

Global polio situation-risks and risk mitigation

POLIO GLOBAL
ERADICATION
INITIATIVE

Rotary District 2452 TRF Seminar

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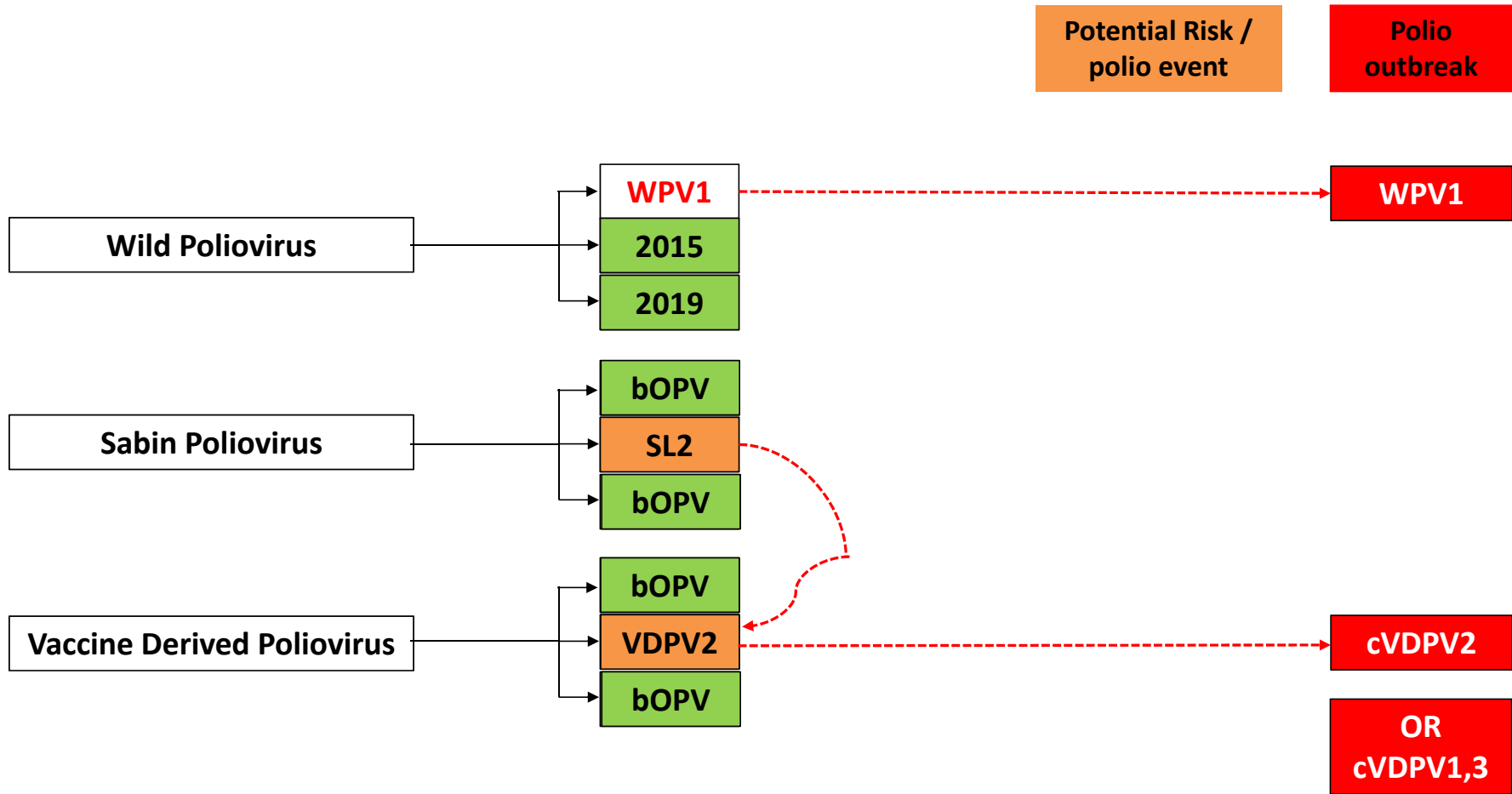
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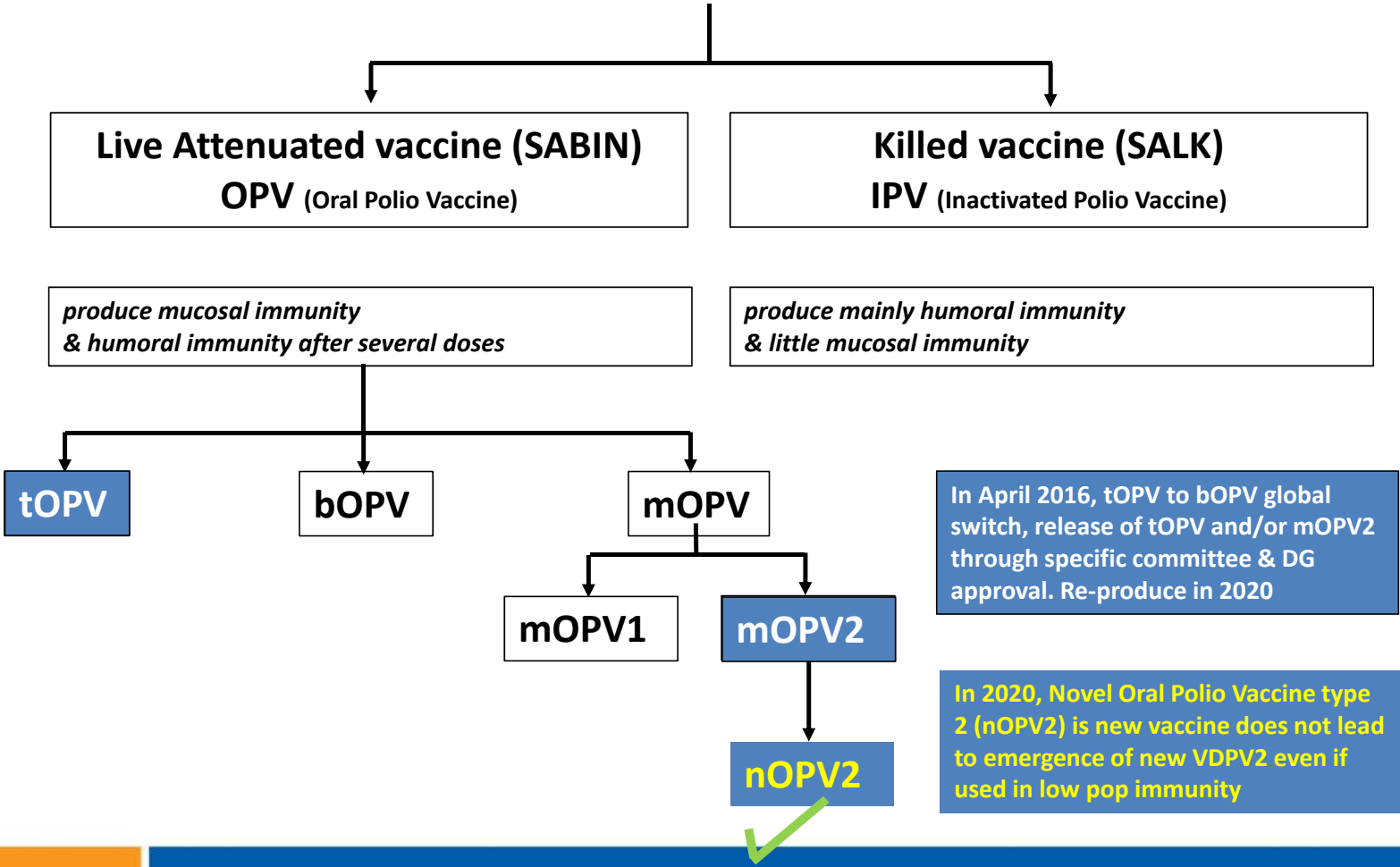
BILL & MELINDA
GATES foundation



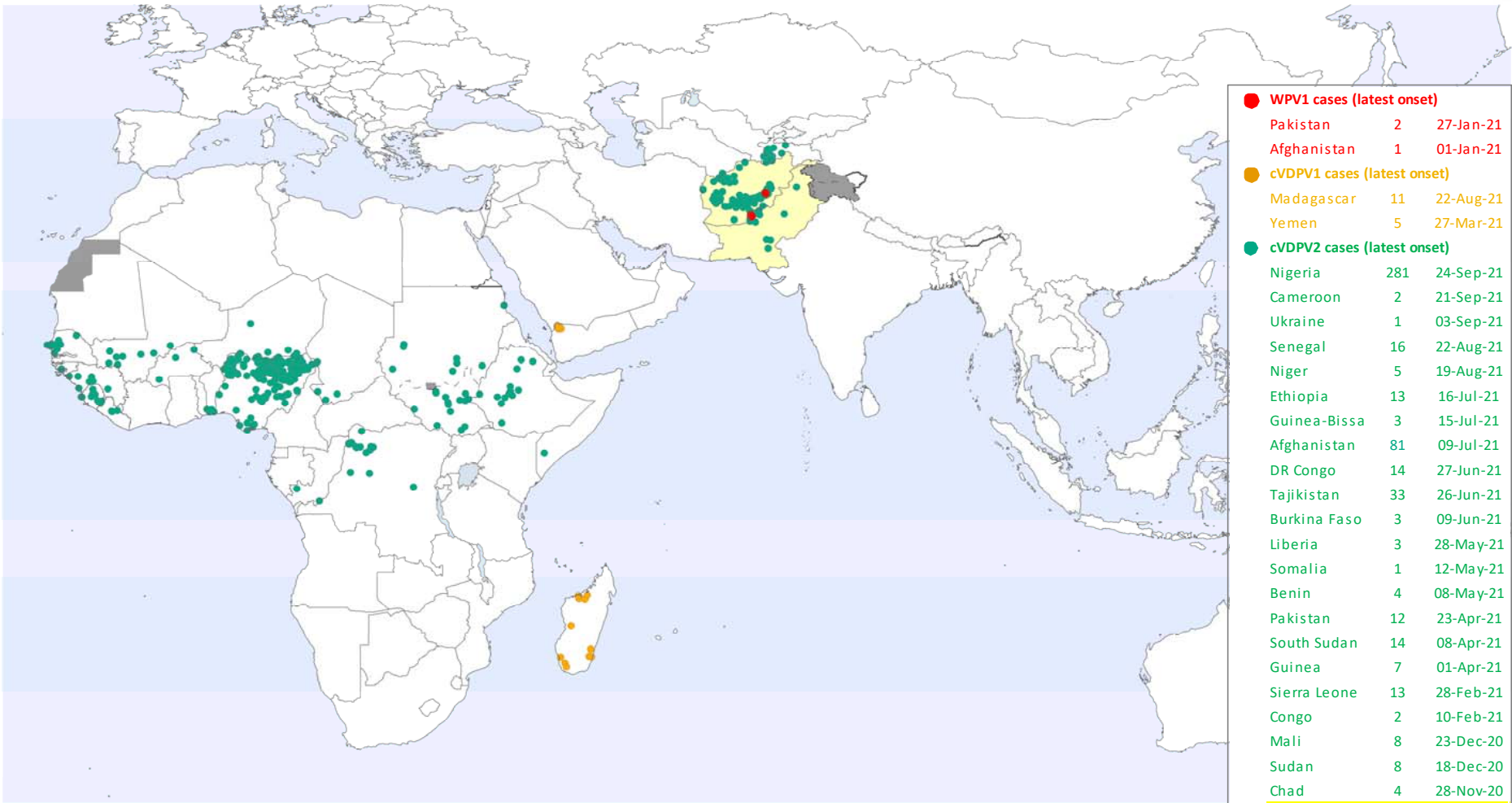
Polioviruses



Polio Vaccines



Global WPV1 & cVDPV Cases, Previous 12 Months

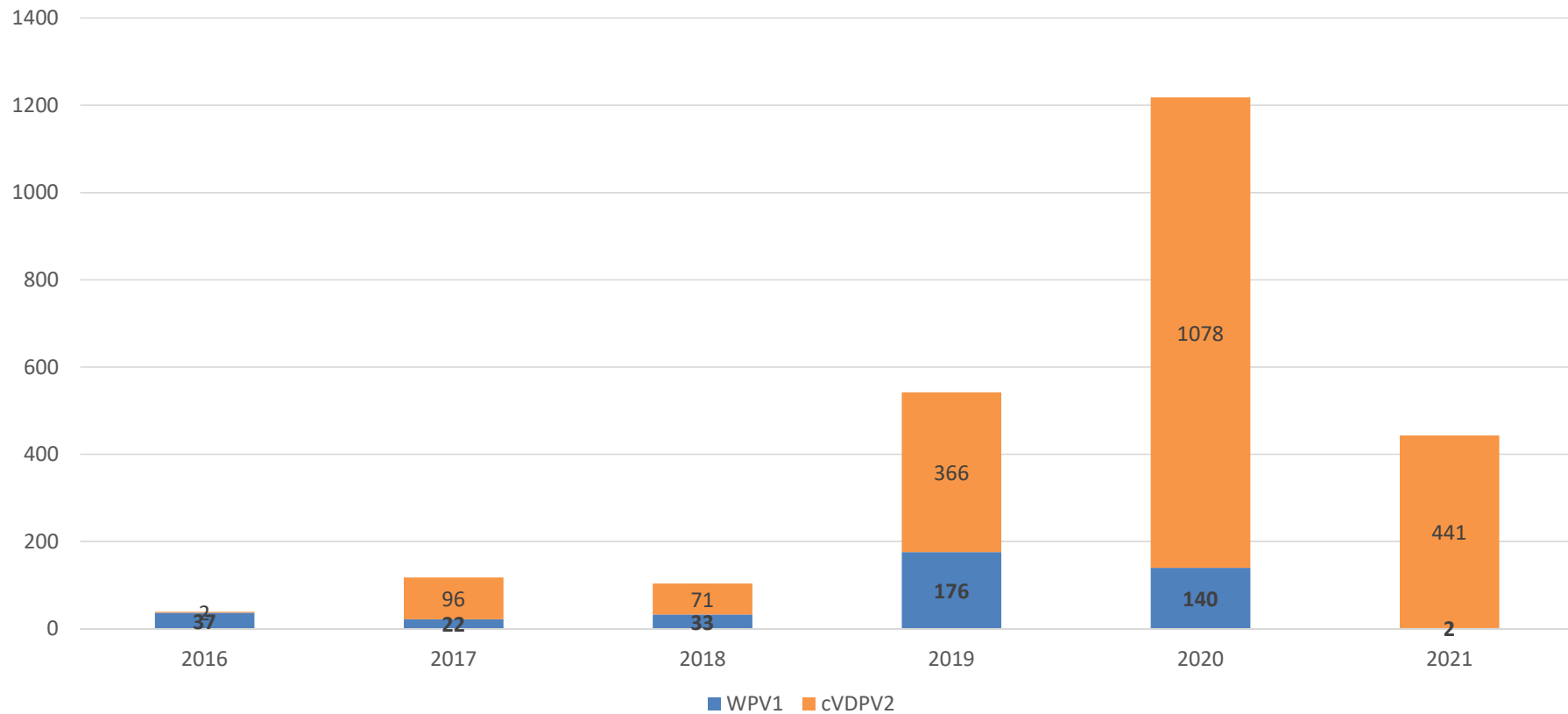


●	WPV1 cases (latest onset)		
	Pakistan	2	27-Jan-21
	Afghanistan	1	01-Jan-21
●	cVDPV1 cases (latest onset)		
	Madagascar	11	22-Aug-21
	Yemen	5	27-Mar-21
●	cVDPV2 cases (latest onset)		
	Nigeria	281	24-Sep-21
	Cameroon	2	21-Sep-21
	Ukraine	1	03-Sep-21
	Senegal	16	22-Aug-21
	Niger	5	19-Aug-21
	Ethiopia	13	16-Jul-21
	Guinea-Bissa	3	15-Jul-21
	Afghanistan	81	09-Jul-21
	DR Congo	14	27-Jun-21
	Tajikistan	33	26-Jun-21
	Burkina Faso	3	09-Jun-21
	Liberia	3	28-May-21
	Somalia	1	12-May-21
	Benin	4	08-May-21
	Pakistan	12	23-Apr-21
	South Sudan	14	08-Apr-21
	Guinea	7	01-Apr-21
	Sierra Leone	13	28-Feb-21
	Congo	2	10-Feb-21
	Mali	8	23-Dec-20
	Sudan	8	18-Dec-20
	Chad	4	28-Nov-20

Global Circulating Vaccine-derived Poliovirus (cVDPV2)

Country	AFP cases (Paralysis onset between 2016-2021)						Onset of most recent case	Other sources (Human) ⁴ (Collection between 2016-2021)						most recent collection date	Other sources (Environment) (Collection between 2016-2021)						most recent collection date						
	2016	2017	2018	2019	2020	2021		2016	2017	2018	2019	2020	2021		2016	2017	2018	2019	2020	2021							
Ukraine						1	03-Sep-21						13	09-Oct-21													
Senegal						16	15-Aug-21						33	06-Oct-21					1	11							07-Sep-21
Nigeria	1		34	18	8	280	24-Sep-21	2 ²		53	18	8	108	04-Oct-21	1		44	64	5	128						21-Sep-21	
Cameroon					7	2	21-Sep-21					4	1	08-Sep-21				4	9							29-Sep-20	
Gambia																							9			09-Sep-21	
Benin				8	5	5	08-May-21						2	08-Sep-21					5							22-Mar-21	
Mauritania												4	19-Jul-21						5							01-Sep-21	
DR Congo		22	20	88	81	11	27-Jun-21		19	15	29	95	5	19-Aug-21								1	5		29-Apr-20		
Niger			10	1	10	5	19-Aug-21			4	6	2	1	13-Aug-21					9							08-Dec-20	
Tajikistan				1	32		26-Jun-21						24	24-May-21										17		13-Aug-21	
Pakistan	1			22	135	8	23-Apr-21				14	2		11-Nov-20	4			40	135	35						11-Aug-21	
Guinea-Bissau						3	15-Jul-21						1	26-Jul-21													
Ethiopia				14	36	9	16-Jul-21				9	7		13-Oct-20				3	4							28-Dec-20	
Guinea					44	6	01-Apr-21					1		05-Sep-20					1	1						10-Jul-21	
Afghanistan					308	43	09-Jul-21					36	2	03-May-21					175	40						23-Jun-21	
Burkina Faso				1	65	2	09-Jun-21						12	19-Sep-20													
Egypt																			1	10						08-Jun-21	
Sierra Leone					10	5	28-Feb-21					6	6	19-Mar-21									9			01-Jun-21	
Uganda																						1				01-Jun-21	
Congo					2	2	10-Feb-21					2		12-Oct-20								1	2			01-Jun-21	
Liberia						3	28-May-21					2	5	21-Jan-21								7	14			20-Apr-21	
Somalia			6 ⁵	3	14	1	12-May-21				2	13	2	25-Jan-21		2	19	5	27	1						23-May-21	
South Sudan					50	9	10-Apr-21					19	5	25-Feb-21					6							01-Dec-20	
Iran																			3	1						20-Feb-21	
Kenya												1	2	25-Jan-21			1		1	1						13-Jan-21	
Côte d'Ivoire					63		18-Oct-20					24		01-Nov-20				7	93							23-Dec-20	
Mali					52		23-Dec-20					3		15-Aug-20					4							29-Aug-20	
Sudan					59		18-Dec-20					11		01-Oct-20					14							09-Nov-20	
Chad				11	101		28-Nov-20				6	17		15-Oct-20				10	3							13-Mar-20	
Central African Republic				21	4		29-Oct-20				43	1		05-Oct-20				9	2							05-Feb-20	
Ghana				18	12		09-Mar-20				16	10		22-Feb-20					17	20						17-Sep-20	
Togo				8	9		03-May-20				1	9		09-Jul-20													
Angola				138	3		09-Feb-20				22			31-Oct-19				17								02-Dec-19	
Malaysia																		3	5							04-Feb-20	
Philippines				12	1		15-Jan-20				6			23-Nov-19				19	4							16-Jan-20	
Zambia				2			25-Nov-19				2			25-Sep-19													
China				1			25-Apr-19				3			18-Aug-19			1									18-Apr-18	
Mozambique			1				21-Oct-18			2				17-Dec-18													
Syria		74					21-Sep-17	1 ³	66					12-Sep-17													
Total type 2	2	96	71	366	1078	441		3	85	74	177	285	214		5	2	65	198	536	286							

WPV1 and cVDPV2 cases worldwide, 2016-Nov 2021



Factors predisposing to a polio outbreak

Low population immunity

Vaccines, health staff, Health facilities

- Availability
- Accessibility
- Utilization

Importation of polio virus or emergence of cVDPV2

- Sudden massive pop movement
- Political instability with loose borders between countries
- Lack of Health-related cross border coordination

Note: some polioviruses are not leading to paralysis like SL2 or VDPV2 with low nucleotide change

Risk Mitigation

Maintain sensitive polio surveillance system

Rational:

Early detection and early response

Essentials: Communication, equity of health services, neutrality

How to mitigate the risks:

- Establish ES system
- Tracking population movement
- Include the whole pop in the country surveillance system
- Intensify cross-border coordination

Maintain high immunity level

Prevent the spread of any imported virus

- Maintain EPI services
- Mobile vaccination in remote areas
- Multi-antigen campaigns
- Community engagement
- Border vaccination

Immediate response to any polio event/outbreak

Prevent international spread, cost effective, time consuming

- Update disease outbreak preparedness and response plans
- Verification process for novel vaccine

Thank you