



STRATEGY FOR GLOBAL POLIOVIRUS CONTAINMENT





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ACRONYMS AND ABBREVIATIONS

CC	Certificate of containment
CCS	Containment Certification Scheme
cVDPV	Circulating vaccine-derived poliovirus
cVDPV2	Circulating vaccine-derived poliovirus type 2
GAP	Global Action Plan for containment (all editions)
GAPIII	Global Action Plan to minimize poliovirus facility-associated risk, third edition
GAPIV	Global Action Plan for Poliovirus Containment, fourth edition
GCC	Global Commission for the Certification of the Eradication of Poliomyelitis
GCC-CWG	Containment Working Group of the Global Commission for the Certification of the Eradication of Poliomyelitis
GPCAP	Global Poliovirus Containment Action Plan
GPEI	Global Polio Eradication Initiative
IM	Infectious materials
M&E	Monitoring and evaluation
MoH	Ministry of Health
NAC	National authority for containment
NCC	National Committee for the Certification of the Eradication of Poliomyelitis
NPCC	National poliovirus containment coordinator
NPCTF	National Poliovirus Containment Task Force
NTF	National Task Force for Poliovirus Containment (applicable whenever NPCTF is cited)
OPV	Oral polio vaccine
PCS	Polio Post-Certification Strategy
PEF	Poliovirus-essential facility
PIM	Potentially infectious materials
PV	Poliovirus
R&D	Research and development
RCC	Regional Commission for the Certification of the Eradication of Poliomyelitis
Sabin strain	Sabin vaccine poliovirus strain
VDPV	Vaccine-derived poliovirus
WHA	World Health Assembly
WHO	World Health Organization
WPV	Wild poliovirus
WPV1	Wild poliovirus type 1

INTRODUCTION

WHAT IS CONTAINMENT

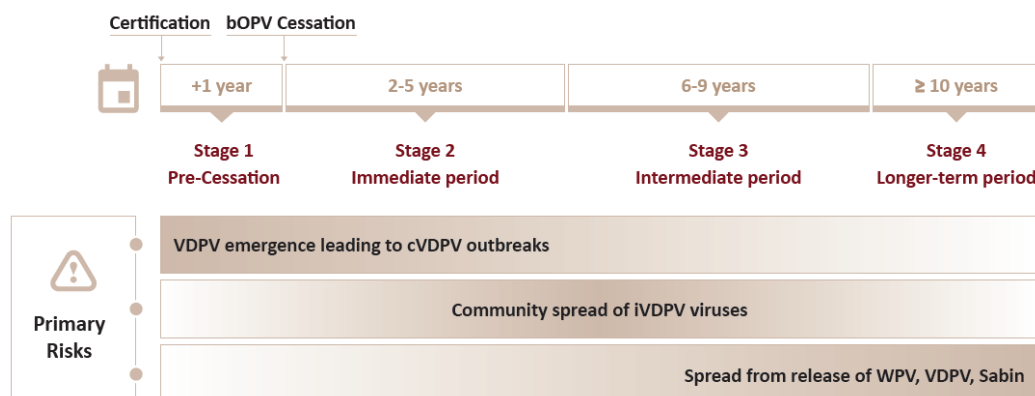
Containment defines a set of policies used as safeguards to uphold biosafety and biosecurity requirements for laboratories, vaccine production sites, and other facilities that handle or store eradicated polioviruses. Containment policies also address the use of some live oral polio vaccines (OPVs) in immunization campaigns. The primary goal of poliovirus containment is to minimize the risk of reintroducing polioviruses into an increasingly susceptible population once the global eradication of all wild polioviruses (WPVs) is certified, the absence of all vaccine-derived polioviruses (VDPVs) is validated, and the use of all OPV has stopped. Setting guidance and procedures for the appropriate containment of all poliovirus (PV) materials, including wild, Sabin-type and vaccine-derived PV materials, is a key objective of the Global Polio Eradication Initiative (GPEI), in addition to achieving the global eradication of poliovirus. Poliovirus containment can only be achieved through timely country implementation and compliance.

WHY IS CONTAINMENT CRITICAL TO POLIO ERADICATION

In view of the enormous investments of financial and human resources made by countries and global partners to eradicate polio, all stakeholders must recognize the importance of poliovirus containment to the ultimate eradication goal.

As long as PV materials are retained in any facility, potential release of polioviruses constitutes a risk to certified countries and regions – a risk that increases in the post-eradication era (**Fig. 1**). Once global eradication is achieved and OPV use is discontinued in essential immunization and mass vaccination campaigns, population immunity to polioviruses will decline, particularly in countries and areas with low-performing essential immunization programmes. The consequences of any unintentional or intentional release into communities due to a containment breach could be severe. The very real risk of such breaches has been illustrated,¹ including reported incidents documented since the inception of the GPEI.²

Fig. 1. Risk of polio re-emergence over time after global certification of WPV eradication



bOPV = bivalent oral polio vaccine; cVDPV = circulating vaccine-derived poliovirus; iVDPV = immunodeficiency-associated vaccine-derived poliovirus; Sabin = Sabin vaccine poliovirus strain; VDPV = vaccine-derived poliovirus; WPV = wild poliovirus

Source: Polio Post-Certification Strategy.

¹ Bandyopadhyay AS, Singh H, Fournier-Caruana J, Modlin JF, Wenger J, Partridge J, Sutter RW, Zaffran MJ. Facility-Associated Release of Polioviruses into Communities—Risks for the Posteradication Era. *Emerg Infect Dis.* 2019;25(7):1363-69 (https://wwwnc.cdc.gov/eid/article/25/7/18-1703_article).

² Duizer E, Ruijs WL, van der Weijden CP, Timen A. Response to a wild poliovirus type 2 (WPV2)-shedding event following accidental exposure to WPV2, the Netherlands, April 2017. *Eurosurveillance.* 2017; 22(21):pii=30542 (<https://doi.org/10.2807/1560-7917.ES.2017.22.21.30542>).

WHY IS A CONTAINMENT STRATEGY NEEDED

To sustain polio eradication – and to preserve decades of investments that have contributed to public health gains that extend far beyond polio eradication – relatively modest but strategically critical efforts must be made and resources identified to safely contain poliovirus materials.

This ***Strategy for Global Poliovirus Containment*** defines the goals and objectives to safely contain polioviruses through efforts coordinated across the GPEI partnership, Ministries of Health (MoHs), vaccine manufacturers, laboratories, and other facilities retaining infectious and potentially infectious materials (IM and PIM) that include live vaccines and samples collected through surveillance for cases of acute flaccid paralysis (AFP) and environmental surveillance (ES). As containment engages facilities and processes independent of GPEI ownership and oversight, all stakeholders in the polio eradication effort must recognize the goals of containment and the objectives that will support timely progress toward reaching containment milestones.

While containment was not positioned within the two primary goals of the *Polio Eradication Strategy 2022–2026* due to the dual emergencies of continued wild poliovirus type 1 (WPV1) transmission and circulating vaccine-derived poliovirus (cVDPV) spread,³ containment is a critical component of eradication. Containment is connected to many other eradication workstreams including outbreak response, surveillance, vaccine supply, vaccine research and development (R&D), broader polio-related R&D, and communication and advocacy. While some containment milestones are contingent on global WPV eradication, other containment milestones are independent of eradication and yet have still experienced challenges toward timely implementation. The impact of delayed progress on poliovirus containment must be addressed.

This *Strategy for Global Poliovirus Containment* is thus offered as a fundamental strategy or framework, defining high-level containment principles that must be carried forward by all containment stakeholders. It is intended to elaborate the polio containment principles outlined in the *Polio Eradication Strategy 2022–2026*.³

HOW DOES THIS STRATEGY RELATE TO OTHER GUIDANCE

At the Seventy-first World Health Assembly, all Member States of the World Health Organization (WHO) unanimously passed a resolution prioritizing global poliovirus containment.⁴ Adoption of the resolution committed all countries to expedite full implementation of containment requirements.

This strategy provides a blueprint for all countries and partners by defining the containment goals around which polio eradication stakeholders must organize their efforts to safely contain all poliovirus. **It is intended broadly for the GPEI partnership – and particularly for national political and health leaders and heads of institutions and facilities retaining poliovirus.** Whether or not a country intends to designate a poliovirus-essential facility (PEF) to handle and store polioviruses after the global certification of WPV eradication, all countries must uphold and perform poliovirus containment activities, including by routinely updating the facility surveys and inventories required to ensure compliance with containment standards and policies.

³ Global Polio Eradication Initiative (GPEI). *Polio Eradication Strategy 2022–2026: Delivering on a promise*. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/bitstream/handle/10665/345967/9789240031937-eng.pdf>).

⁴ Resolution WHA71.16. Poliomyelitis – containment of polioviruses. In: Seventy-first World Health Assembly, Geneva, 26 May 2018. Geneva: World Health Organization; 2018 (https://apps.who.int/gb/ebwha/pdf_files/WHA71/A71_R16-en.pdf).

Four companion guidance documents support this strategy:

1. **Global Poliovirus Containment Action Plan 2022–2024 (GPCAP)** is intended for those working directly on containment activities, including national containment coordinators and authorities for containment, national-level auditors, managers of PEFs, and WHO global and regional containment coordinators.⁵ As the eradication effort has adjusted to the long tail of WPV1 transmission and cVDPV outbreaks, containment milestones and policies have also been impacted. The GPCAP defines the way forward for country-level implementation of poliovirus containment by providing actionable guidance for national containment stakeholders and supportive actions on the part of regional and global containment stakeholders.
2. **Agency-specific containment workplans** direct the efforts of the WHO, the U.S. Centers for Disease Control and Prevention (CDC), the Bill & Melinda Gates Foundation and other partners toward further developing the coordination, assistance, and global monitoring & evaluation (M&E) needed to support WPV eradication and ensure containment in the post-certification era. These internal workplans will provide agile guidance for agency coordination on containment; they will be reviewed annually and adjusted as needed.
3. **A containment M&E framework** is in development by the WHO and the Executive Management Unit of the GPEI to track progress toward key performance indicators and milestones on the part of national, regional and global containment stakeholders. This M&E framework will be completed by the end of 2022.
4. The **Polio Post-Certification Strategy (PCS)** defines activities and functions that will be needed to sustain a polio-free world once the certification criteria for global WPV eradication are met.⁶ Within the PCS (2018), containment is positioned as the first goal. Together with containment-related technical guidance, including the WHO Global Action Plan for Poliovirus Containment (GAP), the Containment Certification Scheme (CCS), and WHO Guidance to minimize risks for potentially infectious materials (PIM),⁷ the PCS is scheduled to be revised. The PCS revision will provide updated frameworks to support the transition of core polio functions to countries and other future owners after the closure of the GPEI partnership.

⁵ Global Polio Eradication Initiative (GPEI). Global Poliovirus Containment Action Plan. Geneva: World Health Organization; 2022 (<https://polioeradication.org/wp-content/uploads/2022/07/GPCAP-2022-2024.pdf>).

⁶ Polio Post-Certification Strategy: A risk mitigation strategy for a polio-free world. Geneva: World Health Organization; 2018 (<https://polioeradication.org/wp-content/uploads/2018/04/polio-post-certification-strategy-20180424-2.pdf>).

⁷ Other technical guidance that is in preparation for revised publication include: WHO global action plan to minimize poliovirus facility-associated risk after type-specific eradication of wild polioviruses and sequential cessation of oral polio vaccine use. Geneva: World Health Organization; 2015 (http://polioeradication.org/wp-content/uploads/2016/12/GAPIII_2014.pdf). Poliovirus containment: guidance to minimize risks for facilities collecting, handling or storing materials potentially infectious for polioviruses, second edition. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/bitstream/handle/10665/341367/9789240021204-eng.pdf>). Containment Certification Scheme to support the WHO Global Action Plan for Poliovirus Containment (GAPIII-CCS). 2017, World Health Organization: Geneva. (<https://polioeradication.org/wp-content/uploads/2016/10/CCS.pdf>). **Revised guidance documents, once available, will be posted to the GPEI website under *Containment Guidance and Tools*** (<https://polioeradication.org/polio-today/preparing-for-a-polio-free-world/containment/containment-resources>).

STRATEGY FOR GLOBAL POLIOVIRUS CONTAINMENT

This strategy lays out the vision, overarching goals and strategic objectives for poliovirus containment in facilities retaining poliovirus (PV) materials. Three strategic goals for poliovirus containment will need to be achieved by all poliovirus containment stakeholders in parallel to the effort to interrupt wild poliovirus type 1 (WPV1) and circulating vaccine-derived poliovirus (cVDPV) transmission – and beyond eradication into the post-certification era.

The **three main strategic goals** are:

- 1 to reduce to a minimum the number of facilities retaining poliovirus materials;
- 2 to ensure that all eradicated poliovirus materials in poliovirus-essential facilities (PEFs) are stored and handled according to international standards to maintain long-term containment; and
- 3 to strengthen and support national and international programmes to ensure sustainability and continuity of poliovirus containment in the post-certification era.

GOAL ONE

Reduce to a minimum the number of facilities retaining poliovirus materials

From the beginning, poliovirus containment efforts have focused on four main workstreams to identify and reduce to a minimum the number of laboratories and other facilities where poliovirus materials are retained (**Table 1**).

Table 1. Primary workstreams for containment

Identify ⇨	Destroy ⇨	Transfer ⇨	Contain
All WHO Member States survey their laboratories, vaccine manufacturers and other facilities to identify and create inventories of facilities handling and/or storing poliovirus infectious and potentially infectious materials (IM and PIM).	Once inventories have been created, all identified laboratories and facilities must destroy all materials which are not required for national or international diagnostic, research or vaccine production purposes.	Laboratories and other facilities without appropriate containment measures and which are not designated as poliovirus-essential facilities (PEFs) may transfer any needed poliovirus materials to a designated/certified PEF.	Eventually, the only locations allowed to retain eradicated polioviruses will be PEFs, as designated by Member States, which will need to be fully certified as complying with all internationally required biorisk and biosecurity management standards, as described in GAP.

GAP = Global Action Plan for Poliovirus Containment; IM = infectious materials; PEF = poliovirus-essential facility; PIM = potentially infectious materials; WHO = World Health Organization

OBJECTIVE 1A

Establish and maintain inventories for all facilities retaining poliovirus materials – and destroy or transfer unneeded material

Conduct and provide oversight of containment activities at the national level. Conducting surveys and establishing and maintaining inventories of facilities holding both infectious and potentially infectious poliovirus materials (IM and PIM) is a critical baseline activity required in all countries. It is conducted by National Poliovirus Containment Task Forces (NPCTFs),⁸ led by a national poliovirus containment coordinator (NPCC), with support from independent National Committees for the Certification of the Eradication of Poliomyelitis (NCCs). National containment groups must review and update inventories on an annual basis as facilities may have closed or new facilities may have opened, or a new poliovirus importation or polio outbreak may have occurred with one or more facilities possibly holding new IM or PIM, including oral polio vaccines (OPVs) and novel live poliovirus strains and materials.

Report on national containment activities from the national to the regional level. Regional Commissions for the Certification of the Eradication of Poliomyelitis (RCCs) in each WHO region require annual reports from NCCs of all Member States. Polio-free countries provide updates on maintaining their WPV-free status, addressing the quality of their surveillance and immunization activities, as well as their progress in implementing poliovirus containment measures such as surveys and inventories. RCCs conduct an overall assessment of remaining polio risks and then recommend actions needed to mitigate risk and achieve containment goals within the region.

Conduct surveys for facilities holding potentially infectious materials (PIMs). In addition to identifying facilities retaining materials known to be poliovirus infectious (WPV, VDPV, OPV), countries are also required to identify laboratories and other facilities retaining poliovirus PIMs, as such facilities are often not even aware that they may be harboring PIMs. PIMs may be found as specimen types collected for purposes other than poliovirus-associated work in countries where WPVs and cVDPVs were in circulation or where OPV or the novel oral polio vaccine (nOPV) were used. Facilities with a high probability of handling or storing and retaining PIMs include facilities working with enteric or respiratory disease agents and facilities engaged in nutrition research or environmental studies.⁹

Maintain a poliovirus type-specific approach to containment activities. Following the declaration of the eradication of indigenous wild poliovirus type 2 (WPV2) and the subsequent globally coordinated cessation of type 2 OPV (OPV2) for essential immunization, all WHO Member States committed to contain all type 2 polioviruses, including wild, vaccine-derived and Sabin strains.¹⁰ Accordingly, containment activities initially focused on type 2 polioviruses and included the conduct of surveys and creation of facility inventories. However, as requested in the 2018 resolution (WHA71.16) which passed unanimously at the Seventy-first Health Assembly,¹¹ all Member States have been urged to accelerate the completion of national inventories of facilities containing infectious or potentially infectious materials for types 1 and 3 wild and vaccine / vaccine-derived polioviruses. Unneeded types 1 and 3 wild and vaccine-derived viruses should be destroyed or plans made to transfer any retained types 1 and 3 material to a designated PEF.

⁸ NPCTFs are sometimes referred to as National Task Forces (NTFs) for Poliovirus Containment in different country or regional contexts. As their functions are equivalent, NTFs are referred to as NPCTFs throughout this strategy.

⁹ Poliovirus containment: guidance to minimize risks for facilities collecting, handling or storing materials potentially infectious for polioviruses, second edition. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/bitstream/handle/10665/341367/9789240021204-eng.pdf>).

¹⁰ Resolution WHA68.3. Poliomyelitis. In: Sixty-eighth World Health Assembly, Geneva, 26 May 2015. Geneva: World Health Organization; 2015 (https://apps.who.int/gb/ebwha/pdf_files/WHA68/A68_R3-en.pdf).

¹¹ Resolution WHA71.16. Poliomyelitis – containment of polioviruses. In: Seventy-first World Health Assembly, Geneva, 26 May 2018. Geneva: World Health Organization; 2018 (https://apps.who.int/gb/ebwha/pdf_files/WHA71/A71_R16-en.pdf).

OBJECTIVE 1B

Keep the number of poliovirus-essential facilities to a minimum

All facility-associated poliovirus containment risk can be mitigated through the destruction of all poliovirus materials known to be infectious or potentially infectious. This is the most important modus of reducing the number of facilities retaining poliovirus materials. However, important national and international functions require the continued maintenance and handling of poliovirus materials, and as such some Member States may need to designate a small number of PEFs to continue to retain poliovirus materials with appropriate containment measures beyond the certification of WPV eradication. These critical functions include virologic research to develop new vaccines or antivirals, vaccine production, vaccine quality assurance and diagnostic reagent production, as well as the management of OPV stockpiles for use in the event of an outbreak.

Ensure designated PEFs comply with containment certification process. Global poliovirus containment activities have been increasingly focused on designated PEFs. The designation of a PEF commits the WHO Member State to ensure the PEF complies with all requirements for poliovirus containment, as outlined in GAP. This includes establishing a competent national authority for containment (NAC), which works with the PEF to implement the Containment Certification Scheme (CCS) towards issuing a certificate of containment (CC), or formal certification of the facility as compliant with GAP.

Avoid excessive designation of PEFs. Although GAP describes criteria for which functions of a facility should be considered “poliovirus-essential,” countries are free to provide their own justification for the decision to designate a facility as a PEF for the retention of poliovirus materials. In cases where the reasoning for a designation as PEF is not clear, particularly for facilities not involved in vaccine production or facilities in locations presenting an increased risk of spread following possible virus release, the WHO and other GPEI partners will intensify advocacy at the most appropriate level to limit to a minimum the global number of PEFs.

GOAL TWO

Ensure retained polio materials are stored and handled according to international standards to maintain appropriate long-term containment

Only facilities that have been recognized by a national authority for containment (NAC) as meeting GAP requirements and that have achieved certification through the Containment Certification Scheme (CCS) will be allowed to handle live poliovirus materials by the time global certification of WPV eradication is declared. In coordination with the Global Commission for the Certification of the Eradication of Poliomyelitis (GCC), facilitated by its Containment Working Group (GCC-CWG) and in alignment with the CCS, NACs must nationally authorize and certify PEFs against the biorisk management requirements specified in GAP.

OBJECTIVE 2A

Establish a national authority for containment in all countries retaining eradicated poliovirus in poliovirus-essential facilities

According to WHO guidance, all countries that want to retain poliovirus materials in a poliovirus-essential facility (PEF) must establish a NAC to conduct and oversee the process to certify PEFs against GAP requirements.

Nominated by the Ministry of Health (MoH) or other governmental authority, NACs provide oversight and coordinate with the designated PEF to assess, audit, and (in coordination with the

GCC and GCC-CWG) eventually certify the facility as compliant with GAP requirements. Following global certification of WPV eradication, the NAC will continue to monitor and verify the PEF's compliance with GAP as long as it retains PV materials. This includes audits and recertification of the PEF at regular intervals as described in GAP and CCS.

Countries themselves are fully responsible for planning, implementing and providing resources for all activities of poliovirus containment, with the WHO taking an advisory and technical support role. This includes full government administrative and financial support for activities of the NAC in countries with designated PEFs. All WHO Member States, regardless of whether they intend to retain PV materials or not, must continue to provide government support for national polio containment coordinators (NPCCs) and National Poliovirus Containment Task Forces (NPCTFs) to maintain and update facility inventories.

OBJECTIVE 2B

Achieve certification of all facilities continuing to work with poliovirus materials after WPV eradication as compliant with global standards

Technical standards, requirements and guidelines that must be followed by all Member States for global poliovirus containment are available.^{12,13,14,15}

According to GAP, all facilities retaining poliovirus materials must enroll in the CCS and become certified as compliant with regulations. Full certification as soon as possible is particularly important for vaccine producers that are essential components of the eradication effort, as the source of vaccine for essential immunization programmes and supplementary immunization activities (SIAs). Compliance of polio vaccine production sites with GAP requirements has high importance for poliovirus containment, both because vaccine production must continue into the post-certification period and because of the known levels of risk associated with vaccine production. In recent years, most reported containment breaches with release of WPV have occurred at vaccine manufacturing sites. Vaccine-producing countries should be well aware of these risks.

GOAL THREE

Strengthen and support national and international programmes to ensure sustainability and continuity of poliovirus containment in the post-certification era

Global WPV eradication will constitute a historical achievement, but it will also introduce concerns for how to safeguard against the re-emergence of polioviruses into a polio-free world. Following global certification, the GPEI will cease to exist. At that time, interest in and support for any continued polio activities will decrease in many Member States, particularly those countries that have been polio-free for decades. Suggestive of this decline, funding from major donors has already begun to ramp down.

¹² World Health Organization. GAPIII: WHO Global Action Plan to minimize poliovirus facility-associated risk. Geneva: WHO; 2015 (http://polioeradication.org/wp-content/uploads/2016/12/GAPIII_2014.pdf). Revision in preparation.

¹³ World Health Organization. Guidance for non-poliovirus facilities to minimize risk of sample collections potentially infectious for polioviruses. Geneva: WHO; 2018 (<http://polioeradication.org/wp-content/uploads/2018/04/polio-containment-guidance-for-non-poliovirus-facilities-20180410-en.pdf>). Revision in preparation.

¹⁴ World Health Organization. Containment Certification Scheme to support the WHO Global Action Plan for Poliovirus Containment. Geneva: WHO; 2017 (http://polioeradication.org/wp-content/uploads/2017/02/CCS_2016EN.pdf).

¹⁵ World Health Organization. GAPIII auditor qualification and audit support plan 2021–2023. World Health Organization; 2021 (<https://apps.who.int/iris/handle/10665/339900>). Revision in preparation.

However, in the post-certification era, a number of essential activities and functions will need to continue, particularly containment. Indeed, the risk of a containment breach in a facility retaining poliovirus will become a primary risk in the post-certification era (see **Fig. 1, Introduction**). While the likelihood of a containment breach in a poliovirus-essential facility (PEF) will decrease as the number of PEFs retaining poliovirus materials will likely decline, the consequences will increase in severity as population immunity against polio decrease over time following the cessation of oral polio vaccine (OPV) use. It is a very real risk as multiple poliovirus breaches are on record, and as a serious laboratory breach occurred after smallpox eradication.¹⁶

At its June 2022 meeting, the Global Commission for the Certification of the Eradication of Poliomyelitis (GCC) decided that both WPV types 1 and 3 should now enter into containment immediately and moving forward, and that all designated PEFs should obtain their certificate of participation (CP) by end-2023. However, uncertainties remain about, when WPV1 eradication and global certification will occur, how much time will be needed to stop cVDPV transmission, when the absence of type 2 circulating vaccine-derived poliovirus (cVDPV2) and eventually the absence of type 1 and 3 cVDPVs will be validated, and when OPV cessation will occur. The *Polio Eradication Strategy 2022–2026* works under the assumption that cVDPV2 transmission will be interrupted by the time WPV eradication is certified and that the absence of cVDPV2 will be validated in parallel to WPV certification.¹⁷ The *Polio Post-Certification Strategy* (PCS) places OPV cessation at one year after WPV certification, which impacts the poliovirus containment timeline as OPV containment is predicated on this milestone.¹⁸

Regardless of these uncertainties, all polio eradication and containment stakeholders should be aware that the importance of poliovirus containment will increase after certification, particularly in countries hosting PEFs. To minimize the probability of re-introducing polioviruses from laboratories or vaccine production sites, PEFs will need to achieve final certification, and routine audits will need to be planned and conducted. Achieving and maintaining containment of all PV materials in PEFs and monitoring compliance with containment requirements will remain critical.

OBJECTIVE 3A

Strengthen continued national ownership of polio containment activities and ensure regular review and recertification of all PEFs

WHO Member States designating one or more PEFs are fully responsible for achieving the certification of PEFs as complying with GAP requirements, for maintaining appropriate oversight of PEFs, and for providing all financial and human resources required for facility certification, surveys, inventories and audits.

At the national level, achieving and maintaining GAP-certification of a PEF will depend on coordination between the main national containment stakeholders, namely NACs and PEFs. In the post-certification era, NACs or agencies with similar profiles and competence will need to be maintained with their activities sufficiently funded. If National Certification Committees (NCCs) and national polio containment coordinators and task forces (NPCCs, NPCTFs) are maintained at the national level following WPV certification, they will likely continue to be involved in annual reviews of the status of surveys and inventories of facilities with actual infectious materials (IM) and potentially infectious materials (PIM). If NCCs and containment groups are not maintained beyond the certification of WPV eradication, countries need to ensure that other appropriate mechanisms are used to maintain facility inventories and compliance.

¹⁶ Britain G, Shooter RA. Cause of the 1978 Birmingham Smallpox Occurrence. London: HM Stationery Office; 1980 (https://www.nlm.nih.gov/nichsr/esmallpox/report_1978_london.pdf).

¹⁷ Global Polio Eradication Initiative (GPEI). Polio Eradication Strategy 2022–2026: Delivering on a promise. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/bitstream/handle/10665/345967/9789240031937-eng.pdf>).

¹⁸ Polio Post-Certification Strategy: A risk mitigation strategy for a polio-free world. Geneva: World Health Organization; 2018 (<https://polioeradication.org/wp-content/uploads/2018/04/polio-post-certification-strategy-20180424-2.pdf>).

OBJECTIVE 3B

Maintain sufficient technical support capacity within the WHO and through external stakeholders for the post-certification needs of containment

The technical functions and standards needed to maintain a polio-free world have been summarized in the PCS.¹⁹ They include poliovirus containment as the first goal, ongoing immunization with appropriate polio vaccines, poliovirus surveillance and outbreak response.

The need for continued poliovirus containment-related activities, particularly in countries choosing to retain poliovirus IM and PIM in PEFs, will require that country-level containment stakeholders continue to have access to up-to-date technical international containment standards, guidance and expertise. These country-level roles will benefit from the international coordination and oversight provided by regional and global advisory groups, such as the GCC, the GCC-CWG, the Containment Advisory Group (CAG) and Regional Certification Commissions (RCCs). In this post-certification era, the WHO will continue supporting countries in their efforts to manage biosafety and health security risks through future, yet to be determined, mainstreamed organizational units.

CONCLUSION

Achieving a polio-free world will depend on the certification of wild poliovirus (WPV) eradication, on stopping all use of oral polio vaccines (OPVs), and on achieving the objectives of these three poliovirus containment goals:

- 1) reducing to a minimum the number of facilities retaining poliovirus materials;
- 2) ensuring that all eradicated poliovirus materials remaining in PEFs are stored and handled according to agreed-upon international biosafety and biosecurity standards; and
- 3) strengthening and supporting national and international organizations and programmes to ensure the sustainability and continuity of poliovirus containment in the post-certification era.

It is critical that work to achieve these three goals is conducted in parallel to and in alignment with progress towards the final certification of WPV eradication and the validation of the absence of circulating vaccine-derived polioviruses (cVDPVs).

Containment is strongly interconnected to other polio eradication workstreams, including outbreak response, surveillance, vaccine supply, vaccine research and development (R&D), and communication and advocacy. While some containment milestones are contingent on global WPV eradication, other containment milestones are independent of eradication and yet still have experienced challenges toward timely implementation.

WHO Member States have unanimously committed to implementing poliovirus containment activities through resolutions at the World Health Assembly. With technical support from the WHO and other GPEI partners, the effective implementation of containment goals and objectives will largely depend upon the compliance and collaboration of all Member States. Country-level efforts at implementing poliovirus containment objectives and achieving containment-related milestones will ensure that enormous investments that have been made by countries themselves and by global partners to eradicate polio are protected – and that the ultimate goal of a polio-free world can be realized and sustained for global posterity.

¹⁹ Polio Post-Certification Strategy: A risk mitigation strategy for a polio-free world. Geneva: World Health Organization; 2018 (<http://polioeradication.org/wp-content/uploads/2018/04/polio-post-certification-strategy-20180424-2.pdf>).