

Social Science and Immunisation
(A Joint Study of BRAC and ICDDR,B)

National Immunisation Days in Bangladesh:
An Evaluation of the 1996 Rounds

July 1996

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Contents

EXECUTIVE SUMMARY	5
1. INTRODUCTION	9
2. THE STUDY	11
2.1 OBJECTIVES	11
2.2 STUDY AREAS, RESPONDENTS AND DATA COLLECTION TECHNIQUES	11
3. RESULTS	13
3.1 SUPPLY/QUALITY OF SERVICE FACTORS	13
3.2 COMMUNITY DEMAND: PARENTAL KNOWLEDGE, PERCEPTIONS AND PRACTICES	18
3.3. NID COVERAGE --	23
3.4 FINANCING OF THE NIDS.....	24
4. DISCUSSION.....	27
5. CONCLUSION	33
REFERENCES.....	36
TABLE 2.1: BROAD ISSUES OF STUDY, TYPE OF RESPONDENTS, METHODS AND TOOLS OF DATA COLLECTION BY STUDY AREA.....	12
TABLE 3.1: PERCENTAGE OF RESPONDENTS BY NID COORDINATION COMMITTEE FORMATION, ADVOCACY AND PLANNING MEETING, ROUND AND STUDY AREA TYPE (PREPARATORY INTERVIEW).....	38
TABLE 3.2: PERCENTAGE OF RESPONDENTS BY VOLUNTEER RECRUITMENT ON TARGET AND TRAINING GIVEN (PREPARATORY INTERVIEW).....	38
TABLE 3.3: PERCENTAGE OF SERVICE PROVIDERS RECEIVING TRAINING/ORIENTATION ON NIDS (INTERVIEW ON VACCINATION DAY).....	38
TABLE 3.4: PERCENTAGE OF SERVICE PROVIDERS BY ORGANIZATION (SESSION OBSERVATION)....	39
TABLE 3.5: PERCENTAGE OF RESPONDENTS BY SPECIAL PLAN FOR HARD-TO-REACH AREA AND STUDY AREA TYPE (PREPARATORY INTERVIEW).....	39
TABLE 3.6: PERCENTAGE OF RESPONDENTS WITH HARD-TO-REACH AREA BY SPECIAL SOCIAL MOBILISATION STRATEGY AND STUDY AREA TYPE (PREPARATORY INTERVIEW)	40
TABLE 3.7: OTHER WORKS DONE FOR NID CAMPAIGN (PREPARATORY INTERVIEW).....	40
TABLE 3.8: TARGET DETERMINING PROCESS AND AVERAGE TARGET CHILDREN PER CENTRE BY ROUND AND RESIDENCE (PREPARATORY INTERVIEW).....	41
TABLE 3.9: PERCENTAGE OF PROVIDERS BY CORRECT KNOWLEDGE ON THE ELIGIBILITY CRITERIA OF CHILDREN FOR OPV (INTERVIEW ON VACCINATION DAY).....	41
TABLE 3.10: PERCENTAGE OF PROVIDERS BY CORRECT KNOWLEDGE OF AGE OF THE TARGET CHILDREN FOR VAC IN NID (1-5 YEARS OLD) (INTERVIEWED ON VACCINATION DAY).....	41

TABLE 3.11: PERCENTAGE OF PROVIDERS BY KNOWLEDGE OF BOTH TARGET AND COVERAGE OF CHILDREN (SESSION OBSERVATION AND INTERVIEW).....	42
TABLE 3.12: STRATEGY PLANNED TO BRING THE LEFTIST CHILDREN (PREPARATORY INTERVIEW).....	42
TABLE 3.13: STEPS TAKEN TO BRING THE CHILDREN WHO DID NOT SHOW UP TIMELY (SESSION OBSERVATION AND INTERVIEW).....	43
TABLE 3.14: DISTRIBUTION OF RESPONDENTS BY STATUS OF VACCINES REQUIRED AND READY STOCK , SHORTAGE ,ROUND AND RESIDENCE (PREPARATORY INTERVIEW).....	44
TABLE 3.15: MEANS OF TRANSPORTING VACCINES TO NID CENTRE (PREPARATORY INTERVIEW)..	45
TABLE 3.16: PROPORTION OF RESPONDENTS RECEIVED DIFFERENT LOGISTICS (PREPARATORY INTERVIEW).....	45
TABLE 3.17: PERCENTAGE OF PROVIDERS OPINION ABOUT THE RECEIPT OF DIFFERENT LOGISTIC SUPPLIES IN THE RURAL AREA (INTERVIEW ON VACCINATION DAY).....	46
TABLE 3.18: PROVIDERS OPINION ABOUT THE RECEIPT OF DIFFERENT LOGISTIC SUPPLIES IN THE MUNICIPAL AREA (INTERVIEW ON VACCINATION DAY).....	46
TABLE 3.19: PERCENTAGE OF CENTRE BY COLD CHAIN MAINTENANCE, VACCINATION AND RESIDENCE (SESSION OBSERVATION).....	47
TABLE 3.20: DISTRIBUTION OF CENTRES BY OPV VIAL SUPPLY, USE , SHORTAGE AND RESIDENCE (SESSION OBSERVATION AND INTERVIEW).....	48
TABLE 3.21: PERCENTAGE OF VACCINATION CENTRES BY DIFFERENT INDICATORS OF LOCATION/ PLACE OF VACCINATION AND RESIDENCE (SESSION OBSERVATION)	49
TABLE 3.22: PERCENTAGE OF CENTRES BY RECORD KEEPING AND MAINTENANCE OF DISCIPLINE (SESSION OBSERVATION)	49
TABLE 3.23: PERCENTAGE OF RESPONDENTS BY STATUS OF SUPERVISORY PLAN AND IMPLEMENTATION, NID ROUND AND TYPE OF STUDY AREA (PREPARATORY INTERVIEW).....	50
TABLE 3.24: PERCENTAGE OF SUPERVISORS BY DESIGNATION (SESSION OBSERVATION AND INTERVIEW).....	50
TABLE 3.25: PERCENTAGE OF CENTRES BY NUMBER OF SUPERVISORS VISIT (SESSION OBSERVATION AND INTERVIEW).....	51
TABLE 3.26: WORK PERFORMED BY THE SUPERVISORS DURING VISITING VACCINATION CENTRES (SESSION OBSERVATION)	52
TABLE 3.2.1: THE NUMBER OF RESPONDENTS BY AREA AND ROUND OF NID.....	53
TABLE 3.2.2: # OF PEOPLE NAMING EACH OF MOST COMMON SOURCES OF INFORMATION ABOUT NID.....	53

TABLE 3.2.3: NUMBER OF CORRECT ANSWERS ON QUESTIONS RELATED TO KNOWLEDGE OF VACCINE (EXIT POINT INTERVIEW).....	53
TABLE 3.2.4: NUMBER OF CORRECT ANSWERS ON QUESTIONS (A-E) CONCERNING PARENTAL KNOWLEDGE ABOUT THE VACCINE (PRE-NID INTERVIEW)	54
TABLE 3.3.1: PERCENTAGE OF NID VACCINE ACCEPTANCE BY TYPE AND DEMOGRAPHIC CHARACTERISTICS	54
TABLE 3.3.2: OPV AND VAC COVERAGE ACCORDING TO THE PROVIDERS (SESSION OBSERVATION AND INTERVIEW).....	54
TABLE 3.3.3: CHANGE IN PARTICIPATION OF CHILDREN BETWEEN APRIL AND MAY BY PROGRAMME INVOLVEMENT	55
TABLE 3.3.4: CHANGE IN PARTICIPATION OF CHILDREN BETWEEN APRIL AND MAY BY REGION.....	55
TABLE 3.4.1: PERCENTAGE OF RESPONDENTS BY STATUS OF IEC MATERIAL DEVELOPMENT AND AVERAGE NUMBER OF ITEMS DEVELOPED LOCALLY (PREPARATORY INTERVIEW)	56
TABLE 3.4.2: SOURCES OF FUNDS FOR DEVELOPING IEC MATERIAL AND OTHER PURPOSES AT LOCAL LEVEL BY ROUND AND RESIDENCE (PREPARATORY INTERVIEW).....	57
APPENDIX 1: DESCRIPTION OF NID ACTIVITIES, OPERATIONAL PROCEDURES AND COORDINATION	58
FIGURE 1.9.1: MAIN RESPONSIBILITIES OF THE FIELD WORKERS IN NIDS.....	64

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Executive Summary

- 1. Introduction:** On April 16 and May 16, 1996, Bangladesh implemented the third and fourth of the six National Immunization Days. On those days oral polio vaccine (OPV) was administered to over 20 million children under 5 years of age. The goal of NIDs is to eradicate poliomyelitis from the country by 2000 AD. NID is a challenging campaign for Bangladesh mobilising a huge human and material resources. This study examined how effective NIDs are in terms of implementation and coverage of the target children and what lessons can be learned from it. The study was implemented as a part of the multi-country 'Social Science and Immunisation' project.
- 2. The study:** This study aimed to explore the answers to the above questions by assessing the seven broad areas of NIDs including: (i) NID preparatory issues, (ii) Parental pre-NID knowledge on the basics of NID, (iii) Parental opinion about NID services (satisfaction), (iv) Health workers' knowledge on NID, (v) Vaccination sessions' operations, (vi) OPV and vit. A capsule coverage, and (vii) Financing of NIDs.

The study was conducted in 16 municipalities and 56 rural thanas spread in various regions of the country. Covering both rounds of 1996 NID, preparatory data were accumulated from thana heads of health and chiefs of municipalities. Data on parental pre-NID knowledge (prior to one day of NID held) and opinion on NID services were collected through general and exit point interview while vaccination centres were observed to understand their operations. Health workers were also interviewed on the vaccination day to assess their knowledge on NIDs. Besides, the NID coverage data were collected through a separate survey. Here, we highlight the salient findings.

Bangladesh is one of the six countries where the project is being implemented. The Bangladesh part of the study is implemented jointly by BRAC and ICDDR,B with active participation of government.

3. Salient Results

3.1 Supply Provision and Organisational Factors: The study found that an overwhelming majority of the respondents in both rural and municipal areas reported to have had performed almost all the assigned preparatory tasks showing little or no difference between the rural and municipal areas. For example, the formation of NID coordination committees at various levels was 95% in rural and 93% in municipal area; holding the NID planning and advocacy meetings was 95% in rural and 86% in municipal; preparation of supervisory plan (97% each); implementation of supervisory plan (rural 91% and municipal 86%) etc. In spite of such impressive outcomes, a concern still continues to remain regarding working out of special plans and their implementation in the hard-to-reach areas. Although adequate special plans for vaccination and social mobilisation had reportedly been adopted for such areas but these seemed to be less effective. Consistently low coverage of OPV in Kishoreganj which is a haor (low lying) area with difficult geophysical communication problems clearly corroborates the fact. Except in a few cases, logistic supply of almost all the necessities was reported to be sufficient. But short supplies of vaccine carriers and ice packs were reported from 8 rural thanas and 2 municipalities. The consequence of the latter (ice pack problem) is that it risks the vaccine potency.

Thousands of local volunteers worked alongside the government workers for NID, and most of them came from school teachers, students, NGOs and local governments (selected or elected body). This indicates that NID is poised to turning to a social movement wherein people from different social groups take part. Retention of providers' knowledge on the basics of NID appeared to be consistently lower among the rural providers than their counterpart municipal providers. Lack of proper training, lack of enabling environment and limited exposure to the modernity of the rural providers could be the inhibiting factors in this regard.

In contrast to what the heads of health authorities had said, only 5 in 16 volunteers in rural areas, and 4 in 6 in municipal areas were actually trained on NID. The 1996 NID dates were shifted due to state political unrest which in turn extremely hampered registration of the children through household visits.

Over 10% of both rural and municipal centres did not use any sign for indicating the locations of vaccination sites. Ten percent of the rural centres administered OPV under trees risking the OPV potency. Shortage of icepacks particularly for keeping OPV vials during vaccination was acute in many of the centres. Although the supervisor visited the centres on average 1.9 times, 28% of the rural and 22% of the municipal centres were not at all visited. The visiting supervisors performed a variety of tasks during supervising the centres but most of the supervision concentrated on checking recording/tally sheet fill up in the rural areas while in the municipal on OPV/VAC stock checking. Interestingly, the supervisors stayed in a centre for less than 2 minutes on average. Observation showed that technical skills of vaccinators related to OPV administration (such as 2 drops of OPV given to a child etc.) were better.

3.2 Community Demand Issues

Parental Knowledge on NID: Unlike the municipal areas, many of the rural parents did not know the correct date of the next NID. The results of both the NID preparation day and exit point interviews revealed that the degree of parental knowledge on the vaccine, its purpose and target children was higher in the municipal areas than in the rural. However, the overall knowledge of parents on OPV and VAC was not much impressive. About half of the municipal (9 in 20) and less than one third of the rural people (16 in 60) could tell that OPV was given to their children. Six people (5 rural and 1 municipal) classified the OPV as a 'drop', one as 'medicine' and one as a 'Shishu Tika' (child vaccine). Half of the municipal (9 in 20) and less than one third of the rural (13 in 60) people said that OPV was given to 'eradicate polio from Bangladesh. Other answers in municipal areas were: 'everyone takes it, so we do', 'its a medicine for all diseases' and 'its good for the child'. Many rural people said that it would cure diseases; 'it would prevent childhood diseases' etc. Half of the municipal (5 in 10) and less than half (8 in 18) of the rural people could mention apart from OPV, VAC was also given to their children during round2. Other municipal people mentioned it as a 'capsule', and as a 'tablet'. In rural areas, four people knew it as a

'vitamin' and some classified it as a 'tablet'. None of the municipal people while four of the rural people knew that VAC prevents night blindness.

4. **Coverage:** The survey carried out in 10 different rural areas showed that over 79% and 81% of the target children received OPV in Round 1 and 2 respectively; children receiving both doses of OPV was 69%. About 73% of the children (1-5 years) were administered VAC during the Round 2 of NID. The survey also revealed a harrowing disparity in OPV coverage between the accessible (e.g. Kushtia: 90%) and hard-to-reach areas (e.g. Kishoreganj: 15%).
5. **Financing of the NIDs:** The government of Bangladesh contributed only 13.5% of the total allocation of 7.1 million US dollars while the rest of the amount came from outside sources. Although modest in amount, evidence of community financing in terms of development of certain IEC materials and entertainment, transport etc. was reported by the study.
6. **Conclusion:** The 1996 NIDs seemed to be effectively implemented although about one third of the target children did not receive both doses of OPV. This puts a challenge towards polio eradication needing further improvement in many respects of NID. However to make the forthcoming NIDs more successful, all the procedural activities should be strengthened, volunteers should be properly recruited and trained, cold chain equipments should be adequately supplied and a vigorous IEC campaign should be launched. Moreover, all political parties should extend more support to and participate in NID campaign on time even in the face of political unrest to prove their commitment for protecting children's health and rights.

National Immunisation Days In Bangladesh: An Evaluation of the 1996 Rounds

1. Introduction

Bangladesh implemented the third and fourth of the six National Immunisation Days (NIDs) on April 16th and May 16th 1996. NIDs were implemented in a special drive towards eradication of poliomyelitis from the country by 2000 AD. The immediate objective was to administer oral polio vaccine (OPV) to over 20 million children below 5 years of age. While the Ministry of Health and Family Welfare carries out the NIDs, different allied forces extend active assistance to it.

Importance of NID: Spearheaded in large part by the successful campaign to eradicate smallpox from the globe, the health policy makers of the western hemisphere have orchestrated their eradication of poliomyelitis, a disease which either kills or disables many children (Greenough, 1995). This success led many countries, including Bangladesh, to organize NIDs as a special drive to administer OPV to the children below 5 years of age under the technical guidance of the World Health Organisation (WHO), and with active assistance from UNICEF and other allied agencies in order to eradicate poliomyelitis by 2000 AD. In view of that, Bangladesh apart from the routine EPI, decided to implement 6 NIDs in 3 consecutive years (2 each year) beginning from 1995.

It is speculated that the routine immunisation of OPV may reduce the incidence of poliomyelitis to a certain extent but such drive is unable to eradicate it. In fact, eradication requires complete destruction of polio virus from the environment meaning reduction of the disease incidence to the level of "zero" forever. Available studies (EPI-Bangladesh, 1995) reveal that only 1-10 cases in 1,000 polio virus infected children suffer from paralysis and the remaining children survive as carriers who may transmit the disease to others. The fact is that, if all the children below 5 years of age are administered OPV, the wild polio virus has no way but comes out to

the open environment through stool and eventually dies as it cannot survive in the open environment. Thus poliomyelitis can be eradicated (EPI-Bangladesh, 1995).

Operations of NID in Bangladesh: Bangladesh started NID in 1995. The first and second rounds were held on 16th March and 20th April in the same year. But the dates for NIDs of 1996 were to shift to 16th April and 16th May due to the political unrest in the country. The NIDs are supposed to be held on two particular days in a year (known as round 1 and round 2) in the whole country. However, an exception made for particularly inaccessible areas in terms of geophysically remote with difficult communication system. In each NID, OPV is administered to all children below 5 years of age. The vitamin A capsule (VAC) is also given to the children 1-5 years of age on the either round of NID of the year.

NID, is a gigantic campaign mobilising a huge human and material resources. To administer OPV to over 20 million children all over the country on particular days is very difficult to implement by the government alone without the active participation of the people, including the NGOs, professionals, religious and cultural bodies, individuals, politicians and mass media. About 650,000 workers are needed to carry out the NID activities, through 130,000 vaccination centres. The government Health and Family Welfare Ministry has only 40-45 thousand people at the periphery levels requiring recruitment and training of 600,000 more local volunteers (115,000 vaccinators and 485,000 social mobilisers). For a full description of NID activities, its operational procedures and co-ordination requirements see Appendix 1.

Among various approaches of EPI the NID is almost a new approach in Bangladesh mobilizing a huge human and material resources. In fact, the allocation for the 1996 NIDs was US \$ 7.1 million excluding the infrastructural costs and staff salaries and benefits. Such efforts and massive investment pose questions of how effective NIDs are in terms of implementation and coverage of the target children; and what lessons

can be learned from the NIDs? It is the intent of the present study to look at the operations and effectiveness of the NID strategy in Bangladesh.

2. The Study

BRAC's Research and Evaluation Division (RED) conducts monitoring and evaluation on EPI and provides feedback to the EPI management. As part of such efforts, the RED in collaboration with ICDDR,B implemented a study on the first and second round of the 1996 NID held on 16th April and 16th May respectively. The study forms a part of an international study on "Social Science and Immunisation".

2.1 Objectives

The objectives of the study were to:

- i. assess the operations and management of and supplies to vaccination sessions in rural and municipal areas;
- ii. assess the basic knowledge of the parents and grassroots health and family planning workers (vaccinators) on NID;
- iii. assess the extent of coverage of the target children by OPV and VAC^{*}; and
- iv. analyse the financing of NIDs.

2.2 Study Areas, Respondents and Data Collection Techniques

The study was carried out in various parts of Bangladesh where BRAC implements its development programmes. The study areas were carefully selected to include areas with diverse contexts and to use the BRAC's existing facilities to collect the study data easily. The study areas represented both the rural and municipal settings. In each of the rounds 1 and 2 of NID 1996, 16 municipal centres from 15 thanas of 13 districts were observed. On the other hand, 62 rural centres from 56 thanas of 30 districts were covered in round 1 followed by 57 rural centres from 53 thanas of 30 districts in round 2.

^{*} VAC = Vitamin A Capsule is administered in the round 2 of NID.

Table 2.1 illustrates that data of NID preparatory phase (one day before holding NID) were collected through interviews from 106 officials or their deputies of rural thanas (53 each round) and 29 municipal areas (15 in round 1 and 14 in round 2) through interview. To explore basic knowledge of NID, 50 parents of the target children of the rural areas (20 in round 1 and 30 in round 2) followed by 25 in municipal areas (15 in round 1 and 10 in round 2) were interviewed before one day of NID held. Both the parents and vaccinators were also interviewed at the vaccination sessions to elicit their knowledge on NID. On the first round of the 1996 NID (April 16), 16 municipal and 62 rural vaccination sessions were observed followed by 16 municipal and 57 rural sessions on the second round (May 16) in order to fully understand the sessions' operations, management, and supply factors. Nationally representative polio and vitamin A coverage survey data were used from a separate study conducted by RED in 10 districts covering 2,169 and 2,103 eligible children in Round 1 and 2 respectively (Hadi et al 1996).

Depending on the broad study issues Six types of instruments were used for data collection (Table 2.1). In essence, the study looked at the community demand for/acceptance of and quality of NID services.

Table 2.1: Broad issues of study, type of respondents, methods and tools of data collection by study area

Broad issues studied	Type of respondents	Data collection		Number of study population by area					
		Method	Tool	Rural			Municipal		
				Rd1	Rd2	Total	Rd1	Rd2	Total
1. NID preparation (one day before NID)	Heads of health and municipality	Interview	a. Questionnaire	53	53	106	15	14	29
2. Service providers knowledge (on vaccination day)	Community providers	Interview	b. Checklist	11	12	23	5	5	10
3. Parental pre-NID knowledge (one day before NID)	Parents	Interview	c. Checklist	20	30	50	15	10	25
4. Parental opinion about NID services	Parents	Exit point interview	d. Checklist	30	30	60	10	10	20
5. Vaccination session observation	Vaccination sessions	Observation	e. Checklist	62	57	119	16	16	32
6. OPV and VAC coverage	Parents*	Survey	f. Questionnaire	2,169	2,103	-	-	-	-

* Parents of 2,169 and 2,103 children (0-5 years of age) in Round 1 and 2 respectively
Rd = Round of NID

Eight Senior Researchers from the head office and over 62 field Programme Managers or Senior Programme Organisers collected data using questionnaire/checklist (a-e) while coverage survey was carried out by 10 experienced field researchers in the RED's Health and Development Surveillance (called 'watch') areas. They used the questionnaire 'f' for the purpose. The data on the financing of NIDs and financial sources were collected from the EPI head office, Dhaka.

The data were edited and coded at the RED Head Office for computer entry. Processing and analysis were accomplished using computer facilities. Simple frequencies and cross-tabulations were used for interpreting the results. The qualitative data were processed and analysed manually by the researchers.

All the data set collected through different methods (interview and vaccination session observation) were grouped into 3 broad categories for easy analysis. These were: (i) supply/quality of service issues encompassing the organisational and technical factors, (ii) Community demand issues include parental knowledge, perceptions and practices, and (iii) Financial issues pertaining to sources of finance, and community contributions.

3. Results

3.1 Supply/Quality of Service Factors

i. NID coordination committee and planning meeting: Table 3.1 shows that an overwhelming majority of the respondents of both rural and municipal areas (over 93%) irrespective of NID rounds formed NID coordination committees. Advocacy and planning meetings were commonly held for drawing up a precise plan of action but this average appeared to be noticeably lower in municipal areas compared to rural (85% vs 95%).

ii. Volunteer recruitment and training: Status of volunteer vaccinators recruitment on target was apparently identical in both rural and municipal areas but the proportion of the recruits receiving training on NIDs was lower in municipal areas (municipal 87% and rural 97%). Although recruitment of the volunteers for social mobilisation was lower in rural areas but their proportion of receiving training was higher in the rural areas (Table 3.2).

Interview with the providers on the vaccination day at vaccination sessions does not corroborate this claim of the higher authorities regarding volunteer training in reality. Table 3.3 reveals that 5 of 16 rural and 4 of 6 municipal volunteers received training on NIDs for two days.

Table 3.4 shows that a multiple organisations and individuals participated in NID service delivery along side the government workers. Among rural providers about one third was from the government health and family welfare workers, while the same proportion of volunteers came from school/college and one fourth from various NGOs. On the other hand, among municipal providers about one-tenth came from the government, whilst one third of the volunteers came from school/college and nearly half (41%) from NGOs.

iii. Special strategy for hard-to-reach area and social mobilisation: Only the rural respondents reported to have had hard-to-reach populations in terms of tribal groups, tea garden labourers etc. in their command areas, but special plan could not be worked out and implemented for a considerable number of the hard-to-reach areas (Table 3.5).

During the preparation interview (one day ahead of NID) a majority of the respondents (higher level supervisors) reported to have had prepared and implemented a special social mobilisation strategy for the hard-to-reach areas (Table 3.6).

Table 3.7 illustrates that a multifarious means were adopted to educate the people on NIDs in both rural and municipal areas. By order of rank the most prominent were: general meeting, miking, announcement in schools and mosques and drum beating.

iv. Target determination and providers' knowledge: Although two systems such as census, and registration through household visit were used for fixing target of the eligible children but the number of target children found through these system varied. Table 3.8 reveals that except in Round2 of the rural areas, although the average number of the target children per centre found through the latter system was consistently lower across the study areas than the estimate found through the former system but it seems to be more reliable than the former system.

Provider's knowledge about the eligibility criteria of the children for OPV (0-5 years of age; previous history of 3 doses OPV intake; and sickness) was assessed through interviewing them on the vaccination day. Table 3.9 presents that the rural providers' level of correct knowledge on each of the above eligibility criteria of the children was consistently lower than those of the municipal. But the retention of correct knowledge on the eligibility criterion (1-5 years of age) of the children for vitamin A capsule showed a reverse result, the rural providers had a higher correct knowledge than the municipal areas (Table 3.10)

Provider knowledge on the number of target children and the number covered by OPV was higher in the rural areas than the municipal (98% vs 88%). But surprisingly their knowledge on the number of target children and the number covered by VAC was extremely poor in rural areas (5%) while it was zero in municipal (Table 3.11).

v. Strategy for bringing the left out children: A number of strategic plans were mentioned by the respondents for capturing the children not showing up in vaccination session (Table 3.12). The most common was "the left out children be captured with the help of volunteers/government workers/NGO workers/parents" in both type of study areas, while the second most cited strategy was "through mobilisation and motivation". Our vaccination session observation also corroborated the predominant use of those two strategies in bringing the left out children to the centres (Table 3.13).

vi. Logistics: As expected across all the areas and rounds of NIDs ready stock of OPV vials surpassed the level of actual requirement. The respondents were asked, "in case of shortage where would they seek supply from"? Most respondents of both areas mentioned that they would seek supply from the civil surgeon's stock. Eight in 106 rural and 2 in 29 municipal respondents said that they had shortage of cold chain equipments. Among them, one-fourth ran short of 18 vaccine carriers in rural areas while none in municipal. In many rural areas shortage of icepack was acute ranging from 60-200 pieces whilst one municipality had even more shortage of 500 (Table 3.14).

Multiple means for transporting vaccines to the NID centres were used. In the rural areas, bicycle was massively used (84%) for the purpose followed by motorbikes (69%) and rickshaw/van (64%). On the other hand, motorbikes were dominant (79%) followed by bicycle (69%) in municipal areas (Table 3.15).

The preparation interview about the logistics supply revealed a universal receipt of materials such as recording form, registration slip, tally sheet, poster etc. (Table 3.16). Interview with the providers on the vaccination day in both the study areas also substantiated the fact. An overwhelming majority of the providers said that they had received sufficient supply of required logistics with a minor variation between the preparation interview with the officials and interview with the providers on the vaccination day (Tables 3.17 and 3.18).

Vaccination session observation showed that almost all the vaccine carriers contained icepacks inside, and each of the children was given two drops of OPV. Although a majority of the centres used icepacks for keeping OPV vials at the interval of vaccination, the rate was slightly lower in municipal areas than the rural (Table 3.19).

Table 3.20 illustrates that on average, 14 OPV vials were reported to be supplied to each rural centre as oppose to 17.5 in municipal. Corresponding use of average vials was 12 in each rural centre which was slightly lower than municipal average of 14 vials. In the rural areas, the vaccine wastage reduced from 25% in round 1 to 13% in round2, while in municipal areas, it reduced from 34% in round1 to 15% in round2. Despite, the

aggregated result of both rounds was higher by 4% in rural areas and by 9% in municipal compared to the EPI accepted rate of 15%. Although a few in number, a total 4 rural and 2 municipal centres went short of OPV vaccine and they mentioned at least 3 reasons for this wherein "lower supply than requirement" appeared to be the predominant one.

Vaccination session observation (Table 3.21) shows that most of the centres across all the study areas (over 88%) used any sign announcing the location of vaccination sites. A majority of them displayed EPI posters. In many cases, more than one items (poster, moniflag and banner) were simultaneously displayed for the purpose. A higher proportion of the municipal centres administered OPV inside the room of a house at the centre than the rural (72% vs 63%). But unlike the municipal areas, 10% of the rural centres did it under trees.

Almost in all the rural and municipal centre, tally sheets were filled up for record keeping of the recipients, while the use of register was considerably higher in rural areas than in municipal (93% vs 81%). A considerable difference between the rural and municipal areas regarding maintenance of discipline at the centres was found. But the proportion of the centres protected from sun/rain was identical in both study area type (Table 3.22).

- vii. Supervision:** Table 3.23 reveals a slight variation in the planning and implementing of supervisory plans for round 1 and 2 of NID in each of the study areas. Difference between the plan and implementation was even more pronounced. In rural areas, the aggregated difference between plan and implementation was 97% vs 91% which appeared to be wider in municipal areas (97% vs 86%).

Although Table 3.24 illustrates that a good number of supervisors of different ranks and status such as Deputy Commissioner, Civil Surgeon, Deputy Director-Family Planning, Deputy Civil Surgeon, Thana Health and Family Planning Officer, Thana Executive Officer, Medical Officer etc. extended supervisory inputs to the vaccination centres in both rural and municipal settings but none of the supervisors visited 28% and 22% of the rural and municipal centres respectively (Table 3.25). Over 37% of both rural and

municipal centres received at least one visit while some received 4 visits. It is worth noting that most of the supervisors stayed less than 2 minutes in a centre.

Table 3.26 illustrates that a variety of activities were observed to perform by the visiting supervisors during their visits with a varied intensity. In rural areas, the most frequently done task was inquiry about the recording/tally sheet fill up followed by inquiry about target achievement. Considerable differences were evident between round1 and round2 in rural areas in the intensity of many tasks of supervisors e.g. inquiring about target achievement (61% and round 1 and 38% in round 2). In municipal areas, OPV/VAC stock checking appeared to be the most frequently done task by the supervisors during their centre visits followed by inquiry about the progress of vaccination. Here also noticeable differences were observed in many activities between the rounds of NID, e.g. inquiry about target achievement (34% in round 1 and 29% in round2).

3.2 Community Demand: Parental knowledge, perceptions and practices

Exit-point-interview: Table 3.2.1 shows the number of respondents per area and rounds of NID; thirty respondents in three different rural sessions and ten in the urban sessions in each round of NID 1996.

i. Parental knowledge about the National Immunization Day : Three questions were asked during both rounds to reflect parental knowledge about the NID:

- a: From whom did you hear about the NID?
- b. How long ago did you hear about the NID?
- c. Do you know the date of the next NID?

a: Table 3.2.2 shows, most people (60%) in the three rural areas heard about the NID from the Government Health Workers (GHW), although in Panchbaria miking was mentioned more often then the GHWs for both rounds 1 and 2. Concerning the second round all people in Rajnagar mentioned the GHWs as the only source of information. For the three rural sessions (aggregated), miking was the second source of information, however in Rajnagar miking was not mentioned by any of the respondents. The five respondents who heard about the first NID from the NGO

workers all came from Rajnagar. For both rounds, only a few people received information about NID by radio or television (one), from relatives (one), their children (one) or from a Community-Health Worker (CHW) (one).

In the urban area the first source of information was miking (80%) and the second was the GHWs (25%). Only a few also mentioned the CHW (one), the mosque (one), radio or television (two) or the market (one) as the source of information.

- b:** In both rural and urban areas, concerning round 1 and 2, most people who heard about NID by miking said that this was the day before NID or on the day itself. The GHWs spread the information about NID ranging from 2-3 days before, or (in most cases) either one day before or on the NID itself.

Only a few people in Panchbaria village and in the urban area heard - for the first time about NID from days until one month before. In Panchbaria seven people concerning round 1, and five people concerning round 2, heard about the NID ranging more than 1 week in advance. In the urban area four people got information about NID more than 15 days before.

- c:** In the urban area all respondents knew that the next NID would be on May 16th, in the three rural sessions only twelve (out of 30) respondents (40%) knew the date of next NID; four in Rajnagar, six in Panchbaria and two in Charpara.

- ii. Parental knowledge about the vaccine:** The 'exit-point-interview' contained the following three questions to assess the knowledge of the parents about the vaccine:

a: Which vaccine did your child receive today?

b: Why did your child receive this vaccine?

c: Which children should not receive the vaccine?

As Vitamin A was supplied besides OPV to children (1-5 years old) on NID round 2, the parents of eligible children were asked two more questions in this regards.

d: What is given to your child beside OPV?

e: Why should your child receive this?

In Table 3.2.3 the number of correct answers on these questions are given for both rural and urban sessions during Round 1 and Round 2. In the next paragraphs the answers concerning the different questions will be specified.

- a:** As can be seen from table 3.2.3, after both rounds of the urban session, (about) half of the people could tell that their child just received OPV. In the three rural areas, after both sessions, only less than one third of the people could tell the name of the vaccine. In Panchbaria the amount of people knowing the name of the vaccine was highest, compared to the other two rural areas.

Six people (five were in Rajnagar and one in the urban area) classified the vaccine as a drop, one as a medicine and one as 'Shishu Tika' (child medicine).

- b:** The people who knew the name of the vaccine, were in most cases the same people who also knew why the vaccine had been given to the child; to eradicate polio from Bangladesh, or to protect the child against polio. About half of the respondents in the urban session knew the purpose of giving OPV. Other answers included: 'everyone takes it, so do I'; 'it's a medicine for all diseases'; 'people who give the vaccine say, 'it's good for the child' and 'it's good for the health of the child, 'it won't get sick'. Less than one third of the respondents in the rural session knew the purpose of giving OPV. Other people thought it would cure diseases (four respondents in Rajnagar), it would prevent childhood diseases, like measles, whooping cough or cholera (two people in Rajnagar, four in Panchbaria and four in Charpara), or it would prevent the child from the six immunisable diseases (one).
- c:** In the urban session more people knew the target group for receiving OPV than in the rural sessions. In both rural and urban sessions however, the amount of respondents knowing the target group for receiving OPV was higher than the amount of people knowing the name and purpose of OPV (except in Charpara during the first round, where no respondents could mention the target group for receiving OPV).

Some respondents of the different sessions thought that children older than six years should not receive the vaccine (four in Panchbaria and one in the urban session), or that the vaccine was for all children (three respondents in Charpara).

d and e : The same five respondents in the urban session (during round 2) who knew that OPV had been given to their child also knew that their child had received Vit A. Other people only knew that it was a capsule (two), or classified it as a tablet (one) or a red tablet (two). Strikingly none of the respondents knew why Vit A had been given. One respondent thought it would prevent different diseases.

Of the eighteen people in the three rural areas who were asked about Vitamin A (because their child was older than one year), eight respondents (44%), of which six were in Rajnagar, and two in Panchbaria, knew that Vitamin A had been given to their child as well as OPV. In Panchbaria two other respondents knew that a vitamin had been given to their child, however without knowing the name. In Charpara none of the respondents could mention Vit A and OPV were given to their children, although four people knew that it was a vitamin. Two people in Charpara classified it as a tablet.

Only four people in total (two in Rajnagar, one in Panchbaria and one in Charpara) knew that Vit A was given to protect their child against night blindness. Four respondents in Charpara thought that what they had classified as a tablet or a vitamin would protect the child against different diseases.

iii. Accessibility: Four questions assessed some information about personal aspects of respondents, which might affect the parental motivation for going to this or future immunization sessions:

- a: How long you had to wait in the center for the vaccination of your child?
- b. How did you come here today?
- c. How long did it take you to come here today?
- d. Did you experience any problems in coming here today?

In the urban area, four people had to wait for longer than one hour to get the vaccination for their children during round 1. Most respondents (round 1 and 2) told that the waiting time for receiving the vaccination was less than 15 minutes. Some parents had to wait between 15 and 30 minutes.

During both round 1 and 2, most respondents walked to the immunization session, which took less than 15 minutes in most cases. During round 1, three people had to travel more than 30 minutes. Only a few people came by rickshaw. No serious problems were experienced in coming to the session.

In all three rural areas, most of the respondents (23 during round 1, and 28 during round 2) did not have to wait for the vaccination of their child more than 15 minutes. The rest of the people had to wait 15-30 minutes (seven during round 1; two during round 2).

Almost all respondents walked to the immunization-session (28 during round 1, and 30 during round 2). Most of them (24 during round 1, and 27 during round 2) could reach the centre within 15 minutes. None of the respondents experienced serious difficulties in coming to the centre.

Preparation-day-interview: During both preparation days, people (not the same respondents as during the NID) in the rural and urban areas were asked about their knowledge of the coming NID and the vaccine given on that day. Five questions give an impression of the parental knowledge about the coming NID and the vaccine that would be supplied there:

- a: What is the name of the vaccine that will be given on the NID?
- b: Do you know the target group for this NID?
- c: If your child has already received 3 doses of OPV earlier should it be brought to the NID for another dose?
- d: If you went to the NID last year, would you go to the NID this year again, even when your child is older than 5 years?
- e: Do you know why Vit A will be given?

Three questions reflect the parental knowledge about the NID:

- f: Do you know the dates of both NIDs?
- g: Did you receive a referral-slip?
- h: To which centre are you planning to go?

The results of question "a" through "e" of this questionnaire are presented in table 3.2.4. As the results of the exit-point interview also indicated, the knowledge about the vaccine given on NID was higher in the urban area. Although, during preparation day, 60% of the respondents in the rural area knew that a child should get an extra dose of OPV after already having received three doses previously as only 40% of the respondents in the urban area could give the correct answer on this question.

Concerning question "f" through "h" the following can be mentioned. On preparation day 2, more respondents in the urban area knew that there would be an immunization day on the following day, than on preparation day 1. More people received a referral slip, and more people knew to which centre they were supposed to go. In the two rural areas less people knew that there would be a NID compared to the people in the urban area. On preparation day 1, six (out of 20) people received a referral slip, on preparation day 2, eleven (out of 30). Thirteen respondents on preparation day 1, and 24 on preparation day 2, knew to which centre they should go for immunization.

3.3. NID Coverage

The RED survey (Hadi et al., 1996) found 79.4% and 81.1% of the eligible children were administered OPV during round 1 and round 2 respectively, and 72.7% of the target children (1-5 years) was administered vitamin A capsule (VAC) during the round 2 of NID (Table 3.3.1). Both OPV and VAC coverage was consistently lower for the infants, and children of 5 years old than those of the 1-4 years of age.

Data on OPV and VAC coverage collected from the vaccination centres at the end of day long observation showed a consistently higher coverage unlike the survey data (3.3.2)

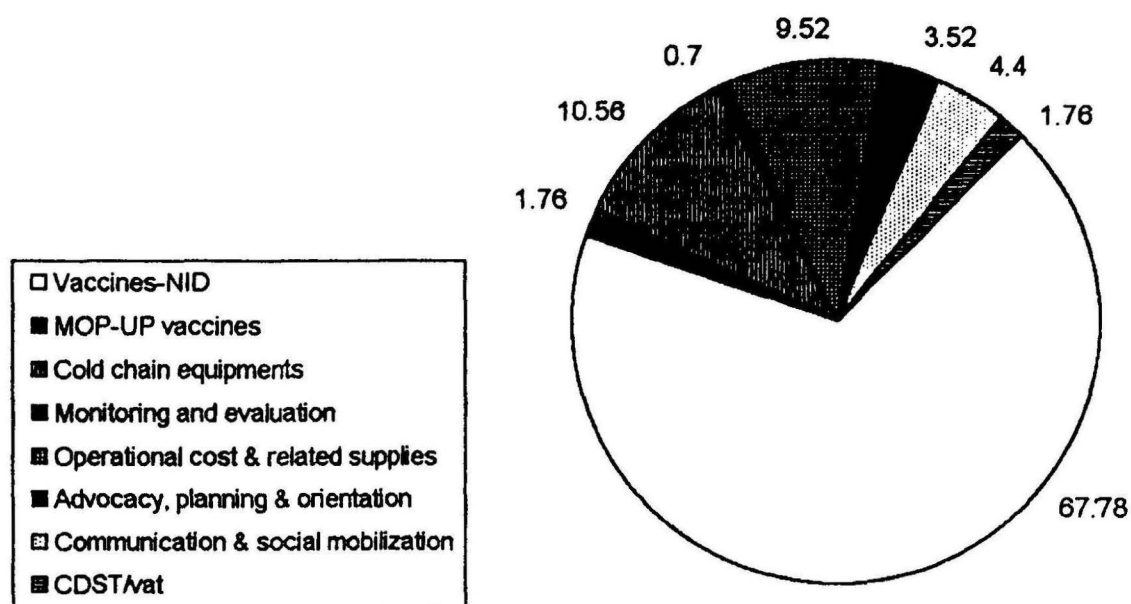
Over 69% of the children received both doses of OPV and 9.2% did not in either rounds (Table 3.3.3). The dropout rate from round 1 to round 2 was 9.8% while in round 2, 11.8% children showed up who actually did not receive vaccination in round 1. When the children were segregated by involvement of their parents with NGOs' activities to assess the level of coverage by both doses of OPV the proportion was found to be higher among NGO participants (72.5%) compared to others not participating in NGOs' activities (67%).

Table 3.3.4 shows the change of coverage of children by round of NID and region. A wide regional variation was evident in compliance on both the rounds of NID vaccinations (April and May). Highest compliance was observed in Cox's Bazar region (92.5%) followed by Kushtia (90.2%) whilst it was lowest in Kishoreganj region (15%).

3.4 Financing of the NIDs

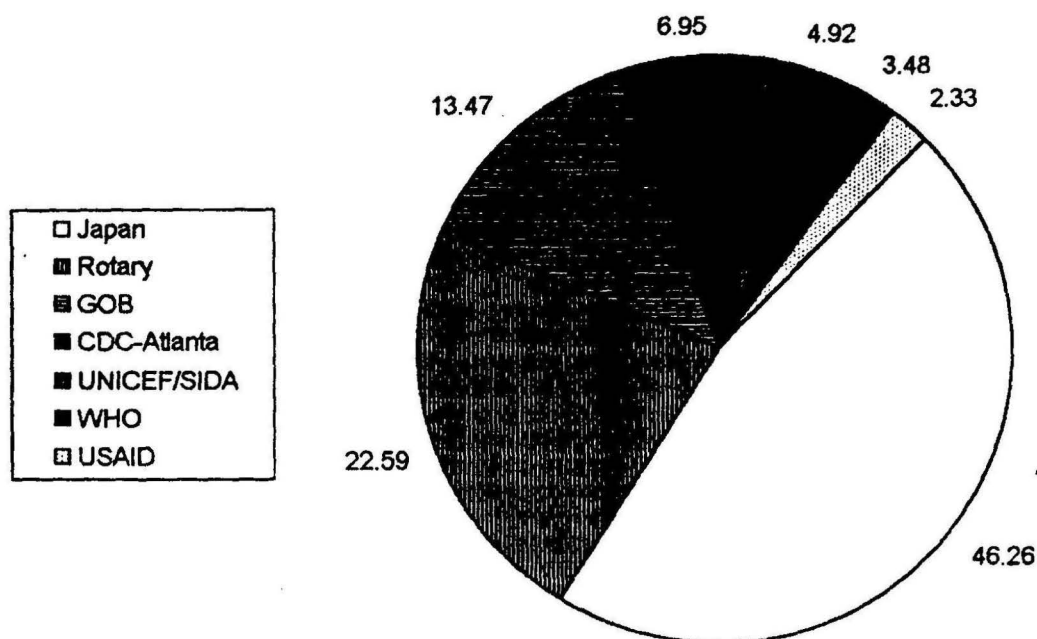
Budget -- To meet up the direct costs of the 1996 NIDs US \$ 7.1 million was earmarked. Item-wise break-up of the budget indicated that 67.8% was allocated for NID vaccines followed by 10.6% for cold chain equipments and 9.5% for operational and related supplies.

Figure 3.4.1: Item-wise break-up of NID Budget (in %)



Sources of Funds -- Apart from the government of Bangladesh (13.5%) many international and bilateral donors contributed to the budget, inter alia, the important are Japan (46.3%), Rotary (22.6%), and CDC-Atlanta (7%).

Figure 3.4.2: Sources of funds for 1996 NID (In %)



Community Financing – Table 3.4.1 shows that during NID preparation interview about one-fourth of the respondents in the rural areas and over one-third in the municipal areas reported to have had developed some sort of IEC materials locally. In the rural area, item-wise average production was: poster 842, leaflet 4,713, banner 19 but there were no cinema slides and sticker production. Likewise, in the municipal areas the average poster was 343, leaflet 5,100, banner 7, cinema slide 4 and sticker 100.

Funds for these were mobilised from different sources. Contribution of the government in rural areas was 28% and it was 30% in municipal areas. Local government's (elected body) contribution was 28% in the rural areas and 60% in the municipal areas. The remaining proportions were contributed by NGOs, community and others.

Ten percent of the rural and 28% of the municipal areas reported to have raised funds from the locality for other purposes such as entertainment, transport, publicity etc. The

average amount raised in the rural area was Taka 11,285 or US \$ 275^{*} while it was higher in municipal area, Taka 17,445 or US \$ 425 (Table 3.4.2).

4. Discussion

Supply/Quality of Service

Several issues of preparation for 1996 NIDs were investigated through interviewing the heads of health or their deputies in thana and municipality areas. An overwhelming majority of the respondents reported to have completed most of the preparatory tasks investigated through the study for example, formation of NID coordination committees at various levels, holding advocacy and planning meetings, preparing and implementing supervisory plan etc. A little or no difference was traced in many issues of NID preparation between both the rounds (16 April and 16 May) and rural and municipal settings. However, one major concern remain regarding the extension of immunisation services to hard-to-reach population. This concern can be explained by the fact that consistently low coverage of immunisation among these people still remains (Hadi et al., 1995 and 1996). Although alternative measures already exist to reach such populations and thereby increase coverage but these seem to be less effective to register a sharp improvement in coverage. The majority of the hard-to-reach populations were reported to be of tribal, tea garden labourers and haors who live in a closed condition. They are heavily surrounded by various superstitions. Elimination of these needs repeated education and motivation through appropriate IEC intervention. But inappropriate social mobilisation plan and weak implementation seem to be a great problem in such areas. Besides knowledge of health workers about the programme is also important for carrying out effective social mobilisation. This study found a poor knowledge particularly of the rural providers on NID. Again, although three criteria (0-5 years of age; previous history of 3 doses OPV intake; and sickness) determine the eligibility of the target children but retention of criterion-specific knowledge of the health workers was poor among the rural providers. Another important issue we found during session observation was that some vaccinators did not administer OPV to some attending children who received OPV a few

* 1 US D = Taka 41

days earlier, thus they were missed. Besides guardians of some children with the above history tended not to bring their children for OPV vaccination indicating that both the providers and guardians alike were unclear about the NID procedures and the value of NID.

Training of volunteers on NID is important to successfully implement it. The volunteers interviewed on the vaccination day at the sessions said that, 5 in 16 rural and 4 in 6 municipal volunteers were given training. The consequences of the above issues may affect not only the efficiency but also the impact of NIDs. Moreover, although unproven, we were reported that a many of the Health and Family Planning workers tended to recruit volunteers from among their relatives who just attend the campaign without doing much work. Since they are relatives of the government workers, the supervisors are likely unable to press them for hard work.

Accurate target fixation is very much needed to attain effective coverage. Registration of the target children by visiting households is a more reliable approach towards accurate targeting but in many cases target fixation was relied only on census which does not bring into focus the correct scenario of the target children. The latter system also fail to record the name and age of the children so that it is difficult to trace those who do not show up on NID sessions. Our observation revealed that a considerable number of vaccinators had no knowledge about their real number of target children. The problem was even more acute in case of VAC. However, provision of child registration by visiting households will ease the task of estimating the target group as well as to identifying the leftouts.

Shortage of cold chain equipments threatens the effectiveness of vaccination. Reportedly 8 rural thanas and 2 municipalities had short supply of vaccine carriers while shortage of ice packs was reported to be even wider. This obviously poses an increased risk of damaging vaccine potency. We observed that in one centre, 2 OPV vials were supplied to meet up the additional requirement putting these in a vanity bag risking the vaccine potency. This was perhaps occurred as a result of short supply of vaccine carrier.

Use of any sign announcing the location of vaccination sites is very important for the users to trace the location. Ten percent of the rural and 12% of the municipal centres used no sign to announce the location of the vaccination sites which might be disturbing especially for the mothers or younger caretakers bringing children to the centres and thereby instigates them to go back home without vaccination. This may even create unamicable impression about the vaccinators affecting the psychosocial relation between the providers and users, and eventually that injures the way of effective campaign.

OPV is one of the sun-shine sensitive vaccines in the package of EPI, entailing constant effort to protect it from the sun-shine. Therefore, OPV vaccination in the open place is not safe. Despite, 10% of the rural vaccination centres administered OPV under trees raising a serious doubt about the potency of vaccines administered through those centres and the level of protection from polio of the children receiving OPV from those centres.

Quality of OPV administration in terms of constant presence of ice pack inside the vaccine carrier, administration of 2 drops of OPV to each child and dropping the OPV at the back of children's tongue appeared to be better. In spite of it, one critical issue was that what was the quality of ice pack used during vaccination for the above purposes? Although the observations revealed a universal presence of frozen ice pack inside the vaccine carrier (over 97%), but it was the finding of the initial stage of the sessions start. All the ice packs became melted at some point of time but unfortunately these were not re-frozen nor any alternative was taken so far. More striking fact we found was that in round 2, no icepack was meant for keeping OPV vials on the tables at the intervals of vaccination. Therefore, such evidences may raise enormous doubts about the protective value of OPV already administered through those centres.

Ensuring supervision during vaccination is a factor of effective operations leading to a greater success in quality services delivery and coverage. Observation showed some centres received no supervisory visits. However, in other centres, the visiting supervisors performed a diversified activities but a majority of rural supervisors concentrated mainly on checking recording/tally sheet fill up and target achievement. In contrast, municipal supervisors mainly concentrated on OPV/VAC stock check up, and inquiry about the progress of vaccination. The supervisors rarely inquired about the human aspects of the

providers that may act as an incentive for the staff to work harder. Needless to say that extending a simple appreciation to the vaccinators recognising their painstaking works appears to be a more powerful incentive than that of money or any other materials to stimulate them for steering more hardship. Identification of problems and providing suggestions to solve those by the supervisors are one of the ways to enhance the effectiveness of the interventions as well as to improve workers' problem solving capacity in practical situation leading to a greater coverage. However, most of the supervisory visits seemed to be mere inspections but not supervision in true sense.

Extent of vaccine wastage could be a predictor of the technical competence of the providers which is essential for effective vaccination. The EPI accepted rate of vaccine wastage is 15% for OPV. In the round 1 of both the rural and municipal areas, vaccine wastage was 10% and 19% higher respectively than the accepted rates. In both rural and municipal areas, it reduced to a significant level from round 1 to round 2, but the reduction of the municipal area was not as sharp as was in the rural. This implies that as the providers get experienced, their technical competence increases.

2. Community Demand Issues

Parental Knowledge on NID: Concerning the knowledge of the parents about NIDs, no striking differences were found between urban (municipal) and rural areas, or between Round 1 and 2. In all areas, for both rounds, the main sources of information were the GHWs and miking. In the rural areas most people heard about NID from a GHW - who have given some parents a referral slip during household visits. The effect of posters, announcements in mosques or messages on rickshaws, if present, didn't seem to have been noticed by the people that much. Most of the mobilization for NIDs seems to have been done only shortly before the NIDs. It would be interesting to know if an earlier start of mobilization would result in a higher number of people coming to the sessions. This might be expected more in the rural areas, because the lower population density requires a longer period of mobilization to reach all people.

Because of the fact that in the rural sessions, during Round 1, not a lot of people knew the date of the next NID (in the urban session all respondents knew the date of the next

NID). This may suggest that, when parents were in the centre to have their children immunized, no information has been given about the next NID. Spreading information about the next NID to parents who just attended a session, might have had a positive effect for the coverage on the next NID or regular immunization sessions.

The degree of knowledge of parents about the vaccine, the purpose, and the target group of children eligible for immunization was higher among the respondents in the urban session (the results of the 'preparation-day interview' also show this tendency). It would be interesting to know if this can be related to a better supply of information during the session, or during the period of mobilization.

Although the degree of knowledge in the urban session was higher than in the rural sessions (on both preparation days, and the two NIDs), overall the knowledge of parents about OPV and Vit A is not very impressive. Most people were unable to mention the name of the vaccine, and mention what they have just seen: a tablet, a capsule, a drop. Strikingly, a lot of people thought that OPV and/or Vit A will prevent or even cure different childhood diseases. Interestingly, more than half of the respondents seem to have come to the NID without exactly knowing about what will be given to their child, and with what purpose.

Those who attended the NID did not face any trouble with transport or waiting time. However, the people who might have had problems, probably have not come to the session at all.

It must however, be stressed that the number of respondents per area were very limited, so that caution must be exercised in interpreting the data from both interviews. The conclusions drawn in here also cannot be generalized.

NID Coverage: Although the BRAC survey on the coverage of 1996 NID (Hadi et al., 1996) in rural areas found that the target children receiving 2 doses of OPV was 69.2% which was substantially lower than the providers' reported coverage on the targets (94% in rural area). The reasons for differentials between the reported and survey coverage

could be manifold. The service statistics provided by the providers are unprocessed and generally tend to be over-estimated. Besides, bringing the young infants particularly the neonates to the centres was difficult and mostly inconvenient. Likewise, age determination of the older children through survey requires special skills of the surveyors, otherwise a number of children particularly those who are at 57-59 months of age cohort are likely to be overlooked by the providers and thus missed from the denominators affecting the coverage. Therefore, it was not unlikely that during registration for NID, children who were at this critical age cohort were consistently missed or overlooked due to lack of required skills in age determination.

The above survey also revealed 72.7% of VAC coverage which was again considerably lower than the rural providers' reported figure of 89%, but strikingly the municipal providers could report neither target nor coverage of VAC. Coverage statistics of VAC in 1995 NIDs revealed a coverage of 87.9% (HKI/IPHN, 1995), which was nearly equal to 86.7% of the figure achieved through "National Vitamin A Week" carried out in 28 October-5 November 1995. However, the reasons of differentials between the inter-agency (HKI/PHN and BRAC) figures could be similar to those cited for OPV coverage. However, one discernible issue is that no gender differentials was traced in VAC coverage (HKI/PHN, 1995; Hadi et al., 1996) as well as OPV (Hadi et al., 1996).

Financing of NID

The government of Bangladesh contributed only 13.5% of the total budget of US \$ 7.1 million for the 1996 NIDs and the rest came from different NGOs and bilateral donors, majority from Japan (46.3%). This scenario reveals that fund dependency still continues to remain a major constraint for Bangladesh necessitating exploration of ways and means for self-financing for example, cost sharing by the community.

However, whatever is the cost of NIDs and sources of finance, NID has its health and economic value. The world community has already saved over US \$ 2 billion since the eradication of smallpox in the seventies. It is expected that polio eradication will also provide benefits of similar magnitude. It is in particular believed that once polio is eradicated, children will no longer suffer from the life long disabilities caused by polio

virus, nor they will require polio vaccination, resulting in enormous health and financial savings.

In fact, the full success of NIDs can be measured by the extent of reduction in polio morbidity and mortality. We could not deal with this issue due to logistic and methodological inconveniences. The government maintains a surveillance nationwide that seems to be weakly developed and unable to produce correct and complete situation of incidences of EPI diseases and mortality caused by them. Recent lameness survey carried out by the EPI, Directorate General of Health Services Ministry of Health and Family Welfare, suggested that even with the current vaccination coverage about 2,000 Bangladeshi children develop poliomyelitis each year, of whom 3-5% die and the rest remain disabled for ever. However, David reports (1996) that the number of poliomyelitis cases reported to EPI during the 6 months following the 1995 NIDs came down by over 50% compared to previous years, testifying to the additive value of 1995 NIDs in halting transmission of wild polio virus. worth-noting that we should be cautious in interpreting these statistics because these are coming through the government routine surveillance system which substantially under-reports the actual number of cases occurring in Bangladesh (David, 1996).

5. Conclusion

NIDs are now the annual events through which special efforts are made to administer 2 extra doses of OPV on 2 separate days at least 4 weeks apart to all children regardless of their previous vaccination status. In true sense, NIDs are the supplements to the routine EPI. To enhance the child survival and to protect the children's rights, VAC distribution was also incorporated in NIDs, which is a highly laudable event.

Overall, the NIDs seemed to be effectively implemented although over 30% of the target children did not receive both doses of OPV posing a challenge towards polio eradication. However, the campaign appears to be getting a shape of social movement wherein many

individuals and agencies including NGOs and bilateral donors contributed to the success of 1996 NIDs.

To make the NIDs of 1997 more successful, all the procedural activities should be strengthened, volunteers should be recruited and properly trained, government grassroots workers should be prepared, strong and effective IEC campaign should be carried out, cold chain equipments should be adequately supplied at least 1 week ahead of the 1997 NIDs and an effective surveillance should be in place to assess the changes in polio incidence and mortality over time. Moreover, even in the face of political unrest, complete freedom of movement of all sectors must be assured. All political parties should extend more support to and participate in the preparation and implementation of NIDs to demonstrate their sincere efforts towards protection of children's rights and health.

Issues for Further Study

Despite both the quantitative and qualitative approaches were used for the study data collection, it reflected mainly the quantitative issues of the NID. To reveal the full scenario, in-depth studies are important to carry out looking at different issues particularly the following:

Providers: How do the providers and managers at different levels perceive NID, how is it technically and operationally different from other EPI vaccines, how effective is NID for polio eradication, what factors do motivate the providers to undertake NID, why NID for polio eradication, what about other EPI diseases, what problems do they face in NID operations, what steps are needed to increase coverage, who and how will implement these, what is health and economic benefits of NID, what are the reasons of geographical and social differentials in coverage, how these can be overcome, how short supply of cold chain equipments can be solved, how knowledge of the grassroots vaccinators can be improved?

Money contributors: Why some community people contribute money for NID, what are their social characteristics, how community financing can be increased?

Parents: what factors contributed to a higher degree of knowledge in the urban area (as the results indicate) about the NID, and about the vaccine given on NID? How is the information supplied before and during immunization days, to what extent does this effect the knowledge of parents about immunization, and to what extent does a higher degree of knowledge result in a higher coverage, of NIDs or routine immunization sessions? Is information about the vaccine, the purpose of it and the target group less important for NIDs than for routine immunization sessions? What is the effect of different mobilization strategies, do rural areas require other strategies in order to mobilize the people, and when should be started with mobilization? What are the problems of people who did not come to the NID? How do the parents perceive poliomyelitis and OPV vaccination (emic perspectives)? Why certain groups do not show up in vaccination centres? What are their socioeconomic characteristics?

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Table 3.1: Percentage of respondents by NID coordination committee formation, advocacy and planning meeting, round and study area type (Preparatory interview)

Indicators	Rural			Municipal		
	Round1 N=53	Round2 N=53	Total N=106	Round1 N=15	Round2 N=14	Total N=29
a. NID coordination committees exist	94.0	96.0	95.0	93.0	93.0	93.0
b. Advocacy and planning meeting held at least one day ahead of vaccination	100.0	91.0	95.0	100.0	71.0	86.0
c. Average vaccination centre:						
(i) Planned	271	273	272	45	45	45
(ii) Actually opened	271	273	272	45	45	45

Table 3.2: Percentage of respondents by volunteer recruitment on target and training given (Preparatory interview)

Indicators	Rural			Municipal		
	Round1 N=53	Round2 N=53	Total N=106	Round1 N=15	Round2 N=14	Total N=29
a. Vaccinator:						
i. Recruited on target	95.0	NA	95.0	94.0	NA	94.0
ii. Trained the recruits	97.0	NA	97.0	87.0	NA	87.0
b. Social mobiliser:						
i. Recruited on target	86.0	NA	86.0	103.0	NA	103.0
ii. Trained the recruits	98.0	NA	98.0	91.0	NA	91.0

Note: NA=Not applicable

Table 3.3: Percentage of service providers receiving training/orientation on NIDs (Interview on vaccination day)

Providers	Rural			Municipal		
	Round1	Round2	Total	Round1	Round2	Total
Government	100.0 (3) N=3	75.0 (3) N=4	85.7 (6) N=7	100.0 (3) N=3	100.0 (1) N=1	100.0 (4) N=4
Volunteer	25.0 (2) N=8	37.5 (3) N=8	31.3 (5) N=16	50.0 (1) N=2	75.0 (3) N=4	66.7 (4) N=6

Note: Figures in parentheses indicate number of providers receive training.

Table 3.4: Percentage of service providers by organization (Session observation)

Service providers and their organization	Rural			Municipal		
	Round 1	Round 2	Total	Round 1	Round 2	Total
Govt. health worker (Govt. health deptt.)	21.1 (40)	19.6 (35)	20.3 (75)	1.8 (1)	5.6 (3)	3.6 (4)
Govt. family planning worker (Govt. F.P. deptt.)	10.1 (20)	12.3 (22)	11.4 (42)	5.4 (3)	5.6 (3)	8.5 (6)
VDP member (Defence Ministry)	2.1 (4)	2.2 (4)	2.2 (8)	0.0 (0)	0.0 (0)	0.0 (0)
Municipal Commissioner/ Municipal staff (Local Govt.)	0.0 (0)	0.0 (0)	0.0 (0)	8.9 (5)	3.7 (2)	6.4 (7)
Teacher (Govt. school)	12.6 (24)	13.4 (24)	13.0 (48)	25.0 (14)	7.4 (4)	16.4 (18)
Student (School/College)	16.3 (31)	21.8 (39)	19.0 (70)	10.7 (6)	25.9 (14)	18.2 (20)
Villagers/Local people/ Others	8.9 (17)	5.6 (10)	7.3 (27)	16.1 (9)	1.9 (1)	9.1 (10)
BRAC worker (BRAC)	22.1 (42)	21.8 (39)	22.0 (81)	8.9 (5)	31.5 (17)	20.0 (22)
Other NGO workers	6.3 (12)	3.3 (6)	4.9 (18)	23.2 (13)	18.5 (10)	20.9 (23)
All	190	179	369	56	54	110

Note : Figure in parenthesis indicate member of respondents

Table 3.5: Percentage of respondents by special plan for hard-to-reach area and study area type (Preparatory interview)

Indicators	Rural			Municipal		
	Round1 N=53	Round2 N=53	Total N=106	Round1 N=15	Round2 N=14	Total N=29
a. Have no hard-to-reach area	60.0	58.0	59.0	100.0	100.0	100.0
b. Have hard-to-reach area	40.0	42.0	41.0	NA	NA	NA
c. Special plan prepared (% of those have hard-to-reach area)	91.0	82.0	86.0	NA	NA	NA
d. Plan implemented (% of those have plan)	84.0	100.0	92.0	NA	NA	NA

Note: NA=Not applicable

Table 3.6: Percentage of respondents with hard-to-reach area by special social mobilisation strategy and study area type (Preparatory interview)

Indicators	Rural			Municipal		
	Round1 N=21	Round2 N=22	Total N=42	Round1	Round2	Total
a. Special strategy						
i. Planned	81.0	77.0	79.0	NA	NA	NA
ii. Implemented	94.0	94.0	94.0			
b. Social mobilisation strategy adequate for all area type	68.0	72.0	70.0	NA	NA	NA
N=	53	53	106			

Note: NA = Not applicable

Table 3.7: Other works done for NID campaign (Preparatory interview)

Work	Rural			Municipal			Both areas		
	R01	R02	Total	R01	R02	Total	R01	R02	Total
General meeting	92.5 (49)	92.5 (49)	92.5 (98)	86.7 (13)	64.3 (9)	75.9 (22)	91.2 (62)	86.6 (58)	88.9 (120)
Publicity (miking)	83.0 (44)	75.5 (40)	79.2 (84)	93.3 (14)	85.7 (12)	89.7 (26)	85.3 (58)	77.6 (52)	81.5 (110)
Announcement at school	71.7 (38)	73.6 (39)	72.6 (77)	40.0 (6)	50.0 (7)	44.8 (13)	64.7 (44)	68.7 (46)	66.7 (90)
Announcement at mosque	71.7 (38)	71.7 (38)	71.7 (76)	46.7 (7)	50.0 (7)	48.3 (14)	66.2 (45)	67.2 (45)	66.7 (90)
Drum beating	17.0 (9)	13.2 (7)	15.1 (16)	6.7 (1)	7.1 (1)	6.9 (2)	14.7 (10)	11.9 (8)	13.3 (18)
Postering	1.9 (1)	0.0 (0)	0.9 (1)	6.7 (1)	7.1 (1)	6.9 (2)	2.9 (2)	1.5 (1)	2.2 (3)
Local folk song	1.9 (1)	0.0 (0)	0.9 (1)	0.0 (0)	0.0 (0)	0.0 (0)	1.5 (1)	0.0 (0)	0.7 (1)
Film show	3.8 (2)	1.9 (1)	2.8 (3)	6.7 (1)	7.1 (1)	6.9 (2)	4.4 (3)	3.0 (2)	3.7 (5)
Rally	1.9 (1)	0.0 (0)	0.9 (1)	0.0 (0)	0.0 (0)	0.0 (0)	1.5 (1)	0.0 (0)	0.7 (1)
Through local news paper	0.0 (0)	0.0 (0)	0.0 (0)	6.7 (1)	0.0 (0)	3.4 (1)	1.5 (1)	0.0 (0)	0.7 (1)
Others	0.0 (0)	0.9 (1)	0.9 (1)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	1.5 (1)	0.7 (1)
Not stated	1.9 (1)	5.7 (3)	3.8 (4)	0.0 (0)	14.2 (2)	6.9 (2)	1.5 (1)	7.5 (5)	4.4 (6)
N=	53	53	106	15	14	29	68	67	135

Note: Figure in parenthesis indicate number of respondents.

Table 3.8: Target determining process and average target children per centre by round and residence (Preparatory interview)

Indicators	Rural			Municipal		
	Round1 (N=53)	Round2 (N=53)	Total (N=106)	Round1 (N=15)	Round2 (N=14)	Total (N=29)
1. No of target children per thana /Municipal according to :						
a) Census	44,680	44,020	44,347	12,387	13,257	12,804
b) Registration	42,854	43,989	43,438	9,842	9,550	9,701
2. Average target children per centre						
a) Census	165	161	163	275	294	284
b) Registration	158	161	159	219	212	216

Table 3.9: Percentage of providers by correct knowledge on the eligibility criteria of children for OPV (Interview on vaccination day)

Eligibility criteria	Rural			Municipal		
	Round1 (N=11)	Round2 (N=12)	Total (N=23)	Round1 (N=5)	Round2 (N=5)	Total (N=10)
Age: 0-5 yrs	81.8 (9)	58.3 (7)	69.6 (16)	100.0 (5)	100.0 (5)	100.0 (10)
3 doses already received earlier	90.9 (10)	75.0 (9)	82.6 (19)	100.0 (5)	100 (5)	100.0 (10)
Sick children	72.7 (8)	18.3 (10)	78.3 (18)	100 (5)	100.0 (5)	100.0 (10)

Notes: Figure in parenthesis indicate number of respondents, Multiple answers considered
C = Correct, I = incorrect

Table 3.10: Percentage of providers by correct knowledge of age of the target children for VAC in NID (1-5 years old) (Interviewed on vaccination day)

Status	Rural			Municipal		
	Round 1	Round 2	Total	Round 1	Round 2	Total
Yes	NA	100.0 (12)	100.0 (12)	NA	80.0 (4)	80.0 (4)
No	NA	0.0 (0)	0.0 (0)	NA	20.0 (1)	20.0 (1)
N=	NA	12	12	NA	5	5

Notes : Figure in parenthesis indicate number of respondents
NA= No applicable

Table 3.11: Percentage of providers by knowledge of both target and coverage of children (Session observation and interview)

Indicators	Rural			Municipal		
	Round 1 N=62	Round 2 N=57	Total N=119	Round 1 N=16	Round 2 N=16	Total N=32
1. Knowledge on both target and coverage of OPV (% of providers)	98.0	98.0	98.0	81.0	94.0	88.0
2. Knowledge on both target and coverage of VAC (% of providers)	NA	5.0	5.0	NA	0.0	0.0

Note: NA = Not applicable

Table 3.12: Strategy planned to bring the leftout children (Preparatory interview)

Strategy	Rural			Municipal		
	Round1 (N=53)	Round2 (N=53)	Total (N=106)	Round1 (N=15)	Round2 (N=14)	Total (N=29)
The leftout children to be captured with the help of volunteers, Govt. workers/NGO workers/parents	64.2 (34)	49.1 (26)	56.6 (60)	66.7 (10)	64.3 (9)	65.5 (19)
Through mobilization/motivation	24.5 (13)	37.7 (20)	31.1 (33)	20.0 (3)	28.6 (4)	24.1 (7)
Feed polio in the normal EPI session	5.7 (3)	1.9 (1)	5.7 (6)	6.7 (1)	- (0)	3.4 (1)
Feed polio at the households level	3.8 (2)	3.8 (2)	3.8 (4)	6.7 (1)	- (0)	3.4 (1)
Feed polio in round-2 NID session	1.9 (1)	0.0 (0)	0.9 (1)	0.0 (0)	0.0 (0)	0.0 (0)
No strategy	5.7 (3)	0.0 (0)	2.8 (3)	6.7 (1)	14.3 (2)	10.3 (3)
Others	1.9 (1)	7.5 (4)	4.7 (5)	0.0 (0)	0.0 (0)	0.0 (0)
Not stated	0.0 (0)	3.8 (2)	1.9 (2)	0.0 (0)	0.0 (0)	0.0 (0)

Note: Figure in parenthesis indicate number of respondents

Note: Multiple answers considered

Table 3.13: Steps taken to bring the children who did not show up timely (Session observation and interview)

Steps	Rural			Municipal		
	Round 1	Round2	Total	Round1	Round2	Total
1. Brought children through household visit by volunteers/govt. workers	79.0 (49)	86.0 (49)	82.4 (98)	68.8 (11)	68.8 (11)	68.8 (22)
2. Informed mothers through other mothers	16.1 (10)	8.8 (5)	12.6 (15)	18.7 (3)	18.7 (3)	18.8 (6)
3. Through miking from mosques	8.1 (5)	10.5 (6)	9.2 (11)	0.0 (0)	0.0 (0)	0.0 (0)
4. Brought with the help of local elites	0.0 (0)	3.5 (2)	1.7 (2)	0.0 (0)	0.0 (0)	0.0 (0)
5. Fed polio through house to house visit	3.2 (2)	1.8 (1)	2.5 (3)	0.0 (0)	0.0 (0)	0.0 (0)
6. No measures taken	14.5 (9)	5.2 (3)	10.1 (12)	18.7 (3)	25.0 (4)	21.9 (7)
N=	62	57	119	16	16	32

Notes: Multiple responses considered

Figure in parenthesis indicate member of respondents

Table 3.14: Distribution of respondents by status of vaccines required and ready stock, shortage, round and residence (Preparatory interview)

Indicators	Rural			Municipal		
	Round1 (N=53)	Round2 (N=53)	Total (N=106)	Round1 (N=15)	Round2 (N=14)	Total (N=29)
1. OPV Vial per thana/Municipal						
a) Average required	2,729	2,966	2,797	749	803	774
a) Average ready stock	2,981	3,206	3,092	850	978	909
2.						
a. Average vial required per centre	10	11	10.5	17	18	17.5
b. Average ready stock per centre	11	12	11.5	19	22	20.5
N=	271	273	272	45	45	45
3. Supply seeking source, if shortage*:						
a) Stock adequate (% of respondents)	28.0	19.0	24.0	7.0	14.0	10.0
b) Civil surgeon office(% of respondents)	34.0	32.0	33.0	47.0	57.0	52.0
c) Routine EPI stock(% of respondents)	23.0	25.0	24.0	40.0	21.0	31.0
d) Not stated (% of respondents)	19.0	26.0	23.0	7.0	7.0	7.0
4. Shortage of cold chain equipments*:						
a) Vaccine carrier: 18 Nos (% of respondents having shortage)	N=4	N=4	N=8	N=1	N=1	N=2
b) Ice pack (% of respondents having shortage):						
60 Nos.	0	0	0	100.0	0	50.0
76 Nos.	25.0	25.0	25.0	0	0	0
82 Nos.	0	25.0	12.5	0	0	0
100 Nos.	25.0	25.0	25.0	0	0	0
139 Nos.	0	25.0	12.5	0	0	0
200 Nos.	25.0	0	12.5	0	0	0
500 Nos.	0	0	0	0	100.0	50.0

*Multiple responses counted

Table 3.15: Means of transporting vaccines to NID centre (Preparatory interview)

Means of transport	Rural			Municipal		
	Round1 (N=53)	Round2 (N=53)	Total (N=106)	Round1 (N=15)	Round2 (N=14)	Total (N=29)
Bicycle	86.8 (46)	81.1 (43)	84.0 (89)	73.3 (11)	64.3 (9)	69.0 (20)
Motor cycle	66.0 (35)	71.7 (38)	68.9 (73)	73.3 (11)	85.7 (12)	79.3 (23)
Cart	13.2 (7)	17.0 (9)	15.1 (16)	6.7 (1)	14.3 (2)	10.3 (3)
Rickshaw/Van	62.3 (33)	66.0 (35)	64.2 (68)	40.0 (6)	28.6 (4)	34.5 (10)
Car	41.5 (24)	47.2 (25)	46.2 (49)	46.7 (7)	42.7 (6)	44.8 (13)
On foot	41.5 (22)	47.2 (25)	14.3 (47)	6.7 (1)	7.1 (1)	6.9 (2)
Boat	9.4 (5)	20.8 (11)	15.1 (16)	6.7 (1)	14.3 (2)	10.3 (3)

Note: Figure in parenthesis indicate number of respondents

Note: Multiple answers considered

Table 3.16: Proportion of respondents received different logistics (Preparatory interview)

Materials	Rural			Municipal		
	Round1 (Yes)	Round2 (Yes)	Total (Yes)	Round1 (Yes)	Round2 (Yes)	Total (Yes)
Recording form	98.1 (52)	100.0 (53)	99.1 (105)	93.3 (14)	92.9 (13)	93.1 (27)
Registration slip	98.1 (52)	100.0 (53)	99.1 (105)	93.3 (14)	92.9 (13)	93.1 (27)
Tally sheet	100.0 (53)	98.1 (52)	99.1 (105)	100.0 (15)	100.0 (14)	100.0 (29)
Reporting form	100.0 (53)	98.1 (52)	99.1 (105)	100.0 (15)	100.0 (14)	100.0 (29)
Poster	100.0 (53)	98.1 (52)	99.1 (105)	93.3 (14)	85.7 (12)	89.7 (26)
Leaflet	96.2 (51)	98.1 (52)	97.2 (103)	93.3 (14)	92.9 (13)	93.1 (27)
Sticker	96.2 (51)	96.2 (51)	96.2 (102)	93.3 (14)	92.9 (13)	93.1 (27)
N=	53	53	106	15	14	29

Note: Figure in parenthesis indicate number of respondents

Table 3.17: Percentage of providers opinion about the receipt of different logistic supplies in the rural area (Interview on vaccination day)

Logistics	Round 1 N = 11				Round 2 N = 12				Total N = 23			
	Suffici ent	Insuffici ent	Got nothing	Don't know	Suffici ent	Insuffici ent	Got nothing	Don't know	Suffici ent	Insuffici ent	Got nothing	Don't know
Poster/Flag/ Banner	54.5 (6)	36.4 (4)	0.0 (0)	9.1 (1)	91.7 (11)	8.3 (1)	0.0 (0)	0.0 (0)	73.9 (17)	21.7 (5)	0.0 (0)	4.3 (1)
Polio vial	90.9 (10)	0.0 (0)	0.0 (0)	9.1 (1)	91.7 (11)	0.0 (0)	0.0 (0)	8.3 (1)	91.3 (21)	0.0 (0)	0.0 (0)	8.7 (2)
Polio dropper	90.9 (10)	0.0 (0)	0.0 (0)	9.1 (1)	91.7 (11)	0.0 (0)	0.0 (0)	8.3 (1)	91.3 (21)	0.0 (0)	0.0 (0)	8.7 (2)
Ice pack	72.7 (8)	9.1 (1)	0.0 (0)	18.2 (2)	91.7 (11)	0.0 (0)	0.0 (0)	8.3 (1)	82.6 (19)	4.3 (1)	0.0 (0)	13.0 (3)
Register	90.9 (10)	0.0 (0)	0.0 (0)	9.1 (1)	91.7 (11)	0.0 (0)	0.0 (0)	8.3 (1)	91.3 (21)	0.0 (0)	0.0 (0)	8.7 (2)
Tally sheet	90.9 (10)	0.0 (0)	0.0 (0)	9.1 (1)	91.7 (11)	0.0 (0)	0.0 (0)	8.3 (1)	91.3 (21)	0.0 (0)	0.0 (0)	8.7 (2)
Registration slip	81.8 (9)	9.1 (1)	0.0 (0)	9.1 (1)	75.0 (9)	0.0 (0)	16.7 (2)	8.3 (1)	78.3 (18)	4.4 (1)	8.7 (2)	8.7 (2)
VAC	NA	NA	NA	NA	91.7 (11)	0.0 (0)	0.0 (0)	8.3 (1)	-	-	-	-

Note : Figure in parenthesis indicate member of respondents
NA = Not applicable

Table 3.18: Providers opinion about the receipt of different logistic supplies in the municipal area (Interview on vaccination day)

Logistics	Round 1 N = 5				Round 2 N = 5				Total N = 10			
	Suffici ent	Insuffici ent	Got nothing	Don't know	Suffici ent	Insuffici ent	Got nothing	Don't know	Suffici ent	Insuffici ent	Got nothing	Don't know
Poster/Flag/ Banner	80.0 (4)	0.0 (0)	0.0 (0)	20.0 (1)	0.0 (0)	80.0 (4)	0.0 (0)	20.0 (1)	40.0 (4)	40.0 (4)	0.0 (0)	20.0 (2)
Polio vial	80.0 (4)	0.0 (0)	0.0 (0)	20.0 (1)	100.0 (5)	0.0 (0)	0.0 (0)	0.0 (0)	90.0 (9)	0.0 (0)	0.0 (0)	10.0 (1)
Polio dropper	80.0 (4)	0.0 (0)	0.0 (0)	20.0 (1)	100.0 (5)	0.0 (0)	0.0 (0)	0.0 (0)	90.0 (9)	0.0 (0)	0.0 (0)	10.0 (1)
Ice pack	60.0 (3)	20.0 (1)	0.0 (0)	20.0 (1)	0.0 (0)	80.0 (4)	0.0 (0)	20.0 (1)	30.0 (3)	50.0 (5)	0.0 (0)	20.0 (2)
Register	80.0 (4)	0.0 (0)	0.0 (0)	20.0 (1)	0.0 (0)	0.0 (0)	80.0 (4)	20.0 (1)	40.0 (4)	0.0 (0)	40.0 (4)	20.0 (2)
Tally sheet	60.0 (3)	0.0 (0)	20.0 (1)	20.0 (1)	80.0 (4)	20.0 (1)	0.0 (0)	0.0 (0)	70.0 (7)	10.0 (1)	10.0 (1)	10.0 (1)
Registration slip	60.0 (3)	0.0 (0)	0.0 (0)	40.0 (2)	0.0 (0)	0.0 (0)	80.0 (4)	20.0 (1)	30.0 (3)	0.0 (0)	40.0 (4)	30.0 (3)
VAC	NA	NA	NA	NA	100.0 (5)	0.0 (0)	0.0 (0)	0.0 (0)	-	-	-	-

Note: Figure in parenthesis indicate member of respondents
NA = Not applicable

Table 3.19: Percentage of centre by cold chain maintenance, vaccination and residence (Session observation).

Indicators	Rural			Municipal		
	Round ¹ N=62	Round ² N=57	Total N=119	Round ¹ N=16	Round ² N=16	Total N=32
1. Presence of frozen icepack in vaccine carrier (% of centre)	98.0	98.0	98.0	94.0	100.0	97.0
2. Keeping OPV vial on icepack at the interval of vaccination (% of centre)	82.0	77.0	80.0	81.0	69.0	75.0
3. 2 drops of OPV given to each child (% of centre)	98.0	100.0	99.0	100.0	100.0	100.0
4. OPV vaccine dropped at the back of tongue of the children (% of centre)	55.0	61.0	58.0	75.0	88.0	81.0

Table 3.20: Distribution of centres by OPV vial supply, use, shortage and residence (Session observation and interview)

Indicators	Rural			Municipal		
	Round 1 N=62	Round 2 N=57	Total N=119	Round 1 N=16	Round 2 N=16	Total N=32
1. Average vial supplied per centre	14	14	14	18	17	17.5
a. Highest	31	40	-	60	38	0
b. Lowest	6	3	-	7	6	0
2. Average vial used per centre						
a. Highest	13	11	12	15	13	14
b. Lowest	30	27	-	56	35	0
c. Vaccine wastage rate (%)*	4	2	-	4	5	0
	25.0	13.0	19.0	34.0	15.0	25.0
3. Shortage of vaccine (% of centre)	5.0	4.0	4.5	13.0	6.0	9.0
4. Reason of shortage (% of centre had shortage)**:						
a. Lower supply than requirement	2	2	4	1	1	2
b. Children from other centre came here	0	0	0	1	0	1
c. Children outside of target list came	1	0	1	0	0	0

*EPI accepted rate is 15%

**Multiple responses considered.

Table 3.21: Percentage of vaccination centres by different indicators of location/ place of vaccination and residence (Session observation)

Indicators	Rural			Municipal		
	Round1 N=62	Round2 N=57	Total N=119	Round1 N=16	Round2 N=16	Total N=32
1. Any sign for locating sites (% of centres)	92.0	88.0	90.0	94.0	81.0	88.0
2. Item used for locating sites (% of centres used any sign)*						
a) Poster	97.0	90.0	94.0	80.0	85.0	82.0
b) Moniflag (EPI)	11.0	14.0	12.5	20.0	23.0	21.5
c) Banner	11.0	30.0	20.5	33.0	23.0	28.0
3. Number item used for locating sites (% of those who used any item)						
1 Item(s)	83.0	66.0	75.0	67.0	77.0	71.0
2 Item(s)	18.0	32.0	24.0	33.0	15.0	25.0
3 Item(s)	0.0	2.0	1.0	0.0	8.0	4.0
4. Place of vaccination at the centre (% of centres)						
a) Inside room	60.0	68.0	63.0	69.0	75.0	72.0
b) In verandah	27.0	26.0	27.0	31.0	25.0	28.0
c) Under a free	13.0	7.0	10.0	0.0	0.0	0.0

*Multiple answers considered

Table 3.22: Percentage of centres by record keeping and maintenance of discipline (Session observation)

Indicators	Rural			Municipal		
	Round ¹ N=62	Round ² N=57	Total N=119	Round ¹ N=16	Round ² N=16	Total N=32
1. Tally sheet used (% of centre)	97.0	93.0	95.0	94.0	100.0	97.0
2. Register used (% of centre)	92.0	95.0	93.0	75.0	88.0	81.0
3. Discipline maintained at the centre (% of centre)	73.0	72.0	72.0	75.0	81.0	78.0
4. Centre protected from sun/ rain (% of centre)	89.0	97.0	92.0	94.0	100.0	97.0

Table 3.23: Percentage of respondents by status of supervisory plan and implementation, NID round and type of study area (Preparatory interview)

Indicators	Rural			Municipal		
	Round1 N=53	Round2 N=53	Total N=106	Round1 N=15	Round2 N=14	Total N=29
NID supervision plan						
i. Prepared	98.0	96.0	97.0	93.0	100.0	97.0
ii. Implemented	94.0	88.0	91.0	86.0	86.0	86.0

Table 3.24: Percentage of supervisors by designation (Session observation and interview)

Designation	Rural			Municipal		
	Round1	Round2	Total	Round1	Round2	Total
1. BRAC staff	17.4 (8)	20.0 (8)	18.6 (16)	9.1 (1)	0.0 (0)	4.0 (1)
2. THFPO	23.9 (11)	17.5 (7)	20.9 (18)	0.0 (0)	0.0 (0)	0.0 (0)
3. TFPO	6.5 (3)	2.5 (1)	4.6 (4)	0.0 (0)	0.0 (0)	0.0 (0)
4. ATFPO	2.2 (1)	2.5 (1)	2.3 (2)	0.0 (0)	0.0 (0)	0.0 (0)
5. CS	6.5 (3)	5.0 (2)	5.8 (5)	0.0 (0)	21.4 (3)	12.0 (3)
6. DCS	0.0 (0)	0.0 (0)	0.0 (0)	9.1 (1)	7.1 (1)	8.0 (2)
7. DC	2.2 (1)	0.0 (0)	1.2 (1)	0.0 (0)	7.1 (1)	4.0 (1)
8. ADC	4.3 (2)	5.0 (2)	4.6 (4)	0.0 (0)	0.0 (0)	0.0 (0)
9. DDFP	4.3 (2)	0.0 (0)	2.3 (2)	0.0 (0)	0.0 (0)	0.0 (0)
10. TNO	6.5 (3)	0.0 (0)	3.5 (3)	0.0 (0)	0.0 (0)	0.0 (0)
11. MO	15.2 (7)	12.5 (5)	13.9 (12)	9.1 (1)	14.3 (2)	12.0 (3)
12. HI	34.8 (16)	32.5 (13)	33.7 (29)	9.1 (1)	7.1 (1)	8.0 (2)
13. AHI	30.4 (14)	20.0 (8)	25.6 (22)	9.1 (1)	0.0 (0)	4.0 (1)
14. FPI	10.9 (5)	12.5 (5)	11.6 (10)	27.3 (3)	0.0 (0)	12.0 (3)
15. EPI Tech	4.3 (2)	0.0 (0)	2.3 (2)	0.0 (0)	7.1 (1)	4.0 (1)
16. HA	6.5 (3)	12.5 (5)	9.3 (8)	0.0 (0)	0.0 (0)	0.0 (0)
17. SI	0.0 (0)	0.0 (0)	0.0 (0)	9.1 (1)	21.4 (3)	16.0 (4)
18. Sr. FWV	0.0 (0)	0.0 (0)	0.0 (0)	9.1 (1)	7.1 (1)	8.0 (2)
19. Dist. EPI Supervisor	2.2 (1)	2.5 (1)	2.3 (2)	36.4 (4)	7.1 (1)	20.0 (5)
20. Health education officer	6.5 (3)	5.0 (2)	5.8 (5)	9.1 (1)	0.0 (0)	4.0 (1)
21. District health superintendent	2.2 (1)	0.0 (0)	1.2 (1)	9.1 (1)	0.0 (0)	4.0 (1)
22. District public health nurse	0.0 (0)	0.0 (0)	0.0 (0)	9.1 (1)	0.0 (0)	4.0 (1)
23. SE-DPHE	2.2 (1)	0.0 (0)	1.2 (1)	0.0 (0)	0.0 (0)	0.0 (0)
24. Agri-officer	2.2 (1)	0.0 (0)	1.2 (1)	0.0 (0)	0.0 (0)	0.0 (0)
25. Dist. cold chain technician	2.2 (1)	2.5 (1)	2.3 (2)	0.0 (0)	0.0 (0)	0.0 (0)
26. Thana administrative officer	2.2 (1)	0.0 (0)	1.2 (1)	0.0 (0)	0.0 (0)	0.0 (0)
27. Municipality nirbahi officer	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	28.6 (4)	16.0 (4)
28. Municipality commissioner/UP member	0.0 (0)	2.5 (1)	1.2 (1)	27.3 (3)	21.4 (3)	24.0 (6)
29. Thana education officer	0.0 (0)	2.5 (1)	1.2 (1)	0.0 (0)	0.0 (0)	0.0 (0)
30. Municipality secretary	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	7.1 (1)	4.0 (1)
31. Municipal chairman	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	21.4 (3)	12.0 (3)
32. NGOs officer	0.0 (0)	0.0 (0)	0.0 (0)	9.1 (1)	28.6 (4)	20.0 (5)
33. UN body officer	0.0 (0)	12.5 (5)	5.8 (5)	0.0 (0)	0.0 (0)	0.0 (0)
34. Women affair officer	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	7.1 (1)	4.0 (1)
35. Others (project officer)	2.2 (1)	0.0 (0)	1.2 (1)	0.0 (0)	7.1 (1)	4.0 (1)
N=	46	40	86	11	14	25

Notes: Multiple responses were considered Figure in parenthesis indicate number of respondents

Table 3.25: Percentage of centres by number of supervisors visit (Session observation and interview)

Number of visit	Rural			Municipal		
	Round1 N=62	Round2 N=57	Total N=119	Round1 N=16	Round2 N=16	Total N=32
0	25.8	28.9	27.7	31.3	12.5	21.9
1	37.1	36.8	37.0	25.0	50.0	37.5
2	16.1	22.8	19.3	25.0	12.5	18.8
3	12.9	7.0	10.1	18.7	12.5	15.6
4	3.2	1.8	2.5	0.0	12.5	6.2
5	3.2	0.0	1.7	0.0	0.0	0.0
6	1.6	1.8	1.7	0.0	0.0	0.0
Average	1.9	1.7	1.8	1.9	1.8	1.8
H highest	6	6	6	3	4	4
Lowest	0	0	0	0	0	0

Note: Figure in parenthesis indicate number of centres.

Table 3.26: Work performed by the supervisors during visiting vaccination centres (Session observation)

Work	Rural			Municipal		
	Round1	Round2	Total	Round1	Round2	Total
1. Checked recording/ tally sheet fill up	54.3 (25)	50.0 (20)	53.3 (45)	45.5 (5)	42.9 (6)	44.0 (11)
2. Inquired about target achievement	60.9 (28)	37.5 (15)	50.0 (43)	34.4 (4)	28.6 (4)	32.0 (8)
3. Checked register	32.6 (15)	37.5 (15)	34.9 (30)	45.4 (5)	28.6 (4)	36.0 (9)
4. Checked quality of OPV administration	34.8 (16)	27.5 (11)	31.4 (27)	9.1 (1)	14.3 (2)	12.0 (3)
5. Observed cold chain condition	32.6 (15)	22.5 (9)	27.1 (24)	18.2 (2)	28.6 (4)	24.0 (6)
6. Checked session management	23.9 (11)	25.0 (10)	24.4 (21)	18.2 (2)	7.1 (1)	12.0 (3)
7. Checked the progress of vaccination	15.2 (7)	20.0 (8)	17.4 (15)	27.3 (3)	71.4 (10)	52.0 (13)
8. Filled NID supervisory checklist	15.2 (7)	7.5 (3)	11.6 (10)	9.1 (1)	0.0 (0)	4.0 (1)
9. Checked stock of OPV/ VAC	8.7 (4)	10.0 (4)	9.3 (8)	100.0 (8)	64.3 (9)	68.0 (17)
10. Checked attendance of workers	6.5 (3)	7.5 (3)	7.0 (6)	9.1 (1)	14.3 (2)	12.0 (3)
11. Checked discipline of centres	4.3 (2)	5.0 (2)	4.6 (4)	0.0 (0)	0.0 (0)	0.0 (0)
12. Appreciate the workers	8.7 (4)	0.0 (0)	46 (4)	0.0 (0)	7.1 (1)	4.0 (1)
13. Inquired about problems	0.0 (0)	0.0 (0)	0.0 (0)	27.3 (3)	21.4 (3)	24.0 (6)
N=	46	40	86	11	14	25

Notes: Figure in the parenthesis indicate number of respondents
Multiple responses counted

Table 3.2.1: The number of respondents by area and round of NID

District	Thana/ Munic.	Status of thana	Name of the centre	Respondents		Total
				Rnd 1	Rnd2	
Narayangonj	Araihazar	rural	Panchbaria	10	10	20
			Charpara	10	10	20
	Rajnagar	rural	Rajnagar	10	10	20
Moulvibazar	Moulvibazar	urban*	Moulvibazar	10	10	20

* Municipality

Table 3.2.2: # of people naming each of most common sources of information about NID

Source	Rural			Urban		
	round 1 (N=26)	round 2 (N=22)	round 1+2 (N=48)	round 1 (N=10)	round 2 (N=10)	round 1+2 (N=20)
Miking	(6)	(5)	23%	(8)	(8)	80%
GHW	(14)	(15)	60%	(1)	(4)	25%
Neighbors	(5)	(1)	12%	(1)	(1)	10%
NGO workers	(5)	-	10%	-	-	-

Note: Figures in parentheses indicate responses

Multiple responses considered.

Full questions are in section 3.2 (Parental knowledge about the vaccine)

Table 3.2.3: Number of correct answers on questions related to knowledge of vaccine (exit point interview)

	Rural									Urban		
	Round 1 N=30				Round 2 N=30				Round 1+2	Round 1	Round 2	Round 1+2
	Raj N=10	Pan. N=10	Char. N=10	Tot. N=30	Raj. N=10	Pan. N=10	Char. N=30	Tot. N=30	Tot. N=60	Mo N=10	Mo N=10	Tot. N=20
Quest. a	(1)	(4)	(3)	(8)	(2)	(4)	(2)	(8)	27%	(4)	(5)	45%
Quest. b	(1)	(3)	(3)	(7)	(2)	(3)	(1)	(6)	22%	(4)	(5)	45%
Quest. c	(5)	(7)	(0)	(12)	(2)	(3)	(6)	(11)	38%	(8)	(6)	70%
Quest. d	NA	NA	NA	NA	(6)	(2)	(0)	(8)*	44%	NA	(5)	50%
Quest. e	NA	NA	NA	NA	(2)	(1)	(1)	(4)*	22%	NA	(0)	0%

*Only 18 respondents: 6 in each area

Note: NA=Not Applicable

Figures in parentheses indicate number of sample

Table 3.2.4: Number of correct answers on questions (a-e) concerning parental knowledge about the vaccine (Pre-NID interview)

Source	RURAL						Round 1+2 N=50	URBAN		Round 1+2 N=25
	Round 1 N=20			Round 2 N=30				Rnd 1 N=15	Rnd 2 N=10	
Indicators	Arab.	Raj.	Total	Arab.	Raj.	Total	Total	Moulo.	Moulo.	Total
Quest.a	(1)	(4)	(5)	(4)	(0)	(4)	18%	(7)	(8)	60%
Quest.b	(0)	(3)	(3)	(3)	(3)	(6)	18%	(6)	(4)	40%
Quest.c	(3)	(3)	(6)	(4)	(5)	(9)	60%	(4)	(6)	40%
Quest.d	(1)	(1)	(2)	(4)	(3)	(7)	18%	(3)	(5)	32%
Quest.e	NA	NA	NA	(0)	(2)	(2)	6,7%	NA	(2)	20%

Note: NA=Not Applicable

Figures in parentheses indicate number of sample

Full questions are in section 3.2 (preparation day interview)

Table 3.3.1: Percentage of NID vaccine acceptance by type and demographic characteristics

Age and Sex	Polio		Vitamin-A
	April	May	May
All	79.4	81.1	72.7
Age			
1 or less	77.3	81.8	44.2
1-4	81.3	82.0	81.0
5	75.3	77.3	75.5
Sex			
Male	79.1	81.3	73.9
Female	79.8	80.9	71.3

Source: Hadi et. al., 1996.

Table 3.3.2: OPV and VAC coverage according to the providers (Session observation and interview)

Indicators	Rural			Urban		
	Round1	Round2	Total	Round1	Round2	Total
1. OPV coverage according to providers version (% of children)	95.0	94.0	94.0	94.0	99.0	97.0
2. VAC coverage according to providers version (% of children)	NA	89.0	89.0	NA	DK	DK

Note: Dk = Not not know.

Table 3.3.3: Change in participation of children between April and May by programme involvement

Programme involvement	No Change		Change	
	Both	Neither	Drop	New
All	69.2	9.2	9.8	11.8
None (Non target)	66.0	9.3	11.0	13.7
None (Target)	68.9	10.7	9.1	11.3
NGO member	72.5	7.2	9.6	10.7

Source: Hadi et al., 1996

Table 3.3.4: Change in participation of children between April and May by region.

Region	No Change		Change	
	Both	Never	Drop	New
Manikganj	78.3	3.5	13.1	5.1
Joypurhat	59.8	8.1	20.1	12.0
Jamalpur	79.4	3.1	4.1	13.4
Lalmonirhat	71.3	2.9	9.6	16.3
Kushtia	90.2	0.5	5.7	3.6
Jessore	77.5	2.5	7.8	12.3
Jhalakathi	59.6	19.7	6.6	14.1
Cox's bazar	92.5	3.4	2.2	1.9
Moulvi bazar	62.2	6.1	16.3	15.3
Kishoreganj	15.0	43.7	34.5	6.8

Source: Hadi et al., 1996

Table 3.4.1: Percentage of Respondents by status of IEC material development and average number of items developed locally (Preparatory interview)

Indicators	Rural			Municipal		
	Round 1 N=53	Round 2 N=53	Total N=106	Round 1 N=15	Round 2 N=14	Total N=29
1. Any IEC material developed locally (% of respondents)	25.0	23.0	24.0	40.0	29.0	35.0
2. Average item developed (distribution of those who had developed)						
a. Poster	530 (5)	1,104 (6)	842 (11)	265 (2)	500 (1)	343 (3)
b. Leaflet	4,300 (4)	5,125 (4)	4,713 (8)	6,768 (3)	2,600 (2)	5,100 (5)
c. Banner	180 (10)	21 (6)	19 (16)	3 (2)	11 (4)	7 (6)
d. Cinema slide	0.0 (0)	0.0 (0)	0.0 (0)	4 (1)	0.0 (0)	4 (1)
e. Sticker	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	100 (1)	100 (1)

Note: Figure in parenthesis indicate thana/municipalities

Table 3.4.2: Sources of funds for developing IEC material and other purposes at local level by round and residence (Preparatory interview)

Indicators	Rural			Municipal		
	Round 1 N=13	Round 2 N=12	Total N=25	Round 1 N=6	Round 2 N=4	Total N=10
1. Sources of funds for developing IEC materials (% of thana/ municipality developed IEC materials):						
Government	31.0 (4)	25.0 (3)	28.0 (7)	33.0 (2)	25.0 (1)	30.0 (3)
Local Govt.*	23.0 (3)	33.0 (4)	28.0 (7)	67.0 (4)	50.0 (2)	60.0 (6)
NGOs	15.0 (2)	25.0 (3)	20.0 (5)	17.0 (1)	0.0 (0)	10.0 (1)
Community	15.0 (2)	8.0 (1)	12.0 (3)	0.0 (0)	0.0 (0)	0.0 (0)
Other	8.0 (1)	0.0 (0)	4.0 (1)	0.0 (0)	0.0 (0)	0.0 (0)
Not stated	15.0 (2)	42.0 (5)	28.0 (7)	0.0 (0)	25.0 (1)	10.0 (1)
2. Whether funds raised for other purposes** (% of thana / municipality raised)	19.0 (10)	20.0 (1)	10.0 (11)	27.0 (4)	29.0 (4)	28.0 (8)
	N=53	N=53	N=106	N=15	N=14	N=29
3. Average amount raised (Distribution of those who had raised)	9,756	26,580	11,285	17,340	17,550	17,445

Notes: 1. Multiple responses counted

2. Figure in parenthesis indicate number of thana/municipality

* Local elected body viz : Union council, thana council and municipality

** Entertainment, Transport, Publicity, Advocacy meeting and Volunteers orientation.

Appendix 1: Description of NID activities, operational procedures and coordination

1.1 Service Provision in NIDs: Provision of the following services are made to provide through NIDs:

- i. administering OPV to all children under 5 years of age;
- ii. administering vitamin A capsule (VAC) to all children 1-5 years of age;
- iii. identifying and enlisting the children 9-12 months of age who did not receive measles vaccine from the routine EPI centres;
- iv. identifying and enlisting the pregnant women for TT vaccine;
- v. ensuring TT and measles vaccinations to those pregnant women and left out children between the period of the first and second rounds of NIDs; and
- vi. reporting about the suspected poliomyelitis cases.

1.2 The Role of the Managers: The managers at different layers are to perform the following critical tasks for NIDs:

1. Formation of NID committees at national, division, district, thana and municipality levels drawing representatives from the chiefs of all local administrations, NGOs, clubs, business organisations, schools, journalist forums, and public leaders.
2. Drawing up a precise plan of action on NID separately for national, divisional, district, thana and municipality levels, and distribution of tasks and responsibilities to the persons involved.
3. Provide orientation to the persons involved in the implementation of the plan of action, and volunteers.
4. Ensure logistic supply including vaccines to the respective areas.
5. Coordination of NID activities.
6. Arrange and participate in the advocacy meeting of NID.
7. Involve the members of parliament, Municipal and Union Council Chairmen and members in the NID.
8. Supervise the field activities to identify problems and provide solutions instantly with a particular focus to the social mobilisation.
9. Arrange a reflection session for the persons involved in NID during the post-NID sessions to discuss the strengths and weaknesses to enhance the effectiveness of the next NIDs.
10. Evaluate the impact of NIDs.

1.3 Division Level Activities:

1. Arrange an orientation for all districts and municipal managers/officers to formulate a plan of action at division level.
2. Initiate monitoring of the activities and advocacy to the districts, thanas and municipalities.
3. Identify OPV preservation facilities at divisional level.
4. Formation of NID committee at division level to chalk out a detailed action plan by ensuring representations from government, non-government, private, business and charitable organisations.
5. Arrange and conduct planning meetings at all division, and municipalities of the district. Must involve invitations, agendas and follow-up action plans.
6. Prepare a division roster of action, and review the weekly progress.

1.4 District level

1. Estimate vaccine requirement and arrange their preservation and distribution including other necessities.
2. Arrange vehicle for supplies and visit of the supervisors.
3. Identify and use district level resources and enhance the social mobilisation.
4. Prepare a separate list for all thanas and municipalities of the district, including estimated number of vaccination centres and requirements of vaccines and other necessities.
5. Formation of NID committee at district level to chalk out a detailed action plan by ensuring representations from government, non-government, private, business and charitable organisations.
6. Arrange and conduct planning meetings at all districts, and municipalities of the district. Must involve invitations, agendas and follow-up action plans.
7. Prepare a district roster of action, and review the weekly progress.

1.5 Field Level Activities: The essential tasks at field level are categorised into 3 groups.

1.5.1 NID Preparatory Activities:

- i. Estimate the number of children below 5 years of age;
- ii. Determine the doses and vials of vaccine;
- iii. Motivate the parents to attend the NID session.
- iv. Prepare public to attend NID session.
- v. Examine the cold-chain equipment's (e.g. refrigerator, vaccine carrier, ice pack etc.), and repair any malfunctional ones as needed;
- vi. Fix the number of vaccination centres;
- vii. Determine the number of Health and Family Welfare Assistants and volunteers;
- viii. Register the eligible children by visiting households, supply referral slips to the parents and provide primary information about NID; and
- ix. Mobilise the community people, local groups, and institutes through meetings, and individual contact.

1.5.2 Activities on NIDs:

- i. Ensure supply of all necessities to the vaccination centres;
- ii. Vaccinate the children in the centers;
- iii. Probe the referral slips vis-à-vis registration forms;
- iv. Fill up tally sheet for each child vaccinated;
- v. Maintain coordination between health and family welfare workers, and local volunteers;
- vi. Feed vitamin A capsule to all children 1-5 years of age on the second round of NID; and
- viii. Prepare reports from tally sheets to submit to the supervisors at upper hierarchies.

1.5.3 Post NID Activities

- i. Review the success or failure of NID in the following monthly meetings;
- ii. Extend assistance to the local and national evaluation of NID;
- iii. Draw a more effective plan of action for the second round of NID; and
- iv. Arrange measles and TT vaccinations between the period of the first and second rounds of NID in the routine outreach EPI sites for the over looked children and women.

1.6 Checklist for Division, District and Thana Level Advocacy and Planning Meetings

A. Pre-Meeting Preparation:

- i. Arrange and conduct orientation for Divisional Commissioners, Deputy Commissioners, Thana Nirbahee Officers and other related persons;
- ii. Fix up date, place and time through discussion;
- iii. Enlist the names of the participants;
- iv. Prepare and distribute letter of invitation;
- v. Fix up agenda for the meeting;
- vi. Prepare and discuss briefing papers based on the speeches of the participating officers;
- vii. Prepare checklist and distribute tasks;
- viii. Prepare handbill, leaflet etc. on NID to distribute to the participants of the meeting; and
- ix. Prepare a banner for the meeting.

B. Tasks on the Meeting Day

- i. Check whether the meeting venue is ready;
- ii. Check whether the audio-visual machine including other items are ready;
- iii. Distribute agenda of meeting and maintain sequence of it; and
- iv. Arrange light refreshment immediately after the advocacy meeting and notify the place and time of the next meeting.

C. Tasks at the end of Meeting

- i. Enlist activities as per the decisions of the meeting;
- ii. Maintain liaison with the respective person for ensuring effective implementation of each decision; and
- iii. Arrange the meeting of the NID task force.

1.7 Social Mobilisation and Communication

A. National Level: Carrying out briefing and advocacy meetings separately with the national leaders, artists, litterateurs, celebrities etc. Publicising the role of different social groups through mass media. Distribution of letters from national leaders and representatives with their instructions, directions etc. to the various levels of their chain of command for NID.

B. Division, District and Thana Level: Identification of various leaders and organisations and arrange advocacy meetings through individual contact in order to orient them on NID vis-à-vis their possible role in NID. Thus form NID committee ensuring their representations.

C. Community Level: Identification of the local leaders, personalities and organisations and arrange advocacy meetings for them. Arrange social mobilisation meetings in cooperation with them and allow them to speak out to the people, because they are most trusted by the local people and in turn they can easily motivate the people towards NID.

1.8 Strategy for Information, Education and Motivation: The following strategies are followed for raising effective awareness on the whole of NID:

A. Interpersonal Contact:

- i. Household visit;
- ii. Advocacy meeting; and
- iii. Special briefing meeting.

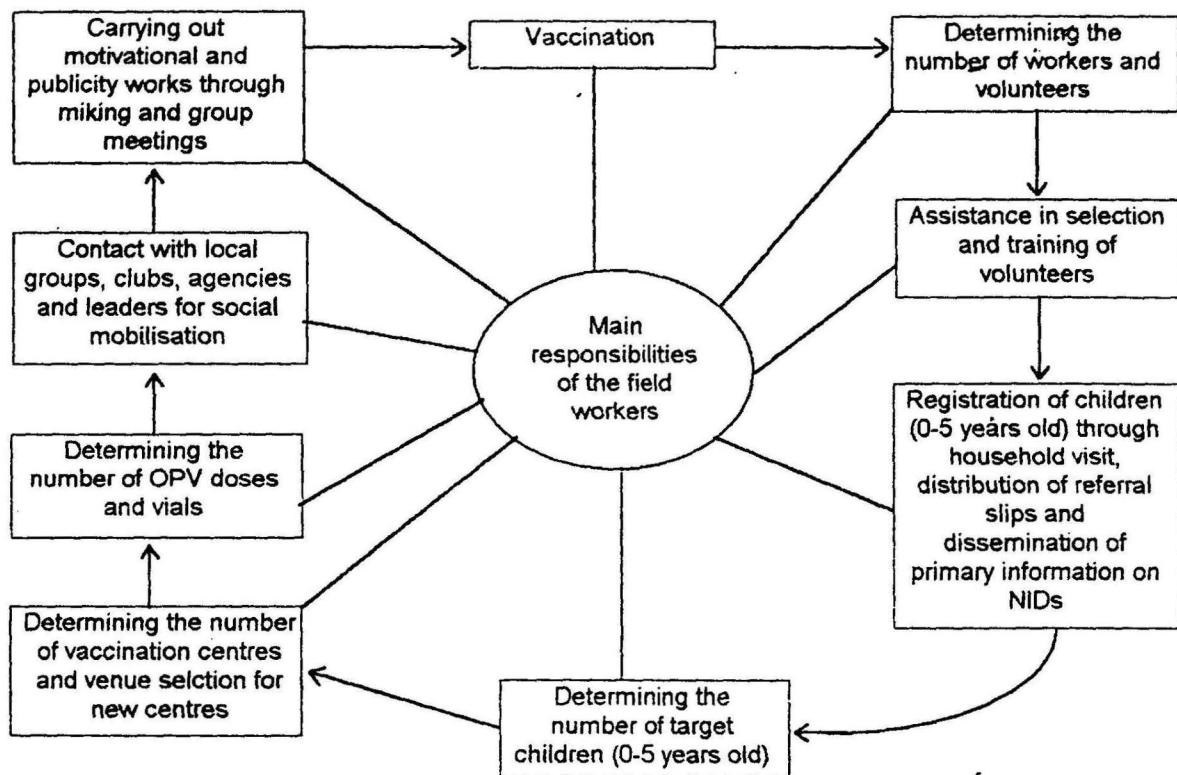
B. Mass Media

- i. Radio, Television, Newspapers and Cinema;
- ii. Paper, Leaflet, Sticker, Banner and Billboard;
- iii. Miking; and
- iv. Fliers sent to schools.

1.9 Selection and Training of Volunteers: Each of the 130,000 centres recruits 5 volunteers for two types of activities.

- a. Vaccinator:** Out of the 5 selected, two work as vaccinators. They administer OPV and VAC in the centre on the NIDs and thereby fill up tally sheets. The Health and Family Welfare Assistants also work with the volunteers.
- b. Social Mobiliser:** The remaining 3 volunteers conduct social mobilisation activities, maintain discipline in the vaccination sessions and bring the parents with their children for vaccination. The volunteers are generally selected from among the students, teachers, clergies, trained birth attendants and NGO workers by the Thana Administrators, Union Council Chairmen, NGO workers, Community leaders, and Health and Family Welfare Officials. They are given training on NID in batches.
- c. The field workers:** The health assistants, family welfare assistants etc. are instrumental to carryout the grassroots activities of the NIDs. The following figure illustrates their main responsibilities in NID.

Figure 1.9.1: Main responsibilities of the field workers in NIDs



Source: NID Folder, Dhaka:EPI (modified)