



PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

31 January 2019 – Week 05 report (up to week 04 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 04 (ending 27 January 2019)

- During week 04, influenza continued to circulate in the community with activity indicators at **Low** intensity and early signs of peaking.
- The impact of flu on healthcare services is at **High** impact for hospitalisations and ICU/HDU influenza admissions.
- Influenza A(H1N1)pdm09 is the dominant circulating subtype. The Department of Health & Social Care has issued an [alert](#) on the prescription of antiviral medicines by GPs

Community

- Eighty-seven acute respiratory outbreaks have been reported in the past 7 days. Forty-nine outbreaks were reported from care homes where 13 tested positive for influenza A(not subtyped), 2 for rhinovirus and 3 for RSV. Ten outbreaks were reported from hospitals where 2 tested positive for influenza A(not subtyped) and 3 influenza A(H1N1)pdm09. Twenty-three outbreaks were reported from schools where 2 were positive for influenza A(not subtyped). The remaining 5 outbreaks were reported from the Other settings category where 1 tested positive for influenza A(H1N1)pdm09 and 1 for influenza A(not subtyped).

Primary Care

- The rate of influenza-like illness (ILI) was at **Low intensity** levels. The overall weekly ILI GP consultation rate was 17.5 per 100,000 registered population in participating GP practices for England, this is a decrease from 19.6 per 100,000 in week 03 2019.
- In the devolved administrations, ILI rates were **Below Baseline** threshold levels for Scotland and Northern Ireland and were at **Low intensity** levels for Wales.

GP ILI
Consultations
England



Secondary Care

- Hospitalisation rate observed was at **High impact** levels, with a rate of 6.11 per 100,000 trust catchment population for England (21 NHS Trusts), this is an increase from 5.12 per 100,000 in week 03
- ICU/HDU admission rate observed was at **High impact** levels, with a rate of 0.56 per 100,000 trust catchment population for England (135/143 NHS Trusts), this is similar to 0.57 per 100,000 in week 03.
- There were 8 new influenza admissions (6 influenza A(H1N1)pdm09 and 2 influenza A(unknown subtype)) reported from the 6 Severe Respiratory Failure centres in the UK.

Hospitalisation



All-cause mortality

- In week 04 2019, 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 Northern Ireland and Wales in week 04; statistically significant excess all-cause mortality was observed in Scotland in week 02 2019.

Microbiological surveillance

- Primary care:** 27 sample tested positive for influenza (16 influenza A(H1N1)pdm09, 6 influenza A(H3) and 5 influenza A(not subtyped)) with a positivity of 45.0% through the UK GP sentinel swabbing schemes.
- Secondary care:** Influenza percent positivity was 24.9%, **Above Baseline** threshold level, this is an increase from 21.1% in week 03. There were 603 detections recorded through the DataMart scheme (341 influenza A(H1N1)pdm09, 107 influenza A(H3), 154 influenza A(not subtyped) and 1 influenza B).

Secondary
Care



Vaccination

- Weekly uptake:** Up to week 04 2019, in 97.4% of GP practices the provisional proportion of people in England who had received the 2018/19 influenza vaccine in targeted groups was: 46.7% in under 65 years in a clinical risk group, 44.8% in pregnant women and 71.2% in 65+ year olds. In 97.5% of GP practices reporting for the childhood collection the provisional proportion vaccinated was: 43.0% in 2 year olds and 45.0% in 3 year olds.
- Provisional data from the third monthly collection of influenza vaccine uptake by frontline healthcare workers show 65.8% were vaccinated by 31 December 2018, compared to 63.9% vaccinated in the previous season by 31 December 2017.
- Provisional data from the third monthly collection of influenza vaccine uptake for children of school years reception to year 5 shows 62.6% in school year reception age, 62.2% in school year 1 age, 60.3% in school year 2 age, 59.1% in school year 3 age, 56.9% in school year 4 age and 55.1% in school year 5 age were vaccinated by 31 December 2018.

International situation

- In the temperate zone of the Northern hemisphere, influenza activity continued to increase slowly. In the temperate zones of the Southern hemisphere, influenza activity returned to inter-seasonal levels with exception of some parts in Australia. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections.

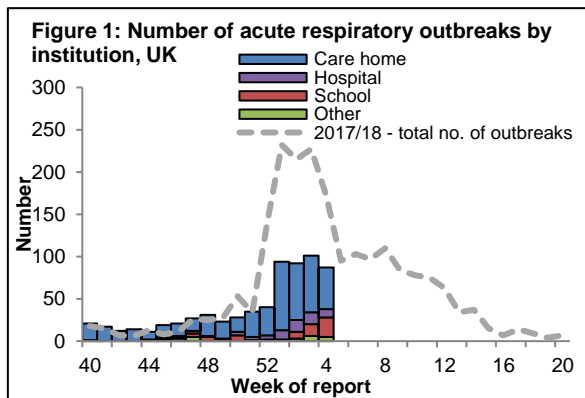
Key		
Arrows (vs previous week):		Colour (intensity according to MEM threshold):
↑ Increase	Below Baseline	High
↓ Decrease	Above Baseline/Low	Very High
↔ Stable/No trend	Medium	

Eighty-seven new acute respiratory outbreaks were reported in the past 7 days.

- Acute respiratory disease outbreaks

- Eighty-seven new acute respiratory outbreaks have been reported in the past 7 days. Forty-nine outbreaks were reported from care homes where 13 tested positive for influenza A(not subtyped), 2 for rhinovirus and 3 for RSV. Ten outbreaks were reported from hospitals where 2 tested positive for influenza A(not subtyped), and 3 influenza A(H1N1)pdm09. Twenty-three outbreaks were reported from schools where 1 was positive for influenza A(not subtyped). The remaining 5 outbreaks were reported from the Other settings category where 1 tested positive for influenza A(H1N1)pdm09 and 1 was positive for influenza A(not subtyped).

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



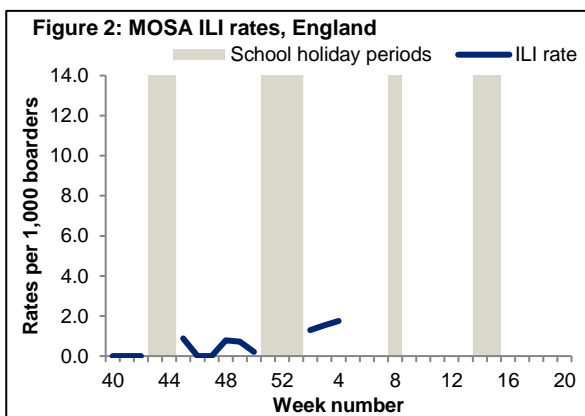
- Medical Officers of Schools Association (MOSA) & PHE surveillance scheme

- 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 03 was 1.8 per 1,000 boarders compared to 1.5 per 1,000 boarders in week 03.

-Since week 40, there have been 11 outbreaks reported from 7 MOSA schools, with a total of 36 ILI cases identified. Of the 11 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 for more information.

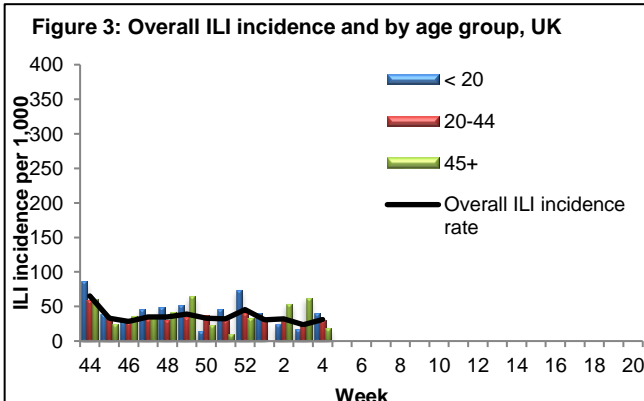


- FluSurvey

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

- The overall ILI rate (all age groups) for week 04 2019 was 31.4 per 1,000 (78/2,485 people reported at least 1 ILI) (Figure 3) compared to 23.6 per 1,000 in the previous week, with the highest rate seen in the <20 year olds (40.1 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 04, the overall weekly influenza-like illness (ILI) GP consultation rate decreased from the previous week but remained at low intensity activity levels in England. In the devolved administrations, ILI rates increased with Wales at medium intensity levels.

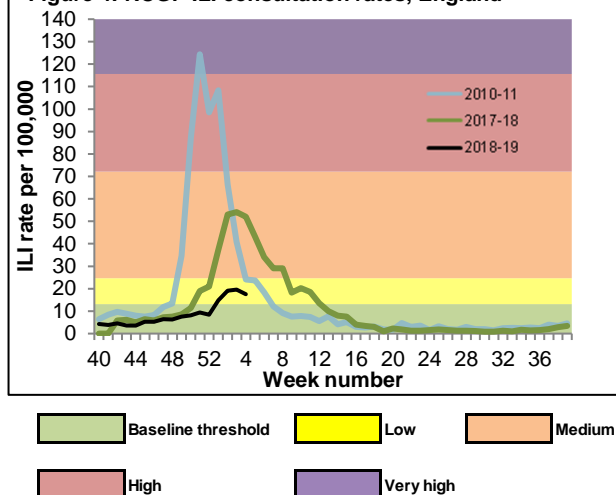
- GP ILI consultations in the UK

RCGP (England)

The weekly ILI consultation rate through the RCGP surveillance was at 17.5 per 100,000 registered population in participating GP practices in week 04 2019, this is a decrease from 19.6 per 100,000 in week 03. This is above the baseline threshold (13.1 per 100,000) (Figure 4*). By age group, the highest rates were seen in 15-44 year olds (21.8 per 100,000) and 45-64 year olds (20.7 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>

Figure 4: RCGP ILI consultation rates, England



UK

In week 04, overall weekly ILI consultation rates across most countries of the UK decreased, England and Wales remain above their respective baseline thresholds with both at low activity levels. In Northern Ireland and Scotland ILI rates remain below baseline threshold levels (Table 1).

By age group, the highest rates were seen in the 45-64 year olds in Scotland (38.4 per 100,000), in the 5-14 year olds in Northern Ireland (14.5 per 100,000) and in the 1-4 year olds in Wales (43.1 per 100,000).

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	8.4	14.8	19.2	19.6	17.5
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	9.5	14.7	20.4	22.9	15.7
Scotland	7.3	5.1	3.1	3.8	2.9	7.3	4.0	4.8	5.5	4.0	6.6	10.4	7.0	16.6	25.6	19.5	28.9
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	9.0	13.5	18.9	14.4	12.4

*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 14.0 per 100,000 in week 04 2019 (Figure 5).

During week 04, there were small increases in a number of acute respiratory indicators including influenza-like illness (ILI) (ED attendances), cold/flu calls (NHS 111) and upper respiratory tract infections (GPIH). ILI remained stable for GPOOH and GPIH consultations.

Figure 5 represents a map of GP ILI consultation rates in week 04 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 04



In week 04 2019, there were 575 hospitalised confirmed influenza cases (210 influenza A(H1N1)pdm09, 60 influenza A(H3N2) and 305 influenza A(unknown subtype)) reported through the USISS sentinel hospital network across England (21 NHS Trusts). There were 275 new admissions to ICU/HDU with confirmed influenza (69 influenza A(H1N1)pdm09, 19 influenza A(H3N2) and 187 influenza A(unknown subtype)) reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (135/143 NHS Trusts in England).

- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 04)

- In week 04 2019, there were 575 hospitalised laboratory confirmed influenza cases (210 influenza A(H1N1)pdm09, 60 influenza A(H3N2) and 350 influenza A(unknown subtype)) reported from 21 NHS Trusts across England through the USISS sentinel hospital network, with a rate of 6.11 per 100,000 trust catchment population compared to 5.12 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 high impact range.

- A total of 2,269 hospitalised confirmed influenza admissions (953 influenza A(H1N1)pdm09, 192 influenza A(H3N2), 1,100 influenza A(unknown subtype) and 24 influenza B) and have been reported in the UK since week 40 2018 via the sentinel scheme.

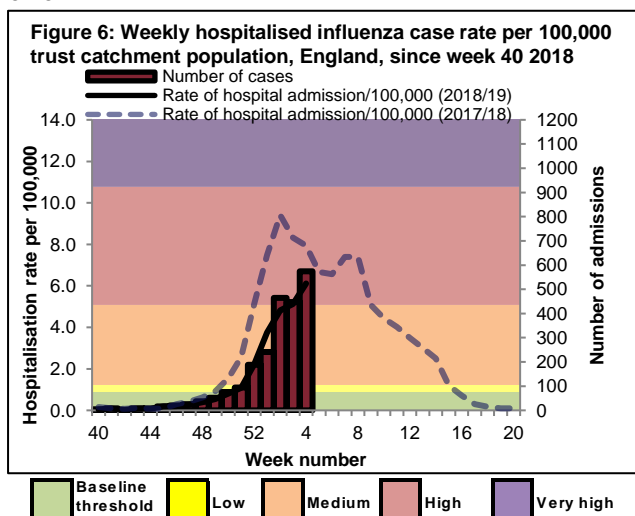
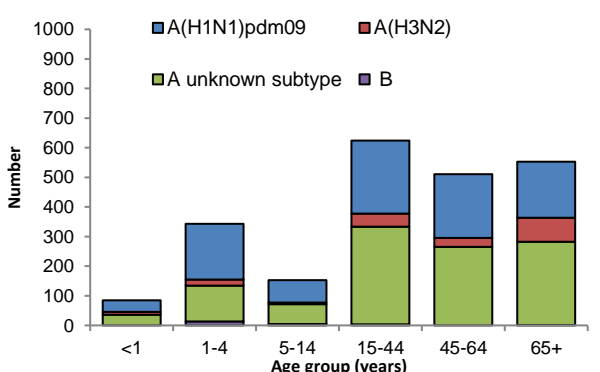


Figure 7: Cumulative hospitalised influenza admissions (USISS sentinel) by age group and flu type, England, since week 40 2018



*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>

- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 04)

- In week 04 2019, there were 275 new admissions to ICU/HDU with confirmed influenza (69 influenza A(H1N1)pdm09, 19 influenza A(H3N2) and 187 influenza A(unknown subtype)) reported across the UK (135/143 Trusts in England) through the USISS mandatory ICU scheme. The rate for England (n=271) was 0.56 per 100,000 trust catchment population compared to 0.57 per 100,000 in the previous week (Figures 8 and 9), above the baseline threshold of 0.09 per 100,000 within the high impact range. Twenty-six influenza laboratory-confirmed deaths were reported to have occurred in ICU in week 04 in the UK.

- A total of 1,548 new ICU/HDU admissions (522 influenza A(H1N1)pdm09, 85 influenza A(H3N2), 923 influenza A(unknown subtype) and 18 influenza B) and 131 confirmed deaths have been reported in the UK since week 40 2018.

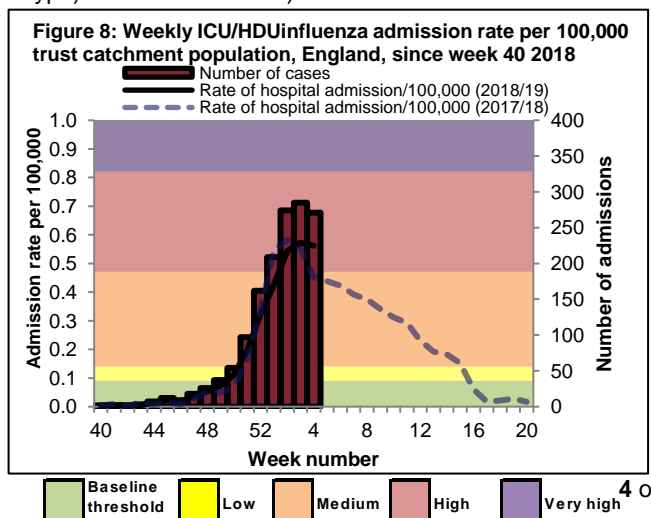
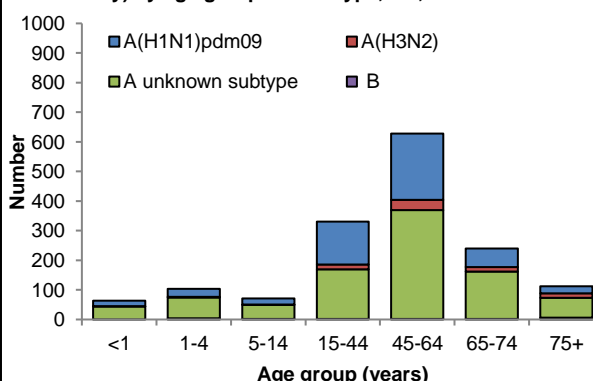


Figure 9: Cumulative ICU influenza admissions (USISS mandatory) by age group and flu type, UK, since week 40 2018



*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 04)

- In week 04, there were 8 new admissions for laboratory confirmed influenza (6 influenza A(H1N1)pdm09 and 2 influenza A(unknown subtype)) among the 6 Severe Respiratory Failure (SRF) centres in the UK.

- Since week 40 there has been 48 confirmed influenza admissions (40 influenza A(H1N1)pdm09, 4 influenza A(H3N2) and 4 influenza A(unknown subtype)) to ECMO centres

All-cause mortality data

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In week 04 2019, 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 Wales and Northern Ireland in week 04 2019. Significant excess all-cause mortality was observed in Scotland in week 02 2019.

- All-cause death registrations, England and Wales

- In week 03 2019, an estimated 11,860 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is a decrease compared to the 12,609 estimated death registrations in week 02 2019.

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

- In week 04 2019 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 Wales, and Northern Ireland in week 04 2019. Significant excess mortality was observed in Scotland in week 02 2019 (Table 2).

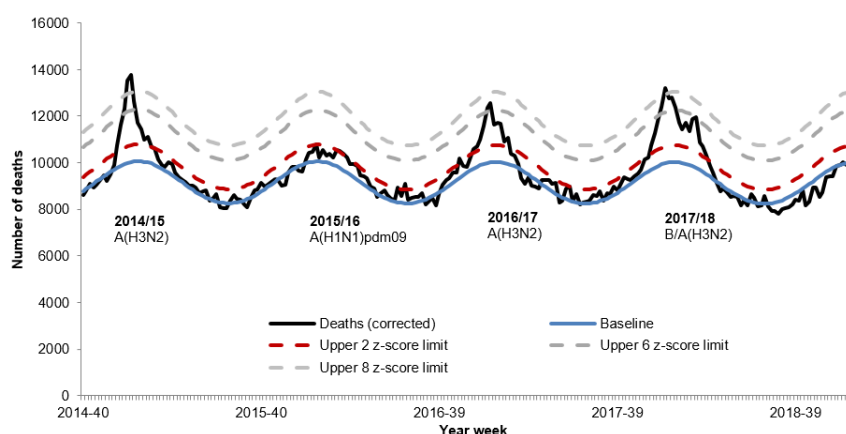
Table 2: Excess mortality by UK country, for all ages*

Country	Excess detected in week 04 2019?	Weeks with excess in 2018/19
England	×	NA
Wales	×	NA
Northern Ireland	×	1
Country	Excess detected in week 02 2019?	Weeks with excess in 2018/19
Scotland	✓	52-2

* 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 04 2019

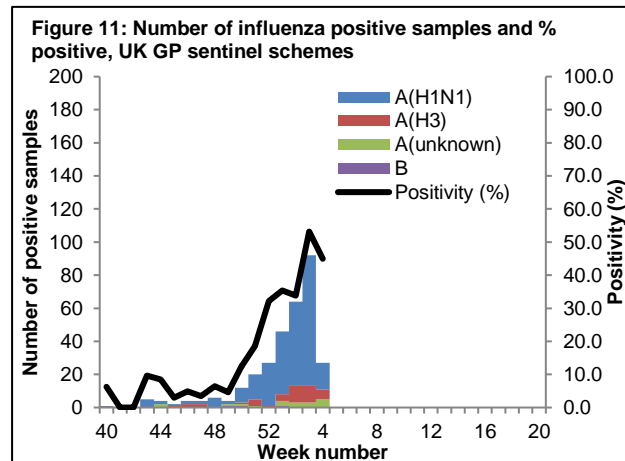


In week 04 2019, 27 samples tested positive for influenza (16 influenza A(H1N1)pdm09, 6 influenza A(H3) and 5 influenza A(not subtyped)) with a positivity of 45.0% through the UK GP sentinel schemes. 603 positive detections were recorded through the DataMart scheme (341 influenza A(H1N1)pdm09, 107 influenza A(H3), 154 influenza A(not subtyped) and 1 influenza B) with a positivity of 24.9%, this is above the baseline threshold of 9.2%.

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

- In week 04 2019, 27 samples tested positive for influenza (16 influenza A(H1N1)pdm09, 6 influenza A(H3) and 5 influenza A(not subtyped)) with an overall positivity of 45.0% compared to 53.2% in week 03 2019 through the UK GP sentinel swabbing schemes (Figure 11).

Since week 40, a total of 318 samples (253 influenza A(H1N1)pdm09, 41 influenza A(H3), 19 influenza A(unknown subtype) and 5 influenza B) tested positive for influenza through this scheme.

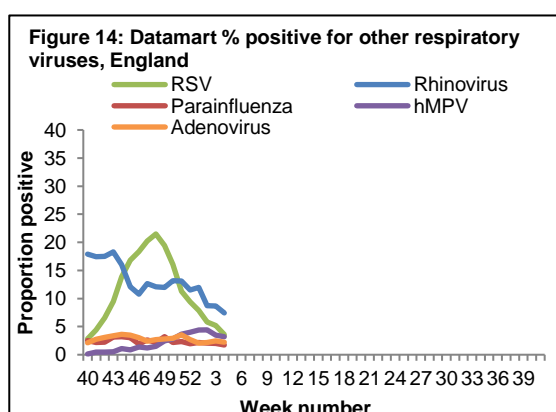
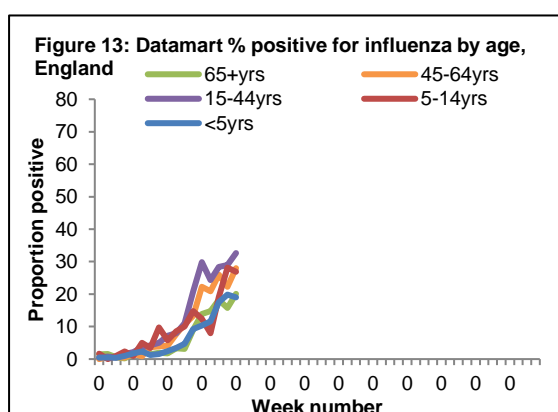
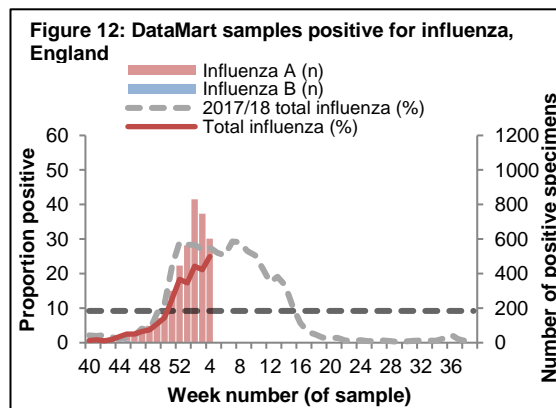


NB. Positivity (%) omitted when fewer than 10 specimens were tested

- Respiratory DataMart System (England)

- In week 04 2019, out of the 2,418 respiratory specimens reported through the Respiratory DataMart System, 603 samples (24.9%) were positive for influenza (341 influenza A(H1N1)pdm09, 107 influenza A(H3), 154 influenza A(not subtyped) and 1 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 32.6% in week 03 (Figure 13). The overall positivity for RSV continued to decrease from 5.2% in week 03 to 3.6% week 03 2019 (Figure 14). Although the main affected population is in children <5 years the positivity continued to decrease in this group from 10.4% in week 03 to 6.0% in week 04 2019.

Rhinovirus positivity decreased from 8.6% in week 03 to 7.4% in week 04 2019. Human metapneumovirus (hMPV) positivity was 3.2%, similar to the previous week. Adenovirus and parainfluenza positivities remained low at 2.2% and 1.7% respectively (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.

The PHE Respiratory Virus Unit has characterised 309 influenza A(H1N1)pdm09 viruses detected since week 40. Genetic characterisation of 279 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. One-hundred and forty-five 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.

Genetic characterisation of 38 A(H3N2) influenza viruses shows that they all belong to genetic subclade 3C.2a, with 37 belonging to a cluster within this genetic subclade designated as 3C.2a1. The Northern Hemisphere 2018/19 influenza A(H3N2) vaccine strain belongs in genetic subclade 3C.2a1.

Of three influenza B viruses characterised to date, two influenza B viruses have been characterised where sequencing of the haemagglutinin (HA) gene shows they belong within genetic clade 1A of the B/Victoria lineage. One of them clusters 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 genetically as belonging to genetic clade 3 of the B/Yamagata lineage and antigenically as 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
A(H1N1)pdm09	115	164	30	309
A(H3N2)	0	38	0	38
B/Yamagata-lineage	1	0	0	1
B/Victoria-lineage	0	2	0	2

- 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, 88 influenza A(H1N1)pdm09 viruses have been tested for oseltamivir susceptibility, 83 were fully susceptible and 5 were resistant. The 5 resistant cases had H275Y mutations. 57 out of the 88 influenza A(H1N1)pdm09 virus have also been tested for zanamivir susceptibility and all were susceptible. 17 influenza A(H3N2) viruses have been tested for oseltamivir susceptibility and all were susceptible. 16 out of the 17 influenza A(H3N2) viruses have also been tested for zanamivir susceptibility and all were susceptible. One influenza B virus has been tested for susceptibility for both oseltamivir and zanamivir and it was susceptible to both agents.

- Antimicrobial susceptibility

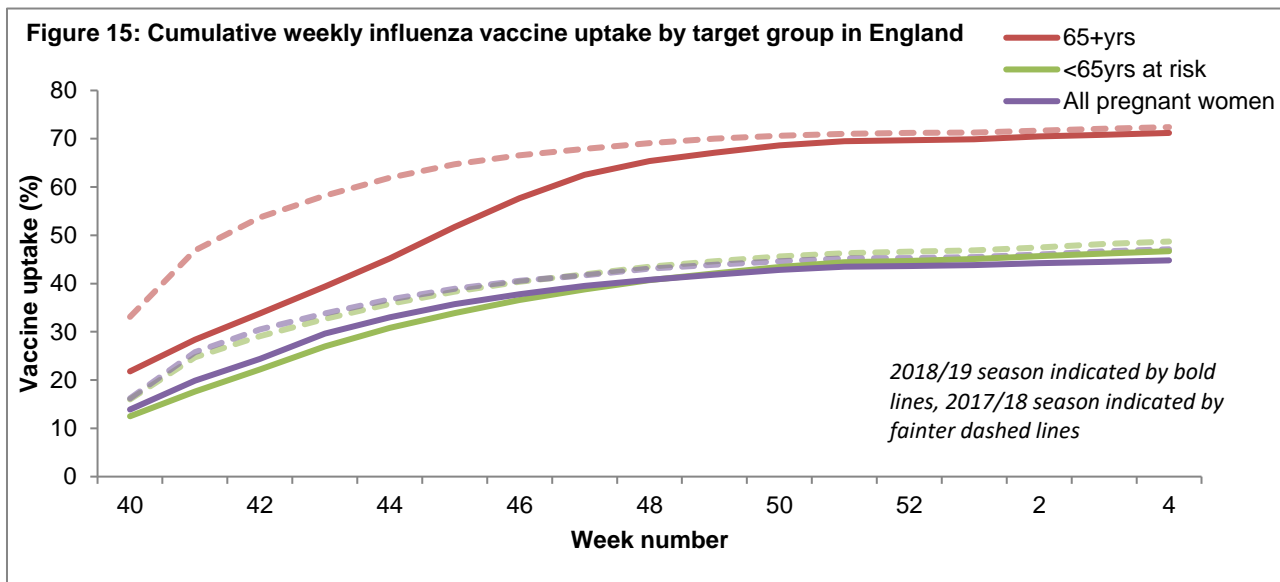
-Table 4 shows in the 12 weeks up to 27 January 2019, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenza*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired pneumonia (CAP) and the choice of antibiotics reflects the British Thoracic Society empirical guidelines for management of CAP in adults.

Table 4: Antimicrobial susceptibility surveillance in lower respiratory tract isolates, 12 weeks up to 27 January 2019, E&W

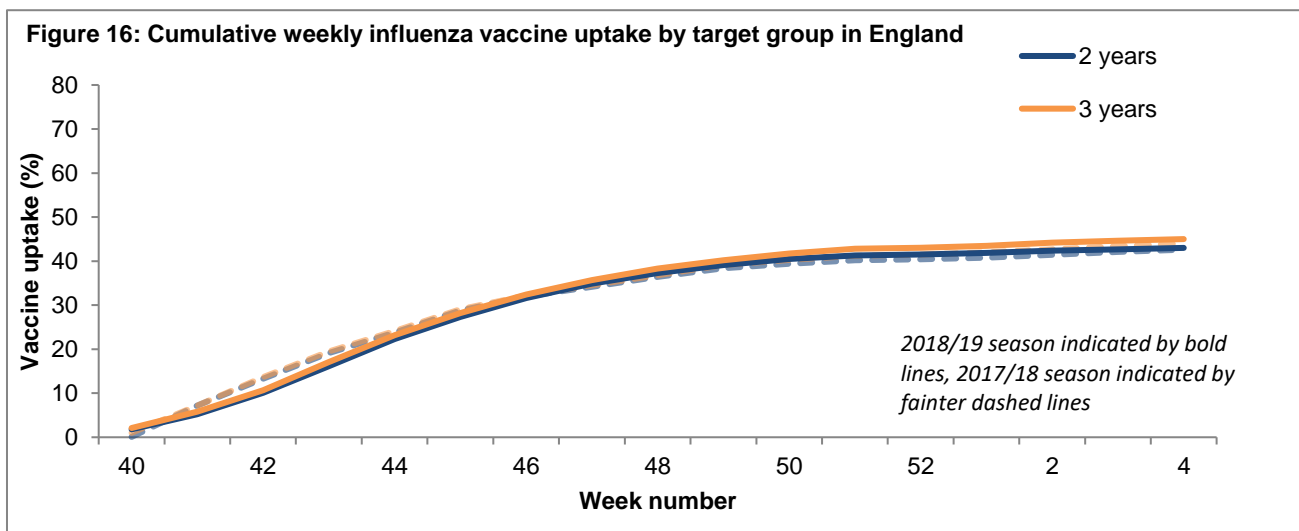
Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	3975	88
	Macrolides	4354	84
	Tetracycline	4298	86
<i>H. influenzae</i>	Amoxicillin/ampicillin	15314	69
	Co-amoxiclav	16539	84
	Macrolides	3727	3
	Tetracycline	16577	98
<i>S. aureus</i>	Methicillin	6826	91
	Macrolides	7598	66
MRSA	Clindamycin	423	45
	Tetracycline	580	79
MSSA	Clindamycin	4298	76
	Tetracycline	5744	93

*Macrolides = erythromycin, azithromycin and clarithromycin

- Up to week 04 2019, in 97.4% 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):
 - 46.7% in under 65 years in a clinical risk group
 - 44.8% in pregnant women
 - 71.2% 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 04 2019, in 97.5% 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):
 - 43.0% in 2 year olds
 - 45.0% in 3 year olds



- Provisional data from the third monthly collection of the influenza vaccine uptake by frontline healthcare workers show 65.8% were vaccinated by 31 December 2018 from 97.9% of all organisations, compared to 63.9% vaccinated in the previous season by 31 December 2017. The [report](#) provides uptake at national, NHS England local team and Trust-level.

- Provisional data from the third [monthly](#) collection of influenza vaccine uptake for children of school years Reception, 1, 2, 3, 4 and 5 age (from a sample of 94.8% 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 31 December 2018 in targeted groups as follows:
 - 62.6% in children school year reception age (4-5 yrs) compared to 61.8% by 31 December 2017
 - 62.2% in children school year 1 age (5-6 yrs) compared to 60.0% by 31 December 2017
 - 60.3% in children school year 2 age (6-7 yrs) compared to 59.5% by 31 December 2017
 - 59.1% in children school year 3 age (7-8 yrs) compared to 56.7% by 31 December 2017
 - 56.9% in children school year 4 age (8-9 yrs) compared to 54.8% by 31 December 2017
 - 55.1% in children school year 5 age (9-10 yrs); age group not include in 2017/18 school vaccine programme.

International Situation

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In the temperate zone of the Northern hemisphere, influenza activity continued to increase slowly. In the temperate zones of the Southern hemisphere, influenza activity returned to inter-seasonal levels with exception of some parts in Australia. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections.

- [Europe](#) updated on 25 January 2019 (Joint ECDC-WHO Europe Influenza weekly update)

In week 03 2019, influenza activity continued to increase in the European Region. Influenza A virus detections dominated with A(H1N1)pdm09 viruses being more prevalent than A(H3N2).

Of all the Member States and areas with influenza-like illness thresholds defined, countries in Eastern (Republic of Moldova, Russian Federation), Northern (Estonia, Ireland, Latvia, Lithuania, and UK (England and Wales)), Southern (Greece, Israel, Italy and Montenegro) and Western (Hungary, Netherlands, Portugal and Spain) areas of the European region reported activity above baseline levels.

Of 46 Member States and areas reporting on influenza activity, 7 reported baseline (Eastern, Northern and Western areas), 22 reported low (across the region), 15 reported medium (across the region) and 2 reported high (Malta and Romania) intensity for week 03.

Of the 46 Member States reporting on geographic spread, 2 reported no activity, 9 reported sporadic cases, 4 reported local spread, 8 reported regional spread (in Eastern, Southern and Western areas) and 23 reported widespread activity (across the region).

For week 03, 1,742 (48.8%) of the 3,569 sentinel specimens tested positive for influenza viruses, 1,717 (98.6%) were influenza A and 25 (1.4%) were influenza B. Of the 1,057 type A viruses subtyped, 673 (63.7%) were influenza A(H1N1)pdm09 and 384 (36.3%) were influenza A(H3N2). Of the 10 type B viruses ascribed to a lineage all were B-Yamagata.

For week 03, 340 laboratory-confirmed influenza cases were reported in ICUs, 338 (99.4%) were infected with influenza type A viruses and 2 (0.6%) were infected with influenza type B viruses. Among the 227 laboratory confirmed influenza cases in other wards reported 225 (99.1%) were infected with influenza type A viruses and 2 (0.9%) were infected with influenza type B viruses.

For week 03, 9,484 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 9,484, 9,401 (99.1%) were type A and 83 (0.9%) were type B viruses. Of the 3,125 influenza A viruses that were subtyped, 1,950 (62.4%) were A(H1N1)pdm09 and 1,175 (37.6%) were A(H3N2). No B viruses ascribed to a lineage

In Sweden, a seasonal reassortant A(H1N2) influenza virus was detected in a specimen collected at the end of December. Preliminary whole genome sequence analysis suggests that the virus is a seasonal reassortant containing genes of seasonal influenza A(H1N1)pdm09 virus and seasonal influenza A(H3N2) virus.

For week 03, data from the 23 Member States or areas reporting to the EuroMOMO project indicated all-cause mortality to be at expected levels for this time of year, but with a few countries observed some excess mortality in elderly populations.

- [United States of America](#) updated on 25 January 2019 (Centre for Disease Control report)

During week 03, influenza activity in the United States (US) increased. Influenza A and B viruses continue to co-circulate. Influenza A viruses have predominated since the start of the season with influenza A(H1N1)pdm09 predominating in most areas, however influenza A(H3) predominated in South-Eastern US.

A cumulative rate of 14.8 laboratory-confirmed influenza-associated hospitalisations per 100,000 population was reported, with the highest rate among those aged 65+ years old.

Nationwide during week 03, the proportion of outpatient visits for influenza-like illness (ILI) increased to 3.3% but remains above the national baseline of 2.2%.

For week 01, the proportion of deaths attributed to pneumonia and influenza (P&I) was 7.2%, above the epidemic threshold (7.1% for week 02) in the National Center for Health Statistics (NCHS) Mortality Surveillance System.

Three influenza-associated pediatric deaths (2 influenza A(H1N1)pdm09 and 1 influenza A(not subtyped)) were reported to the CDC during week 03.

- [Canada](#) updated on 25 January 2019 (Public Health Agency report)

Overall, influenza continues to circulate across Canada with the Eastern region reporting higher levels of activity than the rest of the country. Laboratory detections continued to decline from the previous week. Influenza A is the most common influenza virus circulating and the majority of these viruses are influenza A(H1N1)pdm09. The majority of lab confirmed cases and hospitalisations have been among those aged less than 65 years.

In week 03, a total of 2,313 laboratory confirmed detections of influenza were reported, of which 98% were influenza A. The percentage of tests positive for influenza from sentinel laboratories decreased to 20.8% in week 03, which is above the seasonal threshold of 5.0%.

In week 03, 1.4% of visits to healthcare professionals were due to ILI, the percentage of visits for ILI is within expected levels.

To date this season, 1,637 influenza-associated hospitalisations have been reported by participating provinces and territories, of which 1,631 (99.6%) were associated with influenza A. To date this season, 262 ICU admissions and 56 deaths have been reported; all reported deaths were associated with influenza A.

- [Global influenza update](#) updated on 21 January 2019 (WHO website)

In the temperate zone of the Northern hemisphere, influenza activity continued to increase slowly. In the temperate zones of the Southern hemisphere, influenza activity returned to inter-seasonal levels with exception of some parts in Australia. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections.

In North America, influenza activity remained elevated, with influenza A(H1N1)pdm09 virus predominating. In Canada, although influenza percent positivity appeared to decrease, activity remained elevated; paediatric hospitalisations remained elevated but within the average number of hospitalisations seen in 2010-2011 season. In the United States, influenza activity increased, with mainly influenza A(H1N1)pdm09 virus detected followed by increased detections of influenza A(H3N2) viruses. In Mexico, influenza A(H1N1)pdm09 continued to be reported.

In Europe, influenza activity continued to increase across the continent but remained overall low with influenza A(H1N1)pdm09 and A(H3N2) viruses co-circulating. In Northern Europe, increased detections of predominantly influenza A were reported in Estonia, Sweden and UK. In In South Eastern Europe, ILI levels and influenza activity increased slightly across the sub-region. In Eastern Europe, influenza activity increased in the Republic of Moldova and Ukraine, with influenza A(H1N1)pdm09 and A(H3N2) viruses predominating, respectively

In In Central Asia, influenza activity of predominantly influenza A(H1N1)pdm09 virus decreased in Kyrgyzstan and appeared to have peaked in week 50 2018.

In Northern Africa, detections of influenza A(H3N2)viruses continued to be reported in Egypt.

In Western Asia, respiratory illness indicators continued to increase in Armenia, Georgia, Israel and Turkey. Influenza A viruses predominated with various proportions of A(H1N1)pdm09 and A(H3N2) in different

countries. In the Arabian Peninsula, elevated influenza activity continued to be reported across countries, but lower than previously reported.

In East Asia, influenza season increased with predominantly influenza A (H1N1)pdm09. ILI activity sharply increased in China and Hong Kong SAR, and slightly decreased in Republic of Korea, with mainly influenza A(H1N1)pdm09 detected. In Japan and Mongolia, influenza and ILI activity continued to increase with influenza A(H1N1)pdm09 predominantly detected.

In the Caribbean and Central American countries, influenza activity and RSV remained low across reporting countries with exception of Costa Rica, where RSV activity continued to increase

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

In Western, Middle and Eastern Africa, Influenza virus detections were low across reporting countries. Influenza A(H3N2) viruses predominated followed by influenza B Victoria lineage virus.

In Southern Asia, influenza detections remained elevated. ILI levels increased in Afghanistan and influenza activity continued to be reported in India, with influenza A(H1N1)pdm09 virus most frequently detected. Increased detections were observed in Sri Lanka with all seasonal subtypes co-circulating. Iran (Islamic Republic of) saw a sharp increase in influenza A(H3N2) viruses.

In South-East Asia, Lao PDR continued to report influenza activity with ILI levels in line with previous years, influenza A(H1N1)pdm09 virus was most frequently detected. A few influenza detections were reported in Thailand with influenza A(both subtypes) and influenza B co-circulating. Singapore appeared to have peaked in week 50 2018, with predominantly influenza A(H3N2) reported

The WHO GISRS laboratories tested more than 191,778 specimens between 24 December 2018 and 06 January 2019. 39,161 were positive for influenza viruses, of which 38,493 (98.3%) were typed as influenza A and 668 (1.7%) as influenza B. Of the sub-typed influenza A viruses, 13,313 (79.4%) were influenza A (H1N1)pdm09 and 3,446 (20.6%) were influenza A (H3N2). Of the characterized B viruses, 45 (38.1%) belonged to the B-Yamagata lineage and 73 (61.9%) to the B-Victoria lineage.

- [Avian Influenza](#) latest update on 21 December 2019 (WHO website)

Influenza A(H5) viruses

Between [14 December 2018 and 21 January 2019](#), 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(H7N9)

Between [14 December 2018 and 21 January 2019](#), no new laboratory-confirmed human cases of influenza A(H7N9) virus infection were reported to WHO. There have been no publicly available reports from animal health authorities in China of influenza A(H7N9) virus detections in animals in recent months.

Influenza A(H9N2)

Between [14 December 2018 and 21 January 2019](#), 1 new laboratory-confirmed case of influenza A(H9N2) virus infection was 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 23 January 2019

Up to 30 January 2019, 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 1,425 suspected cases in the UK that have been investigated for MERS-CoV and tested negative.

Between [01 December 2018 and 31 December 2018](#), the National IHR Focal Point of The Kingdom of Saudi Arabia reported 5 additional cases of Middle East Respiratory Syndrome coronavirus(MERS-CoV).

Globally, since September 2012, WHO has been notified of 2,279 laboratory-confirmed cases of infection with MERS-CoV, including 806 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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This report was prepared by the Influenza section, Immunisations and Countermeasures Division, National Infection Service, 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](#))
- 2018/19 Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))