PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

31 December 2015 – Week 53 report (up to week 52 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.

Summary

In week 52 2015 (ending 27 December), allowing for Christmas reporting breaks, across community/primary care surveillance schemes, influenza activity remains at low levels, although an increase in influenza activity is now being observed through secondary care surveillance schemes.

- Community influenza surveillance
  - During week 52 selected respiratory indicators remained high but continue to be within seasonally expected levels.
  - Six new acute respiratory outbreaks have been reported in the past 7 days. Five in care homes where one tested positive for influenza A(not subtyped), one tested positive for RSV and hMPV, one tested positive for RSV only, one tested positive for parainfluenza and one was not tested/test results were not available). The sixth outbreak was in a hospital which tested positive for RSV.
- Overall weekly influenza GP consultation rates across the UK
  - Due to bank holidays in week 52 (ending 27 December 2015), GP surgeries were only open for four days – data should therefore be interpreted with caution.
  - In week 52, overall weekly influenza-like illness (ILI) GP consultations was low in England (6.6 per 100,000), Wales (6.8 per 100,000), Scotland (12.4 per 100,000) and Northern Ireland (17.0 per 100,000).
  - Weekly ILI rates also remain low in week 52 through the GP In Hours Surveillance system.
- Influenza-confirmed hospitalisations
  - Thirty-five new admissions to ICU/HDU with confirmed influenza (fourteen influenza A(H1N1)pdm09, eighteen influenza A(unknown subtype) and three influenza B) were reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (129 Trusts in England) in week 52, a rate of 0.08 compared to 0.04 per 100,000 the previous week.
  - Twenty-nine new hospitalised confirmed influenza cases (twenty-three influenza A(H1N1pdm09), four influenza A(not subtyped) and two influenza B) were reported through the USISS sentinel hospital network across England (20 Trusts), a rate of 0.38 compared to 0.19 per 100,000 the previous week.
  - Since week 40, eight confirmed influenza admissions have been reported (four influenza A(H1N1)pdm09 and four influenza A(unknown subtype) from the five Severe Respiratory Failure centres in England.
- All-cause mortality data
  - Up to week 50 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
  - Twenty-five samples tested positive for influenza (15 A(H1N1)pdm09, 8 A(untyped) and 2 B) through GP sentinel schemes across the UK.
  - Eighty-seven influenza positive detections were recorded through the DataMart scheme (seventy-one influenza A(H1N1)pdm09, twelve A(not subtyped) and four influenza B). A positivity of 8.3% was seen in week 52, an increase from 5.5% seen in week 51, with the highest positivity in 15-44 year olds (15.4%). This is above the threshold for 2015/16 season of 7.4%.
- Vaccination
  - Up to week 51 2015 in 84.9% 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: 42.9% in under 65 years in a clinical risk group, 41.0% in pregnant women, 69.7% in 65+ year olds, 33.7% in all 2 year olds, 35.3% in all 3 year olds and 28.4% in all 4 year olds.
  - Provisional data from the second monthly collection of influenza vaccine uptake by frontline healthcare workers show 44.1% were vaccinated by 30 November 2015 from 97.0% of Trusts, compared to 48.2% vaccinated in the previous season by 30 November 2014. The report is available here.
  - Provisional data from the second monthly collection of influenza vaccine uptake children of school years 1 and 2 age show the proportion of children in England who received the 2015/16 live attenuated intranasal vaccine (LAIV) from 1 September 2015 to 30 November 2015 was as follows: 40.9% in children school year 1 age (5-6 years) and 39.3% in children school year 2 age (6-7 years).
  - Provisional data from the second monthly collection of influenza vaccine uptake in GP patients up to 30 November 2015 has been published. The report provides uptake at national, area team and CCG level.
- International situation
  - Globally, influenza activity generally remained low in both hemispheres overall but there are signs of increasing activity in the Northern hemisphere.
  - Influenza activity in Europe remains low, however an increase in the positivity of samples from sentinel sources indicates an increase in influenza activity and the start of the season.

Community surveillance

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During week 52 selected respiratory indicators remained high but continue to be within seasonally expected levels. Six new acute respiratory outbreaks were reported in the past 7 days.

- PHE Real-time Syndromic Surveillance

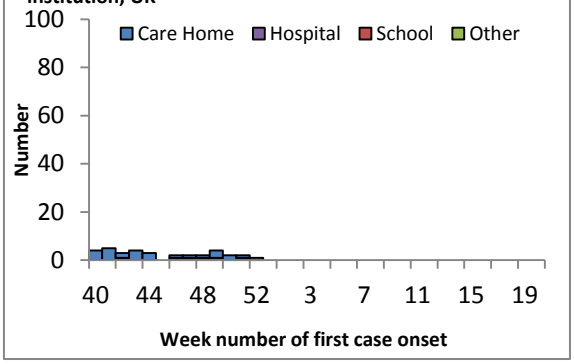
- During week 52 selected respiratory indicators remained high but continue to be within seasonally expected levels.

- Acute respiratory disease outbreaks

- Six new acute respiratory outbreaks have been reported in the past 7 days. Five of them were in care homes where one tested positive for influenza A(not subtyped), one tested positive for RSV and hMPV, one tested positive for RSV only, one tested positive for parainfluenza and one was not tested/test results were not available). One outbreak was in a hospital which tested positive for RSV.

-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



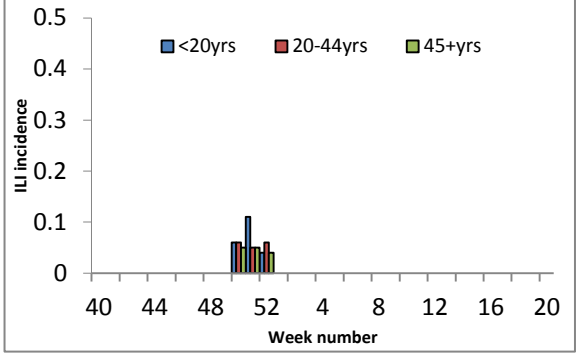
- FluSurvey

- Internet-based surveillance of influenza in the general population is undertaken through the FluSurvey. A project run jointly by PHE and the London School of Hygiene and Tropical Medicine.

- The overall ILI rate (all age groups) for week 52 was 0.05 (100 / 2,105 people reported at least 1 ILI).

- If you would like to become a participant of the FluSurvey project please do so by visiting the http://flusurvey.org.uk website for more information

Figure 2: FluSurvey ILI incidence by age group, UK



Weekly consultation rates in national sentinel schemes

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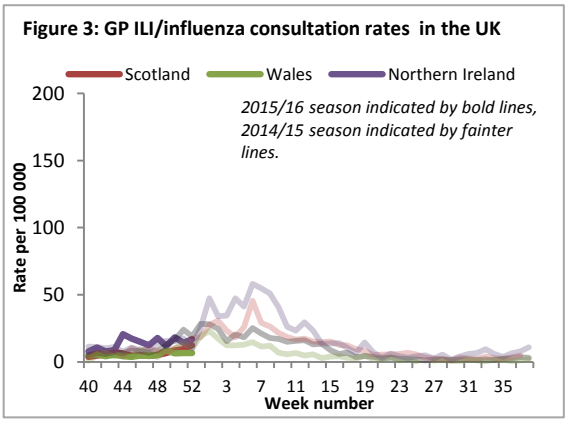
In week 52 overall weekly influenza-like illness GP consultations were low in England, Wales, Scotland and Northern Ireland.

- Influenza/Influenza-Like-Illness (ILI)

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



Northern Ireland

-The Northern Ireland influenza consultation rate was low at 17.0 per 100,000 in week 52 (Figure 3) and below the pre-epidemic threshold (49 per 100,000).

-The highest rates were seen in the 1-4 year olds (32.6 per 100,000), 65-74 year olds (26.3 per 100,000) and 15-44 year olds (18.5 per 100,000).

Wales

-The Welsh influenza rate was low at 6.8 per 100,000 in week 52 (Figure 3).

-The highest rates were seen in 45-64 year olds (10.57 per 100,000), in 15-44 year olds (9.11 per 100,000) and in 1-4 year olds (7.48 per 100,000).

Scotland

-The Scottish ILI rate was low at 12.4 per 100,000 in week 52 (Figure 3) and below the pre-epidemic threshold (37 per 100,000).

-The highest rates were seen in 45-64 year olds (17.1 per 100,000), 15-44 year olds (15.6 per 100,000) and 75+ year olds (10.4 per 100,000).

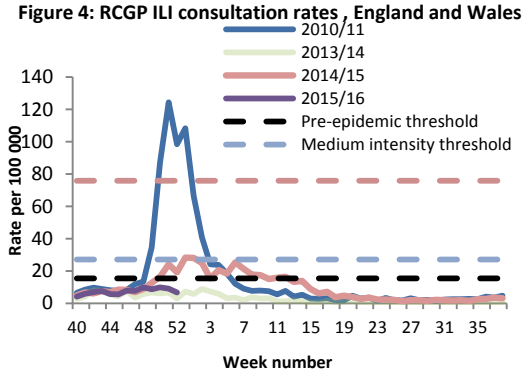
RCGP (England and Wales)

- The weekly ILI consultation rate through the RCGP surveillance system was low at 6.6 in week 52 and below the pre-epidemic threshold (15.4 per 100,000) (Figure 4*). By age group, the highest rates were seen in 1-4 year olds (9.1 per 100,000) and 15-44 year olds (9.0 per 100,000).

- Due to bank holidays in week 52 (ending 27 December 2015), GP surgeries were only open for four days – data should therefore be interpreted with caution.

**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 15.4 per 100,000 for the 2015/16 season.*

Figure 4: RCGP ILI consultation rates , England and Wales



GP In Hours Syndromic Surveillance System (England)

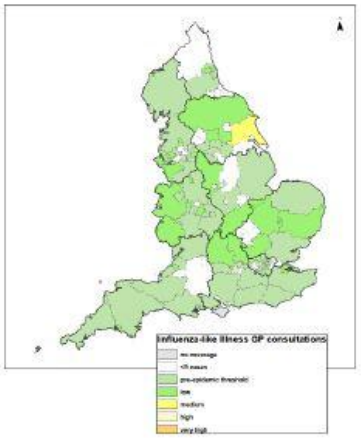
-The weekly ILI consultation rate through the GP In Hours Syndromic Surveillance system was low at 6.7 per 100,000 in week 52 (Figure 5).

Figure 5 represents a map of GP ILI consultation rates in Week 52 across England by Local Authorities, using influenza-like illness surveillance thresholds.

Thresholds are calculated using a standard methodology for setting ILI thresholds across Europe (the "Moving Epidemic Method" (MEM)) and are based on six previous influenza seasons (excluding the 2009/10 H1N1 pandemic)

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

Figure 5: Map of GP ILI consultation rates in Week 52



Influenza confirmed hospitalisations

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In week 52, thirty-five new admissions to ICU/HDU with confirmed influenza (fourteen influenza A(H1N1pdm09), eighteen A(unknown subtype) and three influenza B) were reported through the national USISS mandatory ICU scheme across the UK (129 Trusts in England). Twenty-nine new hospitalised confirmed influenza cases (twenty-three influenza A(H1N1pdm09), four influenza A(not subtyped) and two influenza B) were reported through the USISS sentinel hospital network across England (20 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 52)

-In week 52, thirty-five new admissions to ICU/HDU with confirmed influenza (fourteen influenza A(H1N1pdm09), eighteen A(unknown subtype) and three influenza B) were reported across the UK (129/156 Trusts in England) through the USISS mandatory ICU scheme (Figures 6 and 7), a rate of 0.08 per 100,000 compared to 0.04 per 100,000 the previous week and one new confirmed influenza death was reported in week 52 2015. A total of 122 admissions (42 influenza A(H1N1)pdm09, seven influenza A(H3N2), 62 influenza A unknown subtype and eleven influenza B) and five confirmed influenza deaths have been reported since week 40 2015.

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

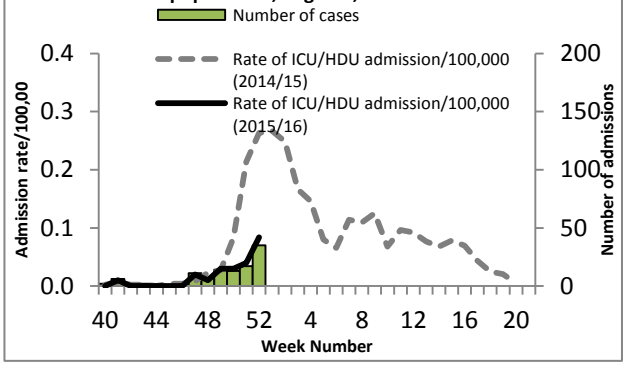
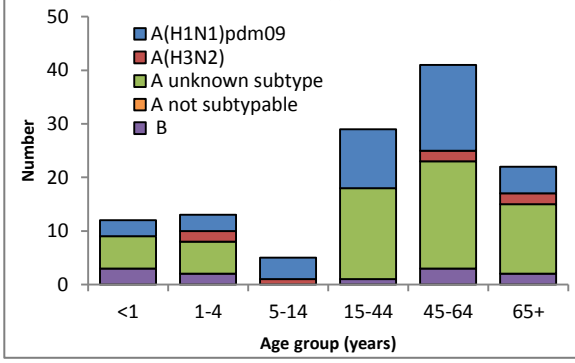


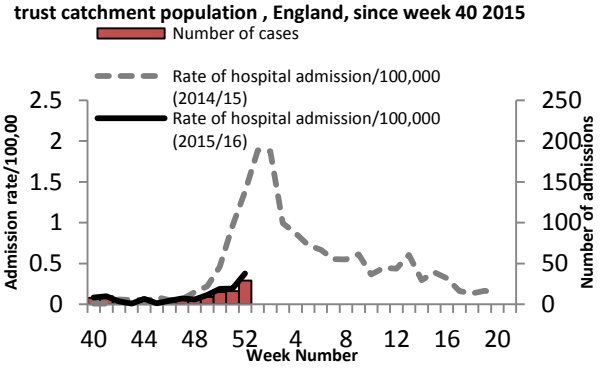
Figure 7: Cumulative ICU influenza admissions (USISS mandatory) by age group and flu type, UK, since week 40 2015



- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 52)

-In week 52, twenty-nine new hospitalised confirmed influenza cases (twenty-three influenza A(H1N1pdm09), four influenza A(not subtyped) and two influenza B) were reported through the USISS sentinel hospital network from 20 NHS Trusts across England (Figure 8), a rate of 0.38 per 100,000 compared to 0.19 per 100,000 the previous week. A total of 117 hospitalised confirmed influenza admissions (80 A(H1N1pdm09), nine A(H3N2), nine A unknown subtype, 13 A(unknown subtype) and 15 B) have been reported since week 40.

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



- USISS Severe Respiratory Failure Centre confirmed influenza admissions, England (week 52)

-In week 52, three new confirmed influenza admissions to the five Severe Respiratory Failure Centres in England were reported. Since week 40, eight confirmed influenza admissions have been reported (four influenza A(H1N1)pdm09 and four influenza A unknown subtype)

All-cause mortality data

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Up to week 50 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.

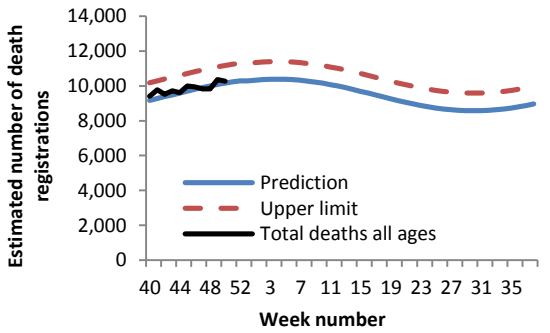
Seasonal mortality is seen each year in the UK, with a higher number of deaths in winter months compared to the summer. Additionally, peaks of mortality above this expected higher level typically occur in winter, most commonly the result of factors such as cold snaps and increased circulation of respiratory 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 50 2015, an estimated 10,269 all-cause deaths were registered in England and Wales (source: Office for National Statistics). This is a decrease compared to the 10,365 estimated death registrations in week 49, and is below the 95% upper limit of expected death registrations for the time of year as calculated by PHE (Figure 9).

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



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

-Up to week 50 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), in any age group or subnationally. This data is provisional due to the time delay in registration; numbers may vary from week to week.

- No excess mortality above the threshold through the same standardised algorithm was seen across the Devolved Administrations in week 50 (Table 2).

Table 1: Excess mortality by age group,England*

Age group (years)	Excess detected in week 50 2015?	Weeks with excess in 2015/16
<5	×	NA
5-14	×	NA
15-64	×	NA
65+	×	NA

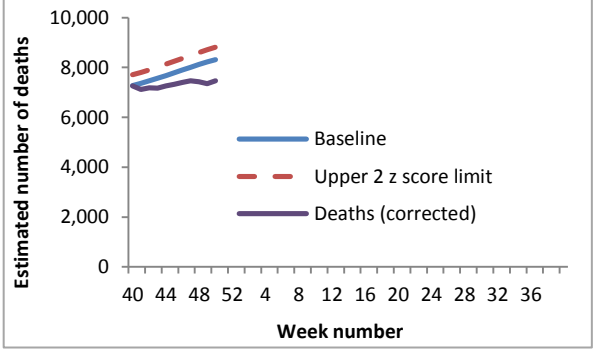
** Excess mortality is calculated as the observed minus the expected number of deaths in weeks above threshold*

Table 2: Excess mortality by UK country*

Country	Excess detected in week 50 2015?	Weeks with excess in 2015/16
England	×	NA
Wales	×	NA
Scotland	×	48
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 52 2015, thirteen samples tested for influenza through the UK GP sentinel schemes were positive. Eighty-seven influenza positive detections were recorded through the DataMart scheme (seventy-one influenza A(H1N1)pdm09, twelve A(not subtyped) and four influenza B).

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

-In week 52, twenty-five samples were positive for influenza. Twenty positive samples in England (13 influenza A(H1N1)pdm09, 6 influenza A(untyped) and 1 influenza B), three positive samples in Scotland (2 influenza A(H1N1)pdm09 and 1 influenza A (untyped)), two samples in Northern Ireland (1 A(untyped) and 1 B). No samples were positive for influenza in Wales (Table 3).

Table 3: Sentinel influenza surveillance in the UK

Week	England	Scotland	Northern Ireland	Wales
48	3/93 (3.2%)	0/85 (0%)	0/1 (-)	0/1 (-)
49	4/72 (5.6%)	1/74 (1.4%)	0/0 (-)	0/3 (-)
50	14/83 (16.9%)	5/78 (6.4%)	0/5 (-)	0/3 (-)
51	20/122 (16.4%)	4/78 (5.1%)	1/11 (9.1%)	1/10 (10%)
52	20/76 (26.3%)	3/33 (9.1%)	2/4 (-)	0/2 (-)

NB. Proportion positive omitted when fewer than 10 specimens tested

- Respiratory DataMart System (England)

In week 52 2015, out of the 1045 respiratory specimens reported through the Respiratory DataMart System, 87 samples (8.3%) were positive for influenza (71 A(H1N1)pdm09, 12 A(not subtyped) and 4 B) (Figure 11). The highest positivity was in the 15-44 year olds, 15.4%. The overall positivity for RSV continued to decrease with the highest positivity in children aged under 5 years old which also continued to decrease (from 43.8% in week 51 to 35.6% in week 52) (Figure 12). Positivity for parainfluenza decreased slightly to 3.3% in week 52. Positivity for rhinovirus decreased to 12.2% whereas positivity for hMPV increased to 4.7%. Adenovirus remained low at 3.3% (Figure 13).

Figure 11: DataMart samples positive for influenza, England

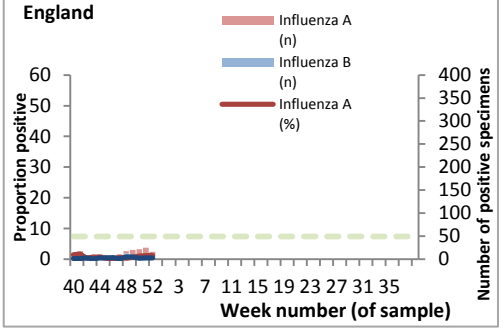


Figure 12: Datamart % RSV positive by age, England

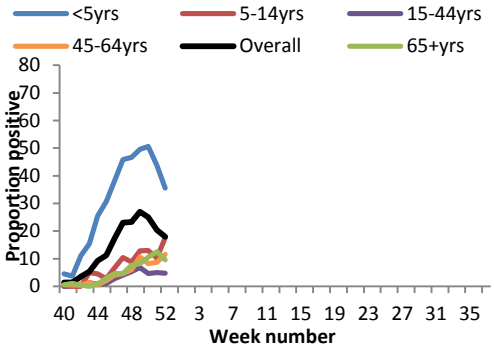
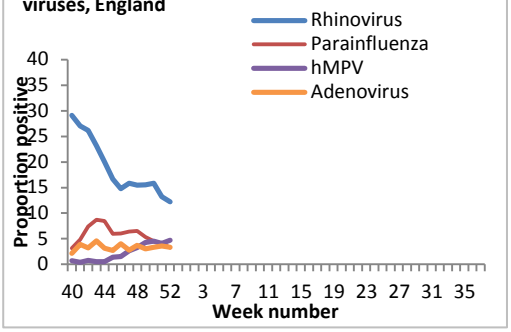


Figure 13: Datamart % positive for other respiratory viruses, England



**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

The PHE Respiratory Virus Unit has isolated and antigenically characterised 37 A(H1N1)pdm09 influenza viruses since the start of the 2015/16 winter influenza season in week 40 2015. These 37 viruses were antigenically similar to the A/California/7/2009 Northern Hemisphere 2015/16 (H1N1)pdm09 vaccine strain.

Four A(H3N2) influenza viruses have been isolated and antigenically characterised since week 38 2015. These four viruses were antigenically similar to the A/Switzerland/9715293/2013 H3N2 Northern Hemisphere 2015/16 vaccine strain. Genetic characterisation of eight A(H3N2) influenza viruses since week 38 showed that they belong to genetic group 3C.2a, and are genetically similar to the majority of A(H3N2) viruses circulating in the 2014/15 season.

Two influenza B virus has been isolated and antigenically characterised since week 40 2015. These viruses were characterised as belonging to the B/Victoria/2/87 lineage and were antigenically similar to B/Brisbane/60/2008, the influenza B/Victoria-lineage component of 2015/16 Northern Hemisphere quadrivalent vaccines.

- Antiviral susceptibility

Since week 40 2014, 72 influenza A(H1N1)pdm09 and one influenza B have been tested for oseltamivir susceptibility, and 17 influenza A(H1N1)pdm09 and one influenza B have been tested for zanamivir susceptibility in the UK, and all were found to be sensitive.

- Antimicrobial susceptibility

-Table 4 shows in the 12 weeks up to 20 December 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 20 December 2015, E&W

Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
S. pneumoniae	Penicillin	2,471	91
	Macrolides	2,843	82
	Tetracycline	2,743	83
H. influenzae	Amoxicillin/ampicillin	10,026	72
	Co-amoxiclav	9,577	92
	Macrolides	3,459	18
	Tetracycline	9,766	98
S. aureus	Methicillin	3,854	87
	Macrolides	3,790	72
MRSA	Clindamycin	417	48
	Tetracycline	469	89
MSSA	Clindamycin	2,075	78
	Tetracycline	3,128	93

**Macrolides = erythromycin, azithromycin and clarithromycin*

Vaccination

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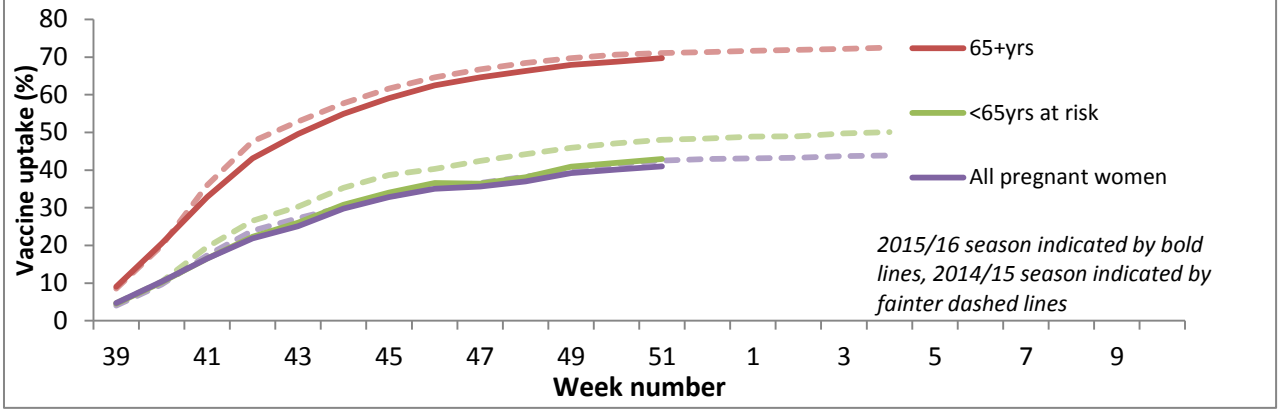
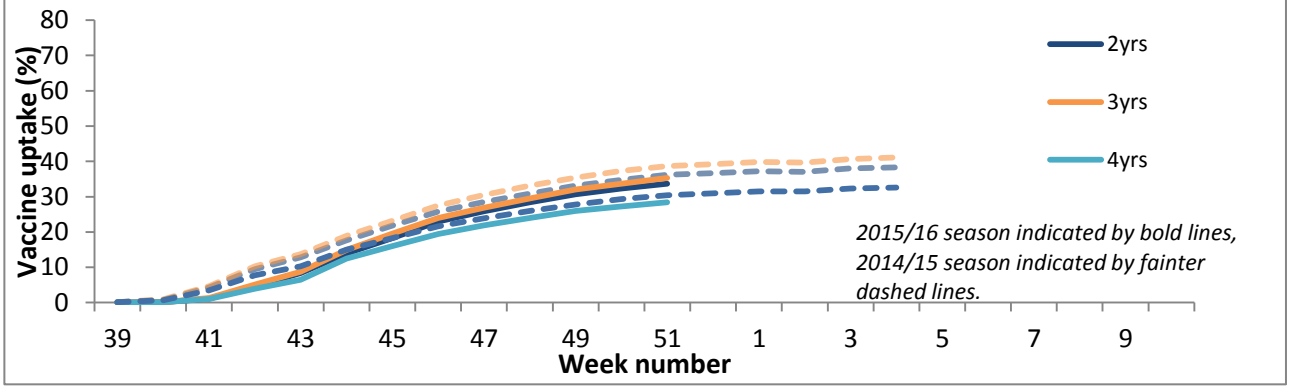
- Up to week 51 2015 in 84.9% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2015/16 influenza vaccine in targeted groups was as follows (Figure 14)
    - 42.9% in under 65 years in a clinical risk group
    - 41.0% in pregnant women
    - 69.7% 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 50 2015 in 84.9% 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)
    - 33.7% in all 2 year olds
    - 35.3% in all 3 year olds
    - 28.4% in all 4 year olds

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



- Provisional data from the second monthly collection of influenza vaccine uptake by frontline healthcare workers show 44.1% were vaccinated by 30 November 2015 from 97.0% of Trusts, compared to 48.2% vaccinated in the previous season by 30 November 2014. The report provides uptake at national, area team and CCG level.
- Provisional data from the second monthly collection of influenza vaccine uptake children of school years 1 and 2 age show the proportion of children in England who received the 2015/16 live attenuated intranasal vaccine (LAIV) from 1 September 2015 to 30 November 2015 was as follows: 40.9% in children school year 1 age (5-6 years) and 39.3% in children school year 2 age (6-7 years).
- Provisional data from the second monthly collection of influenza vaccine uptake in GP patients up to 30 November 2015 has been published. The report provides uptake at national, area team and CCG level.

International Situation

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Globally, influenza activity generally remained low in both hemispheres.

- Europe updated on 23 December 2015 (Joint ECDC-WHO Influenza weekly update)

In week 51, influenza activity is low in most countries in the WHO European Region, with the majority reporting sporadic detections of influenza A(H1N1)pdm09, A(H3N2) and B viruses.

For week 51/2015, 11% of the specimens from sentinel sources tested positive for influenza virus compared to 6% for the previous week. This indicates an increase in influenza activity and the start of the influenza season in the Region.

Since week 40, approximately 2% of specimens from non-sentinel sources tested positive for influenza virus but the proportion was 12% for week 51/2015.

Since week 40/2015, 115 influenza-confirmed cases in hospitals have been reported, of which 76 were in intensive care units (ICUs). Of 76 influenza-confirmed cases in ICUs, 44 were type A viruses (not subtyped), 21 were A(H1N1)pdm09, seven influenza type B viruses and four A(H3N2).

The increase in virus detections seen since week 49 in sentinel and non-sentinel cases is due almost exclusively to influenza A(H1N1)pdm09. This subtype was detected more frequently than A(H3N2), and B/Victoria lineage was detected more frequently than B/Yamagata in both sentinel and non-sentinel specimens. Viruses characterized so far this season are genetically similar to the strains recommended for inclusion in this winter's trivalent or quadrivalent vaccine for the northern hemisphere.

- United States of America Updated on 28 December 2015 (Centre for Disease Control report)

During week 50, influenza activity increased slightly in the United States but remained low overall. The most frequently identified type reported to be influenza A with influenza A (H1N1)pdm09 viruses predominating.

Nationwide during week 50, the proportion of outpatient visits for influenza-like illness (ILI) was 2.2%, which is above the national baseline of 2.1%. Four of 10 regions reported ILI at or above region-specific baseline levels.

During week 50, 6.3% of all deaths reported through the 122 Cities Mortality Reporting System were due to P&I. This percentage was below the epidemic threshold of 6.8% for week 50.One influenza-associated paediatric death with Influenza A(unknown subtype) was reported in week 50. A total of four influenza associated paediatric deaths have been reported during the 2015-2016 season.

- Canada Updated on 30 December 2015 (Public Health Agency report)

In week 50, influenza surveillance indicators in Canada revealed that influenza activity is on the rise nationally compared to previous weeks.

So far this season, influenza A(H3N2) has been the most common subtype affecting Canadians, however an increase in the number of influenza A(H1N1) cases has been noted over the past few weeks.

The percent positive for influenza detections decreased from 1.64% in week 49 to 2.42% in week 50.To date, 89% of influenza detections have been influenza A and the majority of those subtyped have been A(H3) (78%).

The national influenza-like-illness (ILI) consultation rate has increased from 21.0 per 1,000 visits in week 49 to 23.2 per 1,000 visits in week 50. In week 50, the highest ILI consultation rate was found in the 5-19 years of age and the lowest was found in the >65 years of age group.

To date this season, 18 laboratory-confirmed influenza-associated paediatric (≤16 years of age) hospitalizations have been reported by the Immunization Monitoring Program Active (IMPACT) network. Since the start of the 2015-16 season, 105 laboratory-confirmed influenza-associated hospitalizations were reported from participating provinces and territories. The majority (49%) of patients were ≥65 years of age.

- Global influenza update Updated on 28 December 2015 (WHO website)

Globally, influenza activity generally remained low in both hemispheres.

In a few countries in Central and Northern Asia, as well as in Eastern and Northern Europe, there were slight increases in influenza detections in recent weeks.

In Eastern Asia, the rest of Europe, North Africa and North America, influenza activity continued at low, inter-seasonal levels.

In southern and western Asia, Iran (Islamic Republic of)and Pakistan reported elevated influenza activity, predominantly influenza A(H1N1)pdm09.Oman reported increased influenza activity, predominantly due to influenza A(H1N1)pdm09 and influenza B viruses, while Bahrain reported a decline in influenza activity. Qatar also reported a decline in influenza activity but remained at elevated levels.

Few influenza virus detections were reported by countries in tropical Africa.

In tropical countries of the Americas, Central America and the Caribbean, respiratory virus activity remained at low levels, with the exception of Costa Rica(A(H3N2)), Cuba (A(H3N2)) and Nicaragua (A(H1N1)pdm09).

In tropical Asia, countries in South East Asia reported low influenza activity overall except Thailand where activity mainly due to B viruses continued to be reported.

In the temperate countries of the Southern Hemisphere, respiratory virus activity was generally low in recent weeks with low levels of influenza virus detections reported.

Based on FluNet reporting, the WHO GISRS laboratories tested more than 40,491 specimens between 30 November 2015 and 13 December 2015. 2,590 were positive for influenza viruses, of which 2,158 (83.3%) were typed as influenza A and 432 (16.7%) as influenza B. Of the sub-typed influenza A viruses, 1,375 (82.7%) were influenza A(H1N1)pdm09 and 287 (17.3%) were influenza A(H3N2). Of the characterized B viruses, 100 (75.8%) belonged to the B-Yamagata lineage and 32 (24.2%) to the B-Victoria lineage.

- Avian Influenza latest update on 14 December 2015 (WHO website)

Influenza A(H7N9) latest update on 17 December 2015
On 11 December 2015 the National Health and Family Planning Commission (NHFPC) of China notified WHO of 2 additional laboratory-confirmed cases of human infection with avian influenza A (H7N9) virus. For further updates and WHO travel and clinical management advice, please see the WHO website.

Influenza A(H5N1)
From 2003 through 14 December 2015, 844 laboratory-confirmed human cases of avian influenza A(H5N1) virus infection have been officially reported to WHO from 16 countries. Of these cases, 449 have died. Influenza A(H5) viruses of various subtypes, such as influenza A(H5N1), A(H5N2), A(H5N6), A(H5N8) and A(H5N9) have been detected in birds in Africa, Asia, and Europe according to reports received by OIE. Although influenza A(H5) viruses have the potential to cause disease in humans, so far no human cases of infection with these viruses 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.

In recent weeks, highly pathogenic avian influenza A(H5) viruses of several subtypes have been detected in domestic birds in France. Based on preliminary data, at least one of these viruses has different origins than the influenza A(H5) viruses that have infected the human cases reported in the past. WHO is in contact with the animal health authorities to better understand these viruses and to more accurately assess the public health risk.

Influenza A(H5N6)
On 29 December 2015, a human A(H5N6) avian flu case has been reported in Shenzhen City, Guangdong province, South China. Four cases of A(H5N6) have been reported so far around the world, with the first human infection reported in May 2014 in China's southwest province of Sichuan.

- Middle East respiratory syndrome coronavirus (MERS-CoV) latest update on 04 December 2015

Between 02 and 27 November 2015, the National IHR Focal Point for the Kingdom of Saudi Arabia notified WHO of 3 additional cases of Middle East Respiratory Syndrome-Coronovirus (MERS-CoV) infection, including two deaths.

On 12 October 2015, the National IHR Focal Point for the Republic of Korea provided follow-up information on a previously reported case of Middle East respiratory syndrome coronavirus (MERS-CoV) infection. The patient, who was diagnosed from hospital on 3 October following two consecutive negative PCR tests for MERS-CoV, was readmitted to hospital with fever on 11 October and tested positive again for MERS-CoV on 12 October. On 26 November 2015, the Korean Ministry of Health and Welfare announced the death of the readmitted patient.

Up to 30 December 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 518 suspect cases in the UK that have been investigated for MERS-CoV and tested negative.

Globally, since September 2012, WHO has been notified of 1,621 laboratory-confirmed cases of infection with MERS-CoV, including at least 584 related deaths. Further information on management and guidance of possible cases is available online. The latest ECDC MERS-CoV risk assessment can be found here, where it is highlighted that risk of widespread transmission of MERS-CoV remains low.

Acknowledgements

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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)
- 2015/16 Northern Hemisphere seasonal influenza vaccine recommendations (WHO)