The Polio Endgame

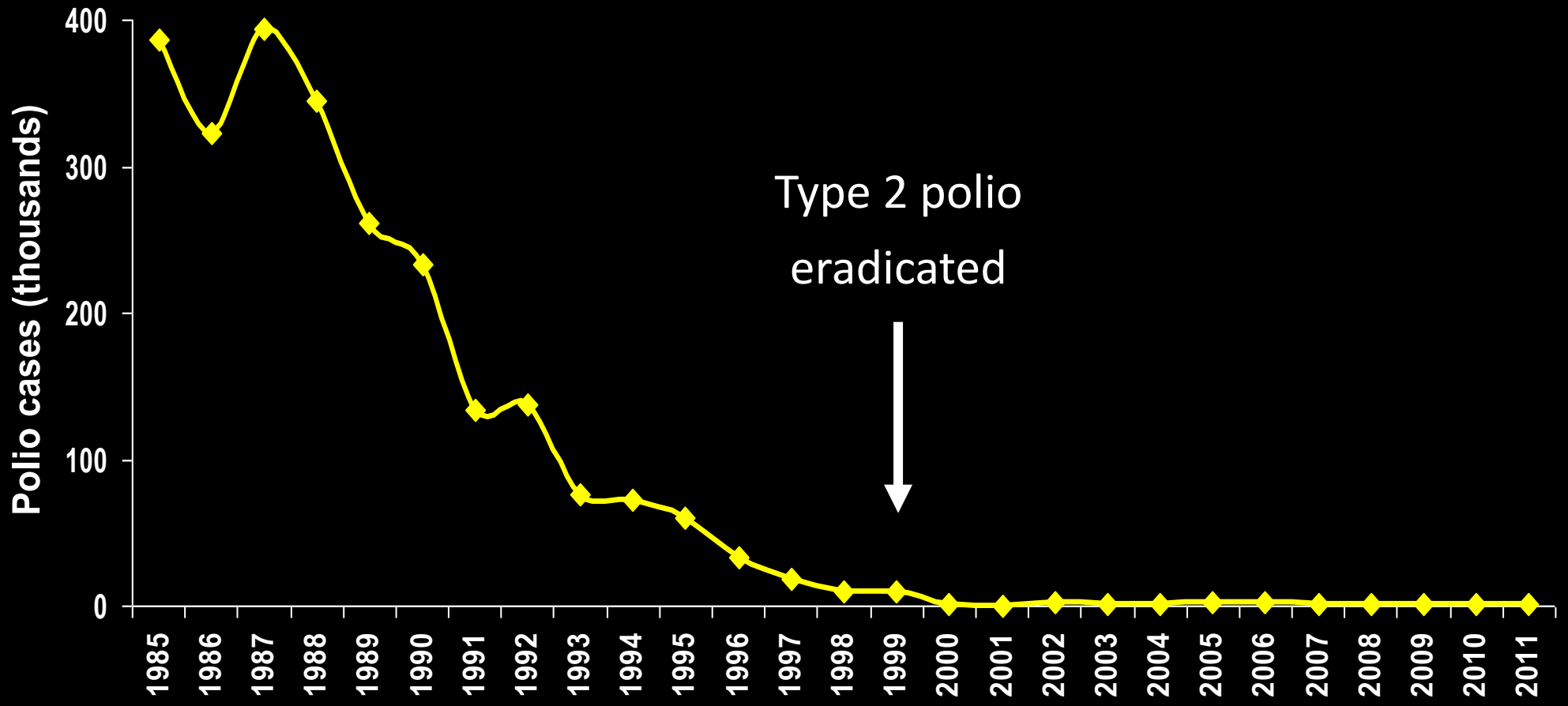
2013-2018

World Health Organization

- context
- the *Endgame Plan*
- implications for DCVMN

Context

Polio-paralyzed children, 1988-2011



Rukshar Khatoon
West Bengal, India
January 2011

Bivalent OPV (1&3)

Last type 2 wild poliovirus: 1999

however……

250-500 VAPP cases/year

(40% due to Sabin type 2)

circulating Vaccine-Derived Poliovirus Outbreaks (cVDPVs), 2000-2011

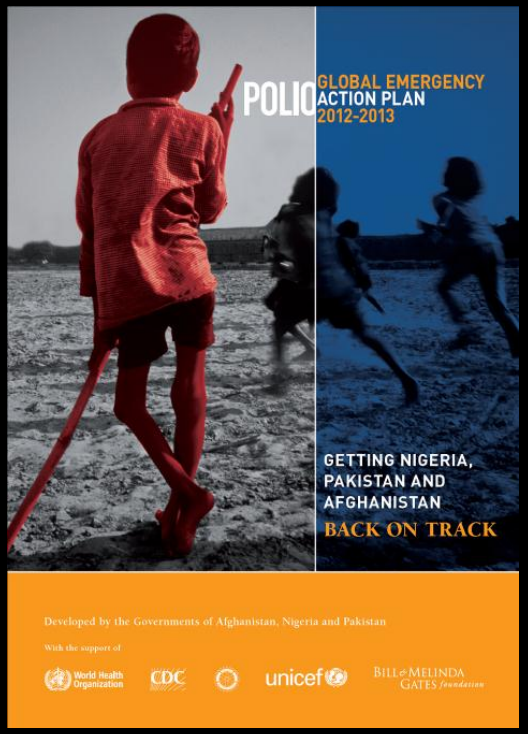
14 countries have had a type 2 cVDPV

World Health Assembly

25 May 2012

"DECLARES polio eradication an emergency...

...urges DG/WHO rapidly finalize a polio endgame plan".



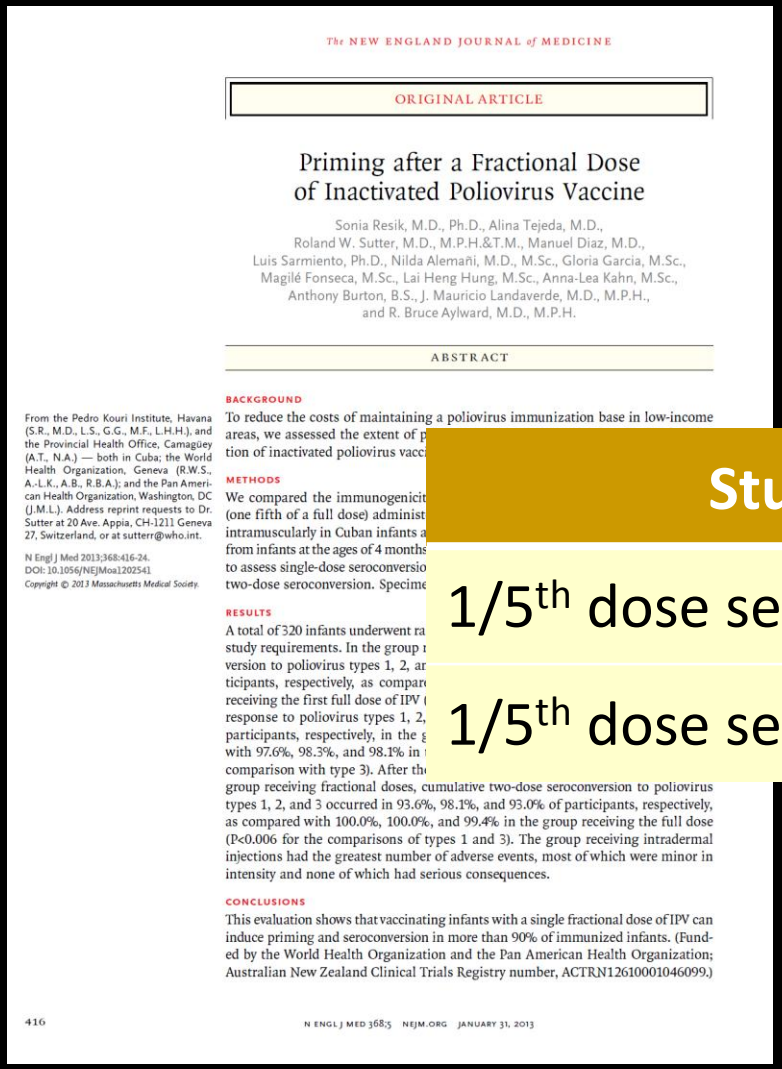
World Health Assembly:

2008 synchronize OPV cessation

2012 begin with OPV 2 cessation

The key to the endgame:

'affordable' IPV



The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Priming after a Fractional Dose of Inactivated Poliovirus Vaccine

Sonia Resik, M.D., Ph.D., Alina Tejeda, 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.

ABSTRACT

BACKGROUND

To reduce the costs of maintaining a poliovirus immunization base in low-income areas, we assessed the extent of p tion of inactivated poliovirus vacc

METHODS

We compared the immunogenicit (one fifth of a full dose) administ intramuscularly in Cuban infants a from infants at the ages of 4 months to assess single-dose seroconversio two-dose seroconversion. Specime

RESULTS

A total of 320 infants underwent ra study requirements. In the group r version to poliovirus types 1, 2, ar ticipants, respectively, as compar receiving the first full dose of IPV (response to poliovirus types 1, 2, participants, respectively, in the g with 97.6%, 98.3%, and 98.1% in t comparison with type 3). After th group receiving fractional doses, cumulative two-dose seroconversion to poliovirus types 1, 2, and 3 occurred in 93.6%, 98.1%, and 93.0% of participants, respectively, as compared with 100.0%, 100.0%, and 99.4% in the group receiving the full dose ($P<0.006$ for the comparisons of types 1 and 3). The group receiving intradermal injections had the greatest number of adverse events, most of which were minor in intensity and none of which had serious consequences.

CONCLUSIONS

This evaluation shows that vaccinating infants with a single fractional dose of IPV can induce priming and seroconversion in more than 90% of immunized infants. (Funded by the World Health Organization and the Pan American Health Organization; Australian New Zealand Clinical Trials Registry number, ACTRN12610001046099.)

From the Pedro Kouri Institute, Havana (S.R., M.D., L.S., G.G., M.F., L.H.H.), and the Provincial Health Office, Camagüey (A.T., N.A.) — both in Cuba; the World Health Organization, Geneva (R.W.S., A.-L.K., A.B., R.B.A.); and the Pan American Health Organization, Washington, DC (J.M.L.). Address reprint requests to Dr. Sutter at 20 Ave. Appia, CH-1211 Geneva 27, Switzerland, or at sutterr@who.int.

N Engl J Med 2013;368:416-24.
DOI: 10.1056/NEJMoa1202541

Study Summary	PV type 2
1/5th dose seroconversion	63%
1/5th dose seroconversion + priming	99%

World Health Organization

Organisation mondiale de la Santé

Weekly epidemiological record
Relevé épidémiologique hebdomadaire

4 JANUARY 2013, 88th YEAR / 4 JANVIER 2013, 88e ANNÉE
No. 1, 2013, 88, 1–16
http://www.who.int/wer

Contents

Meeting of the Strategic Advisory Group of Experts on immunization, November 2012 – conclusions and recommendations

Réunion du Groupe stratégique consultatif d'experts sur la vaccination, novembre 2012 – conclusions et recommandations

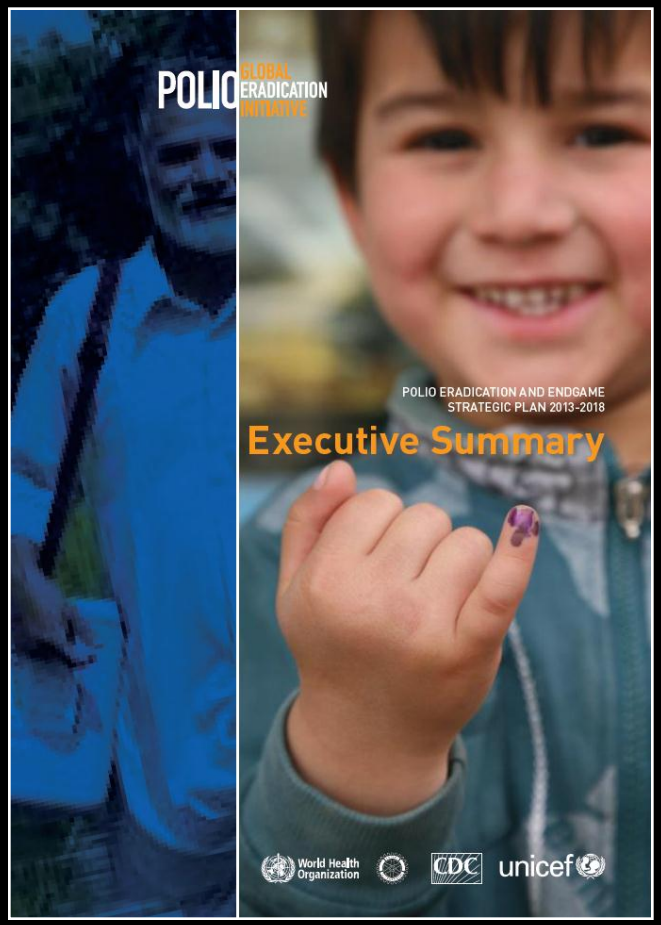
SAGE recommended that all countries should introduce at least 1 dose of IPV in their routine immunization programme to mitigate the risks associated with the withdrawal of OPV2. SAGE accepted the detailed scientific

The Polio Endgame

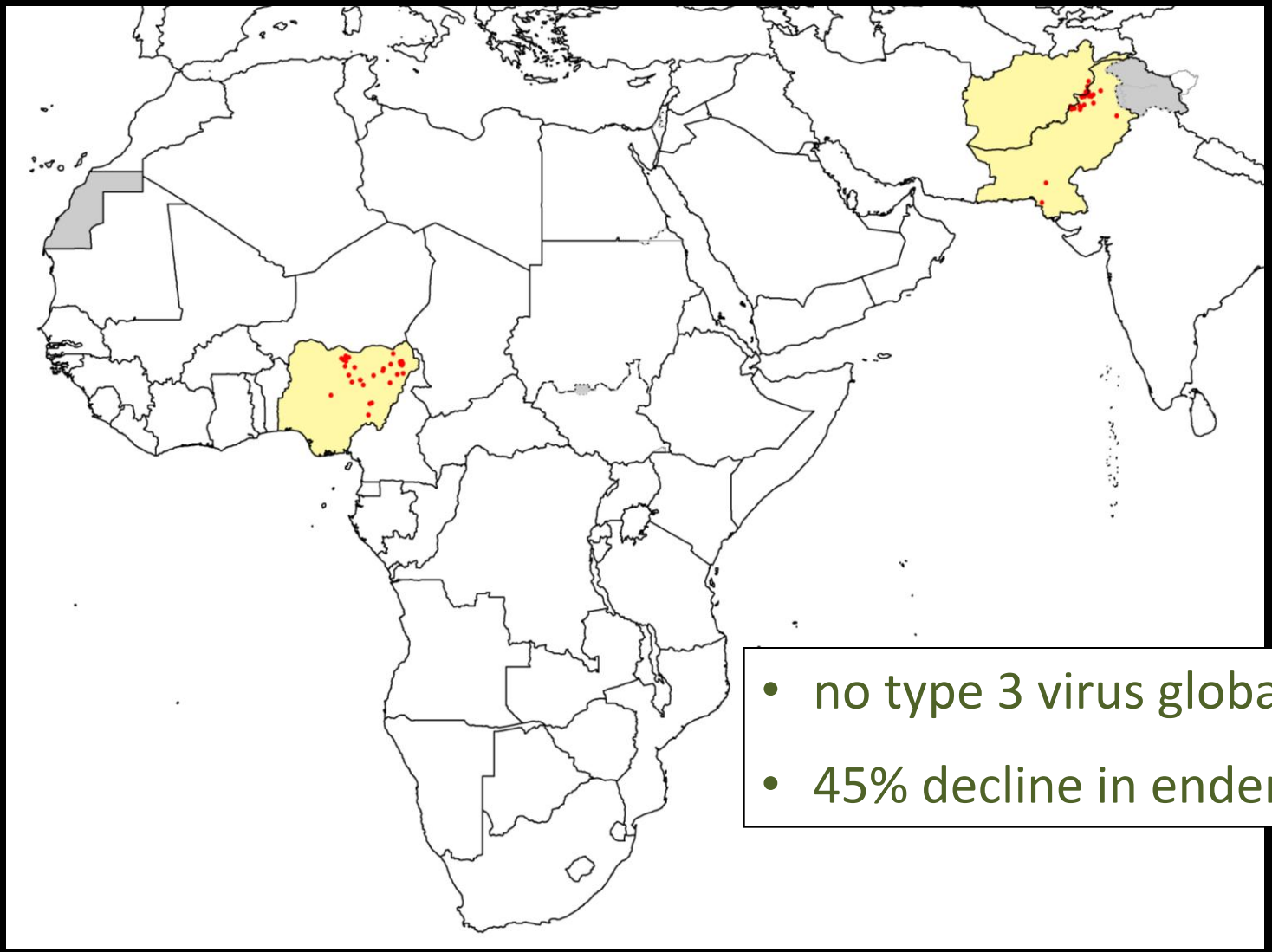
Goal: complete the eradication & containment of all wild, vaccine-related and Sabin polioviruses.

Endgame Plan, 2013-8

- Polio detection & interruption
- EPI strengthening, IPV intro. & OPV withdrawal
- Containment & Certification
- *Legacy Planning*

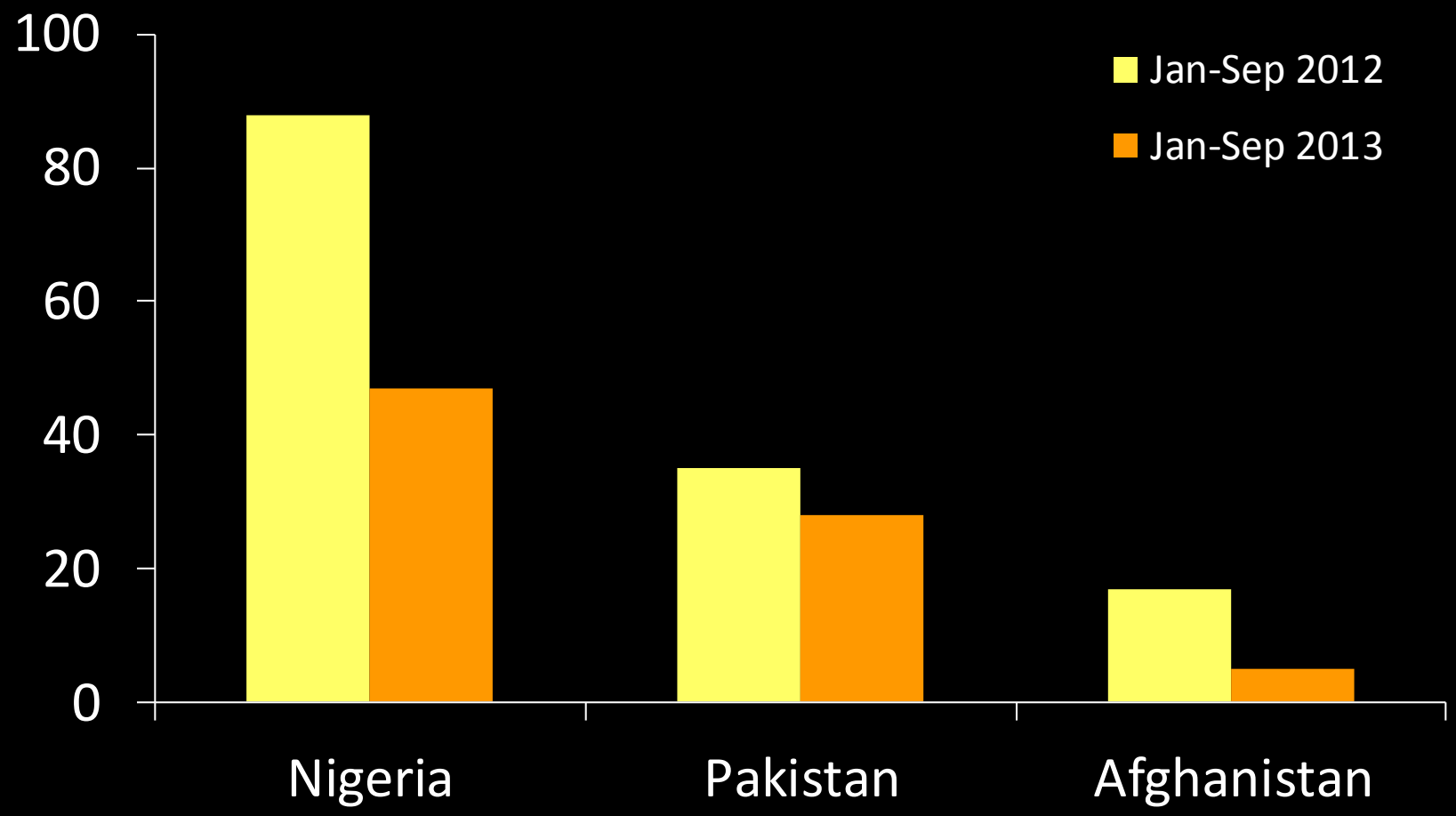


Endemic Polio Cases, last 6 months

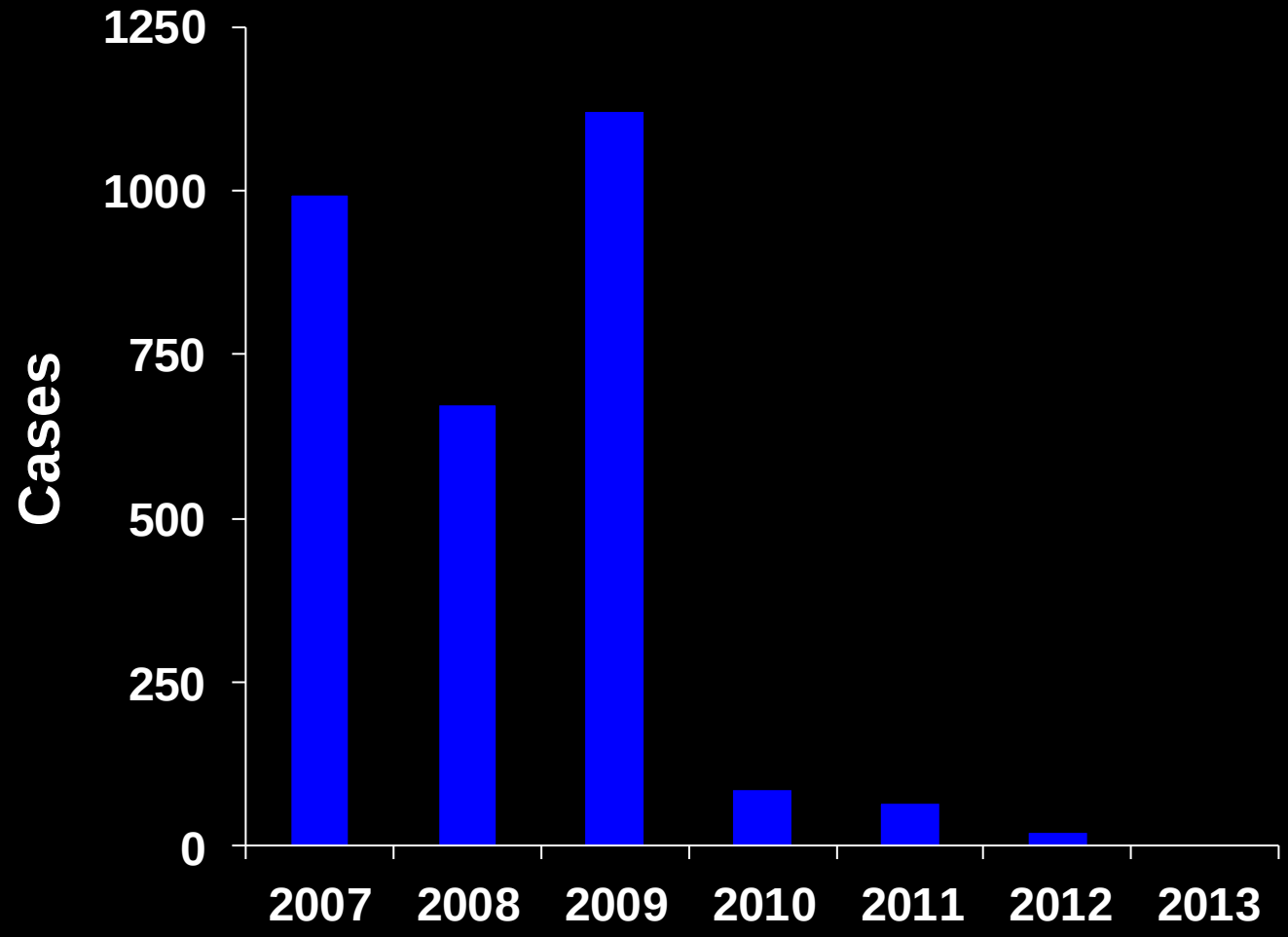


- no type 3 virus globally
- 45% decline in endemic virus

Polio-paralyzed children

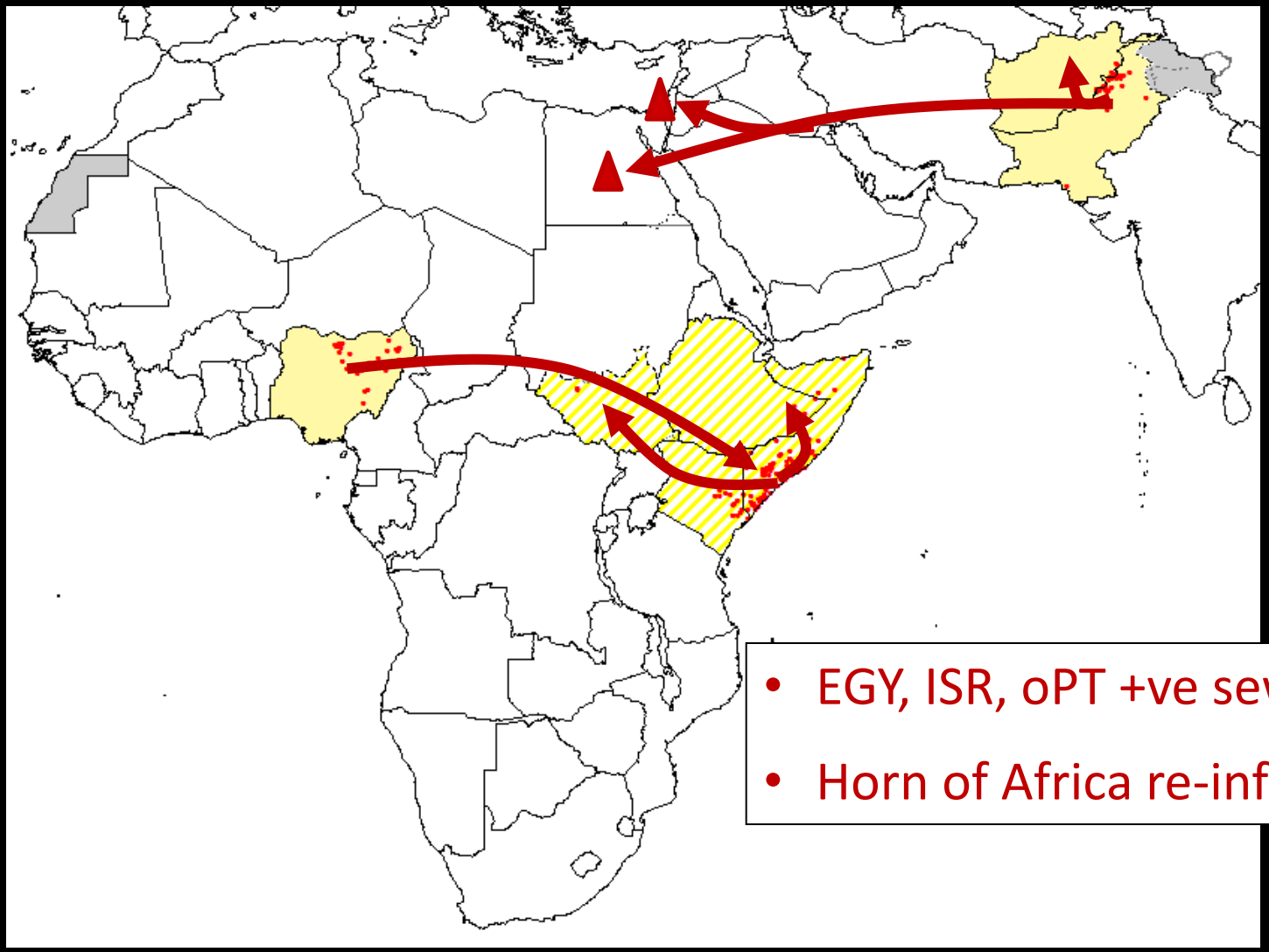


Polio, type 3 cases



* onset of most recent case was 10 Nov 2012

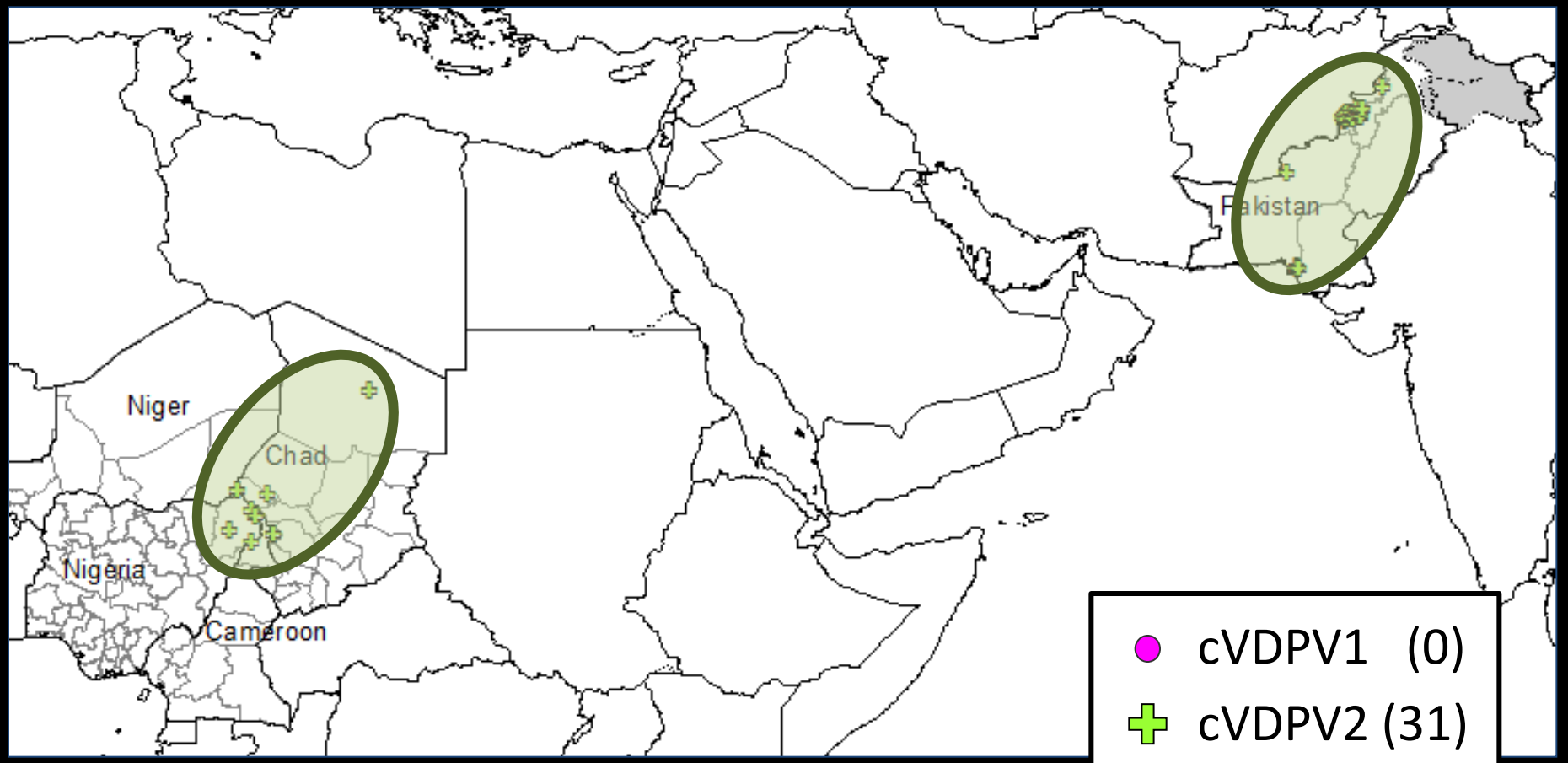
Polio-paralyzed children, last 6 months



- EGY, ISR, oPT +ve sewage
- Horn of Africa re-infected


Islamic Advisory
Group (IAG)


H.E. President
of Somalia

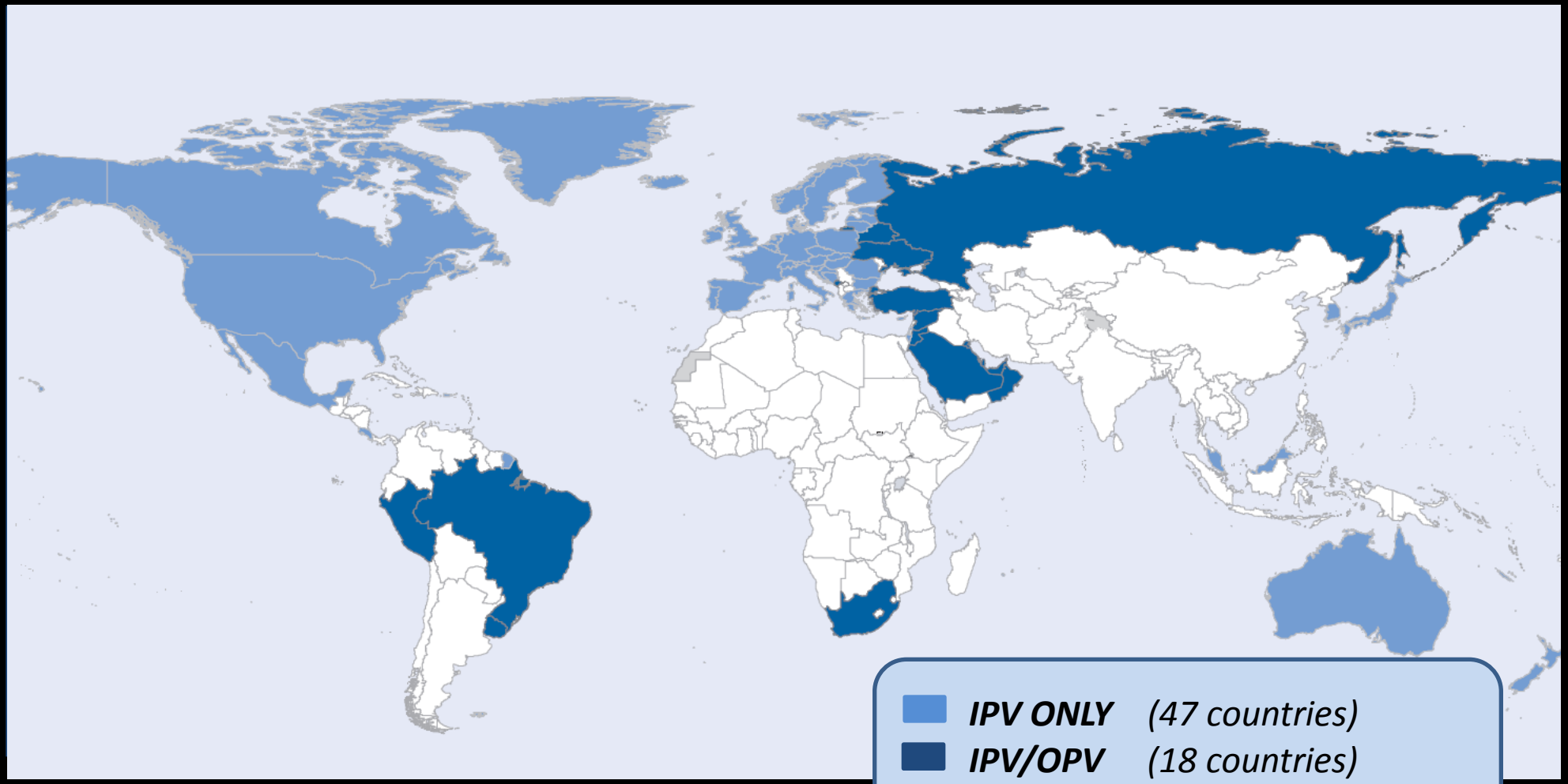


Vaccine virus outbreaks

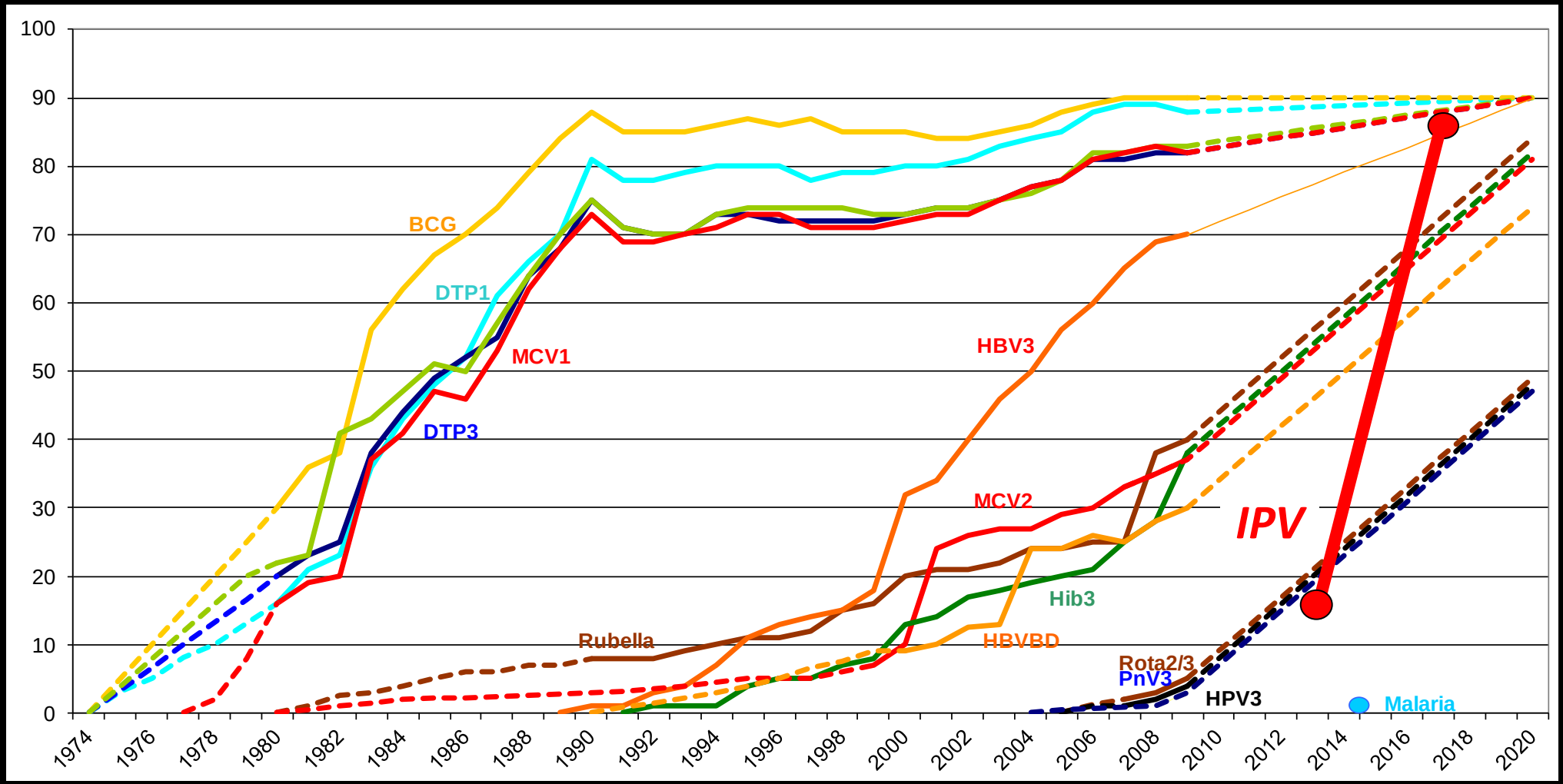
last 6 months


IMOVAX POLIO

The challenge: 125 'OPV-only' countries

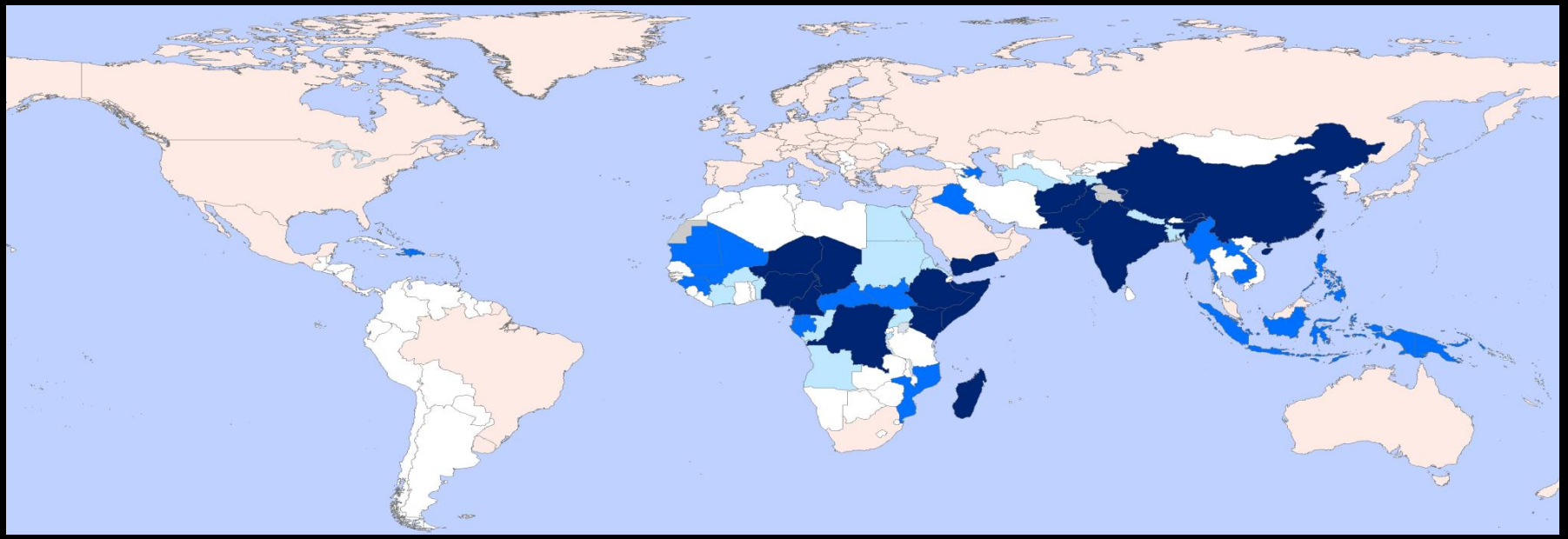


Challenge: outpacing new vaccine uptake




GAVI
ALLIANCE

'Tiered' IPV introduction based on risk



		# countries	% OPV cohort
Tier 1	Endemic OR cVDPV2 since 2000	14	61%
Tier 2	cVDPV1/3 OR large/medium size & DTP3 <80%, 2009-11	19	11%
Tier 3	Large/medium, next to Tier 1 OR WPV import since 2011	14	11%
Tier 4	All other OPV only using countries	77	17%

SAGE Working Group :

By October 2013, IPV supply, financing & introduction strategy for each Tier 1 & 2 country.

(strategy for all countries within 12 months)

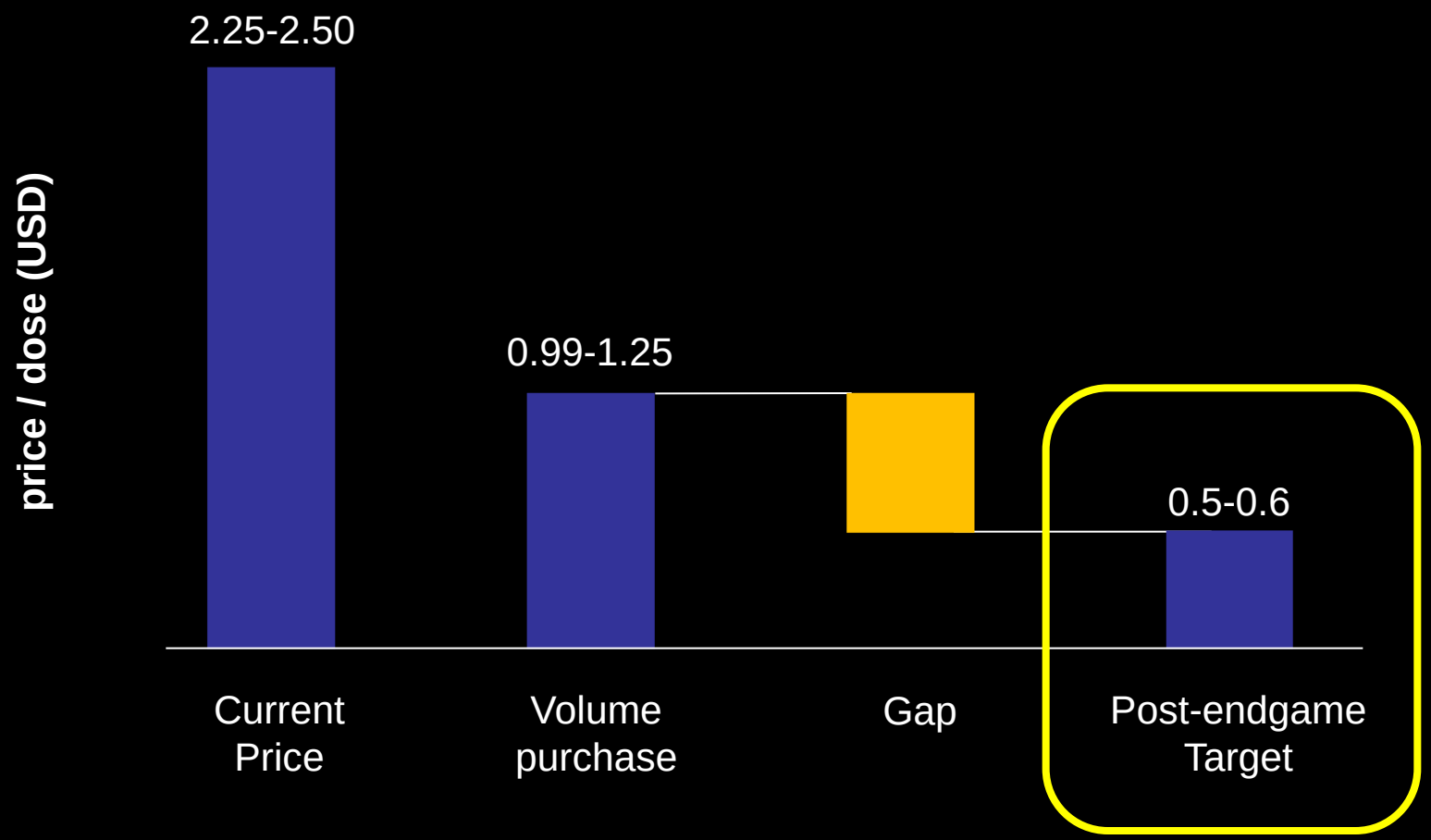
DCVMN
&
The Polio Endgame

Major Objectives

Virus detection & interruption	Wild virus interruption	Outbreak response (esp. cVDPVs)	
RI strengthening & OPV withdrawal	Strengthen RI & prep. OPV2 withdrawal	Introduce IPV	Prepare bOPV withdrawal
Containment & certification	Finalize long-term containment plans	Complete containment & certification globally	
Legacy Planning	Consultation	Mainstream polio functions, infrastructure & learnings	

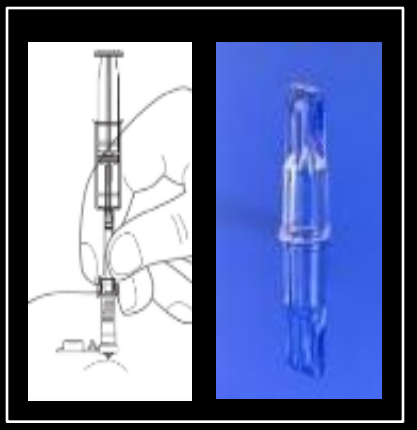
- robust mOPV1, bOPV & tOPV supply
- bOPV licensed for routine immunization
- low-cost IPV for low-income settings

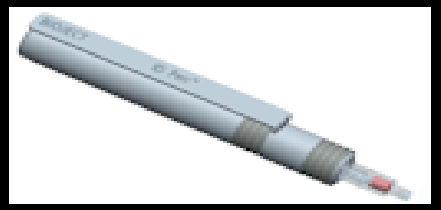
'Affordable' IPV Target



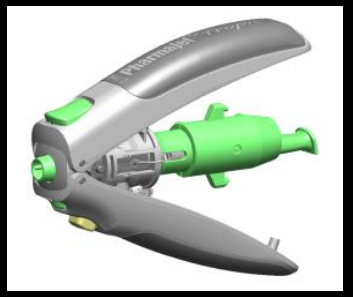
Approaches

- adjuvants
- fractional dosing



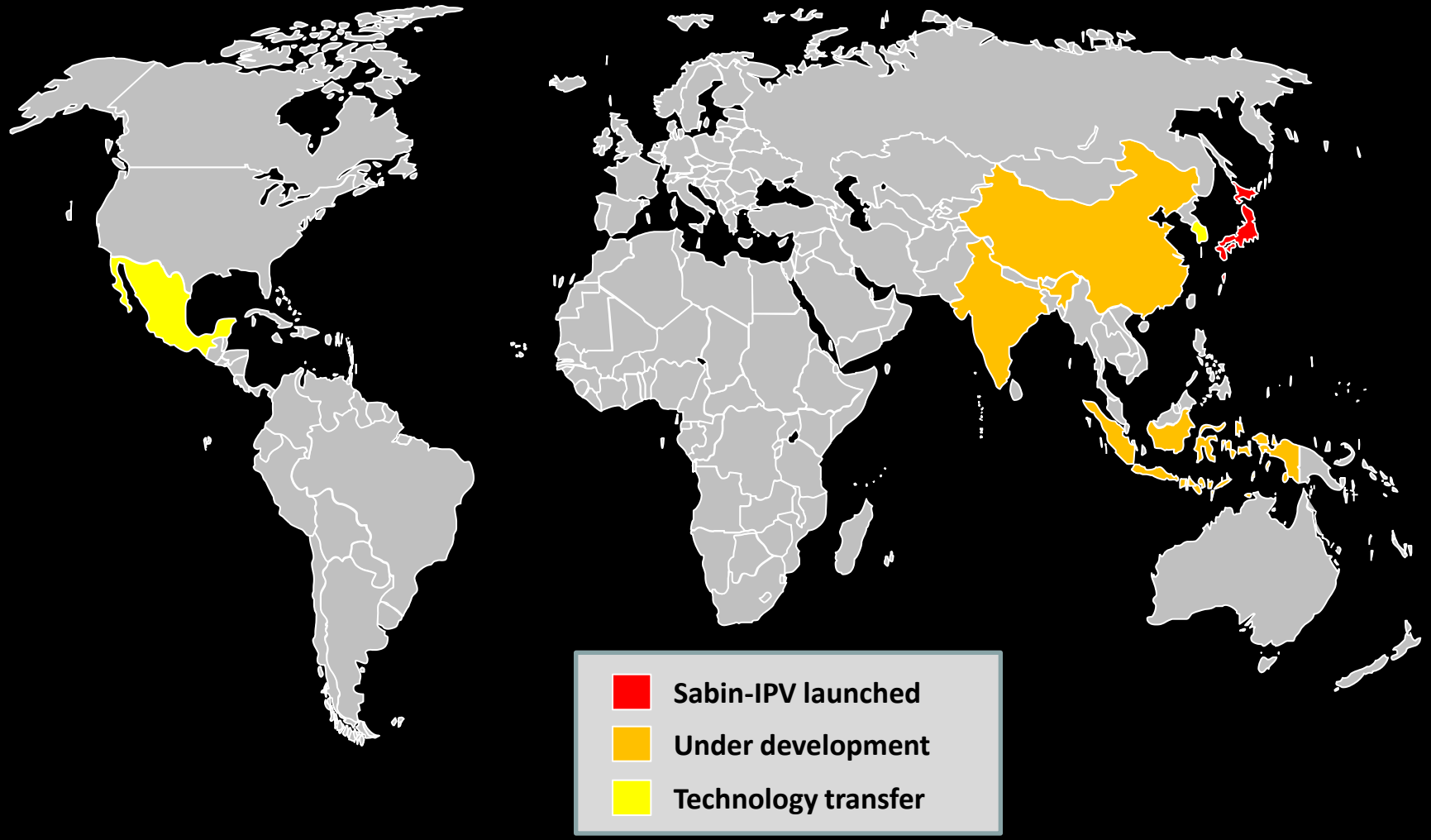


ID devices

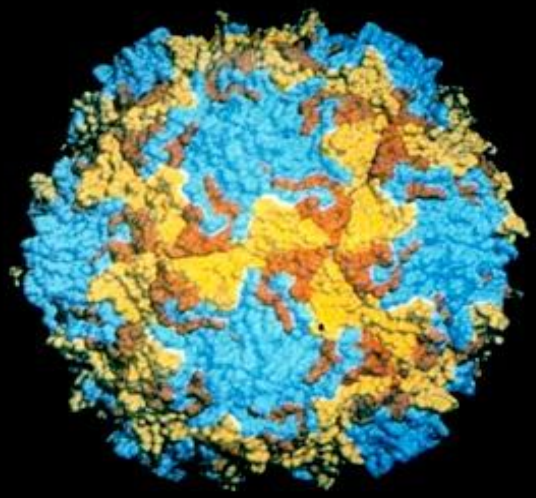


Patches

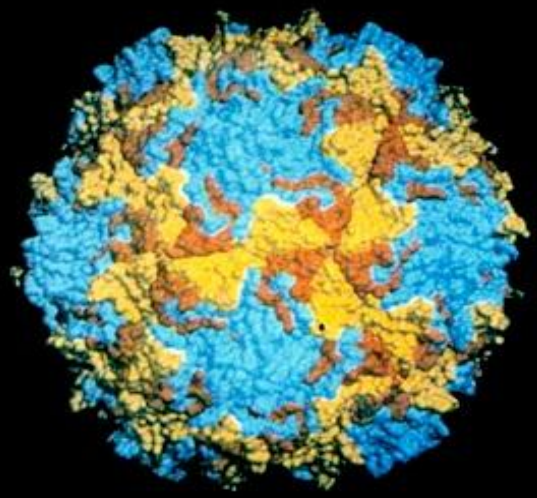
Sabin-IPV for safer production



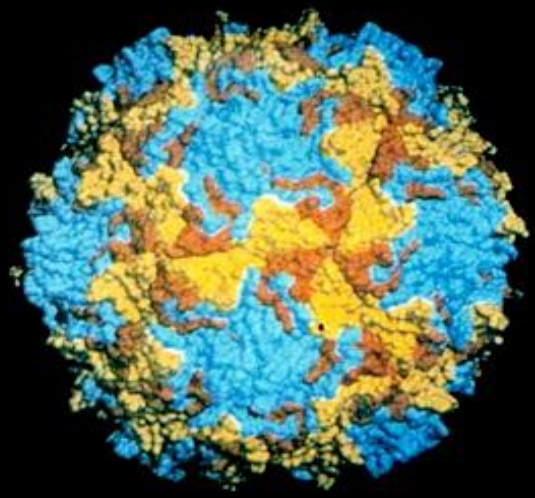
Summary



POLIO TYPE 1



POLIO TYPE 2



POLIO TYPE 3


India

DCVMN & the Endgame:

- continue supply of high quality OPV products
- engage in global planning for OPV2 withdrawal
- explore affordable options for the 'post-endgame'

Timelines are very tight…

…the target for global readiness to withdraw OPV2 is early 2016

The Polio Endgame still has substantial uncertainty & risk – very close collaboration is more essential than ever.

Thank you

Extra Slides

Criteria: *global readiness for OPV2 withdrawal*

- all countries can access bOPV for routine
- all countries can introduce at least 1 IPV dose
- mOPV2 stockpile & response strategy
- appropriate containment of type 2 polioviruses
- 'certification' of wild type 2 eradication

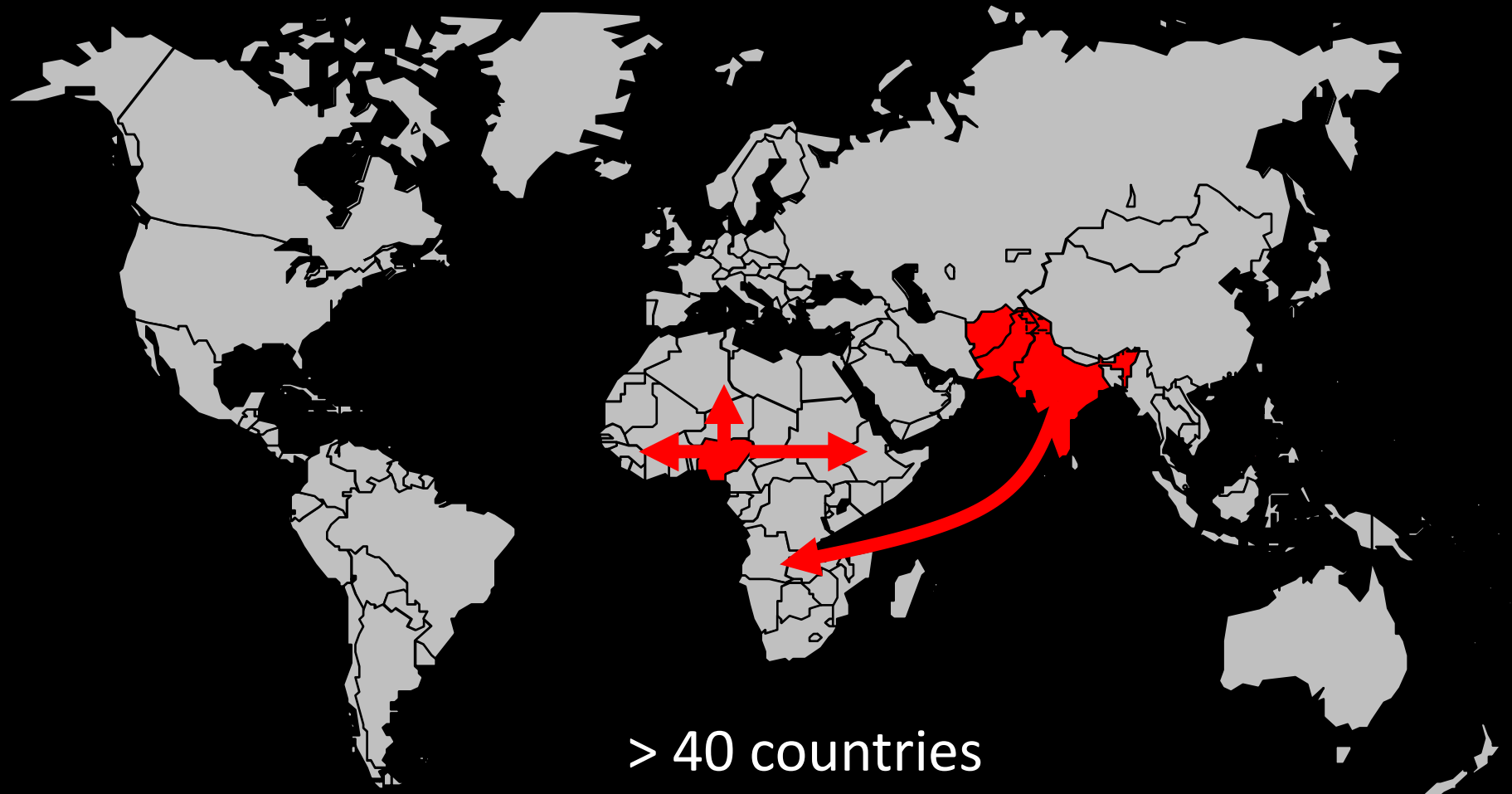
***SAGE Rationale for ≥ 1 IPV dose*:**

- prevent polio if exposed to a VDPV2 or WPV2
- improve response to mOPV2 in an outbreak
- reduce transmission of a reintroduced type 2
- boost immunity to WPV1 & 3

GAVI Board:

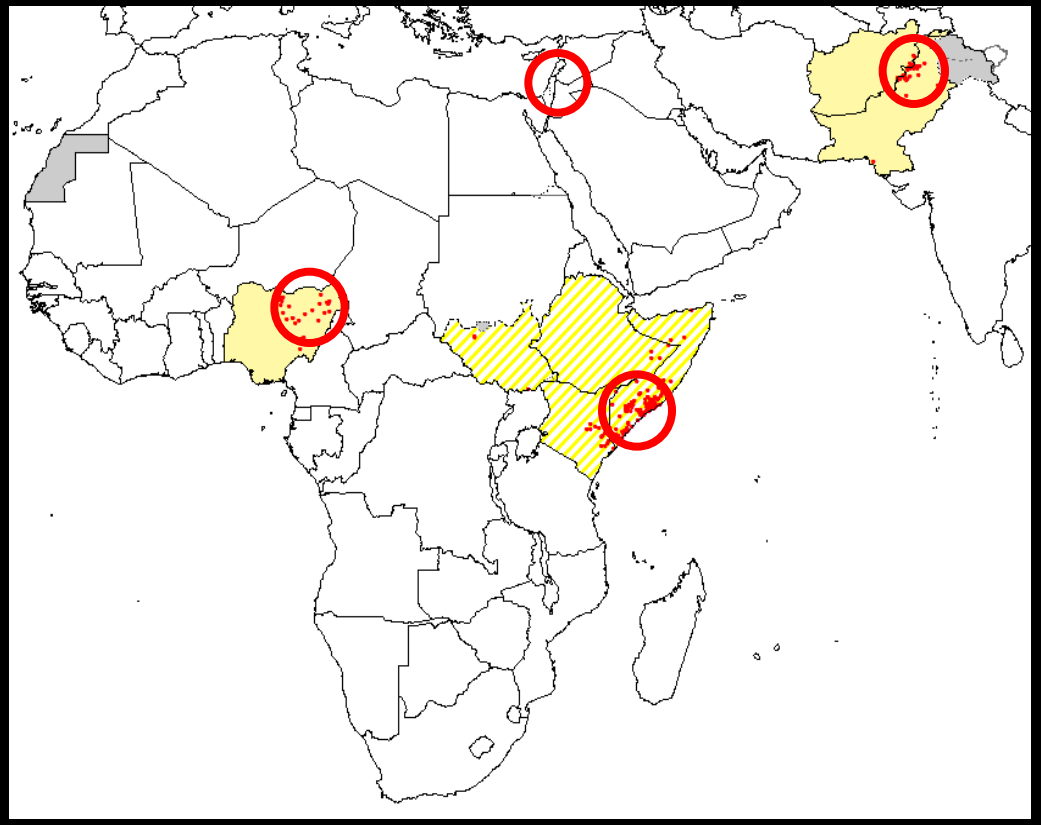
- play lead role for IPV intro in 73 GAVI countries
- immediately communicate importance of IPV
- establish finance/supply strategy w GPEI by Nov
- request donors ensure financing

Progress: 1988-2011



> 40 countries
became re-infected

Risks to Polio Interruption



- 1.5 m children inaccessible
- insecurity, attacks
- OPV campaign gaps
- slow response to importations