POLIOVIRUS CONTAINMENT:
AN INTEGRAL PART OF POLIO ERADICATION

As the world works to eradicate polio, we must take precautions to minimize the risk of eradicated polioviruses being released from the laboratories and facilities that retain them.

Last case of wild polio in the Americas
Photo Credit: Pan American Health Organization

WHY IT MATTERS

Poliovirus can affect the central nervous system, resulting in paralysis and death. The last case resulting from wild poliovirus type 2 occurred in 1999 and the virus was formally declared eradicated in 2015. Wild poliovirus type 3 was formally declared eradicated in 2019 and its last case was in 2012. Even with eradication, wild poliovirus types 2 & 3 continue to be used for research and development:

- Laboratories use poliovirus to conduct important research for cancer treatment and other life-saving work
- Manufacturers use live poliovirus to make vaccine to prevent new cases of polio from occurring around the globe
- Laboratories conduct research for other diseases using potentially infectious materials, such as stool or respiratory samples. These samples may have been collected in regions where wild poliovirus was circulating or where the live oral poliovirus vaccine was in use.

4 PILLARS OF POLIOVIRUS CONTAINMENT

Identify: All countries survey their laboratories and other facilities to identify infectious and potentially infectious poliovirus materials

Destroy: All countries request that laboratories and facilities destroy all unneeded poliovirus materials

Transfer: Laboratories and facilities may choose to transfer needed poliovirus materials to designated poliovirus-essential facilities

Contain: Countries will designate poliovirus-essential facilities for continued work with eradicated polioviruses. These facilities are expected to comply with the World Health Organization Global Action Plan requirements.

CENTER FOR PREPAREDNESS AND RESPONSE

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

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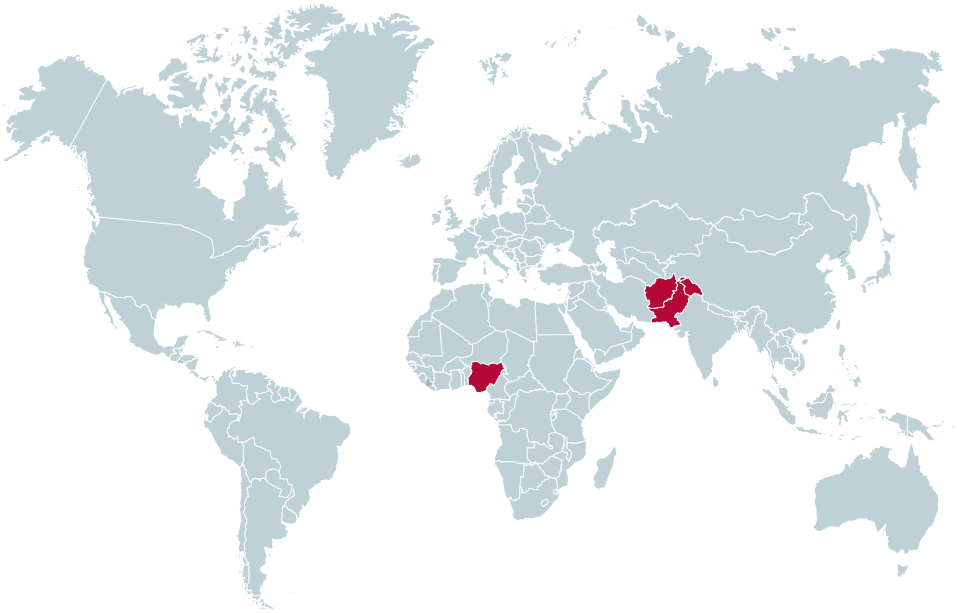
WHY CDC?

CDC has a long history in the fight against poliovirus worldwide. The agency provides technical assistance for poliovirus outbreak response, laboratory testing, disease surveillance, vaccination campaign planning, program monitoring and evaluation, and research. This expertise in poliovirus is combined with CDC's expertise in oversight and monitoring of biosafety and security in the laboratory to support U.S. and global poliovirus containment efforts.

VACCINATING PEOPLE AGAINST POLIOVIRUS IS STILL IMPORTANT

Oral polio vaccine (OPV) is still used in many countries. In April 2016, the world switched from trivalent OPV, which included poliovirus types 1, 2, and 3, to bivalent OPV, which only includes poliovirus types 1 and 3.

COUNTRIES WHERE POLIO IS ENDEMIC IN 2020



In the United States, only inactivated poliovirus vaccine (IPV) is used, and over 90% of the population is vaccinated against poliovirus. IPV still contains all three types of poliovirus and one dose is recommended in all countries that use bivalent OPV.

POLIOVIRUS CONTAINMENT IS NECESSARY TO ENSURE POLIO STAYS ERADICATED

Poliovirus containment is a key objective of the World Health Organization's Global Polio Eradication Initiative. Facilities designated as "poliovirus-essential" must follow defined poliovirus containment measures to minimize the risk that the virus could get into the environment and cause harm.

At this time, poliovirus containment is only focused on eradicated polioviruses. There are three kinds of poliovirus that need to be contained:

Wild poliovirus types 2 & 3:

Although eradicated, samples of wild poliovirus types 2 & 3 still remain in laboratories and vaccine manufacturing facilities.

Vaccine-derived poliovirus types 2 & 3:

Rarely, the strain of poliovirus in the oral vaccine can mutate to a form of poliovirus that can cause paralysis and circulate like wild poliovirus.

Oral poliovirus vaccine type 2:

This weakened strain of poliovirus does not cause disease, and protects against infection with wild poliovirus, but is no longer used for routine immunization anywhere in the world.