

Influenza

What is Influenza?

\n\n

\n

- Influenza is an acute **viral infection of the respiratory tract** which is considered to be one of the life-threatening infectious diseases.

\n

- The virus can be transmitted by direct contact with infected individuals, via contaminated objects (also called fomites) and by inhalation of virus-laden aerosols.

\n

- An unexpected emergence of a new and highly virulent influenza virus strains can result in a world-wide pandemics with high morbidity and mortality - such as **the “avian flu” in 1997 and “swine flu” in 2009.**

\n

- Human influenza viruses are **single-stranded RNA viruses**. The main targets of the virus are the columnar epithelial cells of the respiratory tract, i.e. trachea, bronchi and bronchioles.

\n

- Infectivity of influenza virus particles depends on the pH, temperature and salinity of the water, as well as the UV irradiation.

\n

\n\n

What are the types of Influenza?

\n\n

\n

- Influenza is caused by three types of RNA viruses called influenza types A, B and C (considered different genera), which all belong to the family **Orthomyxoviridae**.

\n

- The disease, colloquially called "flu" in humans, is generally caused by the viruses A and B.

\n

- Subtypes of influenza A and B viruses can be further characterized into strains. There is a plethora of different strains of influenza B viruses and of

influenza A subtypes, and new strains of influenza viruses can appear and replace older strains.

\n

- Influenza type A viruses are known to infect people, birds, pigs, horses, whales, seals and other animals, but **wild birds represent the natural hosts** for these viruses.

\n

- Only a fraction influenza A subtypes (i.e. **H1N1, H1N2 and H3N2**) are currently in general circulation among people.

\n

- Influenza B viruses are responsible the same spectrum of disease as influenza A. And, **influenza B viruses do not cause pandemics.**

\n

- Influenza C viruses are different in comparison to influenza A and B. They cause a mild respiratory illness and are **not thought to cause epidemics.**

\n

\n\n

Why have H1N1 cases shot up?

\n\n

\n

- The spread of influenza virus declines when the temperature shoots up.
- But this year, despite the summer temperature crossing 40 degrees Celsius in some parts of the country, the number of H1N1 cases and occasional deaths have not stopped.

\n

- According to the WHO, since December 2016, **H1N1, H3N2 and Influenza B have been circulating in India.**

\n

- During September 2016-February 2017, H3N2 has been predominant in most countries, with only “low levels” of the H1N1 viruses circulating in the northern hemisphere, says the WHO.

\n

- H1N1 had claimed 160 lives in the country between January 1 and March 26, 2017. The highest number of deaths was reported from Maharashtra.

\n

\n\n

What are the steps to be taken?

\n\n

\n

- With over 32,000 people infected and nearly 2,000 killed in 2015, H1N1 highlighted **how ill-prepared the country was** in preventing the spread of an infectious disease and managing it.
\n
- What India needs is a **national policy for influenza immunisation**.
\n
- In the absence of information on who is most susceptible to H1N1 infection and very likely to die, framing a national policy will be harder and take a long time.
\n
- But until a national policy for influenza immunisation is in place, individuals, particularly those who are highly vulnerable, should get vaccinated and practise safe health measures such as **correct cough etiquette** (not coughing into our fingers but at elbow), staying at home if infected, and not sharing towels with others.
\n
- Healthcare workers who handle high-risk patients should particularly get vaccinated.
\n

\n\n

Is the circulating strain different?

\n\n

- **The Pune-based National Institute of Virology** has sequenced the whole genome of H1N1 and **has not found any critical mutation** responsible for the spread or increased mortality.
\n
- While the California strain had been circulating across the world since the 2009 pandemic.
\n
- During 2016 **California strain and Michigan strain** were circulating in India.
\n
- However, this year, the H1N1 surveillance revealed that the Michigan strain was circulating, with no sign of the California strain.
\n

\n\n

Can vaccination prevent infection?

\n\n

\n

- On March 2, the WHO flu vaccine advisory group recommended the composition of influenza virus vaccines for use in the 2017-18 northern hemisphere influenza season.

\n

- It announced that the Michigan strain replaced the California strain in the northern hemisphere.

\n

- Based on its recommendation, **the Pune-based Serum Institute of India** has started making influenza vaccine using the Michigan strain, but the vaccine is yet to reach the market.

\n

\n\n

\n\n

Source: The Hindu

\n

