

Seasonal Influenza

Background Information

Seasonal influenza or 'flu' is a respiratory illness caused by influenza virus infection. The influenza virus was first identified in 1933. There are two main types that cause infection: influenza A and influenza B. Influenza A usually causes a more severe illness than influenza B.¹ In annual influenza epidemics, 5-15% of the population develop upper respiratory tract infections.² Hospitalisation and death mainly occurs in high-risk groups (elderly, chronically ill).² Although difficult to assess, these annual epidemics are thought to result in between three and five million cases of severe illness and between 250,000 and 500,000 deaths every year around the world.² Most deaths currently associated with influenza in industrialized countries occur among people over 65 years of age.²

Facts about seasonal influenza

The symptoms of influenza frequently include headache, fever, cough, sore throat, aching muscles and joints.³ For the majority of people influenza is mild in its symptoms. Despite being incapacitating it is usually regarded by the sufferer as an unpleasant but temporary illness. However, for people who may be more vulnerable such as the elderly, asthmatics, those in poor health, or those with compromised immune systems (such as individuals with HIV, leukaemia and other cancers) it can lead to more serious illnesses. The most common complications of influenza can include: bacterial pneumonia, ear infections, sinus infections, dehydration, and worsening of chronic medical conditions, such as congestive heart failure, asthma or diabetes.⁴

Influenza occurs most often in winter and usually peaks between December and March in the northern hemisphere, and April and September in the southern hemisphere. Influenza appears year-round in the tropics.² Illnesses occurring in the summer that resemble influenza are usually due to other viruses or allergies.^{5,6,7}

In elderly people, influenza poses a serious health risk. Currently most deaths associated with influenza in 'high-income' countries occur among the elderly ≥ 65 years of age.⁸

Preventing influenza through vaccination

Influenza can be prevented through vaccination.⁹ There are two types of vaccines:

- The inactivated influenza vaccines (containing either inactivated whole virus, split virus or surface antigens) which are given by injection. They are approved for use in people six months of age and older, including healthy people and people with chronic medical conditions.
- The nasal-spray influenza vaccine is a vaccine made with live, weakened influenza viruses that do not cause the influenza (sometimes called LAIV or “Live Attenuated Influenza Vaccine”). LAIV is approved for use in healthy people 5 years to 49 years of age who are not pregnant.

Normally, a single vaccine is required each year in young adults and the elderly to stimulate a protective immune response because their immune systems have already encountered the influenza virus. However, in very young children a two-dose regimen is required since their immune system needs to be primed to respond to the influenza virus if they have not been previously vaccinated. About two weeks after vaccination a protective response will develop which helps protect against influenza virus infection. Influenza vaccines will not protect against influenza-like illnesses caused by other viruses and bacteria.

In the northern hemisphere the best time for vaccination is October or November, however benefit will still be derived if vaccination takes place in December or even later as most influenza activity occurs in January and the influenza season can last until as late as May.¹⁰

Vaccine development

The influenza virus is dynamic and can mutate so new strains and variants are constantly emerging. Consequently the composition of seasonal influenza vaccines needs to be adjusted in order to provide effective protection.

A list of influenza viruses that are most likely to be a public health concern in the upcoming influenza season is released to regulatory health bodies based on The World Health Organization (WHO) Global Influenza Surveillance Network which monitors the influenza strains circulating globally. The recommended vaccine virus strains are not always identical to the identified circulating virus but do closely resemble them. The regional regulatory bodies make

the final decision on what strains the vaccine manufacturers legally have to include in their seasonal vaccine preparations.

Separate vaccines are developed for the northern and southern hemispheres. The three strains for inclusion in next season's influenza vaccine are usually decided by mid-February for the northern hemisphere vaccine, and by the end of September for the southern hemisphere vaccine.

Who should be vaccinated?

Anyone who wants to reduce their chances of getting the influenza can ask their doctor for the vaccination. However, certain people should be prioritised each year either because they are at higher risk of experiencing serious influenza-related complications or because they live with or care for high risk persons.

People at high risk for complications from influenza should be vaccinated, including:

- Children aged 6–59 months
- Pregnant women
- People 50 years of age and older
- People of any age with certain chronic medical conditions (such as asthma)
- People who live in nursing homes or other long term care facilities
- People who live with or care for those at high risk for complications from influenza, for example health care workers

In most countries seasonal vaccination against influenza is recommended in the elderly population,² but there are country specific guidelines for the exact age at which vaccination is recommended.

References

¹ The Health Protection Agency. <http://www.hpa.org.uk> (Accessed 12.10.06)

² <http://www.who.int/mediacentre/factsheets/fs211/en/> (Accessed 12.10.06)

³ <http://www.cdc.gov/influenza/symptoms.htm> (Accessed 12.10.06)

⁴ <http://www.cdc.gov/influenza/keyfacts.htm> (Accessed 12.10.06)

⁵ <http://www.medterms.com/script/main/art.asp?articlekey=8280> (Accessed 13.10.06)

⁶ <http://www.nhsdirect.nhs.uk/articles/article.aspx?ArticleID=494> (Accessed 13.10.06)

⁷ <http://www.nhsdirect.nhs.uk/articles/article.aspx?ArticleID=494§ionId=6262> (Accessed 13.10.06)

⁸ <http://mednet3.who.int/prioritymeds/report/background/ininfluenzaenza.doc> (Accessed 12.10.06)

⁹ <http://www.cdc.gov/nip/publications/VIS/vis-influenza.txt> (Accessed 12.10.06)

¹⁰ <http://www.fda.gov/bbs/topics/NEWS/2006/NEW01478.html> (Accessed 12.10.06)