

Highlights of Polio Fax Bulletin No. 1075 for Week 19 2019

I. Salient features:

1. Four new wild poliovirus type-1 (WPV1) cases and four new positive environmental samples for WVP1 from Pakistan.
2. Confirmed detection of a WPV1 in an environmental sample in south-eastern Iran, bordering Pakistan. Few additional details below.

II. Poliovirus Transmission

1. Endemic countries (PAKISTAN & AFGHANISTAN): Four new wild poliovirus type-1 (WPV1) cases and four new WPV1 positive environmental samples from Pakistan reported this week.

- a. *Human samples*: Four new WPV1 cases reported this week from Pakistan. Total WPV1 cases in 2019 to date are 22 (7 from Afghanistan and 15 from Pakistan). This compares with 10 cases in 2018 in the same period (Afghanistan – 8 and Pakistan – 2).

- i. Afghanistan: In 2019 to date, seven WPV1 cases are reported, all from the southern region plagued with conflict and compromised access- two each from provinces of Kandahar and Uruzgan and three from Hilmand. The most recent reported case has date of onset of paralysis on 3 April 2019.

- ii. Pakistan: The four new WPV1 cases include:

- Case No. 1: The case is a 38-month old female child from Larkana district, Sindh province. She has onset of paralysis on 17 April 2019 and reportedly received more than 7 doses of oral polio vaccine (OPV), including 3 from routine and 7 from supplementary immunization activities (SIAs).
- Case No. 2: The case is a 6-month old female child from Bannu district, Khyber Pakhtunkhwa (KP) province, with date of paralysis onset 18 April 2019. The child has not received any OPV doses – none from routine or SIAs.
- Case No. 3: The case is a 36-month old female child from North Waziristan district, from KP Tribal Districts (KPTD). She had onset of paralysis on 22 April 2019 and reportedly received 7 doses of OPV, all 7 from SIAs and none from routine.
- Case No. 4: The case is an 8-month old male child from Bannu district, KP province, with date of paralysis onset 26 April 2019. The child has reportedly received one OPV dose from SIAs and none from routine.

In 2019 to date, 15 WPV1 cases reported from Pakistan. They include six from KP, four from KPTD, three from Punjab, and two from Sindh. The most recent reported case has date of onset of paralysis on 26 April 2019.

- b. *Environmental samples*: Four new WPV1 positive environmental samples were reported this week, all from Pakistan.

- i. Afghanistan: In 2019 to date, there are 21 positive environmental samples with most recent positive sample collected on 23 March 2019.

- ii. Pakistan: The four new WPV1 positive environmental samples reported this week include one from Punjab province (from Lahore district); two from

Balochistan province (one each from Kila Abdulla and Quetta districts); and one from Sindh province (from Karachi Landhi town). In 2019 to date, there are 111 positive environmental samples with most recent positive sample collected on 20 April 2019.

III. Outbreak response countries

SOMALIA:

- No new cVDPV2 or cVDPV3 cases or isolates from human or environmental samples reported this week.
 - In 2019: to date, Somalia has reported one cVDPV2 case from Las Anod district from Sool province, with date of onset 15 March 2019 noting that one of its contacts is also identified as cVDPV2.
 - 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.
 - cVDPV2: cVDPV2 was isolated from 19 sewage samples in Mogadishu, the most recent sample collected on 11 October 2018.
 - cVDPV3
 - Human samples: the date of onset of the most recent cVDPV3 case is 7 September 2018.
 - Sewage samples: cVDPV3 has been isolated from 11 sewage samples in Mogadishu and date of specimen collection of the most recent is 23 August 2018.
 - Co-infection cVDPV2 and cVDPV3: The date of onset of the most recent coinfection case is 11 May 2018. In 2018, cVDPV2 and cVDPV3 were both isolated from 1 sewage sample in Mogadishu collected on 19 April 2018.

IV. Other countries

Islamic Republic of IRAN: A new WPV1 positive environmental sample reported this week from Konarak district, Seestan Balochistan province of Iran. Stool collection was on 22 April 2019. Genetic analysis reflects that the closest matches to virus detected in Iran are viruses detected in Karachi, Pakistan, in early 2019, confirming international spread. The closeness of the genetics of isolates strongly suggests that virus was recently introduced in Iran. Investigations including case search according to standard practice have been initiated. The affected district was included in two pre-emptive targeted vaccination activities achieving 100% coverage in the native population as well as foreigners mainly from Pakistan. Pakistan program data shows significant movement between Karachi and Iran. Risk assessments indicate the risk of a serious outbreak in Iran as very low, given the very high routine immunization coverage and strong disease surveillance. WHO is working closely with the Ministry of Health on the investigation process, and based on that investigation, on plans for any necessary response. A Ministry of Health team is currently conducting a field investigation. Efforts of Surveillance Officer and National Polio Lab Iran are much appreciated. As of now, this is considered as Event, which has been reported to WHO HQ for further action.

V. Surveillance performance indicators

In 2019, 17 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.

- a. Djibouti, did not report any AFP case since April 2017.
- b. Morocco has a non-polio AFP rate of 1.8 and percentage of AFP cases with adequate stool specimens of 67.8%
- c. Oman has a non-polio AFP rate of 1.9 and percentage of AFP cases with adequate stool specimens of 71.4%
- d. Qatar has a non-polio AFP rate of 0.8 and percentage of AFP cases with adequate stool specimens of 0%
- e. Tunisia has a non-polio AFP rate of 1.7 and percentage of AFP cases with adequate stool specimens of 77.8%

In Yemen there are AFP cases pending final classification more than 90 days due to delay shipment of specimens due to insecurity and conflict.

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AFP SURVEILLANCE

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

Country	Reported AFP cases by week of onset - Week (19/19) / Ending on : 12/05/2019														
	Total AFP 2017	Total AFP 2018	Total AFP to date, 2019	W08 24 Feb 19	W09 03 Mar 19	W10 10 Mar 19	W11 17 Mar 19	W12 24 Mar 19	W13 31 Mar 19	W14 07 Apr 19	W15 14 Apr 19	W16 21 Apr 19	W17 28 Apr 19	W18 05 May 19	W19 12 May 19
Afghanistan	3094	3378	1320	78	81	73	68	71	75	85	66	53	72	47	7
Bahrain	18	35	6	1	0	1	0	0	1	0	1	0	0	0	0
Djibouti	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Egypt	1242	1246	451	20	40	31	31	23	43	28	24	13	18	4	
Iran	820	896	321	27	11	15	14	7	16	25	23	20	8	1	
Iraq	699	1023	398	32	21	17	17	15	18	26	19	25	17	6	
Jordan ****	116	115	61	1	2	4	5	4	4	6	2	3	2	1	
Kuwait	69	72	18	0	1	3	3	1	0	2	1	0	0	0	
Lebanon ****	75	89	35	4	2	2	1	1	2	1	5	1	2	0	
Libya	88	122	29	0	1	1	1	1	1	2	1	1	1	1	
Morocco	143	212	59	3	3	9	3	2	5	4	1	0			
Oman	40	28	7	0	1	1	0	0	0	0	1	0	1	1	0
Pakistan	10319	12271	4485	263	250	248	259	284	223	205	207	271	202	84	0
Palestine ****	43	44	18	2	1	1	2	2	0	0	1	3	0	0	0
Qatar	18	10	1	0	0	0	0	0	0	0	0	0			
Saudi Arabia	276	241	97	3	6	9	13	6	7	3	7	5	0	0	0
Somalia	345	353	131	4	7	8	9	14	6	12	6	7	7	3	2
Sudan	570	578	171	12	18	7	12	3	11	15	2	4	9	2	0
Syria ****	362	362	152	14	11	8	6	4	16	7	7	3	5	2	
Tunisia	67	68	18	0	2	3	0	1	0	0	0	1	0	0	
U.A.E	58	40	16	1	0	1	1	1	0	0	3	0	0	0	
Yemen	713	730	266	15	14	10	16	11	12	16	16	24	11	6	0
Total EMR	19179	21913	8060	480	472	452	461	451	440	437	393	434	355	158	9

No data = No report received

Table 2: Confirmed polio cases by month of onset

Country	Total year 2017	Total year 2018	12/05		Confirmed polio cases by month of onset											
			2018	2019	June 2018	July 2018	August 2018	September 2018	October 2018	November 2018	December 2018	January 2019	February 2019	March 2019	April 2019	May 2019
Afghanistan	14	21	8	7	2	3	2	3	2	1	0	2	1	3	1	
Bahrain	0	0	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	0	0	
Iran	0	0	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	0	
Jordan ****	0	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	0	
Lebanon ****	0	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	0	
Morocco	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Oman	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pakistan	8	12	2	15	0	0	1	3	1	0	4	4	2	0	9	
Palestine ****	0	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	0	
Saudi Arabia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Somalia	0	0	0	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	0	
Syria ****	0	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	0	0	
U.A.E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Yemen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total EMR	22	33	10	22	2	3	3	6	3	1	4	6	3	3	10	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 (19/19) / Ending on : 12/05/2019

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	1320	7	0	198	1115	0	17.9	17	2	94.0	7	0	12-05-2019
Bahrain	35	0	0	2	33	0	12.1	2	0	97.1	0	0	6	0	0	3	3	0	5.7	0	0	100.0	0	0	12-05-2019
Djibouti	0	0	0	0	0	0	0.0	0	0		0	0	0	0	0	0	0	0.0	0	0			0	0	10-04-2019
Egypt	1246	0	0	2	1243	1	3.2	2	0	93.2	0	0	451	0	0	65	386	0	3.2	0	0	92.2	0	0	09-05-2019
Iran	896	0	0	0	894	2	4.6	0	0	97.0	0	0	321	0	0	13	308	0	4.6	0	0	97.2	0	0	11-05-2019
Iraq	1023	0	0	0	1023	0	6.7	0	0	89.9	0	0	398	0	0	74	324	0	7.2	1	0	95.7	0	0	11-05-2019
Jordan	115	0	0	0	115	0	4.1	0	0	100.0	0	0	61	0	0	2	59	0	6.0	0	0	100.0	0	0	09-05-2019
Kuwait	72	0	0	0	72	0	8.1	0	0	90.3	0	0	18	0	0	8	10	0	5.6	0	0	88.9	0	0	05-05-2019
Lebanon	89	0	0	1	88	0	4.8	1	0	96.6	0	0	35	0	0	10	25	0	5.2	3	0	85.7	0	0	10-05-2019
Libya	122	0	0	0	122	0	4.9	0	0	96.7	0	0	29	0	0	4	25	0	3.2	0	0	100.0	0	0	11-05-2019
Morocco	212	0	0	1	211	0	2.4	1	0	77.8	0	0	59	0	0	41	18	0	1.8	13	6	67.8	0	0	22-04-2019
Oman	28	0	0	0	28	0	3.2	0	0	92.9	0	0	7	0	0	2	5	0	1.9	0	0	71.4	0	0	12-05-2019
Pakistan	12271	12	1	2	12256	0	15.7	2	0	87.1	12	0	4485	15	0	556	3914	0	15.8	49	0	90.6	15	0	12-05-2019
Palestine	44	0	0	0	44	0	2.3	0	0	90.9	0	0	18	0	0	10	8	0	2.6	0	0	100.0	0	0	12-05-2019
Qatar	10	0	0	0	10	0	2.8	0	0	100.0	0	0	1	0	0	1	0	0	0.8	1	0	0.0	0	0	21-04-2019
Saudi Arabia	241	0	0	0	241	0	3.0	0	0	95.9	0	0	97	0	0	75	22	0	3.3	14	0	88.7	0	0	12-05-2019
Somalia	353	0	0	0	341	12	5.5	0	0	97.7	0	0	131	0	0	29	101	1	5.7	0	0	97.7	0	0	12-05-2019
Sudan	578	0	0	0	578	0	3.2	0	0	97.2	0	0	171	0	0	16	155	0	2.6	1	0	98.2	0	0	12-05-2019
Syria	362	0	0	0	362	0	4.7	0	0	87.3	0	0	152	0	0	18	134	0	5.4	0	0	89.5	0	0	11-05-2019
Tunisia	68	0	0	0	68	0	2.6	0	0	80.9	0	0	18	0	0	2	15	1	1.7	0	0	77.8	0	0	09-05-2019
U.A.E	40	0	0	2	38	0	3.2	2	1	97.5	0	0	16	0	0	6	10	0	3.5	0	0	87.5	0	0	08-05-2019
Yemen	730	0	0	378	352	0	5.2	378	344	91.6	0	0	266	0	0	263	3	0	5.2	95	87	90.6	0	0	12-05-2019
EMR	21913	33	1	388	21476	15	8.7	388	345	89.8	33	0	8060	22	0	1396	6640	2	8.9	194	95	91.9	22	0	
2017	19179	22	3	72	19006	76	7.7	72	58	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	467	1	0	26	76	29
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	174	0	0	6	9	24
IRN	145	0	0	3	6	0	43	0	0	0	2	0
IRQ	811	0	0	22	93	9	195	0	0	3	6	23
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	218	0	0	3	16	20	19	0	0	0	3	0
LIB	1	0	0	0	0	0	2	0	0	0	0	0
MOR	161	0	0	0	9	9	25	0	0	1	0	12
OMA	70	0	0	2	16	0	17	0	0	0	3	7
PAK	4209	3	0	207	882	0	1718	0	0	103	203	128
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	1051	0	10	49	133	3	399	0	1	7	26	86
SUD	350	0	0	3	24	88	112	0	0	0	6	32
SYR	670	0	0	8	17	0	299	0	0	6	9	23
TUN	1	0	0	0	0	0	6	0	0	0	1	0
UAE	0	0	0	0	0	0	0	0	0	0	0	0
YEM	1558	0	0	0	0	1558	256	0	0	0	0	257
EMR	10756	7	10	360	1471	1709	3732	1	1	152	344	621

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	1	6-Mar-19
2018 Total		1	6-Mar-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	HILMAND	SANGIN	1	6-Mar-19	6-Mar-19
	2019 Total				1	6-Mar-19
2018	AFG	NANGARHAR	PACHIERAGAM	1	17-Jul-18	17-Jul-18
		URUZGAN	SHAHID-E-HASSA	1	8-Jul-18	8-Jul-18
	PAK	FATA	BAJOUR	1	1-Sep-18	1-Sep-18
		BALUCHISTAN	DUKKI	1	15-Apr-18	15-Apr-18
2018 Total				4	15-Apr-18	01-Sep-18

Table 5: Laboratory investigation of AFP cases with paralysis onset in 2019 up to Week (19/2019) / Ending on : (12/05/2019)

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	1266	102	10	146	904	104		6	72						78						11%	100%	100%	98%	12/05/2019
Bahrain	NPL Oman / CDC																									13/05/2019
Djibouti	NPL Kenya / CDC																									10/04/2019
Egypt***	RRL Egypt	447	25		25	357	29	11		12						17			1	1		6%	99%	100%	100%	09/05/2019
Iran	NPL Iran / CDC	353	7		5	316	24	1		2						5						2%	100%	100%	99%	11/05/2019
Iraq	RRL Egypt	399	7		43	317	28	4		2						2						10%	100%	100%	33%	09/05/2019
Jordan	NPL Jordan / RRL EGYPT	61			8	53																14%	100%			12/05/2019
Kuwait	RRL Kuwait / RIVM	23			1	17		5														10%	83%		100%	12/05/2019
Lebanon	NPL Jordan / RRL EGYPT	31	1		2	28									1							8%	100%	100%	0%	12/05/2019
Libya	RRL Tunisia / RIVM	28			1	24	1	2														2%	100%		100%	06/05/2019
Morocco	NPL Morocco / RRL Tunisia	65			1	60	4															2%	100%		97%	10/05/2019
Oman	NPL Oman / CDC	7			2	4	1															29%	100%		100%	13/05/2019
Pakistan	RRL Pakistan	4468	198	28	482	3363	394	4	15	136						142			2	1		10%	100%	100%	98%	12/05/2019
Palestine & UNRWA		18			4	13		1														24%	38%		100%	12/05/2019
Qatar	NPL Oman / CDC	1				1																0%	100%		100%	13/05/2019
Saudi Arabia	NPL Saudi Arabia / CDC	108	3			87	11	7								3						0%	96%	100%	100%	06/05/2019
Somalia	NPL Kenya / CDC	131	3		12	87	10	19		2			1			1						12%	21%		100%	12/05/2019
Sudan	NPL Sudan / RRL Egypt	159	1		28	120	3	7								1						15%	73%	100%	50%	05/05/2019
Syria	NPL Syria / RRL Egypt	150	12		4	125	9			5						5						3%	100%	100%	50%	09/05/2019
Tunisia	RRL Tunisia	16			1	15																10%	100%		100%	06/05/2019
U.A.E	NPL Oman / CDC	15			3	12																20%	100%		53%	13/05/2019
Yemen	NPL Kenya / CDC																									12/05/2019
Total EMR 2019		7746	359	38	768	5903	618	61	21	231			1		255			3	2			9%	98%	100%	98%	
Total EMR 2018		20744	902	90	3513	16217		18	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 so far 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	46
	PENDING					21
	WILD	20	2	42	83	21
AFG Total		149	185	316	336	88
EGY	NEGATIVE	495	528	522	540	167
	PENDING					28
	VDPV2	3	1			
EGY Total		498	529	522	540	195
IRN	NEGATIVE				6	54
	PENDING					3
	WILD					1
IRN Total				6	54	20
JOR	NEGATIVE		2	32	36	8
	PENDING					5
JOR Total			2	32	36	13
LEB	NEGATIVE		4	27	45	11
	PENDING					5
LEB Total			4	27	45	16
PAK	NEGATIVE	347	462	523	534	114
	PENDING					30
	WILD	79	59	105	139	111
	WILD & VDPV2	5	3	1		
	VDPV2	8	5	4		
PAK Total		439	529	633	673	255
SOM	NEGATIVE				34	181
	PENDING					8
	VDPV2				2	20
	VDPV3					12
SOM Total				36	213	24
SYR	NEGATIVE				4	102
	PENDING					10
SYR Total				4	102	56
Grand Total		1086	1249	1576	1999	667

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	
				HERAT	1	25-Jun	25-Jun	
				KABUL	3	26-Feb	26-Jun	
				KANDAHAR	42	8-Jan	26-Dec	
				KHOST	1	25-Sep	25-Sep	
				KUNAR	2	24-Apr	25-Sep	
				NANGARHAR	3	28-Jan	25-Oct	
					19	27-Jan	26-Dec	
			AFG Total		83		8-Jan	26-Dec
	PAK	WILD	BALOCHISTAN	LORALAI	2	17-Mar	17-Aug	
				PISHIN	1	2-Dec	2-Dec	
				QUETTA	13	13-Feb	20-Dec	
					KABDULAH	8	1-Jan	15-Dec
					ISLAMABAD	7	10-Jan	10-Nov
					PUNJAB	12	11-Jun	18-Dec
					RAWALPINDI	15	10-Jan	14-Dec
					DGKHAN	2	12-Feb	12-Sep
					HYDERABAD	1	9-Feb	9-Feb
					JACOBABAD	3	12-Feb	12-Sep
					KAMBAR	3	7-Apr	9-Jul
					KHIBALDIA	2	1-Aug	4-Sep
					KHIGADAP	15	15-Feb	11-Dec
					KHIGIQBAL	1	13-Sep	13-Sep
					KHIKORANGI	1	14-Dec	14-Dec
					KHILANDHI	3	10-Jan	30-Jul
					KHISITE	2	1-Jan	3-Sep
					SUKKUR	2	8-Feb	9-Nov
				KHILIAQAT	2	7-Mar	7-Nov	
				KHISADDAR	1	10-Sep	10-Sep	
				FATA	5	19-May	25-Oct	
				BAJOUR	2	26-Nov	27-Dec	
				KHYBER PAKHTOONKHWA	4	31-Mar	27-Dec	
					5	5-Jan	27-Sep	
					2	15-Oct	15-Nov	
					2	18-Sep	18-Oct	
					23	10-Jan	26-Dec	
PAK Total		139		1-Jan	27-Dec			
SOM	VDPV2	BANADIR	HAMAR WEYN	11	4-Jan	20-Sep		
			HODAN	2	22-Feb	4-Oct		
			WABERI	7	1-Mar	11-Oct		
				6	11-Feb	5-Apr		
				1	1-Feb	1-Feb		
	VDPV3	BANADIR	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	2	23-Feb	20-Mar	
				NAHR-E-SARAJ	3	6-Jan	26-Jan	
				KANDAHAR	11	6-Jan	23-Mar	
				NANGARHAR	5	26-Jan	23-Mar	
	AFG Total		21		6-Jan	23-Mar		
	PAK	WILD	BALOCHISTAN	KHUZDAR	1	20-Mar	20-Mar	
				LORALAI	1	17-Mar	17-Mar	
				PISHIN	1	2-Feb	2-Feb	
				QUETTA	11	1-Jan	20-Apr	
					KABDULAH	8	1-Jan	19-Apr
					CDA	1	12-Apr	12-Apr
					ISLAMABAD	2	3-Jan	6-Feb
					PUNJAB	18	5-Jan	19-Apr
					MULTAN	2	18-Feb	18-Apr
					RAWALPINDI	5	10-Jan	11-Apr
					DGKHAN	1	8-Apr	8-Apr
					HYDERABAD	4	24-Jan	8-Apr
					JACOBABAD	2	24-Jan	12-Feb
					KAMBAR	1	7-Mar	7-Mar
					KHIBALDIA	3	2-Jan	1-Apr
					KHIGADAP	8	8-Jan	10-Apr
					KHIGIQBAL	2	11-Apr	15-Apr
					KHIKORANGI	3	18-Feb	12-Apr
					KHILANDHI	3	19-Feb	16-Apr
					KHISITE	4	3-Jan	2-Apr
					SUKKUR	4	23-Jan	5-Apr
					KHILIAQAT	3	7-Feb	3-Apr
				KHISADDAR	4	7-Jan	5-Apr	
				FATA	3	22-Jan	21-Mar	
				KURRAM	1	15-Jan	15-Jan	
				KHYBER PAKHTOONKHWA	3	28-Jan	28-Mar	
					3	8-Jan	9-Apr	
		1	27-Feb	27-Feb				
		2	16-Mar	15-Apr				
		6	11-Jan	18-Mar				
PAK Total		111		1-Jan	20-Apr			
SOM	VDPV2	BANADIR	HODAN	1	3-Feb	3-Feb		
SOM Total		1		3-Feb	3-Feb			
IRN	WILD	S & B	IRANSHAHR	1	22-Apr	22-Apr		
IRN Total		1		22-Apr	22-Apr			
2019 Total				134	1-Jan	22-Apr		

Figure 1: Non Polio AFP Rate and Wild Virus in EMR 01/01/2019 - 12/05/2019

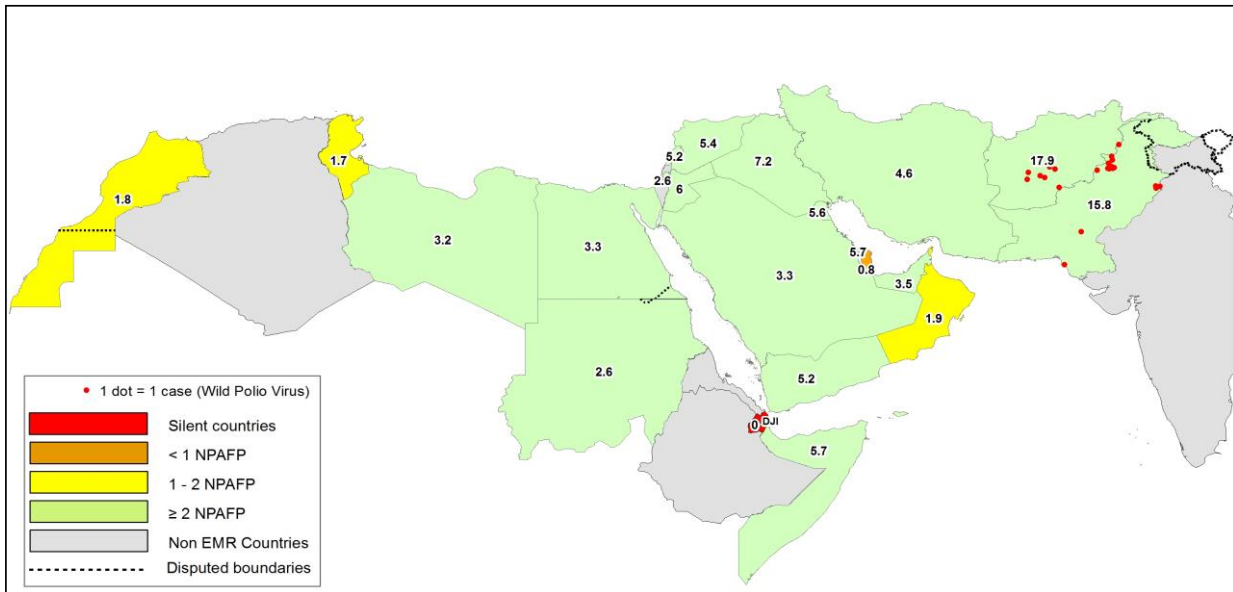


Figure 2: Percent of AFP cases with Adequate Samples & Compatible Cases in EMR 01/01/2019 - 12/05/2019

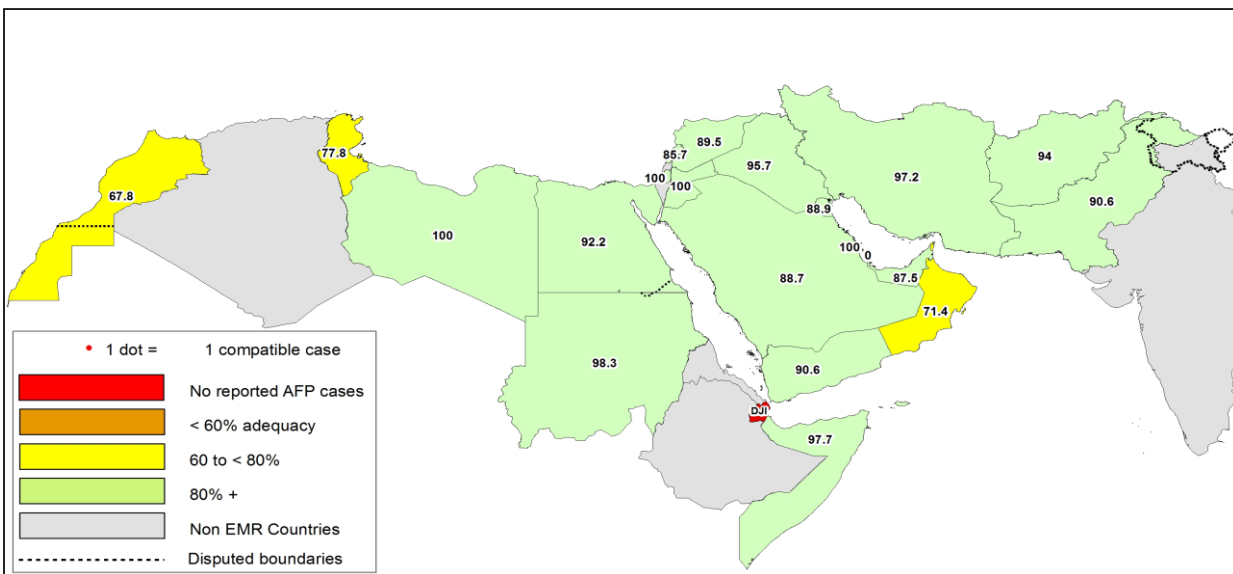


Table 8: Wild polio cases by country and date of onset of paralysis in EMR, 2018 - 2019

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	7	4-Jan-19	3-Apr-19
	PAK	15	15-Jan-19	26-Apr-19
2019 Total		22	4-Jan-19	26-Apr-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 - 12/05/2019

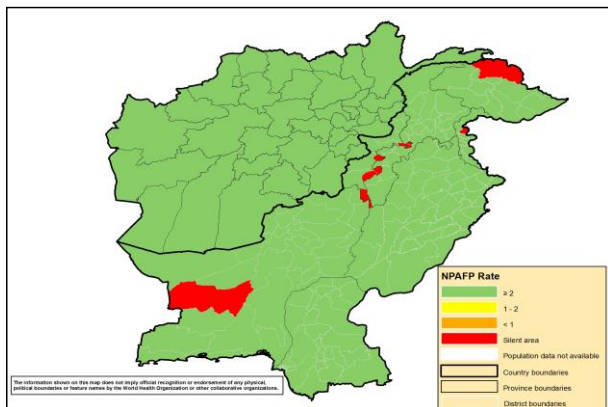


Figure 4: Percent of AFP cases with Adequate Samples in Afghanistan by Province & Pakistan by District 01/01/2019 - 12/05/2019

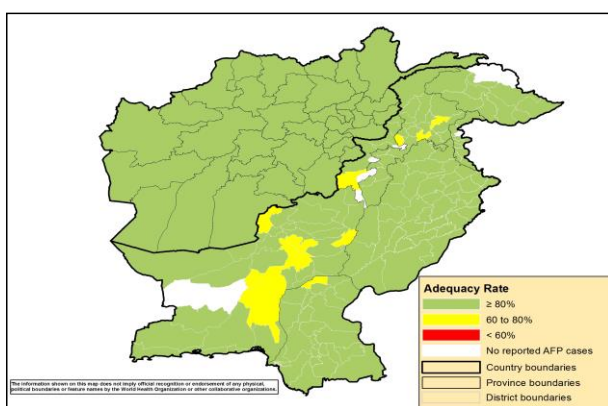
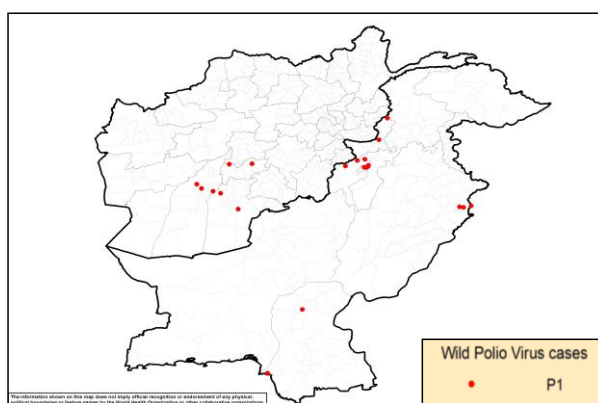
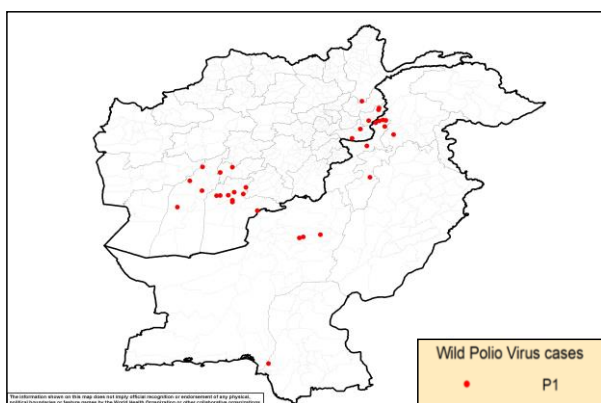


Figure 5: Wild Virus Cases by Type & District in Afghanistan & Pakistan

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

5(b) 01/01/2019 - 12/05/2019



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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	HILMAND	NAWZAD	1	3-Apr-19	3-Apr-19
		WASHER	1	23-Mar-19	23-Mar-19
		SANGIN	1	6-Mar-19	6-Mar-19
	URUZGAN	CHORA	1	20-Mar-19	20-Mar-19
		SHAHID-E-HASSAS	1	25-Feb-19	25-Feb-19
	KANDAHAR	GHORAK	1	12-Jan-19	12-Jan-19
		SPINBOLDAK	1	4-Jan-19	4-Jan-19
2019 Total			7	4-Jan-19	3-Apr-19

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

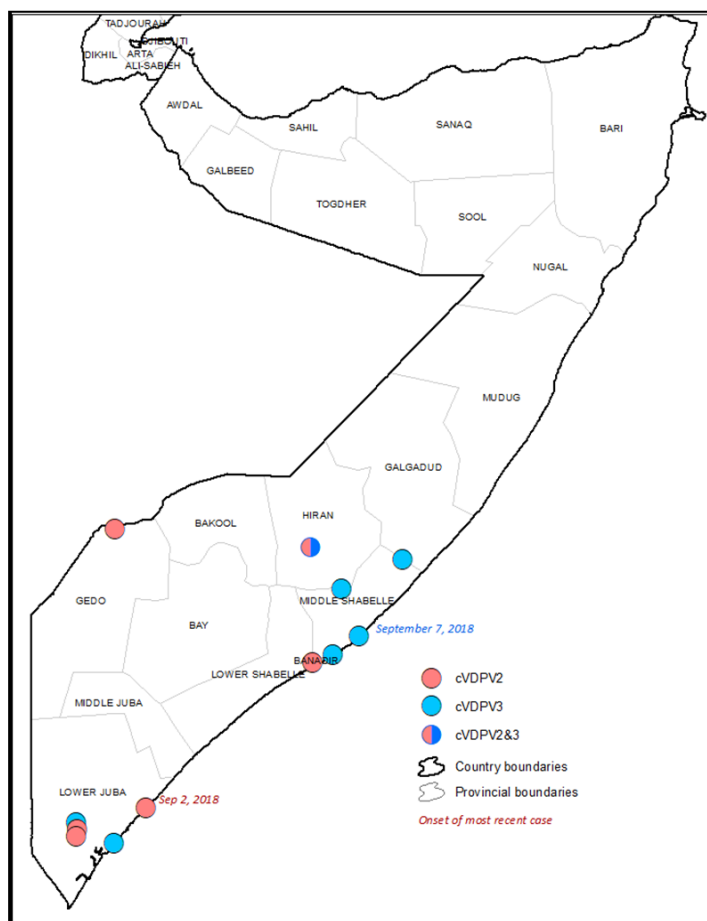
ONSETYR	PROVINCE	DISTRICT	Count	First case	Last case
2018	FATA	BAJOUR	5	1-Sep-18	31-Dec-18
		KHYBER	1	25-Sep-18	25-Sep-18
	KHYBER PAKHTOON	LAKKIMRWT	1	16-Dec-18	16-Dec-18
		CHARSADA	1	1-Aug-18	1-Aug-18
	SINDH	KHIGADAP	1	22-Sep-18	22-Sep-18
	BALUCHISTAN	DUKKI	3	8-Mar-18	18-May-18
2018 Total			12	8-Mar-18	31-Dec-18
2019	KHYBER PAKHTOON	BANNU	5	15-Jan-19	26-Apr-19
		HANGU	1	20-Jan-19	20-Jan-19
	FATA	WAZIR-N	2	4-Apr-19	22-Apr-19
		KHYBER	1	14-Feb-19	14-Feb-19
		BAJOUR	1	18-Jan-19	18-Jan-19
	PUNJAB	LAHORE	3	20-Jan-19	17-Apr-19
	SINDH	LARKANA	1	17-Apr-19	17-Apr-19
		KHILAYARI	1	25-Feb-19	25-Feb-19
2019 Total			15	15-Jan-19	26-Apr-19

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

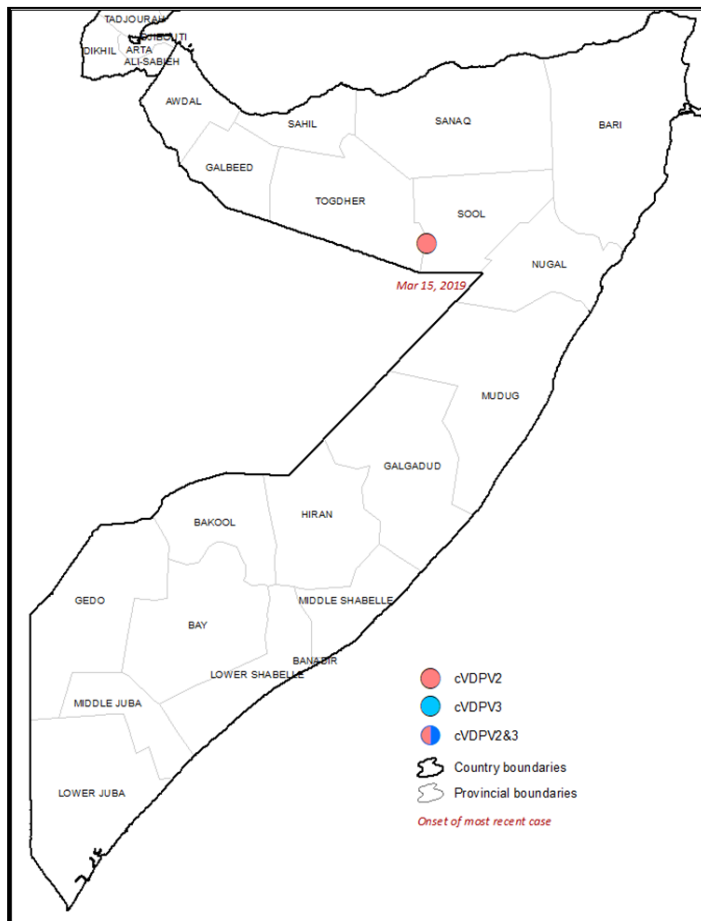
		Province	District	cVDPV2		cVDPV3			
SOM	2019	SOOL	Las Anod	1	15-Mar-19	15-Mar-19			
		Total 2019			1	15-Mar-19	15-Mar-19		
	2018	LOWER JUBA	Jamaame West KISMAYO	1	02-Sep-18	02-Sep-18			
				2	29-Jul-18	30-Jul-18	2	24-Jul-18	27-Jul-18
		MIDDLE SHABELLE	RUNINGOD MAHADAY WARSHEIKH				1	07-Sep-18	07-Sep-18
							1	29-Jun-18	29-Jun-18
					2	16-May-18	23-May-18		
		BANADIR	DANYILE	1	10-Jul-18	10-Jul-18			
	HIRAN	BULO BURTII	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

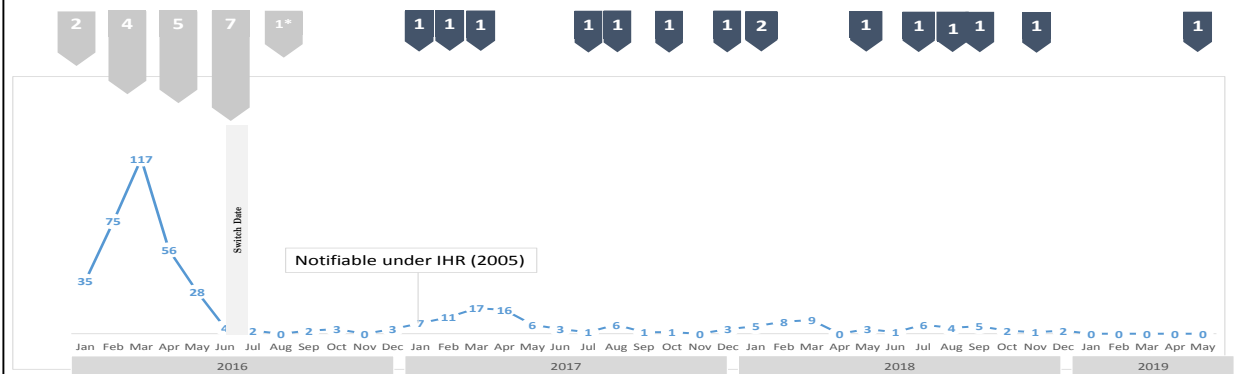
6(a) 01/01/2018 - 31/12/2018



6(b) 01/01/2019 - 12/05/2019

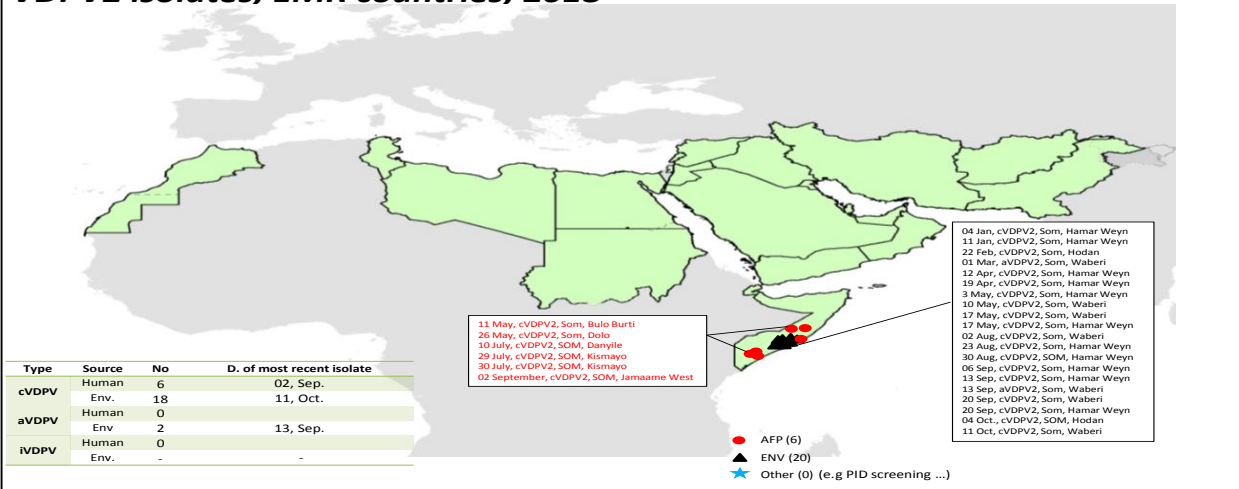


Sabin Like Type-2 Poliovirus Isolates (H & E) EMR, 2016-19



EVERY CHILD
 TOPV SIAs
 mOPV2 SIAs
 World Health Organization

VDPV2 isolates, EMR countries, 2018



VDPV2 isolates, EMR countries, 2019

