THE CONTAINMENT CORNER - POLIOVIRUS CONTAINMENT NEWS

DECEMBER 2019

POLIOVIRUS CONTAINMENT

Welcome to the fourth edition of *The Containment Corner - Poliovirus Containment News.* In this issue we explore what wild poliovirus type 3 eradication means for facilities holding the virus, speak to the head of the Global Polio Eradication Initiative on the need for increased type 2 oral polio vaccine production and balancing this with containment, look at key topics discussed at containment-related meetings held in Geneva in October, and provide an update on our soon-to-be-launched online platform for National Authorities for Containment. Happy reading.

REMINDER:

All designated poliovirus-essential facilities are required to submit, to their National Authorities for Containment, their applications for participation in the GAPIII-Containment Certification Scheme by no later than 31 December 2019.

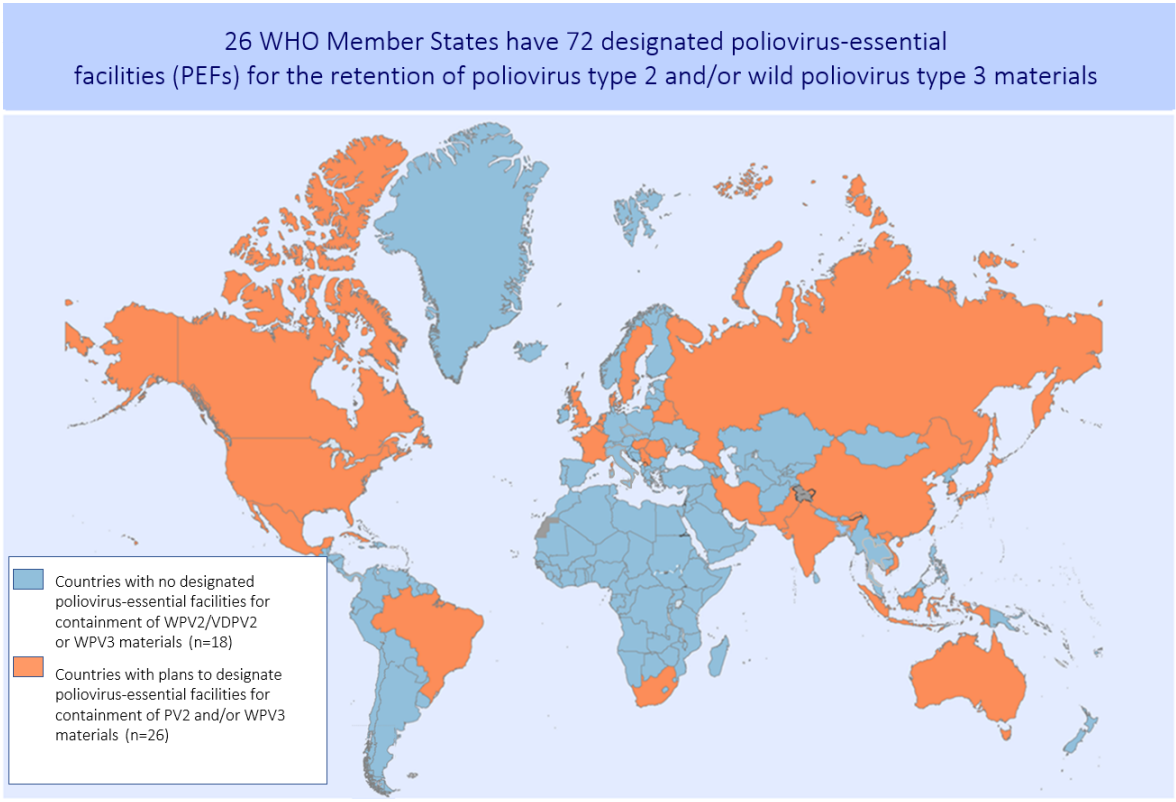
Wild poliovirus type 3 eradicated. So now what?

On 24 October 2019 - World Polio Day - the Global Commission for the Certification of Eradication of Poliomyelitis (GCC) officially declared the eradication of wild poliovirus type 3 (WPV3). This achievement serves as a historic milestone for polio eradication and public

health, but also a trigger for containment of the pathogen. Alongside containment of type 2 poliovirus, the global community is now required to identify, destroy, or contain in certified poliovirus-essential facilities type 3 poliovirus materials with a focus on WPV3 and vaccine-derived poliovirus type 3 (VDPV3) infectious and potentially infectious materials. Read more

Current containment status

Currently, 26 countries plan to retain type 2 poliovirus and/or type 3 wild poliovirus in 72 designated poliovirus-essential facilities. A total of 17 facilities have been granted Global Certification Commission-endorsed Certificates of Participation (CPs) in the WHO GAPIII-Containment Certification Scheme. Facilities have until 31 December 2019 to submit their applications for CPs to their National Authorities for Containment.



Data reported by WHO Regional Offices as of 28 November 2019 and subject to change

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Caught between a rock and a hard place: cVDPV2 and the vaccine available to stop it

Head of the Global Polio Eradication Initiative Michel Zaffran sheds some light on the global type 2 circulating vaccine-derived poliovirus (cVDPV2) situation, the need for increased production of type 2-containing oral polio vaccine, and what this means for containment.

Q: Outbreaks of cVDPV2 are popping up in a lot of countries. How do you explain this?

Did the programme know this would happen after the oral polio vaccine 'switch'?

There have been 47 cVDPV2 outbreaks in 20 countries since the switch in April 2016. Some of these outbreaks are spreading over more than one country. Taking the three years before the switch as a frame of reference, there were eight cVDPV2 outbreaks in five countries altogether in 2013, 2014 and 2015.

Based on epidemiological modelling studies, we anticipated cVDPV2 outbreaks following the removal of the type 2 component from oral polio vaccine in 2016, via the trivalent to bivalent OPV "switch". And we anticipated that VDPV cases would outnumber wild poliovirus cases in the endgame. However, what the modelling did not predict was the number and scale of these outbreaks, some of which have proven very difficult to stop.

The reason we are seeing a growing number of cVDPV2 outbreaks, particularly in Africa, is the result of a growing cohort of children without mucosal immunity to type 2 poliovirus, while at the same time the [polio] programme uses monovalent oral polio vaccine type 2 (mOPV2) to respond to existing cVDPV2 outbreaks.

The monovalent vaccine [mOPV2] is currently our only tool to interrupt transmission of cVDPV2 and it is very effective when there is sufficient vaccination coverage in the communities we are targeting to avoid an outbreak. However, when campaign quality is poor and not enough children are reached with the vaccine, we run a risk of seeding new viruses among under-immunized populations. There has been evidence of this happening in and outside of outbreak response zones. We are currently developing a new strategy for stopping cVDPV2 outbreaks, and at the same time preventing new outbreaks.

Q: With a limited global stockpile of mOPV2, is there sufficient vaccine to respond to these and future outbreaks?

No. Current mOPV2 stock is insufficient to cater for the number of outbreaks and the sizes of populations requiring it. The GPEI is working with vaccine manufacturers to boost production of mOPV2 and we expect to meet targeted quantities in 2020.

The vaccine will continue to be used for cVDPV2 outbreak response until a new and more genetically stable oral polio vaccine, known as novel oral polio vaccine type 2 (nOPV2), currently under clinical development, is available.

Q. What does increased production of mOPV2 mean for vaccine manufacturers in terms of containment? On one hand, the polio programme is asking for more live type 2-containing OPV. And on the other, it's pushing for strict containment of all type 2 wild and Sabin polioviruses.

It's a balance. The world needs enough mOPV2 stocks to help with the elimination of cVDPV2, and type 2 live attenuated poliovirus is needed to produce this vaccine. Yes, we are asking vaccine manufacturers to make more vaccine, but [vaccine] production and containment of type 2 poliovirus are not mutually exclusive pursuits. Polio vaccine manufacture is costly, particularly when demand calls for rapid scale-up of outputs. Containment is also costly. But this is not a reason to put it on hold and stop efforts to ensure safe and secure handling and storage of virus. Quite the opposite: the impetus for putting in place adequate biorisk management systems should be greater, given the higher level of risk of human exposure to poliovirus in and around these facilities.

Q. What about manufacturers of inactivated polio vaccine (IPV)? Can they afford to relax?
Read more

Polio immunization campaign in Hargeisa, Somaliland. March 2019. Photo: WHO

New guidance on managing exposure to live polioviruses

WHO has published guidance for managing human exposure to live polioviruses in laboratory facilities. Countries where polioviruses are kept require this guidance.

The document is primarily aimed at workers handling and storing polioviruses in designated poliovirus-essential facilities and outlines public health measures to be taken in the event of a spill or containment breach.

Thank you to all parties who provided feedback on the document.

Containment meetings in Geneva - October 2019

National Authorities for Containment, polio vaccine manufacturers, the Global Certification Commission Containment Working Group (GCC-CWG) and WHO and UNICEF HQ and Regional Office staff came together in October for two key meetings on vaccine production and containment.

- **15 October**
  WHO-UNICEF consultation with oral polio vaccine and inactivated polio vaccine manufacturers and National Authorities for Containment
- **16 October**
  National Authorities for Containment, GCC-CWG and WHO HQ and Regional

Office poliovirus containment consultation

Topics of discussion included:
- current supply of bOPV, mOPV2 and IPV, and demand forecasts;
- nOPV2 clinical trials, production scale-up and plans for emergency use listing;
- Sabin-IPV manufacture;
- global containment implementation progress;
- Containment Advisory Group (CAG) recommendations; and
- planned amendments to GAPIII guidance.

Reports from these meetings will be made available soon, here.

Launching soon: Online information sharing portal for National Authorities for Containment

To help drive progress in poliovirus containment, WHO has been working to set up an online information sharing portal for National Authorities for Containment (NACs).

Through use of TechNet-21, a WHO online platform which facilitates information exchange between immunization professionals globally, NACs will be able to engage in closed, private group discussions on containment and share relevant documentation, best practices, experiences, etc.

Launch of the NAC portal is scheduled for late January. NAC members will receive an invitation to join TechNet-21 and the closed group via email. Once access is authorized, users will be able to see information posted in the group and participate in discussions.

Gryphon Scientific, an external service provider engaged by WHO to provide technical assistance to NACs as they progress through the Containment Certification Scheme, will assist WHO with the running of the group platform. Watch this space...

Quick links

More on poliovirus containment

Global Action Plan III for the Containment of Polioviruses (GAPIII) and GAPIII Containment Certification Scheme (GAPIII-CCS)

Rolling timeline for review of containment certification applications

Could you be harbouring poliovirus? Potentially Infectious Material (PIM) guidance

Polio this week

For information, please contact: containment@who.int