



Hepatitis B Serosurveillance Study

In order to asses the impact of HepatitisB vaccination in Bangladesh a serosurveillance study is being conducted jointly by Institute of Epidemiology, Disease Control and Research, Bangladesh (IEDCR), International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) and World Health Organization (WHO). The objectives of the study are: general 1. To assess the impact of hepatitis B vaccination in Bangladesh; and specific 1. To measure the prevalence of HBsAg among children born before and after introduction of HepatitisB vaccination in Bangladesh; 2. To calculate the vaccine effectiveness of HepatitisB vaccine; 3. To estimate the level of vertical transmission of HepatitisB infection in Bangladesh; and 4. To assess the validity of undocumented vaccination history information provided by caretakers.

A training was organized from 12 September 2011 to 18 September 2011 at ICDDR,B for medical technologists, field research assistants and field research officers followed by sample collection in Sarail of Brammanbaria (1st cluster) conducted on 19-20 September 2011. Four teams have been made for data collection from 105 clusters which is situated in 105 upazilas of the country so, one team has to conduct nearly 26 clusters which will take about six months (October 2011-March 2012). Each team consists of two medical technologists, two field research assistants and one research officer. The main activities of a team are follows:

Team	Main activities
Medical technologist	1. Oral fluid collection for instant HBsAg rapid testing 2. Blood sample collection for laboratory and instant blood grouping 3. At evening –centrifuging and Aliquot
Field research assistant (FRA)	1. Household survey for eligibility 2. Conduct interviews 3. If HBsAg positive, conduct private counseling
Field research officer (FRO)	1. Ensure all logistics to the field 2. Ensure quality 3. Check 5% of the interviews

Data and blood samples have been collected from two groups of children –one group consisting of children born before the introduction of the HepB vaccine and the other group consisting of children born after the introduction. Children have been selected from households of a randomly chosen direction of a cluster. Blood samples also have been being taken from the mothers of children who are HBsAg positive to asses the possibility of perinatal infection (vertical transmission). The

field research assistant will use PDA for data input at the field level and it will be transferred to FRO's laptop every evening. After completing every 3 cluster ICDDR,B will collect the data from PDA. Two field assistants will be engaged for carrying samples from the field to IEDCR. IEDCR will provide report within 15 days of sample reception. Upazila health authorities have been providing extraordinary support to the field teams for accomplishing the activities at the field level while maintaining high quality. We hope that this study will provide valuable and useful information to EPI-HQ for future planning.

Surveillance Summary

Description	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011 ¹
Number of AFP cases	1287	1365	1128	1301	1458	1619	1844	1790	1502	1537	1198
No. of compatible cases according to virologic classification system	36	0	0	2	0	2	0	0	0	0	0
No. of cases with isolation of wild poliovirus	0	0	0	0	0	18	0	0	0	0	0
No. of discarded polio cases (i.e., non-polio AFP)	1251	1365	1128	1299	1458	1599	1844	1790	1502	1537	1083
No. of cases pending classification	0	0	0	0	0	0	0	0	0	0	115
Expected annual number of non-polio AFP cases (2/100,000 children <15 yr)*	533	549	556	563	1094	1114	1135	1153	1151	1203	1220

AFP Surveillance Performance Indicators

Indicators	Target	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011 ¹
01 Annual Non-Polio AFP rate in children < 15 years old	≥ 2.0	2.34	2.49	2.03	2.31	2.66	2.87	3.25	3.10	2.61	2.63	2.50
02 Completeness of passive reporting from facilities	≥ 90%	65%	62%	67%	82%	91%	89%	90%	93%	91%	91%	93%
03 Timeliness of passive reporting from facilities	≥ 80%	38%	36%	62%	75%	84%	83%	85%	87%	86%	84%	86%
04 Suspected AFP cases investigated within 48 hours of notification	≥ 80%	96%	96%	98%	98%	99%	100%	99%	99%	99%	99%	99%
05 Confirmed AFP cases with 2 stool specimens collected within 14 days after paralysis onset	≥ 80%	80%	89%	90%	90%	92%	93%	92%	92%	94%	95%	96%
06 Stool specimens arriving at laboratory within 3 days after collection	≥ 80%	97%	98%	99%	99%	98%	99%	100%	100%	100%	100%	100%
07 Stool specimens arriving at laboratory in "good" condition "good" = 1. Presence of unmelted ice or temperature <8°C 2. Adequate volume (≥ 8 grams or size of ½ thumb) 3. No evidence of leakage 4. No evidence of desiccation (drying)	≥ 90%	100%	99%	100%	100%	100%	100%	100%	100%	100%	100%	100%
08 Confirmed AFP cases receiving a follow-up exam at least 60 days after paralysis onset	≥ 80%	93%	99%	100%	98%	99%	100%	100%	99%	99%	99%	95% ²
09 Stool specimens with laboratory results: - Within 28 days after specimen receipt (old algorithm)	≥ 80%	99%	100%	100%	100%	98%	100%	-	-	-	-	-
- Within 14 days after specimen receipt (new algorithm)	≥ 80%						80%	93%	95%	96%	95%	
10 Stool specimens from which non-polio enterovirus (NPEV) was isolated	≥ 10%	29%	28%	23%	20%	20%	15%	15%	23%	19%	19%	21%

¹ Data as of September 24, 2011; ² among cases occurring up to July 10, 2011; * Prior to 2005 NPAFP rate calculated as 1/100,000 under 15 children

AFP Surveillance Performance Indicators, 2010 - 2011

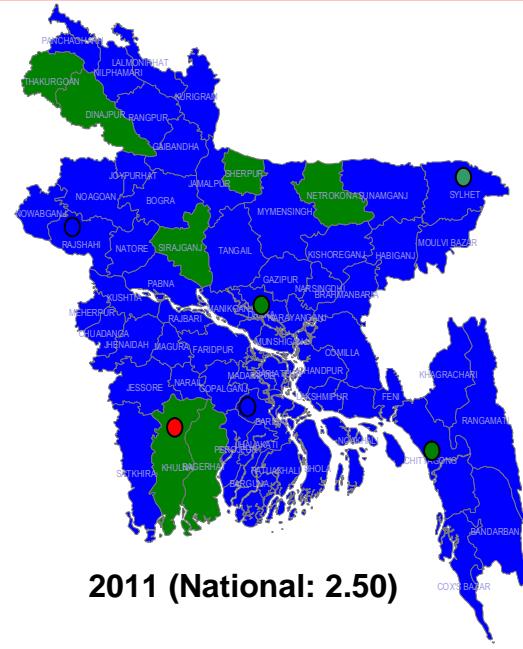
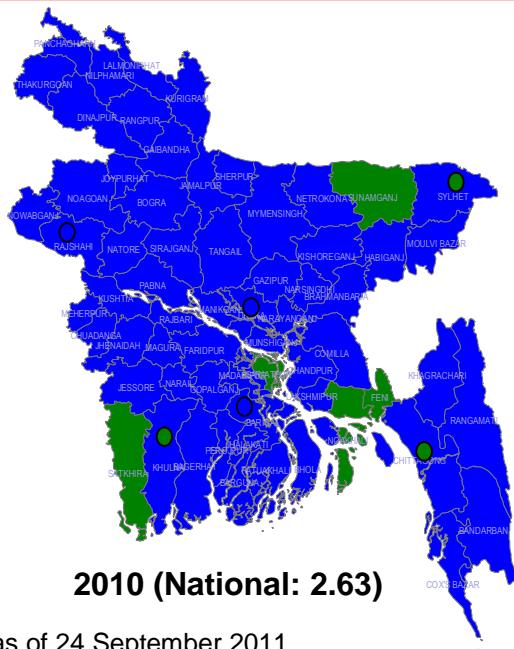
District	Minimum operational target of non-polio AFP		Total # AFP ¹		Wild polio-virus isolated		# Compatible cases		Non- Polio AFP cases ¹		Pending final classif. ¹		Annualized Non-polio AFP Rate ¹		Notification within 10 d after paralysis onset ¹		Investigation within 48 h after notification ¹		% with 2 stools within 14 days ¹		Stool sample arriving to lab within 72 hrs ¹		% with 60-day follow-up ²				
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011			
Barisal Division																											
Barguna	8	9	8	8					8	8	0	0	2.01	2.71	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Barisal (non BCC)	21	21	29	20					29	17	0	3	2.90	2.29	100%	100%	100%	100%	97%	100%	100%	100%	100%	100%	100%	100%	100%
BCC only	3	3	4	2					4	2	0	0	3.78	2.55	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	NA
Bhola	17	17	25	22					25	18	0	4	3.12	3.03	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jhalakati	7	7	11	9					11	9	0	0	3.37	3.72	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Patuakhali	14	15	15	14					15	12	0	2	2.17	2.35	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Perojpur	11	11	19	14					19	13	0	1	3.67	3.38	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Total_BAR	81	83	111	89	0	0	0	0	111	79	0	10	2.89	2.77	99%	100%	100%	100%	99%	100%	100%	100%	100%	100%	100%	100%	
Chittagong Division																											
Bandarban	3	3	5	4					5	3	0	1	3.53	2.86	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Brahmanbaria	23	23	30	22					30	19	0	3	2.68	2.29	100%	100%	100%	100%	97%	100%	98%	95%	100%	100%	100%	100%	100%
Chandpur	22	22	23	25					23	21	0	4	2.18	2.68	91%	92%	100%	91%	92%	100%	100%	100%	100%	100%	100%	100%	100%
Chittagong (non CCC)	42	42	42	34					42	33	0	1	2.04	2.16	83%	97%	100%	97%	83%	91%	100%	100%	100%	100%	100%	100%	100%
CCC only	21	21	18	12					18	10	0	2	1.76	1.32	94%	100%	100%	94%	92%	100%	100%	100%	100%	100%	100%	NA	
Comilla	44	44	63	45					63	43	0	2	2.91	2.68	97%	98%	100%	97%	98%	100%	100%	100%	100%	100%	100%	100%	100%
Cox's Bazar	17	17	20	18					20	18	0	0	2.41	2.93	95%	100%	100%	95%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feni	12	12	7	16					7	16	0	0	1.23	3.80	100%	100%	86%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Khagrachari	5	5	8	6					8	4	0	2	3.29	2.22	88%	83%	100%	88%	83%	100%	100%	100%	100%	100%	100%	100%	100%
Lakshmpur	15	15	17	14					17	14	0	0	2.43	2.70	94%	100%	100%	94%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Noakhali	25	25	17	30					17	30	0	0	1.40	3.34	100%	93%	71%	97%	100%	97%	100%	100%	100%	100%	100%	100%	100%
Rangamati	5	6	7	4					7	4	0	0	2.83	2.18	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	NA
Total-CTG	234	235	257	230	0	0	0	0	257	215	0	15	2.26	2.55	94%	97%	98%	99%	94%	96%	100%	100%	100%	100%	100%	100%	
Dhaka Division																											
Dhaka (non DCC)	24	24	45	36					45	33	0	3	3.84	3.80	93%	92%	100%	97%	98%	92%	99%	100%	100%	100%	100%	100%	100%
DCC only	58	59	70	48					70	41	0	7	2.42	1.91	96%	96%	100%	94%	96%	100%	97%	100%	82%				
Faridpur	17	17	17	16					17	14	0	2	2.07	2.30	94%	81%	100%	94%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Gazipur	20	20	27	17					27	15	0	2	2.83	2.12	100%	88%	100%	96%	88%	100%	80%	50%					
Gopalganj	11	12	16	15					16	15	0	0	2.95	3.73	88%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jamalpur	20	21	36	28					36	23	0	5	3.63	3.13	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Kishoreganj	25	25	42	24					42	21	0	3	3.49	2.35	90%	88%	95%	100%	93%	79%	100%	92%	100%				
Madaripur	11	11	12	10					12	10	0	0	2.25	2.53	100%	80%	92%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Manikganj	13	13	23	15					23	13	0	2	3.75	2.86	100%	100%	100%	100%	93%	98%	100%	100%	100%	100%	100%	100%	100%
Munshiganj	13	13	20	13					20	12	0	1	3.29	2.67	100%	92%	100%	95%	92%	100%	96%	100%	100%	100%	100%	100%	100%
Mymensingh	43	43	48	34					48	33	0	1	2.28	2.12	88%	91%	100%	96%	91%	100%	100%	100%	100%	100%	100%	100%	100%
Narayanganj	21	21	24	24					24	22	0	2	2.35	2.90	100%	96%	100%	96%	96%	100%	100%	100%	100%	100%	100%	100%	100%
Narsinghdi	18	19	25	16					25	14	0	2	2.79	2.11	92%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Netrokona	19	19	31	15					31	12	0	3	3.34	1.74	87%	93%	100%	100%	94%	93%	100%	100%	100%	100%	100%	100%	100%
Rajbari	9	10	11	9					11	8	0	1	2.45	2.41	91%	100%	100%	91%	89%	100%	100%	100%	100%	100%	100%	100%	100%
Sariatpur	11	11	10	8					10	8	0	0	1.96	2.12	90%	100%	100%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Sherpur	12	13	15	8					15	6	0	2	2.51	1.35	87%	88%	100%	100%	93%	100%	100%	94%	100%	NA			
Tangail	31	32	35	27					35	23	0	4	2.28	2.02	97%	89%	100%	91%	96%	100%	100%	100%	100%	100%	100%	100%	80%
Total-DHAKA	376	383	507	363	0	0	0	0	507	323	0	40	2.76	2.37	94%	93%	99%	100%	95%	94%	100%	99%	98%	93%	93%		
Khulna Division																											
Bagerhat	15	15	16	14					16	10	0	4	2.24	1.89	100%	93%	100%	93%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Chuadanga	10	10	20	15					20	12	0	3	4.22	3.42	100%	100%	90%	100%	85%	87%	100%	100%	100%	100%	100%	100%	100%
Jessore	24	24	33	22					33	22	0	0	2.84	2.55	94%	91%	100%	97%	95%	100%	100%	100%					

Disease Surveillance, 2010 - 2011

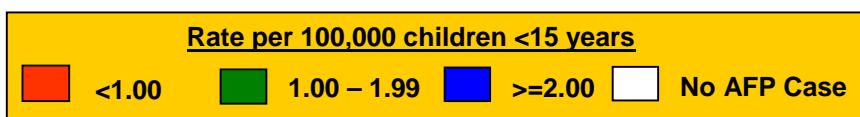
District	Neonatal Tetanus						Measles						AEFI					
	# of case reported by Active Surveillance		# of case reported by Passive Surveillance		# of case Investigated		# of case reported by Active Surveillance		# of case reported by Passive Surveillance		Outbreak*		Number of Outbreak Investigated		# of cases			
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011		
Barisal Division																		
Barguna			1				1	25	8	34					9	10	1	
Barisal (non BCC)	2	1	3	1		1		5	4	4					65	22		
BCC only							2	2	2	3					4			
Bhola	2	2	4	2	3	1		9	2	19					2	3		
Jhalakhati							1	9	1	12					30	7		
Patuakhali	4	1	3	1	4	1	1	31	7	24			2		30	1	2	
Pirojpur	1		1		1		1	13	13	18					13	10		
Total-Barisal	8	5	11	5	7	4	6	94	37	114	0	2	0	39	125	45		
CTG Division																		
Bandarban								1	1	2			3		109	2	1	
Brahmanbaria	4	1	2	1	1			1	11	32			3		13	7		
Chandpur	2		1		2		3	5	44	18		2	18	27	16	40		
Chittagong (non CCC)			1	1		1	2	6	9	16			1		11	4		
CCC only	6	1	5	1	6		9	23	3	19		4		172	1			
Comilla	4	1		1	5		1	2	29	21		1		29	13	19		
Cox's Bazar	1	1	1	1	1	1	5	7	7					2			2	
Feni	4		3		4			9	2	19					6	5		
Khagrachari							2	15	10	21				6	3	1		
Laxmipur	5	4	11	2	6	4	2	10	47	43		3		53	16	16		
Noakhali	4	5	4	6	5	6		13	5	37				9	6			
Rangamati							5	10	15	18		2		6	2			
Total-Chittagong	30	13	28	13	30	12	25	100	183	253	0	19	18	396	98	101		
Dhaka Division																		
Dhaka (non DCC)	3	1	1		4	2	1	99	39	73			87	8	31	27		
DCC only	4	2	2		3		19	332	230	351		13		206	36	12		
Faridpur	4	1	7	2	3			2	6	14				59	20			
Gazipur	1	1	1		1	1	6	28	28	29				21	15			
Gopalganj	2		5		1	2	4	1	13			2		27	18	3		
Jamalpur	2	1	1		1	1		4	109	63				19	10			
Kishoreganj	5	4	8	7	5	4	1	3	56	30				22	12			
Madaripur	3		5		1	2	3	6	6			1		7	52	20		
Manikganj								3	15	36		2		6	24	12		
Munshiganj	1		1		1	2	11	91	34			46		28	12			
Mymensingh	4	5	9	6	3	5	4	19	45	79				5	52	21		
Narayanganj	1	1			1	1	1	9	23	11				5	27	11		
Narsingdhi								2	15	34				41	27			
Netrokona	1	1	4	3		1			36	26		1		13	3	2		
Rajbari	1		1		1			1	10	22		1		6	30	24		
Shariatpur		1					2	21	20					22	13			
Sherpur		1	3					4	22	26		1		12	3			
Tangail	4	2	3		4	2	11	19	20	43				58	36			
Total-Dhaka	30	26	41	29	26	20	49	545	773	910	0	21	133	283	555	280		
Khulna Division																		
Bagerhat	2	3	3	2	2	1		1	7	10		1		12	16	97	33	
Chuadanga	2		2		1			2	3	17		2		10	9			
Jessore	2	1	2		2	1	5	13	21	64		1		32	8			
Jhenaidah	1		1		1		2	41	7	45		2		13	9	3		
Khulna (non KCC)	3		5					1	19	16				43	31			
KCC only	1		1	1	1			2	1	8				24	7			
Kushtia	1	1		1	1		2	10	16	20		1		27	10	6		
Magura	2		2					6	10	22		1		21	11			
Meherpur	1		1				2	6	20	14				2	3			
Narail	1	1	3	1	1		1	23	15	19				5	6	10		
Satkhira	1		1		1		2	6	10	17				28	13			
Total-Khulna	11	12	13	13	10	2	14	111	129	252	0	8	12	61	282	134		
Rajshahi Division																		
Bogra	2	3	1	2	2	3	3	5	36	53		1		7	126	36		
Joypurhat								14	1	20		1		27	15			
Natore	1		1		1		1		39	37				6	28	13		
Noagoan		1					1	11	28	41	60		5		63	52	20	
Nowabganj	1	2	1	2	1	2	2	1	20	20				10	7	10		
Pabna	1	1	1		1	1	3	1	113	120		2		25	24	15		
Rajshahi (non RCC)	2		1		2		3	1	14	25		1	57	8	37	25		
RCC only								4	25	22	30		4	40	168	42	9	
Sirajganj	1	1					1	1		5		2		25	9	4		
Total-Rajshahi	8	8	5	4	7	8	28	75	287	370	0	16	97	312	352	147		
Rangpur Division																		
Dinajpur	1	1	2	1	1		1	13	25	109		3		12	51	20		
Gaibandha	1	2	1	3	1	2		4	4	16		2		28	13			
Kurigram	2				2		1	7	1	9				12	4			
Lalmonirhat								10	1	13				24	10			
Nilphamari					1		1	2	1	4			4		32	7		
Panchagarh							1	3	3	3		1		17	9			
Rangpur	1		1		1			1		9				7	12			
Thakurgaon							4		16	38				22	9			
Total-Rangpur	5	3	4	4	6	2	8	40	51	201	0	6	0	16	193	84		
Sylhet Division																		
Habiganj	7	4	7	5	2		5	11	9	18				6	2			
Maulvibazar	2	1	3	2	1		18	29	24	52		1		4	2			
Sunamganj	5		4	3	5		6	23	6	45		2		118	21	2		
Sylhet (non SCC)	2		2				19	8	29	44				5	2	2		
SCC only							16	4	9	8				1				
Total-Sylhet	14	7	14	12	8	0	64	75	77	167	0	3	0	123	33	9		
National	106	74	116	80	94	48	194	1,040	1,537	2,267	0	75	260	1,230	1,638	800		

Data as of 30 September 2011, * Only Lab Confirmed Measles

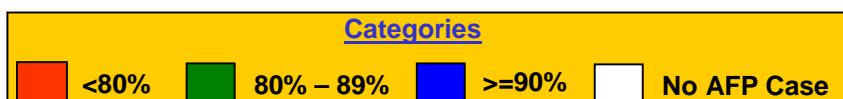
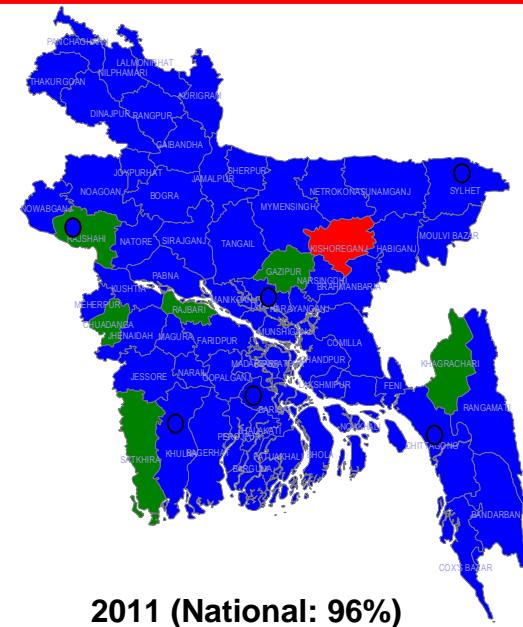
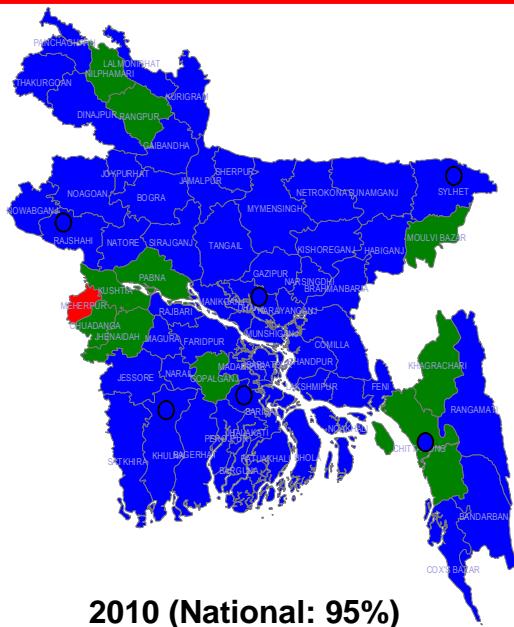
Annualized Non-Polio AFP Rate, by District, Bangladesh 2010-2011*



*Data as of 24 September 2011



Percentage of AFP Cases with Two Stool Samples Collected within 14 days of Paralysis Onset, by District, Bangladesh 2010-2011*



*Data as of 24 September 2011

International Developmental Partners for Polio Eradication in Bangladesh include Centers for Disease Control and Prevention, Atlanta, Governments of Japan, the Netherlands, USAID, Rotary International, U.K. DFID, UN Foundation, UNICEF and WHO