

# EMR Polio Bulletin

World Health Organization – Regional Office for Eastern Mediterranean Issue No. 1213, Week 52 (ending on 02/01/2022)

## Highlights



Children  
Paralyzed  
by polio

2020

- 140 Wild Polio 1 cases
  - 56 in Afghanistan
  - 84 in Pakistan

- 515 cVDPV2 cases
  - 308 in Afghanistan
  - 135 in Pakistan
  - 58 in Sudan
  - 14 in Somalia

- 31 cVDPV1 cases
  - All in Yemen

2021

- 5 Wild Polio 1 cases
  - 4 in Afghanistan
  - 1 in Pakistan

- 58 cVDPV2 cases
  - 43 in Afghanistan
  - 8 in Pakistan
  - 0 in Sudan
  - 1 in Somalia
  - 6 in Yemen

- 3 cVDPV1 cases
  - All in Yemen



Sewage  
water  
sampling

2020

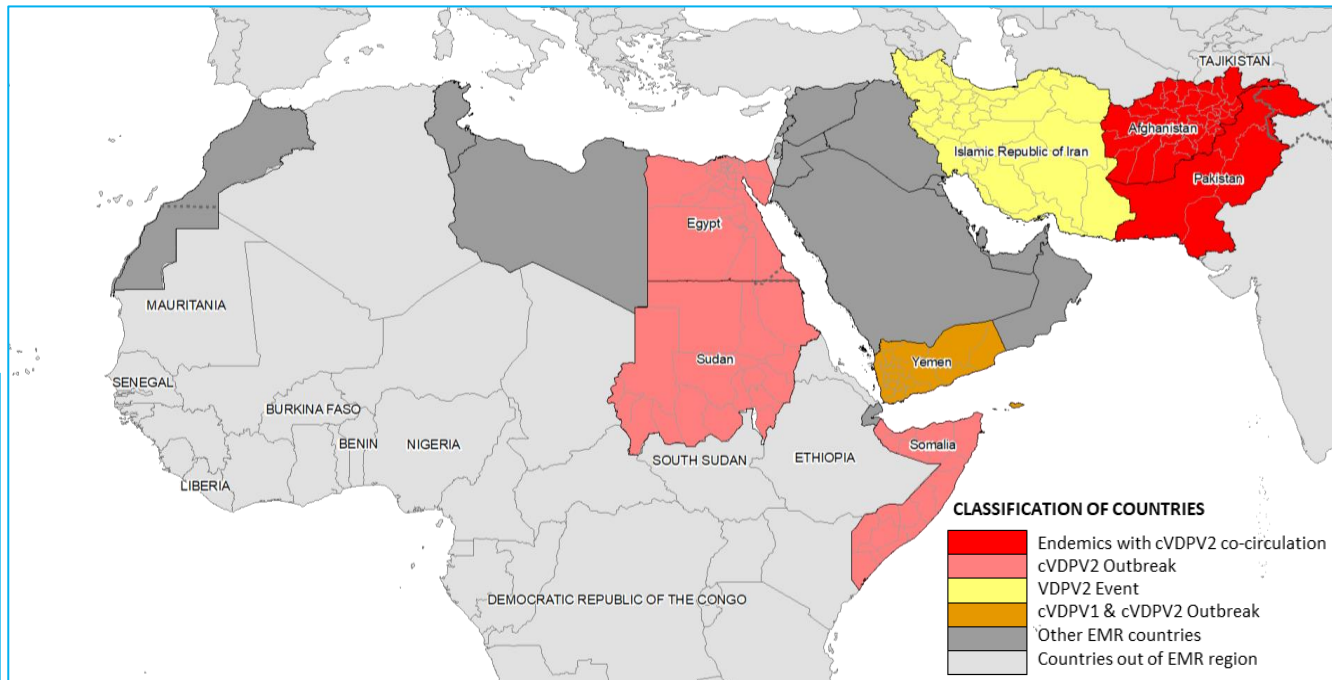
- 469 Wild Polio 1 samples
  - 35 in Afghanistan
  - 434 in Pakistan

- 352 cVDPV2 samples
  - 174 in Afghanistan
  - 135 in Pakistan
  - 0 in Egypt
  - 3 in Iran
  - 14 in Sudan
  - 26 in Somalia

2021

- 66 Wild Polio 1 samples
  - 1 in Afghanistan
  - 65 in Pakistan

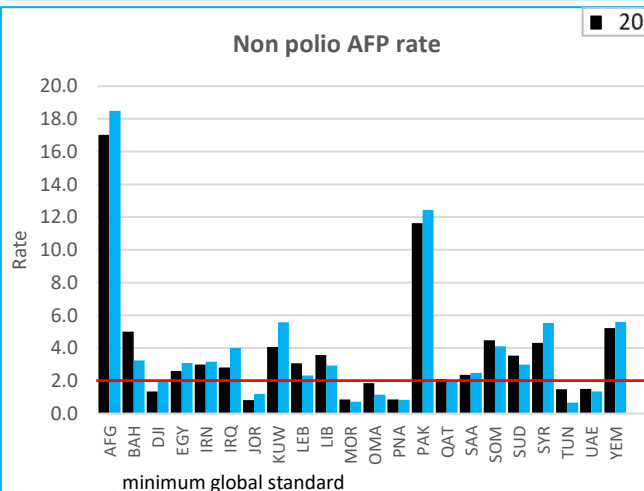
- 88 cVDPV2 samples
  - 40 in Afghanistan
  - 35 in Pakistan
  - 11 in Egypt
  - 1 in Iran
  - 0 in Sudan
  - 1 in Somalia



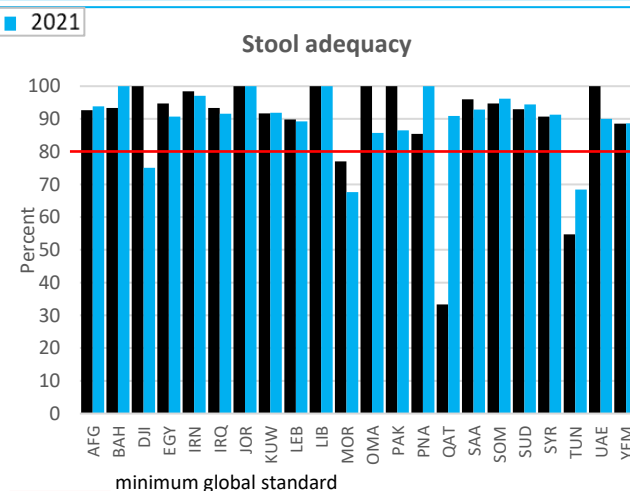
## Highlights of the week

- No new WPV1 or cVDPV1 isolates from human or environmental samples in the past week.
- VDPV2 has been detected from two environmental samples in Pakistan from Balochistan province (Kila Abdullah) and Khyber Pakhtunkhwa province (Peshawar district), with nucleotide difference of 6 and 7, respectively. Both specimens were collected on 6 December 2021.
- Extensive desk review of Afghanistan continues and a briefing to the country team is scheduled on 9 January 2022.

## Non polio AFP rate



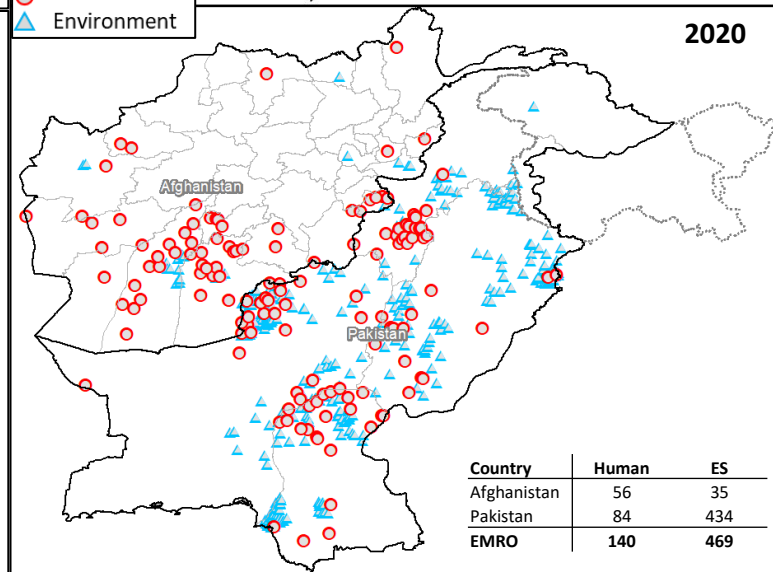
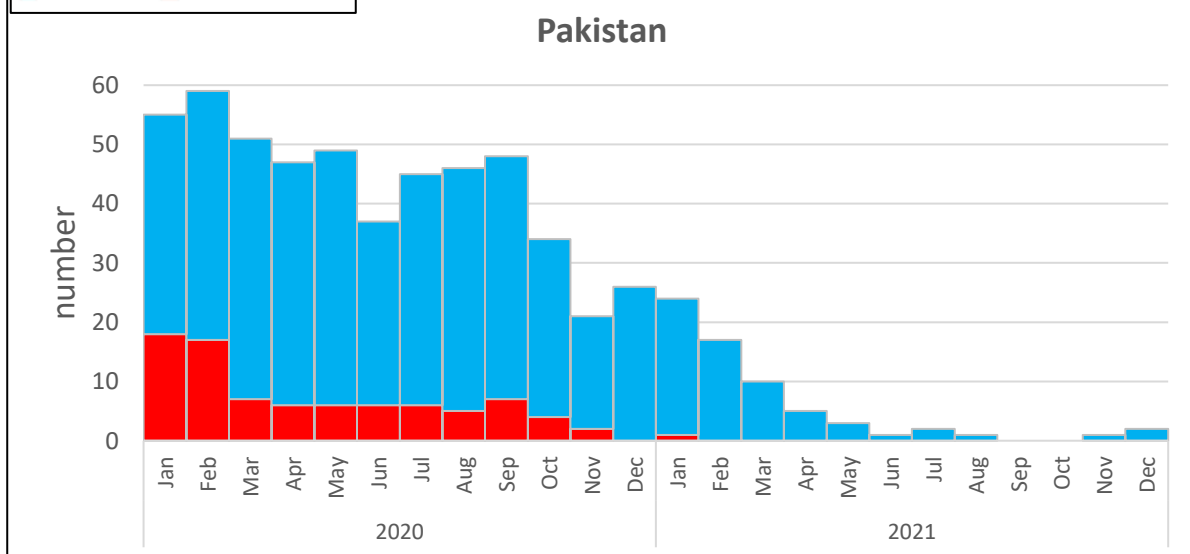
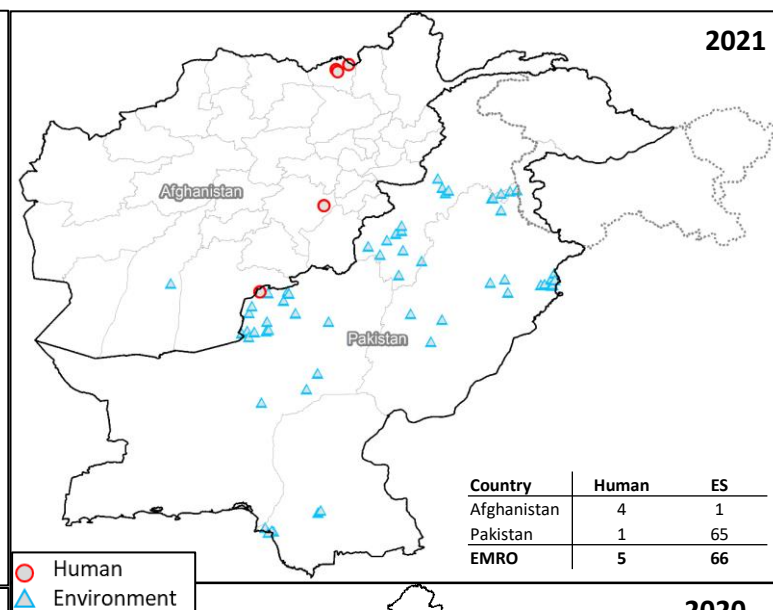
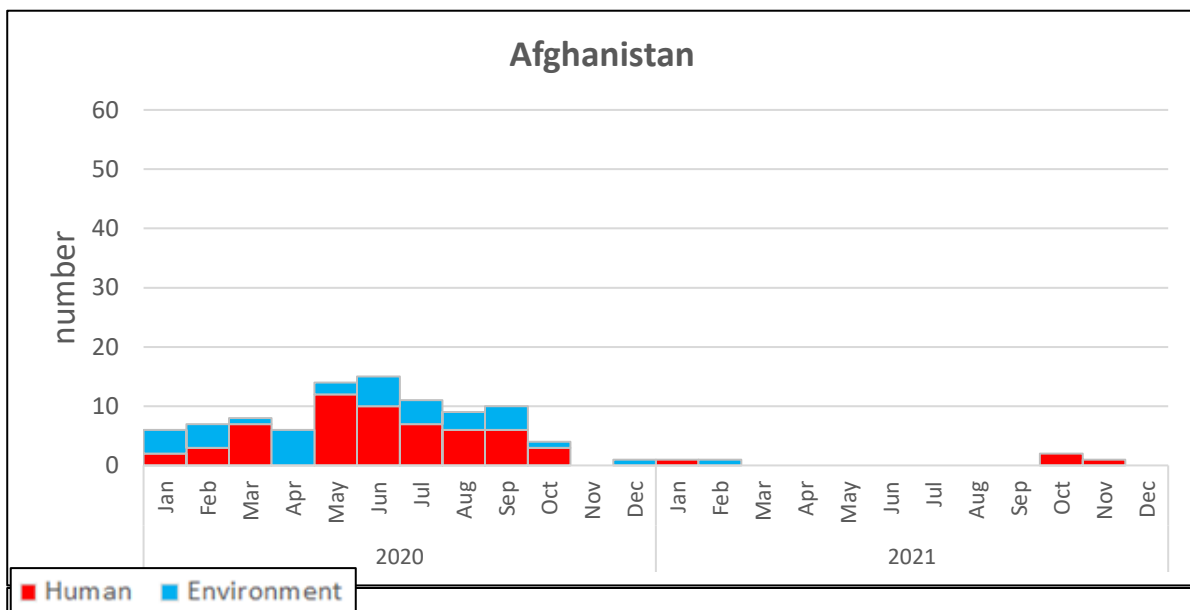
## Stool adequacy



Wild Poliovirus type-1 (WPV1) Vaccine-derived Poliovirus (VDPV)

# WPV1 Positive isolates from Afghanistan and Pakistan by source

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# Virus isolation by country, last 12 months (Jan. 02, 2021 to Jan. 02, 2022)

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Source / Virus type	AFG	PAK	EGY	IRN	SOM	YEM	Total
<b>Human (AFP only)</b>	<b>47</b>	<b>17</b>	<b>1</b>		<b>1</b>	<b>11</b>	<b>76</b>
Wild	3	1					4
cVDPV2	42	8			1	6	57
Wild+cVDPV2							
Wild+aVDPV2							
Wild+aVDPV3							
cVDPV1						3	3
aVDPV1	1					1	2
aVDPV2	1	8	1				10
VDPV1							
VDPV2							
<b>Environment</b>	<b>43</b>	<b>116</b>	<b>80</b>	<b>3</b>	<b>1</b>		<b>243</b>
Wild		44					44
cVDPV2	39	18	11	1	1		70
Wild+cVDPV2	1	16					17
Wild+aVDPV2		3					3
Wild+aVDPV3		1					1
cVDPV1							
aVDPV1		1					1
aVDPV2	3	31		2			36
VDPV1			1				1
VDPV2		2	68				70

Note: Viruses isolated from 'other' sources (example healthy children) are not included in this analysis; they are shown in page No. (8)

# Confirmed Wild Polio 1 Cases by month of onset

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Country	Total year 2019	Total year 2020	31-12		Confirmed Wild Polio 1 Cases by month of onset												Recent most Case
					2021												
			2020	2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Afghanistan	29	56	56	4	1	0	0	0	0	0	0	0	0	2	1		29-Oct-21
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			
Iran	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			
Libya	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				
Oman	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pakistan	147	84	84	1	1	0	0	0	0	0	0	0	0				27-Jan-21
Palestine ****	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			
Somalia	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					
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					
Yemen	0	0	0	0	0	0	0	0	0	0	0	0					
EMR	176	140	140	5	2	0	0	0	0	0	0	0	0	2	1		29-Oct-21

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

# Investigation of AFP cases with paralysis onset in 2020 & 2021

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COUNTRY	2020									2021									Line List
	AFP cases	Case classification						Surveillance indicators		AFP cases	Case classification						Surveillance indicators		Date of latest
		Total Confirmed WPV1 Polio Cases	Polio Compatible	(non polio AFP) Discarded	VDPV	Pending classification > 90 days from onset	Pending LAB classification > 90 days from onset	Annualized Non polio AFP rate	% with adequate specimens		Total Confirmed WPV1 Polio Cases	Polio Compatible	Discarded (non polio AFP)	VDPV	Pending classification > 90 days from onset	Pending LAB classification > 90 days from onset	Annualized Non polio AFP rate	% with adequate specimens	
AFGHANISTAN	3972	56	3	3600	314	0	0	18.53	92.60	3992	4	1	3719	45	28	0	18.48	93.76	2-Jan-22
BAHRAIN	15	0	0	15	0	0	0	5.00	93.33	10	0	0	3	0	0	0	3.25	100.00	26-Dec-21
DJIBOUTI	5	0	0	5	0	0	0	1.35	100.00	8	0	0	4	0	0	0	2.06	75.00	12-Dec-21
EGYPT	1009	0	0	1009	0	0	0	2.60	94.65	1218	0	0	1103	1	12	0	3.08	90.72	30-Dec-21
IRAN	618	0	0	618	0	0	0	2.99	98.54	647	0	0	622	0	0	0	3.17	97.06	1-Jan-22
IRAQ	476	0	0	476	0	0	0	2.81	93.28	698	0	0	653	0	5	0	4.02	91.55	31-Dec-21
JORDAN	32	0	0	32	0	0	0	0.83	100.00	47	0	0	35	0	0	0	1.19	100.00	2-Jan-22
KUWAIT	36	0	0	36	0	0	0	4.06	91.67	49	0	0	46	0	0	0	5.58	91.84	26-Dec-21
LEBANON	49	0	0	49	0	0	0	3.07	89.80	37	0	0	33	0	3	0	2.32	89.19	26-Dec-21
LIBYA	95	0	0	94	1	0	0	3.62	100.00	76	0	0	68	0	0	0	2.93	100.00	31-Dec-21
MOROCCO	87	0	0	87	0	0	0	0.86	78.16	71	0	0	36	0	20	2	0.73	67.61	24-Dec-21
OMAN	22	0	0	22	0	0	0	1.85	100.00	14	0	0	13	0	0	0	1.16	85.71	2-Jan-22
PAKISTAN	11972	84	29	11719	142	0	0	15.25	85.43	12547	1	4	11698	18	104	0	12.44	86.51	2-Jan-22
PALESTINE	16	0	0	16	0	0	0	0.87	100.00	16	0	0	9	0	1	0	0.85	100.00	2-Jan-22
QATAR	9	0	0	9	0	0	0	2.11	33.33	11	0	0	9	0	0	0	2.03	90.91	2-Jan-22
SAUDI ARABIA	200	0	0	200	0	0	0	2.37	96.00	208	0	0	154	0	0	0	2.48	92.79	2-Jan-22
SOMALIA	376	0	0	361	15	0	0	4.66	94.68	340	0	0	318	1	1	0	4.10	96.18	2-Jan-22
SUDAN	733	0	0	675	58	0	0	3.84	92.91	584	0	0	435	0	24	17	2.99	94.35	23-Dec-21
SYRIA	343	0	0	343	0	0	0	4.32	90.96	426	0	0	408	0	0	0	5.54	91.31	1-Jan-22
TUNISIA	42	0	0	42	0	0	0	1.49	54.76	19	0	0	19	0	0	0	0.67	68.42	31-Dec-21
U.A.E.	19	0	0	19	0	0	0	1.52	100.00	20	0	0	12	0	1	0	1.36	90.00	27-Dec-21
YEMEN	825	0	1	793	31	0	0	5.44	88.73	863	0	0	619	10	17	4	5.59	88.64	2-Jan-22
EMR POL	20951	140	33	20220	561	0	0	7.96	88.59	21901	5	5	20016	75	216	23	7.65	89.16	

\* 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, with 14 days of paralysis onset and specimens received in the lab in 'Good Condition'

\*\*\*\* Includes all VDPV cases. Further details available in page (8)

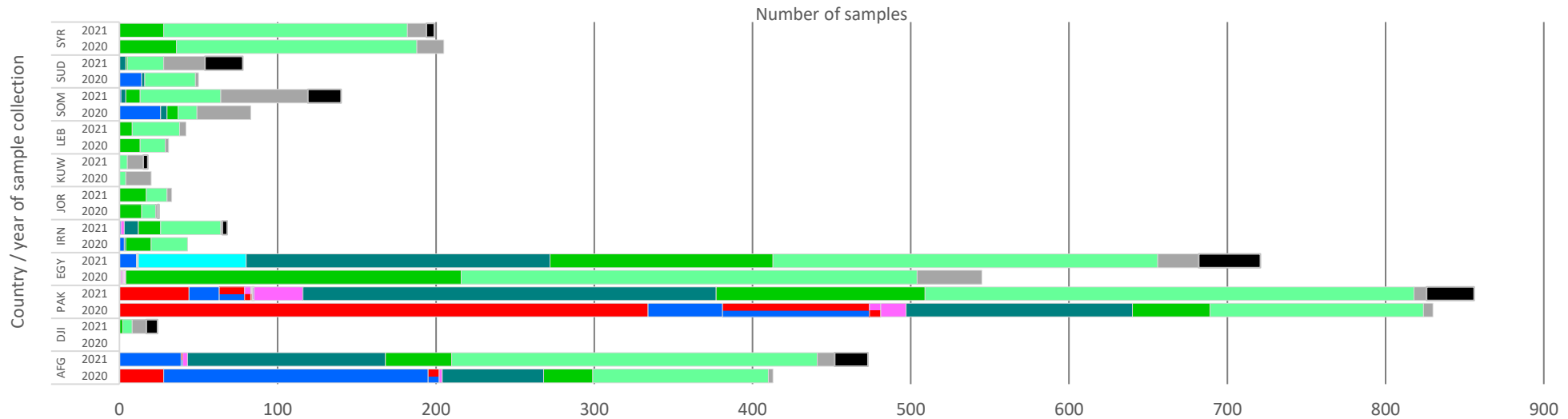
# Laboratory investigation of AFP cases with paralysis onset in 2021

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Country	Polio laboratories	AFP cases with specimens	Preliminary virus isolation results of AFP cases						Poliovirus intratypic differentiation results													Indicators				Latest report Date
	ITD / Nucleotide Sequencing		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**	
	Sequencing performed by CDC and RIVM laboratories		L20B+	L20B+ / NPEV			received within last 14 days	received more than 14 days ago	Wild	Sabin	VDPV	Wild	Sabin	VDPV	Wild	Sabin	VDPV									
Afghanistan	RRL Pakistan	3951	317	47	692	2745	139	12	4	155	1		104	40		154			2		1	15%	99%	99%	99%	2-Jan-22
Bahrain	NPL Oman / CDC	10				9	1															0%	100%		44%	30-Dec-21
Djibouti	NPL Kenya / CDC	8			1			4														100%			100%	12-Dec-21
Egypt***	RRL Egypt	1184	61	4	164	913	37	6		4			58			3			2			12%	97%	100%	99%	30-Dec-21
Iran	NPL Iran / CDC	652	14		11	616	10	1		3	1		6			4						2%	100%	100%	98%	1-Jan-22
Iraq	NPL Iraq, RRL Egypt	692	11		46	609	26			7						17				1		7%	100%	50%	98%	31-Dec-21
Jordan	NPL Jordan, RRL Egypt	47	1		3	39	4			2						2						7%	100%	0.5	100%	2-Jan-22
Kuwait	RRL Kuwait / RIVM	48				46	1	1														0%	100%		98%	26-Dec-21
Lebanon	NPL Jordan, NPL Syria, RRL Egypt	37	1		1	35																4%	100%			30-Dec-21
Libya	RRL Tunisia / RIVM	72				69		3														0%	100%		86%	15-Dec-21
Morocco	NPL Morocco, RRL Tunisia	63			1	58	2	2														2%	100%		95%	31-Dec-21
Oman	NPL Oman / CDC	14				14																1%	93%		100%	30-Dec-21
Pakistan	RRL Pakistan	12260	604	64	2405	8672	454	69	1	263	1		181	14		342	1		5			17%	100%	100%	97%	2-Jan-22
Palestine & UNRWA		16				12		4														0%	17%		100%	2-Jan-22
Qatar	NPL Oman / CDC	9				9																0%	100%		100%	30-Dec-21
Saudi Arabia	NPL Saudi Arabia / CDC	212	3		2	185	21	1		1						3						1%	94%	67%	97%	2-Jan-22
Somalia	NPL Kenya / CDC	340	6		50	263	2	18		4				1		4						16%	3%		61%	2-Jan-22
Sudan	NPL Sudan / RRL Egypt	514	1		73	364		77		1			1			2		1				17%	88%	100%	67%	18-Nov-21
Syria	NPL Syria / RRL Egypt	421	16		23	368	14															6%	100%		0%	30-Dec-21
Tunisia	RRL Tunisia	17				17																0%	100%		94%	15-Dec-21
U.A.E	NPL Oman / CDC	12				12																0%	100%		42%	30-Dec-21
Yemen	NPL Oman, NPL Kenya, RRL Egypt	483	23	1	105	354				3	4	5		6		7						18%	87%	100%	0%	2-Jan-22
Total EMR 2021		21062	1058	116	3577	15409	711	198	5	443	7	5	350	61		538	1	1	7	2	2	15%	97%	99%	94%	
Total EMR 2020		20387	1680	93	3046	15557		4	129	352	32		509	468		462	2	3	18	11		14%	94%	97%	93%	

# Environmental Surveillance Isolation by Classification

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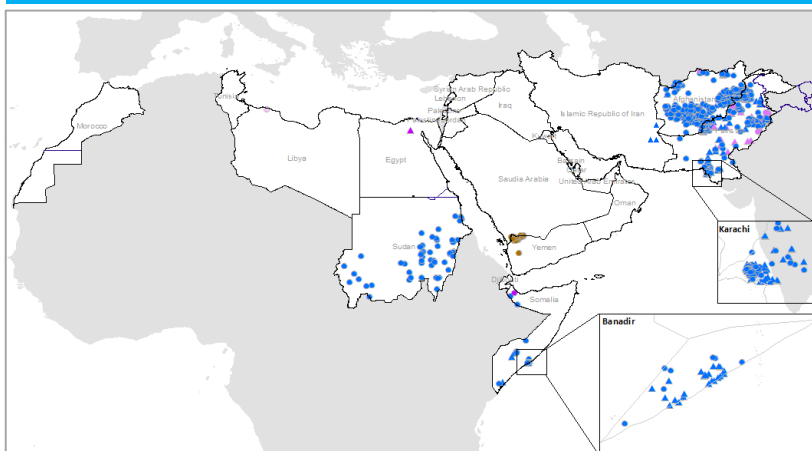


	AFG		DJI		PAK		EGY		IRN		JOR		KUW		LEB		SOM		SUD		SYR	
	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021
Wild	28				334	44																
cVDPV2	167	39			47	19		11	3	1							26	1	14			
Wild+cVDPV2	7	1			93	16																
Wild+aVDPV2					7	4																
Wild+aVDPV3						1																
aVDPV1						1	1															
aVDPV2	2	3			16	31	1			2												
aVDPV3							2															
VDPV1								1														
VDPV2								68														
SL2	64	125			143	261		192	1	9							4	3	2	4		
SL1/3	31	42		2	49	132	212	141	16	14	14	17			13	8	7	9		1	36	28
Entero	111	231		6	135	309	288	243	23	38	9	13	4	5	16	30	12	51	32	23	152	154
Negative	3	11		9	6	8	41	26		1	1	3	16	10	2	4	34	55	2	26	17	12
Pending		21		7		30		39		3	1			3				21		24		5

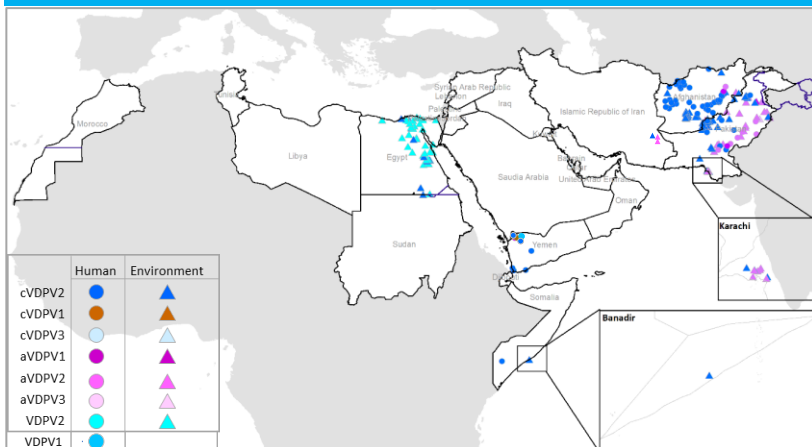
# VDPVs isolations by Source and Country

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## VDPV Isolates, EMR countries, 2020



## VDPV Isolates, EMR countries, 2021



## VDPVs isolated from 2016-2021

cVDPV Isolate type	EMR Country	Sources																				Other Sources (Healthy Children)							
		AFP cases(Human)						Contacts(Human)						Environment															
		2016	2017	2018	2019	2020	2021	Most recent	2016	2017	2018	2019	2020	2021	Most recent	2016	2017	2018	2019	2020	2021	Most recent	2016	2017	2018	2019	2020	2021	Most recent
cVDPV2	Afghanistan					307	43	09-07-21												174	40	23-06-21							
	Egypt																				11	18-11-21							
	Iran																			3	1	20-02-21							
	Pakistan	1			22	135	8	23-04-21								4			38	135	35	11-08-21							
	Somalia			6	3	14	1	12-05-21			3	1	11		10-11-20	2	19	5	26	1	23-05-21				1	5		22-09-20	
	Sudan					58		18-12-20					18		08-10-20					14		09-11-20				4		24-08-21	
	Syria		74					21-09-17		63					12-09-17									4				20-08-17	
	Yemen						6	08-Oct-21																					
cVDPV1	Yemen				1	31	3	27-03-21				2		10-07-19															
cVDPV3	Somalia			7				07-09-18			7			30-06-18			12				23-08-18								
aVDPV1	Afghanistan						1	22-02-21																					
	Egypt																		1		17-06-20								
	Pakistan						1	21-08-21												1	10-02-21								
	Somalia					1		26-01-20																					
aVDPV2	Afghanistan	1			3	1	01-03-21					75	15	03-05-21					2	3	25-07-21								
	Egypt						1	30-05-21					1	14-06-21					1		21-09-21								
	Iran																			2	28-09-21								
	Pakistan				7	8	24-09-21				8	19	1	28-04-21	3	5		3	22	35	09-11-21								
	Somalia	1					24-10-16	1						30-10-16			2	1			03-02-19								
	Yemen	1					11-06-16	2						20-06-16															
aVDPV3	Afghanistan					1		23-06-20																					
	Egypt																		2		30-09-20								
	Pakistan																			1	05-04-21								
	Libya					1		15-01-20																					
VDPV1	Yemen					1	20-07-21																						
VDPV2	Egypt														1				68	04-11-21									
	Pakistan														1					11-07-16									



# Important links

EMR Polio Bulletin - Issue No. 1213, Week 52 (ending on 02/01/2022)

- [Global Polio Eradication Initiative](#)
- [IMST – Outbreak Response Dashboard](#)
- [nOPV2 Tracker](#)
- [Pol-MIS](#) (restricted to registered users)
- [Containment](#) (restricted to registered users)