

# EMR Polio Bulletin

World Health Organization – Regional Office for Eastern Mediterranean Issue No. 1212, Week 51 (ending on 26/12/2021)

## Highlights



Children  
Paralyzed  
by polio

2020

140 Wild Polio 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 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 isolates:

- 35 in Afghanistan
- 434 in Pakistan

352 cVDPV2 Isolates:

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

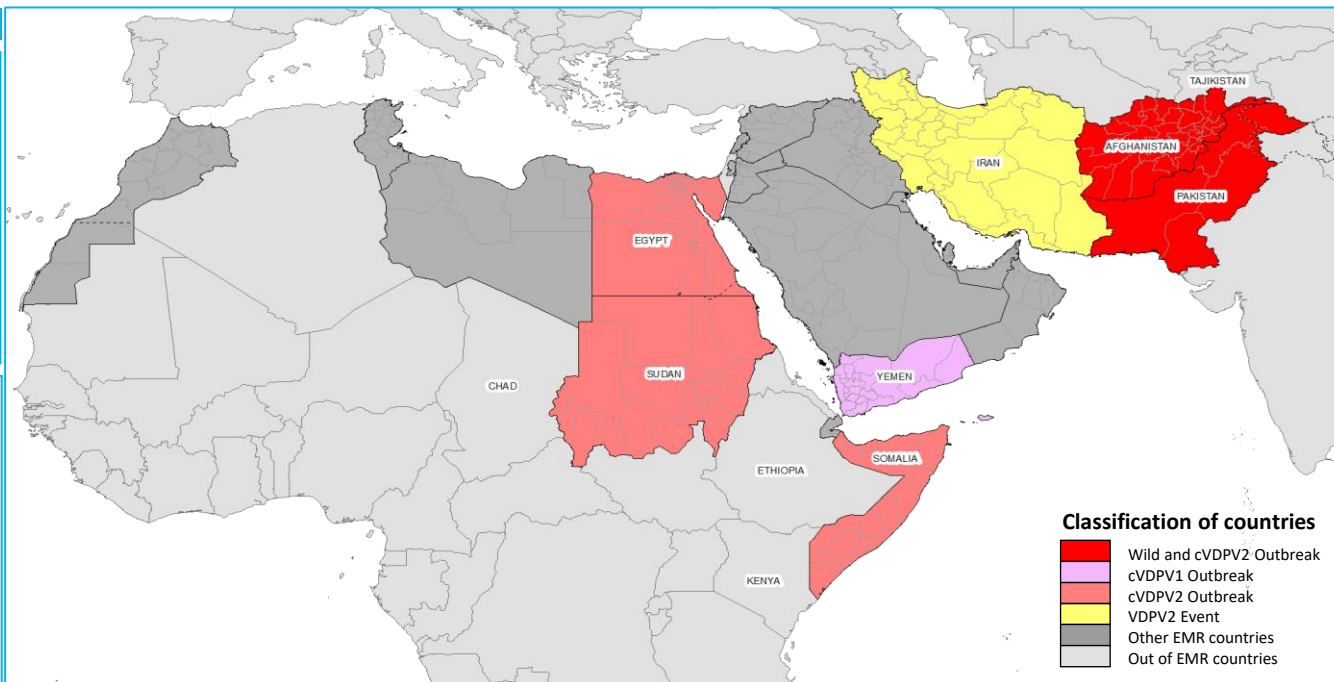
2021

64 Wild Polio isolates:

- 1 in Afghanistan
- 63 in Pakistan

88 cVDPV2 Isolates:

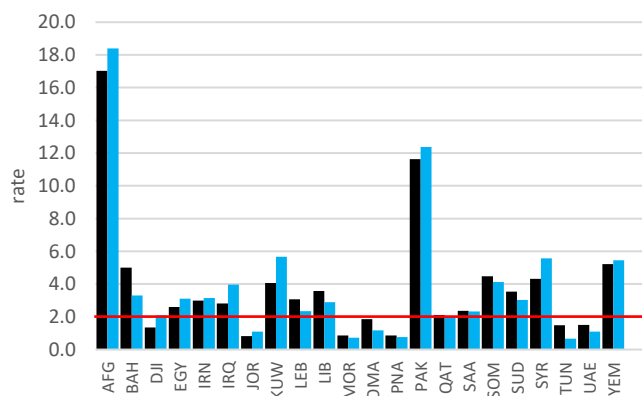
- 40 in Afghanistan
- 35 in Pakistan
- 11 in Egypt
- 1 in Iran
- 0 in Sudan
- 1 in Somalia



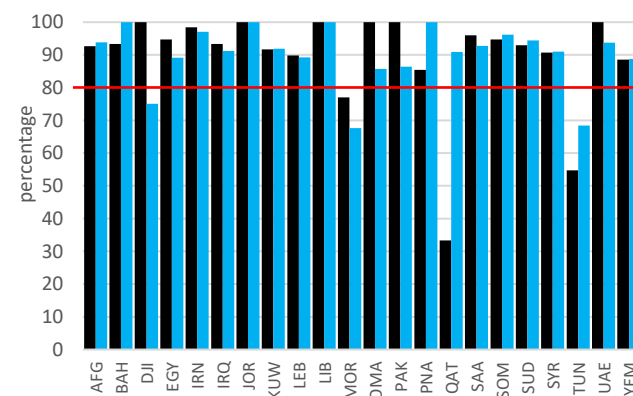
## Highlights of the week

- Two new WPV1 positive environmental samples from Pakistan. These isolates are from Tank and Bannu districts of Khyber Pakhtunkhwa province (specimen collection on 3 and 6 December 2021, respectively).
- Two new cVDPV2 cases were reported from Yemen. The cases are from Al Safrah and Sahar districts of Saadah province (dates of onset 5 & 8 October 2021).
- No new cVDPV1 isolates from human or environmental samples reported this week.
- The first ever novel oral polio vaccine type-2 (nOPV2) in the WHO's Eastern Mediterranean Region was completed successfully in Egypt on 24 December 2021. Post campaign independent assessment through Lot Quality Assessment Survey (LQAS) is underway.

## Non polio AFP rate



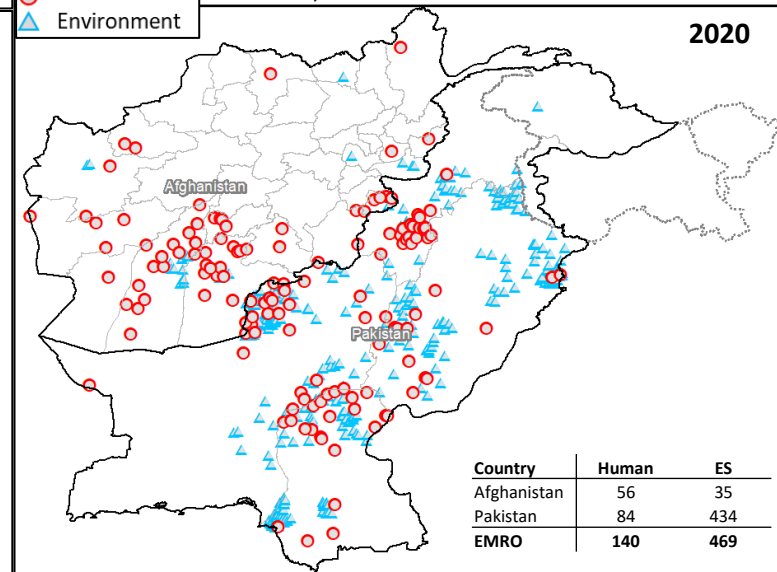
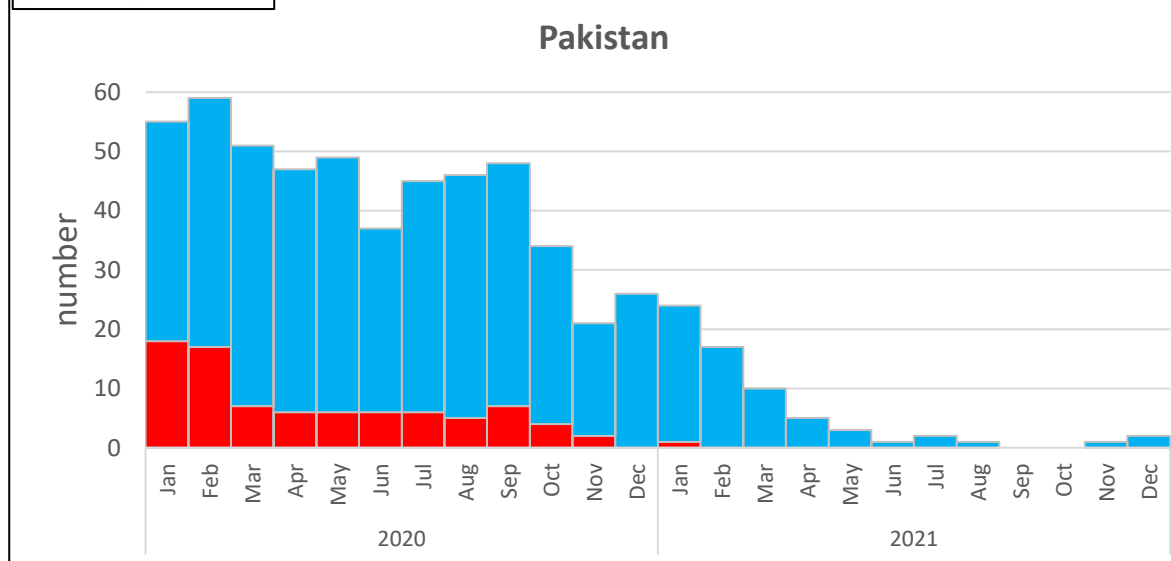
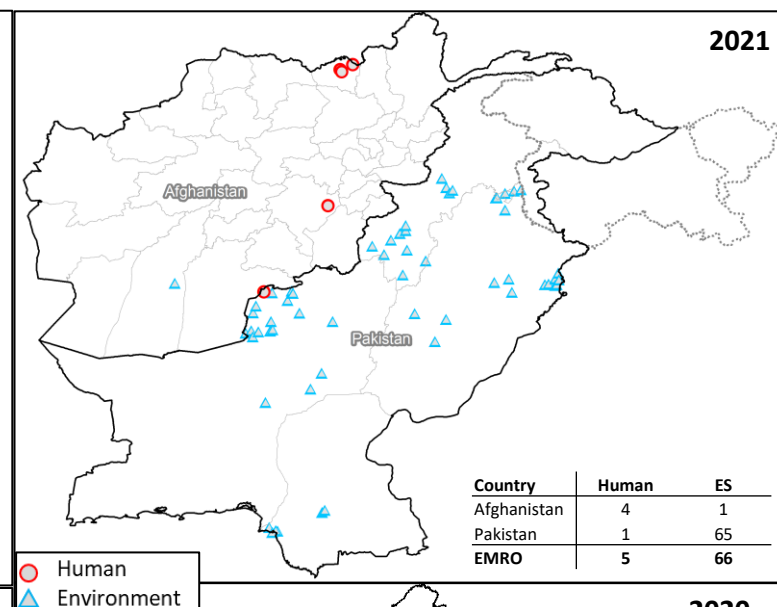
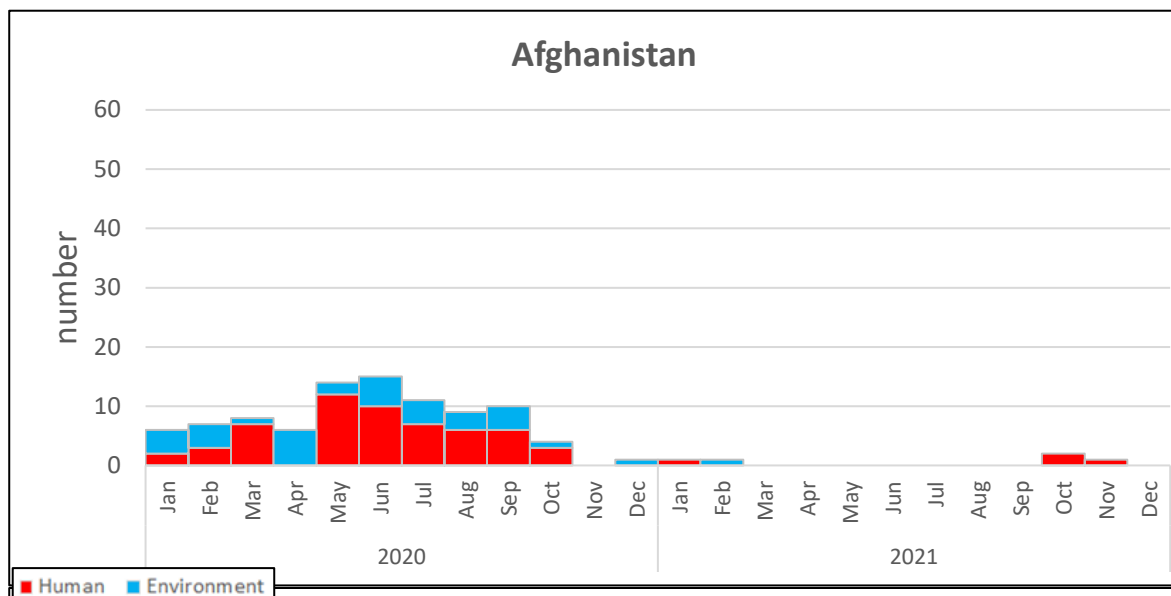
## Stool adequacy



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

# WPV1 Positive isolates from AFG/PAK by source

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# Virus isolation by country, last 12 months (Dec. 26, 2020 to Dec. 26, 2021)

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Source / Virus type	AFG	PAK	EGY	IRN	SOM	YEM	Total
<b>Human (AFP only)</b>	<b>55</b>	<b>18</b>	<b>1</b>		<b>1</b>	<b>11</b>	<b>86</b>
Wild	4	1				1	6
cVDPV2	48	8			1	6	63
Wild+cVDPV2							
Wild+aVDPV2							
Wild+aVDPV3							
cVDPV1						3	3
aVDPV1	1	1					2
aVDPV2	2	8	1				11
VDPV1						1	1
VDPV2							
<b>Environment</b>	<b>50</b>	<b>120</b>	<b>80</b>	<b>3</b>	<b>1</b>		<b>254</b>
Wild		45					45
cVDPV2	45	20	11	1	1		78
Wild+cVDPV2	1	16					17
Wild+aVDPV2		4					4
Wild+aVDPV3		1					1
cVDPV1							
aVDPV1		1					1
aVDPV2	4	33		2			39
VDPV1			1				1
VDPV2			68				68

# Confirmed Wild Polio Cases by month of onset

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Country	Total year 2019	Total year 2020	19-12		Confirmed Wild Polio Cases by month of onset												Last 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				
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					27-Jan-21
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	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				
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			
U.A.E	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					
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	AFP (2020)									AFP (2021)									Line List 2021
	AFP cases	Case classification						Surveillance indicators		AFP cases	Case classification						Surveillance indicators		Date of latest
		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		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	3915	4	1	3646	45	24	0	18.39	93.84	26-Dec-21
BAHRAIN	15	0	0	15	0	0	0	5.00	93.33	10	0	0	3	0	0	0	3.30	100.00	26-Dec-21
DJIBOUTI	5	0	0	5	0	0	0	1.35	100.00	8	0	0	4	0	0	0	2.09	75.00	12-Dec-21
EGYPT	1009	0	0	1009	0	0	0	2.60	94.65	1210	0	0	1103	1	10	0	3.11	89.09	23-Dec-21
IRAN	618	0	0	618	0	0	0	2.99	98.54	634	0	0	604	0	0	0	3.15	97.00	25-Dec-21
IRAQ	476	0	0	476	0	0	0	2.81	93.28	681	0	0	638	0	7	0	3.98	91.19	25-Dec-21
JORDAN	32	0	0	32	0	0	0	0.83	100.00	43	0	0	32	0	0	0	1.10	100.00	23-Dec-21
KUWAIT	36	0	0	36	0	0	0	4.06	91.67	49	0	0	46	0	0	0	5.66	91.84	26-Dec-21
LEBANON	49	0	0	49	0	0	0	3.07	89.80	37	0	0	33	0	3	0	2.36	89.19	18-Dec-21
LIBYA	95	0	0	94	1	0	0	3.62	100.00	74	0	0	68	0	0	0	2.89	100.00	24-Dec-21
MOROCCO	87	0	0	87	0	0	0	0.86	78.16	71	0	0	36	0	18	2	0.74	67.61	24-Dec-21
OMAN	22	0	0	22	0	0	0	1.85	100.00	14	0	0	12	0	0	0	1.18	85.71	26-Dec-21
PAKISTAN	11972	84	29	11719	142	0	0	15.25	85.43	12306	1	4	11501	18	98	1	12.38	86.40	26-Dec-21
PALESTINE	16	0	0	16	0	0	0	0.87	100.00	14	0	0	8	0	2	0	0.76	100.00	26-Dec-21
QATAR	9	0	0	9	0	0	0	2.11	33.33	11	0	0	9	0	0	0	2.06	90.91	26-Dec-21
SAUDI ARABIA	200	0	0	200	0	0	0	2.37	96.00	192	0	0	152	0	0	0	2.32	92.71	26-Dec-21
SOMALIA	376	0	0	361	15	0	0	4.66	94.68	337	0	0	310	1	1	0	4.12	96.14	26-Dec-21
SUDAN	733	0	0	675	58	0	0	3.84	92.91	584	0	0	435	0	10	5	3.04	94.35	23-Dec-21
SYRIA	343	0	0	343	0	0	0	4.32	90.96	422	0	0	403	0	0	0	5.56	91.00	25-Dec-21
TUNISIA	42	0	0	42	0	0	0	1.49	54.76	19	0	0	17	0	0	0	0.68	68.42	24-Dec-21
U.A.E.	19	0	0	19	0	0	0	1.52	100.00	16	0	0	12	0	1	0	1.10	93.75	5-Dec-21
YEMEN	825	0	1	793	31	0	0	5.44	88.73	832	0	0	597	10	12	3	5.46	88.70	26-Dec-21
EMR POL	20951	140	33	20220	561	0	0	7.96	88.59	21479	5	5	19669	75	186	11	7.61	89.01	

\* 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

\*\*\*\*Includes all VDPV cases. Further details available page number

For further details on Contacts click: [detail of contact samples](#)

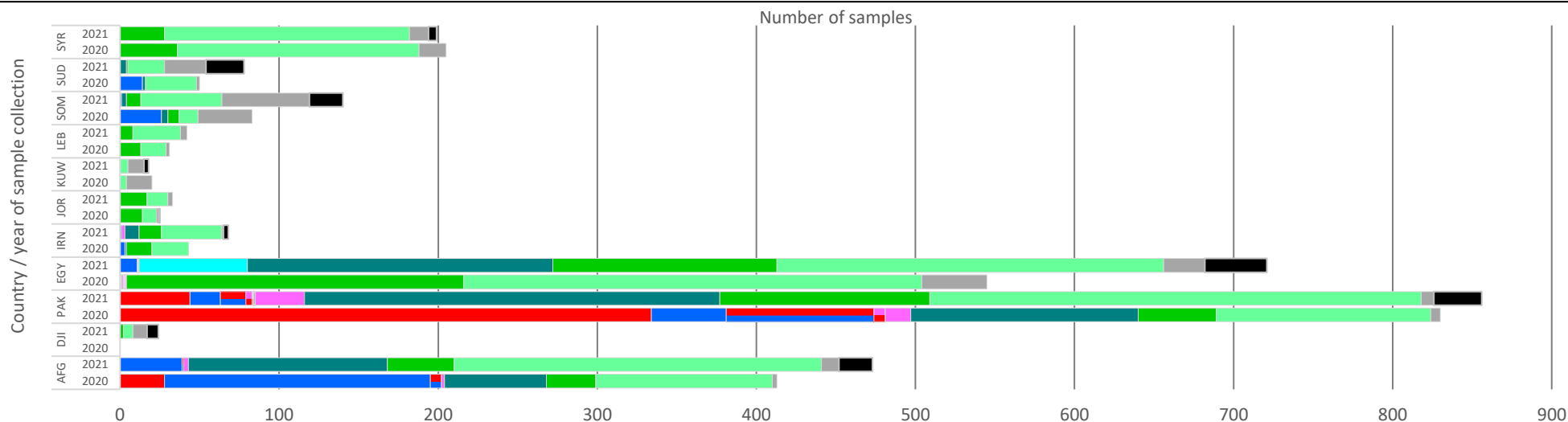
# Laboratory investigation of AFP cases with paralysis onset in 2021

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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+/N PEV			received within last 14 days	received more than 14 days ago	Wild	Sabin	VDPV	Wild	Sabin	VDPV	Wild	Sabin	VDPV									
Afghanistan	RRL Pakistan	3874	308	46	666	2698	144		4	150	1		101	40		151			2			15%	99%	99%	99%	26-Dec-21
Bahrain	NPL Oman / CDC	9				9															0%	100%		44%	22-Dec-21	
Djibouti	NPL Kenya / CDC	8			1			4													100%			100%	12-Dec-21	
Egypt***	RRL Egypt	1164	61	3	161	893	44	3		3			58			2			2		12%	97%	100%	99%	23-Dec-21	
Iran	NPL Iran / CDC	629	14		11	597	7			3	1		6			4					2%	100%	100%	98%	25-Dec-21	
Iraq	NPL Iraq, RRL Egypt	677	10		46	599	22			7						17					7%	100%	50%	98%	24-Dec-21	
Jordan	NPL Jordan, RRL Egypt	42	1		3	34	4			2						2					8%	100%	0.5	100%	19-Dec-21	
Kuwait	RRL Kuwait / RIVM	48				46	2														0%	100%		98%	26-Dec-21	
Lebanon	NPL Jordan, NPL Syria, RRL Egypt	37	1		1	35															4%	100%			25-Dec-21	
Libya	RRL Tunisia / RIVM	72				69	3														0%	100%		86%	15-Dec-21	
Morocco	NPL Morocco, RRL Tunisia	61			1	57	1	2													2%	100%		95%	17-Dec-21	
Oman	NPL Oman / CDC	14				12	2														1%	92%		100%	22-Dec-21	
Pakistan	RRL Pakistan	12014	578	64	2384	8525	448	8	1	249	1		179	14		322	1		5		17%	100%	100%	97%	26-Dec-21	
Palestine & UNRWA		14				12	1	1													0%	17%		100%	26-Dec-21	
Qatar	NPL Oman / CDC	9				9															0%	100%		100%	22-Dec-21	
Saudi Arabia	NPL Saudi Arabia / CDC	184	2			166		16								2					0%	92%	50%	97%	12-Dec-21	
Somalia	NPL Kenya / CDC	337	6		50	255	6	19		4				1		4					16%	3%		61%	26-Dec-21	
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	415	16		23	361	15														6%	100%		0%	25-Dec-21	
Tunisia	RRL Tunisia	17				17															0%	100%		94%	15-Dec-21	
U.A.E	NPL Oman / CDC	12				12															0%	100%		42%	22-Dec-21	
Yemen	NPL Oman, NPL Kenya, RRL Egypt	483	23		102	333	25			3	4	4		6		7					18%	86%	100%	0%	26-Dec-21	
Total EMR 2021		20634	1021	113	3522	15103	724	130	5	422	7	4	345	61		513	1	1	7	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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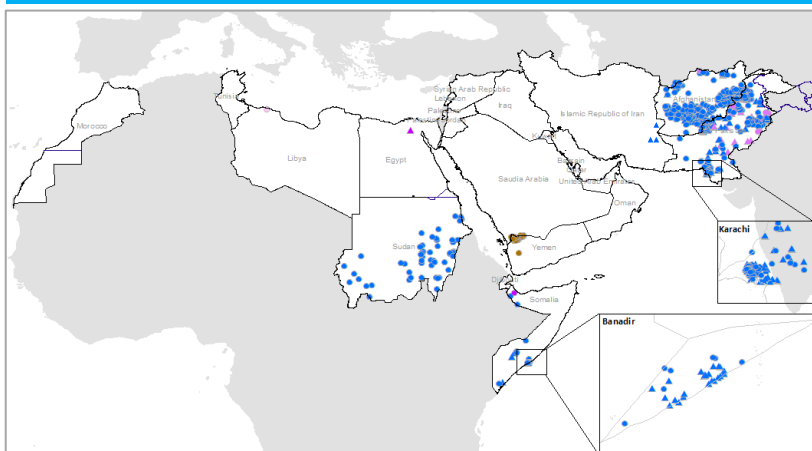


	AFG		DJI		PAK		EGY		IRN		JOR		KUW		LEB		SOM		SUD		SYR	
	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021
Wild	28				334	44																
cVDPV2	167	39			47	19		11	3	1							26	1	14			
Wild+cVDPV2	7	1			93	16																
Wild+aVDPV2					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

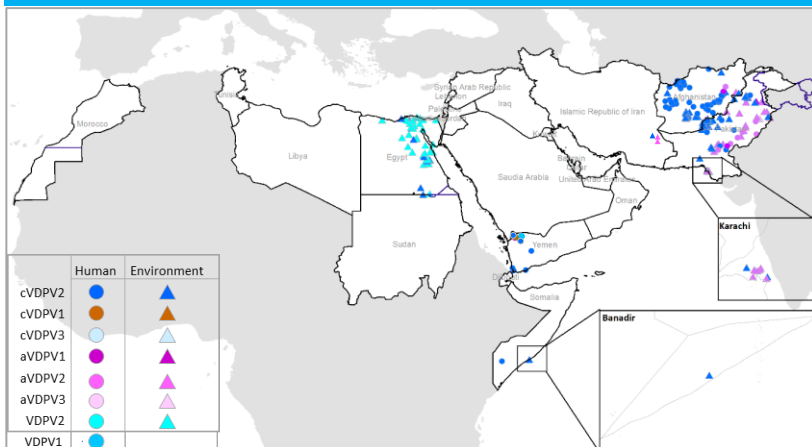
# VDPVs isolations by Source and Country

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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
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. 1212, Week 51 (ending on 26/12/2021)

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