Update on the OPV switch and the supply constraints for IPV

This document provides an update on the supply constraints for Inactivated Polio Vaccine (IPV) in all product presentations procured through UNICEF and the PAHO Revolving Fund, including actions being taken to proactively manage and minimize the implications.

SAGE has confirmed the global OPV switch date from 17 April to 1 May 2016

On 20-22 October 2015 the Strategic Advisory Group of Experts on immunization (SAGE) to WHO met and reviewed type 2 Vaccine Derived Poliovirus (VDPV2) epidemiology and all readiness criteria for the switch. SAGE reaffirmed April 2016 for the globally coordinated withdrawal of type 2 containing Oral Polio Vaccine (OPV2), by switching from use of trivalent OPV (tOPV) to bivalent OPV (bOPV).

SAGE confirmed that every country should stop using tOPV and introduce bOPV on a single day of its choosing between 17 April and 1 May 2016, then remove all stocks of tOPV within two weeks of that date and confirm its removal from service delivery points to WHO.

SAGE’s landmark decision follows the endorsement by the World Health Assembly (WHA) in May 2015, when Ministers of Health from 194 Member States adopted a resolution on the global effort to eradicate polio.

In a milestone towards the switch, wild poliovirus (WPV) type 2 was recently declared as eradicated worldwide. WPV type 3 has not been detected globally since November 2012, and the only remaining endemic WPV type 1 strains are now restricted to Pakistan and Afghanistan.

The withdrawal of type 2 containing OPV will ultimately eliminate the risk of the emergence of new type 2 circulating VDPVs (cVDPV) in the future, and will prevent upwards of 200 cases of vaccine associated paralytic poliomyelitis that currently occur each year as a result of the type 2 component in trivalent OPV. The globally synchronised switch will therefore be of great significance for the polio eradication programme with tremendous public health benefits.

As part of the Polio Eradication and Endgame Strategic Plan (the Polio Endgame) 2013-2018, and as recommended by WHO, all 126 countries which, at the start of 2013 were only using OPV, were required to introduce at least 1 dose of the IPV into routine immunization schedules as part of preparations for the global withdrawal of the type 2 containing OPV now confirmed for April 2016.

The level of commitment from countries to meet this timeline has been exceptional. Almost all countries using only OPV at the start of 2013 had committed to introduce IPV before the end of 2015 and many (90\(^1\)) have already introduced IPV as of 1 February 2016. Unfortunately the rapid scale-up of IPV production required to meet this timeline has encountered various challenges, leading to global supply constraints.

The current supply constraints mean that seven countries that have not already received their first IPV shipment through UNICEF and are considered at low risk for polio outbreaks will not be able to introduce IPV in 2016. These countries are expected to receive their first IPV shipments only in early 2017. In addition, shipments to 12 countries considered at low risk for type 2 outbreaks after the

\(^1\) Data on IPV introductions, updated monthly, is available at: www.who.int/immunization/diseases/poliomyelitis/endgame_objective2/en/
switch will not receive additional supply before August. These delays, while unfortunate, are unavoidable. Affected countries have been notified by WHO and UNICEF directly.

It is important to note that all countries must implement the globally synchronized switch from tOPV to bOPV in April 2016, regardless of their IPV introduction date.

1. Why are there supply constraints?

In March 2014, UNICEF issued awards to two manufacturers for the supply of IPV in 1, 5 and 10 dose vials and long term supply agreements have been established through to 2018.

Due to technical challenges in scaling up IPV bulk production and the associated quality control testing and releases, there is now reduced availability from both manufacturers for all presentations. The availability of supply for routine introductions has also been reduced by new unanticipated requests for IPV doses for use in eradication-related supplementary immunization activities (SIAs), and requirements for volumes to be set aside for potential outbreak response that may be carried out post-switch to control cVDPV2 outbreaks in any country.

The constrained situation is projected to remain through 2017 for all IPV product presentations procured through UNICEF, the PAHO Revolving Fund, and national Governments. Regular updates will be shared with WHO and UNICEF regional staff, country offices and partners as soon as new information becomes available.

WHO, UNICEF and partners are taking action to limit the number of countries impacted by the delays and minimise the consequences of this situation. Frequent discussions have taken place with manufacturers to identify steps to manage the reductions. Coordination with regional offices has helped to inform the most suitable allocation of supply, taking into consideration each country’s level of risk for a cVDPV type 2 (VDPV2) outbreak after the switch and the size of its national birth cohort.

2. How is the available supply being allocated?

When the Polio Endgame Strategy was launched, countries were divided into four tiers, primarily for purposes of planning and prioritization. These tiers represent each country’s level of risk (tier 1 being at highest risk) for a cVDPV2 outbreak after the switch from tOPV to bOPV.

There are four criteria used to determine the classification of each country, and therefore their prioritization for the allocation of IPV supply. Countries are considered to be in a higher risk tier if:

- The transmission of wild poliovirus has not yet been interrupted
- The country has a history of cVDPV outbreaks
- There are consistently low levels of routine immunization coverage (and therefore population immunity to type 2)
- The country shares borders with higher risk countries

In the current context of supply constraints, this grouping of countries into tiers is the primary consideration for supply allocation, and countries at higher risk of cVDPV2 outbreaks are being prioritized for IPV supply.

SAGE emphasized that even in the event of further changes in IPV supply, the switch date will not be changed. SAGE requested its Polio Working Group to provide urgent guidance on the optimal management of IPV supply if it is further reduced, and endorsed the following approach to prioritizing for allocation of supplies:
- First ensuring the introduction of IPV in routine immunization in tier 1 and 2 countries before the switch;
- Making stocks available for outbreak response after the switch; and,
- Minimizing delays in introduction in routine immunization and stock-outs.

3. What is the impact on national immunization programmes?

Based on the latest information from manufacturers on supply availability and the most optimum scenarios, at least 90 countries – including all tier 1 and 2 countries – have received their first IPV shipment in time to introduce the vaccine before the end of 2015.

For countries that have not yet introduced IPV:
Of the low risk countries, approximately 19 countries will experience delays in deliveries in 2016. The majority of these countries will be delayed until August/September 2016, however seven countries will be delayed until the first quarter of 2017.

For countries that will experience delays to their resupply for routine immunization:
12 countries (that introduced IPV in 2015) will not receive additional supply until August. This group of countries is considered at low risk for type 2 outbreaks after the switch.

All countries affected are receiving direct communications from UNICEF Supply Division about the timing of their shipment. This will allow for planning of the IPV introduction soon after the receipt of vaccines, or for other actions to facilitate vaccination of eligible infants who may have missed a scheduled dose of IPV (as quantities may allow). WHO and UNICEF regional and country offices are facilitating discussions to identify new launch dates and support the revision of introduction plans for these countries.

4. What is the role of IPV in the Endgame Strategy?

The short term risk of a cVDPV2 outbreak after the switch is higher in countries with low routine immunization coverage or a history of cVDPV2 or wild polio virus outbreaks, as well as in countries sharing borders with higher risk countries. This risk is being reduced by boosting population immunity through ongoing high quality tOPV campaigns before the switch to bOPV.

In tier 1 and 2 countries at risk of cVDPV2, should an outbreak of cVDPV2 occur after the switch, having IPV already introduced will enable a more effective and rapid outbreak response, due to its role in priming the immune system for a more rapid and robust response to OPV. IPV will also help to protect against paralytic polio and to boost immunity to polio infection. A global stockpile of monovalent type 2 OPV (mOPV2) and IPV will be available for outbreak response in the event of a VDPV2 being detected in any country after the switch.

5. What is the level of risk for the countries that are delayed for IPV introduction?

The SAGE considered the following as a compelling risk management rationale:
- IPV has a limited role in preventing VDPV2 emergence, however is very effective in preventing paralytic disease in any outbreak. This value will increase with time after the switch, as the birth cohorts that have not received OPV2 grow;
- The risk of VDPV2 emergence is principally being reduced by an extensive use of tOPV in SIAs before the switch;
- In addition to tOPV SIAs, the highest risk (tier 1 and tier 2) countries will have introduced IPV in routine immunization before the switch;
- The majority of countries affected by the delay are in low risk tiers 3 and 4. Population immunity against type 2 is high in these countries (due to consistently high routine immunisation coverage) so the risk of VDPV2 emergence and spread is minimal;
- Finally, a global stockpile of mOPV2 and IPV will be available for outbreak response in the event of a VDPV2 being detected in any country after the switch.

The SAGE concluded that the public health risks associated with the continued use of tOPV far outweigh the risk of new VDPV2 emergence after use of tOPV is stopped, even in countries where IPV introduction is delayed.

6. If affected by the delays, what can a country do to mitigate risks?

All countries affected by delays in the receipt of IPV for national introduction should:

- Make all efforts to optimize type 2 population immunity prior to the switch with effective use of remaining tOPV stocks. Global supply is available for countries to conduct tOPV campaigns before the switch. The higher the type 2 population immunity is at the time of the switch, the longer that immunity will protect against type 2 poliovirus.
- Coordinate implementation of the switch in a highly effective and timely manner, to make sure that strictly no tOPV is used after the global switch window from 17 April to 1 May.
- Ensure that preparations for IPV introduction are completed well in advance, so that IPV roll out can start as soon as the vaccine becomes available.
- Plan for the vaccination of any eligible infants who missed a scheduled dose of IPV after the OPV switch in April 2016 (e.g. came for DTP3 after switch, but IPV was not available). When global supplies become available, affected countries will be offered additional doses to cover needs that were not adequately met post-switch.
- Enhance surveillance systems through both Acute Flaccid Paralysis (AFP) surveillance and environmental sampling, where it has been established, to help identify and confirm any type 2 poliovirus infections as soon as possible after the switch.
- Prepare a response plan so that in the unlikely situation that a type 2 poliovirus outbreak occurs, it can be addressed and ended as soon as possible.

Countries that experience delays to the resupply of IPV for their routine programme may also:

- Closely monitor IPV stocks at all levels, to balance stocks effectively to help prevent stockouts, e.g. smaller and more frequent deliveries to lower levels to help with effective distribution of available supply.
- Ensure strict adherence to vaccinating children only in the target group, e.g. at 14 weeks of age or the nearest immunization visit
- Prioritize available supply to at-risk populations, in the case of a potential IPV stock out.
- Apply the multi-dose vial policy, to enable use of IPV with the vaccine vial monitor on the label up to 28 days after opening, to help minimize wastage.
- Use vaccination cards and registers effectively to record a missed dose of IPV, to facilitate later tracking and follow up. (Further guidance on related strategies is forthcoming.)

---


Finally, as an alternative to the intramuscular injection of a full IPV dose, countries may choose the implementation of a two-dose fractional dose schedule (using 1/5 of a full dose), via the intradermal route. Programmatic implications should be carefully considered. This option endorsed by SAGE is reflected in the WHO Position Paper on polio vaccines4.

7. What is the importance of containment ahead of the switch?

Certifying the world as polio-free requires not only stopping the circulation of wild poliovirus in human populations, the only natural reservoir, but also minimizing the risk of an accidental reintroduction of poliovirus into the community from a laboratory or vaccine production site.

With wild poliovirus type 2 (WPV2) already eradicated globally, the destruction of all WPV2 and Sabin 2 viruses (Phase 1) and the security of all remaining WPV2 and Sabin type 2 viruses under appropriate bio-containment levels in a limited number of ‘poliovirus essential facilities’ are key risk management measures to be taken in preparation for the OPV switch in April 2016.

The IPV supply situation remains dynamic and is being closely monitored. Should anything change from these current projections, WHO and UNICEF will contact affected regional colleagues and countries.

Additional programmatic guidance on strategies related vaccination of eligible infants who may have missed a scheduled dose of IPV after the OPV switch in April 2016 will be issued in coming weeks.

Our organizations remain at your disposal for further information or support related to the introduction of IPV and preparations to implement the switch.

For more information on IPV introduction and the switch, please visit: http://www.who.int/immunization/diseases/poliomyelitis/endgame_objective2/en/

---