MARCH 2024

POLIO QUICKSHEET

Kentucky Public Health
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DISEASE DESCRIPTION

The virus infects the throat and intestine, with invasion of local lymph nodes. Up to 95% of polio infections are asymptomatic or unapparent. Some persons have nonspecific mild illnesses including fever, sore throat, or gastrointestinal symptoms. In rare cases, poliovirus infects the spinal cord or brain stem resulting in aseptic meningitis or acute asymmetric flaccid paralysis.

PARALYTIC

Acute onset of a flaccid paralysis of one or more limbs with decreased or absent tendon reflexes in the affected limbs, without other apparent cause, and without sensory or cognitive loss.

NONPARALYTIC

Poliovirus infections that are asymptomatic or cause mild febrile disease.

TREATMENT

Supportive only.

CONTROL MEASURES

Educate the public on the advantages of immunization in early childhood.

POLIO IN RECENTLY VACCINATED

It is not uncommon for a poliovirus to be identified in a clinical specimen from an infant or young child who has recently received a dose of oral polio vaccine (OPV- used outside of the US). If you receive a laboratory report indicating that a poliovirus has been identified, obtain the following information on the patient:

- Complete immunization history (the number, dates, and lot numbers of all previous doses of OPV and inactivated poliovirus vaccine (IPV) vaccine
- Clinical history (were there any clinical signs of paralysis?)
- Diagnosis
- Obtain isolate to submit to CDC for further testing

ETIOLOGIC AGENT

Poliovirus (genus Enterovirus)

TRANSMISSION

Fecal-oral or oral-oral

COMMUNICABILITY

- Highly infectious
- Most infectious in the days immediately before and after onset of symptoms

INCUBATION PERIOD

- 3 to 6 days for nonparalytic poliomyelitis
- 7 to 21 days for onset of paralysis in paralytic poliomyelitis

POLIOVIRUS VACCINES

- *IPV (IPOL)*
- *Combination vaccines*
  - *DTaP-HepB-IPV (Pediarix)*
  - *DTaP-IPV/Hib (Pentacel)*
  - *DTaP-IPV (Kinrix)*
  - *DTaP-IPV (Quadracel)*
  - *DTaP-IPV-Hib-HepB (Vaxelis)*

KENTUCKY DEPARTMENT OF PUBLIC HEALTH
ON CALL PHONE: (888) 9REPORT
IMMUNIZATION BRANCH: (502) 564-4478

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CASE CLASSIFICATION

CLINICAL CRITERIA

Acute onset of flaccid paralysis with decreased or absent tendon reflexes in the affected limbs, in the absence of a more likely alternative diagnosis.

CONFIRMED CASE

Paralytic Poliomyelitis: Meets clinical criteria **AND** confirmatory laboratory evidence.

Nonparalytic Poliovirus Infection: Meets confirmatory laboratory evidence.

Note: A person with post-polio syndrome should not be enumerated as a new case.

LABORATORY CRITERIA

Confirmatory Laboratory Evidence:

- Poliovirus detected by sequencing of the capsid region of the genome by the CDC Poliovirus Laboratory, **OR**
- Poliovirus detected in an appropriate clinical specimen (e.g., stool [preferred], cerebrospinal fluid, oropharyngeal secretions) using a properly validated assay^

Note: The categorical labels used here to stratify laboratory evidence are intended to support the standardization of case classifications for public health surveillance. The categorical labels should not be used to interpret the utility or validity of any laboratory test methodology.

^ The Global Polio Laboratory Network (GPLN) provides guidelines on acceptance of results from labs that are not in GPLN; assays would have to be validated and approved by GPLN. CDC is part of GPLN.

SPECIMEN COLLECTION FOR LABORATORY TESTING

Test Name	Specimens to take	Timing for specimen collection	Transport requirements
RT-PCR Sequencing **Preferred specimen*	Stool (2-4g), pharyngeal swab, CSF (2-5 mL)	Acute	CDC Polio/Picornavirus Laboratory PicornaLab@cdc.gov
Culture	Stool (2-4g), pharyngeal swab, CSF (2-5 mL)	Acute	Sterile, screw-capped container
Serology	Paired sera	Acute: ASAP Convalescent: 3 weeks after acute	N/A

**CDC may request additional types of specimens. All suspected cases of paralytic poliomyelitis are reviewed by a panel of expert consultants at CDC before final classification occurs. Poliovirus is most likely to be isolated from stool specimens. It may also be isolated from pharyngeal swabs. Isolation is less likely from blood or CSF. (CDC| Polio Specimen Collection, Storage, and Shipment)*

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CASE INVESTIGATION

1. Confirm that the clinical and laboratory results meet the case definition
2. Review medical records or speak to an infection preventionist or physician to verify case definition, underlying health conditions, course of illness, vaccination status and travel history
    a. Collect full demographics (name, age, sex, race, complete address, and occupation of patient)
    b. Request copies of admission and discharge summaries and laboratory results
    c. Clinical summary
        i. Paralysis, date of onset
        ii. Asymmetric paralysis
        iii. Ascending paralysis
        iv. Immune deficiency (if any)
        v. MRI results
    d. If patient dies, request copies of the autopsy report, death summary and death certificate
3. Determine vaccination history of the case
    a. Number of OPV doses received
    b. Date of last OPV dose
    c. Number of IPV doses received
4. Interview the case to get a detailed exposure history
    a. Recent travel of patient or a close contact to polio-endemic areas or OPV-using countries
    b. Contact with any known case of poliomyelitis
    c. Contact within previous 30 days with any person who received oral poliovirus vaccine (OPV) within the last 60 days (include date of contact, nature of contact, date contact received OPV, lot number of vaccine, age of contact, and relationship to patient). Please note that OPV is no longer used in the United States but is routinely used in other countries
5. Identify and follow-up with all close contacts
    a. Monitor the close contacts for symptoms
    b. If the contact was exposed to the case's stool or may be exposed to the case's stool then vaccinate as appropriate
    c. Submit specimens from case and close contacts to the KDPH laboratory

The Poliomyelitis Worksheet can serve as a guide for data collection during investigation of reported cases.

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