

FLU Fact Sheet

Background

Influenza (flu) is an infectious and common viral respiratory illness spread by coughs and sneezes. Although it is possible to contract flu at any time of the year, it is especially common in winter, i.e. 'seasonal flu'. Symptoms include fever, headache, aching muscles and joints, tiredness, sore throat, possible loss of appetite and cough. There are two main types of flu that cause infection: influenza A and influenza B. Influenza A usually causes a more severe illness.^{1,2}

Risk factors

For most people flu is just a nasty experience, but for some it can lead to more serious illnesses. The most common complications are bronchitis and secondary bacterial pneumonia, which may require treatment in hospital and can be life threatening especially in the elderly, asthmatics and those in poor health.

For those groups of people at higher risk, a free NHS flu vaccine is available from October each year. As new strains and variants of influenza are constantly emerging, the vaccine needs to be adjusted accordingly and this is one of the reasons that it is given annually. The Department of Health, Public Health England and NHS England recommend that for 2016/17 the seasonal influenza vaccine should be offered to the following groups of people:³

- All children aged two to seven (but not eight years or older) on 31 August 2016
- All primary school-aged children in former primary school pilot areas
- Those aged six months to under 65 years in clinical risk groups
- Pregnant women
- Those aged 65 years and over
- Those in long-stay residential care homes
- Carers

How the flu virus mutates⁴

Mutations are changes in the genetic code of an organism which occur randomly in all living things. The building blocks of the genetic code are called nucleotide bases. Some changes may affect the virus, making it more or less harmful, or it may have no effect.

Another type of mutation can occur when different kinds of viruses exchange information with each another if they come into contact in a single host. For example, a virus that spreads easily between humans could exchange genetic information with a strain of avian flu virus, creating a new strain that can be transmitted from person to person.

¹ NHS Choices. Flu.

² Public Health England. Seasonal Influenza.

³ Department of Health, Public Health England and NHS England. The national flu immunisation programme 2016/17.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/529954/Annual_flu_letter_2016_2017.pdf

⁴ The Cornell Lab of Ornithology. Bird Flu. What are avian influenza viruses, and how do they mutate? <http://www.birds.cornell.edu/birdflu/what-you-should-know/q-a/q-a-10>

*The need to change the vaccine each year*⁵

Each year, the viruses most likely to cause flu are identified in advance and vaccines are produced to match them as closely as possible. The vaccines are recommended by the World Health Organisation.

The WHO announced that the trivalent vaccines for use in the 2016-2017 influenza season (northern hemisphere winter) contain the following:

- A/California/7/2009 (H1N1)pdm09-like virus
- A/Hong Kong/4801/2014 (H3N2)-like virus
- B/Brisbane/60/2008-like virus

It is recommended that quadrivalent vaccines containing two influenza B viruses contain the above three viruses and a B/Phuket/3073/2013-like virus.

*The 1918 pandemic and its potential implications for us today*⁶

As the First World War drew to a close, an even worse threat to the lives of young people emerged in the form of the influenza pandemic of 1918-19. This was the cause of around 50 million deaths worldwide, far more than the number of Great War casualties. The disease was an influenza A bird flu virus that mutated and caused a human pandemic.

It first emerged in Spring 1918. French soldiers in the trenches mistook it for the common illness 'la grippe', but this was far more serious. Glasgow was the first UK city affected, but the disease swiftly spread south.

Many who became ill developed pneumonia or septicaemia. This could progress to heliotrope cyanosis which caused sufferers shortly before death to assume a distinctive blue tinge to their skin due to lack of oxygen. The course of the disease was so swift that people who were perfectly healthy in the morning could be dead by the end of the day.

Surprisingly, this new disease targeted the young and healthy rather than the frail and elderly, but in other respects the disease knew no boundaries, attacking both the affluent and the poor. Medical facilities could not cope and in any case there was no effective treatment. Cemeteries could not cope, leaving families of the deceased to dig their own graves, and there were not enough coffins.

As the pandemic spread worldwide, only Australia with its strict quarantine laws escaped. India suffered the highest mortality - there around 12 million people died.

In Europe, Spain lost an estimated eight million people, which led to the label 'Spanish flu' (though Spain is not where the disease originated from).

The final, third wave of the pandemic struck in early 1919 but then died away swiftly- after causing such human destruction it disappeared almost as quickly as it had arrived.

⁵ NHS Choices. The Flu Jab. <http://www.nhs.uk/Conditions/vaccinations/Pages/flu-influenza-vaccine.aspx>

⁶ Laurance J. Flu: how Britain coped in the 1918 epidemic . Independent. 22 Oct 2005. <http://www.independent.co.uk/life-style/health-and-families/health-news/flu-how-britain-coped-in-the-1918-epidemic-5348535.html>

So this leaves us with the question, what are the implications for us today?

Could such a pandemic occur again? Are we as vulnerable to a mutation of the disease today? The answer is that unfortunately there is no way of knowing when, or how severe the next pandemic could be. There have been a number of pandemics since 1918, most recently the Swine flu in 2009-2010, attributable to the H1N1 strain of virus. Flu pandemics can be regarded as a natural event that will occur from time to time. As well as in 1918, further pandemics in 1957 and 1968 caused more than a million deaths across the world.⁷

The Local Picture

Data for 2014/15 onwards in the following statistics applies to Sutton only, but older data refers to Sutton and Merton PCT.

Fig. 1 shows that for Sutton, flu vaccination coverage for older people (Sutton 68.4%) is higher than London (66.4%) and lower than the national average (71%). However, this is far lower than the 75% national coverage target.

Fig. 1: Uptake of seasonal flu vaccinations, people aged 65 and over, Sutton compared to London authorities

Fig. 2 shows that coverage rates for older people in Sutton were lower than for the previous year.

Fig. 2: Trend in Uptake of seasonal flu vaccinations, people aged 65 and over

Fig. 3 shows that for those of the population 'at risk,' uptake rates (aged 6 months to 65 years, excluding pregnant women) are similar (Sutton 43.5%) to London (43.7%) and lower than the England average (45.1%).

Fig. 3: Uptake of seasonal flu vaccinations, At Risk individuals, Sutton compared to London authorities

Fig. 4 shows that coverage rates those 'at risk' for Sutton in the most recent year (2015/16) fell significantly compared to the previous year, down from 48.2% to 43.5%.

Fig. 4: Trend in Uptake of seasonal flu vaccinations, At Risk individuals

In summary, overall Sutton's uptake of flu vaccine for those aged 65 years and over is far lower than the 75% coverage target and is not improving. This leaves a significant proportion of the population not protected against avoidable illness.

⁷ NHS Choices. Swine Flu. <http://www.nhs.uk/conditions/Pandemic-flu/Pages/Introduction.aspx>

What works

Flu vaccines provide effective protection. As described above under 'Risk Factors', increased numbers of people in designated vulnerable population groups in Sutton would clearly benefit from annual vaccination to prevent significant illness.

Key indicators and targets

Relevant indicators from the Public Health Outcomes Framework

<http://www.phoutcomes.info/>

Health Protection domain:

- 3.03xiv - % of eligible adults aged 65+ who have received the flu vaccine
- 3.03xv - % of at risk individuals aged 6 months to 65 years (excluding pregnant women) who have received the flu vaccine
- 3.03xviii - Population vaccination coverage - Flu (2-4 years old)

Healthcare and premature mortality domain:

- 4.07ii - Age-standardised rate of mortality considered preventable from respiratory disease in those aged <75 per 100,000 population

Links to further information

- NHS Choices. Flu. <http://www.nhs.uk/conditions/flu/Pages/Introduction.aspx>
- Public Health England. Seasonal Influenza. <http://www.hpa.org.uk/topics/infectiousdiseases/infectionsaz/seasonalinfluenza/>

Priorities for Sutton

Many cases of influenza and pneumonia are preventable through increasing rates of vaccination of at risk populations. There is a need for more targeted work to improve the identification of those at risk involving primary, community and social care.

In particular, flu vaccination uptake for Sutton is far lower than the 75% target for those aged 65 years and over.