



DATE: August 4, 2022

TO: Healthcare Providers, Hospitals, Clinical Laboratories, and Local Health Departments (LHDs)

FROM: New York State Department of Health (NYSDOH), Division of Epidemiology

HEALTH ADVISORY: Update Regarding Poliomyelitis in Rockland County, New York State

For clinical staff in Epidemiology/Infection Control, Emergency Department, Infectious Disease, Neurology, Radiology, Nursing, Internal Medicine, Pediatrics, Family Medicine, Intensive Care, Pharmacy, Laboratory Services, and all patient care areas.

Updates Since Last Advisory

- NYSDOH is conducting enhanced surveillance activities to detect additional polio cases. These surveillance activities may be modified as additional information becomes available and as we enter the height of enterovirus season.
- Approximately 75% of poliovirus infections are asymptomatic, and approximately 25% have mild signs and symptoms compatible with other acute viral illnesses, e.g., sore throat, fever, tiredness, nausea, headache, stomach pain. Poliovirus can also cause meningitis.
- When evaluating individuals who live, work, or attend school in southeastern New York, health care providers should have a heightened vigilance for polio.
- Patients who are unimmunized or incompletely immunized against polio are at higher risk.
- Polio should be part of the differential diagnosis in patients who present with an acute illness compatible with either paralytic or non-paralytic polio, particularly if they are unimmunized.
- **Surveillance for non-paralytic polio – non-specific viral symptoms**
 - NYSDOH recommends that the following individuals undergo testing for enterovirus (poliovirus is a type of enterovirus):
 - Unimmunized for polio, or unknown immunization status (patient report acceptable if records are not available), and
 - Resident of Rockland or Orange County, or works or attends school in Rockland or Orange County, and
 - Symptoms consistent with non-paralytic polio:
 - Sore throat and/or fever, AND
 - At least two of the following symptoms (sore throat and/or fever can count as one or both): sore throat, fever, tiredness, headache, nausea, stomach pain.
 - If tested, negative results for COVID-19, influenza, streptococcal infection, and other respiratory pathogens (with the exception of enterovirus or “rhino-enterovirus”, for which positive results might indicate poliovirus).
 - Individuals who meet the criteria above should have a diagnostic **stool specimen collected for enterovirus PCR and sent to the clinical laboratory** that you routinely use.

- If a stool specimen cannot be obtained, then an oropharyngeal (OP) swab is also acceptable, although stool is preferred.
 - The relevant ICD-10 code should be included on the lab requisition (e.g., B34.9, J02.9).
 - **The Rockland or Orange County connection and the polio immunization status should be included on the lab requisition.**
 - An enterovirus-specific PCR test should be ordered; that is, point-of-care or other tests that return a “rhino-enterovirus” result are not acceptable.
 - NYSDOH will contact clinical laboratories and request that they send specimens positive for enterovirus to the New York State public health laboratory, Wadsworth Center, for poliovirus testing.
- **Surveillance for non-paralytic polio – meningitis**
 - NYSDOH recommends that the following individuals with meningitis undergo diagnostic testing for poliovirus:
 - Resident of Rockland or Orange County, or works or attends school in Rockland or Orange County, and
 - If tested, positive results for enterovirus in cerebrospinal fluid (CSF). If not tested for enterovirus, then no other apparent cause for the meningitis.
 - Individuals who meet the criteria above should have a diagnostic **stool specimen collected for enterovirus PCR and sent to the clinical laboratory** that you routinely use.
 - If a stool specimen cannot be obtained, then an OP swab is also acceptable, although stool is preferred.
 - **The Rockland or Orange County connection should be included on the lab requisition.**
 - An enterovirus-specific PCR test should be ordered; that is, point-of-care or other tests that return a “rhino-enterovirus” result are not acceptable.
 - NYSDOH will contact clinical laboratories and request that they send specimens positive for enterovirus to the New York State public health laboratory, Wadsworth Center, for poliovirus testing.
- **Surveillance for paralytic polio or strongly-suspected non-paralytic polio**
 - **Immediately notify the local health department** where the patient resides and/or contact the New York State Department of Health. See additional information below in section entitled “Guidelines for Healthcare Providers”.
 - The specimen collection recommendations in this section apply for cases of possible paralytic polio, or when there is a high suspicion of non-paralytic polio (e.g., compatible illness in a contact of a polio case).
 - Specimens should be collected as follows (in order of priority) and **sent directly to Wadsworth Center**:
 - **Two stool specimens** collected 24 hours apart
 - **Oropharyngeal swab**
 - **Nasopharyngeal swab**
 - **Cerebral spinal fluid (CSF;** 2-3 cc, if available, in sterile collection tube)
 - **Serum** (acute and convalescent), collected **before** treatment with intravenous immunoglobulin (IVIG; 2-3 cc in red or tiger-top tube)
 - A shipping manifest from an electronically-submitted Remote Order OR an [Infectious Disease Requisition](#) form should accompany all specimens sent to Wadsworth, noting symptoms and immunization history.
 - Specimens should be stored refrigerated and shipped on frozen gel packs.

- **Specimen collection, storage, and shipping**
 - For stool specimens, a quarter-sized amount of stool should be collected in a sterile, wide-mouth container with no additives.
 - For OP swabs, flocked swabs are preferred. Sterile Dacron or rayon swabs with plastic or metal handles may also be used. Do NOT use cotton or calcium alginate swabs or swabs with wooden sticks. Place the swab in liquid viral transport media (VTM) or universal transport media (UTM). The same swabs and media used for COVID or influenza PCR testing can be used. Do not use saline or send dry swabs.
 - Specimens should be stored refrigerated and shipped on frozen gel packs.
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Summary of Case

- A case of poliomyelitis has been identified in Rockland County, New York.
- An adult presented to an emergency department with respiratory symptoms, fever, neck stiffness, and back pain. The symptoms progressed to include paralysis.
- Samples were tested for several pathogens as part of the evaluation for [acute flaccid myelitis](#) (AFM). **A stool sample tested positive for poliovirus.**
- Subsequent sequencing showed that the strain was NOT wild-type virus but rather was revertant poliovirus Sabin type 2.
- Poliovirus Sabin type 2 is used in some formulations of oral polio vaccine (OPV). OPV is longer licensed, available, or administered in the United States and has not been used in the United States since 2000. Rather, inactivated polio vaccine (IPV) is used in the US.
- The individual was not vaccinated against polio.
- There is an ongoing investigation to determine community risk.

Clinical Presentation of Poliomyelitis

- Most people with poliovirus infection have no symptoms or only a non-specific febrile illness. Fewer than 1 in 100 people will develop acute flaccid weakness of the limbs.
- Progression of weakness is rapid and often associated with fever and muscle pain.
- Weakness is typically asymmetric and more severe proximally than distally.
- Deep tendon reflexes are absent or diminished.
- Bulbar paralysis can result in respiratory distress and often requires mechanical ventilation.
- There may be a history of fever, sore throat, nausea, and malaise up to one week before weakness onset.
- Polio is a disabling and life-threatening disease which can affect a person's brain and spinal cord, leading to paralysis, meningitis, paresthesia, and long-term disability.
- There can be long-term sequelae, post-polio syndrome, even decades after the original infection.
- Polio has been eliminated from the United States, but it still occurs in other parts of the world, especially where there are low vaccination rates. Wild-type polio has been eliminated everywhere but Afghanistan and Pakistan. Recently, cases of polio caused by revertant Sabin-derived strains have been identified in several countries in Europe, Asia, and Africa, and poliovirus has been detected in wastewater in the UK. The last case of polio identified in the US was in 2013 in an immunocompromised infant who received OPV abroad.
- The incubation period is 3 to 6 days for non-paralytic poliomyelitis and 7 to 21 days for onset of paralysis in paralytic poliomyelitis.
- Transmission is fecal-oral, respiratory, or oral-oral.

- Poliovirus is highly infectious and is most transmissible up to 14 days before and after onset of symptoms, although ongoing fecal shedding can occur for weeks.
- The best way to protect your patients is to maintain high immunity against polio in the population through vaccination, along with rapid identification and isolation of suspected polio cases.

Guidelines for Healthcare Providers

- Poliomyelitis should be considered in the differential for patients with acute flaccid weakness, particularly if they are not vaccinated for polio.
- In the event paralytic or non-paralytic polio is suspected in a patient:
 - Ideally, only healthcare workers **with evidence of complete polio immunization** should provide care to the patient. For adults, this would be at least three documented doses of poliovirus-containing vaccine. If healthcare worker polio immunization status is not tracked, then any healthcare workers who know or suspect that they have not received polio immunizations (e.g., as part of routine childhood immunizations) should be excluded from care of the patient. Efforts should be made to document polio immunization of healthcare workers whenever possible, especially when polio is known or high on the differential diagnosis.
 - Standard and Contact Precautions should be used while evaluating a potential or confirmed case, and facility infection control should be notified immediately.
 - The patient should be evaluated for flaccid weakness by a neurologist.
 - **Immediately notify the local health department** where the patient resides and/or contact the New York State Department of Health.
 - Test for polio as recommended above, section entitled “Surveillance for paralytic polio or strongly-suspected non-paralytic polio”.
 - Other routine pathogen-specific testing should continue at hospital laboratories as determined by the patient's clinical picture.

Polio Immunization Recommendations

- Children, adolescents, and adults who are unvaccinated or do not know if they were vaccinated are at risk for polio if exposed and should be offered an outbreak dose of IPV if they reside in an area with possible community transmission of poliovirus or if they have other potential exposures.
- Previously vaccinated individuals who are at risk for exposure because of their community of residence or who have had close contact with a patient infected with poliovirus should also receive a booster dose of IPV.
- Polio vaccine may be given to children and adults as a stand-alone vaccine (not combined) in an outbreak setting.
- IPV or the first dose of combination products containing IPV can be given as early as 6 weeks of age and should be considered for administration when infants who are at least 6 weeks old and reside in an area with possible community transmission of poliovirus present for care.
- Polio vaccine can be given during pregnancy and is recommended if the individual is at risk of exposure. Pregnant persons should discuss the risks and benefit of IPV with their healthcare provider.
- Polio vaccine may be given at the same time as other vaccines.
- IPV, the only polio vaccine available in the US, is highly effective, with 90% or more of vaccine recipients developing protective antibody levels to all three poliovirus types after 2 doses, and 99% developing protective antibody levels following 3 doses.
- Unvaccinated adults at risk for poliovirus infection should get three doses of IPV: two doses separated by 1 to 2 months, and a third dose 6 to 12 months after the second dose. Often

during an outbreak, the first dose may be administered by a public health agency but follow up doses can be obtained where the patient receives regular health care.

- The schedule for polio vaccination for unvaccinated or under-vaccinated children through age 17 years is 2 doses of IPV separated by 4–8 weeks, and a third dose 6–12 months after the second dose. For details and age groups, refer to the [ACIP IPV catch-up vaccine table](#).
- If you are interested in obtaining IPV for your patients, please contact the Bureau of Immunization via email at immunize@health.ny.gov or by phone at (518) 473-4437.

Acute Flaccid Myelitis

- AFM is a rare but serious paralytic condition that adversely affects the nervous system, specifically the gray matter of the spinal cord, which in turn causes muscles and reflexes in the body to weaken.
- AFM can be difficult to diagnose because it shares many symptoms with other neurological diseases, including transverse myelitis, Guillain-Barre syndrome, and polio.
- Poliomyelitis should be considered as part of the differential diagnosis.
- Samples sent to Wadsworth are tested for multiple potential causes of AFM.
- Most cases are seasonal and occur between August and November. Full details can be found at NYS recent AFM Health Advisory:
https://apps.health.ny.gov/pub/ctrl/docs/alrtview/postings/NYSDOH_AFM_Health_Advisory_06242022_FINAL_1656100564923_0.pdf
- Report suspected cases promptly to the NYSDOH at 518-473-4439 during business hours or 866-881-2809 evenings, weekends, and holidays or via email at AFM@health.ny.gov or BCDC@health.ny.gov

Resources

- CDC Suspect Polio Factsheet: <https://www.cdc.gov/polio/pdf/Polio-Fact-Sheet-Suspect-Polio-508.pdf>
- ACIP Recommendations for Polio Vaccination: <https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/polio.html>
- CDC Polio Vaccination: What Everyone Should Know: <https://www.cdc.gov/vaccines/vpd/polio/public/index.html>
- CDC Polio Vaccine Information Statements: <https://www.cdc.gov/vaccines/hcp/vis/vis-statements/ipv.html>
- CDC Polio Education Materials: <https://www.cdc.gov/vaccines/vpd/polio/public/index.html#educational-materials>
- Vaccine Derived Polio FAQ: <https://www.cdc.gov/vaccines/vpd/polio/hcp/vaccine-derived-poliavirus-faq.html>
- Clinicians with questions can contact the NYSDOH at 1-866-881-2809 evenings, weekends, and holidays. In New York City clinicians may contact the healthcare provider access line at 1-866-692-3641.