THE CONTAINMENT CORNER - POLIOVIRUS CONTAINMENT NEWS

DECEMBER 2018

POLIOVIRUS CONTAINMENT

Full steam ahead to contain polioviruses

As we move closer towards global polio eradication, countries are shifting gears to make sure that polioviruses are destroyed or securely contained in places they are still needed. Are you up to speed?

In this second issue of *The Containment Corner*, we look at global commitment to ramping up containment efforts, speak to two polio labs about their decisions to retain or destroy infectious materials, give a snapshot of the number of facilities planning to hang on to the virus, and share outcomes of key containment oversight meetings. Happy reading.

Countries commit to reducing risk

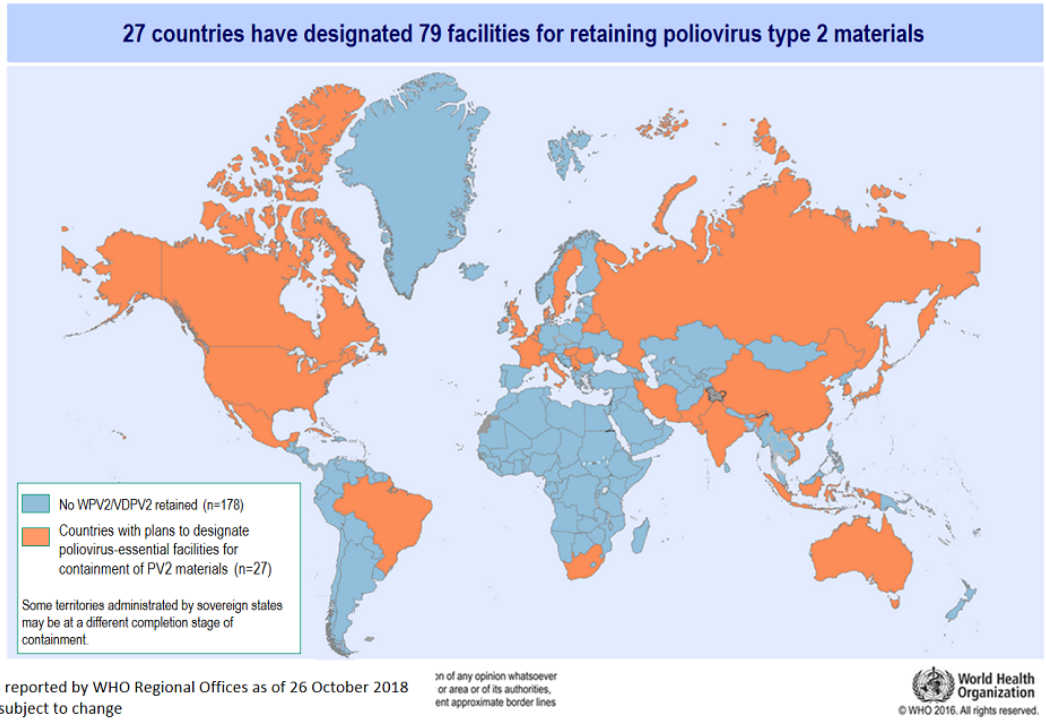
At the 71st World Health Assembly in May, WHO Member States unanimously adopted a resolution on poliovirus containment which calls for acceleration of containment activities worldwide. The document includes actions for all Member States and WHO's Director-General, and actions specifically for Member States planning to maintain stocks of the epidemic-prone virus.

Member States planning to keep the virus for critical functions including vaccine production and key research **must appoint by no later than 31 December 2018** a competent National Authority for Containment (NAC) to oversee national containment efforts.

Wherever possible, WHO urges countries to destroy poliovirus stocks to minimize risk of the virus being reintroduced into communities. The resolution calls for the completion of inventories and destruction of unneeded type 2 poliovirus materials, and the commencement of this process for types 1 and 3 materials.

Read the full resolution here.

> Currently, 27 countries plan to retain type 2 poliovirus materials in 79 facilities. 24/27 countries have established a National Authority for Containment (NAC).



WHO Region	Number of countries planning to retain type 2 poliovirus (PV2) materials	Number of designated poliovirus-essential facilities (PEFs)
Region of the Americas	5	18
African Region	1	1
European Region	12	39
Eastern Mediterranean Region	2	3
South-East Asia Region	2	2
Western Pacific Region	5	16

To retain or not to retain...

This month, we spoke to managers of two polio laboratories about reasons behind

retaining or destroying poliovirus infectious materials. Steve Oberste, chief of the US Centers for Disease Control and Prevention (CDC) polio and picornavirus lab in Atlanta, and Peter Borus, head of the Kenya Medical Research Institute's (KEMRI) polio, measles and rubella lab in Nairobi share some insight.

Could you please provide some background on your labs and the polio-related work carried out there?

SO: CDC's polio and picornavirus lab is a global specialized laboratory in the WHO Global Polio Laboratory Network. It was set up in the mid-1950s and is US-government funded, with CDC being an agency under the Department of Health and Human Services. Our polio lab is one of the largest out there with approximately 55 staff dedicated to polio. We largely deal with the more complex side of polio diagnostics – sequencing, which is the molecular testing of poliovirus-positive samples to determine genetic connections to other known polioviruses. We also act as a 'lab of last resort' when countries, for whatever reason, are unable to carry out preliminary diagnostic tests on their samples. We're involved in the development of a new and even safer form of oral polio vaccine, and have a team which looks at population immunity through examining blood samples from communities (serosurveys). Importantly, we also develop and distribute reagent kits for testing samples for polio, to labs across the Network.

PB: The polio laboratory at KEMRI is combined with the measles and rubella laboratory and has been in operation since the 1980s under the general virology programme. The lab became formally accredited as one of the WHO Global Polio Laboratory Network labs in 2000. Our primary role in relation to polio is supporting surveillance through detection, i.e. isolation of poliovirus from samples we receive. We also conduct intratypic differentiation to identify strains of polioviruses isolated. KEMRI has 12 staff working on polio. WHO funds our routine diagnostic work and supplies and the Kenyan government funds our infrastructure, staff and recurrent costs such as electricity.

What's the geographic scope of the support you provide?

SO: CDC's polio lab provides sequencing support to countries around the world. Some examples of countries we are currently assisting include Nigeria, Yemen and those in the Horn of Africa. In terms of serosurveys, we've recently done work for Nigeria, DR Congo, Sri Lanka, Ukraine, Pakistan and Lebanon to name a few. We also assisted with testing of samples from Syria during recent polio outbreaks.

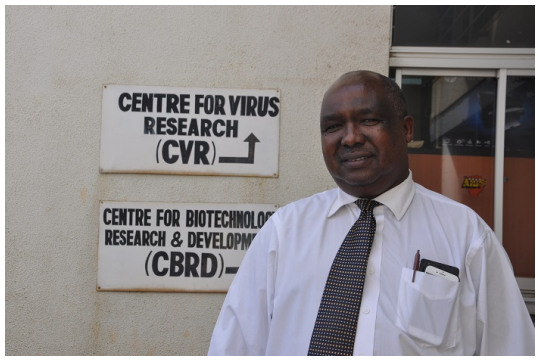
PB: We test samples collected from Kenya, Somalia, Djibouti, Eritrea and occasionally

from Yemen, for poliovirus. In a year, we would process roughly 4,000 samples and we've tested about 200 from Yemen this year. In fact, around 800 samples from Yemen arrived just yesterday. We are in the process of shipping these on to CDC in Atlanta as currently we do not have the capacity to test this quantity. We assist when we can but need to be careful of our capacity so we don't compromise our support to the other countries.

Type 2 poliovirus (PV2) has been eradicated and WHO has called for countries to destroy unneeded PV2 stocks. However, some will continue to keep PV2 to perform critical functions. Facilities keeping the virus will need to follow GAPIII guidance and pass through a rigorous certification process to prove they can safely and securely handle and store the virus. Their governments are also responsible for putting in place safeguards to minimize risk of containment failure. CDC has decided that it will continue to work with poliovirus but KEMRI has decided to destroy its infectious materials. How were these decisions made?

…

Click to read full interview on the GPEI website



From top left:

Steve Oberste has been chief of US CDC's picornavirus laboratory since 2012. He has also worked as a research microbiologist at CDC, from 1996 – 2011. Photo: CDC.

Dr Peter Borus has been at KEMRI since 1994. Before moving to polio, he worked in yellow fever serology and virus isolation. Photo: WHO/Leilia Dore 2018

CDC scientist Chelsea Harrington placing samples into a real-time thermocycler, to identify the various types of poliovirus contained therein. Photo: CDC/James Gathany 2018.

KEMRI lab technologist Benlick Mwangi examining an environmental sample. Photo: WHO/Leilia Dore 2018

Key oversight meetings - outcomes

WHO-UNICEF consultation with oral polio vaccine and inactivated polio vaccine manufacturers - October 2018

WHO and UNICEF met with OPV and IPV manufacturers and National Authorities for Containment (NACs) of these polio vaccine-producing countries in Geneva. This was the second time the consultation was attended by NACs who will be responsible for national level oversight and implementation of Global Action Plan III (GAPIII) guidance for containment certification. The objective of the consultation was to strengthen collaboration between stakeholders. The meeting outlined the status and needs of the polio eradication programme which have implications for OPV and IPV demand and supply; provided an update on research and product development; and emphasized the importance of accelerating containment efforts globally. Read report.

Meeting between Global Certification Commission's Containment Working Group and National Authorities for Containment - October 2018

This meeting in Geneva was an opportunity for members of the GCC-CWG and representatives of NACs from Member States hosting facilities retaining polioviruses to review the current situation with regards to poliovirus containment, exchange information and experience gained to date, debate procedures and methodologies and identify key challenges to further progress in containment implementation.

18th Global Certification Commission meeting - October/November 2018

The Global Commission for the Certification of Poliomyelitis Eradication (GCC) met in Amman to review criteria that will need to be met to achieve certification of wild poliovirus (WPV) eradication. WHO's Director General has accepted the GCC's recommendations for a process for sequential certification of WPV and confirmation of absence of vaccine-derived polioviruses (VDPVs) when data is available. The GCC is planning to certify the eradication of wild poliovirus type 3 (WPV3) in the near future, with timelines for containment to be aligned with those for certification. Read the statement following the meeting. A full official report will be made available online, here.

Key dates

- **13-14 December 2018**
  3rd Containment Advisory Group (CAG) meeting - Geneva
- **31 December 2018**
  Deadline for National Authority for Containment (NAC) establishment in

poliovirus-essential facility (PEF) hosting countries

- **January 2019**
  WHO to report to its Executive Board on Member State progress in implementing actions outlined in WHA Resolution 71.16 on poliovirus containment

- **25-27 February 2019**
  19th Global Certification Commission (GCC) meeting - Geneva

- **31 March 2019**
  Deadline for NACs to communicate contact details with WHO

Quick links

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

More on poliovirus containment

Key points on poliovirus containment

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

Polio this week

For information, please contact: containment@who.int