



# PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

28 December 2018 – Week 52 report (up to week 51 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 – Week 51 (ending 23 December 2018)

- Influenza activity continues to increase, with evidence now that influenza is starting to circulate in the community with indicators approaching **Baseline** threshold levels.
- The impact of flu on healthcare services is at **Moderate** intensity levels for hospitalisations and ICU/HDU admissions.
- Influenza A(H1N1)pdm09 is the dominant subtype

### Community

- Thirty-six new acute respiratory outbreaks have been reported in the past 7 days. Thirty-one outbreaks were reported from care homes where 8 tested positive for influenza A(not subtyped) and 1 was positive for RSV. Four outbreaks were reported from hospitals where 2 tested positive for influenza A(not subtyped). The remaining outbreak was reported from a school with no test result available

### Primary Care

- The rate of influenza-like illness (ILI) was **Below Baseline** threshold levels. The overall weekly ILI GP consultation rate was 9.4 per 100,000 registered population in participating GP practices for England, this is an increase from 8.1 per 100,000 in week 50.
- In the devolved administrations, ILI rates were also **Below Baseline** threshold levels.

GP ILI  
Consultations  
England



### Secondary Care

- Hospitalisation rate observed was at **Moderate** impact threshold levels, with a rate of 1.30 per 100,000 trust catchment population for England (16 NHS Trusts), this is an increase from 0.82 per 100,000 in week 50.
- ICU/HDU admission rate observed was at **Moderate impact** threshold levels, with a rate of 0.19 per 100,000 trust catchment population for England (115/143 NHS Trusts), this is an increase from 0.11 per 100,000 in week 50.
- There were 4 new influenza admission (4 influenza A(H1N1)pdm09) reported from the 6 Severe Respiratory Failure centres in the UK.

Hospitalisation



ICU/HDU



### All-cause mortality

- In week 50 2018, no statistically significant excess all-cause mortality by week of death was seen overall and by age group in England. In the devolved administrations, no statistically significant excess all-cause mortality for all ages was observed in Scotland in week 51 and in Northern Ireland and Wales in week 50.

### Microbiological surveillance

- **Primary care:** 8 samples tested positive for influenza (5 influenza A(H1N1)pdm09, 1 influenza A(H3N2) and 2 influenza A(unknown subtype)) with a positivity of 19.5% through the UK GP sentinel swabbing schemes, an increase from 12.9% in week 50.
- **Secondary care:** Influenza percent positivity was 11.8%, **Above Baseline** threshold level, an increase from 11.0% in week 50. There were 215 detections recorded through the DataMart scheme (89 influenza A(H1N1)pdm09, 35 influenza A(H3), 89 influenza A(not subtyped) and 2 influenza B). RSV positivity decreased to 12.0%.

Secondary  
Care



### Vaccination

- **Weekly uptake:** Up to week 50 2018, in 96.7% of GP practices the provisional proportion of people in England who had received the 2018/19 influenza vaccine in targeted groups was: 43.4% in under 65 years in a clinical risk group, 42.8% in pregnant women and 68.6% in 65+ year olds. In 97.1% of GP practices reporting for the childhood collection the provisional proportion vaccinated was: 40.5% in 2 year olds and 41.7% in 3 year olds.
- Provisional data from the second monthly collection of influenza vaccine uptake by frontline healthcare workers show 61.0% were vaccinated by 30 November 2018, compared to 59.3% vaccinated in the previous season by 30 November 2017.
- Provisional data from the second monthly collection of influenza vaccine uptake for children of school years reception to year 5 shows 49.6% in school year reception age, 49.4% in school year 1 age, 47.7% in school year 2 age, 46.8% in school year 3 age, 45.2% in school year 4 age and 43.7% in school year 5 age were vaccinated by 30 November 2018.

### International situation

- In the temperate zone of the Northern hemisphere, influenza activity started to increase although overall influenza activity remained low. Increased influenza was reported in some countries of Southern and South-East Asia. In the temperate zones of the Southern hemisphere, influenza activity returned to inter-seasonal levels. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections

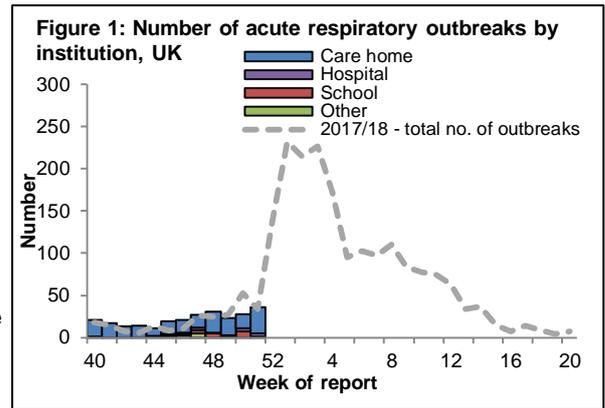
Arrows (vs previous week):	Colour (intensity according to MEM threshold):	
Increase	Below Baseline	High
Decrease	Above Baseline/Low	Very High
Stable/No trend	Moderate	

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

- Acute respiratory disease outbreaks

- Thirty-six new acute respiratory outbreaks have been reported in the past 7 days. Thirty-one outbreaks were reported from care homes where 8 tested positive for influenza A(not subtyped) and 1 was positive for RSV. Four outbreaks were reported from hospitals where 2 tested positive for influenza A(not subtyped). The remaining outbreak was reported from a school with no test result available.  
*N.B. outbreak data included outbreaks reported between 19 to 24 December 2018 due to data availability*

-Outbreaks should be recorded on HPZone and reported to the local Health Protection Teams and [respscids@phe.gov.uk](mailto:respscids@phe.gov.uk)



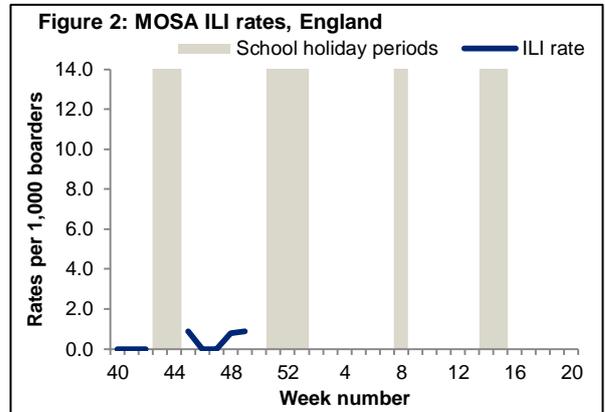
- Medical Officers of Schools Association (MOSA) & PHE surveillance scheme

- 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 2018/19 season, 21 MOSA schools have agreed to participate in the scheme, including a total of 6,530 boarders.

- The overall rate (all boarders) for week 49 was 0.9 per 1,000 boarders compared to 0.8 per 1,000 boarders in the previous week.

-Since week 40, there have been 5 outbreaks reported with 12 ILI cases identified. Of the 5 outbreaks, 1 outbreak has tested positive for influenza B.

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

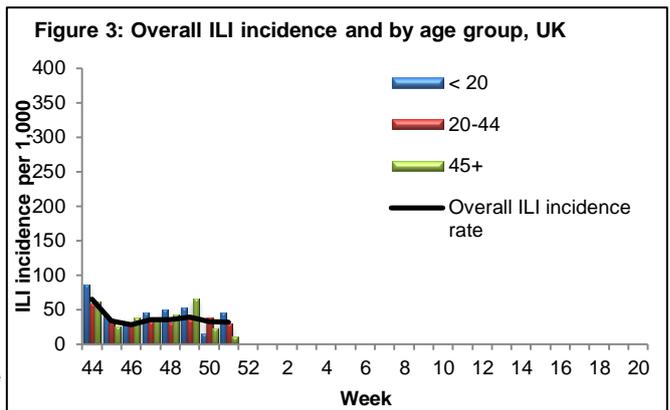


- FluSurvey

- Internet-based surveillance of influenza-like illness in the general population is undertaken through the FluSurvey. A project run by PHE to monitor ILI activity in the community.

- The overall ILI rate (all age groups) for week 51 was 32.0 per 1,000 (76/2,376 people reported at least 1 ILI) (Figure 3) compared to 33.0 per 1,000 in the previous week, with the highest rate seen in the 20-44 year olds (45.6 per 1,000).

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



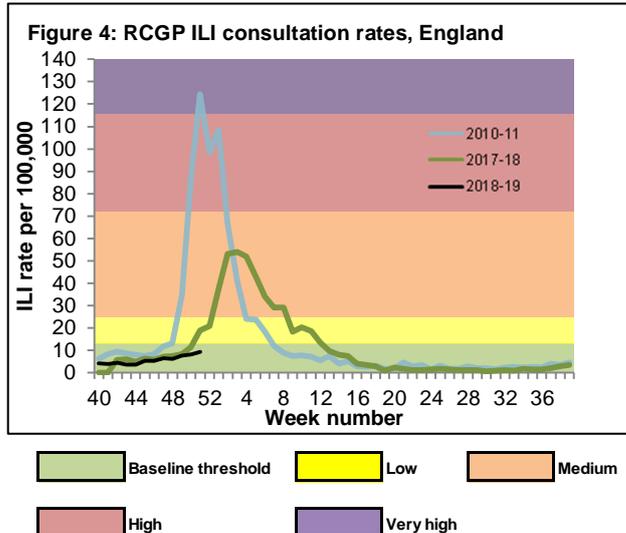
In week 51, the overall weekly influenza-like illness (ILI) GP consultation rate increased towards the baseline threshold in England. In the devolved administrations, ILI rates remain below baseline levels.

- GP ILI consultations in the UK

**RCGP (England)**

- The weekly ILI consultation rate through the RCGP surveillance was at 9.4 per 100,000 registered population in participating GP practices in week 51, this is an increase from 8.1 per 100,000 in week 50. This is below the baseline threshold (13.1 per 100,000) (Figure 4\*). By age group, the highest rates were seen in <1 year olds (14.9 per 100,000) and 45-64 year olds (12.8 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 51, overall weekly ILI consultation rates across the countries of the UK were all below their respective baseline thresholds (Table 1).
- By age group, the highest rates were seen in the 15-44 year olds in Scotland (13.0 per 100,000) and in the 45-64 year olds in Northern Ireland and Wales (13.2 per 100,000 and 14.9 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)	4.2	3.9	4.5	3.6	3.6	5.3	5.2	6.4	6.2	7.6	8.1	9.4					
Wales	7.0	3.6	4.2	6.6	6.3	6.4	4.5	4.7	6.5	3.2	4.5	9.0					
Scotland	7.1	5.1	3.6	4.5	2.9	7.3	4.2	5.2	5.9	4.1	6.8	10.5					
Northern Ireland	3.8	3.5	3.8	3.6	3.8	5.0	6.3	4.5	5.6	6.0	8.4	8.9					

\*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 6.6 per 100,000 in week 51 (Figure 5).

- During week 51, there was an increase in respiratory conditions including influenza –like illness (ILI) seen in GPIH, GPOOH and ED attendances, with ED attendances also increasing for pneumonia. There was an increase in NHS 111 calls for cough and sore throat, there was also a small increase in the number of cold/flu calls, however they remain within seasonal expected levels.

- Figure 5 represents a map of GP ILI consultation rates in week 51 across England by PHE centres, 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 51**

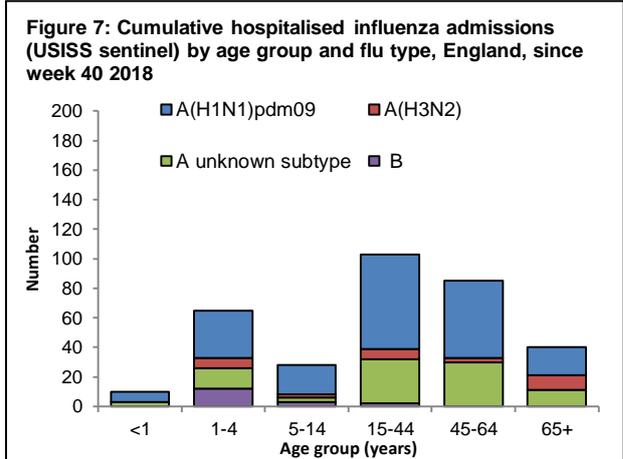
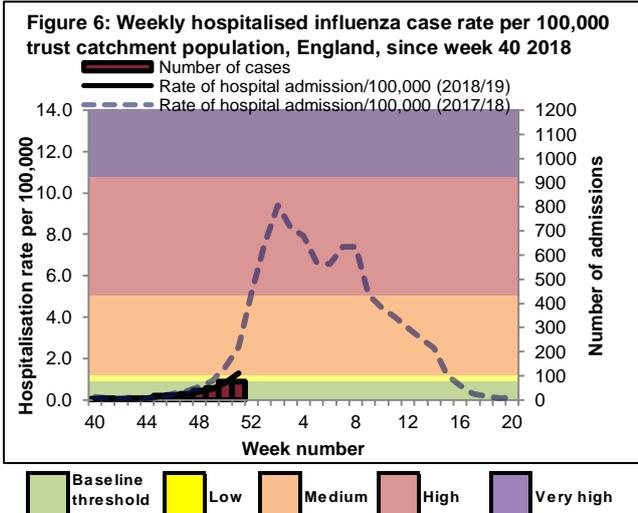


In week 51 2018, there were 75 hospitalised confirmed influenza cases (38 influenza A(H1N1)pdm09, 5 influenza A(H3N2) and 32 influenza A(unknown subtype)) reported through the USISS sentinel hospital network across England (16 NHS Trusts). There were 82 new admissions to ICU/HDU with confirmed influenza (46 influenza A(H1N1)pdm09, 34 influenza A(unknown subtype) and 2 influenza B) reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (115/143 NHS Trusts in England).

- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 51)

- In week 51, there were 75 hospitalised laboratory confirmed influenza cases (38 influenza A(H1N1)pdm09, 5 influenza A(H3N2) and 32 influenza A(unknown subtype)) reported from 16 NHS Trusts across England through the USISS sentinel hospital network, with a rate of 1.30 per 100,000 trust catchment population compared to 0.82 per 100,000 in the previous week (Figures 6 and 7). This is above the baseline impact threshold of 0.89 per 100,000 within the moderate impact range.

- A total of 331 hospitalised confirmed influenza admissions (194 influenza A(H1N1)pdm09, 29 influenza A(H3N2), 91 influenza A(unknown subtype) and 17 influenza B) and have been reported in the UK since week 40 2018 via the sentinel scheme.

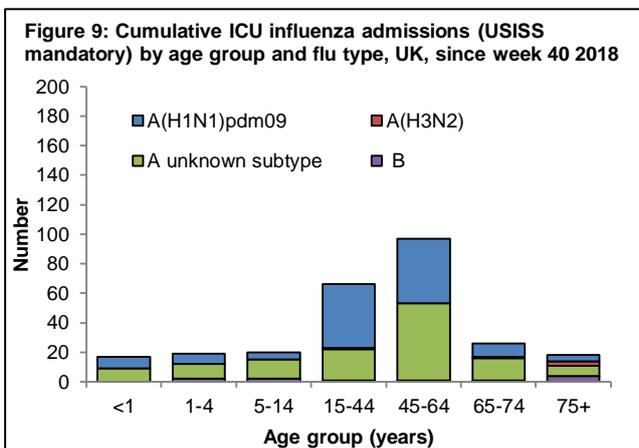
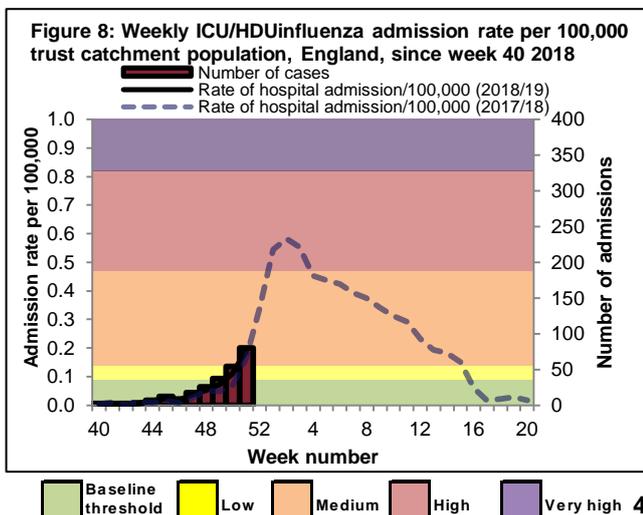


\*The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for ICU/HDU admission rates for the start of influenza activity (based on 6 seasons) in a standardised approach across Europe. For MEM threshold values, please visit: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

- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 51)

- In week 51, there were 82 new admissions to ICU/HDU with confirmed influenza (46 influenza A(H1N1)pdm09, 34 influenza A(unknown subtype) and 2 influenza B) reported across the UK (115/143 Trusts in England) through the USISS mandatory ICU scheme. The rate for England (n=80) was 0.19 per 100,000 trust catchment population compared to 0.11 per 100,000 in the previous week (Figures 8 and 9), above the baseline threshold of 0.09 per 100,000 within the moderate impact range. Nine influenza laboratory-confirmed deaths were reported to have occurred in ICU in week 51 in the UK.

- A total of 263 new ICU/HDU admissions (120 influenza A(H1N1)pdm09, 5 influenza A(H3N2), 127 influenza A(unknown subtype) and 11 influenza B) and 21 confirmed deaths have been reported in the UK since week 40 2018.



\*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 Severe Respiratory Failure Centre confirmed influenza admissions, UK (week 51)

- In week 51, there were 4 new admission for laboratory confirmed influenza (4 influenza A(H1N1)pdm09) among the 6 Severe Respiratory Failure (SRF) centres in the UK.

- Since week 40 there has been 9 confirmed influenza admissions (8 influenza A(H1N1)pdm09 and 1 influenza A(H3N2)) to ECMO centres

**All-cause mortality data**

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**In week 50 2018, no statistically significant excess all-cause mortality by week of death was observed overall and by age group in England, through the EuroMOMO algorithm. In the devolved administrations, no statistically significant excess all-cause mortality for all ages was observed in Scotland in week 51 and in Wales and Northern Ireland in week 50 2018.**

- All-cause death registrations, England and Wales

- In week 49 2018, an estimated 10,287 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is an increase compared to the 10,033 estimated death registrations in week 48 2018.

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

- In week 50 2018 in England, no statistically significant excess mortality by week of death above the upper 2 z-score threshold was seen overall, by age group and sub-nationally (all ages), after correcting ONS disaggregate data for reporting delay with the standardised EuroMOMO algorithm. This data is provisional due to the time delay in registration; numbers may vary from week to week.

- In the devolved administrations, no statistically significant excess all-cause mortality for all ages was observed in week 51 in Scotland and in Wales and Northern Ireland in week 50 2018 (Table 2).

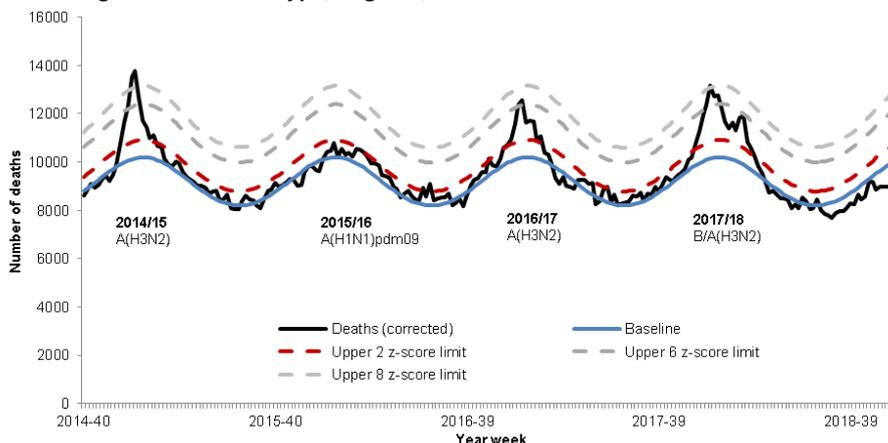
**Table 2: Excess mortality by UK country, for all ages\***

Country	Excess detected in week 51 2018?	Weeks with excess in 2018/19
England	NA	NA
Wales	NA	NA
Scotland	x	NA
Northern Ireland	NA	NA

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

\* NA refers to data not available for this week

**Figure 10: Weekly observed and expected number of all-age all-cause deaths, with the dominant circulating influenza A subtype, England, 2014 to week 50 2018**



\*Note: Delays in receiving all registered deaths from April 2018, following changes in IT systems at ONS, may result in some delays in the model to adjust for most recent deaths.

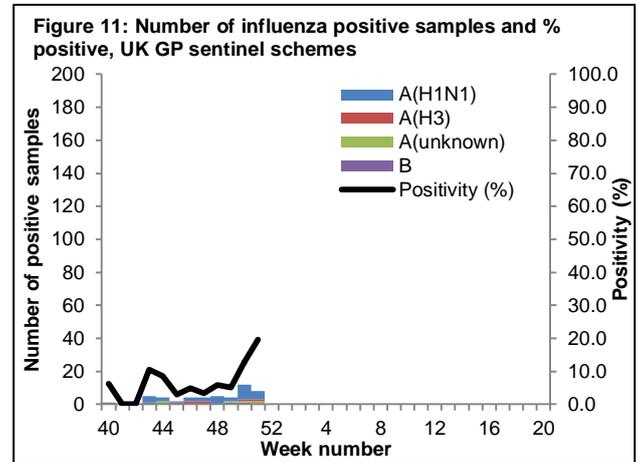
In week 51 2018, 8 samples tested positive for influenza (5 influenza A(H1N1)pdm09, 1 influenza A(H3N2) and 2 influenza A(unknown subtype)) with a positivity of 19.5% through the UK GP sentinel schemes. 215 positive detections were recorded through the DataMart scheme (89 influenza A(H1N1)pdm09, 35 influenza A(H3), 89 influenza A(not subtyped) and 2 influenza B) with a positivity of 11.8%, this is above the baseline threshold of 9.2%.

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

- In week 51, 8 samples tested positive for influenza (5 influenza A(H1N1)pdm09, 1 influenza A(H3N2) and 2 influenza A(unknown subtype)) with an overall positivity of 19.5% compared to 12.9% in week 50 through the UK GP sentinel swabbing schemes (Figure 11).

*NB. Data was not available for Wales for week 51 at the time of publication*

Since week 40, a total of 49 samples (32 influenza A(H1N1)pdm09, 7 influenza A(H3), 5 influenza A(unknown subtype) and 4 influenza B) tested positive for influenza through this scheme.

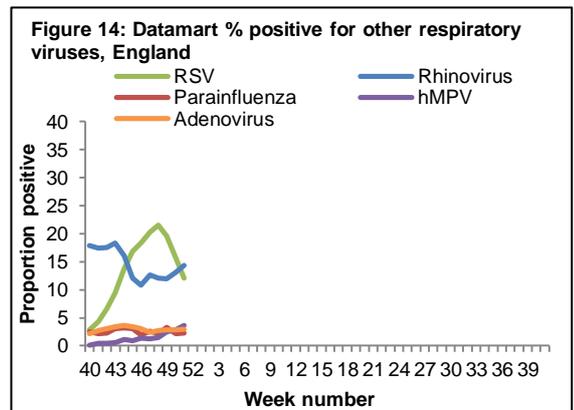
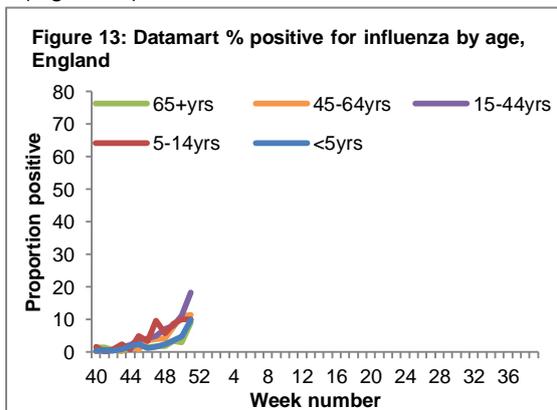
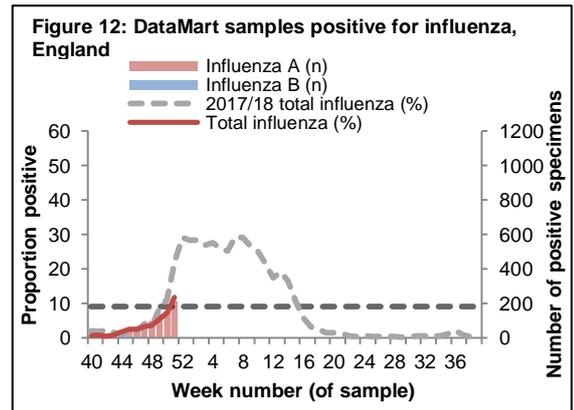


NB. Positivity (%) omitted when fewer than 10 specimens were tested

- Respiratory DataMart System (England)

- In week 51 2018, out of the 1,826 respiratory specimens reported through the Respiratory DataMart System, 215 samples (11.8%) were positive for influenza (89 influenza A(H1N1)pdm09, 35 influenza A(H3), 89 influenza A(not subtyped) and 2 influenza B) (Figure 12), which is above the MEM baseline threshold for this season of 9.2%. the highest positivity for influenza by age group was seen in the 15-44 year olds at 18.2% in week 51 (Figure 13). The overall positivity for RSV decreased further from 15.7% in week 50 to 12.0% week 51 (Figure 14). Although the main affected population is in children <5 years the positivity continued to decrease in this group from 31.5% in week 50 to 25.6% in week 51.

Parainfluenza positivity appeared to stabilise at 2.2% in week 51 similar to week 50 (2.1%). Rhinovirus positivity increased from 13.1% in week 50 to 14.4% in week 51. Human metapneumovirus (hMPV) positivity, increased to 3.6% in week 51 from 2.8% in week 50. Adenovirus positivity remained low at 3.0% (Figure 14).



\*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 9.2% in 2018/19.

- 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.

Genetic characterisation by the PHE Respiratory Virus Unit of 64 influenza A(H1N1)pdm09 viruses detected since week 40, shows that they all belong in the genetic subgroup 6B.1, which was the predominant genetic subgroup in the 2017/18 season. Sixty-six A(H1N1)pdm09 viruses have been antigenically characterised and are similar to the A/Michigan/45/2015-like Northern Hemisphere 2018/19 (H1N1)pdm09 vaccine strain.

The PHE Respiratory Virus Unit has characterised 15 influenza A(H3N2) viruses detected since week 40. Genetic characterisation of these A(H3N2) viruses shows that they belong to genetic subclade 3C.2a1. The Northern Hemisphere 2018/19 influenza A(H3N2) vaccine strain belongs in genetic subclade 3C.2a1.

Of two influenza B viruses characterised to date, one influenza B virus has been characterised where sequencing of the haemagglutinin (HA) gene shows it belongs within genetic clade 1A of the B/Victoria lineage, in a subgroup characterised by deletion of two amino acids in the HA. The N.Hemisphere 2018/19 B/Victoria-lineage quadrivalent and trivalent vaccine component virus (a B/Colorado/06/2017-like virus), is a double deletion subgroup virus. The other influenza B virus has been characterised as antigenically similar to the B/Phuket/3073/2013 B/Yamagata lineage vaccine component in the N.Hemisphere 2018/19 quadrivalent vaccine.

**Table 3: Viruses characterised by PHE Reference Laboratory, 2018/19**

Virus	No. viruses characterised			
	Genetic and antigenic	Genetic only	Antigenic only	Total
<b>A(H1N1)pdm09</b>	39	25	27	91
<b>A(H3N2)</b>	0	15	0	15
<b>B/Yamagata-lineage</b>	0	0	1	1
<b>B/Victoria-lineage</b>	0	1	0	1

- 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 2018/19 season since week 40 2018, 29 influenza A(H1N1)pdm09 viruses have been tested for oseltamivir susceptibility and all but two were fully susceptible. The resistant cases each had an H275Y mutation. 22 out of the 29 influenza A(H1N1)pdm09 virus have also been tested for zanamivir susceptibility and all were susceptible.

14 influenza A(H3N2) viruses have also been tested for oseltamivir susceptibility and 13 of 14 influenza A(H3N2) viruses tested for zanamivir, all samples were susceptible to both agents.

One influenza B was tested for both oseltamivir and zanamivir and was susceptible to both agents.

- Antimicrobial susceptibility

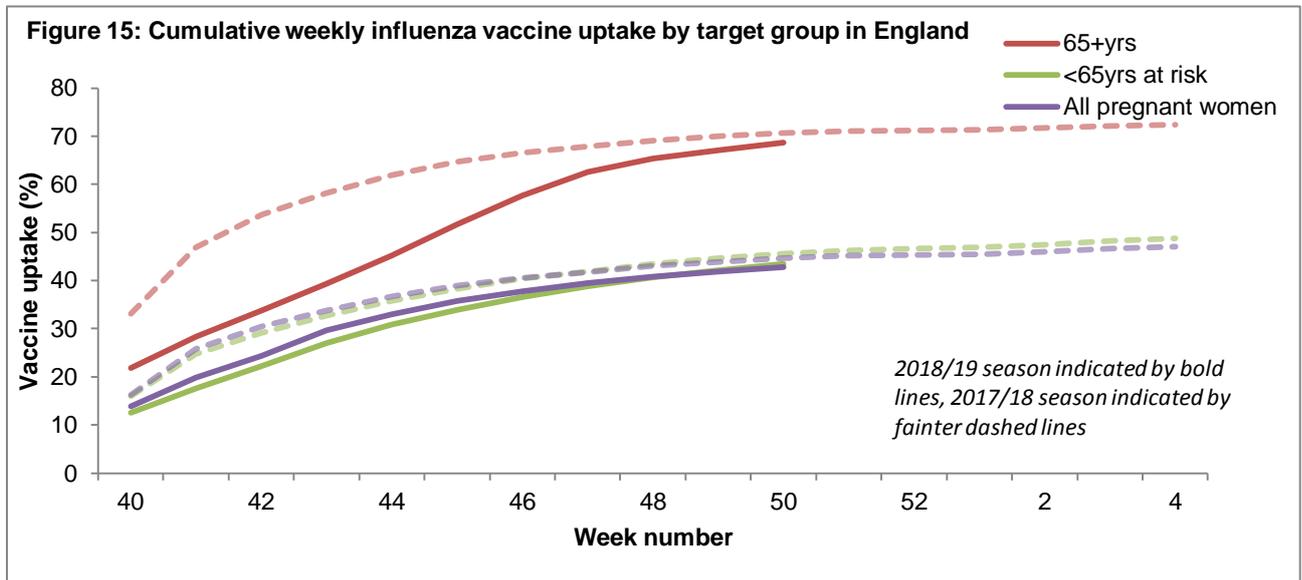
-Table 4 shows in the 12 weeks up to 23 December 2018, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired 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 23 December 2018, E&W**

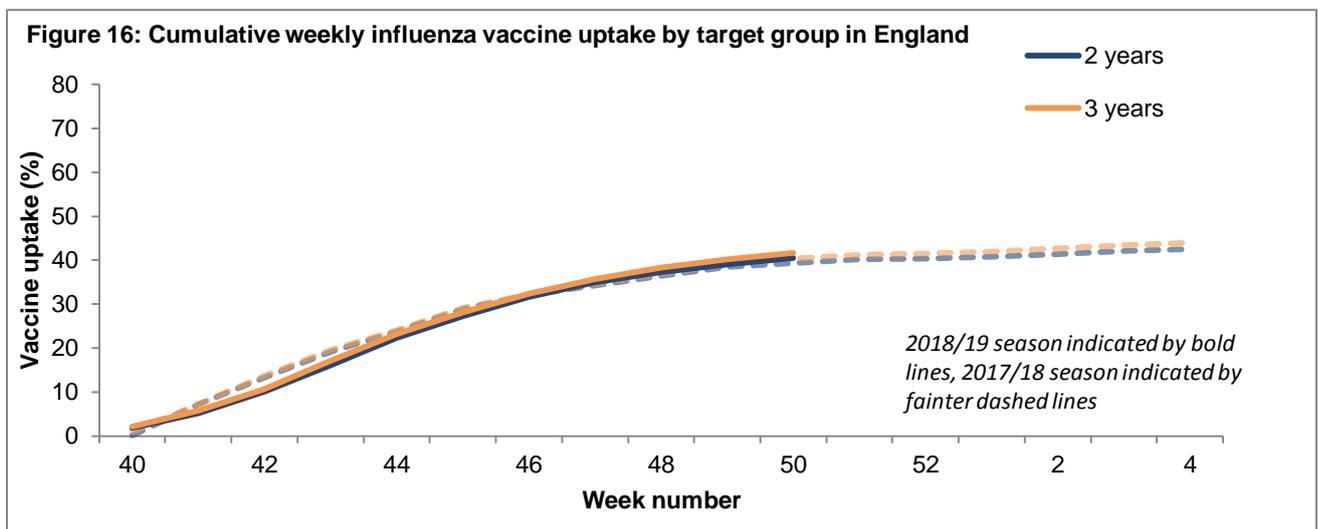
Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	3814	89
	Macrolides	4153	82
	Tetracycline	4091	85
<i>H. influenzae</i>	Amoxicillin/ampicillin	13161	69
	Co-amoxiclav	14309	84
	Macrolides	3322	3
	Tetracycline	14352	98
<i>S. aureus</i>	Methicillin	6563	91
	Macrolides	7329	66
MRSA	Clindamycin	398	46
	Tetracycline	550	78
MSSA	Clindamycin	4161	76
	Tetracycline	5518	93

\*Macrolides = erythromycin, azithromycin and clarithromycin

- Up to week 50 2018, in 96.7 % of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2018/19 influenza vaccine in targeted groups was as follows (Figure 15):
  - 43.4% in under 65 years in a clinical risk group
  - 42.8% in pregnant women
  - 68.6% in 65+ year olds



- In 2018/19, all 2 and 3 year-olds continue to be eligible for flu vaccination, through their GPs. Up to week 50 2018, in 97.1% of GP practices reporting weekly to ImmForm, the provisional proportion of children in England who had received the 2018/19 influenza vaccine in targeted groups was as follows (Figure 16):
  - 40.5% in 2 year olds
  - 41.7% in 3 year olds



- Provisional data from the second monthly collection of the influenza vaccine uptake by frontline healthcare workers show 61.0% were vaccinated by 30 November 2018 from 97.9% of all organisations, compared to 59.3% vaccinated in the previous season by 30 November 2017. The [report](#) provides uptake at national, NHS England local team and Trust-level.

- Provisional data from the second [monthly](#) collection of influenza vaccine uptake for children of school years Reception, 1, 2, 3, 4 and 5 age (from a sample of 97.4% of all Local Authorities in England) show the provisional proportion of children in England who received the 2018/19 influenza vaccine via school, pharmacy or GP practice by 30 November 2018 in targeted groups as follows:
  - 49.6% in children school year reception age (4-5 yrs)
  - 49.4% in children school year 1 age (5-6 yrs)
  - 47.7% in children school year 2 age (6-7 yrs)
  - 46.8% in children school year 3 age (7-8 yrs)
  - 45.2% in children school year 4 age (8-9 yrs)
  - 43.7% in children school year 5 age (9-10 yrs)

## International Situation

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**In the temperate zone of the Northern hemisphere, influenza activity continued to increase although overall influenza activity remained low. Increased influenza was reported in some countries of Southern and South-East Asia. In the temperate zones of the Southern hemisphere, influenza activity returned to inter-seasonal levels. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections**

- [Europe](#) updated on 21 December 2018 (Joint ECDC-WHO Europe Influenza weekly update)

Although most countries reported local, regional or widespread geographic spread, influenza activity remained at baseline or was low throughout the European Region. Of all the Member States and areas with influenza-like illness thresholds defined, 2 countries in Southern Europe (Greece and Italy) and 2 in Western Europe (Netherlands and Poland) reported activity above their baseline levels. Of 44 Member States and areas reporting on intensity, 21 reported baseline, 20 reported low (across the region) and 3 reported medium intensity (Armenia, Georgia, and Ukraine) for week 50.

Of the 44 Member States reporting on geographic spread, 6 reported no activity, 25 reported sporadic cases, 5 reported local (Estonia, France, Greece, Latvia and Spain), 3 reported regional (Italy, Portugal and Ukraine) and 5 reported widespread activity (Georgia, Iceland, Norway, Sweden and Turkey).

For week 50, 193 (18%) of the 1,059 sentinel specimens tested positive for influenza viruses, 190 (98.4%) were influenza A and 3 (1.6%) were type B. Of the 182 type A viruses subtyped, 95 (52.2%) were influenza A(H1N1)pdm09 and 87 (47.8%) were influenza A(H3N2).

For week 50, 58 laboratory-confirmed influenza cases were reported in ICUs, 53 (91.4%) influenza type A and 5 (8.6%) influenza type B viruses were detected. Among the 42 laboratory confirmed influenza cases in other wards reported 41 (97.6%) were infected with influenza type A virus infection and 1 (2.4%) was infected with influenza type B viruses.

For week 50, 1,289 specimens from non-sentinel sources (such as hospitals, schools, primary care facilities not involved in sentinel surveillance, or nursing homes and other institutions) tested positive for influenza viruses. Of the 1,289, 1,245 (96.6%) were type A and 44 (3.4%) were type B viruses. Of the 228 influenza A viruses that were subtyped, 198 (69.5%) were A(H1N1)pdm09 and 87 (30.5%) were A(H3N2). None of the influenza B viruses were assigned to a lineage

For week 50, data from the 20 Member States or areas reporting to the EuroMOMO project indicated all-cause mortality to be at expected levels for this time of year.

- [United States of America](#) updated on 21 December 2018 (Centre for Disease Control report)

During week 50, influenza activity in the United States is increasing.

Influenza A and B viruses continue to co-circulate with influenza A(H1N1)pdm09 most commonly reported by public health laboratories.

A cumulative rate of 2.9 laboratory-confirmed influenza-associated hospitalisations per 100,000 population was reported, with the highest rate among children <5 years old.

Nationwide during week 50, the proportion of outpatient visits for influenza-like illness (ILI) increased to 2.7%, which is above the national baseline of 2.2%.

For week 49, the proportion of deaths attributed to pneumonia and influenza (P&I) was 6.0%, below the epidemic threshold (6.6%) in the National Center for Health Statistics (NCHS) Mortality Surveillance System.

One influenza-associated pediatric death (influenza B) was reported to the CDC during week 50.

- [Canada](#) updated on 21 December 2018 (Public Health Agency report)

Overall, influenza activity continued to increase in week 50. Influenza A is the most common influenza virus circulating predominantly influenza A(H1N1)pdm09.

In week 50, a total of 1,869 laboratory confirmed detections of influenza were reported, of which 99% were influenza A. The percentage of tests positive for influenza from sentinel laboratories continued to increase to 22.8%, which is above the seasonal threshold of 5.0%.

In week 50, 1.5% of visits to healthcare professionals were due to ILI, the percentage of visits for ILI is within expected levels.

To date this season, 864 influenza-associated hospitalisations have been reported by participating provinces and territories, of which 761 (99%) were associated with influenza A. To date this season, 118 ICU admissions and 22 deaths have been reported.

- [Global influenza update](#) updated on 24 December 2018 (WHO website)

In the temperate zone of the Northern hemisphere, influenza activity continued to increase, although overall influenza activity remained low. Increased influenza was reported in some countries of Southern and South-East Asia. In the temperate zones of the Southern hemisphere, influenza activity returned to inter-seasonal levels. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections.

In North America, influenza activity increased overall, with influenza A(H1N1)pdm09 virus predominating. In Canada, influenza activity continued to increase; paediatric hospitalisations were high for this time of year mainly due to influenza A(H1N1)pdm09 virus. In the United States, influenza activity remained low although a slight increase was reported, with A(H1N1)pdm09 virus predominantly reported. In Mexico, an increase in A(H1N1)pdm09 virus were reported.

In Europe, influenza activity started to increase in some countries but remained low in general, with detection of predominantly influenza A(H1N1)pdm09 and A(H3N2) viruses. In Central Asia, increased detections on influenza A(H1N1)pdm09 were reported in Kyrgyzstan.

In North Africa, there was no influenza activity detected across reporting countries.

In Western Asia, respiratory illness indicators increased in some of the countries although influenza activity remained low, with the exception of Georgia which observed increased detections of influenza A(H1N1)pdm09. Influenza activity remained elevated across countries of the Arabian Peninsula. Detections of influenza A(H1N1)pdm09 remained elevated in Bahrain.

In East Asia, a slight increase of ILI levels and influenza detections were reported in China and the Republic of Korea.

In the Caribbean, while influenza activity remained low in general, increase detections of influenza A(H1N1)pdm09 virus were reported in Puerto Rico. In Central American countries, influenza activity declined in Costa Rica and El Salvador while increased detections of influenza B and influenza A(H1N1)pdm09 were reported in Nicaragua.

In the tropical countries of South America, influenza and RSV activity were low in general.

In Western Africa, influenza detections were reported as decreased across reporting countries, except for Burkina Faso. In Middle Africa, increased ILI activity was reported in Cameroon with decreased detections of influenza A(H3N2) and influenza B viruses (both lineages). In Eastern Africa, influenza detections of influenza A(H3N2) and A(H1N1)pdm09 viruses were reported in Mauritius, respectively. Influenza B virus detection continued to be reported in Mozambique.

In Southern Asia, decreased influenza activity of predominantly influenza A(H1N1)pdm09 virus was reported in India. Influenza activity continued to increase in Iran with influenza A(H3N2) viruses most frequently detected. ILI levels increased in Afghanistan.

In South-East Asia, influenza activity continued to be reported with all seasonal subtypes reported across the region. In Lao PDR, influenza percent positivity remained elevated with influenza A(H1N1)pdm09 virus most frequently detected. Although decreased, influenza activity continues to be reported in Cambodia and

Thailand with influenza A(H1N1)pdm09 predominating most frequently detected. Influenza activity increased in Philippines and Singapore in recent weeks.

The WHO GISRS laboratories tested more than 139,511 specimens between 26 November 2018 and 09 December 2018. 10,520 were positive for influenza viruses, of which 9,970 (94.8%) were typed as influenza A and 550 (5.2%) as influenza B. Of the sub-typed influenza A viruses, 4,961 (84.1%) were influenza A (H1N1)pdm09 and 936 (15.9%) were influenza A (H3N2). Of the characterized B viruses, 85 (63.0%) belonged to the B-Yamagata lineage and 50 (37.0%) to the B-Victoria lineage.

- [Avian Influenza](#) latest update on 13 December 2018 (WHO website)

### **Influenza A(H5) viruses**

Between [2 November 2018 and 13 December 2018](#), no new laboratory-confirmed human cases of influenza A(H5) virus infections were reported to WHO.

According to reports received by the World Organization for Animal Health (OIE), various influenza A(H5) subtypes continue to be detected in birds in Africa, Europe and Asia.

### **Influenza A(H7N2)**

Between [2 November 2018 and 13 December 2018](#), 1 additional laboratory-confirmed human case of infection with an avian influenza A(H7N2)virus, associated with an outbreak in cats in the USA. This is the second human case of infection with influenza A(H7N2) virus transmitted from cats to humans.

### **Influenza A(H7N9)**

According to reports from mainland and the Hong Kong Special Administrative Region China and those received by the World Organisation for Animal Health (OIE), A(H7N9) avian influenza viruses continue to be detected in China but at lower levels compared to previous years. A nationwide domestic poultry vaccination campaign began in 2017.

### **Influenza A(H9N2)**

Between [2 November 2018 and 13 December 2018](#), 2 new laboratory-confirmed cases of influenza A(H9N2) virus infections were reported to WHO from China. Avian influenza A(H9N2) viruses are enzootic in poultry in China

- [Middle East respiratory syndrome coronavirus \(MERS-CoV\)](#) latest update on 27 December 2018

Up to 27 December 2018, a total of five cases of Middle East respiratory syndrome coronavirus, MERS-CoV, (three imported and two linked cases) have been confirmed in the UK. On-going surveillance has identified 1,379 suspected cases in the UK that have been investigated for MERS-CoV and tested negative.

Between [16 October 2018 and 30 October 2018](#), the National IHR Focal Point of The Kingdom of Saudi Arabia reported 4 additional cases of Middle East Respiratory Syndrome (MERS), including 1 death.

Globally, since September 2012 through to the end of October 2018, WHO has been notified of 2,266 laboratory-confirmed cases of infection with MERS-CoV, including 804 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 very low.

## **Acknowledgements**

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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](#))
- 2018/19 Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))