GLOBAL POLIO ERADICATION INITIATIVE (GPEI) STATUS REPORT

29 APRIL 2013

ANNEX

Table of Contents

GPEI STRATEGIC PLAN 2010 – 2012 Milestones

Reported as of 16 April 2013

Milestone	Measurement	Baseline	Final Status	Comments
Cessation of new outbreaks within six months of confirmation of index case	Number of new outbreak events in 2012 persisting >6 months from confirmation of index case	2012: 1 outbreak event in 1 country (Niger)	0 country with WPV importation persisting >6 months 2012: 1/1 outbreak considered 'active' (Niger)	See sub-table below
By end-2010, cessation of all 're-established' poliovirus transmission	Number of countries with 're-established' transmission reporting genetically-related WPV after 31 Dec 2010	2010: 4 countries with 're-established' transmission (Angola, Chad, Democratic Republic of Congo, Republic of South Sudan)	1 country with continued 're-established' WPV transmission (Chad)	See sub-table below
By 2011, cessation of polio transmission in at least 2/4 endemic countries	Number of polio endemic countries	2010: 4 endemic countries (Afghanistan, India, Nigeria, Pakistan)	3 endemic countries (Afghanistan, Nigeria, Pakistan)	See sub-tables below

Comments — row 1:

Year	Country	Most recent case	Duration in months from confirmation of index case to most recent case	Status of outbreak event*
2012	Niger	15 Nov	0	Active

*Outbreak events without WPV for >6 months are considered "over" as an operational event.

Comments — row 2:

Country	Countries with re-established transmission	
	Date most recent case	Months since most recent case
Chad	14 Jun 2012	10

Comments — row 3:

Country	Number of WPV cases[1]	
	Jan-Dec 2011	Jan-Dec 2012
Afghanistan	80	37 (-54%)
Nigeria	62	122 (+97%)
Pakistan	198	58 (-71%)

Country	Number of WPV cases[2]	
	Jan-Apr 2012	Jan-Apr 2013
Afghanistan	6	1 (-83%)
Nigeria	23	12 (-48%)
Pakistan	15	6 (-60%)

[1] Data in WHO HQ on 17 April 2012 for 2011 data and on 16 April 2013 for 2012 data.
[2] Data in WHO HQ on 17 April 2012 for 2012 data and on 16 April 2013 for 2013 data.

GPEI STRATEGIC PLAN 2010 – 2012 Major Process Indicators

AFGHANISTAN

End-2012: >90% of children with >3 doses of OPV in all provinces of the country.

		Final Status – end 2012 12 of 34 provinces did not achieve target.		

	Province	Total number of NPAFP cases (6-35 month old children)	Percent with >3 doses OPV	Achieved 2012
1	Badakhshan	18	100.0	Yes
2	Badghis	16	87.5	No
3	Baghlan	28	92.9	Yes
4	Balkh	42	100.0	Yes
5	Bamyan	15	100.0	Yes
6	Daykundi *	6	66.7	No
7	Farah	32	68.8	No
8	Faryab	36	94.4	Yes
9	Ghazni	15	93.3	Yes
10	Ghor	20	90.0	Yes
11	Hilmand	40	52.5	No
12	Hirat	76	98.7	Yes
13	Jawzjan	16	93.8	Yes
14	Kabul	62	98.4	Yes
15	Kandahar	60	61.7	No
16	Kapisa	10	100.0	Yes
17	Khost	18	83.3	No
18	Kunar	16	87.5	No
19	Kunduz	35	94.3	Yes
20	Laghman	15	100.0	Yes
21	Logar	20	100.0	Yes
22	Nangarhar	48	100.0	Yes
23	Nimroz	9	77.8	No
24	Nuristan	6	83.3	No
25	Paktika	12	100.0	Yes
26	Paktya	13	76.9	No
27	Panjsher	1	100.0	Yes
28	Parwan *	8	100.0	Yes
29	Samangan	8	100.0	Yes
30	Sari Pul	14	92.9	Yes
31	Takhar	33	97.0	Yes
32	Uruzgan	20	45.0	No
33	Wardak	15	100.0	Yes
34	Zabul	8	37.5	No

* New province since last report

Data source: non-polio AFP, children 6-35 months, 1-Jan-2012 to 31-Dec-2012 (data as of 9-Apr-2013)

PAKISTAN

End-2012: <10% missed children during each SIA in all districts

> **Final Status – end 2012**
> **36 of the 162 (27%) districts had not achieved the target**

Province	District / agency	Percent of children missed in each round: *									
		30-Jan-12	12-Mar-12	Apr-12	Jun-12	Jul-12	Sep-12	Oct-12	Nov_Pass1	Nov_Pass2	Dec-12
Balochistan	Barkhan	9.5	11.3	5.6							
	Chaghai	15.4		9.0		9.9		9.2			
	Harnai	17.6	24.8	8.4		13.2		1.9			
	Kabdulah	25.4				39.2	39.3	32.8	40.5		
	Kech			18.8		25.0					
	Khuzdar	37.8	11.3	17.6	5.8						
	Ksaifulah	9.0	8.6	8.6		2.1		16.8			7.5
	Mastung	6.5	12.6	9.1	4.3			3.3			
	Pishin	14.8	15.9				15.4		12.8		
	Quetta	7.8	9.1		7.6	9.7	19.9	18.0	9.8		
	Sharani	8.6		8.8		10.3	6.5	6.9	7.2		5.9
	Washuk	24.4		0.0		0.0					
	Ziarat			15.5							
FATA	F.R. Dikhan	0.7	3.9	2.6	3.9	2.3	3.6	2.8	11.4		
	F.R. Kohat	26.1	17.2	14.4	7.8	10.2	2.0	3.1	2.5	1.7	
	F.R. Lakki	4.5	6.9	6.9	8.3	5.4	38.1	8.9	17.0		
	F.R. Peshawar	3.3		0.0	19.8	3.9	5.1	5.0	2.2	8.8	
	Khyber	12.2	9.4	6.4	4.9	1.9	0.6	2.1	2.4	1.6	
	Kurram	19.5	8.3	5.6	4.8	4.9	2.4	1.6		2.3	
	Wazir-n	7.5	12.2	18.7	21.2						
	Wazir-s		57.6	55.5			0.0	0.0			
GB	Diamer	7.1		6.6		7.9		20.0			
Islam.	CDA	14.8	13.2		6.8	4.3	2.7	4.8			
	ICT	12.9	9.0		5.8	1.8	3.4	2.3			
KP	Abotabad	11.2		6.5		1.1		2.1	1.8	4.5	
	Batagram			11.9		3.1		3.9	2.6	2.9	
	Charsada	1.5	1.2	1.5	1.4	0.8	13.1	0.7	0.6	0.8	
	Karak	1.1	2.5	2.2		0.0		4.2	12.5	7.2	
	Kohistan			10.9		1.9		3.6			
	Torghar	11.0		13.8				0.0	0.0	0.0	
Sindh	Khibaldia	0.8	0.0	1.9	0.6		13.5	5.0			
	Khigadap	2.0	5.8	2.9	2.6			30.9	2.6		
	Khigulberg	21.6	2.5	1.9	1.7			5.8	2.3		
	Khinnazim	2.9	2.4	6.4	2.1		11.4	7.4			
	Khisaddar	4.1	1.1	2.8	0.8		2.9	16.3			
	Khisite	4.0	6.1	0.0	0.4		2.3	12.7			

* Results in access-compromised districts are "adjusted" by adding the number of children inaccessible for immunization to the number of 'missed children'.

Data source: independent monitoring; only districts failing to meet this indicator are shown; blank cells indicate that the district was not included in that round

End-2012: >90% of children with >six doses of OPV sustained in all provinces

	Final Status – end 2012 5 of the 8 provinces have not achieved the target		
Province	Total number of NPAFP cases (6-35 month old children)	Percent with >6 doses OPV	**Achieved 2012**
AJK	18	100.0	**Yes**
Balochistan	87	56.3	**No**
FANA	7	42.9	**No**
FATA	77	58.4	**No**
Islamabad	8	100.0	**Yes**
KP	505	87.5	**No**
Punjab	1074	93.5	**Yes**
Sindh	492	89.2	**No**

Data source: AFP database 1-Jan-2012 to 31-Dec-2012 (data as of 9-Apr-2013)

NIGERIA

End-2012: >90% of children with ≥3 doses of OPV in all states.

	Final Status – end 2012 8 of the 12 states have not achieved the target		
States	Total number of NPAFP cases (6-35 month old children)	Percent >3 doses	**Achieved 2012**
Bauchi *	115	91.3	**Yes**
Borno *	88	86.4	**No**
Gombe	95	89.5	**No**
Jigawa *	61	93.4	**Yes**
Kaduna	88	83.0	**No**
Kano *	216	75.9	**No**
Katsina *	168	83.3	**No**
Kebbi	242	98.3	**Yes**
Niger	116	94.8	**Yes**
Sokoto *	148	87.2	**No**
Yobe *	62	87.1	**No**
Zamfara *	108	79.6	**No**

* Persistent transmission states

Data source: AFP database 1-Jan-2012 to 31-Dec-2012 (data as of 9-Apr-2013)

End-2012: <10% missed children in at least 90% of the Local Government Areas (LGAs) during at least 4 SIAs in each of the 12 high-risk states.

Final Status – end 2012
9 of the 12 states have not achieved the target

State	February No. LGAs <10%	February No. LGAs 10%+	February %	March No. LGAs <10%	March No. LGAs 10%+	March %	May No. LGAs <10%	May No. LGAs 10%+	May %	July No. LGAs <10%	July No. LGAs 10%+	July %	October No. LGAs <10%	October No. LGAs 10%+	October %	November No. LGAs <10%	November No. LGAs 10%+	November %	December No. LGAs <10%	December No. LGAs 10%+	December %	Achieved 2012
Bauchi	18	2	90.0	17	3	85.0	16	4	80.0	18	2	90.0	19	1	95.0	19	1	95.0	19	1	95.0	Yes
Borno	23	4	85.2	23	4	85.2	24	3	88.9	26	1	96.3	17	9	65.4	24	1	96.0	6	2	75.0	No
Gombe	11	0	100.0	11	0	100.0	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	No
Jigawa	17	10	63.0	20	7	74.1	23	4	85.2	22	5	81.5	17		100.0	25	1	96.2	24	1	96.0	No
Kaduna	20	3	87.0	18	5	78.3	15	7	68.2	16	7	69.6	14	9	60.9	17	5	77.3	18	5	78.3	No
Kano	34	10	77.3	26	18	59.1	29	15	65.9	36	8	81.8	23	4	85.2	40	2	95.2	13	2	86.7	No
Katsina	27	7	79.4	30	4	88.2	28	6	82.4	29	5	85.3	9	3	75.0	30	3	90.9	32	2	94.1	No
Kebbi	13	8	61.9	12	9	57.1	17	4	81.0	20	1	95.2	15	6	71.4	18	3	85.7	17	4	81.0	No
Niger	20	5	80.0	20	5	80.0	17	4	81.0	23	2	92.0	24	1	96.0	25		100.0	25		100.0	Yes
Sokoto	18	5	78.3	20	3	87.0	20	3	87.0	16	7	69.6	14	9	60.9	18	5	78.3	8	2	80.0	No
Yobe	15	2	88.2	15	2	88.2	14	3	82.4	14	2	87.5	12	4	75.0	11	3	78.6	7	1	87.5	No
Zamfara	13	1	92.9	13	1	92.9	13	1	92.9	14		100.0	12	2	85.7	12	2	85.7	14		100.0	Yes

Considering independent monitoring (IM) data from all SIAs conducted in 2012 in a state, the following is used to score each for achievement of the MPI for the year. If ≥4 SIAs were conducted, and of those, if ≥4 SIAs had >90% of LGAs with <10% missed children, the state is scored as "Yes." If ≥4 SIAs were conducted, and of those, if <4 SIAs had >90% of LGAs with <10% missed children, the state is scored as "No". If <4 SIAs were conducted the state is scored as "No."

Data source: independent monitoring

Pakistan Lot Quality Assurance Sampling (LQAS) surveys

Lot quality assurance sampling (LQAS) surveys provide an assessment of SIA quality through a sample obtained from random cluster sampling. The original interpretation of LQAS surveys[1] in Nigeria and Pakistan overstated SIA quality. Guidelines developed by WHO with other GPEI partners in 2012 provide updated decision rules[2] that allow for a more accurate assessment of SIA quality. These updated criteria have been applied in Nigeria (all LQAS Nigeria results shown in this report and prior Partners' Status Report use the 2012 rules) but have not been applied in analyses within Pakistan. LQAS performed at the union council (UC) level in Pakistan WPV sanctuaries and elsewhere prior to April 2012 were based on a sample of 50 children; since April 2012, they are generally based on a sample of 60 children. The decision rules currently used in Pakistan were intended to set a higher quality target (95% threshold) than the original WHO plan; unfortunately the chosen decision rules also overstate SIA quality. The graphs below compare LQAS results in in each sanctuary using original criteria ("old") with updated 2012 criteria ("new") at an 80% threshold. GPEI partners recommend applying 2012 criteria of SIA quality to better identify and track those UCs needing further improvement.

FATA SANCTUARY

Proportion of Union Councils with LQAS survey results accepted at 80%
NEW criteria

OLD criteria

---

[1] Current decision rules of 5, 7 and 16 are being used for samples of five clusters of 10 children (50) and six clusters of 10 (60) for testing thresholds of 95%, 90% and 80%. These decision rules result in very large type I (alpha) errors under the assumption of moderate variability in cluster-level results; leading to a high likelihood of falsely assessing high SIA quality.

[2] Recommended decision rules of 0, 2, and 6 for sample sizes of 50; 0, 3, and 8 for sample sizes of 60 provide a more reasonable quality assessment of 95%, 90% and 80% thresholds for programmatic purposes under the same assumption of moderate variability in cluster-level results. It should be noted that under the current design, these rules are still not adequate to make statements about coverage.

KHYBER PAKHTUNKHWA SANCTUARY

Proportion of Union Councils with LQAS survey results accepted at 80%

NEW criteria

OLD criteria

KARACHI SANCTUARY

Proportion of Union Councils with LQAS survey results accepted at 80%

NEW criteria

OLD criteria

QUETTA SANCTUARY

Proportion of Union Councils with LQAS survey results accepted at 80%

NEW criteria

OLD criteria

Interpretation of Phylogenetic Clusters

The phylogenetic "clusters" reported by GPEI (e.g., "H5", "R2", "H4", etc.) are based on the nucleotide (nt) coding sequence of the major viral capsid protein, VP1, which is approximately 900 nt long, and which undergoes evolution at about 1% per year of circulation. VP1 is the variable region of the poliovirus genome that is the most informative for phylogenetic analysis.

To facilitate interpretation of the genetic data, the Polio Laboratory Network reviews the genetic data periodically and assigns cluster designations to poliovirus isolates. A cluster includes WPV with <5% pairwise nt. difference in theVP1 coding sequence. The cluster designations themselves are typically revised once a year in May or June for all sequenced polioviruses isolated during the current year and two previous calendar years. Because polioviruses are constantly evolving, the cluster designations need to be constantly updated, and clusters constantly need to be divided into two or more "new" clusters if transmission has been sufficient to exceed the 5% threshold for nt. divergence.

Thus, for example, the "N5" cluster in Nigeria represented a single cluster in 2011 but may eventually represent more than one cluster in 2012. In May 2012, when the 2011 genetic data were reviewed, the 2011 viruses designated cluster "N5" as a result of that review were all closely related. However, over the course of 2012, this cluster spread widely, particularly in the North Central and Northeast sanctuaries. As it did so, the genetic diversity inevitably also expanded, such that these viruses, which are for now provisionally all considered "N5", will be reclassified into two or more clusters when the year's data are reviewed next month.

For this reason, comparisons of "cluster counts" between 2011 and 2012 based on the current designations are misleading. Cluster counts from 2013 are even less reliable, both for the reasons explained above and because of the relatively small number of 2013 isolates to date.