

Surveillance: Key to disease control

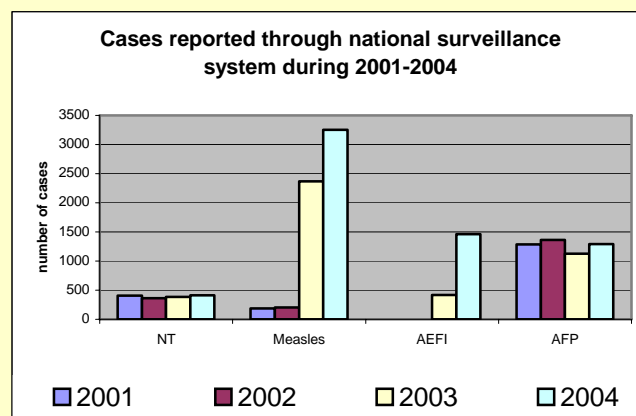
Surveillance is an ongoing process that helps us to interpret the actual situation in the field regarding particular disease epidemiology and give us a basis for planning, implementing and evaluating disease control program. With an urgent need to eradicate polio Government of Bangladesh has introduced AFP surveillance system since 1996. Initially the surveillance performance indicators were not up to the desired standard and Government of Bangladesh, considering the urgency of polio eradication, set up a network of Surveillance Medical Officers (SMO) with the help of WHO. At the same time USAID funded IOCH helped with surveillance in urban areas. After the cessation of IOCH activities, WHO has expanded SMO network to cover urban areas too. With the help of all partners Bangladesh has been able to achieve the international standard of major AFP surveillance indicators since 2001 and has been able to remain polio free since 2000.

Though since very beginning other vaccine preventable diseases like Neonatal Tetanus and Measles were integral part of the AFP surveillance system, only since 2003 surveillance of all vaccine preventable diseases was strengthened. With an aim of improving EPI service quality and reducing dropouts AEFI surveillance was also introduced at the same time.

In spite of international recognition on high performance of our AFP surveillance system, still there is no place for complacency. According to the latest international review recommendation, government ownership of the program needs to be further enhanced. Local Surveillance Officers (LSO) at district and upazila level are not functioning equally well in all places. Active surveillance and monitoring passive surveillance is not considered by some of them as part of their responsibilities. Completeness and timeliness of passive surveillance in many upazilas and districts are still below standard level.

There are signs of improvement of reporting comparatively higher number of cases especially measles and AEFI through passive surveillance from facilities in recent past. Still this is only tip of the iceberg. Considering the TT₂₊ coverage (84% in CES 2003) only a

negligible number of total expected cases come into notice. Measles and AEFI cases rarely appear in a health facility unless there are some



serious complications. Service providers are also so overburdened in OPD, they rarely inquire about background illness in detail.

Unless community surveillance for all vaccine preventable diseases (e.g. Measles, NT) and AEFI is introduced, total scenario of the disease burden will never be visualized. We have a very good health infrastructure that has been highly appreciated by various forums; we have skill professionals in health facilities. A little extra effort, motivation and commitment to the well being of the children of Bangladesh can make us establishing an exemplary surveillance system for all vaccine preventable diseases in this region. Good surveillance makes us aware of our achievements and of threats to the program by visualizing the actual disease burden in our country against which we are fighting. Lets make all out efforts to achieve our goals.

Surveillance Summary for 1998-2004 (through Epidemiologic Week 52, December 19 – 25, 2004)

	1998	1999	2000	2001	2002	2003	2004 ¹
Number of AFP cases	475	761	1138	1287	1365	1128	1242
No. of clinically confirmed polio cases	298	322	197	NA	NA	NA	NA
No. of compatible cases according to virologic classification system	NA	NA	NA	36	0	0	2
No. of cases with isolation of wild poliovirus	10	29	1	0	0	0	0
No. of discarded polio cases (i.e., non-polio AFP)	165	439	941	1251	1365	1128	1155
No. of cases pending classification	0	0	0	0	0	0	85
Expected annual number of non-polio AFP cases (1/100,000 children <15 yr)	495	505	515	533	549	556	563

AFP Surveillance Performance Indicators:

Indicator	Target	1998	1999	2000	2001	2002	2003	2004
1. Annual Non-Polio AFP rate in children < 15 years old	≥ 1/100,000	0.33	0.87	1.82	2.34	2.49	2.03	2.25 ²
2. Completeness of passive reporting from facilities	≥ 90%	34%	66%	83%	65%	62%	67%	82%
3. Timeliness of passive reporting from facilities	≥ 80%	15%	30%	58%	38%	36%	62%	75%
4. Suspected AFP cases investigated within 48 hours of notification	≥ 80%	89%	83%	93%	96%	96%	98%	98%
5. Confirmed AFP cases with 2 stool specimens collected ≤ 14 days after paralysis onset	≥ 80%	59%	49%	68%	80%	89%	90%	91%
6. Stool specimens arriving at laboratory ≤ 3 days after collection	≥ 80%	88%	81%	92%	97%	98%	99%	100%
7. 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%	92%	97%	100%	100%	99%	100%	100%
8. Confirmed AFP cases receiving a follow-up exam at least 60 days after paralysis onset	≥ 80%	80%	97%	95%	93%	99%	100%	97% ³
9. Stool specimens with laboratory results ≤ 28 days after specimen receipt	≥ 80%	16%	58%	94%	99%	100%	100%	99% ⁴
10. Stool specimens from which non-polio enterovirus (NPEV) was isolated	≥ 10%	5%	13%	21%	29%	28%	23%	20%

¹ Data as of December 25, 2004; ² NPAFP rate annualized for cases according to October 23, 2004; ³ among cases occurring up to September 25, 2004; ⁴ as of November 29, 2004

AFP Surveillance Performance Indicators -- 2004

Epiweek 52, 2004

District	# Expected 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 ² (/1,00,000)	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 ³
Dhaka Division												
DCC only	36	46			43	3	1.28	91%	100%	87%	100%	89%
Dhaka (non DCC)	14	35			31	4	2.59	91%	100%	91%	100%	96%
Faridpur	8	30			29	1	4.38	87%	100%	93%	100%	93%
Gazipur	9	13			12	1	1.61	92%	100%	100%	100%	100%
Gopalganj	5	20			19	1	4.35	95%	100%	95%	100%	100%
Jamalpur	9	16			14	2	1.48	88%	100%	88%	100%	91%
Kishoreganj	11	34			33	1	3.19	97%	97%	94%	100%	100%
Madaripur	5	19			18	1	3.63	100%	100%	100%	100%	100%
Manikganj	6	12			11	1	2.02	83%	100%	83%	100%	100%
Munshiganj	6	21			21	0	3.43	91%	100%	91%	100%	94%
Mymensingh	20	27			26	1	1.51	82%	93%	85%	96%	92%
Narayanganj	9	16			16	0	2.02	94%	100%	94%	100%	100%
Narsingdhi	8	14			14	0	1.81	86%	100%	86%	100%	100%
Netrokona	9	21			18	3	2.02	86%	100%	86%	95%	85%
Rajbari	4	15			15	0	4.23	100%	100%	100%	100%	100%
Shariatpur	5	23			22	1	5.08	91%	100%	87%	100%	100%
Sherpur	6	16			15	1	2.62	94%	100%	100%	100%	100%
Tangail	14	29			29	0	2.33	93%	100%	90%	100%	100%
Total-DHAKA	184	407	0	0	386	21	2.31	91%	99%	91%	100%	96%
CTG Division												
CCC only	12	13			11	2	0.91	100%	100%	92%	100%	100%
Chittagong (non CCC)	20	37			34	3	1.81	95%	100%	92%	100%	96%
Bandarban	1	3			2	1	2.42	33%	100%	33%	100%	100%
Brahmanbaria	11	20			19	1	2.09	100%	95%	100%	90%	100%
Chandpur	10	21			19	2	1.93	91%	100%	81%	100%	100%
Comilla	20	41			40	1	2.24	98%	100%	98%	98%	97%
Cox's Bazar	8	18			15	3	2.27	89%	94%	89%	100%	92%
Feni	5	16			15	1	3.14	81%	100%	81%	100%	100%
Khagrachari	2	5			5	0	3.02	100%	100%	100%	100%	100%
Laxmipur	7	28			25	3	4.15	93%	93%	86%	100%	96%
Noakhali	11	26			26	0	2.64	92%	100%	81%	100%	100%
Rangamati	2	10			10	0	6.05	80%	90%	90%	100%	100%
Total-CTG	109	238	0	0	221	17	2.26	92%	98%	89%	99%	98%
Sylhet Division												
SCC	1	1			1	0	1.21	100%	100%	100%	100%	100%
Sylhet (non SCC)	10	17			16	1	1.69	82%	100%	88%	100%	100%
Habiganj	8	11			11	0	1.51	82%	100%	91%	100%	100%
Maulvibazar	7	13			12	1	2.07	92%	92%	77%	100%	100%
Sunamganj	9	19			19	0	2.55	95%	95%	95%	100%	82%
Total-SYL	35	61	0	0	59	2	1.93	89%	97%	89%	100%	94%
Raj Division												
RCC only	2	1			1	0	0.60	100%	100%	100%	100%	100%
Rajshahi (non RCC)	8	8			8	0	1.21	88%	100%	88%	100%	100%
Bogra	13	19			17	2	1.40	90%	100%	100%	100%	100%
Dinajpur	12	26			21	5	1.71	85%	100%	89%	100%	100%
Gaibandha	9	21			20	1	2.42	91%	100%	95%	100%	100%
Joypurhat	4	14			12	2	3.33	100%	100%	100%	100%	100%
Kurigram	8	14			13	1	1.66	71%	93%	86%	100%	80%
Lalmonirhat	5	17			12	5	2.66	88%	100%	88%	100%	100%
Natore	7	11			7	4	1.21	82%	91%	64%	100%	100%
Nilphamari	7	22			21	1	2.42	91%	100%	100%	100%	100%
Noaogan	11	19			17	2	1.65	100%	100%	95%	100%	93%
Nowabganj	6	9			8	1	1.61	78%	100%	78%	100%	100%
Pabna	10	22			20	2	2.42	100%	100%	91%	100%	100%
Panchagarh	4	10			10	0	3.02	100%	100%	100%	100%	100%
Rangpur	11	24			23	1	2.20	100%	96%	100%	100%	100%
Sirajganj	12	26			23	3	2.02	85%	96%	85%	96%	88%
Thakurgaon	5	11			11	0	2.42	100%	100%	100%	100%	100%
Total-RAJ	134	274	0	0	244	30	1.95	91%	99%	92%	100%	97%
Khulna Division												
KCC only	4	7			7	0	1.81	100%	100%	100%	100%	100%
Khulna (non KCC)	7	14			14	0	2.07	93%	93%	100%	100%	92%
Bagerhat	7	13			11	2	1.73	92%	100%	100%	100%	100%
Chuadanga	4	7			7	0	2.12	100%	100%	100%	100%	100%
Jessore	11	23			23	0	2.53	87%	96%	87%	100%	100%
Jhenaidah	7	13			13	0	2.07	92%	100%	85%	100%	100%
Kushtia	7	20			20	0	3.46	90%	100%	90%	100%	100%
Magura	4	6			6	0	1.81	83%	100%	83%	100%	100%
Meherpur	3	5			5	0	2.02	100%	100%	100%	100%	100%
Narail	3	10		1	8	1	3.22	80%	100%	80%	100%	100%
Satkhira	8	17		1	15	1	2.27	100%	94%	94%	100%	100%
Total-KHU	65	135	0	2	129	4	2.31	92%	98%	92%	100%	99%
Barisal Division												
BCC	1	5			4	1	4.84	100%	100%	100%	100%	75%
Barisal (non BCC)	10	23			22	1	2.54	87%	100%	83%	100%	100%
Barguna	4	12			10	2	2.12	100%	100%	92%	100%	100%
Bhola	7	22			18	4	2.59	91%	91%	91%	100%	100%
Jhalakhati	3	22			20	2	6.05	96%	91%	91%	100%	100%
Patuakhali	6	22			21	1	3.43	96%	100%	96%	100%	94%
Pirojpur	5	21			21	0	4.11	100%	100%	100%	100%	100%
Total-BAR	36	127	0	0	116	11	3.22	95%	97%	92%	100%	98%
National	563	1242	0	2	1155	85	2.25	92%	98%	91%	100%	97%

¹Data as of Epidemiologic Week 52, December 25, 2004; ² Non-Polio AFP rate is annualized for cases occurring up to October 23, 2004; ³ for cases occurring up to September 25, 2004

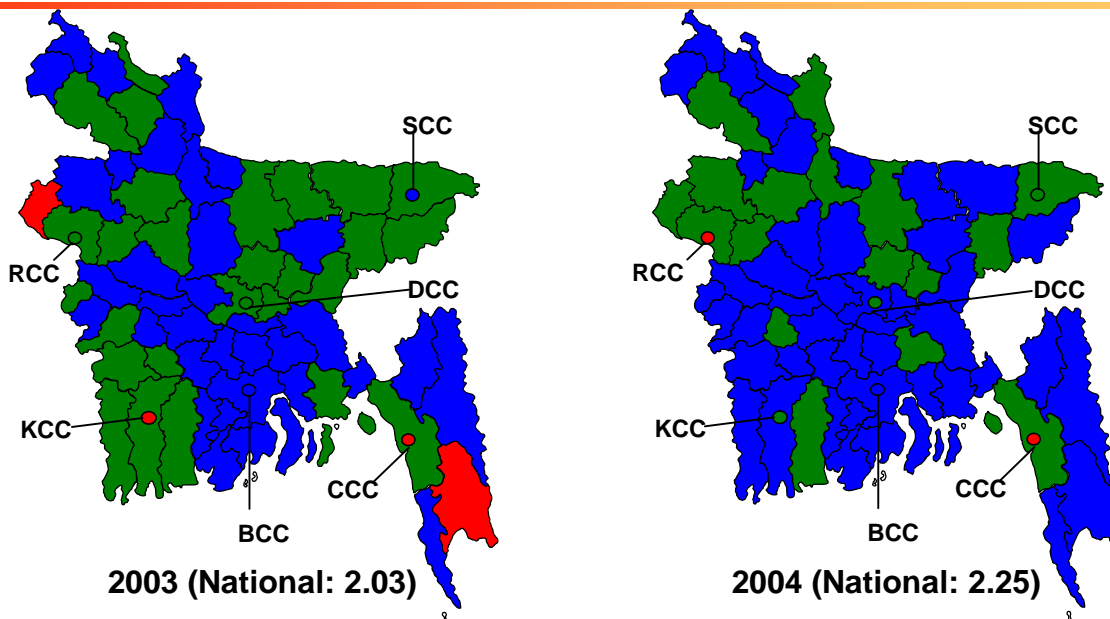
Disease Surveillance - 2004

EPI week 52, 2004

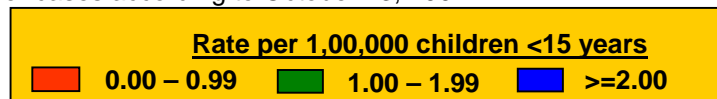
District	Neonatal Tetanus			Measles				AEFI
	# of case reported by Active Surveillance	# of case reported by Passive Surveillance	# of case Investigated	# of case reported by Active Surveillance	# of case reported by Passive Surveillance	Outbreak		# of case Reported
						Number of Outbreak (% Investigated)	# of cases	
Dhaka Division								
DCC only	14	13	16	95	104	3 (100%)	228	32
Dhaka (non DCC)	7	9	4	8	37	1 (100%)	328	23
Faridpur	11	8	11	10	52	1 (100%)	27	21
Gazipur	4	2	1	6	16			9
Gopalganj	8	14	12	8	16			24
Jamalpur	4	4	4	16	21	1 (100%)	71	22
Kishoreganj	17	25	14	41	225	4 (100%)	230	39
Madaripur	6	8	7	1	10			5
Manikganj	4	4	4	6	2	2 (100%)	404	11
Munshiganj	2	1	2	1	15			21
Mymensingh	20	13	12	34	100	3 (100%)	103	31
Narayanganj	5	5	5	15	17	1 (100%)	51	17
Narsingdhi	3	6	1	8	10			5
Netrokona	1	8	2	4	104	1 (100%)	137	34
Rajbari		1		1	40			2
Shariatpur	1	1	1	3	19			41
Sherpur	8	4	9	2	19	1 (100%)	51	22
Tangail	11	9	7	17	39			18
Total-DHAKA	126	135	112	276	846	18 (100%)	1630	377
CTG Division								
CCC only	9	11	5	37	40	1 (100%)	15	6
Chittagong (non CCC)	4	3	1	9	35	1 (100%)	10	8
Bandarban				11	3	1 (100%)	11	3
Brahmanbaria	23	28	22	4	18	1 (100%)	11	6
Chandpur	3	3	5	11	57	10 (100%)	154	45
Comilla	4	4	5	6	77	3 (100%)	254	6
Cox's Bazar	10	13	8	32	26			8
Feni	3	2	3		38	1 (100%)	31	14
Khagrachari	1		1	3	5			6
Laxmipur	8	7	9	3	7	1 (100%)	32	30
Noakhali	1	3	1	3	29			8
Rangamati				4	18			
Total-CTG	66	74	60	123	353	19 (100%)	518	140
Sylhet Division								
SCC	4	2	1	83	57			2
Sylhet (non SCC)	9	7	5	98	306	4 (100%)	388	44
Habiganj	11	14	5	29	109	2 (100%)	126	39
Maulvibazar	10	12	2	15	93			20
Sunamganj	18	18	6	189	202	3 (100%)	182	18
Total-SYL	52	53	19	414	767	9 (100%)	696	123
Raj Division								
RCC only	1	2		2	3			3
Rajshahi (non RCC)	1	2		15	21	1 (100%)	34	5
Bogra	5	6	4	17	27	1 (100%)	74	35
Dinajpur	4	5	4	5	40	7 (100%)	537	48
Gaibandha	1	10	5	4	26	8 (100%)	272	64
Joypurhat				13	77	2 (100%)	27	18
Kurigram	1		1	3	1			22
Lalmonirhat		1	1		30			1
Natore	4	6	3	8	31			14
Nilphamari	2	1	1	9	29	3 (100%)	115	33
Noagoan	4	5	4	7	43	4 (100%)	121	31
Nowabganj	3	3	2	7	31			10
Pabna	3	6	2	20	74			32
Panchagarh	2	2		2	42			3
Rangpur	8	7	5	16	11	3 (100%)	172	43
Sirajganj	1	1		11	39	1 (100%)	172	27
Thakurgaon		1		7	16			16
Total-RAJ	40	58	32	146	541	30 (100%)	1524	405
Khulna Division								
KCC only	1		1	4	12			3
Khulna (non KCC)				2	85	1 (100%)	20	48
Bagerhat	4		4	4	31			4
Chuadanga	1	2	2	4	12	1 (100%)	89	19
Jessore	9	10	4	5	55			31
Jhenaidah	7	8	4	6	18			23
Kushtia	4	3	4	2	5			13
Magura	2	7	2	9	58	2 (100%)	132	25
Meherpur			1	4	3			4
Narail	6	8	7	13	16			24
Satkhira	3	3	3		5			18
Total-KHU	37	41	32	53	300	4 (100%)	241	212
Barisal Division								
BCC								
Barisal (non BCC)	5	10		11	39			2
Barguna	1	2		15	99	2 (100%)	48	8
Bhola	3	11	3		8	1 (100%)	60	68
Jhalakhati	2	4	3	4	6			3
Patuakhali	4	4	2	7	71			7
Pirojpur	3	2	3	4	28			25
Total-BAR	18	33	11	41	251	3 (100%)	108	113
National	339	394	266	1053	3058	83 (100%)	4717	1370

Data as of Epidemiologic Week 52, December 25, 2004

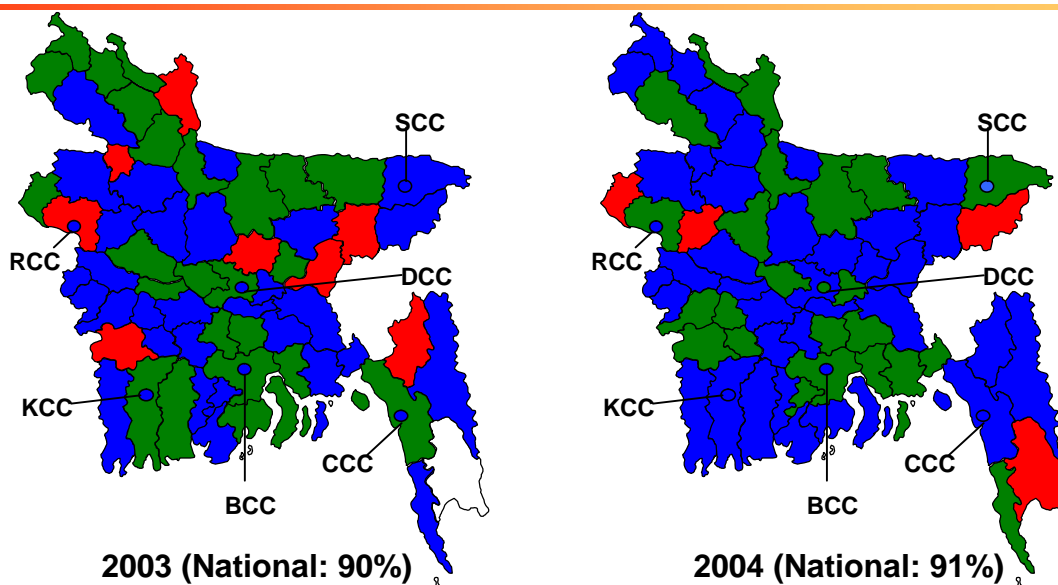
Annualized Non-Polio AFP Rate, by District, Bangladesh 2003-2004*



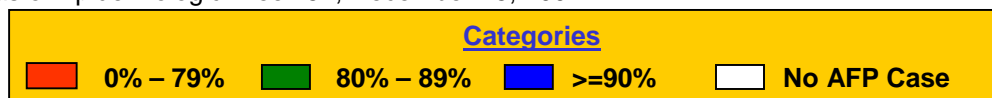
*NPAFP rate annualized for cases according to October 23, 2004



Percent of AFP Cases with Two Stool Samples Collected within 14 days of Paralysis Onset, by District, Bangladesh 2003-2004*



*Data as of Epidemiologic Week 52, December 25, 2004



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