

Type 2 Poliovirus Detection and Response Strategy Following OPV2 Withdrawal

SAGE Polio Session

November 5, 2013

Five major components of the strategy

1. **Notification:** all type 2 viruses –wild, vaccine-related or Sabin – should require immediate notification under IHR (2005) after OPV2 withdrawal;
2. **Surveillance:** AFP surveillance must be complimented by expanded environmental surveillance;
3. **Stockpile:** the planned mOPV2 stockpile should be complemented by an IPV stockpile to facilitate population immunity.
4. **Response:** the principles for response should reflect the nature of the **virus** (e.g. wild vs. Sabin virus), **time** since OPV2 withdrawal, **geographic locations** and **population** characteristics; and
5. **Travelers:** travel in and out of infected areas should be restricted to the degree possible; people undertaking essential travel in or out of an infected area should receive a booster dose of IPV;

Objectives of the strategy

- **To detect and stop the circulation of poliovirus type 2 as rapidly as possible**
- **To achieve this while keeping further exposure to Sabin poliovirus type 2 as restricted as possible**
- **To demonstrate the absence of poliovirus type 2 in populations and the environment following cessation of the outbreak**

1. Notification

Current reporting requirements in International Health Regulation (2005)

- '*....a **notifiable case of poliomyelitis** due to **wild-type poliovirus** is defined as a suspected case with isolation of wild poliovirus in stool specimens collected from the **suspected case** or from **a close contact** of the suspected case.*'
- '*In addition to notification of laboratory confirmed cases of **poliomyelitis due to wild-type poliovirus**..... the isolation of **wild or vaccine-derived poliovirus** from other **human or non-human sources** must generally also be notified to WHO under the separate notification requirement for "events which may constitute a public health emergency of international concern".....'*

**What will need to be notified after
OPV2 withdrawal?**

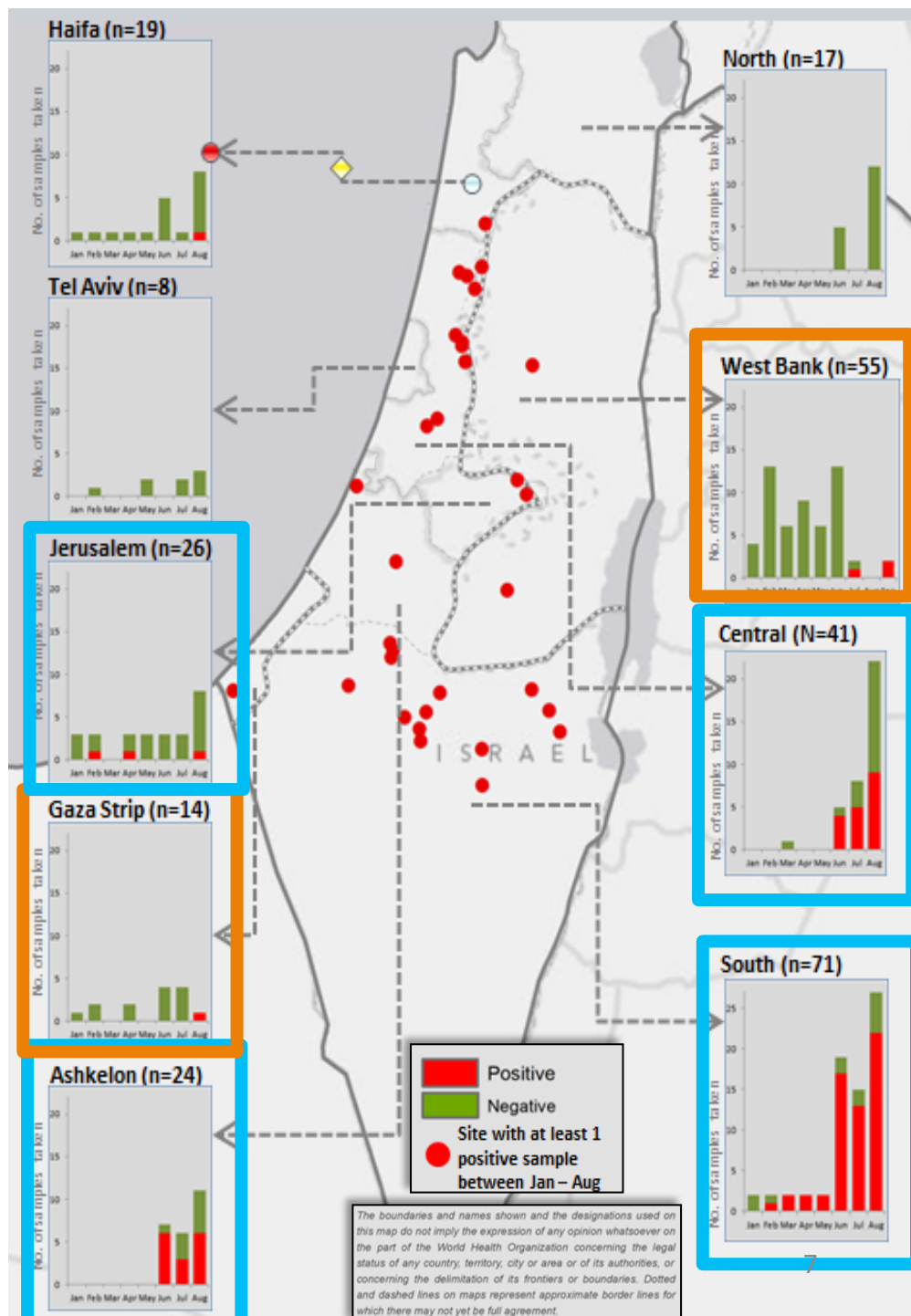
***ANY detection of
poliovirus type 2
(wild, vaccine derived, or sabin)
in **any** sample of **any** source***

2. Type 2 Virus Surveillance

- **AFP surveillance: Detection from an AFP case/contact**
 - AFP systems likely to remain strong until global certification (2018) and gradually decline in quality thereafter
- **Environmental surveillance: Detection from an environmental sample**
 - Environmental sampling will be expanded and sustained for an extended period
- **Incidental finding: Detection in a non AFP case clinical specimen, or detection in a stool survey**
 - Currently not an important surveillance source

Lessons learned from the WPV circulation in Israel

- WPV transmission can be sustained for several months without being detected in areas with high IPV coverage
- This underscores the importance of targeted expansion of the environmental surveillance, especially in areas at high risk for cVDPV emergence, including:
 - areas with low routine coverage and historical cVDPV cases
 - areas where there is risk of silent transmission and circulation of poliovirus



Surveillance response

***All enhanced surveillance to
be maintained for a minimum
of 12 months following the
last virus detection***

3. Vaccine Stockpile

- **Monovalent OPV2 is the vaccine of choice to stop type 2 poliovirus circulation**
- **Inactivated polio vaccine (IPV) has a role depending on circumstances**
 - **Simultaneous administration with mOPV2 to enhance speed of immunity in poorly immunized populations**
 - **Booster immunization around the outbreak response zone to raise immunity levels**

3. Vaccine Stockpile (Continued)

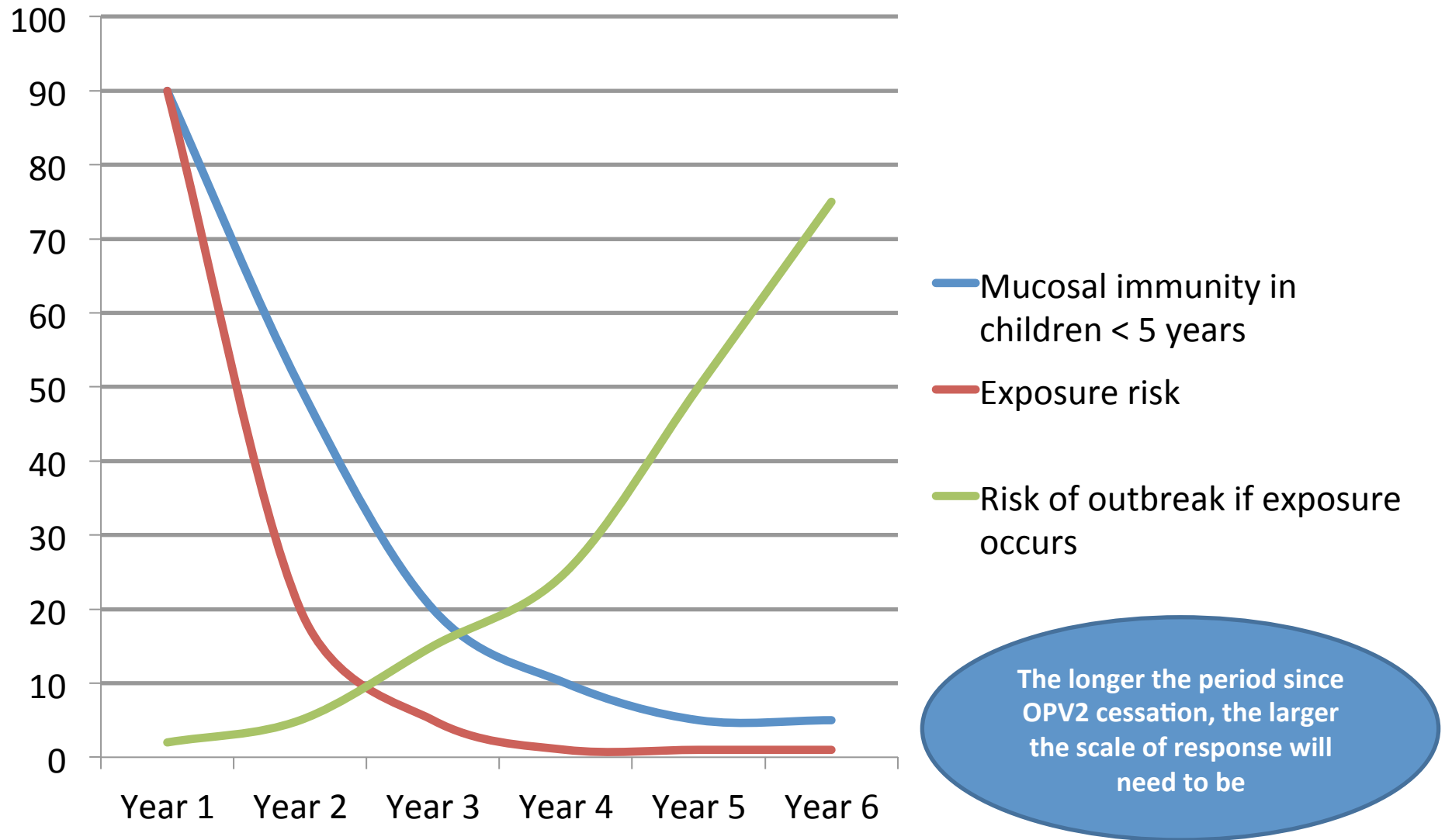
- **GPEI is establishing 500M dose stockpile of mOPV2 for type 2 response after OPV2 withdrawal**
- **Further expansion of the mOPV2 stockpile will be guided by ongoing modeling and scenario analysis**
- **Release protocol for the mOPV2 stockpile will include criteria and procedures for use (e.g. decision by DG WHO on advice by an expert panel within 48 hours of assessment and recommendation)**
- **A virtual IPV stockpile will be maintained by ensuring minimum buffer stocks with manufacturers, and the capacity to expand supply for emergency settings (e.g., by ID administration)**

4. Type 2 Response

Key principles for the outbreak response include:

- a. Speed:** Immediate response commencing within 2 weeks of detection & larger scale response within 4 weeks
- b. Selection of the vaccine:** mOPV2 is the vaccine of choice for the mass vaccination response to stop transmission with IPV possibly used to boost immunity in surrounding areas and outbreak area itself
- c. Operational Flexibility:** Short-interval, expanded age group, and multiple rounds
- d. Type and scale of response:** Determined by the type of virus, time elapsed since OPV2 withdrawal, location, and population affected

Risks of outbreak evolve over time after OPV2 withdrawal



Matrix for WPV / cVDPV response (Draft)

Zone 1: Countries/areas with a clear history of sustained transmission of wild poliovirus or the development of circulating vaccine derived poliovirus

Zone 2: Countries/areas with consistently low immunization coverage or history of importation of WPV or cVDPV type 1 or 3

Zone 3: Countries/areas with consistently higher coverage and few risk factors for sustained transmission of poliovirus

	Zone 1	Zone 2	Zone 3
Phase 1 (within 2 years of OPV2 withdrawal)	<ul style="list-style-type: none"> - Target Population (TP) dependent on time & situation - Age group up to 10 years if needed 	<ul style="list-style-type: none"> - TP dependent on situation - Age group up to 5 yrs minimum 	<ul style="list-style-type: none"> - TP dependent on situation - Age group dependent on situation
Phase 2 (within 3-5 years of OPV2 withdrawal)	<ul style="list-style-type: none"> - TP minimum 1 million - Age group up to 10 years minimum 	<ul style="list-style-type: none"> - TP dependent on time & situation - Age group up to 10 years if needed 	<ul style="list-style-type: none"> - TP dependent on situation - Age group dependent on situation
Phase 3 (after 5 years of OPV2 withdrawal)	<ul style="list-style-type: none"> - TP minimum several millions - Age group up to 15 yrs minimum - Min 5 mOPV2 rounds 	<ul style="list-style-type: none"> - TP minimum 1 million - Age group up to 10 years minimum 	<ul style="list-style-type: none"> - TP minimum 1 million - Age group up to 10 years minimum

5. Potential measures for travellers

- ***Restrictions on travel in and out of infected areas to the largest degree possible***
- ***People undertaking essential travel in or out of an infected area should receive a booster dose of IPV***

Conclusion

- *The WG reviewed the draft strategy for post-cessation type 2 virus detection*
- *The WG proposes that the SAGE endorse the 5 major components of the type2 poliovirus detection and response strategy, covering a) Notification, b) Surveillance, c) Stockpile, d) Response, and e) Travelers*
- *Next Steps: Specific protocols will be established for each major element of the strategy and presented to SAGE in 2014*

Type 2 detection and response strategy: Polio WG recommendation (Reprise)

- The WG reviewed the draft strategy and recommended that it should be comprised of the following 5 major components and include the following provisions:
 - **Notification:** all type 2 viruses –wild, vaccine-related or Sabin – should require immediate notification under IHR (2005) after OPV2 withdrawal;
 - **Surveillance:** AFP surveillance must be complimented by expanded environmental surveillance;
 - **Stockpile:** the planned mOPV2 stockpile should be complemented with IPV to facilitate population immunity;
 - **Response:** the principles for response should reflect the nature of the virus (e.g. wild vs. Sabin virus), the time since OPV2 withdrawal; and
 - **Travellers:** travel in and out of infected areas should be restricted to the degree possible; people undertaking essential travel in or out of an infected area should receive a booster dose of IPV.