



PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

07 December 2017 – Week 49 report (up to week 48 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

During week 48 (ending 03 December 2017), influenza activity is starting to increase but remains at baseline levels across most surveillance systems and RSV is at peak activity.

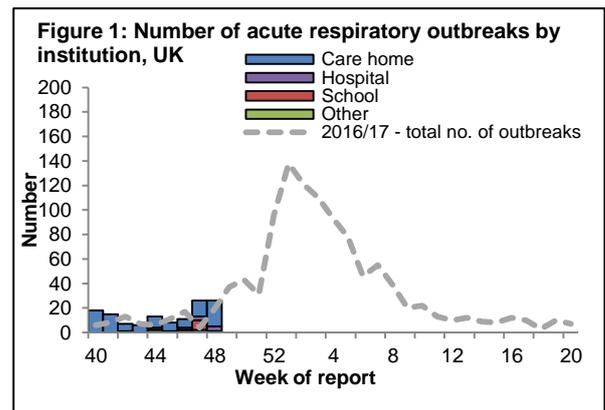
- [Community influenza surveillance](#)
 - Twenty-six new acute respiratory outbreaks have been reported in the past 7 days. Twenty-one outbreaks were from care homes, where three tested positive for influenza A(unknown subtype) and one for influenza B. Four outbreaks were from hospitals where two tested positive for influenza A(unknown subtype). The remaining outbreak was from a school with no test result available.
- [Overall weekly influenza GP consultation rates across the UK](#)
 - In week 48, the overall weekly influenza-like illness (ILI) GP consultation rate was 7.6 per 100,000 in England, compared to 7.3 per 100,000 in week 47. This is below the baseline threshold of 13.1 per 100,000 for this season. In the devolved administrations, ILI rates were also below baseline thresholds.
 - Through the Syndromic Surveillance systems, GP in hours consultations for influenza like illness (ILI) were low in week 48 (GP IH) and there were decreases in GP out of hours consultations and Emergency Department attendances for bronchitis/bronchiolitis and in NHS 111 calls for cough and difficulty breathing.
- [Influenza-confirmed hospitalisations](#)
 - In week 48, there were 18 admissions to ICU/HDU with confirmed influenza (three A(H1N1)pdm09, three influenza A(H3N2), nine influenza A(unknown subtype) and three influenza B) reported across the UK (116/144 Trusts in England) through the USSS mandatory ICU scheme with a rate of 0.04 per 100,000 for England, compared to 0.03 per 100,000 in the previous week.
 - In week 48, there were 64 hospitalised confirmed influenza cases (10 influenza A(H1N1)pdm09, eight influenza A(H3N2), 35 influenza A(unknown subtype) and 11 influenza B) reported through the USSS sentinel hospital network (all levels of care) (22 NHS Trusts across England), with a rate of 0.63 per 100,000 compared to 0.39 per 100,000 in the previous week.
 - One laboratory confirmed influenza admission (one influenza A(unknown subtype)) was reported from the six Severe Respiratory Failure centres in the UK in week 48.
- [All-cause mortality data](#)
 - In week 48 2017, no statistically significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England. In the devolved administrations, no significant excess all-cause mortality was observed in week 48 2017.
- [Microbiological surveillance](#)
 - Eleven samples tested positive for influenza (two influenza A(unknown subtype) and nine influenza B) through the UK GP sentinel schemes, with an overall positivity of 17.5%.
 - Sixty-one positive detections were recorded through the DataMart scheme (32 influenza A(H3), 10 influenza A(H1N1)pdm09, 10 influenza A(unknown subtype) and 9 influenza B) with a positivity of 3.4% in week 48. RSV activity is stabilising at 21.4% in week 48 and the highest positivity was seen in <5 year olds at 47.0%.
- [Vaccination](#)
 - Up to week 48 2017, in 72.2% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2017/18 influenza vaccine in targeted groups was: 43.5% in under 65 years in a clinical risk group, 43.1% in pregnant women and 69.1% in 65+ year olds. In 72.1% of GP practices reporting weekly to Immform, the provisional proportion of children in England who had received the 2017/18 influenza vaccine in targeted groups was: 36.4% in 2 year olds and 36.8% in 3 year olds.
 - Provisional data from the first monthly collection of influenza vaccine uptake by frontline healthcare workers show 46.0% were vaccinated by 31 October 2017, compared to 40.4% vaccinated in the previous season by 31 October 2016.
 - Provisional data from the first monthly collection of influenza vaccine uptake for children of school years Reception, 1, 2, 3 and 4 age show the provisional proportion of children in England who received the 2016/17 influenza vaccine via school, pharmacy or GP practice by 31 October 2017 in targeted groups was as follows: 18.1% in children of school year Reception age (4-5 years); 17.9% in children of school Year 1 age (5-6 years); 17.5% in children of school Year 2 age (6-7 years); 17.0% in children of school Year 3 age (7-8 years) and 16.2% in children of school Year 4 age (8-9 years).
 - Provisional data from the first monthly collection of influenza vaccine uptake in GP patients up to 31 October 2017 is now available. The report provides uptake at national, Local Team (LT), Area Team (AT), Clinical Commissioning Group (CCG) and at Local Authority (LA) levels.
- [International situation](#)
 - Globally, influenza activity increased slightly in the temperate zone of the northern hemisphere, with Canada exceeding its seasonal threshold in week 45, indicating the start of the influenza season in Canada. In the temperate zone of the southern hemisphere activity appeared to have decreased at inter-seasonal levels. Worldwide, influenza A(H3N2) and B viruses accounted for the majority of influenza detections.

Twenty-six new acute respiratory outbreaks were reported in the past 7 days.

- Acute respiratory disease outbreaks

- Twenty-six new acute respiratory outbreaks have been reported in the past 7 days. Twenty-one outbreaks were from care homes, where three tested positive for influenza A(unknown subtype) and one for influenza B. Four outbreaks were from hospitals where two tested positive for influenza A(unknown subtype). The remaining outbreak was from a school with no test result available.

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



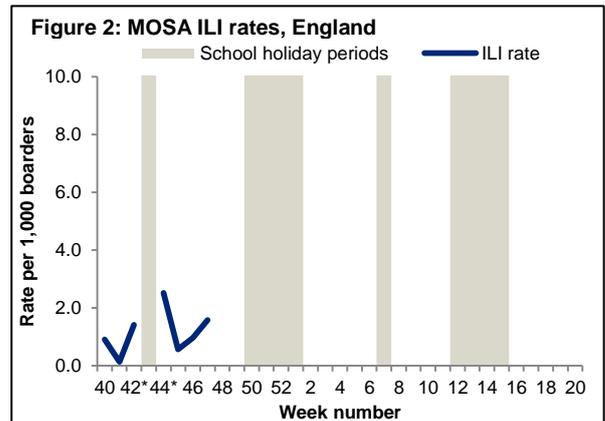
- Medical Officers of Schools Association (MOSA) & PHE surveillance scheme

- Boarding schools in England within the MOSA network are recruited each season to report various respiratory related illnesses including influenza like illnesses (ILI). For the 2017/18 season, 21 MOSA schools have agreed to participate in the scheme, including a total of 7,575 boarders.

- The overall ILI rate (all boarders) for week 47 was 1.6 per 1,000 boarders compared to 1.0 per 1,000 boarders in the previous week.

-Since week 40, eight outbreaks have been reported from three MOSA schools, with a total of 34 ILI cases identified.

- If you are a MOSA school and would like to participate in this scheme, please email mosa@phe.gov.uk for more information.



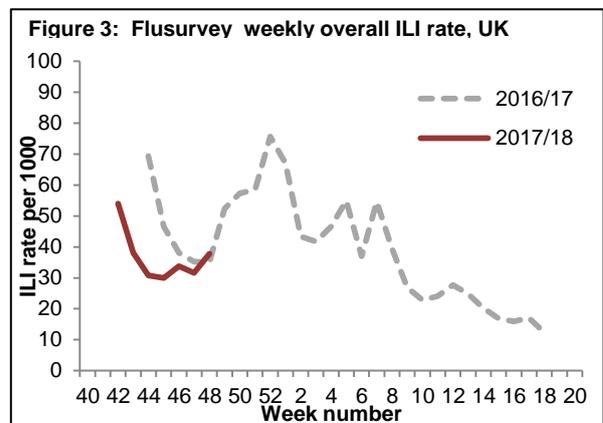
*represents weeks where not all schools will be reporting due to varying school holiday periods.

- FluSurvey

- Internet-based surveillance of influenza-like illness 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 48 was 37.8 per 1,000 (75/1,984 people reported at least 1 ILI) (Figure 3), with the highest rate seen in the <20 year olds (54.3 per 1,000).

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



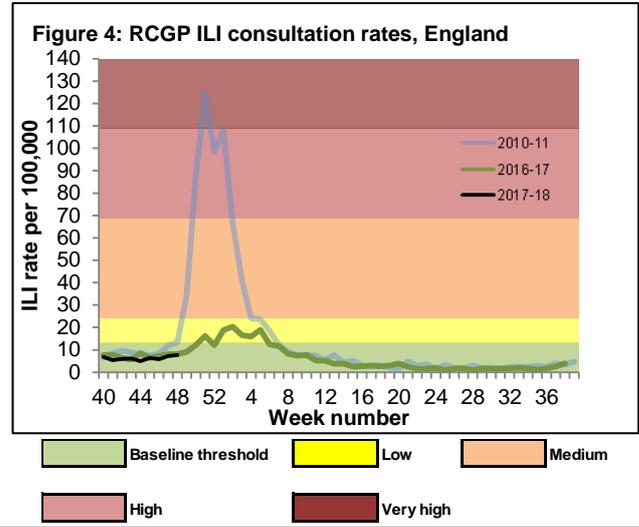
In week 48, the overall weekly influenza-like illness (ILI) GP consultation rate is low and is below the baseline threshold in England. In the devolved administrations, ILI rates remained low in week 48.

- GP ILI consultations in the UK

RCGP (England)

- The weekly ILI consultation rate through the RCGP surveillance is at 7.6 per 100,000 in week 48 compared to 7.3 per 100,000 in week 47. This is below the baseline threshold (13.1 per 100,000) (Figure 3*). By age group, the highest rates were seen in 45-64 year olds (10.8 per 100,000) and 15-44 year olds (7.6 per 100,000).

*The Moving Epidemic Method (MEM) 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 (based on 10 seasons excluding 2009/10) in a standardised approach across Europe. For MEM intensity threshold values, please visit: <https://www.gov.uk/guidance/sources-of-uk-flu-data-influenza-surveillance-in-the-uk#clinical-surveillance-through-primary-care>



UK

- In week 48, overall weekly ILI consultation rates across the countries of the UK were low (Table 1).
- By age group, the highest rates were seen in the 45-64 year olds in Scotland (14.4 per 100,000) and in the 65-74 year olds in Wales and Northern Ireland (13.7 per 100,000 and 6.0 per 100,000 respectively).

Table 1: GP ILI consultations in the UK for all ages with MEM thresholds applied*

GP ILI consultation rates (all ages)	Week number																
	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4
England (RCGP)	6.8	5.4	5.9	6.1	5.0	6.4	5.8	7.3	7.6								
Wales	5.7	6.5	6.6	5.4	5.0	5.4	6.2	6.4	6.2								
Scotland	4.6	7.1	3.5	5.8	5.2	4.8	4.3	5.4	9.3								
Northern Ireland	3.4	3.9	3.7	3.3	4.0	3.6	4.5	5.3	4.0								

*The Moving Epidemic Method (MEM) 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 (based on 10 seasons excluding 2009/10), in a standardised approach across Europe. For MEM threshold values for each country, please visit: <https://www.gov.uk/guidance/sources-of-uk-flu-data-influenza-surveillance-in-the-uk#clinical-surveillance-through-primary-care>

GP In Hours Syndromic Surveillance System (England)

-The weekly ILI consultation rate through the GP In Hours Syndromic Surveillance system is at 5.8 per 100,000 in week 48 (Figure 5).

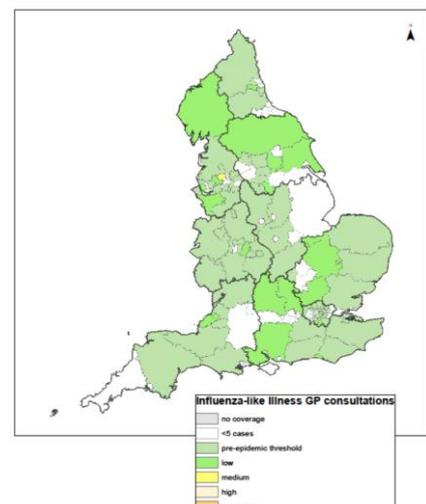
There were decreases in GP out of hours consultations and Emergency Department attendances for bronchitis/bronchiolitis and in NHS 111 calls for cough and difficulty breathing.

Figure 4 represents a map of GP ILI consultation rates in week 48 across England by upper tier Local Authorities (utLA), with influenza-like illness surveillance MEM thresholds applied.

ILI consultation rates presented for each utLA on the map should be interpreted in context of regional and national ILI activity; as MEM thresholds are calculated (based on previous influenza seasons from 2012/13 onwards) separately for each of the nine PHE centres and utLA rates are then compared to Centre-level thresholds only, therefore utLAs with higher background rates than the Centre may appear to have higher ILI activity.

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

Figure 5: Map of GP ILI consultation rates in week 48

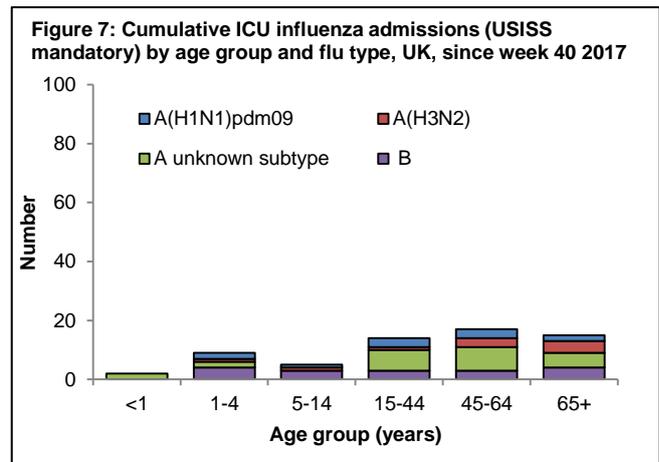
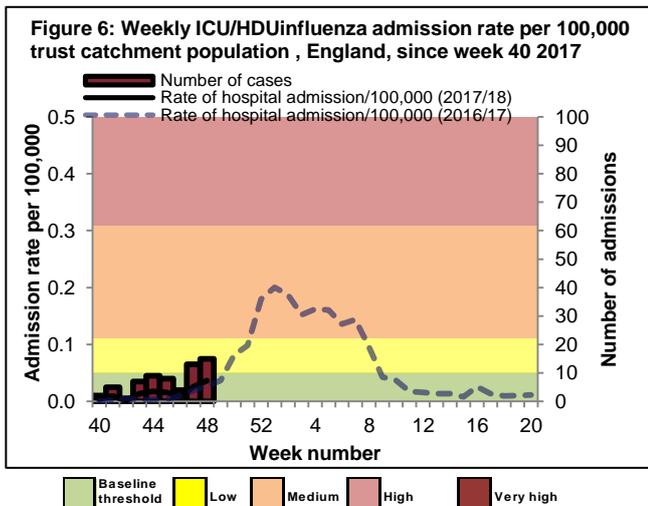


In week 48, there were 18 admissions to ICU/HDU with confirmed influenza: (three A(H1N1)pdm09, three influenza A(H3N2), nine influenza A(unknown subtype) and three influenza B reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (116 Trusts). Sixty-four hospitalised confirmed influenza cases (10 influenza A(H1N1)pdm09, eight influenza A(H3N2), 35 influenza A(unknown subtype) and 11 influenza B) were reported through the USISS sentinel hospital network across England (22 Trusts).

- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 48)

- In week 48, there were 18 admissions to ICU/HDU with confirmed influenza (three A(H1N1)pdm09, three influenza A(H3N2), nine influenza A(unknown subtype) and three influenza B reported across the UK (116/144 Trusts in England) through the USISS mandatory ICU scheme, with a rate of 0.04 per 100,000 for England data (Figures 6 and 7). Two deaths were reported to have occurred in week 48.

A total of 63 admissions (11 influenza A(H1N1)pdm09, 10 influenza A(H3N2), 25 influenza A(unknown subtype) and 17 influenza B) and six confirmed deaths have been reported in the UK since week 40 2017.

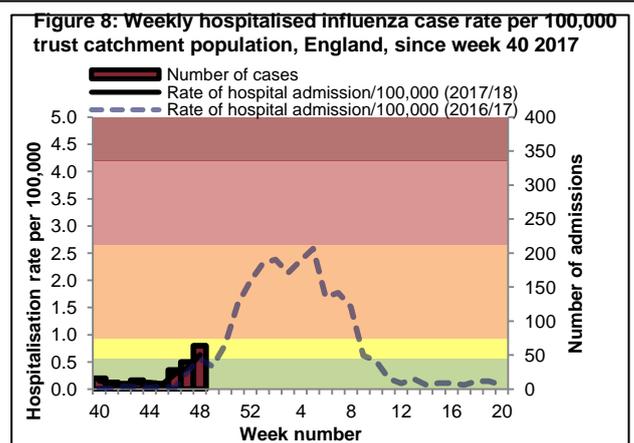


*The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for ICU/HDU admission rates for the start of influenza activity (based on 6 seasons) in a standardised approach across Europe. For MEM threshold values, please visit: <https://www.gov.uk/guidance/sources-of-uk-flu-data-influenza-surveillance-in-the-uk#disease-severity-and-mortality-data>

- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 48)

- In week 48, there were 64 hospitalised confirmed influenza cases (10 influenza A(H1N1)pdm09, eight influenza A(H3N2), 35 influenza A(unknown subtype) and 11 influenza B) reported through the USISS sentinel hospital network from 22 NHS Trusts across England (Figure 8), a rate of 0.63 per 100,000 compared to 0.39 per 100,000 in the previous week. This is above the baseline threshold of 0.56 per 100,000 population for the 2017/18 season.

A total of 193 hospitalised confirmed influenza admissions (44 influenza A(H1N1)pdm09, 42 influenza A(H3N2), 64 influenza A(unknown subtype) and 43 influenza B) have been reported since week 40 2017.



*The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for hospital admission rates for the start of influenza activity (based on 6 seasons) in a standardised approach across Europe. For MEM threshold values, please visit: <https://www.gov.uk/guidance/sources-of-uk-flu-data-influenza-surveillance-in-the-uk#disease-severity-and-mortality-data>

- USISS Severe Respiratory Failure Centre confirmed influenza admissions, UK (week 48)

- In week 48, there was one laboratory confirmed influenza admission (one influenza A(unknown subtype)) reported from the six Severe Respiratory Failure (SRF) centres in the UK. Since week 40, a total of two laboratory confirmed influenza admissions (one influenza A(unknown subtype) and one influenza B) were reported from the SRFs for the season to date.

In week 48 2017 in England, no statistically significant excess all-cause mortality by week of death was observed through the EuroMOMO algorithm in England. In the devolved administrations, no significant excess all-cause mortality was observed in week 48 2017.

- All-cause death registrations, England and Wales

- In week 47 2017, an estimated 10,621 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is an increase compared to the 10,275 estimated death registrations in week 46 2017.

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

- In week 48 2017 in England, no excess mortality by week of death above the upper 2 z-score threshold was seen overall, by age group or subnationally, after correcting ONS disaggregate data for reporting delay with the standardised EuroMOMO algorithm (Figure 9). This data is provisional due to the time delay in registration; numbers may vary from week to week.

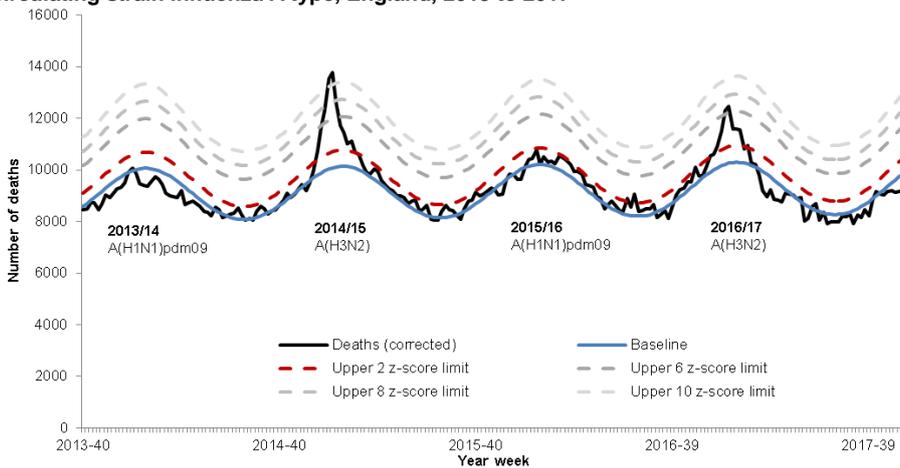
- In the devolved administrations, no significant excess mortality above the threshold was observed in week 48 (Table 2).

Table 2: Excess mortality by UK country, for all ages*

Country	Excess detected in week 48 2017?	Weeks with excess in 2017/18
England	×	NA
Wales	×	NA
Scotland	×	41
Northern Ireland	×	NA

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

Figure 9: Weekly observed and expected number of all-age all-cause deaths, with the dominant circulating strain influenza A type, England, 2013 to 2017

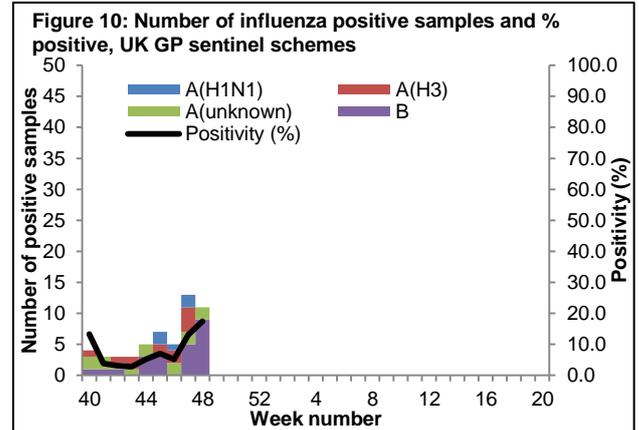


In week 48 2017, 11 samples tested positive for influenza (two influenza A(unknown subtype) and nine influenza B) through the UK GP sentinel schemes, with an overall positivity of 17.5%. Sixty-one positive detections were recorded through the DataMart scheme (32 influenza A(H3), 10 influenza A(H1N1)pdm09, 10 influenza A(unknown subtype) and nine influenza B) with a positivity of 3.4% in week 48. RSV activity is stabilising at 21.4% in week 48 and the highest positivity was seen in <5 year olds at 47.0%.

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

-In week 48, 11 samples tested positive for influenza (two influenza A(unknown subtype) and nine influenza B) with an overall positivity of 17.5% compared to 13.1% in week 47 through the UK GP sentinel swabbing schemes (Figure 10).

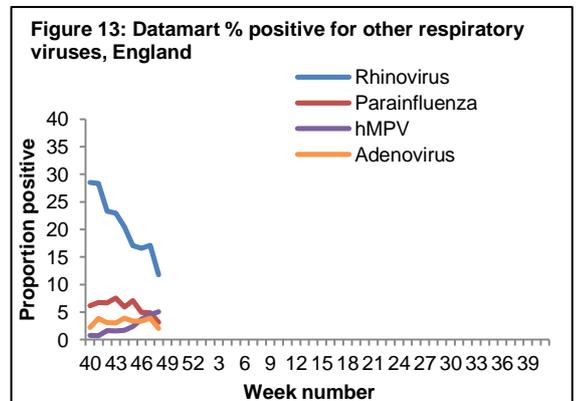
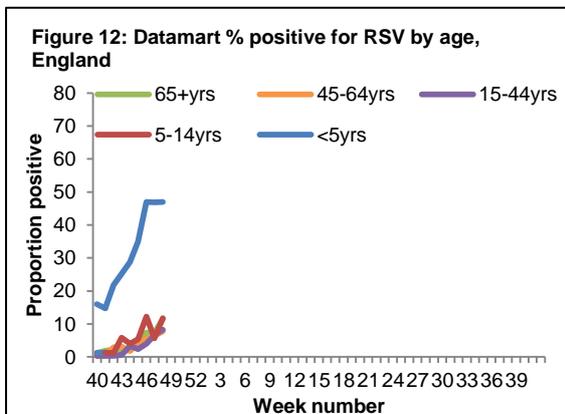
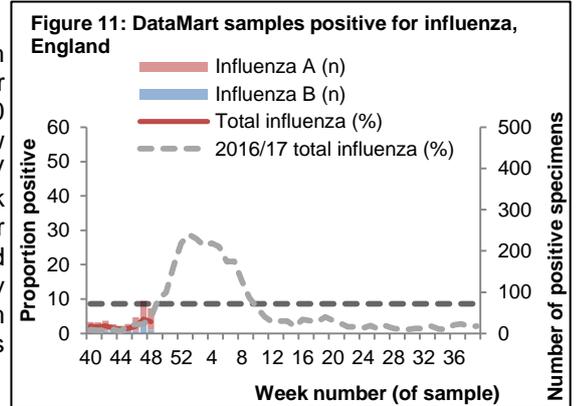
Since week 40, a total of 54 samples (12 influenza A(H3), 14 influenza (unknown subtype), five influenza A(H1N1)pdm09 and 23 influenza B) tested positive for influenza through this scheme.



NB. Positivity (%) omitted when fewer than 10 specimens were tested

• Respiratory DataMart System (England)

In week 48 2017, out of the 1,804 respiratory specimens reported through the Respiratory DataMart System, 61 samples (3.4%) were positive for influenza (32 influenza A(H3), 10 influenza A(unknown subtype), 10 influenza A(H1N1)pdm09 and 9 influenza B) (Figure 11), which is below the MEM threshold for this season of 8.6%. The overall positivity for RSV is stabilising at 21.4% in week 48 compared to 20.5% in week 47. The highest positivity for RSV by age group was seen in the <5 year olds at 47.0% in week 48 (Figure 12). Rhinovirus positivity decreased from 17.1% in week 47 to 11.7% in week 48. Adenovirus positivity remained low at 2.1%. Parainfluenza positivity decreased slightly from 4.9% in week 47 to 3.1% in week 48; however human metapneumovirus (hMPV) positivity increased slightly in week 48, at 5.1% (Figure 13).



*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 8.6% in 2017/18.

- Virus characterisation

PHE characterises the properties of influenza viruses through one or more tests, including [genome sequencing](#) (genetic analysis) and [haemagglutination inhibition \(HI\)](#) assays (antigenic analysis). These data are used to compare how similar the currently circulating influenza viruses are to the strains included in seasonal influenza vaccines, and to monitor for changes in circulating influenza viruses. The interpretation of genetic and antigenic data sources is complex due to a number of factors, for example, not all viruses can be cultivated in sufficient quantity for antigenic characterisation, so that viruses with sequence information may not be able to be antigenically characterised as well. Occasionally, this can lead to a biased view of the properties of circulating viruses, as the viruses which can be recovered and analysed antigenically, may not be fully representative of majority variants, and genetic characterisation data does not always predict the antigenic characterisation

The PHE Respiratory Virus Unit has characterised 59 influenza viruses detected since late summer (Table 3). Of the 9 A(H1N1)pdm09 influenza viruses that have been characterised, all belong in the genetic subgroup 6B.1, which was the predominant genetic subgroup in the 2016/17 season. The two viruses antigenically analysed are similar to the A/Michigan/45/2015 Northern Hemisphere 2017/18 (H1N1)pdm09 vaccine strain.

Genetic characterisation of 35 A(H3N2) influenza viruses detected since late summer, showed that they all belong to genetic subclade 3C.2a, with 24 belonging to a cluster within this genetic subclade designated as 3C.2a1. The Northern Hemisphere 2017/18 influenza A(H3N2) vaccine strain A/HongKong/4801/2014 belongs in genetic subclade 3C.2a.

Fifteen influenza B viruses have been analysed; 12 were characterised as belonging to the B/Yamagata/16/88-lineage and 3 belonging to the B/Victoria/2/1987-lineage. Of the influenza B viruses antigenically characterised, the B/Victoria/2/87-lineage viruses were antigenically similar to B/Brisbane/60/2008, the influenza B/Victoria-lineage component of 2017/18 Northern Hemisphere trivalent and quadrivalent vaccines. B/Yamagata/16/88-lineage viruses were antigenically similar to B/Phuket/3073/2013, the influenza B/Yamagata-lineage component of 2016/17 Northern Hemisphere quadrivalent vaccine.

Table 3: Viruses characterised by PHE Reference Laboratory, 2017/18

Virus	No. viruses characterised			
	Genetic and antigenic	Genetic only	Antigenic only	Total
A(H1N1)pdm09	2	7	0	9
A(H3N2)	0	35	0	35
B/Yamagata-lineage	2	9	1	12
B/Victoria-lineage	3	0	0	3

- Antiviral susceptibility

Influenza positive samples are screened for mutations in the virus neuraminidase gene known to confer oseltamivir and/or zanamivir resistance. Additionally, testing of influenza A (H1N1)pdm09, A(H3N2), and influenza B virus isolates for neuraminidase inhibitor susceptibility (oseltamivir and zanamivir) is performed at PHE-RVU using a functional assay. The data summarized below combine the results of both testing methods. The samples tested are routinely obtained for surveillance purposes, but diagnostic testing of patients suspected to be infected with neuraminidase inhibitor-resistant virus is also performed.

During the current 2017/18 season so far, ten influenza A(H3N2) have been tested for oseltamivir susceptibility; seven are susceptible. Two viruses have a deletion in the neuraminidase gene, at amino acids 245 to 248. This deletion reduces susceptibility to oseltamivir, but is not likely to reduce zanamivir susceptibility. One of these two oseltamivir resistant viruses has a E119V amino acid substitution in addition, also affecting oseltamivir susceptibility but not zanamivir. A third virus has a R292K amino acid change, which causes resistance to oseltamivir and reduced susceptibility to zanamivir. Three of the A(H3N2) viruses were also tested for zanamivir susceptibility with all being fully susceptible. Thirty-five influenza A(H1N1)pdm09 virus have been tested for oseltamivir susceptibility and all were fully susceptible. Three of the 35 influenza A(H1N1)pdm09 virus was also tested for zanamivir susceptibility and was fully susceptible. Three influenza B viruses have been tested for oseltamivir susceptibility and were fully susceptible.

- Antimicrobial susceptibility

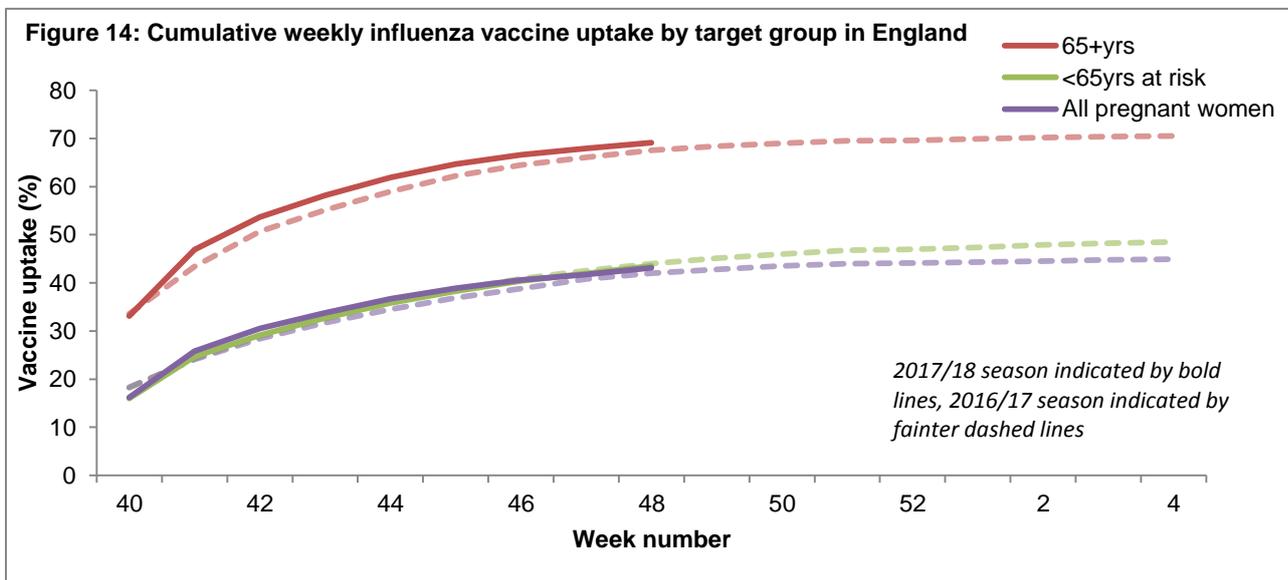
-Table 4 shows in the 12 weeks up to 26 November 2017, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired 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 03 December 2017, E&W

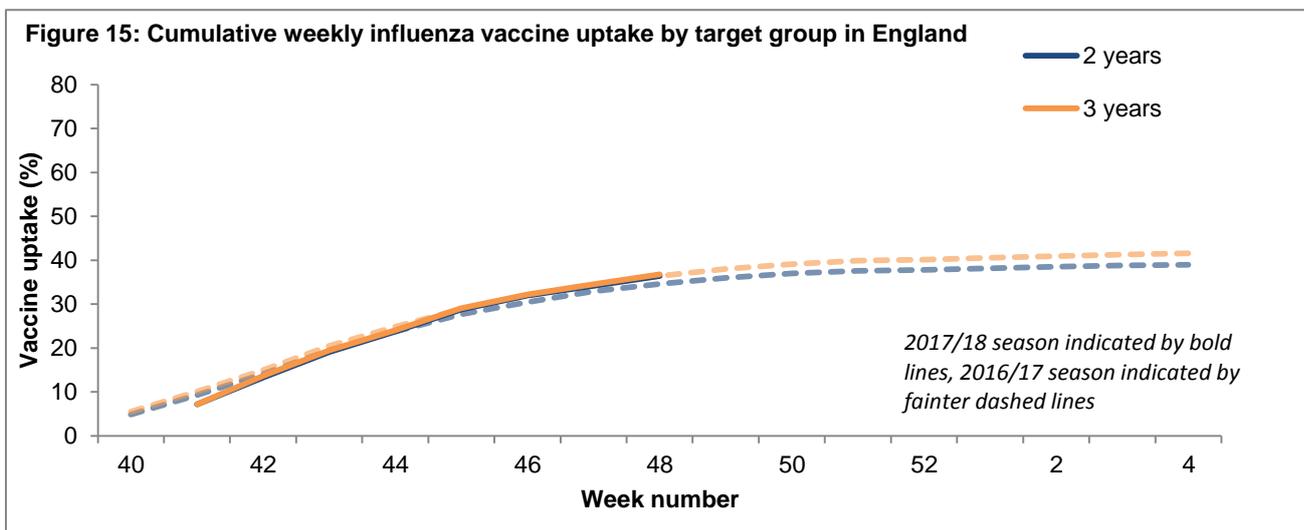
Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	3446	90
	Macrolides	3814	81
	Tetracycline	3752	84
<i>H. influenzae</i>	Amoxicillin/ampicillin	14030	68
	Co-amoxiclav	14822	85
	Macrolides	6212	3
	Tetracycline	14959	98
<i>S. aureus</i>	Methicillin	6505	92
	Macrolides	7140	67
MRSA	Clindamycin	364	40
	Tetracycline	498	79
MSSA	Clindamycin	3780	77
	Tetracycline	5537	93

*Macrolides = erythromycin, azithromycin and clarithromycin

- Up to week 48 2017 in 72.2% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2017/18 influenza vaccine in targeted groups was as follows (Figure 14):
 - 43.5% in under 65 years in a clinical risk group
 - 43.1% in pregnant women
 - 69.1% in 65+ year olds



- In 2017/18, all two- and three-year-olds continue to be eligible for flu vaccination, through their GPs. Up to week 48 2017 in 72.1% of GP practices reporting weekly to Immform, the provisional proportion of children in England who had received the 2017/18 influenza vaccine in targeted groups was as follows (Figure 15):
 - 36.4% in 2 year olds
 - 36.8% in 3 year olds



- Provisional data from the first monthly collection of influenza vaccine uptake by frontline healthcare workers show 46.0% were vaccinated by 31 October 2017 from 97.6% of all organisations, compared to 40.4% vaccinated in the previous season by 31 October 2016. The [report](#) provides uptake at national, NHS local team, “old” area teams and Trust-level.

- Provisional data from the first [monthly](#) collection of influenza vaccine uptake for children of school years Reception, 1,2, 3 and 4 age (from a sample of 99.3% of all Local Authorities in England) show the provisional proportion of children in England who received the 2017/18 influenza vaccine via school, pharmacy or GP practice by 31 October 2017 in targeted groups was as follows:
 - 18.1% in children school year reception age (4-5 yrs)
 - 17.9% in children school year 1 age (5-6 yrs)
 - 17.5% in children school year 2 age (6-7 yrs)
 - 17.0% in children school year 3 age (7-8 yrs)
 - 16.2% in children school year 4 age (8-9 yrs)
- Provisional data from the first [monthly](#) collection of influenza vaccine uptake in GP patients up to 31 October 2017 show that in 94.2% of all GP practices in England responding to the main GP survey, the proportion of people in England who received the 2017/18 influenza vaccine was as follows:
 - 34.1% in under 65 year olds in a clinical risk group
 - 35.3% in pregnant women
 - 60.0% in 65+ year olds
- Provisional data from the first [monthly](#) collection of influenza vaccine uptake in GP patients up to 31 October 2017 show that in 82.3% of all GP practices in England responding to the child GP survey, the proportion of people in England who received the 2017/18 influenza vaccine was as follows:
 - 21.9% in 2 year olds
 - 22.4% in 3 year olds

International Situation

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Influenza activity increased slightly in the temperate zone of the northern hemisphere, with Canada exceeding its seasonal threshold in week 45, indicating the start of the influenza season in Canada. In the temperate zone of the southern hemisphere activity appeared to have decreased at inter-seasonal levels. Worldwide, influenza A(H3N2) and B viruses accounted for the majority of influenza detections.

- [Europe](#) updated on 01 December 2017 (Joint ECDC-WHO Europe Influenza weekly update)

In week 47/2017, low intensity of influenza activity was reported by all of the 42 reporting countries.

Based on influenza virus detections in sentinel specimens taken from ILI and ARI cases, no geographic spread of influenza was reported by 19 of the 42 countries reporting on this indicator, 19 countries reported sporadic cases, 3 reported local geographic spread while 1 country (Finland) reported regional spread.

For week 47/2017, 52 (6.3%) of 820 sentinel specimens tested positive for influenza viruses: 4 A(H1N1)pdm09, 11 A(H3N2), 3 un-subtyped A viruses, 11 B/Yamagata lineage and 23 B viruses not ascribed to a lineage. Since week 40/2017, approximately equal proportions of influenza types A and B viruses have been detected.

For week 47/2017, few laboratory-confirmed influenza-infected cases from intensive care units (ICU) or other wards were reported by France (n=2), Ireland (n=2), Spain (n=7), and the United Kingdom (n=7). Since week 40/2017, 7 countries have reported laboratory-confirmed hospitalized influenza cases in ICU or other wards: 89 cases in ICU (37 in the United Kingdom, 36 in France, 11 in Spain, 3 in Sweden and 1 each in the Czech Republic and Denmark), and 61 in other wards (27 in Ireland, 18 in Denmark, 14 in Spain and 2 in the Czech Republic). Of the 89 cases in ICU, 63 (71%) were infected with type A viruses (26 A(H1N1)pdm09, 14 A(H3N2), 23 A un-subtyped) and 26 (29%) with type B viruses. A similar distribution was observed in other wards: of 61 patients, 41 (67%) were infected with influenza A (10 A(H1N1)pdm09, 11 A(H3N2), 20 A un-subtyped) and 20 (33%) with influenza B viruses.

For week 47/2017, 481 specimens from non-sentinel sources (such as hospitals, schools, primary care facilities not involved in sentinel surveillance, nursing homes and other institutions) tested positive for influenza viruses. Of these, 62% were type A and 38% type B viruses (Table 2). The majority of viruses from non-sentinel specimens were not subtyped or assigned to a lineage.

For week 47/2017, data from the 21 countries or regions reporting to the EuroMOMO project indicated all-cause mortality at expected levels for this time of the year.

- [United States of America](#) updated on 01 December 2017 (Centre for Disease Control report)

During week 47, influenza activity increased in the United States.

The most frequently identified influenza virus type reported by public health laboratories during week 47 was influenza A. The percentage of respiratory specimens testing positive for influenza in clinical laboratories is increasing.

A cumulative rate of 2.0 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported.

The proportion of deaths attributed to pneumonia and influenza (P&I) was below the system-specific epidemic threshold in the National Center for Health Statistics (NCHS) Mortality Surveillance System.

The proportion of outpatient visits for influenza-like illness (ILI) was 2.3%, which is above the national baseline of 2.2%.

- [Canada](#) updated on 01 December 2017 (Public Health Agency report)

Overall, at national level, the influenza season began early this year, especially illnesses due to influenza B. Influenza activity continues to increase steadily in week 47

The number and percentage of laboratory tests positive for influenza continues to increase, and is higher for this time of year compared to previous seasons. The majority of influenza detections continue to be A(H3N2) although an elevated number of influenza B detections has also been reported.

In week 47, 2.3% of visits to healthcare professionals were due to influenza-like illness; an increase compared to the previous week, and above the 5-year average.

In week 47, 34 influenza-associated hospitalizations were reported by participating provinces and territories.

To date this season, 371 influenza-associated hospitalizations have been reported, 92% of which were associated with influenza A, and 270 cases (73%) were in adults 65 years of age or older. The number of cases is considerably elevated relative to this period in the previous two seasons. Twenty-one ICU admissions and eight deaths have been reported.

- [Global influenza update](#) updated on 27 November 2017 (WHO website)

Influenza activity increased slightly in the temperate zone of the northern hemisphere while in the temperate zone of the southern hemisphere activity appeared to have decreased at inter-seasonal levels. Worldwide, influenza A(H3N2) and B viruses accounted for the majority of influenza detections.

In North America, overall influenza activity continued to increase in the region, with detections of predominantly influenza A(H3N2) viruses.

In Europe, influenza activity remained low, with detections of predominantly influenza A(H3N2) and B viruses.

In Western Asia, influenza activity was low in general. In Qatar, influenza activity continued to increase, with all seasonal subtypes co-circulating.

In Central Asia, respiratory illness indicators appeared to increase in Kazakhstan, Tajikistan and Uzbekistan. In East Asia, influenza activity remained low in general. In Northern China, influenza A(H3N2) detections increased slightly in recent weeks.

In South East Asia, influenza activity continued to decrease, with influenza A(H3N2) and B viruses most frequently detected. In Southern Asia, influenza activity remained low in general. In India, influenza A(H1N1)pdm09 and A(H3N2) detections continued to be reported.

In Northern Africa, sporadic influenza A virus detections were reported in Morocco and Tunisia. In Eastern, Middle and Western Africa, influenza detections continued to be reported, with all seasonal influenza subtypes present in the regions.

In the Caribbean and Central American countries, respiratory illness indicators and influenza activity remained low in general but respiratory syncytial virus (RSV) activity remained high in several countries.

In the tropical countries of South America, influenza and RSV activity remained at low levels overall.

In the temperate zone of the Southern Hemisphere, influenza activity appeared to have decreased overall.

The WHO GISRS laboratories tested more than 103,642 specimens between 30 October 2017 to 12 November 2017. 5,515 were positive for influenza viruses, of which 3,690 (66.9%) were typed as influenza A and 1,825 (33.1%) as influenza B. Of the sub-typed influenza A viruses, 509 (21.4%) were influenza A(H1N1)pdm09 and 1,873 (78.6%) were influenza A(H3N2). Of the characterized B viruses, 781 (77.9%) belonged to the B-Yamagata lineage and 221 (22.1%) to the B-Victoria lineage.

- [Avian Influenza](#) latest update on 30 October 2017 (WHO website)

Influenza A(H5) viruses

Since the last update on [27 September 2017](#), one new laboratory-confirmed human case of influenza A(H5N1) virus infection was reported to WHO from Indonesia.

Since 2003, a total of 860 laboratory-confirmed cases of human infection with avian influenza A(H5N1) virus, including 454 deaths, have been reported to WHO from 16 countries.

Influenza A(H5) subtype viruses have the potential to cause disease in humans and thus far, no human cases, other than those with influenza A(H5N1) and A(H5N6) viruses, have been reported to WHO. According to reports received by the World Organisation for Animal Health (OIE), various influenza A(H5) subtypes continue to be detected in birds in Africa, Europe and Asia.

Influenza A(H7N9)

Since the last update on [27 September 2017](#), no new laboratory-confirmed human cases of influenza A(H7N9) virus infection were reported to WHO.

Since 2013, a total of 1,564 laboratory-confirmed cases of human infection with avian influenza A(H7N9) viruses, including at least 612 deaths, have been reported to WHO.

Influenza A(H1N2) variant viruses

Between [28 September and 30 October 2017](#), one new laboratory-confirmed human infection with influenza A(H1N2)v virus was detected in the state of Ohio in the United States (U.S.).

Since 2005, 12 cases of A(H1N2)v influenza virus infections have been reported to the U.S Centers for Disease Control and Prevention (CDC).

Influenza A(H3N2) variant viruses

Since [27 September 2017](#), 41 human infections with influenza A(H3N2)v viruses were detected in the U.S. in several states. Characterization of the viruses from these cases indicates they are similar to A(H3N2)v viruses previously detected and similar to the existing candidate vaccine virus.

Since reporting of novel influenza A viruses became nationally notifiable in 2005, 462 human infections with influenza A(H3N2)v viruses have been reported to the U.S. CDC and 59 of these occurred in 2017.

- [Middle East respiratory syndrome coronavirus \(MERS-CoV\)](#) latest update on 06 December 2017

Up to 06 December 2017, a total of four cases of Middle East respiratory syndrome coronavirus, MERS-CoV, (two imported and two linked cases) have been confirmed in the UK. On-going surveillance has identified 1,104 suspect cases in the UK that have been investigated for MERS-CoV and tested negative.

On [1 November 2017](#), the International Health Regulations (2005) national focal point of Oman reported one case of Middle East respiratory syndrome coronavirus (MERS-CoV) infection. Prior to this case, the most recent case of MERS-CoV from Oman was reported on 30 August 2017.

Between [27 September and 31 October 2017](#), the National IHR Focal Point of the Kingdom of Saudi Arabia reported 12 additional cases of Middle East respiratory syndrome coronavirus (MERS-CoV) infection, including two deaths. Additionally, one death from a previously reported case was reported to WHO.

Globally, since September 2012, WHO has been notified of 2,102 laboratory-confirmed cases of infection with MERS-CoV, including at least 733 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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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, 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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Sources of flu data

- [Clinical surveillance through primary care in the UK](#)
- [Outbreak reporting](#)
- [FluSurvey](#)
- [MOSA](#)
- [Real time syndromic surveillance](#)
- MEM threshold [methodology paper](#) and [UK pilot paper](#)

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](#))
- 2017/18 Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))