



Polio Facts

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Polio is a contagious, acute viral disease caused by poliovirus, a highly infectious enterovirus. There are three poliovirus serotypes (type 1, 2 and 3), each of which can cause polio. Wild polio virus type 2 was eradicated in 2015 and type 3 in 2019.

Polio primarily affects children, with 50% of all cases in children under three years of age, although infants under the age of 12 months are generally protected by maternal antibody, but this depends on maintaining high population vaccination levels. However, people of all ages can be infected with and potentially transmit poliovirus.

Most infected people have no or very mild flu-like symptoms. Thus, infection with the poliovirus usually goes unrecognized. Fewer than 1% of cases result in varying degrees of irreversible paralysis (usually in the legs), and possible death. The death rate for paralytic polio is 2-5% among children and up to 15-30% for adults.

There is no cure for polio and once the disease has been contracted the only treatment is based on alleviation of symptoms, with variable success. In the pre-vaccination era polio was the leading cause of permanent disability, but since 1955 when the first inactivated polio vaccine (IPV) was introduced, there has been a dramatic reduction in the number of polio cases, and since 1988 cases of paralysis caused by wild poliovirus have decreased by over 99.99% from an estimated 350,000 cases per year.

It was only with the introduction of live oral polio vaccine (OPV) in 1962 that endemic transmission began to be interrupted, and as the number of countries where there was still uninterrupted transmission gradually declined countries could be declared polio-free.

The main route of polio virus transmission is by direct contact with an infectious child or adult and ingestion of virus in respiratory or faecal secretions, although less frequently, it may be through a common vector such as contaminated water or food. The virus multiplies in lymphoid cells in the

throat and small intestine, from where it can enter the blood stream and invade the nervous system where it can cause paralysis by destruction of motor nerve cells. The strategy for eradicating polio is based on preventing transmission by immunizing every child with oral polio vaccine until transmission stops and the world is polio-free.

Today only two countries, Pakistan and Afghanistan, have not completely stopped transmission of polio.

Both inactivated and live polio vaccines are highly effective at inducing protective immunity, but because of the infectiousness of the virus it is desirable to achieve rates of vaccination in children of greater than 95%. In populations where vaccination levels are significantly less than optimal, the virus in OPV may be transmitted from person to person over a period of months, and very rarely revert to neurovirulence causing symptoms which are indistinguishable from the wild type virus (vaccine derived polio).

Rotary International is committed to continue the polio eradication campaign until the WHO declares that polio has been eradicated.

Effectively this means interruption of transmission of polioviruses for at least three years. This depends on a high degree of effective surveillance and also the containment of all laboratory poliovirus stocks. However, post-polio syndrome may occur years after infection, with a slow development of muscle weakness.