



Merlin disease code: 04520 Poliomyelitis, Nonparalytic

**CONTACT BUREAU OF EPIDEMIOLOGY**



Specimens for all cases must be sent to the Bureau of Public Health Laboratories

No paper case report form  
No Merlin extended data

## Background

Most poliovirus infections are asymptomatic or cause mild febrile disease. Poliovirus infections occasionally cause aseptic meningitis and one out of 200 infections from poliovirus type 1 results in paralytic poliomyelitis, characterized by acute onset of flaccid paralysis that is typically asymmetric and associated with a prodromal fever. Poliovirus is spread through fecal material, oral secretions, some aerosols, and fomites.

## Clinical criteria for case classification

Not applicable.

## Laboratory criteria for case classification

### Confirmatory:

Poliovirus isolate identified in an appropriate clinical specimen (e.g., stool, cerebrospinal fluid, oropharyngeal secretions), with confirmatory typing and sequencing performed by the CDC Poliovirus Laboratory, as needed.

## Epidemiological criteria for case classification

Not applicable.

## Case classification

### Confirmed:

A person with laboratory criteria.

## Criteria to distinguish a new case from previous reports

Not applicable.

## Comments

This case definition applies only to poliovirus infections found in asymptomatic persons or those with mild, nonparalytic disease (e.g., those with a nonspecific febrile illness, diarrhea, or aseptic meningitis). Isolation of *polioviruses* from persons with acute paralytic poliomyelitis should continue to be reported as “paralytic poliomyelitis 04590”.

In 2005, a vaccine-derived poliovirus (VDPV) type 1 was identified in a stool specimen obtained from an immunodeficient Amish infant and, subsequently, from 4 other children in 2 other families in the infant’s central Minnesota community<sup>1</sup>. Epidemiological and laboratory investigations determined that the VDPV had been introduced into the community about 3 months before the infant was identified and that there had been virus circulation in the community. Investigations in other communities in Minnesota and nearby states and Canada did not identify any additional infections or any cases of paralytic poliomyelitis. Although oral poliovirus vaccine (OPV) is still widely used in most countries, inactivated poliovirus vaccine (IPV) replaced OPV

in the U.S. in 2002<sup>2</sup>. Therefore, the Minnesota poliovirus infections were the result of importation of a vaccine-derived poliovirus into the U.S. and the first time a VDPV has been shown to circulate in a

community in a developed country. Circulating VDPVs commonly revert to a wild poliovirus phenotype and have increased transmissibility and high risk for paralytic disease; they have recently caused polio infections and outbreaks of paralytic poliomyelitis in several countries<sup>3</sup>. Contacts between persons in communities with low polio vaccination coverage pose the potential for transmission of polioviruses and outbreaks of paralytic poliomyelitis.

Because of the success of the routine childhood immunization program in the U.S. and the Global Polio Eradication Initiative, polio has been eliminated in the Americas since 1991. Because the U.S. has used IPV exclusively since 2000, the occurrence of any poliovirus infections in the U.S. is a cause for concern. Reflecting the global concern for poliovirus importations into previously polio-free countries, the World Health Assembly, W.H.O., has added circulating poliovirus to the notifiable events in the International Health Regulations (IHR).<sup>4</sup>

1. CDC. Poliovirus infections in four unvaccinated children – Minnesota, August-October 2005. *MMWR*; 54(41); 1053–1055.
2. CDC. Poliomyelitis prevention in the U.S. Updated recommendations from the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2000;49(No. RR-5).
3. Kew OM, Sutter RW, de Gourville EM, Dowdle WR, Pallansch MA. Vaccine-derived polioviruses and the endgame strategy for global polio eradication. *Ann Rev Microbiol* 2005;59;587-635.
4. CDC. Brief report. Conclusions and recommendations of the Advisory Committee on Poliomyelitis Eradication — Geneva, Switzerland, October 2005. *MMWR* 2005;54;1186-8.