: 90 percent of the vaccinated mothers in the rural areas received TT1 from government outreach sites, as compared to 66 percent in the urban areas. In contrast, the government hospitals/clinics were found to be more commonly used in the urban areas than in the rural areas (21 percent and 8 percent respectively). More striking urban-rural variations were there in the use of other sources, including NGO facilities/outreach sites and private providers. NGOs accounted for 8 percent of the TT vaccination in the urban areas and 1 percent in the rural areas. Private providers were rarely available (1 percent) in the rural areas, but it was 5 percent in the urban areas.

In the rural areas by divisions, the government outreach services were most commonly used in Barisal and Khulna divisions (95 percent) and least used in Chittagong division (85 percent). On the contrary, use of government hospitals/clinics was least in Khulna division (4 percent) and most in Chittagong division (13 percent). Use of NGO services was found low in every division. (Figure I2).

In the urban areas under the City Corporations/all Municipalities, the government outreach services were used most commonly in KCC (73 percent) and the least in SCC and DCC (51 percent and 53 percent respectively). On the contrary, government hospitals/clinics were the least used in CCC (16 percent) and the most used in BCC (26 percent). But, delivery of vaccination by NGOs was most prevalent in KCC (13 percent) and least prevalent in RCC (2 percent) (Figure I3).

FIGURE H1

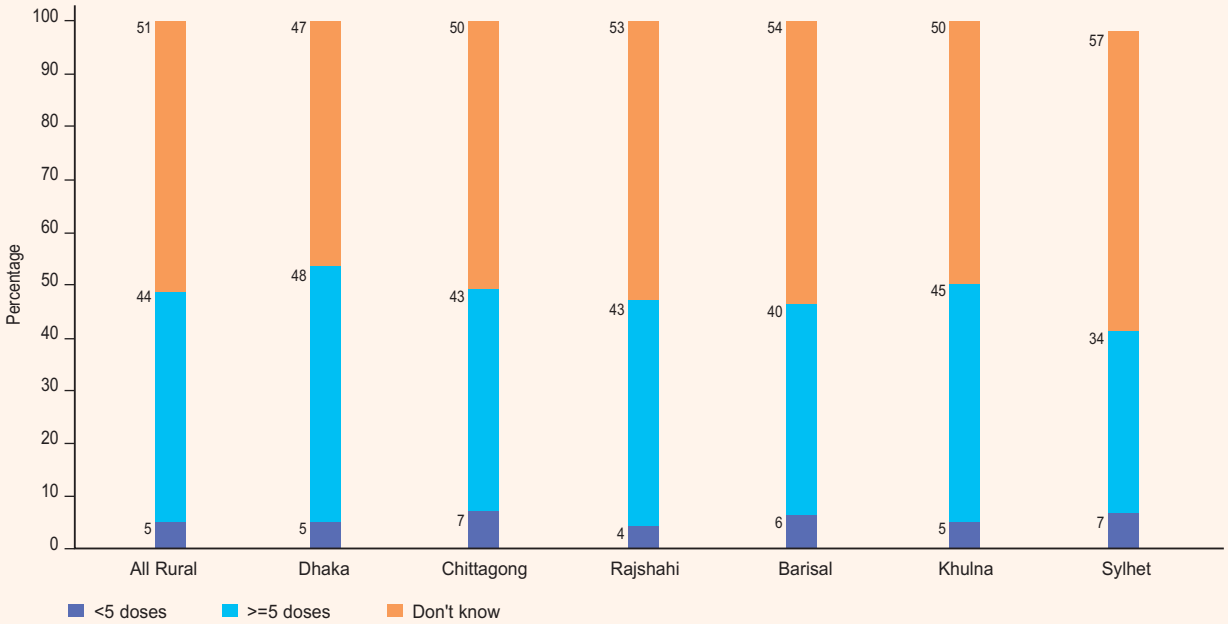
Number of TT Doses Required During Reproductive Period for Protection against Tetanus as Reported by Mothers of 0-11 Months Old Children by National, Rural and Urban Areas in 2006



Source: CES 2006

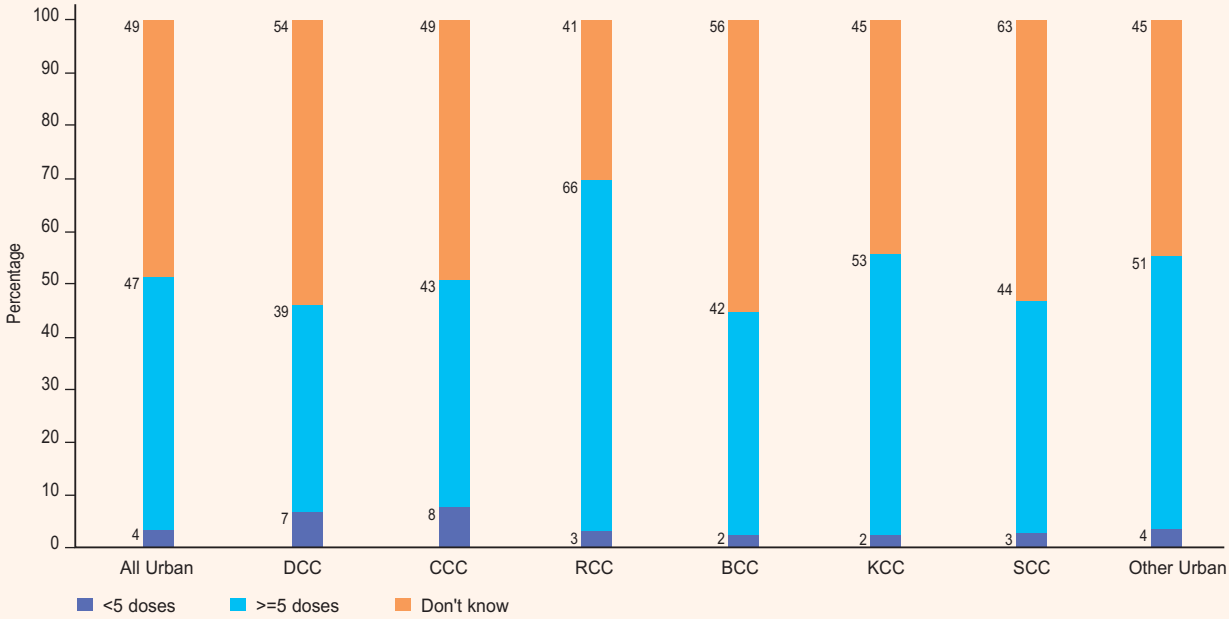
FIGURE H2

Number of TT Doses Required During Reproductive Period for Protection against Tetanus as Reported by Mothers of 0-11 Months Old Children in Rural Areas by Division in 2006



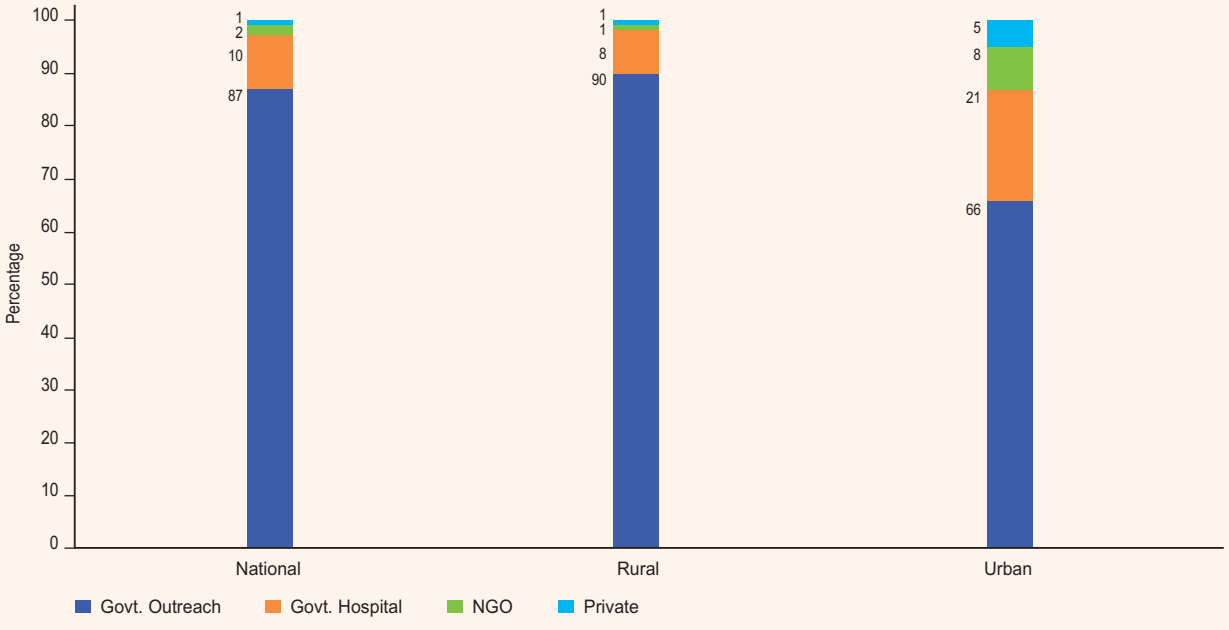
Source: CES 2006

FIGURE H3
Number of TT Doses Required During Reproductive Period for Protection against Tetanus as Reported by Mothers of 0-11 Months Old Children by City Corporation/Municipalities in 2006



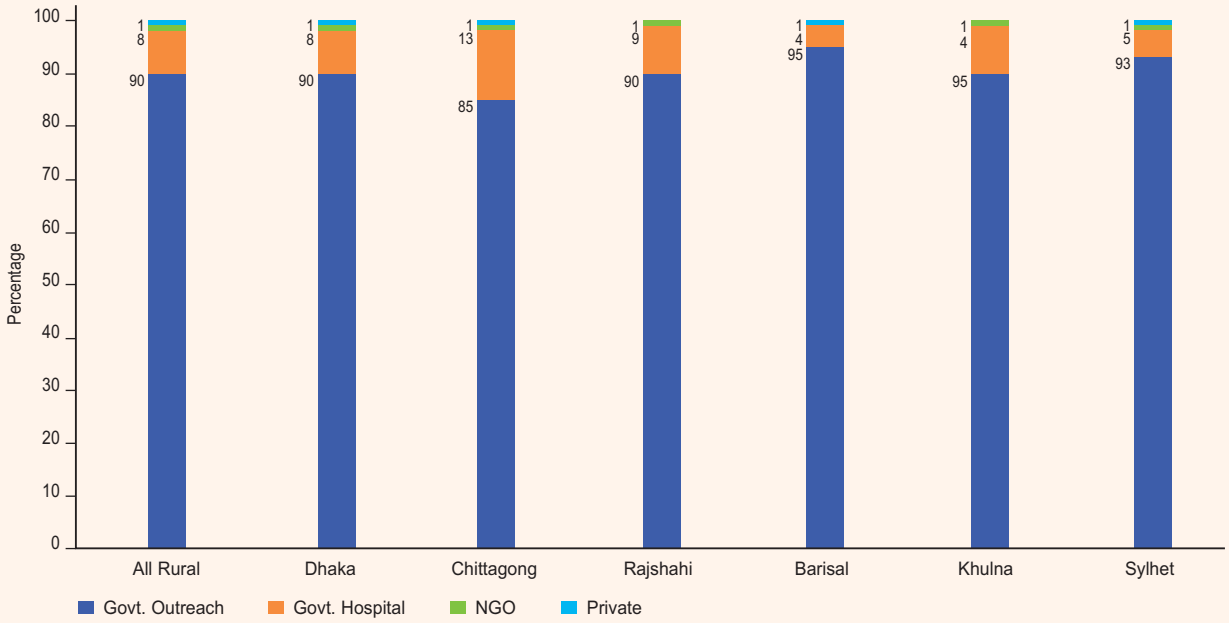
Source: CES 2006

FIGURE I1
Sources of TT1 Vaccination among Mothers of 0-11 Months Old Children by National, Rural and Urban Areas in 2006



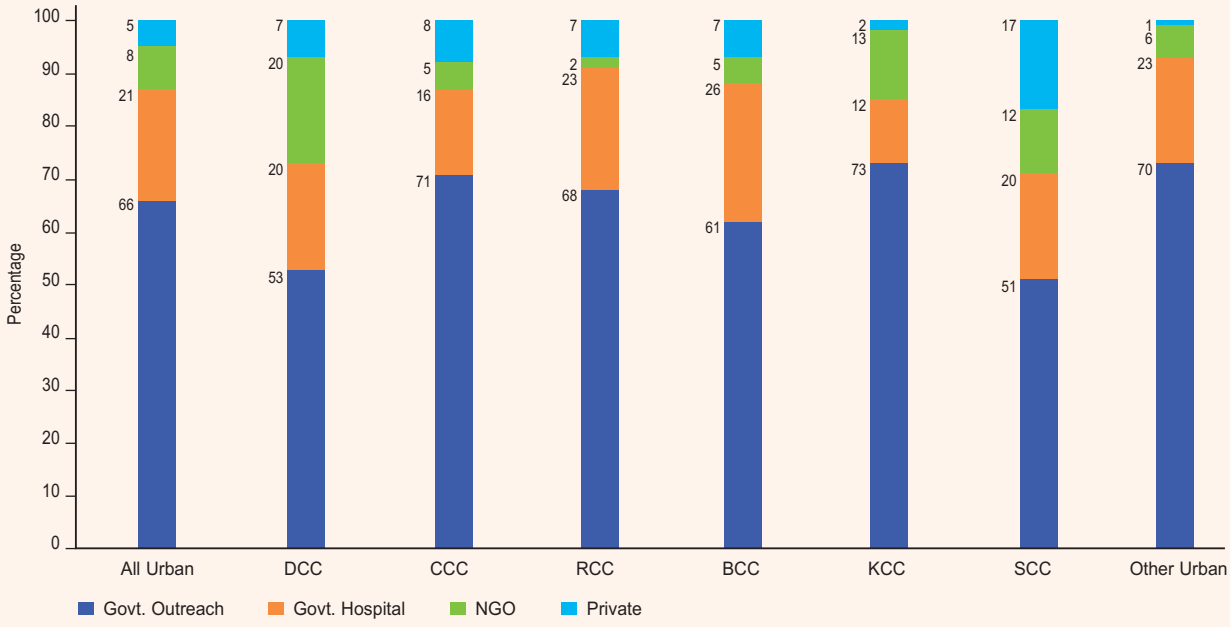
Source: CES 2006

FIGURE I2
Sources of TT1 Vaccination among Mothers of 0-11 Months Old Children in Rural Areas by Division in 2006



Source: CES 2006

FIGURE I3
Sources of TT1 Vaccination among Mothers of 0-11 Months Old Children in Urban Areas by City Corporation/Municipalities in 2006



Source: CES 2006

CHAPTER 4

TETANUS TOXOID (TT) VACCINATION COVERAGE SURVEY AMONG WOMEN AGED BETWEEN 18-25 YEARS

4.1
SELECTION OF SAMPLE

TT5 Survey was conducted over a nationally representative sample of women aged between 18-25 years irrespective of marital status, who were drawn from the sample clusters in the same way as with the child sample selection. First in the selected cluster, a household list is prepared by asking a question if the sample household had 18-25 years old married / unmarried women. All such women were listed and a random sample of 7 women was selected for the interview on TT5 history. Thus, the TT5 sample consisted of 14700 married/unmarried women of (210 women from 70 sample Units) 18-25 years old women nationally- 12,642 women from rural areas and 2058 women from urban areas.

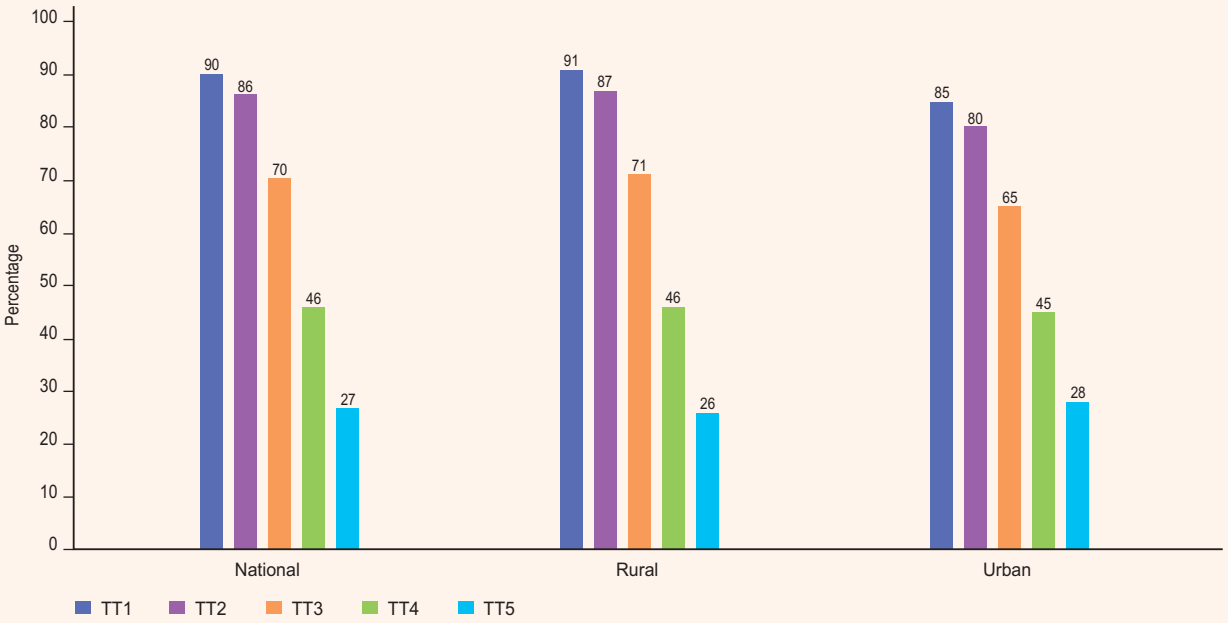
4.2
TT5 VACCINATION COVERAGE AMONG THE WOMEN AGED BETWEEN 18-25 YEARS

The nationwide information on TT5 coverage suggests that 15 percent women aged between 18-25 years had valid vaccination. Urban- rural differentiation suggests that TT coverage was higher in urban areas (18 percent) than in rural areas (14 percent). Similarly, nationwide crude coverage was 27 percent. Urban-rural difference in crude coverage was 2 percentage points (28 percent in the urban areas as opposed to 26 percent in the rural areas) (Figure J2 and Figure J1).

In respect of the geographical divisions by rural areas, the highest valid coverage was in Rajshahi (17 percent), which was being followed by Dhaka (16 percent), Khulna (14 percent), Chittagong (13 percent), Barisal (11 percent), and Sylhet (10 percent) divisions (Figure J4).

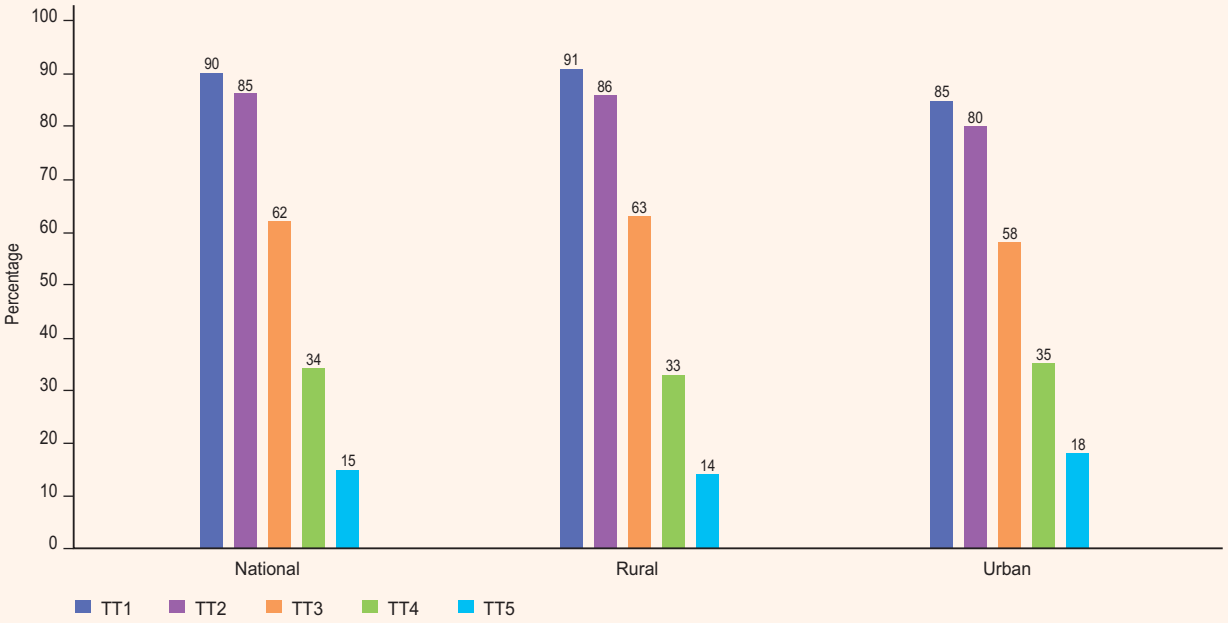
In urban areas, crude coverage was the highest in RCC (36 percent) and the lowest in BCC (15 percent). The valid coverage rate was the highest in RCC (27 percent), which was being followed by DCC (20 percent), CCC (13 percent), KCC and SCC (12 percent). BCC had the lowest coverage (9 percent) (Figure J5 and Figure J6).

FIGURE J1
Crude TT Coverage among Women Aged 18-25 Years Old by National, Rural and Urban Areas in 2006 (Card+History)



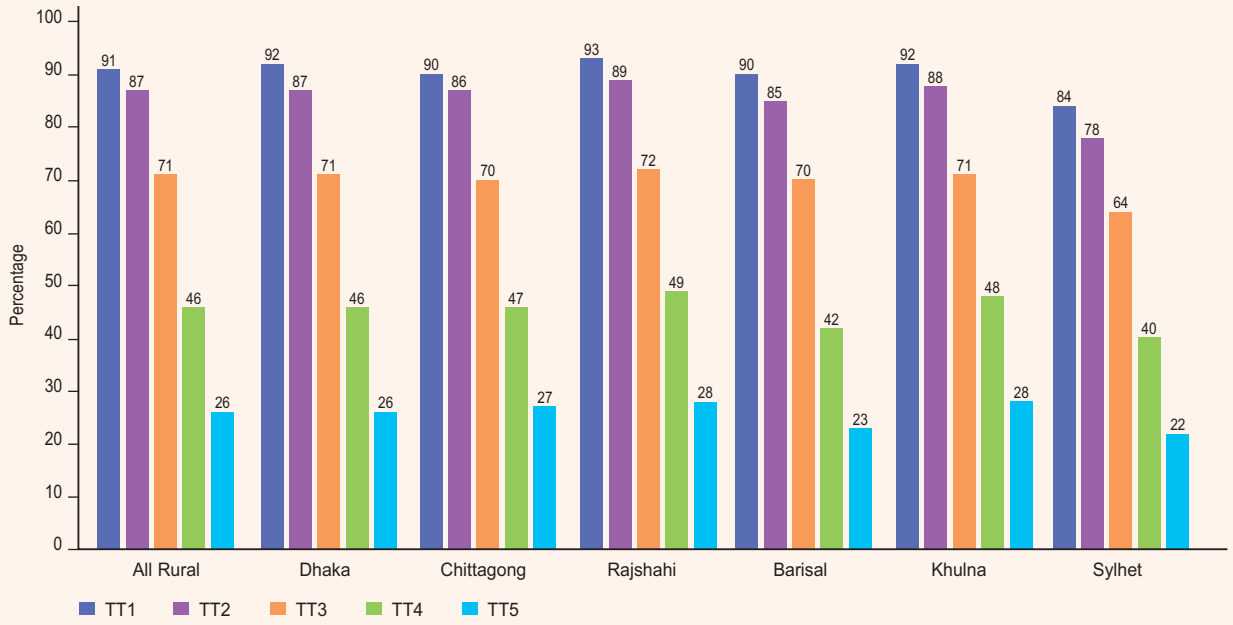
Source: CES 2006

FIGURE J2
Valid TT Coverage among Women Aged 18-25 Years Old by National, Rural and Urban Areas in 2006 (Card+History)



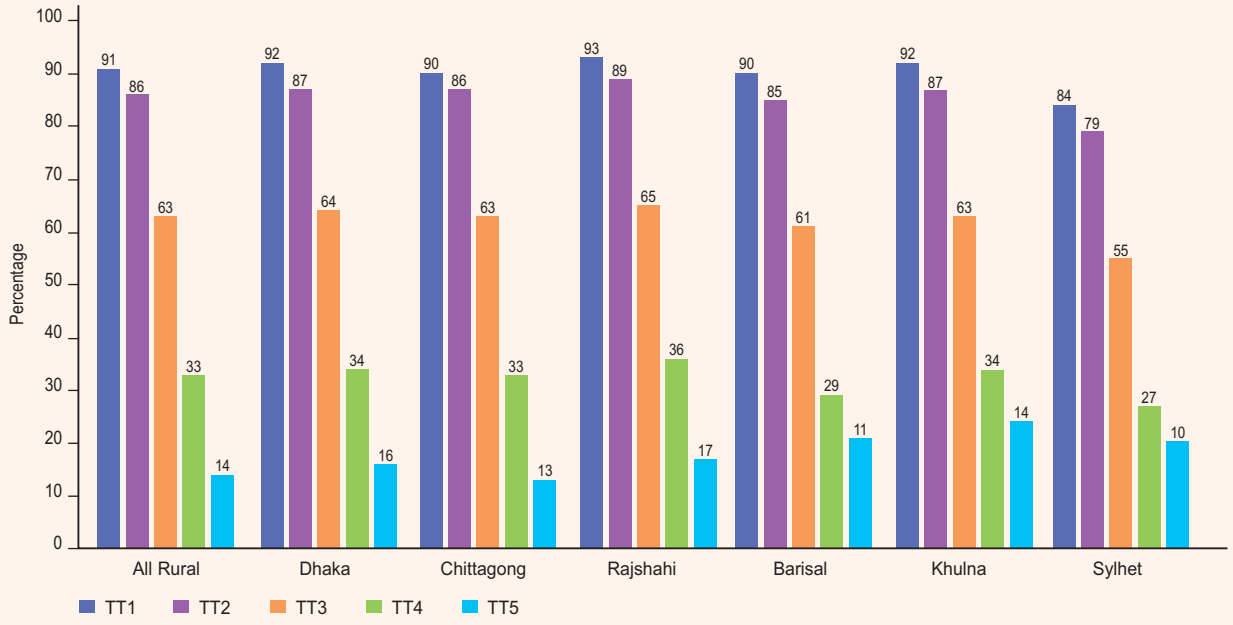
Source: CES 2006

FIGURE J3
Crude TT Coverage among Women Aged 18-25 Years Old In Rural Areas by Division in 2006 (Card+History)



Source: CES 2006

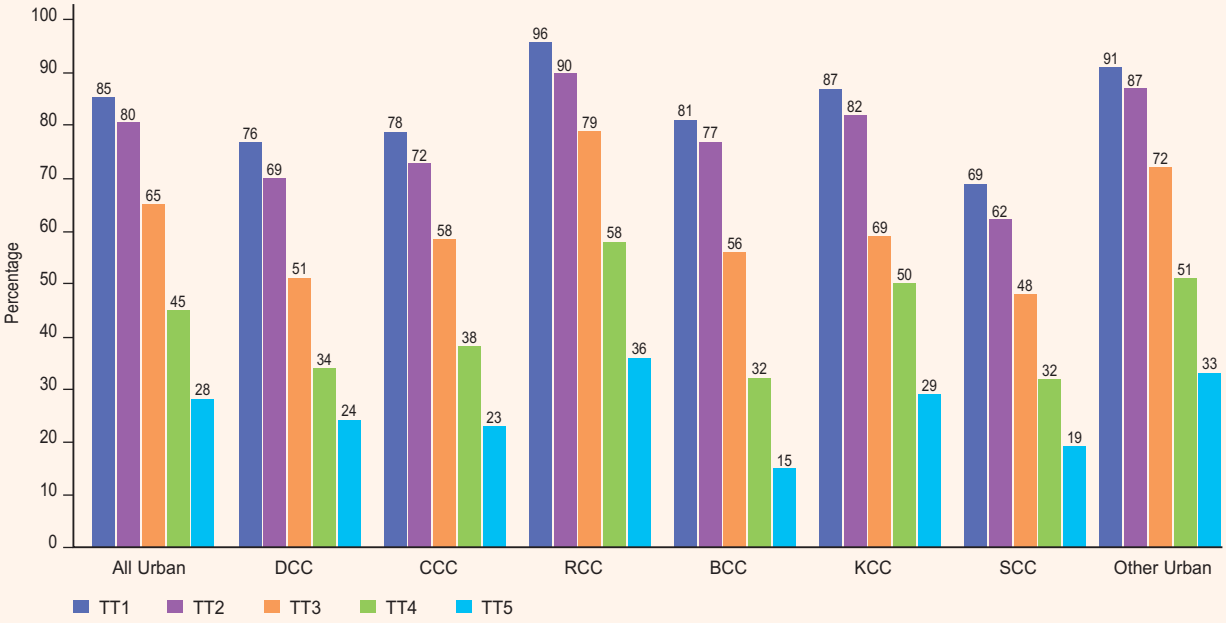
FIGURE J4
Valid TT Coverage among Women Aged 18-25 Years Old In Rural Areas by Division in 2006 (Card+History)



Source: CES 2006

FIGURE J5

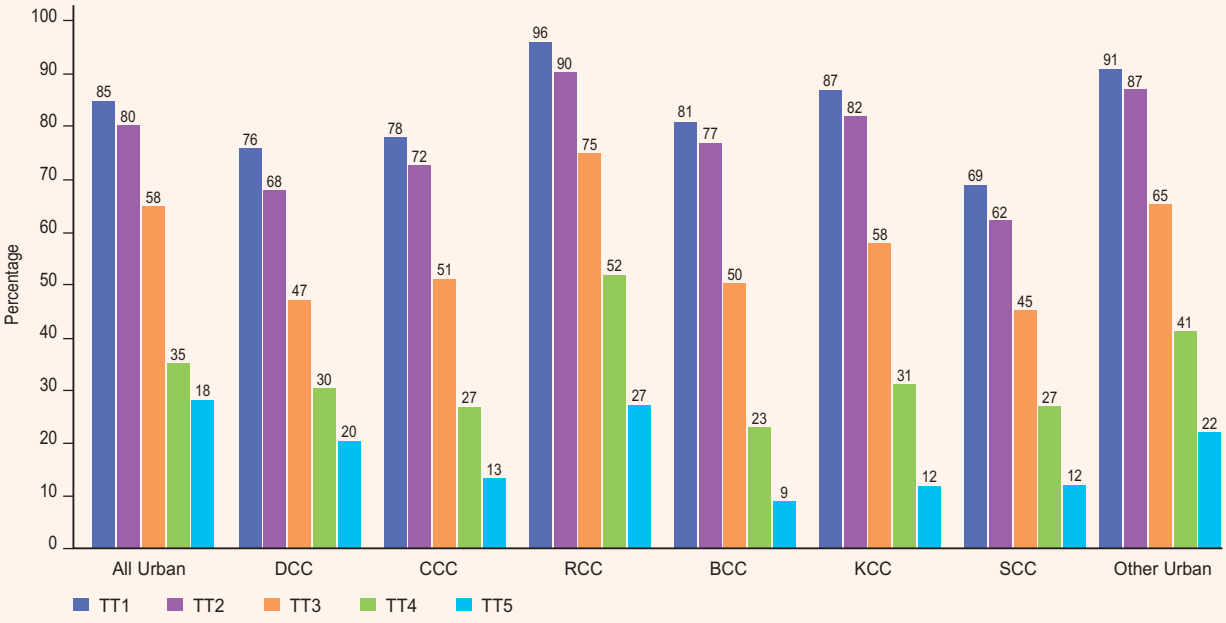
Crude TT Coverage among Women Aged 18-25 Years Old In Urban Areas by City Corporation/Municipalities in 2006 (Card+History)



Source: CES 2006

FIGURE J6

Valid TT Coverage among Women Aged 18-25 Years Old In Urban Areas by City Corporation/Municipalities in 2006 (Card+History)



Source: CES 2006

4.3
TT VACCINATION CARD STATUS AMONG THE WOMEN AGED 18-25 YEARS

The sample women aged between 18-25 years were asked whether they had TT cards with them. In Bangladesh, according to the CES 2006, 12 percent reported that they were not given any TT card. Those who received were a little over 38 percent mentioned that they lost the cards. Slightly more than the half (57 percent) retained TT cards with them. In rural areas, 13 percent of the women were not given cards much higher than the urban areas where 7 percent women were not given cards. However, card retention rate was higher in rural areas (58 percent) than urban areas (53 percent) (Figure K1).

Among the rural divisions, percentage of women who did not receive TT cards were more or less the same across the geographical divisions. It ranged between 8 percent in Rajshahi division and 21 percent in Khulna divisions. Card losses by the respondents varied significantly among the divisions. It was the highest in Dhaka (41 percent), it was being followed by Barisal (40 percent), Khulna and Rajshahi divisions (37 percent). And, it was the lowest (33 percent) in Sylhet division. Similarly, card retention rate was the highest (63 percent) in Sylhet division and the lowest (54 percent) in Dhaka and Khulna divisions (Figure K2).

Among the municipalities and city corporations, percentage of women who did not receive TT cards was minimum in DCC and RCC(5 percent) and the highest in KCC (12 percent). In DCC, the highest percentage of women (62 percent) lost TT cards as compared to minimum (31 percent) in RCC. Card retention rate (68 percent) was also the highest in RCC and the lowest (35 percent) in DCC (Figure K3).

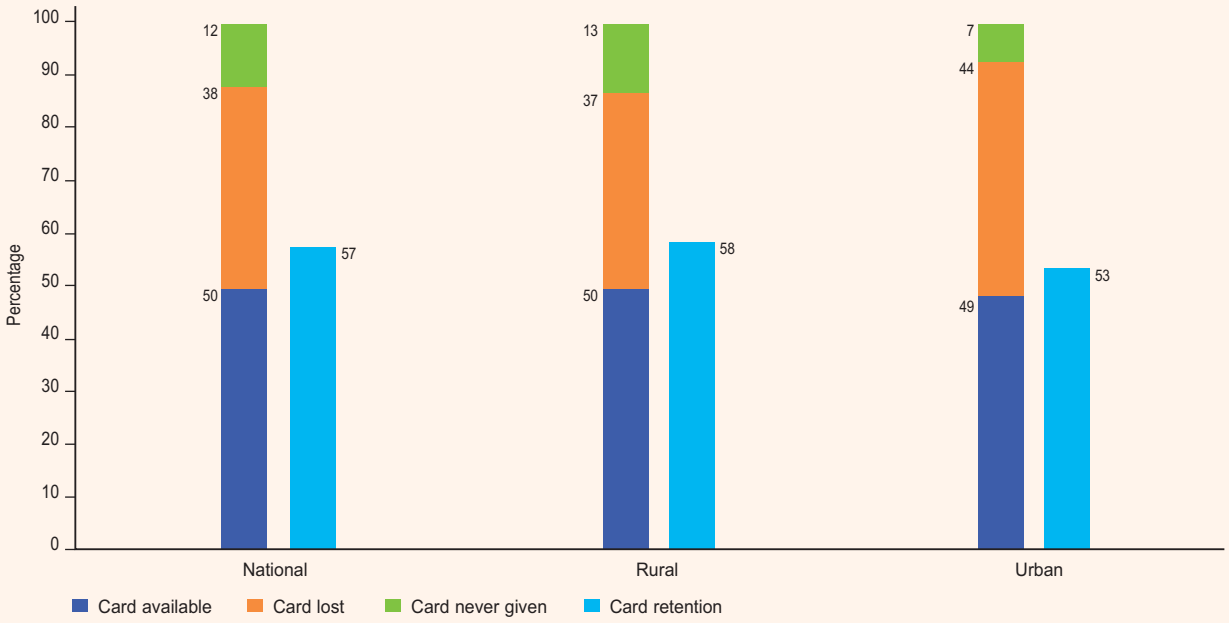
4.4
INCIDENCE OF INVALID TT DOSES

Estimates of invalid TT doses are shown in Figure K4. Nationally as well as in the rural and the urban areas, only a few of the TT2 doses administered were found to be invalid. Incidence of invalid doses at the national level as in the rural and the urban areas rose steeply for TT3, and then it gradually decreased for the subsequent doses. For example, while the proportion of invalid doses at the national level was a negligible- 1 percent for TT2- it jumped up to about 14 percent for TT3, and then, it declined to 11 percent for TT4, and to 8 percent for TT5.

In rural areas, national incidence of TT3 doses was found to be similar to the national trend. However, by divisions, incidence of invalid TT3 doses was found to be the highest in Barisal, Chittagong, Khulna and Sylhet divisions (16 percent each) and the lowest in Dhaka division (13 percent). Incidence of invalid TT4 doses was found to be the lowest in Dhaka division (9 percent) and the highest in Barisal, Khulna, Sylhet and Chittagong divisions (13 percent). The trend of invalid TT5 dose was more or less similar in all the divisions. (ranging from 7 to 10 percent) (Figure K5).

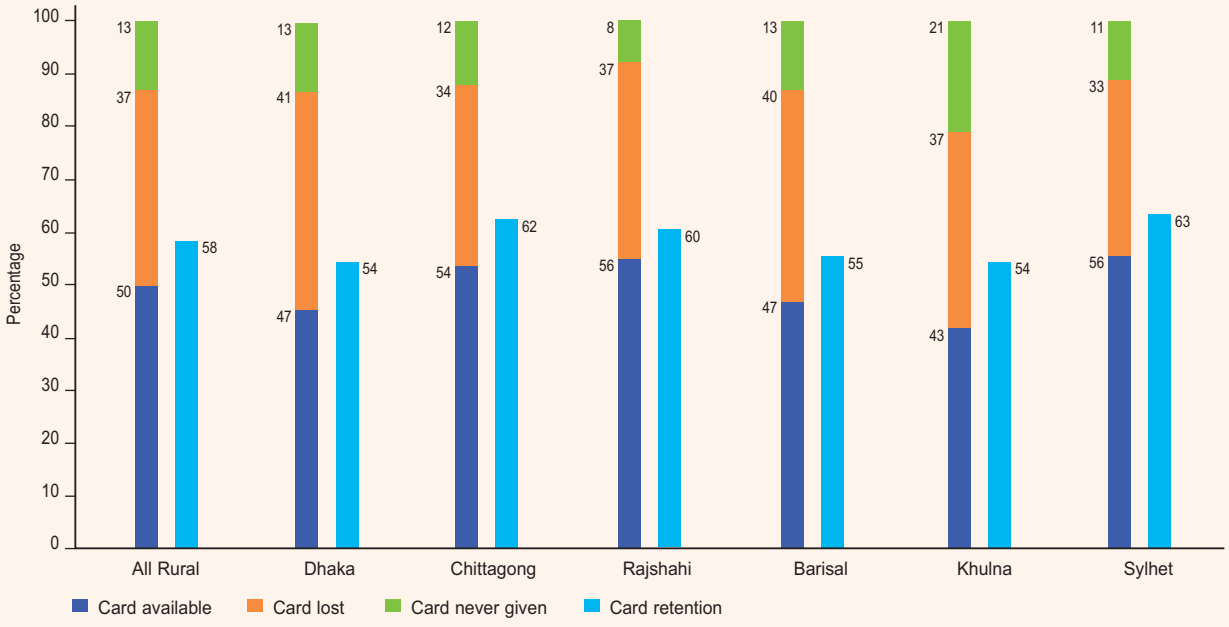
In the urban areas under City Corporations/all Municipalities, incidence of invalid TT3 dose was the highest in KCC (22 percent) and the lowest in SCC (5 percent). Invalid TT4 dose was the highest- 17 percent- in KCC and lowest- 4 percent in DCC. Because of sampling variability, the remaining TT doses can be explained properly (Figure K6).

FIGURE K1
TT Card Status among Women Aged 18-25 Years Old by National, Rural and Urban Areas in 2006



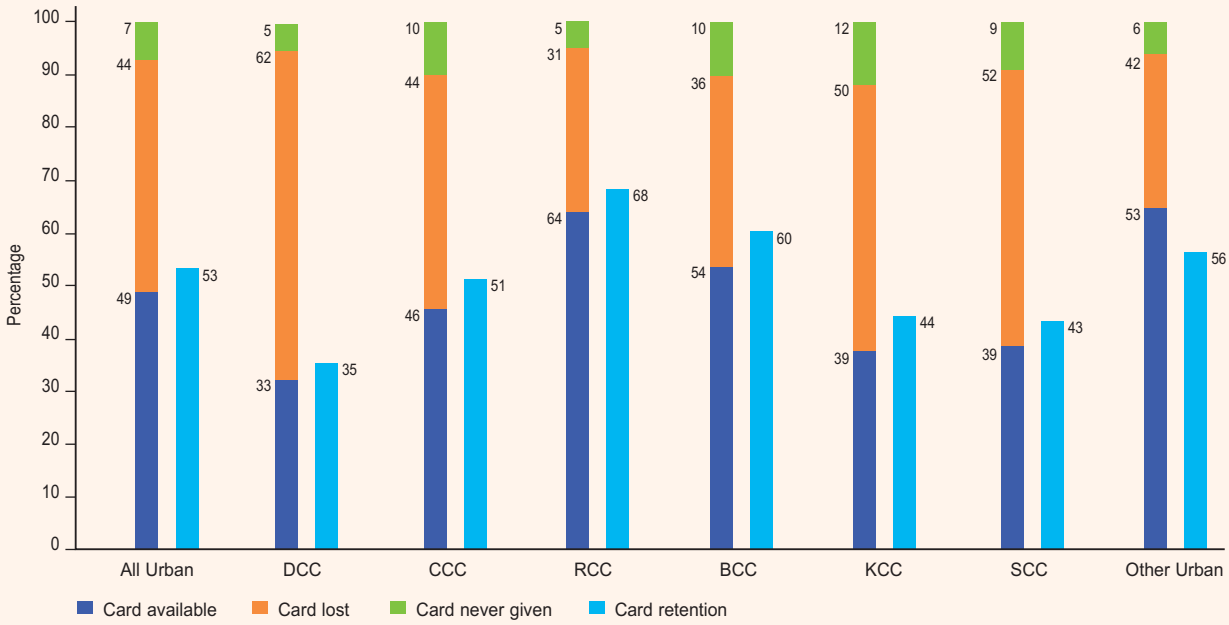
Source: CES 2006

FIGURE K2
TT Card Status among Women Aged 18-25 Years Old in Rural Areas by Division in 2006



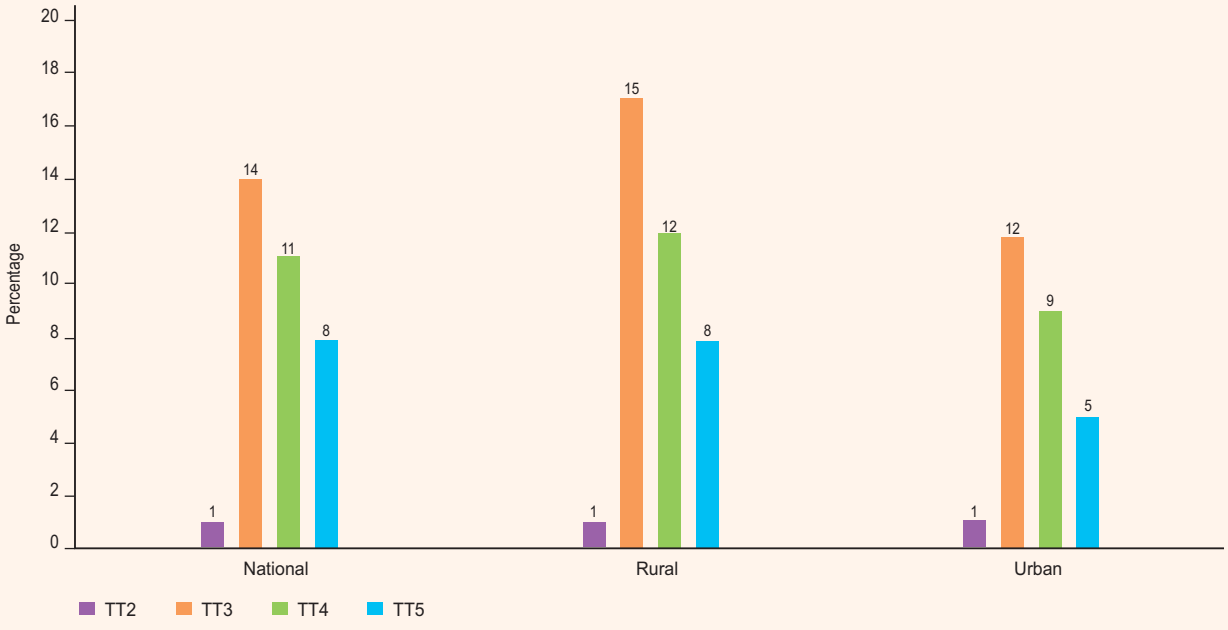
Source: CES 2006

FIGURE K3
TT Card Status among Women Aged 18-25 Years Old in Urban Areas by City Corporation/Municipalities in 2006



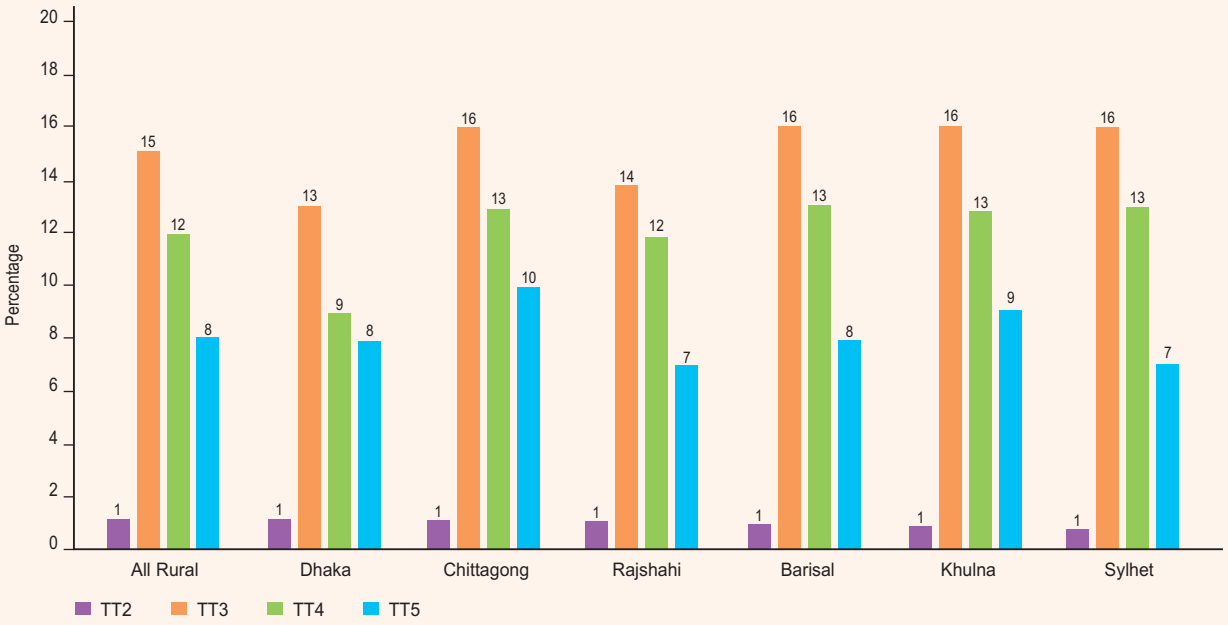
Source: CES 2006

FIGURE K4
Incidence of Invalid TT Doses among Women Aged 18-25 Years Old by National, Rural and Urban Areas in 2006 (Card+History)



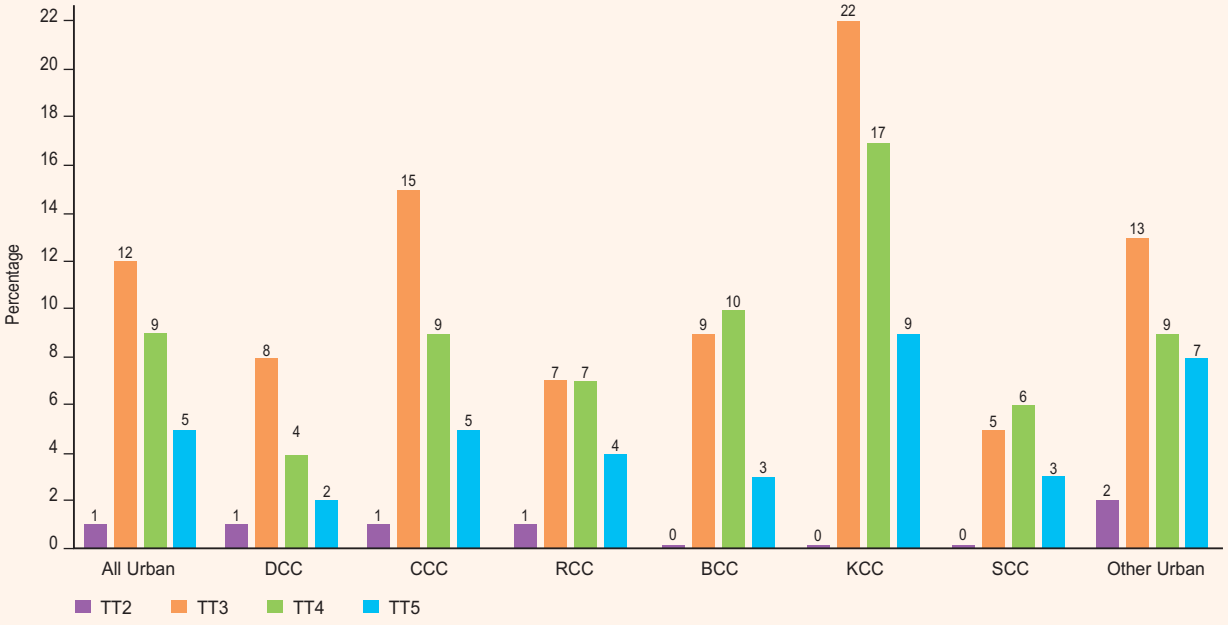
Source: CES 2006

FIGURE K5
Incidence of Invalid TT Doses among Women Aged 18-25 Years Old in Rural Areas by Division in 2006 (Card+History)



Source: CES 2006

FIGURE K6
Incidence of Invalid TT Doses among Women Aged 18-25 Years Old in Urban Areas by City Corporation/Municipalities in 2006 (Card+History)



Source: CES 2006

4.5
KNOWLEDGE ABOUT NUMBER OF TT DOSES REQUIRED DURING THE REPRODUCTIVE PERIOD

Knowledge of the respondents about the number of TT doses required during the reproductive period was also collected. Nationwide 37 percent of the respondents were not aware of it. Four percent of the respondents mentioned less than five doses while 59 percent mentioned five doses. The rural pattern of knowledge was the same as that of Bangladesh. In urban areas, 34 percent of the respondents mentioned they were not aware of it. In rural areas 57, percent of the women mentioned that five doses of TT required during the reproductive period; 5 percent said that less than five doses were required (Figure L1).

Among the rural divisions, the percentage of women who were not aware of the number of TT doses during the reproductive period ranged between 34 percent in Chittagong division and 44 percent in Rajshahi division. Among the respondents who mentioned less than five doses varied from 4 percent in Dhaka, Khulna and Rajshahi to 8 percent in Sylhet division (Figure L2).

Similarly, in city corporations the highest percent (41 percent) from DCC were not aware of the number of doses to be required during the reproductive period. This was minimum in RCC (29 percent). Knowledge of 5 doses was found to be the highest in Rajshahi and the lowest in KCC. Awareness of required number of doses was the highest in RCC (69 percent), followed by BCC (67 percent), SCC (60 percent), KCC and CCC (59 percent). Knowledge of required number of doses was the lowest in DCC (56 percent) (Figure L3).

4.6
SOURCES OF TT1 VACCINATION

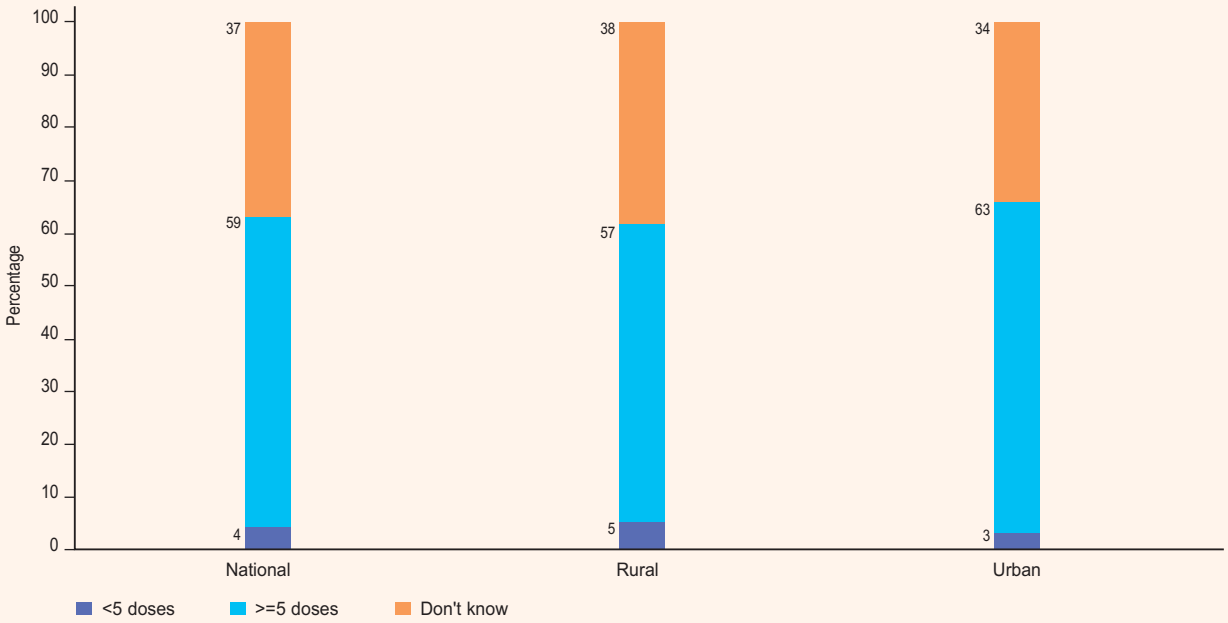
Women married/unmarried who received TT1 vaccination were asked to mention the sources of vaccination received. Nationally, 87 percent of the respondents mentioned that they received TT vaccination from the government outreach centers, which was being followed by government hospitals (10 percent); three percent received from NGOs, and one percent received from private health facility (Figure M1).

In rural areas, the majority of the respondents (89 percent) received TT1 vaccination from the government outreach, as compared to 73 percent in the urban areas. In urban areas, 17 percent of them received TT from the government hospitals as against 9 percent in rural areas (Figure M1).

In the rural geographical divisions, sources of receiving TT1 varied from one division to another (Figure M2). In Barisal division, the majority (96 percent) of the women received TT1 from the government outreach centers while it was 86 percent in Chittagong division. However, 12 percent of the women from Chittagong and Rajshahi divisions received TT1 from the government hospitals as against four percent in Barisal division.

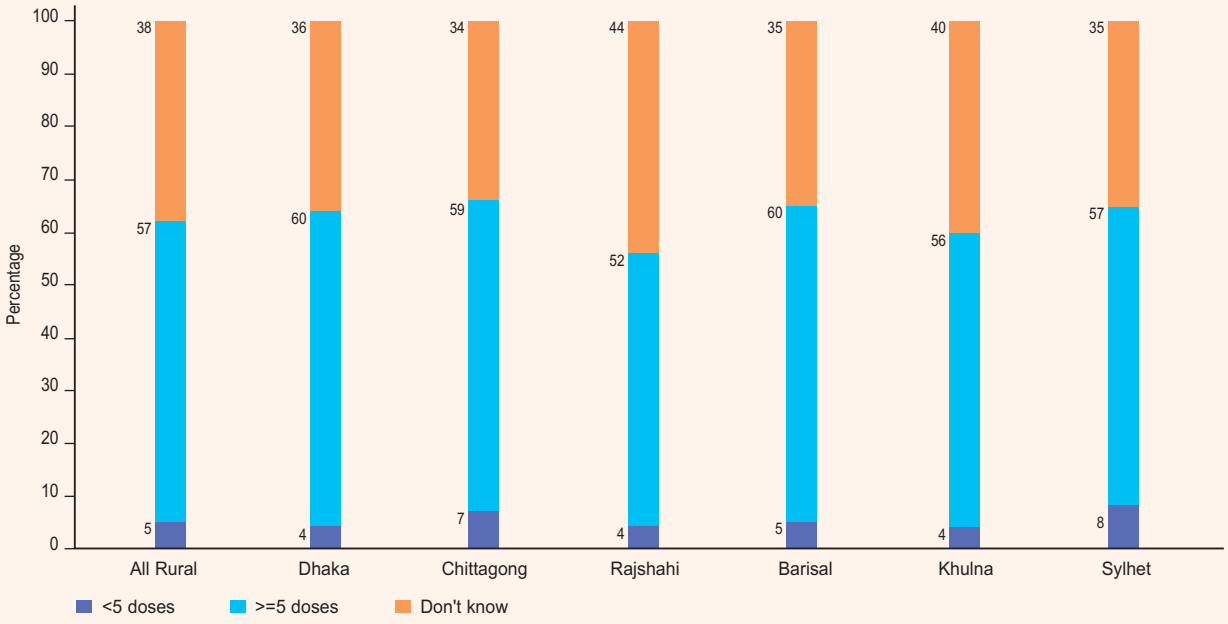
In the City corporations, Govt. source was used mostly by RCC (97 percent), which was being followed by BCC (91 percent), CCC and SCC (87 percent), KCC and DCC (77 percent) (Figure M3).

FIGURE L1
Number of TT Doses Required During Reproductive Period for Protection against Tetanus as Reported by Women Aged 18-25 Years Old by National, Rural and Urban Areas in 2006



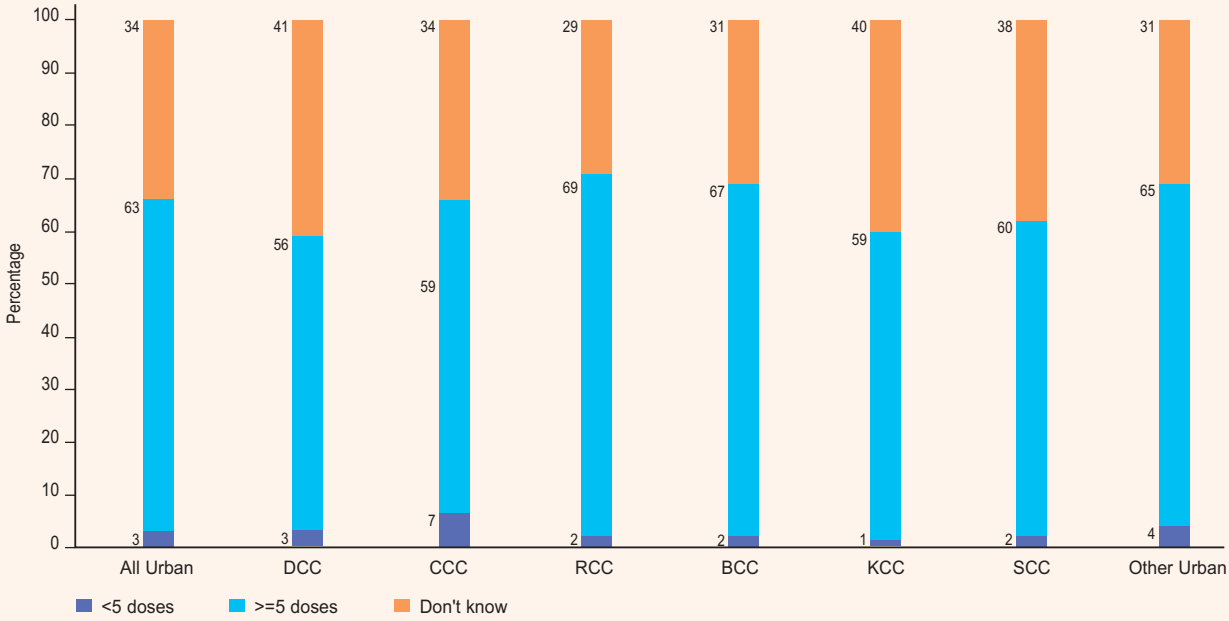
Source: CES 2006

FIGURE L2
Number of TT Doses Required During Reproductive Period for Protection against Tetanus as Reported by Women Aged 18-25 Years Old in Rural Areas by Division in 2006



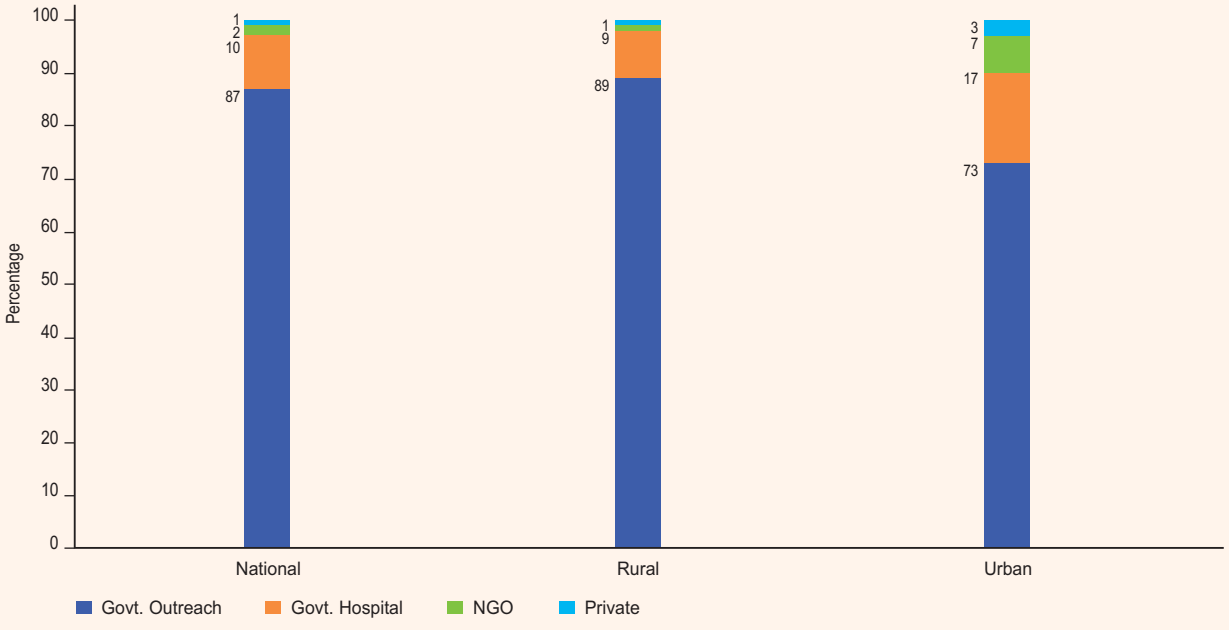
Source: CES 2006

FIGURE L3
Number of TT Doses Required During Reproductive Period for Protection against Tetanus as Reported by Women Aged 18-25 Years Old by City Corporation/Municipalities in 2006



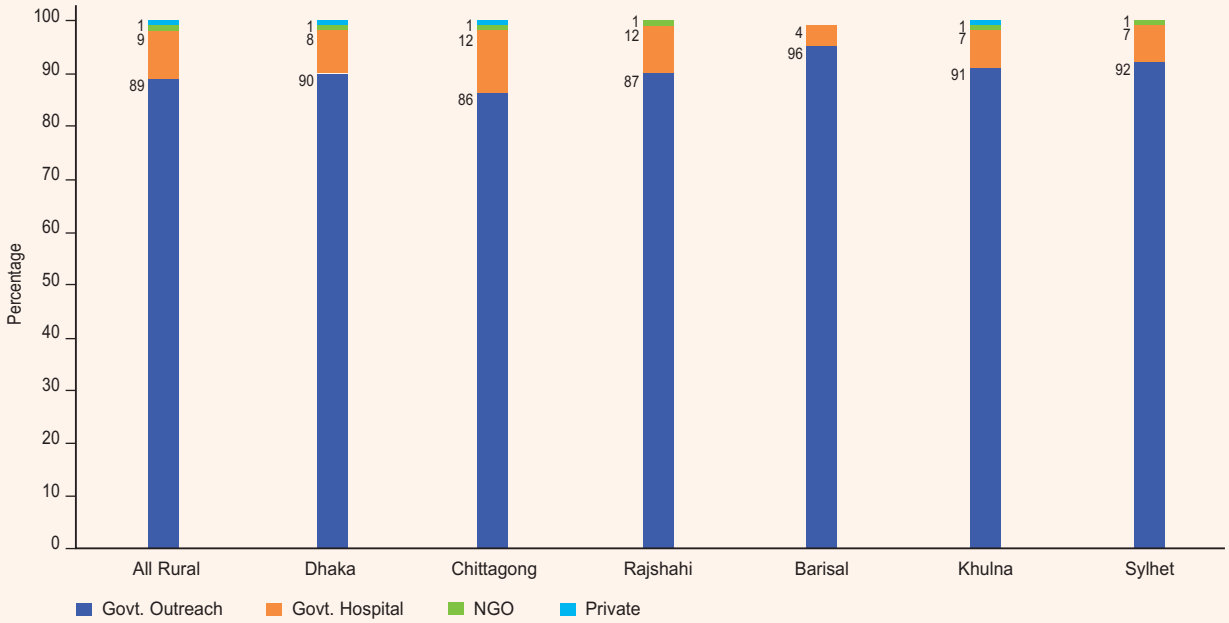
Source: CES 2006

FIGURE M1
Sources of TT1 Vaccination among Women Aged 18-25 Years Old by National, Rural and Urban Areas in 2006



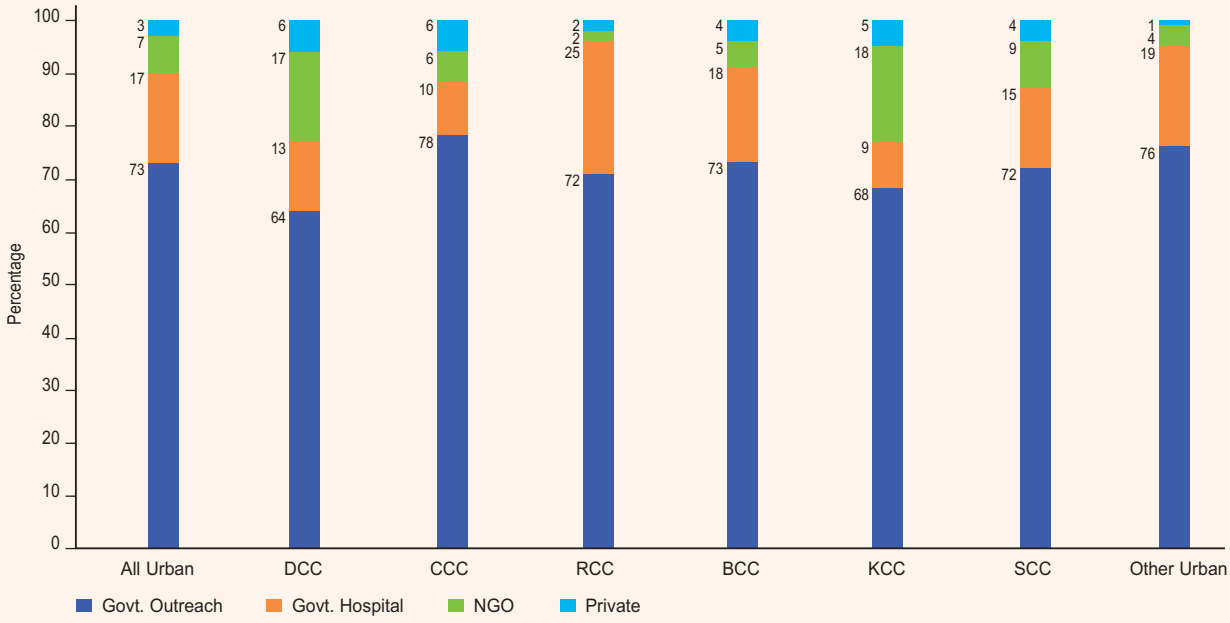
Source: CES 2006

FIGURE M2
Sources of TT1 Vaccination among Women Aged 18-25 Years Old in Rural Areas by Division in 2006



Source: CES 2006

FIGURE M3
Sources of TT1 Vaccination among Women Aged 18-25 Years Old in Urban Areas by City Corporation/Municipalities in 2006



Source: CES 2006

CHAPTER 5

MEASLES CATCH UP CAMPAIGN

Bangladesh has conducted Measles Catch-up Campaign as part of a global effort to reduce measles morbidity and morality. Phase-1 campaign was conducted during 3-22 September 2005 in Bogra and Rajshahi districts and Rajshahi City Corporation. Phase-2 campaign took place between 25 February and 16 March 2006 in the rest of the country. Target age group of this campaign was 9 months to <10 years children irrespective of their previous measles vaccination status or illness. An estimated 35 million children was targeted during this two phases of campaign of which 1.5 million in phase 1 and 33.5 million in Phase-2. The objective of this campaign was to provide a second opportunity for measles vaccination to the target children. Along with other technical and operational issues, two major challenges in this campaign were huge target group and mass vaccination with injectable antigen. Bangladesh has a unique health infrastructure at primary health care level. These primary care level health facilities are the strength of this campaign. Another strength was availability of a large number of trained vaccinators in health and family planning wings of MOH&FW.

5.1
MEASLES CATCH UP CAMPAIGN AND COVERAGE

In the EPI Coverage Evaluation Survey 2006, information was also collected on measles vaccination of the children born between 17-03-1996 and 25-05-2005 in all districts except Rajshahi district, Rajshahi City Corporation and Bogra district. In these three areas (Rajshahi district, Rajshahi City Corporation and Bogra district), information about the measles vaccination was collected from the children who were born between 23-09-1995 and 03-12-2004. The information collected in this respect suggests that overall, in Bangladesh, 87 percent of the eligible children were covered by measles vaccination under measles catch up campaign 2005-2006. There was a little variation in coverage by urban and rural areas, i.e. 87 percent in rural areas as opposed to 88 percent in urban areas (Figure N2). Among all rural divisions, measles coverage was the highest (91percent) in Barisal, which was being followed by Dhaka and Rajshahi (89 percent), Khulna (88 percent), and Chittagong (79 percent). The lowest was in Sylhet (75 percent). As has been mentioned above, there was a little difference between rural areas by divisions and urban areas by city corporations and municipalities in respect of measles coverage (Figure N3- N4).

In the urban areas by city corporations, the coverage was the highest in BCC (91 percent) and the lowest in SCC (84 percent). However, for the other city corporations, the coverage rate varied between 85 percent and 88 percent.

5.2
REASONS FOR NOT RECEIVING MEASLES BY URBAN AND RURAL AREAS

Mothers or caregivers of children who did not receive measles vaccines during the period mentioned above were asked to provide reasons for not receiving measles. The information is presented in Figure N5. Among the children who didn't receive measles vaccine, about half of the parents (49 percent) mentioned that they did not know about the measles campaign, which was being followed by parents /care givers who did not give importance to measles vaccination (12 percent), was in travelling (9 percent), parents/care givers did not know about place or date (8 percent) and the child was sick so the parents did not take him/her to the vaccination site (6 percent). More or less similar patterns were observed by urban and rural areas.

In the rural areas by division, the most common reasons to be found were lack of awareness about the campaign, the fact that parents didn't give importance and that the mothers/caregivers was in travelling. Likewise, similar reasons were noticed in the city corporations.

5.3
SOURCES OF RECEIVING INFORMATION FOR MEASLES CAMPAIGN

Parents/caregivers were asked to provide sources of receiving information about measles campaign. Overall, in Bangladesh the significant sources of information were field workers (37 percent), followed by school teachers (30 percent), mobile miking (21 percent), mosque miking (16 percent), school students (15 percent), and TV (14 percent).The pattern of receiving information in the rural areas is quite similar to the national pattern. In urban areas, the frequent and significant source was TV (38 percent), which was being followed by field workers' home visit and school teachers (each is 30 percent), mobile miking (28 percent), volunteers' visit to household (13 percent), and school students (11 percent) (Figure N6).

FIGURE N1

Age Distribution of Children Sampled for Measles Survey by National, Rural and Urban Areas in 2006

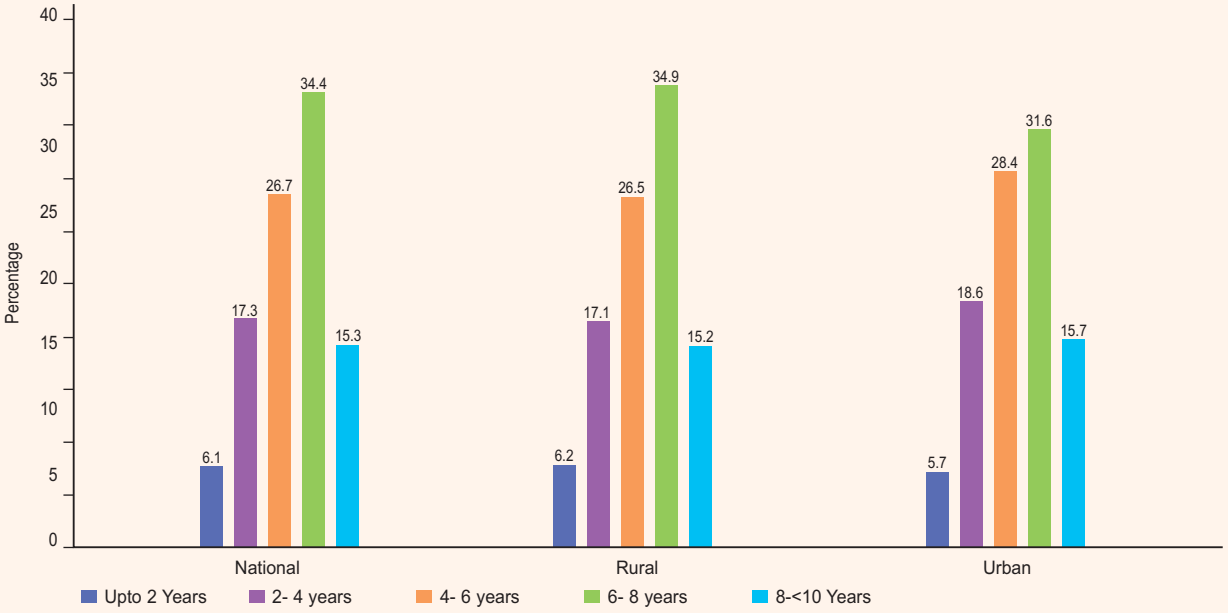


FIGURE N2

Measles Coverage by National, Rural and Urban Areas in 2006

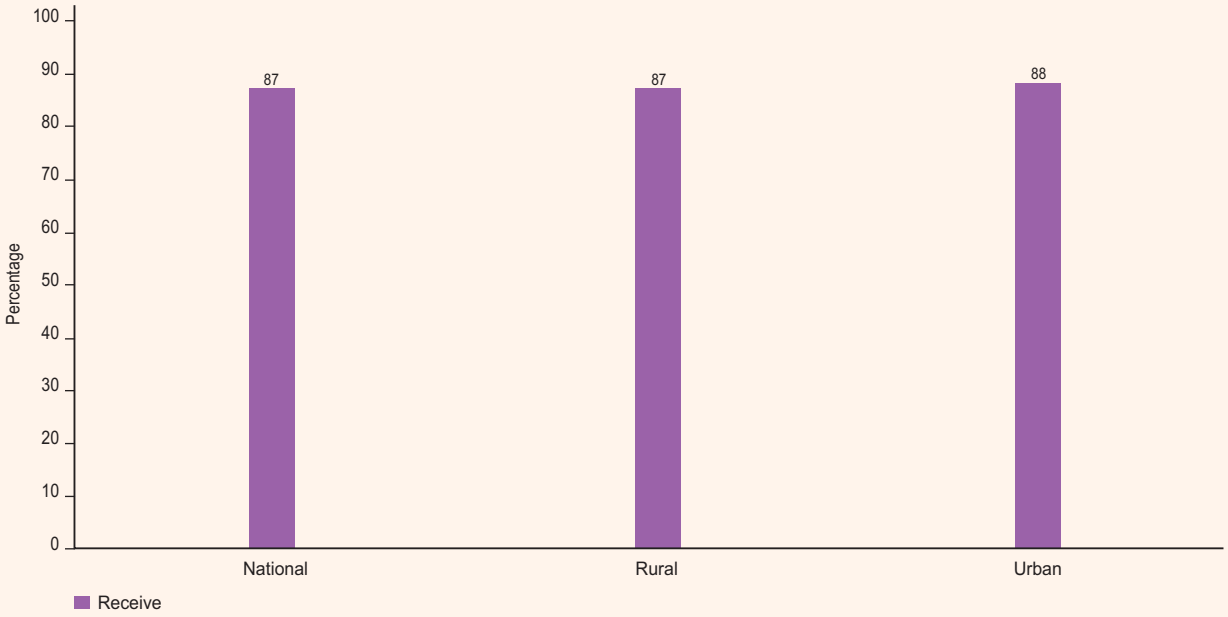


FIGURE N3
Measles Coverage in Rural Areas by Divisions in 2006

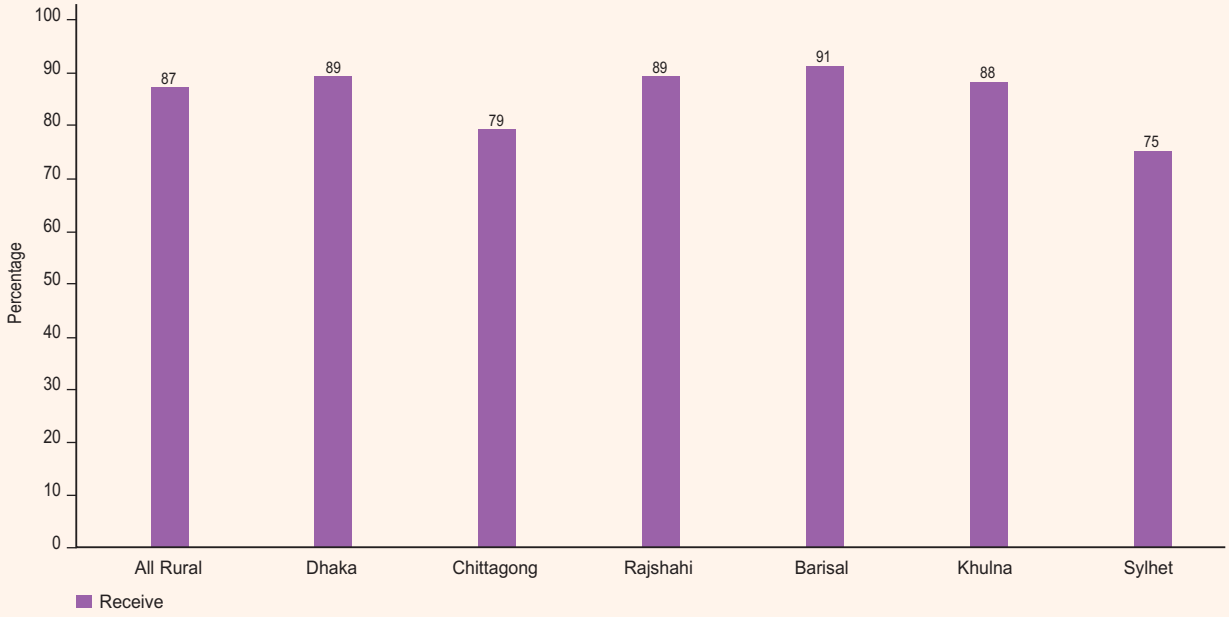


FIGURE N4
Measles Coverage in Urban Areas by City Corporations/Municipalities in 2006

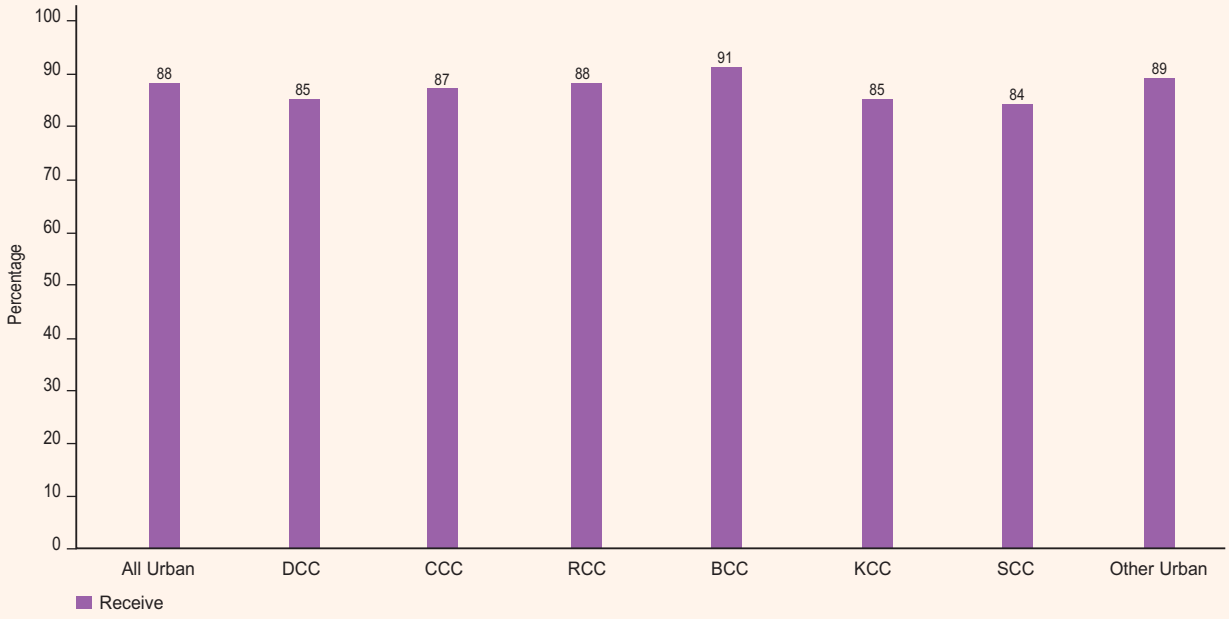


FIGURE N5

Reasons for not receiving measles by National, Rural and Urban Areas in 2006

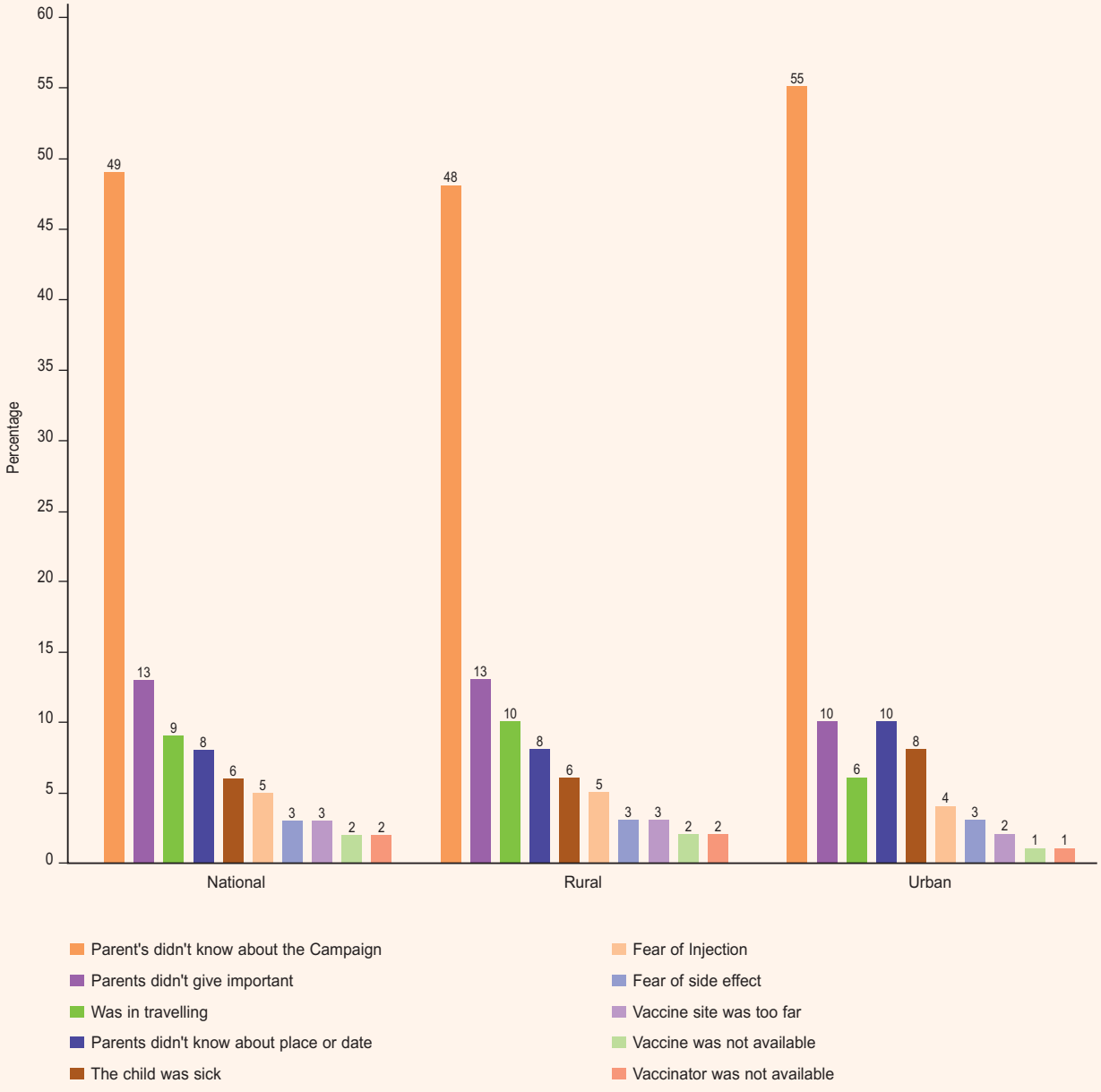
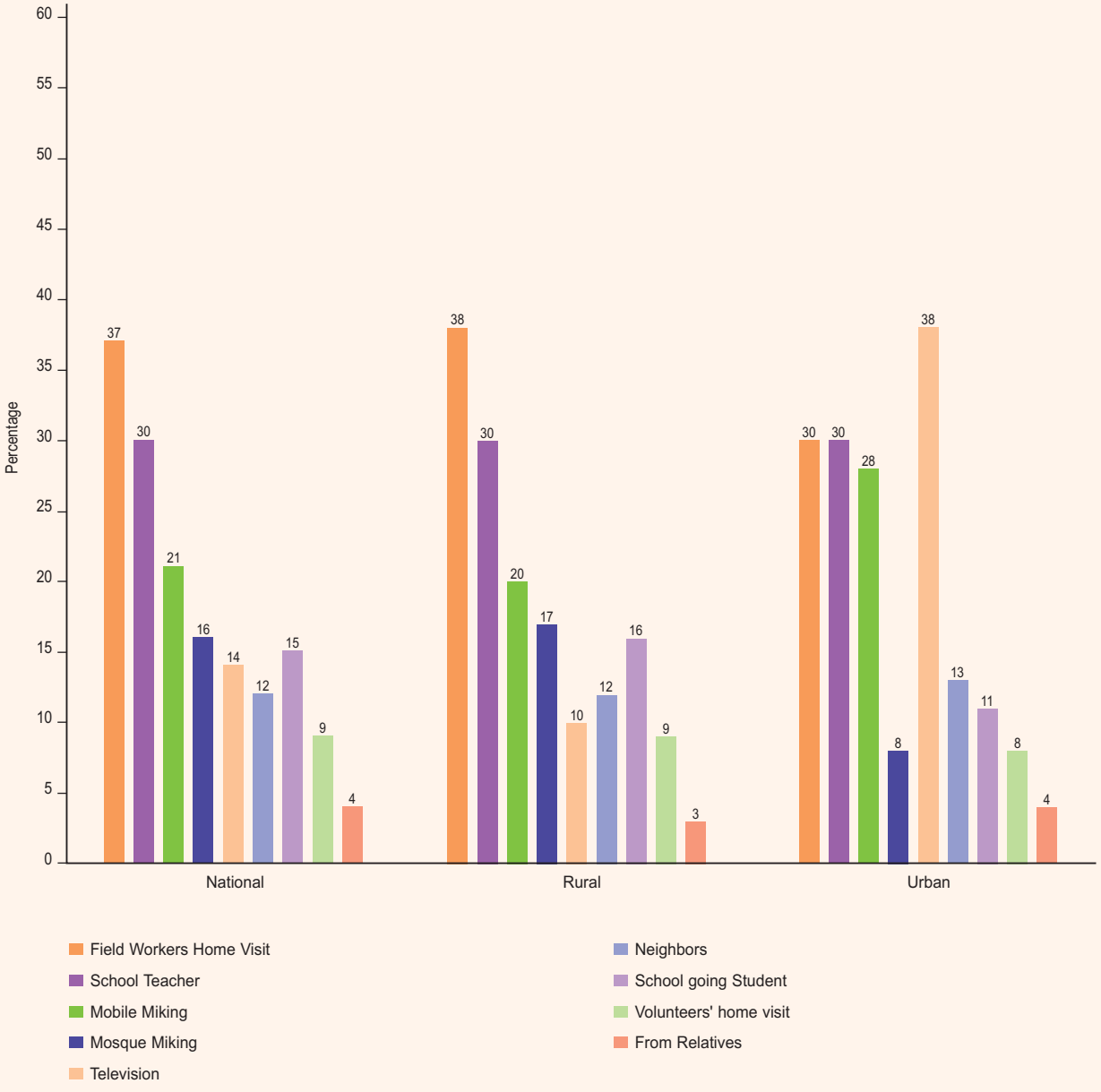
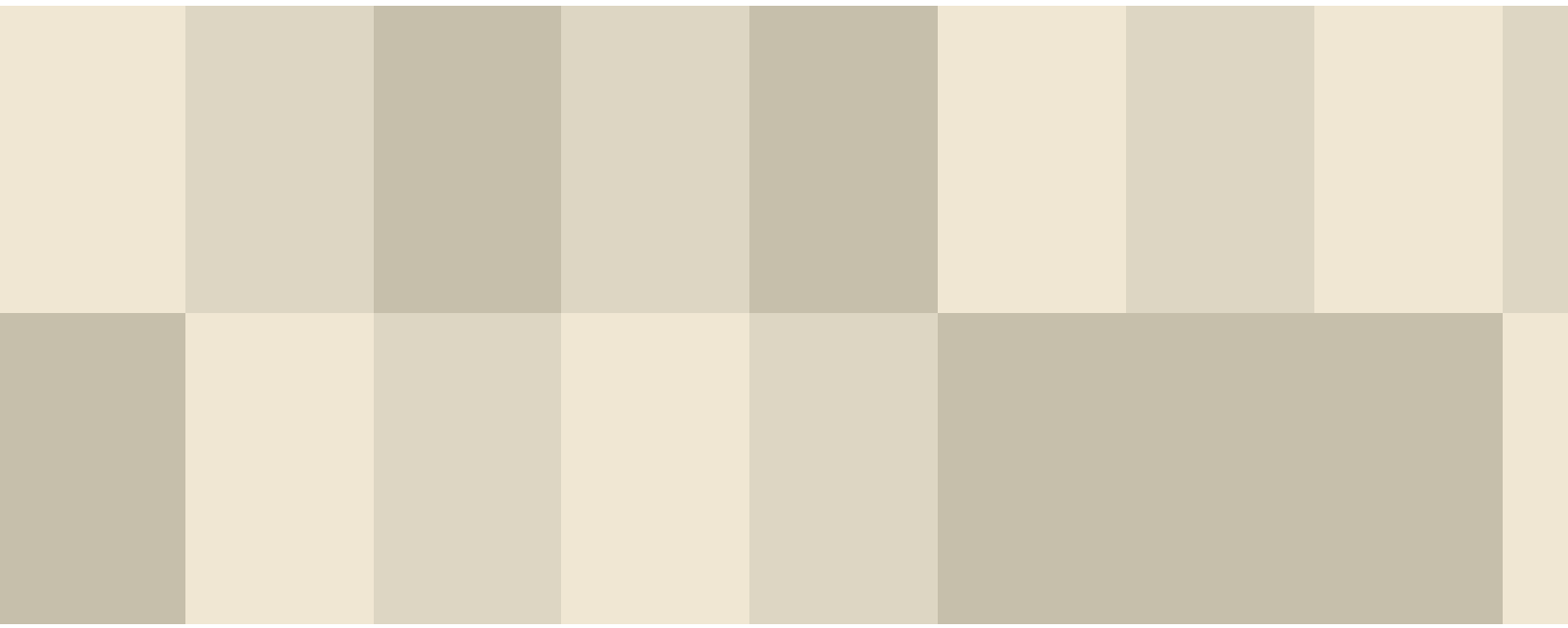


FIGURE N6

Sources of Information about Measles Catch up Campaign by National, Rural and Urban Areas in 2006





CHAPTER 6

THE 13TH SPECIAL NATIONAL IMMUNIZATION DAYS & VITAMIN A SUPPLEMENTATION COVERAGE SURVEY

The 13th special NIDs in Bangladesh had been conducted shortly before the CES 2006. The first round NID was held on 16th April 2006, second round NID on 13th May, 2006, and the third round NID on 11th June, 2006 with the objectives - as stated in Chapter 1 - to ascertain the:

- Vitamin A coverage among 12-59 months old children in the intensified 13th NIDs;
- Coverage of the child-to-child search carried out for identifying and vaccinating the children left out of vaccination in the 13th NIDs; and
- Reasons for not having children vaccinated in the 13th NIDs;

In order to present the national NID coverage as well as for an understanding of the methodology and findings of the 13th NIDs Survey, a brief description of NIDs is provided in the following section. This section describes the purposes of NIDs as a supplementary immunization strategy- how they are conducted in Bangladesh, and how a child-to-child search is carried out to identify and vaccinate the children left out of the NID fixed-site vaccination.

6.1
NIDS AS A SUPPLEMENTARY STRATEGY

Poliomyelitis is a deadly childhood disease that kills or cripples a child, if s/he is not properly immunized against the disease. Eradication of Poliomyelitis is a global issue. Although 3 regions of the world have already been certified as polio-free, the remaining 3 regions are yet to get the aforesaid certificate. As a part of Global Polio Eradication initiative and being recommended by the World Health Assembly (WHA) in May 1988, National Immunization Days (NIDs) are conducted as one of the four strategies to make a country polio-free through mass vaccination to the targeted children. In Bangladesh, 1st NID was conducted in the year 1995. Usually two rounds are being conducted in every NIDs in 4-6 weeks apart. OPV is being administered to all under-5 children regardless of their previous OPV vaccination status. The purpose of the additional mass OPV vaccination is to interrupt the transmission of wild polio virus by replacing it with the vaccine virus, since once the wild polio virus is ousted from the body into the environment, it cannot live for long. Besides OPV, as part of the National Vitamin A Campaign, high-potency vitamin A capsule is administered to all 12-59 months old children in one of the two rounds of NIDs by maintaining the recommended interval between two doses of high potency vitamin A.

6.1.1 ORGANIZATION OF NIDS

The Government of Bangladesh conducts NIDs in collaboration with WHO, UNICEF, and other partners. Before conducting an immunization day, wide publicity is carried out using all types of available communication channels, including mass media, i.e. television, radio, press, mike-announcements, posters, and banners. And, it is carried out with support from community gatekeepers.

NIDs are held in a festive mood, with spontaneous participation of parents in particular and people in general. On NIDs, banners, posters, and flags abound all over, particularly at and around the vaccination sites, highlighting the importance of immunization/NIDs and urging parents/caregivers to have their 0-59 months old children vaccinated from vaccination sites. Mobile & mosque mikes are used to remind the parents of their responsibility of bringing their children for vaccination.

For an immunization day, one lac forty thousand vaccination sites are set up across the country, ensuring easy access to all people everywhere so that parents/caregivers face no difficulties in bringing their children to a site for vaccination.

Alongside the 68,000 government health workers plus the other semi-government and NGO workers, about 650,000 community volunteers from all walks of life worked as usual as vaccinators in the 13th NIDs. The volunteers represented participation from a cross-section of people, including teachers, students, religious personalities, women groups, members of community-based micro-finance organizations, members of the Village Defense Party (VDP), and many indigenous organizations.

6.1.2 CHILD-TO-CHILD SEARCH

For the four consecutive days following an NID, child-to-child search is undertaken for identifying and vaccinating the children who could not be reached and vaccinated during an NID. These children are usually referred to as the 'left-out children'. The workers visit every household in their respective wards/mahallas, looking for the left-out children to give them OPV as they have missed it at the fixed site.

6.2
SELECTION OF SAMPLE

The 13th NIDs Survey was implemented over a representative national NID Sample of 0-59 months old children, being drawn from the cluster samples for the 2006 CES in the following manner. Visiting each sample household in every cluster, the interviewer asked if there was any 0-59 months old child in the household. If the household had only one such 0-59 months old child, s/he was included in the NID Sample. If it had more than one such child, one of them was randomly chosen for inclusion in the sample. In this way, seven 0-59 months old children were selected from a cluster into the sample. Thus, the NID Sample consisted of 14,700 children 0-59 months old nationally- 12,642 children from rural areas and 2058 children from urban areas.

6.3
NID FORM

The following information were collected about each surveyed 0-59 months child in the NID Form. The form was completed by interviewing the mother/ caregiver of the child:

- Date of birth of the child, or the age of the child if the date of birth was not known;
- Whether the child received an OPV dose on the immunization day- 16th April 2006- the first day of the 13th NIDs, or during the following few days at home;
- Where the child received the OPV dose, if received;
- If a fixed site was not mentioned, why the child did not receive the OPV dose at a fixed site;
- Whether the child received an OPV dose on the immunization days- 13th May and 11th June 2006- or during the following few days at home;
- Whether the child received vitamin A on the immunization day- 11th June 2006;
- If received, where the child received this OPV dose;
- If a fixed site was not mentioned, why the child did not receive the OPV dose at a fixed site;
- How the parent/caregiver had learnt about the immunization day;

6.4
AGE COMPOSITION OF THE SAMPLED CHILDREN

In the national NID, the target sample was aged under 5- year-old children. CES 2006 survey shows that among the under ten- year children overall in Bangladesh about 4 percent were under one year old; 9 percent were aged between under two years; about one among four children was between 24-35 months ; the higher proportion of children (about 30 percent) covered under the NID were from age group 36-47 months, which was being followed by the highest proportion that came from the age group 48-59 months. Age distribution of rural and urban NID sample children was not much different from that of the distribution

of national children (Figure O1). The age composition of children was about the same for both rural and urban samples. It was, thus, seen that the sample had disproportionately higher representation of children between 36-47 months and 48-59 months age group, and, lower representation of those from under 12 months, which was being followed by 12-23 months old children. This bias in the sample was, however, unlikely to have any bearing on the survey results varying little by the age of child.

6.5 OPV COVERAGE

The OPV coverage on first three rounds of 13th Special NID was an important part of CES 2006. The sample size and selection of the target population were the same as that of the national immunization coverage survey.

In the 13th special NIDs, the national OPV coverage in the 1st round was 97 percent of the targeted children (Figure O4) of which 98 percent were vaccinated at fixed sites and 2 percent at home through child-to-child search. In the 2nd round, the national coverage was 96 percent. Among them, 98 percent were vaccinated at fixed sites and 2 percent at home through child-to-child search. In the 3rd round, the national coverage was 96 percent. Among them, 97 percent vaccinated at fixed sites and 3 percent vaccinated at home through child-to-child search. Overall, in the 13th special NIDs, 99 percent of the targeted children were given at least one OPV dose and 93 percent all the three OPV doses, with only one percent not being reached at all (Figure O2).

The overall OPV coverage in the 13th special NIDs had a little variation between rural and urban areas. In the 1st round, 97 percent of the rural children and a slightly higher proportion of the urban children (99 percent) received OPV, while in the 2nd and 3rd rounds, 96 percent of the rural children and a slightly higher (97 percent) proportion of the urban children were given OPV. However, in the third round similar trend was noticed (Figure O4).

In the rural areas by division, OPV coverage in the 13th special NIDs was the lowest in Sylhet division with 95 percent of the children being vaccinated both in the 1st and 2nd rounds. Among the other divisions, the OPV coverage in the 1st round was ranged between 95 percent and 98 percent. Khulna and Dhaka divisions had the highest coverage (98 percent). OPV coverage in the 2nd round was found to be the highest in Khulna division (98 percent), which was being followed by Dhaka (97 percent), Barisal, Rajshahi (96 percent) and Sylhet (95 percent) divisions. The lowest coverage was found in Chittagong division (93 percent). OPV coverage in the third round was the lowest in Chittagong division (93 percent) and the highest in Khulna division (98 percent). The coverage rate varied between 94 percent and 97 percent in the other divisions (Figure O5).

In urban areas, very little variation was noticed among the six City Corporations with respect to OPV coverage in the 13th special NIDs. In the 1st round, OPV coverage varied between 98 percent(in BCC) and 100 percent (in RCC and KCC) while during the 2nd round, it varied between 97 percent (in CCC) and 100 percent (in RCC and KCC). In the 3rd round the highest coverage was found in KCC and RCC- 100 percent. The lowest coverage was in DCC with 95 percent. The percentage of the children receiving OPV doses in all three rounds was the lowest in DCC (93 percent) while the highest in KCC (100 percent). Coverage in other divisions are: 99 percent in RCC, 97 percent in SCC, 95 percent in BCC and 94 percent in CCC (Figure O6).

FIGURE O1

Age Distribution of Children Sampled for 13th Special NIDs Survey by National, Rural and Urban Areas in 2006

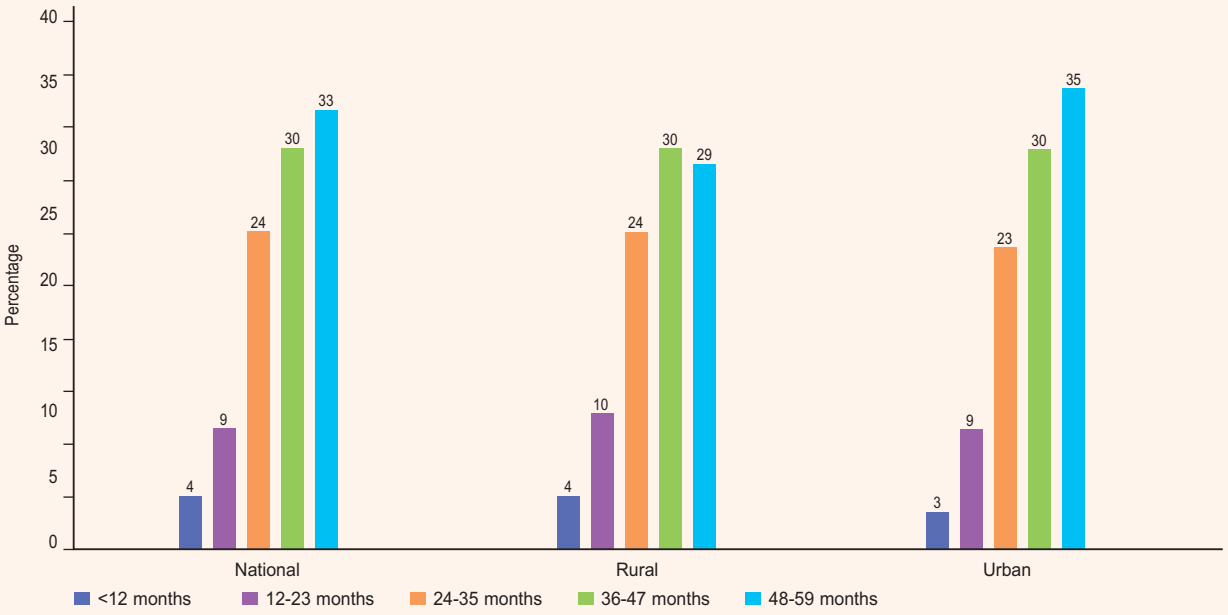


FIGURE O2

OPV Coverage among 0-59 Months Old Children in 13th Special NIDs by National, Rural and Urban Areas in 2006

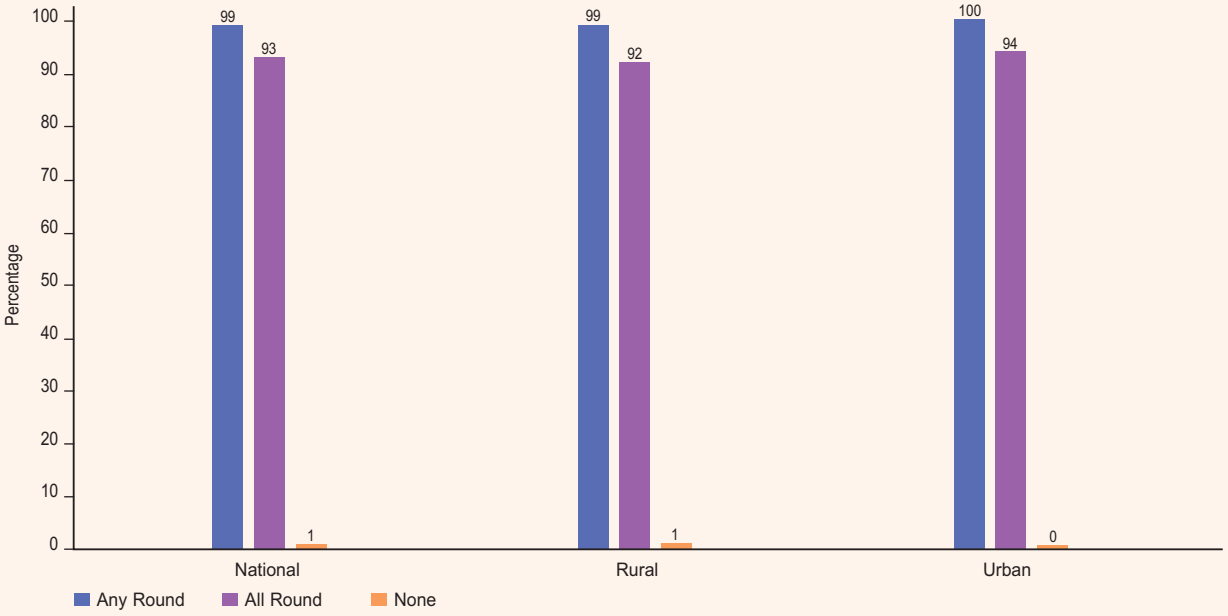


FIGURE 03
OPV Coverage among 0-59 Months Old Children by NIDs from 1995 to 2006

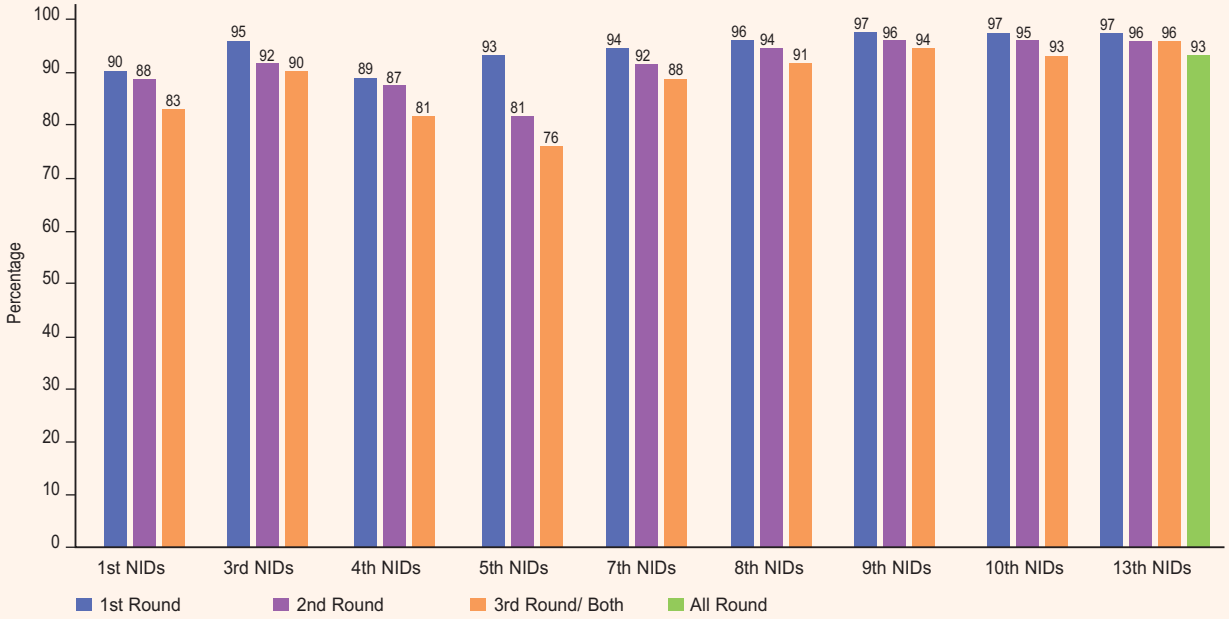


FIGURE 04
Round Specific OPV Coverage among 0-59 Months Old Children, Vitamin A Coverage among 12-59 months Old Children and Anthelmintic Coverage among 24-59 Months Old Children in 13th Special NIDs by National, Rural and Urban Areas in 2006

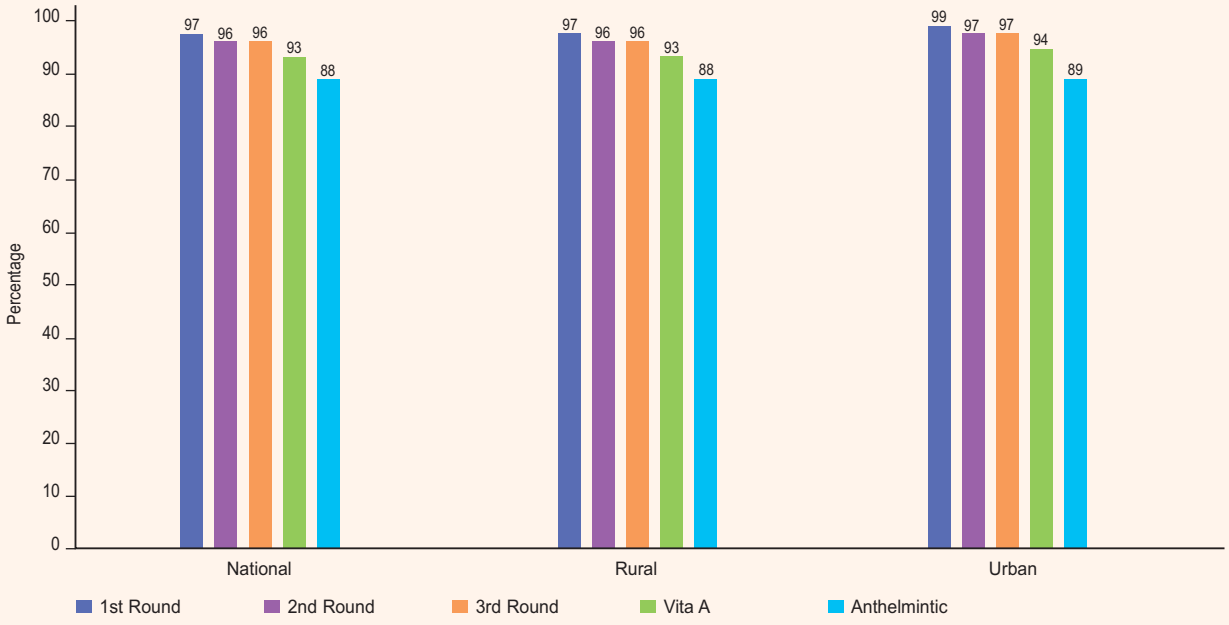


FIGURE O5

OPV Coverage among 0-59 Months Old Children in 13th Special NIDs in Rural Areas by Division in 2006

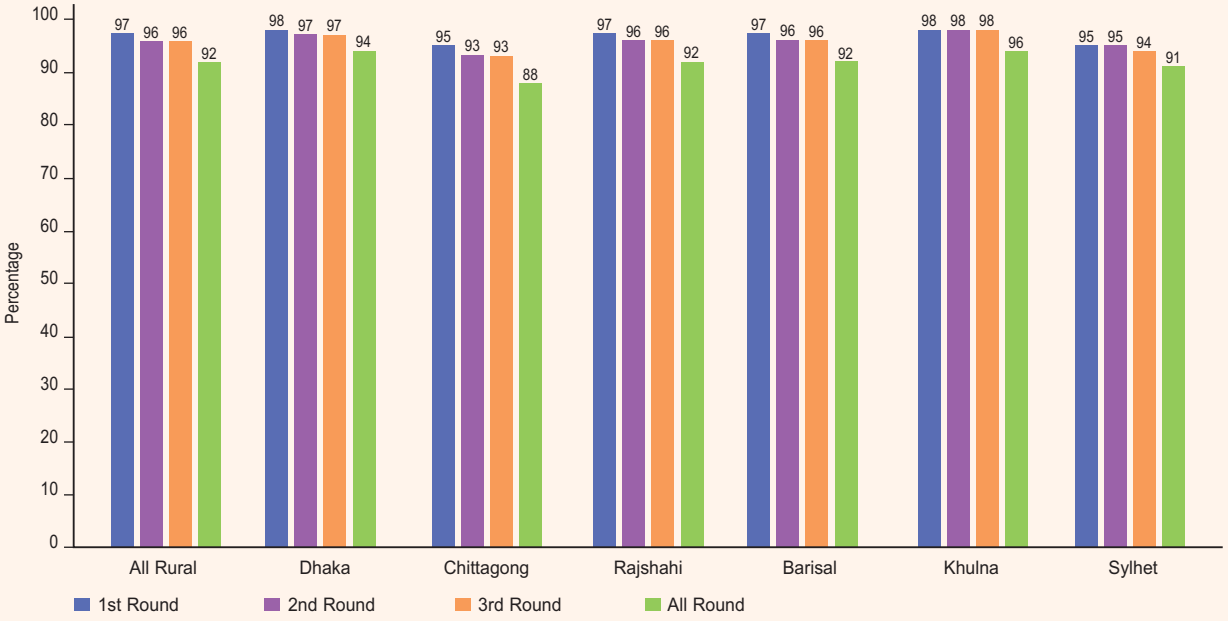
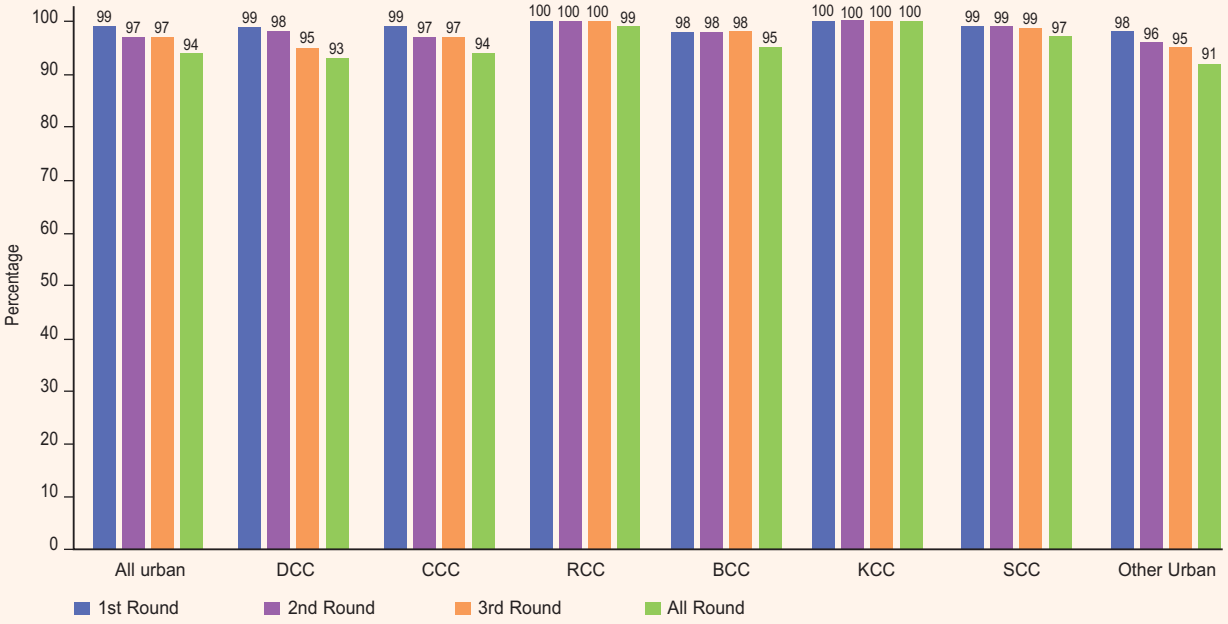


FIGURE O6

OPV Coverage among 0-59 Months Old Children in 13th Special NIDs in Urban Areas by City Corporations/Municipalities in 2006



6.6
VACCINATION OF LEFT-OUT CHILDREN DURING CHILD-TO-CHILD SEARCH

Among those who didn't receive OPV in the fixed site nationally, 42 percent of the left-out children from the 1st round of the 13th intensified NIDs and 37 percent of those from the 2nd round were being reached and vaccinated with OPV through child-to child search. Compared to those in urban areas, the child-to-child search was more successful in vaccinating left-out children in rural areas, thus suggesting a better quality search there. For example, 42 percent of the rural left-out children from the 1st round were vaccinated through the child-to-child search, compared to a lower 40 percent of the urban left-out children. In the 2nd round, the proportion was 37 percent for rural and 32 percent for urban children. However, in the third round the dropout rate is 14 percentage points higher in the rural areas than that in urban areas.

In rural areas by division, the child-to-child search in the 13th intensified NIDs was most successful in Dhaka division and the least successful in Khulna division. Only 57 percent of the left-out children from the 1st round and 55 percent of those from the 2nd round in Dhaka division were vaccinated with OPV through the child-to-child search compared to 22 percent and 28 percent respectively in Khulna division. Among other divisions, the percentage in the 1st round varied between 47 percent and 30 percent, and in the 2nd round between 55 percent and 25 percent. A similar trend was noticed in the third round. It was also evident from the comparisons that the child-to-child search was relatively more successful in reaching left--out children where it was carried out more methodically. Aberrations from this pattern of relationship were plausibly a result of sampling fluctuations.

Like the estimates for households having left-out children with visit dates, estimates for left-out children vaccinated through the child-to-child search were based on small numbers of observations for the four City Corporations and All Municipalities and, hence, were unstable, precluding any reliable analysis/conclusions about the relative degree of success of the child-to-child search among different urban units. (Figure P1-P2)

6.7
REASONS FOR NOT HAVING CHILDREN VACCINATED AT FIXED SITES

For a child not being vaccinated with OPV at a fixed site in the 13th Intensified NIDs, the child's mother/caregiver was asked why the child was not vaccinated at a fixed site. If the., mother/caregiver gave more than one reason, only the most important one was recorded.

Nationally, that parents and caregivers did not know about the campaign was the significant reason (36 percent) why children were not vaccinated in the 1st round of 13th NIDs. It was being followed by the other reasons: the child was not at home (17 percent), parents and caregivers were busy (14 percent), and the center was at a far away place (8 percent) (Figures P3).

In urban areas, the reasons were, however, reported in a different order with the exception of first two reasons which were the same as in the case of rural areas. The most common reasons for not having children vaccinated at a fixed site in the 2nd round, nationally as well as for both rural and urban areas, were more or less same as those in the 1st round. Likewise, the reasons for not receiving OPV in the 3rd

round are almost the same as in the 1st and 2nd rounds. The common reasons were lack of information, business of the mother/caregiver, and the fact that the mother/ caregiver was not at home. There were little variations between urban and rural areas in this regard (Figures P4 and P5).

6.8
SOURCES OF INFORMATION ABOUT 13TH SPECIAL NIDS

Nationally, government/municipal field-workers were the most common source of information from whom parents/caregivers learnt about the 13th NIDs. Nationally, 46 percent of the mothers/caregivers stated that they had learnt about immunization days from government/ municipal field-workers. The next most important source of information about the NIDs at national level was mobile miking (32 percent), being followed by television and mosque miking (each 23 percent), relatives/neighbors/friends (15 percent), other volunteer's visit by 11 percent, and NGO worker's visit by 4 percent (Figure P8).

Rural areas did not differ from the national level with respect to the sources of information. The most cited source of information about the immunization days in rural areas was the government field-workers (48 percent). The next most reported source of information in rural areas was mobile miking (31 percent), which was being followed by mosque miking (25 percent), television (18 percent), relatives/neighbors/friends (15 percent), other volunteers (11 percent), and NGO workers (4 percent).

Urban areas differed remarkably from the national level or, for that matter, from rural areas with respect to the source of information. In urban areas, television was the most common source of information, being mentioned by more than half (56 percent) of the mothers/caregivers. Mobile miking, however, emerged to be the second most reported source (43 percent) in urban areas, which was being followed by health workers' visit (33 percent), relatives/neighbors/friends, (16 percent) and mosque miking and other volunteer's visit (10 percent).

FIGURE P1

Percentage of Left Out Children Receiving OPV during Child to Child Search in 13th Special NIDs in Rural Areas by Divisions in 2006

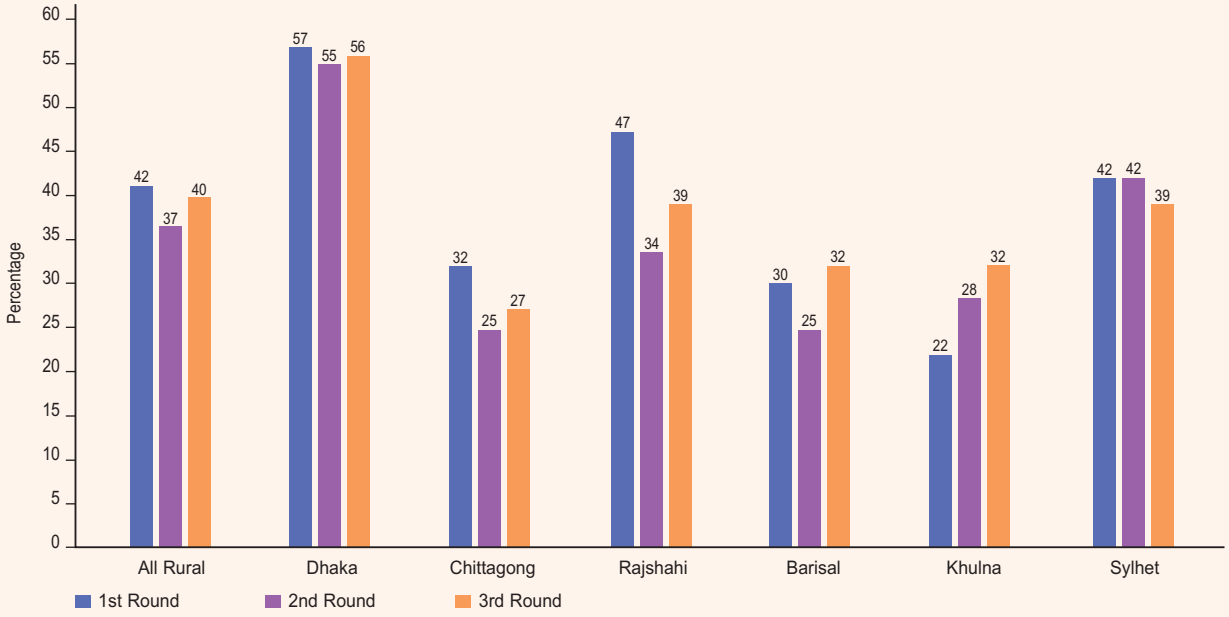


FIGURE P2

Percentage of Left Out Children Receiving OPV during Child to Child Search in 13th Special NIDs in Urban Areas by City Corporations/Municipalities in 2006

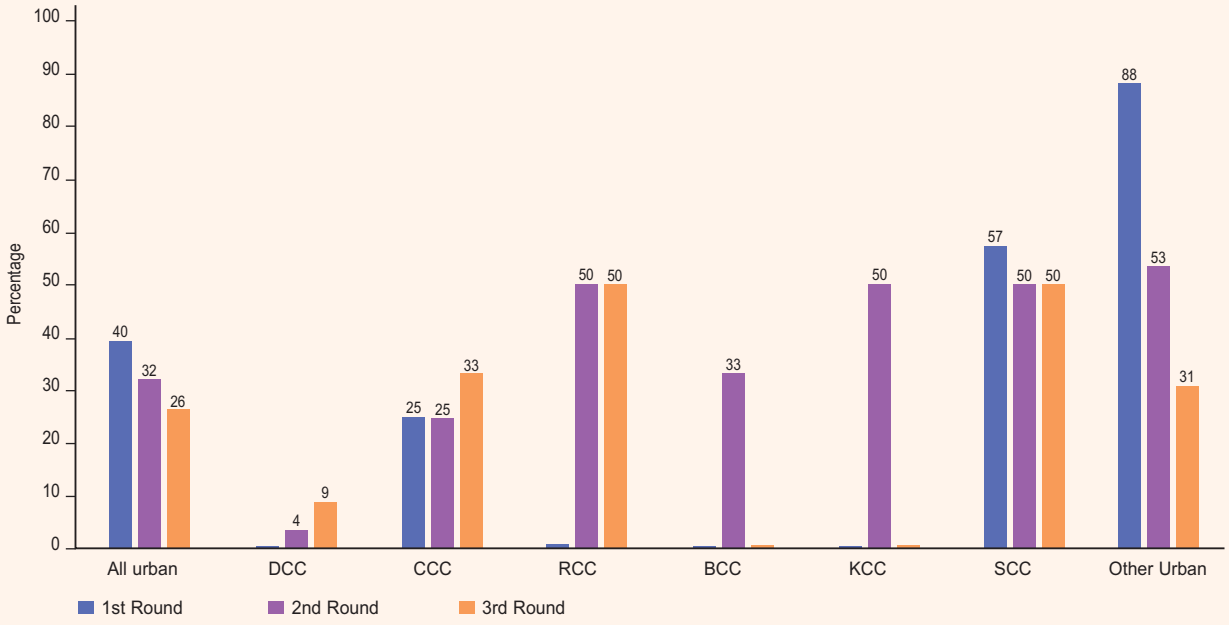


FIGURE P3

Reasons Why Children were not Vaccinated in 1st Round of 13th Special NIDs by National, Rural and Urban Areas in 2006

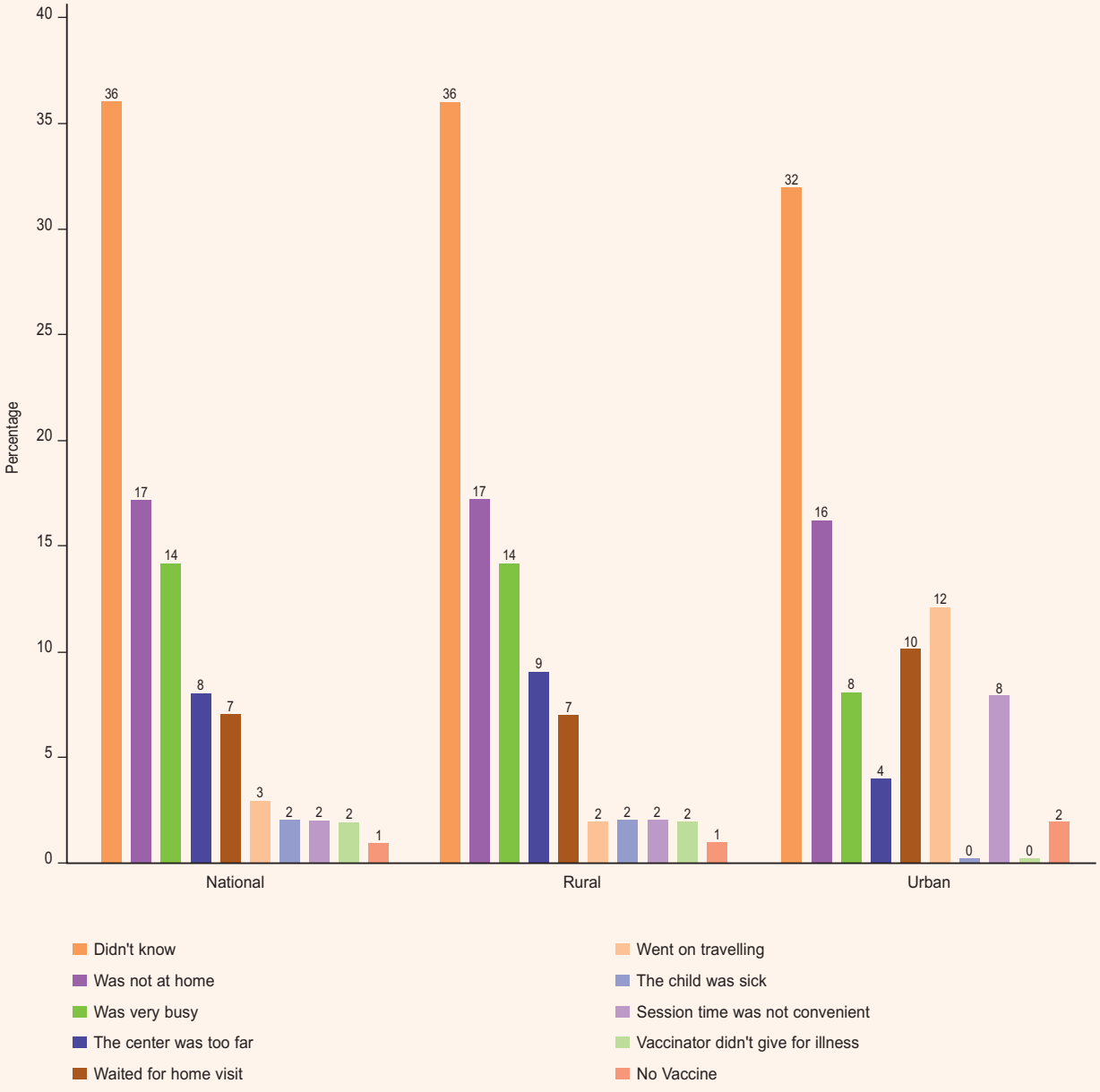


FIGURE P4

Reasons Why Children were not Vaccinated in 2nd Round of 13th Special NIDs by National, Rural and Urban Areas in 2006

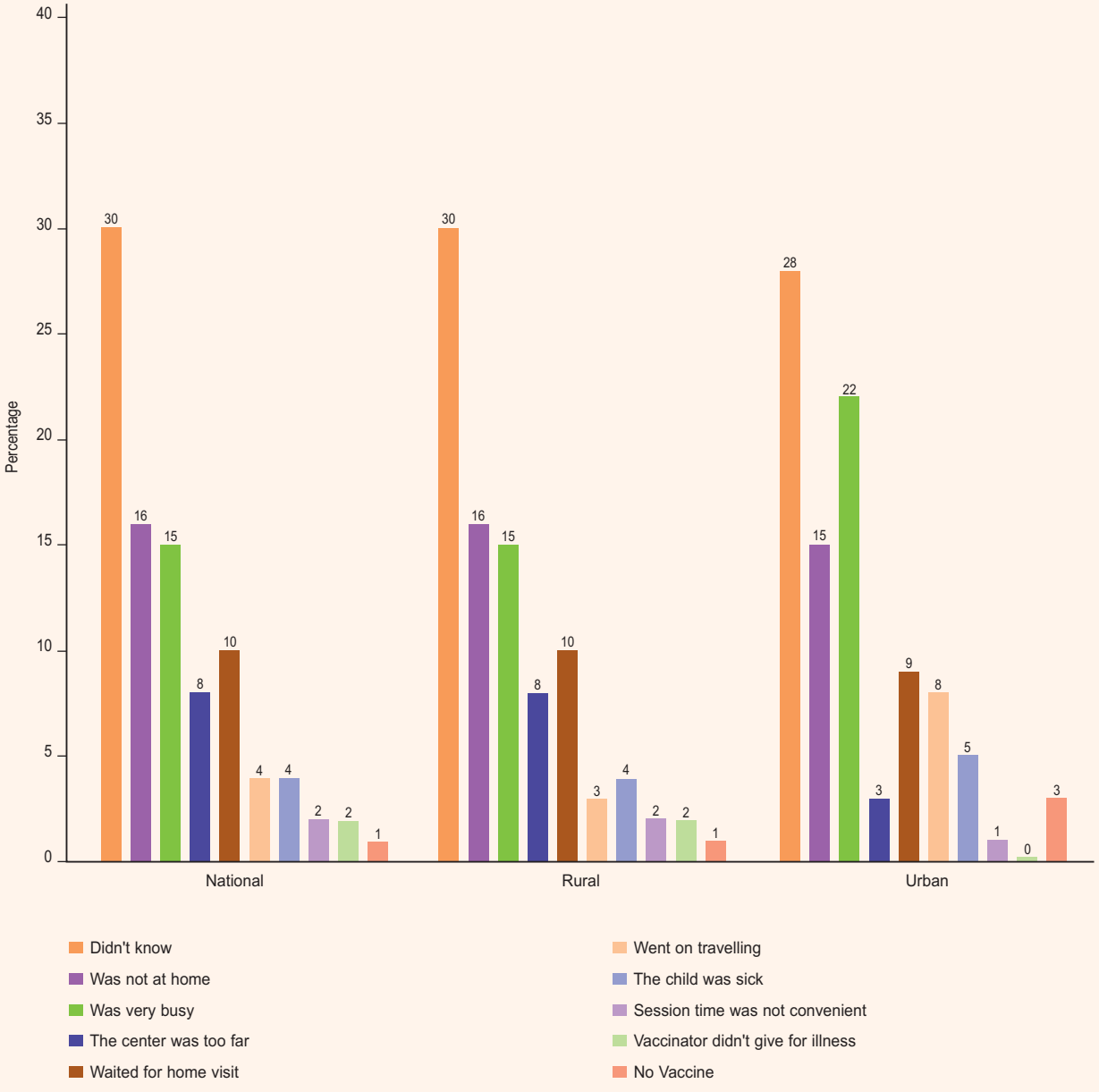


FIGURE P5

Reasons Why Children were not Vaccinated in 3rd Round of 13th Special NIDs by National, Rural and Urban Areas in 2006

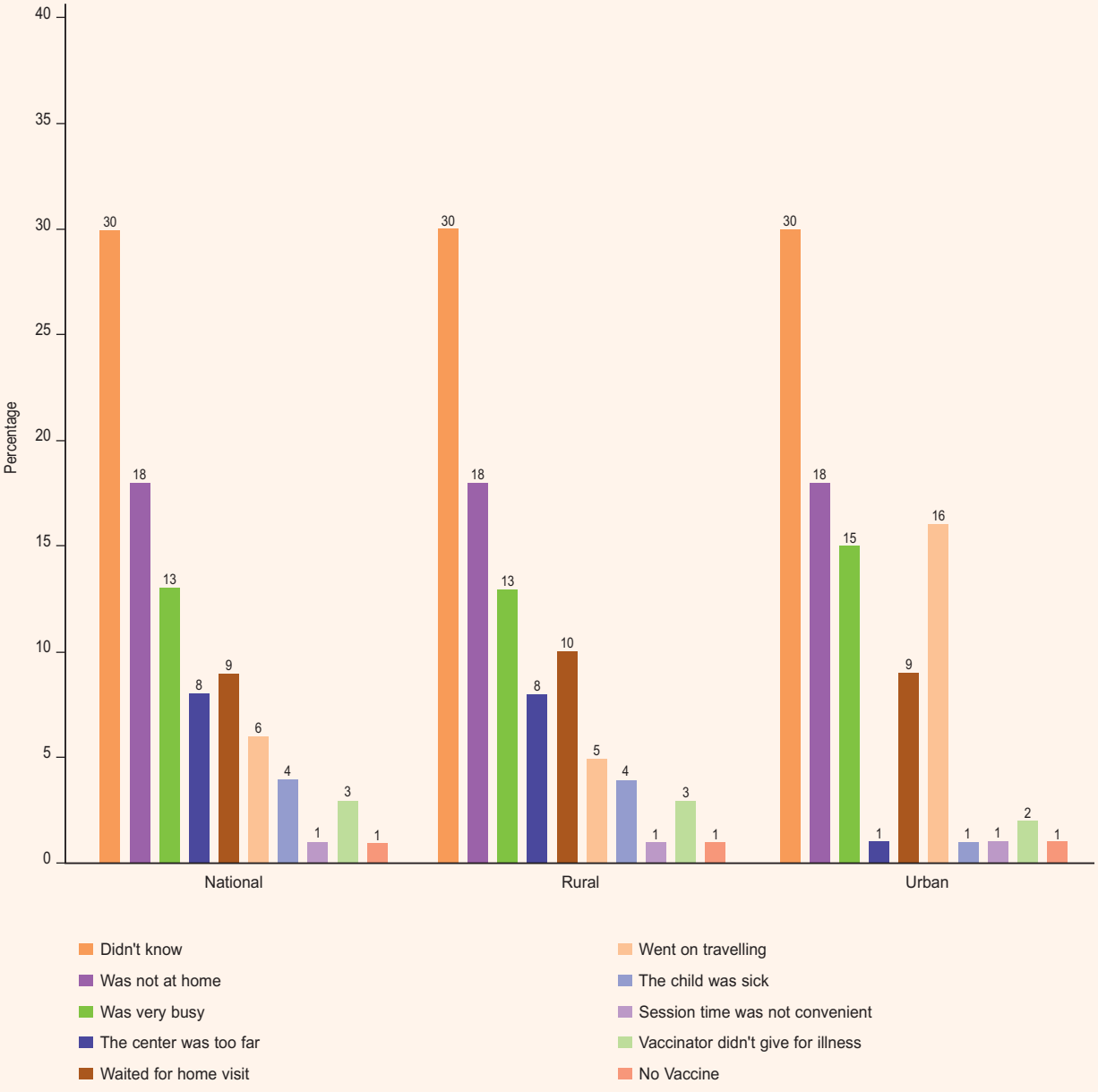


FIGURE P6
OPV Coverage among 0-59 Months Old Children in 13th Special NIDs in Rural Area by Division in 2006

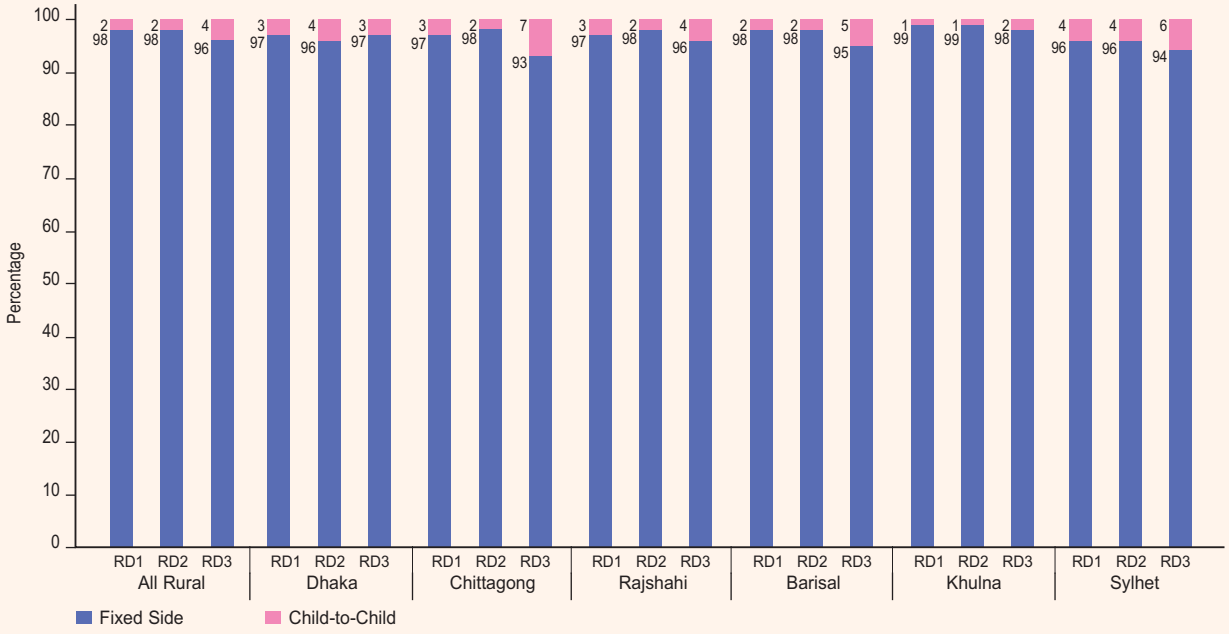


FIGURE P7
OPV Coverage among 0-59 Months Old Children in 13th Special NIDs in Urban Area by City Corporations in 2006

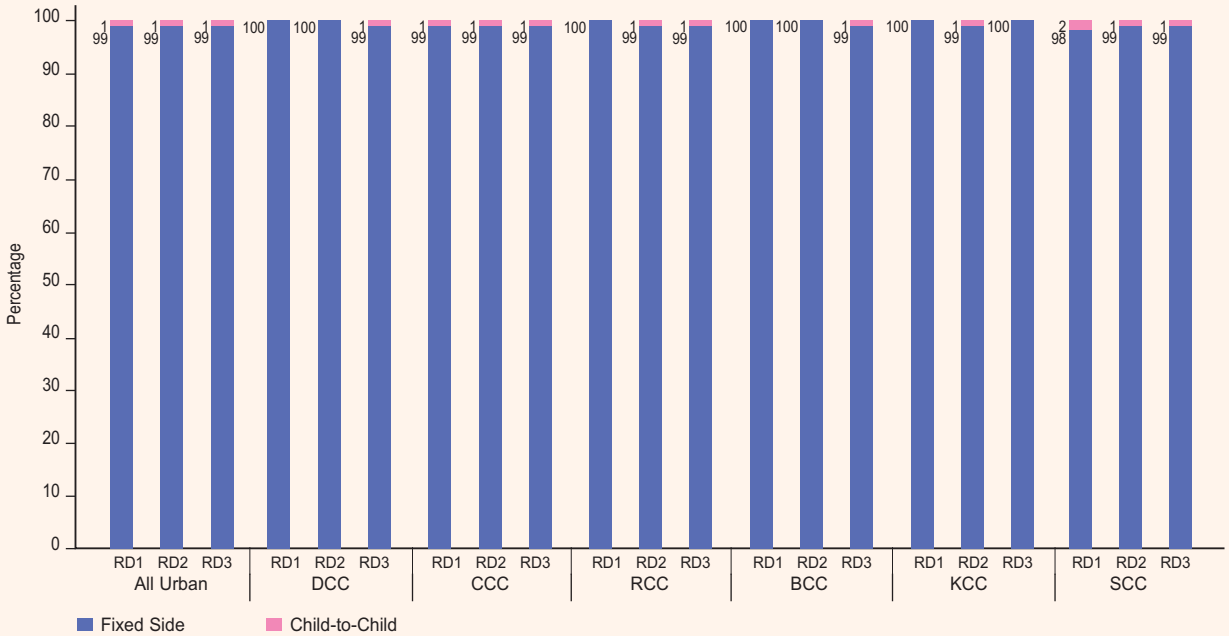
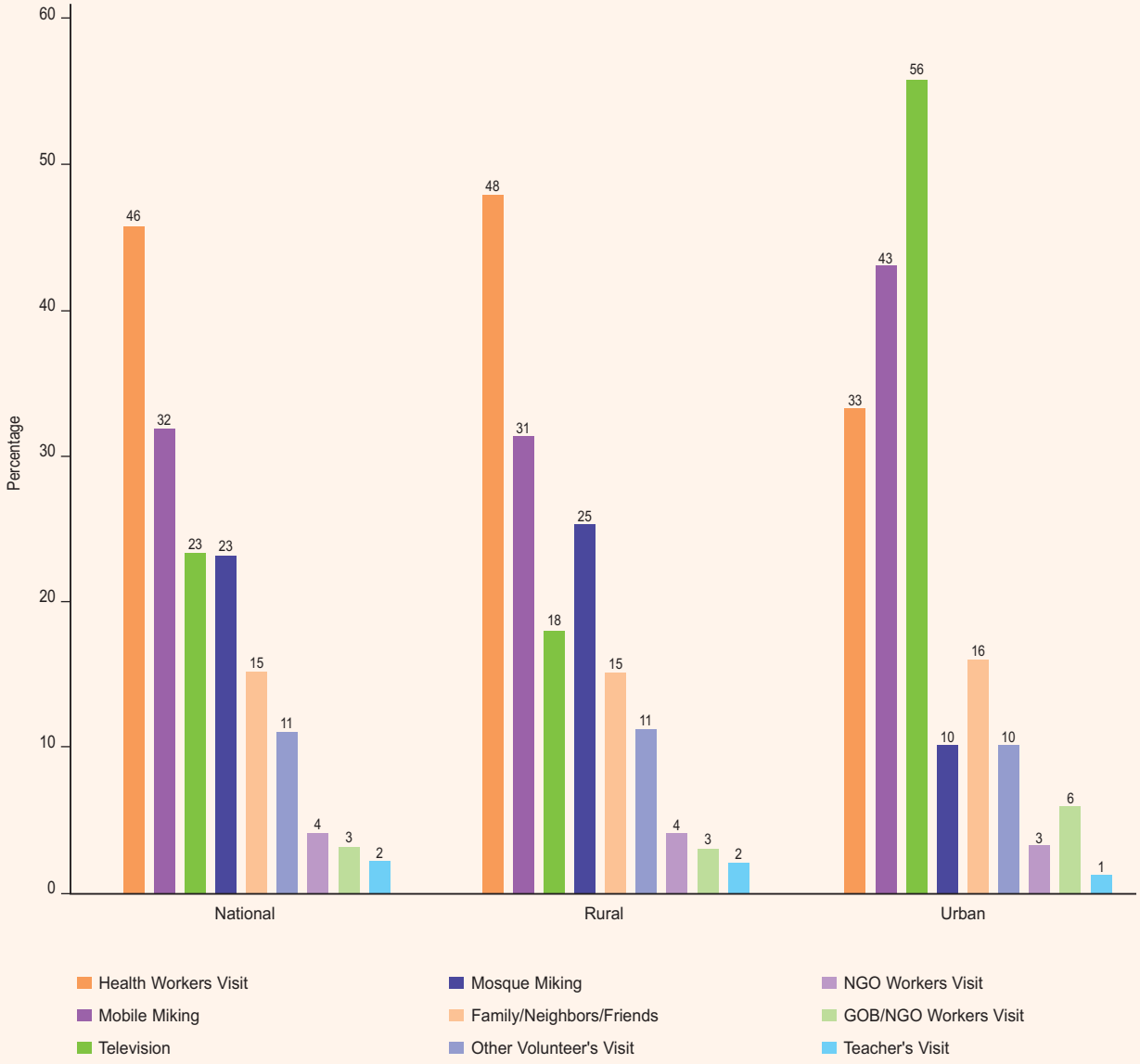


FIGURE P8

Sources of Information about 13th Special NIDs Campaign by National, Rural and Urban Areas in 2006



6.9 VITAMIN A SUPPLEMENTATION COVERAGE AMONG INFANTS, POSTPARTUM WOMEN AND CHILDREN

INFANTS

The national coverage of vitamin A Supplementation among infants aged between 9-11 -month was 73 percent. Coverage in rural areas (73 percent) was lower than that in urban areas (78 percent) (Figure Q1). Vitamin A Supplementation coverage was 5 percentage points lower than valid coverage of measles vaccination (77 percent in rural area, 81 percent in urban areas and 78 percent nationally).

In rural regions, coverage of vitamin A supplementation in infants ranged between 60 percent in Sylhet division and 82 percent in Khulna division (Figure Q2), and in urban regions the coverage ranged between 75 percent in SCC and 82 percent in RCC (Figure Q3).

In rural regions, there was a slight difference in coverage between boys (73 percent) and girls (72 percent), while in urban regions, there was a 4 percentage points difference between boys (80 percent) and girls (76 percent) (Figure Q4).

CHILDREN AGED 12-59 MONTHS

The national coverage of vitamin A Supplementation among children aged between 12-59 months during the 3rd round of 13th special NIDs being held on 11th June 2006 was 93 percent. Coverage in rural areas (93 percent) was similar to that in urban areas (94 percent) (Figure Q1).

Among the rural divisions, the coverage was the highest in Khulna division (95 percent) and the lowest in Chittagong division (89 percent) (Figure Q2). However, Khulna City Corporation had the highest coverage (98 percent), being followed by Sylhet (97 percent), Rajshahi (96 percent), Barisal and Chittagong (95 percent), and Dhaka City Corporation (90 percent) (Figure Q3).

Nationally, there was no difference in coverage between boys and girls both in the urban and rural areas (Figure Q5).

POSTPARTUM WOMEN

The national coverage of vitamin A Supplementation among the postpartum women within 6 weeks of delivery was 29 percent (Figure Q1). Coverage in the rural areas (27 percent) was lower than in the urban areas (37 percent).

In the rural geographical regions, coverage ranged between 21 percent in Sylhet division and 40 percent in Barisal division (Figure Q2), and in the urban geographical regions, coverage ranged between 24 percent in SCC and 51 percent in BCC and KCC respectively (Figure Q3).

FIGURE Q1

Vitamin A Coverage among Infants aged 9-11 months in Childhood Vaccination Survey, Vitamin A Supplementation Coverage among Children 12-59 months in 13th Special NIDs and Vitamin A Coverage among Postpartum Women in TT Survey by National, Rural and Urban Areas

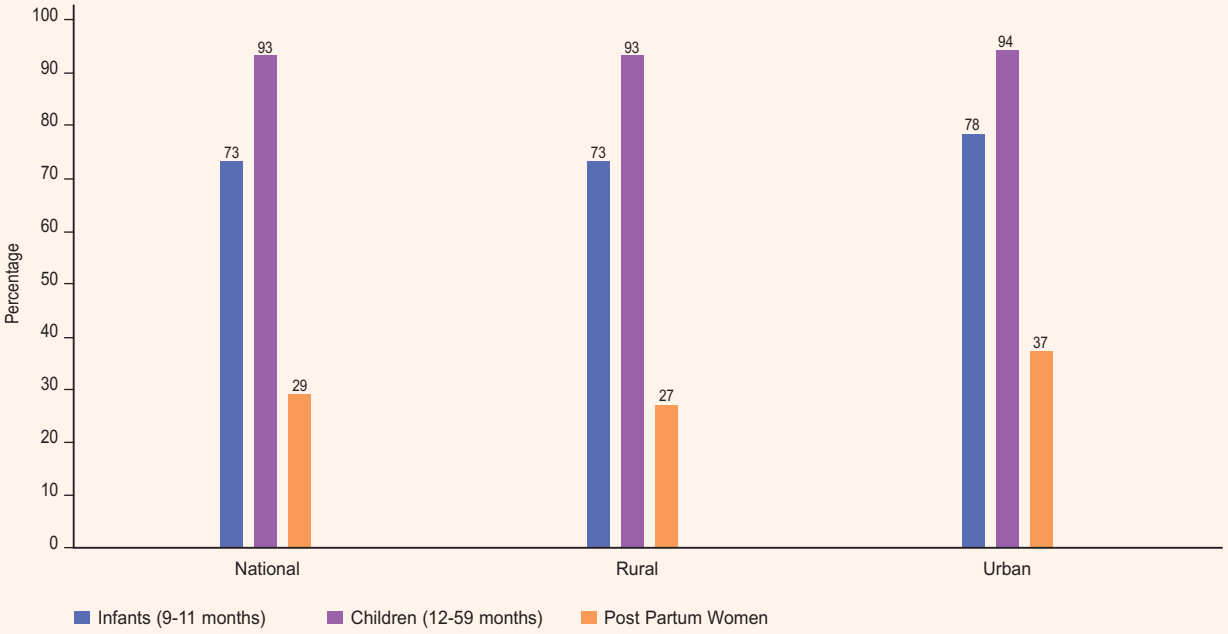


FIGURE Q2

Vitamin A supplementation Coverage during 13th Special NIDs among Children aged 12-59 months, Infants aged 9-11 months, and Postpartum women In Rural Areas by Division

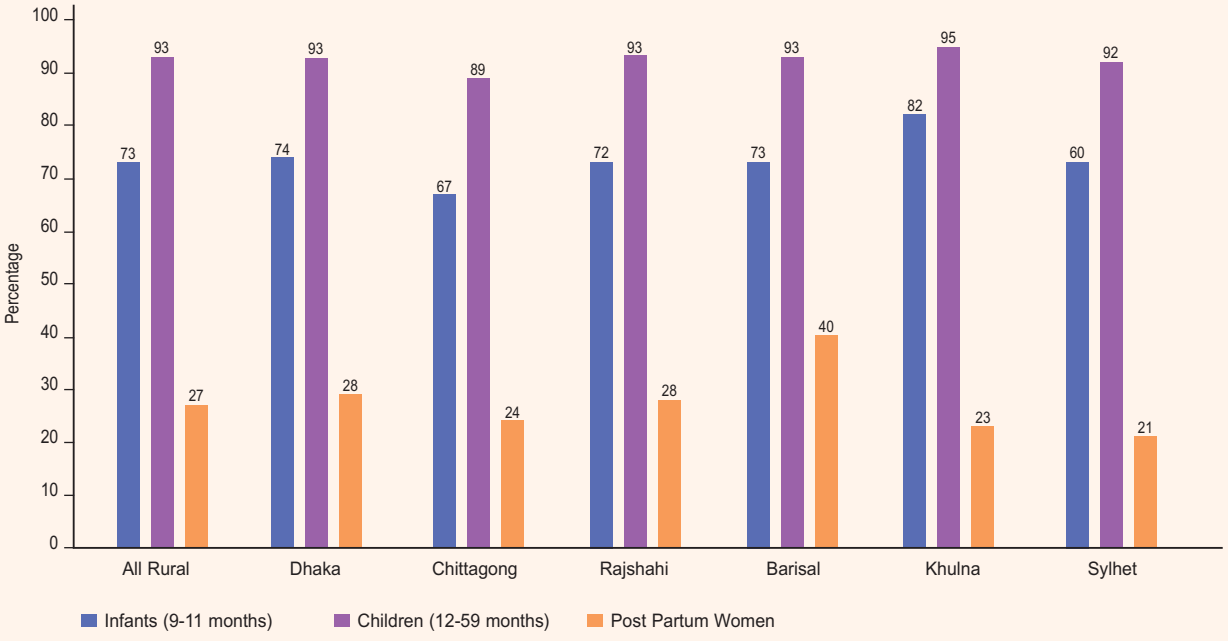


FIGURE Q3

Vitamin A supplementation Coverage during 13th Special NIDs among Children aged 12-59 months, Infants aged 9-11 months, and Postpartum women in Urban Areas by City Corporations/Municipalities

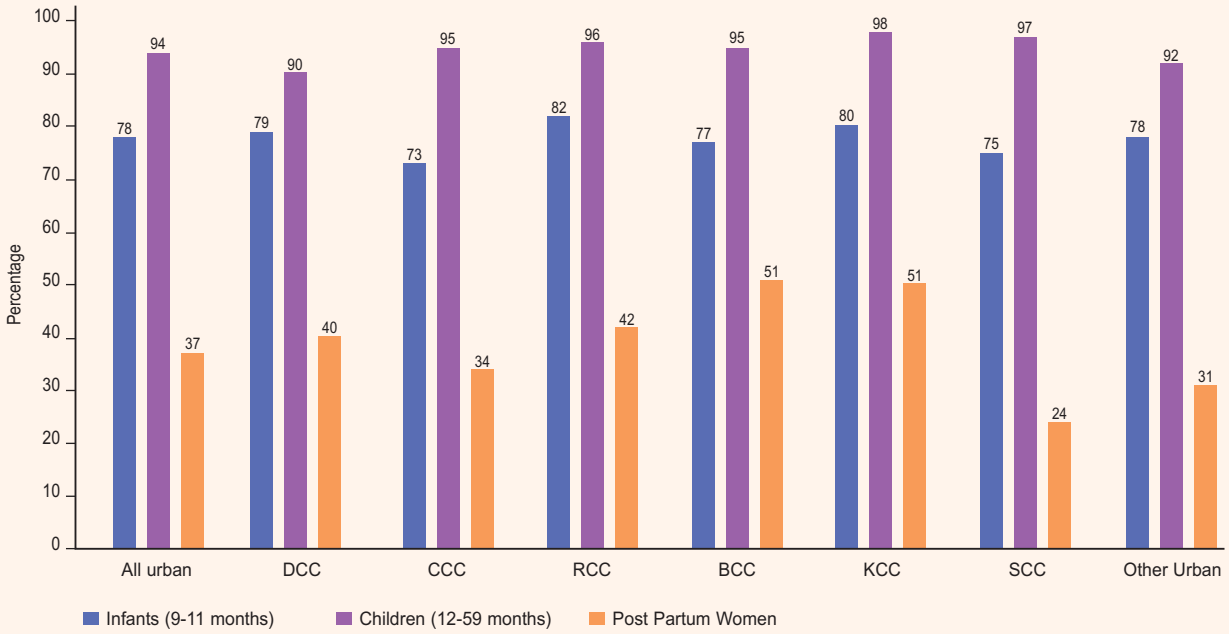


FIGURE Q4

Vitamin A Coverage among Infants aged 9-11 months in Childhood Vaccination Survey by Region and Sex

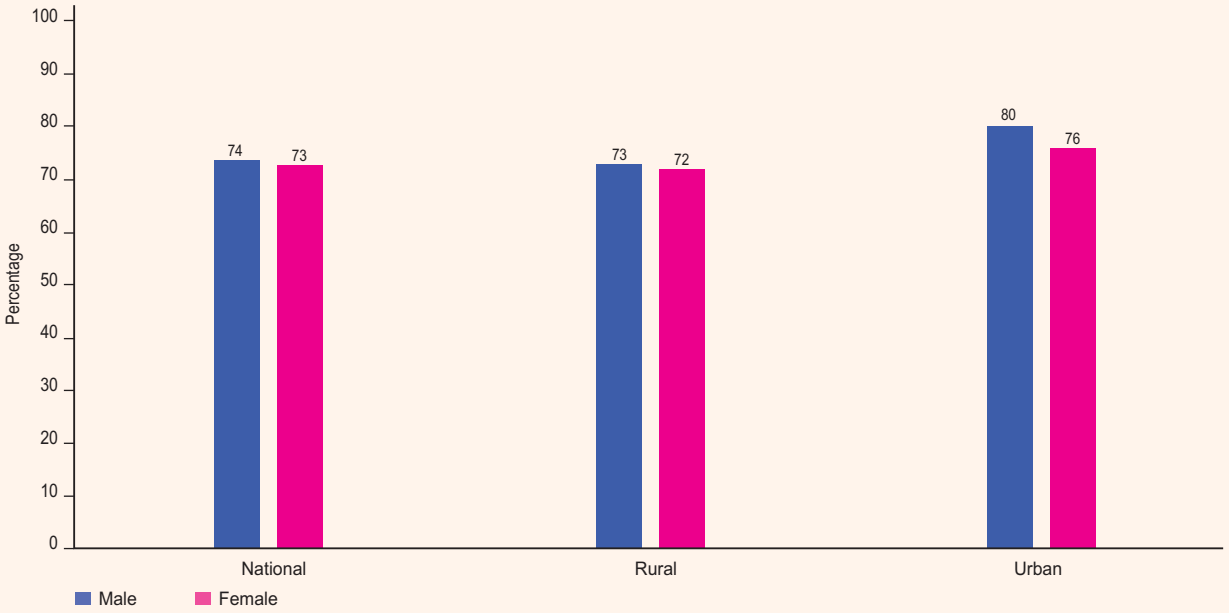
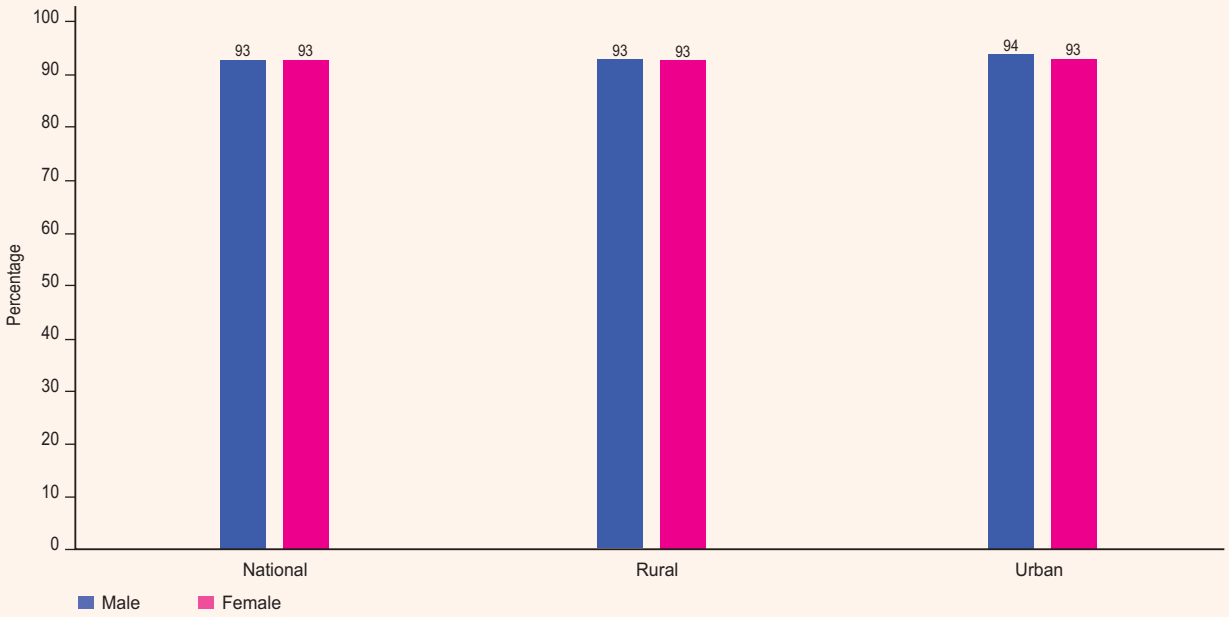


FIGURE Q5
Vitamin A Supplementation Coverage among Children aged 12-59 months in 13th Special NIDs by Region and Sex



6.9.1 REASONS WHY CHILDREN DID NOT RECEIVE VAC DURING THE 13TH SPECIAL NIDS CAMPAIGN

Mothers and caregivers of children aged between 12-59 months who did not receive a vitamin A capsule (VAC) during the 3rd round of 13th special NIDs held on 11th June 2006 were asked the reason as to why their children did not receive VAC (Tables Q1-Q3). Nationally, the most common response was lack of awareness about the NID/vitamin A supplementation (40 percent), which was being followed by absence from home (14 percent), non-availability of VAC at the site (12 percent), child was sick (8 percent) and mothers/caregivers were very busy (5 percent).

Lack of awareness about the NID/vitamin A supplementation was the most common reason for not receiving VAC in both rural (40 percent) and urban (39 percent) regions (Table Q1). In the rural areas, percentage of children who did not receive VAC due to lack of awareness was the highest in Chittagong division (49 percent), which was being followed by Dhaka (44 percent), Khulna (35 percent), Barisal (34 percent), Sylhet (32 percent), and Rajshahi (32 percent) divisions (Table Q2). In urban areas, corresponding data are CCC 70 percent, DCC 52 percent, SCC 29 percent, KCC 25 percent, BCC 20 percent and RCC 13 percent (Table Q3). Geographical variations might be due to lack of social mobilization efforts to inform mothers and caregivers about the campaign.

TABLE Q1

Reasons why Children did not receive Vitamin A Supplement during the 13th special NID in 2006 by National, Rural and Urban Areas

Reasons for not receiving Vitamin A	National	Rural	Urban
Was not aware about NID/vitamin A supplementation	39.7	39.8	39
Was not at home	14.4	14.4	14.6
Vitamin A was not available at site	11.7	12.2	8.1
Child was sick so field worker/volunteer did not give vitamin A	7.7	7.4	9.8
Was very busy	5.4	5.3	6.5
Was expecting Vitamin A to be given at home	3.7	3.5	5.7
Child was sick, so did not take him distribution site	3.7	4.3	-
Was in Traveling	3.3	2.4	9.8
Distribution site was too far	2.5	2.6	1.6
The child was fed in the previous time	2.5	2.7	0.8
Child was not aged enough	1.5	1.6	0.8
Time of distribution inconvenient	1.3	1.1	2.4
Health worker was not available	1	1.1	-
Was afraid of side effects	0.7	0.7	0.8
There was a long queue	0.3	0.3	-
Religious/Social obstacles	0.2	0.2	-
Others	**0.4**	**0.4**	**0.1**
Number of Children who did not receive Vitamin A	**1014**	**891**	**123**

TABLE Q2

Reasons why Children did not receive Vitamin A Supplement during the 13th Special NIDs in 2006 in Rural areas by Division

Reasons for not receiving Vitamin A	All rural	Dhaka	Chittagong	Rajshahi	Barisal	Khulna	Sylhet
Was not aware about Campaign	39.8	43.7	48.7	31.9	33.7	35.1	32.3
Was not at home	14.4	13.5	8.1	18.3	20.9	12.8	22.6
Vitamin A was not available at site	12.2	13.5	14.8	9.4	3.5	20.2	6.5
Child was sick so field worker/ volunteer did not give vitamin A	7.4	8.1	3.8	8.9	11.6	3.2	14.5
Was very busy	5.3	2.7	5.9	5.8	5.8	7.4	6.5
Was expecting Vitamin A to be given at home	3.5	5	4.7	3.1	2.3	-	1.6
Child was sick, so did not take him distribution site	4.3	2.3	3.4	8.4	7	2.1	1.6
Was in Travelling	2.4	0.9	1.3	3.7	5.8	3.2	1.6
Distribution site was too far	2.6	1.8	2.5	2.1	3.5	3.2	4.8
The child was fed in the previous time	2.7	1.8	3.4	4.2	2.3	2.1	-
Child was not aged enough	1.6	1.8	0.8	0.5	-	6.4	1.6
Time of distribution inconvenient	1.1	1.8	-	1.6	1.2	2.1	-
Health worker was not available	0.3	0.5		0.5	1.2	-	-
Was afraid of side effects	0.7	0.9	0.4	1	1.2	-	
There was a long queue	0.3	0.5		0.5			1.2
Religious/Social obstacles	0.2						3.2
Others	**1.2**	**1.2**	**2.2**	**0.1**	**0**	**2.2**	**2**
Number of Children who did not receive Vitamin A	**891**	**222**	**236**	**191**	**86**	**94**	**62**

TABLE Q3

Reasons why Children did not receive Vitamin A Supplement during the 13th Special NIDs in 2006 in Urban Areas by City Corporations

Reasons for not receiving Vitamin A	Urban Total	DCC	CCC	RCC	BCC	KCC	SCC	Other Urban
Was not aware about Campaign	39.0	52.4	70.0	12.5	20.0	25.0	28.6	38.1
Was not at home	14.6	4.8	10.0	12.5	10.0	75.0	-	17.5
Vitamin A was not available at site	8.1	-	10.0	-	20.0	-	14.3	9.5
Child was sick so field worker/volunteer did not give vitamin A	9.8	4.8		62.5			28.6	6.3
Was very busy	6.5	4.8	10.0	-	-	-	-	9.5
Was expecting Vitamin A to be given at home	5.7	4.8		12.5	10.0	-	-	6.3
Was in Travelling	9.8	19.0			20.0		28.6	6.3
Distribution site was too far	1.6	-	-	-	-	-	-	3.2
The child was fed in the previous time	0.8							1.6
Child was not aged enough	0.8							1.6
Time of distribution inconvenient	2.4	9.5			10.0			-
Was afraid of side effects	0.8				10.0			-
Number of Children who did not receive Vitamin A	**123**	**21**	**10**	**8**	**10**	**4**	**7**	**63**

6.10 ANTHELMINTIC COVERAGE AMONG CHILDREN

Coverage of anthelmintic treatment among children aged between 24-59 months during the third round of 13th NIDs, in all areas of the country except districts covered by a filariasis programme, was 88 percent (Figure R1). The coverage was similar in urban (89 percent) and rural (88 percent) areas. Similarly, there was no difference in the coverage among boys and girls.

In rural divisions, the coverage of anthelmintic treatment ranged between 84 percent in Chittagong division and 91 percent in Khulna division (Figure R2). Data on coverage of anthelmintic treatment was collected from all city corporations except RCC since it was covered by filariasis programme. Coverage in the urban areas ranged between 82 percent in DCC and 92 percent in BCC, KCC, and SCC (Figure R3).

6.10.1 REASONS WHY CHILDREN DID NOT RECEIVE ANTHELMINTIC

Mothers and caregivers of children aged between 24-59 months who did not receive anthelmintic treatment during the 3rd round of 13th special NIDs held on 11th June, 2006 were asked the reason as to why their children did not receive anthelmintic treatment (Table R1-R3). Nationally, the most common reason was lack of awareness about the NID/anthelmintic treatment (34 percent), which was being followed by the reason that anthelmintic tablets were not available (16 percent), field worker/volunteer did not give it (12 percent), and the child was not at home (10 percent).

Lack of awareness about the NID/anthelmintic treatment was the most common reason for not receiving anthelmintic treatment in both rural (34 percent) and urban (31 percent) regions (Table R1). In rural areas, percentage of children who did not receive anthelmintic treatment due to lack of awareness was the highest in Chittagong division (45 percent), which was being followed by Barisal (35 percent), Dhaka (33 percent), Khulna (31 percent), Rajshahi (29 percent), and Sylhet (15 percent) divisions (Table R2). In urban areas, the corresponding data are: CCC -40 percent, DCC-32 percent, KCC- 21 percent, BCC- 20 percent, and SCC- 13 percent (Table R3). Geographical variations might be due to lack of social mobilization efforts regarding informing mothers and caregivers about the campaign.

FIGURE R1
Anthelmintic Coverage among Children during 13th Special NIDs in 2006 by National, Rural and Urban Areas

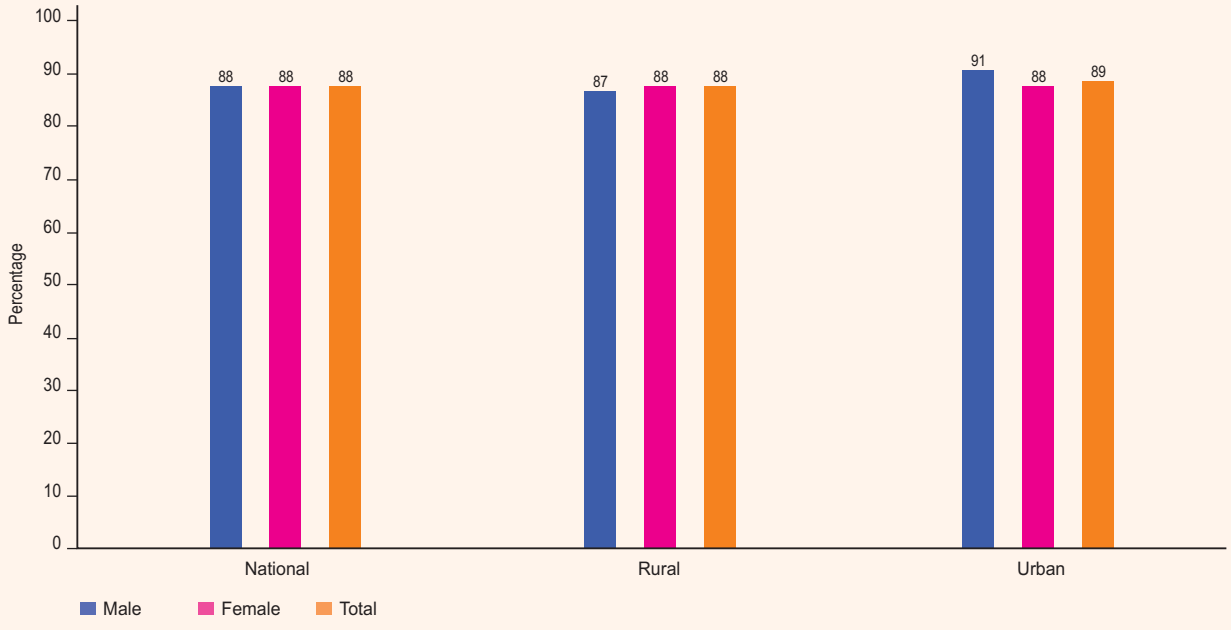


FIGURE R2
Anthelmintic Coverage among Children during 13th Special NIDs in Rural Areas by Division

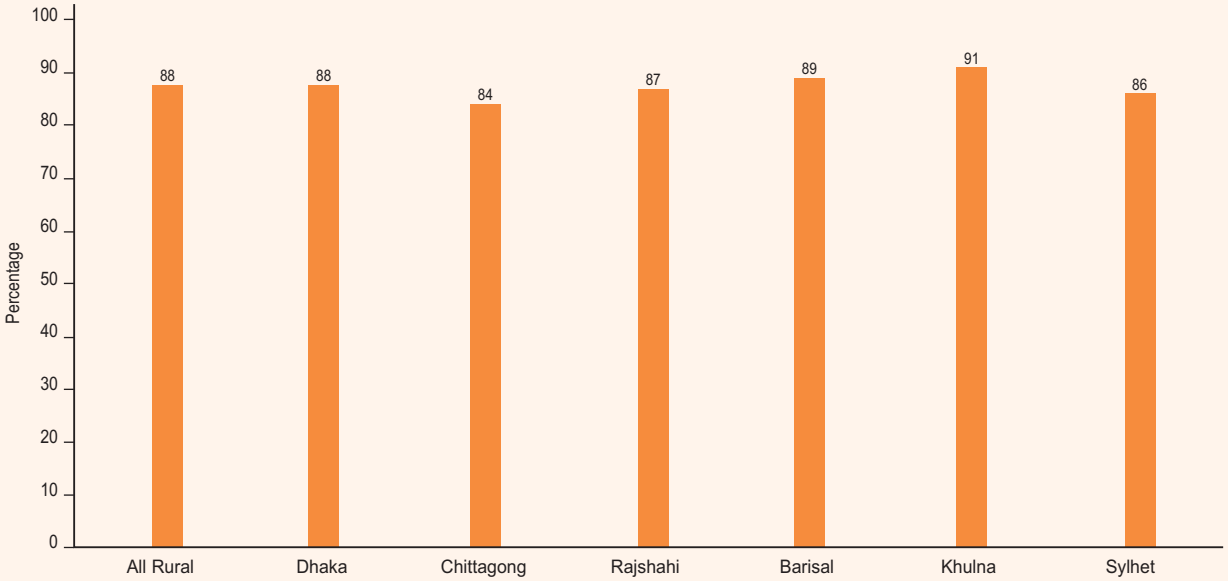


FIGURE R3
Anthelmintic Coverage among Children during 13th Special NIDs in 2006 in Urban Areas by City Corporation

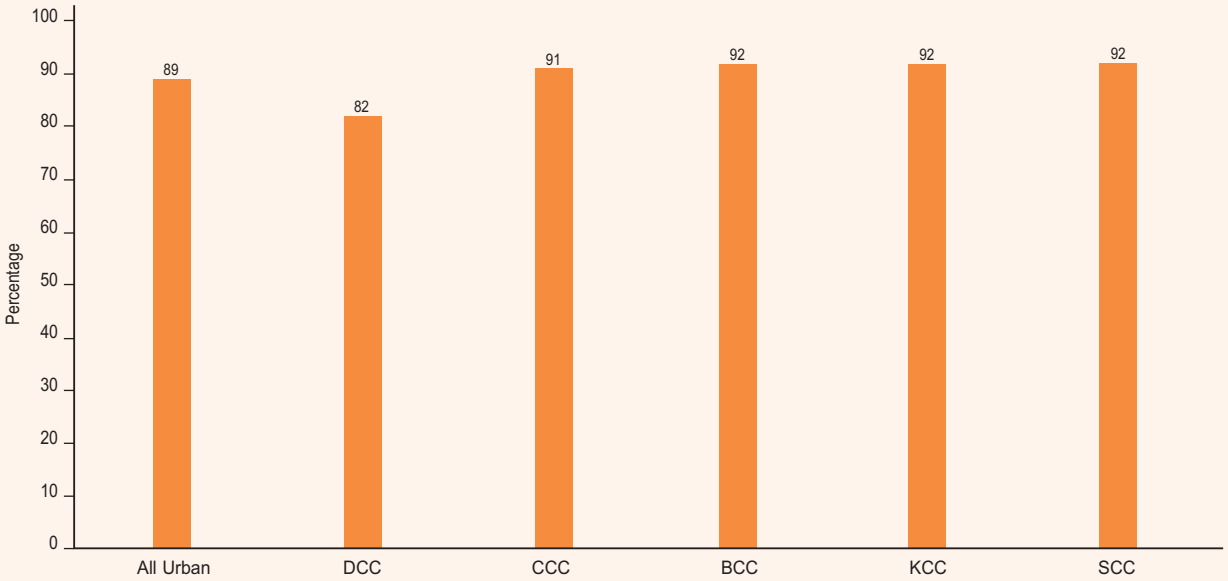


TABLE R1

Reasons why Children did not receive Anthelmintic during the 13th Special NID in 2006 by Region

Reasons for not receiving Vitamin A	National	Rural	Urban
Was not aware about NID/anthelmintic treatment	33.7	34.1	30.6
Anthelmintic tablet was not available at site	15.6	16.4	9.5
Field worker/volunteer did not give	12.4	12.5	12.2
Was not at home	9.6	9.7	8.8
Child received during last distribution	5.6	5.2	8.8
Was traveling	1.9	1.2	6.8
Distribution site was too far	2.1	2.4	-
Was afraid of side effects	2.1	1.9	3.4
Was expecting anthelmintic treatment to be given at home	2.9	2.7	4.1
Child was not aged enough	2.5	2.6	2
Was busy	4.1	4.2	4.1
The child was sick, so didn't take to the vaccination site	4	3.7	6.1
Time was in convenient	1.7	1.6	2
Others	**1.8**	**2**	**1.6**
Number of Children who didn't receive anthelmintic tablet	**1205**	**1058**	**1047**

TABLE R2

Reasons why Children did not receive Anthelmintic during the 13th Special NID in 2006 in Rural areas by Divisions

Reasons for not receiving Anthelmintic	Rural Total	Dhaka	Chittagong	Rajshahi	Barisal	Khulna	Sylhet
Was not aware about Campaign	34.1	32.9	44.6	29.4	34.7	31.1	15.2
Anthelmintic tablet was not available at site	16.4	22.2	14.8	6.6	2.7	25.8	14.1
Field worker/volunteer did not give	12.5	14.8	7.4	18.4	12	4.5	23.9
Was not at home	9.7	9.2	5.4	12.5	25.3	6.1	14.1
Child received during last distribution	5.2	3.1	9.7	5.1	2.7	2.3	4.3
Was traveling	1.2	0.3	1	2.2	1.3	3	1.1
Was afraid of side effects	1.9	1.5	0.3	2.2	1.3	4.5	4.3
Was expecting anthelmintic treatment to be given at home	2.7	2.8	4.7	0.7	2.7	1.5	1.1
Child was not aged enough	2.6	1.5	2	2.9	-	4.5	6.5
The child was sick	3.7	3.1	2.7	8.8	4	1.5	4.3
Was busy	4.2	2.8	3.7	5.9	6.7	6.8	2.2
Time was inconvenient	1.6	1.8	0.7	1.5	0	4.5	1.1
Long queue	0.1	0	0	0	1.3	0	0
Distribution site was too far	2.4	2.5	2	1.5	4	2.3	3.3
Religious Obstacle	0.2						2.2
Vaccinator Was not available	1.1	1.2	0.3	2.2	0	1.5	2.2
Others	**0.3**	**0.3**	**1**	**0.2**	**0.1**	**0.1**	**0.1**
Number of Children who didn't receive anthelmintic tablet	**1058**	**325**	**298**	**136**	**75**	**132**	**92**

TABLE R3

Reasons why Children did not receive Anthelmintic during the 13th Special NID in 2006 in Urban areas by City Corporation

Reasons for not receiving Anthelmintic	Urban Total	DCC	CCC	BCC	KCC	SCC	Other Urban
Was not aware about Campaign	30.6	32.4	40	20	21.4	13.3	37
Anthelmintic tablet was not available at site	9.5	8.8	13.3	13.3	7.1	13.3	7.4
Field worker/volunteer did not give	12.2	14.7	6.7		28.6	6.7	13
Was not at home	8.8	5.9	6.7	6.7	21.4	6.7	9.3
Child received during last distribution	8.8	8.8	20	13.3	7.1	-	7.4
Was traveling	6.8	8.8	6.7	13.3		20	1.9
Time was not convenient	2	0	0	6.7	0	6.7	1.9
Was afraid of side effects	3.4	0	0	13.3	7.1	6.7	1.9
Was expecting anthelmintic treatment to be given at home	4.1	5.9		6.7			5.6
Child was not aged enough	2	2.9	0	0	0	0	3.7
Was very busy	4.1	2.9	0	0	0	0	9.3
Child was sick	6.1	8.8			7.1	26.7	1.9
Long queue	0.7	0	6.7	0	0	0	0
Don't believe in anthelmintic	0.7	0	0	6.7	0	0	0
Number of Children who did not receive anthelmintic tablet	**147**	**34**	**15**	**15**	**14**	**15**	**54**

CHAPTER 7

DISCUSSIONS ON PROGRAMMATIC IMPLICATIONS

7.1 DISCUSSIONS AND PROGRAMMATIC IMPLICATIONS

EPI CES 2006 was conducted on the nationally representative samples. The sampling design was same as that adopted in CES 2005. This was also a cluster survey, and clusters were drawn from the Mouzas having 100 households per cluster. Each cluster had a map for its identification with land marking and comprised on an average 100 households. This has ensured the covering of larger area for 7 eligible respondents from a cluster after reaching a cluster. The Coverage Evaluation Survey 2006 indicates that in general in Bangladesh over 70 percent of the eligible children were fully immunized by 12 months. It shows an increase of seven percentage points from the last survey carried out in 2005. Despite many efforts given by the EPI management, valid coverage is yet to be increased substantially according to RED strategy.

This chapter deals with the program issues and provides explanations for increased valid coverage in future. The analysis shows that the valid coverage is still a problem in Bangladesh. This is a fact that over one- third of the mothers could not retain EPI cards; besides, they failed to vaccinate their children with the subsequent doses in time. As a result, both the crude and the valid coverages were depended on the history to a substantial extent. Due to illiteracy among the mothers and absence of birth registration, age misreporting has become a common phenomenon. Absence of card retention has affected the overall performance of EPI Coverage Evaluation Survey 2006. In rural areas by administrative divisions, EPI coverage varied significantly among these six divisions in 2006 CES. For instance, valid coverage ranged between 61 percent in Sylhet and 76 percent in Khulna. In relation to the coverage, Khulna and Rajshahi are the highest performing divisions having 76 percent and 72 percent respectively while Chittagong and Sylhet are the lowest performing divisions with coverage of 65 percent and 61 percent. On the other hand, Dhaka and Barisal are intermediate performing divisions with coverage of 71 percent each. In Sylhet division, among four districts, Sunamgonj had the lowest EPI coverage where only about 45 percent children were fully immunized, which indicated that the coverage is 26 percent lower than that of the national level. Within the division, the comparison suggests that the coverage of Sunamganj is well below the coverage of Sylhet district (75 percent vs 45 percent). Why does such a large difference exist between the highest and lowest performing districts in Sylhet division? One of the important reasons might be the geographical location and the internal communication network in the district of Sunamganj. In future during program strategy setting, it is important to plan how to change the scenario and bring the district in a better position in terms of EPI coverage.

Another low performing division is Chittagong. It has got 11 districts, Where EPI coverage varied between 48 percent in Noakhali and 81 percent in Feni. All the districts in Chittagong Hill Tracts (CHT) show low performance. Because of the hilly and difficult terrain, it is not easy to reach EPI site. This reason along with cultural factors may affect the performance at CHT. Out of 11 districts, three have higher coverage than that at the national level. These districts are Chittagong, Chandpur, and Feni. In CES 2005, B.Baria was one of the worst performing districts where about 46 percent children were fully immunized while in CES 2006 the coverage increased up to 50 percent, which means that the increase was only 4 percent. It is a matter of concern as to why the performance of B. Baria is still low. Is it due to internal communication, or poverty, or any other reasons for which EPI coverage has not been increasing satisfactorily in B.Baria? Different program strategies should be taken into consideration for plain land, such, as B. Baria and hilly areas, such as, CHT, to increase EPI coverage in both regions.

Dhaka division has got 17 districts; it is the largest geographical division in Bangladesh. Among these 17 districts, EPI coverage ranged between 61 percent in Netrokona and 81 percent in Tangail. This information suggests that variation in coverage among the districts under Dhaka division is lower than that of Sylhet and Chittagong divisions. There are seven districts where the coverage is above the national average. In Mymensingh district, EPI coverage has increased significantly between 2005 and 2006 CESs. In CES 2005, the coverage of Mymenshingh was found only 46 percent which was the lowest in Dhaka division. CES 2006 shows that EPI coverage has increased to 75 percent in Mymenshingh (29 percent increase between the two surveys). If this increase is due to special interventions, then those interventions need to be replicate in other low performing districts in the country for achieving universal immunization coverage.

Barisal is one of the medium performing divisions; there are six districts in this division. According to CES 2006, the coverage ranged between 66 percent in Bhola and Jhalokati and 78 percent in Pirojpur. There is a little variation in EPI coverage among the districts of Barisal division. Out of the six districts in Barisal division, two had performance below the national average and three had EPI coverage above the national

average. Why is the EPI coverage difference low among the districts of Barisal division? What are the programmed and demographic reasons behind it? Is there any lesson that can be replicated in low performing divisions to increase immunization coverage?

Khulna is one of the two high performing divisions. It has got 10 districts. There EPI coverage varied from district to district - about 64 percent to 85 percent. Variations among the districts are significant. Kushtia is the only district under this division where EPI coverage was below the national average. The remaining 9 districts had performance above the national average. The highest coverage was in Satkhira district where about 85 percent eligible children were fully immunized. Bangladesh Demographic and Health Surveys (BDHS) data show that both demographic and reproductive characteristics are much better in Khulna division than those in the other divisions. What are the important correlates of better performance in Khulna division? Which factor contributed to this success? Could it be replicated in other districts?

Rajshahi division has got 16 districts. According to CES 2006, the coverage ranged between nearly 56 percent in Lalmonirhat and about 82 percent in Naogaon, thus, suggesting that variation between the lowest and the highest performing districts is 26 percent. Among the 16 districts, 5 had a performance below the national average and 10 above the national average. A close look at the coverage data indicate also that the districts with low EPI coverage in Rajshahi division are also poverty-stricken areas. The information suggests that there exists a kind of relationship between poverty and EPI coverage. In CES 2005, it was found that Sirajgonj district had a poor performance where only 44 percent fully immunized children. However, CES 2006 shows that 70 children were fully immunized in this district. The difference between the two surveys is 26 percentage points. This huge change in the coverage may be due to the interventions that helped minimize the differences between crude and valid vaccination coverages. This sort of change also took place in Mymensingh district under Dhaka division. If the change is due to special interventions undertaken by the EPI management, then those interventions should be replicated in other low performing districts so that universal coverage can be achieved as early as possible.

A detailed investigation into the coverage of different antigens shows that there lies a gap between DPT1 and DPT3. Districts with low percentage of children fully immunized are also the districts where dropout rate between DPT1 and DPT3 are considerably high. The following information shows that 10 low performing districts are from Chittagong, Sylhet, Dhaka, and Rajshahi divisions. It is evident that low coverage in the districts can be attributed to drop -outs between DPT1 & DPT3 and DPT1 & measles. The analysis reveals that one out of five children dropped out from the coverage between DPT1 and DPT3 and this drop-out increases to almost one in three children between DPT1 and measles vaccination. What are the strategies that need to be undertaken to reduce this huge drop-outs. Why are mothers not vaccinating their children in time or why are they not completing the immunization schedule? Is it due to lack of awareness of mothers or caregivers about the importance of timely immunization of their children? Or, is it due to some other factors, such as, long distance of the immunization site/s from home, bad internal communication, losing immunization card, etc? Correlation between the loss of immunization card of children and literacy level of mothers was explored. The study found connection between the mother's literacy level and the immunization status of their children.

BEST PERFORMING DISTRICTS

District	Percent of children fully immunized	Percent of drop- out	DPT1-DPT3 Percent of drop-out	DPT1-Measles Percent of mothers who lost immunization card of their children	Percent of mothers who are illiterate
Satkhira	84.7	1.3	12	17.6	18.1
Jhenaidah	82.0	4.4	15.4	36.7	13.8
Naogaon	81.6	7.8	15.3	23.1	24.8
Feni	81.3	9.3	12.4	12.9	16.2
Tangail	81.2	9.2	14.1	49.8	31.0
Bogra	80.8	9.3	15.4	28.7	31.4
Shariatpur	80.4	12.3	9.1	17.6	18.1
Chuadanga	79.4	9.2	7.9	32.4	26.7
Panchagarh	78.9	8	13.9	27.5	45.7
Khulna	78.7	11.7	11.1	20.7	21.4
Average	**80.9**	**8.3**	**12.7**	**26.7**	**24.7**

One of the major reasons behind the gap between expectation and reality concerning the valid coverage is the huge difference between crude and valid coverages in almost all districts. This might be a reason for the coverage that is not being increased up to the level of expectation. Difference between valid coverage and crude coverage was as high as 38 percent in Lalmonirhat district under Rajshahi division and as low as about 10 percent in Satkhira district under Khulna division. Nationally, differences between crude and valid coverage was over 18 percent implying that there is scope for improving the valid coverage by 18 percentage points through ensuring effective monitoring practices, further improvement in the service delivery and more sensitizating both community and parents about the importance to vaccinate their children completely in time. By using CES 2006 data, EPI management should undertake several measures for improving valid coverage, particularly, in those districts where performance is awfully low. This could be done by designing the program interventions based on the reasons identified.

The data also revealed that dropout rates in Sylhet and Chittagong divisions were much higher than those in Khulna and Barisal divisions . How can this difference be explained? Was it due to the lack of supervision, monitoring or other factors, such as, communication? To some extent, it was due to the lack of supervision and monitoring and/or due to the communication barrier in relation to the geographical accessibility in these divisions, i.e. Chittagong and Sylhet divisions. The land of Sylhet is characterized by

haors and bills (large water bodies), which are abundant, particularly in Sunamganj and Habiganj districts. Besides, natural calamities , like floods, are also common in Sylhet division, which might have affected the programs' performance. Regular monitoring and supervision are likely to be lacking because of poor communication, and it may be due to the lack of strong commitment on the part of EPI program management. Poverty seemed to be a problem in some districts of the country. For instance, Jamalpur, Gaibandha, Lalmonirhat and Kurigram are poverty-stricken districts, where parents are not well- motivated regarding their survival and securing health of their children by immunization.

POOR AND BEST PERFORMING DISTRICTS

Ranking of districts in order of valid coverage has also been done to make effective monitoring with a view to achieving EPI targets. In order to calculate Z-score, a total of five variables are considered. These are: percentage of children fully immunized; percentage of mothers who retained the immunization card at the time of survey; percentage of children who completed DPT3; percentage of the difference between DPT1 and measles; and percentage of mothers / caregivers who are illiterate . Standardized Z-score is calculated first for the five indicators for 64 districts of Bangladesh. Z-score is calculated by using the formula Z=x- /s. From each district, the population mean is subtracted from the observed value and being divided by the standard deviation for Z-score. The Z-score for each of the five variables is either positive (+) or negative (-). Then, each of the five scores are added considering their sign for each district the highest negative score refers to the worst district while the highest positive score to the best performed district. In terms of valid immunization coverage, the first 10 poorest districts and the first 10 best performing districts are shown below.

Name of 10 poorest performing districts on the basis of Z-score	Z-score	Fully immunized in percentage
Brahmanbaria	-8.2	50.2
Noakhali	-6.6	47.7
Sunamganj	-6.2	45.6
Rangamati	-5.7	59.9
Khagrachari	-4.9	64.3
Bandarban	-4.5	58.4
Cox's Bazar	-2.7	59.3
Moulvibazar	-2.4	55.8
Lakshmipur	-2.2	66.5
Narshingdi	2.2	69.4
Average		**57.7**

Z-score in terms of poor performance suggests that most of the districts are from Chittagong, which are being followed by Sylhet division and one district from Dhaka division. Brahmanbaria, Noakhali and Rangamati from Chittagong division had the lowest EPI coverage. Z-score suggests that all the three districts of Chittagong Hill Tracts had poor performance in CES 2006. In 2005 CES, these three districts had low performance too. Sirajgonj, Mymensingh, Brahmanbaria, Jamalpur, Sunamganj, Moulvibazar, Netrokona, and Sherpur were also in the list of poor performing districts in CES 2005. Low EPI coverage in the Hill Tracts districts may be due to security reasons and poor internal communication. Besides, the rate of literacy in the ethnic minority groups is very low. Special efforts would be needed to improve EPI coverage in these hilly districts. Other than CHT districts, Brahmanbaria, Sunamgonj and Moulvibazar are being identified as the poor performing districts in both the surveys of 2005 and 2006. Other 5 districts, namely, Sirajgonj, Mymensingh, Jamalpur, Netrokona, and Sherpur that were in the list of poor performing districts in 2005 survey did not fall in this category in CES 2006. Effective programmed interventions were taken to improve the coverage of poor performing districts where the coverage has significantly increased. The average coverage of 10 poor performing districts in CES 2005 was 49.58 percent. It has increased upto 57.7 percent in CES 2006, thus indicating an increase in average coverage upto 8.12. Noakhali, Laxmipur and Cox's Bazar entered newly in the list of poor performing districts as revealed by CES 2006.

A close investigation into CES 2006 suggests that the percentage of children fully immunized has increased considerably in some districts which were labeled as under poor performing districts in the past. For instance, in Mymensingh district, the percent of children fully immunized was about 46 in CES 2005; this has increased upto 75.5 percent in CES 2006. Similarly, in Netrokona district, the percent of children fully immunized was 51.4 in CES 2005. It became 60.6 percent in CES 2006. Overall, the performance is the worst in Sylhet division, which was being followed by Chittagong division. The following table shows valid FIC comparison of poor performing districts estimated in from CES 2005 with that of CES 2006.

Poor performing districts based on valid FIC in EPI CES 2005 in ascending order	Poor performing districts based on valid FIC in EPI CES 2006 in ascending order
Sirajganj	Sunamgonj
Mymensingh	Noakhali
B.Baria	B.Baria
Rangamati	Lalmonirhat
Jamalpur	Moulvibazar
Sunamganj	Gaibandha
Bandarban	Bandarban
Moulavibazar	Rangamati
Netrokona	Cox's Bazar
Sherpur	Netrokona

BEST PERFORMING DISTRICTS

One important feature of the best performing districts is that out of ten one district each from Dhaka (Sariotpur) and Chittagong (Feni) divisions and three from Khulna division (Jhenaidah, Satkhira & Khulna) and the remaining five (Panchghar, Thakurgaon, Dinajpur, Bogra and Naogaon) are from Rajshahi division. Surprisingly, none from Barisal and Sylhet divisions could enter in the list of best performing districts, thus indicating regional diversity in EPI coverage. Factors for improving EPI coverage in some districts of Khulna and Rajshahi divisions can be replicated in other divisions which are performing low in achieving universal immunization coverage. BDHSs also show that demographic parameters in terms of infant mortality, under- five mortality, and total fertility are also lower in Khulna and Rajshahi divisions than in other divisions.

Name of 10 best performing districts on the basis of Z-score	Z-score	Fully immunized in percentage
Panchagarh	3.6	78.1
Thakurgaon	3.4	72.4
Dinajpur	3.3	73.3
Shariatpur	3.0	79.4
Satkhira	2.9	84.7
Bogra	2.9	80.8
Feni	2.8	76.8
Naogaon	2.8	80.1
Jhenaidah	2.4	79.5
Khulna	2.4	77.5
		78.3

The question is whether this increase in coverage is due to effective program management in terms of better supervision and monitoring in best performing districts. Can experiences of EPI program in the best performing districts be introduced in the poor performing districts for improving universal vaccination coverage in Bangladesh? The average coverage of 10 poor performing districts is about 58 percent compared to 78 percent in the 10 best performing districts that refers to a difference of 20 percentage points. Thus, it is understood that taking appropriate intervention and setting new strategies for reducing this wide gap is required. Exactly, half of the districts in CES 2006 had valid coverage, which is lower than the national average. For these districts, aforesaid measures should be undertaken for improving the desired national coverage.

Districts	Z-score	Fully immunized in percentage
Panchagarh	3.6	78.1
Thakurgaon	3.4	72.4
Dinajpur	3.3	73.3
Shariatpur	3.0	79.4
Satkhira	2.9	84.7
Bogra	2.9	80.8
Feni	2.8	76.8
Naogaon	2.8	80.1
Jhenaidah	2.4	79.5
Khulna	2.4	77.5

POLICY IMPLICATIONS

The detailed analysis of EPI Coverage Evaluation Survey 2006 shows that between 2005 and 2006 CESs there has been a significant improvement in the percent of children fully immunized. Trends can be seen for assessing the program efforts between the two surveys.

EPI CES 2006 showed an increase in the valid coverage of fully immunized children. Despite this improvement in the coverage rate, achievement is far below the expected target. There may be many reasons for this. Usually, every immunized child is given a card, which provides detailed information about the time of every vaccination. The nationwide survey data shows that about one-third mothers/caregivers could not retain the cards. Due to one particular reason or the others they lost their cards. District-wise variation is enormous from as high as 64 percent in Brahmanbaria district to as low as 18 percent in Satkhira districts.

After the card was lost, mothers/caregivers were asked about the age of their children. As most of the mothers are illiterate and there is no birth registration, most often mothers reported their children's ages by guess work (or using historical events). There is also a tendency to report the age in years than in particular month. But, for valid immunization, information determination of correct age is crucial to measure the valid dose. During the survey, some unknown amount of error was introduced regarding the age recording of the child by the mothers/caregivers. Besides, interviewer's error is also possible while recording the age of the child.

Apart from the problem associated with card retention, there are problems of dropout as well. From DPT1 to DPT3 , about one- third children dropped out in poor performing districts; from DPT1 to measles it was 40 percent. Now the question is how these rates of dropout can be minimized.

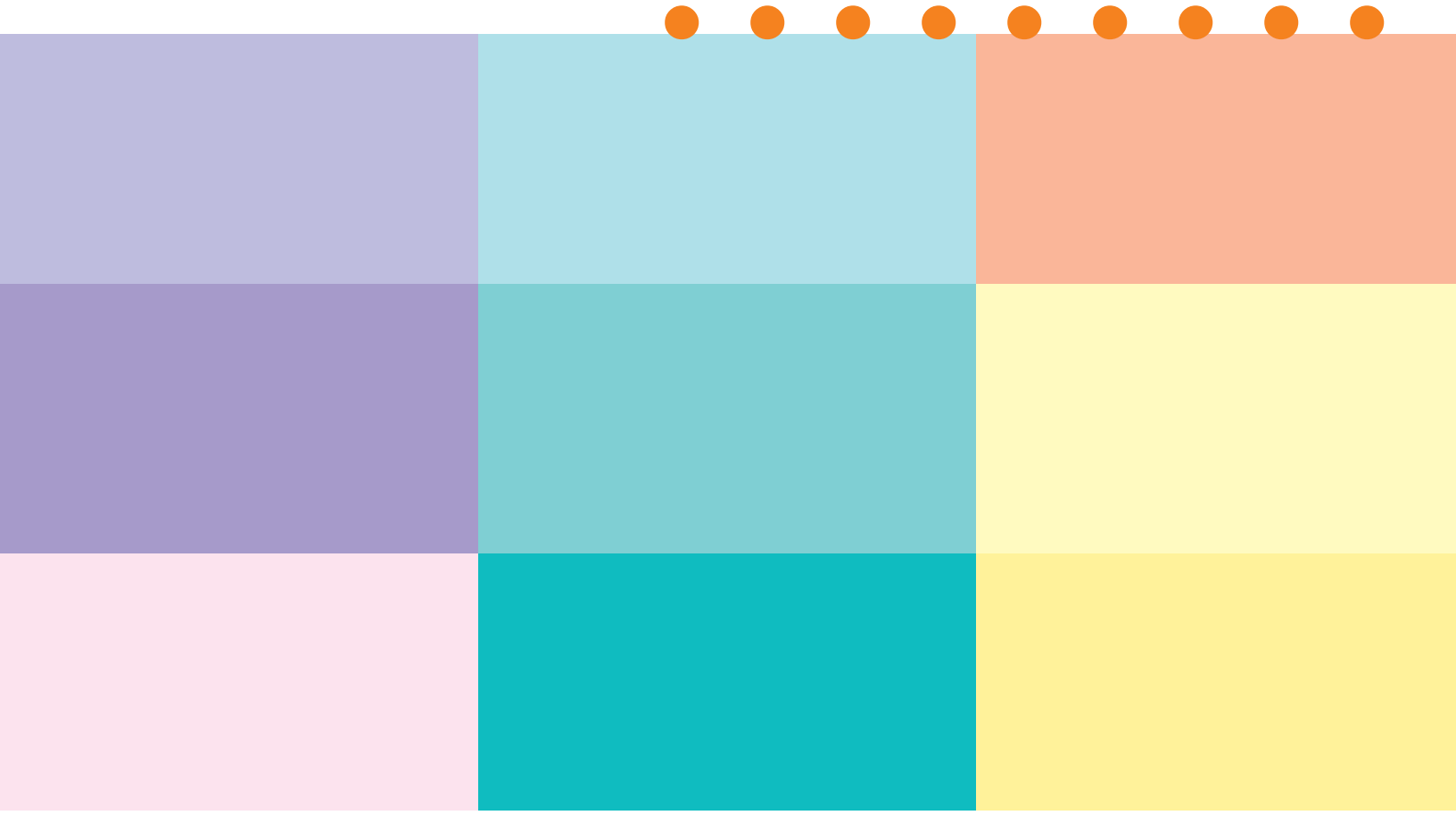
A considerable percent of mothers lost their children's vaccination cards due to their illiteracy and not giving sufficient importance to card retention. These factors are accompanied by ignorance, poor housing

condition, natural calamities like floods and cyclones, movement to relatives' house, etc. Now it is crucial that EPI workers should maintain register of each child of his/her area. Records should be verified each week and houses of eligible children's mother should be visited for counseling about taking their children at the immunization center. At the same time, how their cards could be preserved - ways and means - should be located considering the geographical locations and internal communication in some districts. Some children will not visit the immunization centers because they migrate from one place to another, i.e., they visit their relatives' houses. How can these children be reached? Some mechanism should be developed in this regard. Finally, there is a large difference between the crude coverage and the valid coverage rates in almost all the districts of Bangladesh. In some districts, the situation is worse. The important question is how this gap can be minimized. What are the strategies that should be considered for a detailed discussion?

In the light of the observation made so far, it can be said now that the following issues need particular attention:

- How to preserve the vaccination card since one-third of the children's vaccination cards are lost by mothers? This is more important in natural calamity- prone zones, such as, cyclone and flood- prone areas.
- Strategy for increasing the value/importance of immunization card will attract parents to retain it, e.g., immunization card at school entry as birth registration tools.
- How to minimize the dropout from DPT1 to DPT3? Missing of DPT2 or DPT3 will discourage mothers not to visit EPI center for next vaccination because they do not give importance to it.
- Dropout rate from DPT1 to DPT3 is also high in poor performing districts. These districts need regular supervision and monitoring in order to minimize the rates.
- Dropout rate is also high from DPT1 to measles and requires strong supervision and monitoring so that the dropout rate can be minimized. If this can be done, EPI coverage rate will increase automatically.
- There is a large gap between crude coverage and valid coverage - the important challenge to the EPI program management is what strategy should be considered for reducing the gap so that valid coverage can increase significantly.
- Overall, success of EPI Program depends on three important factors: preservation of vaccination card; minimizing the dropout rates; and, reducing the gap between crude coverage and valid coverage. If EPI program management could improve all these, valid coverage will increase significantly.
- EPI headquarters management should supervise and monitor the poor performing districts quite often in order to improve the immunization coverage. If it is not dealt with seriously, EPI coverage will not increase as per expectation.
- The immediate step of the EPI management to be taken is to visit low performing districts and identify the actual reasons for such failures. Appropriate measures should also be taken to improve the EPI coverage. Discussion with local management may not be of any help. The management may need to think talking with the EPI workers, mothers, and community members for finding out the reasons for losing immunization cards and failure to bring the child for the next vaccination.

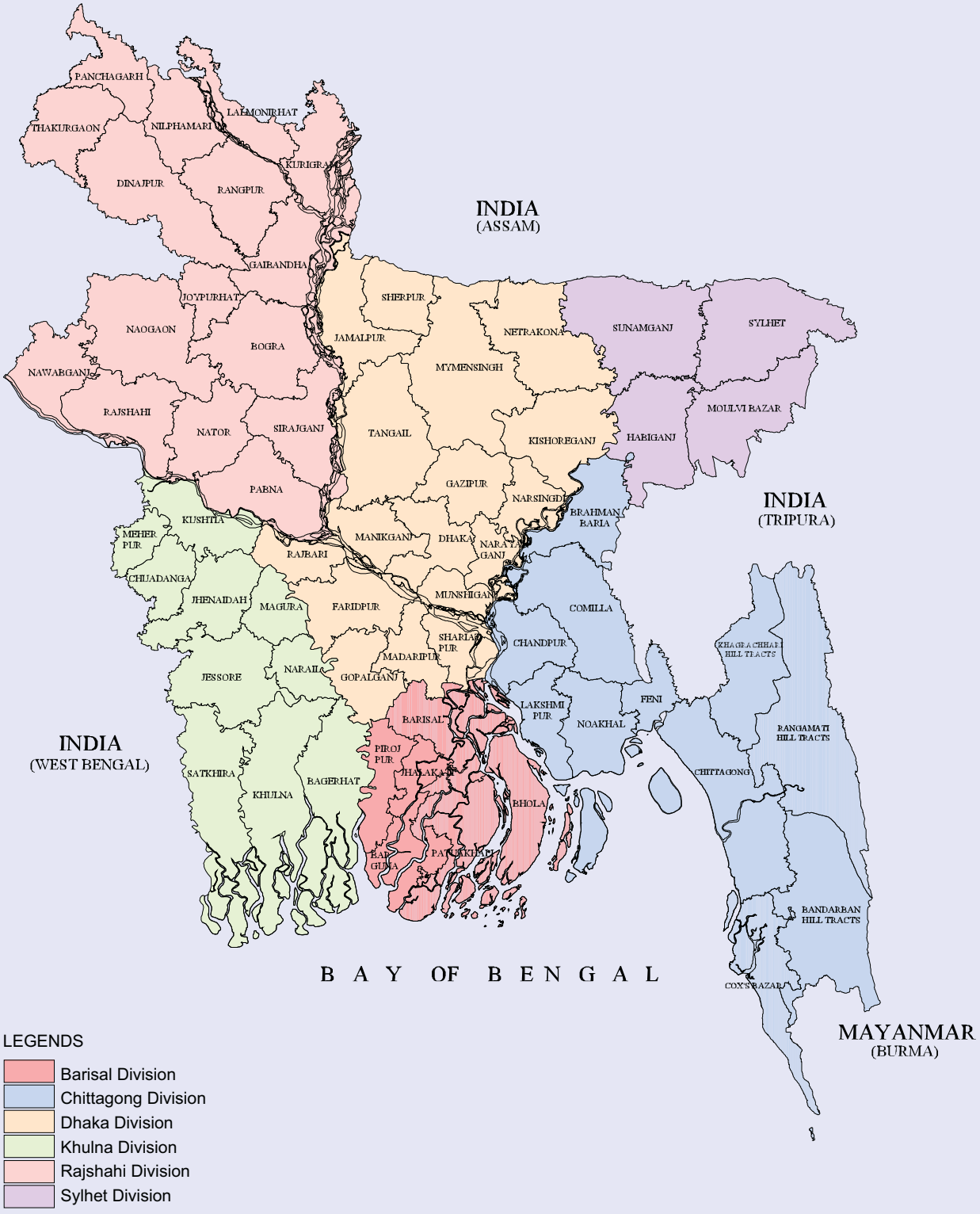
APPENDIX



VACCINATION COVERAGE BY SURVEY UNIT

EPI COVERAGE EVALUATION SURVEY 2006

SURVEY UNITS



FULLY IMMUNIZED COVERAGE IN BANGLADESH BY DISTRICT 2006

COVERAGE

- ≥ 80%
- 65% - 79%
- 50% - 64%
- < 50%

TABLE 1

Valid Immunization Coverage by Age 12 months among 12-23 Months Old children according to survey units by District, City Corporation

DISTRICT	BCG	DPT1	DPT2	DPT3	OPV1	OPV2	OPV3	Measles	Fully Immunized
Gazipur	98.6	98.6	97.1	85.8	98.6	97.1	94.3	75.1	69.8
Gopalganj	99.5	99.5	96.7	82.8	99.5	96.7	90.3	74.8	67.2
Jamalpur	98.1	98.1	95.0	85.6	98.1	95.0	93.3	75.0	68.3
Kishoreganj	98.1	96.8	94.9	87.5	96.8	96.2	92.0	83.1	78.5
Madaripur	99.5	95.6	94.1	78.8	95.6	94.9	90.4	75.0	64.1
Manikganj	99.0	97.3	96.7	84.1	97.3	96.7	94.4	79.3	72.3
Munshiganj	100.0	97.5	98.7	83.7	99.2	98.7	97.6	72.4	61.6
Mymensingh	98.6	97.0	96.8	85.2	97.0	97.6	90.0	76.4	75.5
Narayanganj	98.1	98.1	96.7	85.2	98.1	96.7	94.8	81.9	74.2
Narsingdi	97.1	96.2	95.2	84.7	96.2	95.2	91.4	73.8	70.5
Netrokona	97.6	96.1	91.3	81.4	96.1	92.4	90.3	64.7	60.6
Shariatpur	100.0	100.0	98.3	87.7	100.0	100.0	96.5	90.9	80.4
Sherpur	99.5	99.5	92.4	76.3	99.5	93.3	87.3	77.9	67.1
Tangail	99.5	99.5	98.6	90.3	99.5	98.6	97.1	85.4	81.2
Faridpur	99.5	99.5	98.1	80.3	99.5	98.1	93.4	72.5	67.7
Rajbari	100.0	98.1	98.1	88.6	98.1	98.1	93.4	80.7	76.2
Dhaka	99.5	99.0	97.8	87.9	99.0	97.8	97.6	82.9	75.6
Dhaka City Corporation	98.6	97.6	97.1	85.8	97.6	97.1	91.8	80.3	75.7
Dhaka Division	**98.9**	**98.0**	**96.3**	**84.6**	**98.1**	**96.7**	**93.1**	**77.9**	**71.5**
Satkhira	100.0	98.8	100.0	97.5	98.8	100.0	100.0	86.8	84.7
Narail	99.0	96.6	94.2	86.7	96.6	95.0	92.8	84.0	77.3
Meherpur	99.0	99.0	97.1	84.5	99.0	97.1	91.6	81.0	75.0
Jhenaidah	100.0	99.2	99.5	94.8	99.2	99.5	99.5	83.8	82.0
Kushtia	99.0	94.8	94.7	77.4	94.8	95.4	92.0	75.2	64.3
Magura	99.5	98.8	95.6	81.0	98.8	97.1	90.9	86.5	75.0
Chuadanga	100.0	97.1	98.8	87.9	97.1	99.5	97.0	89.2	79.4
Khulna	99.0	97.8	96.4	86.1	97.8	97.0	94.3	86.7	78.7
Bagerhat	98.1	94.7	93.6	84.4	94.7	93.6	91.4	79.4	72.2
Jessore	99.0	98.4	97.0	86.8	98.4	97.0	96.5	85.7	75.2
Khulna City Corporation	99.0	96.3	97.6	89.0	96.3	97.6	94.0	81.3	77.5
Khulna Division	**99.3**	**97.4**	**96.8**	**87.0**	**97.4**	**97.2**	**94.6**	**83.7**	**76.6**
Chandpur	98.6	98.6	97.9	88.1	98.6	97.9	94.9	84.3	77.0
Comilla	99.5	98.0	96.9	78.7	98.0	97.6	95.1	79.1	65.9
Cox's Bazar	97.6	95.2	85.6	72.9	95.2	86.2	80.1	65.0	60.6
Khagrachari	93.8	93.3	88.4	74.7	93.3	88.4	81.9	70.7	64.5
Lakshmipur	95.7	95.0	94.3	78.3	95.0	94.3	86.0	77.4	69.4
Feni	99.5	99.0	98.5	89.7	99.0	99.0	96.3	86.6	81.3
Rangamati	91.9	90.6	86.5	71.3	90.6	86.5	79.8	65.3	60.5
Bandarban	88.1	86.8	85.1	78.3	86.8	85.1	83.2	64.9	60.3

DISTRICT	BCG	DPT1	DPT2	DPT3	OPV1	OPV2	OPV3	Measles	Fully Immunized
B.Baria	94.8	90.3	84.6	59.4	90.3	84.6	82.2	63.0	48.5
Noakhali	91.9	91.1	87.1	68.9	91.1	87.9	81.3	56.7	48.3
Chittagong City Corporation	99.5	97.9	95.4	84.1	97.9	95.4	91.9	78.9	73.2
Chittagong	99.0	99.0	98.6	85.1	99.0	98.6	96.4	81.5	71.7
Chittagong Division	**95.8**	**94.7**	**91.7**	**78.4**	**94.7**	**91.9**	**87.5**	**73.1**	**66.0**
Habiganj	94.3	93.6	91.0	84.1	93.6	91.0	88.6	71.0	67.3
Moulvibazar	93.8	92.5	85.8	73.9	92.5	86.4	80.2	63.9	57.1
Sunamganj	94.8	88.3	82.4	68.1	89.0	82.4	77.9	51.1	44.6
Sylhet	97.1	96.7	94.6	85.9	96.7	94.6	90.3	76.8	74.7
Sylhet City Corporation	95.2	94.5	91.2	83.0	94.5	91.9	86.6	77.4	75.2
Sylhet Division	**95.0**	**93.1**	**89.0**	**79.1**	**93.3**	**89.2**	**84.8**	**68.0**	**63.7**
Thakurgaon	99.5	98.8	98.8	90.4	98.8	99.5	96.2	80.8	75.4
Gaibandha	100.0	99.2	97.3	83.4	99.2	97.3	90.4	66.8	59.7
Naogaon	99.0	99.0	97.1	91.2	99.0	97.1	95.1	83.7	81.6
Natore	98.6	97.0	95.6	79.3	97.0	95.6	94.7	77.9	64.8
Chapai Nawabganj	99.5	97.0	97.3	83.5	97.0	97.3	91.9	80.2	72.5
Pabna	99.0	99.0	96.7	86.2	99.0	96.7	95.0	85.5	78.4
Rajshahi	99.5	98.9	97.6	86.3	98.9	97.6	93.5	78.2	73.1
Rangpur	98.1	98.1	94.8	86.8	98.1	96.2	94.5	82.9	75.4
Sirajganj	98.6	97.6	95.2	84.1	97.6	96.2	91.9	75.8	70.4
Bogra	99.5	99.5	98.1	90.2	99.5	98.1	95.5	84.1	80.8
Panchagarh	98.6	97.9	97.4	89.9	97.9	98.1	96.2	84.0	78.9
Lalmonirhat	100.0	98.9	94.9	69.2	98.9	95.6	88.3	73.3	56.3
Nilphamari	99.0	96.3	95.7	82.9	96.3	95.7	91.4	69.8	63.7
Kurigram	99.0	97.2	96.1	83.0	97.2	96.7	91.3	77.6	70.5
Dinajpur	100.0	99.5	96.7	91.8	99.5	96.7	95.6	81.9	77.5
Joypurhat	100.0	99.3	98.3	81.2	99.3	99.0	94.3	83.6	72.1
Rajshahi City Corporation	100.0	100.0	99.0	88.2	100.0	99.0	96.7	83.8	78.1
Rajshahi Division	**99.3**	**98.4**	**96.9**	**85.3**	**98.4**	**97.2**	**93.7**	**79.5**	**72.6**
Bhola	99.5	99.5	93.8	81.5	99.5	93.8	88.3	69.2	65.5
Jhalokati	98.6	95.1	96.7	79.8	95.8	96.7	95.4	78.6	65.8
Patuakhali	98.6	98.1	96.4	86.4	98.1	96.4	95.7	78.8	72.3
Pirojpur	98.1	98.1	97.1	88.7	98.1	97.1	95.6	82.1	78.0
Barguna	99.5	99.5	96.8	81.5	99.5	97.6	93.5	84.7	71.6
Barisal	99.0	98.3	98.1	81.1	98.3	98.1	96.0	86.9	71.4
Barisal City Corporation	99.0	97.4	96.1	85.7	97.4	96.1	94.9	79.4	73.4
Barisal Division	98.9	98.0	96.4	83.5	98.1	96.6	94.2	79.9	71.1
National	**98.3**	**97.1**	**95.2**	**83.6**	**97.1**	**95.5**	**92.0**	**77.9**	**71.0**

TABLE 1A

Valid Immunization Coverage by Age 12 months among 12-23 Months Old children according to survey units by District, City Corporation
(Fully Immunized arranged in ascending order by all districts)

DISTRICT	BCG	DPT1	DPT2	DPT3	OPV1	OPV2	OPV3	Measles	Fully Immunized
Sunamganj	94.8	88.3	82.4	68.1	89.0	82.4	77.9	51.1	44.6
Noakhali	91.9	91.1	87.1	68.9	91.1	87.9	81.3	56.7	48.3
B.Baria	94.8	90.3	84.6	59.4	90.3	84.6	82.2	63.0	48.5
Lalmonirhat	100.0	98.9	94.9	69.2	98.9	95.6	88.3	73.3	56.3
Moulvibazar	93.8	92.5	85.8	73.9	92.5	86.4	80.2	63.9	57.1
Gaibandha	100.0	99.2	97.3	83.4	99.2	97.3	90.4	66.8	59.7
Bandarban	88.1	86.8	85.1	78.3	86.8	85.1	83.2	64.9	60.3
Rangamati	91.9	90.6	86.5	71.3	90.6	86.5	79.8	65.3	60.5
Cox's Bazar	97.6	95.2	85.6	72.9	95.2	86.2	80.1	65.0	60.6
Netrokona	97.6	96.1	91.3	81.4	96.1	92.4	90.3	64.7	60.6
Munshiganj	100.0	97.5	98.7	83.7	99.2	98.7	97.6	72.4	61.6
Nilphamari	99.0	96.3	95.7	82.9	96.3	95.7	91.4	69.8	63.7
Madaripur	99.5	95.6	94.1	78.8	95.6	94.9	90.4	75.0	64.1
Kushtia	99.0	94.8	94.7	77.4	94.8	95.4	92.0	75.2	64.3
Khagrachari	93.8	93.3	88.4	74.7	93.3	88.4	81.9	70.7	64.5
Natore	98.6	97.0	95.6	79.3	97.0	95.6	94.7	77.9	64.8
Bhola	99.5	99.5	93.8	81.5	99.5	93.8	88.3	69.2	65.5
Jhalokati	98.6	95.1	96.7	79.8	95.8	96.7	95.4	78.6	65.8
Comilla	99.5	98.0	96.9	78.7	98.0	97.6	95.1	79.1	65.9
Sherpur	99.5	99.5	92.4	76.3	99.5	93.3	87.3	77.9	67.1
Gopalganj	99.5	99.5	96.7	82.8	99.5	96.7	90.3	74.8	67.2
Habiganj	94.3	93.6	91.0	84.1	93.6	91.0	88.6	71.0	67.3
Faridpur	99.5	99.5	98.1	80.3	99.5	98.1	93.4	72.5	67.7
Jamalpur	98.1	98.1	95.0	85.6	98.1	95.0	93.3	75.0	68.3
Lakshmipur	95.7	95.0	94.3	78.3	95.0	94.3	86.0	77.4	69.4
Gazipur	98.6	98.6	97.1	85.8	98.6	97.1	94.3	75.1	69.8
Sirajganj	98.6	97.6	95.2	84.1	97.6	96.2	91.9	75.8	70.4
Narsingdi	97.1	96.2	95.2	84.7	96.2	95.2	91.4	73.8	70.5
Kurigram	99.0	97.2	96.1	83.0	97.2	96.7	91.3	77.6	70.5
Barisal	99.0	98.3	98.1	81.1	98.3	98.1	96.0	86.9	71.4
Barguna	99.5	99.5	96.8	81.5	99.5	97.6	93.5	84.7	71.6
Chittagong	99.0	99.0	98.6	85.1	99.0	98.6	96.4	81.5	71.7
Joypurhat	100.0	99.3	98.3	81.2	99.3	99.0	94.3	83.6	72.1
Bagerhat	98.1	94.7	93.6	84.4	94.7	93.6	91.4	79.4	72.2
Manikganj	99.0	97.3	96.7	84.1	97.3	96.7	94.4	79.3	72.3
Patuakhali	98.6	98.1	96.4	86.4	98.1	96.4	95.7	78.8	72.3

DISTRICT	BCG	DPT1	DPT2	DPT3	OPV1	OPV2	OPV3	Measles	Fully Immunized
Chapai Nawabganj	99.5	97.0	97.3	83.5	97.0	97.3	91.9	80.2	72.5
Rajshahi	99.5	98.9	97.6	86.3	98.9	97.6	93.5	78.2	73.1
Chittagong City Corporation	99.5	97.9	95.4	84.1	97.9	95.4	91.9	78.9	73.2
Barisal City Corporation	99.0	97.4	96.1	85.7	97.4	96.1	94.9	79.4	73.4
Narayanganj	98.1	98.1	96.7	85.2	98.1	96.7	94.8	81.9	74.2
Sylhet	97.1	96.7	94.6	85.9	96.7	94.6	90.3	76.8	74.7
Magura	99.5	98.8	95.6	81.0	98.8	97.1	90.9	86.5	75.0
Meherpur	99.0	99.0	97.1	84.5	99.0	97.1	91.6	81.0	75.0
Sylhet City Corporation	95.2	94.5	91.2	83.0	94.5	91.9	86.6	77.4	75.2
Jessore	99.0	98.4	97.0	86.8	98.4	97.0	96.5	85.7	75.2
Rangpur	98.1	98.1	94.8	86.8	98.1	96.2	94.5	82.9	75.4
Thakurgaon	99.5	98.8	98.8	90.4	98.8	99.5	96.2	80.8	75.4
Mymensingh	98.6	97.0	96.8	85.2	97.0	97.6	90.0	76.4	75.5
Dhaka	99.5	99.0	97.8	87.9	99.0	97.8	97.6	82.9	75.6
Dhaka City Corporation	98.6	97.6	97.1	85.8	97.6	97.1	91.8	80.3	75.7
Rajbari	100.0	98.1	98.1	88.6	98.1	98.1	93.4	80.7	76.2
Chandpur	98.6	98.6	97.9	88.1	98.6	97.9	94.9	84.3	77.0
Narail	99.0	96.6	94.2	86.7	96.6	95.0	92.8	84.0	77.3
Dinajpur	100.0	99.5	96.7	91.8	99.5	96.7	95.6	81.9	77.5
Khulna City Corporation	99.0	96.3	97.6	89.0	96.3	97.6	94.0	81.3	77.5
Pirojpur	98.1	98.1	97.1	88.7	98.1	97.1	95.6	82.1	78.0
Rajshahi City Corporation	100.0	100.0	99.0	88.2	100.0	99.0	96.7	83.8	78.1
Pabna	99.0	99.0	96.7	86.2	99.0	96.7	95.0	85.5	78.4
Kishoreganj	98.1	96.8	94.9	87.5	96.8	96.2	92.0	83.1	78.5
Khulna	99.0	97.8	96.4	86.1	97.8	97.0	94.3	86.7	78.7
Panchagarh	98.6	97.9	97.4	89.9	97.9	98.1	96.2	84.0	78.9
Chuadanga	100.0	97.1	98.8	87.9	97.1	99.5	97.0	89.2	79.4
Shariatpur	100.0	100.0	98.3	87.7	100.0	100.0	96.5	90.9	80.4
Bogra	99.5	99.5	98.1	90.2	99.5	98.1	95.5	84.1	80.8
Tangail	99.5	99.5	98.6	90.3	99.5	98.6	97.1	85.4	81.2
Feni	99.5	99.0	98.5	89.7	99.0	99.0	96.3	86.6	81.3
Naogaon	99.0	99.0	97.1	91.2	99.0	97.1	95.1	83.7	81.6
Jhenaidah	100.0	99.2	99.5	94.8	99.2	99.5	99.5	83.8	82.0
Satkhira	100.0	98.8	100.0	97.5	98.8	100.0	100.0	86.8	84.7
National	**98.3**	**97.1**	**95.2**	**83.6**	**97.1**	**95.5**	**92.0**	**77.9**	**71.0**

TABLE 1B

Valid Immunization Coverage by Age 12 months among 12-23 Months Old children according to survey units by District, City Corporation
(Fully Immunized arranged in ascending order by all divisions)

DISTRICT	BCG	DPT1	DPT2	DPT3	OPV1	OPV2	OPV3	Measles	Fully Immunized
Netrokona	97.6	96.1	91.3	81.4	96.1	92.4	90.3	64.7	60.6
Munshiganj	100.0	97.5	98.7	83.7	99.2	98.7	97.6	72.4	61.6
Madaripur	99.5	95.6	94.1	78.8	95.6	94.9	90.4	75.0	64.1
Sherpur	99.5	99.5	92.4	76.3	99.5	93.3	87.3	77.9	67.1
Gopalganj	99.5	99.5	96.7	82.8	99.5	96.7	90.3	74.8	67.2
Faridpur	99.5	99.5	98.1	80.3	99.5	98.1	93.4	72.5	67.7
Jamalpur	98.1	98.1	95.0	85.6	98.1	95.0	93.3	75.0	68.3
Gazipur	98.6	98.6	97.1	85.8	98.6	97.1	94.3	75.1	69.8
Narsingdi	97.1	96.2	95.2	84.7	96.2	95.2	91.4	73.8	70.5
Manikganj	99.0	97.3	96.7	84.1	97.3	96.7	94.4	79.3	72.3
Narayanganj	98.1	98.1	96.7	85.2	98.1	96.7	94.8	81.9	74.2
Mymensingh	98.6	97.0	96.8	85.2	97.0	97.6	90.0	76.4	75.5
Dhaka	99.5	99.0	97.8	87.9	99.0	97.8	97.6	82.9	75.6
Dhaka City Corporation	98.6	97.6	97.1	85.8	97.6	97.1	91.8	80.3	75.7
Rajbari	100.0	98.1	98.1	88.6	98.1	98.1	93.4	80.7	76.2
Kishorganj	98.1	96.8	94.9	87.5	96.8	96.2	92.0	83.1	78.5
Shariatpur	100.0	100.0	98.3	87.7	100.0	100.0	96.5	90.9	80.4
Tangail	99.5	99.5	98.6	90.3	99.5	98.6	97.1	85.4	81.2
Dhaka Division	**98.9**	**98.0**	**96.3**	**84.6**	**98.1**	**96.7**	**93.1**	**77.9**	**71.5**
Kushtia	99.0	94.8	94.7	77.4	94.8	95.4	92.0	75.2	64.3
Bagerhat	98.1	94.7	93.6	84.4	94.7	93.6	91.4	79.4	72.2
Magura	99.5	98.8	95.6	81.0	98.8	97.1	90.9	86.5	75.0
Meherpur	99.0	99.0	97.1	84.5	99.0	97.1	91.6	81.0	75.0
Jessore	99.0	98.4	97.0	86.8	98.4	97.0	96.5	85.7	75.2
Narail	99.0	96.6	94.2	86.7	96.6	95.0	92.8	84.0	77.3
Khulna City Corporation	99.0	96.3	97.6	89.0	96.3	97.6	94.0	81.3	77.5
Khulna	99.0	97.8	96.4	86.1	97.8	97.0	94.3	86.7	78.7
Chuadanga	100.0	97.1	98.8	87.9	97.1	99.5	97.0	89.2	79.4
Jhenaidah	100.0	99.2	99.5	94.8	99.2	99.5	99.5	83.8	82.0
Satkhira	100.0	98.8	100.0	97.5	98.8	100.0	100.0	86.8	84.7
Khulna Division	**99.3**	**97.4**	**96.8**	**87.0**	**97.4**	**97.2**	**94.6**	**83.7**	**76.6**
Noakhali	91.9	91.1	87.1	68.9	91.1	87.9	81.3	56.7	48.3
B.Baria	94.8	90.3	84.6	59.4	90.3	84.6	82.2	63.0	48.5
Bandarban	88.1	86.8	85.1	78.3	86.8	85.1	83.2	64.9	60.3
Rangamati	91.9	90.6	86.5	71.3	90.6	86.5	79.8	65.3	60.5
Cox's Bazar	97.6	95.2	85.6	72.9	95.2	86.2	80.1	65.0	60.6
Khagrachari	93.8	93.3	88.4	74.7	93.3	88.4	81.9	70.7	64.5
Comilla	99.5	98.0	96.9	78.7	98.0	97.6	95.1	79.1	65.9

DISTRICT	BCG	DPT1	DPT2	DPT3	OPV1	OPV2	OPV3	Measles	Fully Immunized
Lakshmipur	95.7	95.0	94.3	78.3	95.0	94.3	86.0	77.4	69.4
Chittagong	99.0	99.0	98.6	85.1	99.0	98.6	96.4	81.5	71.7
Chittagong City Corporation	99.5	97.9	95.4	84.1	97.9	95.4	91.9	78.9	73.2
Chandpur	98.6	98.6	97.9	88.1	98.6	97.9	94.9	84.3	77.0
Feni	99.5	99.0	98.5	89.7	99.0	99.0	96.3	86.6	81.3
Chittagong Division	**95.8**	**94.7**	**91.7**	**78.4**	**94.7**	**91.9**	**87.5**	**73.1**	**66.0**
Sunamganj	94.8	88.3	82.4	68.1	89.0	82.4	77.9	51.1	44.6
Moulvibazar	93.8	92.5	85.8	73.9	92.5	86.4	80.2	63.9	57.1
Habiganj	94.3	93.6	91.0	84.1	93.6	91.0	88.6	71.0	67.3
Sylhet	97.1	96.7	94.6	85.9	96.7	94.6	90.3	76.8	74.7
Sylhet City Corporation	95.2	94.5	91.2	83.0	94.5	91.9	86.6	77.4	75.2
Sylhet Division	95.0	93.1	89.0	79.1	93.3	89.2	84.8	68.0	63.7
Lalmonirhat	100.0	98.9	94.9	69.2	98.9	95.6	88.3	73.3	56.3
Gaibandha	100.0	99.2	97.3	83.4	99.2	97.3	90.4	66.8	59.7
Nilphamari	99.0	96.3	95.7	82.9	96.3	95.7	91.4	69.8	63.7
Natore	98.6	97.0	95.6	79.3	97.0	95.6	94.7	77.9	64.8
Sirajganj	98.6	97.6	95.2	84.1	97.6	96.2	91.9	75.8	70.4
Kurigram	99.0	97.2	96.1	83.0	97.2	96.7	91.3	77.6	70.5
Joypurhat	100.0	99.3	98.3	81.2	99.3	99.0	94.3	83.6	72.1
Chapai Nawabganj	99.5	97.0	97.3	83.5	97.0	97.3	91.9	80.2	72.5
Rajshahi	99.5	98.9	97.6	86.3	98.9	97.6	93.5	78.2	73.1
Rangpur	98.1	98.1	94.8	86.8	98.1	96.2	94.5	82.9	75.4
Thakurgaon	99.5	98.8	98.8	90.4	98.8	99.5	96.2	80.8	75.4
Dinajpur	100.0	99.5	96.7	91.8	99.5	96.7	95.6	81.9	77.5
Rajshahi City Corporation	100.0	100.0	99.0	88.2	100.0	99.0	96.7	83.8	78.1
Pabna	99.0	99.0	96.7	86.2	99.0	96.7	95.0	85.5	78.4
Panchagarh	98.6	97.9	97.4	89.9	97.9	98.1	96.2	84.0	78.9
Bogra	99.5	99.5	98.1	90.2	99.5	98.1	95.5	84.1	80.8
Naogaon	99.0	99.0	97.1	91.2	99.0	97.1	95.1	83.7	81.6
Rajshahi Division	**99.3**	**98.4**	**96.9**	**85.3**	**98.4**	**97.2**	**93.7**	**79.5**	**72.6**
Bhola	99.5	99.5	93.8	81.5	99.5	93.8	88.3	69.2	65.5
Jhalokati	98.6	95.1	96.7	79.8	95.8	96.7	95.4	78.6	65.8
Barisal	99.0	98.3	98.1	81.1	98.3	98.1	96.0	86.9	71.4
Barguna	99.5	99.5	96.8	81.5	99.5	97.6	93.5	84.7	71.6
Patuakhali	98.6	98.1	96.4	86.4	98.1	96.4	95.7	78.8	72.3
Barisal City Corporation	99.0	97.4	96.1	85.7	97.4	96.1	94.9	79.4	73.4
Pirojpur	98.1	98.1	97.1	88.7	98.1	97.1	95.6	82.1	78.0
Barisal Division	**98.9**	**98.0**	**96.4**	**83.5**	**98.1**	**96.6**	**94.2**	**79.9**	**71.1**
National	**98.3**	**97.1**	**95.2**	**83.6**	**97.1**	**95.5**	**92.0**	**77.9**	**71.0**

TABLE 2

Crude Immunization Coverage among 12-23 Months Old children according to survey units by District, City Corporation

DISTRICT	BCG	DPT1	DPT2	DPT3	OPV1	OPV2	OPV3	Measles	Fully Immunized
Gazipur	98.6	98.6	97.1	94.3	98.6	97.1	94.3	89.5	89.5
Gopalganj	99.5	99.5	96.7	95.2	99.5	96.7	95.2	86.2	86.2
Jamalpur	98.1	98.1	95.7	93.3	98.1	95.7	93.3	86.7	86.7
Kishorganj	98.1	98.1	96.2	95.2	98.1	96.2	95.2	90.5	90.5
Madaripur	99.5	97.1	95.7	92.9	97.1	95.7	92.9	87.6	87.6
Manikganj	99.0	99.0	96.7	95.2	99.0	96.7	95.2	89.0	89.0
Munshiganj	100.0	100.0	99.5	97.6	100.0	99.5	97.6	93.8	93.8
Mymensingh	98.6	98.6	97.6	95.7	98.6	97.6	95.7	88.1	88.1
Narayanganj	98.1	98.1	96.7	95.7	98.1	96.7	95.7	91.4	91.4
Narsingdi	97.1	97.1	95.2	93.3	97.1	95.2	93.3	85.7	85.7
Netrokona	97.6	97.1	92.4	91.4	97.1	92.4	91.4	82.4	82.4
Shariatpur	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.6	98.6
Sherpur	99.5	99.5	93.3	91.0	99.5	93.3	91.0	86.2	85.7
Tangail	99.5	99.5	98.6	97.1	99.5	98.6	97.1	93.8	93.8
Faridpur	99.5	99.5	98.1	96.2	99.5	98.1	96.2	92.9	92.9
Rajbari	100.0	99.0	98.1	95.2	99.0	98.1	95.2	88.6	88.6
Dhaka	99.5	99.0	98.6	97.6	99.0	98.6	97.6	93.3	93.3
Dhaka City Corporation	98.6	98.6	97.1	94.8	98.6	97.1	94.8	91.9	91.9
Dhaka Division	**98.9**	**98.7**	**96.9**	**95.1**	**98.7**	**96.9**	**95.1**	**89.8**	**89.8**
Satkhira	100.0	100.0	100.0	100.0	100.0	100.0	100.0	94.3	94.3
Narail	99.0	98.1	95.7	94.3	98.1	95.7	94.3	89.0	89.0
Meherpur	99.0	99.0	97.1	94.8	99.0	97.1	94.8	89.5	89.5
Jhenaidah	100.0	100.0	99.5	99.5	100.0	99.5	99.5	98.1	98.1
Kushtia	99.0	99.0	96.2	94.3	99.0	96.2	94.3	88.6	88.6
Magura	99.5	99.5	97.1	94.8	99.5	97.1	94.8	93.3	92.9
Chuadanga	100.0	100.0	99.5	98.6	100.0	99.5	98.6	95.7	95.7
Khulna	99.0	99.0	97.6	96.2	99.0	97.6	96.2	94.3	93.8
Bagerhat	98.1	98.1	94.3	92.9	98.1	94.3	92.9	88.1	88.1
Jessore	99.0	99.0	97.6	97.1	99.0	97.6	97.1	93.3	93.3
Khulna City Corporation	99.0	99.0	97.6	96.2	99.0	97.6	96.2	92.9	92.9
Khulna Division	**99.3**	**99.2**	**97.5**	**96.2**	**99.2**	**97.5**	**96.2**	**92.5**	**92.4**
Chandpur	98.6	98.6	98.6	97.6	98.6	98.6	97.6	90.0	90.0
Comilla	99.5	99.5	97.6	96.7	99.5	97.6	96.7	91.4	91.4
Cox's Bazar	97.6	95.2	86.2	81.9	95.2	86.2	81.9	77.1	77.1
Khagrachari	93.8	93.3	89.0	87.1	93.3	89.0	87.1	81.0	81.0
Lakshmipur	95.7	95.7	94.3	88.6	95.7	94.3	88.6	81.4	81.4
Feni	99.5	99.5	99.0	98.6	99.5	99.0	98.6	97.6	97.6
Rangamati	91.9	91.9	87.1	82.4	91.9	87.1	82.4	75.2	75.2
Bandarban	88.1	88.1	85.7	83.8	88.1	85.7	83.8	74.8	74.8

DISTRICT	BCG	DPT1	DPT2	DPT3	OPV1	OPV2	OPV3	Measles	Fully Immunized
B.Baria	94.8	93.3	87.6	85.2	93.3	87.6	85.2	77.1	76.7
Noakhali	91.9	91.9	89.5	83.8	91.9	89.5	83.8	73.3	72.9
Chittagong City Corporation	99.5	99.5	96.2	94.3	99.5	96.2	94.3	89.5	89.5
Chittagong	99.0	99.0	98.6	98.6	99.0	98.6	98.6	92.9	92.9
Chittagong Division	**95.8**	**95.5**	**92.5**	**89.9**	**95.5**	**92.5**	**89.9**	**83.5**	**83.4**
Habiganj	94.3	94.3	91.0	88.6	94.3	91.0	88.6	83.3	82.9
Moulvibazar	93.8	93.8	87.6	83.3	93.8	87.6	83.3	76.2	76.2
Sunamganj	94.8	89.0	83.8	80.0	89.0	83.8	80.0	67.6	67.6
Sylhet	97.1	96.7	95.2	91.0	96.7	95.2	91.0	86.2	86.2
Sylhet City Corporation	95.2	95.2	91.9	89.5	95.2	91.9	89.5	85.7	85.7
Sylhet Division	**95.0**	**93.8**	**89.9**	**86.5**	**93.8**	**89.9**	**86.5**	**79.8**	**79.7**
Thakurgaon	99.5	99.5	99.5	99.0	99.5	99.5	99.0	96.2	96.2
Gaibandha	100.0	100.0	98.1	91.9	100.0	98.1	91.9	81.0	81.0
Naogaon	99.0	99.0	97.1	95.7	99.0	97.1	95.7	93.8	93.8
Natore	98.6	98.6	97.1	96.2	98.6	97.1	96.2	89.5	89.5
Chapai Nawabganj	99.5	99.5	98.6	97.1	99.5	98.6	97.1	92.4	91.9
Pabna	99.0	99.0	96.7	95.7	99.0	96.7	95.7	93.3	93.3
Rajshahi	99.5	99.5	97.6	95.2	99.5	97.6	95.2	89.5	89.5
Rangpur	98.1	98.1	96.2	95.2	98.1	96.2	95.2	88.1	88.1
Sirajganj	98.6	97.6	96.2	93.8	97.6	96.2	93.8	86.7	86.7
Bogra	99.5	99.5	98.1	96.2	99.5	98.1	96.2	91.4	91.4
Panchagarh	98.6	98.6	98.1	97.6	98.6	98.1	97.6	92.9	92.9
Lalmonirhat	100.0	99.5	98.1	96.2	99.5	98.1	96.2	95.7	94.3
Nilphamari	99.0	99.0	97.1	92.9	99.0	97.1	92.9	86.7	86.7
Kurigram	99.0	99.0	98.6	93.8	99.0	98.6	93.8	84.8	84.8
Dinajpur	100.0	99.5	96.7	96.2	99.5	96.7	96.2	91.4	90.5
Joypurhat	100.0	100.0	99.0	98.1	100.0	99.0	98.1	96.7	96.7
Rajshahi City Corporation	100.0	100.0	99.0	98.6	100.0	99.0	98.6	95.2	95.2
Rajshahi Division	**99.3**	**99.2**	**97.8**	**95.9**	**99.2**	**97.8**	**95.9**	**90.9**	**90.7**
Bhola	99.5	99.5	93.8	90.0	99.5	93.8	90.0	82.4	81.0
Jhalokati	98.6	98.1	96.7	96.2	98.1	96.7	96.2	89.0	88.6
Patuakhali	98.6	98.1	97.1	97.1	98.1	97.1	97.1	96.7	96.7
Pirojpur	98.1	98.1	97.1	97.1	98.1	97.1	97.1	91.9	91.9
Barguna	99.5	99.5	97.6	96.7	99.5	97.6	96.7	89.0	89.0
Barisal	99.0	99.0	98.1	97.6	99.0	98.1	97.6	93.3	93.3
Barisal City Corporation	99.0	99.0	98.6	95.7	99.0	98.6	95.7	92.4	92.4
Barisal Division	**98.9**	**98.8**	**97.0**	**95.8**	**98.8**	**97.0**	**95.8**	**90.7**	**90.4**
National	**98.3**	**98.0**	**95.9**	**94.0**	**98.0**	**95.9**	**94.0**	**88.8**	**88.7**

TABLE 2A

Crude Immunization Coverage among 12-23 Months Old children according to survey units by District, City Corporation
(Fully Immunized arranged in ascending order by all districts)

DISTRICT	BCG	DPT1	DPT2	DPT3	OPV1	OPV2	OPV3	Measles	Fully Immunized
Sunamganj	94.8	89.0	83.8	80.0	89.0	83.8	80.0	67.6	67.6
Noakhali	91.9	91.9	89.5	83.8	91.9	89.5	83.8	73.3	72.9
Bandarban	88.1	88.1	85.7	83.8	88.1	85.7	83.8	74.8	74.8
Rangamati	91.9	91.9	87.1	82.4	91.9	87.1	82.4	75.2	75.2
Moulvibazar	93.8	93.8	87.6	83.3	93.8	87.6	83.3	76.2	76.2
B.Baria	94.8	93.3	87.6	85.2	93.3	87.6	85.2	77.1	76.7
Cox's Bazar	97.6	95.2	86.2	81.9	95.2	86.2	81.9	77.1	77.1
Khagrachari	93.8	93.3	89.0	87.1	93.3	89.0	87.1	81.0	81.0
Gaibandha	100.0	100.0	98.1	91.9	100.0	98.1	91.9	81.0	81.0
Bhola	99.5	99.5	93.8	90.0	99.5	93.8	90.0	82.4	81.0
Lakshmipur	95.7	95.7	94.3	88.6	95.7	94.3	88.6	81.4	81.4
Netrokona	97.6	97.1	92.4	91.4	97.1	92.4	91.4	82.4	82.4
Habiganj	94.3	94.3	91.0	88.6	94.3	91.0	88.6	83.3	82.9
Kurigram	99.0	99.0	98.6	93.8	99.0	98.6	93.8	84.8	84.8
Narsingdi	97.1	97.1	95.2	93.3	97.1	95.2	93.3	85.7	85.7
Sherpur	99.5	99.5	93.3	91.0	99.5	93.3	91.0	86.2	85.7
Sylhet City Corporation	95.2	95.2	91.9	89.5	95.2	91.9	89.5	85.7	85.7
Gopalganj	99.5	99.5	96.7	95.2	99.5	96.7	95.2	86.2	86.2
Sylhet	97.1	96.7	95.2	91.0	96.7	95.2	91.0	86.2	86.2
Jamalpur	98.1	98.1	95.7	93.3	98.1	95.7	93.3	86.7	86.7
Sirajganj	98.6	97.6	96.2	93.8	97.6	96.2	93.8	86.7	86.7
Nilphamari	99.0	99.0	97.1	92.9	99.0	97.1	92.9	86.7	86.7
Madaripur	99.5	97.1	95.7	92.9	97.1	95.7	92.9	87.6	87.6
Mymensingh	98.6	98.6	97.6	95.7	98.6	97.6	95.7	88.1	88.1
Bagerhat	98.1	98.1	94.3	92.9	98.1	94.3	92.9	88.1	88.1
Rangpur	98.1	98.1	96.2	95.2	98.1	96.2	95.2	88.1	88.1
Rajbari	100.0	99.0	98.1	95.2	99.0	98.1	95.2	88.6	88.6
Kushtia	99.0	99.0	96.2	94.3	99.0	96.2	94.3	88.6	88.6
Jhalokati	98.6	98.1	96.7	96.2	98.1	96.7	96.2	89.0	88.6
Manikgonj	99.0	99.0	96.7	95.2	99.0	96.7	95.2	89.0	89.0
Narail	99.0	98.1	95.7	94.3	98.1	95.7	94.3	89.0	89.0
Barguna	99.5	99.5	97.6	96.7	99.5	97.6	96.7	89.0	89.0
Gazipur	98.6	98.6	97.1	94.3	98.6	97.1	94.3	89.5	89.5
Meherpur	99.0	99.0	97.1	94.8	99.0	97.1	94.8	89.5	89.5
Chittagong City Corporation	99.5	99.5	96.2	94.3	99.5	96.2	94.3	89.5	89.5
Natore	98.6	98.6	97.1	96.2	98.6	97.1	96.2	89.5	89.5

DISTRICT	BCG	DPT1	DPT2	DPT3	OPV1	OPV2	OPV3	Measles	Fully Immunized
Rajshahi	99.5	99.5	97.6	95.2	99.5	97.6	95.2	89.5	89.5
Chandpur	98.6	98.6	98.6	97.6	98.6	98.6	97.6	90.0	90.0
Kishorgonj	98.1	98.1	96.2	95.2	98.1	96.2	95.2	90.5	90.5
Dinajpur	100.0	99.5	96.7	96.2	99.5	96.7	96.2	91.4	90.5
Narayangonj	98.1	98.1	96.7	95.7	98.1	96.7	95.7	91.4	91.4
Comilla	99.5	99.5	97.6	96.7	99.5	97.6	96.7	91.4	91.4
Bogra	99.5	99.5	98.1	96.2	99.5	98.1	96.2	91.4	91.4
Dhaka City Corporation	98.6	98.6	97.1	94.8	98.6	97.1	94.8	91.9	91.9
Chapai Nawabganj	99.5	99.5	98.6	97.1	99.5	98.6	97.1	92.4	91.9
Pirojpur	98.1	98.1	97.1	97.1	98.1	97.1	97.1	91.9	91.9
Barisal City Corporation	99.0	99.0	98.6	95.7	99.0	98.6	95.7	92.4	92.4
Faridpur	99.5	99.5	98.1	96.2	99.5	98.1	96.2	92.9	92.9
Magura	99.5	99.5	97.1	94.8	99.5	97.1	94.8	93.3	92.9
Khulna City Corporation	99.0	99.0	97.6	96.2	99.0	97.6	96.2	92.9	92.9
Chittagong	99.0	99.0	98.6	98.6	99.0	98.6	98.6	92.9	92.9
Panchagarh	98.6	98.6	98.1	97.6	98.6	98.1	97.6	92.9	92.9
Dhaka	99.5	99.0	98.6	97.6	99.0	98.6	97.6	93.3	93.3
Jessore	99.0	99.0	97.6	97.1	99.0	97.6	97.1	93.3	93.3
Pabna	99.0	99.0	96.7	95.7	99.0	96.7	95.7	93.3	93.3
Barisal	99.0	99.0	98.1	97.6	99.0	98.1	97.6	93.3	93.3
Munshiganj	100.0	100.0	99.5	97.6	100.0	99.5	97.6	93.8	93.8
Tangail	99.5	99.5	98.6	97.1	99.5	98.6	97.1	93.8	93.8
Khulna	99.0	99.0	97.6	96.2	99.0	97.6	96.2	94.3	93.8
Naogaon	99.0	99.0	97.1	95.7	99.0	97.1	95.7	93.8	93.8
Satkhira	100.0	100.0	100.0	100.0	100.0	100.0	100.0	94.3	94.3
Lalmonirhat	100.0	99.5	98.1	96.2	99.5	98.1	96.2	95.7	94.3
Rajshahi City Corporation	100.0	100.0	99.0	98.6	100.0	99.0	98.6	95.2	95.2
Chuadanga	100.0	100.0	99.5	98.6	100.0	99.5	98.6	95.7	95.7
Thakurgaon	99.5	99.5	99.5	99.0	99.5	99.5	99.0	96.2	96.2
Joypurhat	100.0	100.0	99.0	98.1	100.0	99.0	98.1	96.7	96.7
Patuakhali	98.6	98.1	97.1	97.1	98.1	97.1	97.1	96.7	96.7
Feni	99.5	99.5	99.0	98.6	99.5	99.0	98.6	97.6	97.6
Jhenaidah	100.0	100.0	99.5	99.5	100.0	99.5	99.5	98.1	98.1
Shariatpur	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.6	98.6
National	**98.3**	**98.0**	**95.9**	**94.0**	**98.0**	**95.9**	**94.0**	**88.8**	**88.7**

TABLE 2B

Crude Immunization Coverage among 12-23 Months Old children according to survey units by District, City Corporation
(Fully Immunized arranged in ascending order by all divisions)

DISTRICT	BCG	DPT1	DPT2	DPT3	OPV1	OPV2	OPV3	Measles	Fully Immunized
Netrokona	97.6	97.1	92.4	91.4	97.1	92.4	91.4	82.4	82.4
Narsingdi	97.1	97.1	95.2	93.3	97.1	95.2	93.3	85.7	85.7
Sherpur	99.5	99.5	93.3	91.0	99.5	93.3	91.0	86.2	85.7
Gopalganj	99.5	99.5	96.7	95.2	99.5	96.7	95.2	86.2	86.2
Jamalpur	98.1	98.1	95.7	93.3	98.1	95.7	93.3	86.7	86.7
Madaripur	99.5	97.1	95.7	92.9	97.1	95.7	92.9	87.6	87.6
Mymensingh	98.6	98.6	97.6	95.7	98.6	97.6	95.7	88.1	88.1
Rajbari	100.0	99.0	98.1	95.2	99.0	98.1	95.2	88.6	88.6
Manikganj	99.0	99.0	96.7	95.2	99.0	96.7	95.2	89.0	89.0
Gazipur	98.6	98.6	97.1	94.3	98.6	97.1	94.3	89.5	89.5
Kishoreganj	98.1	98.1	96.2	95.2	98.1	96.2	95.2	90.5	90.5
Narayanganj	98.1	98.1	96.7	95.7	98.1	96.7	95.7	91.4	91.4
Dhaka City Corporation	98.6	98.6	97.1	94.8	98.6	97.1	94.8	91.9	91.9
Faridpur	99.5	99.5	98.1	96.2	99.5	98.1	96.2	92.9	92.9
Dhaka	99.5	99.0	98.6	97.6	99.0	98.6	97.6	93.3	93.3
Munshiganj	100.0	100.0	99.5	97.6	100.0	99.5	97.6	93.8	93.8
Tangail	99.5	99.5	98.6	97.1	99.5	98.6	97.1	93.8	93.8
Shariatpur	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.6	98.6
Dhaka Division	**98.9**	**98.7**	**96.9**	**95.1**	**98.7**	**96.9**	**95.1**	**89.8**	**89.8**
Bagerhat	98.1	98.1	94.3	92.9	98.1	94.3	92.9	88.1	88.1
Kushtia	99.0	99.0	96.2	94.3	99.0	96.2	94.3	88.6	88.6
Narail	99.0	98.1	95.7	94.3	98.1	95.7	94.3	89.0	89.0
Meherpur	99.0	99.0	97.1	94.8	99.0	97.1	94.8	89.5	89.5
Magura	99.5	99.5	97.1	94.8	99.5	97.1	94.8	93.3	92.9
Khulna City Corporation	99.0	99.0	97.6	96.2	99.0	97.6	96.2	92.9	92.9
Jessore	99.0	99.0	97.6	97.1	99.0	97.6	97.1	93.3	93.3
Khulna	99.0	99.0	97.6	96.2	99.0	97.6	96.2	94.3	93.8
Satkhira	100.0	100.0	100.0	100.0	100.0	100.0	100.0	94.3	94.3
Chuadanga	100.0	100.0	99.5	98.6	100.0	99.5	98.6	95.7	95.7
Jhenaidah	100.0	100.0	99.5	99.5	100.0	99.5	99.5	98.1	98.1
Khulna Division	**99.3**	**99.2**	**97.5**	**96.2**	**99.2**	**97.5**	**96.2**	**92.5**	**92.4**
Noakhali	91.9	91.9	89.5	83.8	91.9	89.5	83.8	73.3	72.9
Bandarban	88.1	88.1	85.7	83.8	88.1	85.7	83.8	74.8	74.8
Rangamati	91.9	91.9	87.1	82.4	91.9	87.1	82.4	75.2	75.2
B.Baria	94.8	93.3	87.6	85.2	93.3	87.6	85.2	77.1	76.7
Cox's Bazar	97.6	95.2	86.2	81.9	95.2	86.2	81.9	77.1	77.1
Khagrachari	93.8	93.3	89.0	87.1	93.3	89.0	87.1	81.0	81.0
Lakshmipur	95.7	95.7	94.3	88.6	95.7	94.3	88.6	81.4	81.4

DISTRICT	BCG	DPT1	DPT2	DPT3	OPV1	OPV2	OPV3	Measles	Fully Immunized
Chittagong City Corporation	99.5	99.5	96.2	94.3	99.5	96.2	94.3	89.5	89.5
Chandpur	98.6	98.6	98.6	97.6	98.6	98.6	97.6	90.0	90.0
Comilla	99.5	99.5	97.6	96.7	99.5	97.6	96.7	91.4	91.4
Chittagong	99.0	99.0	98.6	98.6	99.0	98.6	98.6	92.9	92.9
Feni	99.5	99.5	99.0	98.6	99.5	99.0	98.6	97.6	97.6
Chittagong Division	**95.8**	**95.5**	**92.5**	**89.9**	**95.5**	**92.5**	**89.9**	**83.5**	**83.4**
Sunamganj	94.8	89.0	83.8	80.0	89.0	83.8	80.0	67.6	67.6
Moulvibazar	93.8	93.8	87.6	83.3	93.8	87.6	83.3	76.2	76.2
Habiganj	94.3	94.3	91.0	88.6	94.3	91.0	88.6	83.3	82.9
Sylhet City Corporation	95.2	95.2	91.9	89.5	95.2	91.9	89.5	85.7	85.7
Sylhet	97.1	96.7	95.2	91.0	96.7	95.2	91.0	86.2	86.2
Sylhet Division	**95.0**	**93.8**	**89.9**	**86.5**	**93.8**	**89.9**	**86.5**	**79.8**	**79.7**
Gaibandha	100.0	100.0	98.1	91.9	100.0	98.1	91.9	81.0	81.0
Kurigram	99.0	99.0	98.6	93.8	99.0	98.6	93.8	84.8	84.8
Sirajganj	98.6	97.6	96.2	93.8	97.6	96.2	93.8	86.7	86.7
Nilphamari	99.0	99.0	97.1	92.9	99.0	97.1	92.9	86.7	86.7
Rangpur	98.1	98.1	96.2	95.2	98.1	96.2	95.2	88.1	88.1
Natore	98.6	98.6	97.1	96.2	98.6	97.1	96.2	89.5	89.5
Rajshahi	99.5	99.5	97.6	95.2	99.5	97.6	95.2	89.5	89.5
Dinajpur	100.0	99.5	96.7	96.2	99.5	96.7	96.2	91.4	90.5
Bogra	99.5	99.5	98.1	96.2	99.5	98.1	96.2	91.4	91.4
Chapai Nawabganj	99.5	99.5	98.6	97.1	99.5	98.6	97.1	92.4	91.9
Panchagarh	98.6	98.6	98.1	97.6	98.6	98.1	97.6	92.9	92.9
Pabna	99.0	99.0	96.7	95.7	99.0	96.7	95.7	93.3	93.3
Naogaon	99.0	99.0	97.1	95.7	99.0	97.1	95.7	93.8	93.8
Lalmonirhat	100.0	99.5	98.1	96.2	99.5	98.1	96.2	95.7	94.3
Rajshahi City Corporation	100.0	100.0	99.0	98.6	100.0	99.0	98.6	95.2	95.2
Thakurgaon	99.5	99.5	99.5	99.0	99.5	99.5	99.0	96.2	96.2
Joypurhat	100.0	100.0	99.0	98.1	100.0	99.0	98.1	96.7	96.7
Rajshahi Division	**99.3**	**99.2**	**97.8**	**95.9**	**99.2**	**97.8**	**95.9**	**90.9**	**90.7**
Bhola	99.5	99.5	93.8	90.0	99.5	93.8	90.0	82.4	81.0
Jhalokati	98.6	98.1	96.7	96.2	98.1	96.7	96.2	89.0	88.6
Barguna	99.5	99.5	97.6	96.7	99.5	97.6	96.7	89.0	89.0
Pirojpur	98.1	98.1	97.1	97.1	98.1	97.1	97.1	91.9	91.9
Barisal City Corporation	99.0	99.0	98.6	95.7	99.0	98.6	95.7	92.4	92.4
Barisal	99.0	99.0	98.1	97.6	99.0	98.1	97.6	93.3	93.3
Patuakhali	98.6	98.1	97.1	97.1	98.1	97.1	97.1	96.7	96.7
Barisal Division	**98.9**	**98.8**	**97.0**	**95.8**	**98.8**	**97.0**	**95.8**	**90.7**	**90.4**
National	**98.3**	**98.0**	**95.9**	**94.0**	**98.0**	**95.9**	**94.0**	**88.8**	**88.7**

PERCENTAGE OF NEWBORNS PROTECTED AT BIRTH (PAB) AGAINST TETANUS BY DISTRICT 2006

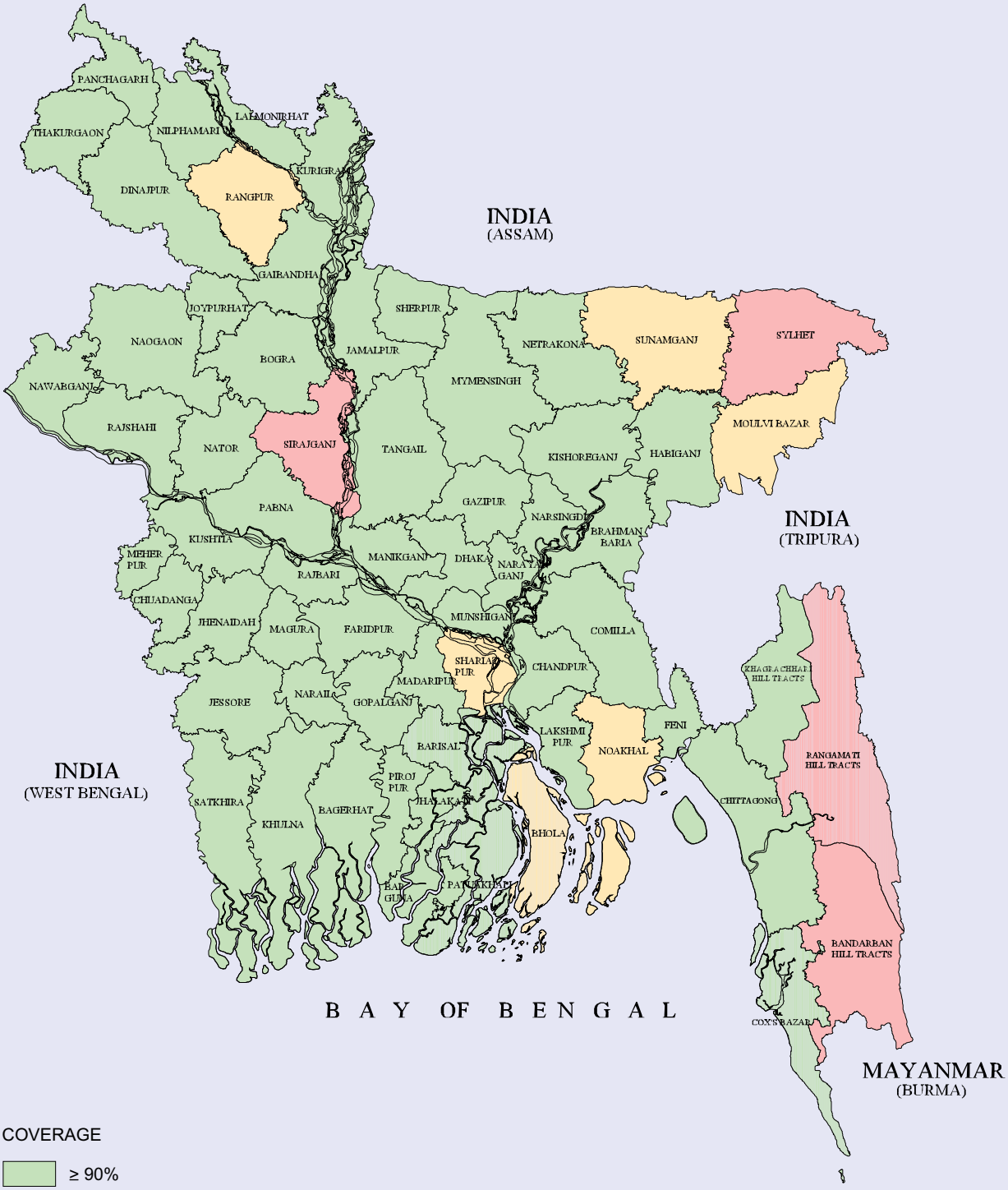


TABLE 3

Valid TT Coverage among women age 15-49 years by survey units, according to division

Districts	TT1	TT2	TT3	TT4	TT5
Gazipur	98.6	97.1	80.5	41	19.5
Gopalganj	93.8	91	70	44.3	18.1
Jamalpur	95.7	92.9	76.7	40	15.7
Kishoreganj	97.6	96.2	81.4	51	25.2
Madaripur	96.7	92.4	66.2	32.4	14.8
Manikganj	98.1	96.2	70.5	40.5	17.1
Munshiganj	99.5	98.1	83.8	55.2	26.2
Mymensingh	96.2	93.8	65.2	34.8	16.7
Narayanganj	96.7	93.3	69	32.9	11.9
Narsingdi	96.7	94.3	77.1	44.8	21.4
Netrokona	96.7	94.8	80.5	49	27.6
Shariatpur	94.8	89.5	63.3	33.8	20.5
Sherpur	98.6	97.1	71.9	37.1	13.3
Tangail	97.6	95.2	70	35.7	17.6
Faridpur	97.6	95.7	70.5	43.8	21
Rajbari	98.1	96.7	77.1	44.3	16.7
Dhaka	96.2	93.8	77.1	50	28.1
Dhaka City Corporation	97.1	95.7	71.9	35.2	14.3
Dhaka Division Total	**97**	**94.7**	**73.5**	**41.4**	**19.2**
Chandpur	98.1	97.6	86.7	57.1	31
Comilla	99.5	98.6	86.2	54.3	21
Cox's Bazar	98.1	92.9	73.8	51.9	30
Khagrachari	93.8	90.5	74.3	44.3	23.8
Lakshmipur	97.1	94.8	73.8	42.9	21.4
Feni	98.1	97.6	86.7	61.4	26.7
Rangamati	87.1	82.4	55.7	28.6	12.4
Bandarban	85.2	82.9	63.8	40.5	20.5
B.Baria	95.2	92.9	71	40.5	17.6
Noakhali	93.3	91	70.5	41	21.9
Chittagong City Corporation	97.1	96.2	73.8	33.3	17.6
Chittagong	98.1	96.2	74.8	45.7	22.4
Chittagong Division Total	**95.1**	**92.8**	**74.2**	**45.1**	**22.2**
Thakurgaon	99.5	97.6	79.5	37.6	17.1
Gaibandha	98.1	95.2	65.2	37.1	11.9
Naogaon	99.5	98.1	84.3	52.4	21.4
Natore	97.1	93.8	68.1	35.2	21.9
Chapai Nawabganj	97.1	93.8	80.5	59	31.9
Pabna	99	97.6	80.5	52.9	24.8
Rajshahi	97.6	93.3	74.3	43.8	17.1

TABLE 3 *(continued)*

Districts	TT1	TT2	TT3	TT4	TT5
Rangpur	97.6	92.9	75.7	38.1	15.7
Sirajganj	79.5	73.3	35.2	11	1.9
Bogra	99.5	97.6	81.4	51.4	27.1
Panchagarh	96.7	90	70.5	35.2	12.4
Lalmonirhat	96.2	92.4	37.6	19.5	6.7
Nilphamari	97.1	94.3	73.3	37.1	13.3
Kurigram	95.2	91.4	72.4	36.7	17.1
Dinajpur	98.6	97.1	83.3	53.3	26.2
Joypurhat	96.7	91.9	65.7	39	13.3
Rajshahi City Corporation	99	97.6	82.9	58.1	34.3
Rajshahi Division Total	**96.7**	**93.4**	**71.2**	**41**	**18.5**
Satkhira	100	98.6	78.6	46.2	19.5
Narail	97.1	95.7	79.5	40.5	19.5
Meherpur	97.1	92.4	65.2	25.7	11
Jhenaidah	95.2	94.3	68.1	39.5	13.3
Kushtia	95.2	90.5	68.6	38.6	15.7
Magura	98.6	96.7	75.2	41.9	18.1
Chuadanga	97.6	95.7	76.2	35.2	14.8
Khulna	98.6	95.2	76.7	43.8	21
Bagerhat	95.2	92.4	71.4	38.6	20
Jessore	99	98.1	79.5	48.1	21
Khulna City Corporation	98.6	98.1	75.7	40	23.8
Khulna Division Total	**97.5**	**95.2**	**74.1**	**39.8**	**18**
Bhola	92.4	89.5	70.5	37.6	19.5
Jhalokati	95.2	91	57.6	21.9	8.1
Patuakhali	94.8	93.8	62.4	28.1	11.9
Pirojpur	95.2	93.3	71.4	41	21.9
Barguna	98.1	97.1	73.3	38.1	15.7
Barisal	95.7	93.3	76.7	47.6	21.9
Barisal City Corporation	98.1	96.7	74.3	38.6	13.8
Barisal Division Total	**95.6**	**93.5**	**69.5**	**36.1**	**16.1**
Habigonj	97.6	96.2	75.7	49.5	21.4
Moulvibazar	93.3	90	71.4	49	21
Sunamganj	88.6	87.1	54.8	30	12.4
Sylhet	90.5	87.6	71	41.4	21
Sylhet City Corporation	92.9	90.5	68.6	31	13.3
Sylhet Division Total	**92.6**	**90.3**	**68.3**	**40.2**	**17.8**
National	**96.2**	**93.7**	**72.4**	**41.1**	**18.9**

TABLE 4

Crude TT Coverage among women age 15-49 years by survey units, according to division

Districts	TT1	TT2	TT3	TT4	TT5
Gazipur	98.6	97.1	84.8	63.8	41
Gopalganj	93.8	91.9	74.8	59.5	41.9
Jamalpur	95.7	92.9	82.9	63.8	39.5
Kishoreganj	97.6	96.2	88.1	71.4	54.8
Madaripur	96.7	92.4	76.2	55.2	34.3
Manikganj	98.1	96.2	78.1	54.3	32.9
Munshiganj	99.5	98.6	91.4	71	54.8
Mymensingh	96.2	93.8	73.3	51	36.2
Narayanganj	96.7	93.3	74.8	58.6	35.2
Narsingdi	96.7	94.3	83.8	67.1	50.5
Netrokona	96.7	94.8	85.2	59	46.2
Shariatpur	94.8	90	69	47.1	31.4
Sherpur	98.6	97.1	83.8	58.6	41.4
Tangail	97.6	95.2	79	58.1	40.5
Faridpur	97.6	95.7	82.9	60	38.6
Rajbari	98.1	97.1	85.7	67.1	51
Dhaka	96.2	93.8	85.2	67.6	48.1
Dhaka City Corporation	97.1	95.7	82.4	58.1	41
Dhaka Division	**97**	**94.8**	**81.2**	**60.6**	**42.2**
Chandpur	98.1	97.6	90.5	75.2	58.1
Comilla	99.5	98.6	90	73.8	52.9
Cox's Bazar	98.1	92.9	82.4	69	56.2
Khagrachari	93.8	91	78.1	57.6	45.7
Lakshmipur	97.1	95.2	82.4	65.7	53.8
Feni	98.1	97.6	90.5	73.8	51
Rangamati	87.1	82.4	62.9	46.7	30
Bandarban	85.2	82.9	68.6	49	31.4
B.Baria	95.2	92.9	81.9	64.8	47.1
Noakhali	93.3	91	76.7	59	43.8
Chittagong City Corporation	97.1	96.2	77.1	56.2	44.3
Chittagong	98.1	96.2	79.5	57.6	32.4
Chittagong Division	**95.1**	**92.9**	**80**	**62.4**	**45.6**
Thakurgaon	99.5	98.6	91	69.5	46.2
Gaibandha	98.1	95.7	73.8	51.4	31.9
Naogaon	99.5	98.1	89.5	65.2	40
Natore	97.1	94.3	77.1	48.1	30.5
Chapai Nawabganj	97.1	93.3	81.9	66.7	42.4
Pabna	99	98.1	86.2	64.3	44.3
Rajshahi	97.6	93.3	81.9	61.9	39

TABLE 4 *(continued)*

Districts	TT1	TT2	TT3	TT4	TT5
Rangpur	97.6	92.9	81.9	59	37.1
Sirajganj	79.5	73.3	46.7	26.7	9.5
Bogra	99.5	97.6	92.4	71.4	56.7
Panchagarh	96.7	90.5	77.1	59.5	37.6
Lalmonirhat	96.2	93.3	55.2	38.1	27.1
Nilphamari	97.1	94.3	82.4	60	41.4
Kurigram	95.2	91.4	79	55.2	38.6
Dinajpur	98.6	97.1	88.6	71.4	52.4
Joypurhat	96.7	92.4	70	49	19.5
Rajshahi City Corporation	99	97.6	87.6	64.3	47.1
Rajshahi Division	**96.7**	**93.6**	**79**	**57.8**	**37.7**
Satkhira	100	98.6	84.8	63.3	43.3
Narail	97.1	95.7	83.3	52.4	30.5
Meherpur	97.1	92.4	72.9	45.2	29
Jhenaidah	95.2	94.3	80	55.7	35.7
Kushtia	95.2	90.5	73.8	58.1	37.1
Magura	98.6	96.7	83.3	61.9	43.3
Chuadanga	97.6	95.2	87.1	61.4	40
Khulna	98.6	95.2	86.2	65.7	42.4
Bagerhat	95.2	92.4	81.4	59.5	39.5
Jessore	99	98.6	85.2	65.2	41
Khulna City Corporation	98.6	98.1	89	56.7	43.8
Khulna Division	**97.5**	**95.2**	**82.5**	**58.7**	**38.7**
Bhola	92.4	89.5	77.6	62.9	51
Jhalokati	95.2	91	66.2	38.6	24.3
Patuakhali	94.8	94.3	70.5	55.2	35.2
Pirojpur	95.2	93.3	83.3	60.5	41
Barguna	98.1	97.1	81.9	62.4	44.3
Barisal	95.7	93.8	83.3	61.4	43.8
Barisal City Corporation	98.1	97.1	82.9	60	40
Barisal Division	**95.6**	**93.7**	**78**	**57.3**	**39.9**
Habiganj	97.6	96.7	87.6	73.8	61
Moulvibazar	93.3	90	77.6	62.4	46.2
Sunamganj	88.6	87.1	71.9	50.5	37.1
Sylhet	90.5	87.6	79.5	61.9	46.2
Sylhet City Corporation	92.9	90.5	74.3	56.2	40
Sylhet Division	**92.6**	**90.4**	**78.2**	**61**	**46.1**
National	**96.2**	**93.7**	**72.4**	**41.1**	**18.9**

TABLE 5

Valid TT Coverage among women age 18-25 years by survey units, according to division

Districts	TT1	TT2	TT3	TT4	TT5
Gazipur	94.3	90	66.2	37.1	17.6
Gopalganj	81.4	75.2	49	27.1	13.8
Jamalpur	90	82.9	62.4	33.3	12.4
Kishoreganj	94.3	90	69	42.9	17.1
Madaripur	91.4	88.1	59	27.1	8.1
Manikganj	86.2	78.1	55.7	31.4	21
Munshiganj	93.8	90.5	79	47.1	27.1
Mymensingh	91.9	87.1	61	22.9	9.5
Narayanganj	95.2	91	66.2	35.7	16.2
Narsingdi	91.9	86.2	59.5	31.4	11.9
Netrokona	97.6	94.3	71.9	35.2	12.4
Shariatpur	94.8	92.9	79	48.1	27.1
Sherpur	88.1	82.4	59.5	27.1	11
Tangail	92.4	87.6	71	36.7	15.7
Faridpur	94.3	91	69.5	41.9	19
Rajbari	88.1	84.3	55.2	27.6	11.4
Dhaka	88.1	84.3	62.4	37.6	21.4
Dhaka City Corporation	75.7	68.1	47.1	30	19.5
Dhaka Division Total	**90.5**	**85.8**	**63.5**	**34.5**	**16.2**
Thakurgaon	96.2	93.8	72.4	38.6	12.9
Gaibandha	89.5	82.4	54.3	26.7	11
Naogaon	93.3	90.5	69.5	45.2	20
Natore	95.7	92.4	66.2	41	21
Chapai Nawabganj	91.9	87.6	69	49	30.5
Pabna	95.7	93.3	72.9	42.4	20
Rajshahi	93.8	86.7	63.3	35.2	20
Rangpur	92.4	85.7	59	26.2	11
Sirajganj	84.8	77.1	50	22.9	11
Bogra	96.2	92.9	72.9	47.1	24.8
Panchagarh	91.9	85.7	61	26.2	12.4
Lalmonirhat	97.1	92.4	55.7	27.6	9
Nilphamari	86.7	82.4	59.5	26.7	7.6
Kurigram	95.2	88.1	61.4	31.4	12.4
Dinajpur	96.2	92.4	76.2	49	25.2
Joypurhat	97.1	94.3	70	47.1	21.9
Rajshahi City Corporation	96.2	90	75.2	51.9	26.7
Rajshahi Division Total	**93.5**	**88.7**	**65.2**	**37.3**	**17.5**
Chandpur	95.7	94.3	74.3	44.3	20

TABLE 5 *(continued)*

Districts	TT1	TT2	TT3	TT4	TT5
Comilla	92.4	89.5	59	28.6	7.1
Cox's Bazar	97.1	94.8	75.7	45.7	15.2
Khagrachari	82.9	77.1	45.2	25.7	12.4
Lakshmipur	95.7	91.4	61.9	26.2	7.6
Feni	96.7	96.7	85.7	52.9	25.7
Rangamati	81	72.9	50	23.3	11.9
Bandarban	83.8	80	58.1	32.4	17.6
B.Baria	82.9	78.1	58.6	25.7	9
Noakhali	90	85.2	57.6	27.1	11
Chittagong	88.1	84.3	62.9	31.4	11.4
Chittagong City Corporation	78.1	71.9	51	27.1	12.9
Chittagong Division	**88.7**	**84.7**	**61.7**	**32.5**	**13.5**
Satkhira	89.5	86.2	62.9	31.9	10.5
Narail	89	85.7	64.3	33.3	13.8
Meherpur	87.1	77.6	41.4	17.6	7.1
Jhenaidah	93.8	88.6	61.9	28.1	12.4
Kushtia	93.8	87.1	62.4	24.3	8.6
Magura	95.2	88.6	67.1	46.2	22.9
Chuadanga	91	84.8	56.2	27.6	8.1
Khulna	97.1	94.8	70.5	42.9	17.1
Bagerhat	89.5	84.8	68.1	41.9	21.9
Jessore	97.1	95.2	77.1	46.2	21.9
Khulna City Corporation	86.7	81.9	58.1	31.4	12.4
Khulna Division Total	**91.8**	**86.8**	**62.7**	**33.8**	**14.2**
Bhola	89	82.4	50	20	6.2
Jhalokati	88.1	85.7	69	37.6	15.7
Patuakhali	91.9	81.4	53.3	20	8.6
Pirojpur	82.9	76.2	57.6	28.1	10
Barguna	94.8	93.8	70.5	37.6	15.2
Barisal	91.9	88.1	67.6	30	12.4
Barisal City Corporation	80.5	77.1	50	22.9	9
Barisal Division Total	**88.4**	**83.5**	**59.7**	**28**	**11**
Habiganj	89	85.7	64.3	35.2	12.9
Moulvibazar	80	72.4	52.9	28.1	11.9
Sunamganj	81.9	70	41.9	17.1	7.6
Sylhet	86.2	82.9	61.9	25.7	6.2
Sylhet City Corporation	69	61.9	45.2	27.1	12.4
Sylhet Division Total	**81.2**	**74.6**	**53.2**	**26.7**	**10.2**
National	**90.3**	**85.4**	**62.4**	**33.5**	**14.8**

TABLE 6

Crude TT Coverage among women age 18-25 years by survey units, according to division

Districts	TT1	TT2	TT3	TT4	TT5
Gazipur	94.3	90	71.4	46.7	26.7
Gopalganj	81.4	75.2	52.9	30.5	19
Jamalpur	90	82.9	71.4	47.6	27.1
Kishorganj	94.3	90.5	74.3	52.9	30.5
Madaripur	91.4	88.1	64.8	38.6	18.1
Manikganj	86.2	78.6	58.6	37.1	25.7
Munshiganj	93.8	90.5	81.9	54.8	36.2
Mymensingh	91.9	87.1	71.9	44.3	23.8
Narayanganj	95.2	91.4	74.8	52.9	32.9
Narsingdi	91.9	86.2	68.1	44.8	26.7
Netrokona	97.6	94.3	80.5	48.6	25.7
Shariatpur	94.8	93.3	82.9	54.3	34.3
Sherpur	88.1	82.4	67.1	40	20
Tangail	92.4	87.6	74.8	49	23.3
Faridpur	94.3	91	73.8	51	29.5
Rajbari	88.1	84.3	62.4	44.3	24.3
Dhaka	88.1	84.3	71.9	49.5	32.9
Dhaka City Corporation	75.7	69	51.4	33.8	24.3
Dhaka Division Total	**90.5**	**85.9**	**69.7**	**45.6**	**26.7**
Satkhira	89.5	86.2	70	45.2	25.7
Narail	89	85.7	71.4	48.1	30
Meherpur	87.1	77.6	50	29.5	16.7
Jhenaidah	93.8	89	69.5	37.1	19.5
Kushtia	93.8	87.1	70	44.3	19.5
Magura	95.2	89	72.9	55.7	33.8
Chuadanga	91	86.2	70.5	40.5	21.9
Khulna	97.1	94.8	80	61.9	38.1
Bagerhat	89.5	84.8	73.3	54.3	36.7
Jessore	97.1	95.2	83.8	60.5	37.1
Khulna City Corporation	86.7	81.9	69	50	28.6
Khulna Division Total	**91.8**	**87.1**	**71**	**47.9**	**28**
Thakurgaon	96.2	93.8	80.5	59.5	32.4
Gaibandha	89.5	82.4	65.2	37.6	20
Naogaon	93.3	90.5	75.7	55.2	33.3
Natore	95.7	92.4	77.6	49	28.1
Chapai Nawabganj	91.9	87.6	71	53.3	33.8
Pabna	95.7	93.3	75.7	53.3	31.4
Rajshahi	93.8	86.7	68.1	42.9	26.7
Rangpur	92.4	85.7	71	41.9	23.8

TABLE 6 *(continued)*

Districts	TT1	TT2	TT3	TT4	TT5
Sirajganj	84.8	78.1	56.7	32.4	17.1
Bogra	96.2	92.9	82.4	67.1	46.2
Panchagarh	91.9	86.2	70	42.4	23.8
Lalmonirhat	97.1	93.8	68.6	41.9	18.6
Nilphamari	86.7	82.4	67.1	40.5	21.9
Kurigram	95.2	87.6	70	47.6	26.2
Dinajpur	96.2	92.4	82.4	67.6	46.2
Joypurhat	97.1	94.8	75.7	58.1	29.5
Rajshahi City Corporation	96.2	90	78.6	58.1	36.2
Rajshahi Division Total	**93.5**	**88.9**	**72.7**	**49.9**	**29.1**
Chandpur	95.7	94.3	81.9	60	37.1
Comilla	92.4	89.5	72.9	51	21.4
Cox's Bazar	97.1	94.8	84.3	69.5	39
Khagrachari	82.9	77.1	51.4	32.4	18.6
Lakshmipur	95.7	91.4	73.3	47.6	31
Feni	96.7	96.7	89	62.9	39
Rangamati	81	73.8	55.7	31	21.4
Bandarban	83.8	80.5	61.9	41.9	24.3
B.Baria	82.9	78.6	66.7	41	24.3
Noakhali	90	85.2	68.1	41	21
Chittagong City Corporation	78.1	71.9	58.1	37.6	23.3
Chittagong	88.1	84.3	67.1	37.6	19
Chittagong Division Total	**88.7**	**84.8**	**69.2**	**46.1**	**26.6**
Bhola	89	82.4	70.5	41.9	29
Jhalokati	88.1	85.7	72.4	47.1	25.2
Patuakhali	91.9	82.4	63.3	33.3	21.9
Pirojpur	82.9	76.2	65.2	41.9	22.4
Barguna	94.8	93.8	77.6	49.5	22.4
Barisal	91.9	88.1	73.3	38.1	17.6
Barisal City Corporation	80.5	77.1	55.7	31.9	14.8
Barisal Division Total	**88.4**	**83.7**	**68.3**	**40.5**	**21.9**
Habiganj	89	85.7	75.7	54.3	33.8
Moulvibazar	80	72.4	57.6	37.6	19
Sunamganj	81.9	70.5	52.4	27.6	16.2
Sylhet	86.2	82.9	68.6	40.5	16.7
Sylhet City Corporation	69	61.9	47.6	32.4	19
Sylhet Division Total	**81.2**	**74.7**	**60.4**	**38.5**	**21**
National	**90.3**	**85.6**	**69.7**	**46.1**	**26.6**

TABLE 7

Measles Coverage among the Children 9 months to < 10 years old by District and City Corporation

Districts	% of Children Received Measles Vaccination
Gazipur	91
Gopalganj	89.5
Jamalpur	83.3
Kishoreganj	85.2
Madaripur	90.5
Manikganj	90
Munshiganj	92.4
Mymensingh	74.8
Narayanganj	88.6
Narsingdi	76.7
Netrokona	94.3
Shariatpur	97.6
Sherpur	88.6
Tangail	92.9
Faridpur	96.2
Rajbari	91.4
Dhaka	89.5
Dhaka City Corporation	85.2
Dhaka Division Total	**88.8**
Chandpur	83.3
Comilla	83.8
Cox's Bazar	81
Khagrachari	69.5
Lakshmipur	67.6
Feni	80.5
Rangamati	68.1
Bandarban	83.8
B.Baria	76.2
Noakhali	81.9
Chittagong City Corporation	86.7
Chittagong	97.6
Chittagong Division Total	**80**
Thakurgaon	99
Gaibandha	92.9
Naogaon	90
Natore	88.6
Chapai Nawabganj	99
Pabna	91.9
Rajshahi	69

TABLE 7 *(continued)*

Districts	% of Children Received Measles Vaccination
Rangpur	88.1
Sirajganj	79
Bogra	80.5
Panchagarh	95.7
Lalmonirhat	97.1
Nilphamari	86.7
Kurigram	92.4
Dinajpur	84.3
Joypurhat	96.2
Rajshahi City Corporation	88.1
Rajshahi Division Total	**89.3**
Satkhira	79
Narail	93.8
Meherpur	81
Jhenaidah	94.3
Kushtia	87.6
Magura	91
Chuadanga	84.8
Khulna	93.8
Bagerhat	86.7
Jessore	93.3
Khulna City Corporation	85.2
Khulna Division Total	**88.2**
Bhola	82.4
Jhalokati	92.9
Patuakhali	97.1
Pirojpur	91.9
Barguna	90
Barisal	94.8
Barisal City Corporation	91.4
Barisal Division Total	**91.5**
Habiganj	82.4
Moulvibazar	80.5
Sunamganj	49
Sylhet	87.1
Sylhet City Corporation	83.8
Sylhet Division Total	**76.6**
National	**87**

TABLE 8

OPV Coverage among 0-5 months Children in the 13th Special NIDS by District and City Corporation

Districts	1st Round	2nd Round	3rd Round	All Round
Gazipur	99.5	98.1	99.0	96.7
Gopalganj	99.5	98.1	97.1	97.1
Jamalpur	89	92.9	96.2	85.7
Kishoreganj	98.1	98.1	97.1	95.2
Madaripur	98.6	95.7	91.9	89.5
Manikganj	100	99.0	96.2	95.2
Munshiganj	98.6	98.6	98.1	97.1
Mymensingh	92.9	93.3	92.4	86.7
Narayanganj	93.3	91.0	92.9	80.5
Narsingdi	98.1	95.2	97.1	93.8
Netrokona	99.5	100.0	100.0	99.5
Shariatpur	100	100.0	100.0	100
Sherpur	97.6	96.7	97.6	94.8
Tangail	97.6	97.6	96.7	94.3
Faridpur	98.1	97.6	95.2	95.2
Rajbari	99	98.1	98.1	97.1
Dhaka	98.6	97.6	97.1	95.2
Dhaka City Corporation	99	98.1	95.2	92.9
Dhaka Division Total	**97.6**	**97.0**	**96.6**	**93.7**
Chandpur	96.7	97.1	98.6	94.8
Comilla	96.7	94.8	94.3	90.5
Cox's Bazar	96.2	92.9	96.7	91.4
Khagrachari	89.5	90.5	87.6	79.5
Lakshmipur	86.7	84.8	89.5	78.1
Feni	100	100.0	100.0	100
Rangamati	95.2	89.0	82.9	76.7
Bandarban	94.3	92.4	90.5	83.3
B.Baria	96.7	94.3	96.2	93.8
Noakhali	89	88.1	86.2	77.6
Chittagong City Corporation	98.6	97.1	97.1	94.3
Chittagong	99.5	99.5	99.5	99.5
Chittagong Division Total	**94.9**	**93.4**	**93.3**	**88.3**
Thakurgaon	100	100.0	100.0	100
Gaibandha	97.1	97.1	97.6	96.7
Naogaon	96.2	96.2	95.7	91
Natore	100	97.6	98.1	96.7
Chapai Nawabganj	100	100.0	100.0	100
Pabna	100	98.6	96.7	96.2
Rajshahi	97.1	96.2	94.3	90.5

TABLE 8 *(continued)*

Districts	1st Round	2nd Round	3rd Round	All Round
Rangpur	99	95.2	91.9	90
Sirajganj	79	71.9	80.5	46.7
Bogra	92.4	92.9	95.7	84.3
Panchagarh	98.6	98.1	97.1	95.7
Lalmonirhat	98.6	98.6	97.1	94.8
Nilphamari	99.5	99.5	98.6	98.1
Kurigram	99.5	98.6	97.6	97.1
Dinajpur	99	97.1	93.8	91.9
Joypurhat	99.5	99.5	99.5	99.5
Rajshahi City Corporation	100	99.5	99.5	99
Rajshahi Division Total	**97.4**	**96.3**	**96.1**	**92.2**
Satkhira	95.7	96.7	92.9	88.6
Narail	100	100.0	100.0	100
Meherpur	97.6	98.1	96.7	93.3
Jhenaidah	100	100.0	100.0	100
Kushtia	98.6	97.1	97.1	94.8
Magura	98.1	95.7	96.7	94.3
Chuadanga	98.1	97.1	98.1	95.7
Khulna	99	99.5	100.0	99
Bagerhat	97.6	98.6	97.1	94.8
Jessore	98.6	99.5	99.0	98.1
Khulna City Corporation	99.5	99.5	100.0	99.5
Khulna Division Total	**98.4**	**98.4**	**98.0**	**96.2**
Bhola	87.6	84.8	82.9	71.9
Jhalokati	98.1	98.6	96.2	93.8
Patuakhali	99	97.1	99.5	97.1
Pirojpur	98.1	99.0	99.0	97.6
Barguna	97.1	98.1	96.2	94.8
Barisal	100	99.5	98.6	98.1
Barisal City Corporation	98.1	98.1	98.1	95.2
Barisal Division Total	**96.9**	**96.5**	**95.8**	**92.7**
Habiganj	92.9	93.8	94.8	91
Moulvibazar	94.8	92.9	92.9	88.6
Sunamganj	96.2	93.8	92.9	91
Sylhet	97.1	97.6	95.7	95.2
Sylhet City Corporation	98.6	99.0	98.6	97.1
Sylhet Division Total	**95.9**	**95.4**	**95.0**	**92.6**
National	**97.0**	**96.0**	**96.0**	**93.0**

TABLE 9

Vitamin A Supplementation Coverage among Postpartum Women, Infants 9-11 Months and Children 12-59 Months and Anthelmintic Coverage among Children 24-59 Months by Districts and City Corporation

Districts	Vitamin A Supplementation Coverage		Vitamin A Coverage	Anthelmintic Coverage
	Post Partum Women	Children 12-59 Months	Infants 9-11 months	Children 24-59 Months
Gazipur	44.8	92.6	74.0	89
Gopalganj	41	95.1	78.5	88.3
Jamalpur	28.6	94.3	71.5	84.6
Kishoreganj	24.8	91.8	78.3	74.3
Madaripur	8.6	81.8	63.9	77.2
Manikganj	33.8	91.8	79.3	90.7
Munshiganj	35.2	97.5	69.2	96.2
Mymensingh	15.2	84.5	75.2	79.1
Narayanganj	15.7	89.2	79.6	84
Narsingdi	25.2	95.9	61.0	94.5
Netrokona	2.4	99.5	62.3	98.7
Shariatpur	48.1	99.5	73.9	96.5
Sherpur	44.3	90.4	74.6	86.7
Tangail	15.2	96.6	84.1	95.9
Faridpur	42.9	90.7	72.2	83.5
Rajbari	23.8	95.6	69.7	90.4
Dhaka	29.5	96.2	83.0	93.4
Dhaka City Corporation	39.5	89.8	78.6	82.1
Dhaka Division Total	**28.8**	**93**	**74.9**	**88.2**
Thakurgaon	10	97.5	75.6	NA
Gaibandha	81.9	96.1	63.4	92.1
Naogaon	26.2	92.3	77.0	85
Natore	16.2	96.5	74.4	90.2
Chapai Nawabganj	8.1	99.5	77.1	NA
Pabna	26.7	93.8	64.0	92.7
Rajshahi	22.4	90.7	74.9	NA
Rangpur	22.9	89.9	54.8	NA
Sirajganj	14.8	75	76.0	74.4
Bogra	42.4	85.2	80.5	75.9
Panchagarh	25.2	97.5	69.1	NA
Lalmonirhat	45.2	96.6	72.2	NA
Nilphamari	26.7	95.9	56.0	NA
Kurigram	27.6	95.1	77.8	NA
Dinajpur	15.7	91.6	79.9	NA
Joypurhat	34.8	99	83.3	97.9
Rajshahi City Corporation	42.4	95.9	82.1	NA
Rajshahi Division Total	**28.8**	**93.5**	**73.2**	**87.2**
Chandpur	33.8	95.8	84.2	89.7

TABLE 9 *(continued)*

Districts	Vitamin A Supplementation Coverage		Vitamin A Coverage	Anthelmintic Coverage
	Post Partum Women	Children 12-59 Months	Infants 9-11 months	Children 24-59 Months
Comilla	11.9	79.7	71.4	81
Cox's Bazar	11.9	86.8	45.1	83.5
Khagrachari	40.5	85	58.2	78.5
Lakshmipur	21.4	83.6	83.6	67.5
Feni	11.4	98.5	98.5	93
Rangamati	35.2	82	82	77.7
Bandarban	41.4	88.9	88.9	89.1
B.Baria	7.6	89.6	89.6	78.6
Noakhali	13.8	85.3	85.3	79.6
Chittagong City Corporation	33.8	94.8	94.8	90.7
Chittagong	41.4	96.1	96.1	97.3
Chittagong Division Total	**25.4**	**88.9**	**88.9**	**84**
Satkhira	13.8	90.3	90.3	87
Narail	12.9	97.5	97.5	94.9
Meherpur	22.4	91.8	91.8	NA
Jhenaidah	9	99.5	99.5	96.9
Kushtia	1.9	95.6	95.6	90.6
Magura	40.5	91.8	91.8	86.2
Chuadanga	26.7	92	92	93.8
Khulna	55.7	99	99	96
Bagerhat	33.3	94.3	94.3	83.4
Jessore	20.5	96.6	96.6	93.6
Khulna City Corporation	51	98	98	92.3
Khulna Division Total	**26.1**	**95.1**	**95.1**	**91.5**
Bhola	24.8	72.2	72.2	67.7
Jhalokati	24.8	90.9	90.9	89.4
Patuakhali	60.5	98.5	98.5	98.9
Pirojpur	33.3	99	99	98.9
Barguna	54.3	97	97	NA
Barisal	44.3	97.1	97.1	97.4
Barisal City Corporation	51.4	95.1	95.1	92
Barisal Division Total	**41.9**	**92.9**	**92.9**	**89.6**
Habiganj	18.1	94	94	95.2
Moulvibazar	40.5	87.6	87.6	76.3
Sunamganj	15.2	89.8	89.8	77.9
Sylhet	10.5	95.1	95.1	93.7
Sylhet City Corporation	23.8	96.6	96.6	91.9
Sylhet Division Total	**21.6**	**92.7**	**92.7**	**87.2**
National	**29**	**93**	**73**	**88**

FIGURE 1

Valid Full Immunization by Age 12 Months among 12-23 Months Old Children by Districts in Dhaka Division
(Fully Immunized arranged in descending order by all districts)

DHAKA DIVISION

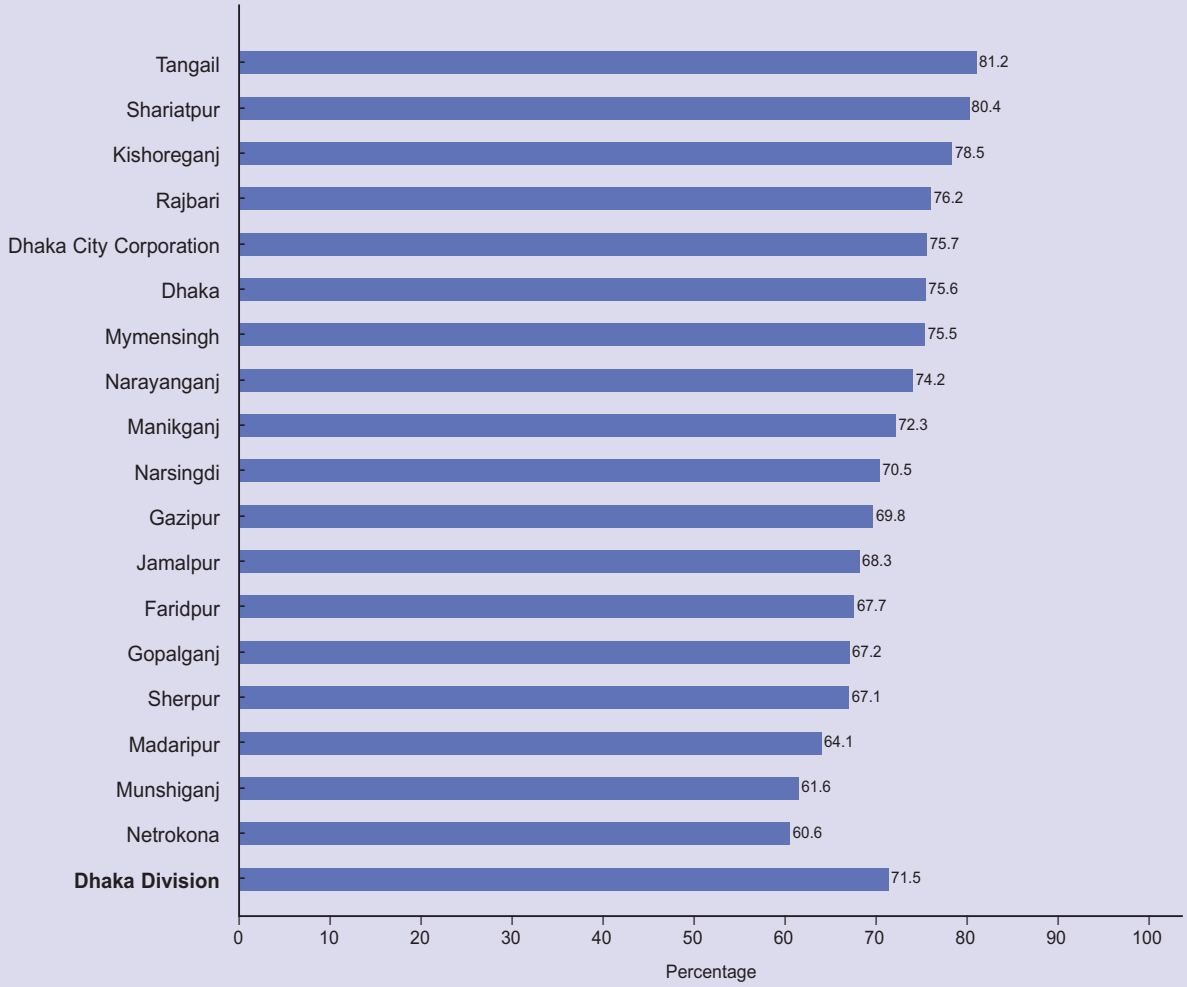


FIGURE 2

Valid Full Immunization by Age 12 Months among 12-23 Months Old Children by Districts in Chittagong Division
(Fully Immunized arranged in descending order by all districts)

CHITTAGONG DIVISION

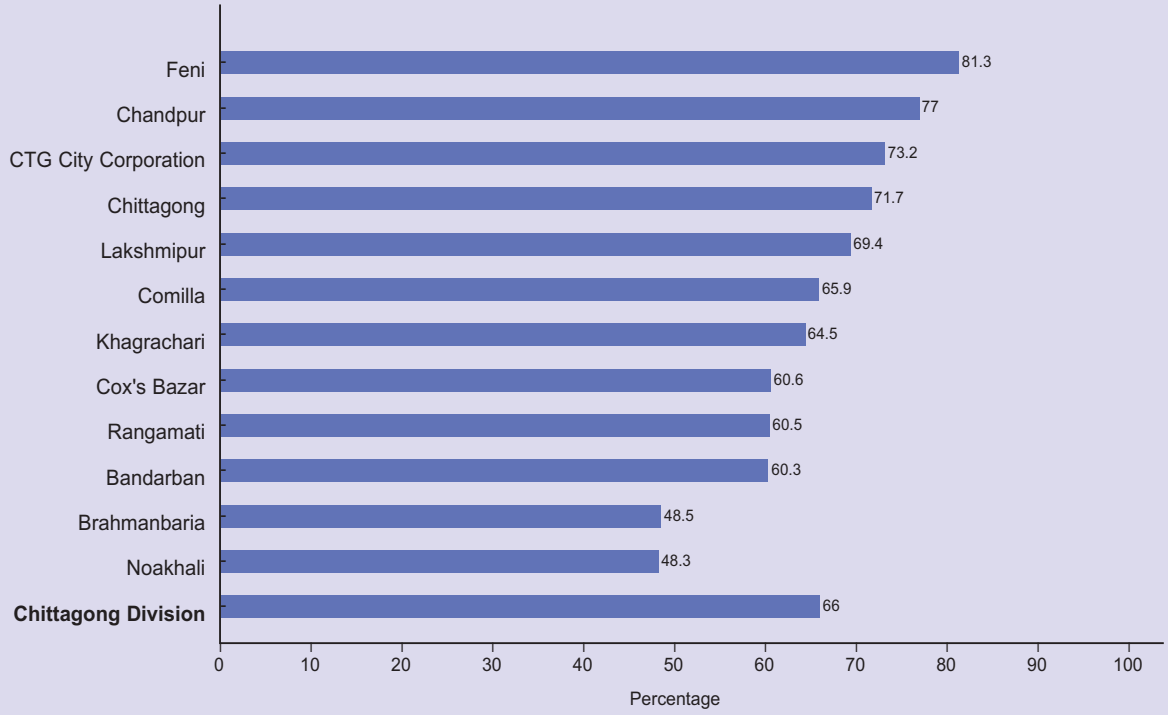


FIGURE 3

Valid Full Immunization by Age 12 Months among 12-23 Months Old Children by Districts in Rajshahi Division
(Fully Immunized arranged in descending order by all districts)

RAJSHAHI DIVISION

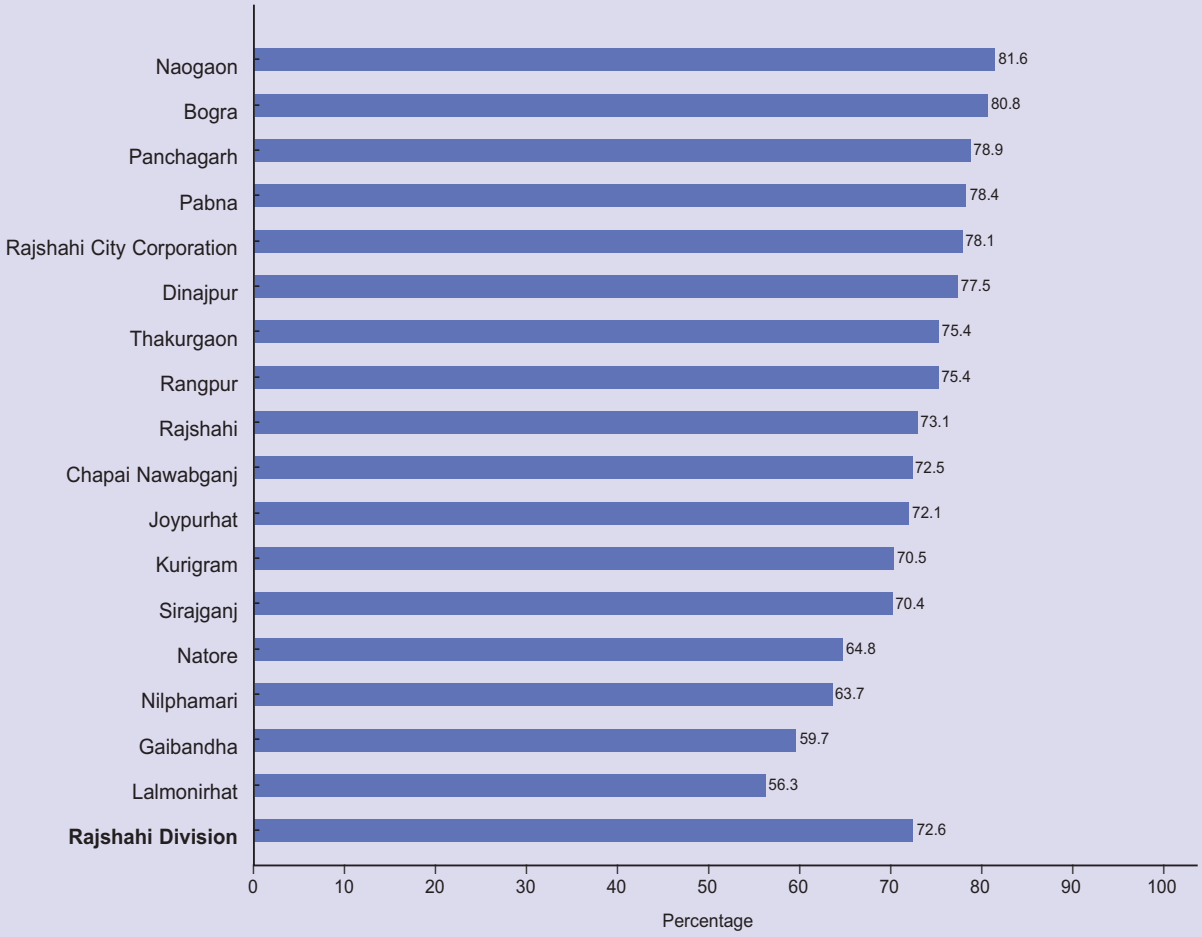


FIGURE 4

Valid Full Immunization by Age 12 Months among 12-23 Months Old Children by Districts in Barisal Division
(Fully Immunized arranged in descending order by all districts)

BARISAL DIVISION

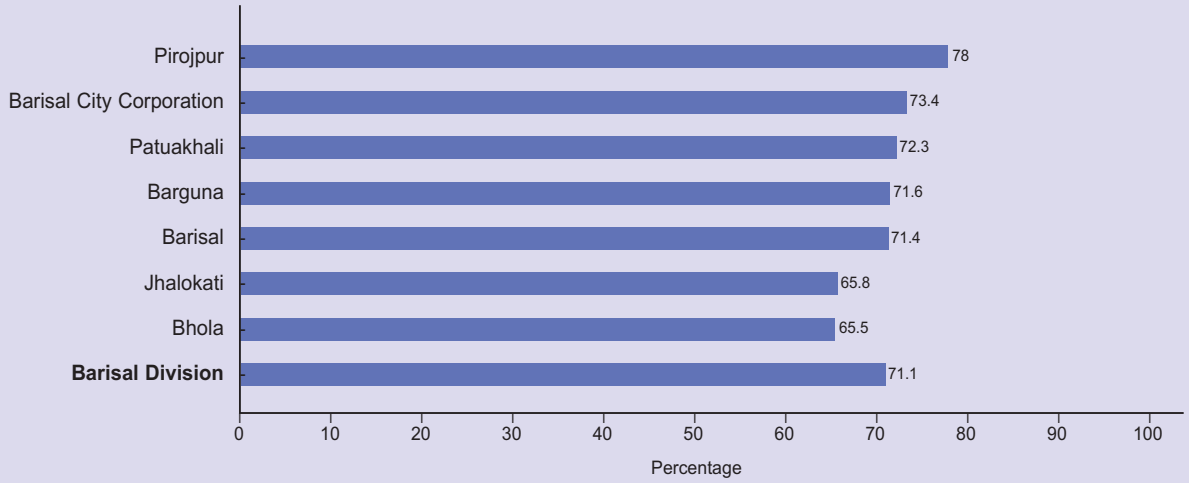


FIGURE 5

Valid Full Immunization by Age 12 Months among 12-23 Months Old Children by Districts in Barisal Division (Fully Immunized arranged in descending order by all districts)

KHULNA DIVISION

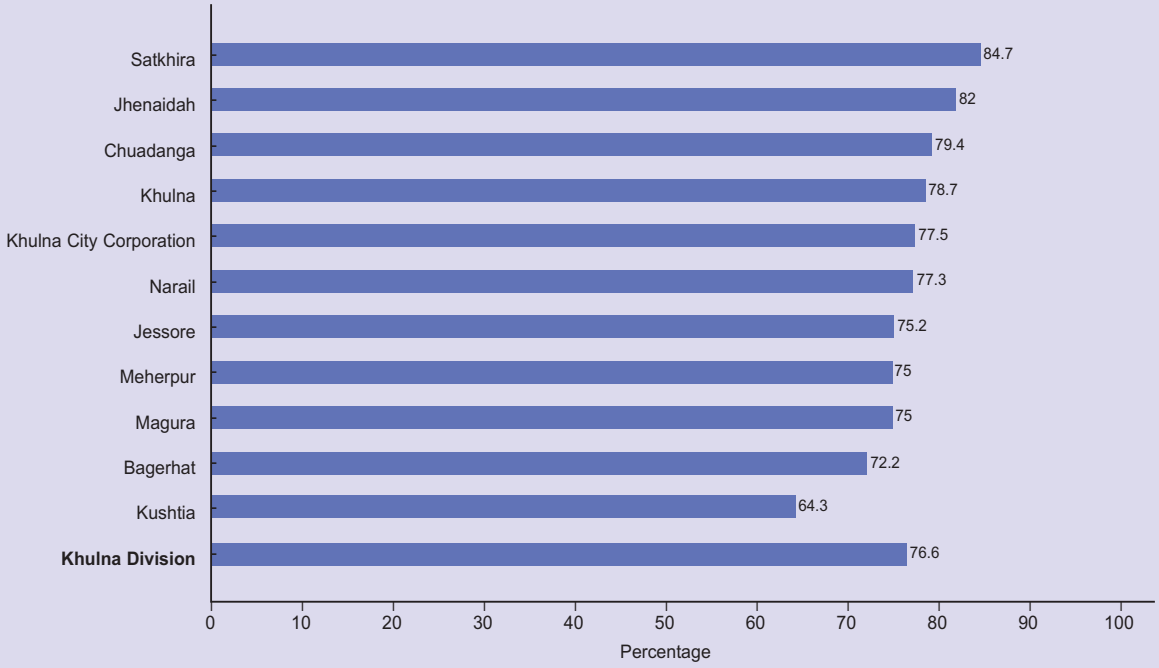


FIGURE 6

Valid Full Immunization by Age 12 Months among 12-23 Months Old Children by Districts in Sylhet Division (Fully Immunized arranged in descending order by all districts)

SYLHET DIVISION TOTAL

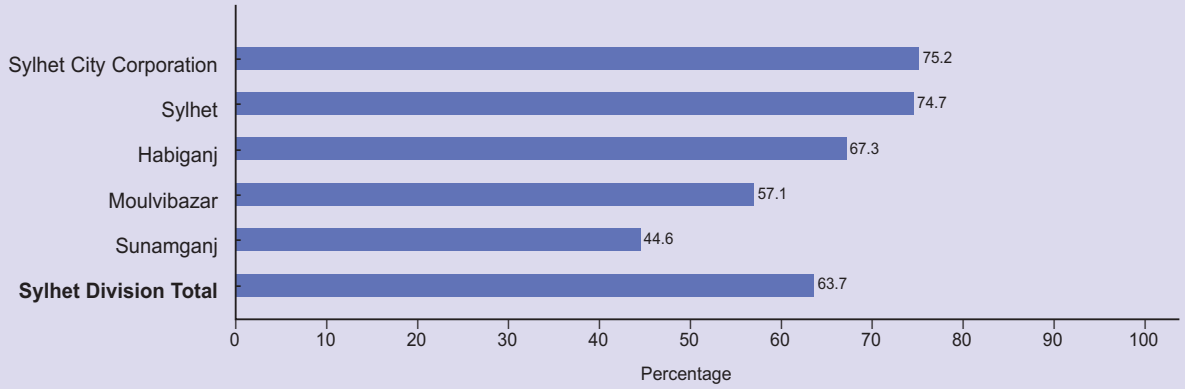


FIGURE 7

Valid TT2 Coverage among 15-49 Years Old Mothers of 0-11 Months Old Children by Districts in Dhaka Division (Arranged in descending order by all districts)

DHAKA DIVISION TOTAL

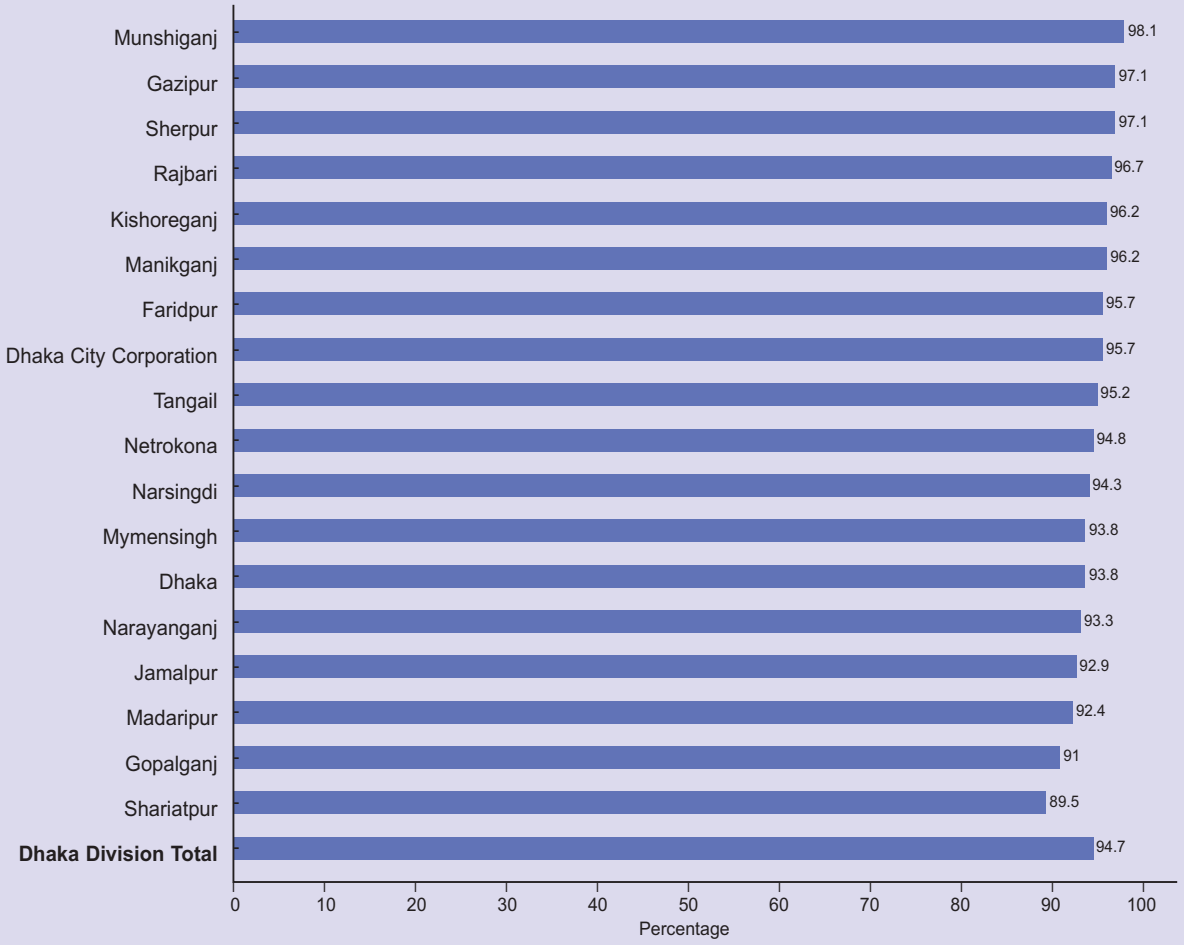


FIGURE 8

Valid TT2 Coverage among 15-49 Years Old Mothers of 0-11 Months Old Children by Districts in Chittagong Division (Arranged in descending order by all districts)

CHITTAGONG DIVISION TOTAL

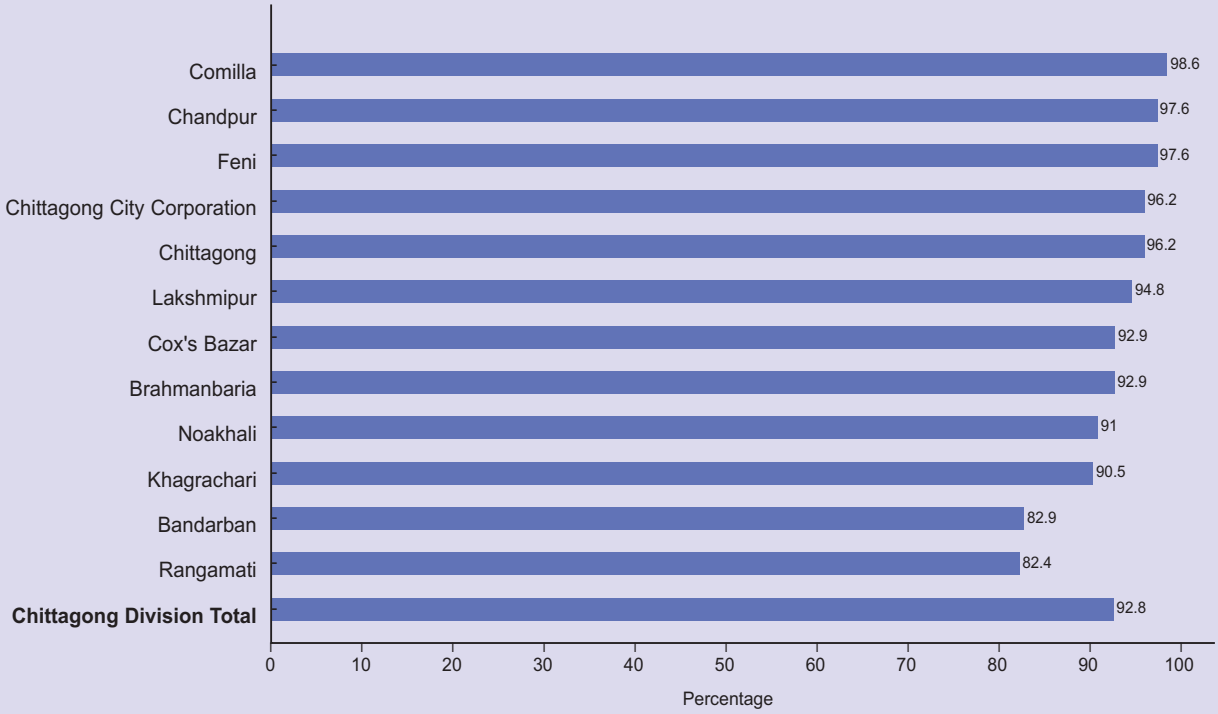


FIGURE 9

Valid TT2 Coverage among 15-49 Years Old Mothers of 0-11 Months Old Children by Districts in Rajshahi Division (Arranged in descending order by all districts)

RAJSHAHI DIVISION TOTAL

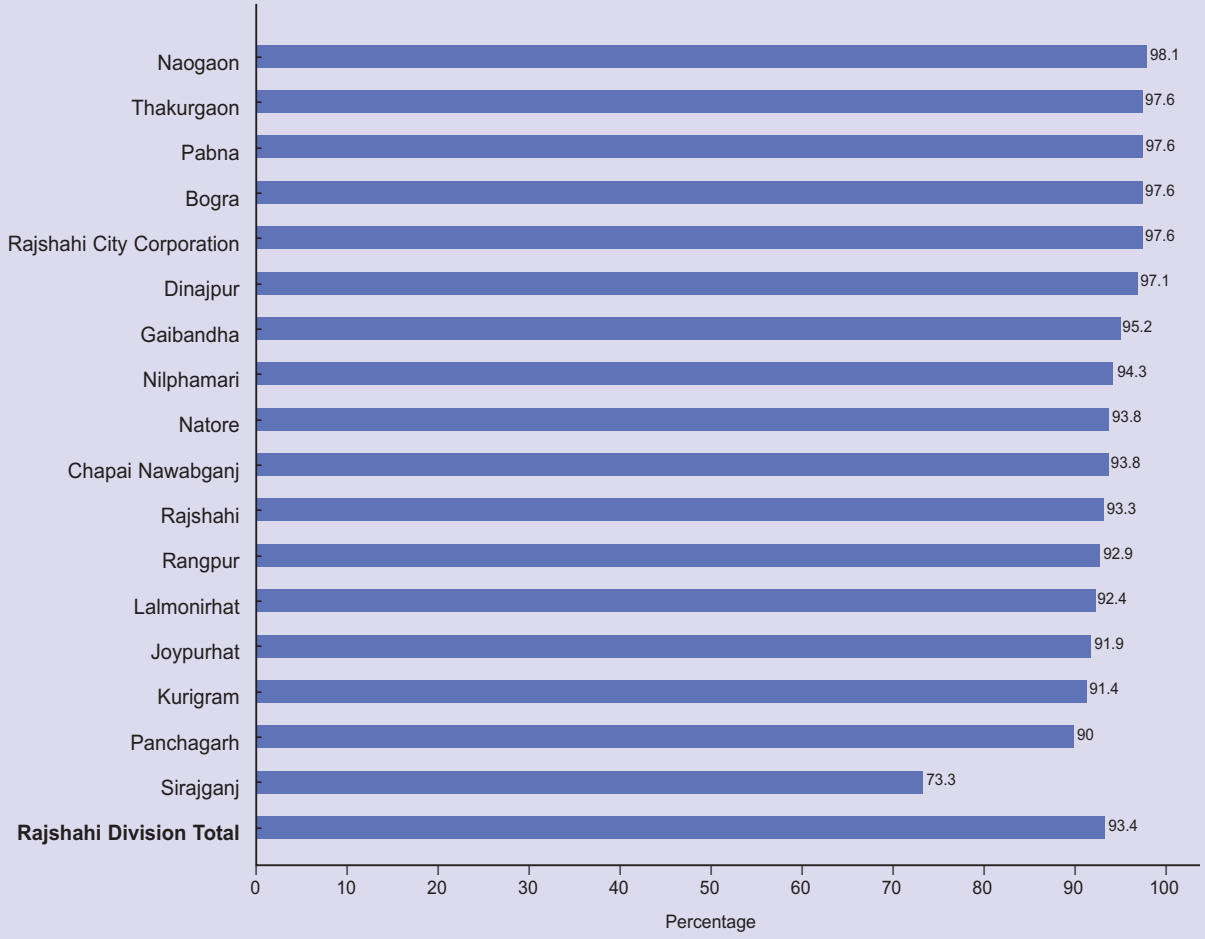


FIGURE 10

Valid TT2 Coverage among 15-49 Years Old Mothers of 0-11 Months Old Children by Districts in Barisal Division (Arranged in descending order by all districts)

BARISAL DIVISION TOTAL

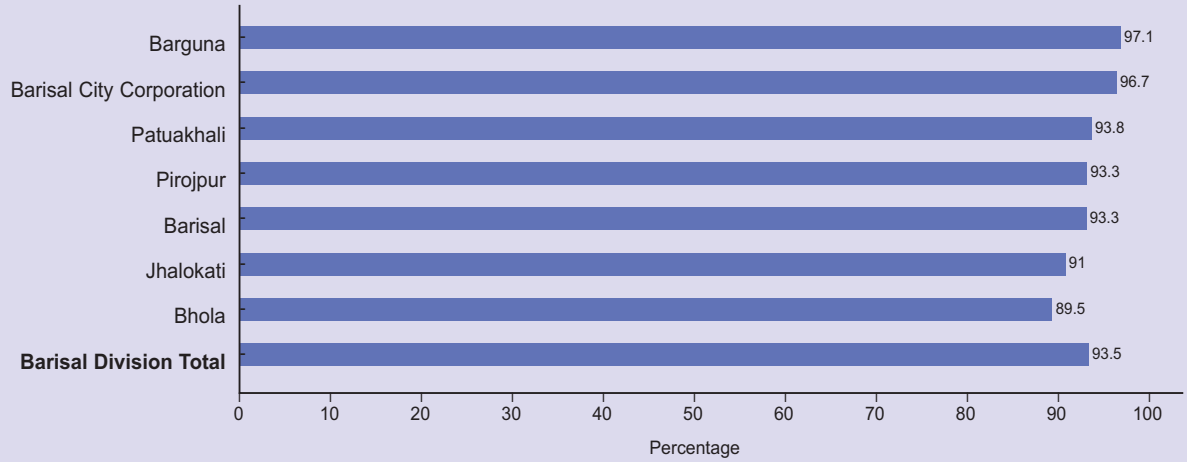


FIGURE 11

Valid TT2 Coverage among 15-49 Years Old Mothers of 0-11 Months Old Children by Districts in Khulna Division (Arranged in descending order by all districts)

KHULNA DIVISION TOTAL

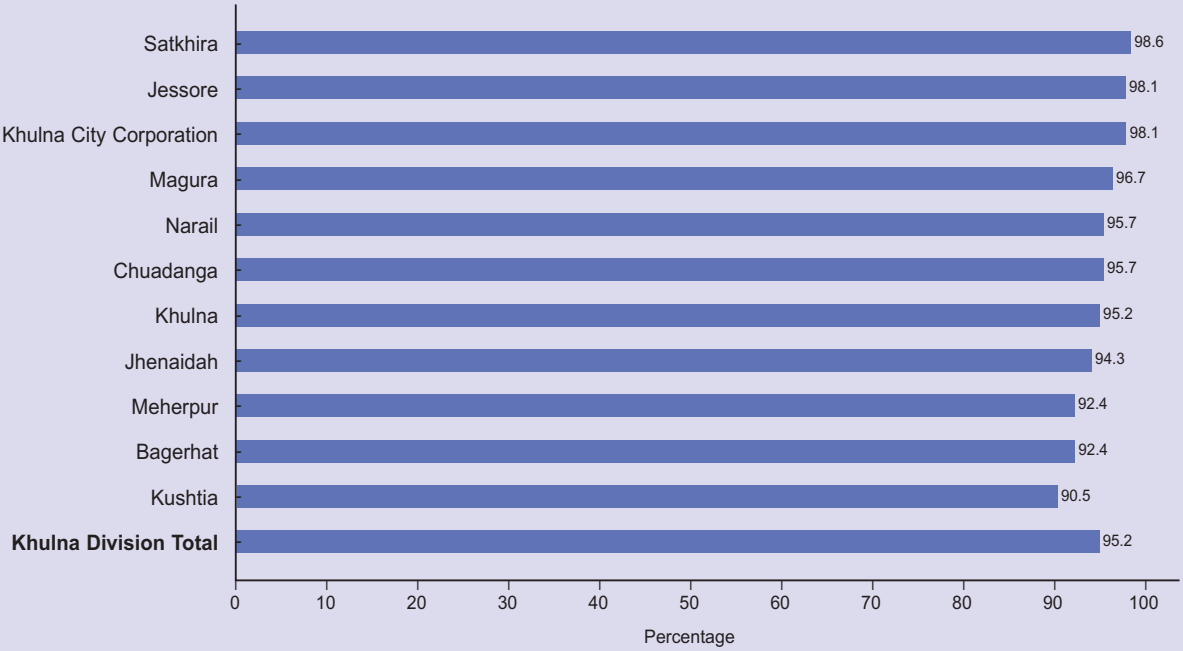
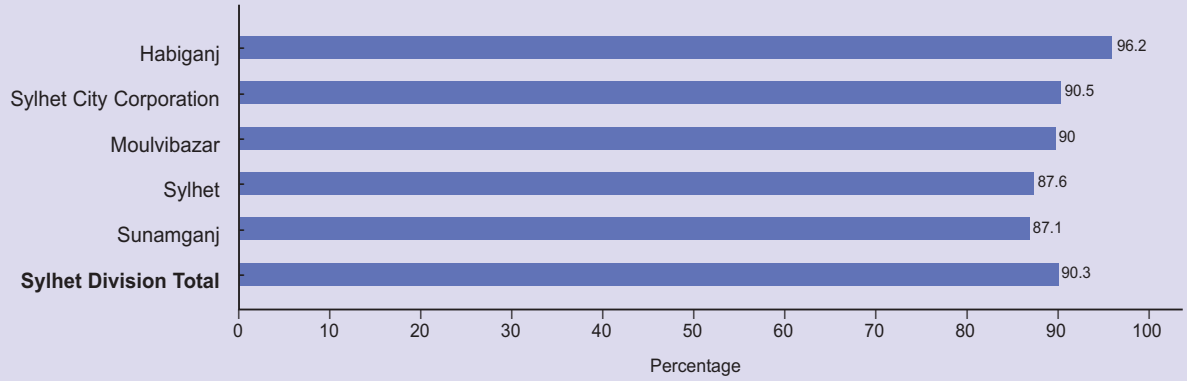


FIGURE 12

Valid TT2 Coverage among 15-49 Years Old Mothers of 0-11 Months Old Children by Districts in Sylhet Division (Arranged in descending order by all districts)

SYLHET DIVISION TOTAL



QUESTIONNAIRE

PEOPLEíS REPUBLIC OF BANGLADESH
EXPANDED PROGRAM ON IMMUNIZATION (EPI)
COVERAGE EVALUATION SURVEY 2006

Job # :	***SR /***	CENTRE									
PROJECT	**EPI Coverage Evaluation Survey 2006**										
CLUSTER NO	**Type:** **Urban = 1** **Rural = 2**	**INTERVIEW TIME**									
AREA					**START**			**END**			
LANDMARKS											
NAME OF INTERVIEWER		**Code**									
CHECK DETAILS	**Code**	**Accompany**			**Back Check**			**Scrutiny**			
		Code	**Sign**	**Date**	**Code**	**Sign**	**Date**	**Code**	**Sign**	**Date**	
NAME OF FS			**1**			**2**			**3**		
NAME OF FC			**1**			**2**			**3**		
NAME OF OTHER OFFICIAL			**1**			**2**			**3**		

I hereby oath that all the information of the information of this interview true and correct. I followed the survey methodology and didnít take any unfair means while collecting data of this questionnaire.

Signature of the Interviewer

Introduction

Salam/Adab. My name is ----. I am from ACNielsen Bangladesh a research firm of Bangladesh on behalf of EPI. Currently we are conducting a survey on mother and child vaccination. I would be grateful to you if you help me in this regard. Your information will be kept confidential and will be used for the development of EPI programme.

CHILD FORM

Applicable for those babies born in between July 1, 2004 to June 30, 2005
(Applicable for those babies born in between 17 Ashar 1411 to 16 Ashar 1412)

1.	Cluster number									
2.	Date									
3.	Survey area									
4.	Sl no. of sample (to be filled in by office)									
5.	Sl no. of children in this cluster	Skip to	1	2	3	4	5	6	7
6.	Household number/ G R number and name of house head								
7.	Name of the child								
8.	Sex of the child :Male -1 Female - 2								
9.	Name of the father of the child								
10.	Name of the mother of the child								
11.	Date of the birth of the child (Day/Month/Year)								
12.	Academic qualification of the mother Illiterate -1, Primary-2, Secondary-3, SSC/Dhakil/ O level-4, HSC/Alim/ A level-5, Degree/Fazil-6, Masters/Kamil-7								
13.	Academic qualification of the father of the child Illiterate -1, Primary-2, Secondary-3, SSC/Dhakil/ O level-4, HSC/Alim/ A level-5, Degree/Fazil-6, Masters/Kamil-7								
14.	Occupation of the mother Housewife-1, Government employee-2, Non-government employee-3, Household works/day labour-4, Small business-5, Big business-6, Teacher-7, Professional -8, others								
15.	Occupation of the father Agriculture-1, Government employee-2, Non-government employee-3, Day labor/rickshaw/van puller-4, Small business-5, Big business-6, Teacher-7, professional -8, driver (truck/bus/car)-9,others								
16.	Number of family members								
17.	Has the baby ever received vaccine?	Yes 1							
		No: 2	18						
17.1	Does the child have card for vaccination?	Yes: 1	18						
		No: 2							
17.2	If he doesnít have card, then ask, Were you ever given a card?	Yes: 1							
		No: 2	18						
17.3	If the answer for the question 17.2 is yes, then ask Why didnít you preserve the card? (please mention)								
18.	Would you please tell me, how many times should the child be taken to the vaccination center to complete all the vaccines? (write the number or 'don't know')								
19.	BCG	(Date/+/0)							
19.1.	BCG Scar (notice the upper side of the left arm)	(Yes/No)							
19.2.	BCG ~Source	(O/ H / N /P)							
20.	DPT1	(Date/+/0)							
20.1	DPT1 Source	(O/ H / N /P)							
21.	DPT 2	(Date/+/0)							
22.	DPT 3	(Date/+/0)							
23.	OPV 1	(Date/+/0)							
24.	OPV 2	(Date/+/0)							
25.	OPV 3	(Date/+/0)							
26.	OPV 4	(Date/+/0)							
27.	Measles	(Date/+/0)							
28.	Vitamin A	(Date/+/0)							

			Skip to	1	2	3	4	5	6	7
29.	Has the child received all the vaccinations	Received all the vaccination: 1	29.1							
		Received partial vaccination: 2	30							
		Didnít receive any vaccination: 3	32							
29.1.	Has the child received all the vaccination within the 12 months	Yes: 1								
		No: 2								
30.	After giving vaccine to your child, has there been any abscess at the place of vaccine?	Yes: 1								
		No: 2	3							
30.1	If the answer is yes, then ask, Where did you have the abscess? (multiple answers can be recorded) (please code)	Right thigh: 1								
		Left thigh: 2								
		Left arm: 3								
		Others (specify)								
30.2	Did you feel discouraged to take the rest vaccine due to abscess or any other problem?	Yes: 1								
		No: 2								
31.	Have you ever given money for vaccination of your child? (please code)	Yes: 1								
		No: 2	32							
31.1	If yes, How much money did you pay?									
31.2	(If yes, then ask) As you given money, did you abstain yourself from giving rest vaccine to your child?	Yes: 1								
		No: 2								

Date-Record date from vaccination

\+ - history that the child was vaccinated.

0 - The child was not vaccinated

Source codes:

O = GOB Outreach

H = All GOB Hospital (e.g., District, UHC)

N = NGO (Hospital, Clinic, Outreach)

P = Private (chamber, clinic and hospital)

Reasons for Vaccination Failure

32. The children who never/partially vaccinated ask the mothers or guardians ìWhy was the child not vaccinated or why the child was not fully vaccinated?î

Sl. no. of the baby in this cluster		1	2	3	4	5	6	7
1.	**Lack of information**							
i.	Didnít know that my child should be given vaccine	1	1	1	1	1	1	1
ii .	Didnít know when to go for the second/third dose	2	2	2	2	2	2	2
iii.	Didnít know when to go for vaccine of measles	3	3	3	3	3	3	3
iv.	Didnít know where to go for vaccine of measles	4	4	4	4	4	4	4
v.	Fearing side effects	5	5	5	5	5	5	5
vi.	Rumor (Please mention)	6	6	6	6	6	6	6
2.	**Lack of Motivation**							
vii.	Donít believe in vaccination	21	21	21	21	21	21	21
viii.	Was busy and so couldnít give vaccine to child	22	22	22	22	22	22	22
ix.	Will give vaccine in future	23	23	23	23	23	23	23
x.	There was a long queue in the vaccination centre	24	24	24	24	24	24	24
xi.	Donít remember	25	25	25	25	25	25	25
3.	**Obstacles**							
xii.	There was no vaccine in the center	40	40	40	40	40	40	40
xiii.	There was no vaccinator in the center	41	41	41	41	41	41	41
xiv.	Vaccine centre was too far	42	42	42	42	42	42	42
xv.	Injection was too painful for the child	43	43	43	43	43	43	43
xvi.	Was abscess at the place of vaccine	44	44	44	44	44	44	44
xvii.	Faced difficulty after receiving vaccine	45	45	45	45	45	45	45
xviii.	Vaccinator was not friendly	46	46	46	46	46	46	46
xix.	The child was sick, so was not taken to the vaccination center	47	47	47	47	47	47	47
xx.	The child was sick, so the vaccinator didnít give vaccine	48	48	48	48	48	48	48
xxi.	Mother was sick	49	49	49	49	49	49	49
xxii.	I thought the vaccinator would come home	50	50	50	50	50	50	50
xxiii.	They charge money to take vaccine	51	51	51	51	51	51	51
xxivi.	The time period for the session was not comfortable	52	52	52	52	52	52	52x
others (please specify)								

Thank You

MEASLES CATCH-UP CAMPAIGN FORM

Applicable for those who were born in between 17-03 1996 to 25-05 2005 (Chaitra 3, 1402- Joista 11, 1412) Except Rajshahi, Bogra and RCC 23-09- 1995 to 03-12 2004 (Ashin 8, 1402-Agrahaon 19, 1411) for Rajshahi, Bogra and RCC

1. Cluster number									
2. Date									
3. Survey area									
4. Name of the child									
5. Name of the childís father									
6. Name of the childís mother									
7. Sl. no.of the child in this cluster	Skip to	1	2	3	4	5	6	7	
8. Sex: Male -1 Female - 2									
9. **Date of birth of the child (Day/Month/Year) Write down the age if date of birth not found (in month)**									

Ask all district except Bogra, Rajshahi and Rajshahi City Corporation Child born in between 17-03 1996 to 25-05 2005 (Chaitra 3, 1402- Joista 11, 1412)

10. Did the child receive measles vaccine during last measles campaign held from 25th February to March 16, 2006 (From 13 Falgun 1413 to 2 Chaittra 1413)?	Yes	1	13						
	No	2	12						

Ask the respondents of Bogra, Rajshahi and Rajshahi City Corporation Child born between 23-09- 1995 to 03-12- 2004 (Ashin 8, 1402- Agrahaon 19, 1411)

			Skip to	1	2	3	4	5	6	7
11. Did the child receive measles vaccine during last measles campaign held from September 3 to September 22, 2005 (from 19, Bhaddra 1412 to 7 Ashin 1412)?	Yes	1								
	No	2	12							

Ask the respondents of all districts

12. If child was not vaccinated, then ask, Why was the child not vaccinated during the campaign? (If there come multiple answers, ask which one is more important and code accordingly)	Parents didnít know about the campaign: 99	Stop Interview							
	Parents didnít know about place or date of the campaign: 01								
	Parents didnít give importance: 02								
	The child was sick: 03								
	There was no vaccine at the site: 04								
	There was no vaccinator at the site: 05								
	Fear of injection: 06								
	Fear of side effect: 07								
	Site was too far: 08								
	Very long queue: 09								
	Was in traveling: 10								
	Others (specify)								

			Skip to	1	2	3	4	5	6	7
Q13. Ask mothers/guardians those who know about the campaign **Ask mothers/ guardians except Rajshahi Division** How did you learn about the campaign hold from 25 February to 16 March 2006 (From 13 Falgun 1413 to 2 Chaittra 1413)? **(If there come multiple answers, ask which one is more important and code accordingly** **Ask mothers/guardians of Rajshahi Division** How did you learn about the campaign hold from 3 September to 22 September 2005 (from 19, Bhaddra 1412 to 7 Ashin 1412)?	Television:	01								
	Radio:	02								
	Newspapert:	03								
	Poster:	04								
	Mobile miking:	05								
	Mosque miking:	06								
	Field workerís home visit:	07								
	Volunteerís home visit:	08								
	From relatives:	09								
	From neighbors:	10								
	From school teacher:	11								
	From school going children:	12								
	Other (Please mention)									

Thank You

NID FORM

Applicable for those who were born in between16th June, 2001 to 16th April, 2006
(2 Ashar 1408 to 3 Baishak 1413)

1.	Cluster number									
2.	Date									
3.	Survey area									
4.	Name of the child									
5.	Name of the childís father									
6.	Name of the childís mother									
7.	Sl. no.of the child in this cluster		Skip to	1	2	3	4	5	6	7
8.	Sex: Male -1 Female - 2									
9.	Date of birth of the child (Day/Month/Year) Write down the age if date of birth not found (in month)									
10.	**Ask mother/guardian**: Did your child receive polio drops during the first round of NID on 16th April 2006 (3 Baishak 1413) or few days afterwards?î	Yes: 1	10.1							
		No: 2	10..2							
10.1.	**If yes, ask,** where was the child vaccinated?	At fixed site: 1	11							
		Child to Child Search: 2	10.2							
10.2.	If the child (0-59 months) was not vaccinated at the fixed site on 16th April 2006 (3 Baishak 1413), ask ìWhy was not your child vaccinated at the fixed siteî? If the response is more than one then ask ì which of those is the most important reason and code accordingly?î	Didnít know: 99								
		Was very busy: 01								
		Went in traveling: 02								
		Doesnít believe in vaccine: 03								
		The child was fed in the previous time: 04								
		The child was sick , s/he was not taken: 05								
		The child was sick, so vaccine was not given: 06								
		No Vaccine: 07								
		No Vaccinator: 08								
		There was a long queue: 09								
		The centre was too far: 10								
		Time was inconvenient: 11								
		Fear of side effect: 12								
		Waited for home visit: 13								
		Religious/Social obstacles: 14								
		Was not at home: 15								
		Other s (specify)								

			Skip to	1	2	3	4	5	6	7
11.	Ask mother/care taker, ì Did your child receive polio drops during the 2nd round of Jatiya Tika Dibosh on 13th May 2005 (30th Baishak, 1413) or a few days afterwardsî?	Yes: 1	12							
		No: 2	11.2							
11.1.	**If yes, then ask,** where was the child vaccinated? (Please code)	At fixed site: 1								
		Child to Child Search: 2								
11.2	If the child (0-59 months) was not vaccinated at the fixed site on 13th May 2006 (30th Baishak, 1413), ask ìWhy was not your child vaccinated at the fixed siteî? î? (If the response is more than one then ask ì which of those is the most important reason and code accordingly)î	Was very busy: 01								
		Went in traveling: 02								
		Doesnít believe in vaccine: 03								
		The child was fed in the previous time: 04								
		The child was sick , s/he was not taken: 05								
		The child was sick, so vaccine was not given: 06								
		No Vaccine: 07								
		No Vaccinator: 08								
		There was a long queue: 09								
		The centre was too far: 10								
		Time was inconvenient: 11								
		Fear of side effect: 12								
		Waited for home visit: 13								
		Religious/Social obstacles: 14								
		Was not at home: 15								
		Otherís (specify)								

			Skip to	1	2	3	4	5	6	7
12.	Ask mother/care taker, ì Did your child receive polio drops during the 3rd round of Jatiya Tika Dibosh on 11th June 2006 (28 Jaiysta 1413) or a few days afterwardsî?	Yes: 1	12.1							
		No: 2	12.2							
12.1.	**If yes, ask,** where was the child vaccinated? (Please code)	At fixed site: 1	13							
		Child to Child Search: 2	12.2							

12.2	If the child (0-59 months) was not vaccinated at the fixed site on 11th June 2006 (28 Jaiysta 1413), ask ìWhy was not your child vaccinated at the fixed siteî? (If the response is more than one then ask ì which of those is the most important reason and code accordingly)î	Was very busy:	01							
		Went in traveling:	02							
		Doesnít believe in vaccine:	03							
		The child was fed in the previous time:	04							
		The child was sick , s/he was not taken:	05							
		The child was sick, so vaccine was not given:	06							
		No Vaccine:	07							
		No Vaccinator:	08							
		There was a long queue:	09							
		The centre was too far:	10							
		Time was inconvenient:	11							
		Fear of side effect:	12							
		Waited for home visit:	13							
		Religious/Social obstacles:	14							
		Was not at home:	15							
		Other s (specify)								

Applicable for those children who born in between 16-06-2001 to 11-06-2005

				Skip to	1	2	3	4	5	6	7
13.	**Ask mother/guardian**: Was your child (12-59 months) fed vitamin A during the 3rd round of Jatiya Tika Dibosh on 11th June 2006 (Bangla (28 Jaiysta 1413)	Yes:	1	13.2							
		No:	2	13.1							
13.1.	If the child (12-59 months) was not fed vitamin during Jatiya Tika Dibosh on 11th June 2006(Bangla (28 Jaiysta 1413) ?, then ask, Why the child wasnít fed Vitamin A during Jatiya Tika Dibosh on 11th June 2006(Bangla (28 Jaiysta 1413)? (If there come multiple answers, ask which one is more important and code accordingly)	Didnít know:	99								
		Was very busy:	01								
		Went on traveling:	02								
		Donít believe in Vitamin A:	03								
		The child was fed in the previous time:	04								
		The child was sick, so didnít take him to the vaccination centre:	05								
		The child was sick , so the health worker didnít give vaccine:	06								
		Vitamin A was not available:	07								
		Health worker was not available:	08								
		There was a long queue:	09								
		The centre was too far:	10								
		The time was not in favor:	11								
		Was afraid of side effects:	12								
		Was waiting to come back home with vitamin A:	13								
		Religious/Social obstacles:	14								
		Was not at home:	15								
		Otherís									

Q. 13.2 and 13.3 was not applicable for Panchagarh, Thakurgaon, Nilphamari, Lalmonirhat, Kurigram, Rangpur, Rajshahi, Chapai Nawabganj, Dinajpur, Meherpur, Patuakhali, Barguna and Rajshahi city corporation

Applicable for those children who born in between 1606-2001 to 11-06-2004

			Skip to	1	2	3	4	5	6	7
13.2 Ask mother/guardian Was your child (24-59 months) fed antihelmenthic tablet during Jatiya Tika Dibosh on 11th June 2006 (Bangla (28 Jaiysta 1413)?	Yes:	1	14							
	No:	2	13.3							
13.3 If the child (24-59 months) was not fed anthelmintic tablet during Jatiya Tika Dibosh on 11th June 2006(Bangla (28 Jaiysta 1413) ?, then ask, Why the child wasnít fed anthelmintic tablet during Jatiya Tika Dibosh on 11th June 2006 (Bangla (28 Jaiysta 1413)? (If there come multiple answers, ask which one is more important and code accordingly)	Didnít know:	99								
	Was very busy:	01								
	Went on traveling:	02								
	Donít believe in Anthelmintic:	03								
	The child was fed in the previous time:	04								
	The child was sick, so didnít take to the vaccination centre:	05								
	The child was sick , so the health worker didnít give vaccine:	06								
	Anthelmintic was not available:	07								
	Health worker was not available:	08								
	There was a long queue:	09								
	The centre was too far:	10								
	The time was not in favor:	11								
	Was afraid of side effects:	12								
	Was waiting to come back home with anthelmintic:	13								
	Religious/Social obstacles:	14								
	Was not at home:	15								
	Others									
14. Ask mother/guardian How did you learn about the ëJatiya Tika Diboshí held on 16th April (3 Baishak 1413), 13th May (30 Baishak 1413) and 11th June 2006(Bangla (28 Jaiysta 1413)? (Please code)	GOB/NGOs FW visit:	01								
	NGO worker Visit:	02								
	Teacher visit:	03								
	Other volunteers Visit:	04								
	Family/neighbor/friends:	05								
	Television:	06								
	Radio:	07								
	Poster:	08								
	Newspaper:	09								
	Mobile Miking:	10								
	Mosque Miking:	11								
	Health Workersí home visit:	12								
	Told during first round:	13								
	Other (specify)									

Thank You

TT FORM

Applicable for those women who gave birth to live or dead child between July 1, 2005 to June 30, 2006 (Who gave birth to live or dead child between 17 Ashar 1412 to 16 Ashar 1413)

1.	Cluster number									
2.	Date									
3.	Survey area									
4.	Sl number of sample (to be filled in by office)									
5.	Sl number of woman in this cluster	Skip to	1	2	3	4	5	6	7	
6.	Household number/GR number/Name of the house head									
7.	Name of the respondent									
8.	Name of the husband									
9.	Date of birth of the child born at the latest (still or live)									
10.	Age of the respondent (write in year)									
11.	Academic qualification of the respondent Illiterate -1, Primary-2, Secondary-3, SSC/Dhakil/ O level-4, HSC/Alim/ A level-5, Degree/Fazil-6, Masters/Kamil-7									
12.	Academic qualification of the husband: Illiterate -1, Primary-2, Secondary-3, SSC/Dhakil/ O level-4, HSC/Alim/ A level-5, Degree/Fazil-6, Masters/Kamil-7									
13.	Occupation of the respondent Housewife-1, Government employee-2, Non-government employee-3, Household works/day labour-4, Small business-5, Big business-6, Teacher-7, Professional -8, others									
14.	Occupation of the husband Agriculture-1, Government employee-2, Non-government employee-3, Day labor/rickshaw/van puller-4, Small business-5, Big business-6, Teacher-7, professional -8, driver (truck/bus/car)-9, others									
15.	Number of family members of the family									
16.	How many times have you given birth to child? (live and dead)	Live:								
		Dead:								
		Total:								
16.1	The last born baby was alive or dead?	Live: 1	17							
		Has died: 2	16.2							
		Still birth: 3	17							
16.2	Within how many days since birth, did the child die?									
17.	Delivery place of the last child?	in the health complex: 1	18							
		at home: 2								
17.1	Who delivered the child?	SBA: 1								
		USBA: 2								

SBA= Skilled Birth Attendant USBA = Un-Skilled Birth Attendant

18.	Have you ever received any TT injection?	Yes: 1							
		No: 2	33						
18.1	Do you have card for TT injection?	Yes: 1	19						
		No: 2							
18.2	(If the respondent does not have any card) were you ever given a card for TT injection?	Yes: 1							
		No: 2	19						
18.3	If the answer for 18.2 is yes, Why didnít you preserve the card?								

Instruction: Record the answers for Q 19-29 from a card or history

		1	2	3	4	5	6	7
19. TT 1	(Date/+/0)							
19.1 Source of TT1?	(O/H/N/P)							
20. TT2								
20.1 Source of TT2?	(O/H/N/P)							
20.2 Interval between TT-1 and TT-2?	(write in weeks)	.....weeks	.....weeks	...weeks	...weeks	....weeks	..weeks	..weeks
21. TT 3	(Date/+/0)							
21.1 Interval between TT2 and TT3	(Write in months)	....months	.....months	....months	...months	...months	.months	months
22. TT4	(Date/+/0)							
22.1 Interval between TT3 and TT4	(Write in months)	....months	.....months	....months	...months	...months	.months	months
23. TT5	(Date/+/0)							
23.1 Interval between TT 4 and TT5	(Write in months)	....months	.....months	....months	...months	...months	.months	months
24. TT6	(Date/+/0)							
24.1 Interval between TT5 and TT6	(Write in months)	....months	.....months	....months	...months	...months	.months	months
25. TT 7	(Date/+/0)							
25.1 Interval between TT 6 and TT7	(Write in months)	....months	.....months	....months	...months	...months	.months	months
26. TT8	(Date/+/0)							
26.1 Interval between TT 7 and TT8	(Write in months)	....months	.....months	....months	...months	...months	.months	months
27. TT9	(Date/+/0)							
27.1 Interval between T8 and T9	(write in month)	....months	.....months	....months	...months	...months	.months	months
28. TT10	(Date/+/0)							
28.1 Interval between TT9 and TT10	(write in month)	....months	.....months	....months	...months	...months	.months	months
29. TT10+	(Date/+/0)							
29.1 Interval between TT 10+ and last TT injection	(write in month)	....months	.....months	....months	...months	...months	.months	months
30. Interval between latest TT injection and birth date of the child	(write in Weeks)	.....weeks	.....weeks	...weeks	...weeks	....weeks	..weeks	..weeks

		Skip to	1	2	3	4	5	6	7
Please record whether the last child was protected from Tetanus when it was born. (to be filled in office)	Yes: 1								
	No: 2								
31. Have you ever had an abscess after receiving a Tetanus injection?	Yes: 1								
	No: 2	32							
	Donít know/ donít remember: 9								
31.1 Were you discouraged to take the following TT injection due to abscess or any other problem?	Yes: 1								
	No: 2								
32. Did the health worker ask about your TT injection When you took your child to be vaccinated?	Yes: 1								
	No: 2								
	Not applicable: 3								
	Donít know: 9								
33. (Those who did not receive TT injection, ask them) Why didnít you receive TT injection?									

			Skip to	1	2	3	4	5	6	7
34. How many times must a woman receive TT injection to be protected for the rest of her life? (write number or ëdonít knowí)										
35. Did you take vitamin A within six weeks/ 42 days of child delivery?	Yes:	1								
	No:	2	stop interview							
35.1 If yes, then tell us from where have you taken Vitamin A?	At home:	1								
	At vaccination Centre:	2								
	At hospital:	3								
	No:	2								

Vaccination code:	**Source codes:**
Date - Record date from vaccination card.	O = GOB Outreach (Community household, Community Clinics, Satellite Clinic, Club)
+ - history that the child was vaccinated.	H = All GOB Hospital (e.g., District, UHC)
0 - The child was not vaccinated	N = NGO (Hospital, Clinic, Outreach)
	P = Private (chamber, clinic and hospital)

Thank You

TT 5 FORM

Ask those who born between 01-07-1981 to 30-06- 1988 (Women aged 18 to 25 years)
(Who born between 17 Ashar 1387 to 16 Ashar 1394)

1. Cluster No.									
2. Household Number/GR number and name of house head									
3. Date									
4. Survey Area									
5. Name of the respondents									
6. Fatherís Name/Husbandís Name									
7. Sl number of sample (to be filled in by office)									
8. Sl number of woman in this cluster	Skip to	1	2	3	4	5	6	7	
9. Age of the respondents? (in years)									
10. Marital Status	Married/ divorce/ separated: 1								
	Unmarried: 2								
11. Educational Qualification: Illiterate -1, Primary-2, Secondary-3, SSC/Dhakil/ O level-4, HSC/Alim/ A level-5, Degree/Fazil-6, Masters/Kamil-7									
12. Occupation of the Respondents: Housewife-1, Government employee-2, Non-government employee-3,Household works-4, Small business-5, Big business-6, Student-7, Teacher-8, Professional -9, others									
13. Total family member									
14. Have you ever received TT Injection?	Yes: 1								
	No: 2	28							
	Skip to	1	2	3	4	5	6	7	
15. Do your TT card available?	Yes: 1	16							
	No: 2	15.1							
15.1 If no, card ever given?	Yes: 1	15.2							
	No: 2	16							
15.2 (if yes) Why did you not preserve the card?									

Instruction: 16-26 record the answer from card or history								
		1	2	3	4	5	6	7
16. TT 1	(Date/+/0)							
16.1 Source of TT1?	(O/H/P/N)							
17. TT2	Date/+/0							
17.1 Source of TT2?	(O/H/P/N)							
17.2 Interval between TT-1 and TT-2?	(write in weeks)	.....weeks	...weeks	... weeks	..weeks	..weeks	..weeks	...weeks
18. TT 3	(Date/+/0)							
18.1 Interval between TT2 and TT3	(Write in months)	....months	..months	....months	..months	....months	...months	months
19. TT4	(Date/+/0)							
19.1 Interval between TT3 and TT4	(Write in months)	....months	..months	....months	..months	....months	...months	months
20. TT5	(Date/+/0)							
20.1 Interval between TT 4 and TT5	(Write in months)	....months	..months	....months	..months	....months	...months	months
21. TT6	(Date/+/0)							
21.1 Interval between TT5 and TT6	(Write in months)	....months	..months	....months	..months	....months	...months	months
22. TT 7	(Date/+/0)							
22.1 Interval between TT 6 and TT7	(Write in months)	....months	..months	....months	..months	....months	...months	months
23. TT8	(Date/+/0)							
23.1 Interval between TT 7 and TT8	(Write in months)	....months	..months	....months	..months	....months	...months	months
24. TT9	(Date/+/0)							
24.1 Interval between T8 and T9	(write in months)	....months	..months	....months	..months	....months	...months	months
25. TT10	(Date/+/0)							
25.1 Interval between TT9 and TT10	(write in months)	....months	..months	....months	..months	....months	...months	months
26. TT10+	(Date/+/0)							
26.1 Interval between TT 10+ and last TT injection	(write in months)	....months	..months	....months	..months	....months	...months	months

		Skip to	1	2	3	4	5	6	7
27. Have you ever had an abscess after receiving a Tetanus injection?	Yes: 1	27.1							
	No: 2	28							
	Donít know:								
27.1 Are you discouraged to take the rest TT injection due to abscess or any other problem?	Yes: 1								
28. How many times must a woman receive TT injection to be protected for the rest of her life? (write number or ëdonít knowí)									
31. Why did you not take any TT injection? (ask those who have never taken any TT injection)									

Date - Record date from vaccination card.

\+ - History that the child was vaccinated.

0 - The child was not vaccinated

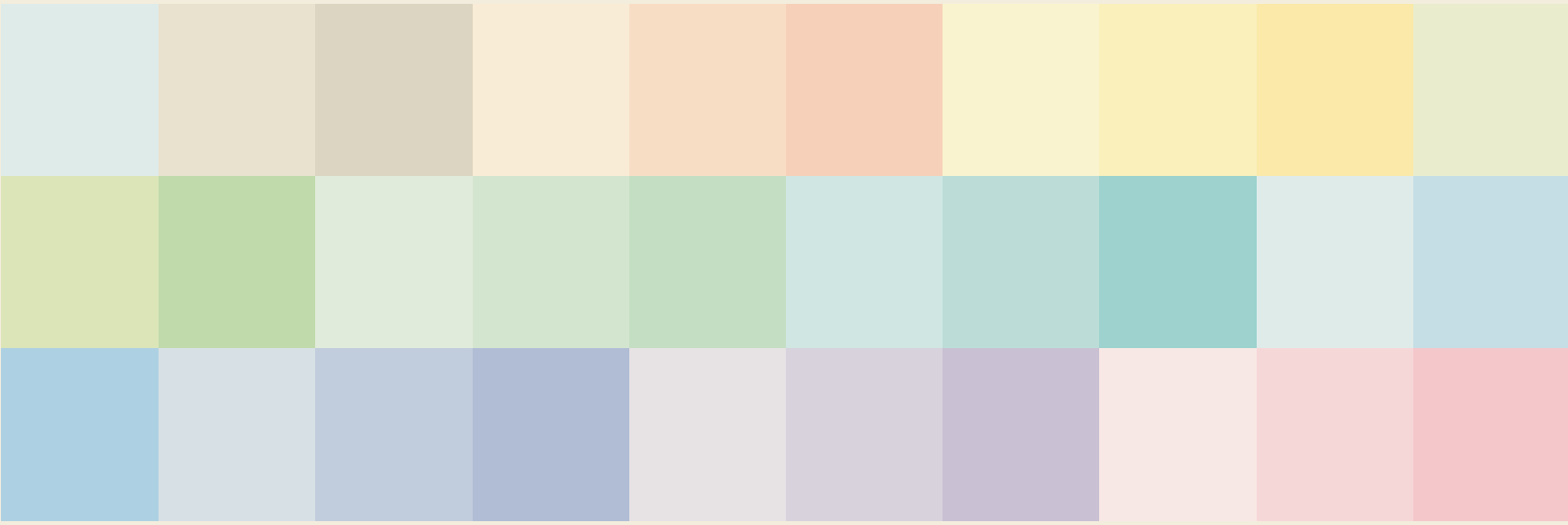
Source codes:

O = GOB Outreach

H = All GOB Hospital (e.g., District, UHC)

N = NGO (Hospital, Clinic, Outreach), P = Private (chamber, clinic and hospital)

Thank you



EXPANDED PROGRAMME ON IMMUNIZATION
Directorate General of Health Services
Mohakhali, Dhaka-1212