Global Polio Eradication

Progress and Current Epidemiologic/Operational Risks

SAGE Meeting
April 13-15, 2010

Poliovirus Transmission, 2009
Definitions and Geographic Focus

1256 Cases in 4 Countries
143 Cases in 4 Countries
267 Cases in 15 Countries

Endemic Areas
Re-established Transmission*
Recent Importation

*at least 12 months of transmission after introduction
**Reported 'Indigenous' Polio Cases**

2008-2009 comparison

<table>
<thead>
<tr>
<th>Country</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigeria</td>
<td>800</td>
<td>200</td>
</tr>
<tr>
<td>India</td>
<td>600</td>
<td>400</td>
</tr>
<tr>
<td>Pakistan</td>
<td>200</td>
<td>100</td>
</tr>
<tr>
<td>Afghan</td>
<td>100</td>
<td>50</td>
</tr>
</tbody>
</table>

**Global Polio Cases by Serotype, 2001-2009**

Source: WHO/Polio database

*193 WHO Member States

mOPV: monovalent Oral Polio Vaccine
A New Vaccine: 
‘Bivalent oral polio vaccine’ (bOPV)

Seroconversion After 2nd Dose, by Study Arm, bOPV Trial Multi-site, India, 2008-09

<table>
<thead>
<tr>
<th>Type 1 polio</th>
<th>Type 3 polio</th>
</tr>
</thead>
<tbody>
<tr>
<td>nOPV1</td>
<td>88.7%</td>
</tr>
<tr>
<td>bOPV</td>
<td>80.3%</td>
</tr>
<tr>
<td>OPV</td>
<td>63.2%</td>
</tr>
<tr>
<td>Total</td>
<td>71%</td>
</tr>
</tbody>
</table>

Wild Poliovirus*, 1 Oct 2009 – 08 April 2010

- Wild virus type 1
- Wild virus type 3
- Wild virus type 1/3

- Jan-Mar 09:
  - P1: 117
  - P3: 114
  - Total: 231
- Jan-Mar 10:
  - P1: 21
  - P3: 35
  - Total: 56

Data in WHO HQ as of 06 April 2010
Major Epidemiologic and Operational Risks

1. Alternating/Oscillating type 1 and 3 outbreaks
2. Irrational Exuberance – over interpretation of available WPV information (esp. during low season)
3. Continuing Low Quality SIAs/Complacency in Making Improvements (esp. Nigeria/Africa importation belt, Pakistan)
4. Covert Surveillance Deficiencies
5. Conflict/Security Access (esp. Afghanistan, parts of Pakistan)

Stopping Transmission in the 4 Polio-Endemic Countries
**Wild Poliovirus**
**India, 2010**

*Dots are randomly placed within blocks (Sub-districts)*

Data as of 06 Apr 2010

= Most recent P1 Wild polio case
= Most recent P3 Wild polio case

**Districts with cases in 2010**

**Districts with cases in current week**

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**Polio cases as of week 15, Nigeria, 2009 & 2010**

**2009**

- Polio cases: 1
- Affected states: 1

**2010**

- Polio cases: 123
- Affected states: 22

Most recent polio-paralyzed child was in Kano on 17 Feb due to type 2 cVDPV

Polio cases: 1+1 VDPV
- Affected states: 2
Wild Poliovirus Week 15
Afghanistan/Pakistan, 2009 & 2010

2009

District with wild virus
WPV1
WPV3

2010

5 9
7 12

WPV Cases
2009
2010

Stopping International Spread of Polioviruses
Number of Countries Infected with Indigenous vs. Imported Polio, 2000-2009

Impact of Outbreak Response Activities

**Polio cases in past 6 months**

12 of the 20 're-infected' countries in 2009 & 2010 have not reported a case in > 6 months.
Stopping Transmission in the 4 Re-established Transmission Countries

Reported polio cases in areas of ‘re-established’ transmission*

<table>
<thead>
<tr>
<th>Country</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chad</td>
<td>37</td>
<td>66</td>
<td>3</td>
</tr>
<tr>
<td>Angola</td>
<td>2929</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Sudan</td>
<td>26</td>
<td>45</td>
<td>5</td>
</tr>
<tr>
<td>DR Congo</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

* as of 06 April 2010
Alignment of Major Epidemiologic Risks with
--Major Proposed Milestones--

Stopping International Spread of Polioviruses:
  ➢ mid-2010: all new importations (2009) interrupted.

Stopping Transmission in 4 “Re-established Transmission” Countries:
  ➢ end-2010: all re-established viruses interrupted.

Stopping Transmission in 4 Endemic Countries:
  ➢ end-2011: 2 of 4 endemic countries interrupted.
  ➢ end-2012: all endemic virus interrupted.