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Influenza (seasonal)

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Key facts

- **There are around a billion cases of seasonal influenza annually, including 3–5 million cases of severe illness.**
- **It causes 290 000 to 650 000 respiratory deaths annually.**
- **Ninety-nine percent of deaths in children under 5 years of age with influenza-related lower respiratory tract infections are in developing countries.**
- **Symptoms begin 1–4 days after infection and usually last around a week.**

Overview

Seasonal influenza (the flu) is an acute respiratory infection caused by influenza viruses. It is common in all parts of the world. Most people recover without treatment.

Influenza spreads easily between people when they cough or sneeze. Vaccination is the best way to prevent the disease.

Symptoms of influenza include acute onset of fever, cough, sore throat, body aches and fatigue.

Treatment should aim to relieve symptoms. People with the flu should rest and drink plenty of liquids. Most people will recover on their own within a week. Medical care may be needed in severe cases and for people with risk factors.

There are 4 types of influenza viruses, types A, B, C and D. Influenza A and B viruses circulate and cause **seasonal epidemics** of disease.

- **Influenza A viruses are further classified into subtypes according to the combinations of the proteins on the surface of the virus. Currently circulating in humans are subtype A(H1N1) and A(H3N2) influenza viruses. The A(H1N1) is also written as A(H1N1)pdm09 as it caused the pandemic in 2009 and replaced the previous A(H1N1) virus which had circulated prior to 2009. Only influenza type A viruses are known to have caused pandemics.**
- **Influenza B viruses are not classified into subtypes but can be broken down into lineages. Influenza type B viruses belong to either B/Yamagata or B/Victoria lineage.**
- **Influenza C virus is detected less frequently and usually causes mild infections, thus does not present public health importance.**
- **Influenza D viruses primarily affect cattle and are not known to infect or cause illness in people.**

Signs and symptoms

Symptoms of influenza usually begin around 2 days after being infected by someone who has the virus.

Symptoms include:

- **sudden onset of fever**
- **cough (usually dry)**
- **headache**
- **muscle and joint pain**
- **severe malaise (feeling unwell)**
- **sore throat**
- **runny nose.**

The cough can be severe and can last 2 weeks or more.

Most people recover from fever and other symptoms within a week without requiring medical attention. However, influenza can cause severe illness or death, especially in people at high risk.

Influenza can worsen symptoms of other chronic diseases. In severe cases influenza can lead to pneumonia and sepsis. People with other medical issues or who have severe symptoms should seek medical care.

Hospitalization and death due to influenza occur mainly among high-risk groups.

In industrialized countries most deaths associated with influenza occur among people aged 65 years or older *(1)*.

The effects of seasonal influenza epidemics in developing countries are not fully known, but research estimates that 99% of deaths in children under 5 years of age with influenza related lower respiratory tract infections are in developing countries *(2)*.

Epidemiology

All age groups can be affected but there are groups that are more at risk than others.

- **People at greater risk of severe disease or complications when infected are pregnant women, children under 5 years of age, older people, individuals with chronic medical conditions (such as chronic cardiac, pulmonary, renal, metabolic, neurodevelopmental, liver or hematologic diseases) and individuals with immunosuppressive conditions/treatments (such as HIV, receiving chemotherapy or steroids, or malignancy).**
- **Health and care workers are at high risk of acquiring influenza virus infection due to increased exposure to the patients, and of further spreading particularly to vulnerable individuals. Vaccination can protect health workers and the people around them.**

Epidemics can result in high levels of worker/school absenteeism and productivity losses. Clinics and hospitals can be overwhelmed during peak illness periods.

Transmission

Seasonal influenza spreads easily, with rapid transmission in crowded areas including schools and nursing homes. When an infected person coughs or sneezes, droplets containing viruses (infectious droplets) are dispersed into the air and can infect persons in close proximity. The virus can also be spread by hands contaminated with influenza viruses. To prevent transmission, people should cover their mouth and nose with a tissue when coughing and wash their hands regularly.

In temperate climates, seasonal epidemics occur mainly during winter, while in tropical regions, influenza may occur throughout the year, causing outbreaks more irregularly.

The time from infection to illness, known as the incubation period, is about 2 days, but ranges from 1–4 days.

Diagnosis

Most cases of human influenza are clinically diagnosed. However, during periods of low influenza activity or outside of epidemics situations, the infection of other respiratory viruses (e.g. SARS-CoV-2, rhinovirus, respiratory syncytial virus, parainfluenza and

adenovirus) can also present as influenza-like illness (ILI), which makes the clinical differentiation of influenza from other pathogens difficult.

Collection of appropriate respiratory samples and the application of a laboratory diagnostic test is required to establish a definitive diagnosis. Proper collection, storage and transport of respiratory specimens is the essential first step for laboratory detection of influenza virus infections. Laboratory confirmation is commonly performed using direct antigen detection, virus isolation, or detection of influenza-specific RNA by reverse transcriptase-polymerase chain reaction (RT-PCR). Various guidance on the laboratory techniques is published and updated by WHO.

Rapid diagnostic tests are used in clinical settings, but they have lower sensitivity compared to RT-PCR methods and their reliability depends largely on the conditions under which they are used.

Treatment

Most people will recover from influenza on their own. People with severe symptoms or other medical conditions should seek medical care.

People with mild symptoms should:

- **stay home to avoid infecting other people**
- **rest**
- **drink plenty of fluids**
- **treat other symptoms such as fever**
- **seek medical care if symptoms get worse.**

People at high risk or with severe symptoms should be treated with antiviral medications as soon as possible. They include people who are:

- **pregnant**
- **children under 59 months of age**
- **aged 65 years and older**
- **living with other chronic illnesses**
- **receiving chemotherapy**
- **living with suppressed immune systems due to HIV or other conditions.**

The WHO Global Influenza Surveillance and Response System (GISRS) monitors resistance to antivirals among circulating influenza viruses to provide timely evidence for national policies related to antiviral use.

Prevention

Vaccination is the best way to prevent influenza.

Safe and effective vaccines have been used for more than 60 years. Immunity from vaccination goes away over time so annual vaccination is recommended to protect against influenza.

The vaccine may be less effective in older people, but it will make the illness less severe and reduces the chance of complications and death.

Vaccination is especially important for people at high risk of influenza complications and their carers.

Annual vaccination is recommended for:

- **pregnant women**
- **children aged 6 months to 5 years**
- **people over age 65**
- **people with chronic medical conditions**
- **health workers.**

Other ways to prevent influenza:

- **wash and dry your hands regularly**
- **cover your mouth and nose when coughing or sneezing**
- **dispose of tissues correctly**
- **stay home when feeling unwell**
- **avoid close contact with sick people**
- **avoid touching your eyes, nose or mouth.**

Vaccines

Vaccines are updated routinely with new vaccines developed that contain viruses that match those circulating. Several inactivated influenza vaccines and recombinant influenza vaccines are available in injectable form. Live attenuated influenza vaccines are available as a nasal spray.

WHO response

WHO, through the Global Influenza Programme and GISRS, in collaboration with other partners, continuously monitors influenza viruses and activity globally, recommends seasonal influenza vaccine compositions twice a year for the northern and southern

hemisphere influenza seasons, guides countries in tropical and subtropical areas as to which formulation vaccines to use, supports decisions for timing of vaccination campaigns, and supports Member States to develop prevention and control strategies.

WHO works to strengthen national, regional and global influenza response capacities including diagnostics, antiviral susceptibility monitoring, disease surveillance and outbreak response, to increase vaccine coverage among high-risk groups, and to support research and development of new therapeutics and other countermeasures.

References

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Human metapneumovirus (hMPV) infection