Poliomyelitis for Healthcare Workers

What is Poliomyelitis?

Poliomyelitis, or polio, is a highly infectious disease caused by poliovirus types 1, 2 or 3. These are also called wild polioviruses (WPVs) since they are the naturally occurring types that circulate and infect people.

Polio mainly affects children of less than five years of age. One in 200 infections causes irreversible paralysis when the virus attacks the spinal cord nerve cells that control the muscles.

Due to the Global Polio Eradication Initiative, which was launched in 1988, the number of countries still reporting WPVs has been reduced from 125 to three in 2015.

How is Polio spread?

Poliovirus spreads by the faecal-to-oral route. In areas with poor sanitation, it is thought to more commonly enter the body through the mouth when people eat food or drink water that is contaminated with faeces. The majority of infected people do not show symptoms but can still spread the disease.

What are the signs and symptoms of Polio?

Following infection with poliovirus, approximately 25% of those infected develop a minor illness, usually with fever, headache and sore throat. Paralysis occurs in approximately 1% of those infected. Death occurs in approximately 5–10% of those paralyzed.

What is the treatment for Polio?

There is no cure for polio. Treatment consists of supportive, symptomatic care. A ventilator can help patients who have difficulty breathing. Orthopedic treatment, regular physiotherapy and the use of braces can help reduce the long-term crippling effects.

How is Polio prevented?

Polio can be prevented through immunization with oral polio vaccine (OPV) and/or inactivated polio vaccine (IPV). WHO recommends that all countries using only OPV add at least one dose of IPV to the routine immunization schedule.

What is Polio vaccine?

OPV is a live attenuated (weakened) poliovirus vaccine that contains types 1, 2 and 3 individually or in combination (types 1, 2 and 3, or 1 and 3). It is supplied in multi-dose vials. It is very heat-sensitive and must be kept frozen during long-term storage. After thawing, it can be kept at a temperature of between +2 °C and +8 °C for a maximum of six months or can be refrozen.

IPV is an inactivated poliovirus vaccine available as a stand-alone product or in combination with diphtheria, tetanus, pertussis, hepatitis B and/or Hib. It is stable outside the cold chain but should be stored between +2 °C and +8 °C. It must not be frozen. It is supplied in one-, five- or ten-dose vials. OPV is given orally and IPV is injected intramuscularly as a 0.5 ml dose.

How safe is polio vaccine and what are the potential adverse events following immunization?

Both OPV and IPV are extremely safe. With OPV, vaccine-associated paralytic polio (VAPP) can occur in approximately 1 in 2.7 million doses. VAPP usually occurs with the first dose of OPV, and this small risk declines further with subsequent doses. On rare occasions, over time, in areas of low vaccination coverage, the live attenuated (weakened) viruses contained in OPV can begin to circulate and regain the ability to cause paralytic cases. This is known as circulating vaccine-derived poliovirus. IPV is one of the safest vaccines in routine use. No serious adverse events have been linked to it. Mild events include injection site redness in less than 1% of those vaccinated, swelling in 3–11% and soreness in 14–29%.

When is polio vaccine administered?

In Bermuda, the routine childhood vaccination schedule includes 5 doses of IPV administered at 2 months, 4 months, 6 months, 15-18 months, and 4-6 years. OPV may be used in the event of an outbreak of polio.

Adapted from: World Health Organization. Immunization in Practice - A practical guide for health staff. Target diseases and vaccines. Retrieved from http://www.who.int/immunization/documents/IIP2015_Module1.pdf?ua=1

Epidemiology and Surveillance Unit
Continental Building, 25 Church Street, Hamilton, HM 12, Bermuda
P.O. Box HM 1195, Hamilton HM EX, Bermuda
Phone: (+1 441) 278-6503 Fax: (+1 441) 296-3283
E-mail: epidemiology@gov.bm or jdwilson@gov.bm