

KEY POINTS ABOUT CONTAINMENT

(Original WHO version from April 2018 and adapted by PAHO in November 2018)

Wild poliovirus Type 2 has been eradicated.

- Wild poliovirus type 2 was declared eradicated by the Global Commission for the Certification of Eradication of Poliomyelitis (GCC) in September 2015.
- Wild poliovirus type 2 is the first of the three poliovirus types to be eradicated.
- The eradication of wild poliovirus type 2 means it is no longer found among people or in the environment.
- In May 2016, the world stopped using oral polio vaccine type 2 (OPV2) for routine vaccination of children.
- Some facilities around the world still use and store wild poliovirus type 2 for vaccine production or research purposes.

All poliovirus type 2 in facilities must be destroyed or appropriately contained.

- Handling and storing an eradicated pathogen is a risk and responsibility for all countries.
- WHO strongly encourages countries to destroy all poliovirus type 2, unless it is needed for critical national or international functions such as vaccine production or research. Destroying the virus is the best way to prevent it from being released, accidentally or intentionally, from facilities into the community.
- Facilities that wish to retain poliovirus type 2 for critical functions must safely and securely contain the virus.
- Poliovirus type 2 materials include wild poliovirus, vaccine-derived poliovirus, monovalent oral polio vaccine and Sabin poliovirus containing the type 2 serotype.

Appropriate containment minimizes risk of poliovirus type 2 being released.

- Containment includes biosafety and biosecurity requirements for laboratories, vaccine production sites, or other facilities that handle or store the eradicated poliovirus, to minimize the risk of it being released, accidentally or intentionally, into the community.
- Containment is a key objective of the [Polio Eradication and Endgame Strategic Plan 2013-2018](#), and will be critical for maintaining a polio-free world for the long-term.

Any release of poliovirus type 2 could have major consequences.

- If poliovirus type 2 is released into communities, the strain could resurge and again cause paralysis and death. This is especially a risk in areas where polio vaccination coverage is low. However, even in countries with high levels of polio vaccination coverage, some people may not be vaccinated or fully protected against polio, putting them at risk of infection if they are exposed.
- A release of the only other eradicated human pathogen, smallpox virus, from a laboratory in the United Kingdom in 1978 resulted in a person dying from the disease. This triggered countries to further reduce the number of facilities retaining smallpox virus to the two official repositories that remain today.
- Learning from the smallpox experience, the polio eradication programme is working with countries and stakeholders to ensure that containment activities are appropriately implemented in a limited number of designated poliovirus-essential facilities.

Global plan aims to minimize risk of release of eradicated polioviruses.

- The *WHO Global Action Plan to minimize poliovirus facility-associated risk after the type-specific eradication of wild polioviruses and sequential cessation of oral polio vaccine use* (GAPIII) was published in December 2014, and endorsed by the World Health Assembly in May 2015 ([resolution WHA68.3](#)).
- Key ways to minimize risk are: destroy unneeded poliovirus materials, or safely and securely contain needed poliovirus materials in a poliovirus-essential facility (PEF). A PEF is a facility designated and determined by its host country to be serving critical national or international functions such as polio vaccine production or research, that involve the handling and storage of poliovirus.

- GAPIII describes the requirements for PEFs to safely and securely handle and store eradicated polioviruses.
- PEFs and their host countries are responsible for appropriate containment of eradicated polioviruses. Facilities must meet the requirements for safe and secure handling and storage of poliovirus, and the host countries must ensure high population immunity levels and environmental sanitation.

Facilities must be certified to handle and store poliovirus type 2.

- Only poliovirus-essential facilities (PEFs) holding containment certificates, approved by their respective National Authority for Containment (NAC) and endorsed by the GCC, will be permitted to handle and store eradicated polioviruses.
- WHO developed the [GAPIII Containment Certification Scheme](#) (GAPIII-CCS) to help countries put in place the appropriate mechanisms to certify that facilities have met the requirements in GAPIII. This scheme was endorsed by [Strategic Advisory Group of Experts on Immunization \(SAGE\) in October 2016](#).
- The GAPIII-CCS offers three levels of containment certification: (1) certificate of participation (CP) is awarded to facilities in countries that have demonstrated compliance with the required secondary and tertiary safeguards described in GAPIII and are recognized by their NACs to engage in the GAPIII-CCS process (2) an interim containment certification (ICC), which allows facilities to continue conducting critical activities such as vaccine production and research, while addressing remaining requirements for full containment certification (within given timelines), and (3) certificate of containment is awarded when the facility is fully compliant with GAPIII.
- In May 2018, WHO will propose a resolution for consideration by the World Health Assembly, seeking international consensus on accelerating efforts and activities needed to ensure containment requirements are met globally and that was finally approved (resolution [WHA71.16](#)).

Many specimens may potentially be infected with poliovirus type 2.

- Many specimens (e.g. stool or respiratory secretion specimens) collected at times and in geographic areas where wild poliovirus type 2, vaccine-derived poliovirus type 2, oral polio vaccine type 2 or Sabin type 2 viruses were circulating, are likely to harbour these viruses.
- ‘Non-poliovirus facilities’ may unknowingly be handling and storing specimens potentially infected with polioviruses. Examples include facilities working with stool, respiratory or environmental sewage specimens to carry out rotavirus, hepatitis, influenza, measles, diarrheal disease or nutrition research.
- [Tailored Guidance to minimize risks for facilities collecting, handling or storing materials potentially infectious for polioviruses](#) for these facilities has been developed to help them identify specimens potentially infected with polioviruses, and to implement appropriate measures for their destruction or safe and secure handling and storage.

Once eradicated, wild poliovirus types 1 and 3 must be destroyed or contained.

- The last case of wild poliovirus type 3 occurred in Nigeria in 2012, and wild poliovirus type 1 circulates in only two countries (Pakistan and Afghanistan).
- Once the eradication of wild poliovirus types 1 and 3 has been declared, countries will need to destroy unneeded virus, or safely and securely contain remaining viruses in certified poliovirus-essential facilities.
- The GCC will certify the world is polio-free, marking the start of the full containment of wild polioviruses.

Links of interest on poliovirus containment

1. Key points about containment <http://polioeradication.org/wp-content/uploads/2018/04/polio-poliovirus-containment-key-points-20180418.pdf>
2. WHO Global Action Plan for poliovirus containment (GAPIII) and GAPIII-Containment Certification Scheme (GAPIII-CCS) http://polioeradication.org/wp-content/uploads/2016/12/GAPIII_2014.pdf
3. Containment certification scheme to support the WHO global action plan for poliovirus containment. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO. http://polioeradication.org/wp-content/uploads/2017/11/CCS_19022017-EN.pdf
4. Guidance to minimize risks for facilities collecting, handling or storing materials potentially infectious for polioviruses. Geneva: World Health Organization; 2018. Licence: CC BY-NC-SA 3.0 IGO. <http://polioeradication.org/wp-content/uploads/2018/04/polio-containment-guidance-for-non-poliovirus-facilities-20180410-en.pdf>
5. Considerations in the framework of Containment of Poliovirus in the Americas, Regional-GAPIII. Guidance to minimize risks for facilities collecting, handling or storing materials potentially infectious for polioviruses. 2018. <https://bit.ly/2Sa6V9e>
6. Frequently asked questions guidance to minimize risks for facilities collecting, handling or storing samples potentially infectious for polioviruses (PIM guidance) <http://polioeradication.org/wp-content/uploads/2018/11/PIM-guidance-frequently-asked-questions-July-18.pdf>
7. WHA71.16 May 2018 Poliomyelitis – containment of polioviruses http://apps.who.int/gb/ebwha/pdf_files/WHA71/A71_R16-en.pdf
8. WHO. 2017. CAG June 2017 Report. Report of the First Meeting of the Containment Advisory Group, 19-20 June 2017 <http://polioeradication.org/wp-content/uploads/2017/08/CAG1-Report-30082017.pdf>
9. WHO. 2017. CAG2 November 2017 Meeting report. Report of the Second Meeting of the Containment Advisory Group, 28-30 November 2017. <http://polioeradication.org/wp-content/uploads/2018/02/poliovirus-containment-advisory-group-meeting-20171130.pdf>
10. Teleconference of the Containment Advisory Group (CAG TC1) on Showers <http://polioeradication.org/wp-content/uploads/2018/05/containment-advisory-group-teleconference-1-on-showers-25-january-2018-20180523.pdf>
11. Teleconference of the Containment Advisory Group (CAG TC2) on Novel Poliovirus Strains <http://polioeradication.org/wp-content/uploads/2018/05/containment-advisory-group-novel-poliovirus-strains-8-march-2018-20180518.pdf>
12. Teleconference of the Containment Advisory Group (CAG TC3) on nOPV2 candidate vaccines and S19 – poliovirus type 2 strains http://polioeradication.org/wp-content/uploads/2018/09/CAG_TC3_June_2018_EN_Final.pdf
13. The 15th face-to-face meeting of the SAGE Polio Working Group (WG) was held on 20-21 February, 2018 at the World Health Organization HQ in Geneva, Switzerland. http://www.who.int/immunization/sage/meetings/2018/april/2_WHO_Polio_SAGE_Apr2018.pdf