



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

In week 8 2015 (ending 22 February), influenza continues to circulate with activity levels generally similar to last week. Significant excess all-cause mortality has been seen mainly in 65+ year olds, with suggestion that it is now decreasing. The Department of Health [alert](#) issued on the prescription of antiviral medicines by GPs is still active.

- [Community influenza surveillance](#)
 - In week 8 the syndromic indicators for respiratory symptoms were stable or decreased.
 - 33 new acute respiratory outbreaks have been reported in the past seven days, 30 in care homes (eight flu A(untyped), five flu A(H3), two Flu B, two hMPV and the rest not tested/results not available yet), and three in hospitals (flu A(untyped)).
- [Overall weekly influenza GP consultation rates across the UK](#)
 - The weekly ILI consultation rate through the GP In Hours Syndromic Surveillance system remained stable in week 8.
 - In week 8, overall weekly influenza-like illness (ILI) GP consultations decreased in Scotland (29.2 per 100,000) and Northern Ireland (54.8 per 100,000) and remained stable in Wales (12.3 per 100,000).
- [Influenza-confirmed hospitalisations](#)
 - 46 new admissions to ICU/HDU with confirmed influenza (20 A unknown subtype, 10 A(H3N2), four influenza A(H1N1)pdm09 and 12 B) were reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (124 Trusts in England) in week 8, a rate of 0.10 compared to 0.11 per 100,000 the previous week.
 - 42 new hospitalised confirmed influenza cases (10 influenza A(H3N2), 13 influenza B, 16 A unknown subtype and three influenza A(H1N1)pdm09) were reported through the USISS sentinel hospital network across England (21 Trusts), a rate of 0.53 compared to 0.54 per 100,000 the previous week.
- [All-cause mortality data](#)
 - In week 8 2015, significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England in 65+ year olds. In the devolved administrations in week 8, significant excess all-cause mortality was also seen in Northern Ireland, but not in Scotland or Wales. Since week 40 2014, significant excess mortality has been seen in England from week 50 2014 onwards, coinciding with circulating influenza and cold snaps, with suggestions impact is now decreasing.
- [Microbiological surveillance](#)
 - 38 samples were positive for influenza through the UK GP sentinel schemes (17 A(H3), two A(H1N1)pdm09, nine A(not subtyped) and 10 B, positivity of 30.0% compared to 40.1% the previous week .
 - In week 8 2015, 170 influenza positive detections were recorded through the DataMart scheme (110 A(H3), 17 A(not subtyped), 16 influenza A(H1N1)pdm09 and 27 B, a positivity of 13.2% compared to 15.1% the previous week, with the highest levels seen in 65+ year olds (19.3%).
 - Characterisation of influenza A(H3N2) viruses by the PHE Respiratory Virus Unit indicates that a proportion of the viruses circulating this season are distinguishable from the Northern Hemisphere 2014/15 vaccine strain and are similar to the H3N2 virus selected for the 2015 Southern Hemisphere influenza vaccine.
- [Vaccination](#)
 - Up to week 4 2015 in 92% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2014/15 influenza vaccine in targeted groups was as follows: 72.5% in 65+ year olds, 50.1% in under 65 years in a clinical risk group, 43.9% in pregnant women, 38.3% in all 2 year olds, 41.1% in all 3 year olds and 32.6% in all 4 year olds. This is the last week of reporting for weekly uptake data.
 - Provisional data from the fourth monthly collection of influenza vaccine uptake by frontline healthcare workers show 54.6% were vaccinated by 31 January 2015 from 100.0% of Trusts.
 - PHE have published their mid-season flu vaccine effectiveness [estimate](#).
- [International situation](#)
 - Globally influenza activity remained high in the northern hemisphere with influenza A(H3N2) viruses predominating. In the European Region, the influenza season is well underway, particularly in western and central European countries.

In week 8 syndromic indicators for respiratory symptoms remained stable or decreased and 33 new acute respiratory outbreaks were reported in the last seven days.

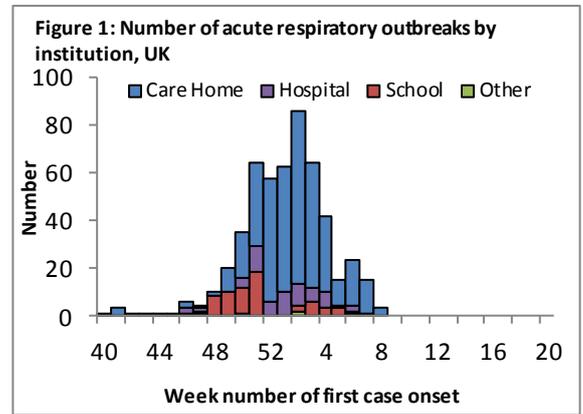
- PHE Real-time Syndromic Surveillance

-In week 8 syndromic indicators for respiratory symptoms remained stable.
 -For further information, please see the syndromic surveillance [webpage](#).

- Acute respiratory disease outbreaks

-33 new acute respiratory outbreaks have been reported in the past seven days, 30 in care homes (eight flu A(untyped), five flu A(H3), two Flu B, two hMPV and the rest not tested/results not available yet), and three in hospitals (flu A(untyped)). So far in the 2014/15 flu season, 572 outbreaks (432 in care homes, 68 in schools, 66 in hospitals and six in other settings) have been reported in the UK including 95 with flu A(H3) infection, 149 flu A (untyped), five flu B, three flu A(untyped)/flu B, two flu A (H1N1)pdm09, eight rhinovirus, five RSV, three parainfluenza, three hMPV, one enterovirus, 16 mixed infections with different respiratory viruses and 285 not tested (or test results not yet available or tested negative).

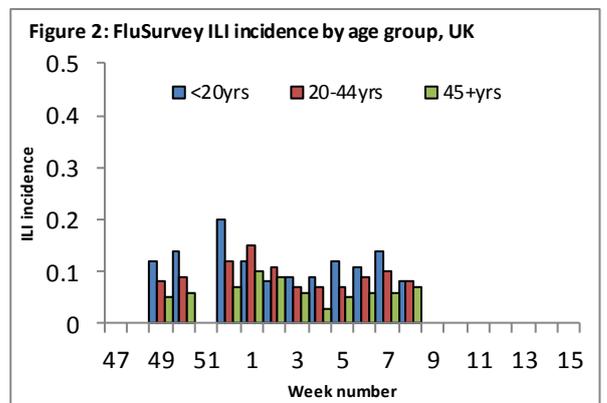
-Outbreaks should be recorded on HPZone and reported to the local Health Protection Teams and Respscidsc@phe.gov.uk.



- FluSurvey

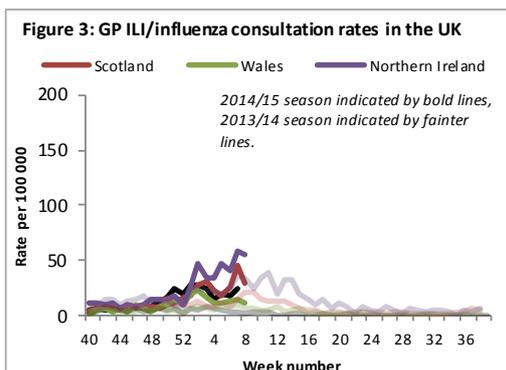
-Internet-based surveillance of influenza in the general population is undertaken through the FluSurvey project (<http://flusurvey.org.uk>) run by the London School of Hygiene and Tropical Medicine. Please see the website for information on how to register.

-In week 8, the incidence of ILI reports by age group was highest in under 20 year olds (Figure 2, NB. No data is currently available for week 51).



In week 8 overall weekly influenza-like illness GP consultations decreased in Scotland, Northern Ireland, and remained stable in Wales.

- Influenza/Influenza-Like-Illness (ILI)



Northern Ireland

-The Northern Ireland influenza rate decreased from 58.3 in week 7 to 54.8 per 100,000 in week 8 (Figure 3).

-The highest rates were seen in 1-4 year olds (85.5 per 100,000), 75+ year olds (84.0 per 100,000) and 15-44 year olds (58.1 per 100,000).

Wales

-The Welsh influenza rate remained stable at 12.3 in week 8 compared to 14.5 per 100,000 in week 7 (Figure 3).

-The highest rates were seen in 45-64 year olds (19.5 per 100,000), 15-44 year olds (11.9 per 100,000) and 65-74 year olds (9.0 per 100,000).

Scotland

-The Scottish ILI rate decreased from 45.4 in week 7 to 29.2 per 100,000 in week 8 (Figure 3).

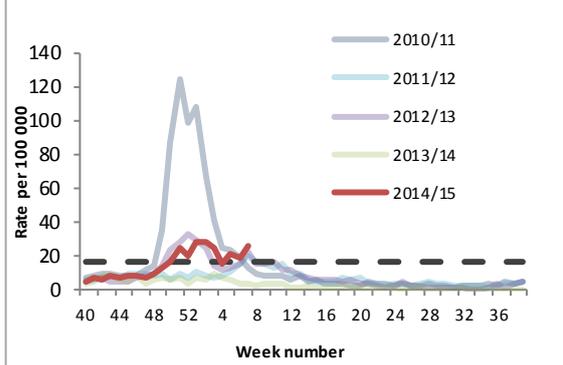
-The highest rates were seen in 45-64 year olds (37.3 per 100,000), 75+ year olds (36.0 per 100,000) and 15-44 year olds (29.7 per 100,000).

RCGP (England and Wales)

-Confirmed data is available up to week 6 2015. The weekly ILI consultation rate through the RCGP surveillance system increased from 18.3 in week 6 to 25.3 per 100,000 in week 7 (Figure 4*). By age group, the highest rate was seen in 45-64 year olds (29.9 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 16 per 100,000.*

Figure 4: RCGP ILI consultation rates, England and Wales

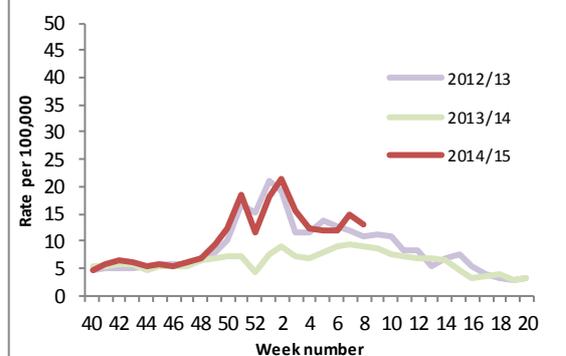


GP In Hours Syndromic Surveillance System (England)

-The weekly ILI consultation rate through the GP In Hours Syndromic Surveillance system remained stable compared to the previous week (from 14.9 in week 7 to 13.0 per 100,000 in week 8, Figure 5).

-For further information, please see the syndromic surveillance [webpage](#).

Figure 5: GP in hours ILI consultation rate, England



Influenza confirmed hospitalisations

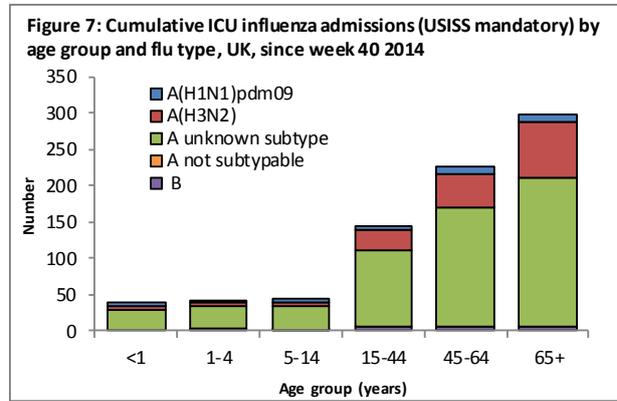
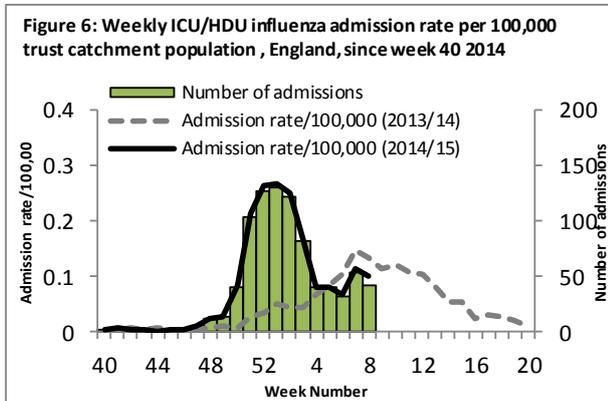
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In week 8, 46 new admissions to ICU/HDU with confirmed influenza (20 A unknown subtype, 10 A(H3N2), four influenza A(H1N1)pdm09 and 12 B) were reported through the national USSS mandatory ICU scheme across the UK (124 Trusts in England). 42 new hospitalised confirmed influenza cases (10 influenza A(H3N2), 13 influenza B, 16 A unknown subtype and three influenza A(H1N1)pdm09) were reported through the USSS sentinel hospital network across England (21 Trusts).

A national mandatory collection (USSS 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 (USSS sentinel hospital network) of acute NHS trusts has been 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.

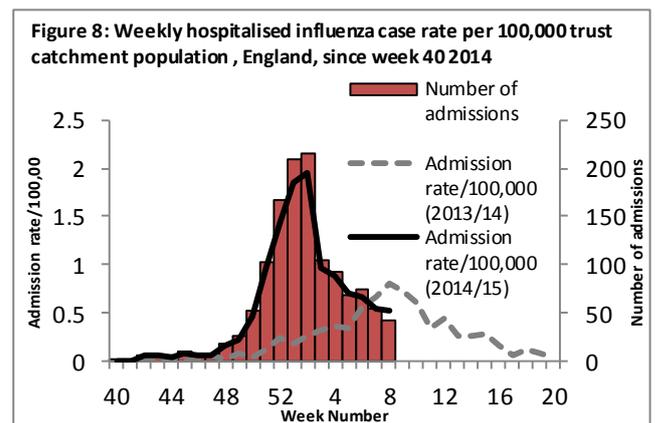
- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 8)

-In week 8, 46 new admissions to ICU/HDU with confirmed influenza (20 A unknown subtype, 10 A(H3N2), four influenza A(H1N1)pdm09 and 12 B) were reported across the UK (124/156 Trusts in England) through the USISS mandatory ICU scheme (Figures 6 and 7), a rate of 0.10 per 100,000 compared to 0.11 per 100,000 the previous week. Eight new confirmed influenza deaths were reported in week 8 2015. A total of 964 admissions (652 A unknown subtype, 206 A(H3N2), 55 A(H1N1)pdm09) and 100 confirmed influenza deaths have been reported since week 40 2014.



- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 8)

-In week 8, 42 new hospitalised confirmed influenza cases (10 influenza A(H3N2), 13 influenza B, 16 A unknown subtype and three influenza A(H1N1)pdm09) were reported through the USISS sentinel hospital network from 21 NHS Trusts across England (Figure 8), a rate of 0.53 per 100,000 compared to 0.54 per 100,000 the previous week. A total of 1,255 hospitalised confirmed influenza admissions (812 A(H3N2), 352 A unknown subtype, 62 B and 29 A(H1N1)pdm09)) have been reported since week 40.



All-cause mortality data

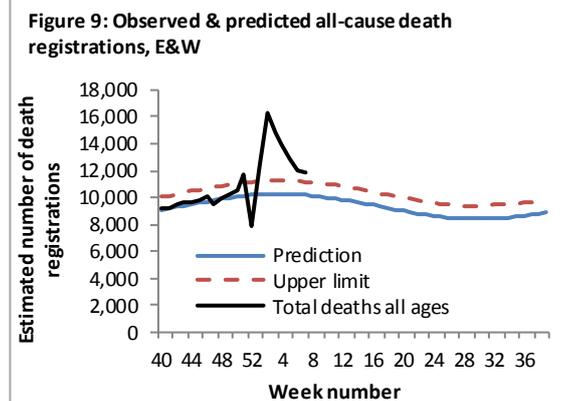
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In week 8 2015, significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England in 65+ year olds. In the devolved administrations in week 8, significant excess all-cause mortality was also seen in Northern Ireland, but not in Scotland or Wales. Since week 40 2014, significant excess mortality has been seen in England from week 50 2014 onwards mainly in 65+ year olds, coinciding with circulating influenza and cold snaps, with suggestions impact is now decreasing.

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 7 2015, an estimated 11,822 all-cause deaths were registered in England and Wales (source: Office for National Statistics). This is less than the 12,039 estimated death registrations in week 6, but remains above the 95% upper limit of expected death registrations for the time of year as calculated by PHE (Figure 9). The sharp drop in number of deaths in week 52 corresponds to a week when there were bank holidays and fewer days when deaths were registered and so is likely to be artificial and result in subsequent increases in following weeks.



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

-Since week 40 2014 up to week 8 2015 in England, 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 in 65+ year olds in weeks 50 to 8 2015, 15-64 year olds in weeks 46, 51-1 and weeks 1 and 2 in under five year olds (Figure 10, Table 1). This coincides with circulating influenza and cold snaps. This data is provisional due to the time delay in registration; numbers may vary from week to week.

-In the devolved administrations, up to week 8 2015, excess mortality above the threshold was seen in weeks 51-4 and 6-7 in Scotland, weeks 52-3 in Wales and weeks 3-4 and 6-8 in Northern Ireland (Table 2).

Table 1: Excess mortality by age group, England*

Age group (years)	Excess detected in week 8 2015?	Weeks with excess in 2014/15
<5	x	1-2
5-14	x	NA
15-64	x	46,51-1
65+	✓	50-8

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

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

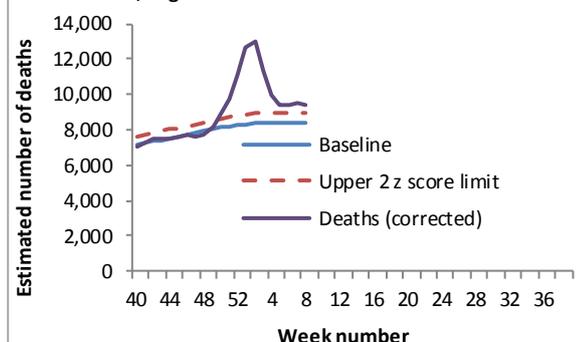


Table 2: Excess mortality by UK country*

Country	Excess detected in week 8 2015?	Weeks with excess in 2014/15
England	✓	50-8
Wales	x	52-3
Scotland	x	51-4,6-7
Northern Ireland	✓	3-4,6-8

* 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

Microbiological surveillance

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In week 8 2015, 38 samples were positive for influenza through the UK GP sentinel schemes (17 A(H3), two A(H1N1)pdm09, nine A(not subtyped) and 10 B, positivity of 30.0%). 170 influenza positive detections were recorded through the DataMart scheme (110 A(H3), 17 A(not subtyped), 16 influenza A(H1N1)pdm09 and 27 B, positivity of 13.2%).

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

-In week 8, 21 samples were positive for influenza in England (11 A(H3), nine B and one A(H1N1)pdm09), 10 in Scotland (five A(H3), three A(untyped), one B and one A(H1N1)pdm09), six in Northern Ireland (six A(not subtyped)) and one in Wales (one A (H3)) (Table 3).

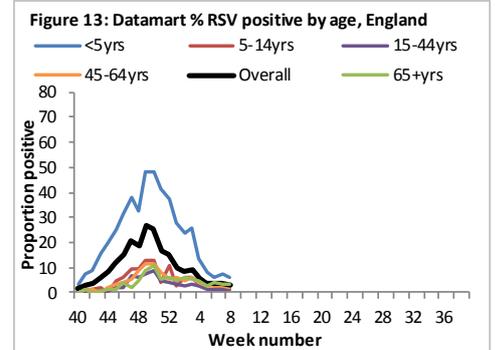
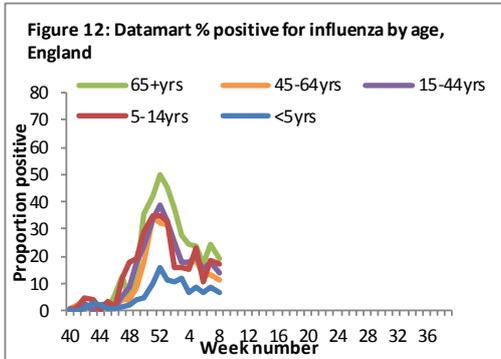
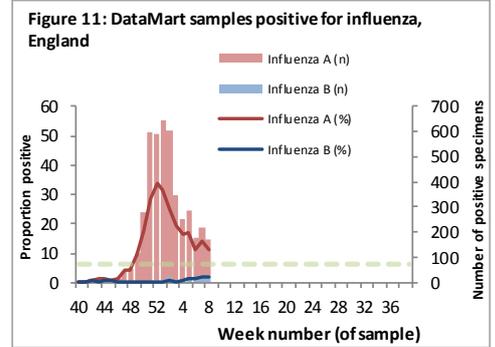
Table 3: Sentinel influenza surveillance in the UK

Week	England	Scotland	Northern Ireland	Wales
5	55/159 (37.7%)	37/80 (46.3%)	8/14 (57.1%)	2/10 (20%)
6	15/69 (23.2%)	29/79 (36.7%)	6/15 (40%)	2/5 (-)
7	48/124 (37.7%)	42/96 (43.8%)	13/15 (86.7%)	0/4 (-)
8	21/81 (25.9%)	10/30 (33.3%)	6/8 (-)	1/8 (-)

NB. Proportion positive omitted when fewer than 10 specimens tested

- Respiratory DataMart System (England)

In week 8 2015, out of the 1288 respiratory specimens reported through the Respiratory DataMart System, 170 samples (13.2%) were positive for influenza (110 A(H3), 17 A(not subtyped), 16 influenza A(H1N1)pdm and 27 B (Figure 9*)). The overall positivity for RSV remained at low levels at 2.8% in week 08, mainly in children under 5 years (5.9%), Figure 10). Positivity for rhinovirus decreased slightly to 9.3% in week 8, while other respiratory viruses remained at low levels: adenovirus 4.2%, parainfluenza 2.9% and hMPV 3.2%, (Figure 11).



*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 6%.

- Virus characterisation

Since week 40 2014, the PHE Respiratory Virus Unit (RVU) has isolated and antigenically characterised 209 influenza A(H3N2) viruses. Of these, the majority were similar to the A/Texas/50/2012 H3N2 Northern Hemisphere 2014/15 vaccine strain, however 51 (24%) showed reduced reactivity in antigenic tests with A/Texas/50/2012 antiserum. These 51 isolates are antigenically similar to A/Switzerland/9715293/2013, the H3N2 virus selected for the 2015 Southern Hemisphere influenza vaccine. A/Switzerland/9715293/2013 is related to, but antigenically and genetically distinguishable, from the A/Texas/50/2012 vaccine virus.

A portion of recent influenza A(H3N2) viruses do not grow sufficiently for antigenic characterization. For many of these viruses, RVU performs genetic characterisation. Of 76 A(H3N2) viruses characterised genetically by RVU to date, some of which were not able to be antigenically characterised, the majority (80%) fall into a genetic subgroup which has been shown to be antigenically distinguishable from the current A(H3N2) vaccine virus.

Thirty-six influenza A(H1N1)pdm09 viruses have been isolated and antigenically characterised as similar to the A/California/7/2009 Northern Hemisphere 2014/15 vaccine strain.

Twenty-four influenza B viruses have been isolated and antigenically characterised as belonging to B/Yamagata/16/88 lineage, the influenza B component of the 2014-2015 Northern Hemisphere trivalent and quadrivalent vaccines.

- Antiviral susceptibility

Since week 40 2014, 144 influenza viruses (76 A(H3N2), 56 A(H1N1)pdm09 and 12 B) have been tested for oseltamivir susceptibility in the UK and all but three H3N2 are sensitive. The 74 flu A(H3N2), 19 A(H1N1)pdm09 and 12 B were also tested against zanamivir and all but one H3N2 are sensitive. The resistant H3N2 influenza virus has an R292K amino acid substitution in the neuraminidase. This sample was taken from a child who had received oseltamivir treatment. The R292K substitution is known to cause resistance to oseltamivir and also reduces susceptibility to zanamivir.

- Antimicrobial susceptibility

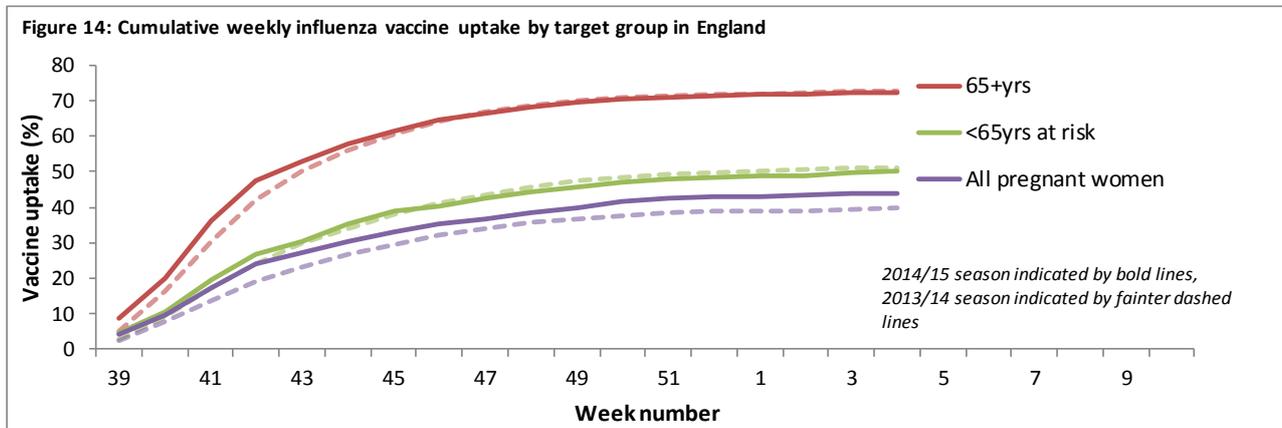
-Table 4 shows in the 12 weeks up to 15 February 2015, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired 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 15 Feb 2015, E&W

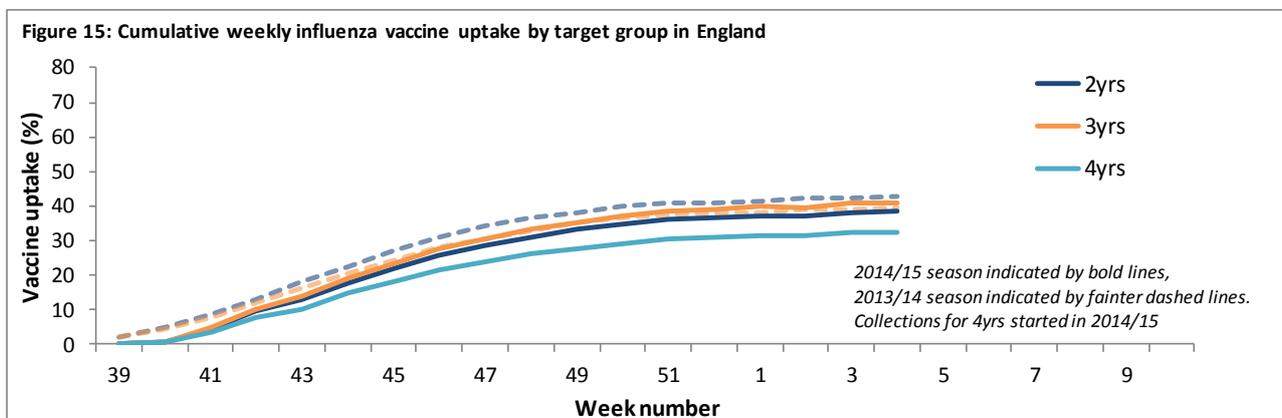
Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	3,505	92
	Macrolides	3,803	82
	Tetracycline	3,657	85
<i>H. influenzae</i>	Amoxicillin/ampicillin	13,999	74
	Co-amoxiclav	13,026	95
	Macrolides	5,255	20
	Tetracycline	14,017	98
<i>S. aureus</i>	Methicillin	4,769	87
	Macrolides	4,674	72
MRSA	Clindamycin	507	40
	Tetracycline	588	85
MSSA	Clindamycin	2,233	80
	Tetracycline	3,631	92

*Macrolides = erythromycin, azithromycin and clarithromycin

- Up to week 4 2015 in 92% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2014/15 influenza vaccine in targeted groups was as follows (Figure 13):
 - 50.1% in under 65 years in a clinical risk group
 - 43.9% in pregnant women
 - 72.5% in 65+ year olds



- The childhood universal influenza vaccination programme has extended from 2-3 year olds in 2013/14 to 2-4 year olds in 2014/15. Up to week 4 2015 in 92% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2014/15 influenza vaccine in targeted groups was as follows (Figure 14):
 - 38.3% in all 2 year olds
 - 41.1% in all 3 year olds
 - 32.6% in all 4 year olds



- Provisional data from the fourth monthly collection of influenza vaccine uptake by frontline healthcare workers show 54.6% were vaccinated by 31 January 2015 from 100.0% of Trusts, compared to 54.8% vaccinated the previous season by 31 January 2014. The [report](#) provides uptake at national, geographical area, area team (on behalf of primary care and independent sector healthcare providers) and individual Trust level.
- Provisional data from the fourth monthly collection of influenza vaccine uptake up to 31 January 2015 by targeted groups has been published. The [report](#) provides uptake at national, area team and CCG level.
- A mid-season influenza vaccine effectiveness estimate for the 2014/15 season in the United Kingdom has been [published](#), with an adjusted value of 3.4% (upper 95% confidence interval of 35.5%) against primary care consultations with laboratory-confirmed influenza. The low value reflects mismatch between circulating A(H3N2) viruses and the 2014/15 northern hemisphere A(H3N2) vaccine strain. Annual flu vaccination remains the best protection we have against an unpredictable virus which can cause severe illness and deaths each year. It will provide protection against the other circulating strains this season. Early use of antivirals for prophylaxis and treatment of vulnerable populations remains important.

Globally influenza activity remained high in the northern hemisphere with influenza A(H3N2) viruses predominating. In the European Region, the influenza season is well underway, particularly in western and central European countries.

- [Europe](#) 20 February 2015 (Joint ECDC-WHO Influenza weekly update)

Influenza activity continues, particularly in western and central countries of the WHO European Region. The overall proportion of influenza positive specimens and the total number of sentinel influenza virus detections decreased slightly which may be indicative of several countries having passed their peaks of influenza activity. Of 38 reporting countries an equal number of countries, 15 each, reported stable and increasing influenza activity. Influenza A(H1N1)pdm09, A(H3N2) and type B viruses continued to circulate in the Region, with A(H3N2) predominating.

Excess all-cause mortality among elderly people (aged ≥ 65 years), concomitant with increased influenza activity and the predominance of A(H3N2) viruses, has been observed since the beginning of the year in seven (Belgium, France, Greece, Portugal, Spain, Switzerland and the United Kingdom (England, Scotland and Wales)) of 13 reporting countries. Most of the A(H3N2) viruses characterized so far show antigenic differences from the virus included in the 2014–2015 northern hemisphere influenza vaccine. A reduction in the effectiveness of the A(H3N2) component of the vaccine has been observed (www.eurosurveillance.org), which in turn may have contributed to the excess mortality reported among elderly people in several European countries. The A(H1N1)pdm09 and B components of the vaccine are likely to be effective.

Thirty-eight countries reported epidemiological data for week 07/2015. Seven countries, mostly in central and Eastern Europe, and the United Kingdom (Wales) reported low intensity of influenza activity, with three reporting increasing trends, indicating that the season has not yet fully started in these countries. Eight countries, mostly in the western part of the Region, reported high intensity of influenza activity, either regional or widespread geographically, with mostly increasing or stable trends. In addition, 22 countries, predominantly in western, northern and central Europe and the Russian Federation, reported medium-intensity influenza activity. Of these, 15 reported laboratory-confirmed influenza cases in 50% or more of their administrative units (or reporting sites) and trends were still increasing in 10.

Since week 40/2014, eight countries (Finland, France, Ireland, Romania, Slovakia, Spain, Sweden and the United Kingdom) have reported a total of 2536 laboratory-confirmed hospitalized influenza cases. Of these, 1709 cases were admitted to intensive care units (ICUs): 886 (52%) being reported by the United Kingdom. Of the 2536 confirmed cases, 2286 (90%) were positive for influenza A virus (902 were subtyped: 712 A(H3N2) and 190 A(H1N1)pdm09) and 250 (10%) for influenza B virus.

For week 07/2015, 202 laboratory-confirmed hospitalized influenza cases were reported, with 73 admitted to ICUs: two by Finland, three by Ireland, seven by Romania, 21 by Spain and 40 by the United Kingdom. No data were reported by France and Sweden. Of the influenza viruses detected in ICU patients, 60 (82%) were diagnosed as type A and 13 as type B (18%). Of the 25 subtyped influenza A viruses, 12 (48%) were A(H3N2) and 13 (52%) were A(H1N1)pdm09. Where data on age are available, since the start of the season, the highest number of cases (829) have occurred in the ≥ 65 year age group. Of these, 384 were admitted to ICUs and 445 to other wards, and of the 335 cases where influenza type A viruses were subtyped, 285 were A(H3N2) and 50 A(H1N1)pdm09.

Since week 40/2014, the antigenic characteristics of 685 influenza viruses have been reported, and 831 viruses have been characterized genetically. The 139 A(H1N1)pdm09 viruses antigenically characterized to date are similar to the components included in the 2014–2015 northern hemisphere vaccines. Of the 143 influenza B viruses characterized antigenically, 139 were of the Yamagata lineage, which is included in the current 2014–2015 northern hemisphere trivalent and quadrivalent vaccines. Four viruses were of the Victoria lineage.

Forty-two (30%) of the Yamagata lineage viruses were similar to B/Massachusetts/2/2012, a virus from genetic clade 2, while 94 (68%) were like B/Phuket/3073/2013, the virus from genetic clade 3 recommended for the southern hemisphere 2015 influenza season vaccines. Although viruses from clade 2 and clade 3 are antigenically distinguishable, reference antisera raised against B/Massachusetts/2/2012 react well with viruses from clade 3, which suggests that the current trivalent vaccine might give protection against B-Yamagata clade 3 viruses. In addition, one B/Wisconsin/1/2010-like and two B/Florida/4/2006-like Yamagata lineage viruses have been reported. Of the 163 B-Yamagata lineage viruses characterized genetically to date, 160 belong to clade 3, represented by B/Phuket/3073/2013. The three influenza B Victoria lineage viruses were B/Brisbane/60/2008-like (recommended for inclusion in quadrivalent vaccines).

Of the 583 A(H3N2) viruses characterized genetically, 374 (64%) fell in genetic subgroup 3C.2a, represented by A/Hong Kong/5738/2014; 147 (25%) in subgroup 3C.3, represented by A/Samara/73/2013; 53 (9%) in genetic subgroup 3C.3a, represented by A/Switzerland/9715293/2013, 7 (1%) in genetic subgroup 3C.1 represented by A(H3N2) A/Texas/50/2012, 1 (<1%) was characterized as A(H3N2) A/Perth/16/2009 and 1 (<1%) in genetic subgroup 3C.2 represented by A(H3N2) A/Stockholm/1/2013. Viruses in genetic subgroups 3C.2a and 3C.3a have been shown to be antigenically dissimilar to the current A(H3N2) vaccine virus. Twenty-one A(H3N2) viruses were not attributable to an antigenic category and sixteen were not ascribed to a genetic category. Together, these observations indicate that the current A(H3N2) component of influenza vaccines will probably have reduced effectiveness.

- [United States of America](#) 20 February 2015 (Centre for Disease Control report)

During week 6 (February 8-14, 2015), influenza activity decreased, but remained elevated in the United States. The proportion of outpatient visits for influenza-like illness (ILI) was 3.2%, above the national baseline of 2.0%. All 10 regions reported ILI at or above region-specific baseline levels. Puerto Rico and 12 states experienced high ILI activity; five states experienced moderate ILI activity; New York City and 12 states experienced low ILI activity; 21 states experienced minimal ILI activity; and the District of Columbia had insufficient data. The geographic spread of influenza in Puerto Rico and 30 states was reported as widespread; Guam, the U.S. Virgin Islands, and 15 states reported regional activity; and the District of Columbia and five states reported local activity.

Of 18,370 specimens tested and reported by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories during week 6, 2,381 (13.0%) were positive for influenza. (1,315 influenza A subtype not performed, 512 influenza A (H3), 548 influenza B and six influenza A(H1N1)pdm09).

Six influenza-associated paediatric deaths were reported to CDC during week 6. Four deaths were associated with an influenza A (H3) virus and occurred during weeks 51, 3, and 4. Two deaths were associated with an influenza A virus for which no subtyping was performed and occurred during weeks 4 and 5. A total of 86 influenza-associated paediatric deaths have been reported during the 2014-2015 season from New York City and 29 states

CDC has characterized 871 influenza viruses [21 A(H1N1)pdm09, 696 A(H3N2), and 154 influenza B viruses] collected by U.S. laboratories since October 1, 2014. All 21 H1N1 viruses tested were characterized as A/California/7/2009-like, the influenza A (H1N1) component of the 2014-2015 Northern Hemisphere influenza vaccine. 214 (30.7%) of the 696 H3N2 viruses tested have been characterized as A/Texas/50/2012-like, the influenza A (H3N2) component of the 2014-2015 Northern Hemisphere influenza vaccine. 482 (69.3%) of the 696 viruses tested showed either reduced titers with antiserum produced against A/Texas/50/2012 or belonged to a genetic group that typically shows reduced titers to A/Texas/50/2012. Among viruses that showed reduced titers with antiserum raised against A/Texas/50/2012, most were antigenically similar to A/Switzerland/9715293/2013, the H3N2 virus selected for the 2015 Southern Hemisphere influenza vaccine. A/Switzerland/9715293/2013 is related to, but antigenically and genetically distinguishable from, the A/Texas/50/2012 vaccine virus. A/Switzerland-like H3N2 viruses were first detected in the United States in small numbers in March of 2014 and began to increase through the spring and summer.

Early [estimates](#) of seasonal vaccine effectiveness in the United States suggest the 2014/15 vaccine has low effectiveness against circulating influenza A(H3N2) viruses.

- [Canada](#) 20 February 2015 (Public Health Agency report)

In week 06, all influenza indicators declined from, or remained similar to, the previous week. Influenza activity in the Central and the Atlantic Provinces continued into week 06 (mainly due to influenza A) while activity in the Western provinces and the Territories declined. For the past few weeks, influenza B detections have been increasing steadily, particularly in the Prairies and in Quebec. A(H3N2) continues to be the most common type of influenza affecting Canadians. Seniors continue to have the highest number of positive laboratory detections, hospitalizations and deaths. Detections of respiratory syncytial virus (RSV) continue to be the second most frequently detected virus after influenza. Evidence from the National Microbiology Laboratory (NML) does indicate that this year's vaccine will continue to provide protection against the circulating A(H1N1) and B strains.

In week 06, the number of positive influenza tests (1,625) and the percentage positive for influenza A (16.3%) continued to decline from the previous week. The percentage of positive influenza B tests continued to increase and was 3.6 % in week 06, the highest this season thus far. In week 06, influenza B accounted for 33%-52% of influenza detections in AB, SK and QC. To date, 95% of influenza detections have been influenza A, and 99.7% of those subtyped have been A(H3N2). To date this season, detailed information on

age and type/subtype has been received for 28,650 cases. A significantly greater proportion of laboratory detections of influenza have been reported in adults ≥ 65 years of age (61%) this season compared to the 2013-14 season when only 15.6% of cases were in adults ≥ 65 years of age.

The national influenza-like-illness (ILI) consultation rate decreased to 44.5 consultations per 1,000, which is slightly above expected levels for week 06. The rate was highest among the 5 to 19 years of age group (60.1 consultations per 1,000) and lowest among the adults ≥ 65 years of age (36.2 consultations per 1,000).

In week 06, 14 laboratory-confirmed influenza-associated paediatric (≤ 16 years of age) hospitalizations were reported by the Immunization Monitoring Program Active (IMPACT) network: seven cases of influenza A and seven cases of influenza B. Among the reported cases, six (43%) were < 2 years of age, seven (50%) were 2 to 9 years of age and one (7%) was 10-16 years of age. One case was admitted to the ICU. To date this season, 503 hospitalizations have been reported by the IMPACT network, 465 (93%) of which were cases of influenza A. Among cases for which the influenza A subtype was reported, 99% (142/144) were A(H3N2). To date, 57 cases were admitted to the ICU, of which 35 (61%) were 2 to 9 years of age). Three deaths have been reported.

In week 06, 56 laboratory-confirmed influenza-associated adult (≥ 16 years of age) hospitalizations were reported by the PHAC/CIHR Influenza Research Network (PCIRN) Serious Outcomes Surveillance (SOS) network. Among the cases in week 06, 41 cases (73%) were in adults over the age of 65 and 46 cases (82%) had influenza A. To date this season, 1,628 cases have been reported; 1,590 (98%) with influenza A. The majority of cases (83%) were among adults ≥ 65 years of age. One hundred and nineteen ICU admissions have been reported and 89 cases were adults ≥ 65 years of age. A total of 86 ICU cases (72%) reported to have at least one underlying condition or comorbidity. Of the 82 ICU cases with known immunization status, 30 (37%) reported not having been vaccinated this season. Seventy-four deaths have been reported, 67 (91%) of the deaths were adults > 65 years of age.

Early estimates of seasonal vaccine effectiveness in Canada published in [January](#) and [February](#) suggest the 2014/15 vaccine has low effectiveness against circulating influenza A(H3N2) viruses.

- [Global influenza update](#) 23 February 2015 (WHO website)

Globally, influenza activity remained high in the northern hemisphere with influenza A(H3N2) viruses predominating. Some countries reported an increase in influenza A(H1N1)pdm09 activity. Antigenic characterization of most recent A(H3N2) viruses thus far indicated differences from the A(H3N2) virus used in the influenza vaccines for the northern hemisphere 2014-2015. The vast majority of influenza A(H3N2) viruses tested to date this season were sensitive to neuraminidase inhibitors.

In North America, the influenza activity seemed to have peaked. Influenza A(H3N2) virus has predominated this season.

In Europe, the influenza season continued to rise, particularly in western and central countries. Influenza A(H3N2) remained the dominant virus detected this season. However, in south west Europe the proportion of influenza A(H1N1) and influenza B increased.

In northern Africa and the Middle East, influenza activity is ongoing. Some countries are reporting an increase in influenza A(H1N1)pdm09 activity (Jordan, Morocco and Tunisia).

In the temperate countries of Asia, influenza activity decreased from its peak in northern China, but continued to increase in Mongolia and the Republic of Korea. Influenza A(H3N2) virus predominated so far. In tropical countries of the Americas, influenza activity remained low in most countries.

In tropical Asia, influenza activity continued to increase in southern China, China Hong Kong Special Administrative Region and India.

In the southern hemisphere, influenza activity remained at inter-seasonal levels.

- Enterovirus D68 (EV-D68) 15 January 2015

From mid-August to 15 January 2015, CDC or state public health laboratories have confirmed a total of [1,153 persons](#) in 49 states and the District of Columbia with respiratory illness caused by EV-D68. Almost all of the confirmed cases were among children, many whom had asthma or a history of wheezing. Additionally, there were likely millions of mild EV-D68 infections for which people did not seek medical treatment and/or get tested.

ECDC have published a [rapid risk assessment](#). Based on information currently available to ECDC, the risk of increased severe cases of EV-D68 in EU/EEA countries is assessed as moderate, in light of recent reports of such cases and because the circulation of this strain in the population seems to be geographically widespread in the EU.

The UK has an enhanced enterovirus surveillance system established as part of poliovirus elimination. Samples from individuals who present with neurological symptoms (such as acute flaccid paralysis or meningitis) and in whom enterovirus is detected should be sent for sub-typing at the reference laboratory. From 2012 to 1 September 2014, a total of 12 EV-D68 cases had been diagnosed, mainly in children. Following the reports from North America, guidance was developed highlighting that EV-D68 should be considered as a possible cause of disease in children with severe acute respiratory infections and/or with unexplained neurological symptoms, when all other respiratory virus screens are negative and if a rhinovirus/enterovirus positive PCR is initially detected. Although no unexplained clusters of severe respiratory or neurological disease have been reported, since September 2014, a total of 33 sporadic cases have been detected in children and adults. From the information available to date, the majority seem to have presented with respiratory symptoms, with two children presenting with neurological symptoms.

- [Avian Influenza](#) 12 February 2015 (WHO website)

Influenza A(H7N9) & Influenza A(H5N6)

On [09 February 2015](#), the National Health and Family Planning Commission (NHFPC) of China notified WHO of 1 additional laboratory-confirmed case of human infection with avian influenza A(H5N6) virus.

So far, the overall risk associated with the H7N9 virus has not changed. WHO does not advise special screening at points of entry with regard to this event, nor does it currently recommend any travel or trade restrictions. For further updates please see the WHO website and for advice on clinical management please see information available [online](#).

Influenza A (H5N1)

From 2003 through 26 January 2015, 718 human cases of H5N1 avian influenza have been officially reported to [WHO](#) from 16 countries, of which 413 (57.5%) died. The patient had history of exposure to dead wild fowl.

- Novel coronavirus 16 February 2015

Up to 11 February 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 224 suspect cases in the UK that have been investigated for MERS-CoV and tested negative.

A further 1027 confirmed cases have been reported internationally, resulting in a current global total of 1031 cases, with the most recent cases reported on 23 February 2015 from the [Kingdom of Saudi Arabia](#). 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.

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