

Influenza Weekly Surveillance Bulletin

Northern Ireland, Week 3 (16 January 2017 – 22 January 2017)

Summary

At this point in the 2016/17 influenza season, influenza remained widespread across region with some indicators continuing to decrease in week 3 (week commencing 16th January 2017). The number of ICU admissions and deaths in week 3 are lower than the same period in 2015/16:

Weekly Influenza GP Consultation Rates

- GP consultation rates for combined flu and flu-like illness (flu/FLI) have decreased in week 3, 2017 to 21.4 per 100,000 population. Rates remain below the 2016/17 pre-epidemic threshold¹
- OOH GP consultation rates for flu/FLI decreased to 4.2 per 100,000 population in week 3, 2017

Microbiological Surveillance

- The proportion of positive influenza detections from both sentinel and non-sentinel sources has decreased to 21% in week 3

Respiratory Syncytial Virus (RSV) Activity

- RSV activity has remained stable from week 2 with levels similar to the same period last season

Influenza Confirmed Intensive Care Unit (ICU) Cases and Deaths

- Three cases were reported in ICU with laboratory confirmed influenza in week 3, giving a total of 25 cases this season
- Two deaths were reported in week 3 among ICU patients with laboratory confirmed influenza, giving a total of four deaths in ICU patients with laboratory confirmed influenza this season

Influenza Outbreaks across Northern Ireland

- No confirmed influenza outbreaks were reported to the PHA. There has been a total of 11 confirmed influenza outbreaks this season

Influenza Vaccine Uptake in Northern Ireland

- To 31st December 2016; uptake was 69% among those aged 65 years and over, 51.6% among those under 65 in an at risk group, 49.4% among 2-4 year olds and 77.7% among primary school children

¹ The pre-epidemic threshold for Northern Ireland is 47.9 per 100,000 population this year (2016/17)

Introduction

Influenza is an acute viral infection of the respiratory tract (nose, mouth, throat, bronchial tubes and lungs). There are three types of flu virus: A, B and C, with A and B responsible for most clinical illness. Influenza activity in Northern Ireland is monitored throughout the year to inform public health action and to prevent spread of the infection. The influenza season typically runs from week 40 to week 20. Week 40 for the 2016/17 season commenced on 3rd October 2016.

Surveillance systems used to monitor influenza activity include:

- GP sentinel surveillance representing 11.7% of Northern Ireland population;
- GP Out-of-Hours surveillance system representing the entire population;
- Virological reports from the Regional Virus Laboratory (RVL);
- Influenza outbreak report notification to PHA Duty Room;
- Critical Care Network for Northern Ireland reports on critical care patients with confirmed influenza;
- Mortality data from Northern Ireland Statistics and Research Agency (NISRA);
- 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

NB: Please note changes in the y axes on figures 1 – 6 from last season's bulletin when interpreting the charts contained in this season's bulletin.

Sentinel GP Consultation Data

Figure 1. Sentinel GP consultation rates for flu/FLI 2014/15 - 2016/17

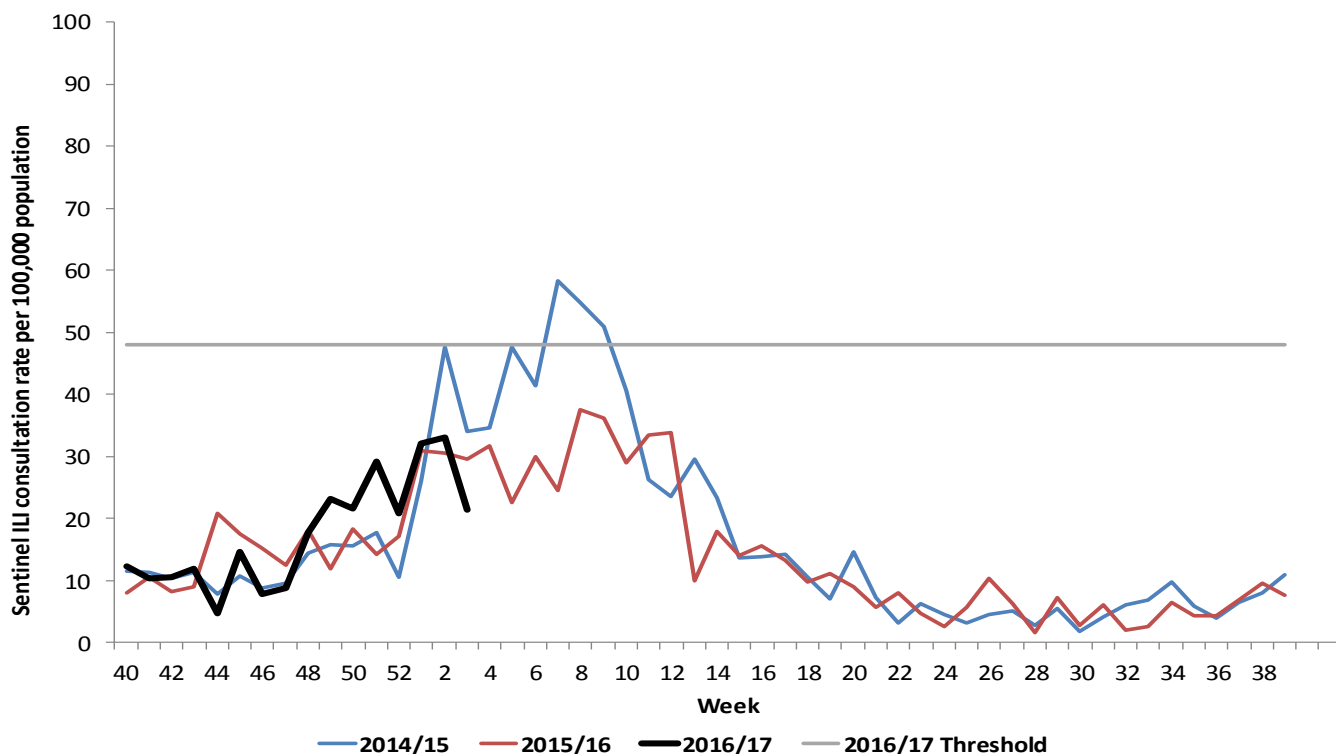


Figure 2. Sentinel GP combined consultation rates for flu/FLI and number of influenza positive detections 2011/12 – 2016/17

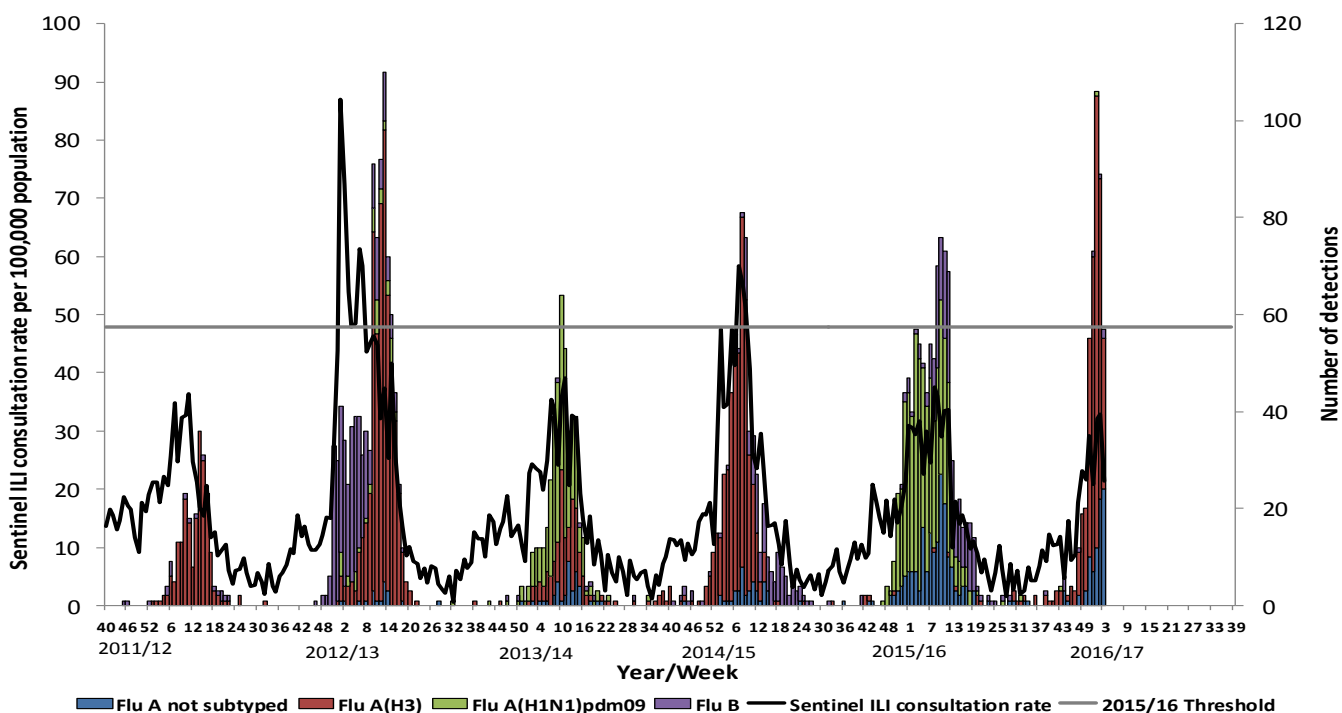
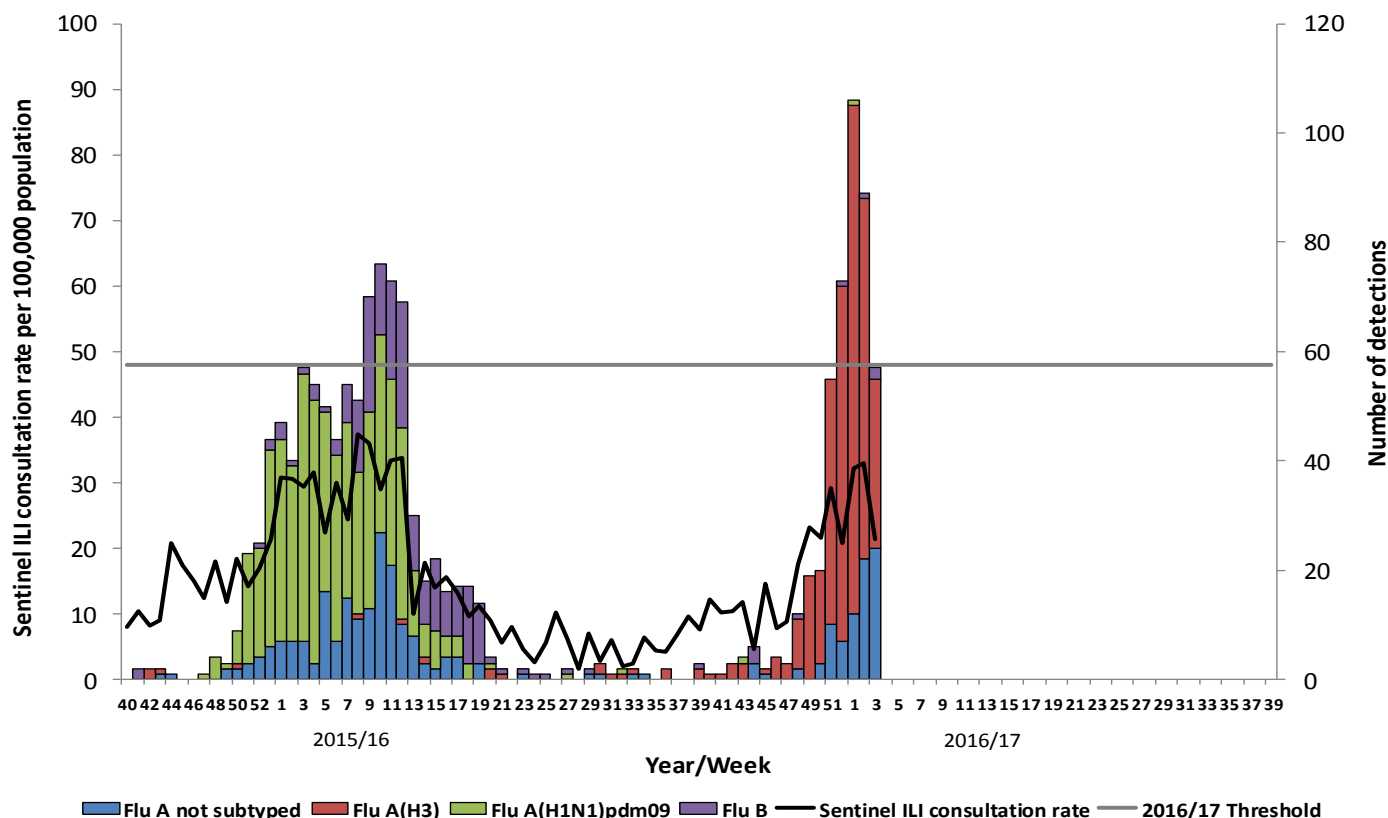


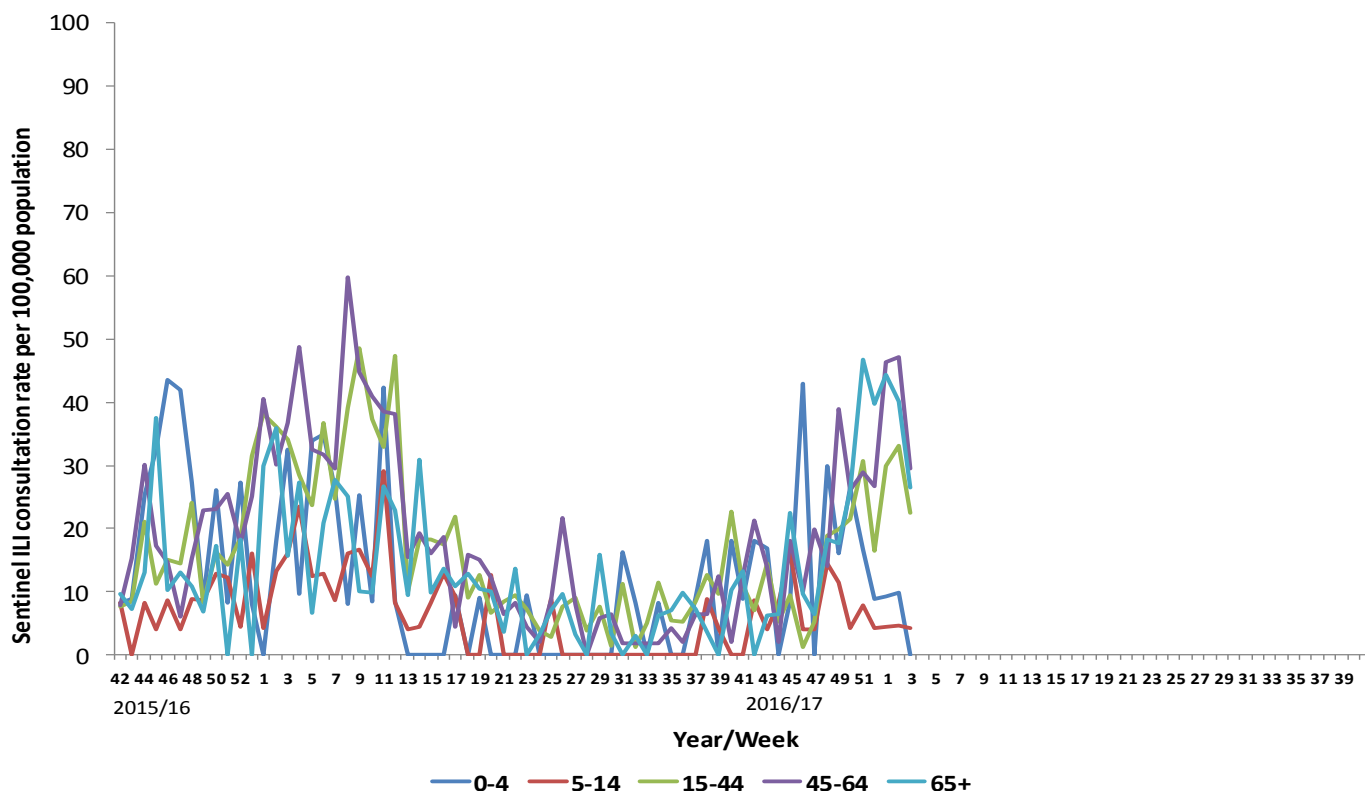
Figure 3. Sentinel GP consultation rates for flu/FLI and number of virology 'flu detections from week 40, 2015



Comment

GP consultation rates have decreased in week 3, 2017 to 21.4 per 100,000 population from 33.0 per 100,000 population in week 2. The GP consultation rate in week 3 is lower than the same period in both 2015/16 (29.5 per 100,000 population) and 2014/15 (34.1 per 100,000 population). Rates remain below the pre-epidemic Northern Ireland 2016/17 threshold of 47.9 per 100,000 (Figures 1, 2 and 3).

Figure 4. Sentinel GP age-specific consultation rates for flu/FLI from week 40, 2015



Comment

Sentinel GP flu/FLI consultations have decreased among almost all age groups in week 3, with the rate remaining relatively stable among those aged 5-14 years.

In week 3, 2017 the highest age-specific rate was again noted among those aged 45-64 years (29.4 per 100,000 population), with the lowest rate represented by those aged 0-4 years (zero consultations).

Age-specific consultation rates are lower among almost all age groups in week 3 than the same time period in 2015/16, but are higher among those aged 65 years and over (Figure 4).

Out-of-Hours (OOH) Centres Call Data

Figure 5. OOH call rate for flu/FLI, 2014/15 – 2016/17

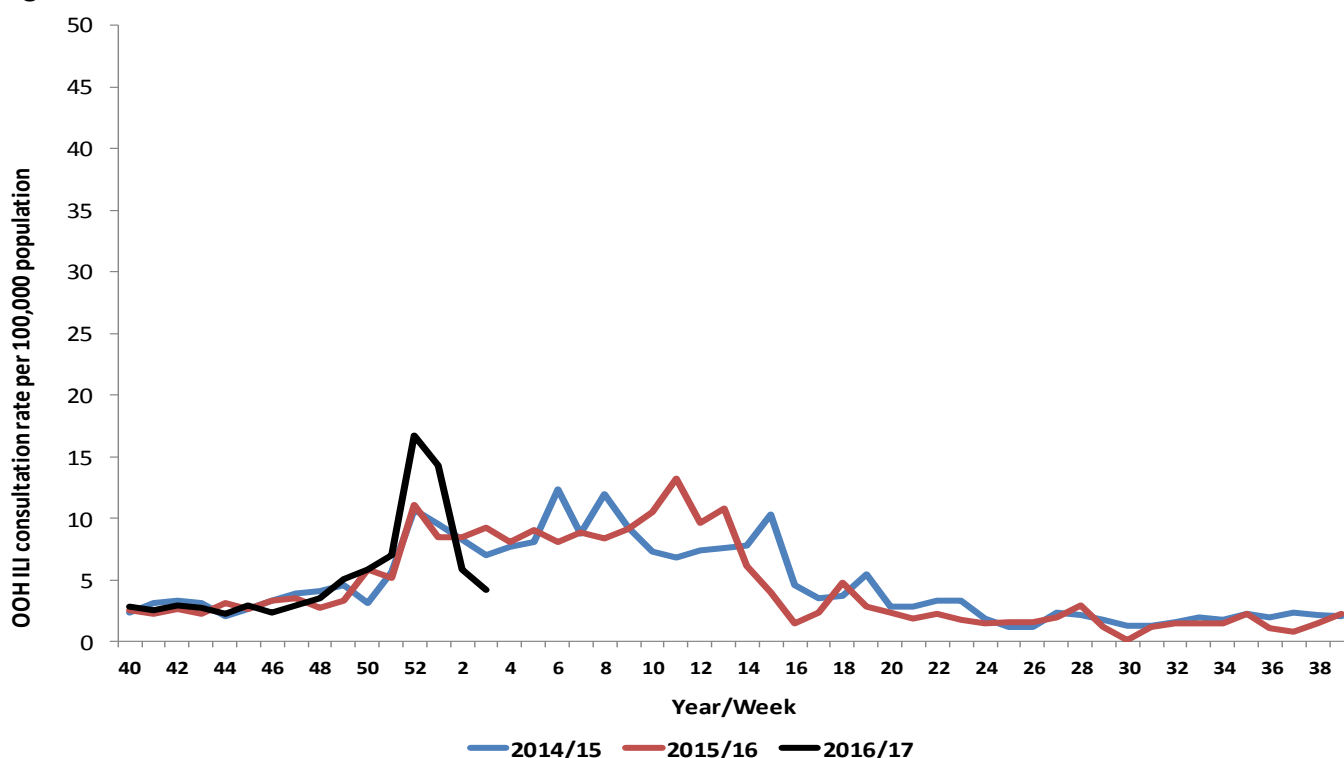
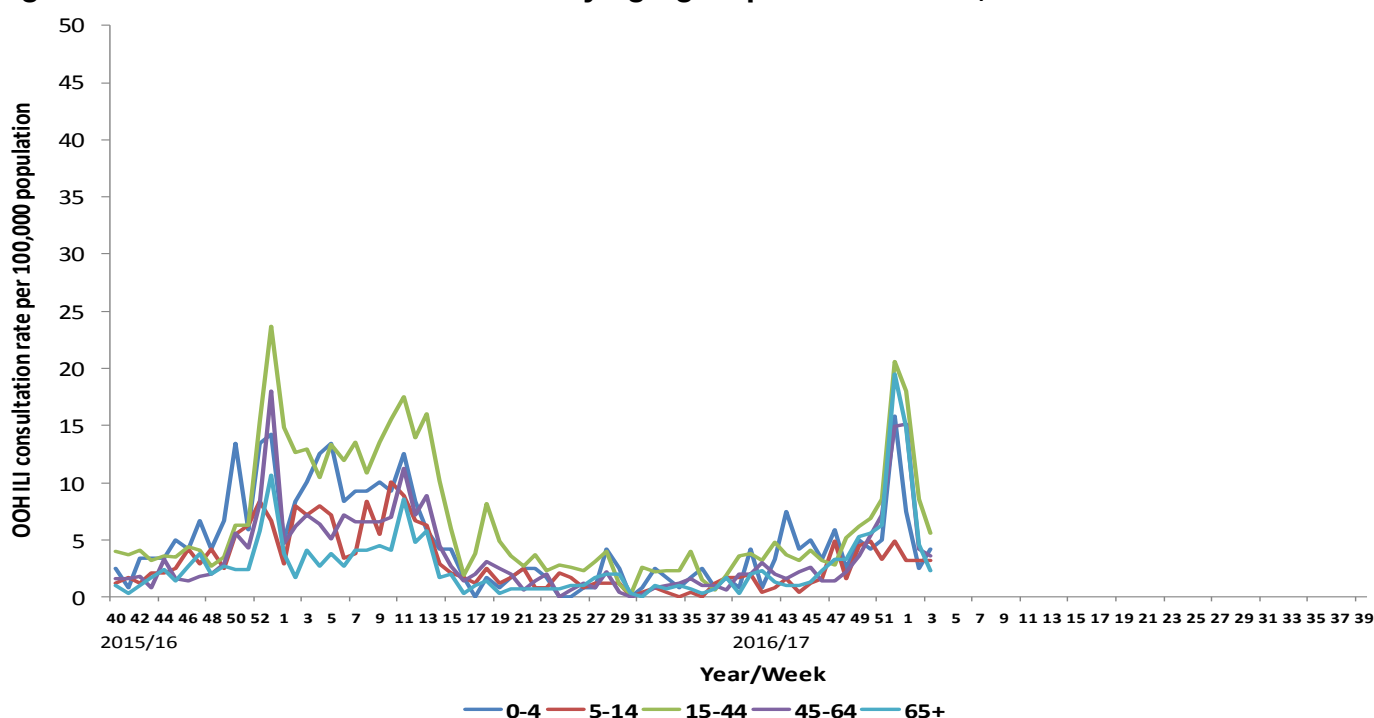


Figure 6. OOH Call rates of flu/FLI by age-group from week 40, 2015



Comment

During week 3, 2017 the OOH GP consultation rate decreased to 4.2 per 100,000 population from 5.8 per 100,000 population in week 2. The OOH GP consultation rate in week 3 is lower than the same period in both 2015/16 (9.2 per 100,000 population) and 2014/15 (7.0 per 100,000 population) (Figure 5).

The proportion of calls related to flu has further decreased and represents less than 1% of total calls to the OOH service in week 3, 2017.

During week 3, OOH flu/FLI rates have decreased among the older age groups, with rates slightly increasing among those aged 0-4 years and remaining stable among the 5-14 years age group. The highest age-specific OOH flu/FLI rate in week 3 was noted among the 15-44 years age group (5.6 per 100,000 population) while those aged 65 years and over represented the lowest rate in week 3 (2.3 per 100,000 population) (Figure 6).

Age-specific rates in week 3 are lower among all age groups than those noted during the same period in both 2015/16 and 2014/15.

Table 1. Virus activity in Northern Ireland by source, Week 3, 2016/17

Source	Specimens Tested	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	RSV	Total influenza Positive	% Influenza Positive
Sentinel	8	3	0	0	0	0	3	38%
Non-sentinel	262	28	0	24	2	16	54	21%
Total	270	31	0	24	2	16	57	21%

Table 2. Cumulative virus activity from all sources by age group, Week 40 - 3, 2016/17

	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
0-4	14	0	4	1	19	424
5-14	7	0	0	1	8	16
15-64	150	1	38	5	194	89
65+	190	1	42	1	234	122
Unknown	0	0	0	0	0	0
All ages	361	2	84	8	455	651

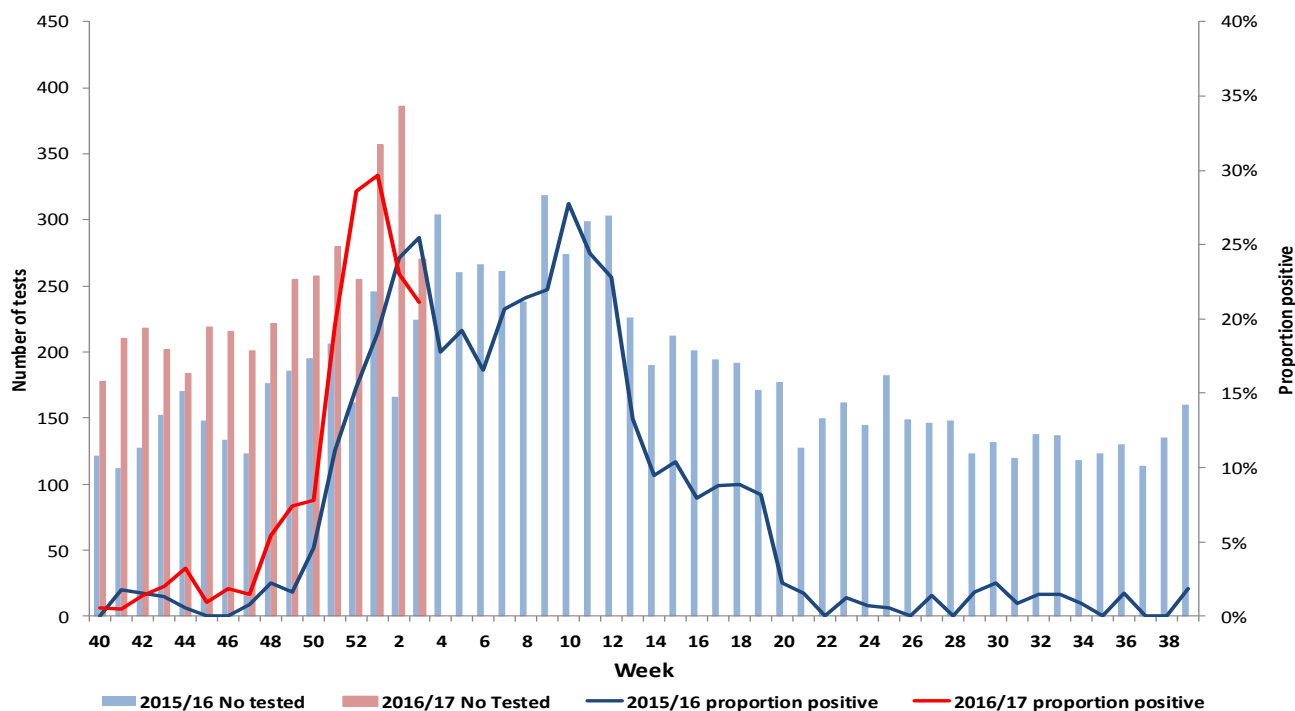
Table 3. Cumulative virus activity by age group and source, Week 40 - Week 3, 2016/17

	Sentinel						Non-sentinel					
	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV	Flu AH3	Flu A(H1N1) 2009	A (untyped)	Flu B	Total Influenza	RSV
0-4	0	0	0	0	0	1	14	0	4	1	19	423
5-14	2	0	0	0	2	0	5	0	0	1	6	16
15-64	22	1	1	0	24	8	128	0	37	5	170	81
65+	4	1	1	0	6	2	186	0	41	1	228	120
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
All ages	28	2	2	0	32	11	333	0	82	8	423	640

Note

All virology data are provisional. The virology figures for previous weeks included in this or future bulletins are updated with data from laboratory returns received after the production of the last bulletin. The current bulletin reflects the most up-to-date information available. Sentinel and non-sentinel samples are tested for influenza and for RSV. Cumulative reports of influenza A (untyped) may vary from week to week as these may be subsequently typed in later reports.

Figure 7. Number of samples tested for influenza and proportion positive, 2015/16 and 2016/17, all sources



Comment

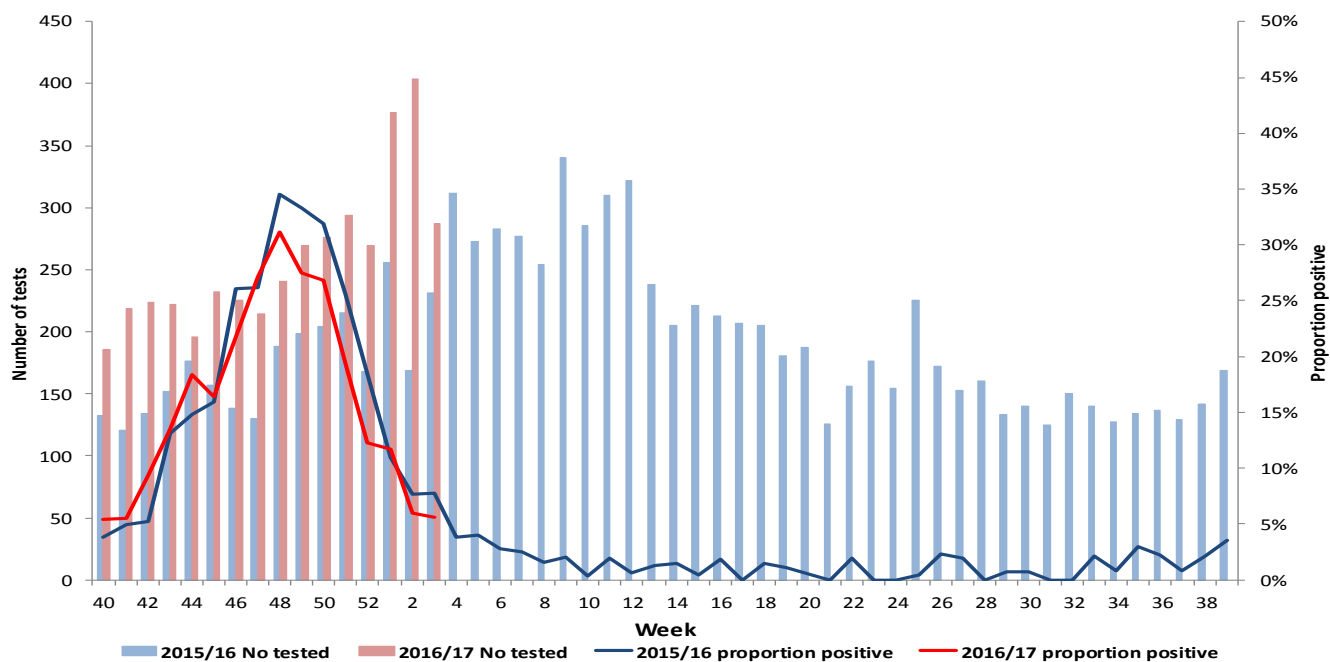
During week 3, 2017 there were 270 specimens submitted for virological testing. There were 57 detections of influenza in total (positivity rate of 21%) (Figure 7). There were 31 detections of influenza A(H3), 24 detections of influenza A (typing awaited) and 2 detections of influenza B. There were no detections of influenza A(H1N1)pdm09.

There were eight samples positive for influenza submitted through the GP based sentinel scheme across Northern Ireland, of which three was typed as influenza A(H3).

This season to date there have been a total of 455 detections of influenza, of which 361 have been typed as influenza A(H3). There have been 8 detections of influenza B, 84 of influenza A (typing awaited), and 2 detections of influenza A(H1N1)pdm09 (Tables 1, 2, and 3).

Respiratory Syncytial Virus

Figure 8. Number of samples tested for RSV and proportion positive, 2015/16 and 2016/17, all sources

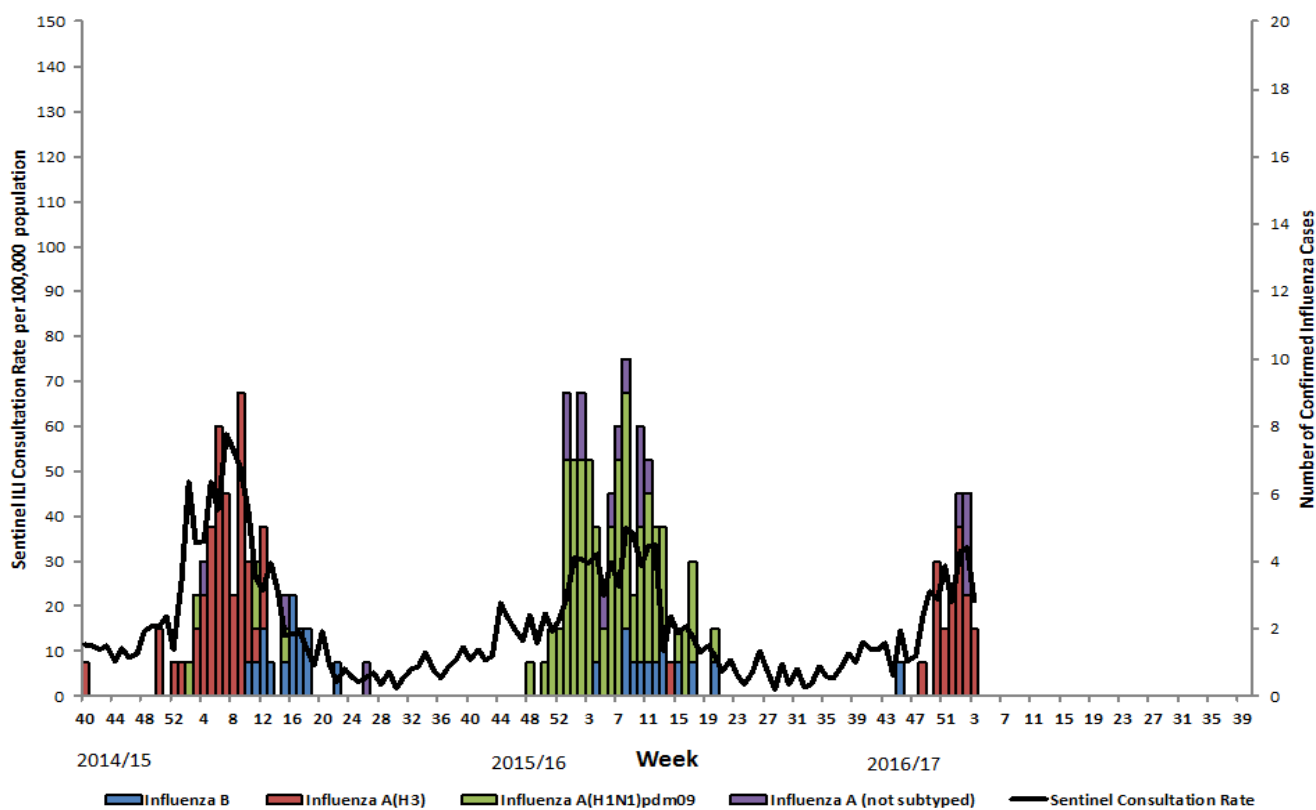


Comment

During week 3, 2017 there were 16 positive detections of RSV, giving a positivity rate of 6%; similar to the same period in 2015/16 (8%). To date there have been a total of 651 detections of RSV of which the majority (65%) were in those aged 0-4 years (Figure 8 and Table 2).

ICU/HDU Surveillance

Figure 9. Confirmed ICU influenza cases by week of specimen, with sentinel ILI consultation rate, 2014/15 - 2016/17



Comment

Data are collected on laboratory confirmed influenza patients and deaths in critical care (level 2 and level 3).

During week 3, three confirmed cases of influenza in ICU were reported to the PHA, all of which were typed as influenza A(H3). There were two deaths reported in ICU patients with laboratory confirmed influenza.

There have been 25 confirmed cases of influenza in ICU reported this season to date, of which 20 have been typed as influenza A (H3), four as influenza A (typing awaited) and one influenza B. There have been four deaths reported in confirmed cases of influenza in ICU this season to date.

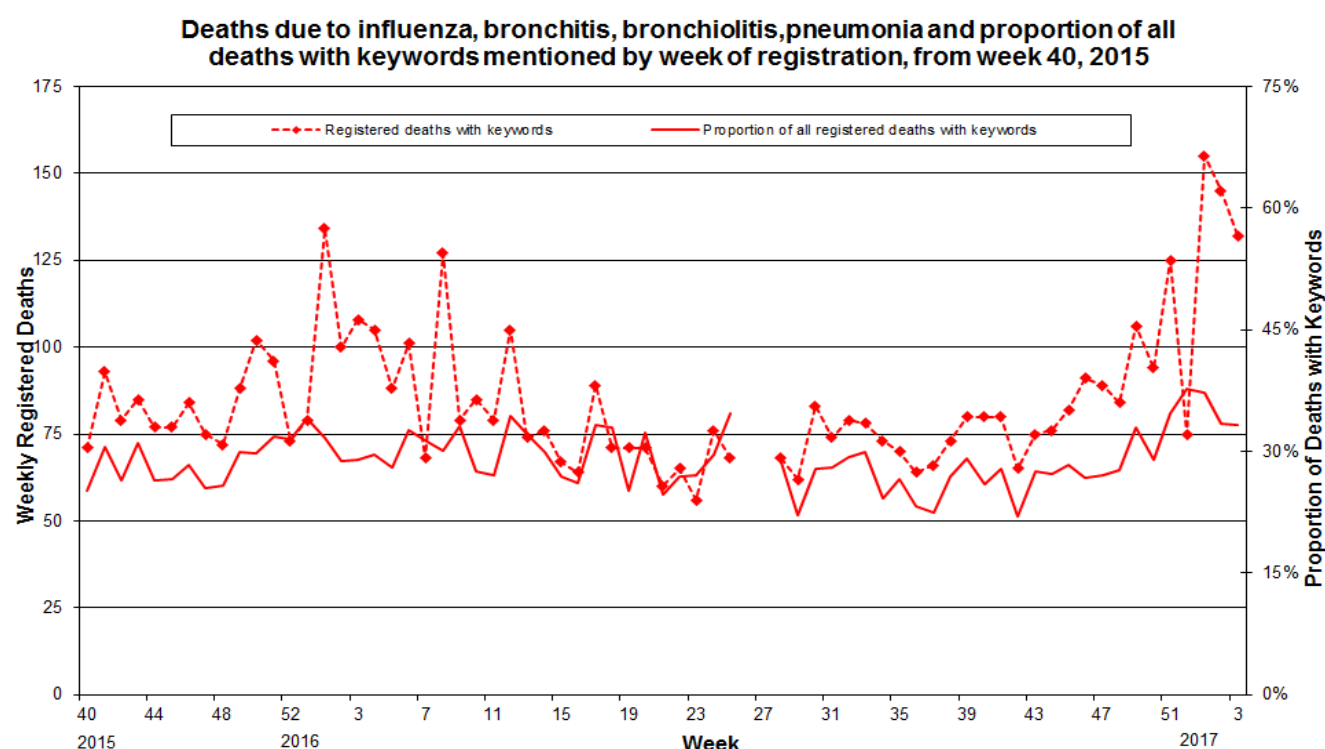
Outbreak Surveillance

During week 3, 2017 there were no confirmed influenza outbreaks reported to the PHA. There have been a total of 11 confirmed influenza outbreaks reported this season to date, of which eight have been confirmed as influenza A(H3) and three as influenza A (typing awaited).

Mortality Data

Weekly mortality data is provided from Northern Ireland Statistics and Research Agency. The data relates to the number of deaths from selected respiratory infections (some of which may be attributable to influenza, and other respiratory infections or complications thereof) registered each week in Northern Ireland. This is not necessarily the same as 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 (bronchiolitis, bronchitis, influenza and pneumonia). Death registrations containing these keywords are presented as a proportion of all registered deaths.

Figure 10. Weekly registered deaths



*Please note data are currently unavailable for weeks 26 – 27, 2016

Comment

During week 3, 2017 the proportion of deaths related to respiratory keywords has remained stable at 33% from week 2. In week 3 there were 397 registered deaths, of which 132 related to specific respiratory infections (Figure 10).

The proportion of deaths attributed to specific respiratory infections is higher at this point in the season than during the same period in both 2015/16 (29%) and 2014/15 (32%).

EuroMOMO

EuroMOMO data will be available later in the season.

Influenza Vaccine Uptake

To 31st December 2016, provisional data suggested that vaccine uptake for those aged 65 years and over was 69%, higher than the same period in the 2015/16 (65.6%); while 51.6% of those under 65 and in an at risk group had received the vaccine, similar to 2015/16 when 52% had received the vaccine in this group during the same period.

Similar to last season, all children aged between 2 and 4 years and all primary school children in 2016/17 have been offered the seasonal influenza vaccine. To 31st December 2016, provisional data suggested that vaccine uptake among 2-4 year old children was 49.4%, higher than in 2015/16 when 45.4% had received the vaccine during the same period. Provisional data suggests uptake among children in primary school was 77.7%, also higher than in 2015/16 when 76.4% had received the vaccine during the same period.

International Summary

Europe

Week 2, 2017

- Influenza activity remained widespread across the region with high or very high intensity in 8 out of 44 reporting countries or regions and medium intensity in 26 countries.
- The proportion of influenza virus detections among sentinel surveillance specimens was 46%, a slight decline from 52% in the previous week.
- The great majority of influenza viruses detected were type A (97%) and, of those subtyped, 99% were A(H3N2).
- Most of the hospitalized laboratory-confirmed cases reported have occurred in people aged 65 years or more.
- Excess all-cause mortality among the elderly has been observed in the past 1 to 2 months in most of the 18 countries that take part in [EuroMOMO](#).

Season Overview:

- Influenza activity started early this season compared to previous seasons.
- Since week 40/2016, influenza A viruses have predominated, accounting for 96% of all sentinel detections; the great majority (99%) of subtyped influenza A viruses from sentinel sites has been A(H3N2).
- In an influenza season in which A(H3N2) viruses predominate, elderly populations can be expected to be most severely affected. Indeed, confirmed cases of influenza A infection reported from hospitals have predominantly been in adults aged over 65 years.
- So far, circulating A(H3N2) viruses are antigenically similar to the vaccine strain. While about two-thirds of the A(H3N2) viruses characterized belong to a new genetic subclade (3C.2a1), these viruses are antigenically similar to the vaccine strain (clade 3C.2a).
- Early monitoring of vaccine effectiveness in [Finland](#) and [Sweden](#) suggests levels of effectiveness similar to estimates from multi-country studies during the seasons 2011–

2012 to 2014–2015 with 26% (95% CI 22% to 30%) and 24% (95% CI 11% to 34%) vaccine effectiveness, respectively, in persons aged 65 years and older with laboratory-confirmed influenza A. Given the partial effectiveness of influenza vaccines, rapid use of neuraminidase inhibitors for laboratory-confirmed or probable cases of influenza infection should be considered for vaccinated and non-vaccinated patients at risk of developing complications.

- No reduced antiviral susceptibility has been observed among the viruses tested.
- A **risk assessment** on seasonal influenza in EU/EEA countries was published by ECDC on 24 December 2016. The above summary is in line with the findings of the risk assessment.

<http://www.flunewseurope.org/>

Worldwide (WHO) and CDC

As at 23rd January 2017:

Influenza activity in the temperate zone of the northern hemisphere continued to increase, with many countries especially in East Asia and Europe having passed their seasonal threshold early in comparison with previous years. Worldwide, influenza A(H3N2) virus was predominant. The majority of influenza viruses characterized so far was similar antigenically to the reference viruses contained in vaccines for use in the 2016-2017 northern hemisphere influenza season. All tested viruses collected recently for antiviral sensitivity were susceptible to the neuraminidase inhibitor antiviral medications.

- In North America influenza activity continued to increase with influenza A(H3N2) virus predominating. In the United States of America, influenza-like illness (ILI) levels were above the seasonal thresholds and respiratory syncytial virus (RSV) activity continued to be reported.
- In Europe, influenza activity was high, with influenza A (H3N2) virus being the most prominent subtype. Persons aged over 65 years were most frequently associated with severe disease from influenza infection.
- In East Asia, high influenza activity continued to be reported with influenza A(H3N2) viruses predominant.
- In Western Asia, influenza activity slightly increased.
- In Southern Asia influenza activity remained low in most of the countries. Detection of influenza A (H3N2) virus continued to be reported by the Islamic Republic of Iran and Sri Lanka.
- In South East Asia, influenza activity remained low, with influenza A(H3N2) virus and influenza B predominating in the region.
- In Northern Africa, influenza detections continued to be reported in Morocco and Tunisia with influenza A(H3N2) virus dominating.
- In West Africa, influenza continued to be detected in Ghana with B viruses dominating.
- In the Caribbean countries and Central America, influenza and other respiratory virus activity remained low in general.
- In tropical South America, influenza and other respiratory viruses activity remained low.
- In the temperate zone of the Southern Hemisphere, influenza activity was at inter-seasonal levels.
- National Influenza Centres (NICs) and other national influenza laboratories from 97 countries, areas or territories reported data to FluNet for the time period from 26 December 2016 to 08 January 2017 (data as of 2017-01-20 09:52:23 UTC). The WHO GISRS laboratories tested more than 165297 specimens during that time period. 40259 were positive for influenza viruses, of which 38809 (96.4%) were typed as influenza A and

1450 (3.6%) as influenza B. Of the sub-typed influenza A viruses, 422 (2.6%) were influenza A(H1N1)pdm09 and 15893 (97.4%) were influenza A(H3N2). Of the characterized B viruses, 116 (49.8%) belonged to the B-Yamagata lineage and 117 (50.2%) to the B-Victoria lineage.

http://www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/index.html

<http://www.cdc.gov/flu/weekly/>

Acknowledgments

We would like to extend our thanks to all those who assist us in the surveillance of influenza in particular the sentinel GPs, Out-of-Hours Centres, Regional Virus Laboratory, Critical Care Network for Northern Ireland, Public Health England and NISRA. Their work is greatly appreciated and their support vital in the production of this bulletin.

Further information

Further information on influenza is available at the following websites:

<http://www.fluawareni.info>

<https://www.gov.uk/government/organisations/public-health-england>

<http://www.publichealth.hscni.net>

<http://www.who.int>

<http://ecdc.europa.eu>

<http://euroflu.org>

Internet-based surveillance of influenza in the general population is undertaken through the FluSurvey. A project run jointly by PHE and the London School of Hygiene and Tropical Medicine. If you would like to become a participant of the FluSurvey project please do so by visiting the [Flusurvey website](#) for more information.

Detailed influenza weekly reports can be found at the following websites:

Republic of Ireland:

<http://www.hpsc.ie/hpsc/A-Z/Respiratory/Influenza/SeasonalInfluenza/Surveillance/InfluenzaSurveillanceReports/>

England:

<https://www.gov.uk/government/collections/seasonal-influenza-guidance-data-and-analysis#epidemiology>

Scotland

<http://www.hps.scot.nhs.uk/resp/seasonalInfluenza.aspx>

Wales

<http://www.wales.nhs.uk/sites3/page.cfm?orgid=457&pid=34338>

For further information on the Enhanced Surveillance of Influenza in Northern Ireland scheme or to be added to the circulation list for this bulletin please contact:

Chris Nugent
Surveillance Officer
Public Health Agency
028 9536 3407

Dr Naomh Gallagher
Senior Epidemiological Scientist
Public Health Agency
028 9536 3498

Email: flusurveillance@hscni.net

This report was compiled by Chris Nugent, Cathriona Kearns, Dr Naomh Gallagher and Dr Muhammad Sartaj.