

Influenza- Written Report

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Influenza is a viral infection caused by the Influenza virus which affects the respiratory system. There are four types of Influenza Viruses: Influenza A,B,C and D. Influenza A and B are known to cause seasonal flu outbreaks yearly in the United Kingdom.

Influenza C causes mild illness and is not known to cause outbreaks and Influenza D only affects cattle (National Institute for Health and Care Excellence, 2022).

This assignment will be discussing the history of the Influenza virus, the mode of transmission, the signs and symptoms, and the individuals most at risk of being infected with Influenza virus. As well as, strategies used in the United Kingdom to measure, monitor and control the incidence of the Influenza Virus.

Influenza virus was initially thought to be a bacterial infection, in the year nineteen eighty two Richard Pfeiffer a German scientist obtained a sample from the nose of an individual infected with Influenza. However, in the year nineteen thirty three researchers by the name Wilson Smith identified Influenza as a virus. During the year nineteen eighty one the H1N1 virus caused a severe influenza pandemic (World Health Organization, 2022) .

The influenza virus spreads through the air in the form of droplets which are released from the nose or mouth when a person infected with the Influenza virus speaks, coughs or sneezes.

The droplets can land on surrounding surfaces such as tables, door knobs and chairs and so a person touching these surfaces can become infected. Also, the influenza virus remains outside the human body for up to 24 hours and a person can spread Influenza one day before symptoms start. This makes the virus highly contagious.

Influenza symptoms usually become worse suddenly. The symptoms can include coughing, fatigue, muscle aches, fever, joint pain, dry cough, loss of appetite and headaches.

These symptoms can last for two weeks or more. However, the fever may last a week without medical intervention (Patel, 2022).

The influenza virus can affect people of all ages however there are groups more at risk of the Influenza virus such as pregnant women, the elderly, children, people with chronic medical conditions such as high blood pressure, heart disease, kidney disease, liver disease, sickle cell and more. Also, people suffering from medical conditions that suppress their immune system such as AIDS, HIV and cancer. Also, healthcare workers are at risk because they come into contact with a high number of people suffering from Influenza (World Health Organization, 2018).

Strategies used in the United Kingdom to measure the incidence of the Influenza virus include 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. Pitman (2007) states that in England influenza can cause between ten thousand five hundred to twenty five thousand deaths a year. Furthermore, Dobson (2006) states that the

influenza virus can lead to twenty thousand hospitalisations a year as influenza complications can cause bronchitis which is a chest infection, this can further lead to pneumonia which is defined as the inflammation of the lungs. Pneumonia is life threatening if not treated early according to Mayo Clinic (2022).

A strategy used to monitor the incidence of Influenza in the United Kingdom is the use of vaccination efficiency data. Influenza vaccine efficiency varies as the strains of Influenza mutate every year so the vaccine may not provide protection against the correct Influenza strain circulating that season. Influenza vaccination has been estimated to be thirty to sixty percent effective for individuals aged eighteen to sixty five (Sussex NHS Commissioners, 2020). However, Public Health England published that the Influenza vaccine effectiveness from the year twenty seventeen to twenty eighteen was overall fifteen percent in all age groups (Public Health England ,2018). For example, Influenza vaccine efficiency is typically lower in the elderly because the vaccine is not able to produce a strong immune response due to the fewer immune cells so the immune system is slower to react. The elderly (individuals aged sixty five and older) may be offered a higher dose or a type of vaccine called Adjuvanted Quadrivalent Influenza Vaccine (aQIV). This vaccine contains Adjuvant which is a substance that stimulates a stronger immune system response which is required to provide protection against the Influenza virus (NHS inform ,2022).

The World Health Organisation is responsible for reviewing globally the vaccination required for the northern hemisphere and southern hemisphere every year by providing recommendations (using epidemiological data)on which flu

virus strain should be added to the vaccinations for the following seasons (World Health Organization ,2022b)

A common strategy used by the United Kingdom to control the incidence of the Influenza virus is vaccination. A vaccine is defined as a form of treatment/ preparation used to protect people against harmful diseases by stimulating the body to produce an immune response which helps the body to fight off disease before they get into contact with it. There are various Influenza vaccines used in the United Kingdom. For example, Quadrivalent Influenza Vaccine, egg-grown (QIVe) and Cell-based Quadrivalent Influenza Vaccine (QIVc) (GOV UK ,2022). Quadrivalent Influenza vaccines aim to protect against four different flu viruses. The vaccines usually include two Influenza A viruses and two Influenza B viruses. There are a range of different vaccines targeted at different age groups (Centres for Disease Control and Prevention,2022).

The Influenza virus vaccine is recommended for everyone however the vaccine is offered annually to individuals who have a high risk of contracting the virus such as the elderly (over 65), pregnant women, children, health care workers and people with chronic medical conditions.

Pregnant women are advised to get the influenza vaccine during any stage of their pregnancy. This is because pregnant women are at risk of becoming infected with Influenza due to their suppressed immune system. Pregnant women infected with Influenza virus could experience complications in their pregnancy such as premature birth, low birth weight baby or even stillbirth. The influenza virus vaccine can pass the immunity to the unborn child which would protect them for the first few months of the baby's life (NHS,2022).

There are various ways used to control the incidence of the Influenza virus including good hygiene measures such as

regular hand washing. This is important as Influenza is spread through droplets and the Influenza virus can survive in the droplets outside the body. For example, on surfaces for twenty four hours.

Another form of hygiene includes covering the nose and mouth when a person infected with the Influenza virus coughs or sneezes. Masks are recommended to reduce the amount of droplet particles in the atmosphere. Health care professionals may use personal protective equipment (PPE) such as gloves, gowns and eye protection to reduce the spread of the virus (United States Department of Labour ,2022).

Also, it is very important that tissues used for coughing, sneezing or catching phlegm are disposed of correctly because if it is not disposed correctly it can spread the Influenza virus by contaminating surfaces thus infecting more people.

Another way the Influenza virus can be controlled is through isolation once the virus is suspected. For example, if an individual feels generally unwell, feverish or experiencing any other flu like symptoms such as coughing and runny nose.

Influenza virus can be diagnosed using the signs and symptoms an individual presents with as they are characteristic to the virus. However, many other conditions can present as “flu-like” symptoms such as rhinovirus which can make the diagnosis of the disease difficult. In this instance, samples from the nose and throat can be taken from the infected person and sent to the laboratory so a definite diagnosis can be made. This is called a PCR (polymerase chain reaction) test. However, some hospitals have now implemented a quicker way to achieve a diagnosis called rapid influenza diagnostic test (RIDT). This test can take twenty minutes to form a result and can also process up to

eight results at a time. This is beneficial especially in diagnosing patients experiencing flu like symptoms admitted on a ward as it will prompt early isolation and personal protective equipment (PPE). It also reduces the likelihood of patients being given antibiotics instead of antivirals as there would be a confirmed Influenza virus diagnosis (NHS choices ,2022) .

The treatment of Influenza virus depends on the severity of the illness as people suffering from severe influenza may need to be hospitalised so that additional treatment is provided. Individuals experiencing seasonal influenza are advised to self manage unless their symptoms become worse and unmanageable. The treatment aimed at uncomplicated influenza is usually targeted at managing symptoms such as fever, nasal congestion and muscle pain. For example, the use of painkillers such as paracetamol or throat lozenges. Self isolating at home and bed rest is also encouraged as a form of treatment because the Influenza virus symptoms such as fever tend to subside after a week.

On the other hand, individuals with other medical conditions which are worsened by Influenza such as pneumonia and asthma may be treated with an antiviral medication with the aim of killing the virus or preventing the growth of the virus. An example of a commonly used antiviral is oseltamivir. This medication should be started as soon as possible to maximise the intended effect of the drug (Centres for Disease Control and Prevention ,2022b) .

In conclusion, the Influenza virus is a highly contagious infection that can be categorised into four types of viruses: Influenza A, Influenza B, Influenza C and Influenza D. Influenza A and B attributes to seasonal flu outbreaks in the

United Kingdom. Influenza is contagious because the mode of transmission is through droplets which can easily contaminate surfaces and spread to people as the virus can survive for up to twenty four hours. Vulnerable groups include pregnant women, children, the elderly, Immunocompromised individuals such as HIV conditions, people receiving cancer treatment and people with chronic health conditions such as asthma and heart problems. Furthermore, mortality and morbidity are methods used to measure the incidence of Influenza as it assesses the impact the disease has on a population. Dobson (2006) states that Influenza can cause up to twenty five thousand deaths a year and twenty thousand hospitalisations a year. Morbidity caused by Influenza includes bronchitis which could lead to pneumonia, this is life threatening.

Moreover, Vaccine efficiency is a method used to monitor the incidence of Influenza, However, Sussex NHS Commissioners (2020) states that the efficiency rate fluctuates yearly because the vaccine may not contain the Influenza strain that is circulating that season due to the fact that the World Health Organisation uses epidemiology to predict which strains should be included in the vaccine. On the other hand, immunisation is still recommended because it can reduce the severity of the Influenza which could lower the rates of morbidity such as hospitalisation. For this reason, individuals at risk of being infected by Influenza are recommended to get vaccinated yearly. In addition to this, Influenza incidence is controlled using immunisation, good hand hygiene practices, early isolation and mass testing.

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