Coronavirus disease (COVID-19)

Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus.

Most people infected with the virus will experience mild to moderate respiratory illness and recover without requiring special treatment. However, some will become seriously ill and require medical attention. Older people and those with underlying medical conditions like cardiovascular disease, diabetes, chronic respiratory disease, or cancer are more likely to develop serious illness. Anyone can get sick with COVID-19 and become seriously ill or die at any age.

The best way to prevent and slow down transmission is to be well informed about the disease and how the virus spreads. Protect yourself and others from infection by staying at least 1 metre apart from others, wearing a properly fitted mask, and washing your hands or using an alcohol-based rub frequently. Get vaccinated when it’s your turn and follow local guidance.

The virus can spread from an infected person’s mouth or nose in small liquid particles when they cough, sneeze, speak, sing or breathe. These particles range from larger respiratory droplets to smaller aerosols. It is important to practice respiratory etiquette, for example by coughing into a flexed elbow, and to stay home and self-isolate until you recover if you feel unwell.

To prevent infection and to slow transmission of COVID-19, do the following:

- Get vaccinated when a vaccine is available to you.
- Stay at least 1 metre apart from others, even if they don’t appear to be sick.
- Wear a properly fitted mask when physical distancing is not possible or when in poorly ventilated settings.
- Choose open, well-ventilated spaces over closed ones. Open a window if indoors.

- Wash your hands regularly with soap and water or clean them with alcohol-based hand rub.
- Cover your mouth and nose when coughing or sneezing.
- If you feel unwell, stay home and self-isolate until you recover.

COVID-19 affects different people in different ways. Most infected people will develop mild to moderate illness and recover without hospitalization.

Most common symptoms:

- fever
- cough
- tiredness
- loss of taste or smell.

Less common symptoms:

- sore throat
- headache
- aches and pains
- diarrhoea
- a rash on skin, or discolouration of fingers or toes
- red or irritated eyes.

Serious symptoms:

- difficulty breathing or shortness of breath
- loss of speech or mobility, or confusion
- chest pain.

Seek immediate medical attention if you have serious symptoms. Always call before visiting your doctor or health facility.

People with mild symptoms who are otherwise healthy should manage their symptoms at home.

On average it takes 5–6 days from when someone is infected with the virus for symptoms to show, however it can take up to 14 days.

Key facts

- **COVID-19 is a disease caused by a virus. The most common symptoms are fever, chills, and sore throat, but there are a range of others.**
- **Most people make a full recovery without needing hospital treatment. People with severe symptoms should seek medical care as soon as possible.**
- **Over 760 million cases and 6.9 million deaths have been recorded worldwide since December 2019, but the actual number is thought to be higher.**
- **Over 13 billion vaccine doses have been administered as of June 2023.**

Overview

COVID-19 is the disease caused by the SARS-CoV-2 coronavirus. It usually spreads between people in close contact.

COVID-19 vaccines provide strong protection against severe illness and death. Although a person can still get COVID-19 after vaccination, they are more likely to have mild or no symptoms.

Anyone can get sick with COVID-19 and become seriously ill or die, but most people will recover without treatment.

People over age 60 and those with existing medical conditions have a higher risk of getting seriously ill. These conditions include high blood pressure, diabetes, obesity, immunosuppression including HIV, cancer and pregnancy. Unvaccinated people also have a higher risk of severe symptoms.

Symptoms

People may experience different symptoms from COVID-19. Symptoms usually begin 5–6 days after exposure and last 1–14 days.

The most common symptoms are:

- fever
- chills
- sore throat.

Less common symptoms are:

- muscle aches and heavy arms or legs
- severe fatigue or tiredness
- runny or blocked nose, or sneezing
- headache
- sore eyes
- dizziness
- new and persistent cough
- tight chest or chest pain
- shortness of breath
- hoarse voice
- numbness or tingling
- appetite loss, nausea, vomiting, abdominal pain or diarrhoea
- loss or change of sense of taste or smell
- difficulty sleeping.

People with the following symptoms should seek immediate medical attention:

- difficulty breathing, especially at rest, or unable to speak in sentences
- confusion
- drowsiness or loss of consciousness
- persistent pain or pressure in the chest
- skin being cold or clammy, or turning pale or a bluish colour
- loss of speech or movement.

People who have pre-existing health problems are at higher risk when they have COVID-19; they should seek medical help early if worried about their condition. These include people taking immunosuppressive medication; those with chronic heart, lung, liver or rheumatological problems; those with HIV, diabetes, cancer. obesity or dementia.

People with severe disease and those needing hospital treatment should receive treatment as soon as possible. The consequences of severe COVID-19 include death, respiratory failure, sepsis, thromboembolism (blood clots), and multiorgan failure, including injury of the heart, liver or kidneys.

In rare situations, children can develop a severe inflammatory syndrome a few weeks after infection.

Some people who have had COVID-19, whether they have needed hospitalization or not, continue to experience symptoms. These long-term effects are called long COVID (or post COVID-19 condition). The most common symptoms associated with long COVID include fatigue, breathlessness and cognitive dysfunction (for example, confusion, forgetfulness, or a lack of mental focus or clarity). Long COVID can affect a person's ability to perform daily activities such as work or household chores.

Treatment

Most people will recover without needing treatment in a hospital.

For those who need it, doctors will suggest treatments for COVID-19 based on the severity of the disease and the risk of it getting worse. They will consider the person's age and if they have other health problems.

More on treatment

Prevention

People should get vaccinated as soon as it's their turn. They should follow local guidance on vaccination and ways to protect themselves against COVID-19.

COVID-19 vaccines provide strong protection against serious illness, hospitalization and death.

To prevent the spread of COVID-19:

- avoid crowds and keep a safe distance from others, even if they don't appear to be sick;
- wear a properly fitted mask if you feel sick, have been close to people who are sick, if you are at high-risk, or in crowded or poorly ventilated areas;
- clean your hands frequently with alcohol-based hand rub or soap and water;
- cover your mouth and nose with a bent elbow or tissue when you cough or sneeze;
- dispose of used tissues right away and clean your hands; and
- if you develop symptoms or test positive for COVID-19, self-isolate until you recover.

Vaccination against COVID-19 is based on priority groups such as people aged 60 years and over, and those with underlying medical problems such as high blood pressure, diabetes, chronic health problems, immunosuppression (including HIV), obesity, cancer, pregnant persons, and unvaccinated people. In March 2023, WHO updated its recommendations on primary series vaccination (two doses of any vaccine) as well as the need for booster doses. These recommendations are time-limited and can change at any time depending on how the SARS-CoV-2 virus is circulating in your area or country. It is important to stay up to date with local guidelines and recommendations provided by your local health authority.

Since its introduction, COVID-19 vaccines have saved millions of lives across the world by providing protection against severe disease, hospitalization, and death. Even though vaccines protect against severe disease and death, it is still possible to spread SARS-CoV-2 to others after being vaccinated.

WHO response

The World Health Organization is the global coordinating agency for the response to the COVID-19 pandemic. The Organization works with Member States and partners on all aspects of the pandemic response, including facilitating research, developing guidance, coordinating vaccine development and distribution, and monitoring daily case numbers and trends around the world.

Since April 2020, the Access to COVID-19 Tools (ACT) Accelerator, launched by WHO and partners, has supported the fastest, most coordinated, and successful global effort in history to develop tools to fight a disease. COVAX, the vaccines pillar of the ACT-Accelerator is a ground-breaking global collaboration to accelerate the development, production, and equitable access to COVID-19 tests, treatments, and vaccines.

WHO provides global coordination and member state support on vaccine safety monitoring. It developed the target product profiles for COVID-19 vaccines and provides R&D technical coordination.

WHO also leads work to improve global capacity and access to oxygen production, distribution and supply to patients.

Although WHO announced the end of the emergency phase of COVID-19 in May 2023, the Organization continues to coordinate the global response.

Post COVID-19 condition (long COVID)

26 February 2025

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Key facts

- Most patients with COVID-19 recover fully, but some develop post COVID-19 condition with medium- to long-term effects on one or more body systems.
- Approximately 6 in every 100 people who have COVID-19 develop post COVID-19 condition.
- While data are limited, the chance of developing post COVID-19 condition appears to be lower now than earlier in the pandemic. However, the virus is still circulating widely, and every new infection is associated with a risk.
- Fatigue, breathlessness, muscle or joint pain, and impaired sleep are common symptoms of post-COVID-19 condition.
- WHO is working to develop clinical practice guidelines for management of post COVID-19 condition.
- Health-care providers can guide patients on self-management of symptoms and offer medication for symptom relief or referral for rehabilitation services as needed.

Overview

COVID-19 can lead to serious long-term effects, known as post COVID-19 condition (PCC). It is also commonly referred to as long COVID. Post COVID-19 condition is characterized by a range of symptoms which usually start within 3 months of the initial COVID-19 illness and last at least 2 months. PCC can affect a person's ability to perform daily activities such as work or household chores and restrict social participation.

Scope of the problem

Millions of people have been affected with post COVID-19 condition since the beginning of the pandemic *(1)*. Global estimates indicate that 6 in 100 people with COVID-19 develop post COVID-19 condition. Estimates largely come from people who suffered COVID-19 early in the pandemic (in the first two years), and there is a very large variation in estimates *(2)*.

More recent research shows the chances of developing post COVID-19 condition have reduced, but these data are limited and mostly from high-income countries *(3)*. However, the SARS-CoV-2 virus, the virus that causes COVID-19 is widely circulating and post COVID-19 condition remains a substantial threat and ongoing challenge to global public health.

Risk factors

Anyone who was infected with SARS-CoV-2 can develop post COVID-19 condition. Some people have higher risk. These include women, older adults, smokers, those who are overweight or obese or have pre-existing chronic health problems. Repeated infections and severe COVID-19 needing hospitalization or ICU admission also increase the risk *(4)*. We see higher numbers of post COVID-19 condition sufferers among people with disabilities, and where health disparity and access to health care is a problem *(5)*.

Research is ongoing to better understand what causes post COVID-19 condition. Almost any organ can be affected, including the heart and blood vessels, lungs, nervous system, gut and endocrine (hormone) system. In those with post COVID-19 condition, researchers have found evidence of persistence of SARS-CoV2 virus in the body, of altered immune responses and autoimmunity, and of formation of microscopic blood clots (micro-thrombosis), among other problems *(6)*.

Symptoms

Over 200 different symptoms have been reported by people with post COVID-19 condition. Common symptoms include:

- fatigue
- aches and pains in muscles or joints
- feeling breathless
- headaches
- difficulty in thinking or concentrating
- alterations in taste.

Impaired sleep, depression and anxiety also occur *(5)*. These symptoms might persist from their initial illness or develop after their recovery. Symptoms can be mild to severely debilitating, and affect someone's capacity to work, perform their daily activities or do exercise.

With increasing understanding of post COVID-19 condition, some clinical patterns have become clearer. There are symptoms which tend to occur together, for example dizziness, palpitations, light-headedness on standing, and exercise intolerance (related to postural orthostatic tachycardia syndrome), symptoms of post exertional malaise, or myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) *(7)*.

Other medical conditions can occur more often than usual after having COVID-19. These include kidney impairment, heart disease, stroke, diabetes and mental health disorders, among other conditions *(8)*.

Impact

Post COVID-19 condition can affect the ability to work and may lead to loss of productivity, and a reduction in income and quality of life. Ongoing medical needs of people with the condition may stretch existing health systems.

Recovery

Symptoms of post COVID-19 condition generally improve over time, typically 4–9 months. Approximately 15 in 100 people still have symptoms at 12 months as per global estimates from 2022 *(2)*.

Treatments

The individual needs of patients with post COVID-19 condition vary. At the present time, there remains limited research on treatments and a lack of large studies to understand the most effective treatments. However, doctors and their patients may make individualized treatment decisions based on knowledge from similar medical conditions. Health-care providers may offer medications for symptomatic relief as needed. Additionally, newly diagnosed medical problems occurring after COVID-19 frequently have well-established treatments, for example kidney disease or stroke. Many symptoms and functional impairment can be managed effectively by rehabilitation, and with careful communication between primary care practitioners and medical specialists.

Self-care

Education about the importance of quality rest and sleep and skills training on energy conservation techniques can help patients manage their symptoms better. Health-care providers can discuss with patients about self-management strategies to respond promptly to a flare-up or relapse, such as identifying possible triggers, temporarily reducing activity levels, monitoring symptoms over time, and not returning to usual activity levels until the flare-up has resolved. Use of assistive devices and environmental modifications at work and home may be needed in some instances.

Prevention

People can be reinfected with SARS-CoV-2 multiple times. Each time, they have a risk of developing post COVID-19 condition. Therefore, risk reduction with preventive measures such as the use of masks, personal hygiene and ventilation in high-risk situations continues to be important. Receiving two doses of vaccination appears to reduce the likelihood chance of developing post COVID-19 condition *(9)*.

WHO response

WHO first started work on post COVID-19 condition in the first wave of the global COVID-19 pandemic in 2020 when reports began to emerge that some patients had persistent symptoms weeks or months following SARS-CoV-2 infection. To better understand this phenomenon, WHO met with patient advocates, researchers, health-care providers and public health professionals and by September 2020, established emergency international classification of disease (ICD) codes for post COVID-19 condition.

Since then, WHO has developed a clinical case definition of post COVID-19 condition to recognize the condition and its impact on people's lives. This definition was developed by patients, researchers and clinical experts, representing all WHO regions, with the understanding that the definition may change as new evidence emerges and our understanding of the consequences of COVID-19 evolves.

A separate clinical case definition for post COVID-19 condition in children and adolescents is also available.

WHO has been organizing webinars on post COVID-19 condition since February 2021 to expand understanding of the condition and its impact on patients' lives, and foster research and collaboration. A global webinar series on the medical management of post COVID-19 condition is organized each month and has been running since 2023.

A WHO Guideline Development Group consisting of global experts, frontline providers and affected individuals is presently at work on guidelines on diagnosis, treatment and rehabilitation in post COVID-19 condition.

We advocate for governments and funders to support research on post COVID-19 condition in the interest of improved understanding of this condition around the world, not just in high-income countries, and design optimal clinical care for patients. National authorities are encouraged to plan and budget for multidisciplinary post COVID-19 condition programmes and to ensure equitable access to relevant therapies.

Influenza (avian and other zoonotic)

Key facts

- **Humans can be infected with avian, swine and other influenza viruses.**
- **Direct contact with infected animals (through handling, culling, slaughtering or processing) or indirect contact (through environments contaminated with bodily fluids from infected animals) represent a risk for human infection.**
- **Exposure to animal influenza viruses can lead to infection and disease in humans – ranging from mild, flu-like symptoms or eye inflammation to severe, acute respiratory disease and/or death. Disease severity will depend upon the virus causing the infection and the characteristics of the infected individual.**
- **Currently circulating zoonotic influenza viruses have not yet demonstrated sustained person-to-person transmission.**
- **As influenza viruses have a natural reservoir in aquatic birds they are impossible to eradicate. Zoonotic influenza infections will continue to occur. To minimize public health risk, quality surveillance in both animal and human populations, thorough investigation of every human infection, and risk-based pandemic planning are essential.**

Overview

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 in humans although only type A viruses can cause global pandemics based on current knowledge and understanding. Influenza A viruses are established in many animal species. The emergence of an influenza A virus, with the ability to infect people and sustain human-to-human transmission, could cause an influenza pandemic.

Influenza type A viruses are classified into subtypes according to the combinations of the proteins on the surface of the virus. When animal influenza viruses infect their host species, they are named according to the host – as avian influenza viruses, swine influenza viruses, equine

influenza viruses, canine influenza viruses, etc. These animal influenza viruses are distinct from human influenza viruses and do not easily transmit to and among humans.

Wild aquatic birds are the primary natural reservoir for most subtypes of influenza A viruses. Avian influenza outbreaks in poultry can have immediate and severe consequences for the agricultural sector.

Pandemic potential

There will be pandemics in future, but when, where and how they spread is difficult to predict. They can have significant health, economic and social consequences. An influenza pandemic will occur when an influenza virus emerges with the ability to cause sustained human-to-human transmission, and the human population has little to no immunity against the virus. With the growth of global travel, a pandemic can spread rapidly.

Whether currently circulating avian, swine and other influenza viruses will result in a future pandemic is unknown. However, the diversity of zoonotic influenza viruses that have caused human infections necessitates strengthened surveillance in both animal and human populations, thorough investigation of every zoonotic infection and pandemic preparedness planning.

Signs and symptoms in humans

Exposure to avian influenza viruses can lead to infection and disease in humans, ranging from mild, flu-like symptoms or eye inflammation to severe, acute respiratory disease and/or death. Disease severity will depend upon the virus causing the infection and the characteristics of the infected individual. Rarely, gastrointestinal and neurological symptoms have been reported. The case fatality rate for A(H5) and A(H7N9) subtype virus infections among humans is higher than that of seasonal influenza infections.

Epidemiology of human infections

Human infections with avian and other zoonotic influenza viruses, though rare, have been reported sporadically. Direct or indirect contact with infected animals represent a risk for human infection. Current zoonotic influenza viruses have not demonstrated sustained person-to-person transmission.

For avian influenza viruses, the primary risk factor for human infection appears to be exposure to infected live or dead poultry or contaminated environments, such as live bird markets. Slaughtering, defeathering, handling carcasses of infected poultry, and preparing poultry for consumption, especially in household settings, are also likely to be risk factors. There is no evidence to suggest that A(H5), A(H7N9) or other avian influenza viruses can be transmitted to humans through properly prepared and cooked poultry or eggs. A few influenza A(H5N1) human cases have been linked to consumption of dishes made with raw contaminated poultry blood.

In 1997, human infections with **A(H5N1)** viruses were reported during an outbreak in poultry in Hong Kong SAR, China. Since 2003, this virus has spread in bird populations from Asia to Europe and Africa, and to the Americas in 2021, and has become endemic in poultry populations in many countries. Outbreaks have resulted in millions of poultry infections, several hundred human cases, and many human deaths. Human cases have been reported mostly from countries in Asia, but also from countries in Africa, the Americas and Europe.

In 2013, human infections with **A(H7N9)** viruses were reported for the first time in China. The virus spread in the poultry population across the country and resulted in over 1500 reported human cases and many human deaths from 2013 to 2019. No further human cases have been reported to WHO since 2019. Since 2014, sporadic human infections with avian influenza A(H5N6) viruses have been reported almost exclusively from China. O**ther avian influenza viruses** have resulted in sporadic human infections.

For swine influenza viruses, risk factors include close proximity to infected pigs or visiting locations where pigs are exhibited. Sporadic human infections with swine influenza viruses of the A(H1) and A(H3) subtypes have also been detected.

Diagnosis

Laboratory tests are required to diagnose human infection and testing should be done at a lab capable of safely processing and confirming zoonotic infections.

The collection of appropriate specimens from suspected human cases for virus identification and the rapid and precise characterization of the virus and/or its isolate is done at specialized reference laboratories. This is essential for proper response measures.

Treatment

If a person is suspected of having zoonotic influenza, the health authorities should be notified and appropriate clinical case management provided, including testing, triage, clinical assessment for disease severity classification, assessment of risk factors for severe disease, and isolation and treatment (for example, with antivirals and supportive care). Patients with influenza should be managed properly to prevent severe illness and death.

Prevention

Influenza viruses are impossible to eradicate and zoonotic infections will continue to occur. To minimize public health risk, quality surveillance in both animal and human populations, thorough investigation of every human infection and risk-based pandemic planning are essential. Public health and animal health authorities should work together and share information during investigations of human cases of zoonotic influenza.

The public should minimize contact with animals in areas known to be affected by animal influenza viruses, including farms and settings where live animals may be sold or slaughtered, and avoid contact with any surfaces that appear to be contaminated with animal faeces. Children, older people, pregnant and postpartum women (up to 6 weeks) or people with suppressed immune systems should neither collect eggs nor assist with slaughtering or food preparation.

The public should strictly avoid contact with sick or dead animals, including wild birds, and should report dead animals or request their removal by contacting local wildlife or veterinary authorities.

Everyone should perform hand hygiene, preferably washing their hands either with soap and running water (especially if there is visible soiling of hands) or using alcohol hand rubs, and in all cases as frequently, thoroughly and often as possible – but especially before and after contact with animals and their environments.

Everyone should practice good food safety habits: separating raw meat from cooked or ready-to-eat foods, keeping clean and washing hands, cooking food thoroughly, and handling and storing meat properly.

Travelers to countries and people living in countries with known outbreaks of avian influenza should, if possible, avoid poultry farms, contact with animals in live poultry markets, entering

areas where poultry may be slaughtered, and contact with any surfaces that appear to be contaminated with faeces from poultry or other animals. Travelers returning from affected regions should report to local health services if respiratory symptoms suspecting zoonotic influenza virus infection.

WHO response

WHO continuously monitors avian and other zoonotic influenza viruses closely through its Global Influenza Surveillance and Response System (GISRS). WHO, in collaboration with the World Organisation for Animal Health (WOAH) and the Food and Agriculture Organization of the United Nations (FAO), conducts surveillance at the human-animal interface, assesses the associated risks and coordinates response to zoonotic influenza outbreaks and other threats to public health.

Twice a year, WHO consults with experts from WHO Collaborating Centres, Essential Regulatory Laboratories and other partners to review data generated by GISRS and animal health partners on influenza viruses with pandemic potential and assesses the need for additional candidate vaccine viruses for pandemic preparedness purposes.

Based on risk assessment, WHO provides guidance, develops and adjusts surveillance, preparedness and response strategies to seasonal, zoonotic and pandemic influenza, and communicates timely risk assessment outcomes and intervention recommendations with Member States to enhance preparedness and response nationally and globally. The WHO Pandemic Influenza Preparedness Framework implements a global approach to prepare for the next influenza pandemic.

Related

- Avian influenza A(H7N9) virus
- Questions and answers: Avian influenza
- Cumulative number of confirmed human cases for avian influenza A(H5N1)
- Global Influenza and Surveillance Response System (GISRS)
- Food safety authorities network
- World Organisation for Animal Health
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Influenza (seasonal)

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.

REFERENCIA: https://www.who.int/pt/about