Poliomyelitis “Polio”

*Research provided by the Kansas Association of Local Health Departments*

As Polio has made a reappearance in both the United States and England in 2022, it is important to know the signs, symptoms, and epidemiology of the disease. Not unlike COVID-19, Polio can have lasting, if not deadly, effects on those infected and can even cause permanent paralysis.

**What is Polio?**

Poliomyelitis is a contagious disease that spreads through person to person contact and lives in intestines and the throat. It can be spread through contact with the fecal matter of an infected person or through droplets of an infected person, which is less common. An infected person can spread the virus immediately after infection and can live in the infected person’s feces for many weeks and contaminate food and water.

Polio can cause typical flu-like symptoms and most people will not have symptoms at all (72%). 1 out of 1000 people can have severe complication such as paralysis or meningitis. Paralysis is considered the most severe symptom of Polio, as it causes long lasting effects. **Without prevention through a vaccination, there is no cure for Polio.**

**History of Transmission**

Polio was first identified in hieroglyphics in ancient Egypt, suggesting that the disease was an issue from 1580 BC. However, the first known case of polio was found in Britain by Dr. Michael Underwood. By 1840s Germany, Dr. Jacob Von Heine discovers that the disease is contagious.

In the United States, polio has been a problem since 1894, with the first significant outbreak being documented in the United States. However, the most notable outbreak of polio in the United States occurred from 1949-1952, with most cases effecting children and causing paralysis. In 1952, over 21,269 individuals experienced Polio.

**Paralysis, Iron Lung, and Treatment**

For many children who experienced paralysis, the disease also affected their lungs and other organs. The infection would gradually stop the muscles of the lungs, causing asphyxiation. The “iron lung” sought to prevent this from happening. In addition, casts for legs and arms, along with hot baths were introduced for children to be able to walk again. Most of the children paralyzed by Polio were not able to recover.



**Vaccination and Vaccine Recommendations**

By 1935, research had begun to create a polio vaccine that could be given to patients. The trials were poorly executed, and most vaccinated people fell ill with polio or experienced allergic reactions. However, by 1948, the early foundation of the March of Dimes funded a study for Dr. Jonas Salk to research polio and a vaccine. The program was suspended in 1955 due to suspected deaths. In 1959, researcher Albert Sabin worked with the Soviet Union to create an affordable oral polio vaccine. This vaccine triggered a faster immune response and was easier to administer than an injectable vaccine.

In 1963, the US surgeon general licensed the OPV in the United States. Most children received this vaccine in the United States through sugar cubes in schools. By the 1990s, the program had transitioned to a childhood injectable vaccination that is still used today. This vaccine is a four-dose series using an inactivated Polio virus and the doses occur at yearly checkups from 2 months old to 6 years old.

The current outbreak has not changed recommendations for childhood polio vaccines. However, vaccinations are available for those who have not received a vaccine. Because of the vaccine type, it is widely available for children and adults. The current Polio vaccine is authorized for an adult booster for those who may be at a higher risk of coming in to contact with the disease, but this booster should be discussed with your doctor.

**Eradication Efforts, March of Dimes, and Rotary International**

By 1994, polio was fully eradicated in the United States and by 2002 in Europe. However, polio remains a problem for countries with high levels of unsanitary conditions. [Rotary International](https://rotary.org/en/our-causes/ending-polio) and the [March of Dimes](https://www.marchofdimes.org/giving/support-general.aspx?srcCode=GAQALODA2200CEBINGBXXXX&utm_source=bing&utm_medium=cpc&utm_campaign=alwayson&utm_content=brand&DonationTrackingParam1=digital_paid&DonationTrackingParam2=alwayson_bing&gclid=70c1fc2cea5d1850dd5f9dc21df21a1a&gclsrc=3p.ds&msclkid=70c1fc2cea5d1850dd5f9dc21df21a1a) continue eradication efforts through vaccination today, with only 33 cases reported in the world in 2018.

**Current Outbreak and What it Means for the Future**

In mid-summer 2022, an individual presented at a hospital with paralytic polio. It was later revealed that this individual was not vaccinated for the virus and had most likely spread it to other people. By August, the polio virus, which lives in water and feces, was detected in both London city wastewater, and New York City wastewater, indicating that hundreds, if not thousands of individuals may have been exposed to polio as early as May 2022.

Polio was eradicated, through vaccination, in the United States, in 1979. By 2013, due to vaccine hesitancy, cases were popping up in small pockets. The 2022 outbreak is the largest of these outbreaks post-vaccination campaign to date.

As we can see from Polio’s epidemiology, it spreads quickly and is almost undetectable until symptoms begin in the body. While Kansas currently does not have any active cases, it is important to understand the side effects of deciding to forgo vaccination – and what it can do to you and your community.

It is easy to forget what diseases look like when we don’t see them, and vaccination has been SO effective against Polio, that many forget what the disease did to former generations. This current outbreak is a consequence of that effectiveness.

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