

Research Topic: Polio

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What?

Polio also known as Poliomyelitis is an infectious disease caused by the virus Poliovirus . The word Poliomyelitis originates from the word “polio” which means “grey” and “myelon” which means “marrow” (Mehndiratta et al., 2014).

When?

Poliomyelitis has existed since ancient Egyptian times. However, a British Doctor by the name Michael Underwood in 1978 was the first physician to give Polio a clinical definition. On the other hand, Jakob Heine gave Polio recognition as a condition in 1840 (World Health Organization (2022a)). Polio caused several epidemics all over the world during the 20th century. An epidemic is defined as an outbreak of an infectious disease in a community during a particular time (Collins English Dictionary, 2022).

Why?

The virus is highly contagious transmitted through person to person contact. It is spread through the poo of an infected person via contaminated food and water or a person using poor hand washing techniques and putting their hands in their mouth.

Polio may cause flu-like symptoms such as headaches, fatigue, vomiting, fever and muscle pain. Serious symptoms can include paralysis as Polio can affect the nerves and brain leading to paralysis and even death.

Who?

Polio can affect anyone infected by the virus however children under the age of five years old are more at risk of becoming infected with the virus.

(World Health Organization, 2022b).

This report will be discussing the strategies used in the UK to measure, monitor and control the incidence of Polio.

There are two methods of measuring the incidence of Polio in the UK such as rate of mortality and morbidity.

Mortality is defined as the number of deaths among a group of people during a period of time (Longman dictionary, 2022).

Whereas, Kenton (2022) states Morbidity is the rate at which disease or ill health occurs within a population. GOV UK (2022) states

eight thousand people would develop paralysis due to polio every year in the UK with up to seven hundred and fifty deaths every year before the 1950's when vaccinations were introduced.

People affected by paralytic Polio had to use crutches, splints and casts as their mobility was affected. People experiencing respiratory Paralysis were unable to breathe without assistance from machines (Science Museum, 2018).

The NHS (2022) states Polio has not been the confirmed cause of paralysis in the UK since 1984.

The UK uses various strategies to monitor the incidence of Polio. For example, public health surveillance which includes medical practitioners having the responsibility of reporting suspected and confirmed cases of Polio to the government.

Another way to monitor the incidence of Poliovirus is monitoring the effectiveness of Polio containing vaccines.

Monitoring vaccine effectiveness allows the government to assess how many people are still contracting Polio as an effective vaccine would provide large scale immunity which will reduce the incidence of Polio in the UK. According to ECDC (2021) two doses of the (IPV) inactivated vaccine are ninety percent effective in preventing polio but with a third

dose of the vaccine that protection increases to ninety nine percent to one hundred percent effective. This is backed up by GOV UK (2022a) which states that due to the vaccination programme there have been no poliovirus cases in the UK since 1984 and Poliovirus was eliminated from the whole of Europe during the year 2003.

Immunisation is a strategy used by the UK to control the incidence of Polio. According to GOV UK (2022a) , the UK used Oral Polio vaccines which contained the live virus and generated immunity in the gut when administered however after the eradication of Poliovirus in Europe the UK switched to Inactivated Polio vaccine in 2004 which did not contain the live virus and was given as an injection.

There are four different types of vaccine brands used in the UK: Infranix hexa PIL, Vaxelis PIL, Boostrix-IPV PIL and Revaxis PIL. The schedule of vaccinations are eight, twelve and sixteen weeks old, three years and fourth months old and fourteen years old (NHS, 2022).

People travelling to countries with a high Poliovirus rate such as Afghanistan, Pakistan, Nigeria and India require proof of vaccination against Polio before travelling and may also be required to have a Polio booster vaccine. This is to ensure that passengers do not bring Polio virus into the UK. Also, Pregnant women are offered the Boostrix IPV vaccine which protects the baby against Polio, Diphtheria, Tetanus and Whooping Cough. This vaccine provides the baby with immunity until they are old enough to have the newborn vaccines at 8 weeks of age (NHS,2022).

There are various other strategies used in the UK to control the incidence of Polio. For example, screening for Poliovirus is conducted through collecting a stool specimen. A stool specimen produces the greatest amount of

Poliovirus for testing. There are other sources for testing such as the throat and cerebrospinal fluid (Centres for Disease Control and Prevention, 2021) . Furthermore, the sewage systems in different parts of the UK are tested to detect Poliovirus as Poliovirus is found in the stools of infected individuals (GOV UK,2022b).

As well as, promoting effective hand washing. Polio is transmitted through human contact so good hand hygiene includes washing hands with soap and water after using the toilet, touching dirty items, preparing food and before eating (Queensland, 2019).

In conclusion, Poliovirus is a highly infectious disease that resulted in various epidemics during the 20th century. Poliovirus affects mainly children but can affect anyone who is not fully vaccinated against the virus. Poliovirus can affect the nervous system fifteen to forty years after recovery leading to paralysis, this is known as post polio syndrome or paralytic Polio. The UK has formed several strategies to ensure that Polio is managed to protect the public. For example, the Polio vaccination schedule which includes pregnant women and children. This has been a large contributor to the eradication of Polio in Europe. As well as, public health surveillance which requires health professionals to report all confirmed and suspected cases of Polio.

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