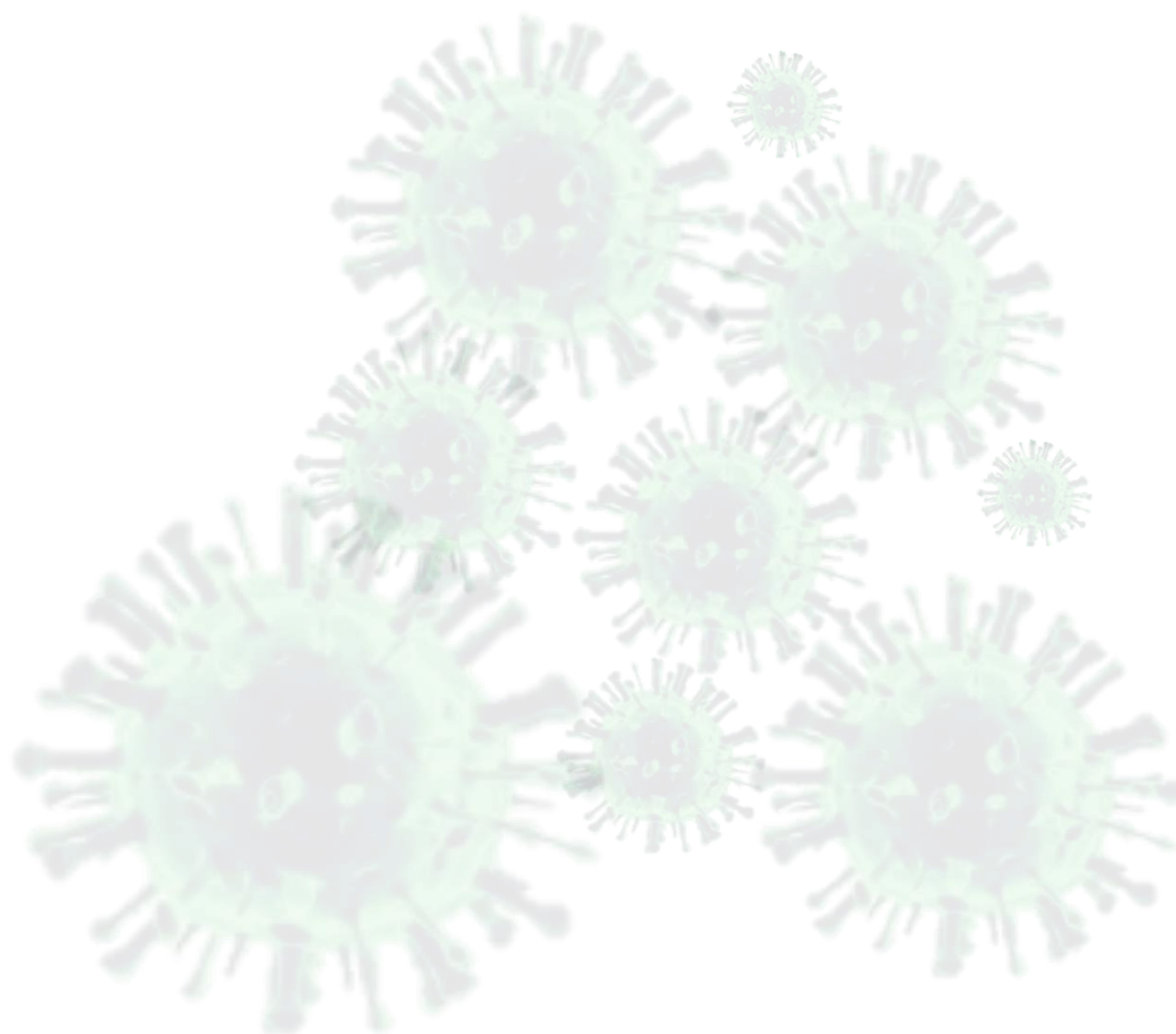


# Surveillance of influenza in Northern Ireland 2018/2019

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## Executive summary

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### Seasonal influenza activity

The 2018/19 influenza season was characterised by lower levels of activity in the community and hospitals compared with 2017/18.

- GP consultation rates for 'flu/flu-like-illness' ('flu/FLI') increased in week 1, 2019, peaking in week 2 at 18.9 per 100,000 population. Rates returned to pre-season levels in week 12.
- The Northern Ireland standardised threshold for influenza intensity<sup>1</sup> (low intensity; equal to or greater than 17.1 per 100,000) was exceeded for one week only this season (week 2, 2019).
- Highest 'flu/FLI' consultation rates were seen in 45-64 year olds in week 2 (25.2 per 100,000).
- Influenza A(H1N1)pdm09 was the predominant circulating virus at the beginning of the season (57% of influenza isolates), with influenza A(H3) the predominant strain later in the season (21% of influenza isolates).
- There were 12 confirmed influenza outbreaks reported this season, of which the majority (8/12) occurred in care homes. The remaining influenza outbreaks (4/12) occurred in hospital settings.
- There were 67 admissions to Intensive Care Units/High Dependency Units (ICU/HDU) with confirmed influenza in 2018/19. Seven deaths were reported in ICU/HDU patients who had laboratory confirmed influenza, giving a case fatality rate of 10%.
- Excess all-cause mortality was reported for two weeks during the season (weeks 1 and 6, 2019).
- The principal activity period for Respiratory Syncytial Virus (RSV) occurred from week 44, 2018 to week 3, 2019, with the proportion of positive samples peaking at 22% in week 48, 2018.

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<sup>1</sup> The Northern Ireland baseline Moving Epidemic Method (MEM) threshold is described later in this report under the enhanced influenza systems.

## Seasonal influenza vaccine uptake

- Influenza vaccine uptake in 2018/19 was marginally lower across the majority of the target cohorts within the public campaign compared with 2017/18.
- The vaccination uptake rate decreased in all target population groups, with the exception of those morbidly obese without other co-morbidities (body mass index (BMI) greater than 40 kg/m<sup>2</sup>), in which uptake increased to 26.3% (compared with 22.8% in 2017/18).
- Vaccine uptake increased in frontline health and social care workers (HSCWs) to 35.4% (compared with 33.4% in 2017/18).
- This year, it was also possible to report vaccine uptake in frontline health care workers (HCWs) (excluding social care staff) to enable comparison with other devolved administrations (39.5% in 2018/19).

## Introduction

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In Northern Ireland, surveillance of influenza and other respiratory viruses is carried out by the Influenza Surveillance Team at the Health Protection Directorate of the Public Health Agency (PHA).

Data are collated from a number of surveillance systems to provide information on the type of influenza strains circulating in the region, the timing of influenza activity, the burden of influenza on the community and health services, the degree of excess mortality and the uptake of influenza vaccine.

Outputs from the surveillance activities are used to produce timely reports that are distributed to the Department of Health (DoH), Health and Social Care Board (HSCB), Health and Social Care Trusts (HSCTs), health professionals, the media, and the public.

Surveillance is carried out all year, with output reports published weekly or fortnightly from week 40, 2018 (commencing 1 October 2018) to week 20, 2019 (ending 19 May 2019).

This report describes the influenza activity in Northern Ireland for the 2018/19 season from week 40, 2018 to week 20, 2019.

## Enhanced influenza surveillance systems

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### **In-hours GP practice surveillance**

Since 2017/18, in-hours GP Practice surveillance has been reported from 98% of the population (323 GP practices) instead of 11% of the population from the sentinel GP scheme (33 GP practices).

The system automatically extracts the number of clinical consultations for confirmed influenza and 'flu/FLI' from GP practices on a daily basis, facilitated by Apollo, Wellbeing Software. Denominator data for each GP practice population was provided by the Business Services Organisation (BSO) at the beginning of the season using 2018 mid-year population registrations for each GP practice. These allowed for combined 'flu/FLI' GP consultations rates per 100,000 population to be calculated.

The Northern Ireland Enhanced Surveillance of Influenza programme has been running since 2000 and in 2018/19 33 GP practices participated in the sentinel GP scheme. The sentinel practices obtain nose and throat swabs to enable community virological surveillance.

Every year the baseline MEM threshold for 'flu/FLI' GP consultation rates in Northern Ireland is calculated to standardise reporting of seasonal influenza activity. Further thresholds are also calculated for low, moderate, high and very high activity<sup>2</sup>. The threshold is used by the European Centre for Disease Prevention and Control (ECDC) and has been adopted by the United Kingdom (UK) devolved administration schemes to standardise reporting of influenza activity across the UK and Europe. Further details of the method have been previously described (Vega et al, 2012).

### **GP out-of-hours surveillance**

The GP Out of Hours (OOH) surveillance system automatically extracts the number of clinical consultations for 'flu/FLI' from all GP OOH Centres in Northern Ireland (n=5) on a weekly

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<sup>2</sup>2018/19 MEM thresholds: baseline 17.1 per 100,000; low activity 17.1 to <25.8; moderate activity 25.8 to <76.8; high activity 76.8 to <124.4 and very high activity >124.4 per 100,000.

basis. Combined 'flu/FLI' GP consultations rates per 100,000 population are calculated, similar to the in-hours GP practice surveillance, using 2018 mid-year population registrations for each GP practice provided by BSO at the beginning of the season.

## **Virological surveillance**

The Regional Virology Laboratory (RVL) tests respiratory samples that are submitted from the sentinel GP scheme, and from HSCT hospitals, GP practices outside the sentinel GP scheme and care home outbreaks (latter known as "non-sentinel" sources).

Swabbing from the sentinel GP scheme runs throughout the normal influenza season and provides information on circulating community flu and feeds into the national Vaccine Effectiveness work. HSCT hospitals and GP practices submit respiratory samples from patients if clinically recommended on the basis of presenting symptoms.

All respiratory samples are tested by real-time polymerase chain reaction (RT PCR) for influenza A, Influenza B and RSV. Samples that are positive are tested with H1(A(H1N1)pdm09) and H3 assays. Depending on clinical details, ward of origin and laboratory capacity at point in time, respiratory samples may be tested for other respiratory targets using RT PCR including: *Mycoplasma pneumoniae*, *Legionella pneumophila* and *Chlamydia pneumoniae*, *Bordetella pertussis*, *Pneumocystis jirovecii*, metapneumovirus, respiratory adenovirus, coronavirus, parainfluenza viruses and rhinovirus. It is not useful to report on other respiratory viruses due to the variation in testing methods from year to year.

This season two HSCT laboratories also conducted influenza testing for patients where the clinician suspects flu. Respiratory samples are tested for influenza A, B and RSV. Samples positive for influenza A are sent to RVL for confirmation and further characterisation.

The influenza team collects and collates the number of patients tested, along with their results for influenza and RSV viruses from RVL and the two local HSCT laboratories. The number and proportion of samples positive for influenza and RSV are reported on a weekly basis.

De-duplication of respiratory samples is undertaken for surveillance purposes because an individual may be tested on numerous occasions over a short period of time. An episode of

influenza is based on a six week interval while other respiratory diseases are based on a two week interval. De-duplication ensures multiple samples from the same individual are not recorded. Their positive result may also not come from their first sample. National guidelines specify that a positive result overrides previous negative results. Total tests undertaken for both influenza and RSV will differ due to this de-duplication interval.

### **Outbreak surveillance**

Respiratory-related outbreaks in institutional settings (e.g. care homes, hospitals, and schools etc.) are reported to the PHA Health Protection duty room. The duty room collects epidemiological data using a standardised proforma at the beginning, during, and at the end of each influenza outbreak. Respiratory sampling and testing is recommended for all outbreaks, with samples sent to RVL. The influenza team collates and reports aggregate data on the number of outbreaks and other relevant epidemiological and virological information.

### **ICU / HDU surveillance**

Since 2011/12, Northern Ireland has participated in the UK Severe Influenza Surveillance System (USISS). This is a national collection that collects the weekly number of laboratory confirmed influenza cases admitted to ICU/HDU and the number of confirmed influenza deaths in ICU/HDU.

Epidemiological information on laboratory confirmed cases of influenza admitted to ICU/HDU are collected and collated weekly, in collaboration with the Critical Care Network for Northern Ireland (CCaNNI). Aggregate data on the number of cases, deaths and other relevant epidemiological information are reported weekly.

### **Mortality surveillance**

The Northern Ireland Statistics and Research Agency (NISRA) provide data to the influenza team on the number of all-cause and selected respiratory infection death registrations by registration week. Selected respiratory infections are obtained by searching death certificates for keywords associated with influenza, including; bronchiolitis; bronchitis; influenza; and pneumonia. The number and proportion of selected respiratory infection death registrations are



reported weekly. Due to delays in death registrations, the number of registered deaths in a week will not equal the number of deaths that actually occurred that week.

In addition, Public Health England (PHE) calculates excess mortality on behalf of the influenza surveillance team, using the Mortality Monitoring in Europe (EuroMOMO) model. EuroMOMO is a project coordinated by the Statens Serum Institut in Denmark to provide a common approach to analysing mortality data and comparing across the UK and Europe. The model produces weekly expected and observed number of deaths, corrected for reporting delay and standardised for the population by age group and region. Excess mortality is reported if the number of observed deaths exceeds the number of expected deaths. Despite delay correction, reported mortality data is still provisional due to the time delay in registration and observations which can vary from week to week.

### **Vaccine uptake surveillance**

Every year, policy for the Seasonal Flu Vaccination Programme is set by DoH in line with recommendations from the Joint Committee on Vaccination and Immunisation (JCVI), including regional targets for immunisation uptake, which are based on the World Health Organisation (WHO) recommendations.

The Seasonal Flu Vaccination Programme consists of the public (children and adults) campaign and the frontline HSCW campaign. Across the United Kingdom, there are differences in the eligibility of individuals in two of the target groups.

Firstly, all primary school children are offered vaccine, similar to Scotland and Wales but different to England where it has been rolled out to different ages over time.

Secondly, whilst the policy recommendation is for flu vaccine to be offered to all frontline HSCWs that work in Northern Ireland, vaccine uptake surveillance is currently only carried out for those that are HSCT-employed. This includes both Health Care Workers (HCWs) and Social Care Workers (SCWs) which differs to elsewhere in the UK, where equivalent NHS Trust employed staff are only HCWs.

This year vaccine uptake surveillance of independent sector care home HSCWs was piloted by the flu surveillance team. Evaluation will inform publication of these figures in the future.

In 2018/19, the following flu vaccines and targets were recommended.

Adjuvanted Trivalent Inactivated Vaccine (aTIV):

- All individuals aged 65 years and older (target 75%)

Quadrivalent Inactivated Vaccine (QIV):

- Individuals aged six months to two years and 18 to 65 years in a clinical “at risk” group (75%), including pregnant women (60%)
- Frontline Health and Social Care Workers (40%)

Quadrivalent Live Attenuated Influenza Vaccine (LAIV):

- All pre-school children aged two years or older on 1 September 2018 (60%)
- All primary school aged children, four to 11 years of age (75%)
- Post-primary school aged children (11 to 17 years of age) in a clinical “at risk” group, unless contraindicated

The flu surveillance team collects data on the number vaccinated in each target group at regular intervals between the start and end of the season. Vaccine uptake rates are calculated using age-specific denominators and presented for Northern Ireland and by HSCT.

Data is collected from different data sources depending on the target group, including GP practices via electronic software (Apollo, Wellbeing Software), GP claim numbers from HSCB, HSCTs, School Nursing and Occupational Health Departments.

## Observations

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### Northern Ireland GP 'flu/FLI' consultation rates

The weekly GP consultation rate for 'flu/FLI' started to increase from pre-season levels in week 47, 2018 (November), rising from 4.5 to 13.5 per 100,000 in week 1, 2019. The rate reached a peak of 18.9 per 100,000 in week 2 (January). A second slightly lower peak of 16.2 per 100,000 was observed in week 6, 2019. From week 7, the rate continued to decrease until the end of the season in week 20 (2.3 per 100,000). Rates remained below the baseline MEM threshold<sup>3</sup> for the entire season with the exception of week 2, 2019 (Figure 1).

During the 2017/18 season, the baseline MEM threshold was exceeded in week 52, 2017 and consultation rates increased above the medium intensity threshold in week 1, 2018. In 2017/18 the rates remained above the baseline MEM threshold for nine consecutive weeks (Figure 1).

Age-specific GP consultation rates fluctuated in all age groups throughout this season, with the peak rates among all age groups being lower than in 2017/18. The highest level of influenza activity was most frequently seen in the those aged over 15 years old, peaking in week 2, 2019 at 21.1 per 100,000 for those aged 15-44 years, 25.2 per 100,000 for those 45-64 years and 15.2 per 100,000 for those aged 65 years and older (Figure 2).

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<sup>3</sup> Equal to or greater than 17.1 per 100,000

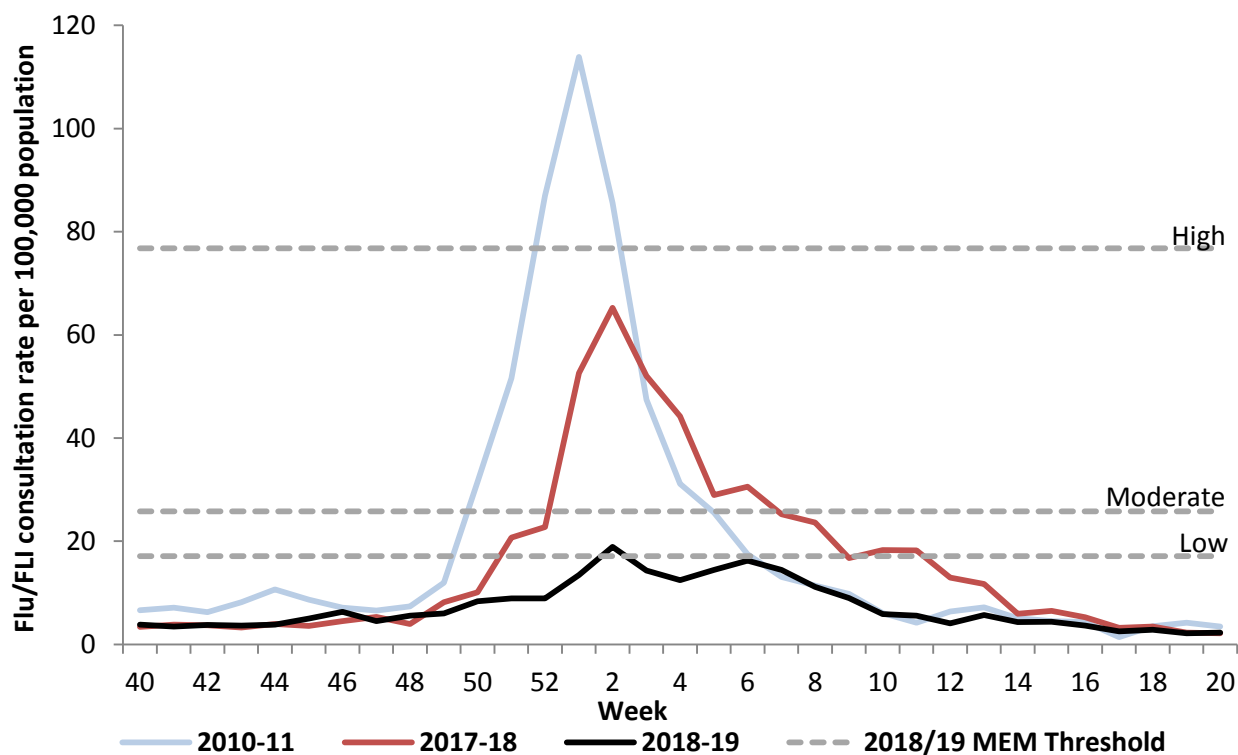


Figure 1: Northern Ireland GP consultation rate per 100,000 population for combined flu and flu-like-illness, 2017/18 – 2018/19, including 2010-11 for comparison

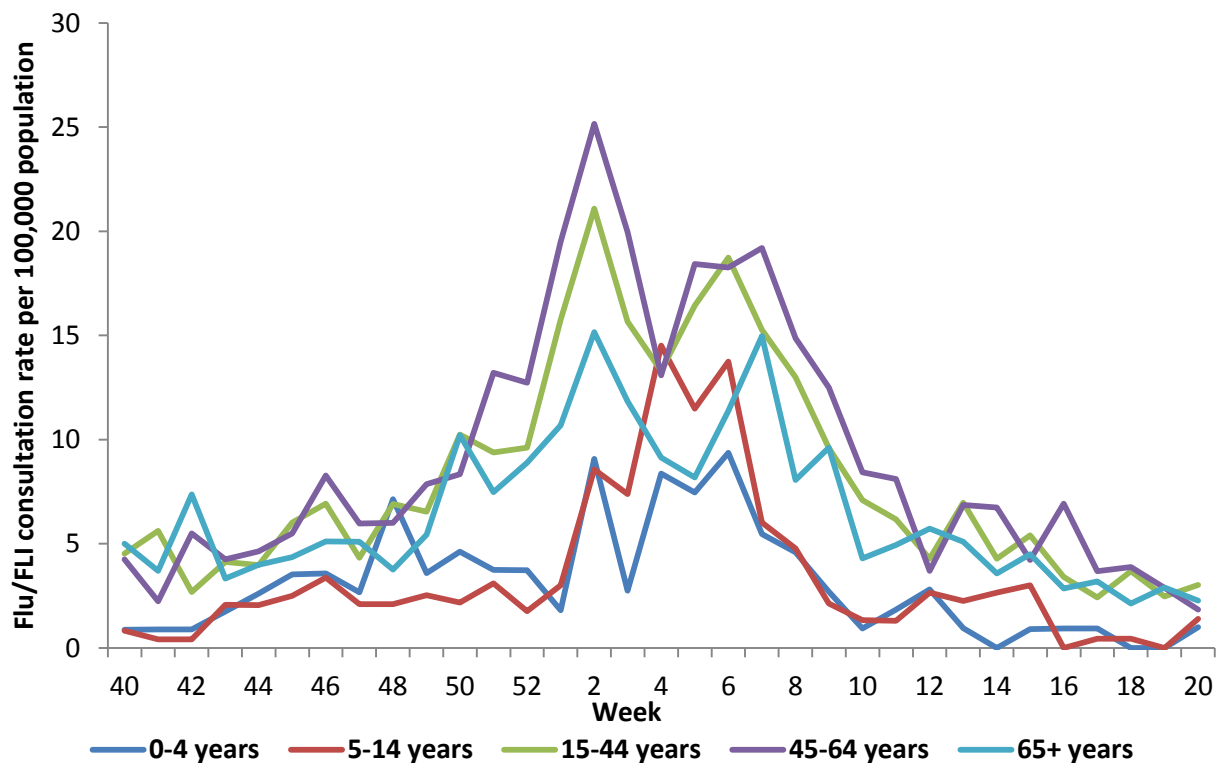


Figure 2: Northern Ireland GP age-specific consultation rates per 100,000 population for combined flu and flu-like-illness, weeks 40 - 20, 2018/19

# GP OOH 'flu/FLI' consultation rates

GP OOH 'flu/FLI' consultation rates began to increase in week 47, 2018, peaking in week 52, 2018 (December) at 14.7 per 100,000. This compares to a peak of 37.2 per 100,000 in 2017/18 and 16.7 per 100,000 in 2016/17. Since week 9, 2019 OOH consultation rates have remained low and stable (Figure 3).

The proportion of 'flu/FLI' calls to total calls was lower this season compared to last season, peaking at 1.7% in week 1, 2019 (January). This compares to a peak of 5.2% in week 1, 2017/18.

By age group, the highest OOH consultation rates were reported in those aged 0-4 years, peaking at 25.2 per 100,000 in week 52, 2018 (Figure 4).

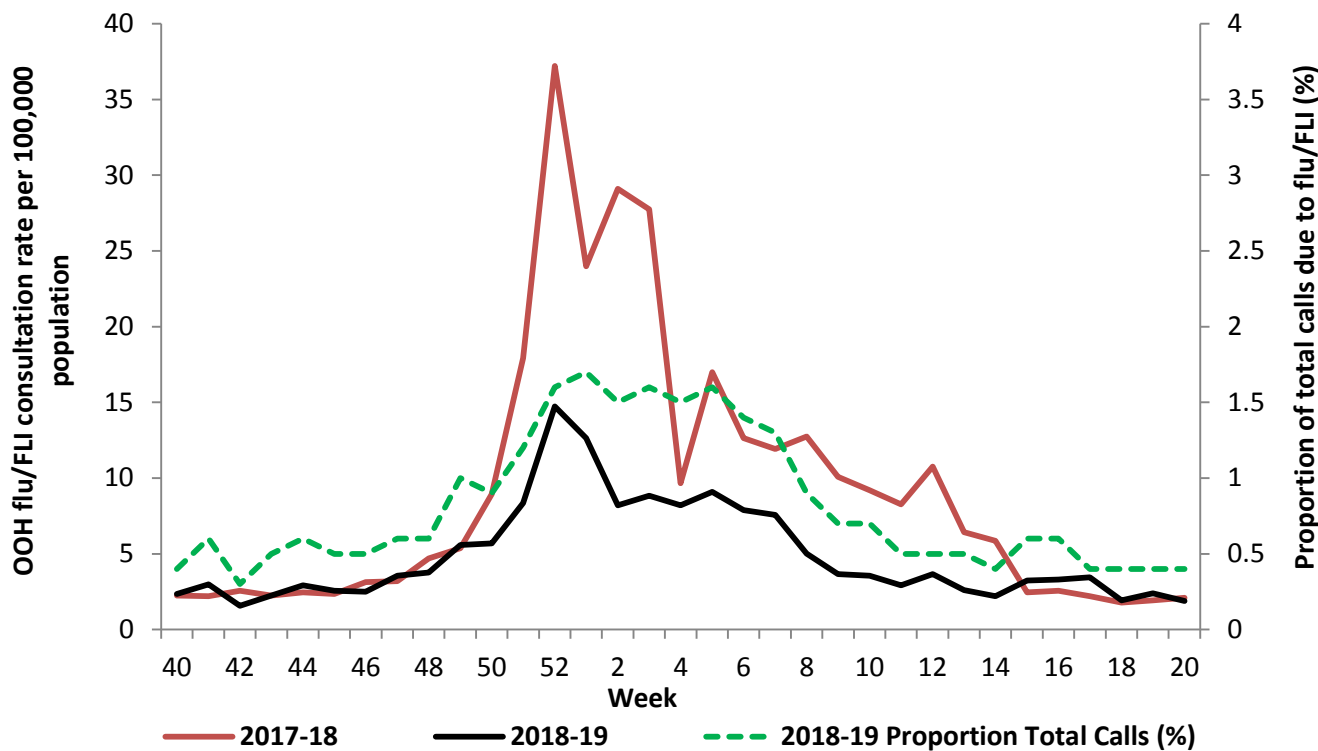


Figure 3: OOH consultation rate per 100,000 population and proportion of total OOH calls for combined flu and flu-like-illness, 2017/18 – 2018/19

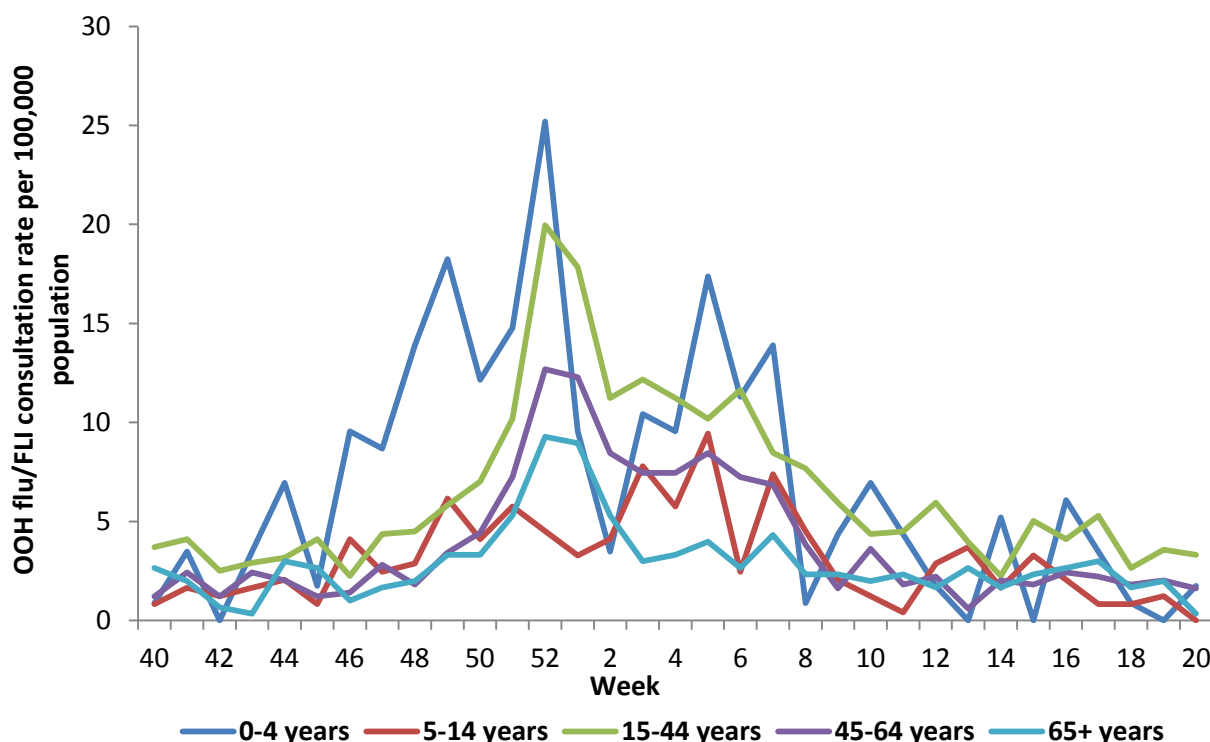


Figure 4: OOH consultation rates per 100,000 population for combined flu and flu-like-illness, by age-group for weeks 40- 20, 2018/19

## Virological activity

Across Northern Ireland, 10,809 respiratory samples from any source were tested (252 sentinel GP scheme; 10,557 non-sentinel sources). Overall, 15% (1,632/10,809) of samples were positive for influenza virus. The proportion of positive influenza samples from the sentinel GP scheme was 36% (91/252) and 15% (1,541/10,557) from non-sentinel sources.

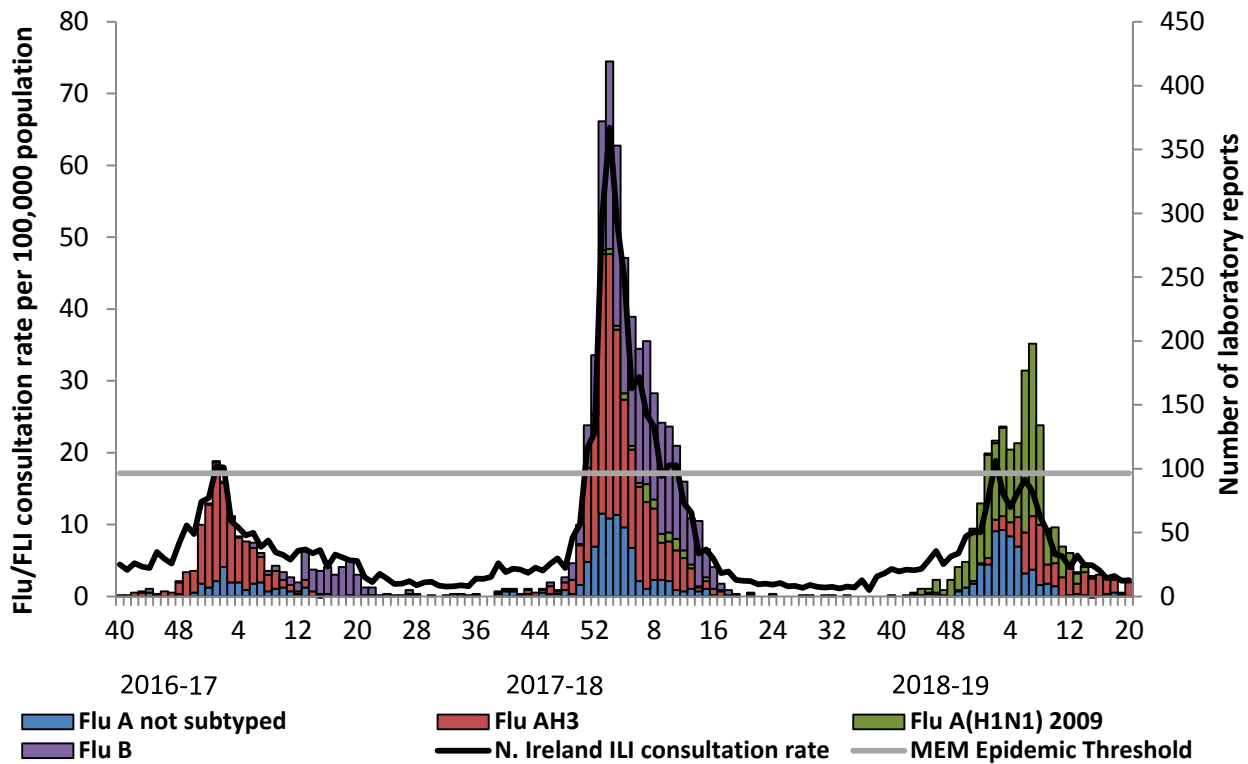
Influenza A(H1N1)pdm09 was the predominant circulating virus at the beginning of the season, accounting for 57% (932/1,632) of influenza isolates, with influenza A(H3) the predominant strain circulating later in the season, accounting for 21% (349/1,632) of influenza isolates. It is assumed that the majority of un-typed influenza A isolates (342/1,632; 21% of isolates) were influenza A(H1N1)pdm09 (New and prevalent mutations this season in influenza A(H1N1)pdm09 virus were circulating that affected the sensitivity of the H1 assay. Therefore many influenza A positives this season were not typing but were proving to be influenza A(H1N1)2009 on nucleic acid sequencing of selected positive samples). Influenza B accounted

for only 1% of influenza isolates (9/1,632). The relative proportion of influenza isolates followed a similar pattern in GP sentinel and non-sentinel samples (Table 1).

**Table 1: Number and proportion of influenza strains to positive influenza samples according to sample source, during weeks 40-20 2018/19**

	Sentinel sources	Non-sentinel sources	All sources
<b>Flu A(H1N1)pdm09</b>	55 (60%)	877 (57%)	932 (57%)
<b>Flu A(H3)</b>	23 (25%)	326 (21%)	349 (21%)
<b>Flu A(untyped)</b>	12 (13%)	330 (21%)	342 (21%)
<b>Flu B</b>	1 (1%)	8 (1%)	9 (1%)
<b>Total positive</b>	<b>91 (6%)</b>	<b>1541 (94%)</b>	<b>1632 (100%)</b>

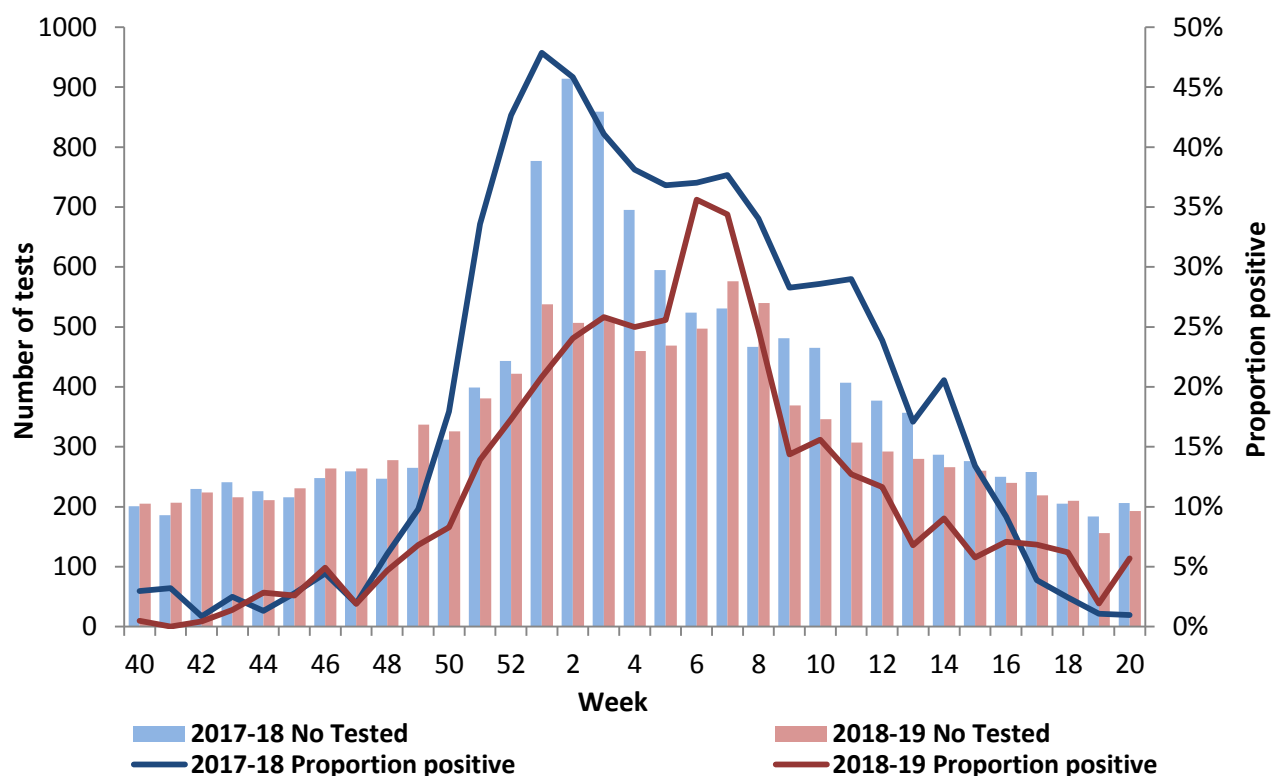
The distribution of influenza positive detections compared to the previous two seasons is shown in Figure 5. The figure illustrates a reduction in GP ‘flu/FLI’ consultation rates and total positive detections compared to 2017/18 but an increased proportion of influenza A(H1N1)pdm09.



**Figure 5: Northern Ireland GP consultation rate for combined flu and flu-like-illness and number of influenza positive detections 2016/17 – 2018/19**

The first influenza B detection was reported in week 40, 2018, followed by the first influenza A(untyped) detection in week 42, 2018. Influenza A(H1N1)pdm09 and influenza A(H3) were first detected in week 43, 2018. The proportion positivity for all samples began to increase in week 48, 2018 and peaked in week 6, 2019 (177/497; 36%). During 2017/18, the proportion positivity for all sources peaked earlier in the season at week 1, 2018 (372/777; 48%) (Figure 6).





**Figure 6: The number of samples tested (all sources) for influenza in Northern Ireland from weeks 40-20, 2017/18 and 2018/19 with the proportion positive**

Overall, the highest proportion positivity for all samples was observed in those aged 15-44 years and 45-64 years (29% in both age groups), with influenza A(H1N1)pdm09 most frequently reported in these age groups (58% and 61%, respectively). Influenza A(H1N1)pdm09 was the predominant strain in all age groups (Table 2).

**Table 2: Proportion of positive influenza samples by age group, all sources, during weeks 40-20 2018/19**

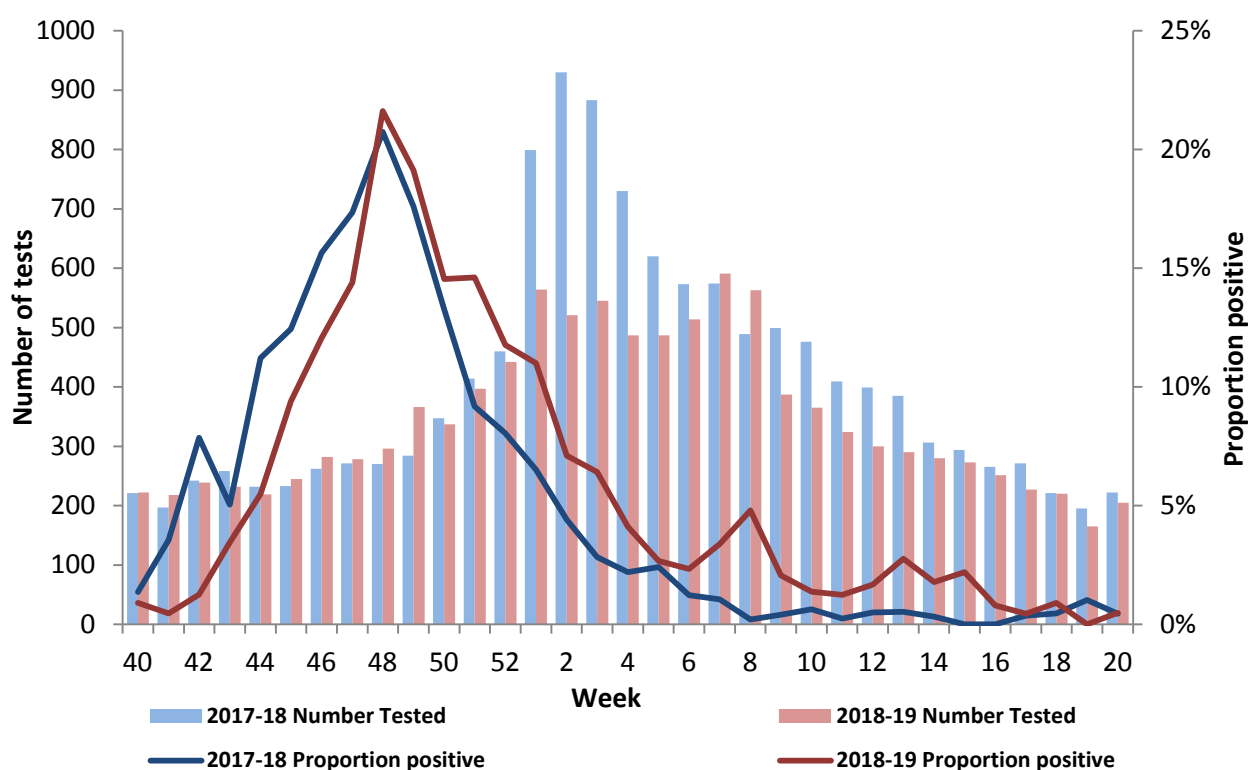
	0-4 years	5-14 years	15-44 years	45-64 years	≥65 years
<b>Flu A(H1N1)pdm09</b>	154 (81%)	44 (56%)	273 (58%)	286 (61%)	175 (41%)
<b>Flu AH3</b>	16 (8%)	22 (28%)	96 (20%)	73 (16%)	142 (33%)
<b>Flu A(untyped)</b>	20 (11%)	13 (16%)	96 (20%)	107 (23%)	106 (25%)
<b>Flu B</b>	0 (0%)	0 (0%)	4 (1%)	2 (0%)	3 (1%)
<b>Total positive*</b>	<b>190 (12%)</b>	<b>79 (5%)</b>	<b>469 (29%)</b>	<b>468 (29%)</b>	<b>426 (26%)</b>

\*total positive = 1632; Due to rounding, total percentages may not add up to 100%

## Respiratory Syncytial Virus

Across Northern Ireland, 11,334 respiratory samples from all sources were tested, with overall RSV positivity of 6% (689/11,334). The principal activity period occurred from week 44, 2018 to week 3, 2019 with the proportion of positive samples peaking in week 48, 2018 at 22% (64/296) (Figure 7). Overall RSV activity was similar to 2017/18.

The majority (366/689; 53%) of RSV detections were in the 0-4 year age group. This is lower than the proportion seen in this age group for 2017/18 (58%).



**Figure 7: Number of samples tested for RSV and proportion positive in Northern Ireland 2017/18 and 2018/19**

## Respiratory outbreaks

A total of 19 respiratory-related outbreaks were reported to the PHA duty room this season. These outbreaks were notified to the PHA between weeks 1 and 16, 2019, with the highest numbers of outbreaks per week (n=3) reported in weeks 3, 6 and 16, 2019 (Figure 8).

Of the 19 respiratory-related outbreaks reported, 12 (63%) were laboratory confirmed influenza. This is a decrease from 39 (75%) laboratory confirmed influenza outbreaks in 2017/18. All of the confirmed influenza outbreaks in 2018/19 were caused by influenza A, with the exception of one outbreak which was caused by influenza B. Two thirds (8/12) of the influenza outbreaks occurred in care homes, including residential homes, nursing homes and/or homes for adults with specialist needs. The remaining four influenza outbreaks occurred in hospital settings.

There were three outbreaks of laboratory confirmed RSV reported to the duty room in 2018/19, all of which occurred in care homes. Virological data was not available for the four remaining outbreaks which were suspected flu-like-illnesses.

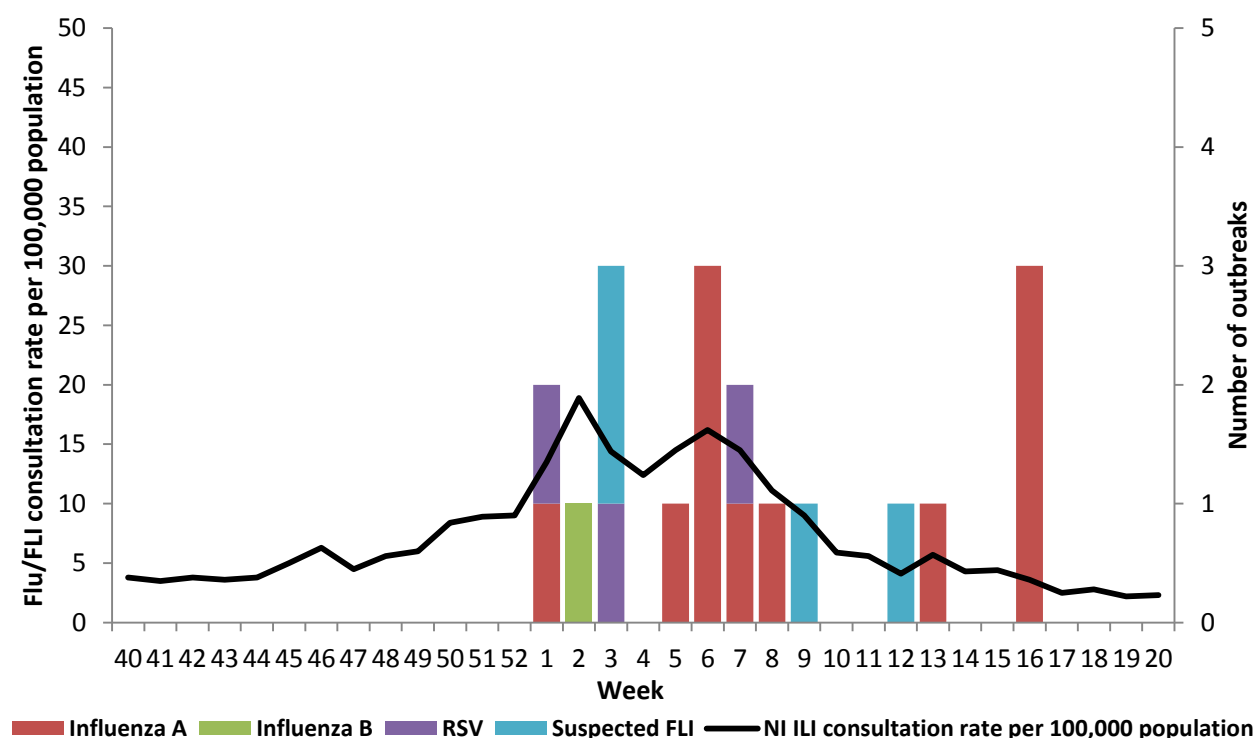


Figure 8: GP consultation rate for combined flu and flu-like-illness with number of influenza outbreaks, by subtype, by week, 2018/19

## ICU / HDU surveillance

The number of laboratory confirmed influenza cases in ICU/HDU was 67, compared with 119 in 2017/18. The predominant strain was influenza A(H1N1)pdm09 (48/67; 72%). The remaining

virus strains included influenza A(H3) (6/67; 9%) and influenza A(untyped) (13/67; 19%) (Figure 9). The highest number of confirmed influenza cases in ICU/HDU was reported in week 7, 2019 (11/67; 16%), of which the majority (9/11; 82%) were reported as influenza A(H1N1)pdm09.

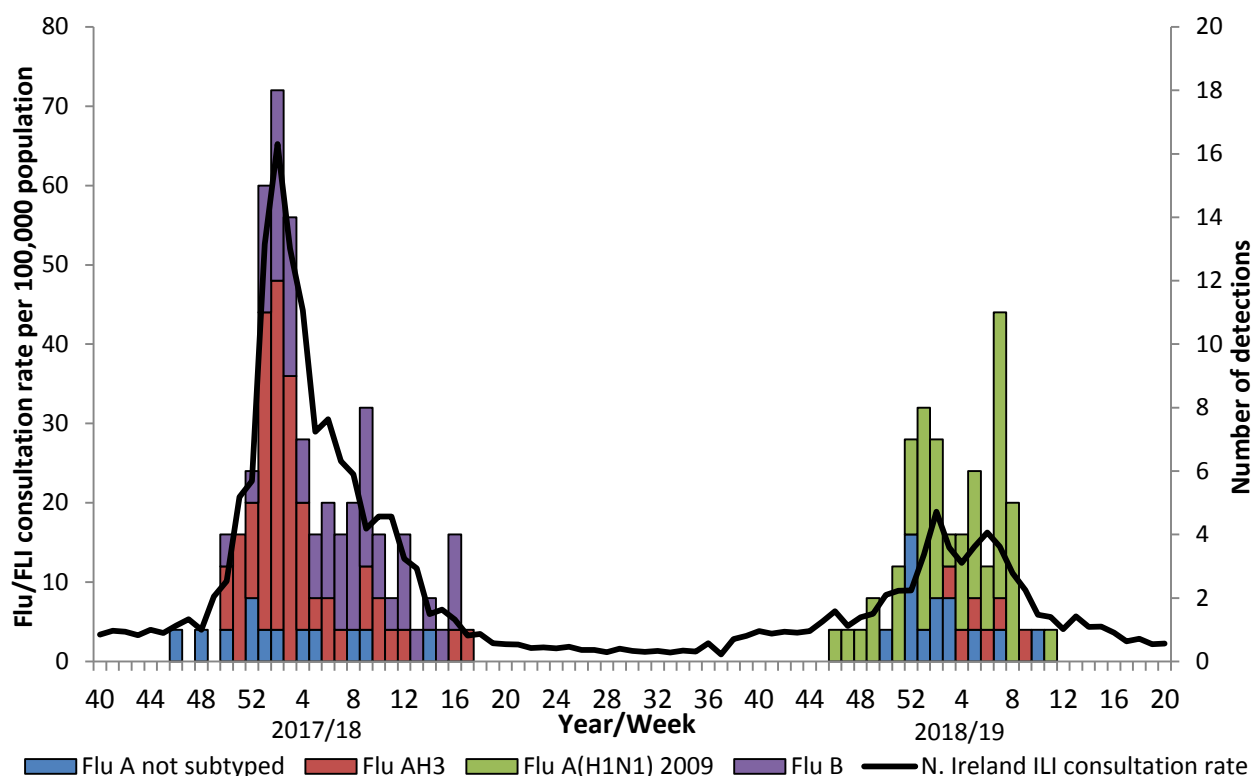
The median age of cases admitted to ICU/HDU was 53 years old (range <1 year to 78 years); 76% (51/67) were aged 15-64 years. The proportion of cases over 65 years (13%, 9/67) was lower this season compared with 2017/18 (48%) whilst the proportion of cases under 15 years was similar (7/67; 10% in 2018/19 compared to 9% in 2017/18).

The majority of positive influenza A(H1N1)pdm09 cases were reported among those aged 45-64 years (29/48; 60%). Similarly the majority of the remaining virus strains, influenza A(H3) and influenza A(untyped), were reported in this age group.

This season, 55% (37/67) of cases were recorded as having a co-morbidity, which was a lower proportion than 2017/18 (78%). Of the 29 eligible cases for the influenza vaccination, 38% (11/29) received the vaccine in 2018/19.

Over half of those reporting a co-morbidity were aged 45-64 years (22/37; 59%). Similarly, the majority of cases in a clinical “at risk” group were also aged 45-64 years (14/29; 48%). Just over a third (5/14; 36%) of those in this group were also vaccinated.

The Case Fatality Rate (CFR) of ICU/HDU cases was 10% (7 deaths/67 cases), compared with 18% (22 deaths/119 cases) in 2017/18. The deaths occurred in patients aged 18 years and older. 86% (6/7) of these patients were eligible for influenza vaccination, with two thirds (4/6) having received the 2018/19 vaccine. It should be noted that deaths in critical care patients who have confirmed influenza are reported, however these deaths may not necessarily be due to influenza.



**Figure 9: Confirmed ICU/HDU influenza cases by week of specimen, with GP consultation rate for combined flu and flu-like-illness, 2017/18 – 2018/19**

## Mortality

The proportion of registered deaths with respiratory keywords (associated with influenza, including; bronchiolitis; bronchitis; influenza; and pneumonia) to all-cause death registrations was 28% (2,821/10,174), compared to 32% in 2017/18. The proportion of weekly registered deaths with respiratory keywords peaked at 36% (123/342) in week 7, 2019, compared to 43% in week 1, 2018 (Figure 10).

Excess all-cause mortality for all ages was calculated for two weeks during the season (weeks 1 and 6, 2019), compared to nine weeks in 2017/18 (Figure 11). Excess all-cause mortality was reported for those aged less than 5 years in week 49, 2018 and weeks 13 and 17, 2019; in those aged 5-14 years in week 48, 2018 and weeks 8 and 14, 2019; in those aged 15-64 years in week 52, 2018; and in those aged 65 years and older in weeks 6 and 11, 2019.

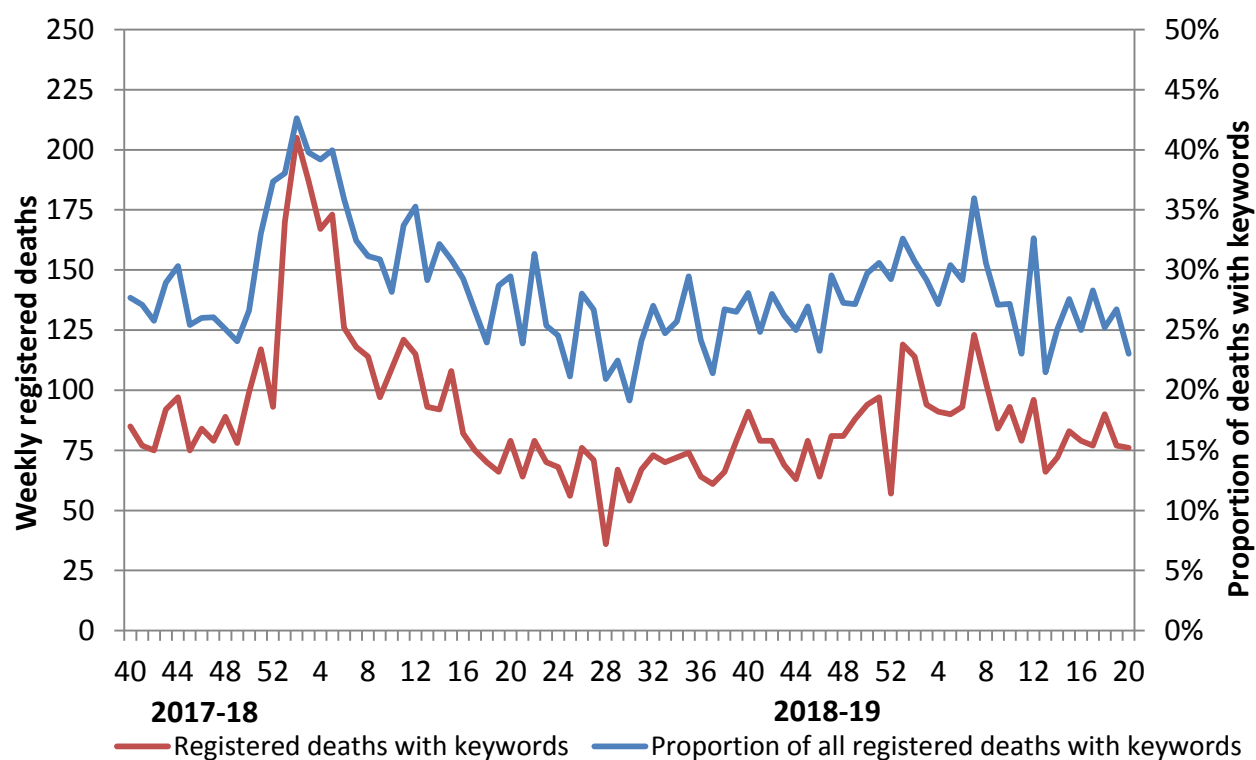


Figure 10: Weekly registered deaths and proportion of all deaths with keywords, by week of registration, week 40, 2017 to week 20, 2019

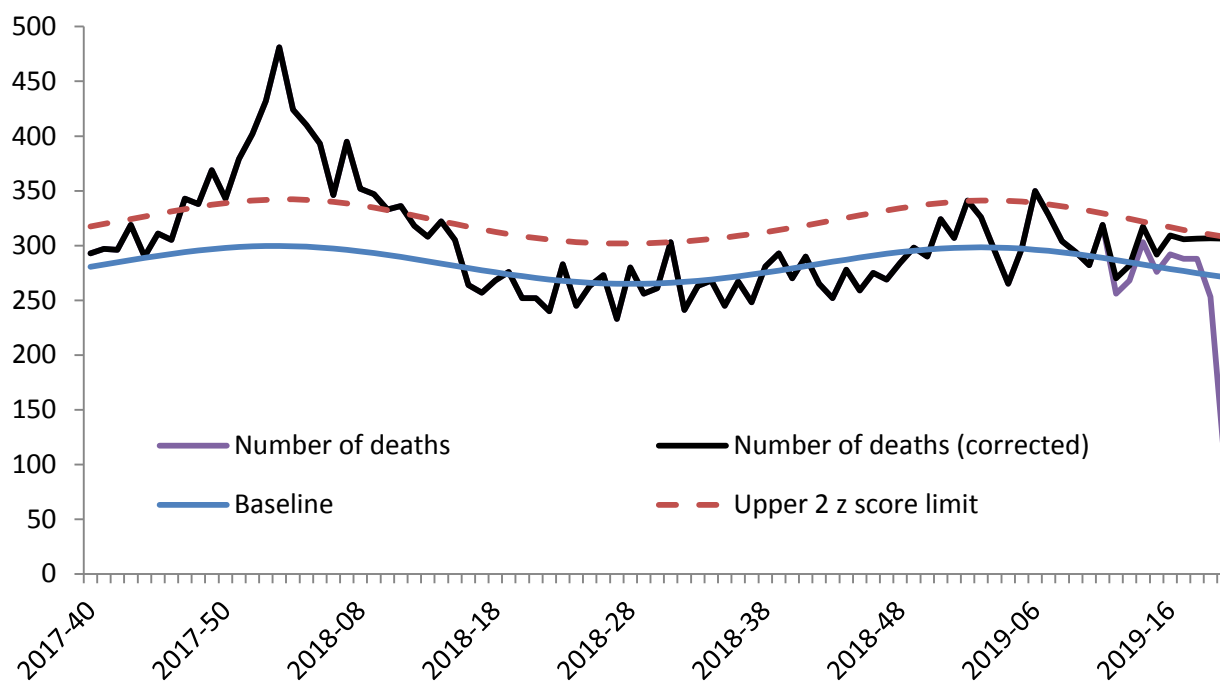


Figure 11: All age excess all-cause mortality by week of death, from week 40, 2017 to week 20, 2019 (calculated using the standardised EuroMOMO algorithm)

# Seasonal influenza vaccine uptake

## Public campaign

The 2018/19 end of season influenza vaccine uptake rates in adults were: 70.0% in those 65 years and older; 52.4% in under 65 years in clinical “at risk” groups and 44.3% in pregnant women. Uptake rates are collected separately for individuals with a BMI greater than 40 kg/m<sup>2</sup> without other co-morbidities; uptake for this group was 26.3%.

The 2018/19 end of season influenza vaccine uptake in children was: 75.9% in primary school children and 47.6% in pre-school children aged two to four years old. Uptake marginally fell in both groups compared with 2017/18, 0.6% and 3.0% respectively (Figure 12).

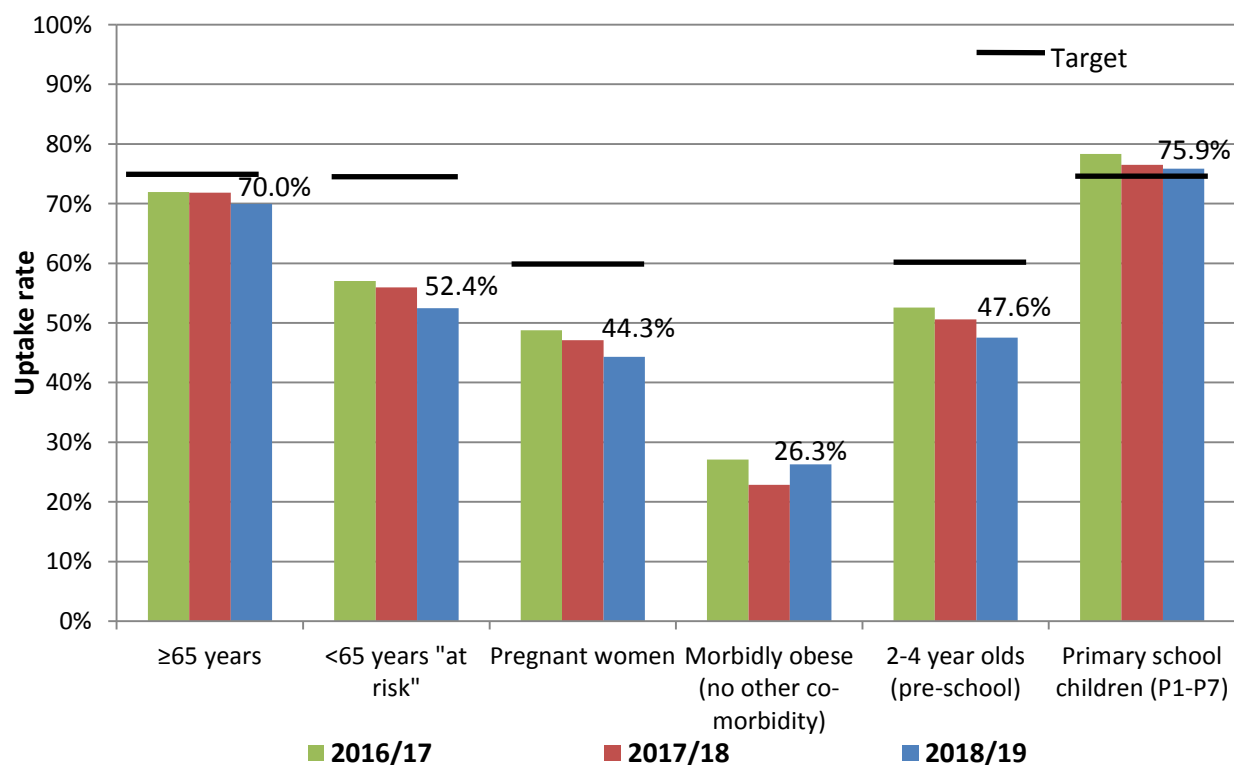
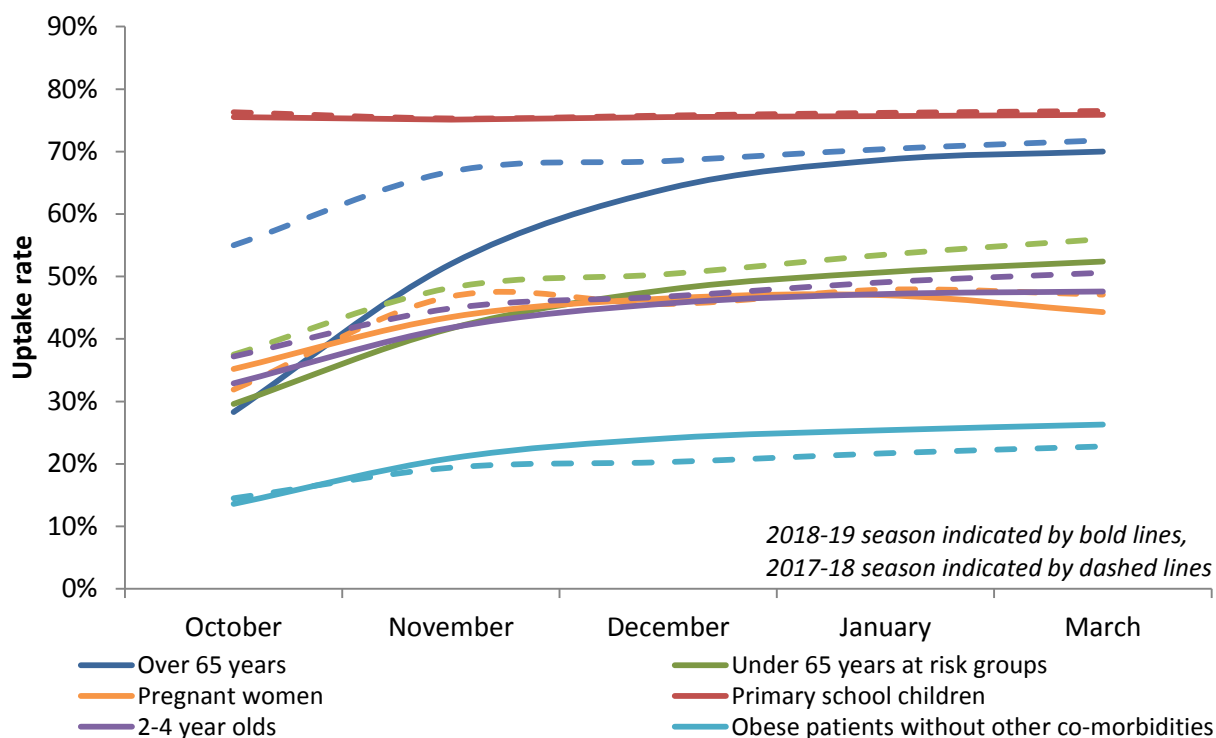


Figure 12: Influenza vaccine uptake rates in population target groups 2016/17 – 2018/19

This year, the new aTIV vaccine offered to individuals 65 years and older arrived in Northern Ireland, and thus GP Practices, in three phased deliveries over time. This meant that GP practices were required to deliver their campaigns differently to previous years and stagger their offer of the vaccine between September 2019 and December 2019/January 2020. Whilst the end of season uptake for those 65 years and older was largely the same compared to the

previous year, the increase was slower over time (Figure 13). It is also possible that this impacted the uptake of those target groups delivered in primary care (two to four year olds, pregnant women, those aged under 65 years in clinical “at risk” groups).

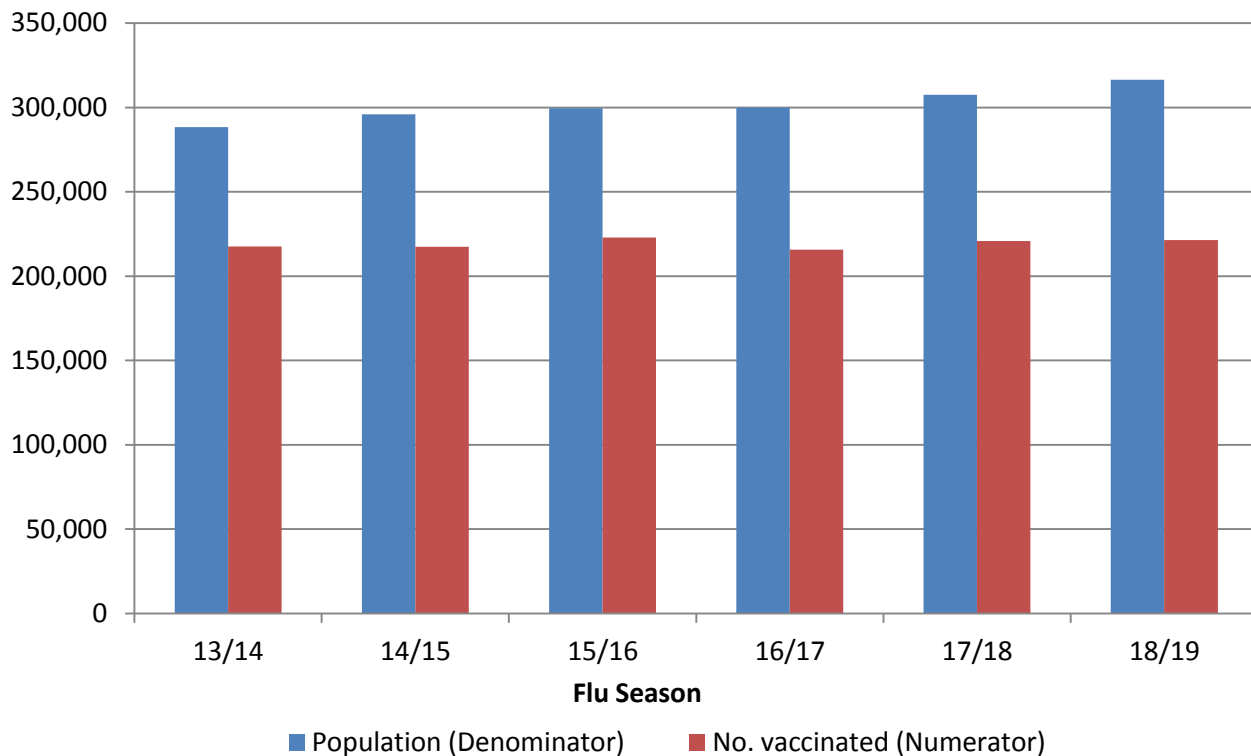


**Figure 13: Cumulative monthly influenza vaccine uptake by population target group, 2017/18 and 2018/19**

Each year since 2013/14 the number of individuals in adult target groups (denominator) has increased, in particular the number aged under 65 years in clinical “at risk” groups, and it is likely that this has contributed to reduced uptake in these groups.

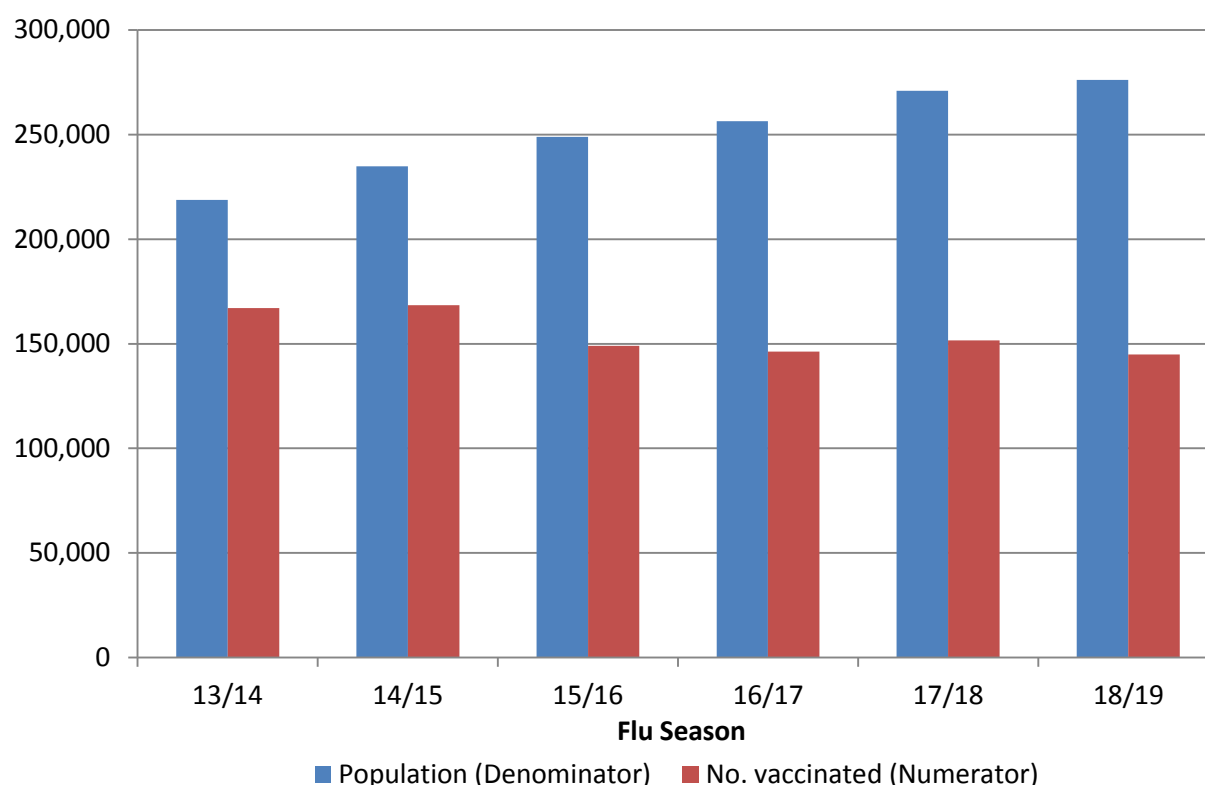
The number of vaccines administered (numerator) in those aged 65 years and older has marginally increased by 2% between 2013/14 and 2018/19, whilst the population size of this target group has increased by 10% during the same period (Figure 14). It is likely this has contributed to the overall fall in uptake in those aged 65 years and older (1.8%) (Figure 12).





**Figure 14: Population of people aged 65 years and older and number vaccinated, 2013/14 to 2018/19**

Whilst the numerator in those under 65 years in clinical “at risk” groups has declined by 13% between 2013/14 and 2018/19, it has not been as marked as the 26% increase in denominator, thus contributing to the bigger decline in vaccine uptake over time (3.6%) (Figures 12 and 15).

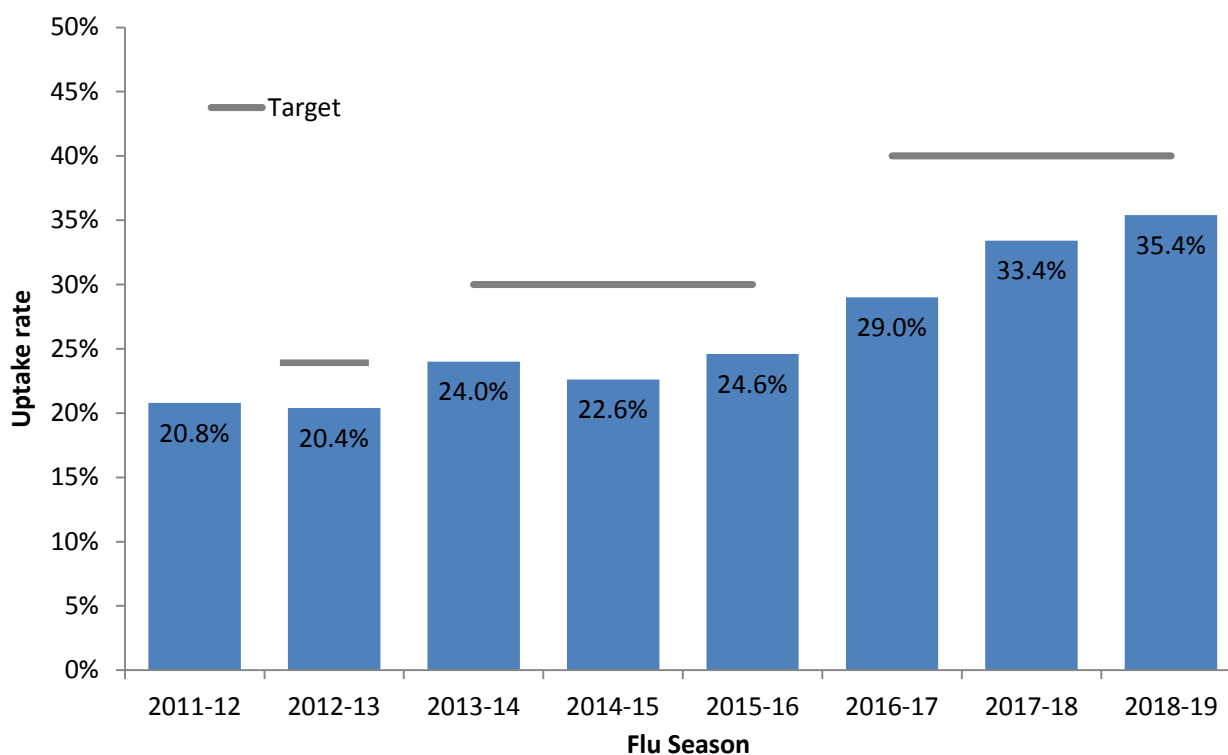


**Figure 15: Population of people aged under 65 years in clinical “at risk” groups and number vaccinated, 2013/14 to 2018/19**

It has always been difficult to obtain accurate denominator data on the number of pregnant women eligible for the flu vaccine during a season. For this reason, uptake is estimated. This year the flu surveillance team analysed data from the Northern Ireland Maternity Administrative System (NIMATS) which provides vaccine uptake rates based on the number of mothers giving birth in hospitals or at home in Northern Ireland. The estimation of the pregnant population used to calculate vaccine uptake rates was comparative to the number of mothers giving birth (data not shown).

### **HSCT frontline HSCW programme**

The 2018/19 end of season influenza vaccine uptake was 35.4% in frontline HSCWs, which was a 2.0% increase compared with the uptake rate in 2017/18 (Figure 16).



**Figure 16: Influenza vaccine uptake in frontline health and social care workers 2011/12 to 2018/19**

Data collection guidance for Trusts was revised this season, standardising definitions across the Trusts and enabling vaccine uptake within staff groups to be reported. Vaccine uptake was highest in pharmacists (57.2%), whilst low uptake was observed in social care workers (19.5%) (Figure 17). Uptake in frontline HCWs (excluding social care workers), 39.5%, was also reported this year to allow greater comparability with other devolved administrations as unlike the rest of the UK, Northern Ireland collects and includes information on social care workers (SCWs) in frontline HSCW uptake rates.

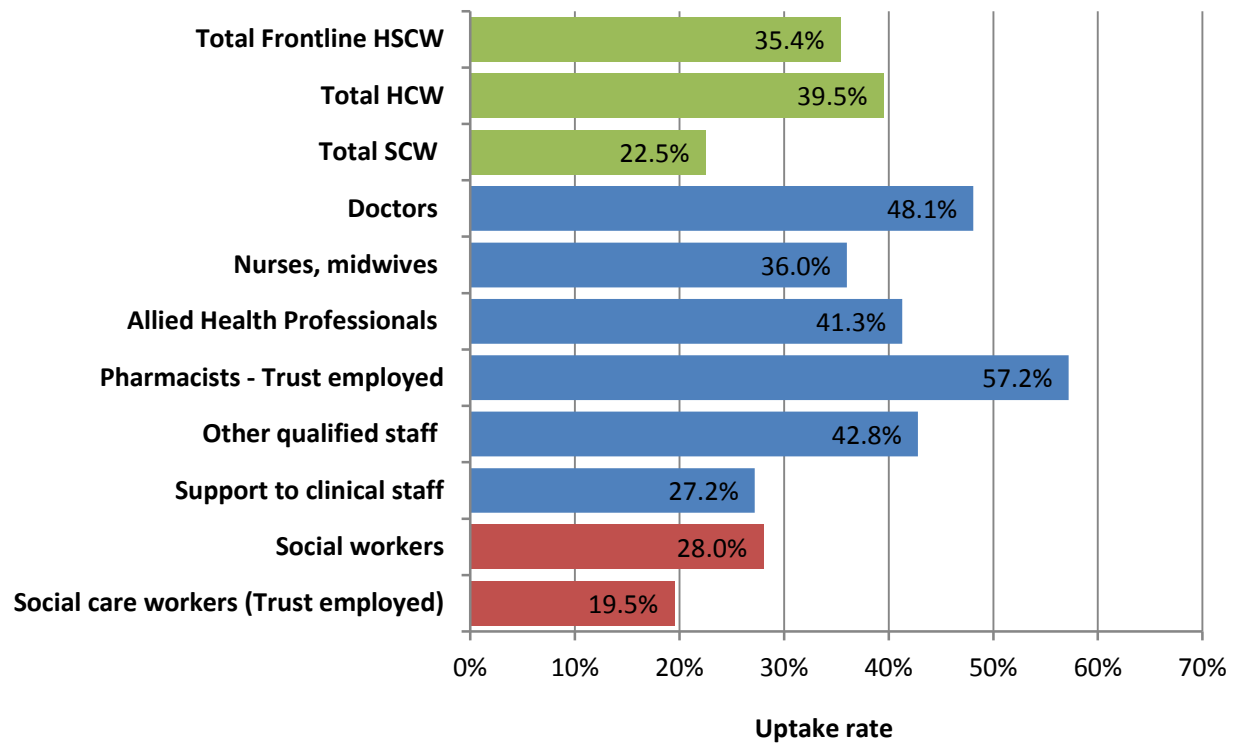


Figure 17: Influenza vaccine uptake rates in frontline health and social care worker staff groups 2018/19

## Conclusion

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The 2018/19 influenza season was characterised by lower levels of activity in the community and hospitals compared with 2017/18. Influenza A(H1N1)pdm09 was the predominant strain throughout the season. Influenza A(H3) was the predominant strain later in the season from week 12, although numbers were small. There was very little circulation of Influenza B (less than 10 positive samples).

GP 'flu/FLI' consultation rates remained below the baseline MEM threshold<sup>4</sup> for the entire season with the exception of week 2, 2019, during which the baseline MEM threshold was exceeded for one week only. The health impact was predominantly seen in adults aged 15-64 years. The median age of the 67 laboratory confirmed influenza cases in ICU/HDU was 53 years (range <1 year to 78 years).

This season influenza vaccine uptake was marginally lower in all targeted population groups compared to 2017/18, with the exception of those with BMI greater than 40 kg/m<sup>2</sup> and frontline HSCWs, uptake increased in both groups. The importance of ensuring high uptake in targeted groups of the national influenza vaccination programme remains.

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<sup>4</sup> Equal to or greater than 17.1 per 100,000

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