

POLIO GLOBAL ERADICATION INITIATIVE

Polio Eradication

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22 February 2017



BILL & MELINDA
GATES *foundation*

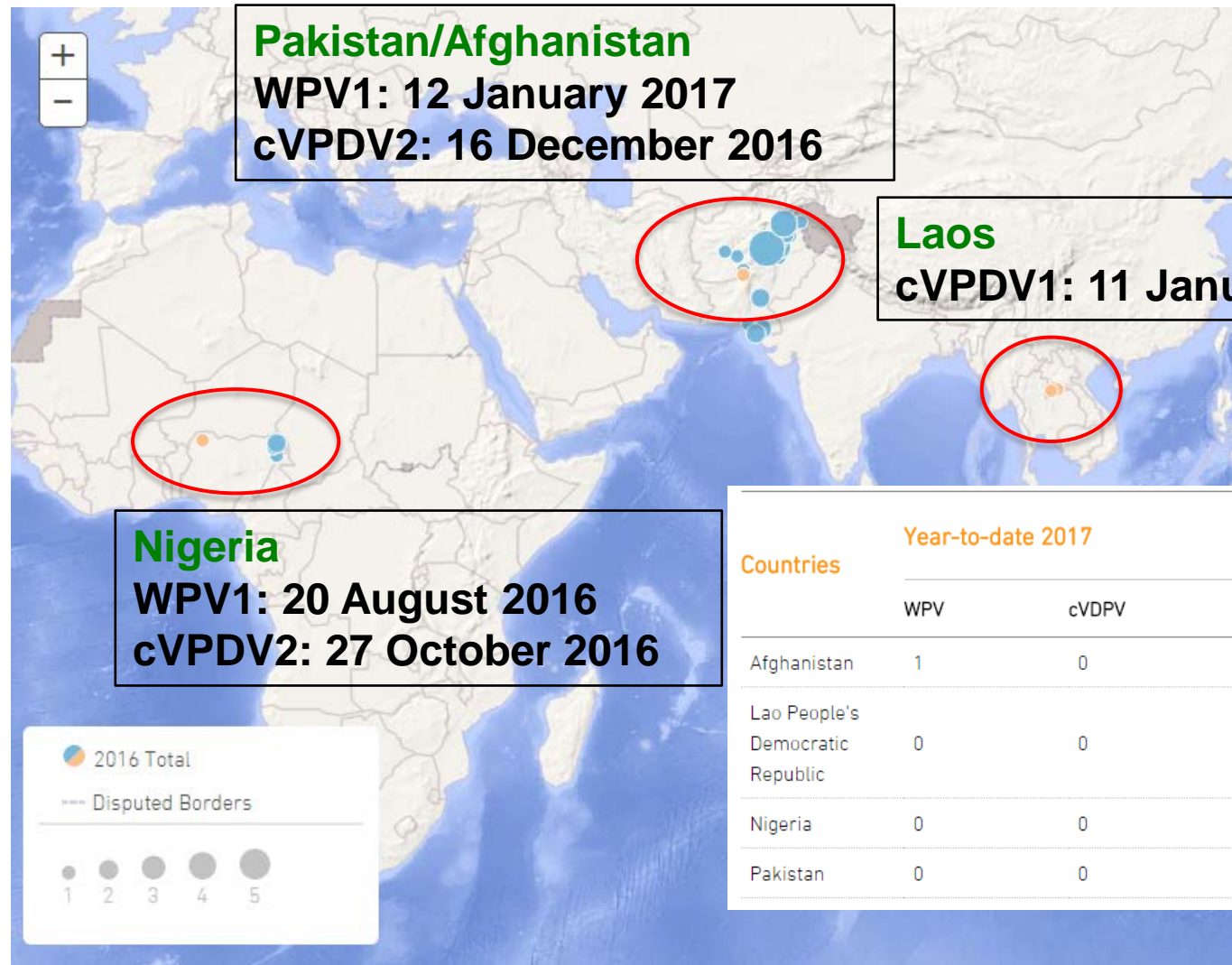


Polio Eradication and Endgame Strategy

1. Poliovirus detection & interruption
2. OPV2 withdrawal, IPV introduction, immunization system strengthening
3. Containment & Global Certification
4. Legacy Planning



Wild Poliovirus & cVDPV Cases, 2016



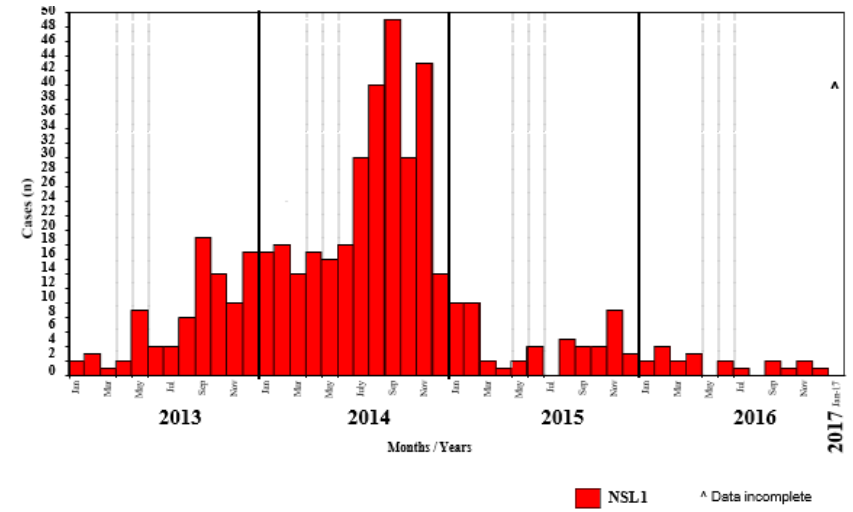
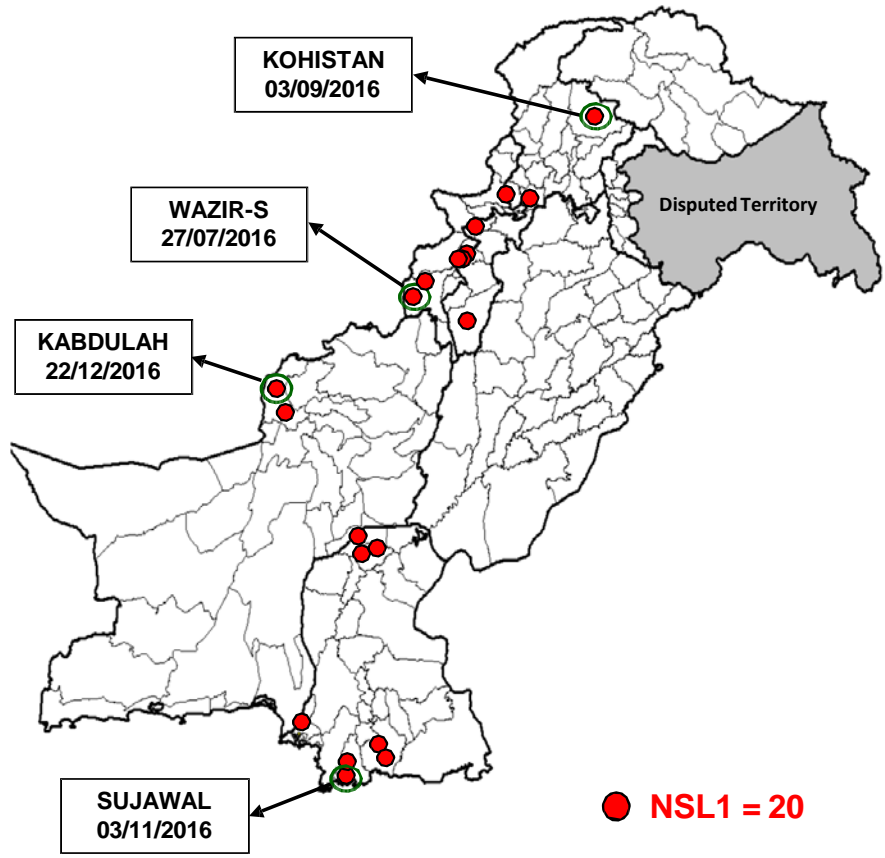
Countries	Year-to-date 2017		Year-to-date 2016		Total in 2016	
	WPV	cVDPV	WPV	cVDPV	WPV	cVDPV
Afghanistan	1	0	0	0	13	0
Lao People's Democratic Republic	0	0	0	2	0	3
Nigeria	0	0	0	0	4	1
Pakistan	0	0	1	0	20	1

Pakistan and Afghanistan

Lowest number of cases ever seen

Map1: Distribution of Wild Polio Cases Pakistan 2016

Districts/Towns with Wild Polio Cases = 14



○ District with last polio case in province

▬ Provincial Boundary

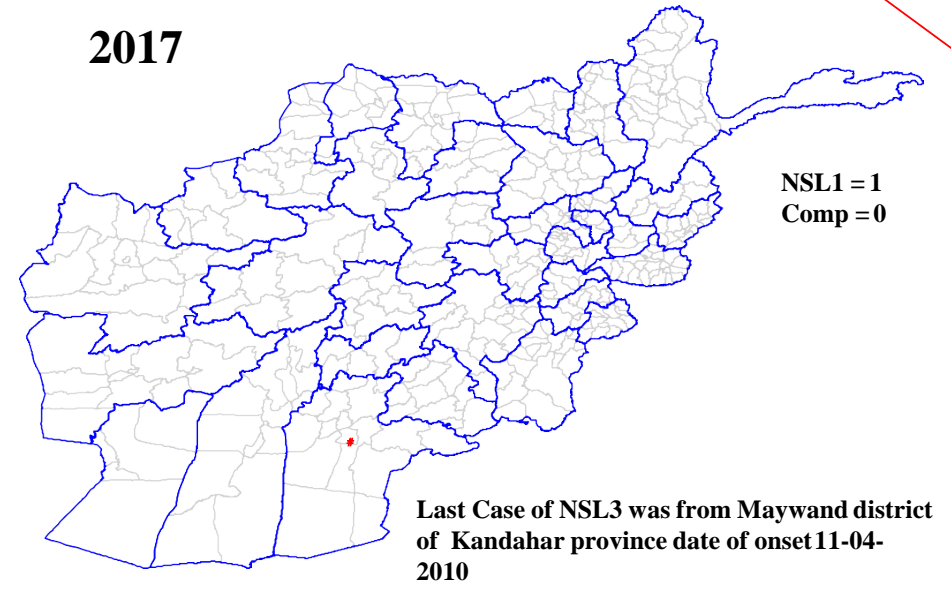
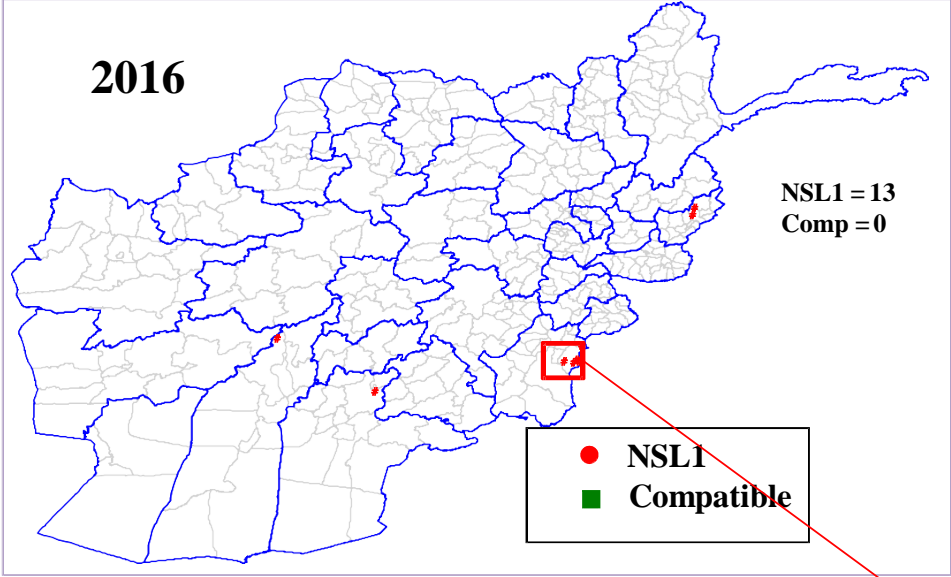
▬ Districts Boundary

▬ Cases randomly placed in districts

* Afp.rec Data as of 06-02-2017

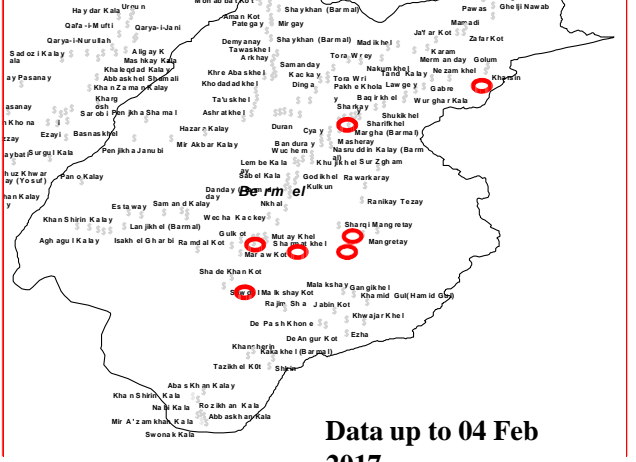


Confirmed Polio cases & Compatibles, 2016-2017

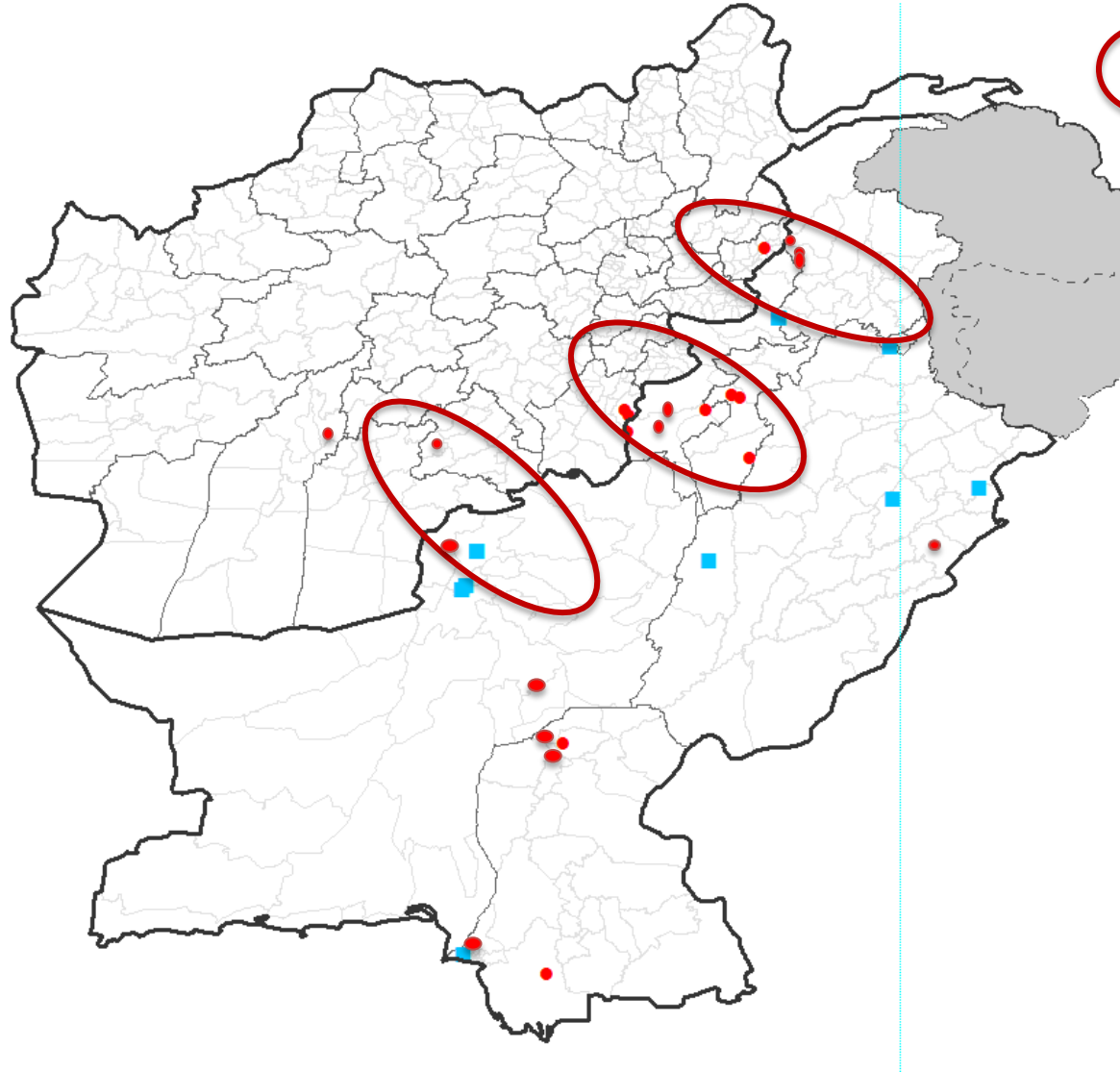


Province	No. Polio Cases 16	Date of Last Polio case 16	No. Polio Cases 17	Date of Last Polio case 17
	P1	P1	P1	P1
Helmand	1	Jan-23	0	-
Kandahar	1	Apr-04	1	Jan-13
Kunar	4	May-29	0	-
Paktika	7	Dec 16	0	-
Total	13	-	1	-

Year	Infected Provinces	Infected Districts
2015	8	16
2016	4	4
2017	1	1



AFG-PAK epidemiological block- past 6 months



Three corridors of active transmission link reservoirs on both sides of the border:

- Nangarhar/Kunar - Khyber/Peshawar
- Paktika - FATA / Bannu
- Kandahar/Helmand - Balochistan (Quetta block)

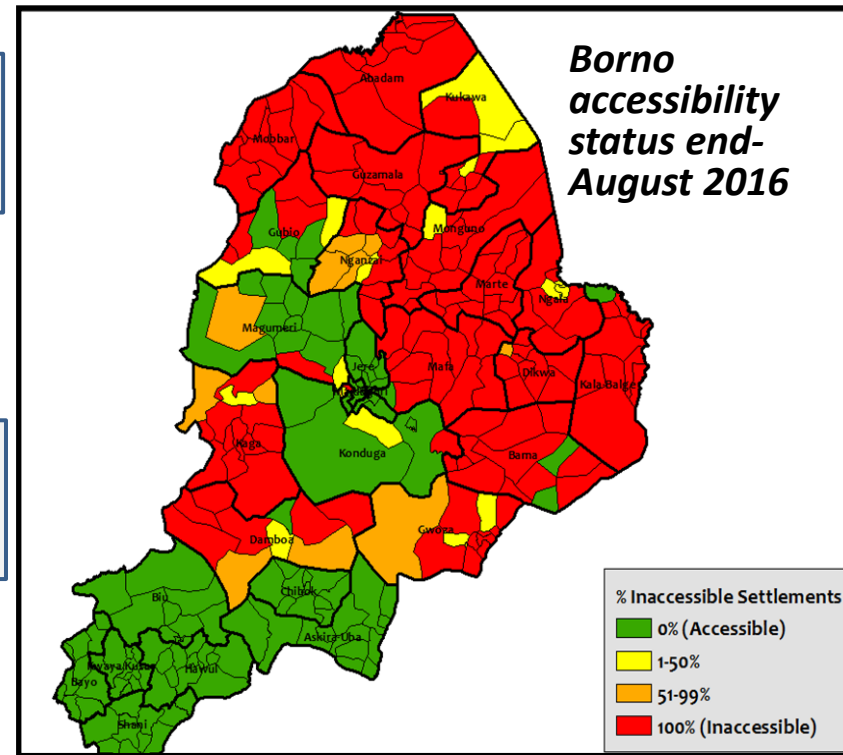
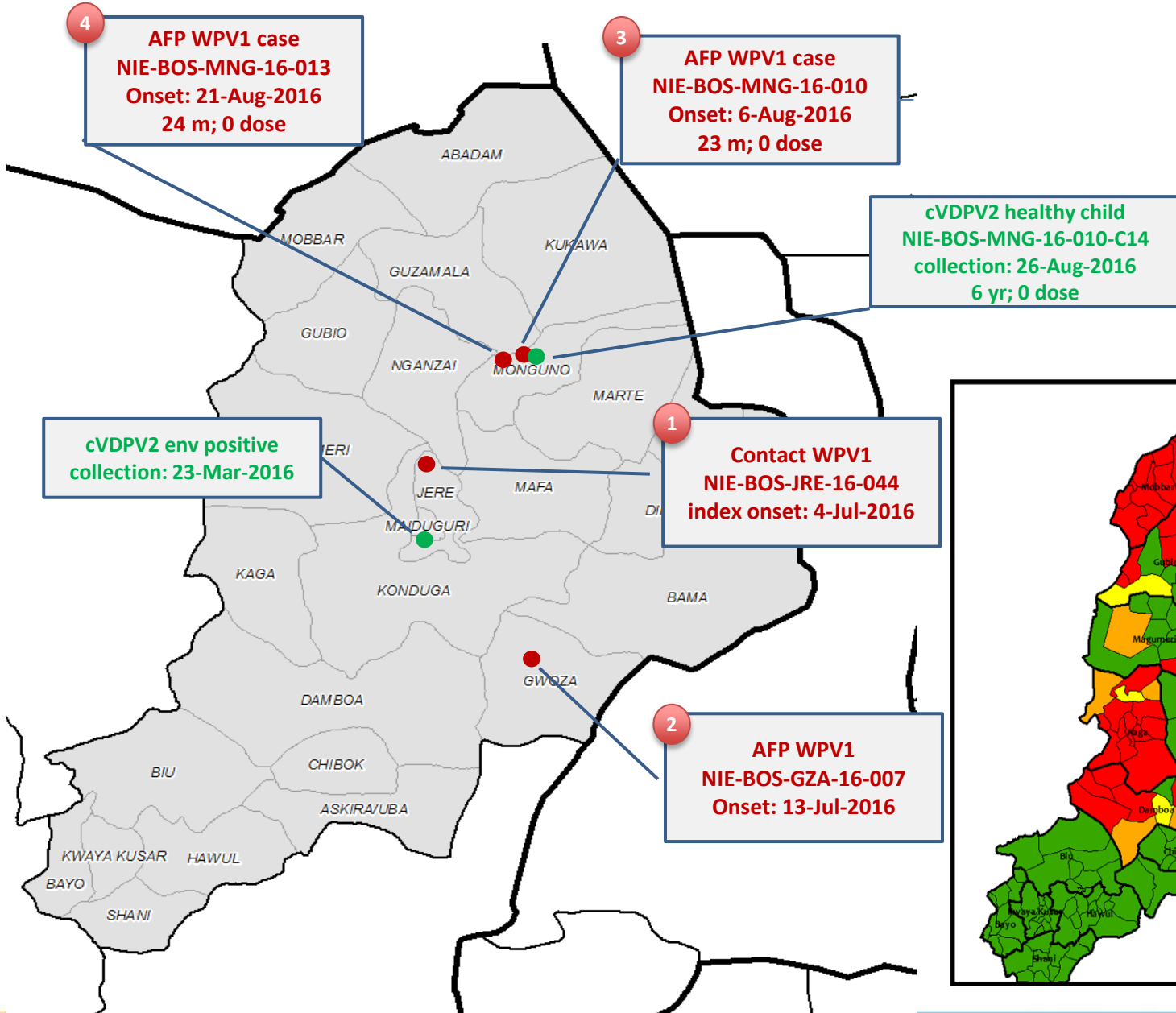
■ ENV positives ■ WPV cases



- **Improvements in overall situation**
 - Improved access & SIAs quality
 - Decrease in number of polio cases and environmental positive samples
- **Progress in highest risk areas of Peshawar, FATA and Quetta**
 - Reduction in intensity of transmission and genetic diversity of circulating virus
- **Strong coordination between the countries**
 - *New National Emergency Action Plans (2016-2017)* endorsed by TAGs
 - EOCs now operational in Kabul and the 3 high-risk AFG regions
- **However: concerning developments**
 - Continued viral transmission in south KP / FATA and adjoining south eastern Afghanistan (Paktika province)
 - Recent positive env. samples from Pishin (Quetta Block, Balochistan)

Nigeria + Lake Chad

2 years after last reported WPV case



Nigeria + Lake Chad Basin Outbreak

- WPV1 outbreak
 - 4 cases and 1 isolate in community contact
- cVDPV2 outbreak
 - ES isolate in March
 - isolate from healthy child in August
- Evidence of prolonged undetected circulation
 - Over 4 years
 - more than 1 strain of both WPV1 and cVDPV2
- insecurity and large population movements across 5 countries in the Lake Chad Basin region
- **Declaration of level 3 health sector emergency**

Multi-country outbreak response

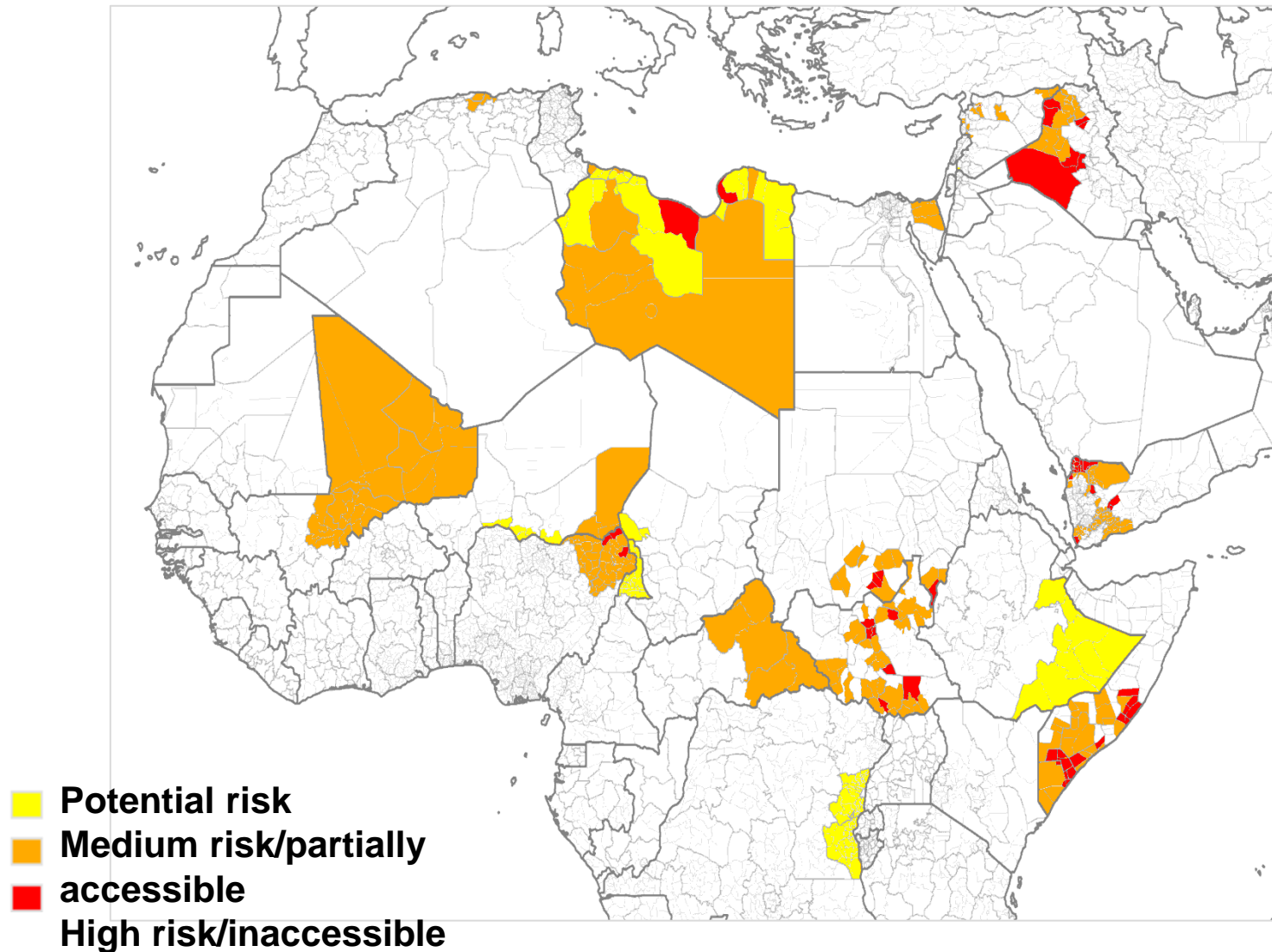
- Lake Chad Coordination established in N'djamena with partner agencies and 5 governments
- Lake Chad Countries have declared regional public health emergency
- Regional GPEI Coordinator appointed by WHO/AFRO
- Multi-country response plan
 - 5 bOPV SIAs followed by mOPV2
 - Surveillance enhancement, including active case search as well as enhanced laboratory capacity
 - Strategies to reach children in inaccessible areas
 - Advocacy, communications and social mobilization strategies
- Strong linkages with humanitarian response

Eradication progress – Summary

- Unprecedented progress (lowest global case count)
- Interruption of type 1 wild poliovirus challenging
 - Negative surprise with type 1 circulation in inaccessible areas of Borno, Nigeria

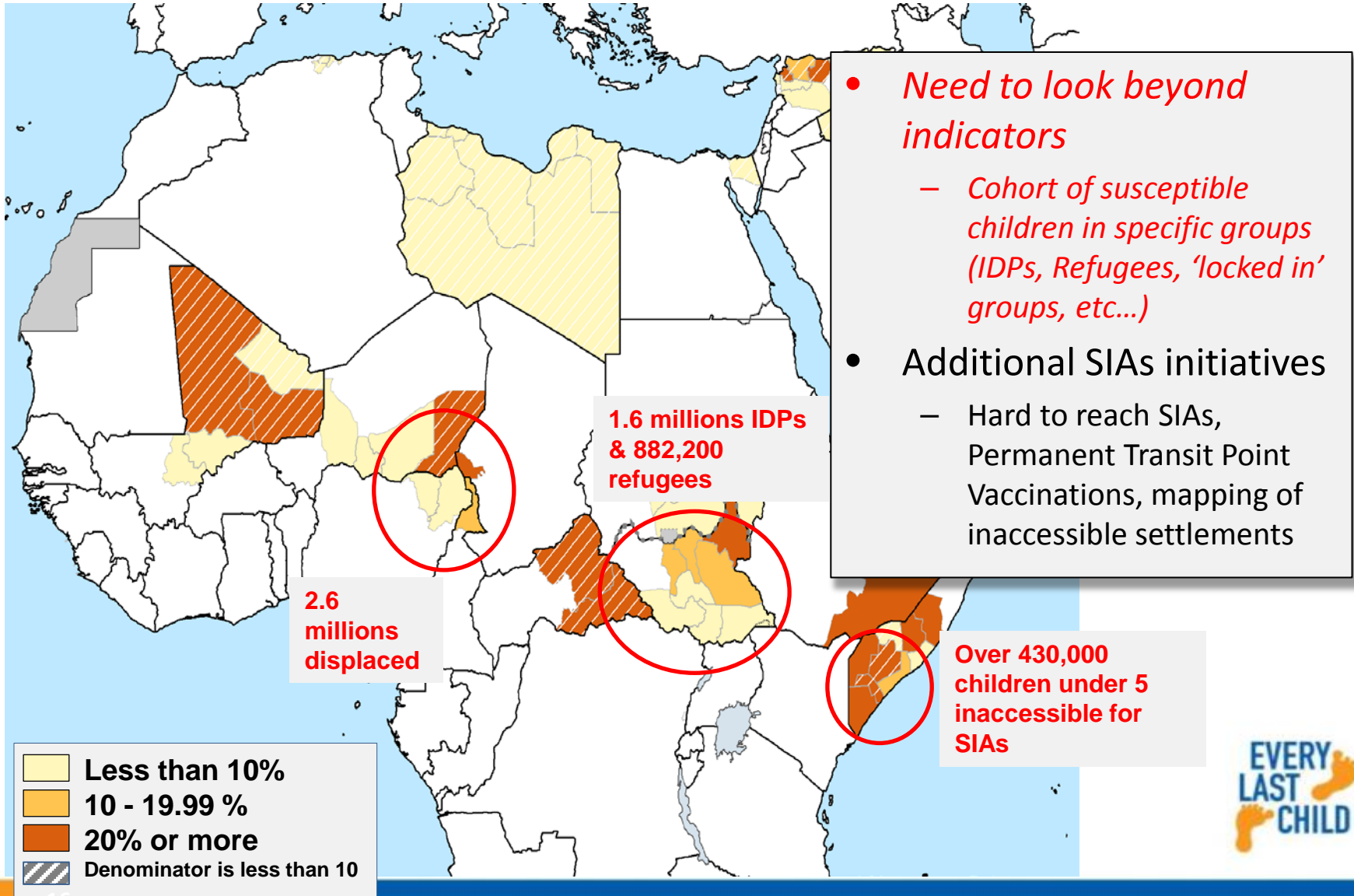
Ensuring there are no more undetected reservoirs

Conflict-related access limitations



Risk of outbreaks following Poliovirus importation

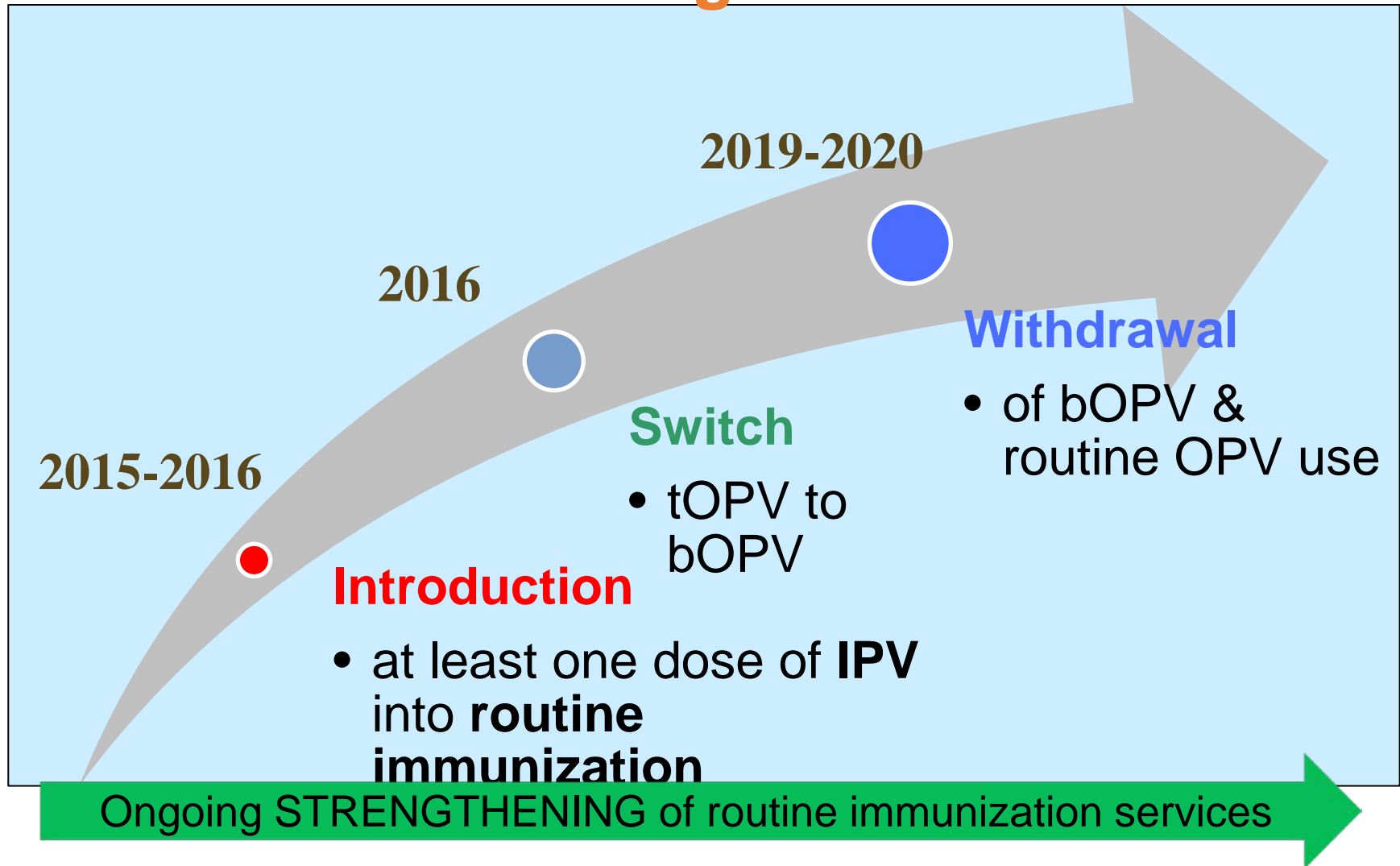
% of AFP cases aged 6 to 59 mo with 0-2 OPV doses, last 12 months (5 Oct '15 to 4 Oct '16)



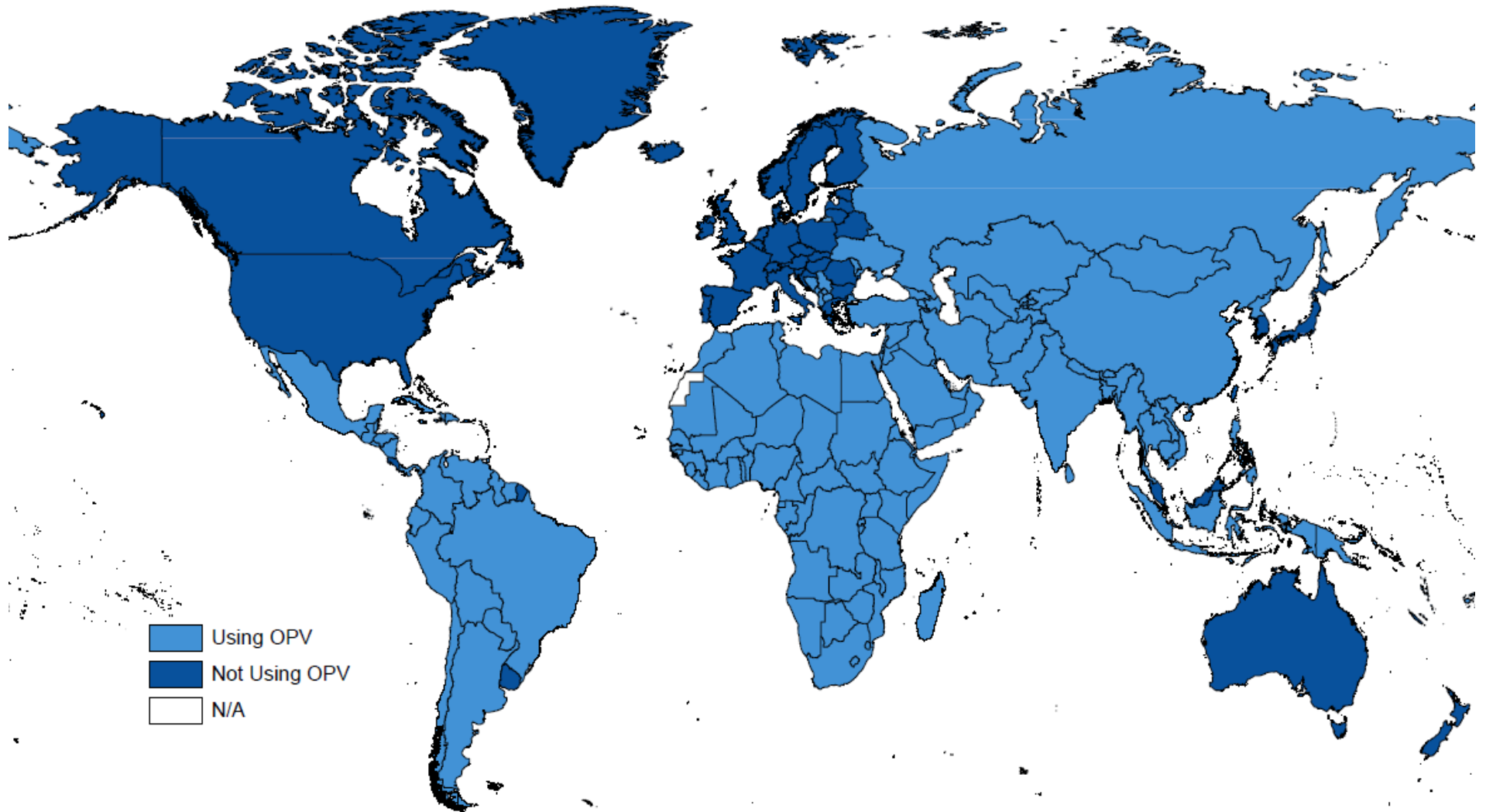
Polio Eradication and Endgame Strategy

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3. Containment & Global Certification
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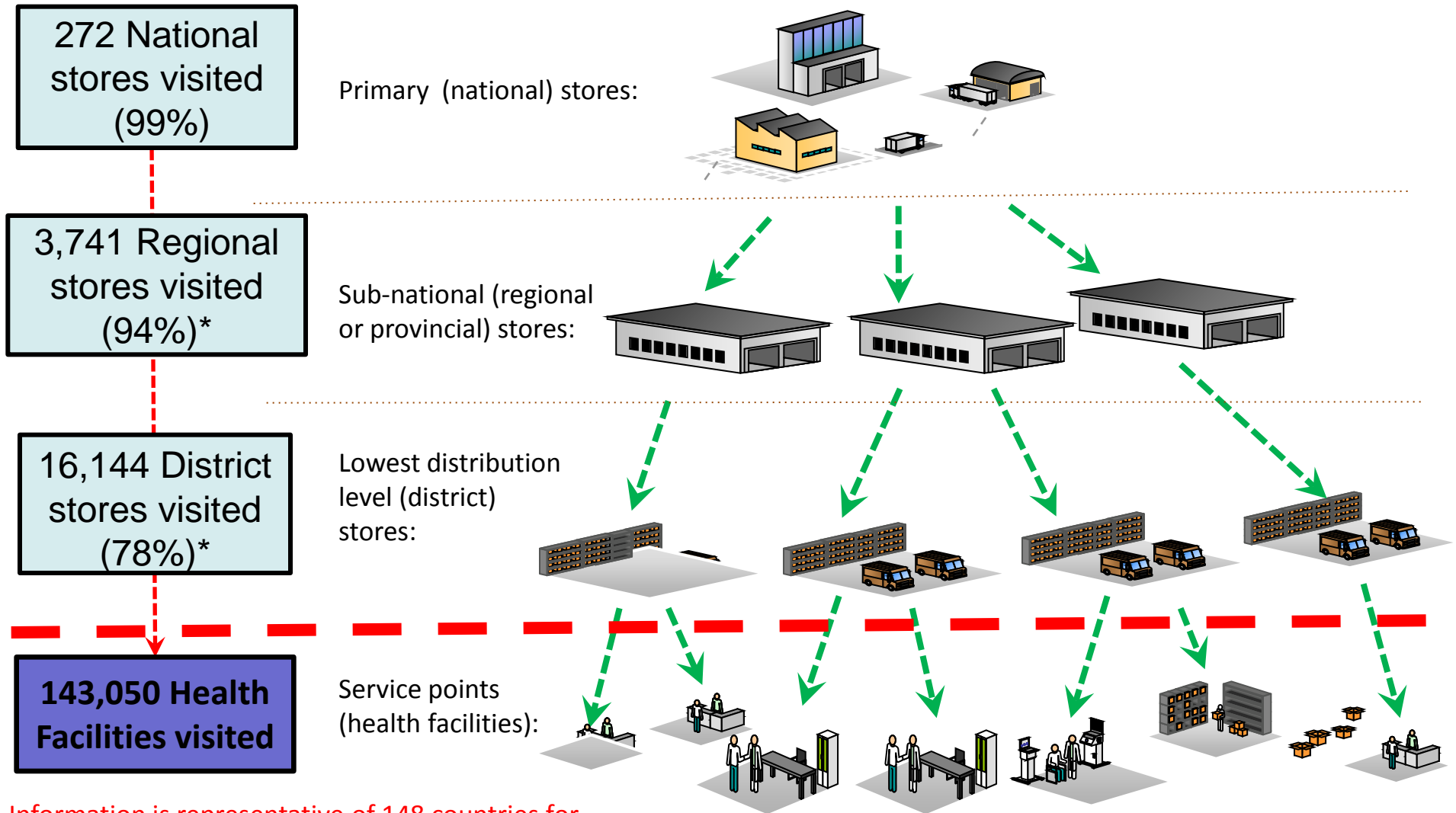
Transitioning Away from tOPV in Three Stages



In May-April 2016, all countries using OPV switched from tOPV to bOPV



Independent Monitoring (within 2 weeks of switch)

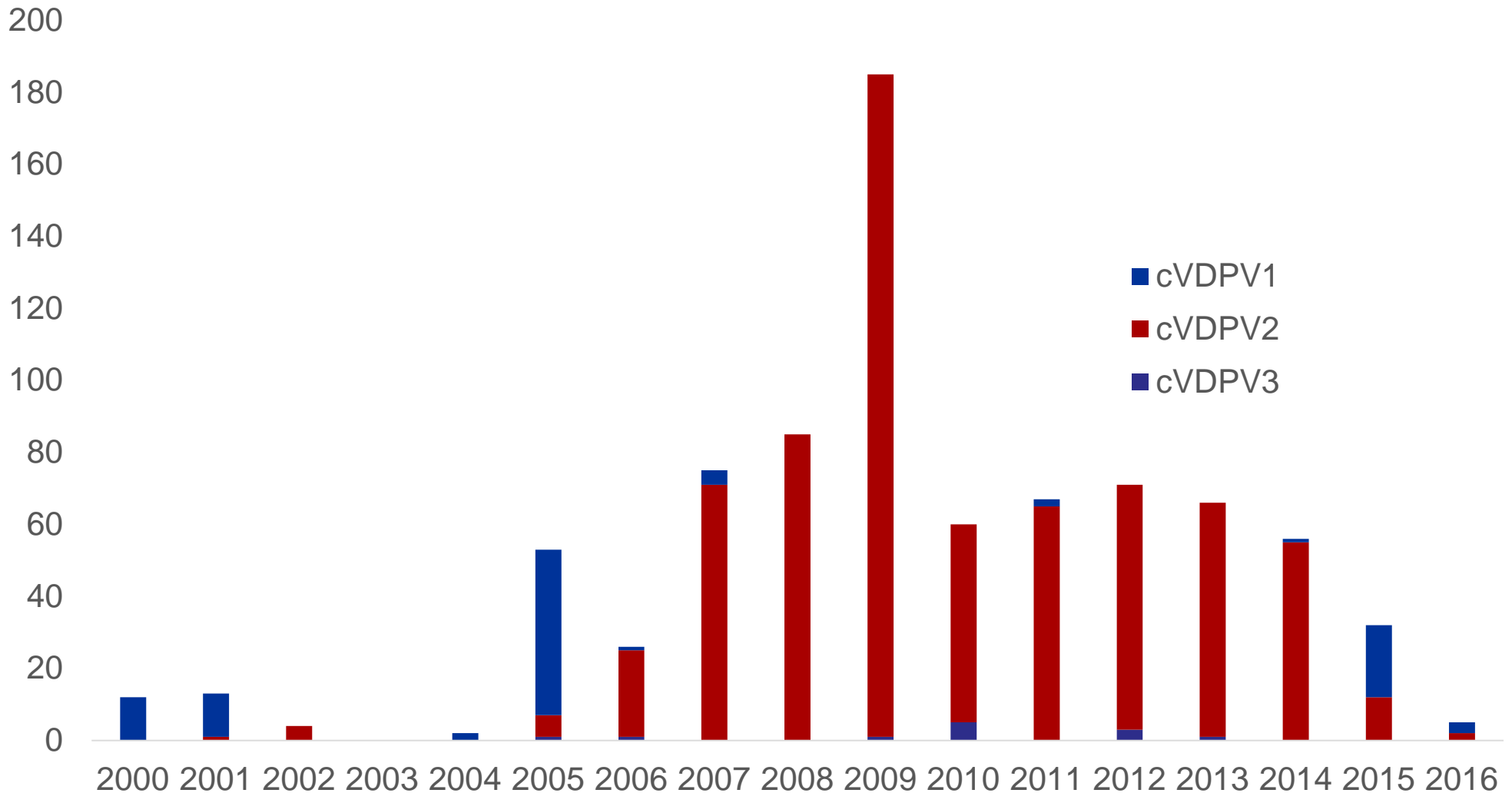


Information is representative of 148 countries for which data is currently available

*Denominator may include sites not stocking tOPV

Total sites visited:
163,207

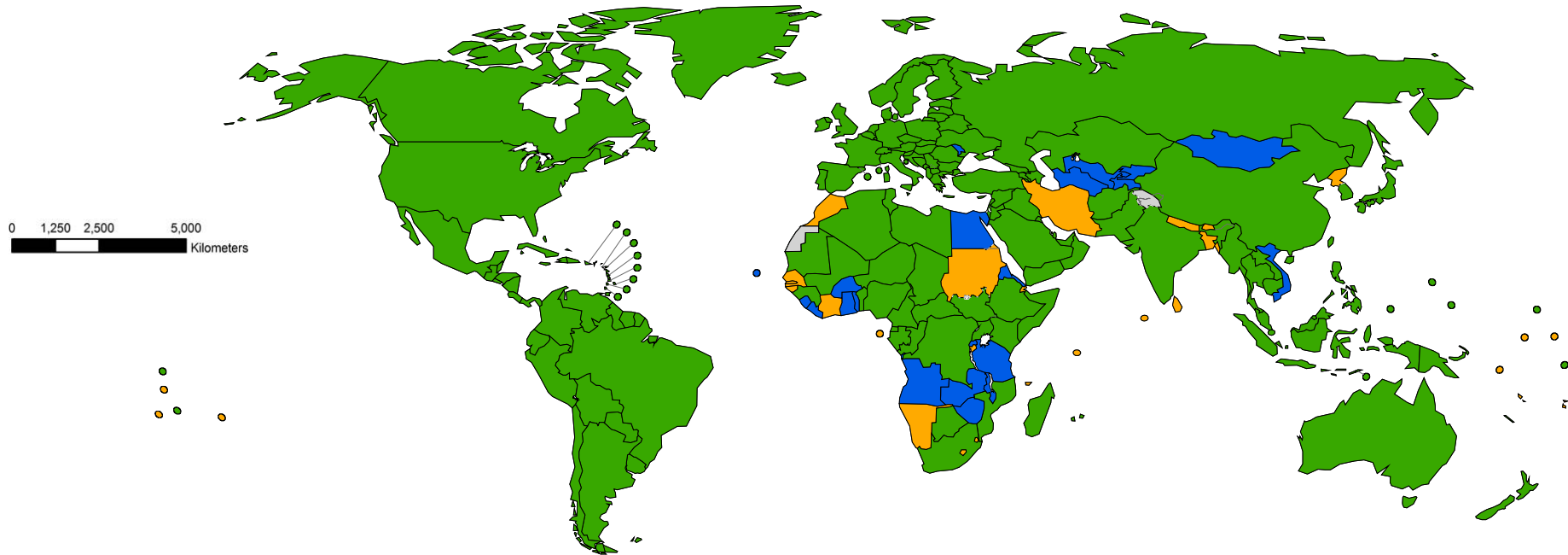
In 2016, fewer cVDPVs than in over a decade



*as of 10 February 2017

(current numbers: <http://www.polioeradication.org/Dataandmonitoring/Poliothisweek.aspx>)

Countries using IPV vaccine



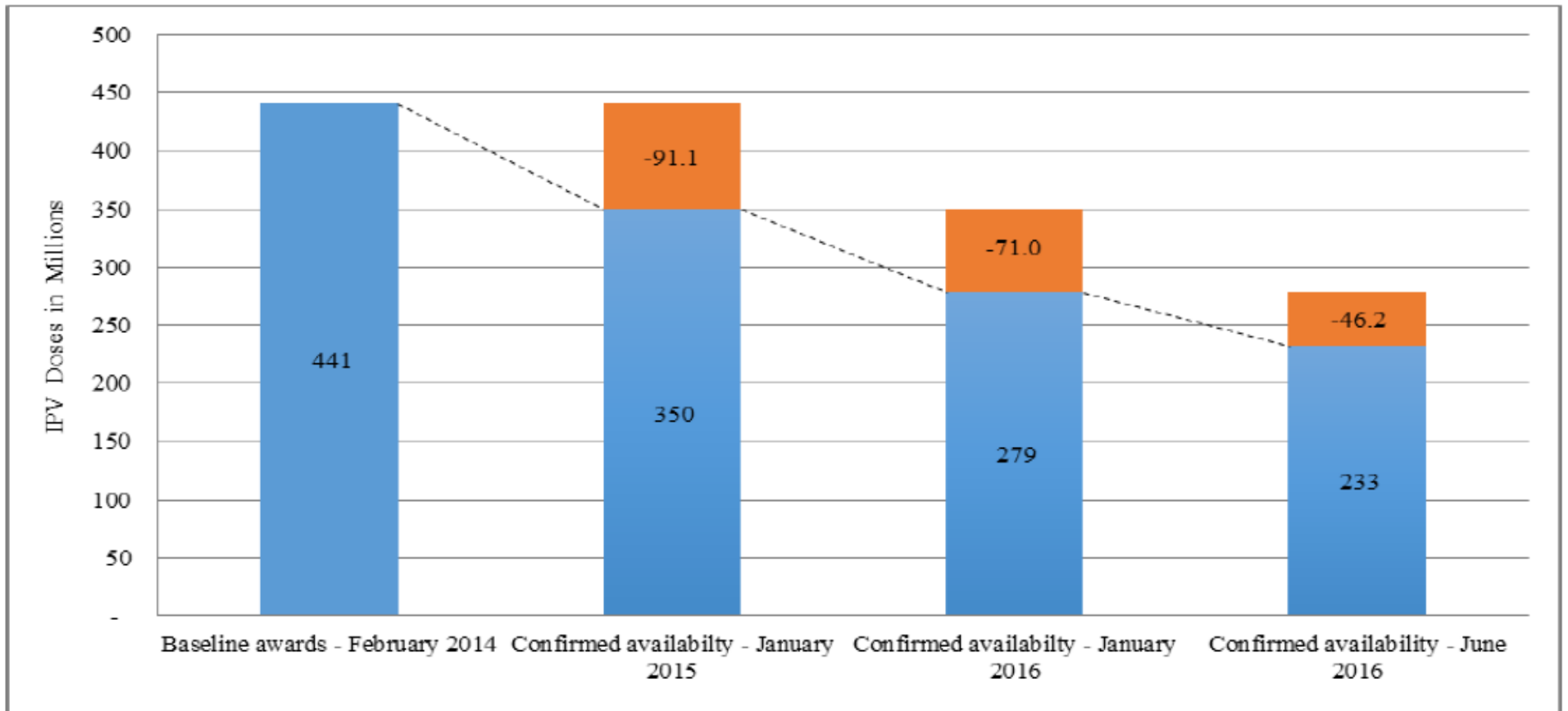
- Introduced to date** (173 countries or 89%)
- Countries which have delayed introductions** (21 countries or 11%)
- Countries affected by stock outs** (29 countries)
- Not available**
- Not applicable**

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement. ©WHO 2016. All rights reserved.

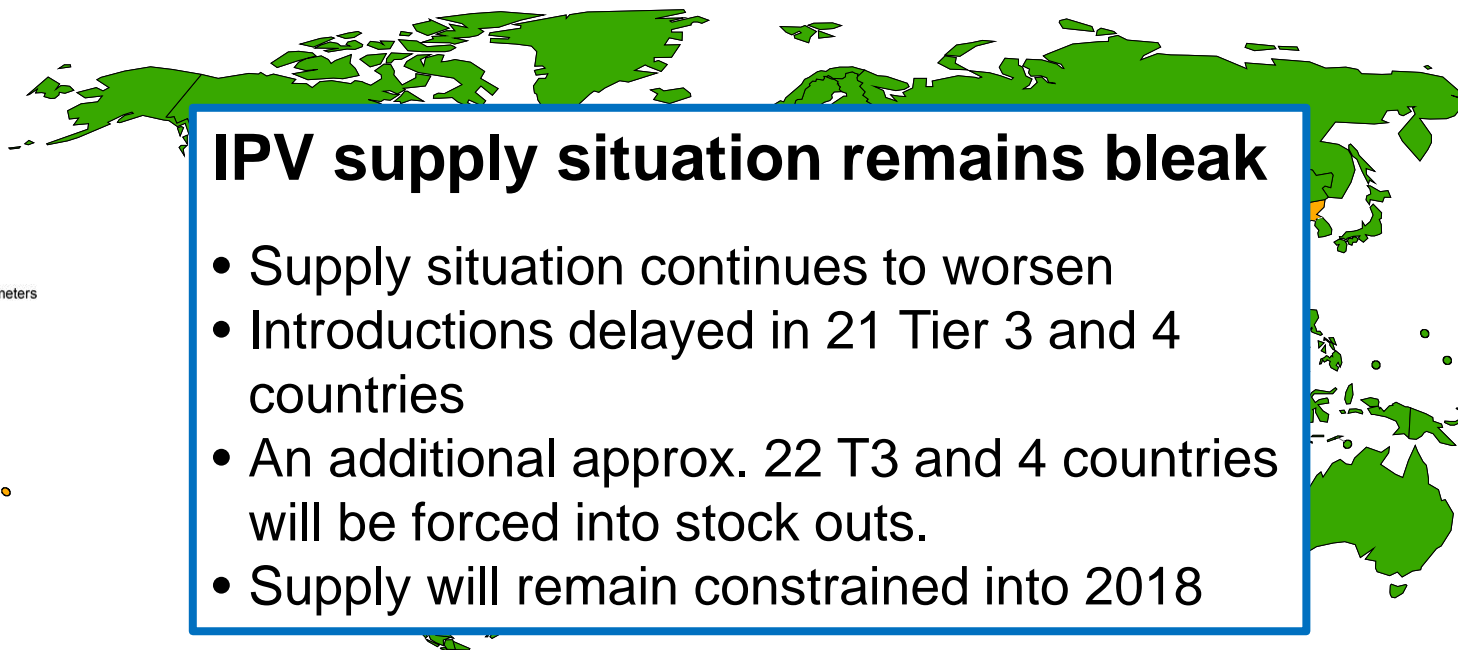
Data source: WHO/IVB Database, as of 13 October 2016
 Map production Immunization Vaccines and Biologicals (IVB),
 World Health Organization



Changes to IPV Supply 2014-2018 Available through UNICEF Supply Division During 2014-2016



Countries using IPV vaccine



0 1,250 2,500 5,000 Kilometers

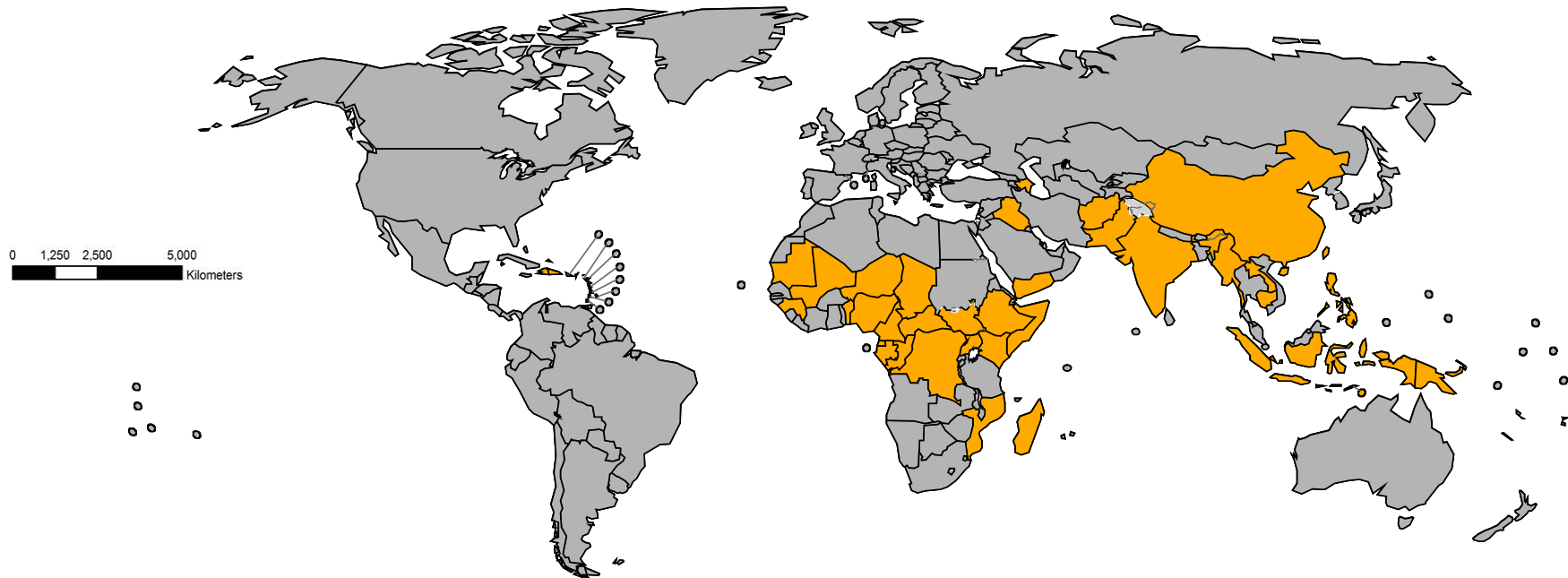
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Data source: WHO/IVB Database, as of 13 October 2016
Map production Immunization Vaccines and Biologicals (IVB),
World Health Organization



Countries considered to be at highest risk for cVDPV2 outbreaks are currently all receiving IPV



- Introduced to date* (36 countries or 100%)
- Not Applicable / not available / Tier 1 or 2 countries

Since January 2013, the following Tier 1 and 2 countries have introduced IPV:

The Philippines (October 2014), China (December 2014), Nigeria (February 2015), DR Congo (April 2015), Madagascar (May 2015), Cameroon, Niger and Pakistan (July 2015); Benin, Chad and Papua New Guinea (August 2015); Afghanistan and CAR (September 2015); Lao People's Democratic Republic (October 2015); Guinea, India, Mauritania, Mozambique, Somalia & Yemen (November 2015); Cambodia, Dominican Rep., Ethiopia, Gabon, Kenya, Myanmar & S. Sudan (December 2015); Haiti & Iraq (January 2016); Azerbaijan, Bolivia & Timor-Leste (February 2016); Mali (March 2016); Congo & Uganda (April 2016); Indonesia (July 2016); Eq. Guinea (August 2016)

Tier 1 countries are countries with cVDPV2 transmission or cVDPV2 reported since 2000 & WPV endemic countries

Tier 2 countries are countries with cVDPV 1/3 since 2000 or large /Medium size countries with DTP3 coverage <80% in the past 3 years as per WUENIC

Data source: WHO/IVB Database, as of 07 November 2016,
based on 36 tier 1 & 2 countries
Map production Immunization Vaccines and Biologicals (IVB),
World Health Organization

Policy response

- WHO Polio Position paper published in March 2016
 - SAGE reaffirmed two doses of intradermal IPV in lieu of one full-dose intramuscular



The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Early priming with inactivated poliovirus vaccine (IPV) and intradermal fractional dose IPV administered by a microneedle device: A randomized controlled trial



Abhijeet Anand^{a,*}, K. Zaman^b, Concepción F. Estívariz^a, Mohammad Yunus^b, Howard E. Gary^a, William C. Weldon^a, Tajul I. Bari^c, M. Steven Oberste^a, Steven G. Wassilak^a, Stephen P. Luby^d, James D. Heffelfinger^{a,b}, Mark A. Pallansch^a

Priming after a Fractional Dose of Inactivated Poliovirus Vaccine

Sonia Resik, M.D., Ph.D., Alina Tejada, M.D., Roland W. Sutter, M.D., M.P.H.&T.M., Manuel Diaz, M.D., Luis Sarmiento, Ph.D., Nilda Alemañi, M.D., M.Sc., Gloria Garcia, M.Sc., Magilé Fonseca, M.Sc., Lai Heng Hung, M.Sc., Anna-Lea Kahn, M.Sc., Anthony Burton, B.S., J. Mauricio Landaverde, M.D., M.P.H., and R. Bruce Aylward, M.D., M.P.H.

^aCenters for Disease Control and Prevention, 1600 Clifton Road, Atlanta, GA 30333, United States

Author	Year published	Country	Schedule	One full-dose IPV	Two fractional doses given intradermally
Resik S	2013	Cuba	IPV	63% (4 mos)	98% (4+8 mos)
Anand A	2015	Bangladesh	IPV	39% (6 wks)	81% (6+14 wks)

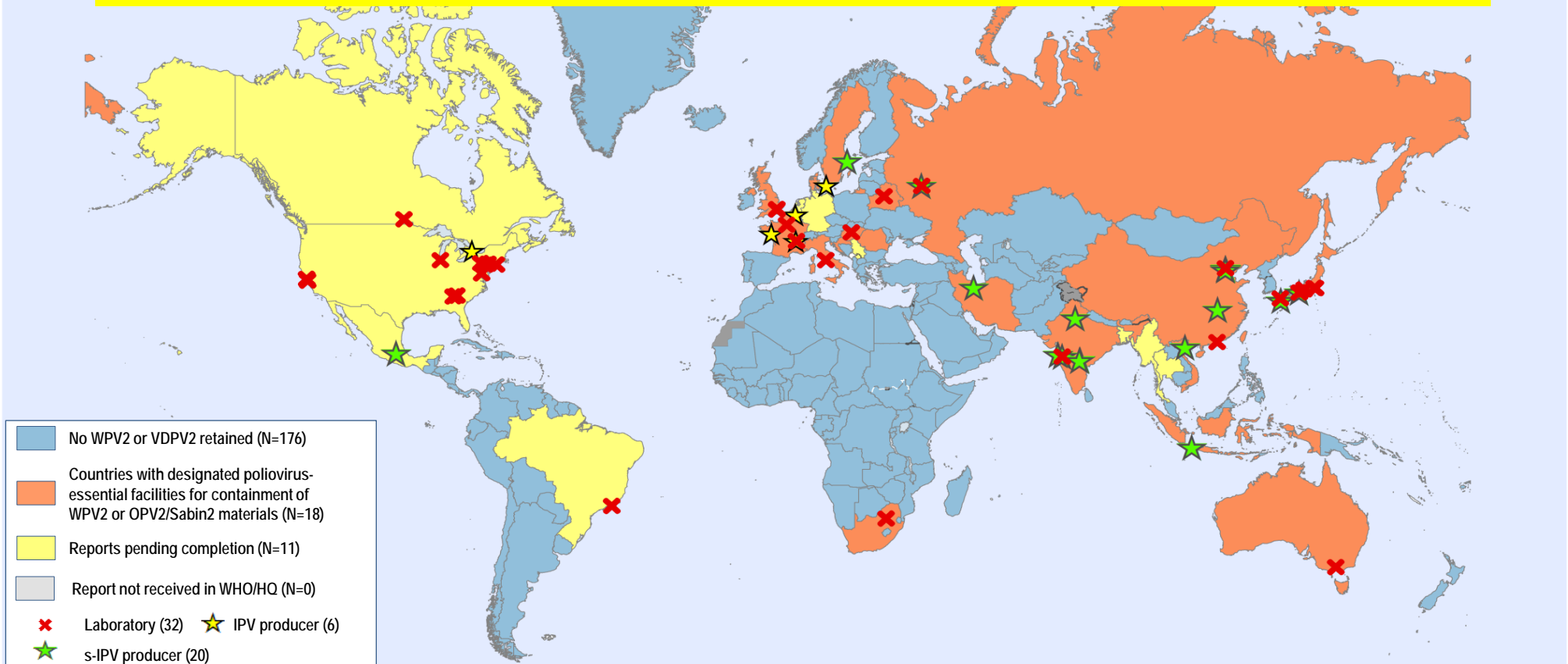
Endgame - Summary

- Switch great success with OPV withdrawal and ability of GPEI to introduce IPV
- IPV supply challenges: Impact risk and GPEI credibility
- Slow uptake of SAGE recommendation of 2-fractional IPV doses

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23 countries reported hosting 58 designated Poliovirus-Essential Facilities (PEFs)



Some territories administrated by sovereign states may be at a different completion stage of containment. The use of this map do not imply the expression of any opinion whatsoever on the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Polio Eradication and Endgame Strategy

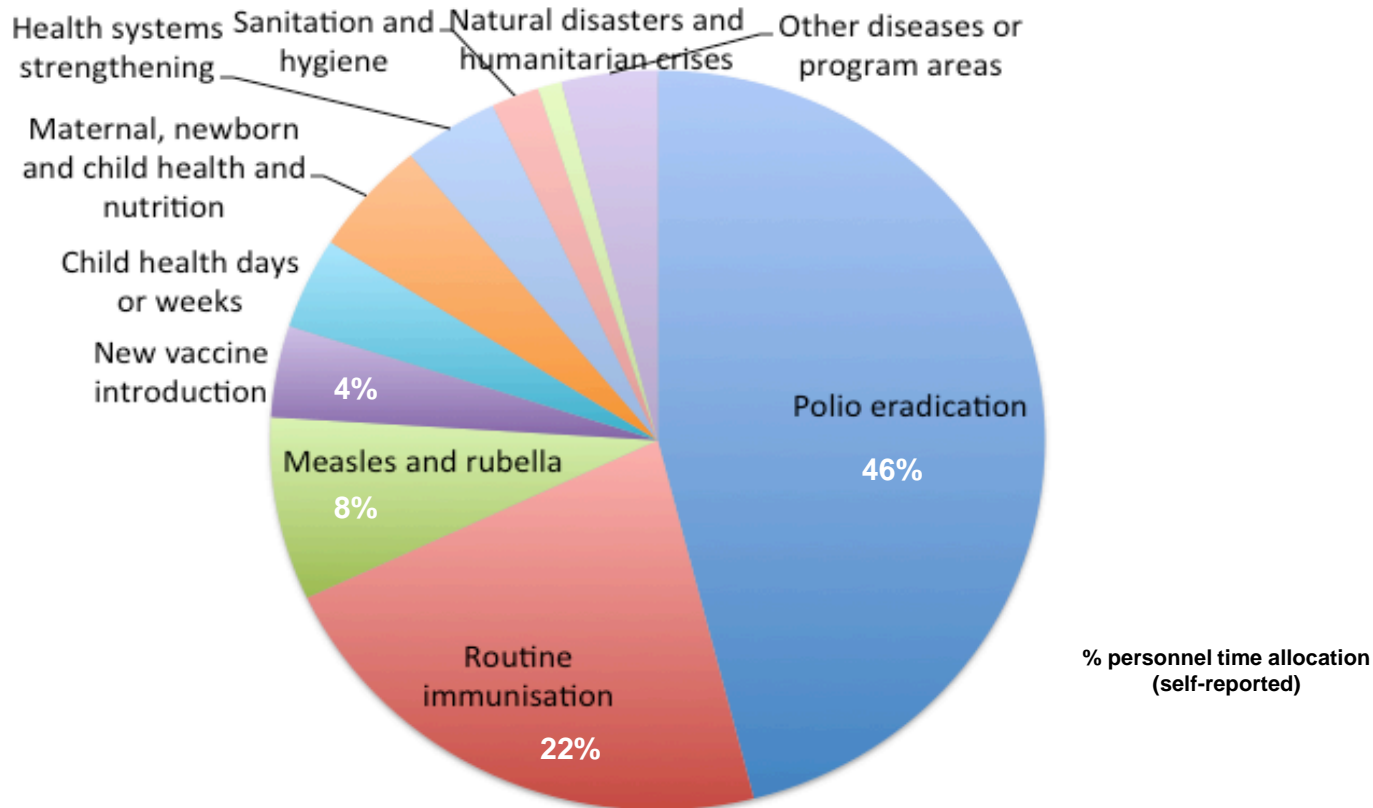
1. Poliovirus detection & interruption
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GPEI has learned many many lessons on the road towards eradication

- ✓ Accessing insecure and hard-to-reach areas
- ✓ Accountability
- ✓ Communications
- ✓ Social mobilization/community engagement
- ✓ Working in complex global partnership
- ✓ Achieving and maintaining political commitment
- ✓ Global disease surveillance networks

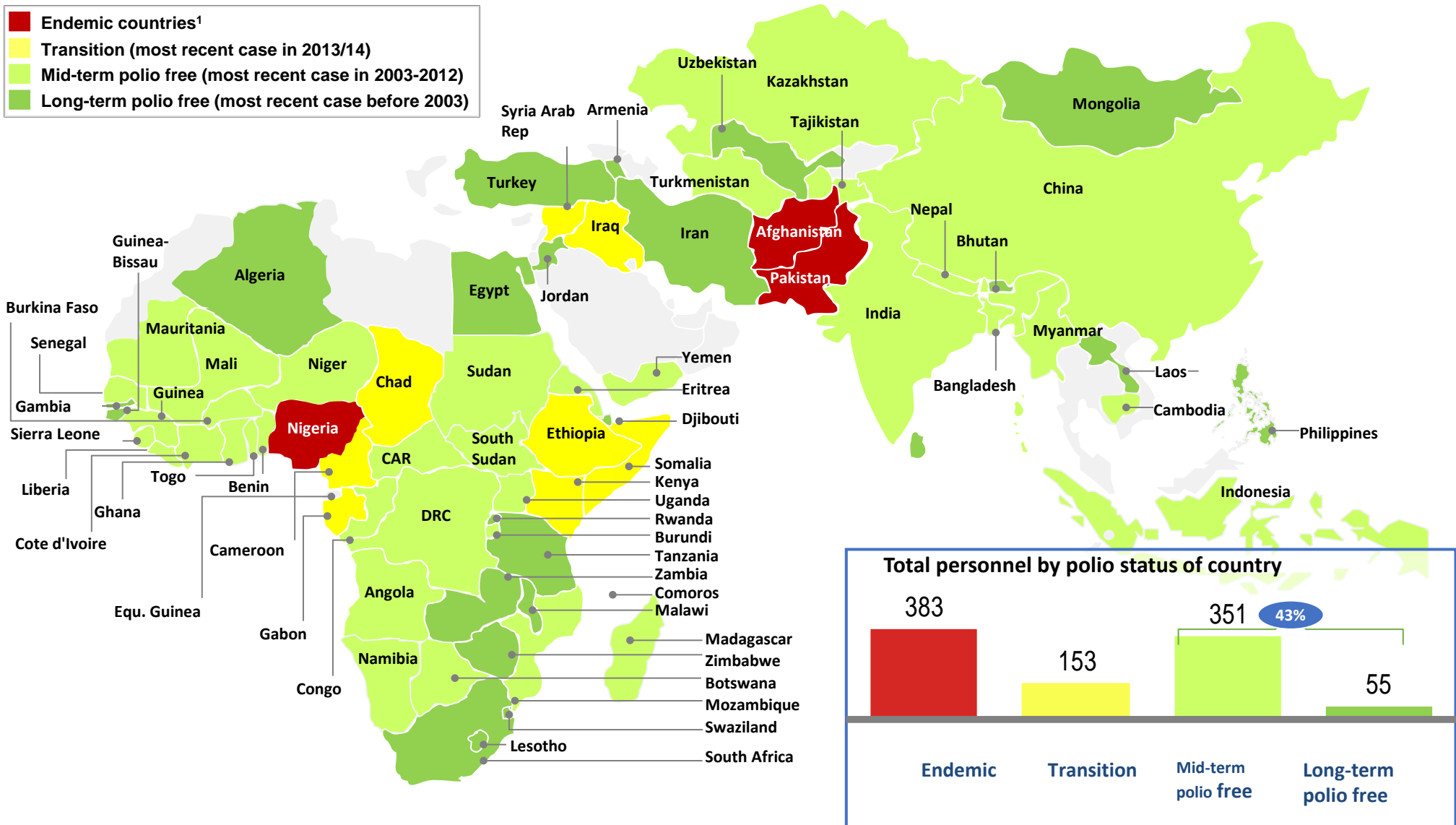
**How can these lessons be
used for greater benefit?**

GPEI-funded staff already report spending more than half of their time on health priorities other than polio



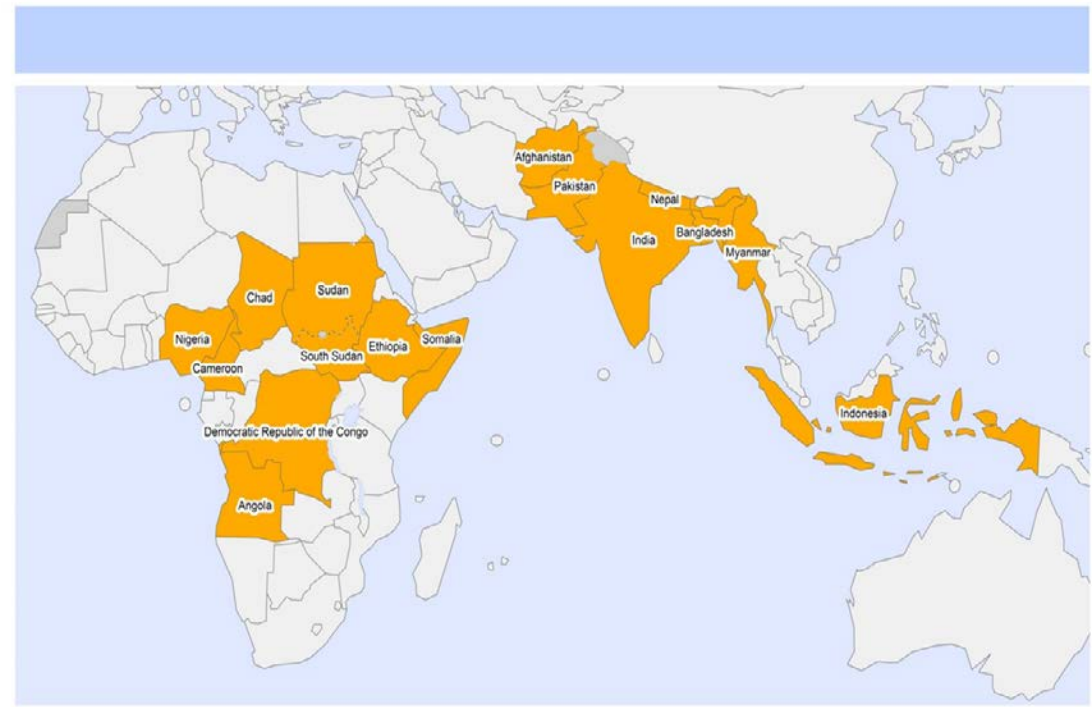
Boston Consulting Group study in Afghanistan, Angola, Chad, DR Congo, Ethiopia, India, Nigeria, Pakistan, Somalia, South Sudan

Footprint of WHO Polio-funded Staff in Countries



Polio Transition Planning Process

- 1. Transition plans in 16 priority countries
- 2. Transition plan(s) at global level and regional levels
- 3. Agency-specific plans
- 4. Global collaboration to document and share lessons learned



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Data Source: <type data source>
Map Production: <type unit name>
World Health Organization



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Regional, country timelines for transition planning

14 countries and 5 regional offices will be expected to have transition plans prepared by the end of 2016

2 countries and 2 regional offices will be expected to have transition plans prepared within 12 months of interruption in the endemics

Priority Country	Priority Regional Office		2016	2017	2018	2019	2020
	WHO	UNICEF					
Bangladesh, India, Indonesia, Nepal, Myanmar	SEARO	ROSA (2017)	Transition Planning	Preparation & Execution			
Angola, Cameroon, Chad, DR Congo, Ethiopia, Nigeria, S. Sudan	AFRO	WCARO ESARO	Transition Planning	Preparation & Execution			
Somalia, Sudan	EMRO (2017)	ESARO MENARO	Transition Planning	Preparation & Execution			
Afghanistan, Pakistan	EMRO	ROSA		Transition Planning	Preparation & Execution		

Response to Nigeria outbreak in all 5 Lake Chad basin countries

Continued **support to Pakistan and Afghanistan**

- Implement all NEAP activities
- Improvement of SIAs quality;
- Additional allocation of IPV for 2017 SIAs

Revisit risk assessment in all **security compromised areas** :

- Surveillance gaps
- Nigeria, Afghanistan, Pakistan but also Syria, Somalia, Sudan, Iraq, Yemen, ...

Strengthen **outbreak response capacity** and **surveillance for certification**

Political advocacy and resource mobilization

- Also to sustain efforts in non endemic countries

Appendix

Possible Eradication of Wild Poliovirus Type 3 – Worldwide, 2012

Weekly

November 14, 2014 / 63(45);1031-1033

Olen M. Kew, PhD¹, Stephen L. Cochi, MD², Hamid S. Jafari, MD³, Steven G.F. Wassilak, MD², Eric E. Mast, MD², Ousmane M. Diop, PhD³, Rudolf H. Tangermann, MD³, Gregory L. Armstrong, MD² (Author affiliations at end of text)

- Possibly last AFP case: **Yobe, Nigeria**, November 2012
- Possibly last environmental isolate: **Lagos, Nigeria**, November 2012