Strategic Policy, Planning and Performance Report

Public Health Intelligence

Subject:	Jersey Seasonal Influenza-like Illness Statistics 2020-21
Date of report:	16 September 2021

Introduction

This report presents two indicators of the relative weekly number of cases of influenza (flu) seen in Jersey:

- number of hospital patients with confirmed flu (confirmed by laboratory test)
- number of resident patients presenting to their GP with flu-like illness

Clinicians can use the numbers presenting with 'flu-like' symptoms, alongside cases of influenza confirmed amongst hospital patients to assess the extent of influenza on the Island.

The report also shows to what extent the previous year's flu vaccines were delivered in advance of the winter flu season.

Also presented are data regarding deaths from influenza and pneumonia for the period 2015-20.

Background

Flu is caused by the influenza virus, and for some groups of people can be serious (e.g. they can develop a serious complication such as pneumonia). However, there are other viruses (i.e. not the influenza virus) that can cause similar symptoms. These other 'flu-like' viruses are often mistaken for influenza and could be referred to as "the flu" but are in fact a different illness. The only way to confirm that a 'flu-like' illness is caused by the influenza virus is to conduct a laboratory test, which in many cases is not necessary.

Interpretation of influenza surveillance data should take into account the impact of public health messaging, social and physical distancing measures, lockdowns, a lack of travel on and off Island and the wearing of face coverings, as well as potential changes in health seeking behaviours due to the ongoing COVID-19 pandemic.

Hospital patients with confirmed influenza

Hospital patients are tested for the influenza virus according to a schedule devised by the Hospital's Consultant Microbiologist. During the 'surveillance' stage of flu-season (i.e. before the declaration of circulating influenza has been made), hospital patients (whether admitted or not) are tested for influenza if they display 'flu-like' symptoms, or are in another 'at risk' group. Once circulating influenza has been declared, only admitted patients are considered for testing (based on the same symptom or risk criteria).

Circulating influenza is declared by the Hospital's Consultant Microbiologist based on the influenza situation in the UK and Europe, as well as the local laboratory tests.

'Flu-like' illness

The number of resident patients presenting to their GP with 'flu-like' illness is taken from the Primary Care database (EMIS). These people are not tested for influenza, so it is not known what proportion of them have actual influenza, and what proportion have a 'flu-like' illness.

It is worth noting that not everyone with 'flu-like' illness will attend their GP.

What is the data telling us?

Influenza-like- illness activity was lower throughout the 2020-2021 flu season than in preceding seasons and contributed to fewer GP visits for flu illnesses and hospitalisations compared with previous flu seasons.

COVID-19 mitigation measures such as wearing face masks, staying home, hand washing, school closures, reduced travel, increased ventilation of indoor spaces, and physical distancing, are likely to have contributed to the decline in 2020-2021 flu incidence.

The Influenza vaccination may also have contributed to reduced flu illness during the 2020–2021 season. The Government of Jersey works each year to increase the number of people who receive a flu vaccine and eliminate barriers to vaccination.

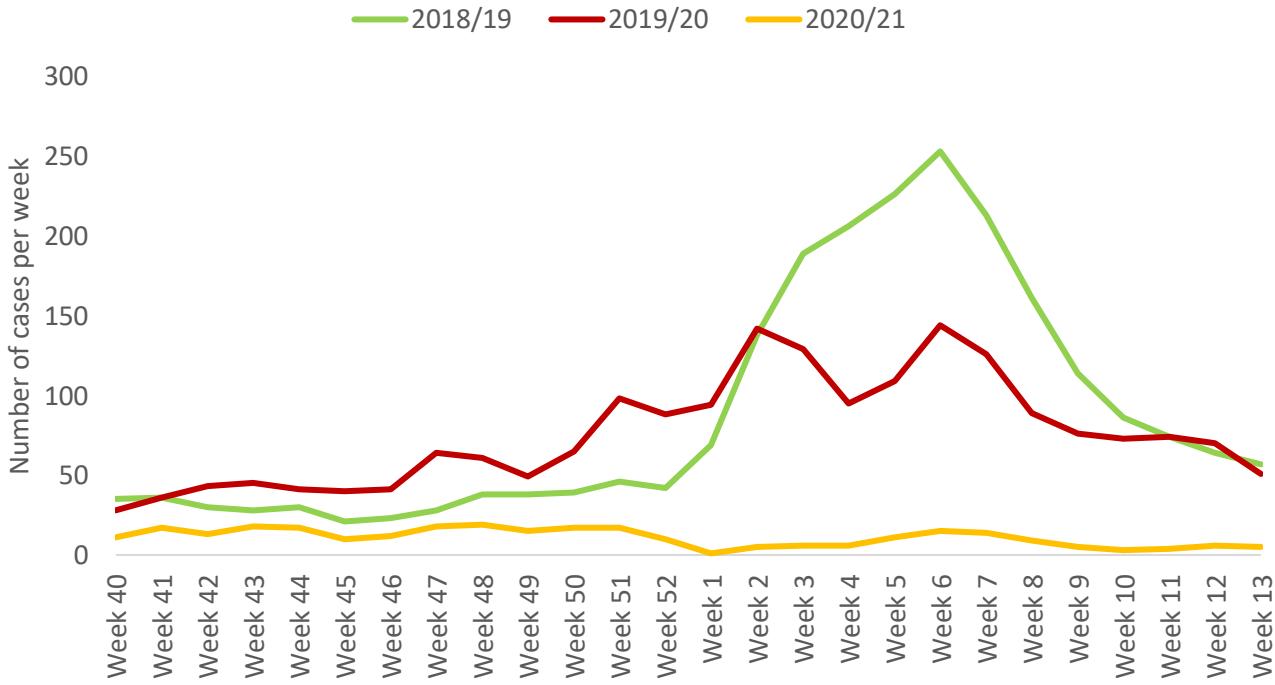
The 2020-21 season's immunisation programme was the most successful on record, with the highest levels of vaccine uptake recorded for those 65 years and over, under 65's with a clinical condition, two and three-year-olds and school-aged children.

Numbers of 'flu-like' illnesses presenting to GPs in last 3 flu seasons

Figure 1 shows the numbers recorded per week as presenting to their GP with 'flu-like' symptoms over each flu season, 2018-19, 2019-20 and 2020-21.

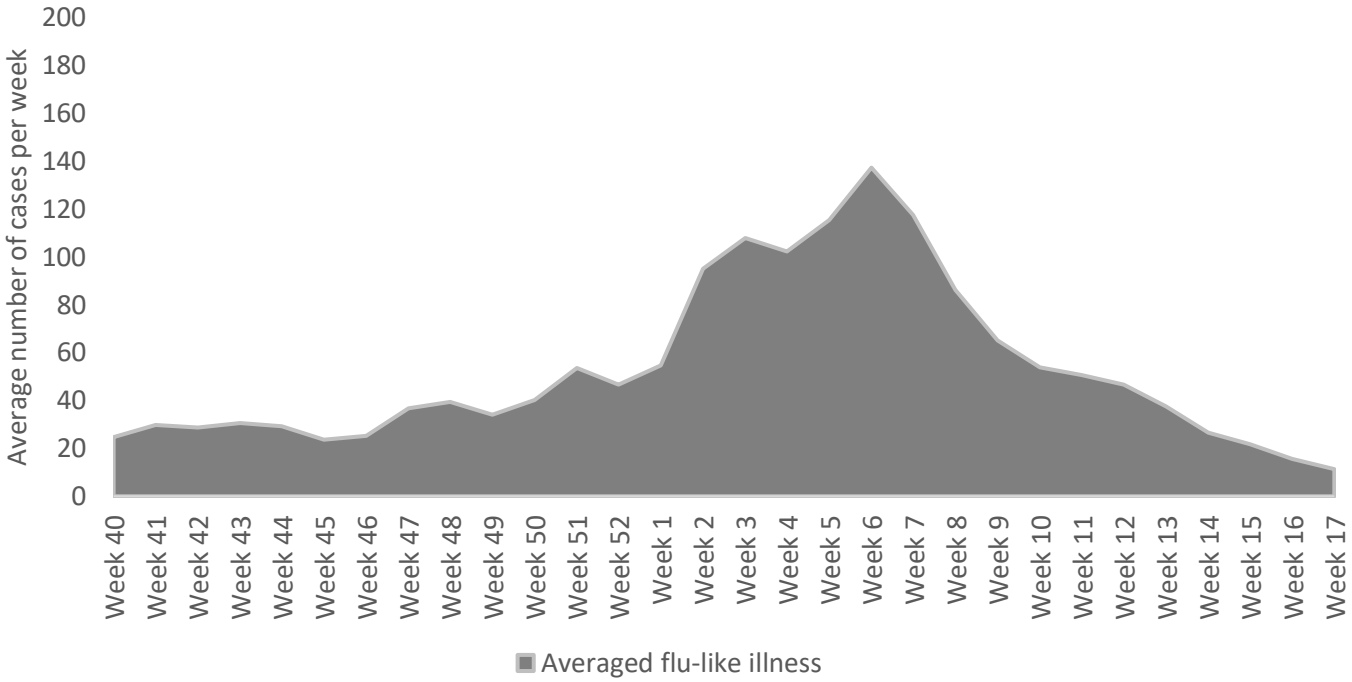
The chart shows that the individual flu-season profiles vary, in terms of the peak number of cases seen, the timing of the increase and decrease in the number of cases, and shape of profile. After recognition of widespread community transmission COVID-19, indicators of influenza activity began to decline in Jersey. These changes may be attributed to both changes related to declines in routine health seeking for respiratory illness as well as real changes in influenza virus circulation because of widespread implementation of measures to mitigate transmission of Covid-19.

Figure 1: 'Flu-like' illness profiles from 2018-19, 2019-20 and 2020-21



The curves from these individual seasons can be combined to produce an 'average' (calculated as a mean average) profile (see Figure 2). The average profile tends to be more spread out, reflecting the earliest increase and latest decrease from each of the individual profiles while flattening the maximum, or peak, number of cases.

Figure 2: 'Flu-like' illness average profile based on individual profiles from 2018-19, 2019-20 and 2020-21

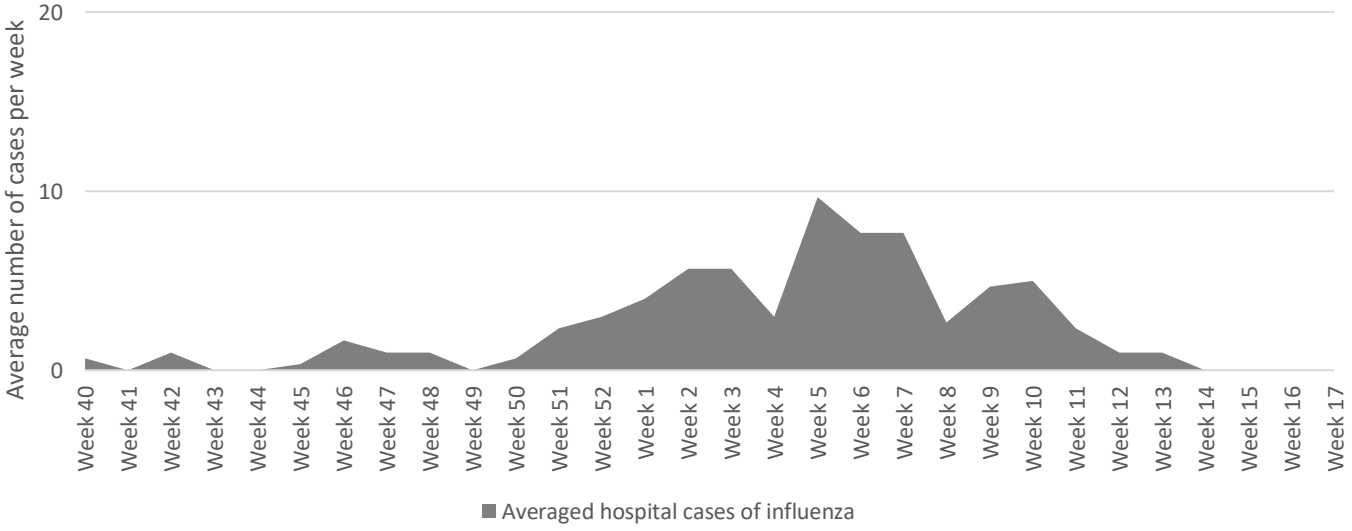


Numbers of hospital patients with confirmed influenza over the last three flu seasons

The same procedure could be carried out for numbers of hospital patients with confirmed influenza. However, as Jersey only carries out flu tests on a relatively small number of people, three-years of data have been combined to prevent disclosure. Figure 3 gives the averaged profile (again a mean average) of numbers of hospital patients with confirmed influenza.

Please note that in the 2020-21 season, baseline or extremely low levels of influenza activity were seen across the UK and Europe[1] more generally. In Jersey, there was no influenza activity observed in the community or secondary care.

Figure 3: Hospital influenza average profile based on individual profiles from 2018-19, 2019-20 and 2020-21



Combined profiles of 'Flu-like' illness and hospital patients with confirmed influenza

Combining the charts of average 'flu-like' illness and average number of hospital patients with confirmed influenza (see Figure 4) shows their relationship over an 'average' flu season.

[1] Flu News Europe - Flu News Europe | Season overview

Figure 4: Average 'flu-like' illness and average hospital patients with confirmed influenza 2018-19, 2019-20 and 2020-21

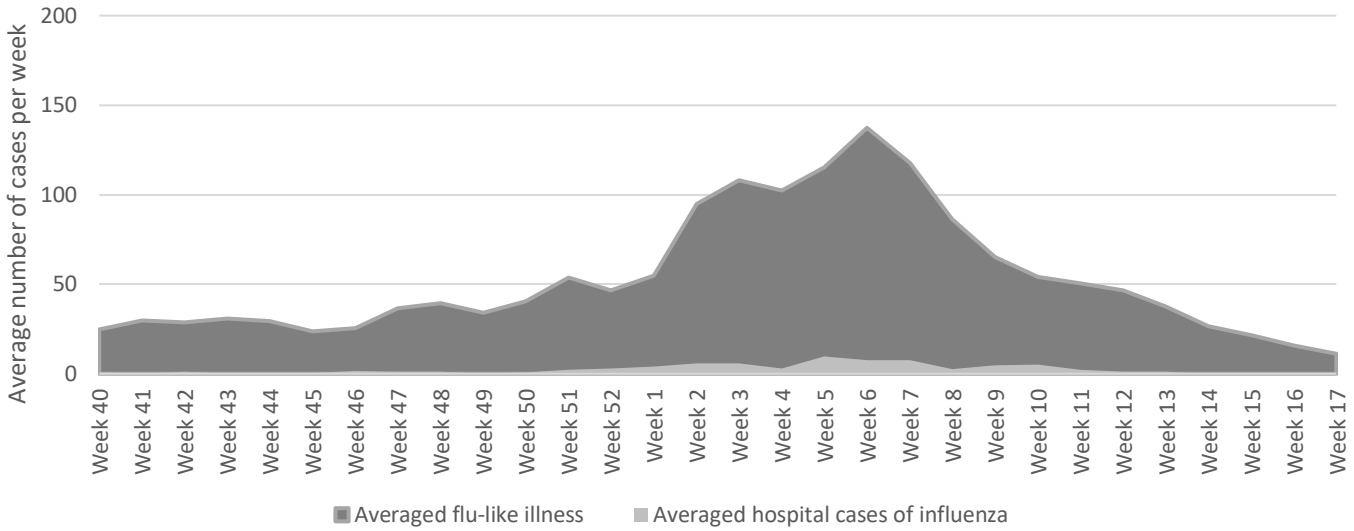


Figure 4 shows that on average, the instances of influenza confirmed by the pathology laboratory at Jersey General Hospital begin to increase from week 50 at the earliest (week 50 is the beginning of December). Prior to that there are a 'baseline' number of flu-like illnesses presenting to GPs and only very isolated individual influenza cases seen in the hospital.

Influenza vaccination

The Health and Community Services (HCS) Department co-ordinates a seasonal flu vaccine plan every year to prevent flu amongst those who are at a higher risk of flu-associated illness and mortality. This includes older people, pregnant women, and those with certain underlying medical conditions (known clinically as being 'at-risk'). In addition, children are offered the flu vaccine to provide both individual protection to the children themselves and reduce transmission across all age groups in order to protect vulnerable members of the population.

For full statistics on the influenza vaccination programme for 2020-21, please see associated report "Jersey Seasonal Influenza Vaccine Statistics 2020-21" produced by the Jersey Public Health Directorate.

Flu vaccination programme

In the 2020-21 season, as in the 2019-20 winter season, HCS nurses offered the flu vaccine to schoolchildren, and GP practices and pharmacies offered the flu vaccine to people who fell into the higher risk categories (at a discounted rate or for free). The seasonal flu vaccine plan aims to protect and prevent as many people as possible within the following groups from catching flu during the winter season:

- children aged 2, 3 and 4 years
- school-aged children aged 4 to 16 years
- at-risk[2] 16 to 64-year olds
- people aged 50 to 64 years
- people aged 65 and over
- pregnant women

[2] *At-risk group – includes patients with a long-term medical condition including chronic respiratory disease or asthma; chronic heart disease; chronic kidney disease; chronic liver disease; chronic neurological disease; diabetes type 1 or type 2; a suppressed immune system; asplenia or spleen dysfunction or a BMI of more than 40*

Key to the vaccination programme being successful is having a high proportion of the targeted populations vaccinated before influenza starts circulating. The vaccine takes approximately **two weeks** to become fully effective after being administered. Therefore, to achieve the best protection for the at-risk population, most of those eligible for flu vaccination should be vaccinated at least two weeks prior to the expected onset of influenza. Based on the averaged profiles, this is by week 48 (mid-November).

Figure 5 shows the actual vaccination profiles over flu season 2020-21 compared to the average 'flu-like' illness and average confirmed influenza profiles.

Figure 5: Percentage of target groups vaccinated compared to average 'flu-like' illness and hospital influenza profiles

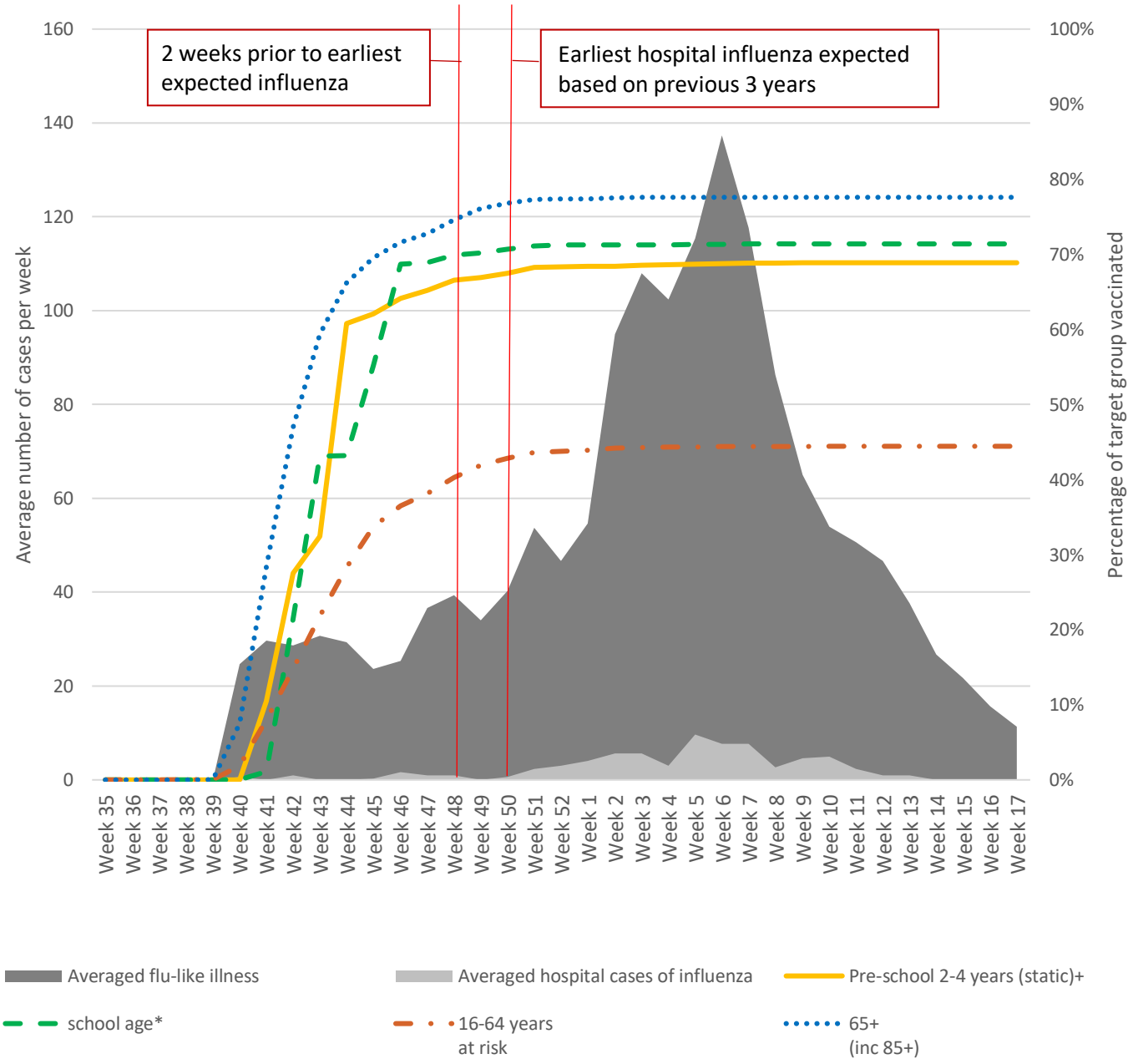


Figure 5 shows that in addition to the percentage of a target group receiving the flu vaccine by the end of the flu season, the percentage vaccinated by week 48 could also be considered, i.e. two weeks prior to the expected arrival of influenza (Table 1).

Table 1: Percentage of priority groups given the influenza vaccine by the end of the flu season, by week 48, and percentage of the total number of those vaccinated that were vaccinated by week 48 (i.e. % of vaccinations that were administered at least two weeks before the expected arrival of flu season)

Age Group	*% of group vaccinated by end of flu season*	*% of group vaccinated by week 48*	*% of group vaccinated by the end of flu season vaccinated by week 48*
children aged 2, 3 and 4 years	69	67	97
school-aged children aged 4 to 16 years	71	70	98
at risk 16-64-year-old	44	40	91
people aged 65 and over	78	75	96

Influenza and pneumonia deaths

It is possible to provide an estimate of deaths by reporting on the underlying cause of death (see Background notes). The underlying cause of death is defined by the WHO as "the disease or injury which initiated the train of morbid events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury"[3].

The number of deaths for Jersey with an underlying cause of Influenza and Pneumonia (ICD-10 code J09-J18) which is used as a proxy for flu deaths, for the five most recent calendar years (2015-2020) where data is available are:

Table 2: Annual Influenza and Pneumonia deaths *(ICD-10 code J09-J18, 2015-2020)

Year	*Number, rounded to nearest 5*
2015	30
2016	30
2017	30
2018	20
2019	20
2020	15

* Counts are rounded to the nearest multiple of 5

Please note that it still may not be possible to know exactly how many people die from seasonal flu each year, as Influenza may not always be listed on death certificates of people who die from flu-related complications. There are several reasons for this:

- serious complications can be triggered by flu; flu can make chronic medical problems worse
- many flu-related deaths can also occur one or two weeks after a person's initial infection, either because the person may develop a secondary bacterial co-infection or because influenza can aggravate an existing chronic illness
- most people who die from flu-related complications are not tested for flu or may not have sought medical care until later in their illness when influenza can no longer be detected from respiratory samples

[3] WHO Medical Certification Cause of Death - Medical certification of cause of death : instructions for physicians on use of international form of medical certificate of cause of death (who.int)

Notes

Data Sources

- the data for this report are derived from GP Central Server (EMIS web); Community Pharmacy server (PharmOutcomes); information supplied by the Preventive Programmes Team about seasonal flu vaccinations given in nurseries and schools; Microbiological Surveillance of Hospital patients by the Infection Sciences Laboratory; All deaths in Jersey captured by the Superintendent Registrar's office and entered on their designated IT system.

Methodology

Confirmed Influenza

- hospital patients are tested for the influenza virus according to a schedule devised by the Hospital's Consultant Microbiologist. During the 'surveillance' stage of flu-season (i.e. before the declaration of circulating influenza has been made), hospital patients (whether admitted or not) are tested for influenza if they display 'flu-like' symptoms, or are in another 'at risk' group. Once circulating influenza has been declared, only admitted patients are considered for testing (based on the same symptom or risk criteria)

Flu-like Illness

- clinical data is gathered from the general practitioner's central server (EMIS web). Weekly consultations for influenza-like illness (ILI) are monitored by Public Health Intelligence

Flu Vaccination Programme

- Uptake in each of the priority groups were calculated using denominators (total in group) from the following sources:
- percentage uptake in pre-school aged children, and compulsory school aged children: Data from Child Health Information System (CarePlus)
- percentage uptake in actively registered patients in the at-risk working age (16-64 years) group: Data from actively registered list from GP Central Server (EMIS web)
- percentage uptake in adults aged 65 and over: Data from actively registered list from GP Central Server (EMIS web)

Influenza and Pneumonia deaths

- the registration of deaths occurring in Jersey is carried out by the office of the Superintendent Registrar Information collected at death registration is recorded on the Registration Online (RON) system by registrars
- cause of death data comes from the information collected at death registration. All of the conditions mentioned on the death certificate are coded using the International Classification of Diseases, Tenth Revision (ICD-10). From all of these causes an underlying cause of death is selected using ICD-10 coding rules. The underlying cause of death is defined by WHO as:
    a) the disease or injury that initiated the train of events directly leading to death, or
    b) the circumstances of the accident or violence that produced the fatal injury
- In the ICD-10 revision, Influenza is coded J09-J11; Pneumonia is coded J12-J18