Influenza Vaccine and Healthcare Workers

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Department Public Health HSE SE
Influenza

- Viral infection - types A, B & C

Asymptomatic ➔ Severe illness ➔ Death

- Illness more severe in elderly, young children, pregnant women and those with a chronic illness

- Infectious from 1-2 days before symptom onset to 5 days post first symptom
<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Cold</th>
<th>Classic Flu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever</td>
<td>Rare, except in very young children</td>
<td>Usual (≥ 38°C 100.4°F) lasts 3-4 days, reduced in elderly</td>
</tr>
<tr>
<td>Headache</td>
<td>Rare</td>
<td>Prominent</td>
</tr>
<tr>
<td>General aches/ pains</td>
<td>Slight</td>
<td>Often severe</td>
</tr>
<tr>
<td>Fatigue/ Weakness</td>
<td>Mild</td>
<td>Sudden onset and can last up to 3 weeks</td>
</tr>
<tr>
<td>Extreme exhaustion</td>
<td>Never</td>
<td>Early and prominent</td>
</tr>
<tr>
<td>Stuffy nose</td>
<td>Common</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Sneezing</td>
<td>Usual</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Sore throat</td>
<td>Common</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Cough, Chest discomfort</td>
<td>Mild to moderate</td>
<td>Common and can become severe</td>
</tr>
</tbody>
</table>
Atypical presentation

- Elderly - e.g. poor fever response, cough, fatigue, confusion, exacerbation of underlying conditions COPD, IHD

- Children - diarrhoea & vomiting
Transmission

- Virus present in nose & airway passages
- Large droplets expelled by coughing & sneezing
- Direct contact with nasal secretions and contaminated surfaces
- Highly infectious and spreads rapidly in institutions
Influenza complications

- **Bacterial superinfections**
  - bacterial pneumonia
  - croup
  - respiratory disorders

- **Decompensation of chronic diseases**
  - pulmonary disease
  - heart disease
  - renal insufficiency
  - metabolic disease
Pregnant women

- Influenza complications → changes in heart rate, lung capacity, immunological functioning

- Hospitalisation and maternal death
- Congenital abnormalities
- Spontaneous abortion
- Preterm delivery
- Low birth weight
- Still birth
- Infant hospitalisation and death from influenza
Safe 1960’s has been given to millions of women in the US

Effective (70% VE)

At any stage of pregnancy

Pregnancy crosses 2 influenza seasons – give both seasonal flu vaccines

Vaccination during pregnancy provides passive immunity to infants up to 6 months of age (41-91% VE)
Flu is Dangerous

- Approximately 200-500 Irish people will die each year because of flu.
- Most of these excess deaths are in the elderly or with underlying illness

**BUT**

- 10-25% of people admitted to ICU in Ireland with lab confirmed flu each year are healthy people with no underlying illness and 85% of those admitted to ICU were under 65 years

*(HPSC Euromomo study – awaiting publication) ** HPSC ICU influenza surveillance
# National Influenza Cases 2016-17

<table>
<thead>
<tr>
<th>Influenza Type</th>
<th>Cases</th>
<th>Hospitalised</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH3</td>
<td>1632</td>
<td>564</td>
</tr>
<tr>
<td>A (not subtyped)</td>
<td>1514</td>
<td>794</td>
</tr>
<tr>
<td>A (H1N1)</td>
<td>7</td>
<td>&lt;5</td>
</tr>
<tr>
<td>B</td>
<td>138</td>
<td>59</td>
</tr>
<tr>
<td>Unknown</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>3299</strong></td>
<td><strong>1425 (43%)</strong></td>
</tr>
</tbody>
</table>

There were 86 influenza related deaths during the 2016-17 influenza season (47% - AH3, 40% - A not subtyped)

Data extracted from the National Computerised Infectious Disease Reporting System (CIDR) on Nov 17th 2017
HSE SE Influenza 2016-17

- 594 cases
- 38% of cases hospitalised
- 7 cases admitted to ICU
- 16 deaths

Data extracted from the National Computerised Infectious Disease Reporting System (CIDR) on Nov 17th 2017
HSE SE Influenza 2016-17

- Of confirmed cases:
  - 1 in 2 > 60 years
  - 1 in 10 children <10 years
  - 1 in 2 children were hospitalised
  - 1 in 100 were admitted to ICU
  - 16 deaths
- Being fit and healthy doesn’t protect you against influenza.

- Best protection = Flu vaccine.
1. Stay home
2. Hand washing, hand sanitisers, sneeze in your sleeve or a tissue.
3. Follow IPC guidelines

But this is not enough...

23% of unvaccinated HCW serologic evidence of influenza virus infection during a single influenza season

Of these
- 59% no recollection flu
- 28% no recollection any respiratory symptoms

8% had sick days for influenza

The majority had mild illness or subclinical infection

Best protection = VACCINATION
The Flu vaccine

- Safe
- Effective
- Annual vaccination
- 10-14 days before protection
2017/18 Flu Vaccine

- A/Michigan/45/2015 (H1N1)pdm09-like strain
- A/Hong Kong/4801/2014 (H3N2) - like strain
- B/Brisbane/60/2008 - like strain

- 40-60% effective

- Children < 9 yrs and those in specific risk groups
  TWO doses of vaccine if receiving for the first time (4 week interval)
Influenza & pneumococcal vaccination campaign 2017-18

It's a lifesaver.

Frequently asked questions for healthcare professionals

http://hse.ie/eng/health/Immunisation/pubinfo/flu-vaccination/FAQ.pdf
Factors influencing vaccine efficacy

- Closeness of the match between the vaccine strain and the circulating virus

- Age of vaccinee: older people do not respond as well

- Health of the vaccinee: people with chronic illnesses and immune system disorders do not respond as well as healthy individuals

- among residents in LTCFs 50-60% effective in preventing hospitalisations and 70-80% effective in preventing death.
Systematic reviews have shown that flu vaccine has reduced the flu incidence rate from 1 IN 5 unvaccinated HCWs to 1 in 20 vaccinated HCWs.

YES! The flu vaccine is very safe. Used for almost 60 years, with hundreds of millions of doses given globally

- Local: redness and soreness
- General: Immune response headache, sweating, muscle & joint pains
- Serious side effects rare
“I got sicker from the vaccine than when I actually got the flu”

<table>
<thead>
<tr>
<th>SYMPTOMS</th>
<th>VACCINE</th>
<th>PLACEBO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhinitis</td>
<td>44.8%</td>
<td>45%</td>
</tr>
<tr>
<td>Sore throat</td>
<td>28.3</td>
<td>28.7</td>
</tr>
<tr>
<td>Cough</td>
<td>46.1</td>
<td>45.7</td>
</tr>
<tr>
<td>Headache</td>
<td>39.6</td>
<td>37.8</td>
</tr>
<tr>
<td>Myalgia</td>
<td>25.1</td>
<td>20.8</td>
</tr>
<tr>
<td>Chills</td>
<td>12.2</td>
<td>11.1</td>
</tr>
<tr>
<td>Fever</td>
<td>5.1</td>
<td>5.0</td>
</tr>
<tr>
<td>Fatigue</td>
<td>27.9</td>
<td>28.6</td>
</tr>
</tbody>
</table>

Does Vaccinating Health Care Workers (HCW) Really Help?

YES!

Many studies have shown that increasing the vaccination rates of HCWs decreases patient illness and death.

One study showed a **40% reduction** of influenza related deaths in hospitals with higher rates of HCP influenza vaccination.

Where are we now?

HCWs target ≥ 40% uptake*
Resident target ≥ 75% uptake
Uptake by Health Care Workers (HCWs) in HSE Funded and Staffed LTCFs* by Season

<table>
<thead>
<tr>
<th>Season</th>
<th>Total No. HCWs**</th>
<th>Total No. Vaccinated HCWs</th>
<th>Avg. Uptake %</th>
<th>No. LTCFs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2012</td>
<td>4159.0</td>
<td>733</td>
<td>17.3</td>
<td>57</td>
</tr>
<tr>
<td>2012-2013</td>
<td>10823.0</td>
<td>1327</td>
<td>14.9</td>
<td>108</td>
</tr>
<tr>
<td>2013-2014</td>
<td>8967.4</td>
<td>1745</td>
<td>21.6</td>
<td>88</td>
</tr>
<tr>
<td>2014-2015</td>
<td>7280.0</td>
<td>1766</td>
<td>26.9</td>
<td>67</td>
</tr>
<tr>
<td>2015-2016</td>
<td>7057.6</td>
<td>1625</td>
<td>24.4</td>
<td>81</td>
</tr>
<tr>
<td>2016-2017</td>
<td>9916.1</td>
<td>2690</td>
<td>28.1</td>
<td>102</td>
</tr>
</tbody>
</table>

Slide courtesy of HPSC
Percentage of Long-term Residents in HSE Funded and Staffed LTCFs Vaccinated Since Season Start*

<table>
<thead>
<tr>
<th>Season</th>
<th>% Long-term Residents Vaccinated Since Season Start</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2012 (n=102)</td>
<td>88.3%</td>
</tr>
<tr>
<td>2012-2013 (n=144)</td>
<td>73.4%</td>
</tr>
<tr>
<td>2013-2014 (n=100)</td>
<td>81.6%</td>
</tr>
<tr>
<td>2014-2015 (n=76)</td>
<td>87.8%</td>
</tr>
<tr>
<td>2015-2016 (n=82)</td>
<td>90.7%</td>
</tr>
<tr>
<td>2016-2017 (n=102)</td>
<td>93.5%</td>
</tr>
</tbody>
</table>

Slide courtesy of HPSC
Uptake in HCWs in HSE Funded and Staffed LTCFs by CHO & Season*

**Average % Staff Uptake**

Community Health Organisation

- CHO 1: DL; SO/LM; CN/MN
- CHO 2: G; RN; MO
- CHO 3: CE; L; TN/EL
- CHO 4: KY; NC NSL; WC
- CHO 5: TS; CW/KK; WD; WX
- CHO 6: WW; DS; DSE
- CHO 7: KE; DW; DSC; DSW
- CHO 8: S/OY; LD/WH; LH/MH
- CHO 9: DN; DNC; DNW

- 2011-2012
- 2012-2013
- 2013-2014
- 2014-2015
- 2015-2016
- 2016-2017

Slide courtesy of HPSC
Uptake in HCWs in HSE Funded and Staffed LTCFs by Staff Category and by Season*

![Chart showing average % uptake by HCWs in HSE Funded and Staffed LTCFs by staff category and season from 2011-2012 to 2016-2017.](chart.png)
Probe as six die in home for elderly

Mystery respiratory illness blamed

Deaths occurred over past 10 days

HSE alert 'too late'

Control of outbreak urged

Shocked relatives and community mourn the flu: more could die

Experts warn that outbreak is serious risk to vulnerable residents

Killer flu could claim more lives

Nursing home horror

'Bug' kills OAPs in just 12 days

Flu to blame for death of six patients

Community is in 'deep shock'

Continued on Page 19
Louise’s Story

Protect yourself, your family, friends, colleagues and patients
You may survive the flu but I may not

Please help keep me safe by getting this years flu vaccine

Protection against flu is everyone’s responsibility. Please protect yourself, your family and those around you.

Acknowledgement

- Ms. Bernie O Connor HSE SE
- National Immunisation Office
- Health Protection Surveillance Centre
- Public Health Wales

More information www.hse.ie/flu

Target 100%