Flu Vaccine

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BE YOUR OWN LIFESAVER

www.hse.ie/flu
**Influenza / Flu**

- Acute viral disease of the respiratory tract

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Seasonal Flu</th>
<th>Cold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever</td>
<td>High fever lasts 3-4 days</td>
<td>Rare</td>
</tr>
<tr>
<td>Headache</td>
<td>Prominent</td>
<td>Rare</td>
</tr>
<tr>
<td>General aches, pains</td>
<td>Usual, often severe</td>
<td>Slight</td>
</tr>
<tr>
<td>Fatigue, weakness</td>
<td>Can last up to 2-3 weeks</td>
<td>Quite mild</td>
</tr>
<tr>
<td>Extreme exhaustion</td>
<td>Early and prominent</td>
<td>Never</td>
</tr>
<tr>
<td>Stuffy nose</td>
<td>Sometimes</td>
<td>Common</td>
</tr>
<tr>
<td>Sneezing</td>
<td>Sometimes</td>
<td>Usual</td>
</tr>
<tr>
<td>Sore throat</td>
<td>Sometimes</td>
<td>Common</td>
</tr>
<tr>
<td>Chest discomfort, cough</td>
<td>Common can become severe</td>
<td>Mild to moderate hacking cough</td>
</tr>
</tbody>
</table>
Influenza Virus
Genetic changes in flu virus

- Changes in the surface antigens (H &N) result in the flu virus constantly changing therefore needing to change the vaccine each year

  **Antigenic drift**: minor changes (natural mutations) in the genes of flu viruses that occur gradually over time

  **Antigenic shift**: Abrupt major change results in a new subtype. Immunity from previous flu infections/vaccinations may not protect against the new subtype, potentially leading to a widespread epidemic or pandemic

- Because of the changing nature of flu viruses, WHO monitors their epidemiology throughout the world
- Each year WHO makes recommendations about the strains of influenza A and B which are predicted to be circulating in the forthcoming winter
- These strains are then included in the flu vaccine developed each year
Flu Season 2018-2019

- Influenza A(H1N1) has been the dominant circulating virus.
- The current vaccine is a good match for the circulating influenza A(H1N1) viruses.
- 131 confirmed influenza cases were admitted to critical care units.
- 3,175 influenza hospitalised cases were notified to HPSC.
- 71 deaths in confirmed influenza cases have been notified to HPSC in the 2018/2019 season to date.
- A total of 95 ARI/influenza outbreaks were reported this season to date.

Influenza Surveillance in Ireland weekly report [https://www.hpsc.ie/a-z/respiratory/influenza/seasonalinfluenza/surveillance/influenzasurveillancereports/20182019season/Influenza_Surveillance_Report_Week%201718%202019_20182019.pdf](https://www.hpsc.ie/a-z/respiratory/influenza/seasonalinfluenza/surveillance/influenzasurveillancereports/20182019season/Influenza_Surveillance_Report_Week%201718%202019_20182019.pdf)
**Figure 1:** ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold, medium and high intensity ILI thresholds and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season.

*Source: ICGP and NVRL*

*For further information on the Moving Epidemic Method (MEM) to calculate ILI thresholds:
http://www.ncbi.nlm.nih.gov/pubmed/22897919*
Effects of Influenza

- Although infection may be asymptomatic, influenza outbreaks result in significant morbidity.
- The incubation period is 1-4 days.
- Onset is sudden, with fever, rhinitis, cough, myalgia and headache.
- Pneumonia, either primary viral or secondary bacterial, can occur.
- Can also cause bronchitis and meningoencephalitis.
- The illness is more severe in the elderly, in those with chronic heart or lung disease, in children aged<4 years or with neurological conditions including cerebral palsy and in pregnant women.
- Majority of reported deaths from influenza occur in the elderly.
Who should receive seasonal influenza vaccine?

Influenza vaccine can significantly reduce the risk of cardiovascular events including myocardial infarction and stroke.

Vaccination is strongly recommended for:

- Persons aged 65 and over
- Adults and children aged 6 months and older with a long-term health condition such as:
  - Chronic heart disease, including acute coronary syndrome
  - Chronic liver disease
  - Chronic renal failure
  - Chronic respiratory disease, including chronic obstructive pulmonary disease, cystic fibrosis, moderate or severe asthma or bronchopulmonary dysplasia
  - Chronic neurological disease including multiple sclerosis, hereditary and degenerative disorders of the central nervous system
  - Diabetes mellitus
  - Down syndrome
  - Haemoglobinopathies
  - Morbid obesity i.e. body mass index over 40
  - Immunosuppression due to disease or treatment, including asplenia or splenic dysfunction and cancer patients

- Children aged 6 months and older:
  - with any condition (e.g. cognitive dysfunction, spinal cord injury, seizure disorder, or other neuromuscular disorder) that can compromise respiratory function especially those attending special schools/day centres
  - with moderate to severe neurodevelopmental disorders such as cerebral palsy and intellectual disability
  - on long-term aspirin therapy (because of the risk of Reyes syndrome)
- Pregnant women (vaccine can be given at any stage of pregnancy)
- Healthcare workers
- Residents of nursing homes and other long stay institutions
- Carers
- People with regular contact with pigs, poultry or water fowl

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Table 19.1 Influenza-related population mortality rates and relative risk of death among those aged six months to under 65 years by clinical risk group in England, September 2010 – May 2011.

<table>
<thead>
<tr>
<th>Risk Group</th>
<th>Number of fatal flu cases (%)</th>
<th>Mortality rate per 100,000 population</th>
<th>Age-adjusted relative risk*</th>
</tr>
</thead>
<tbody>
<tr>
<td>In a risk group</td>
<td>213 (59.8)</td>
<td>4.0</td>
<td>11.3 (9.1-14.0)</td>
</tr>
<tr>
<td>Not in any risk group</td>
<td>143 (40.2)</td>
<td>0.4</td>
<td>Baseline</td>
</tr>
<tr>
<td>Chronic renal disease</td>
<td>19 (5.3)</td>
<td>4.8</td>
<td>18.5</td>
</tr>
<tr>
<td>Chronic heart disease</td>
<td>32 (9.0)</td>
<td>3.7</td>
<td>10.7 (7.3-15.7)</td>
</tr>
<tr>
<td>Chronic respiratory disease</td>
<td>59 (16.6)</td>
<td>2.4</td>
<td>7.4 (5.5-10.0)</td>
</tr>
<tr>
<td>Chronic liver disease</td>
<td>32 (9.0)</td>
<td>15.8</td>
<td>48.2 (32.8-70.6)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>25 (7.3)</td>
<td>2.2</td>
<td>5.8 (3.8-8.9)</td>
</tr>
<tr>
<td>Immunosuppression</td>
<td>71 (19.9)</td>
<td>20.0</td>
<td>47.3 (35.5-63.1)</td>
</tr>
<tr>
<td>Chronic neurological disease (excluding stroke/transient ischaemic attack)</td>
<td>42 (11.8)</td>
<td>14.7</td>
<td>40.4 (28.7-56.8)</td>
</tr>
<tr>
<td>Total (including 22 cases with no information on clinical risk factors)</td>
<td>378</td>
<td>0.8</td>
<td></td>
</tr>
</tbody>
</table>

* Mantel-Haenszel age-adjusted rate ratio (RR), with corresponding exact 95% CI were calculated for each risk group using the two available age groups (from six months up to 15 years and from 16 to 64 years).

Table reproduced from *Surveillance of influenza and other respiratory viruses in the UK 2010-2011 report* by kind permission of PHE.

“I’ll be our lifesaver. I’ll get the flu vaccine.”

The flu vaccine is a lifesaver for you and your baby.

CONTACT YOUR GP OR PHARMACY TODAY TO GET THE FLU VACCINE.

www.hse.ie/flu
**Why vaccinate pregnant women?**

- Recommended pregnant women as the most important group for flu vaccine.
- Was based on significant evidence of substantial risk of disease.
- Evidence that vaccine is safe and effective in pregnant women.
- Also protect their babies in whom disease burden is also high.
Flu vaccine and pregnancy

- Flu vaccine recommended at all stages of pregnancy
- Pregnant women should be vaccinated every year.
- Vaccination during normal flu vaccination period.
- Important to identify women as they become pregnant and vaccinate early.
- Remember to offer vaccine to those who become pregnant later in flu season too.
- They may require re-vaccination with next season’s strain if still pregnant next flu season.
- Vaccine needed with each pregnancy.
- Don’t wait so you can give pertussis and flu vaccine together, give both at the relevant time.
WHO recommendations 2019-2020

Quadrivalent influenza vaccines for use in the 2019/2020 northern hemisphere influenza season include:

- an A/Brisbane/02/2018 (H1N1)pdm09-like virus;
- an A/Kansas/14/2017 (H3N2)-like virus;*
- a B/Colorado/06/2017-like virus (B/Victoria/2/87 lineage);
- a B/Phuket/3073/2013-like virus (B/Yamagata/16/88 lineage).

*The A(H3N2) component was recommended on 21 March 2019

Flu vaccine for 2019-2020

- Called “Sanofi Pasteur Quadrivalent Influenza Vaccine (split virion)”
- QIVe (egg based quadrivalent vaccine)
- Pre-filled syringe needle attached
- Boxes of 10 and singles
- Store 2-8°C
- Licensed for 6 months and over
- Dose 0.5ml given IM
Contents

• Ovalbumin content <0.1 mcg/ml therefore low egg albumin content
• May contain traces of neomycin and formaldehyde
• Does not contain gelatin or thiomersal
• Does not contain latex
One dose or two?

Children under 9 years of age and those in specific at risk groups require two doses of vaccine separated by 4 weeks. (Table 11.1).

<table>
<thead>
<tr>
<th>Age group</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children aged 6 months* to &lt;9 years</td>
<td>Two doses, 4 weeks apart, if receiving influenza vaccine for the first time</td>
</tr>
<tr>
<td>Those aged 9 and older</td>
<td>Two doses, 4 weeks apart, if receiving influenza vaccine for the first time</td>
</tr>
<tr>
<td>- post haematopoietic stem cell transplant</td>
<td>post transplant</td>
</tr>
<tr>
<td>- post solid organ transplant</td>
<td></td>
</tr>
<tr>
<td>Cancer patients who receive the vaccine while on chemotherapy and who complete their treatment in the same season</td>
<td>Two doses 2nd dose on completion of treatment at least 4 weeks after 1st dose (regardless of influenza vaccination in previous seasons)</td>
</tr>
<tr>
<td>All others</td>
<td>One dose</td>
</tr>
</tbody>
</table>

*LAIV from 24 months
Contraindications

- Confirmed anaphylaxis to a previous dose of vaccine
- Confirmed anaphylaxis to a component of the vaccine

All vaccinators must be competent in management of anaphylaxis, though it occurs extremely rarely
**Egg allergy**

- Those with confirmed egg anaphylaxis or egg allergy can be given an influenza vaccine with an ovalbumin content <0.1 micrograms per dose

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### Table 11.2 Inactivated influenza vaccination of those with egg allergy

<table>
<thead>
<tr>
<th>History</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-anaphylactic egg allergy without severe asthma (BTS/ SIGN &lt;4)</td>
<td>Seasonal influenza vaccine with ovalbumin content &lt;0.1 micrograms per dose, in primary care, with observation for 60 minutes</td>
</tr>
<tr>
<td>Egg anaphylaxis or egg allergy and severe asthma (BTS/ SIGN ≥4)</td>
<td>Refer to hospital specialist for vaccination with seasonal influenza vaccine with ovalbumin content &lt;0.1 micrograms per dose. Skin testing is not necessary and vaccine should be given as a single dose with observation for 60 minutes</td>
</tr>
</tbody>
</table>

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Adverse Reactions

• **Local:** Injection site pain, redness and swelling are very common.

• **General:**
  
  Very common: Headache, muscle pain, feeling generally unwell
  
  Common: Fever, shivering
  
  Very rare: Immediate allergic reactions.

• Injectable influenza vaccines are inactivated (non-live) and cannot cause influenza.
Seasonal influenza vaccination coverage in medical card holders aged 65 and over attending GP or pharmacies, from 2004-05 to 2017-18 influenza season, Ireland

*Provisional data – September 2017- August 2018*
"We'll be our lifesaver. We'll get the flu vaccine."

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**Flu Vaccination & Health Care Workers**

Recommendation:

- Everyone working in a healthcare setting should be immunised against flu
- Protects the worker & their own family contacts
- Reduces risk of transmission to patients
- Contributes to protection of those with sub-optimal response to flu vaccination
- Avoids disruption to care services
Staff Groups

- Medical, nursing and allied health professionals including those working in residential disability services
- Medical, nursing and allied health students
- Dental personnel
- Hospital porters and cleaners
- Ambulance personnel
- Carers and home helps
- All GP practice staff
- Agency staff who fall into the above categories.
How do I get vaccinated?
Contact your line manager, occupational health department, GP or pharmacist.

HSELAND eLearning Programme
An eLearning Programme "The Flu Vaccine - Its a Lifesaver" is now available
www.hseland.ie
"I'll be our lifesaver. I'll get the flu vaccine."

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