Global Update – Polio
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UNICEF Vaccine Industry Consultation
Copenhagen, 6th October 2017
Polio Eradication and Endgame Strategy

1. Poliovirus detection & interruption

2. OPV2 withdrawal, IPV introduction, immunization system strengthening

3. Containment & Global Certification

4. Legacy/Transition Planning
Wild Poliovirus & cVDPV Cases\(^1\) in the past 6 months\(^2\)

Public Health Emergency of International Concern declared under the International Health Regulations in May 2014

Last reiterated on 3 August 2017

Excludes viruses detected from environmental surveillance

Onset of paralysis 04 April 2017 – 03 October 2017

\(^1\)Excludes viruses detected from environmental surveillance

\(^2\)Onset of paralysis 04 April 2017 – 03 October 2017

\(^3\)Current rolling 6 months: 04 April 2017 – 03 October 2017

\(^4\)Same period previous year: data reported from 04 April 2016
## Global Wild Poliovirus 2012 - 2017

<table>
<thead>
<tr>
<th>Country or territory</th>
<th>Wild virus confirmed cases</th>
<th>Wild virus reported from other sources^2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>01 Jan - 03 Oct</td>
</tr>
<tr>
<td><strong>Pakistan</strong></td>
<td>58</td>
<td>93</td>
</tr>
<tr>
<td><strong>Afghanistan</strong></td>
<td>37</td>
<td>14</td>
</tr>
<tr>
<td><strong>Nigeria</strong></td>
<td>122</td>
<td>53</td>
</tr>
<tr>
<td><strong>Somalia</strong></td>
<td>0</td>
<td>194</td>
</tr>
<tr>
<td><strong>Cameroon</strong></td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td><strong>Equatorial Guinea</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Iraq</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Israel^4</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Syrian Arab Republic</strong></td>
<td>0</td>
<td>35</td>
</tr>
<tr>
<td><strong>Ethiopia</strong></td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td><strong>West Bank and Gaza</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Kenya</strong></td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td><strong>Egypt</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Niger</strong></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>Chad</strong></td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>223</td>
<td>416</td>
</tr>
</tbody>
</table>

**Total wild virus type 1^5** | 202 | 416 | 359 | 74 | 37 | 25 | 11 |

**Total wild virus type 3** | 21 | 0 | 0 | 0 | 0 | 0 | 0 |

**Tot. in endemic countries** | 217 | 160 | 340 | 74 | 37 | 25 | 11 |

**Tot. in non-end countries** | 6 | 256 | 19 | 0 | 0 | 0 | 0 |

**No. of countries (infected)** | 5 | 8 | 9 | 2 | 3 | 3 | 2 |

**No. of countries (endemic)** | 3 | 3 | 3 | 3^6 | 3^6 | 3^6 | 3 |

Countries in yellow are endemic.  ^1Data in WHO HQ on 03 Oct 2017 for 2017 data and 04 Oct for 2016 data.

^2Wild viruses from environmental samples, selected contacts, healthy children and other sources.  ^3In March 2014, a serotype 1 wild poliovirus was detected in an environment specimen from Brazil, further investigation indicates this is an isolated event without evidence of circulation.  ^4Results are based on L20B positive culture. Prior to reporting week 16, 2014, results were based on a combination of direct qRT-PCR on RNA from concentrated sewage and L20B positive culture.  ^5Includes 1 case in 2012 with a mixture of W1W3 virus.  ^6Between 27 Sep 2015 and 27 Sep 2016, Nigeria was not classified as endemic. NA - Most recent case had onset prior to 1999.  ^7Exceptionally reporting case-contact of a positive index case given the date of collection is later than the onset date of the most recent WPV.
WPV in Pakistan – Afghanistan
One epidemiological block
Pakistan-Afghanistan: WPV cases, 2017

<table>
<thead>
<tr>
<th>PROVINCE</th>
<th>CASES</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAK</td>
<td>05</td>
</tr>
<tr>
<td>G-BALTISTAN</td>
<td>1</td>
</tr>
<tr>
<td>PUNJAB</td>
<td>1</td>
</tr>
<tr>
<td>BALOCHISTAN</td>
<td>1</td>
</tr>
<tr>
<td>SINDH</td>
<td>1</td>
</tr>
<tr>
<td>KHYBER-PAKHTOON</td>
<td>1</td>
</tr>
<tr>
<td>AFG</td>
<td>06</td>
</tr>
<tr>
<td>HILMAND</td>
<td>2</td>
</tr>
<tr>
<td>KANDAHAR</td>
<td>2</td>
</tr>
<tr>
<td>KUNDUZ</td>
<td>1</td>
</tr>
<tr>
<td>ZABUL</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>11</td>
</tr>
</tbody>
</table>

Data in WHO HQ as of 3 Oct. 2017
WPV in Africa
WPV in Nigeria - Borno 2016 outbreak

- 4 WPV1 cases
- 3 cVDPV2 isolates (1 in Sokoto, North West)
- 7 bOPV rounds and 5 mOPV2 rounds in 2016 / 2017 synchronized with Lake Chad countries
- Range of strategies to access children and conduct AFP and environmental surveillance
- Virus last detected on 24 September 2016 (healthy contact) - many communities unreached
Lake Chad: AFP cases, population and access
Type 2 events and outbreaks following tOPV – bOPV switch
Post switch* cVDPV2 outbreaks

*Switch date: 01 May 2016

Data in WHO HQ as of 03 Oct. 2017
Planning preventive bOPV vaccination campaigns
Risk of vaccine-derived poliovirus (VDPV)

- cVDPV risk uncertain, though cVDPV1,3 risk appears lower than cVDPV2 for a given level of immunity
- SAGE WG favours maintenance SIAs, but unclear how many are needed
- Reduction of SIAs in Endemics after 1 year without detection may be possible with very good surveillance (e.g. AFP + ES in Pak)- Nigeria experience shows the risk and cost

Figure and Analysis: emergence rate vs. susceptibility (courtesy Guillaume Chabot-Couture, IDM)
2017 Summary risk assessment

- Anchored by routine immunization performance – DTP3
- Outbreak countries and neighbouring areas = high risk
- 23 countries at medium high or high risk
- Basis of planning bOPV vaccination campaigns to mitigate (type 1,3) risk
Planning supplementary immunization to maintain polio immunity - 2018 - 2021+

Routine childhood immunization - backbone of polio eradication

Supplementary Immunization Activities (SIAs/campaigns)

• Endemic countries:
  • Stop WPV transmission;
  • Stop WPV /cVDPV outbreaks, mitigate spread

• Non-endemic countries:
  • Prevent / mitigate WPV outbreaks
  • Reduce emergence of VDPV/cVDPV, mitigate spread
SIA calendar development

**Endemics** - Nigeria, Afghanistan, Pakistan,
- country plans and advise of Technical Advisory Group for each country;

**Non-endemics - Risk** based on routine immunization coverage - gauge need for SIA to ensure 80% or 90% of children have 3+ OPV doses (RI + SIA)
- Country risk ‘Medium high - High’ : target 90% w/3+ doses of OPV
- Country risk ‘Low - Medium’ : target 80% w/3+ doses of OPV
- some self supporting countries – e.g. India – national plans

Options revised according to local and global context – population movements, conflict, funding situation – discussed through GPEI coordination mechanisms every 6 months - completing review cycle by mid-October
2018 SIA calendar

**SIA Calendar 2018 for EOMG discussion Sept 2017 following RO consultation**

**Option 1:** RATT baseline + SIAOTT input + RO input + (Ramp down starting in 2018)

**Option 2:** RATT baseline + SIAOTT discussion after RO input + Ramp down starting in 2018

- Some countries focus on high risk areas, or space campaigns to allow better preparation
- bOPV 700 million doses
- Approximately $328M, being finalized
- Calendar for 2nd half of 2018 re-visited in Q1 2018
bOPV Placeholder Calendar

**Purpose** – provide a planning horizon and visibility to the programme and to vaccine suppliers

**Current thinking**

– Maintenance SIAs high risk non-endemic countries
– No bOPV intensification (SAGE polio WG)
– **Endemic** countries
  - *Scenario A* – maintain 2018 level through certification
  - *Scenario B* – start ramp down in 2020

*Planning calendars re-visited every six months*
## SIA calendar cost forecast

### Option 2a - Recommended within budget for 2018
- **Endemic**: $218,500,000
- **Non-endemic**: $109,500,000

### Option 2b - Recommended within budget for 2018
- **Endemic**: $218,500,000
- **Non-endemic**: $109,500,000

### Placeholders
- **Maintaining population immunity**: Endemic $218,500,000, Non-endemic $109,500,000
- **Faster ramp-down in endemics**: Endemic $218,500,000, Non-endemic $109,500,000

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<tbody>
<tr>
<td><strong>Endemic</strong></td>
<td>$218,500,000</td>
<td>$218,500,000</td>
<td>$218,500,000</td>
<td>$64,700,000</td>
<td>$1,049,000,000</td>
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<tr>
<td><strong>Non-endemic</strong></td>
<td>$109,500,000</td>
<td>$74,500,000</td>
<td>$74,500,000</td>
<td>$70,300,000</td>
<td>$328,000,000</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>$328,000,000</td>
<td>$293,000,000</td>
<td>$293,000,000</td>
<td>$135,000,000</td>
<td>$827,000,000</td>
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</tbody>
</table>

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Endemic</strong></td>
<td>$218,500,000</td>
<td>$160,600,000</td>
<td>$92,100,000</td>
<td>$35,800,000</td>
<td>$516,000,000</td>
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<tr>
<td><strong>Non-endemic</strong></td>
<td>$109,500,000</td>
<td>$74,400,000</td>
<td>$74,900,000</td>
<td>$61,200,000</td>
<td>$328,000,000</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>$328,000,000</td>
<td>$235,000,000</td>
<td>$167,000,000</td>
<td>$97,000,000</td>
<td>$827,000,000</td>
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</table>

### FRR

<table>
<thead>
<tr>
<th></th>
<th>Endemic</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td><strong>Non-endemic</strong></td>
<td>92</td>
<td>76</td>
<td>78</td>
<td></td>
<td></td>
<td>178</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>328</td>
<td>294</td>
<td>183</td>
<td></td>
<td></td>
<td>705</td>
</tr>
</tbody>
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**FRR** refers to the Final Review Rate.
Polio Eradication and Endgame Strategy

1. Poliovirus detection & interruption

2. OPV2 withdrawal, IPV introduction, immunization system strengthening

3. Containment & Global Certification

4. Legacy/Transition Planning
Countries using IPV

Data source: WHO/IVB Database, as of 01 September 2017
Map production Immunization Vaccines and Biologicals (IVB), World Health Organization

- Introduced* to date (158 countries)
- Introduced to date but with delayed resupply (17 countries)
- Formal commitment to introduce in 2017-2018 (9 countries)
- Introductions delayed due to supply disruptions (10 countries)

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.
Fractional dose (f)IPV implementation

- Routine Immunization (2 fIPV at 6 and 14 weeks)
  - South East Asia
    - Rolled out nationally in India and Sri Lanka (19% of global cohort)
    - Bangladesh Sept 2017, Nepal for Q1 2018 (3% of global cohort)
  - Americas
    - PAHO TAG recommended 14 countries implement a 2 fractional dose sequential schedule (6% of global cohort)
    - Colombia, Nicaragua and Honduras starting preparations in Q4 2017
  - Discussions underway with other regions (AFRO, EMRO)

- fIPV in SIAs-
  - India, Pakistan: local response to VDPV2 detection in high immunity context
Polio Eradication and Endgame Strategy

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4. Legacy/Transition Planning
30 countries wish to retain PV2 in 86 Poliovirus Essential Facilities (PEF)

**National Authorities for Containment (NAC)**
- 18 of 30 NACs ‘nominated’
- NACs demonstrating CCS implementation: 0

*includes WPV2/cVDPV2 and OPV2/Sabin2 materials*
1. Poliovirus detection & interruption
2. OPV2 withdrawal, IPV introduction, immunization system strengthening
3. Containment & Global Certification
4. Transition Planning
Transition

• Programmatic impact of GPEI ramp-down
  – Maintain essential functions critical for a polio free world
  – Plan for health programmes affected by reduced funding

• Streams of work
  – Country level transition planning
  – Independent monitoring and advocacy (TIMB)
  – Post Certification Strategy development
  – Agencies internal transition planning (WHO, UNICEF, CDC)

• WHO
  – WHA requested strategic plan by January 2018
Priorities - Next 6 months

Interrupt WPV and cVDPV transmission
  • Pakistan, Afghanistan, Nigeria (Lake Chad), DRC, Syria

High quality surveillance
  • Endemics and access compromised areas e.g.: CAR, Syria, Somalia, South Sudan, Iraq, Yemen..

Financial management
  • US$ 200 million still to be raised for $7B
  • Plan /budget to extend through 2020

Also...
  • Accelerate efforts for containment
  • Engage broader constituency in transition
Thank you