

*Today's Session on*  
*Polio Endgame*  
**SAGE**

*20 October, 2015*

# Outline of the Session

## Four Presentations

1. Overview of progress – *H Jafari*
2. Preparedness for OPV2 withdrawal – *M Zaffran*
3. Report of the Working Group Chair – *Y Al-Mazrou*
4. Update on Legacy Planning – *S Cochi*

# SAGE Recommendations in April 2015

2015, 90, 261–280

**World Health Organization**

Organisation mondiale de la Santé

No. 22

Weekly epidemiological record  
Relevé épidémiologique hebdomadaire

29 MAY 2015, 90th YEAR / 29 MAI 2015, 90<sup>e</sup> ANNÉE  
No. 22, 2015, 90, 261–280  
<http://www.who.int/wer>

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**Meeting of the Strategic Advisory Group of Experts on immunization, April 2015: conclusions and recommendations**

The Strategic Advisory Group of Experts (SAGE) on immunization<sup>1</sup> met on 14–16 April 2015 in Geneva, Switzerland. This report summarizes the discussions, conclusions and recommendations.<sup>2</sup>

**Réunion du Groupe stratégique consultatif d'experts sur la vaccination, avril 2015: conclusions et recommandations**

Le Groupe stratégique consultatif d'experts (SAGE) sur la vaccination<sup>1</sup> s'est réuni du 14 au 16 avril 2015 à Genève (Suisse). Le présent rapport résume les discussions, conclusions et recommandations auxquelles il est parvenu.<sup>2</sup>

**Report from the WHO Department of Immunization, Vaccines and Biologicals**

The report focused on: the implementation of the Global Vaccine Action Plan (GVAP) and the related discussions during meetings of the WHO Governing Bodies at global and regional levels; the programmatic priorities to close the immunization gap; an update on implementation of selected SAGE recommendations; and agenda items on the horizon for future meetings.

**Rapport du Département Vaccination, vaccins et produits biologiques de l'OMS**

Le rapport s'est concentré sur: la mise en œuvre du Plan d'action mondial pour les vaccins (GVAP) et les débats s'y rapportant au cours des réunions des organes directeurs de l'OMS réunis aux niveaux mondial et régional; les priorités programmatiques visant à combler les lacunes de la couverture vaccinale; un point sur la mise en œuvre de certaines recommandations du SAGE; et un aperçu des points inscrits à l'ordre du jour des futures réunions.

The report stressed that reaching the GVAP goals is resource intensive (human and financial) and emphasized the urgent need for adequate investments and focus in order to increase routine immunization coverage which has been almost static, at global level, since 2009 and below the expected 90% coverage.

Le rapport a souligné que la réalisation des objectifs du GVAP exige des ressources humaines et financières importantes et qu'il est urgent d'y consacrer les investissements et les efforts requis pour améliorer la couverture de la vaccination systématique, demeurée à un niveau quasi statique à l'échelle mondiale depuis 2009, en-deçà du taux escompté de 90%.

The report noted the current global shortage of bacille Calmette-Guérin (BCG) vaccine and proposed interim solutions while stressing the need for the global community to pay more attention and take measures to avoid future shortages of other recommended vaccines.

Constatant la pénurie actuelle de vaccins par le bacille Calmette-Guérin (BCG) à l'échelle mondiale, le rapport a proposé des solutions temporaires, tout en soulignant que la communauté mondiale doit prêter une plus grande attention à la question et prendre les mesures nécessaires pour éviter des pénuries d'autres vaccins recommandés à l'avenir.

**WORLD HEALTH ORGANIZATION**  
Geneva

**ORGANISATION MONDIALE DE LA SANTÉ**  
Genève

Annual subscription / Abonnement annuel  
See p. ix or x 246–247

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ISSN 0043-8114  
Printed in Switzerland

<sup>1</sup> See <http://www.who.int/immunization/sage/en>

<sup>2</sup> The complete set of presentations and background materials used for the SAGE meeting of 14–16 April 2015 together with the list of SAGE members and the summarized declarations of interests provided by SAGE members are available at: <http://www.who.int/immunization/sage/meetings/2015/sageprf/en/>, accessed in April 2015.

<sup>3</sup> Voir <http://www.who.int/immunization/sage/fr/>

<sup>4</sup> La série complète des communications et des documents de travail de la réunion du SAGE tenue du 14 au 16 avril 2015, ainsi que la liste des membres du SAGE et les résumés des déclarations d'intérêts fournies par ces derniers sont disponibles à l'adresse: <http://www.who.int/immunization/sage/meetings/2015/sageprf/en/>, consulté en avril 2015.

- SAGE recommended all countries and GPEI should plan firmly for April 2016 as the designated date for withdrawal of OPV2
- SAGE will consider delaying OPV2 withdrawal **only if** the WG reports in October 2015 that the assessed risk of continued cVDPV2 transmission is high

# For Consideration by SAGE

## Decision:

- Final confirmation of April 2016 as the date for OPV2 withdrawal

## Information:

- Progress towards wild poliovirus eradication
- Update on Legacy Planning

# POLIO | GLOBAL ERADICATION INITIATIVE

## Overview

SAGE - October 20, 2015



# Outline

## Part I

- Wild poliovirus (WPV) eradication
- Programme Context

## Part II

- Progress towards type 2 OPV (OPV2) withdrawal
- Confirming OPV2 withdrawal in April 2016
- Priorities highlighted by SAGE Polio WG
- Recent reduction in IPV supply

# Wild Poliovirus Eradication

## 1988-2014

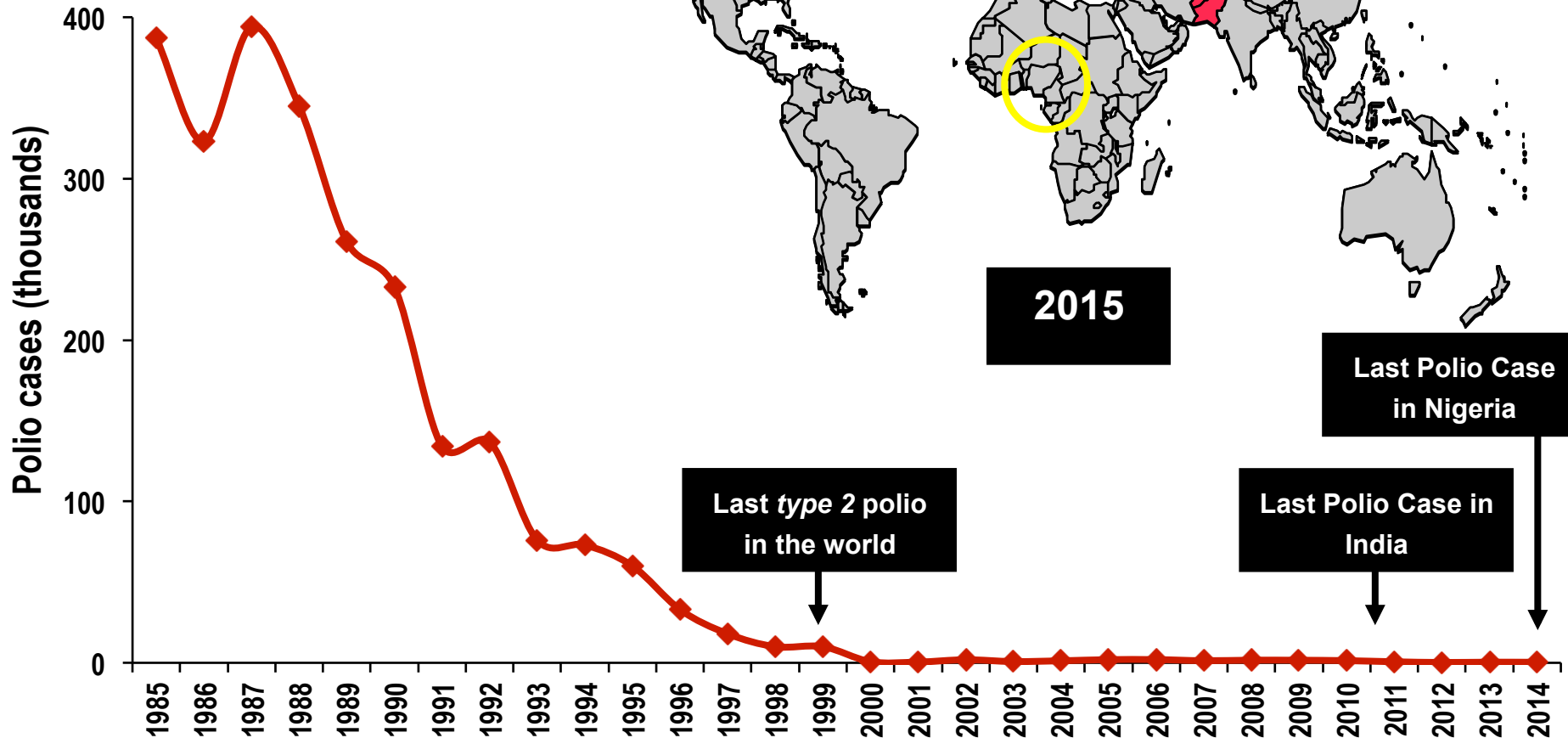
**2 Polio Endemic  
countries**

**2015**

**Last Polio Case  
in Nigeria**

**Last type 2 polio  
in the world**

**Last Polio Case in  
India**





# Certification of WPV2 Eradication



## Declaration

We, the members of the Global Commission for the Certification of Poliomyelitis Eradication, conclude today, 20<sup>th</sup> September 2015, that indigenous wild poliovirus type 2 has been eradicated worldwide.

Anthony Adams, Chair

Supamit Chunsuttiwat

Rose Gana F. Leke

Arlene King

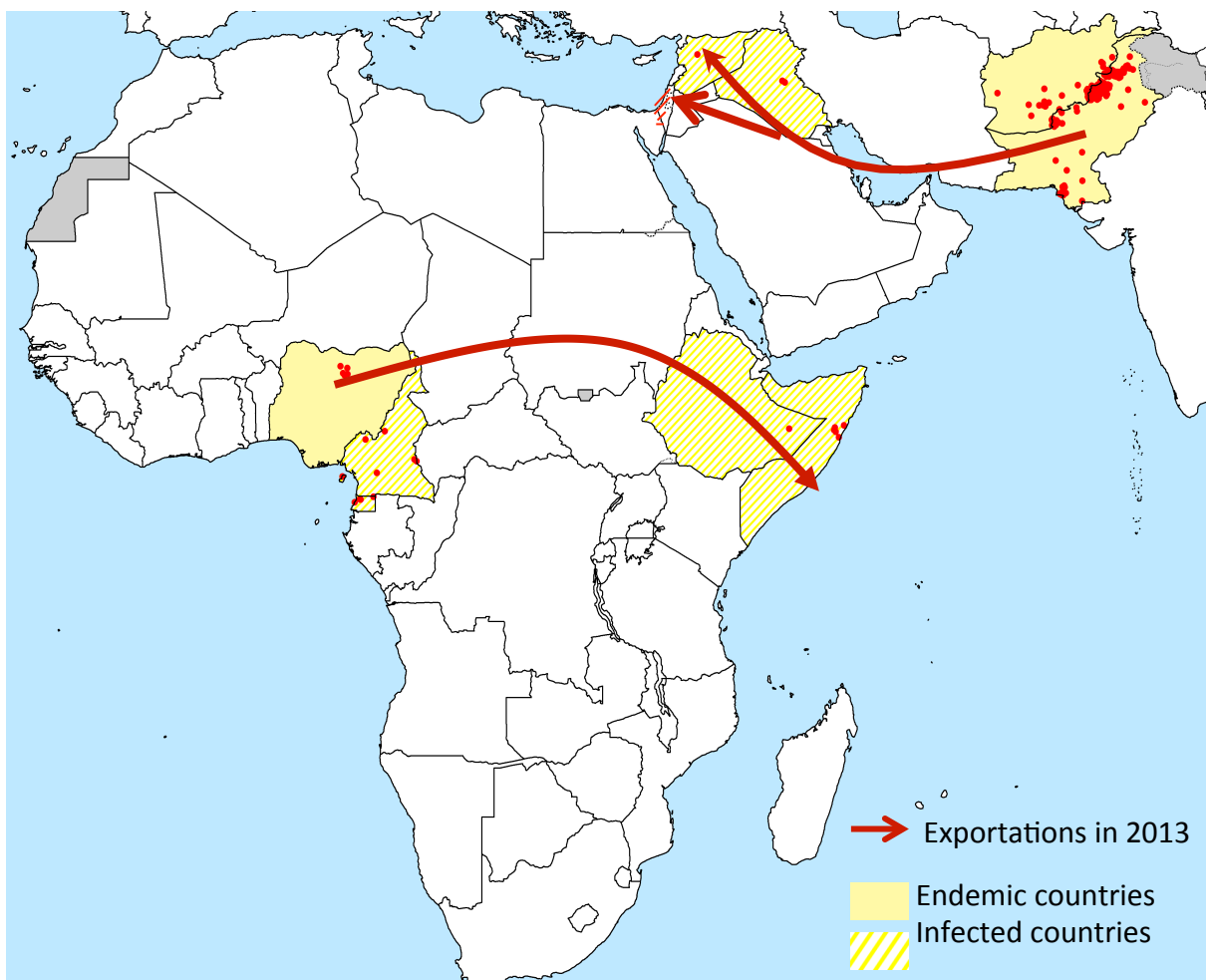
Yagob Al Mazrou

David M. Salisbury

*Bali, Indonesia*



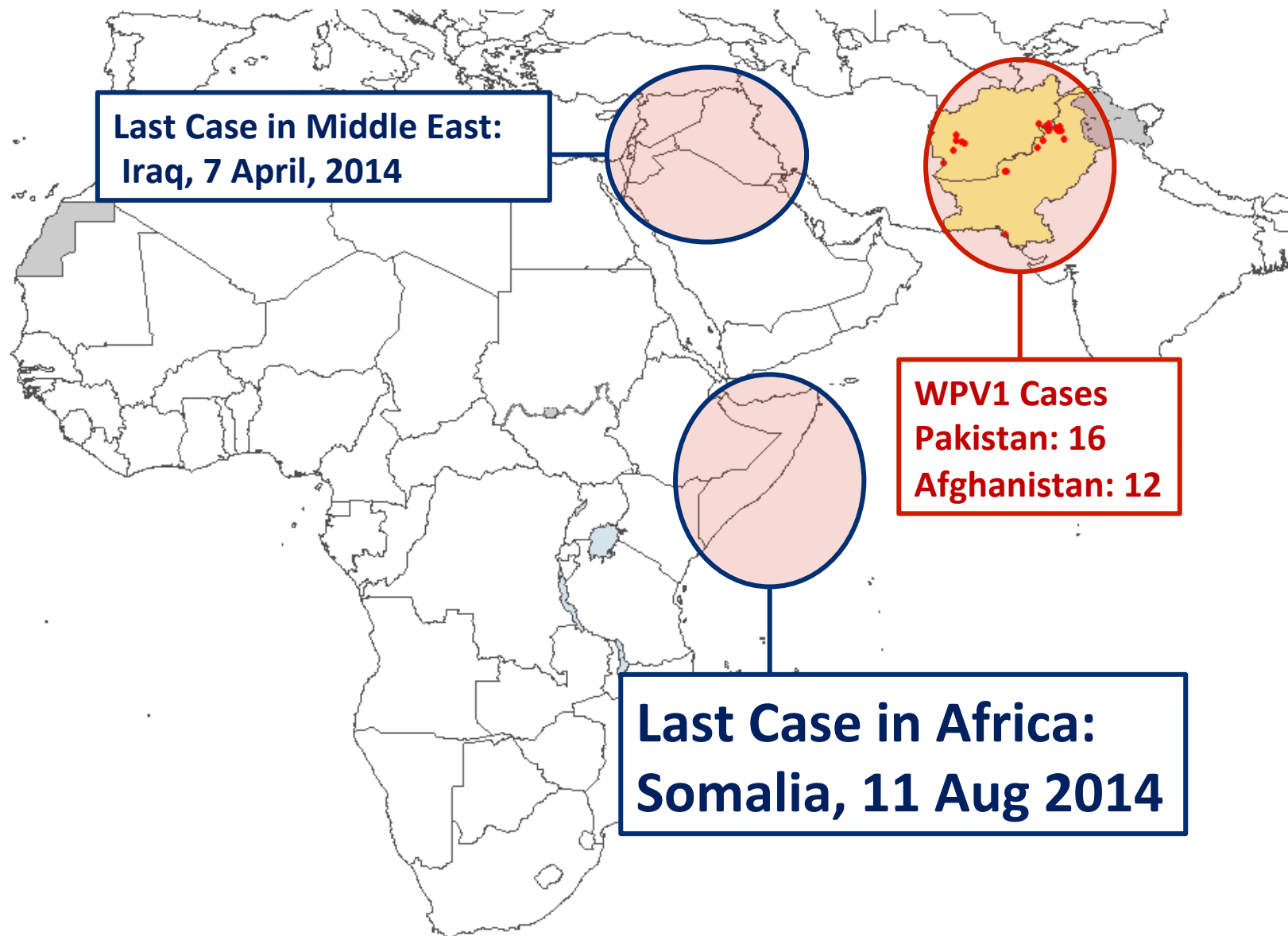
# Wild Poliovirus type 1 Cases, 2014



Country	2013 (Full year)	2014*
Pakistan	93	306
Afghanistan	14	28
Nigeria	53	6
Somalia	194	5
Cameroon	4	5
Equatorial Guinea	0	5
Iraq	0	2
Syria	35	1
Ethiopia	9	1
Kenya	14	0
<b>Total</b>	<b>416</b>	<b>359</b>

Israel = Env. positive isolates (2013 , N=136 ; 2014, N=14 , last 30 Mar 2014)  
 Gaza = Env. positive isolates (2013, N= 7 ; 2014, N=1, Jan )

# Wild Poliovirus Cases, Last 6 months



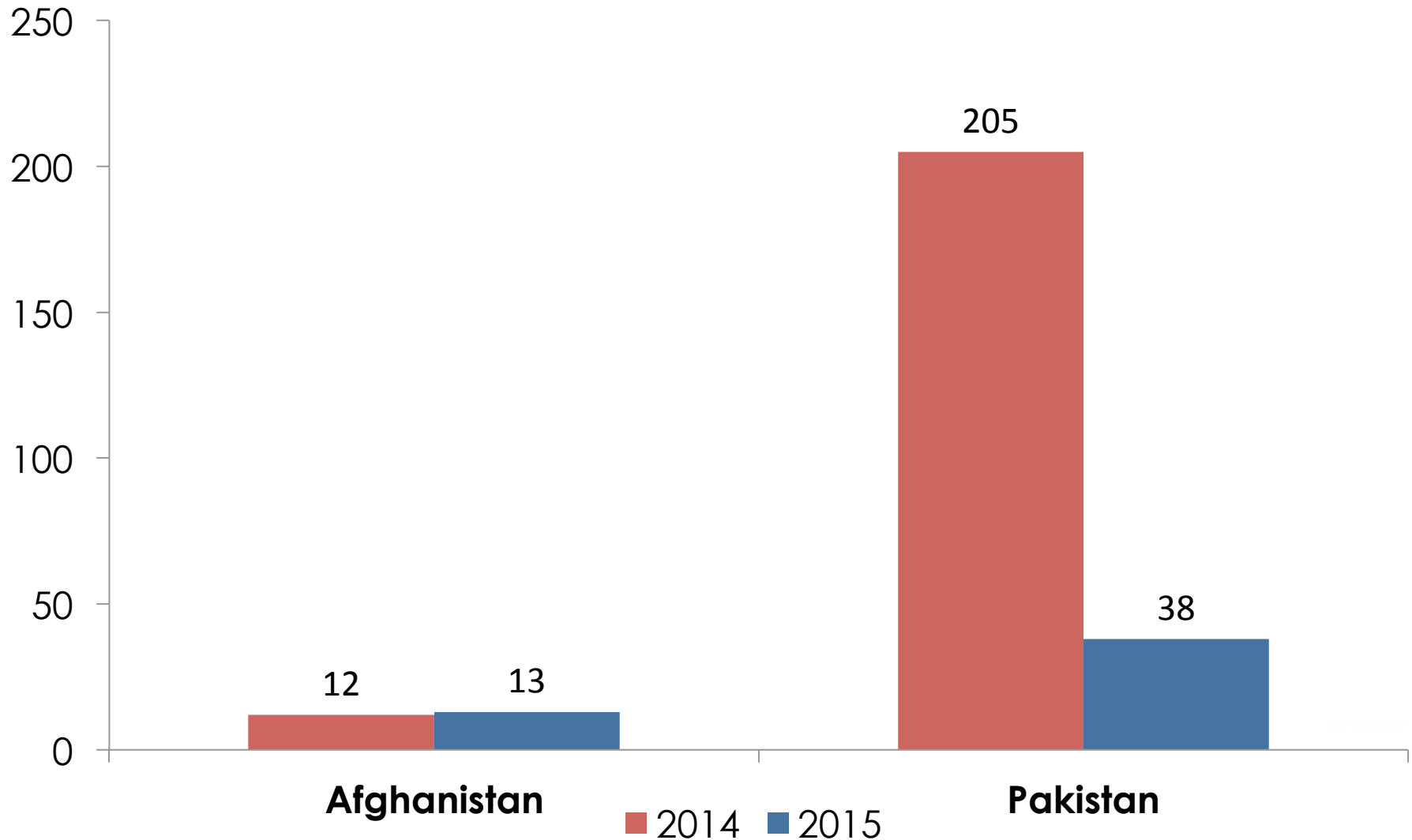
# WPV milestones and achievements (1)

- November 2012: Most recent case of WPV3
- July 2014: Most recent WPV case in Nigeria
- August 2014: Most recent WPV case in Africa
- Since August 2014: No WPV outside of Afghanistan & Pakistan
- All WPV outbreaks stopped

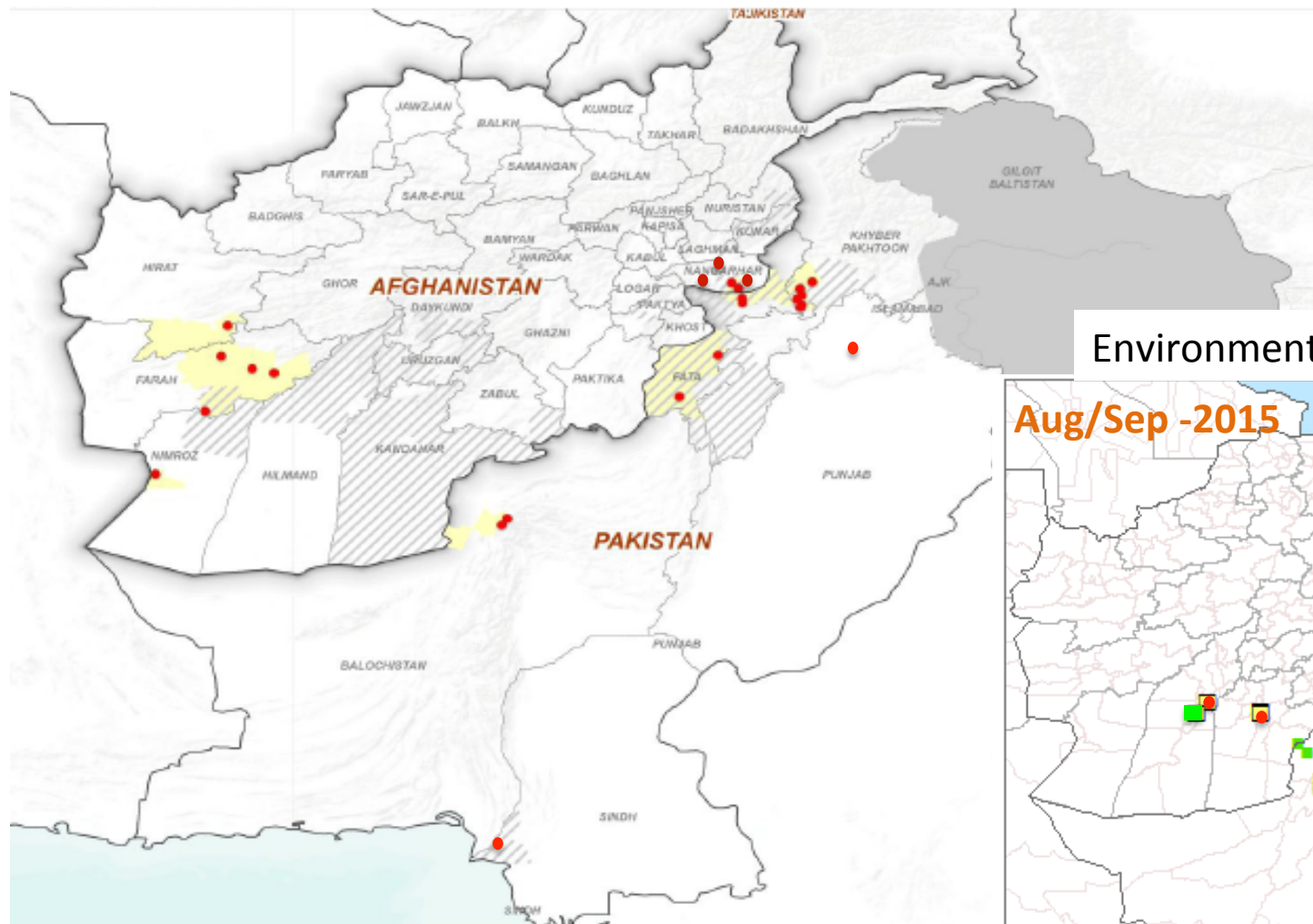
## WPV milestones and achievements (2)

- 20 September 2015: WPV2 eradication certified
- 25 September 2015: Nigeria removed from list of endemic countries by WHO

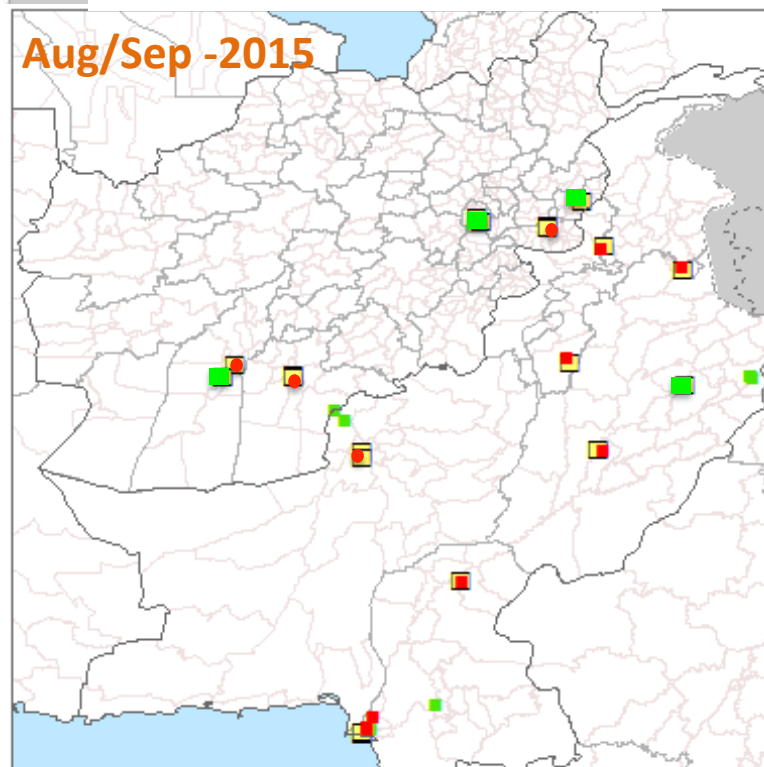
# WPV1 Cases, Afghanistan and Pakistan at 15 October, 2014 & 2015



# Wild Poliovirus – last 6 months



Environmental Surveillance



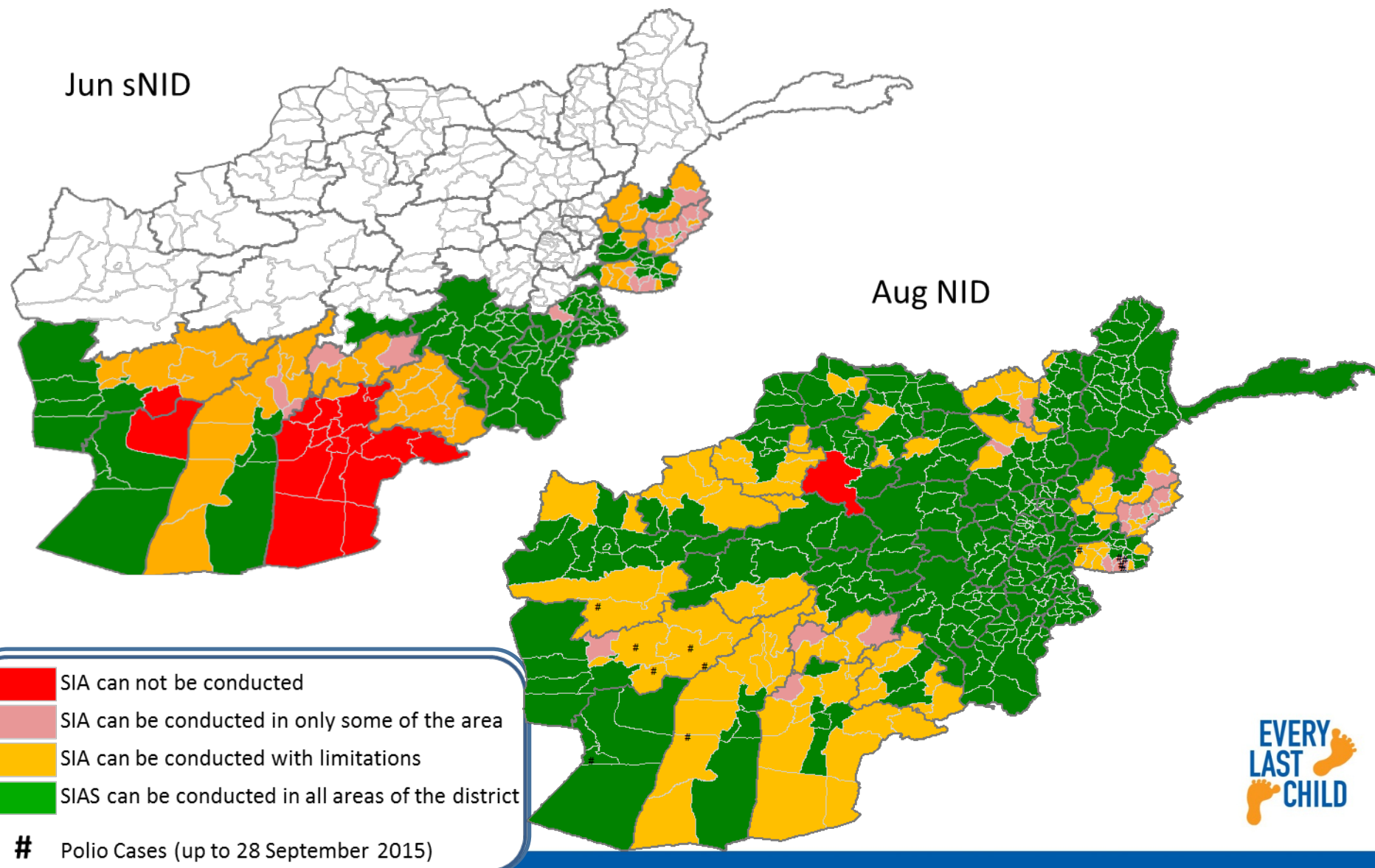
Data Source:  
Admin. Boundaries: World Health Organization  
Base Map: Esri, USGS, NOAA  
Map Production: Global Polio Eradication  
Initiative, World Health Organization

● Wild Poliovirus Type 1  
■ Infected districts

ACCESSIBLE  
AREAS  
ACCESSIBLE

# Accessibility during SIAs by Districts, Afghanistan

## June - August 2015





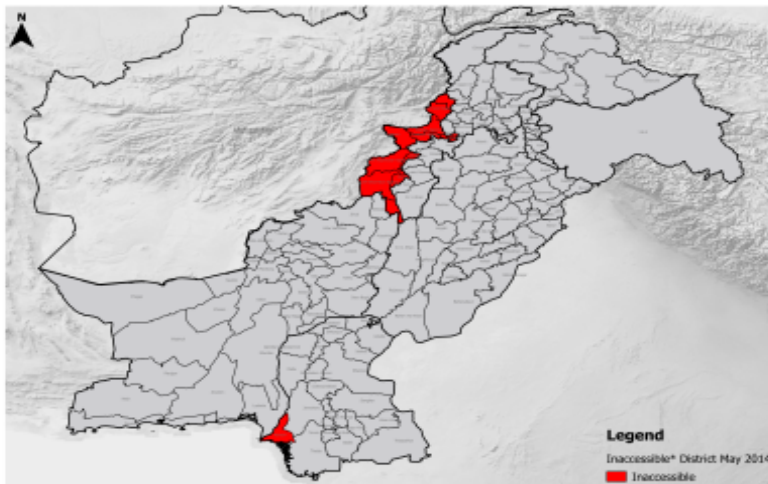
# Ensuring Progress in Afghanistan



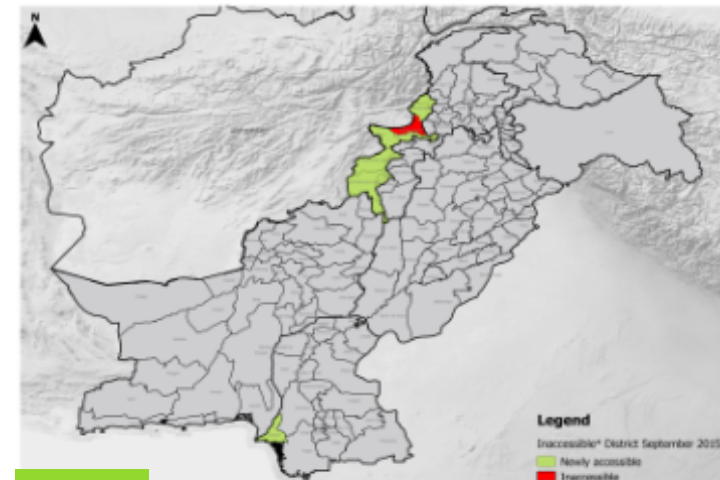
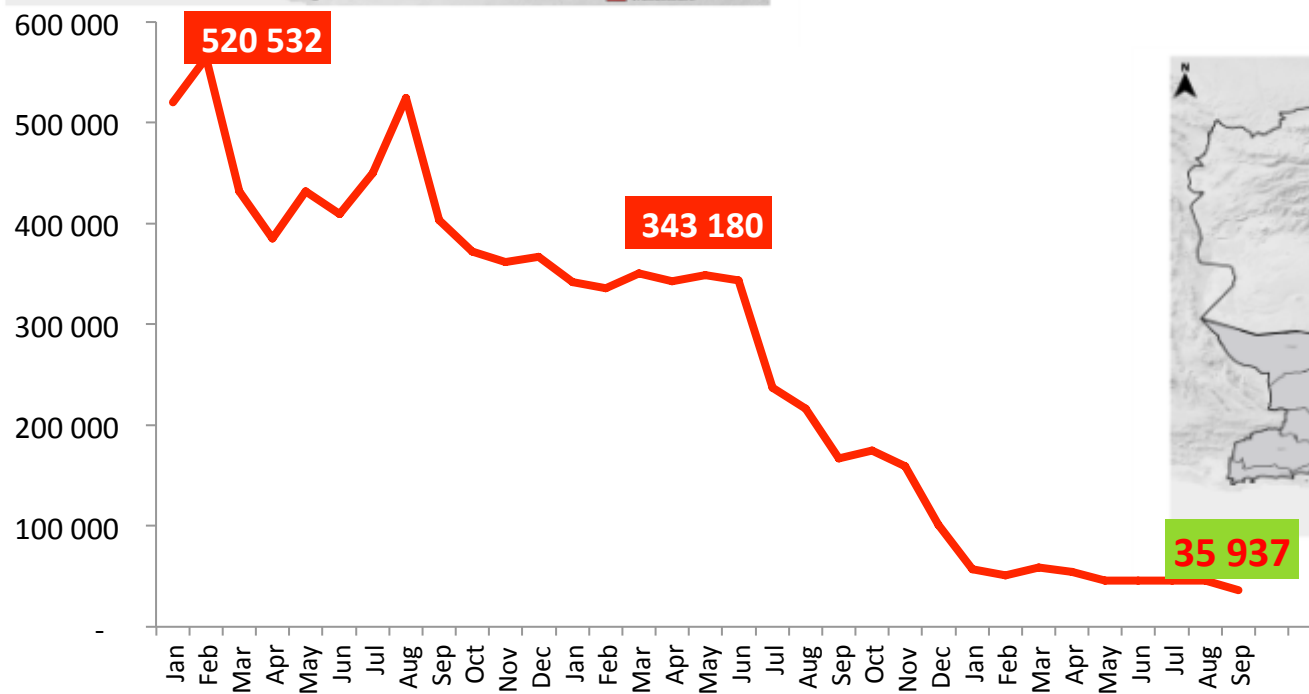
- Engagement of new leadership
- More rigor & innovation to reduce missed children in updated National Emergency Action Plan
- Emergency Operations Center - NEAP implementation
- Access through neutrality & dialogue with all sides

# Decline in Inaccessibility, Pakistan

## Jan 2013-Sep 2015



- Number of children in inaccessible areas reduced to <35k
- Priorities:
  - Accessing the remaining children
  - Maximizing the access opportunity (SIAs, IPV, health camps, CCPV)



2013

2014

2015

# Progress in Pakistan

- Intensified government commitment
- Emergency Operations Centres established
- Improved access in insecure areas
- Improved coordination with Army & security agencies
- Innovations to reach missed children
  - Female community volunteers, health camps, transit posts
- Focus on 12 high risk districts

# Overall Global Programme Context

- Strong progress, increasing momentum to completion
- Increasing public & donor confidence in the Endgame
- Strong political support
- Strong oversight by POB & GPEI partner coordination
- Sustained surge in recent outbreak zones
- Increasing concentration of resources in vulnerable areas

# World Health Assembly Resolution 2015

- Calls on members states to be ready for the withdrawal of OPV type 2 in April 2016 – including introduction of IPV & each of the additional criteria for preparedness
- Efforts required to:
  - stop endemic transmission
  - implement the temporary recommendations under the IHR
  - improve surveillance for poliovirus
  - strengthen outbreak preparedness
  - implement more rigorous outbreak response SOPs



# 2013-18 Strategic Plan: GPEI Mid-term review

Internal 'Midterm review' of progress against the plan, including assessment of total costs to reach certification

## **Outcome:**

Major Strategic priorities & focus on implementation:

- Addressing surveillance gaps in risk areas
- Tracking & reducing number of missed children
- Preventing, preparing & responding to outbreaks
- Accelerating destruction & containment of polioviruses in facilities

# Updated financial scenarios

Scenario:	1	2	3	4
	Optimistic	Intermediate (A)	Intermediate (B)	Pessimistic
Nigeria interrupts:	• 2014	• 2014	• 2014	• 2015
Pak/Afg. interrupt:	• 2015	• 2016	• 2017	• 2017
All other assumptions:	• Optimistic	• Intermediate	• Intermediate	• Pessimistic
Global interruption:	• 2015	• 2016	• 2017	• 2017
Global certification:	• 2018	• 2019	• 2020	• 2020
Post-certification costs:	• 2019-2025	• 2020-2026	• 2021-2027	• 2021-2027
	'13 – cert.	'13 – cert.	'13 – cert.	'13 – cert.
	Post-cert.	Post-cert.	Post-cert.	Post-cert.
	\$5.7B	\$7.0B	\$7.8B	\$8.8B
	\$0.8B	\$0.8B	\$0.8B	\$1.2B

<sup>1</sup> GPEI Strategic Plan period



# **POB Decision on Mid-term Review: New Timeline, New Budget**

- WPV interruption in Pakistan & Afghanistan likely during 2016
- Global certification of eradication delayed to 2019
- An additional \$1.5 bn required to complete polio eradication

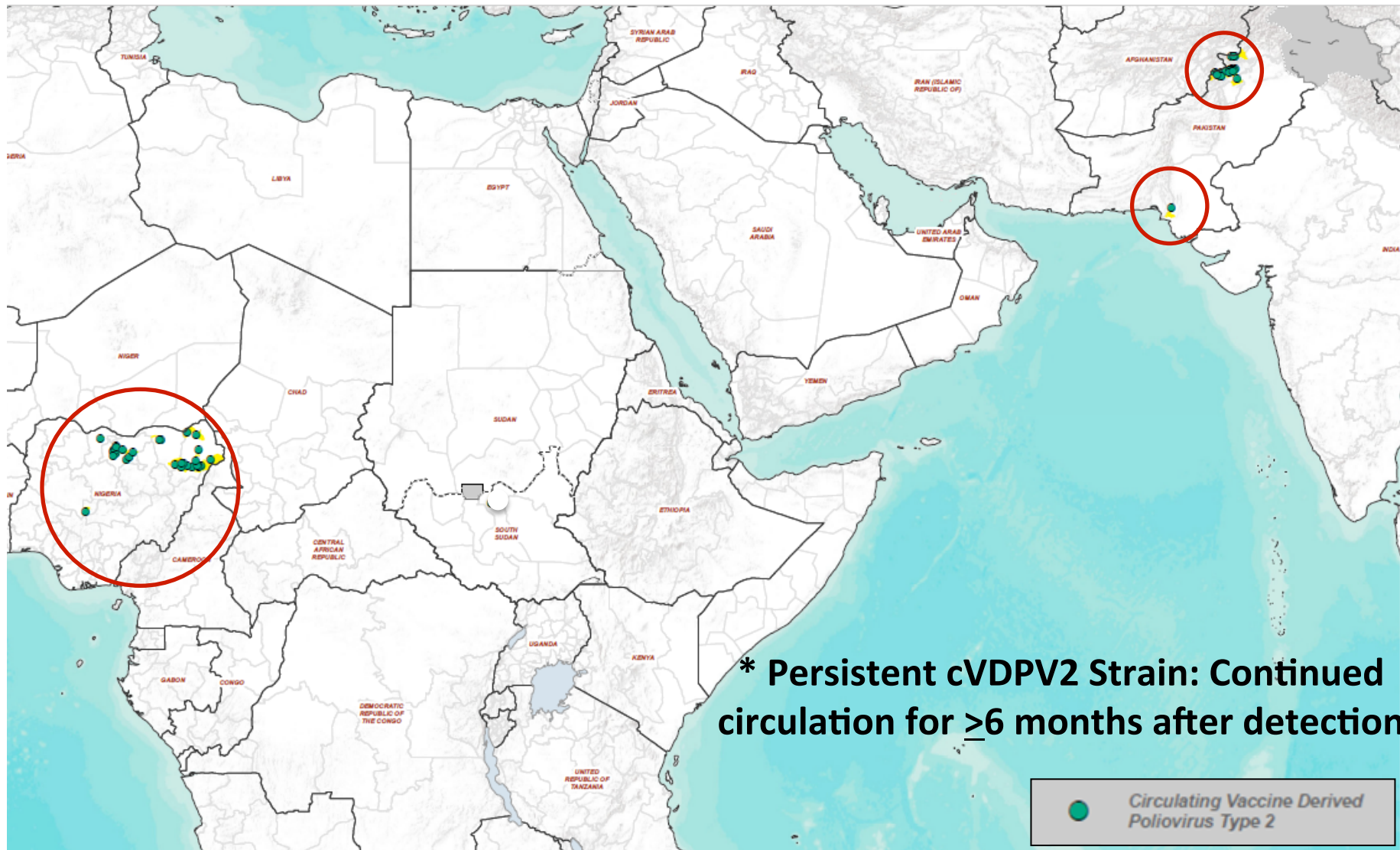
# Progress towards type 2 OPV (OPV2) withdrawal

# Key Questions addressed by SAGE WG

*September 2015*

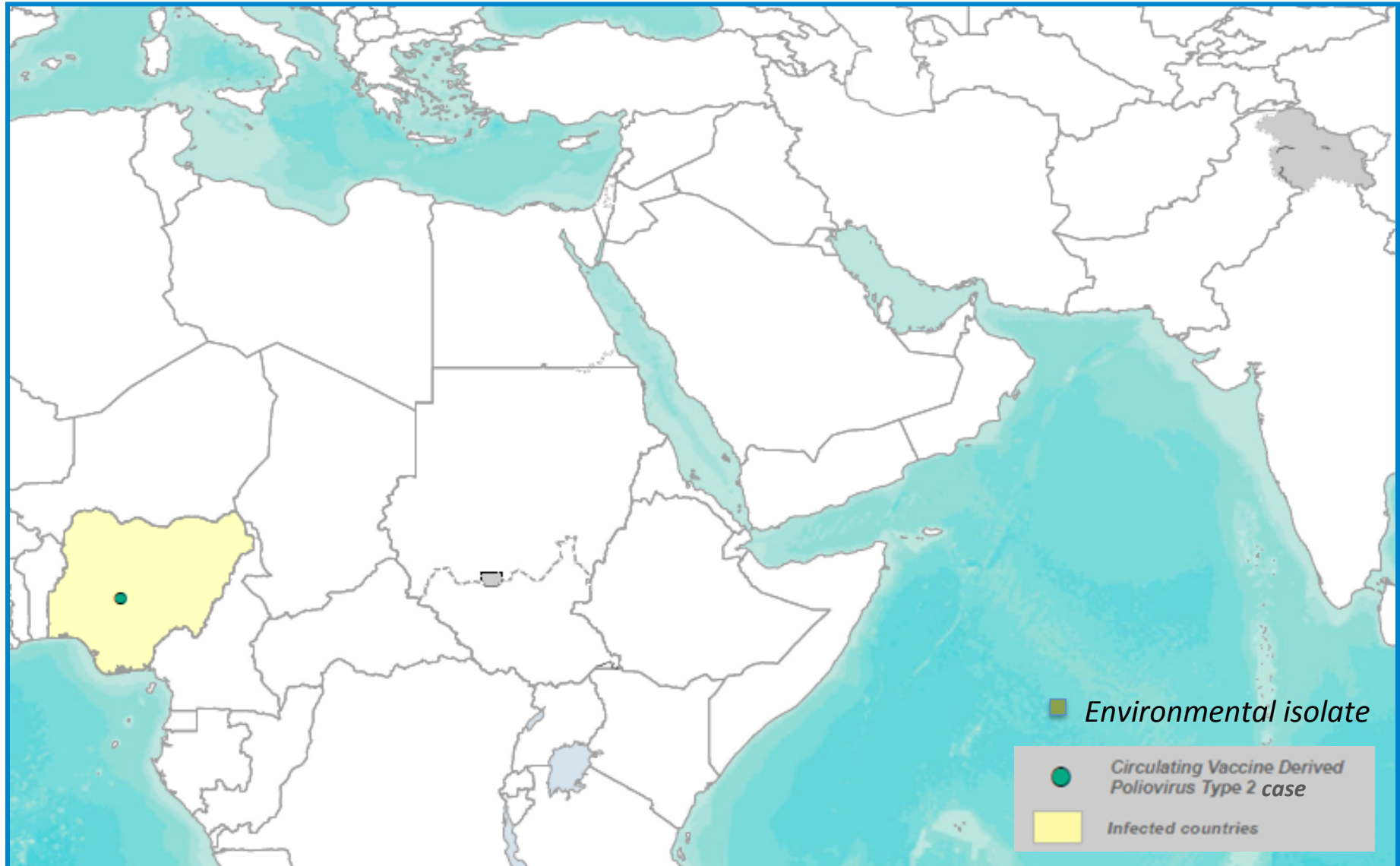
- Have persistent cVDPV2 stopped in Nigeria & Pakistan?
- Are strategies & plans in place to prevent emergence of cVDPV2?
- Will the current cVDPV2 be stopped urgently?
- Are preparedness criteria on track to enable OPV2 withdrawal?
- What are the risks of proceeding with OPV2 withdrawal in April 2016 or delaying it?

# Persistent\* cVDPV2 cases, 2014 - 2015

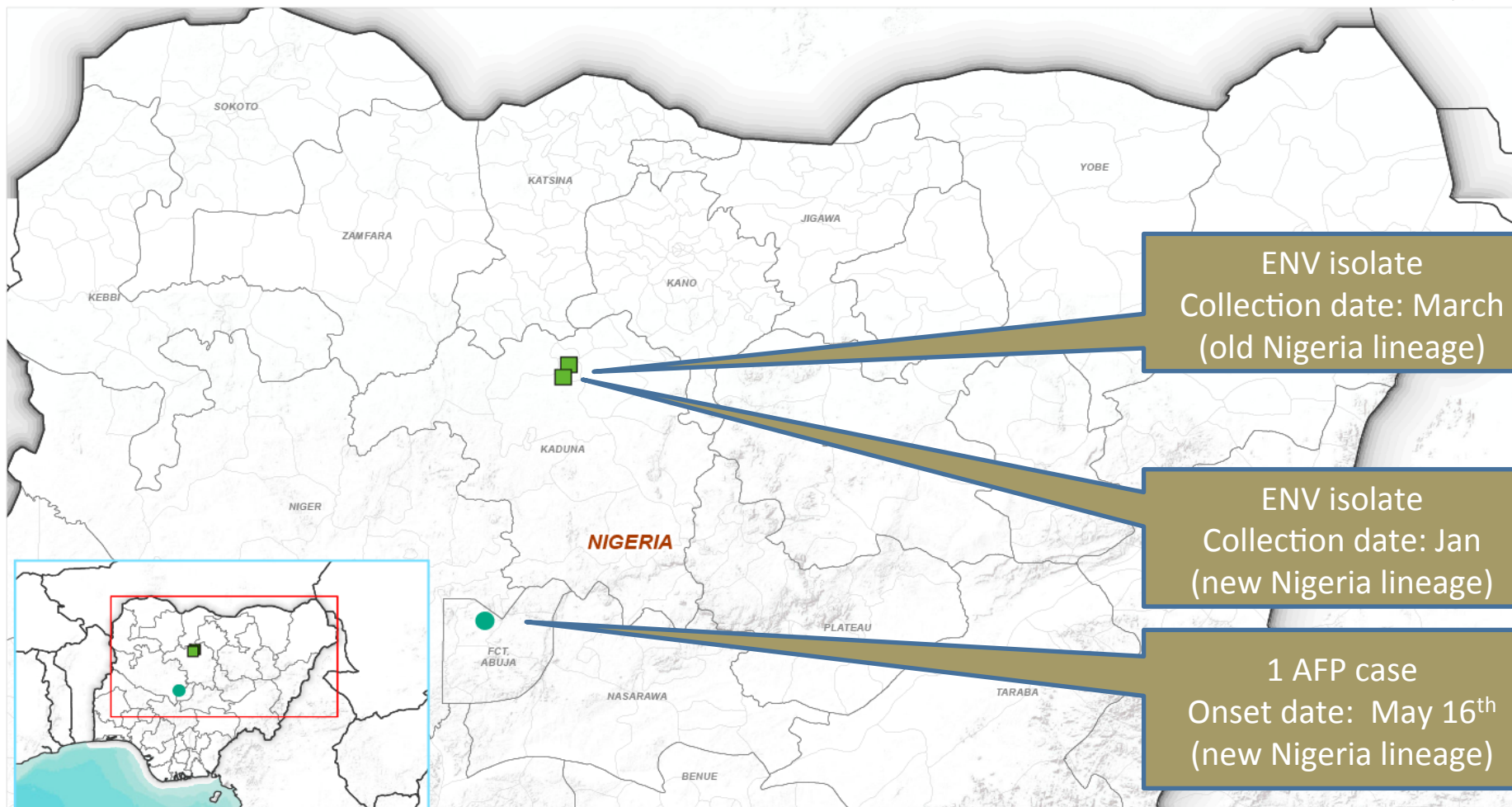


Data as of 15 October 2015

# Persistent cVDPV2, Previous Six Months



## Persistent cVDPV2 Cases & Positive Environmental Sites, Nigeria, 2015



Map Scale (A3): 1:3,000,453

1 cm = 30 km

Coordinate System: GCS WGS 1984  
Datum: WGS 1984  
Units: Degree

Data Source:

Admin. Boundaries: World Health Organization  
Base Map: Esri, USGS, NOAA  
Map Production: Global Polio Eradication  
Initiative, World Health Organization

■ cVDPV2 - Environmental sampling

● cVDPV2 - Cases

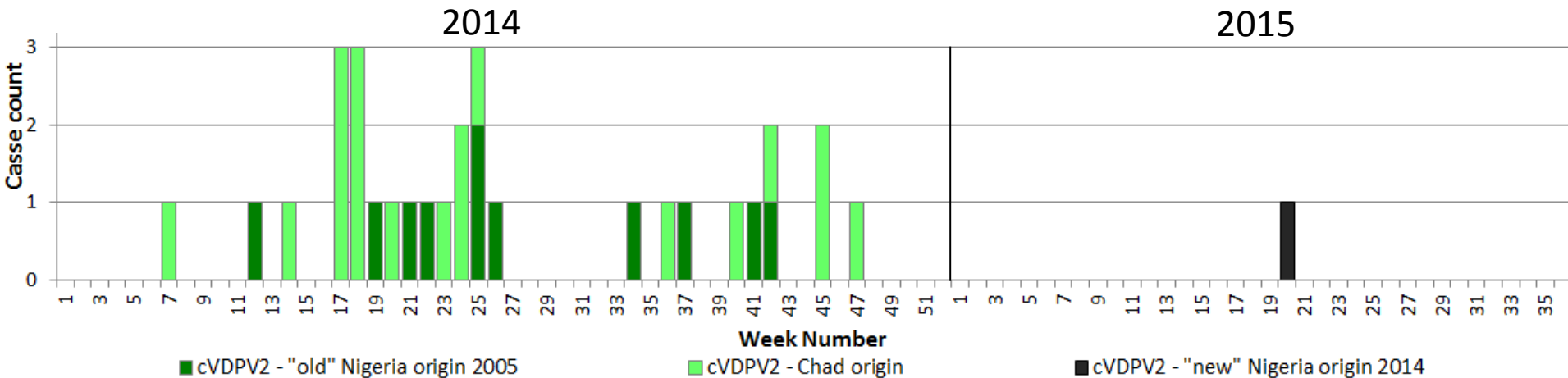
The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers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



# Cases of persistent cVDPV2, Nigeria by emergence group and week

Three separate cVDPV2 emergence groups:

1. 'old' Nigeria origin 2005 – most recent case, 14 Oct 2014
2. Chad origin – most recent case, 16 Nov 2014
3. 'new' Nigeria origin – most recent case, 16 May 2015





# Persistent cVDPV2 - Environmental Samples, Pakistan, 2015

No cVDPV2 case reported in 2015



Map Scale (A3): 1:7,000,000  
1 cm = 70 km

Coordinate System: GCS WGS 1984  
Datum: WGS 1984  
Units: Degree



Data Source:  
Admin. Boundaries: World Health Organization  
Base Map: Esri, USGS, NOAA  
Map Production: Global Polio Eradication Initiative, World Health Organization

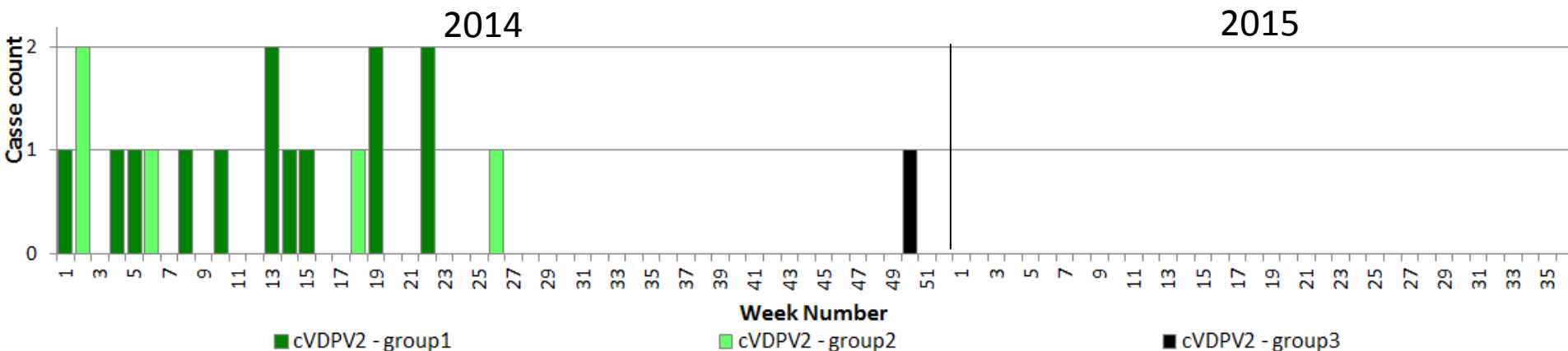
- cVDPV2 - Environmental sampling
- cVDPV2 - Cases

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 and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

# Cases of persistent cVDPV2, Pakistan by emergence group, and week

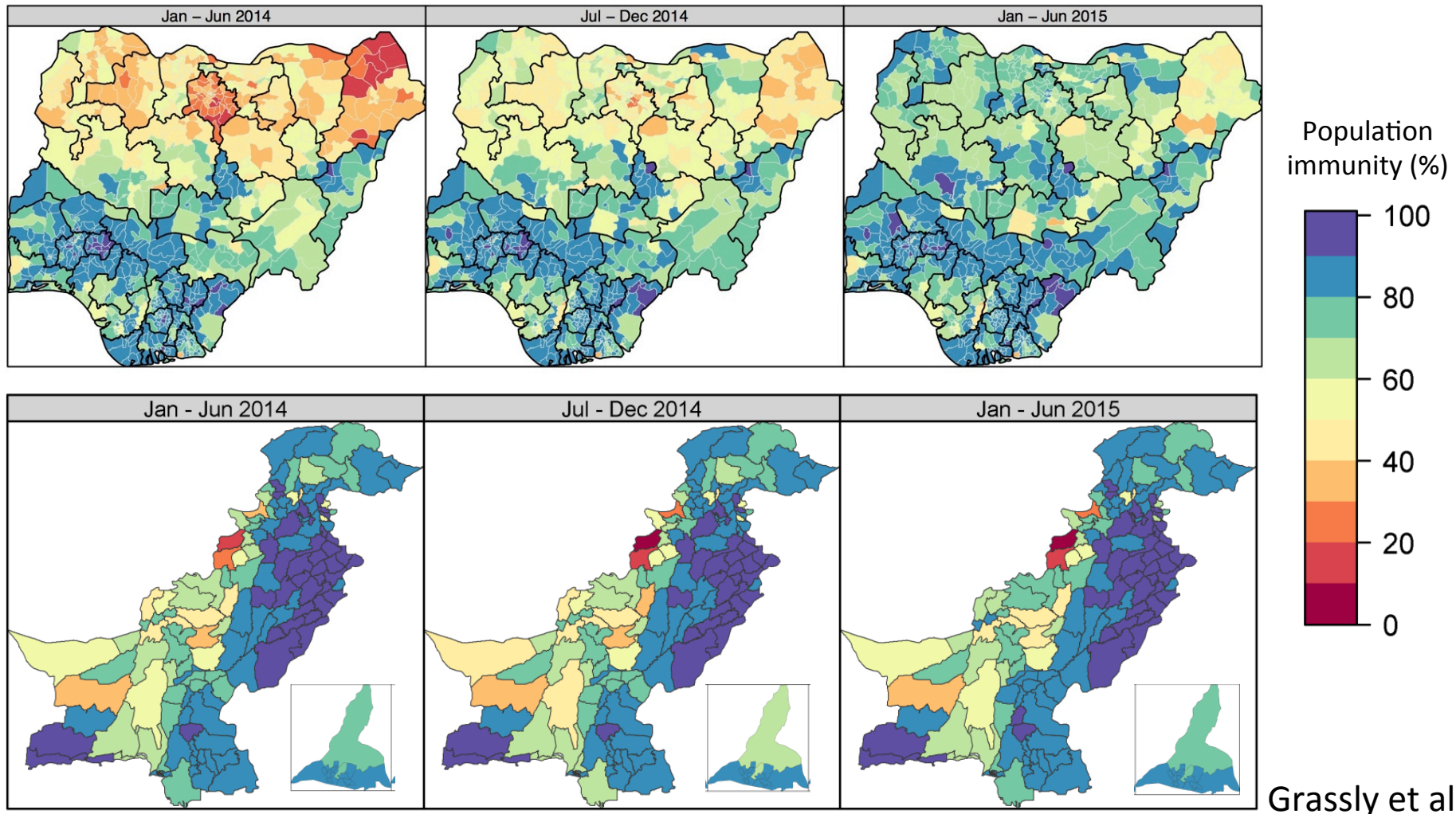
Three separate cVDPV2 emergence groups:

1. Group1 – most recent case, 27 May 2014
2. Group2– most recent case, 23 Jun 2014
3. Group3– most recent case, 13 Dec 2014



# Improvements in type 2 Polio Immunity, Nigeria & Pakistan, Jan 2014 – Jun 2015

## Estimates for Children 0-2 years



# Summary: Persistent cVDPV2

- Both Nigeria and Pakistan have eliminated well established transmission of highly mutated strains
- Overall type 2 population immunity has improved substantially following increase in quality and frequency of tOPV campaigns supplemented by IPV
- Recent persistent cVDPV2 strains emerged in specific pockets with remaining program gaps
- Both countries are aggressively addressing program quality and type 2 immunity gaps in such pockets
- Projected type 2 immunity much higher at the time of the switch (April 2016)

# Preventing Emergence of VDPV2

# Strategies to Prevent cVPDV2 Emergence

- Enhanced detection & close tracking of all VDPV2
- New more sensitive definition for cVDPV
- Immediate immunization response to any VDPV2
- Extensive schedule of planned tOPV campaigns in countries at risk

# VDPV2 tracking, 2014 to Oct 2015

Report date: 19 October 2015

Year / Month

Affected Country		Source	2014												2015									
			Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.
1	Chad	case													X									
2	Guinea	case								X											X			
3	Egypt	case				X																		
		ENV									X					X				X				
4	Ethiopia	case											X				X							
5	DRC	case								X					X						X			
6	India	case	X									X				X								
		ENV	X			X	X																	
7	Iraq	case																		X				
8	Israel	ENV					X				X													
9	Myanmar	case				X																		
10	Nigeria	case			X	X																		
		ENV											X		X	X	X							
11	Pakistan	case							X				X		X	X						X		
		ENV			X	X	X								X			X		X	X			
12	Philippines	case												X										
13	South Sudan	case																X						
14	Turkey	case													X									
15	Uganda	case							X	X														
16	Ukraine	case	X						X															
		ENV																						

X At least one cVDPV2 reported per given month

X At least one VDPV2 reported per given month



# VDPV2 Detection in 2014-15

- 16 countries have detected 49 separate emergences of VDPV2 in AFP and environmental surveillance samples
- Most VDPV2 with 6-9 nt changes, all <15 nt
- Only 4 strains evolved into cVDPV2: Nigeria, Pakistan, South Sudan and Guinea

# Preventing VDPV2 Emergence: Extensive tOPV SIAs

## Sept 2015-March 2016

Transmission zone / Country	2015				2016		
	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Afghanistan		100%			50%		100%
Pakistan		40%					100%
India		0%			100%	100%	0%
West/Central Africa							
Nigeria	45%	45%			45%	100%	100%
Chad	100%	100%	50%	0%		100%	100%
Niger		70%		50%		100%	100%
Mali	50%	50%	0%	0%		50%	100%
Burkina Faso	100%	50%	0%	0%		100%	100%
Benin	100%	100%	0%	0%		100%	100%
Cameroon	100%	0%	60%	0%		100%	100%
DR Congo	50%	0%	60%	0%		60%	100%
Central African Republic		0%	50%	50%		100%	100%
Gabon	100%	0%	0%	0%		100%	100%
Equatorial Guinea	100%	100%	0%	0%		100%	100%
Congo		0%	0%	0%		100%	100%
Liberia	100%	0%	0%	0%		100%	100%
Sierra Leone	100%	0%	0%	0%		100%	100%
Guinea	100%	0%	0%	0%		100%	100%
Horn of Africa							
Somalia		100%				100%	100%
Ethiopia	33%	0%	15%	20%		33%	100%
Kenya	20%	0%	70%	0%		20%	100%
South Sudan	0%	33%	100%	100%		33%	100%
Sudan	0%	65%		0%			50%
Uganda	50%	0%	0%	50%		50%	100%
Yemen	100%	0%	50%	0%		100%	100%
Middle East							
Syria	100%	0%	0%	0%		100%	100%
Iraq	50%	0%	50%	0%			100%
Other							
Ukraine	0%	0%	0%	0%			50%
Madagascar						100%	100%

# Summary

- Program has developed robust plans to reduce risk of emergence and stop continuation of any VDPV2 that emerges
- Most new emergences do not continue as cVDPV2
- Risk will remain high in complex emergencies & conflict

**The ultimate solution is to interrupt the source by stopping use of type 2 containing OPV**

# Confirming OPV2 withdrawal in April 2016

# Potential Risks of switch in April 2016

## 1. Epidemiologic risks

- Current cVDPV2 outbreaks
- One year less IPV coverage in countries newly using IPV, compared to switch delay to April 2017

## 2. Programmatic risk

- GPEI stretched by need to stop WPV in Afghanistan and Pakistan on simultaneous timeframe to switch

# Risks if switch is delayed

## 1. Epidemiologic risks

- Continued risk of VDPV2 emergence and persistence in complex emergencies;
- type 2 VAPP (estimated 100-200 cases/year)

## 2. Programmatic risks

- Loss of momentum, difficult to regain
- Uncertain operating conditions for stopping cVDPV2
- Disruption in tOPV supply, countries have ordered bOPV
- Lower detection and response capacity post-switch

## 3. Political Risks: loss of credibility & political support

## 4. Financial Risks for GPEI: Loss of credibility with donors

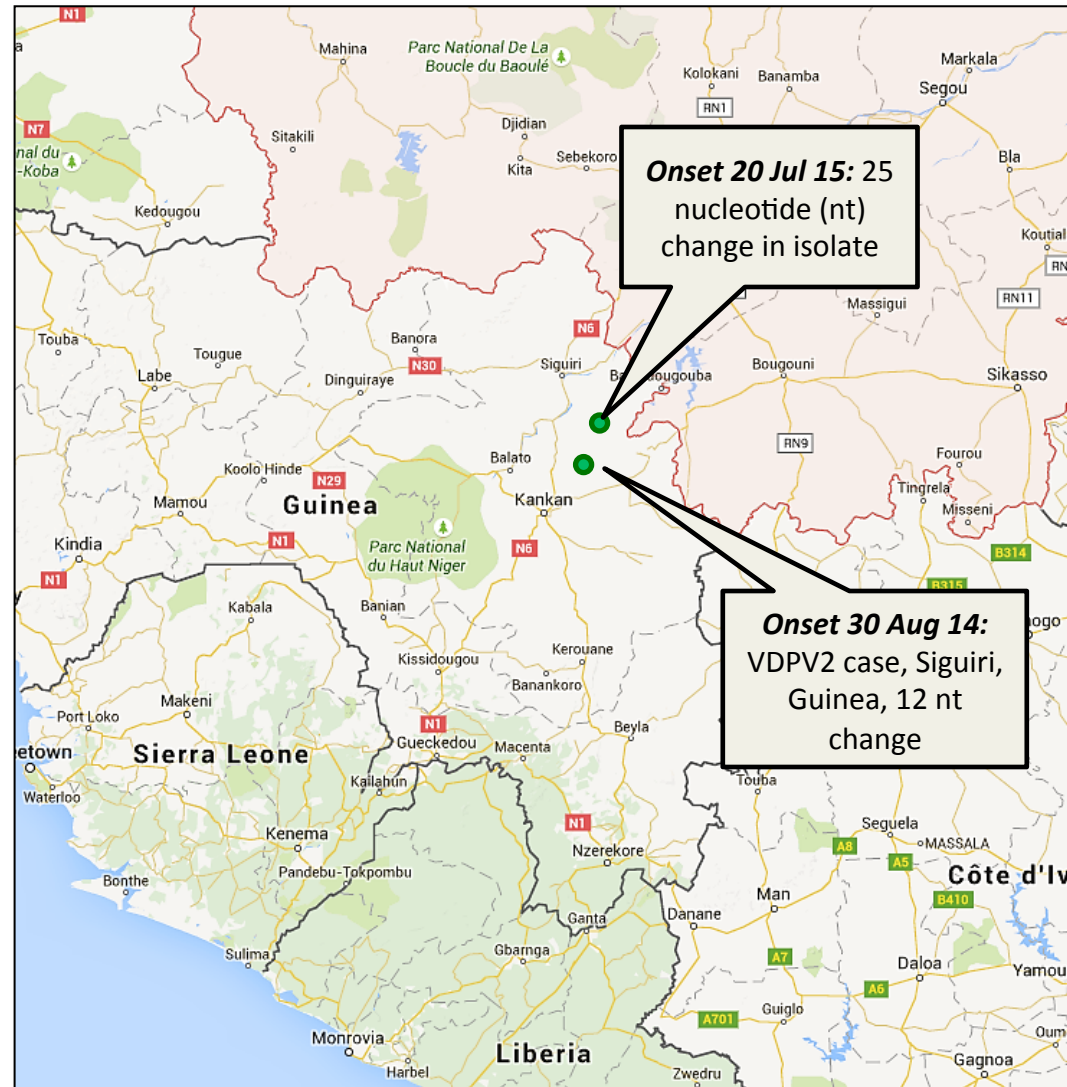
# Priorities highlighted by SAGE Polio WG

- Robust response to interrupt cVDPV2 outbreaks in Guinea and South Sudan – within 120 days
- Stronger management of type 2 polio risks in Pakistan through use of more tOPV & IPV
- Reduce facility-associated type 2 poliovirus risks through accelerating GAP III implementation



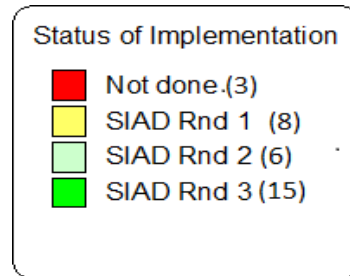
# cVDPV2 Outbreak Response, Guinea

- Outbreak response ongoing, includes adjoining Mali – 2 tOPV SNIDs implemented; additional SIAs planned
- No further detection in Guinea or Mali
- 10 AFP cases in Siguri pending lab results
- Efforts to enhance surveillance and resume testing of AFP samples from Liberia & Sierra Leone

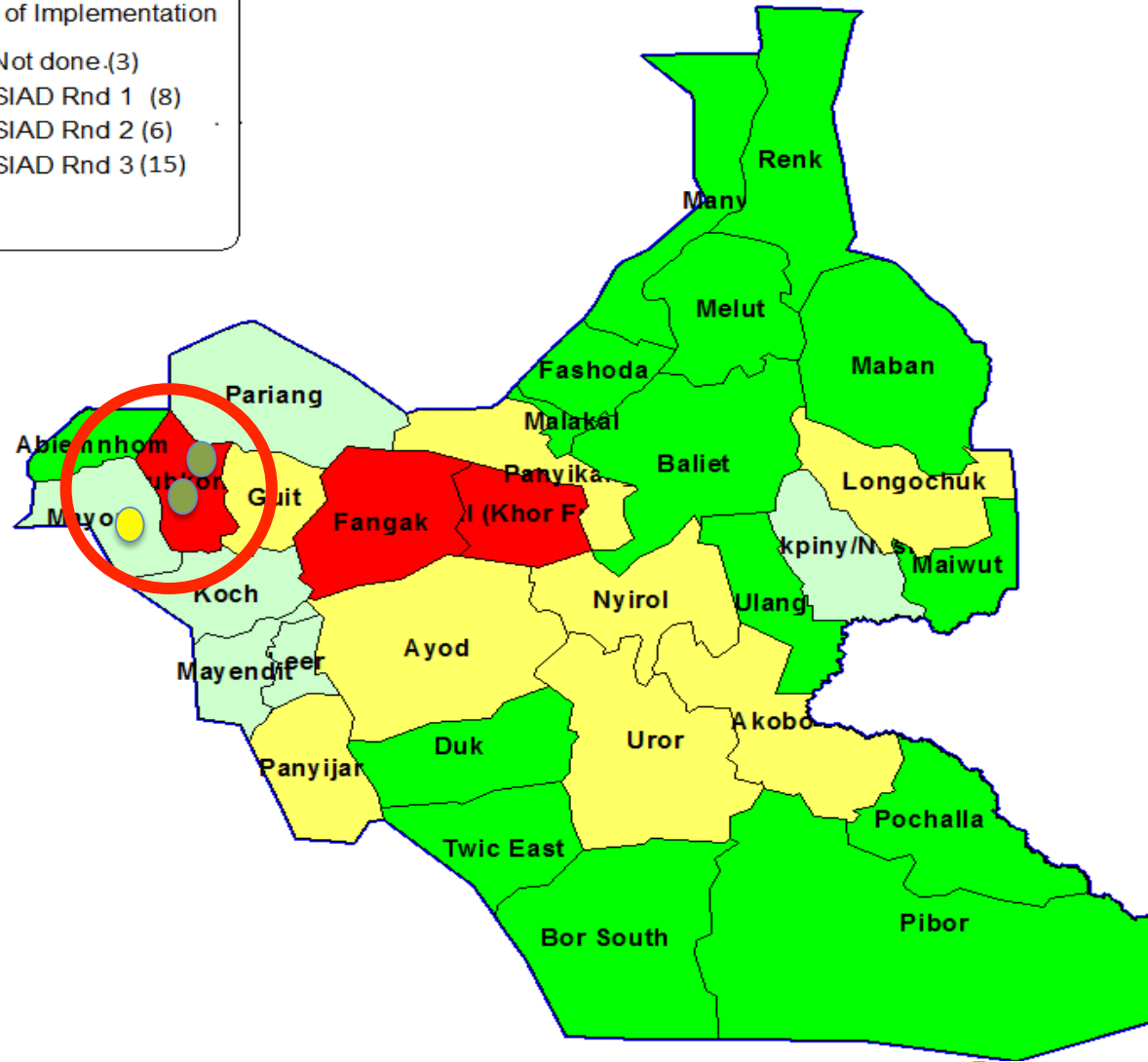


# cVDPV2 Outbreak Response South Sudan

- Onset Sept 2014
- Onset April 2015



- Multiple tOPV SIAs, surveillance intensified
- Additional 4 SIAs Sept-Dec 2015
- No further detection of Sept 2014 or Apr 2015 strain



# **Revised SIA schedule in Pakistan**

## **October 2015 – March 2016**

- Oct 2015: tOPV SNID expanded from 35% to 50%
- Feb 2016: tOPV SNID changed from bOPV & scope expanded to 50%
- Feb 2016 SNID: supplemented with IPV in key areas
- Mar 2016: tOPV NID
- Additional measures:
  - Continued vaccination of missed children after SIAs
  - Immediate response to any VDPV2
  - Routine immunization outreach with IPV

# Recent Reduction in IPV Supply & its Management

# Impact of Reduction in IPV Supply

- Substantial deficit on top of a constrained supply
- Introduction in some low cVDPV2 risk (tiers 3 & 4) countries will have to be delayed
- No impact on risk of VDPV2 emergence & circulation, which is being managed by extensive tOPV SIAs, enhanced VDPV2 detection and response before switch
- Only a fraction (<5%) of the global birth cohort will be delayed for 3 months after switch in low risk countries
- Main impact is programmatic & political
- Will require clear communication, engagement and coordination with countries

# Summary

- Persistent cVDPV2 appear to be stopped
- Current cVDPV2 in Guinea and South Sudan must be interrupted by end 2015
- Robust strategies in place to reduce risk of new VDPV2 emergence & circulation
- Switch preparedness criteria nearly all met
  - Accelerate destruction & containment of PVs in facilities
  - Ensure introduction of IPV in tier 1 & 2 risk countries
- Delaying OPV2 cessation: more risky & disruptive