



PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

07 March 2019 – Week 10 report (up to week 09 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 09 (ending 03 March 2019)

- During week 09 influenza continued to circulate in the community with activity indicators decreasing and now **Below Baseline**.
- The impact of flu on healthcare services is now at **Medium** impact for hospitalisations and ICU/HDU influenza admissions.
- Influenza A(H1N1)pdm09 and influenza A(H3N2) are co-circulating. The Department of Health & Social Care has issued an [alert](#) on the prescription of antiviral medicines by GPs

Community

- Forty-six new acute respiratory outbreaks have been reported in the past 7 days. Thirty-one outbreaks were reported from care homes where 14 tested positive for influenza A(not subtyped), 1 influenza A(H3N2) and 2 human metapneumovirus (hMPV). Ten outbreaks were reported from hospitals where 6 tested positive for influenza A(not subtyped), 1 influenza A(H3) and 1 co-infection of influenza A(not subtyped) and parainfluenza. One outbreak was reported from a school with no test results available. The remaining 4 outbreaks were reported from the Other settings category where 1 tested positive for influenza A(not subtyped)

Primary Care

- The rate of influenza-like illness (ILI) was **Below Baseline** threshold levels. The overall weekly ILI GP consultation rate was 12.1 per 100,000 registered population in participating GP practices for England, this is a decrease from 15.7 per 100,000 in week 08 2019.
- In the devolved administrations, ILI rates were **Below Baseline** threshold levels for Northern Ireland, Scotland and Wales.

GP ILI
Consultations
England



Secondary Care

- Hospitalisation rate observed was at **Medium impact** levels, with a rate of 1.93 per 100,000 trust catchment population for England (20 NHS Trusts), this is a decrease from 4.15 per 100,000 in week 08.
- ICU/HDU admission rate observed was at **Medium impact** levels, with a rate of 0.23 per 100,000 trust catchment population for England (138/143 NHS Trusts), this is a decrease from 0.40 per 100,000 in week 08.
- There were 2 new influenza admissions (2 influenza A(H1N1)pdm09) reported from the 6 Severe Respiratory Failure centres in the UK.

Hospitalisation



ICU/HDU



All-cause mortality

- In week 09 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 Wales in week 09 and in Scotland in week 07 2019; Significant excess all-cause mortality was observed in Northern Ireland in week 09.

Microbiological surveillance

- Primary care:** 49 samples tested positive for influenza (36 influenza A(H1N1)pdm09, 9 influenza A(H3), 3 influenza A(not subtyped) and 1 influenza B) with a positivity of 52.1% through the UK GP sentinel swabbing schemes in week 08 2019.
- Secondary care:** Influenza percent positivity was 15.6%, **Above Baseline** threshold level, this is a decrease from 22.2% in week 08. There were 449 detections recorded through the DataMart scheme (93 influenza A(H1N1)pdm09, 204 influenza A(H3) and 147 influenza A(not subtyped) and 5 influenza B).

Secondary
Care



Vaccination

- Provisional data from the fourth monthly collection of influenza vaccine uptake in GP patients shows that in 99.6% of GP practices the proportions of people in England who had received the 2018/19 influenza vaccine in targeted groups by 31 January 2019 were: 46.9% in under 65 years in a clinical risk group, 45.0% in pregnant women and 71.3% in 65+ year olds. In 99.4% of GP practices reporting for the childhood collection the provisional proportions vaccinated by 31 January 2019 were: 43.1% in 2 year olds and 45.2% in 3 year olds.
- Provisional data from the fourth monthly collection of influenza vaccine uptake by frontline healthcare workers show 68.6% were vaccinated by 31 January 2019, compared to 67.6% vaccinated in the previous season by 31 January 2018.
- Provisional data from the fourth monthly collection of influenza vaccine uptake for children of school years reception to year 5 shows 63.9% in school year reception age, 63.4% in school year 1 age, 61.4% in school year 2 age, 60.2% in school year 3 age, 58.0% in school year 4 age and 56.2% in school year 5 age were vaccinated by 31 January 2019.
- [WHO](#) have published their recommendations for the composition of the 2019/20 Northern hemisphere influenza vaccine

International situation

- In the temperate zone of the Northern hemisphere, influenza activity continued to increase with influenza A(H1N1)pdm09 predominating overall. In the temperate zones of the Southern hemisphere, influenza activity returned to inter-seasonal levels with the exception of some parts of Australia where influenza activity remained above inter-seasonal levels. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections.

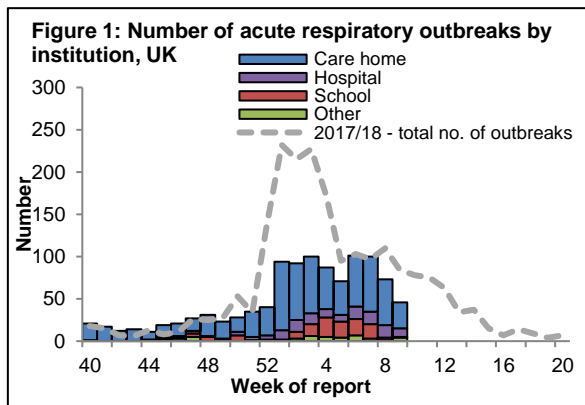
Key	
Arrows (vs previous week):	Colour (intensity according to MEM threshold):
Increase	Below Baseline
Decrease	Above Baseline/Low
Stable/No trend	Medium
	High
	Very High

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

- Acute respiratory disease outbreaks

- Forty-six new acute respiratory outbreaks have been reported in the past 7 days. Thirty-one outbreaks were reported from care homes where 14 tested positive for influenza A(not subtyped), 1 influenza A(H3N2) and 2 human metapneumovirus (hMPV). Ten outbreaks were reported from hospitals where 6 tested positive for influenza A(not subtyped), 1 influenza A(H3) and 1 co-infection of influenza A(not subtyped) and parainfluenza. One outbreak was reported from a school with no test results available. The remaining 4 outbreaks were reported from the Other settings category where 1 tested 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



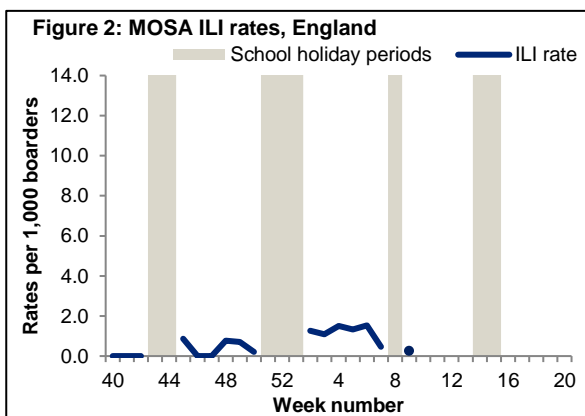
- Medical Officers of Schools Association (MOSA) & PHE surveillance scheme

- 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 6,661 boarders.

- The overall rate (all boarders) for week 09 was 0.3 per 1,000 boarders compared to 0.5 per 1,000 boarders in week 07.

- Since week 40, there have been 16 outbreaks reported from 10 MOSA schools, with a total of 57 ILI cases identified. Of the 16 outbreaks, 2 outbreaks have tested positive for influenza A (H1N1)pdm09 and 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.

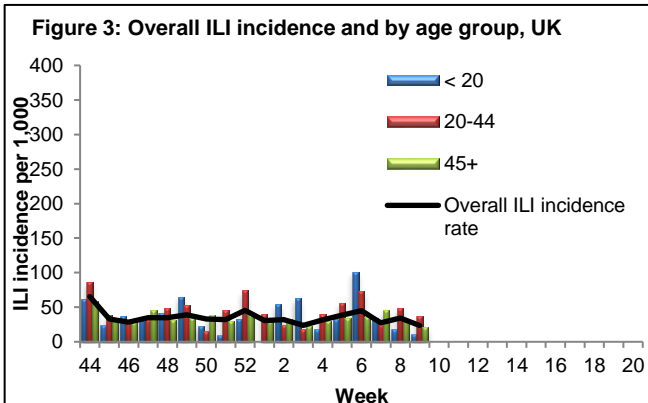


- FluSurvey

- 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 09 2019 was 23.6 per 1,000 (56/2,375 people reported at least 1 ILI) (Figure 3) compared to 34.2 per 1,000 in the previous week, with the highest rate seen in the 20-44 year olds (36.3 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 09, the overall weekly influenza-like illness (ILI) GP consultation rate decreased from the previous week and is now below baseline threshold levels in England. In the devolved administrations, ILI rates decreased and below respective baselines in Scotland, Northern Ireland and Wales.

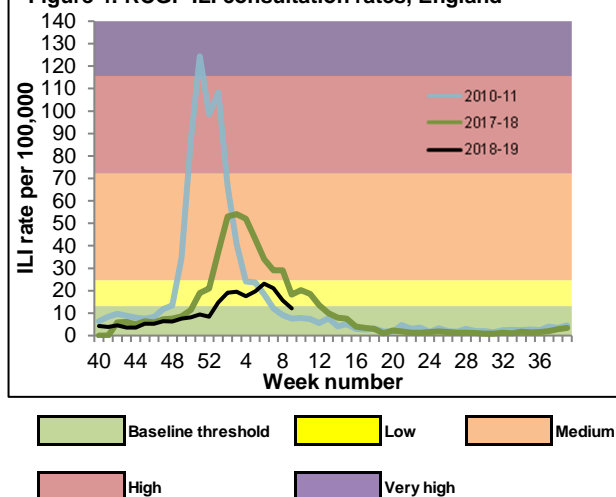
- GP ILI consultations in the UK

RCGP (England)

- The weekly ILI consultation rate through the RCGP surveillance was at 12.1 per 100,000 registered population in participating GP practices in week 09 2019, this is a decrease from 15.7 per 100,000 in week 08. 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 (21.3 per 100,000) and in 1-4 year olds (13.7 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 09, overall weekly ILI consultation rates across all countries of the UK have decreased with all below their respective baseline threshold levels. (Table 1).

- By age group, the highest rates were seen in the 45-64 year olds in Scotland, Wales and Northern Ireland (14.4 per 100,000, 14.0 per 100,000 and 12.5 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	5
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	19.7
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	20.5	22.9	15.7	20.5
Scotland	7.1	5.8	4.0	3.8	2.8	7.6	4.0	4.7	5.6	4.0	6.5	10.1	6.9	17.7	26.7	18.0	28.4	32.7
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	14.5

*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 8.3 per 100,000 in week 09 2019 (Figure 5).

- During week 09, there were continued decreases in influenza-like illness (ILI) seen in ED attendances, GPOOH and GPIH. There were further decreases in NHS 111 cold/flu calls.

- Figure 5 represents a map of GP ILI consultation rates in week 09 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 09



In week 09 2019, there were 175 hospitalised confirmed influenza cases (33 influenza A(H1N1)pdm09, 50 influenza A(H3N2), 91 influenza A(unknown subtype) and 1 influenza B) reported through the USISS sentinel hospital network across Engl and (20 NHS Trusts). There were 114 new admissions to ICU/HDU with confirmed influenza (27 influenza A(H1N1)pdm09, 16 influenza A(H3N2), 68 influenza A(unknown subtype) and 3 influenza B) reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (138/143 NHS Trusts in England).

- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 09)

- In week 09 2019, there were 175 hospitalised laboratory confirmed influenza cases (33 influenza A(H1N1)pdm09, 50 influenza A(H3N2), 91 influenza A(unknown subtype) and 1 influenza B) reported from 20 NHS Trusts across England through the USISS sentinel hospital network, with a rate of 1.93 per 100,000 trust catchment population compared to 4.15 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 medium impact range of 1.22 to <5.08 per 100,000.

- A total of 4,806 hospitalised confirmed influenza admissions (1,763 influenza A(H1N1)pdm09, 542 influenza A(H3N2), 2,470 influenza A(unknown subtype) and 31 influenza B) and have been reported in the UK since week 40 2018 via the sentinel scheme.

Figure 6: Weekly hospitalised influenza case rate per 100,000 trust catchment population, England, since week 40 2018

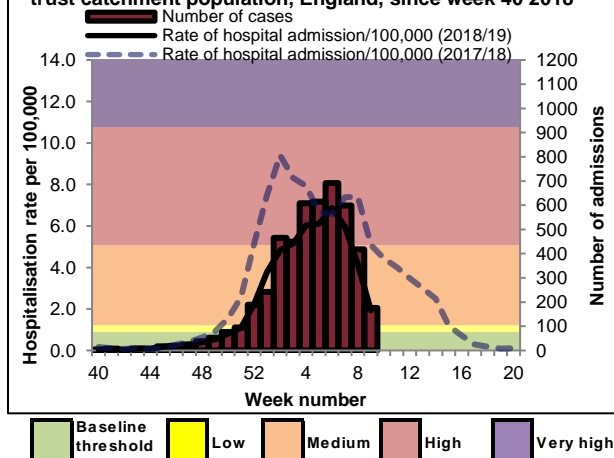
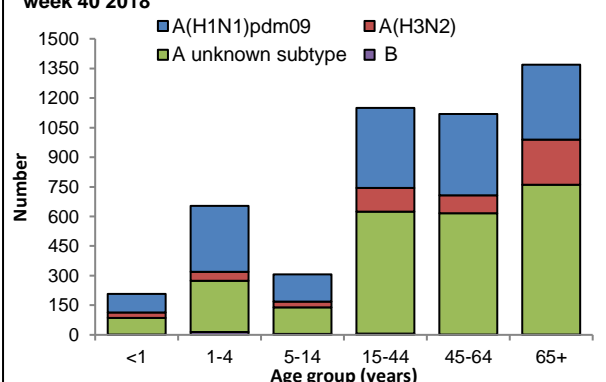


Figure 7: Cumulative hospitalised influenza admissions (USISS sentinel) by age group and flu type, England, since week 40 2018



*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 09)

- In week 09 2019, there were 114 new admissions to ICU/HDU with confirmed influenza (27 influenza A(H1N1)pdm09, 16 influenza A(H3N2), 68 influenza A(unknown subtype) and 3 influenza B) reported across the UK (138/143 Trusts in England) through the USISS mandatory ICU scheme. The rate for England (n=113) was 0.23 per 100,000 trust catchment population compared to 0.40 per 100,000 in the previous week (Figures 8 and 9), above the baseline threshold of 0.09 per 100,000 within the medium impact range. Seventeen influenza laboratory-confirmed deaths were reported to have occurred in ICU in week 09 in the UK.

- A total of 2,832 new ICU/HDU admissions (918 influenza A(H1N1)pdm09, 171 influenza A(H3N2), 1,717 influenza A(unknown subtype) and 26 influenza B) and 270 confirmed deaths have been reported in the UK since week 40 2018.

Figure 8: Weekly ICU/HDU influenza admission rate per 100,000 trust catchment population, England, since week 40 2018

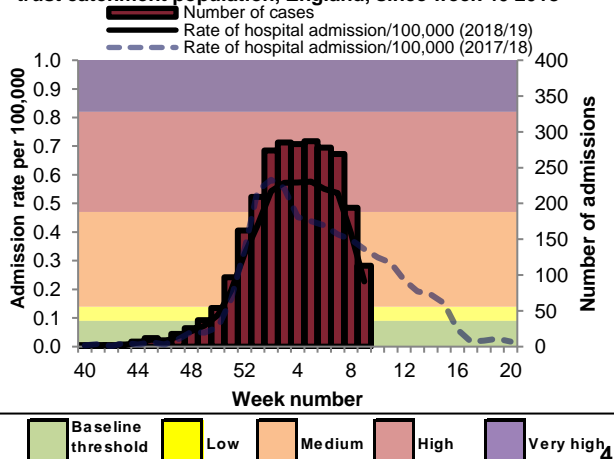
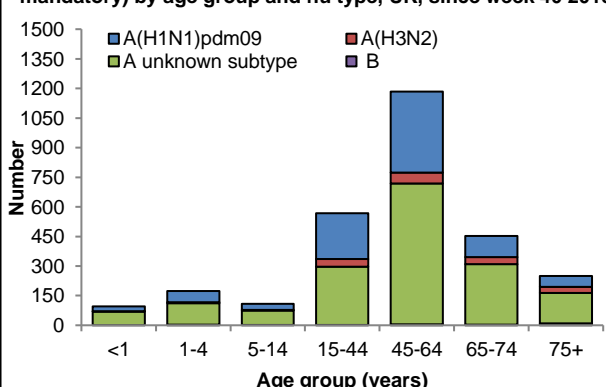


Figure 9: Cumulative ICU influenza admissions (USISS mandatory) by age group and flu type, UK, since week 40 2018



*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 09)

- In week 09, there were 2 new admissions for laboratory confirmed influenza (2 influenza A(H1N1)pdm09) among the 6 Severe Respiratory Failure (SRF) centres in the UK.

- Since week 40 there have been 90 confirmed influenza admissions (74 influenza A(H1N1)pdm09, 4 influenza A(H3N2) and 12 influenza A(unknown subtype)) to ECMO centres

All-cause mortality data

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In week 09 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 in week 09 2019 and in Scotland in week 07 2019. Significant excess all-cause mortality was observed in Northern Ireland in week 09.

- All-cause death registrations, England and Wales

- In week 08 2019, an estimated 11,295 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is a decrease compared to the 11,824 estimated death registrations in week 07 2019.

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

- In week 09 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.

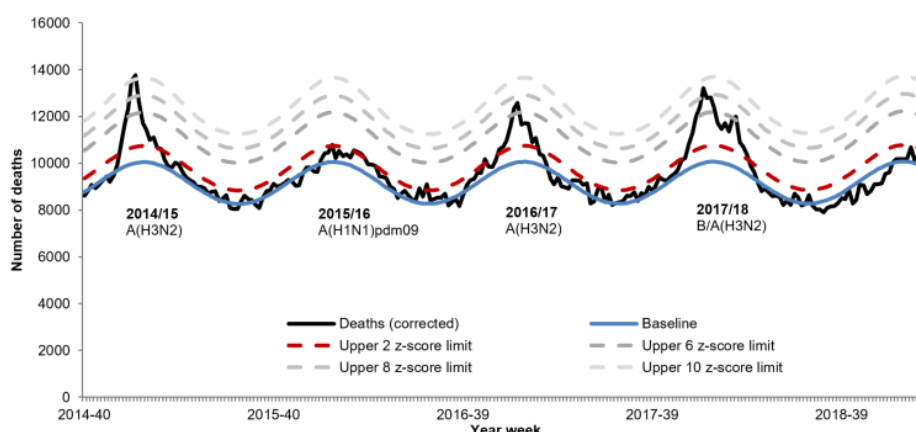
- In the devolved administrations, statistically significant excess all-cause mortality for all ages was observed in Wales in week 09 2019 and in Scotland in week 07 2019. Statistically significant excess all-cause mortality for all ages was observed in Northern Ireland in week 09 (Table 2).

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

Country	Excess detected in week 09 2019?	Weeks with excess in 2018/19
England	×	NA
Wales	×	NA
Northern Ireland	✓	1; 6; 8-9
Country	Excess detected in week 07 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

Figure 10: Weekly observed and expected number of all-age all-cause deaths, with the dominant circulating influenza A subtype, England, 2014 to week 09 2019



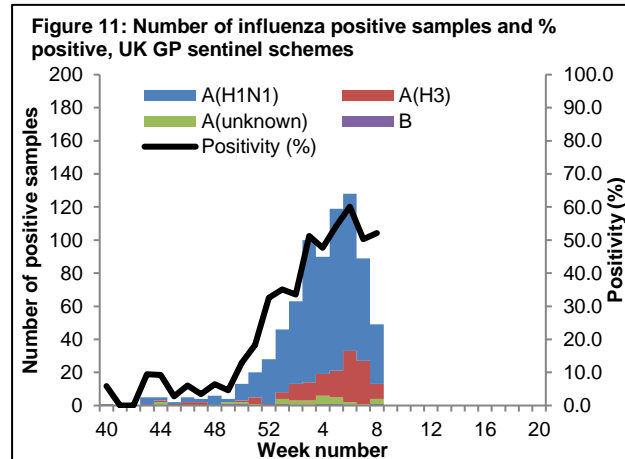
*Note: Delays in receiving all registered deaths from April 2018, following changes in IT systems at ONS, may result in some delays in the model to adjust for most recent deaths.

In week 08 2019, 49 samples tested positive for influenza (36 influenza A(H1N1)pdm09, 9 influenza A(H3), 3 influenza A(not subtyped) and 1 influenza B) with a positivity of 52.1% through the UK GP sentinel schemes. In week 09 2019, 449 positive detections were recorded through the DataMart scheme (93 influenza A(H1N1)pdm09, 204 influenza A(H3), 147 influenza A(not subtyped) and 5 influenza B) with a positivity of 15.6%, this is above the baseline threshold of 9.2%.

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

- In week 08 2019, 49 samples tested positive for influenza (36 influenza A(H1N1)pdm09, 9 influenza A(H3), 3 influenza A(not subtyped) and 1 influenza B) with an overall positivity of 52.1% compared to 50.3% in week 07 2019 through the UK GP sentinel swabbing schemes (Figure 11).

Since week 40, a total of 777 samples (608 influenza A(H1N1)pdm09, 132 influenza A(H3), 29 influenza A(unknown subtype) and 8 influenza B) tested positive for influenza through this scheme.

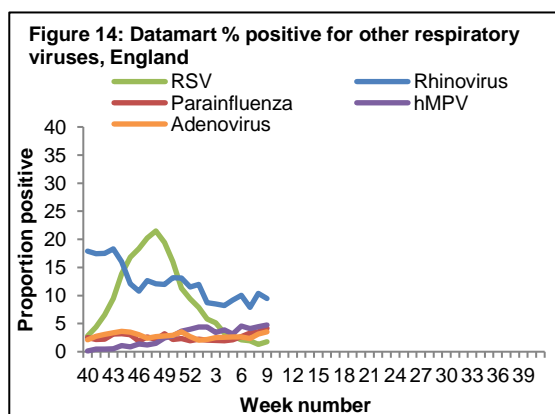
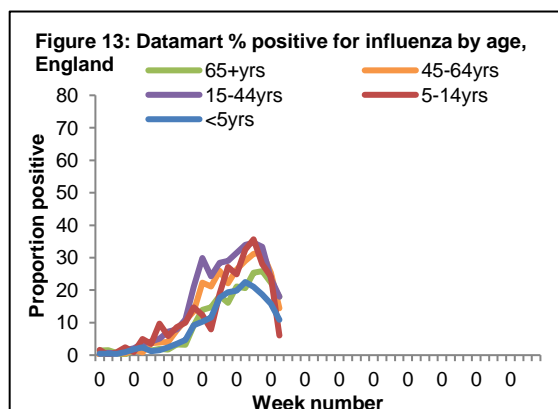
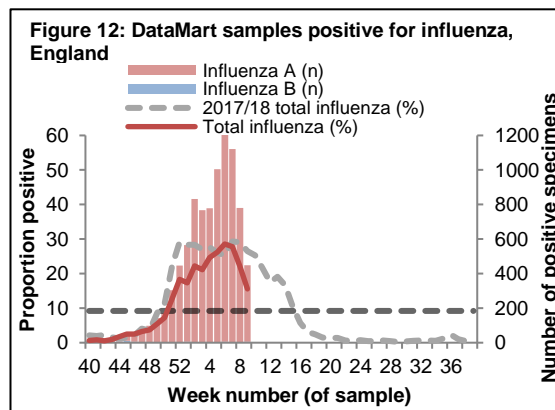


NB. Positivity (%) omitted when fewer than 10 specimens were tested

- Respiratory DataMart System (England)

- In week 09 2019, out of the 2,881 respiratory specimens reported through the Respiratory DataMart System, 566 samples were positive for influenza (93 influenza A(H1N1)pdm09, 204 influenza A(H3), 147 influenza A(not subtyped) and 5 influenza B) (Figure 12), with an overall positivity of 15.6% compared to 22.2% the previous week, 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 65+ year olds at 18.0% in week 09 (Figure 13).

RSV positivity remained low. Rhinovirus positivity decreased slightly from 10.4% in week 08 to 9.5% in week 09 2019. Human metapneumovirus (hMPV) positivity continued to increase slightly to 4.2% in week 09. Adenovirus continues to be at a stable low level at 3.5% in week 09. Parainfluenza positivity continued to increase slightly to 4.2% in week 09 (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 596 influenza A(H1N1)pdm09 viruses detected since week 40. Genetic characterisation of 542 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. Two-hundred and forty-three 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 81 A(H3N2) influenza viruses shows that they all belong to genetic subclade 3C.2a, with 77 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	189	353	54	596
A(H3N2)	0	81	0	81
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, 506 influenza A(H1N1)pdm09 viruses have been tested for oseltamivir susceptibility, 489 were fully susceptible and 17 were resistant confirmed by PHE-RVU. All 17 oseltamivir resistant cases have the H275Y amino acid substitution. Seven of the 17 cases are known to have received oseltamivir treatment. One case has no known exposure to oseltamivir. Nine further cases remain under investigation. 426 out of the 506 influenza A(H1N1)pdm09 virus have also been tested for zanamivir susceptibility and all were susceptible. 70 influenza A(H3N2) viruses have been tested for oseltamivir susceptibility and for zanamivir susceptibility and all were susceptible to both agents. Three influenza B viruses have been tested for susceptibility for both oseltamivir and zanamivir and all were susceptible to both agents.

- Antimicrobial susceptibility

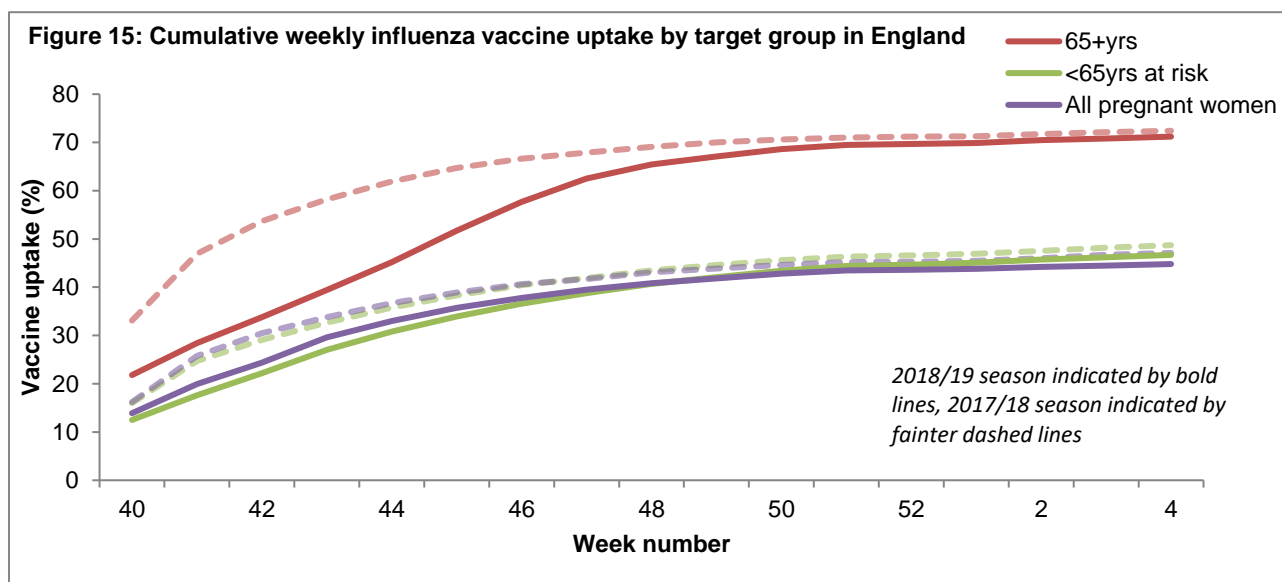
-Table 4 shows in the 12 weeks up to 03 March 2019, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenza*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired pneumonia (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 03 March 2019, E&W

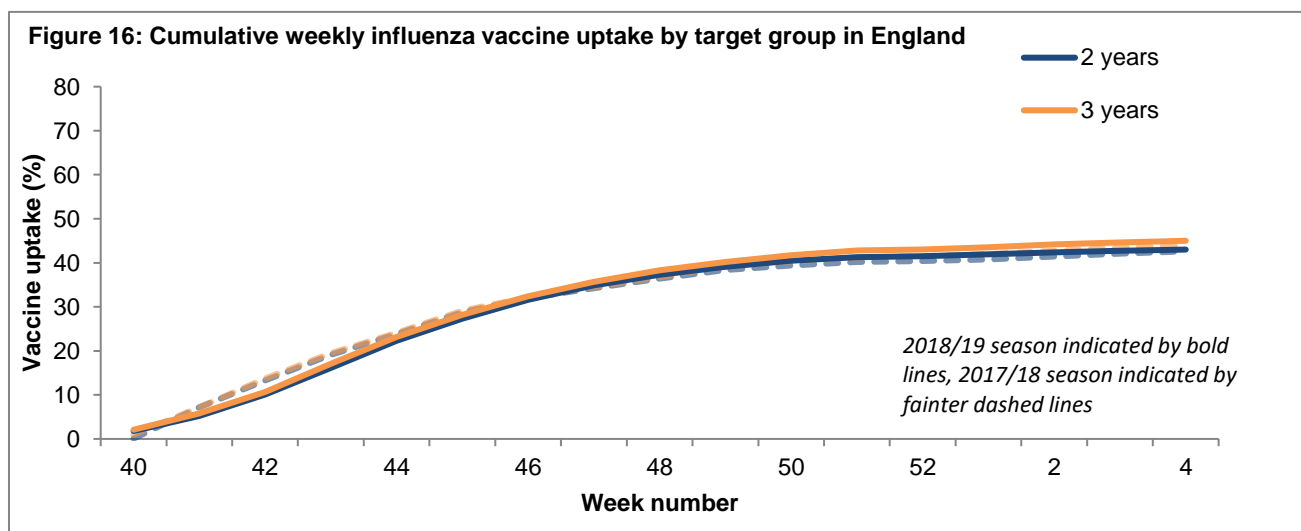
Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	4621	89
	Macrolides	5022	83
	Tetracycline	4926	86
<i>H. influenzae</i>	Amoxicillin/ampicillin	18549	70
	Co-amoxiclav	20001	85
	Macrolides	4176	4
	Tetracycline	19987	98
<i>S. aureus</i>	Methicillin	7341	92
	Macrolides	8216	65
MRSA	Clindamycin	432	44
	Tetracycline	561	78
MSSA	Clindamycin	4591	76
	Tetracycline	6227	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 forth monthly collection of the influenza vaccine uptake by frontline healthcare workers show 68.6% were vaccinated by 31 January 2019 from 97.9% of all organisations, compared to 67.6% vaccinated in the previous season by 31 January 2018. The [report](#) provides uptake at national, NHS England local team and Trust-level.

- Provisional data from the fourth [monthly](#) collection of influenza vaccine uptake for children of school years Reception, 1, 2, 3, 4 and 5 age (from a sample of 100% 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 January 2019 in targeted groups as follows:
 - 63.9% in children school year reception age (4-5 yrs) compared to 62.6% by 31 January 2018
 - 63.4% in children school year 1 age (5-6 yrs) compared to 60.9% by 31 January 2018
 - 61.4% in children school year 2 age (6-7 yrs) compared to 60.3% by 31 January 2018
 - 60.2% in children school year 3 age (7-8 yrs) compared to 57.5% by 31 January 2018
 - 58.0% in children school year 4 age (8-9 yrs) compared to 55.7% by 31 January 2018
 - 56.2% in children school year 5 age (9-10 yrs); age group not included in 2017/18 school vaccine programme.
- Provisional data from the fourth [monthly](#) collection of influenza vaccine uptake in GP patients up to 31 January 2019 show that in 99.6% of all GP practices in England responding to the main GP survey, the proportion of people in England who receive the 2018/19 influenza vaccine was as follows:
 - 46.9% under 65 year olds in a clinical risk group compared to 48.9% by 31 January 2018
 - 45.0% in pregnant women compared to 47.2% by 31 January 2018
 - 71.3% in 65+ year olds compared to 72.6% by 31 January 2018
- Provisional data from the fourth [monthly](#) collection of influenza vaccine uptake in GP patients up to 31 January 2019 show that in 99.4% of all GP practices in England responding to the child GP survey, the proportion of people in England who receive the 2018/19 influenza vaccine was as follows:
 - 43.1% in 2 year olds compared to 42.8% by 31 January 2018
 - 45.2% in 3 year olds compared to 44.2% by 31 January 2018
- The 2018/19 mid-season influenza vaccine effectiveness study was recently [published](#). The report is based on 6 European studies including the UK, analysing influenza data from October 2018 to January 2019.

International Situation

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In the temperate zone of the Northern hemisphere, influenza activity continued to increase with influenza A(H1N1)pdm09 predominating overall. In the temperate zones of the Southern hemisphere, influenza activity returned to inter-seasonal levels, with the exception of some parts of Australia where influenza activity remained above inter-seasonal levels. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections.

- [Europe](#) updated on 01 March 2019 (Joint ECDC-WHO Europe Influenza weekly update)

In week 08 2019, influenza activity is widespread in the European Region. Influenza A virus detections dominated with slightly more A(H1N1)pdm09 viruses than A(H3N2) viruses.

Of all the Member States and areas with influenza-like illness thresholds defined, countries in Eastern (Republic of Moldova and Russian Federation), Northern (Denmark, Estonia, Iceland, Ireland, Latvia, Lithuania, Norway and UK (England and Wales)), Southern (Greece, Israel, Italy Montenegro, Republic of North Macedonia and Serbia) and Western (Belgium, Czech Republic, Luxemburg, Netherlands, Poland, Portugal, Slovakia, Spain and Switzerland) areas of the European region reported activity above baseline levels.

Of 48 Member States and areas reporting on intensity 17 reported low (across the region), 26 reported medium (across the region) and 5 reported high (Southern, Western areas) intensity for week 08.

Of the 48 Member States reporting on geographic spread, 3 reported sporadic cases, 5 reported local spread, 6 reported regional spread (in Eastern, Southern and Western areas) and 32 reported widespread activity (across the region).

For week 08, 1,325 (49.4%) of the 2,682 sentinel specimens tested positive for influenza viruses, 1,316 (99.3%) were influenza A and 9 (0.7%) were influenza B. Of the 1,100 type A viruses subtyped, 738 (67.1%) were influenza A(H1N1)pdm09 and 362 (32.9%) were influenza A(H3N2). Of the 2 type B viruses ascribed to a lineage both were B-Yamagata.

For week 08, 381 laboratory-confirmed influenza cases were reported in ICUs, 379 (99.5%) were infected with influenza type A viruses and 2 (0.5%) were infected with influenza type B viruses. Among the 221 laboratory confirmed influenza cases in other wards reported, almost exclusively influenza type A viruses (99.5%) were detected.

For week 08, 13,892 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 13,892, 13,810 (99.4%) were type A and 82 (0.6%) were type B viruses. Of the 4,704 influenza

A viruses that were subtyped, 2,590 (55.1%) were A(H1N1)pdm09 and 2,114 (44.9%) were A(H3N2). No B viruses ascribed to a lineage

For week 08, data from the 21 Member States or areas reporting to the [EuroMOMO](#) project were included in pooled analyses. The pooled estimates indicated excess mortality mostly among those aged 15-64 years and 65+ years.

- [United States of America](#) updated on 01 March 2019 (Centre for Disease Control report)

During week 08, influenza activity in the United States (US) remains elevated. Influenza A and B viruses continue to co-circulate. Nationally influenza A(H3) viruses were reported more frequently than influenza A(H1N1)pdm09.

A cumulative rate of 32.1 laboratory-confirmed influenza-associated hospitalisations per 100,000 population was reported, with the highest rate among those aged 65+ years old.

Nationwide during week 08, the proportion of outpatient visits for influenza-like illness (ILI) increased to 5.0% which is above the national baseline of 2.2%.

For week 07, the proportion of deaths attributed to pneumonia and influenza (P&I) was 7.1%, below the epidemic threshold (7.3% for week 07) in the National Center for Health Statistics (NCHS) Mortality Surveillance System.

Fifteen influenza-associated pediatric deaths (8 influenza A(H1N1)pdm09, 1 influenza A(H3) and 6 influenza A(not subtyped)) were reported to the CDC during week 08.

- [Canada](#) updated on 01 March 2019 (Public Health Agency report)

Overall, influenza activity is past the peak in most Western regions, but continues to circulate at higher levels in Eastern regions. Influenza A(H1N1)pdm09 continues to be the most common influenza virus circulating.

In week 08, a total of 1,535 laboratory confirmed detections of influenza were reported, of which 98% were influenza A. The percentage of tests positive for influenza from sentinel laboratories was 17.9%, which is above the seasonal threshold of 5.0%. Influenza A(H1N1)pdm09 and influenza A(H3N2) accounted for equal proportions of subtyped influenza A detections, with detections of influenza A(H3N2) steadily increasing.

In week 08, 1.2% of visits to healthcare professionals were due to ILI, the percentage of visits for ILI is low compared to previous seasons.

To date this season, 2,093 influenza-associated hospitalisations have been reported by participating provinces and territories, of which 2,085 (99.6%) were associated with influenza A. To date this season, 384 ICU admissions and 93 deaths have been reported; all ICU admissions and all but 1 of the reported deaths were associated with influenza A.

- [Global influenza update](#) updated on 04 March 2019 (WHO website)

In the temperate zone of the Northern hemisphere, influenza activity continued to increase with influenza A(H1N1)pdm09 predominating overall. In the temperate zones of the Southern hemisphere, influenza activity returned to inter-seasonal, with the exception of some parts of Australia where influenza activity remained above inter-seasonal levels. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections.

In North America, influenza activity continued, with influenza A(H1N1)pdm09 as the dominant subtype followed by influenza A(H3N2) virus. In Canada, at national level, influenza activity continued to decrease and appeared to have peaked with some subnational variations. In the United States, ILI activity continued to increase, at a national level ILI activity was low overall, with the exception of some parts of the country. In Mexico, influenza percent positivity remained elevated with influenza A(H1N1)pdm09 most frequently detected

In Europe, influenza activity remained elevated across the continent. High intensity was reported in 6 countries of South West Europe. Hospitalisation rates remained high in France and the UK. Although influenza A(H1N1)pdm09 was the most frequently detected virus overall, influenza A(H3N2) viruses co-circulated and predominated in some countries.

In Central Asia, increased levels of severe acute respiratory infections (SARI) remained elevated in Kazakhstan and Uzbekistan. Influenza activity of predominantly influenza A(H1N1)pdm09 virus was reported in Kazakhstan.

In Northern Africa, influenza activity remained high. ILI and influenza activity of predominantly influenza A(H1N1)pdm09 virus were high in Morocco. In Tunisia, influenza detections continued to increase with influenza A(H3N2) predominating.

In Western Asia, influenza activity peaked in some countries and increased in others, with all seasonal influenza subtypes co-circulating. Influenza A activity continued to increase in Cyprus and remained elevated in Armenia, Israel and Lebanon with influenza A(H1N1)pdm09 and A(H3N2) co-circulating. Across the Arabian Peninsula, influenza activity decreased overall except in Kuwait and Saudi Arabia where activity remained elevated.

In East Asia, influenza activity appeared to decrease overall. Although decreased ILI and influenza activity remained above seasonal threshold level in China and Hong Kong SAR, with influenza A(H1N1)pdm09 predominating. In Japan, Republic of Korea and Mongolia, influenza activity appeared to have returned to baseline levels.

In the Caribbean and Central American countries, influenza activity and RSV remained low overall. Increased detections of influenza A(H1N1)pdm09 were reported in Jamaica in recent weeks.

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

In Western and Middle Africa, Influenza virus detections were low across reporting countries. In Eastern Africa, low levels of influenza detections of mainly influenza A (H3N2) were reported in Kenya, Madagascar, Mozambique and Zambia.

In Southern Asia, influenza activity remained elevated with influenza A viruses predominating, except in Bangladesh. Influenza activity of predominantly influenza A(H1N1)pdm09 continued to increase in both Bhutan and India. In Iran, influenza activity peaked in week 02 with influenza A(H3N2) virus predominating over the season. In Afghanistan, influenza activity of predominantly (H1N1)pdm09 decreased although ILI remained elevated.

In South-East Asia, detection of predominantly influenza B-Victoria lineage virus continued to be reported in the Philippines. In Thailand, an increase in influenza activity was reported of all seasonal subtypes.

The WHO GISRS laboratories tested more than 220,347 specimens between 04 February 2019 and 17 February 2019. 74,302 were positive for influenza viruses, of which 73,225 (98.6%) were typed as influenza A and 1,077 (1.4%) as influenza B. Of the sub-typed influenza A viruses, 19,600 (65.2%) were influenza A (H1N1)pdm09 and 10,447 (34.8%) were influenza A (H3N2). Of the characterized B viruses, 82 (26.2%) belonged to the B-Yamagata lineage and 231 (73.8%) to the B-Victoria lineage.

- [Avian Influenza](#) latest update on 25 February 2019 (WHO website)

Influenza A(H5) viruses

Between [21 January 2018 and 12 February 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 [21 January 2018 and 12 February 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 [21 January 2018 and 12 February 2019](#), 2 new laboratory-confirmed case of influenza A(H9N2) virus infection was reported to WHO, both from China. Avian influenza A(H9N2) viruses are enzootic in poultry in China.

Influenza A(H3N2)v virus

Between [21 January 2018 and 12 February 2019](#), 1 new laboratory-confirmed human case of influenza A(H3N2)v virus infection was reported from Australia.

- [Middle East respiratory syndrome coronavirus \(MERS-CoV\)](#) latest update on 26 February 2019

Up to 27 February 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 1,455 suspected cases in the UK since September 2012 that have been investigated for MERS-CoV and tested negative.

The National IHR Focal Point of The Kingdom of Saudi Arabia notified WHO of an ongoing outbreak of Middle East Respiratory Syndrome coronavirus(MERS-CoV). Between [29 January 2019 and 13 February 2019](#), 39 cases of MERS-CoV were reported including 4 deaths.

Between [27 January and 31 January 2019](#), the National IHR Focal Point of Oman reported 5 cases Middle East Respiratory Syndrome coronavirus(MERS-CoV).

Globally, since September 2012, [WHO](#) has been notified of 2,298 laboratory-confirmed cases of infection with MERS-CoV, including 811 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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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](#))
- 2018/19Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))