PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

8 October 2015 – Week 41 report (up to week 40 data)

This report is published weekly on the PHE website. For further information on the surveillance schemes mentioned in this report, please see the PHE website and the related links at the end of this document.

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Summary

At the start of the 2015/16 influenza season, activity is at low levels in week 40 (ending 4 October)

- Community influenza surveillance
  - In week 40 all respiratory syndromic indicators were within seasonally expected levels.
  - Six new acute respiratory outbreaks have been reported in the past seven days: five in care homes and one in a workplace setting (tests results not available).
- Overall weekly influenza GP consultation rates across the UK
  - In week 40 overall weekly influenza-like illness GP consultations were low in England, Wales, Northern Ireland and Scotland and through the GP In Hours Surveillance system.
- Influenza-confirmed hospitalisations
  - No new admissions to ICU/HDU with confirmed influenza were reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (95 Trusts in England) in week 40.
  - Five new hospitalised confirmed influenza cases (three influenza A(H1N1)pdm09 and two influenza A(H3N2) were reported through the USISS sentinel hospital network across England (21 Trusts), a rate of 0.06/100,000.
- All-cause mortality data
  - In week 40 2015, no statistically significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England overall and by age group and across the devolved administrations.
- Microbiological surveillance
  - Three of the samples tested were positive for influenza through the English GP sentinel schemes.
  - 22 influenza positive detections were recorded through the DataMart scheme (10 influenza A(H1N1)pdm09, 10 influenza A(H3), one influenza A(not subtyped) and one B) a positivity of 2.8% with the highest positivity seen in 45-64 year olds (5.0%).
- Vaccination
  - Up to week 40 2015 in 90.9% GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2015/16 influenza vaccine in targeted groups was as follows: 10.2% in under 65 years in a clinical risk group, 10.4% in pregnant women, 20.5% in 65+ year olds, 0.1% in all 2 year olds, 0.1% in all 3 year olds and 0.1% in all 4 year olds.
- International situation
  - Globally, influenza activity generally decreased or remained low, with only a few countries reporting elevated respiratory illness levels. Influenza activity in the northern hemisphere continued at low, inter-seasonal levels with sporadic detections.

Community surveillance

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In week 40 all respiratory syndromic indicators were within seasonally expected levels and six new acute respiratory outbreaks were reported in the last seven days.

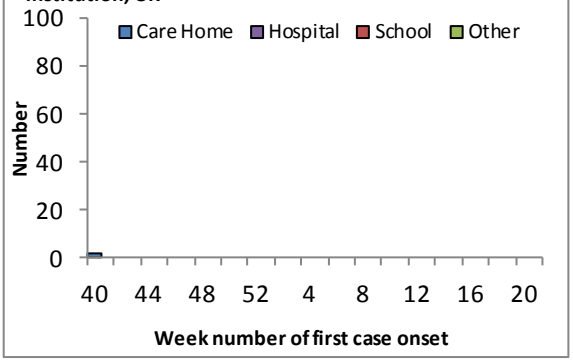
- PHE Real-time Syndromic Surveillance

-In week 40 there were further increases in GP consultations for selected respiratory indicators within seasonally expected levels.
-For further information, please see the syndromic surveillance webpage.

- Acute respiratory disease outbreaks

- Six new acute respiratory outbreaks have been reported in the past seven days: five in care homes and one in a work place setting (test results not available).
-Outbreaks should be recorded on HPZone and reported to the local Health Protection Teams and Respscidsc@phe.gov.uk.

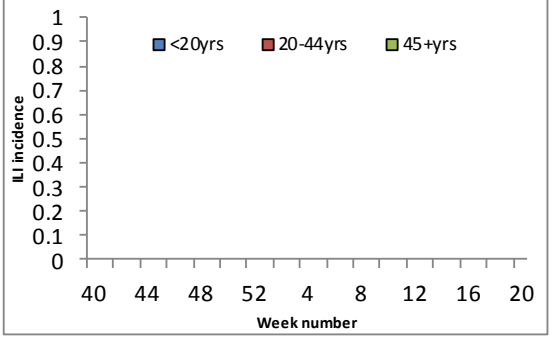
Figure 1: Number of acute respiratory outbreaks by institution, UK



- FluSurvey

-Internet-based surveillance of influenza in the general population is undertaken through the FluSurvey project (http://flusurvey.org.uk) run by the London School of Hygiene and Tropical Medicine.
-Data is expected later in the season.

Figure 2: FluSurvey ILI incidence by age group, UK



Weekly consultation rates in national sentinel schemes

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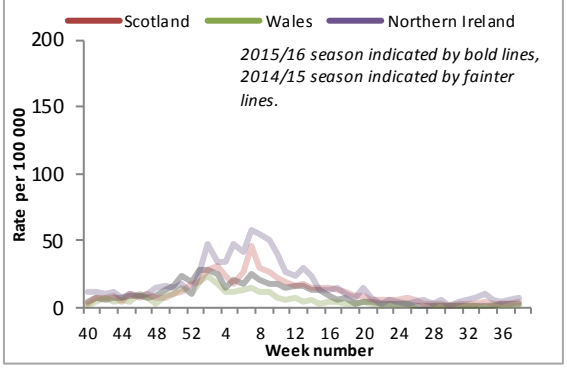
In week 40 overall weekly influenza-like illness GP consultations were low in England, Wales, Northern Ireland and Scotland.

Figure 3: GP ILI/influenza consultation rates in the UK



- Influenza/Influenza-Like-Illness (ILI)

Northern Ireland

-The Northern Ireland influenza consultation rate was low at 8.0 per 100,000 in week 40 (Figure 3) and below the pre-epidemic threshold (49 per 100,000).

-The highest rates were seen in 45-64 year olds (15.4 per 100,000) and 15-44 year olds (8.8 per 100,000).

Wales

-The Welsh influenza rate was low at 3.4 per 100,000 in week 40 (Figure 3).

-The highest rates were seen in 65-74 year olds (5.0 per 100,000), 45-64 year olds (4.3 per 100,000) and 15-44 year olds (3.8 per 100,000).

Scotland

-The Scottish ILI rate was low at 3.9 per 100,000 in week 40 (Figure 3) and below the pre-epidemic threshold (37 per 100,000).

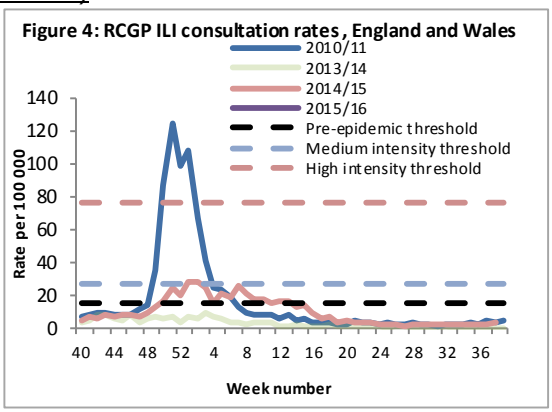
-The highest rates were seen in 15-44 year olds (5.1 per 100,000), 75+ year olds (4.8 per 100,000) and 45-64 year olds (4.1 per 100,000).

RCGP (England and Wales)

-The weekly ILI consultation rate through the RCGP surveillance system was low at 4.0 in week 40 (Figure 4*). By age group, the highest rate was seen in 15-44 year olds (5.6 per 100,000).

**The Moving Epidemic Method has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for GP ILI consultations for the start of influenza activity in a standardised approach across Europe. The threshold to indicate a likelihood of influenza community circulation for as calculated through the Moving Epidemic Method is 15 per 100,000.*

Figure 4: RCGP ILI consultation rates, England and Wales

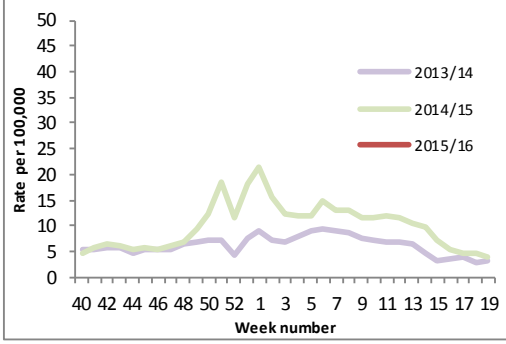


GP In Hours Syndromic Surveillance System (England)

-The weekly ILI consultation rate through the GP In Hours Syndromic Surveillance system was low at 4.6 per 100,000 in week 40 (Figure 5).

-For further information, please see the syndromic surveillance webpage.

Figure 5: GP in hours ILI consultation rate, England



Influenza confirmed hospitalisations

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In week 40, no new admissions to ICU/HDU with confirmed influenza were reported through the national USISS mandatory ICU scheme across the UK (95 Trusts in England). FIve new hospitalised confirmed influenza cases (three influenza A(H1N1)pdm09 and two influenza A(H3N2) were reported through the USISS sentinel hospital network across England (21 Trusts).

A national mandatory collection (USISS mandatory ICU scheme) is operating in cooperation with the Department of Health to report the number of confirmed influenza cases admitted to Intensive Care Units (ICU) and High Dependency Units (HDU) and number of confirmed influenza deaths in ICU/HDU across the UK. A confirmed case is defined as an individual with a laboratory confirmed influenza infection admitted to ICU/HDU. In addition a sentinel network (USISS sentinel hospital network) of acute NHS trusts is established in England to report weekly laboratory confirmed hospital admissions. Further information on these systems is available through the website. Please note data in previously reported weeks are updated and so may vary by week of reporting.

- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 40)

-In week 40, no new admissions to ICU/HDU with confirmed influenza were reported across the UK (95/156 Trusts in England) through the USISS mandatory ICU scheme (Figures 6 and 7). No new confirmed influenza death was reported in week 40 2015.

Figure 6: Weekly ICU/HDU influenza admission rate per 100,000 trust catchment population , England, since week 40 2015

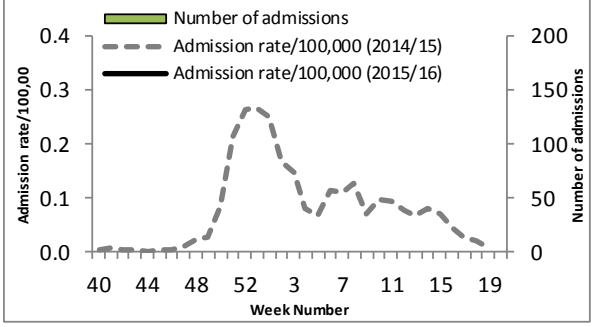
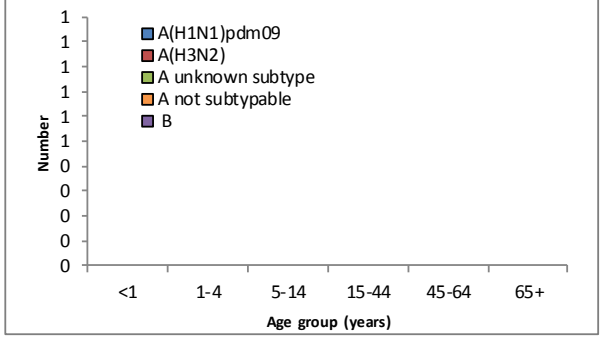


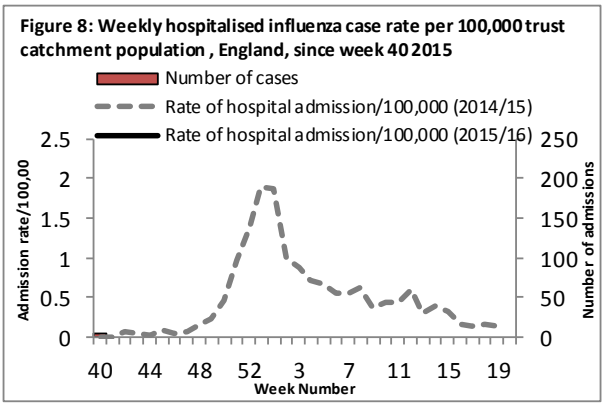
Figure 7: Cumulative ICU influenza admissions (USISS mandatory) by age group and flu type, UK, since week 40 2015



- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 40)

-In week 40, five new hospitalised confirmed influenza cases (three influenza A(H1N1)pdm09 and two influenza A(H3N2)) were reported through the USISS sentinel hospital network from 21 NHS Trusts across England (Figure 8), a rate of 0.06 per 100,000.

Figure 8: Weekly hospitalised influenza case rate per 100,000 trust catchment population , England, since week 40 2015



All-cause mortality data

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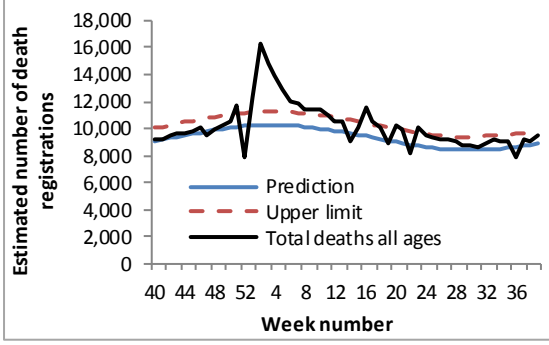
In week 40 2015, no statistically significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England overall and by age group and across the devolved administrations.

Seasonal mortality is seen each year in the UK, with a higher number of deaths in winter months compared to the summer. Additionally, peaks of mortality above this expected higher level typically occur in winter, most commonly the result of factors such as cold snaps and increased circulation of respiratory viruses, in particular influenza. Weekly mortality surveillance presented here aims to detect and report acute significant weekly excess mortality above normal seasonal levels in a timely fashion. Excess mortality is defined as a significant number of deaths reported over that expected for a given point in the year, allowing for weekly variation in the number of deaths. The aim is not to assess general mortality trends or precisely estimate the excess attributable to different factors, although some end-of-winter estimates and more in-depth analyses (by age, geography etc.) are undertaken.

- Excess overall all-cause mortality, England and Wales

-In week 39 2015, an estimated 9,529 all-cause deaths were registered in England and Wales (source: Office for National Statistics). This is more than the 9,097 estimated death registrations in week 38 and is below the 95% upper limit of expected death registrations for the time of year as calculated by PHE (Figure 9). Weeks 52, 1 and 14 correspond to a week when there were bank holidays and fewer days when deaths were registered. Therefore the decrease in deaths seen is likely to be artificial and result in subsequent increases in following weeks.

Figure 9: Observed & predicted all-cause death registrations, E&W



- Excess all-cause mortality by age group, England, Wales, Scotland and Northern Ireland

-In week 40 2015, no excess mortality by date of death above the upper 2 z-score threshold was seen in England after correcting ONS disaggregate data for reporting delay with the standardised EuroMOMO algorithm (Figure 10, Table 1). This data is provisional due to the time delay in registration; numbers may vary from week to week.
-No excess mortality above the threshold was seen across the Devolved Administrations in week 40 (Table 2).

Table 1: Excess mortality by age group,England*

Age group (years)	Excess detected in week 40 2015?	Weeks with excess in 2015/16
<5	×	NA
5-14	×	NA
15-64	×	NA
65+	×	NA

** Excess mortality is calculated as the observed minus the expected number of deaths in weeks above threshold*

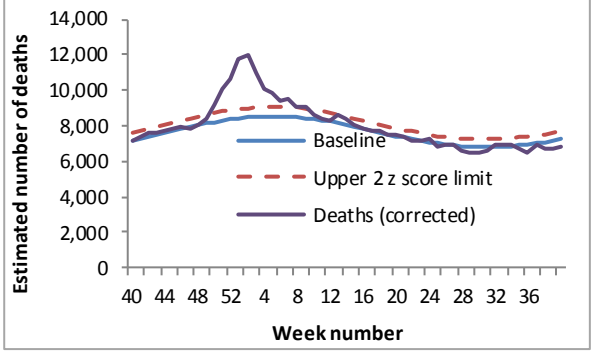
Table 2: Excess mortality by UK country*

Country	Excess detected in week 40 2015?	Weeks with excess in 2015/16
England	×	NA
Wales	×	NA
Scotland	×	NA
Northern Ireland	×	NA

** Excess mortality is calculated as the observed minus the expected number of deaths in weeks above threshold*

NB. Separate total and age-specific models are run for England which may lead to discrepancies between Tables 1 + 2

Figure 10: Excess mortality in 65+ year olds by week of death, EuroMOMO, England



Microbiological surveillance

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In week 40 2015, three samples tested for influenza through the English GP sentinel schemes were positive. 22 influenza positive detections were recorded through the DataMart scheme (10 influenza A(H1N1)pdm09, 10 influenza A(H3), one influenza A(not-subtyped) and one influenza B).

- Sentinel swabbing schemes in England (RCGP) and the Devolved Administrations

-In week 40, two samples were positive for influenza in England, one was positive in Scotland, and none in Northern Ireland or Wales (Table 3).

Table 3: Sentinel influenza surveillance in the UK

Week	England	Scotland	Northern Ireland	Wales
40	2/6 (-)	1/33 (3%)	0/1 (-)	0/0 (-)

NB. Proportion positive omitted when fewer than 10 specimens tested

- Respiratory DataMart System (England)

In week 40 2015, out of the 789 respiratory specimens reported through the Respiratory DataMart System, 22 samples (2.8%) were positive for influenza including 10 influenza A(H1N1)pdm09, 10 influenza A(H3), one influenza A (not subtyped) and one influenza B (Figure 11). The overall positivity for RSV remained low (1.5%) (Figure12). Positivity for rhinovirus was 28.7%, a slight decrease from week 39 (33.3%). Other respiratory viruses remained at low levels: adenovirus 1.9%; parainfluenza 2.9%; and human metapneumovirus (hMPV) remained low at 0.7% (Figure 13).

Figure 11: DataMart samples positive for influenza, England

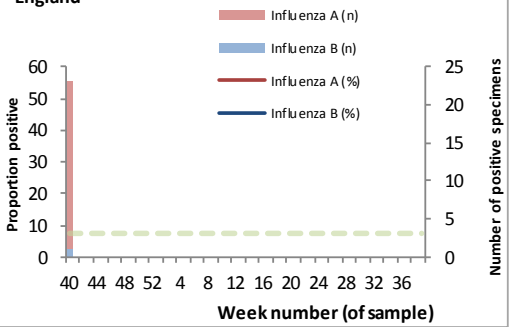


Figure 12: Datamart % positive for influenza by age, England

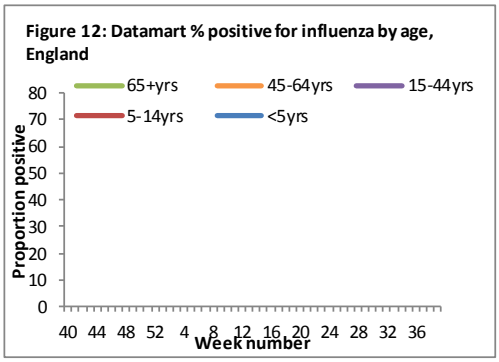
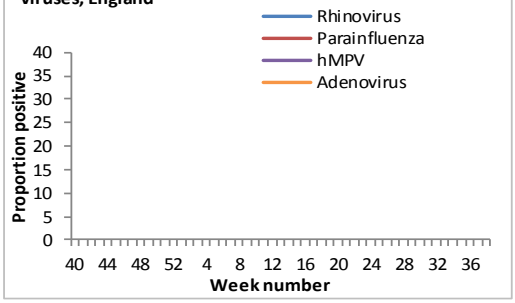


Figure 13: Datamart % positive for other respiratory viruses, England



**The Moving Epidemic Method has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for GP ILI consultations for the start of influenza activity in a standardised approach across Europe. The threshold to indicate a likelihood of influenza community circulation for Datamart % positive as calculated through the Moving Epidemic Method is 7.4% in 2015/16.*

- Virus characterisation

In week 40 2015, no influenza viruses were isolated or antigenically characterised by PHE Respiratory Virus Unit (RVU).

- Antiviral susceptibility

Since week 40 2015, one influenza virus (one A(H1N1)pdm09) has been tested for oseltamivir susceptibility in the UK and was found to be sensitive.

- Antimicrobial susceptibility

-Table 4 shows in the 12 weeks up to 4 October 2015, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenza, Staphylococcus aureus,* MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired pneumonia (CAP) and the choice of antibiotics reflects the British Thoracic Society empirical guidelines for management of CAP in adults.

Table 4: Antimicrobial susceptibility surveillance in lower respiratory tract isolates, 12 weeks up to 4 October 2015, E&W

Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
S. pneumoniae	Penicillin	1,991	91
	Macrolides	2,259	80
	Tetracycline	2,194	82
H. influenzae	Amoxicillin/ampicillin	8,861	73
	Co-amoxiclav	8,500	92
	Macrolides	2,753	18
	Tetracycline	8,734	99
S. aureus	Methicillin	3,806	88
	Macrolides	3,694	71
MRSA	Clindamycin	337	50
	Tetracycline	407	89
MSSA	Clindamycin	2,130	78
	Tetracycline	3,087	94

**Macrolides = erythromycin, azithromycin and clarithromycin*

Vaccination

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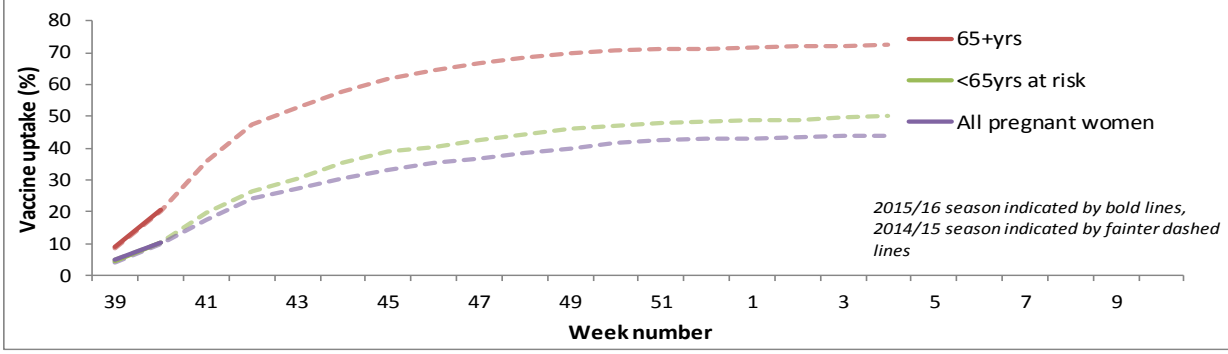
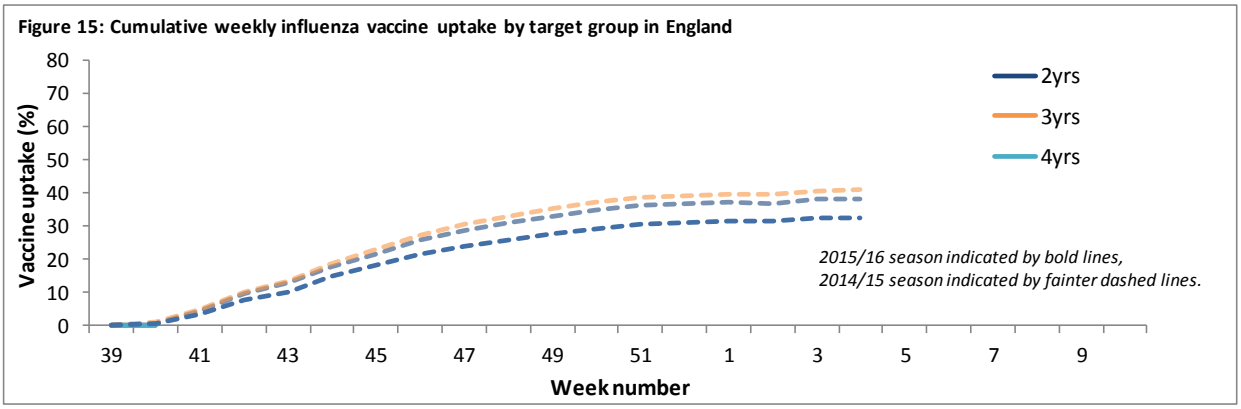
- Up to week 40 2015 in 90.9% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2015/16 influenza vaccine in targeted groups was as follows (Figure 14)
  - 10.2% in under 65 years in a clinical risk group
  - 10.4% in pregnant women
  - 20.5% in 65+ year olds

Figure 14: Cumulative weekly influenza vaccine uptake by target group in England



- In 2015/16, all two-, three- and four-year-olds continue to be eligible for flu vaccination. In addition, the programme has been extended to children of school years 1 and 2 age. Up to week 40 2015 in 90.9% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2015/16 influenza vaccine in targeted groups was as follows (Figure 15)
  - 0.1% in all 2 year olds
  - 0.1% in all 3 year olds
  - 0.1% in all 4 year olds

Figure 15: Cumulative weekly influenza vaccine uptake by target group in England



International Situation

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Globally, influenza activity generally decreased or remained low, with only a few countries reporting elevated respiratory illness levels. Influenza activity in the northern hemisphere continued at low, inter-seasonal levels with sporadic detections.

- Europe updated on 2 October 2015 (Joint ECDC-WHO Influenza weekly update)

For weeks 36-39 2015, low intensity of influenza activity was reported by the twenty countries which reported through all four weeks, with sporadic influenza detections in a few countries.

For weeks 36-39 2015, 20 countries tested 457 sentinel samples, of which one was positive for influenza virus (influenza B). In addition, ten countries reported 45 influenza-virus detections (14(H1N1)pdm09, 7 A(H3N2), 11 influenza A not subtyped and 13 influenza B) from non-sentinel sources.

- United States of America Updated on 2 October 2015 (Centre for Disease Control report)

Nationwide during week 38, 1.2% of patient visits reported through the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet) were due to influenza-like illness (ILI). This percentage is below the national baseline of 2.0%.

During week 38, 5.5% of all deaths reported through the 122 Cities Mortality Reporting System were due to P&I. This percentage was below the epidemic threshold of 5.9% for week 38.

No influenza-associated paediatric deaths were reported to CDC during week 38. A total of 146 influenza-associated paediatric deaths have been reported during the 2014-2015 season.

- Canada Updated on 2 October 2015 (Public Health Agency report)

Overall, there is low influenza activity in Canada; however, influenza activity and detections are increasing, especially in British Colombia. In week 38, sporadic influenza activity was reported in the Western provinces and parts of Central Canada. The majority of influenza activity was reported in the British Colombia and Ontario.

Although the number of positive influenza tests increased over the two week period, the percent positivity for influenza detections remains low (1.5%).

The national influenza-like illness (ILI) consultation rate increased from 13.2 consultations per 1,000 patient visits in week 37 to 14.8 per 1,000 visits in week 38.

In week 37, two influenza outbreaks were reported and one laboratory-confirmed influenza associated paediatric (≤ 16 years of age) hospitalisation was reported by the Immunization Monitoring Progam Active (IMPACT) network). This is the first hospitalization reported through IMPACT this season.

- Global influenza update Updated on 5 October 2015 (WHO website)

Globally, influenza activity generally decreased or remained low, with only a few countries reporting elevated respiratory illness levels.

In the Northern hemisphere, influenza activity continued at low, inter-seasonal levels with sporadic detections. Increased respiratory syncytial virus (RSV) activity was reported in the United States of America (USA).

Few influenza detections were reported by countries in Africa. In Eastern Africa, in countries with reported influenza activity, influenza type A viruses predominated. In Western Africa, influenza activity decreased overall.

In tropical countries of the Americas, Central America and the Caribbean, influenza activity remained at low levels, with the exception of Cuba, where high numbers of severe acute respiratory infections (SARI) were still reported, associated with influenza A(H1N1)pdm09 virus and RSV. Columbia experienced slightly elevated acute respiratory activity (ARI) in recent weeks with elevated RSV activity.

In tropical Asia, countries in Southern and South East Asia reported low influenza activity overall except in India and Lao People's Democratic Republic where increased activity mainly due to A(H1N1)pdm09 virus in India and A(H3N2) virus in Lao PDR continued to be reported. Influenza activity declined in southern China.

In temperate South America, respiratory virus activity decreased or remained low in general. However, ILI activity remained elevated in Chile with increasing influenza A(H1N1)pdm09 detections.

In South Africa, influenza activity remained at low levels with influenza type B viruses predominating in recent weeks.

In Australia, influenza activity in general seemed to be past the peak except in South Australia where it continued to rise with predominantly influenza B virus followed by influenza A(H3N2) virus detections. In New Zealand, influenza activity may have peaked in the second week of August with influenza A(H3N2) and B viruses predominating during the season. ILI activity was still above the seasonal threshold but below the alert threshold.

Based on FluNet reporting, the WHO GISRS laboratories tested more than 35,084 specimens between 7 and 20 September 2015. 2,096 were positive for influenza viruses, of which 1,722 (82.2%) were typed as influenza A and 374 (17.8%) as influenza B. Of the sub-typed influenza A viruses, 305 (21.3%) were influenza A(H1N1)pdm09 and 1124 (78.7%) were influenza A(H3N2). Of the characterized B viruses, 110 (92.4%) belonged to the B-Yamagata lineage and 9 (7.6%) to the B-Victoria lineage.

- Avian Influenza latest update on 16 July 2015 (WHO website)

Influenza A(H7N9) latest update on 16 July 2015

On 16 July 2015, the National Health and Family Planning Commission (NHFPC) of China notified WHO of 5 additional laboratory-confirmed cases of human infection with avian influenza A (H7N9) virus, including 3 deaths.

For further updates and WHO travel advice, please see the WHO website and for advice on clinical management please see information available online.

Influenza A(H5N1)

From 2003 through 4 September 2015, 844 human cases of H5N1 avian influenza have been officially reported to WHO from 16 countries, of which 449 (53.2%) have died. Since the last WHO Influenza update on 17 July 2015, no new laboratory-confirmed human cases of avian influenza A(H5N1) virus infection were reported to WHO. Various influenza A(H5) subtypes, such as influenza A(H5N1), A(H5N2), A(H5N3), A(H5N6) and A(H5N8), continue to be detected in birds in West Africa, Asia, Europe, and North America, according to reports received by OIE. Although these influenza A(H5) viruses might have the potential to cause disease in humans, so far no human cases of infection have been reported, with exception of the human infections with influenza A(H5N1) viruses and the four human infections with influenza A(H5N6) virus detected in China since 2014. Overall, the public health risk assessment for avian influenza A(H5) viruses remains unchanged since the assessment of 17 July 2015.

- Middle East respiratory syndrome coronavirus (MERS-CoV) latest update on 1 October 2015

Between 21 and 23 September 2015, the National IHR Focal Point of Jordan notified WHO of 4 additional cases of Middle East respiratory syndrome coronavirus (MERS-CoV) infection, including one death.

Between 20 and 26 September 2015, the National IHR Focal Point for the Kingdom of Saudi Arabia notified WHO of 6 additional cases of MERS-CoV infection, including one death.

Up to 5 October 2015, a total of four cases of Middle East respiratory syndrome coronavirus, MERS-CoV, (two imported and two linked cases) have been confirmed in England. On-going surveillance has identified 398 suspect cases in the UK that have been investigated for MERS-CoV and tested negative.

Globally, WHO has been notified of 1,593 laboratory-confirmed cases of infection with MERS-CoV, including at least 568 related deaths. Further information on management and guidance of possible cases is available online.

Acknowledgements

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This report was prepared by the Influenza section, Respiratory Diseases Department, Centre for Infectious Disease Surveillance and Control, Public Health England. We are grateful to all who provided data for this report including the RCGP Research and Surveillance Centre, the PHE Real-time Syndromic Surveillance team, the PHE Respiratory Virus Unit, the PHE Modelling and Statistics unit, the PHE Dept. of Healthcare Associated Infection & Antimicrobial Resistance, PHE regional microbiology laboratories, NHS Direct, Office for National Statistics, the Department of Health, Health Protection Scotland, National Public Health Service (Wales), the Public Health Agency Northern Ireland, the Northern Ireland Statistics and Research Agency, QSurveillance® and EMIS and EMIS practices contributing to the QSurveillance® database.

Related links

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Weekly consultation rates in national sentinel schemes

- Sentinel schemes operating across the UK
- RCGP scheme
- Northern Ireland surveillance (Public Health Agency)
- Scotland surveillance (Health Protection Scotland)
- Wales surveillance (Public Health Wales)
- Real time syndromic surveillance
- MEM threshold methodology paper and UK pilot paper

Community surveillance

- Outbreak reporting
- FluSurvey
- MOSA

Disease severity and mortality data

- USISS system
- EuroMOMO mortality project

Vaccination

- Seasonal influenza vaccine programme (Department of Health Book)
- Childhood flu programme information for healthcare practitioners (Public Health England)
- 2014/15 Northern Hemisphere seasonal influenza vaccine recommendations (WHO)