Poliovirus Eradication - What are the final stumbling blocks?
10th International Global Virus Network meeting, 28-30 November, Veyrier du Lac
Michel Zaffran, Director Polio Eradication, WHO / Chairman, GPEI Strategy Committee
Wild Poliovirus Cases (2017 and 2018)

Endemic country

Wild poliovirus type 1 2017

Afghanistan:
20 WPV1 in 2018 (14 WPV1s in 2017)
Most Recent Onset: 9 Oct 2018

Pakistan:
8 WPV1 in 2018 (8 WPV1s in 2017)
Most Recent Onset: 7 Oct 2018

Nigeria:
Last reported case: 21 Aug 2016
Last WPV detected: 27 Sep 2016

Nigeria: Last WPV 3 > 6 years ago
July 2012 (FATA, Pakistan)
November 2012 (Yobe, Nigeria)
## Global Wild Poliovirus & cVDPV Cases

### Past 12 Months

<table>
<thead>
<tr>
<th>Country</th>
<th>Wild poliovirus</th>
<th>cVDPV2</th>
<th>cVDPV3</th>
<th>cVDPV1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Onset of most recent case</td>
<td>Total WPV1</td>
<td>Onset of most recent case</td>
<td>Total cVDPV2</td>
</tr>
<tr>
<td>Nigeria</td>
<td>NA</td>
<td>0</td>
<td>17-Oct-18</td>
<td>27</td>
</tr>
<tr>
<td>Niger</td>
<td>NA</td>
<td>0</td>
<td>09-Sep-18</td>
<td>7</td>
</tr>
<tr>
<td>DRC</td>
<td>NA</td>
<td>0</td>
<td>25-Sep-18</td>
<td>24</td>
</tr>
<tr>
<td>AFR</td>
<td>NA</td>
<td>0</td>
<td>17-Oct-18</td>
<td>58</td>
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<tr>
<td>Pakistan</td>
<td>07-Oct-18</td>
<td>8</td>
<td>NA</td>
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<td>Afghanistan</td>
<td>02-Oct-18</td>
<td>21</td>
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<td>0</td>
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<tr>
<td>Somalia</td>
<td>NA</td>
<td>0</td>
<td>02-Sep-18</td>
<td>6</td>
</tr>
<tr>
<td>EMR</td>
<td>07-Oct-18</td>
<td>29</td>
<td>02-Sep-18</td>
<td>6</td>
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<tr>
<td>WPRO</td>
<td>NA</td>
<td>0</td>
<td>NA</td>
<td>0</td>
</tr>
<tr>
<td>Global</td>
<td>07-Oct-18</td>
<td>29</td>
<td>17-Oct-18</td>
<td>64</td>
</tr>
</tbody>
</table>

### Notes

1. Excludes viruses detected from environmental surveillance.

Data in WHO HQ as of 20 Nov. 2018
Wild Poliovirus & cVDPV Environmental Positives

Past 12 Months

<table>
<thead>
<tr>
<th>Country</th>
<th>Wild poliovirus</th>
<th>cVDPV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Most recent collection date</td>
<td>Total WPV</td>
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<tr>
<td>Nigeria</td>
<td>NA</td>
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<td>Kenya</td>
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<tr>
<td>AFR</td>
<td>0</td>
<td>08-Oct-18</td>
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<td>Pakistan</td>
<td>25-Oct-18</td>
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<td>Afghanistan</td>
<td>25-Oct-18</td>
<td>72</td>
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<tr>
<td>Somalia</td>
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<td>0</td>
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<tr>
<td>PNG</td>
<td>NA</td>
<td>0</td>
</tr>
<tr>
<td>WPR</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

1Excludes viruses detected from AFP surveillance.
2Collection date: 21 Nov. 2017 – 20 Nov. 2018
Public Health Emergency of International Concern
First declared under the International Health Regulations in May 2014
Confirmed on 27 November 2018

*Excludes viruses detected from AFP surveillance.*

*Collection date: 21 Nov. 2017 – 20 Nov. 2018*
Pakistan and Afghanistan
Pak /Afg poliovirus transmission corridors
WPV1 (AFP and ENV) reported over the past 12 months

Northern Corridor
Torkham border used for population Movement between Peshawar and Khyber in Pakistan to Nangarhar, Kunar and Laghman in East Afghanistan

Central Corridor
Southern Khyber Pakhtunkhwa and the FATA in Pakistan travelling across rugged, smaller borders crossings to Paktika, Paktia and Khost provinces in the south east of Afghanistan.

Southern Corridor
Friendship Gate (Chaman) border crossing from Pakistan’s Quetta Block to the Greater Kandahar area in south Afghanistan

Total 2600 KM border shared between PAK and AFP

Karachi

Data in WHO HQ as of 20 Nov. 2018
WPV1 Cases & Environmental samples by genetic cluster, 2018

Blue = R4B5C5B2
Black = R4B1C1
Light Blue = R4B5C3A
Green = R4B5C4B
Red = R4B5C4C
Orange = R4B5C4D
Afghanistan

- 19 WPV1 cases in 2018 vs 10 at the same time in 2017 – Most recent case onset on 2 October, 2018
- Ongoing transmission of wild poliovirus in Northern and Southern corridors
- Genetic sequencing data shows that population groups harboring transmission in the Northern Corridor have not been reached.
- Ban on house to house campaigns: Over 1 million children missed since May
- Gaining & maintaining access remains the most significant bottleneck to stopping transmission
• 8 WPV1 cases in 2018 vs 5 at same date in 2017. Most recent case onset on 7 October, 2018
• Environmental positive samples isolated primarily in core reservoirs but also in many other areas of the country areas.
• General fatigue and resistance to vaccination
• Northern and Southern Transmission Corridors, and Karachi, remain the greatest risk to polio eradication in Pakistan & Afghanistan
Pakistan/Afghanistan: Main risks

• Ongoing transmission in the Southern & Northern corridors
• Accessing all children in highly mobile populations
• Impact of elections and sustaining government commitment at all levels
• Systemic weaknesses in EPI throughout many parts of both countries
• Resistance to vaccination (both overt and covert)
• In Afghanistan
  – Bans on house to house campaigns in Southern Province
  – Increasing inaccessibility in Eastern region
  – Deteriorating security situation creating environment of fear
  – Challenges in getting female front line workers particularly in high risk areas
Nigeria
In August 2016, ~650,000 children were trapped in Borno. Today, with innovative strategies, ~70,541 children remain unreached in ~6,000 settlements (data aggregated from satellite imagery, Vaccinates tracking system, Reach Inaccessible Children strategy and profiling).
cVDPV Outbreaks
The good news:
Syria cVDPV2 outbreak likely interrupted

• Last cVDPV2 sample detected 13 months ago: 21 September 2017

• Recent outbreak assessment review concluded:
  • Absence of cVDPV2 detected for 12 months, in the context of continued high quality surveillance, makes it highly likely that cVPDV2 transmission has been interrupted;
  • Extraordinary achievement on the part of Regional and Syria teams in a particularly challenging context.
Nigeria cVDPV2 outbreak

2 separate cVDPV2 outbreaks:

- **Sokoto North** – 1 case, 14 Env. positives
- **Jigawa outbreak** – 23 cases, 29 Env. positives including 6 cases in Niger.

Key Risks

- Inaccessibility in Borno State
- Large scale population movement within and across the countries
- Weak political engagement in Niger

Data in WHO HQ as of 23 Oct. 2018
Other ongoing cVDPV outbreaks

**DRC:** 37 cVDPV2 cases since May 2017

**HoA:** 5 cVDPV2 cases, 6 cVDPV3 cases and 1 co-infection since October 2017

**PNG:** 21 cVDPV1 since 25 April 2018
Polio Eradication and Endgame Strategy

1. Poliovirus detection & interruption

2. OPV2 withdrawal, IPV introduction, immunization system strengthening

3. Containment & Global Certification

4. Transition Planning
Countries using IPV vaccine to date

Data source: WHO/IVB Database, as of 11 October 2018

Map production Immunization Vaccines and Biologicals (IVB), World Health Organization

- Introduced* to date (176 countries)
- Re-introduced (15 countries)
- Formal commitment to introduce in 2018-2019 (3 countries)
- Not available
- Not applicable

* Including partial introduction in India
IPV introduction
An unprecedented achievement
Missed cohorts in affected countries

~ 43 million children missed
Polio Eradication and Endgame Strategy

1. Poliovirus detection & interruption
2. OPV2 withdrawal, IPV introduction, immunization system strengthening
3. Containment & Global Certification
4. Transition Planning
27 countries plan to retain poliovirus type 2 materials in 79 Facilities

- **National Authorities for Containment**: 24/27 established
- **Poliovirus Essential facilities**: 6 applications for containment certification (certificate of participation) submitted to GCC
  - Application endorsed by GCC: 1
  - Applications on hold: 2
  - Applications under review: 3

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.
Certification of polio eradication

Global Certification Commission: 29 October – 1 November

- Certification of the eradication of the wild polio virus will follow a sequential approach with WPV3 eradication being certified ahead of WPV1

- The validation of the absence of cVDPVs will only be possible after the total cessation of use of all OPVs

The sequential approach:

- WPV type 3 eradication certification (after African region certification)
- Certification of WPV1 eradication (~ 3 years after last WPV1 detection)
- Validation of the absence of cVDPVs (after global OPV cessation)
GPEI Strategy 2019-2023
GPEI Strategy 2019-2023

• The Polio Eradication & Endgame Strategic Plan (PEESP) 2013-2018 was developed to guide the program to the anticipated goal of polio eradication with a cost of $5.5B
  ▪ The PEESP was updated in 2015 after a mid-term review, and extended through 2019 and an additional $1.5B

• Though progress continues, transmission has not been interrupted in Pakistan and Afghanistan.

• The polio program is being extended to achieve eradication
  ▪ A new budget for the period 2019-2023 was approved by the Polio Oversight Board in September 2018 to support the program’s work at the level of US $ 4.3bn, of which US $ 3.27bn must be mobilized;
  ▪ Overlap with the WHO GPW budget in the context of transition will be clarified.
  ▪ GPEI is reviewing current strategies to define the changes and innovations required to achieve eradication
Overview

2013-2019
- Objective 1: Poliovirus detection and interruption
- Objective 2: Immunization systems strengthening and OPV withdrawal
- Objective 3: Containment and certification
- Objective 4: Legacy Planning

2019-2023
- **Eradication**: Stopping transmission
- **Certification**: Certify eradication and containment of all WPVs and ensure long-term polio security
- **Integration**: Leveraging polio assets and lessons learned to protect populations
- **Cross-cutting areas**: (management, research, budget and finance)

2024
- Goal 1: Contain polioviruses
- Goal 2: Protect populations
- Goal 3: Detect and respond

**GPEI**

**Transition**

**Certification (GPEI Dissolves)**

**POST-GPEI PROGRAMMES**

- GVAP 2.0
- Gavi 5.0
- WHO IVB Strategy
- UNICEF Immunization Strategy
- Global Health Security Agenda
- ...
What’s next?
Main activities for the next six months

Global
• Develop strategy for 2019-2023
• Address outcomes of IMB external review and reflect in new strategy
• Mobilize resources to support 2019-2023 strategy

Endemic countries
• Maintain political commitment in the face of changes of governments
• Maintain momentum in spite of “fatigue”
• Continue deployment of qualified personnel

Outbreak Countries
• Improve the quality of outbreak response in DRC, PNG, HoA, Nigeria and Niger
• Secure high level political commitment to respond to these outbreaks
• Identify ways to leverage GPEI efforts to contribute to strengthening routine immunization beyond initial acute outbreak response
Thank you
Merci