



# PHE Weekly National Influenza Report

## Summary of UK surveillance of influenza and other seasonal respiratory illnesses

16 March 2017 – Week 11 report (up to week 10 data)

This report is published weekly on the [PHE website](#). For further information on the surveillance schemes mentioned in this report, please see the [PHE website](#) and the [related links](#) at the end of this document.

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### Summary

During week 10 (ending 12 March 2017), influenza continues to circulate with further decreases noted in most indicators. The Department of Health has issued an [alert](#) on the prescription of antiviral medicines by GPs.

- [Community influenza surveillance](#)
  - Through the GP In Hours Syndromic Surveillance system, GP consultations for influenza-like illness (ILI) continue to decrease in week 10.
  - 22 new acute respiratory outbreaks have been reported in the past 7 days. 15 outbreaks were from care homes, where five tested positive for influenza (five influenza A(not subtyped)). Five outbreaks were from hospitals where two tested positive for influenza A(not subtyped). One outbreak was from a school with no test results available. The remaining outbreak was from the Other settings category (a nursery) with no test results available.
- [Overall weekly influenza GP consultation rates across the UK](#)
  - In week 10, the overall weekly influenza-like illness (ILI) GP consultation rate was 7.7 per 100,000 in England compared to 7.4 per 100,000 in the previous week. This is below the baseline threshold of 14.3 per 100,000 for this season. In the devolved administrations, ILI rates have remained at similar levels to the previous week or increased/decreased slightly.
- [Influenza-confirmed hospitalisations](#)
  - In week 10, there were 16 admissions to ICU/HDU with confirmed influenza (10 influenza A(unknown subtype), two influenza A(H3N2) and four influenza B) were reported across the UK (131/156 Trusts in England) through the USISS mandatory ICU scheme with a rate of 0.03 per 100,000 compared to 0.04 per 100,000 in the previous week.
  - In week 10, there were 30 hospitalised confirmed influenza cases (19 influenza A(H3N2), seven influenza B and four influenza A(not subtyped)) reported through the USISS sentinel hospital network (14 NHS Trusts across England), with a rate of 0.55 per 100,000, compared to 0.64 per 100,000 in the previous week.
  - No confirmed influenza admissions have been reported from the six Severe Respiratory Failure centres in the UK in week 10.
- [All-cause mortality data](#)
  - In week 10 2017, no statistically significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England and in the devolved administrations.
- [Microbiological surveillance](#)
  - 17 samples tested positive for influenza (6 influenza A(H3N2), 3 influenza A(unknown subtype) and 8 influenza B) through GP sentinel schemes across the UK, with an overall positivity of 17.7% in week 10 compared to 21.8% in week 09.
  - 89 influenza positive detections were recorded through the DataMart scheme (69 influenza A(H3N2), 10 influenza A(unknown subtype) and 10 influenza B) in week 10. The overall positivity was at 7.3% in week 10 compared to 10.2% in week 09, which is now below the threshold for 2016/17 season of 8.6%.The highest age-specific positivities were seen in the 65+ year olds (10.7%).
- [Vaccination](#)
  - Provisional data from the fifth monthly collection of influenza vaccine uptake by frontline healthcare workers show 63.4% were vaccinated by 28 February 2017, compared to 50.8% vaccinated in the previous season by 29 February 2016. The report provides uptake at Trust level.
  - Up to week 04 2017, in 85.0% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2016/17 influenza vaccine in targeted groups was as follows: 48.5% in under 65 years in a clinical risk group, 44.9% in pregnant women and 70.5% in 65+ year olds. In 88.1% of GP practices reporting to Immform, the provisional proportion of children in England who had received the 2016/17 influenza vaccine was as follows: 39.0% in all 2 year olds, 41.6% in all 3 year olds and 33.8% in all 4 year olds.
  - Provisional data from the fourth monthly collection of influenza vaccine uptake in GP patients up to 31 January 2017 has been published. The [report](#) provides uptake at national, Area Team (AT), Clinical Commissioning Group (CCG) and by Local Authority (LA) levels.
  - Provisional [data](#) from the fourth monthly collection of influenza vaccine uptake for children of school years 1, 2 and 3 age show the provisional proportion of children in England who received the 2016/17 influenza vaccine via school, pharmacy or GP practice by 31 January 2017 in targeted groups was as follows: 57.6% in children of school Year 1 age (5-6 years); 55.3% in children of school Year 2 age (6-7 years); 53.3% in children of school Year 3 age (7-8 years).
- [International situation](#)
  - Globally, influenza activity in the temperate zone of the northern hemisphere continued to be elevated in some countries, whereas in other countries especially in East Asia and Europe appeared to have already peaked. Worldwide, influenza A(H3N2) virus was predominant. The [vaccine recommendation for the 2017-2018 northern hemisphere](#) influenza season has been made.

Through the GP In Hours Syndromic Surveillance system, GP consultations for influenza-like illness (ILI) continued to decrease in week 10. 22 new acute respiratory outbreaks were reported in the past 7 days.

- PHE Real-time Syndromic Surveillance

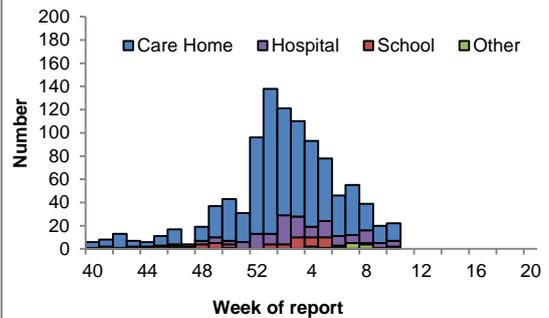
- During week 10, GP consultations for influenza-like illness continued to decrease.
- For further information, please see the syndromic surveillance [webpage](#).

- Acute respiratory disease outbreaks

- 22 new acute respiratory outbreaks have been reported in the past 7 days. 15 outbreaks were from care homes, where five tested positive for influenza (five influenza A(not subtyped)). Five outbreaks were from hospitals where two tested positive for influenza A(not subtyped), one was positive for a mixed infection of influenza A(not subtyped) and seasonal coronavirus and another was positive for parainfluenza. One outbreak was from a school with no test results available. The remaining outbreak was from the Other settings category (a nursery) with no test results available.

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

Figure 1: Number of acute respiratory outbreaks by institution, UK



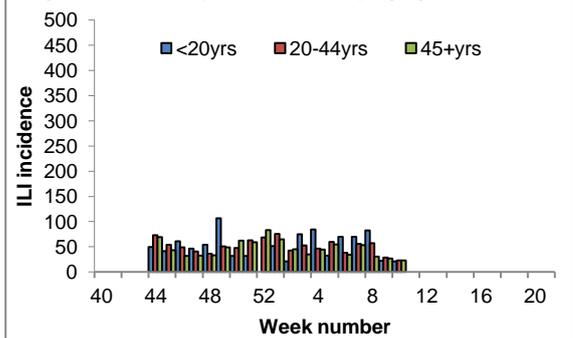
- FluSurvey

- Internet-based surveillance of influenza-like illness in the general population is undertaken through the FluSurvey. A project run jointly by PHE and the London School of Hygiene and Tropical Medicine.

- The overall ILI rate (all age groups) for week 10 was 22.8 per 1,000 (48/2,103 people reported at least 1 ILI), with the 20-44 years age group reporting a higher rate of 23.2 per 1,000.

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

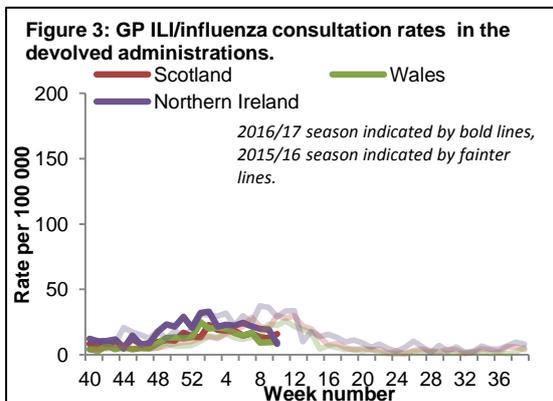
Figure 2: FluSurvey ILI incidence by age group, UK



Weekly consultation rates in national sentinel schemes

In week 10, the overall weekly influenza-like illness GP consultation rate has remained similar to the previous week and is below the baseline threshold in England. In the devolved administrations, ILI rates have remained at similar levels to the previous week or increased/decreased slightly.

- Influenza/Influenza-Like-Illness (ILI)



Northern Ireland

-The Northern Ireland ILI rate has decreased at 8.4 per 100,000 in week 10 compared to 19.4 per 100,000 in week 09 (Figure 3). This remains below the baseline threshold (47.9 per 100,000).

-The highest rates were seen in the 15-44 year olds (11.4 per 100,000) and in the 45-64 year olds (9.5 per 100,000).

### Wales

-The Welsh ILI rate remained at similar levels at 9.9 per 100,000 in week 10 compared to 9.5 per 100,000 in week 09 (Figure 3). This is below the baseline threshold (10.3 per 100,000).

- The highest rates were seen in the 15-44 year olds (13.5 per 100,000) and 65-74 year olds (11.3 per 100,000).

### Scotland

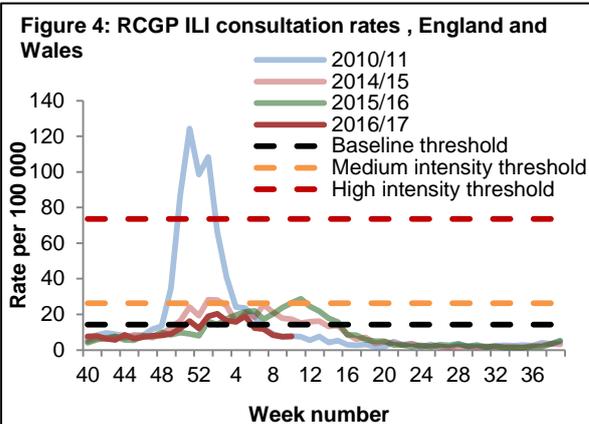
-The Scottish ILI rate slightly increased at 15.8 per 100,000 in week 10 compared to 12.7 per 100,000 in week 09 (Figure 3). This remains below the baseline threshold (36.1 per 100,000).

-The highest rates were seen in 45-64 year olds (19.8 per 100,000) and 75+ year olds (18.4 per 100,000).

### RCGP (England and Wales)

- The weekly ILI consultation rate through the RCGP surveillance is at 7.7 per 100,000 in week 10 compared to 7.4 per 100,000 in week 09. This is below the baseline threshold (14.3 per 100,000) (Figure 4\*). By age group, the highest rates were seen in 5-14 year olds (11.1 per 100,000) and 15-44 year olds (9.7 per 100,000).

*\*The Moving Epidemic Method has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for GP ILI consultations for the start of influenza activity in a standardised approach across Europe.*



### GP In Hours Syndromic Surveillance System (England)

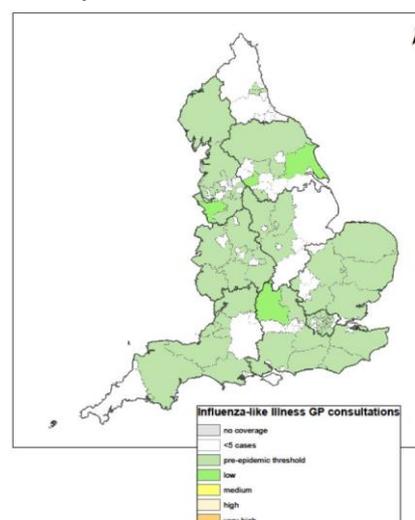
-The weekly ILI consultation rate through the GP In Hours Syndromic Surveillance system is at 4.6 per 100,000 in week 10 (Figure 5).

Figure 5 represents a map of GP ILI consultation rates in Week 10 across England by Local Authorities, using influenza-like illness surveillance thresholds.

*Thresholds are calculated using a standard methodology for setting ILI thresholds across Europe (the "Moving Epidemic Method" (MEM)) and are based on six previous influenza seasons (excluding the 2009/10 H1N1 pandemic)*

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

**Figure 5: Map of GP ILI consultation rates in Week 10**



## **Influenza confirmed hospitalisations**

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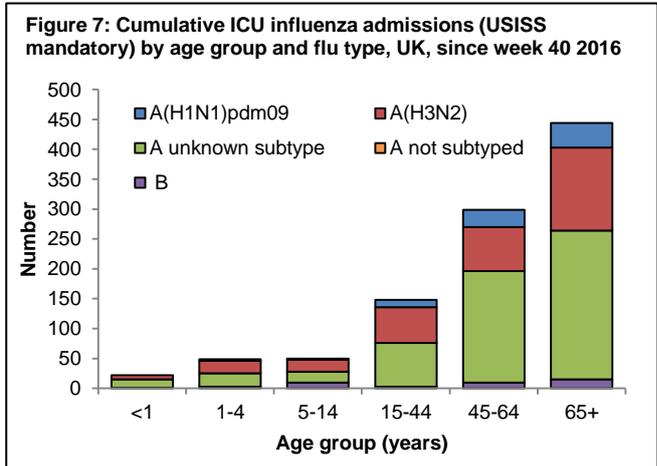
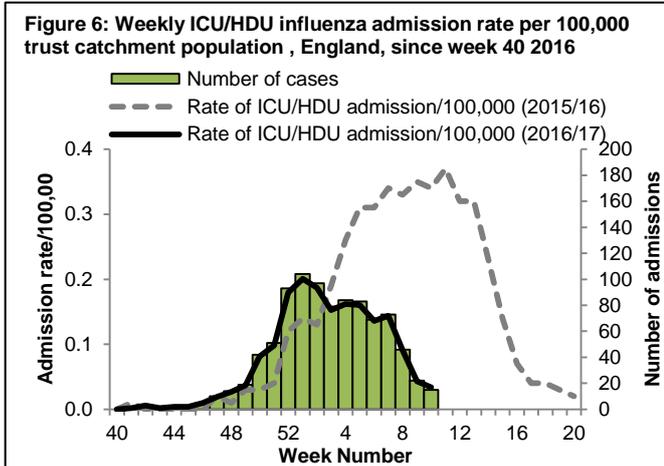
**In week 10, there were 16 admissions to ICU/HDU with confirmed influenza (10 influenza A(unknown subtype), two influenza A(H3N2) and four influenza B) reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (131 Trusts). 30 hospitalised confirmed influenza cases (19 influenza A(H3N2), seven influenza B and four influenza A(not subtyped)) were reported through the USISS sentinel hospital network across England (14 Trusts).**

A national mandatory collection (USISS mandatory ICU scheme) is operating in cooperation with the Department of Health to report the number of confirmed influenza cases admitted to Intensive Care Units (ICU) and High Dependency Units (HDU) and number of confirmed influenza deaths in ICU/HDU across the UK. A confirmed case is defined as an individual with a laboratory confirmed influenza infection admitted to ICU/HDU. In addition a sentinel network (USISS sentinel hospital network) of acute NHS trusts is established in England to report weekly laboratory confirmed hospital admissions. Further information on these systems is available through the [website](#). Please note data in previously reported weeks are updated and so may vary by week of reporting

- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 10)

- In week 10, there were 16 admissions to ICU/HDU with confirmed influenza (10 influenza A(unknown subtype), two influenza A(H3N2) and four influenza B) reported across the UK (131/156 Trusts in England) through the USISS mandatory ICU scheme, with a rate of 0.03 per 100,000 compared to a rate of 0.04 per 100,000 in week 09 (Figures 6 and 7). Four deaths were reported to have occurred in week 10.

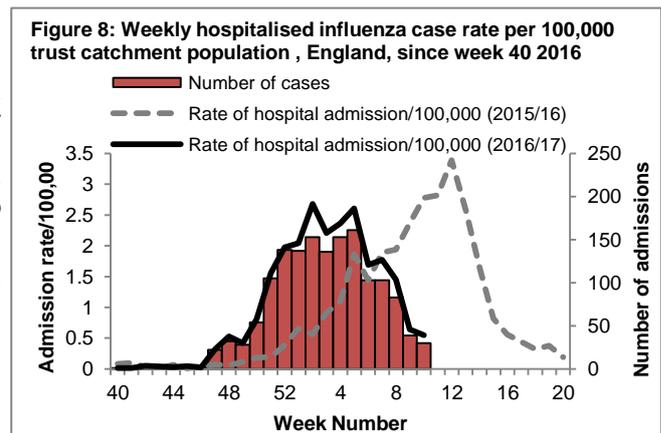
A total of 1,012 admissions (562 influenza A(unknown subtype), 321 influenza A(H3N2), 87 influenza A(H1N1)pdm09 and 42 influenza B) and 119 confirmed deaths have been reported since week 40 2016.



- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 10)

- In week 10, there were 30 hospitalised confirmed influenza cases (19 influenza A(H3N2), seven influenza B and four influenza A(not subtyped)) reported through the USISS sentinel hospital network from 14 NHS Trusts across England (Figure 8), a rate of 0.55 per 100,000 compared to 0.64 per 100,000 in the previous week.

A total of 1,493 hospitalised confirmed influenza admissions (1,003 influenza A(H3N2), 404 influenza A(not subtyped), 60 influenza B and 26 influenza A(H1N1pdm09)) have been reported since week 40 2016.



- USISS Severe Respiratory Failure Centre confirmed influenza admissions, UK (week 10)

- In week 10, there were no confirmed influenza admissions reported from the six Severe Respiratory Failure (SRF) centres in the UK. There have been four confirmed influenza admissions (one influenza A(H3N2) and three influenza A(unknown subtype)) reported since week 40 2016.

### All-cause mortality data

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**In week 10 2017 in England, no statistically significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England. In the devolved administrations, no significant excess all-cause mortality was observed in week 10.**

Seasonal mortality is seen each year in the UK, with a higher number of deaths in winter months compared to the summer. Additionally, peaks of mortality above this expected higher level typically occur in winter, most commonly the result of factors such as cold snaps and increased circulation of respiratory viruses, in particular influenza. Weekly mortality surveillance presented here aims to detect and report acute significant weekly excess mortality above normal seasonal levels in a timely fashion. Excess mortality is defined as a significant number of deaths reported over that expected for a given point in the year, allowing for weekly variation in the number of deaths. The aim is not to assess general mortality trends or precisely estimate the

excess attributable to different factors, although some end-of-winter estimates and more in-depth analyses (by age, geography etc.) are undertaken.

- All-cause death registrations, England and Wales

- In 09 2017, an estimated 11,248 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is a decrease compared to the 11,794 estimated death registrations in week 08 2017.

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

-In week 10 2017 in England, no excess mortality by week of death above the upper 2 z-score threshold was seen overall, by age group or subnationally, after correcting ONS disaggregate data for reporting delay with the standardised EuroMOMO algorithm (Table 1). This data is provisional due to the time delay in registration; numbers may vary from week to week.

- In the devolved administrations, no significant excess mortality above the threshold was observed in Wales and Scotland in week 10 (Table 2). Data was not available for Northern Ireland.

**Table 1: Excess mortality by age group, England\***

Age group (years)	Excess detected in week 10 2017?	Weeks with excess in 2016/17
<5	x	48,52
5-14	x	-
15-64	x	52-02,05
65+	x	52-05

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

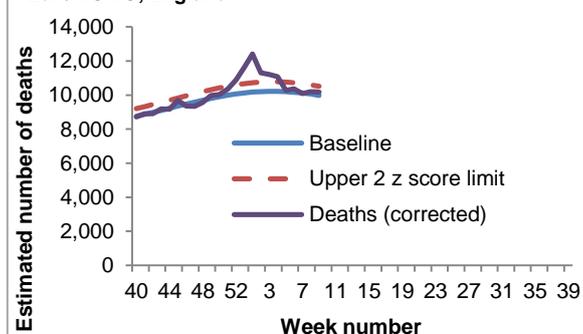
**Table 2: Excess mortality by UK country, for all ages\***

Country	Excess detected in week 10 2017?	Weeks with excess in 2016/17
England	x	52-05
Wales	x	03
Scotland	x	46,50,51,01,05
Northern Ireland	-	-

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

NB. Separate total and age-specific models are run for England which may lead to discrepancies between Tables 1 + 2

**Figure 9: Excess mortality in all ages by week of death, EuroMOMO, England**



## Microbiological surveillance

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In week 10 2017, 11 samples tested positive for influenza (6 influenza A(H3N2), 3 influenza A(unknown subtype) and 2 influenza B) through the UK GP sentinel schemes with an overall positivity of 17.7%. 89 positive detections were recorded through the DataMart scheme (69 influenza A(H3N2), 10 influenza A(not subtyped) and 10 influenza B) with a positivity of 10.2% in week 10.

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

-In week 10, 11 samples tested positive for influenza (6 influenza A(H3N2), 3 influenza A(unknown subtype) and 2 influenza B) through the UK GP sentinel swabbing schemes, with an overall positivity of 17.7% compared to 21.8% in week 09 (Table 3).

Since week 40 2016, 871 samples (740 influenza A(H3N2), 55 influenza A(unknown subtype), 3 influenza A(H1N1)pdm09 and 73 influenza B) have tested positive for influenza through this scheme.

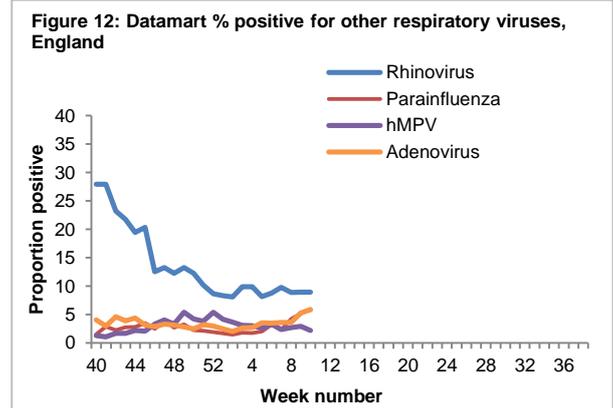
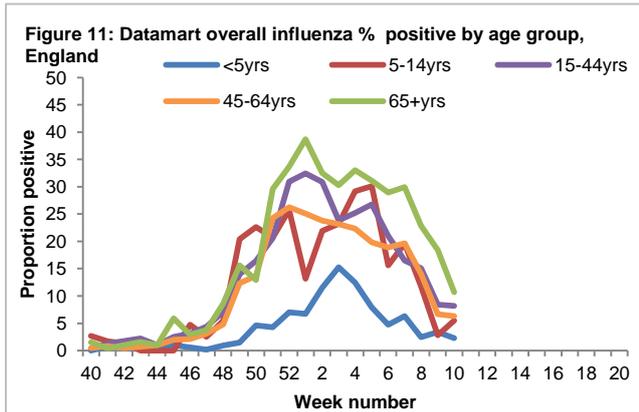
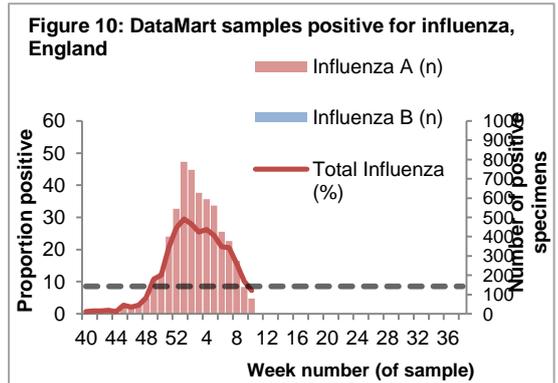
**Table 3: Sentinel influenza surveillance in the UK**

Week	England	Scotland	Northern Ireland	Wales
06	13/59 (22%)	23/73 (31.5%)	2/7 (0%)	15/38 (39.5%)
07	21/60 (35%)	21/57 (36.8%)	2/4 (0%)	4/21 (19%)
08	15/58 (25.9%)	9/34 (26.5%)	2/4 (0%)	3/10 (30%)
09	4/23 (17.4%)	10/36 (27.8%)	1/6 (0%)	2/13 (15.4%)
10	3/37 (8.1%)	4/17 (23.5%)	3/6 (0%)	1/2 (0%)

NB. Proportion positive omitted when fewer than 10 specimens tested

- Respiratory DataMart System (England)

In week 10 2017, out of the 1,222 respiratory specimens reported through the Respiratory DataMart System, 89 samples (7.3%) were positive for influenza (69 influenza A(H3N2), 10 influenza A(not subtyped) and 10 influenza B) (Figure 10), which is below the MEM threshold for this season of 8.6%. The highest positivity by age group was seen in the 65+ year olds (10.7%)(Figure 11). The overall positivity for RSV remained low at 1.2% in week 10. Positivity for rhinovirus remained stable at 8.9% in week 10. Positivity for adenovirus and parainfluenza increased slightly at 5.8% and 5.9% respectively. Positivity for human metapneumovirus (hMPV) decreased slightly in week 10, at 2.2%.



*\*The Moving Epidemic Method has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for GP ILI consultations for the start of influenza activity in a standardised approach across Europe. The threshold to indicate a likelihood of influenza community circulation for Datamart % positive as calculated through the Moving Epidemic Method is 8.6% in 2016/17.*

- 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

Since the start of the 2016/17 winter influenza season in week 40 2016, the PHE Respiratory Virus Unit has characterised four A(H1N1)pdm09 influenza viruses: one both genetically and antigenically and three antigenically. The A(H1N1)pdm09 virus genetically characterised belongs in the genetic subgroup 6B.1, which was the predominant genetic subgroup in the 2015/16 season. The three viruses antigenically analysed are similar to the A/California/7/2009 Northern Hemisphere 2016/17 (H1N1)pdm09 vaccine strain. Genetic characterisation of 318 A(H3N2) influenza viruses since week 40 showed that they all belong to genetic subclade 3C.2a, with 158 belonging to a cluster within this genetic subclade designated as 3C.2a1. The Northern Hemisphere 2016/17 influenza A(H3N2) vaccine strain A/HongKong/4801/2014 belongs in genetic subclade 3C.2a. This seasons A(H3N2) viruses are difficult to cultivate, and only 23 influenza A(H3N2) viruses have been isolated and antigenically characterised since week 40 2016, representing a minority of the detections, indicating the bias in antigenic data. The viruses antigenically analysed are similar to the A/HongKong/4801/2014 Northern Hemisphere 2016/17 A(H3N2) vaccine strain. Of the 23 antigenically characterised viruses, eight isolates have also been genetically characterised, with all belonging in genetic group 3C.2a, and six also belonging in the recently emerged 3C.2a1 cluster. 16 influenza B viruses have been analysed genetically since week 40/2015; 13 have been characterised as belonging to the B/Yamagata/16/88-lineage and 3 belonging to the B/Victoria/2/1987-lineage. Fifteen influenza B viruses have been isolated and antigenically characterised since week 40 2016. Ten viruses were characterised as belonging to the B/Yamagata/16/88-lineage and were antigenically similar to B/Phuket/3073/2013, the influenza B/Yamagata-lineage component of 2016/17 Northern Hemisphere quadrivalent vaccine. Four viruses were characterised as belonging to the B/Victoria/2/87-lineage and were antigenically similar to B/Brisbane/60/2008, the influenza B/Victoria-lineage component of 2016/17 Northern Hemisphere trivalent and quadrivalent vaccines.

- 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.

Since week 40 2016, 305 influenza A(H3N2) have been tested for oseltamivir susceptibility; 300 are fully susceptible. 286 of the 305 were also tested for zanamivir susceptibility with 280 being fully susceptible. Four A(H3N2) viruses have been detected with an R292K amino acid substitution, which causes resistance to oseltamivir and a reduction in susceptibility to zanamivir, and one A(H3N2) virus with an E119V amino acid substitution was detected, causing resistance to oseltamivir but not tested for zanamivir susceptibility. All four R292K cases and the E119V case have been identified in patients with underlying medical conditions with some exposure to oseltamivir. Six influenza A(H1N1)pdm09 and 17 influenza B (Yamagata) viruses have been tested for oseltamivir susceptibility and all were fully susceptible. One of the six influenza A(H1N1)pdm09 virus and all 17 influenza B (Yamagata) virus have been tested for zanamivir susceptibility and all were fully susceptible.

- Antimicrobial susceptibility

-Table 4 shows in the 12 weeks up to 12 March 2017, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired pneumonia (CAP) and the choice of antibiotics reflects the British Thoracic Society empirical guidelines for management of CAP in adults.

Table 4: Antimicrobial susceptibility surveillance in lower respiratory tract isolates, 12 weeks up to 12 March 2017, E&W

Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	4,042	91
	Macrolides	4,542	83
	Tetracycline	4,266	85
<i>H. influenzae</i>	Amoxicillin/ampicillin	19,015	68
	Co-amoxiclav	19,972	88
	Macrolides	7,325	11
<i>S. aureus</i>	Tetracycline	19,531	98
	Methicillin	6,629	91
	Macrolides	7,283	68
MRSA	Clindamycin	389	35
	Tetracycline	571	80
MSSA	Clindamycin	3,634	78
	Tetracycline	5,522	93

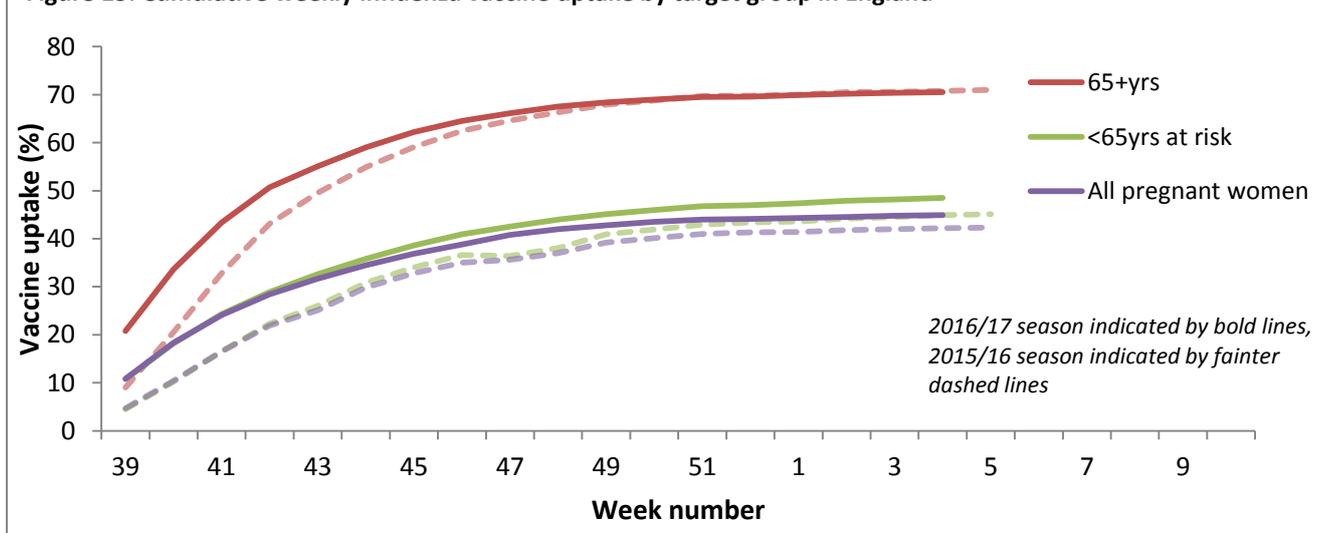
\*Macrolides = erythromycin, azithromycin and clarithromycin

## Vaccination

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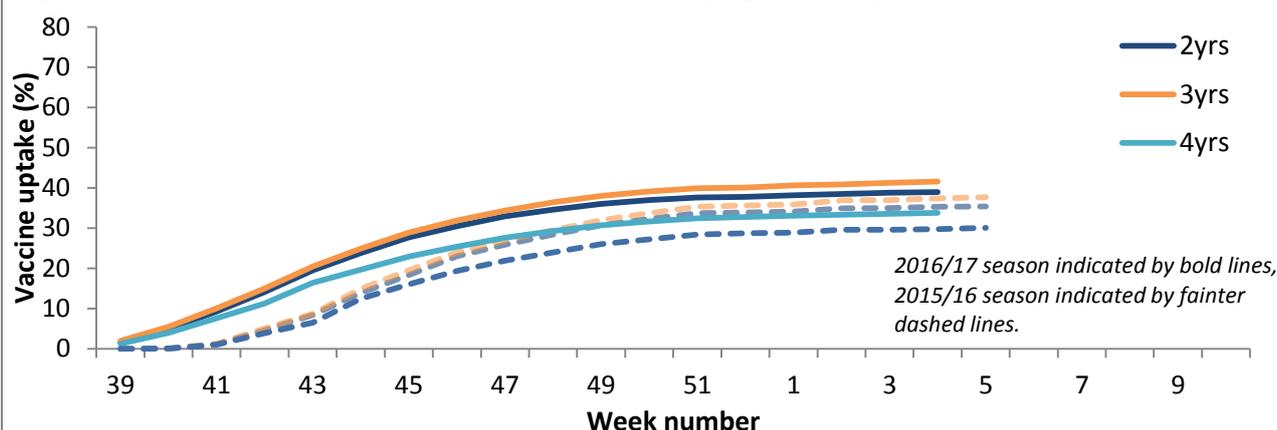
- Up to week 04 2017 in 85.0% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2016/17 influenza vaccine in targeted groups was as follows, with vaccination activity starting earlier than last season (Figure 13):
  - 48.5% in under 65 years in a clinical risk group
  - 44.9% in pregnant women
  - 70.5% in 65+ year olds

Figure 13: Cumulative weekly influenza vaccine uptake by target group in England



- In 2016/17, all two-, three- and four-year-olds continue to be eligible for flu vaccination. In addition, the programme has been extended to children of school years 1, 2 and 3 age. Up to week 04 2017 in 88.1% of GP practices reporting weekly to Immform, the provisional proportion of children in England who had received the 2016/17 influenza vaccine in targeted groups was as follows (Figure 14):
  - 39.0% in all 2 year olds
  - 41.6% in all 3 year olds
  - 33.8% in all 4 year olds

Figure 14: Cumulative weekly influenza vaccine uptake by target group in England



- Provisional data from the fifth monthly collection of influenza vaccine uptake by frontline healthcare workers show 63.4% were vaccinated by 28 February 2017 from 98.9% of Trusts, compared to 50.8% vaccinated in the previous season by 29 February 2016. The report provides uptake at Trust level.
- Provisional data from the fourth monthly collection of influenza vaccine uptake in GP patients up to 31 January 2017 show that in 97.3% of all GP practices in England responding to the main GP survey, the proportion of people in England who received the 2016/17 influenza vaccine was as follows:
  - 48.7% in under 65 years in a clinical risk group
  - 44.8% in pregnant women
  - 70.4% in 65+ year olds
- Provisional data from the fourth monthly collection of influenza vaccine uptake in GP patients up to 31 January 2017 show that in 96.7% of all GP practices in England responding to the child GP survey, the proportion of people in England who received the 2016/17 influenza vaccine was as follows:
  - 38.9% in all 2 year olds
  - 41.5% in all 3 year olds
  - 33.9% in all 4 year olds
- Provisional data from the fourth monthly collection of influenza vaccine uptake for children of school years 1, 2 and 3 age (from a sample of 100% of all Local Authorities in England) show the proportion of children in England who received the 2016/17 influenza vaccine via school, pharmacy or GP practice by 31 January 2017 in targeted groups was as follows:
  - 57.6% in children of school Year 1 age (5-6 years)
  - 55.3% in children of school Year 2 age (6-7 years)
  - 53.3% in children of school Year 3 age (7-8 years)

## International Situation

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**Influenza activity in the temperate zone of the northern hemisphere continued to be elevated in some countries, whereas in other countries especially in East Asia and Europe appeared to have already peaked. Worldwide, influenza A(H3N2) virus was predominant. The vaccine recommendation for the 2017-2018 northern hemisphere influenza season has been made.**

- [Europe](#) updated on 10 March 2017 (Joint ECDC-WHO Influenza weekly update)

In week 09/2017, influenza activity across the region, while decreasing, remained above levels observed during the out of season period: of the 43 countries reporting on influenza activity, 32 countries reported a return to baseline levels and 13 countries reported medium intensity.

In week 09/2017, 370 of 1,415 (26%) sentinel specimens tested positive for influenza viruses. Of these, 69% were type A and 31% were type B. The proportion of type B viruses commonly increases in the second half of an influenza season. The great majority (95%) of subtyped influenza A viruses was A(H3N2). The lineage of 48 influenza B viruses was determined, of which 27 (56%) fell in B/Yamagata and 21 (44%) in B/Victoria lineages. Of 27 countries across the region that each tested at least 10 sentinel specimens, 14 reported proportions of influenza virus detections of 30% or above (median 36%, range 32% to 62%).

For week 08/2017, of 972 SARI cases reported, 308 were tested for influenza viruses, with 54 (18%) testing positive: 9 A(H3N2) and 45 type B viruses. Since week 40/2016, 27, 677 SARI cases have been reported from 15 countries with 7,442 tested for influenza viruses, of which 2, 628 (35%) were positive: 2, 110 (80%) were type A and 518 (20%) type B viruses. Of the influenza A viruses, 1, 989 (94%) were A(H3N2), 4 (<1%) were A(H1N1)pdm09 and 117 (6%) were not subtyped.

For week 09/2017, 3, 798 specimens from non-sentinel sources (such as hospitals, schools, non-sentinel primary care facilities, nursing homes and other institutions) tested positive for influenza viruses. Of these, 69% were type A (with 99% of the subtyped viruses being A(H3N2)), and 31% type B.

The majority of participating European countries has seen a marked excess in all-cause mortality, in particular among the elderly aged 65 years or older, and mortality seems to have peaked in most countries. The excess mortality appears to have coincided with a high level of influenza activity, dominated by circulation of influenza A(H3N2), which usually leads to increased mortality in the elderly. It is, however, still premature to make projections of the overall impact of this year's influenza season; some countries have also experienced extremely cold weather in the beginning of the year, which has likely contributed to the excess mortality.

- [United States of America](#) updated on 10 March 2017 (Centre for Disease Control report)

During week 09, influenza activity decreased but remained elevated in the United States.

The most frequently identified influenza virus subtype reported by public health laboratories during week 09 was influenza A (H3). The percentage of respiratory specimens testing positive for influenza in clinical laboratories decreased.

A cumulative rate for the season of 43.5 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported.

Nationwide during week 09, the proportion of outpatient visits for influenza-like illness (ILI) was 3.6%, which is above the national baseline of 2.2%.

- [Canada](#) updated on 10 March 2017 (Public Health Agency report)

For week 09, widespread or localised influenza activity continues to be reported across Canada. A(H3N2) continues to be the most common type of influenza affecting Canadians.

In week 09, the number of positive tests (2,072) and the percentage of tests positive for influenza (22%) decreased from the previous week. Peak influenza detections occurred in week 02 at 27%. After a decline from the peak in week 03, detections have remained relatively stable (ranging from 22% to 25% in weeks 03 to 09).

In week 09, laboratory detections, influenza-like illness, outbreaks and hospitalizations from participating provinces and territories and sentinel networks decreased from the previous week.

Influenza B activity in Canada is slowly increasing but remain below what has been observed in previous seasons.

The majority of laboratory detections, hospitalizations and deaths have been among adults aged 65+ years.

- [Global influenza update](#) updated on 06 March 2017 (WHO website)

Influenza activity in the temperate zone of the northern hemisphere continued to be elevated in some countries. Influenza activity in many countries especially in East Asia and Europe appeared to have already peaked. Worldwide, influenza A(H3N2) virus was predominant. The majority of influenza viruses characterized so far were similar antigenically to the reference viruses contained in vaccines for use in the 2016-2017 northern hemisphere influenza season. Nearly all tested viruses collected recently for antiviral sensitivity were susceptible to the neuraminidase inhibitor antiviral medications.

In North America, influenza activity continued to increase. Influenza - like illness and the number of influenza detections remain elevated in the United States of America with A(H3N2) and B viruses being detected. Influenza activity plateaued in Canada and increased in Mexico with A(H3N2) virus and A(H1N1)pdm09 virus predominating, respectively.

In Europe, influenza activity remained elevated with influenza A (H3N2) virus being the most prominent subtype. Detections of influenza B virus increased in the recent weeks. Most of the countries reported stable or decreasing trends compared with previous weeks. Persons aged over 65 years were reported most frequently associated with severe disease from influenza infection.

In East Asia, influenza activity appeared to be decreasing with influenza A(H3N2) virus predominant.

In Western Asia, influenza activity continued to decrease with influenza A(H3N2) and B viruses co-circulating in the region.

In Southern Asia, influenza activity continued to increase in India and Sri Lanka, with mainly influenza A(H1N1)pdm09 virus reported followed by influenza B virus.

In South East Asia, influenza activity remained low.

In Northern Africa, influenza activity continued to decrease; influenza A(H3N2) and influenza B virus detections were reported.

In West Africa, influenza activity continued to be reported in Côte d'Ivoire, Ghana and Niger, with influenza B being the main virus detected.

In the Caribbean countries and Central America, influenza and other respiratory virus activity remained low in general, except in Puerto Rico where influenza activity remained above the seasonal threshold with influenza A(H3N2) predominating. In Jamaica, severe acute respiratory infection activity increased and peaked above the alert threshold.

In tropical South America, influenza and other respiratory virus activity remained low, although RSV activity remained elevated in Colombia.

In the temperate zone of the Southern Hemisphere, influenza activity was at inter-seasonal levels.

Based on FluNet reporting, the WHO GISRS laboratories tested more than 187,734 specimens between 06 February 2017 and 19 February 2017. 45,504 were positive for influenza viruses, of which 39,002 (85.7%) were typed as influenza A and 6,502 (14.3%) as influenza B. Of the sub-typed influenza A viruses, 1,085 (7.5%) were influenza A(H1N1)pdm09 and 13,342 (92.5%) were influenza A(H3N2). Of the characterized B viruses, 491 (65.2%) belonged to the B-Yamagata lineage and 262 (34.8%) to the B-Victoria lineage.

The vaccine recommendation for the 2017-2018 northern hemisphere influenza season has been made. It is recommended that trivalent vaccines for use in the 2017-2018 northern hemisphere influenza season contain the following:

- an A/Michigan/45/2015 (H1N1)pdm09-like virus;
- an A/Hong Kong/4801/2014 (H3N2)-like virus; and
- a B/Brisbane/60/2008-like virus.

It is recommended that quadrivalent vaccines containing two influenza B viruses contain the above three viruses and a B/Phuket/3073/2013-like virus. The full report can be found [here](#).

- [Avian Influenza](#) latest update on 27 February 2017 (WHO website)

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

On [07 December 2016](#), two new laboratory-confirmed human case of influenza A(H5N6) virus infection was reported to WHO from the National Health and Family Planning Commission (NHFP) of China.

Since 2003, a total of 856 laboratory-confirmed cases of human infection with avian influenza A(H5N1) virus, including 452 deaths, have been reported to WHO from 16 countries.

Although other influenza A(H5) subtype viruses have the potential to cause disease in humans, no human cases, other than those with influenza A(H5N1) and A(H5N6), have been reported so far. According to reports received by the World Organisation for Animal Health (OIE), various influenza A(H5) subtypes continue to be detected in birds in West Africa, Europe and Asia. There have also been numerous detections of influenza A(H5N8) viruses in wild birds and domestic poultry in several countries in Asia and Europe since June 2016.

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

On [18 February 2017](#), the National Health and Family Planning Commission of China (NHFP) reported to WHO the results of genetic sequencing on virus isolates from two previously reported cases of human infection with avian influenza A(H7N9) virus from Guangdong province. Changes at the cleavage site of the HA gene suggestive of being highly pathogenic to poultry was confirmed by the Chinese National Influenza Centre of the Chinese Centre for Disease Control and Prevention (China CDC).

On [4 February 2017](#), Taipei Centers for Disease Control and Prevention (CDC) reported one laboratory-confirmed case of human infection with avian influenza A(H7N9) virus. This is the fifth human case with avian influenza A(H7N9) virus reported from Taipei CDC.

Between [19 January and 14 February 2017](#), a total of 304 additional laboratory-confirmed cases of human infection have been reported to WHO from mainland China through the China National IHR focal point. A total of 1,222 laboratory-confirmed human infections with avian influenza A (H7N9) virus have been reported through IHR notification since early 2013.

### Influenza A(H7N2)

Between [20 December 2016 and 16 January 2017](#), the United States of America (USA) reported one laboratory confirmed human case of influenza A(H7N2) virus infection to WHO. The likely source of infection in the human was through close contact with ill cats infected with an A(H7N2) virus. More information on influenza in cats, influenza A(H7N2), and the human infection with A(H7N2) can be found [here](#).

### Influenza A(H9N2)

Between [20 December 2016 and 16 January 2017](#), One new laboratory-confirmed human case of A(H9N2) virus infection was reported to WHO from China in a seven-month-old girl from Guangdong province. Avian influenza A(H9N2) viruses are enzootic in poultry in China.

- [Middle East respiratory syndrome coronavirus \(MERS-CoV\)](#) latest update on 10 March 2017

Between [06 and 21 February 2017](#), the National International Health Regulations (IHR) Focal Point of Saudi Arabia reported twelve (12) additional cases of Middle East Respiratory Syndrome (MERS) including three (3) fatal cases. Four (4) deaths among previously reported MERS cases were also reported (case numbers 1, 2, 4 and 6 in the Disease Outbreak News published on 10 February 2017).

Up to 15 March 2017, a total of four cases of Middle East respiratory syndrome coronavirus, MERS-CoV, (two imported and two linked cases) have been confirmed in the UK. On-going surveillance has identified 941 suspect cases in the UK that have been investigated for MERS-CoV and tested negative.

Globally, since September 2012, WHO has been notified of 1,917 laboratory-confirmed cases of infection with MERS-CoV, including at least 684 related deaths. Further information on management and guidance of possible cases is available [online](#). The latest ECDC MERS-CoV risk assessment can be found [here](#), where it is highlighted that risk of widespread transmission of MERS-CoV remains low.

## Acknowledgements

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### Community surveillance

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### Disease severity and mortality data

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### Vaccination

- Seasonal influenza vaccine programme ([Department of Health Book](#))
- Childhood flu programme information for healthcare practitioners ([Public Health England](#))
- 2016/17 Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))