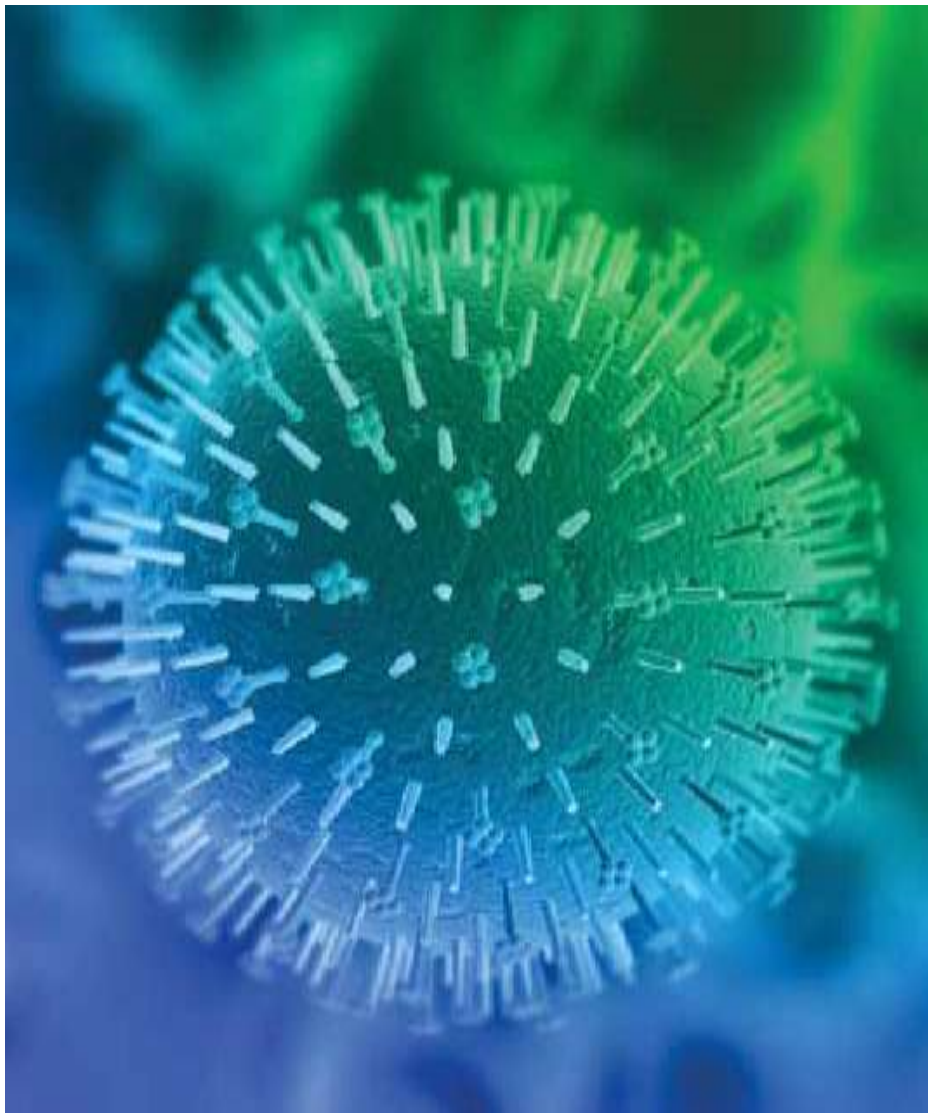


Surveillance of influenza in Northern Ireland

2012 – 2013



Contents

- Summary 1
- Introduction..... 2
- Sources of data 2
 - Sentinel GP surveillance..... 2
 - Out-of-Hours Centres 2
 - Virological surveillance 2
 - Mortality data 3
 - Mandatory ICU surveillance scheme 4
 - Vaccine uptake monitoring 4
- Enhanced influenza surveillance system 5
 - GP Clinical ‘flu/FLI surveillance 5
 - Out-of-Hours Centres 7
 - Virus activity in Northern Ireland 9
 - Respiratory Syncytial Virus 11
 - Antiviral resistance..... 12
 - Mandatory ICU surveillance scheme 13
 - Outbreaks 15
 - Mortality monitoring 16
 - Vaccine uptake 18
- National and International situation 19
- Conclusion..... 20
- Acknowledgements 21
- References 22

Summary

The 2012/13 influenza season started earlier than in 2011/12; however it lasted longer, with GP consultation rates being elevated for approximately four months. Clinical indices began to increase in late December and peaked in early January, with the only two instances of community syndromic indicators exceeding the baseline threshold occurring in this month. GP influenza-like illness consultation rates in 2012/13 were higher than those in the 2011/12 season for the majority of the season but remained low overall.

Overall no one age-group appeared predominantly affected; however, older adults predominated during the peak period, with rates increasing in children during February. Rates for those aged 65 and over increased late in the season, and this was associated with influenza outbreaks in care homes for the elderly.

Similar to 2011/12, influenza A(H3) was the predominant strain of the virus circulating, however, there was a substantial proportion of influenza B strain and a small number of influenza A(H1N1)pdm09. Unlike the previous season, influenza B was the predominant type early in the season with influenza A(H3) not being detected in significant numbers until late February.

In line with the increased virological activity this year the number of patients with confirmed influenza admitted to intensive care units also increased. The mean age of these patients decreased compared with the previous season, with a number of infants and children being admitted unlike in 2011/12 when there were only adult admissions. The number of fatalities in intensive care patients confirmed with influenza also increased from one to seven, all of whom had one or more co-morbidities.

The proportion of over 65 year olds who received the 2012/13 seasonal influenza vaccine was 75.0%, and 80.2% in those in a clinical risk group aged under 65 years. Both of these vaccination uptake figures were a slight decrease on the previous year. Influenza vaccine uptake in frontline healthcare workers remained relatively stable this season at 20.4% and the proportion of pregnant women vaccinated during the season increased slightly to 64.6%.

Introduction

This report describes influenza activity in Northern Ireland in the 2012/13 winter season period. In Northern Ireland, the activity of influenza and other respiratory viruses is monitored by the Public Health Agency (PHA). Data are collated from a number of surveillance systems to provide information on types and extent of influenza strains circulating in the region. Outputs from the surveillance activities are used to produce timely reports to inform health professionals, the media and the public, on influenza activity trends and uptake of the seasonal influenza vaccine. Surveillance is carried out all year; however, the focus in this report is primarily on the winter season, covering the period from week 40 2012 (w/c 01/10/2012) to week 20 2013 (ending 13/05/2013).

Sources of data

Sentinel GP surveillance

In 2012/13, data from 37 sentinel GP practices across Northern Ireland were reported weekly by age group on combined clinical consultations for influenza and influenza-like illness ('flu/FLI) and clinical consultations for acute respiratory infections (ARI). These practices account for 11.6% of the population. Twenty-nine of the 37 practices agreed to participate in enhanced virological surveillance during the winter period, taking nasal and throat swabs of a sample of patients presenting with clinical influenza.

To aid interpretation of GP consultation rates and enable comparison with previous years, a provisional threshold 'flu/FLI rate of 70/100,000 population has been established to distinguish baseline from seasonal influenza activity.

Out-of-Hours Centres

Automated data extractions on clinical consultations for 'flu/FLI and ARI by age groups were collected weekly from all Out-of Hours (OOH) centres across the region, covering the entire population of Northern Ireland. This data supplements the GP in-hours surveillance programme.

Virological surveillance

Respiratory samples accompanied with demographic and epidemiological information are sent from primary care sentinel practices and from non-sentinel sources, which include hospitals and non-sentinel GP practices, to the Regional Virology Laboratory (RVL) for testing. Specimens are tested by PCR for influenza and other respiratory virus infections. In 2012/13 sentinel samples were tested for influenza A and its main subtypes (including AH1 and AH3),

influenza B, respiratory syncytial virus (RSV), *mycoplasma pneumoniae* and *bordetella pertussis*. Non-sentinel samples are routinely tested for the above, and depending on laboratory workload may or may not also be tested for *chlamydia pneumoniae*, metapneumovirus, parainfluenza, *pneumocystis jirovecii*, respiratory adenovirus and rhinovirus unless specifically requested. However, due to the variation in testing methods for other respiratory viruses, only RSV is reported in this report. The RVL also sends a subsample of influenza specimens to Public Health England Respiratory Virus Unit (PHE-RVU) annually during the winter influenza season for antiviral resistance monitoring and further strain identification.

Mortality data

The Northern Ireland Statistics and Research Agency (NISRA) provides weekly mortality data to the PHA on the total number of registered deaths, including both all-cause mortality and mortality due to selected respiratory infections (some of which may be attributable to influenza and other respiratory infections, or complications thereof). Due to delays in death registrations, the number of registered deaths over a time period does not necessarily equal the number of deaths occurring in that period. Searches of the medical certificates of the cause of death are performed using a number of keywords that could be associated with influenza, including; bronchiolitis; bronchitis; influenza; and pneumonia. Death registrations containing these keywords are presented as a proportion of all registered deaths.

Excess mortality estimations are also provided by Public Health England using the EuroMOMO (Mortality Monitoring in Europe) model based on raw death data supplied by NISRA. EuroMOMO is a project coordinated by the Statens Serum Institut in Denmark, providing European countries with a common approach to analyse their mortality data and compare them to other countries. The algorithm provides expected and observed weekly number of deaths corrected for reporting delay and standardised for the total population by age group and region.

The overall objective is to develop a routine public health mortality monitoring system aimed at detecting and measuring, on a real time basis, the excess number of deaths related to influenza and other potential acute public health threats across European countries.

At Public Health England (PHE), deaths registered in England, Wales and Northern Ireland have been aggregated by week of death to give the observed total deaths by week of occurrence. These observed totals have been corrected to allow for delays from death to registration to give a corrected total, which is then compared to the expected number of deaths and an upper prediction limit (using 2 z-scores, equivalent to a 97.7% prediction limit). The expected number of deaths is based on a cyclical regression model where only deaths during spring and autumn are included (to discount high mortality periods from the expected baseline).

Mandatory ICU surveillance scheme

Since 2011/12 Northern Ireland has participated in the national mandatory ICU surveillance scheme, reporting the aggregate number of patients who are admitted to ICU/HDU with confirmed influenza and any deaths occurring in this group, from the five Health and Social Care Trusts (HSCT). The Critical Care Network for Northern Ireland (CCANI) reports this data weekly to the PHA.

Vaccine uptake monitoring

The Joint Committee on Vaccination and Immunisation (JCVI) recommended that all those aged 65 years and over, and those aged between 6 months and 65 years who fall into a clinical at-risk group, be offered the seasonal 2012/13 trivalent influenza vaccine. In 2012/13 pregnant women were also included in the recommendation for seasonal vaccination, being vaccinated this season by their GPs. Healthcare workers were also recommended for vaccination.

For winter 2012/13 the Department of Health, Social Services and Public Safety (DHSSPS) set the regional target of influenza immunisation uptake for the under 65 “at risk” group at 70%, remaining unchanged from the target in the 2011/12 season, with the uptake target for those aged 65 and over also remaining unchanged at 75%.

The Public Health Agency, in liaison with influenza immunisation co-ordinators in primary care, the Health and Social Care Board and Trusts in Northern Ireland, collates influenza vaccination statistics at intervals over the winter period.

Enhanced influenza surveillance system

GP Clinical 'flu/FLI surveillance

GP consultation rates were higher than those seen in 2011/12 which was a season characterised by unusually low influenza activity; however rates in 12/13 remained low overall in a pattern similar to that seen in the rest of the UK. The GP sentinel consultation rate for 'flu/FLI only exceeded the provisional baseline threshold level of 70 consultations per 100,000 for a period of two weeks during the 2012/13 flu season (weeks 1 and 2). Consultation rates for 'flu/FLI did not begin to increase until week 51 (ending 23/12/2013), earlier than the previous season but still slightly later than usual. Similar to the 2011/12 season, the period when influenza consultation rates were raised was longer than would normally be expected, at approximately 16 weeks. Rates peaked at 87.0 per 100,000 population in week 1 (ending 06/01/2013) after which rates decreased slowly, with intermittent small rises. This is compared to a peak of 36.3 per 100,000 in week 1 2011/12, and 263.5 per 100,000 in week 1 2010/11. From week 51 (ending 23/12/2012) to week 18 (ending 05/03/2013) rates were higher than the same weeks in 2011/12 (Figure 1 and 2).

Figure 1. Sentinel GP consultation rate per 100,000 population for combined flu and flu-like illness 2007/08-2012/13 with positive detections of influenza

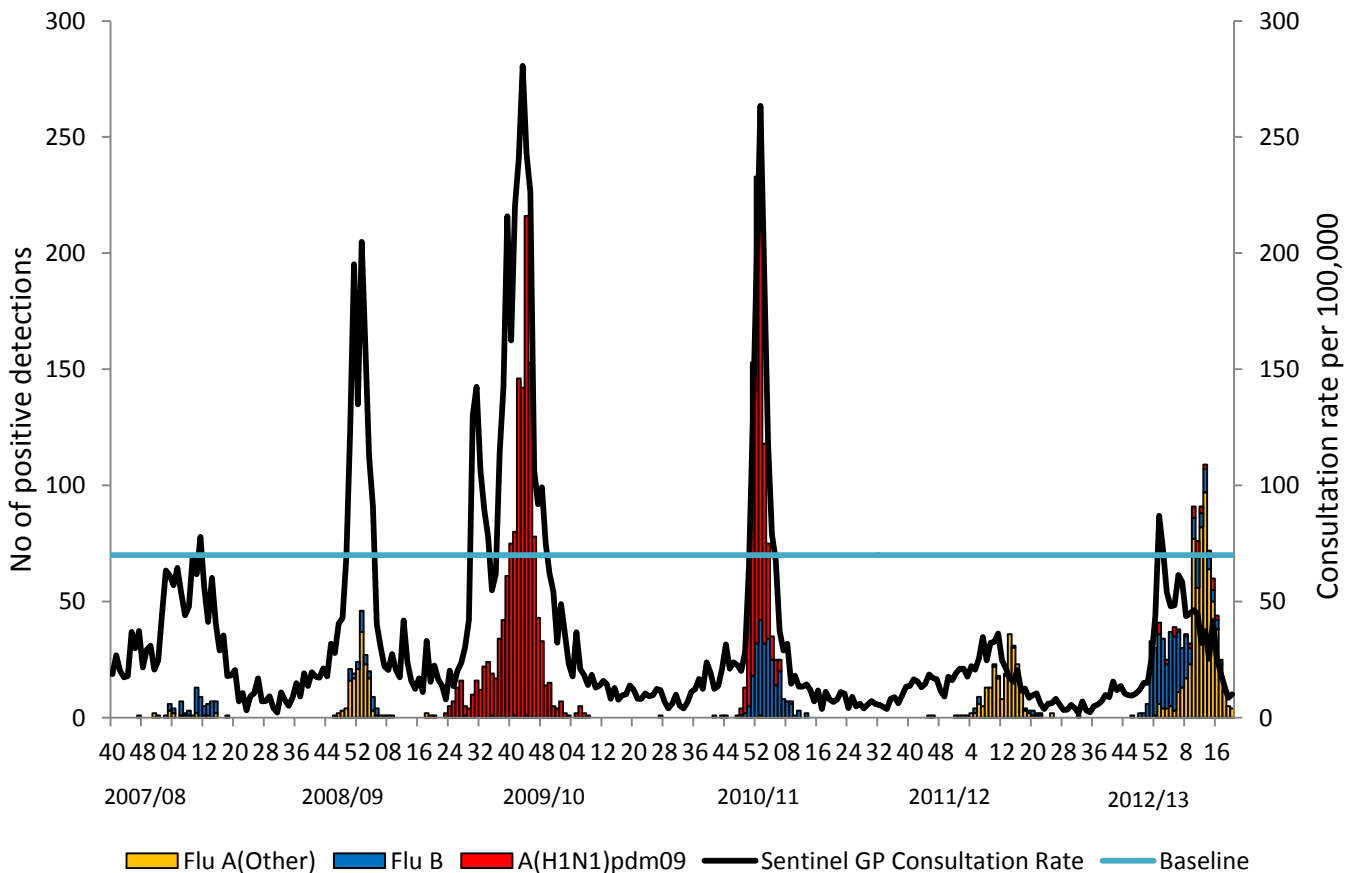
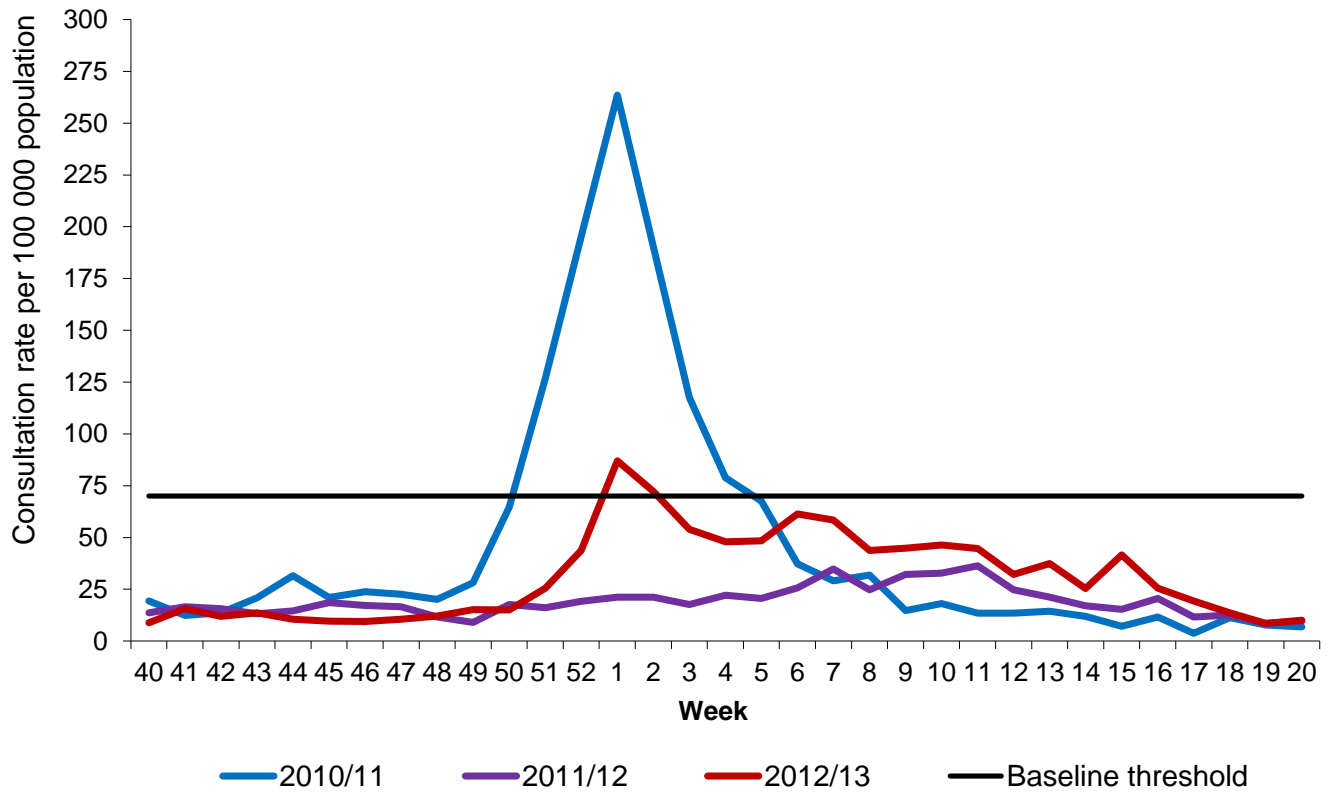


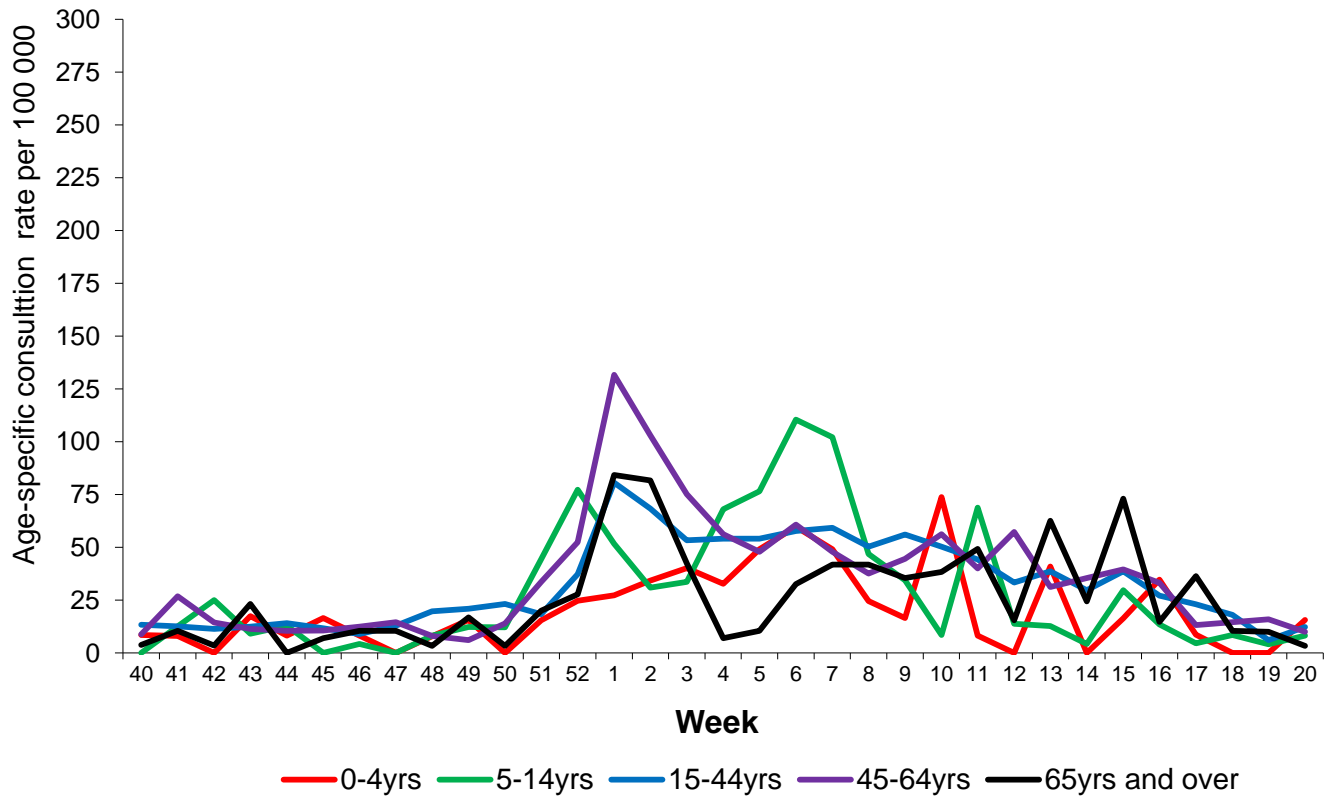
Figure 2. Sentinel GP consultation rate per 100,000 population for combined flu and flu-like illness 2010/11-2012/13



In contrast to the 2011/12 season, the highest age specific rates were observed in the older age groups, with the highest rate being in the 45-64 year age group at 132 per 100,000 population in week 1 (ending 06/01/2013), and the lowest age-specific peak rate in the 0-4 year olds at 74/ 100,000 in week 10 (ending 10/03/2013). Both the 0-4 year group and the 5-14 year age group peaked later than the other age groups, with the latter peaking at 111 per 100,000 population in week 6 (ending 10/02/2013). The over 65 year age group peaked in week 1 at 84/100,000 but increased again later in the season (Figure 3).

The highest rates in 2012/13 in England were in the 1-4 year olds; however, Scotland and Wales were similar to NI with the highest rates found in the 45-64 year olds.

Figure 3. Sentinel GP age-specific consultation rates per 100,000 population for combined flu and flu-like illness from weeks 40 - 20, 2012/13



Out-of-Hours Centres

Out-of-Hours centres 'flu/FLI call rates increased compared to the 2011/12 season but remained low overall. Call rates for 'flu/FLI peaked in week 52 at 34.8 per 100,000 population, coinciding with the holiday period when the GP in-hours surgeries were closed. Total call rates throughout the season also peaked during the holiday periods of Christmas / New Year, St. Patrick's day and Easter, when GP practices are closed. Outside periods when surgeries were closed, the highest peak of 'flu/FLI calls was 14/100,000 in week 5 (ending 03/02/2013). The highest age-specific rate (excluding holiday periods) was in the 5-14 year age-group at 29/100,000, also in week 5. The overall proportion of total calls for 'flu/FLI also increased compared to the previous season but remained low with proportions peaking at only 3.4% in week 1 (ending 06/01/2013) (Figures 4 and 5).

Figure 4. OOH consultation rate per 100,000 population for combined flu and flu-like illness 2010/11-2012/13

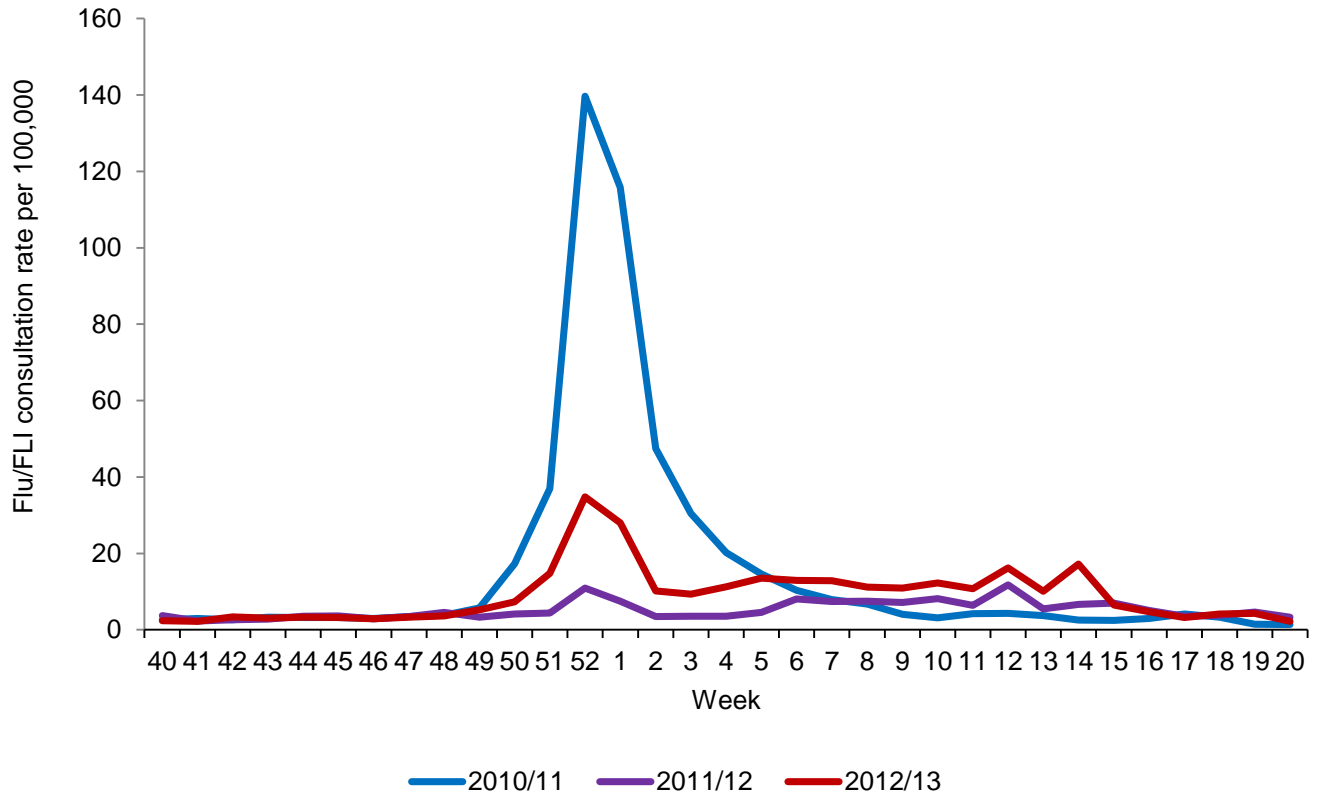
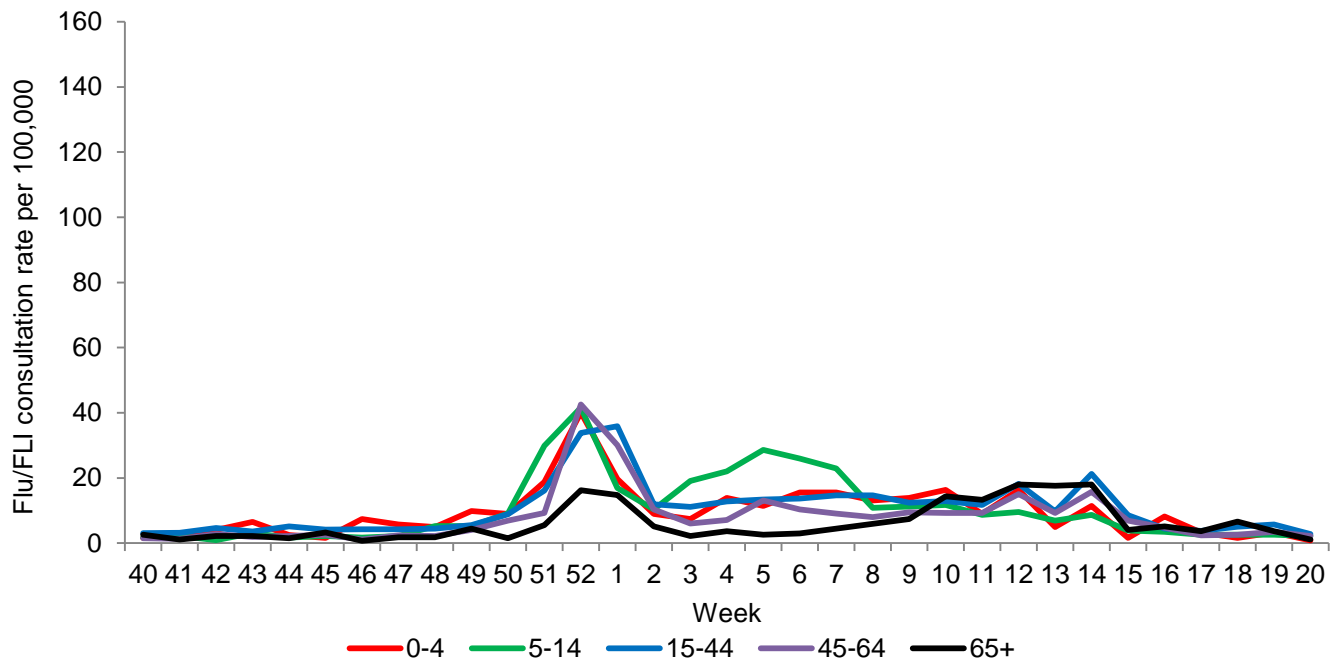


Figure 5. OOH call rates of flu and flu-like illness by age-group from weeks 40- 20 2012/13



Virus activity in Northern Ireland

The dominant circulating virus overall was influenza A (H3), making up 59% (n=578) of all positive influenza specimens. Influenza B made up the next highest proportion with 35% (n=340), followed by influenza A(H1N1)2009 at 4% (n=42) and influenza A subtype not reported at 2% (n=18). Despite influenza A dominating over the season, influenza B was the main circulating flu virus during the early part of the season until approximately week 8, with influenza A being predominant thereafter.

The proportion of samples positive (all sources) for influenza began increasing from week 51, peaking at 46% overall (110/237 tests) in week 14 (Figure 6). Influenza B positivity rate peaked at 23% in week 5 with the peak for influenza A being 42% in week 14 (Figure 7).

Over the whole winter season (week 40 2012 to week 20 2013) an estimated 254 samples were tested from samples taken by GPs in the sentinel scheme, of which 113 (44%) tested positive for influenza. In contrast with the breakdown for samples overall, the predominant influenza type submitted by sentinel practices was influenza B with 62% (n=70) positive, followed by 35% (n=39) positive for influenza A (H3) and 4% positive for influenza A(H1N1) (n=4).

An estimated 4,605 samples were tested in Northern Ireland from non-sentinel sources during the same period, of which 865 (19%) tested positive for influenza. This compares with a positivity level of 7% (217/3,318 samples) from non-sentinel sources last year. Of these 865 samples 62% (n=539) were positive for influenza A (H3), 31% (n=270) were positive for influenza B, 4% (n=38) influenza A(H1N1)pdm2009, and the remaining 18 samples positive for Influenza A, subtype not reported.

The first flu detection of the season was influenza B in week 45 (ending 11/11/2012), with the first influenza A (H3) detection in week 1 (ending 06/01/2013). The median ages for influenza A(H3) and influenza B were 73 and 31 years respectively, substantially higher than the figures for 2011/12 (52 for influenza A(H3), 17 for influenza B). Influenza outbreaks in elderly care homes late in the season will have contributed to an increase in the number of positive detections in the over 65 year age group.

Table 1. Proportion of influenza positives by age group, all sources

	0-4 yrs	5-14 yrs	15-44 yrs	45-64 yrs	Over 65 yrs
Influenza A(H3)	7%	1%	14%	16%	62%
Influenza B	19%	24%	23%	18%	16%

Figure 6. The number of samples tested (all sources) for influenza in Northern Ireland from weeks 40-20, 2011/12 & 2012/13 with the proportion positive.

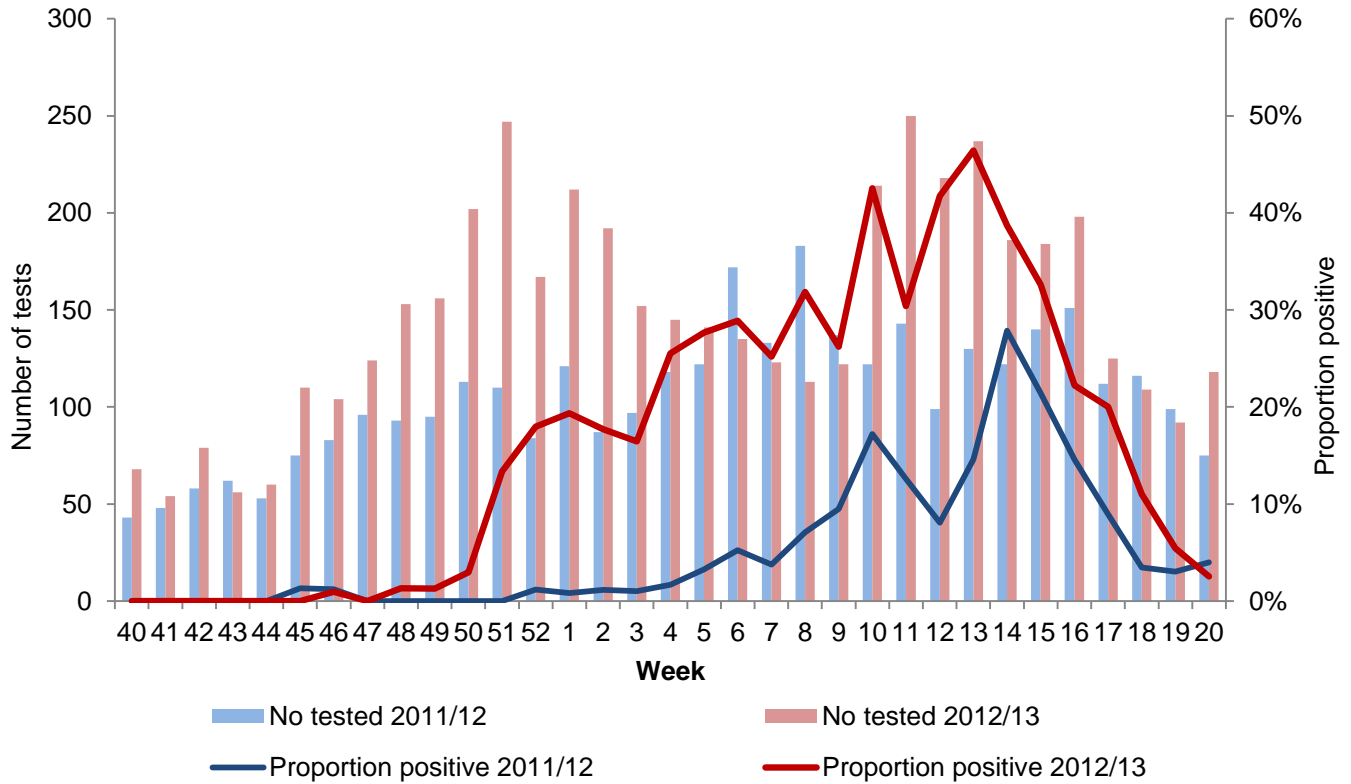
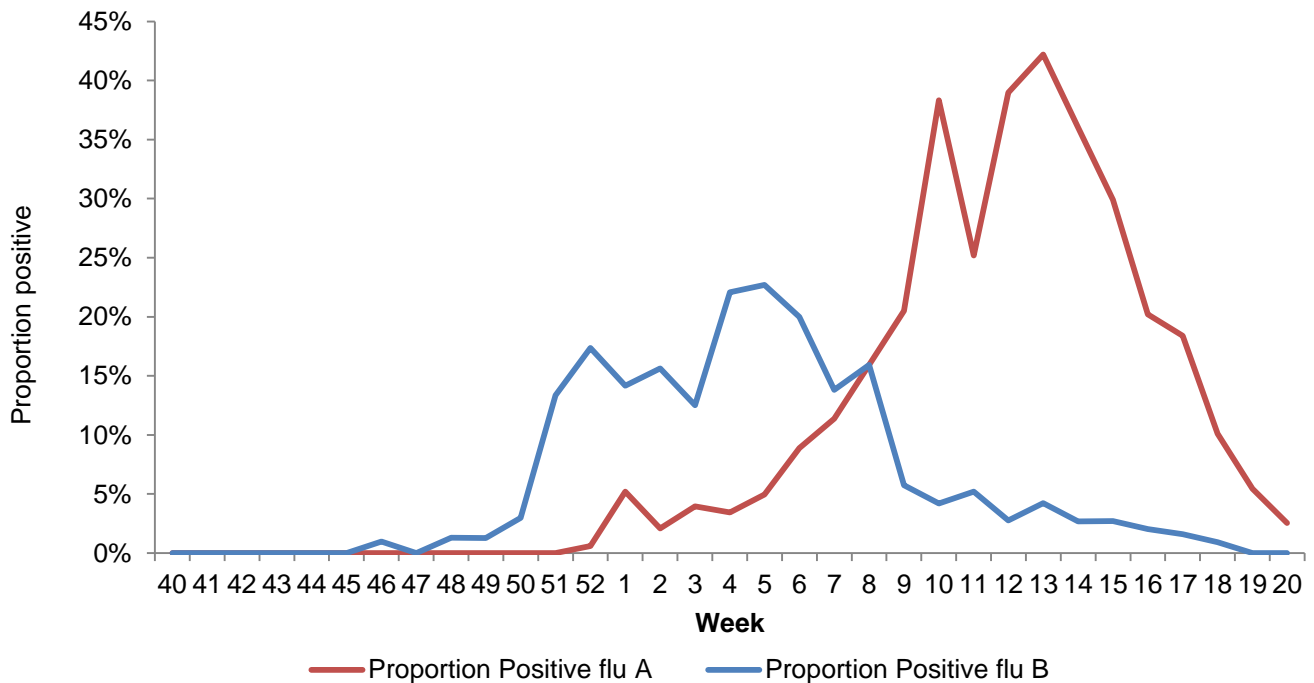


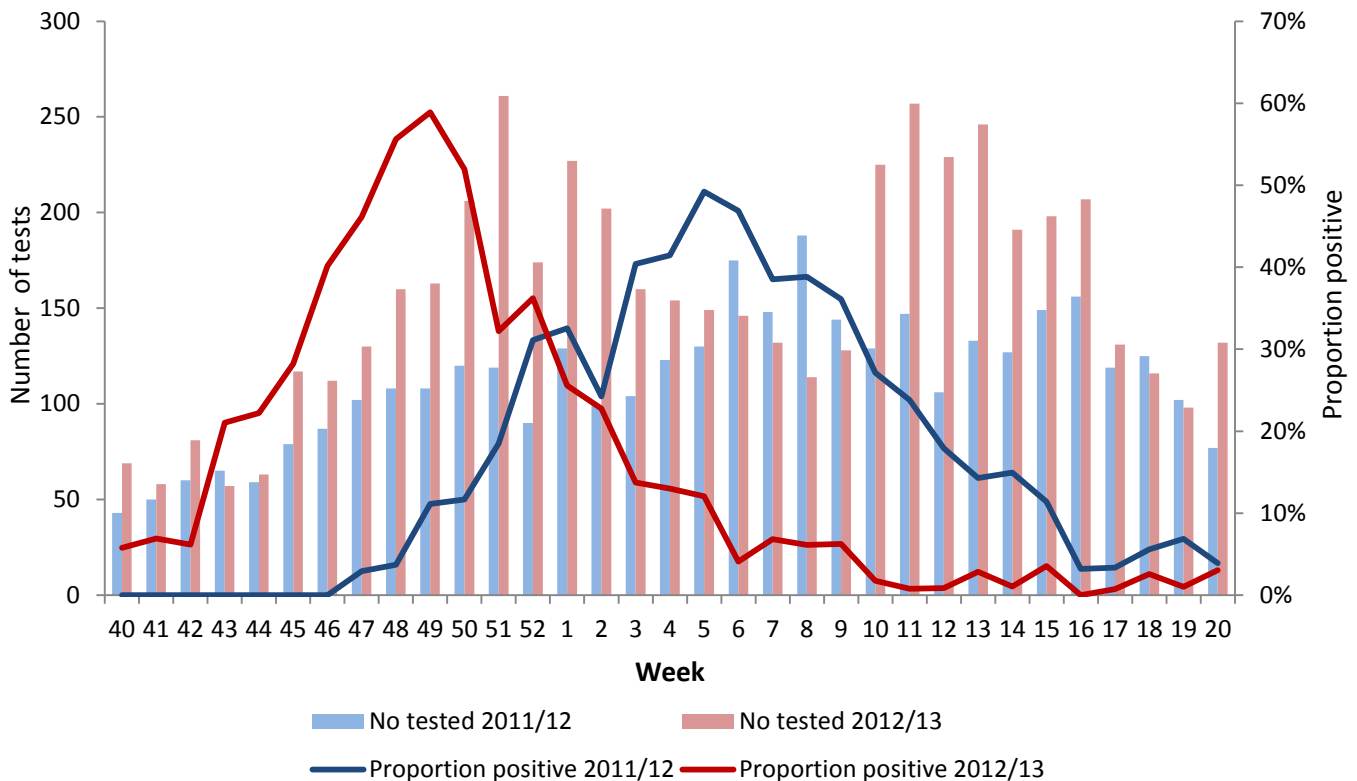
Figure 7. Proportion of samples positive (all sources) for influenza by influenza type from weeks 40-20, 2012/13.



Respiratory Syncytial Virus

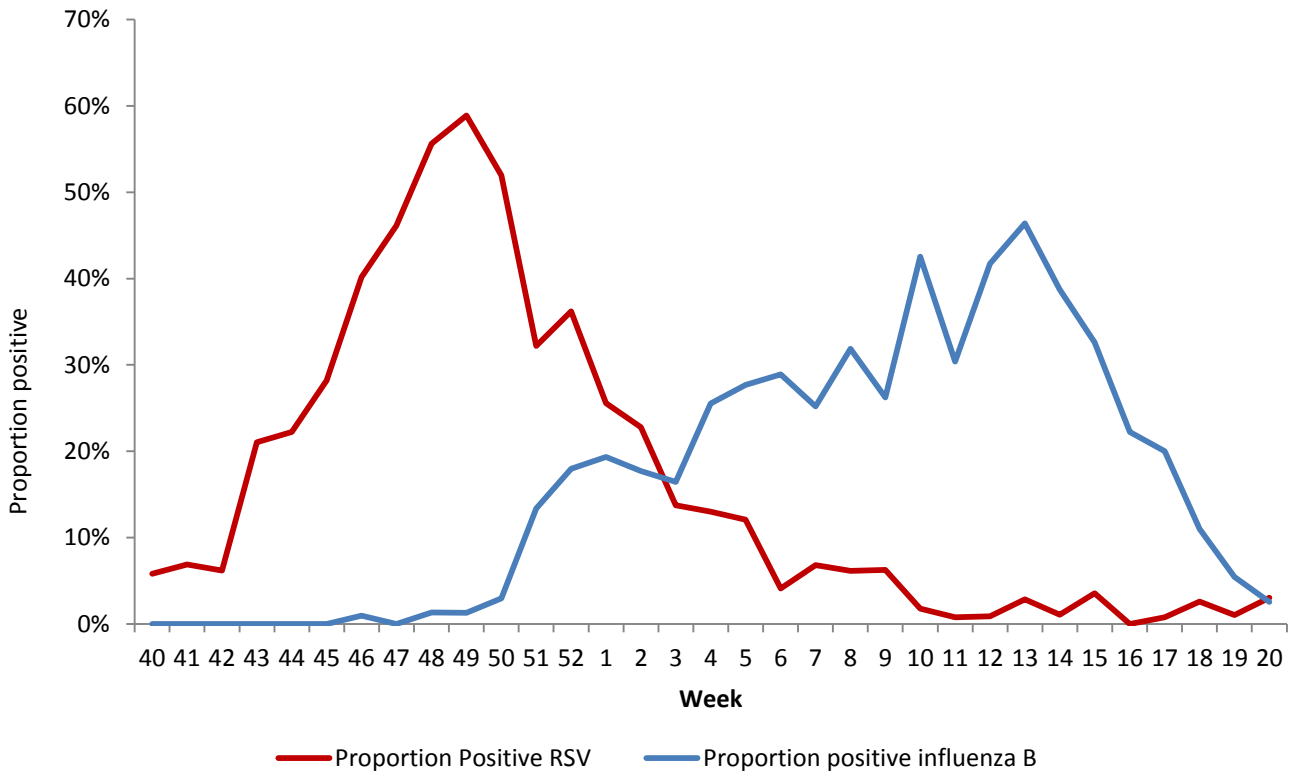
There were a total of 843 RSV detections reported from week 40 to week 20 2012/13, giving an overall positivity of 17% (843/5093). The principal activity period for RSV was from week 43 (ending 28/10/2013) to week 5 (ending 03/02/2013), with the number of detections peaking in week 49 (ending 09/12/2013), approximately 8 weeks earlier than the previous season (Figure 8). The majority (81%) of RSV detections were in the 0-4 year age group; however, this was lower than the proportion seen in this age group in the 2011/12 season (91%).

Figure 8. Number of samples tested for RSV and proportion positive in Northern Ireland 2011/12 and 2012/13



RSV positivity rates peaked much earlier than those for influenza, with approximately 16 weeks between the RSV peak positivity and the initial influenza peak due to influenza B (Figure 9).

Figure 9. RSV and influenza B positivity rates in Northern Ireland 2012/13



Antiviral resistance

A subset of influenza specimens are sent annually from the RVL in Belfast to the HPA Respiratory Virus Unit for molecular characterisation, including antiviral testing for the marker commonly associated with resistance to oseltamivir in influenza viruses. This season no cases from Northern Ireland were found to be resistant to oseltamivir.

Mandatory ICU surveillance scheme

Over the winter season a total of 59 ICU/HDU admissions with confirmed influenza were reported across Northern Ireland, compared to 11 admissions in 2011/12. The number of deaths in ICU admissions confirmed with influenza also increased with a total of seven deaths in the 2012/13 season compared to only one death in the previous season. Of these admissions, 32 (54%) were reported as influenza A (H3) subtype, 24 (41%) as influenza B and 3 (5%) as influenza A(H1N1)pdm09m, with the relative proportions of the flu types similar to that seen in the virology results overall.

The median age of cases admitted to ICU with influenza was 54 years (range 0–87 years). Thirty-nine of the cases were reported to have risk factors for influenza vaccination, with 82% (32/39) receiving the 2012/13 seasonal influenza vaccine and 4 cases were known to have refused vaccination.

Similar to the pattern in the virology results, the majority of admissions in weeks 50-9 were confirmed with influenza B and in weeks 10-20 were confirmed with influenza A(H3) (Figure 10). The older age groups (45-64 and over 65 year olds) predominated and represented 61% (n=36) of the ICU/HDU admissions that were confirmed with influenza; however there were 12 admissions of infants and younger children (Figure 11).

Of the seven deaths, all had co-morbidities and risk factors for influenza vaccination, with four (57%) patients having received the 2012/13 seasonal influenza vaccine.

Figure 10. Number of ICU admissions with confirmed influenza and sentinel consultation rate

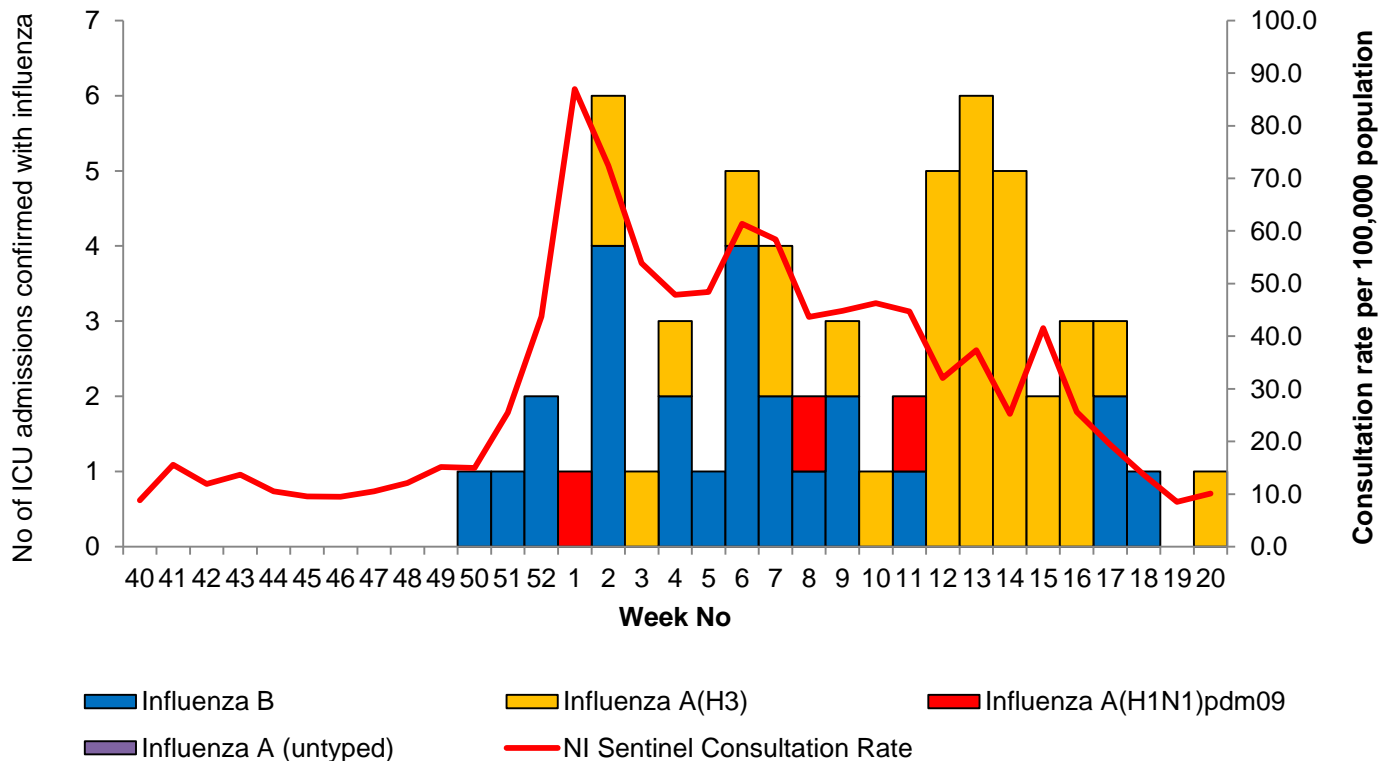
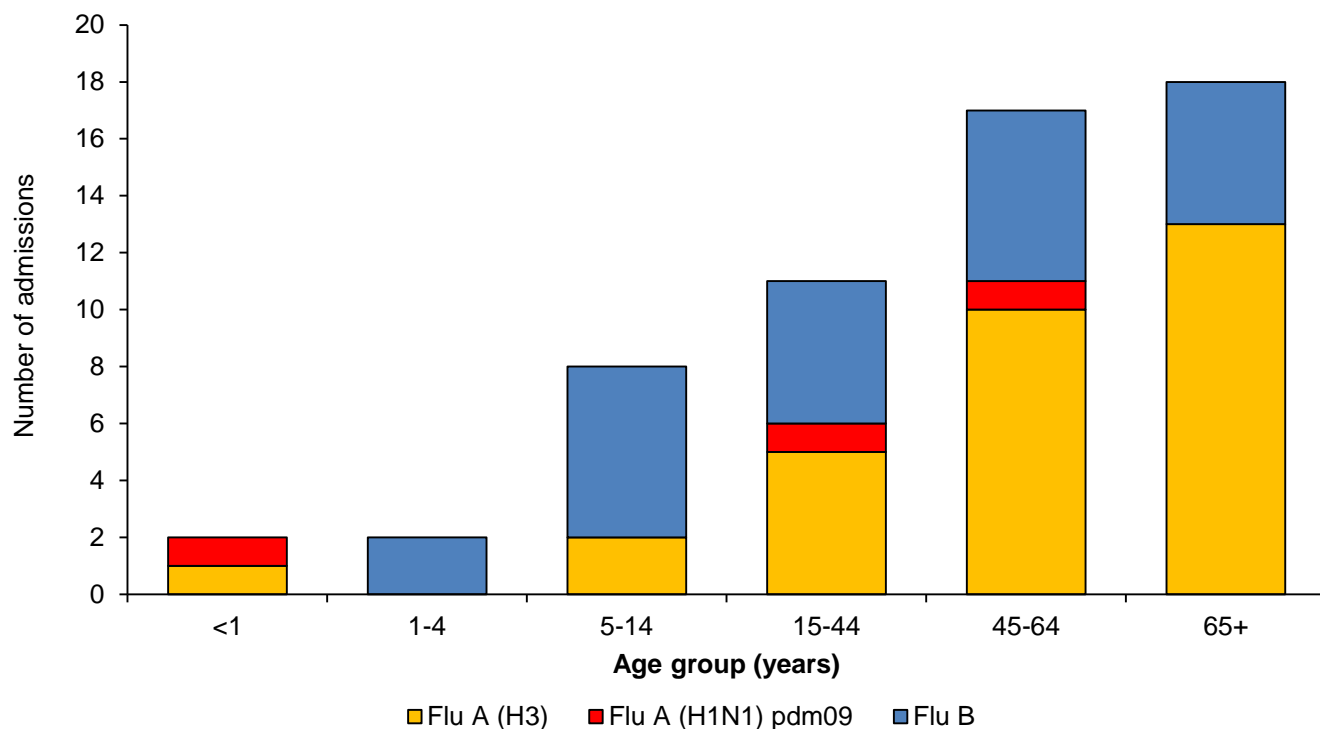


Table 2. ICU admissions with confirmed influenza

Age Group	No of patients	Co-morbidity	Flu vaccine clinical risk group	Vaccinated	Flu A (H3)	Flu A (H1N1) pdm09	Flu B	Deaths*
0-4	4	3	1	1	1	1	2	0
5-14	8	2	1	3	2	0	6	0
15-44	11	5	6	3	5	1	5	0
45-64	17	13	12	10	10	1	6	2
65+	19	18	19	15	14	0	5	5
All	59	41	39	32	32	3	24	7

**deaths in critical care patients confirmed with influenza, however, these deaths may not necessarily be due to influenza. Six of the seven deaths mentioned respiratory factors on the medical certificate of cause of death with three of these mentioning influenza specifically as a cause.*

Figure 11. Number of ICU admissions with confirmed influenza by age group and influenza type



Outbreaks

A total of 42 respiratory related outbreaks were reported to the PHA during the 2012/13 winter season. Thirty five outbreaks were confirmed with influenza - 23 with influenza A(H3), eight with influenza A (subtype not reported), two with influenza B and one with influenza A and B.

Twenty eight of the outbreaks took place in independent sector care homes, 27 of which were elderly care homes and a home for special needs adults. Twenty five of these outbreaks being influenza A, two influenza B and one both influenza A and B. Four outbreaks took place in hospital wards and three in Trust residential homes, all of which were influenza A.

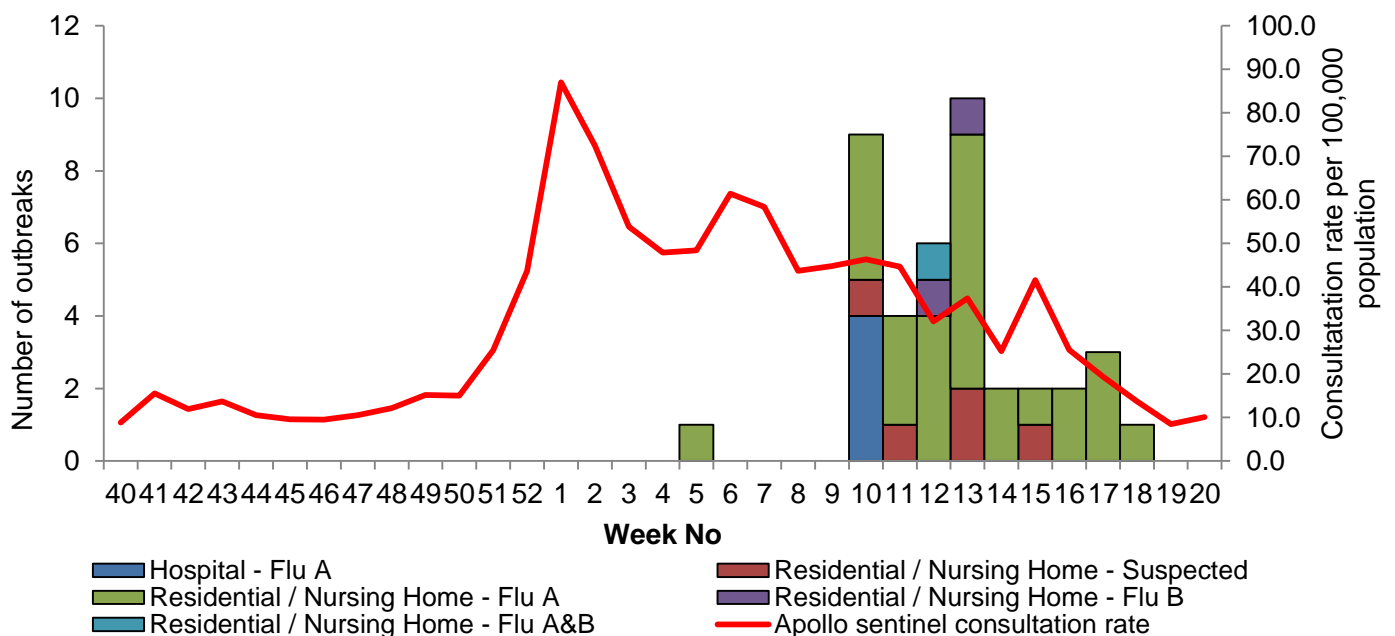
Care home outbreaks

Attack rates amongst residents of independent sector care homes varied between 7% and 76% with a median of 33%. Vaccine coverage among residents in the affected homes was generally high, similar to the 2011/12 season, with a median vaccination rate amongst cases of 85% (range 33% - 100%) in those care home outbreaks where vaccination information was available.

During these outbreaks there were 42 hospitalisations due to respiratory conditions involving residents of 22 of the independent sector care homes. A total of eight fatalities were reported, which occurred in six of the outbreaks, however not all fatalities were attributable to influenza. The majority of these cases had received the seasonal influenza vaccine.

Similar to the previous influenza season the majority of outbreaks took place very late in the season with almost all the reported outbreaks occurring in March and April, substantially later than the time of peak 'flu circulation (Figure 12).

Figure 12. Confirmed and suspected influenza outbreaks by week of reporting, and sentinel 'flu/FLI consultation rate, 2012/13



Mortality monitoring

Similar to the previous season the total weekly registered deaths due to respiratory causes peaked in week 2, but were higher at 130 deaths registered compared to 118 in the 2011/12 season. However, a peak would normally be expected in the period following the holiday period at Christmas and New Year due to delays in death registration. The proportion of registered deaths due to respiratory causes peaked at 40% in week 17 compared to a peak of 35% in week 12 in 2011/12. This peak occurred after the peak sentinel consultation rates occurred (week 1). Overall, the proportion of total registered deaths with respiratory keywords for the 2012/13 flu season was 31%, slightly higher than that in 2011/12 (29%) (Figure 13).

Figure 13. Deaths due to influenza, bronchitis, pneumonia and proportion of all deaths with keywords mentioned by week of registration, from week 40, 2011

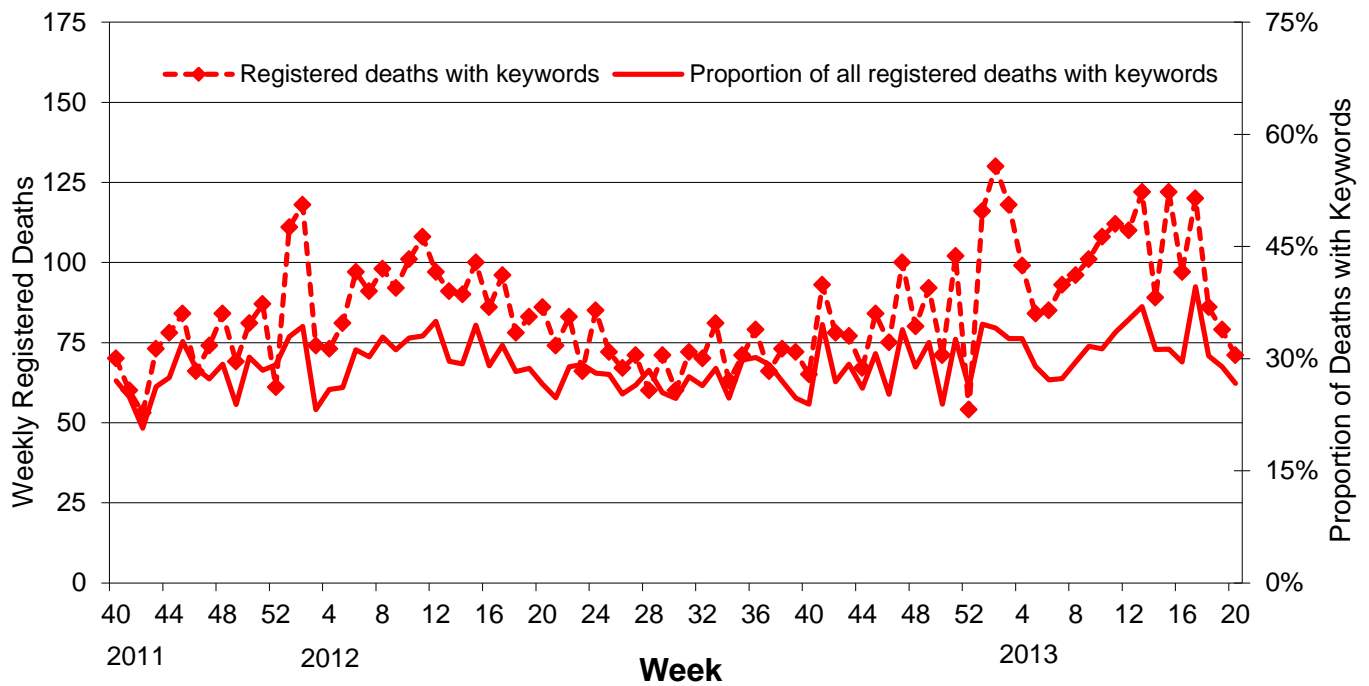
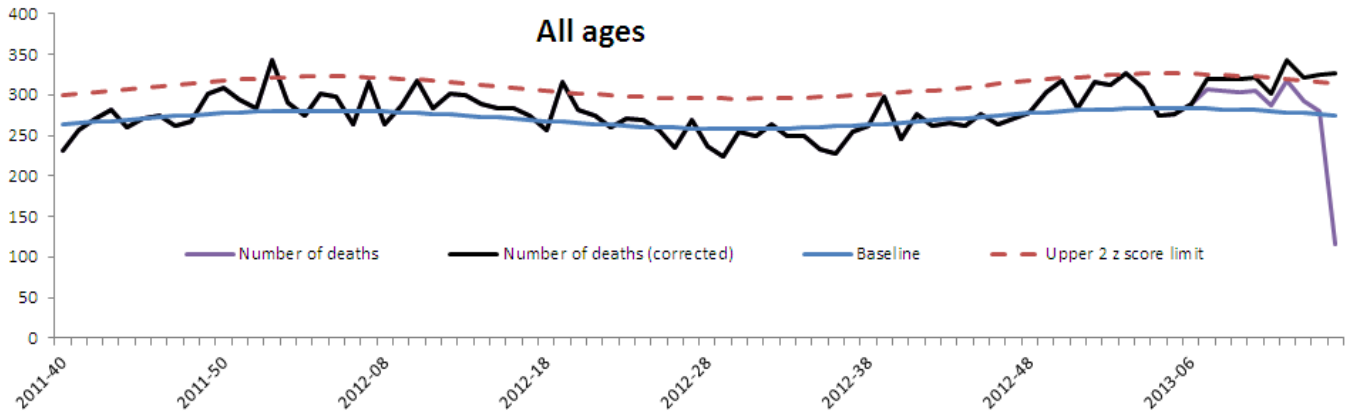


Figure 14 shows the observed and expected total number of deaths with the 2 z-score upper prediction limit.

Figure 14. All age excess all-cause mortality by week of death, Northern Ireland 2009-2013 (calculated using the standardised EuroMOMO algorithm)



During the 2012/13 season there were three periods when excess mortality was seen in Northern Ireland – in weeks 1-3, 8-9 and 12-15. This compares to only one week of excess mortality in the 2011/12 season. There was a total of 313 excess all-cause deaths this season, and a crude excess all-cause mortality rate of 17.3 (rate per 100,000 population estimated using extrapolated ONS mid-year population values).

Vaccine uptake

As at the end of March 2013, the proportion of people in Northern Ireland aged 65 years and over who had received the 2012/13 seasonal influenza vaccine was 75.0%, while the uptake in those aged under 65 in an at risk group was 80.2%. These figures represent a small decrease in vaccination rates compared to the 2011/12 season where there was a 77.0% uptake in the over 65 years, and 81.7% in the under 65 at risk group.

The estimated uptake rate for frontline health care workers across the five HSCTs receiving the seasonal influenza vaccine in 2012/13 was 20.4%, a slight decrease from the previous year (20.8%). An estimated 64.6% of pregnant women were vaccinated in the 2012/13 season compared with 58.4% in the previous season. However, it should be noted that these are estimates due to some approximations in the calculation of denominators.

Table 3. Seasonal Influenza vaccine uptake 2010/11 – 2012/13

Northern Ireland GP Influenza Vaccine Coverage Data			
	2012/2013	2011/2012	2010/2011
Number of Practices	353	353	355
Number of practices submitting return by 31 March	353	353	355
Number of 65+ receiving influenza vaccine between 1st October and 31 March	212,848	211,416	198,505
Registered 65+ population of practices submitting a return	283,668	274,678	265,123
Uptake rate for 65+ population at 31 March	75.0%	77.0%	74.9%
Number of under 65 "at risk" population receiving influenza vaccine between 1 October and 31 March	169,697	168,837	152,712
"At risk" population under 65 years of practices submitting a return	211,661	206,585	193,939
Uptake rate for under 65 "at risk" population at 31 March	80.2%	81.7%	78.7%
Uptake rate for trust frontline staff at 31 March	20.4%	20.8%	17.4%

National and International situation

A similar picture was seen across the UK in the 2012/13 influenza season with consultation rates overall remaining low but peaking at a higher level than in the previous influenza season.

Nationally, seasonal activity was extended compared with previous years with influenza circulating for several months. Clinical indices peaked across the UK in late December to early January although England had a second later peak in February/March. Northern Ireland, Scotland and Wales all displayed the highest age-specific consultation rate in the 45-64 year age group whereas in England it was in the 1-4 year olds. A mixture of influenza A and B circulating meant that both children and adults were affected.

Unusually, in England, Northern Ireland and Wales influenza B circulated prior to influenza A(H3), however in Scotland influenza B circulated later in the season. Across the UK the predominant influenza type was influenza A(H3), with a smaller proportion of influenza B and a much smaller proportion of influenza A(H1N1)2009.

Although clinical activity remained low, the number of respiratory outbreaks across the UK increased substantially in 2012/13. Of those that were virologically tested, the majority were due to influenza A. Unlike Northern Ireland, where none were reported, there were a substantial number of school outbreaks reported in the rest of the UK occurring early in the season, although the majority of outbreaks during the season were reported in care homes for the elderly. Across the UK there were a number of outbreaks in care homes that occurred later in the season and in homes with a high seasonal influenza vaccine uptake.

Excess all-cause mortality in 2012/13 nationally was at higher levels than in 2011/12 with the number of excess deaths increasing substantially in weeks 1-2 and 15-18. The excess deaths were predominantly in the elderly (over 85 years old).

Oseltamivir resistance levels this year remained very low within the UK, and WHO have reported only very low numbers of oseltamivir and zanamivir resistance detected during the season.

Internationally two novel respiratory viruses were of importance, MERS-coronavirus and influenza A(H7N9), both of which are associated with high mortality rates. The MERS-coronavirus was first detected in April 2012 with a total of 77 laboratory confirmed cases to date (MERS-CoV update – WHO, 26th June 2013). Local transmission from non-human exposures appears to have occurred in several countries in the Middle East although there has been limited transmission amongst close contacts of residents of that area or travellers returning from the Middle East. Forty confirmed cases have died giving a fatality rate of 52%.

Novel influenza A(H7N9) originated in China in March 2013 and is one of a sub-group that normally circulates in birds. All patients who have been laboratory confirmed have been severely ill with a high mortality rate. To date there have been 132 confirmed cases with 37 deaths (WHO Risk Assessment, 7th June 2013). There appears to have been only very limited human-to-human transmission to close family members. Both these viruses are being actively monitored by the WHO, and more information can be found on the WHO or ECDC websites.

Conclusion

Seasonal influenza activity throughout the winter season in 2012/13 remained low, but higher levels of activity were recorded than in the 2011/2012 season. The period when influenza circulated was prolonged compared to previous seasons, with consultation rates remaining elevated for approximately 16 weeks.

No single age group was principally affected overall, with clinical consultation increases observed in both children and adults. However, during the peak period the highest rates were displayed in older adults with rates for children increasing in February. Later in the season rates for those in the over 65 age group increased,

The predominant strain overall was influenza A (H3N2); however early in the season influenza B predominated. There were only a small number of influenza A(H1N1)pdm09 cases detected over the whole season in contrast to 2011/12 when no influenza A(H1N1) detections were reported.

Similar to 2011/12, the majority of influenza outbreaks occurred very late in the season and were primarily in elderly care-home settings, with the majority being confirmed with influenza A. However, the number of outbreaks reported increased substantially compared to last year. These care home outbreaks generally involved highly vaccinated populations, again similar to the previous season.

Admissions to ICU/HDU that were confirmed with influenza also increased substantially compared to the previous season. The majority of admissions were in the older age groups; however, there were admissions for both infants and younger children; in all age groups the majority of admissions had co-morbidities. The number of deaths within ICU/HDU that were confirmed with influenza also increased. Again, all cases had co-morbidities. The relative proportions of admissions confirmed with each type of influenza was broadly similar to that seen in the virology data overall.

Vaccine uptake rates fell slightly in both the over 65 year olds and those in the under 65 at risk group; however, the target set by the DHSSPS was still met in both groups. The uptake rate in frontline healthcare workers also decreased slightly but remained above the target level. The importance of vaccination in health care workers cannot be underestimated in contributing to protection for both themselves and their patients. Uptake rates in pregnant women increased compared to the previous season.

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Contributions from: R Smithson

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