

Highlights of Polio Fax Bulletin No. 1101 for Week 45 2019

I. Poliovirus Transmission

1. **Endemic countries (PAKISTAN & AFGHANISTAN):** The following was all reported this week from Pakistan

- Two new wild poliovirus type-1 (WPV1) cases;
- Seven new circulating vaccine-derived poliovirus type-2 (cVDPV2) cases;
- One new WPV1 positive environmental sample;
- Three new cVDPV2 positive environmental samples; and
- Two new combined WPV1 and cVDPV2 positive environmental samples

- a. *Human samples:* Two new wild poliovirus cases reported this week. Total WPV1 cases in 2019 to date are 102 (20 from Afghanistan and 82 from Pakistan). This compares with 29 cases in 2018 in the same period (Afghanistan – 21 and Pakistan – 8).

- Afghanistan: No new wild cases were reported this week.

In 2019 to date, 20 WPV1 cases are reported. They include 8 cases from Uruzgan province, 5 cases from Hilmand province, 3 from Kandahar province, 2 from Paktika province and 1 each from Kunar and Nangarhar provinces. The most recent case has onset of paralysis on 28 September 2019.

- Pakistan: Two new WPV1 cases and seven cVDPV2 cases were reported this week and the details are as follows:

Wild

Case (1): The case was reported from Lakki Marwat district, Khyber Pakhtunkhwa (KP) province, with date of onset 21 October 2019. The case is a 15-month old male child. The child received reportedly a total of 7 OPV doses all from SIAs and none from routine.

Case (2): The case was reported from Lakki Marwat district, KP province, with date of onset 21 October 2019. The case is a 22-month old male child. The child received reportedly a total of 2 OPV doses all from SIAs and none from routine.

In 2019 to date, 82 WPV1 cases are reported from Pakistan. They include 50 from Khyber Pakhtunkhwa (KP) province, 11 from KP Tribal Districts (KPTD), 9 from Sindh province, 7 from Balochistan province and 5 from Punjab province. The most recent case has onset of paralysis on 21 October 2019.

cVDPV2

In 2019 to date, Pakistan reported 7 cVDPV2 cases are reported that include 4 from Diamir District and one each from Kohistan, Tor Ghar and Islamabad. Date of onset of paralysis of these cases are between 7 July and 6 October 2019.

In addition, cVDPV2 has been isolated from 16 healthy children and 3 contacts.

Environmental samples: The following was all reported this week from Pakistan:

- One new WPV1 positive environmental sample;
- Three new cVDPV2 positive environmental samples; and
- Two new combined WPV1 and cVDPV2 positive environmental samples
 - Afghanistan: In 2019 to date, there are 43 wild positive environmental samples with most recent positive sample collected on 24 September 2019.
 - Pakistan: In 2019 to date, there are 292 positive environmental samples (287 WPV1, 3 cVDPV2, and 2 combined WPV1 and cVDPV2) with most recent positive sample collected on 25 October 2019.

2. Outbreak response countries

SOMALIA: No new cVDPV2 or cVDPV3 isolates from human or environmental samples were reported this week.

- In 2019 to date, Somalia has reported three cVDPV2 cases. The most recent reported case has date of onset of paralysis on 8 May 2019.
- In addition, cVDPV2 was isolated from healthy child sample collected during community sampling on 25 May 2019. aVDPV2 was isolated from an environmental sample on 3 February 2019.
- In 2018: Somalia has reported a total of 12 cases due to cVDPVs, which include 5 due to cVDPV2, 6 due to cVDPV3 and 1 due to co-infection of cVDPV2 and cVDPV3. The last cVDPV3 was isolated from a sewage sample from Mogadishu collected on 23 August 2018.

II. Surveillance performance indicators

In 2019, 20 of 22 member states are meeting the global target of both key surveillance indicators, namely non polio AFP rate of 2 per 100,000 children aged below 15 years and percent AFP cases with adequate specimen 80% and above.

- Djibouti has a non-polio AFP rate of 0.9 and percentage of AFP cases with adequate stool specimens of 66.7%
- Tunisia has a percentage of AFP cases with adequate stool specimens of 72.3%
- In Yemen there are AFP cases pending final classification more than 90 days due to delayed lab results because of delay shipment of specimens to reference polio laboratories.

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Table 1: Acute Flaccid Paralysis (AFP) cases by week of onset

Country	Reported AFP cases by week of onset - Week (45/19) / Ending on : 10/11/2019														
	Total AFP 2017	Total AFP 2018	Total AFP to date, 2019	W34 25 Aug 19	W35 01 Sep 19	W36 08 Sep 19	W37 15 Sep 19	W38 22 Sep 19	W39 29 Sep 19	W40 06 Oct 19	W41 13 Oct 19	W42 20 Oct 19	W43 27 Oct 19	W44 03 Nov 19	W45 10 Nov 19
Afghanistan	1897	2421	1365	63	51	44	67	71	47	48	37	66	44	39	7
Bahrain	12	16	3	0	0	0	0	0	0	0	0	0	0	0	
Djibouti	7	3	3	1	0	0	0	0	0	0	0	0	0	0	
Egypt	1007	1000	544	19	22	26	30	21	28	31	17	32	23	18	2
Iran	708	753	355	7	19	10	17	19	17	21	12	11	5	6	
Iraq	444	590	238	7	8	9	11	13	2	14	11	9	6	2	
Jordan ****	35	62	47	1	2	4	2	2	0	1	2	1	0	4	
Kuwait	39	32	19	1	2	1	0	0	1	0	2	0	2	0	0
Lebanon ****	33	50	49	2	2	1	2	1	3	3	2	3	3	2	1
Libya	58	43	29	0	1	1	1	2	0	3	2	0	0	0	
Morocco	106	103	41	3	2	3	2	4	2	0	1	0	0	0	
Oman	20	34	21	1	1	1	0	0	3	0	0	1	3	3	
Pakistan	4790	5369	2209	119	103	106	89	123	108	109	81	75	46	15	0
Palestine ****	38	21	15	0	0	1	1	0	0	0	1	0	0	0	0
Qatar	8	7	6	1	0	0	1	0	0	1	0	0	0	0	0
Saudi Arabia	220	227	121	4	6	7	8	2	5	3	4	6	2	2	0
Somalia	546	420	143	4	6	5	7	8	3	5	4	2	0	0	0
Sudan	410	442	198	6	5	12	12	7	10	9	14	6	2	0	
Syria ****	180	306	118	7	9	6	9	2	6	3	5	6	2	2	
Tunisia	43	44	20	2	1	0	0	1	0	0	0	0	1		
U.A.E	31	25	16	0	1	0	0	1	0	1	0	0	2	1	0
Yemen	614	578	206	2	4	3	7	7	13	7	3	8	7	4	1
Total EMR	11246	12546	5766	250	245	240	266	284	248	259	198	226	148	98	11

No data = No report received

Table 2: Confirmed polio cases by month of onset

Country	Total year 2017	Total year 2018	10/11		Confirmed polio cases by month of onset											
			2018	2019	December 2018	January 2019	February 2019	March 2019	April 2019	May 2019	June 2019	July 2019	August 2019	September 2019	October 2019	November 2019
Afghanistan	14	21	21	20	0	2	1	3	1	5	1	2	2	3		
Bahrain	0	0	0	0	0	0	0	0	0	0	0	0	0			
Djibouti	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Egypt	0	0	0	0	0	0	0	0	0	0	0	0	0			
Iran	0	0	0	0	0	0	0	0	0	0	0	0	0			
Iraq	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Jordan ****	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Kuwait	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Lebanon ****	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Libya	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Morocco	0	0	0	0	0	0				0						
Oman	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pakistan	8	12	8	82	4	4	2	0	11	11	16	12	14	5	7	
Palestine ****	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Qatar	0	0	0	0	0	0	0	0	0	0	0	0	0		0	
Saudi Arabia	0	0	0	0	0	0	0	0	0	0						
Somalia	0	0	0	0	0	0	0	0	0	0			0	0		
Sudan	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Syria ****	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Tunisia	0	0	0	0	0	0	0	0	0	0	0	0	0			
U.A.E	0	0	0	0	0	0	0	0	0	0	0	0	0			
Yemen	0	0	0	0			0									
Total EMR	22	33	29	102	4	6	3	3	12	16	17	14	16	8	7	0

**** UNRWA cases are included with those of country of residence

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Table 3: Investigation of AFP cases with paralysis onset in 2018 & 2019 up to Week (45/19) / Ending on : 10/11/2019

COUNTRY	2018											2019											Latest line List Date		
	AFP									Specimen	Wild cases ****		AFP									Specimen		Wild cases ****	
	Total AFP cases onset 2018	Case classification					Non polio AFP rate **	AFP cases pending classification > 90 days from onset of paralysis	AFP cases pending classification and lab > 90 days from onset of paralysis		% with *** adequate specimens	Wild P1 Poliovirus	Wild P3 Poliovirus	Total AFP cases onset 2019	Case classification					Annualized Non polio AFP rate **	AFP cases pending classification > 90 days from onset of paralysis			AFP cases pending classification and lab > 90 days from onset of paralysis	% with *** adequate specimens
		Total Confirmed Polio Cases *	Polio Compatible	Pending Classification	Discarded (non polio AFP)	VDPV				Total Confirmed Polio Cases *					Polio Compatible	Pending Classification	Discarded (non polio AFP)	VDPV							
Afghanistan	3378	21	0	0	3357	0	16.6	0	0	93.8	21	0	3170	20	0	188	2962	0	18.1	24	0	94.2	20	0	07-11-2019
Bahrain	35	0	0	0	35	0	12.1	0	0	97.1	0	0	13	0	0	2	11	0	5.2	0	0	100.0	0	0	27-10-2019
Djibouti	0	0	0	0	0	0	0.0	0	0		0	0	3	0	0	3	0	0	0.9	2	1	66.7	0	0	03-11-2019
Egypt	1246	0	0	0	1245	1	3.2	0	0	93.2	0	0	1115	0	0	111	1004	0	3.4	3	0	90.5	0	0	07-11-2019
Iran	896	0	0	0	894	2	4.6	0	0	97.0	0	0	799	0	0	17	781	1	4.8	0	0	96.5	0	0	09-11-2019
Iraq	1023	0	0	0	1023	0	6.7	0	0	89.9	0	0	899	0	0	63	836	0	6.8	13	0	94.7	0	0	01-11-2019
Jordan	115	0	0	0	115	0	4.1	0	0	100.0	0	0	103	0	0	5	98	0	4.3	0	0	100.0	0	0	07-11-2019
Kuwait	72	0	0	0	72	0	8.1	0	0	90.3	0	0	36	0	0	2	34	0	4.7	0	0	86.1	0	0	10-11-2019
Lebanon	89	0	0	0	89	0	4.8	0	0	96.6	0	0	69	0	0	14	55	0	4.3	7	0	85.5	0	0	08-11-2019
Libya	122	0	0	0	122	0	4.9	0	0	96.7	0	0	87	0	0	15	72	0	4.0	1	0	98.9	0	0	09-11-2019
Morocco	212	0	0	0	212	0	2.4	0	0	77.8	0	0	187	0	0	55	132	0	2.4	29	6	81.8	0	0	05-11-2019
Oman	28	0	0	0	28	0	3.2	0	0	92.9	0	0	21	0	0	2	19	0	2.7	0	0	85.7	0	0	03-11-2019
Pakistan	12276	12	1	0	12263	0	15.7	0	0	87.0	12	0	12099	82	0	895	11115	7	17.9	215	0	88.0	82	0	10-11-2019
Palestine	44	0	0	0	44	0	2.3	0	0	90.9	0	0	49	0	0	9	40	0	3.0	0	0	98.0	0	0	10-11-2019
Qatar	10	0	0	0	10	0	2.8	0	0	100.0	0	0	6	0	0	3	3	0	2.0	1	0	83.3	0	0	10-11-2019
Saudi Arabia	242	0	0	0	242	0	3.0	0	0	95.9	0	0	196	0	0	58	138	0	2.8	16	9	93.4	0	0	10-11-2019
Somalia	353	0	0	0	341	12	5.5	0	0	97.7	0	0	304	0	0	10	291	3	5.6	3	3	95.7	0	0	10-11-2019
Sudan	579	0	0	0	579	0	3.2	0	0	97.2	0	0	477	0	0	30	447	0	3.1	0	0	97.3	0	0	03-11-2019
Syria	362	0	0	0	362	0	4.7	0	0	87.0	0	0	299	0	0	19	280	0	4.5	0	0	86.0	0	0	09-11-2019
Tunisia	68	0	0	0	68	0	2.6	0	0	80.9	0	0	65	0	0	4	60	1	2.7	0	0	72.3	0	0	01-11-2019
U.A.E	40	0	0	0	40	0	3.2	0	0	97.5	0	0	34	0	0	12	22	0	3.2	6	0	88.2	0	0	10-11-2019
Yemen	730	0	0	119	611	0	5.2	119	110	91.6	0	0	614	0	0	458	156	0	5.1	332	303	89.7	0	0	08-11-2019
EMR	21920	33	1	119	21752	15	8.7	119	110	89.8	33	0	20645	102	0	1975	18556	12	9.6	652	322	90.1	102	0	
2017	19179	22	3	43	19035	76	7.7	43	34	88.9	22	0													

* Confirmed polio cases refer to wild isolation from AFP cases or from contacts of negative index AFP cases

** Non-polio AFP per 100,000 children <15 years

*** Adequate here refers to two stool specimens collected at least 24 hours apart, within 14 days of paralysis onset and specimens received in the lab in Good Condition

**** AFP cases co infected with P1 and P3 are counted separately as wild isolates

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Table 4 (a): Lab results of contacts' samples in EMR, 2018 - 2019

COUNTRY	2018						2019					
	# OF CONTACTS	LAB RESULTS					# OF CONTACTS	LAB RESULTS				
		WILD	VDPV	SL	NPEV	PENDING		WILD	VDPV	SL	NPEV	PENDING
AFG	1009	4	0	52	217	0	942	8	0	38	172	25
BAH	2	0	0	0	0	0	0	0	0	0	0	0
DJI	0	0	0	0	0	0	0	0	0	0	0	0
EGY	495	0	0	11	58	17	412	0	0	7	46	25
IRN	145	0	0	3	6	0	147	0	0	4	6	0
IRQ	811	0	0	22	93	9	468	0	0	7	14	20
JOR	0	0	0	0	0	0	0	0	0	0	0	0
KUW	0	0	0	0	0	0	0	0	0	0	0	0
LEB	229	0	0	3	16	22	24	0	0	0	3	2
LIB	1	0	0	0	0	0	3	0	0	0	0	0
MOR	161	0	0	0	9	9	59	0	0	3	1	17
OMA	70	0	0	2	16	0	65	0	0	2	20	12
PAK	4200	3	0	207	882	0	4457	12	3	172	821	99
PAL	0	0	0	0	0	0	0	0	0	0	0	0
QAT	0	0	0	0	0	0	0	0	0	0	0	0
SAA	5	0	0	0	0	5	0	0	0	0	0	0
SOM	1052	0	10	49	133	0	918	0	1	42	103	32
SUD	350	0	0	3	24	88	315	0	0	0	26	66
SYR	670	0	0	8	17	0	650	0	0	10	36	30
TUN	1	0	0	0	0	0	20	0	0	0	2	0
UAE	0	0	0	0	0	0	0	0	0	0	0	0
YEM	1559	0	0	0	0	636	376	0	0	0	0	175
EMR	10760	7	10	360	1471	786	8856	20	4	285	1250	503

Table 4 (B): Most recent wild contacts in EMRO, 2018 - 2019

Year	Country	Data	
		Count of wild contacts	Date of Most Recent stool collection
2019	Afghanistan	8	17-Aug-19
	Pakistan	12	19-Oct-19
2019 Total		20	19-Oct-19
2018	Afghanistan	4	7-Aug-18
	Pakistan	3	12-Oct-18
2018 Total		7	12-Oct-18

Table 4 (C): Number and distribution by district of -ve index AFP cases identified as wild positive by contact in EMR, 2018-2019

YEAR	COUNTRY	PROVINCE	DISTRICT	COUNT	First case	Last case
2019	AFG	URUZGAN	TIRINKOT	1	02-Aug-19	02-Aug-19
		HILMAND	MUSAQALAH	1	05-Jun-19	05-Jun-19
			SANGIN	1	06-Mar-19	06-Mar-19
	PAK	SINDH	KHIORANGI	1	28-Aug-19	28-Aug-19
			SUJAWAL	1	25-Sep-19	25-Sep-19
		BALOCHSITAN	KILLABDULLAH	1	02-Jul-19	02-Jul-19
		KHYBER PAKHTUNKHWA (KP)	LAKKIMRWAT	3	27-May-19	04-Oct-19
		TORGHAR	1	25-May-19	25-May-19	
2019 Total				10	06-Mar-19	04-Oct-19
2018	AFG	NANGARHAR	PACHIERAGAM	1	17-Jul-18	17-Jul-18
		URUZGAN	SHAHID-E-HASSA	1	08-Jul-18	08-Jul-18
	PAK	KHYBER PAKHTUNKHWA TRIBAL DISTRICTS (KPTD)	BAJOUR	1	01-Sep-18	01-Sep-18
		BALOCHSITAN	DUKKI	1	15-Apr-18	15-Apr-18
2018 Total				4	15-Apr-18	01-Sep-18

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Table 5: Laboratory investigation of AFP cases with paralysis onset in 2019 up to Week (45/2019) / Ending on : (10/11/2019)

Country	Polio laboratories (ITD / Nucleotide Sequencing (Nucleotide Sequencing performed by EGY, PAK, TUN, CDC and RIVM laboratories))	AFP cases with specimens	Preliminary virus isolation results of AFP cases						Poliovirus intratypic differentiation results #										Indicators				Latest report Date			
			Referred for ITD		NPEV only	Negative	Pending		Type 1			Type 2			Type 3			Discordant pending sequence	NPEV by PCR	Non-EV	Pending ITD	% specimens positive for NPEV*		% AFP cases with culture results within 14 days	% AFP cases with ITD results within 7 days	% AFP cases with ITD results within 45 days of onset**
			L20B+	L20B+/NPEV			received < / = 14 days	received > 14 days ago	Wild	Sabin	VDPV	Wild	Sabin	VDPV	Wild	Sabin	VDPV									
Afghanistan	RRL Pakistan	3132	233	22	495	2273	111		17	172						168		1	1	1	1	14%	96%	100%	98%	09/11/2019
Bahrain	NPL Oman / CDC	11			2	9																14%	100%		0%	04/11/2019
Djibouti	NPL Kenya / CDC	3																								03/11/2019
Egypt**	RRL Egypt	1087	35	6	104	852	44	46		15						20			9	3		10%	96%	100%	99%	07/11/2019
Iran	NPL Iran / CDC	798	12		20	748	5	13		3	1					9						3%	100%	100%	98%	02/11/2019
Iraq	RRL Egypt	1003	14		124	805	45	16		6						11						12%	99%	100%	76%	10/11/2019
Jordan	NPL Jordan / RRL EGYPT	103			14	84	5	1														15%	100%		100%	10/11/2019
Kuwait	RRL Kuwait / RIVM	41			2	34	1	4														6%	89%		100%	10/11/2019
Lebanon	NPL Jordan / RRL EGYPT	64	1		7	55	1									1						11%	100%	100%	0%	10/11/2019
Libya	RRL Tunisia / RIVM	86			2	74	3	7														2%	99%		99%	01/11/2019
Morocco	NPL Morocco / RRL Tunisia	181	2		3	166	10									2						2%	99%	100%	94%	08/11/2019
Oman	NPL Oman / CDC	21			3	15	2	1														25%	100%		100%	04/11/2019
Pakistan	RRL Pakistan	11795	422	43	2002	8893	417	11	75	241					7	236			5	1	2	15%	97%	99%	97%	09/11/2019
Palestine & UNRWA		49			7	41	1															15%	36%		100%	10/11/2019
Qatar	NPL Oman / CDC	6				6																0%	100%		100%	04/11/2019
Saudi Arabia	NPL Saudi Arabia / CDC	198	4		2	180	7	5								4						2%	95%	100%	100%	04/11/2019
Somalia	NPL Kenya / CDC	304	22		58	214	4	6		7			10	3		8						20%	14%		98%	10/11/2019
Sudan	NPL Sudan / RRL Egypt	493	6		67	391	27	2		5						2						12%	71%	100%	63%	10/11/2019
Syria	NPL Syria / RRL Egypt	286	12		16	246	3	9		5						9						6%	100%	100%	54%	31/10/2019
Tunisia	RRL Tunisia	63			4	54	2	3														8%	100%		98%	01/11/2019
U.A.E	NPL Oman / CDC	28			3		3															12%	100%		44%	04/11/2019
Yemen	NPL Kenya / CDC																									08/11/2019
Total EMR 2019		19752	763	71	2935	15162	691	127	92	454	1		10	10		470		1	15	5	3	13%	95%	100%	97%	
Total EMR 2018		20746	902	90	3513	16220		17	29	590	3		6	6 #		628	7 #		22	1	3	14%	92%	99%	97%	
* Specimens from all sources including non-AFP cases, excluding environmental samples									# Somalia in 2018 has a total of 12 cVDPV cases (5 cVDPV2, 6 cVDPV3 & 1 coinfection cVDPV2/cVDPV3)																	
** This indicator reflects surveillance and laboratory activities																										

Table 6: Environmental isolate by year and type

Country	Status	2015	2016	2017	2018	2019
AFG	NEGATIVE	129	183	274	253	148
	PENDING					21
	WILD	20	2	42	83	43
AFG Total		149	185	316	336	212
EGY	NEGATIVE	493	528	522	540	603
	PENDING	2				18
	VDPV2	3	1			
EGY Total		498	529	522	540	621
JOR	NEGATIVE			2	32	36
	PENDING					3
JOR Total				2	32	36
LEB	NEGATIVE		4	27	45	34
	PENDING					4
LEB Total			4	27	45	38
PAK	NEGATIVE	347	462	523	534	322
	PENDING					25
	WILD	79	59	105	139	287
	WILD & VDPV2	5	3	1		2
	VDPV2	8	5	4		3
PAK Total		439	529	633	673	639
SOM	NEGATIVE			34	181	45
	PENDING					5
	VDPV2			2	20	1
	VDPV3				12	
SOM Total				36	213	51
SYR	NEGATIVE			4	102	130
	PENDING					22
SYR Total				4	102	152
IRN	NEGATIVE			6	54	58
	WILD					3
IRN Total				6	54	61
KUW	NEGATIVE					5
	PENDING					3
KUW Total						8
SUD	NEGATIVE				15	35
	PENDING					15
SUD Total					15	50
Grand Total		1086	1249	1576	2017	1860

Table 7: Environmental Wild/VDPV isolate by site

Country	COUNTRY	Status	PROVINCE	DISTRICT	Count	First date	Last date		
2018	AFG	WILD	HILMAND	LASHKARGAH	12	8-Jan	26-Dec		
			HIRAT	HERAT	1	25-Jun	25-Jun		
			KABUL	KABUL	3	26-Feb	26-Jun		
			KANDAHAR	KANDAHAR	42	8-Jan	26-Dec		
			KHOST	MATUN	1	25-Sep	25-Sep		
			KUNAR	ASADABAD	2	24-Apr	25-Sep		
			NANGARHAR	BEHSUD	3	28-Jan	25-Oct		
			JALALABAD	JALALABAD	19	27-Jan	26-Dec		
	AFG Total				83	8-Jan	26-Dec		
	PAK	WILD	BALOCHISTAN	LORALAI	LORALAI	2	17-Mar	17-Aug	
				PISHIN	PISHIN	1	2-Dec	2-Dec	
				QUETTA	QUETTA	13	13-Feb	20-Dec	
				KABDULAH	KABDULAH	8	1-Jan	15-Dec	
				ISLAMABAD	CDA	7	10-Jan	10-Nov	
				PUNJAB	LAHORE	12	11-Jun	18-Dec	
				RAWALPINDI	RAWALPINDI	15	10-Jan	14-Dec	
				DGKHAN	DGKHAN	2	12-Feb	12-Sep	
				SINDH	HYDERABAD	HYDERABAD	1	9-Feb	9-Feb
					JACOBABAD	JACOBABAD	3	12-Feb	12-Sep
					KAMBAR	KAMBAR	3	7-Apr	9-Jul
					KHIBALDIA	KHIBALDIA	2	1-Aug	4-Sep
					KHIGADAP	KHIGADAP	15	15-Feb	11-Dec
					KHIGIQBAL	KHIGIQBAL	1	13-Sep	13-Sep
					KHIKORANGI	KHIKORANGI	1	14-Dec	14-Dec
					KHILANDHI	KHILANDHI	3	10-Jan	30-Jul
					KHISITE	KHISITE	2	1-Jan	3-Sep
SUKKUR					SUKKUR	2	8-Feb	9-Nov	
KHILIAQAT					KHILIAQAT	2	7-Mar	7-Nov	
KHISADDAR					KHISADDAR	1	10-Sep	10-Sep	
KP TRIBAL DISTRICTS					BAJOUR	BAJOUR	5	19-May	25-Oct
				WAZIR-S	WAZIR-S	2	26-Nov	27-Dec	
				KHYBER PAKHTUNKHWA	BANNU	BANNU	4	31-Mar	27-Dec
					KOHAT	KOHAT	5	5-Jan	27-Sep
					MARDAN	MARDAN	2	15-Oct	15-Nov
NOWSHERA				NOWSHERA	2	18-Sep	18-Oct		
PESHAWAR	PESHAWAR	23	10-Jan	26-Dec					
PAK Total				139	1-Jan	27-Dec			
SOM	VDPV2	BANADIR	HAMAR WEYN	HAMAR WEYN	11	4-Jan	20-Sep		
			HODAN	HODAN	2	22-Feb	4-Oct		
			WABERI	WABERI	7	1-Mar	11-Oct		
			HAMAR WEYN	HAMAR WEYN	6	11-Feb	5-Apr		
VDPV3	BANADIR	HODAN	HODAN	1	1-Feb	1-Feb			
		WABERI	WABERI	5	8-Mar	23-Aug			
SOM Total				32	4-Jan	11-Oct			
2018 Total				254	1-Jan	27-Dec			
2019	AFG	WILD	HILMAND	LASHKARGAH	7	23-Feb	24-Sep		
			NAHR-E-SARAJ	NAHR-E-SARAJ	6	6-Jan	24-Sep		
			KANDAHAR	KANDAHAR	23	6-Jan	24-Sep		
			NANGARHAR	JALALABAD	7	26-Jan	23-Sep		
	AFG Total				43	6-Jan	24-Sep		
	PAK	WILD	BALOCHISTAN	KHUZDAR	KHUZDAR	2	20-Mar	20-Oct	
				LORALAI	LORALAI	1	17-Mar	17-Mar	
				PISHIN	PISHIN	5	2-Feb	2-Oct	
				QUETTA	QUETTA	31	1-Jan	20-Oct	
				ZHOB	ZHOB	1	16-Oct	16-Oct	
				DBUGTI	DBUGTI	2	19-Aug	19-Sep	
				KABDULAH	KABDULAH	12	1-Jan	15-Oct	
				NSIRABAD	NSIRABAD	1	21-Oct	21-Oct	
				ISLAMABAD	CDA	3	12-Apr	21-Aug	
				PUNJAB	FAISALABAD	4	3-Jan	3-Sep	
				LAHORE	LAHORE	47	5-Jan	15-Oct	
				MULTAN	MULTAN	5	18-Feb	18-Sep	
				RAWALPINDI	RAWALPINDI	11	10-Jan	25-Oct	
				RAJANPUR	RAJANPUR	1	20-Sep	20-Sep	
				BAHAWALPUR	BAHAWALPUR	1	28-Aug	28-Aug	
				DGKHAN	DGKHAN	2	8-Apr	12-Sep	
				SINDH	DADU	DADU	5	2-May	10-Oct
					HYDERABAD	HYDERABAD	10	24-Jan	7-Oct
					JACOBABAD	JACOBABAD	5	24-Jan	18-Oct
					KAMBAR	KAMBAR	6	7-Mar	3-Oct
					KHIBALDIA	KHIBALDIA	8	2-Jan	8-Oct
KHIGADAP					KHIGADAP	26	8-Jan	15-Oct	
KHIGIQBAL					KHIGIQBAL	10	11-Apr	17-Oct	
KHIKORANGI					KHIKORANGI	9	18-Feb	18-Oct	
KHILANDHI					KHILANDHI	8	19-Feb	21-Oct	
KHISITE					KHISITE	9	3-Jan	11-Sep	
SUKKUR	SUKKUR	11	23-Jan		3-Oct				
KHILIAQAT	KHILIAQAT	8	7-Feb		10-Oct				
KHISADDAR	KHISADDAR	10	7-Jan		9-Oct				
KP TRIBAL DISTRICTS	WAZIR-S	WAZIR-S	5	22-Jan	28-May				
	KHYBER PAKHTUNKHWA	KURRAM	KURRAM	1	15-Jan	15-Jan			
		BANNU	BANNU	8	28-Jan	27-Sep			
		DIKHAN	DIKHAN	4	8-Jan	11-Jun			
		KOHAT	KOHAT	1	27-Feb	27-Feb			
MARDAN	MARDAN	4	16-Mar	15-Jun					
PESHAWAR	PESHAWAR	10	11-Jan	11-Oct					
WILD & VDPV2	PUNJAB	LAHORE	1	6-Aug	6-Aug				
	SINDH	KHISITE	1	7-Oct	7-Oct				
	PUNJAB	RAWALPINDI	3	11-Apr	12-Sep				
PAK Total				292	1-Jan	25-Oct			
SOM	VDPV2	BANADIR	HODAN	1	1	3-Feb	3-Feb		
IRN	WILD	S & B	IRANSHAHR	3	22-Apr	20-May			
IRN Total				3	22-Apr	20-May			
2019 Total				339	1-Jan	25-Oct			

Figure 1: Non Polio AFP Rate and Wild Virus in EMR 01/01/2019 - 10/11/2019

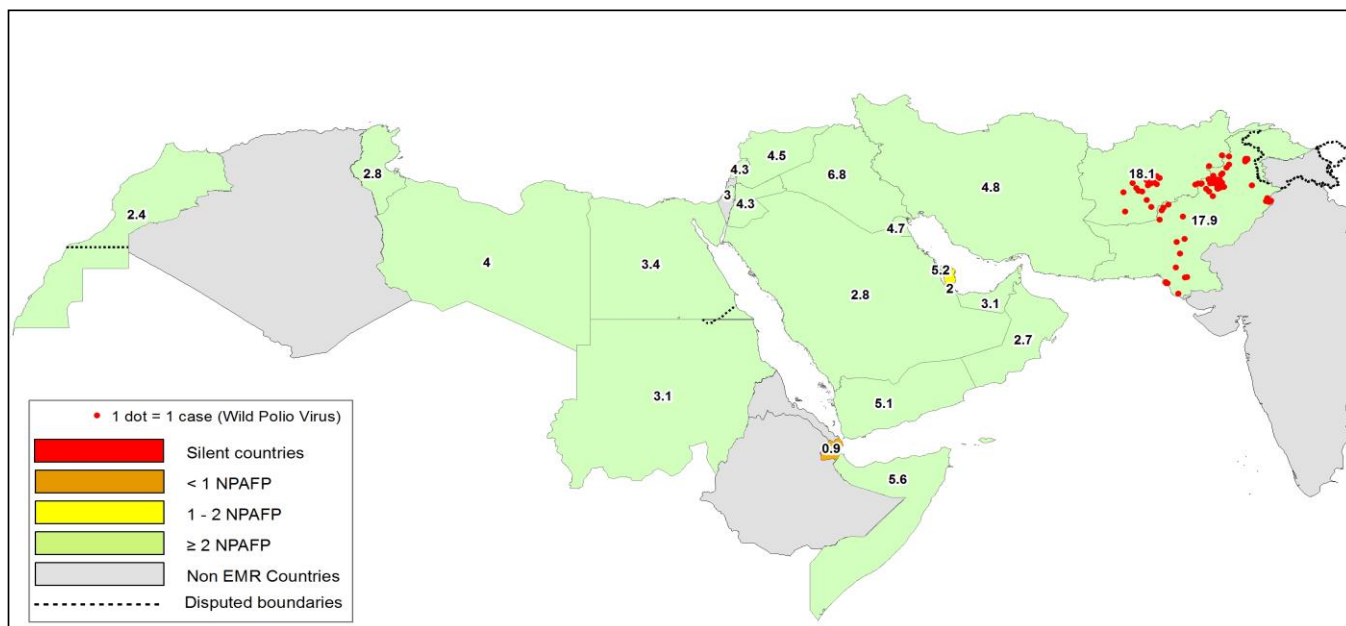


Figure 2: Percent of AFP cases with Adequate Samples & Compatible Cases in EMR 01/01/2019 - 10/11/2019

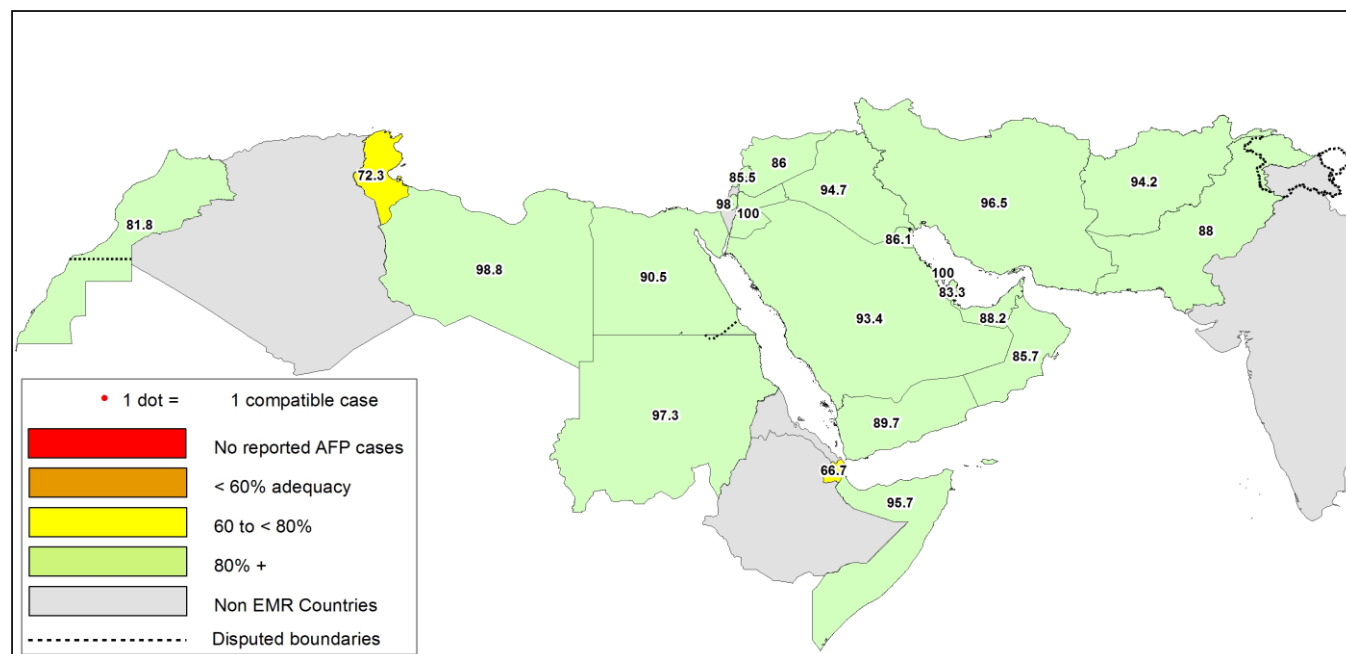


Table 8: Wild polio cases by country and date of onset of paralysis in EMR, 2018 - 2019

Year	COUNTRY	Count	First Case	Last Case
2018	AFG	21	1-Jan-18	6-Nov-18
	PAK	12	8-Mar-18	31-Dec-18
2018 Total		33	1-Jan-18	31-Dec-18
2019	AFG	20	4-Jan-19	28-Sep-19
	PAK	82	15-Jan-19	21-Oct-19
2019 Total		102	4-Jan-19	21-Oct-19

Last reported wild Polio P3 from Pakistan with date of onset 18/04/2012

Figure 3: Non Polio AFP rate by Province in Afghanistan & by District in Pakistan 01/01/2019 - 10/11/2019

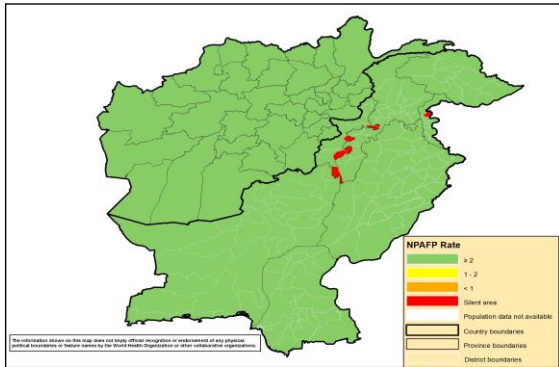


Figure 4: Percent of AFP cases with Adequate Samples in Afghanistan by Province & Pakistan by District 01/01/2019 - 10/11/2019

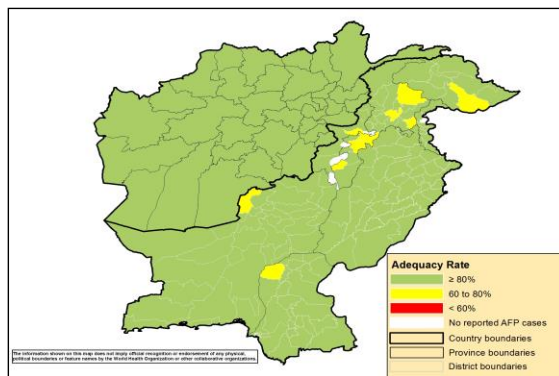
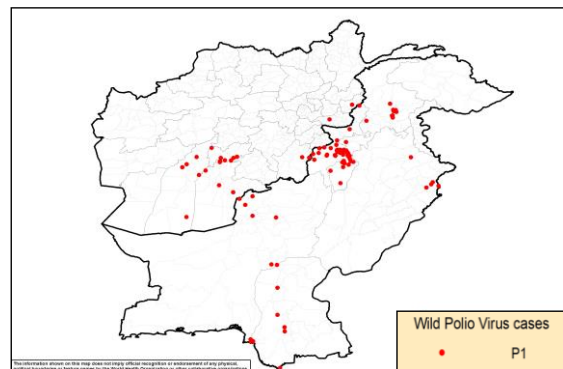
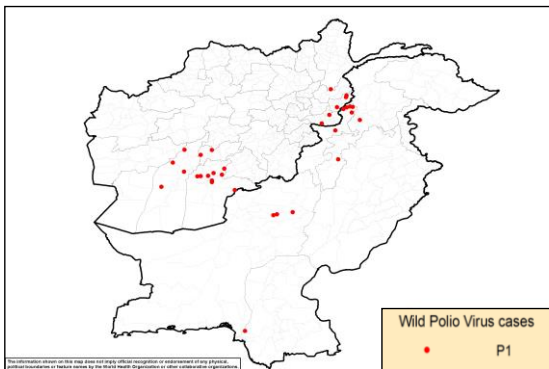


Figure 5: Wild Virus Cases by Type & District in Afghanistan & Pakistan

5(a) 01/01/2018 - 31/12/2018

5(b) 01/01/2019 - 10/11/2019



World Health Organization – Regional Office for Eastern Mediterranean

AFP SURVEILLANCE

Week 45, ending 10 November 2019

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Table 9: Wild Polio cases by district and date of onset of paralysis, Afghanistan 2018-2019

ONSETYR	PROVINCE	DISTRICT	Count	First case	Last case
2018	HILMAND	NAWZAD	3	1-Sep-18	6-Nov-18
		NAD-E-ALI	1	1-Jun-18	1-Jun-18
	URUZGAN	SHAHID-E-HASSAS	2	8-Jul-18	9-Oct-18
	NURISTAN	PORUNS	1	26-Sep-18	26-Sep-18
	KANDAHAR	MAYWAND	1	24-Sep-18	24-Sep-18
		KANDAHAR	2	11-Aug-18	27-Aug-18
		ARGHANDAB (K)	1	17-Jul-18	17-Jul-18
		SHAHWALIKOT	3	5-Jan-18	27-Apr-18
		KHAKREZ	1	25-Feb-18	25-Feb-18
		SPINBOLDAK	1	6-Jan-18	6-Jan-18
	NANGARHAR	PACHIERAGAM	1	17-Jul-18	17-Jul-18
		KAMA	1	1-Jan-18	1-Jan-18
KUNAR	CHAWKAY	1	22-Jun-18	22-Jun-18	
	GHAZIABAD	2	14-Feb-18	3-Mar-18	
2018 Total			21	1-Jan-18	6-Nov-18
2019	PAKTIKA	BERMEL	2	15-Sep-19	28-Sep-19
	NANGARHAR	KHOGYANI	1	18-Sep-19	18-Sep-19
	KANDAHAR	KANDAHAR	1	17-Aug-19	17-Aug-19
		GHORAK	1	12-Jan-19	12-Jan-19
		SPINBOLDAK	1	4-Jan-19	4-Jan-19
	URUZGAN	TIRINKOT	4	19-May-19	2-Aug-19
		CHORA	3	20-Mar-19	23-Jul-19
		SHAHID-E-HASSAS	1	25-Feb-19	25-Feb-19
	HILMAND	GARMSER	1	26-May-19	26-May-19
		MUSAQALAH	1	5-May-19	5-May-19
		NAWZAD	1	3-Apr-19	3-Apr-19
		WASHER	1	23-Mar-19	23-Mar-19
		SANGIN	1	6-Mar-19	6-Mar-19
KUNAR	WATAPUR	1	8-May-19	8-May-19	
2019 Total			20	4-Jan-19	28-Sep-19

Table 10: Wild Polio cases by district and date of onset of paralysis, Pakistan 2018-2019

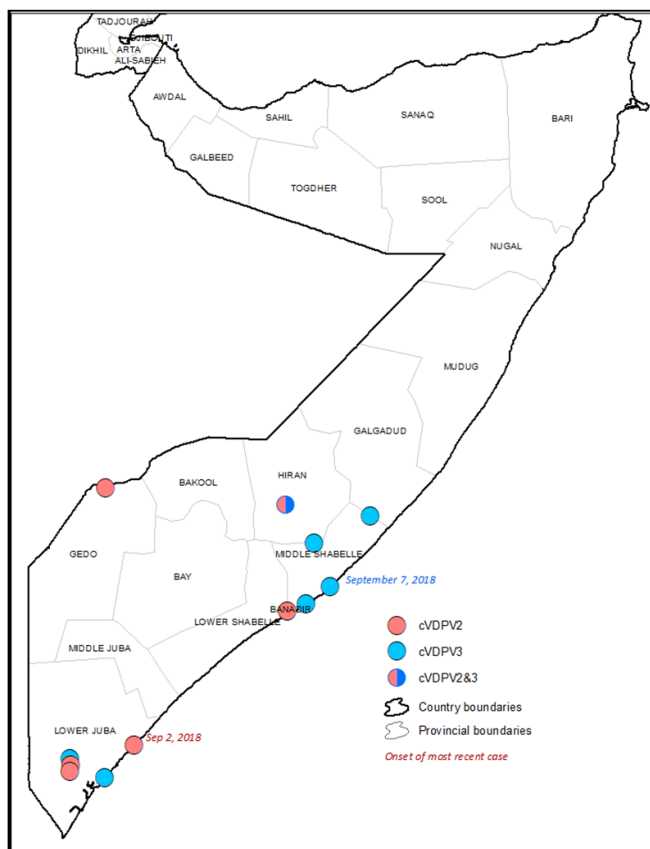
ONSETYR	PROVINCE	DISTRICT	Count	First case	Last case
2018	KP TRIBAL DISTRICTS	BAJOUR	5	1-Sep-18	31-Dec-18
		KHYBER	1	25-Sep-18	25-Sep-18
	KHYBER PAKHTUNKHWA	LAKKIMRWT	1	16-Dec-18	16-Dec-18
		CHARSADA	1	1-Aug-18	1-Aug-18
	SINDH	KHIGADAP	1	22-Sep-18	22-Sep-18
BALOCHISTAN	DUKKI	3	8-Mar-18	18-May-18	
2018 Total			12	8-Mar-18	31-Dec-18
2019	KHYBER PAKHTUNKHWA	LAKKIMRWT	14	27-May-19	21-Oct-19
		TANK	1	11-Oct-19	11-Oct-19
		TORGHAR	7	25-May-19	13-Sep-19
		BANNU	23	15-Jan-19	19-Aug-19
		HANGU	2	20-Jan-19	28-Jul-19
		CHARSADA	1	21-Jul-19	21-Jul-19
		SHANGLA	1	18-May-19	18-May-19
		DIKHAN	1	5-May-19	5-May-19
		BALOCHISTAN	HARNAI	1	27-Sep-19
	JAFARABAD		2	28-May-19	13-Sep-19
	KABDULAH		3	9-Jun-19	8-Aug-19
	QUETTA		1	6-Jul-19	6-Jul-19
	SINDH		SUJAWAL	1	25-Sep-19
	SINDH	KHIORANGI	2	20-Aug-19	26-Aug-19
		JAMSHORO	1	23-Aug-19	23-Aug-19
		HYDERABAD	2	20-Jul-19	5-Aug-19
		KHIGIQBAL	1	29-Apr-19	29-Apr-19
		LARKANA	1	17-Apr-19	17-Apr-19
		KHILAYARI	1	25-Feb-19	25-Feb-19
		KP TRIBAL DISTRICTS	WAZIR-S	1	20-Aug-19
	WAZIR-N		8	4-Apr-19	21-Jul-19
	KHYBER		1	14-Feb-19	14-Feb-19
	BAJOUR		1	18-Jan-19	18-Jan-19
PUNJAB	LAHORE	4	20-Jan-19	22-Jun-19	
	JHELUM	1	21-Jun-19	21-Jun-19	
2019 Total			82	15-Jan-19	21-Oct-19

Table 11: Circulating VDPV cases and date of onset of paralysis in EMR countries by districts 2018-2019

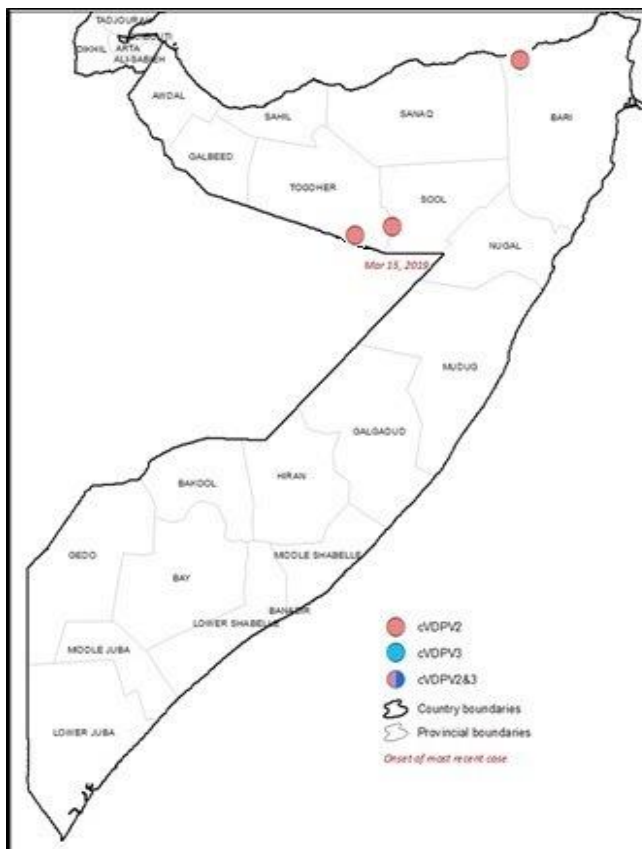
COUNTRY	YEAR	PROVINCE	DISTRICT	cVDPV2			cVDPV3		
				Count	First Case	Last Case	Count	First Case	Last Case
PAK	2019	KHYBER PAKHTUNKHWA	KOHISTANLOWER	1	06-Oct-19	06-Oct-19			
			TORGHAR	1	04-Sep-19	04-Sep-19			
		ISLAMABAD	1	11-Sep-19	11-Sep-19				
		GILGIT BALTISTAN	4	07-Jul-19	28-Aug-19				
SOM	2019	BARI	BOSSASO	1	08-May-19	08-May-19			
		TOGDHER	BUHODLE	1	21-Apr-19	21-Apr-19			
		SOOL	LAS ANOD	1	15-Mar-19	15-Mar-19			
Total 2019				10	15-Mar-19	6-Oct-19			
SOM	2018	LOWER JUBA	JAMAAME WEST	1	02-Sep-18	02-Sep-18			
			KISMAYO	2	29-Jul-18	30-Jul-18	2	4-Jul-18	27-Jul-18
		MIDDLE SHABELLE	RUNINGOD				1	07-Sep-18	07-Sep-18
			MAHADAY WARSHAIKH				1	29-Jun-18	29-Jun-18
		BANADIR	DANYILE	1	10-Jul-18	10-Jul-18			
		HIRAN	BULO BURTU	1	11-May-18	11-May-18	1	11-May-18	11-May-18
GEDO	DOLO	1	26-May-18	26-May-18					
Total 2018				6	11-May-18	2-Sep-18	7	11-May-18	7-Sep-18

Figure 6: Somalia cVDPV cases by type and district

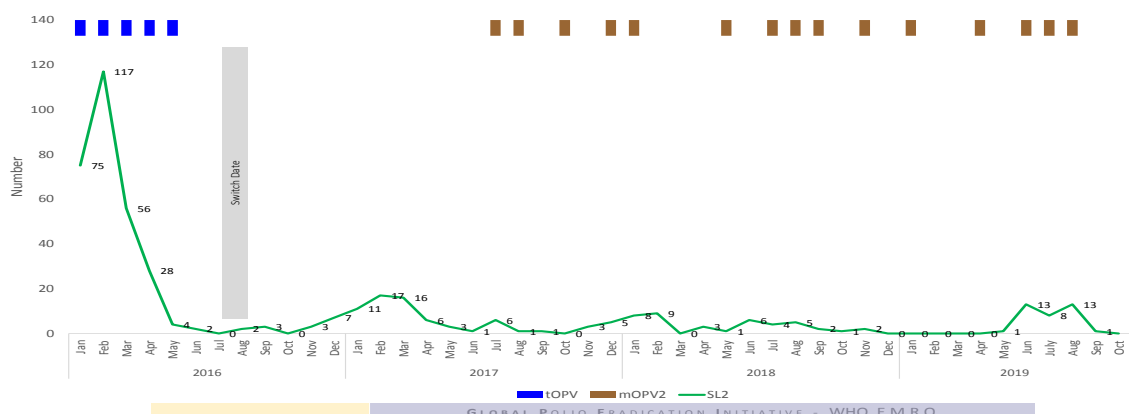
6(a) 01/01/2018 - 31/12/2018



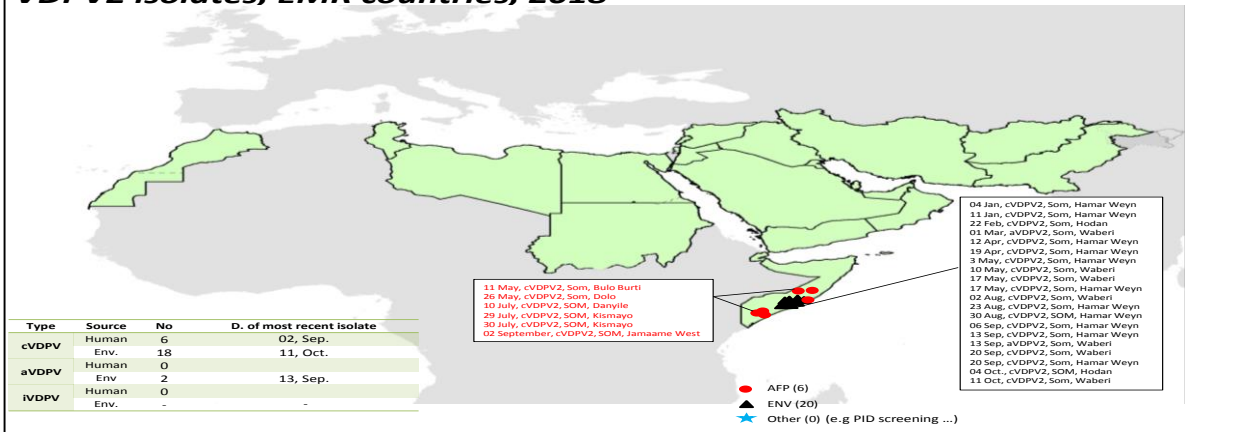
6(b) 01/01/2019 - 10/11/2019



Sabin like type-2 poliovirus isolates (H&E) and vaccine types used during SIAs, EMRO, 2016 to 2019



VDPV2 isolates, EMR countries, 2018



VDPV2 isolates, EMR countries, 2019

