



UK Health  
Security  
Agency

# **Weekly national Influenza and COVID-19 surveillance report**

Week 4 report (up to week 3 data)  
26 January 2023

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For additional information including regional data on COVID-19 and other respiratory viruses, COVID-19 in educational settings, co- and secondary infections with COVID-19 and other data supplementary to this report, please refer to the [accompanying graph pack](#).

## Executive summary

This report summarises the information from the surveillance systems which are used to monitor coronavirus (COVID-19), influenza, and other seasonal respiratory viruses in England. References to COVID-19 represent the disease name and SARS-CoV-2 represent the virus name. The report is based on data from week 3 (between 16 January and 22 January 2023) and for some indicators daily data up to 24 January 2023.

### Overall

In week 3, from activity seen across multiple disease surveillance systems, influenza activity and COVID-19 activity **decreased** compared to week 2. Through syndromic surveillance, few indicators increased in children.

### COVID-19

COVID-19 case rates through Pillar 1 **decreased**. Case rates decreased across all regions, most ethnic groups, and age groups.

Through Respiratory Datamart, SARS-CoV-2 positivity **decreased** to 5.5% compared to 6.2% the previous week.

Through primary care surveillance, COVID-19 indicators **decreased** compared to week 3.

The overall number of reported COVID-19 confirmed outbreaks **decreased** compared to the previous week. The highest number of incidents continue to be in care homes, with 40 COVID-19 confirmed outbreaks occurring in England in week 3 compared to 69 in week 2.

Overall, COVID-19 hospitalisations and ICU admissions **decreased** in week 3 compared to week 2. Hospitalisations were highest in the 85 years and over age group. Through syndromic surveillance indicators, emergency department attendances for covid-like illness **decreased** nationally, across all age groups and regions.

Deaths with COVID-19 **decreased** in week 3.

The COVID-19 Autumn booster vaccination campaign commenced in early September. By the end of week 3, 64.6% of all people aged over 50 years old had been vaccinated with an Autumn booster dose.

### Influenza

In week 3, influenza positivity **decreased** to 2.8% compared to 6.5% in week 2, with the highest positivity seen in children aged 5 to 14 years old and in the 15 to 44 years and at 4.5%.

Through primary care surveillance, the influenza-like-illness consultations indicator **decreased** in week 3 and **returned to baseline**.

The overall number of reported influenza confirmed outbreaks continued to decrease in week 3. The highest number of incidents continue to be in care homes, with 4 influenza confirmed outbreaks occurring in England in week 3 compared to 23 in week 2.

Influenza hospital admissions **decreased** in week 3 compared to the previous week. The week 52 2022, 1 2023 and 2 2023 admissions rates were revised up retrospectively with the receipt of new data. The rate returned in the **low activity range**. Admissions data is provisional. Influenza admissions were highest in the under 5 years old age group. Influenza ICU admissions **decreased** in week 3 and approached the **baseline range of activity**.

Emergency department attendances for influenza-like illness **increased** slightly.

Influenza vaccine uptake for the 2022 to 2023 influenza season has been reported weekly since week 41. The trends in vaccine uptake compared to the previous 2021 to 2022 season are broadly comparable for 65 year olds and over; and for those under 65 years in clinical risk groups, although the difference between this season and last in these groups has increased throughout December and January. Pregnant women and 2 and 3 year olds are lower than last season. Monthly data for frontline healthcare workers, school-aged children and GP patients is published for the fourth time this season.

## RSV

The overall positivity for RSV continued to **decrease** to 3.3%, with the highest positivity seen in the under 5 year olds at 7.8%. The RSV hospitalisation rate **decreased** overall to 1.0 per 100,000, including in the under 5 years age groups. Emergency department attendances for acute bronchiolitis slightly increased nationally and in all age groups except in the 65 years old and over.

## Other viruses

Adenovirus positivity **increased slightly** to 3.2%. Rhinovirus positivity **increased slightly** to 8.1% overall, **with the highest positivity in the under 5 year olds at 20.9%**. Parainfluenza positivity remained low and **stable** at 1.0%. Human metapneumovirus (hMPV) positivity **remained stable** at 3.8%.

## Other indicators

Through NHS 111, calls for cold or flu and cough decreased nationally, except for children aged between 1 and 14 years old.

The primary care lower respiratory tract infection rate **decreased**.

Emergency department attendances for acute respiratory infection **decreased** nationally. By age group, attendances slightly increased in children aged between 1 and 14 years old.

**Excess deaths (from all causes) were observed in week 3.**

# Laboratory surveillance

## Confirmed COVID-19 cases (England)

From 1 April 2022, the government ended provision of widespread community testing in England, as outlined in the plan for [living with COVID-19](#). From week 15 2022, confirmed COVID-19 episodes and positivity through Pillar 1 are presented in this report, with Pillar 2 data available in the accompanying graph pack. Routine asymptomatic testing through NHS settings has been paused from 31 August, this will have an effect on Pillar 1 case rates and positivity rates.

As of 9am on 22 January 2023, a total of 1,984,722 episodes have been confirmed for COVID-19 in England under Pillar 1, and 20,512,686 episodes have been confirmed under Pillar 2, since the beginning of the pandemic. COVID-19 case rates through Pillar 1 decreased in week 3 compared to week 2, across all regions, ethnic groups, and age groups. The number of Pillar 1 COVID-19 episodes decreased to 3,931 in week 3 compared to 5,426 in week 2.

### Data notes:

Changes to testing policies over time may affect positivity rates and incidence rates and should be interpreted accordingly. From 31 January 2022, UK Health Security Agency (UKHSA) moved all COVID-19 case reporting in England to use a new episode-based definition which includes possible reinfections. Each infection episode is counted separately if there are at least 91 days between positive test results (polymerase chain reaction (PCR) or rapid lateral flow device). Each infection episode begins with the earliest positive specimen date. Further information can be found on the [UK COVID-19 dashboard](#).

From the week 32 2021 report onwards, case rates have been updated to use the latest Office for National Statistics (ONS) population estimates for mid-2020. Previously case rates were calculated using the mid-2019 population estimates. Rates by ethnicity and Indices of Multiple Deprivation (IMD) quantile will continue to be presented using the mid-2019 estimates, until the mid-2020 estimates become available.

Please note that positivity is presented as positivity by PCR testing only. Positivity is calculated as the number of individuals testing positive during the week divided by the number of individuals tested during the week through PCR testing.

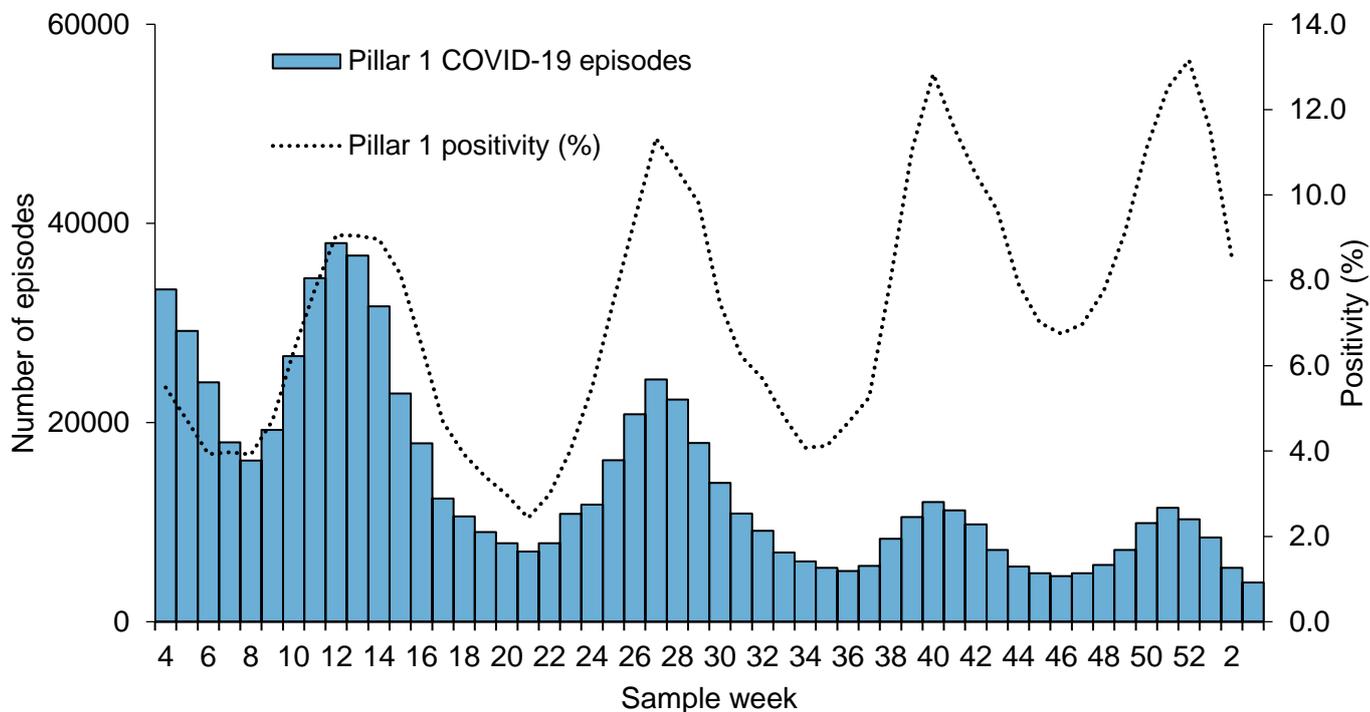
Data is shown by the week the specimen was taken from the person being tested. This gives the most accurate analysis of this time progression, however, for the most recent week results for more samples are expected therefore this should be interpreted with caution.

Data from the most recent week is subject to reporting lags and may change in future iterations.

Pillar 1 positivity metrics for the most recent week have been omitted due to a possible data processing issue which is being investigated. Please refer to the DataMart data on SARS-CoV2 positivity in figure 11.

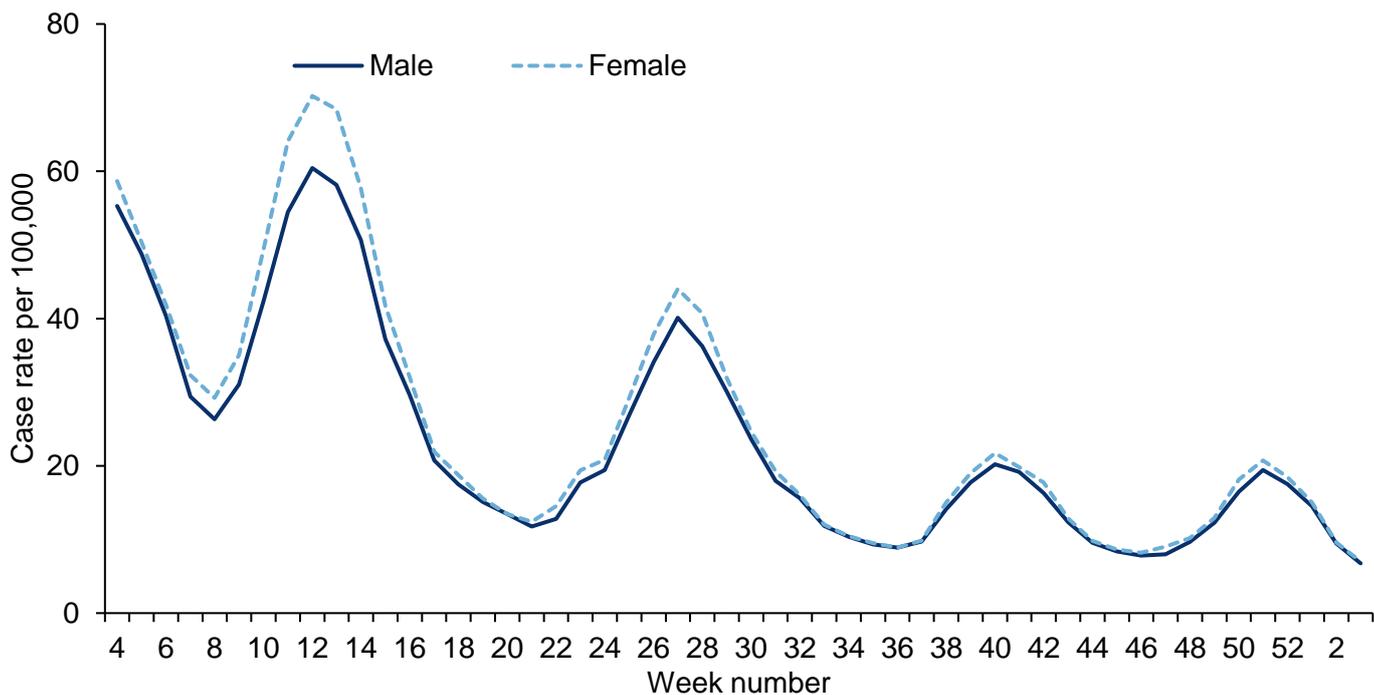
Data source: Second Generation Surveillance System (SGSS)

**Figure 1: Confirmed COVID-19 episodes tested under Pillar 1, based on sample week with overall weekly PCR positivity for Pillar 1 (%)**

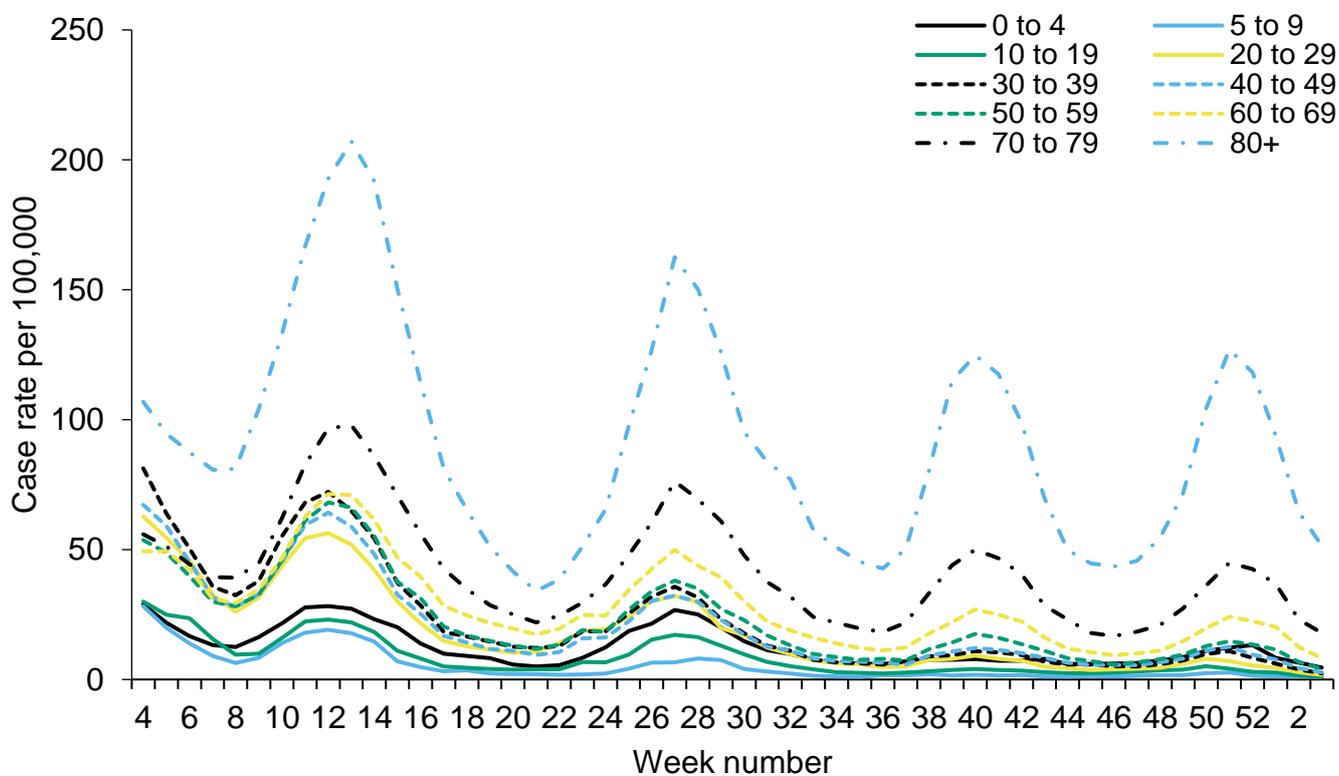


### Age and sex

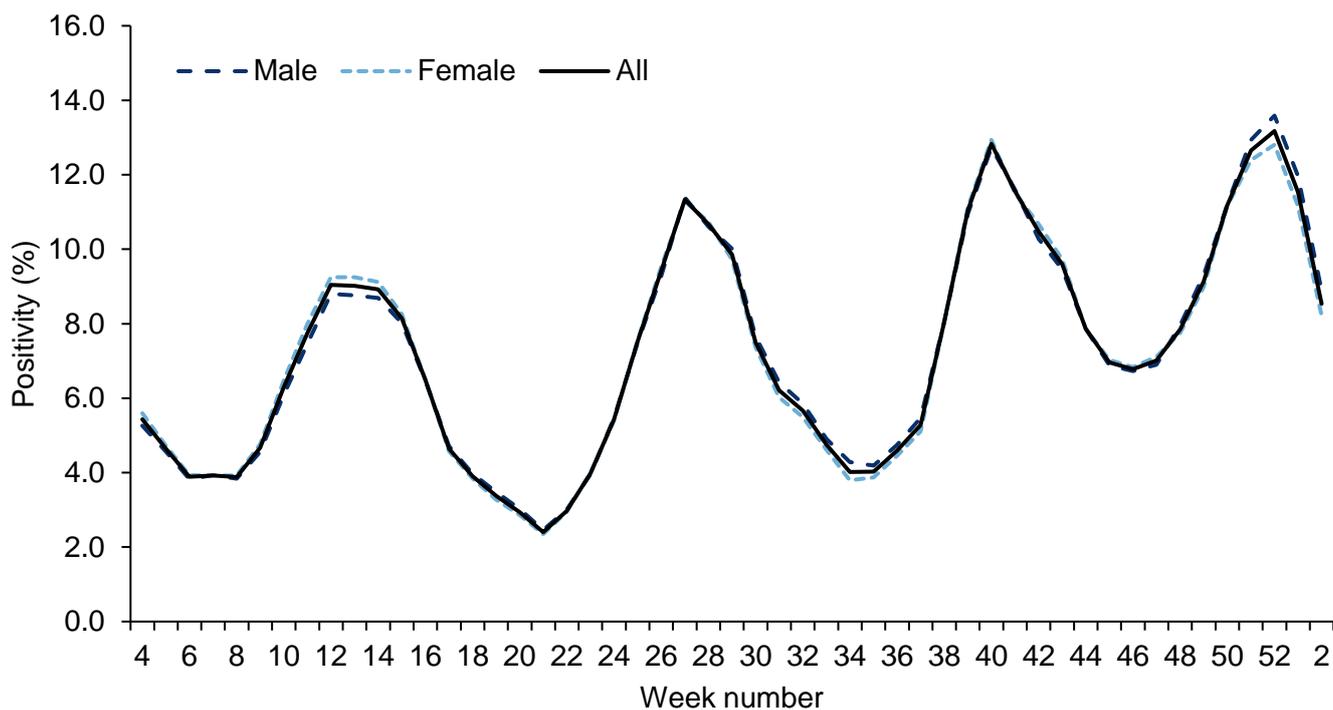
**Figure 2: Weekly confirmed COVID-19 case rates per 100,000, by episode, tested under Pillar 1, by sex**



**Figure 3: Weekly confirmed COVID-19 case rates per 100,000, by episode, tested under Pillar 1, by age group**

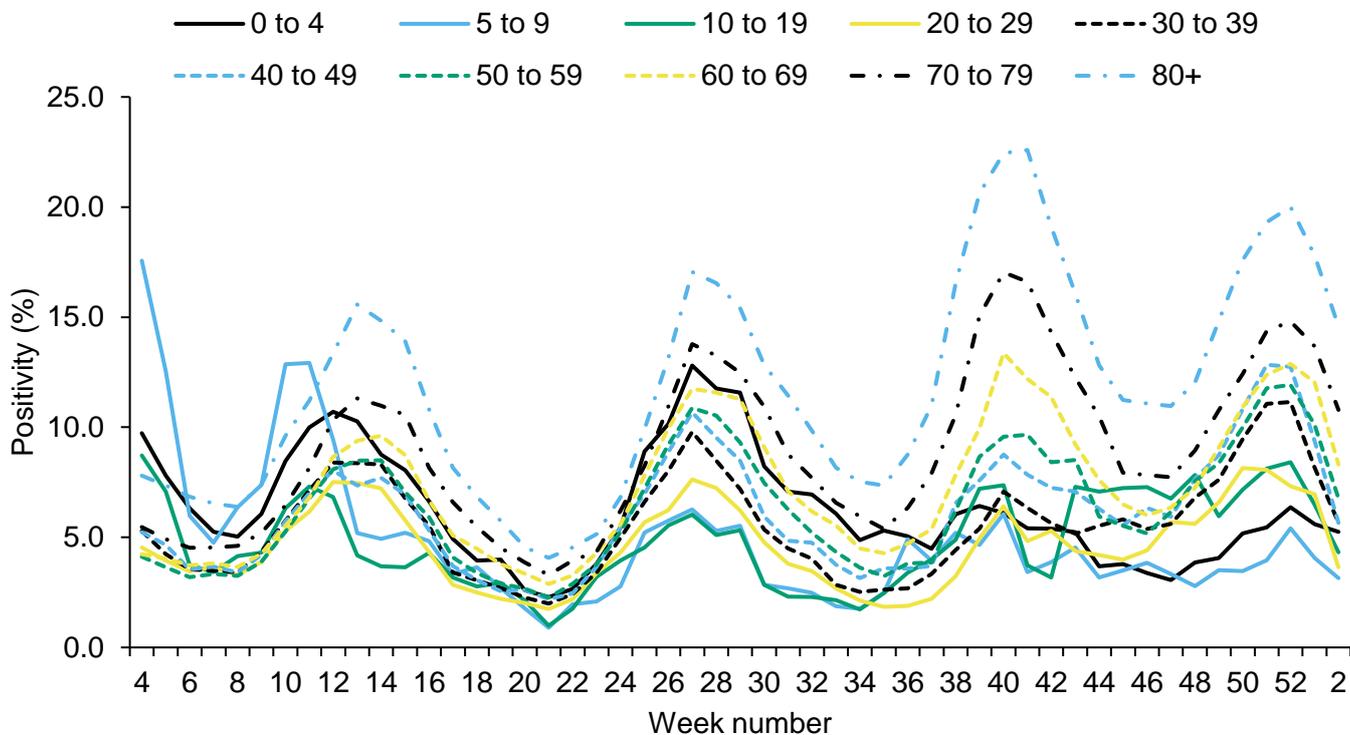


**Figure 4: Weekly PCR positivity (%) of confirmed COVID-19 cases tested overall and by sex under Pillar 1**

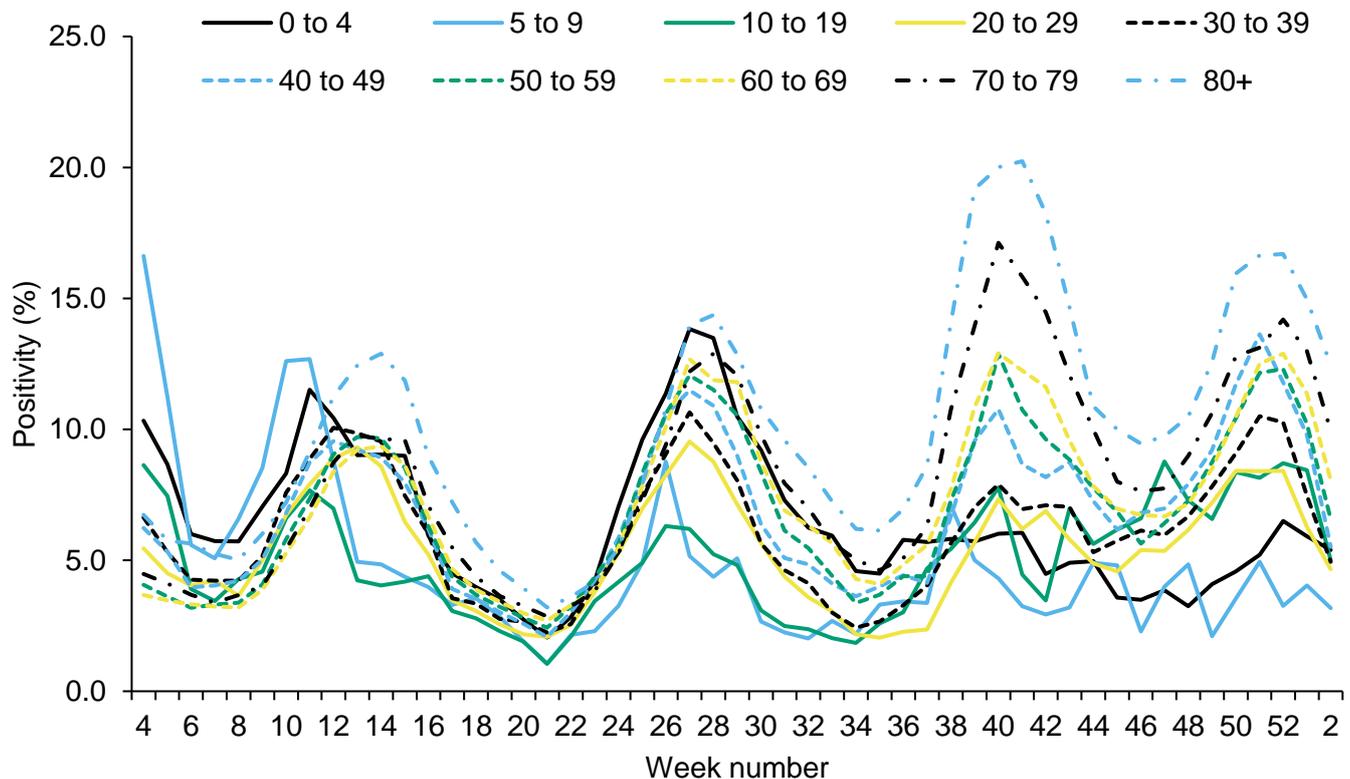


**Figure 5: Weekly PCR positivity (%) of confirmed COVID-19 cases tested under Pillar 1, (a) by male and age group and (b) by female and age group**

(a) Pillar 1 - Male

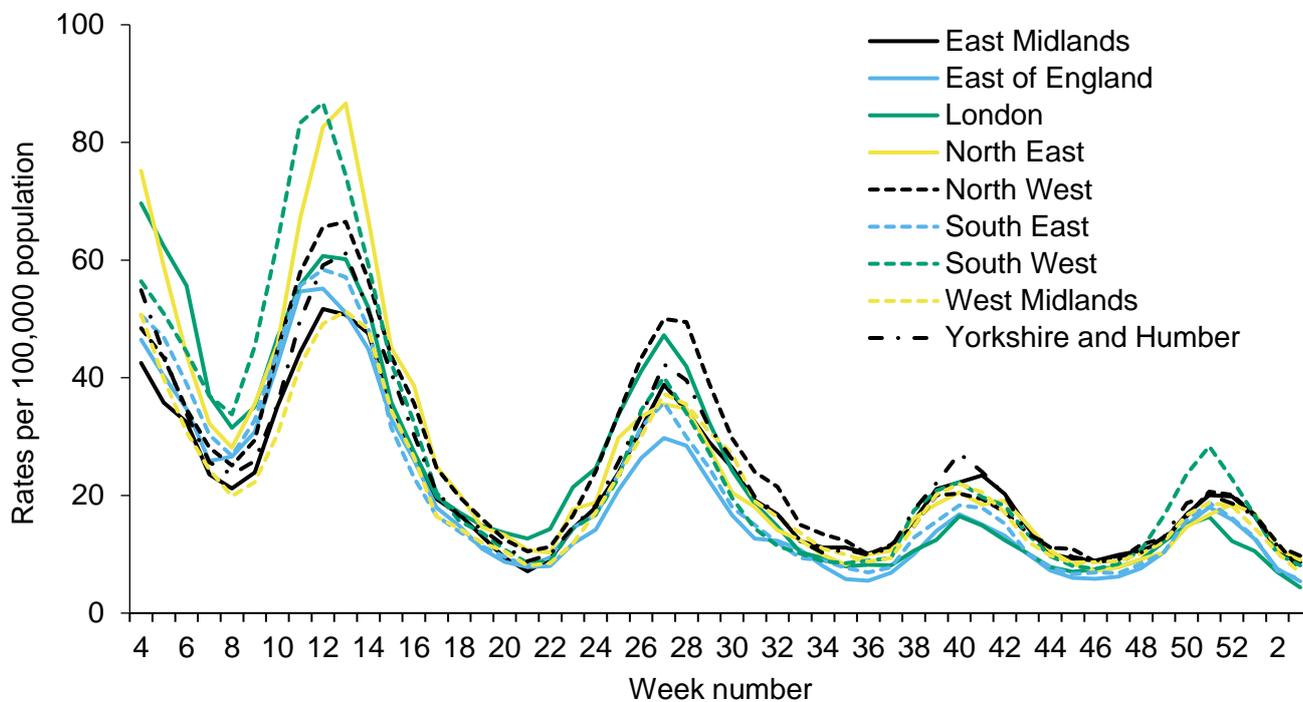


(b) Pillar 1 - Female

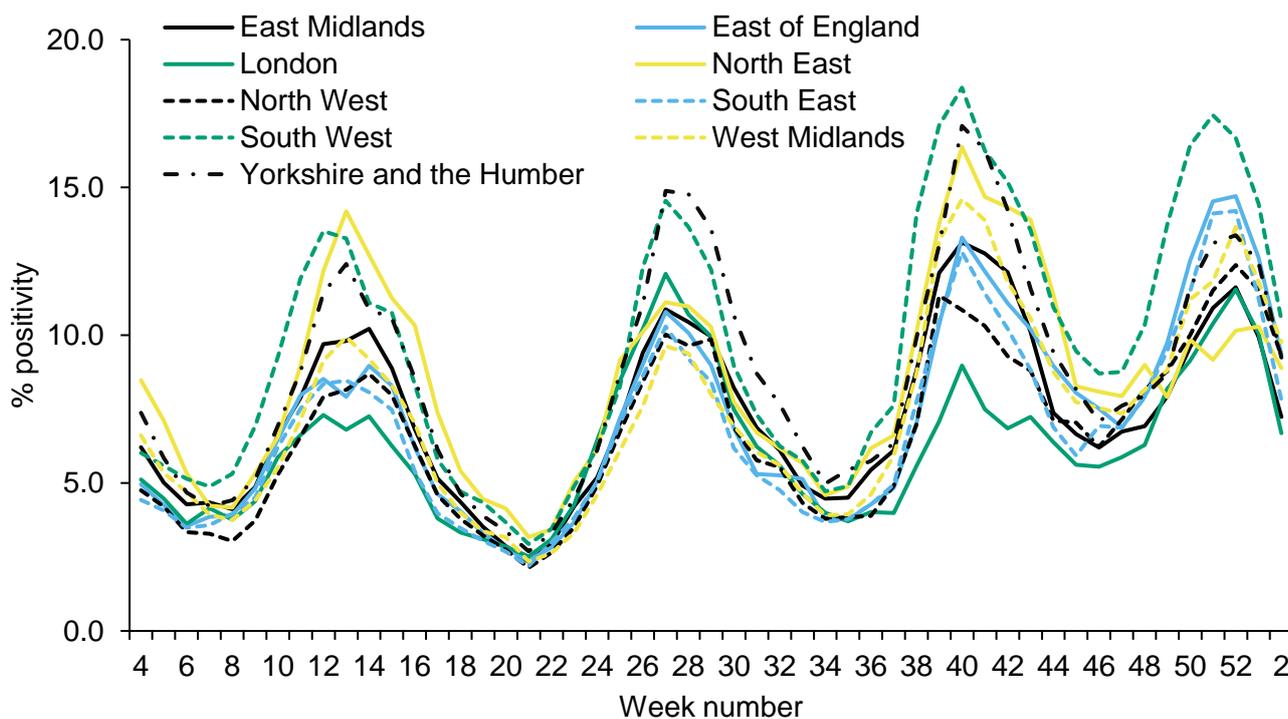


## Geography

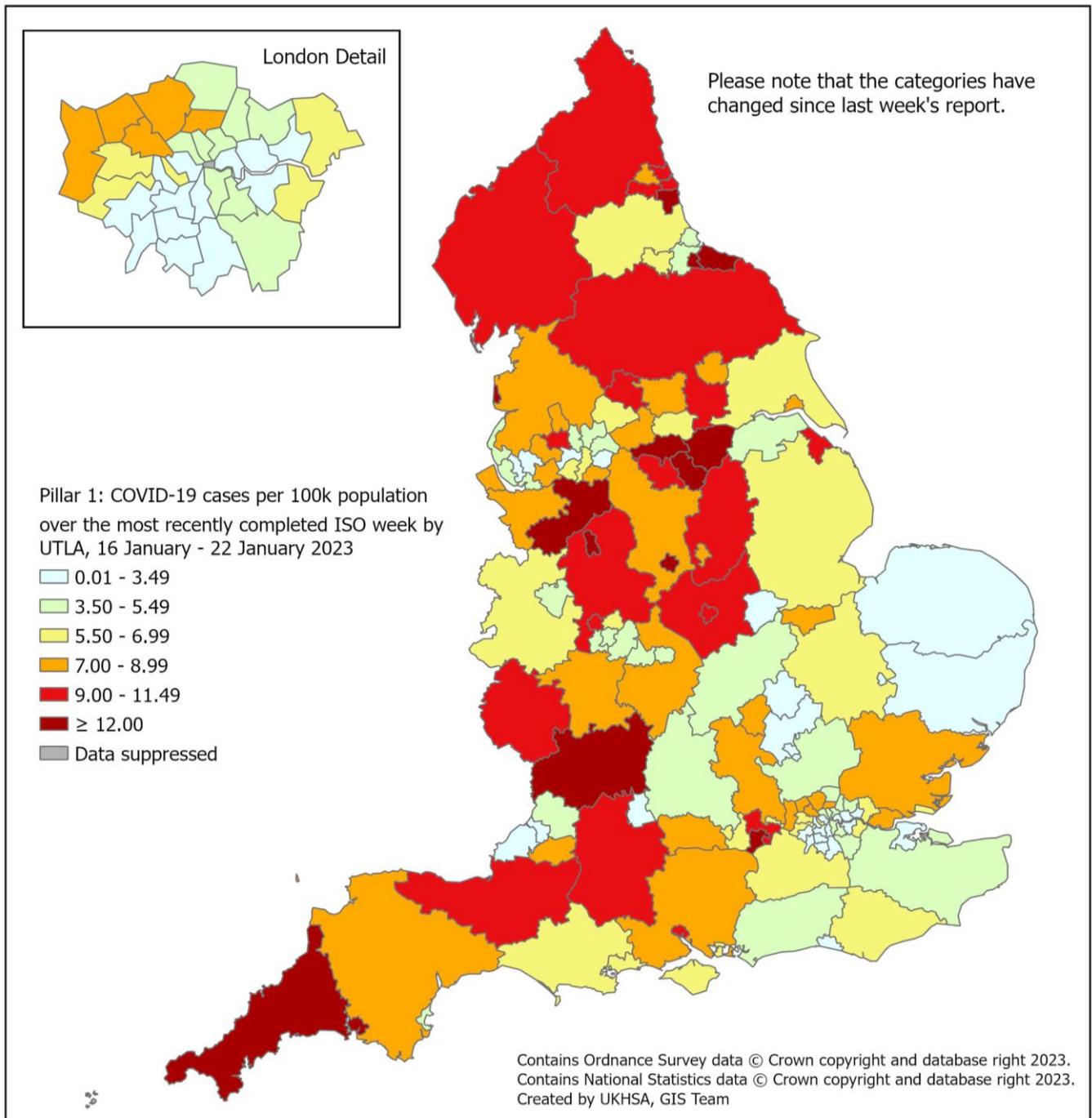
**Figure 6: Weekly confirmed COVID-19 case rates by episode, per 100,000 population (Pillar 1), by UKHSA centres and sample week**



**Figure 7: Weekly PCR positivity of confirmed COVID-19 cases tested under Pillar 1 (%) by UKHSA centres and sample week**

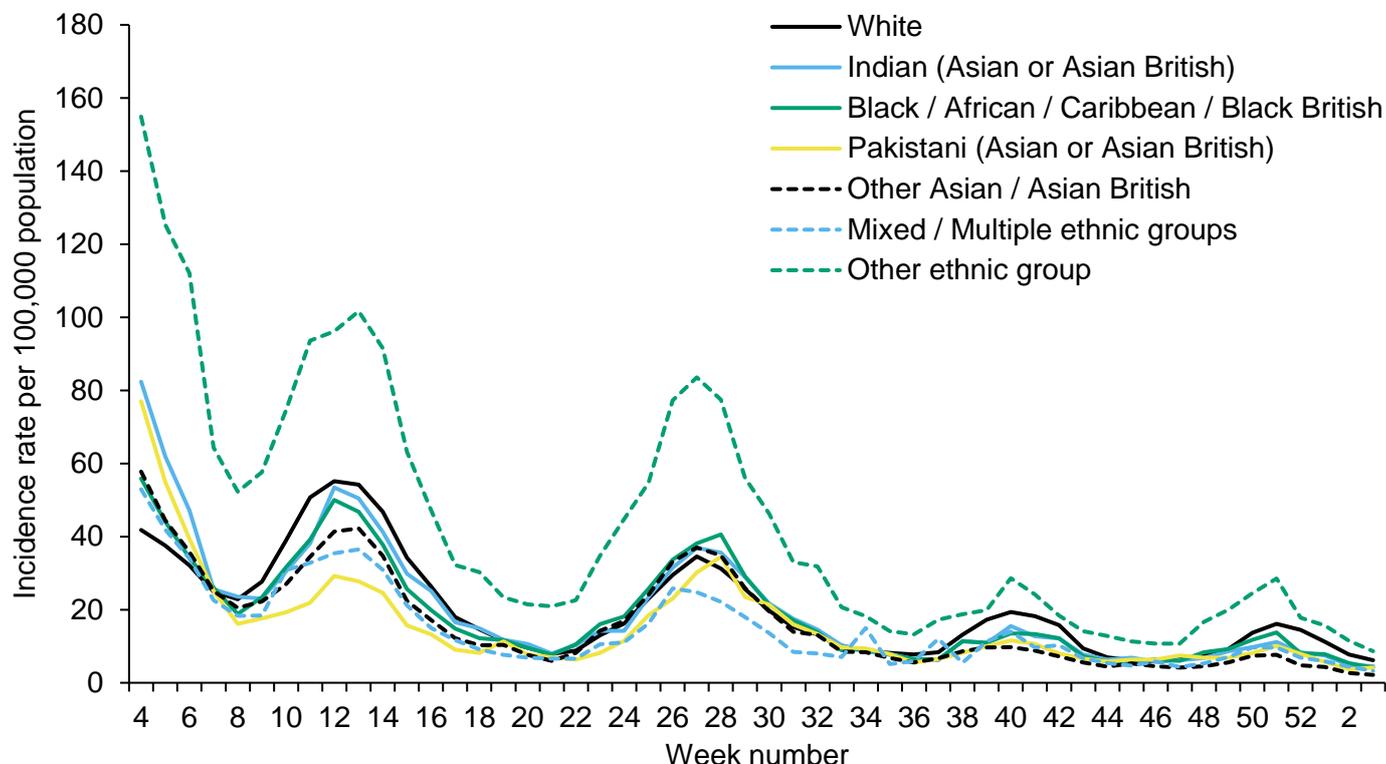


**Figure 8: Weekly rate of COVID-19 episodes per 100,000 population (Pillar 1), by upper-tier local authority (UTLA), England (box shows enlarged map of London area)**



## Ethnicity

**Figure 9: Weekly incidence per 100,000 population by ethnicity (Pillar 1), England\***



\* The incidence rates on Figure 9 have been calculated using the mid-2019 ONS population estimates. Data from one reporting laboratory has been removed from week 43 onwards due to data quality issues.

## Possible SARS-CoV-2 reinfection in England

SARS-CoV-2 reinfections data is not currently being published. For previous updates please see previous editions of this report.

## Respiratory DataMart system (England)

The Respiratory Datamart system began during the 2009 influenza pandemic to collate all laboratory testing information in England. It is now used as a sentinel laboratory surveillance tool, monitoring all major respiratory viruses in England. Sixteen laboratories in England will be reporting data for this season. As this is based on a sample of labs, SARS-CoV-2 positivity figures quoted here will differ from those quoted in the Confirmed COVID-19 cases section, however, they are included to allow comparison with data on other respiratory viruses.

In week 3 of 2023, out of the 15,010 respiratory specimens reported through the Respiratory DataMart System (based on data received from 14 out of 16 laboratories), 831 samples were positive for SARS-CoV-2 with an overall positivity of 5.5% which decreased from 6.2% the previous week. The highest positivity was seen in the 65 year olds and over at 7.6%.

Influenza positivity decreased from 6.5% in week 2 to 2.8% in week 3, with highest positivity seen in the 5 to 14 and in the 15 to 44 year olds groups at 4.5%. 203 samples tested positive for influenza (40 flu A(H3), 4 flu A(H1N1)pdm09, 112 flu A(not subtyped) and 47 flu B) in week 3 (Figure 12).

The overall positivity for RSV continued to decrease to 3.3%, with the highest positivity of 7.8% in the under 5 year olds.

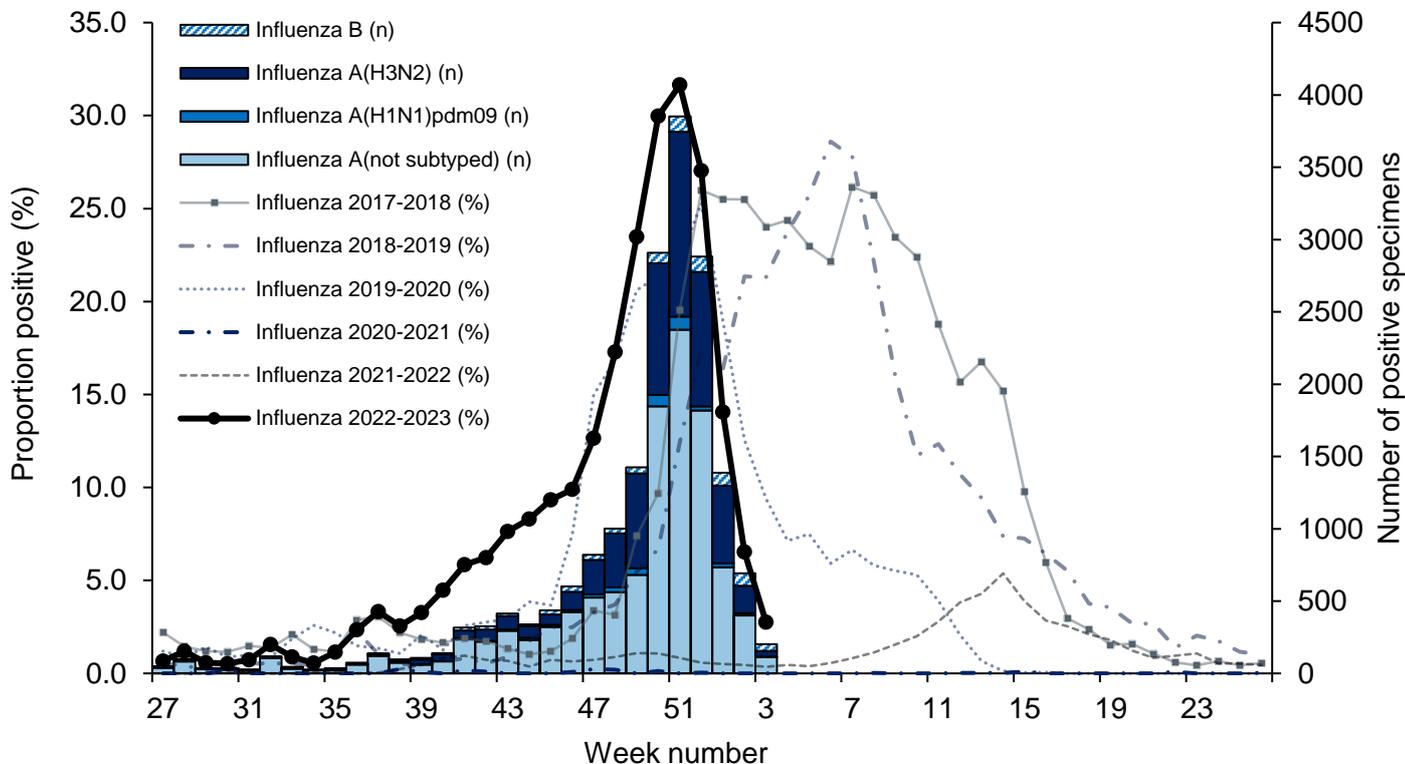
Adenovirus positivity increased slightly to 3.2%, with the highest positivity in the under 5 year olds at 8.6%.

Rhinovirus positivity increased slightly to 8.1% overall, with the highest positivity in the under 5 year olds at 20.9%.

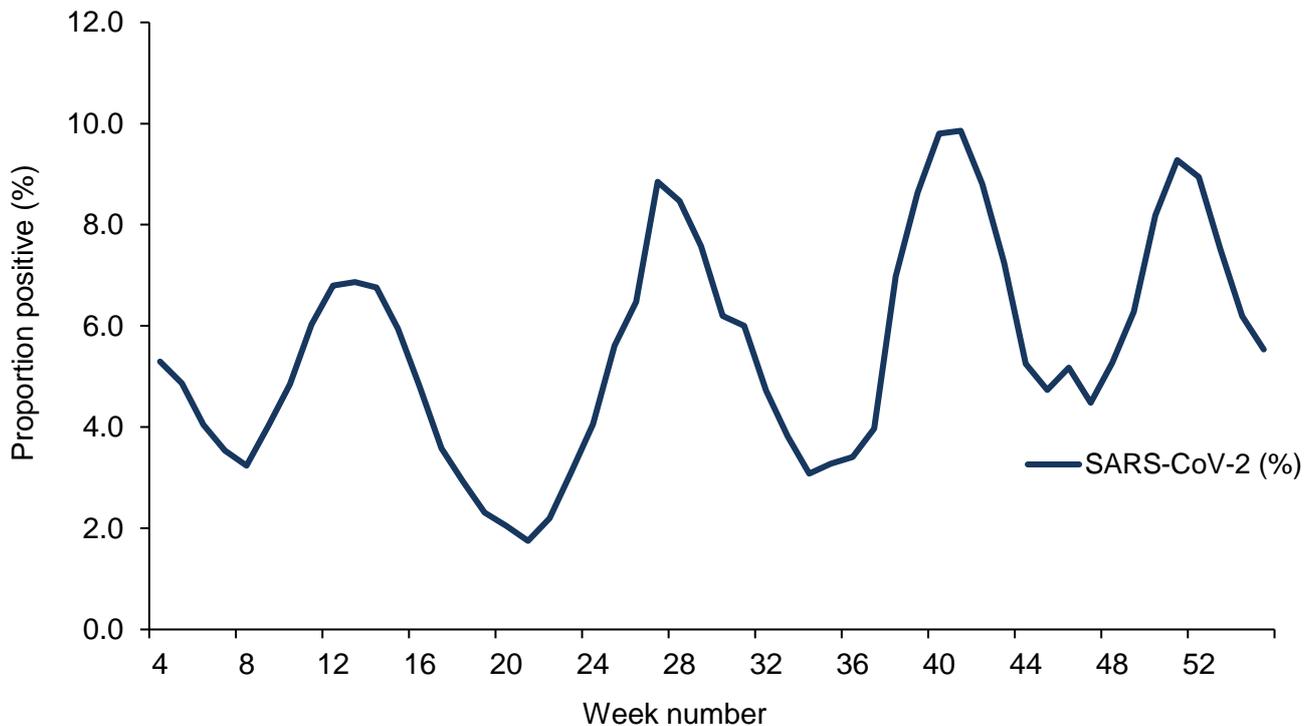
Parainfluenza positivity remained low and stable at 1.0%.

Human metapneumovirus (hMPV) positivity remained stable at 3.8%.

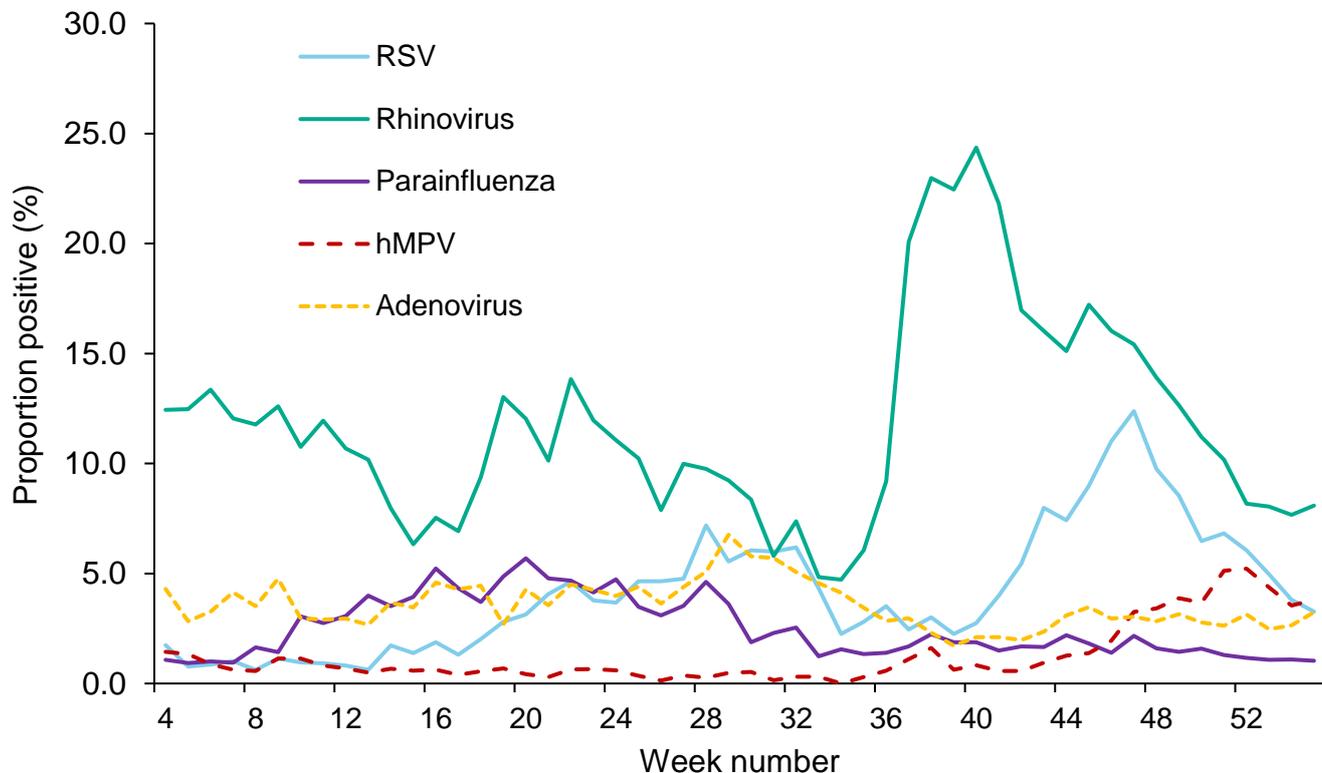
**Figure 10: Respiratory DataMart samples positive for influenza and weekly positivity (%) for influenza, England**



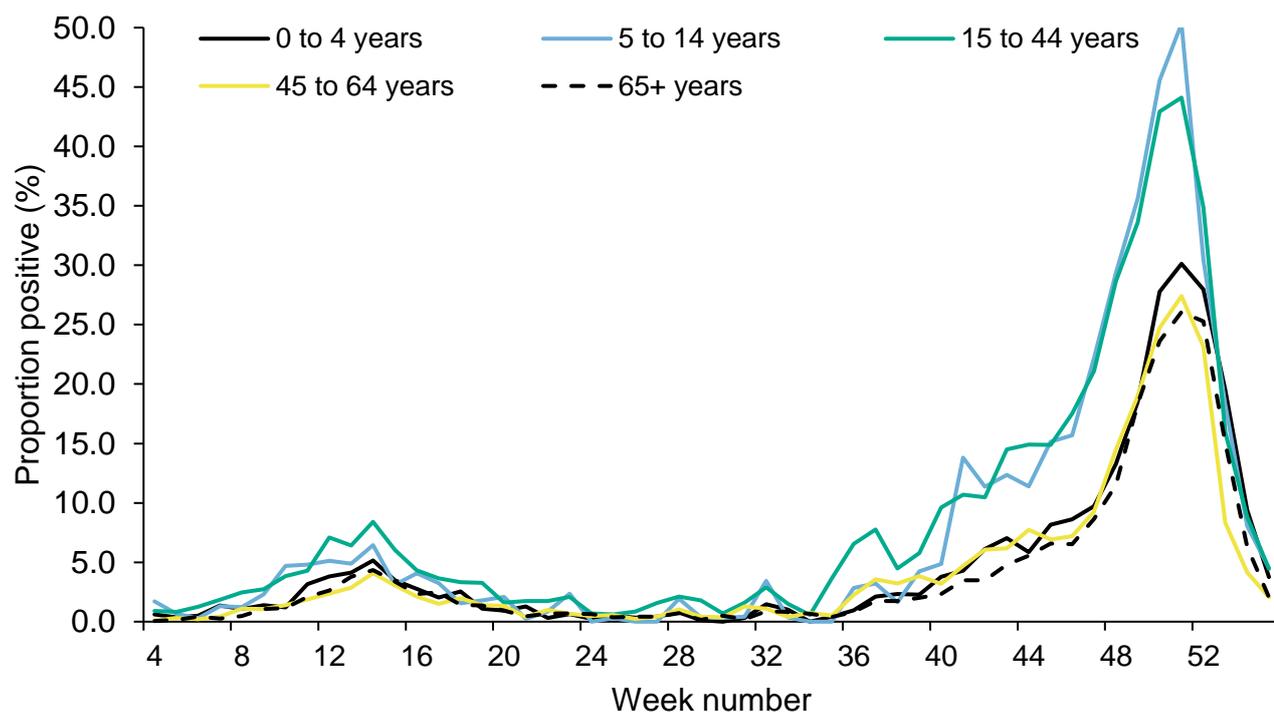
**Figure 11: Respiratory DataMart weekly positivity (%) for SARS-CoV-2, England**



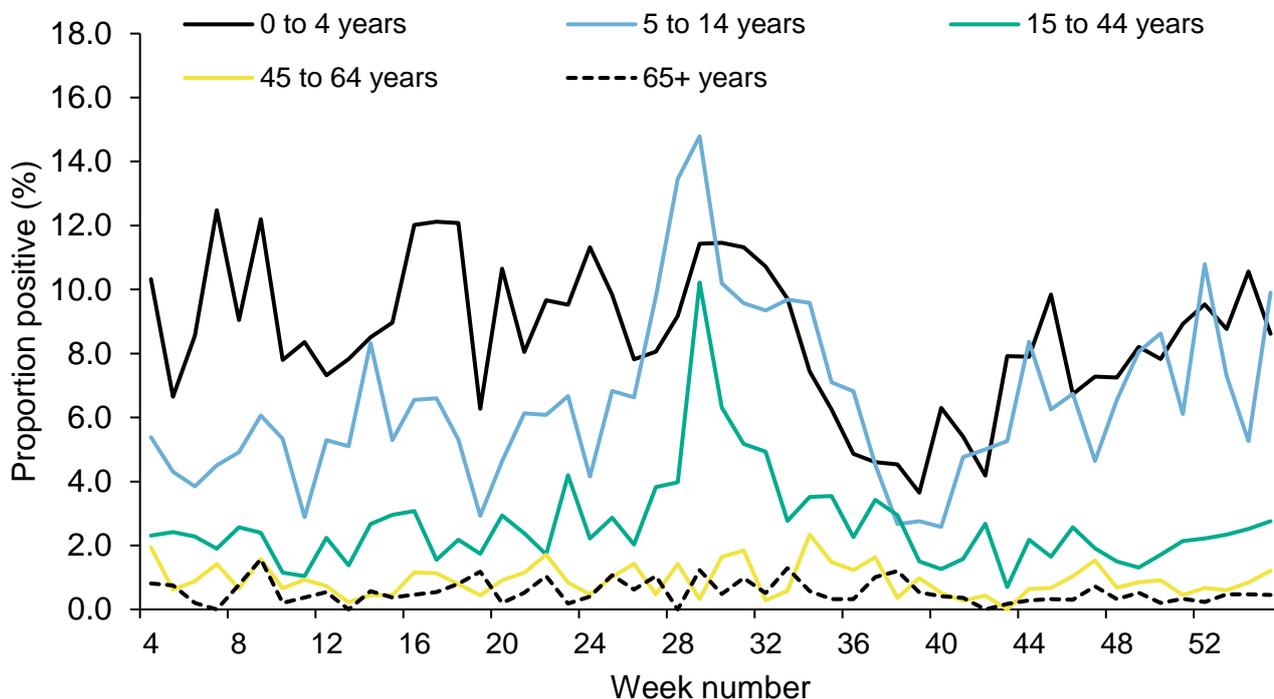
**Figure 12: Respiratory DataMart weekly positivity (%) for other respiratory viruses, England**



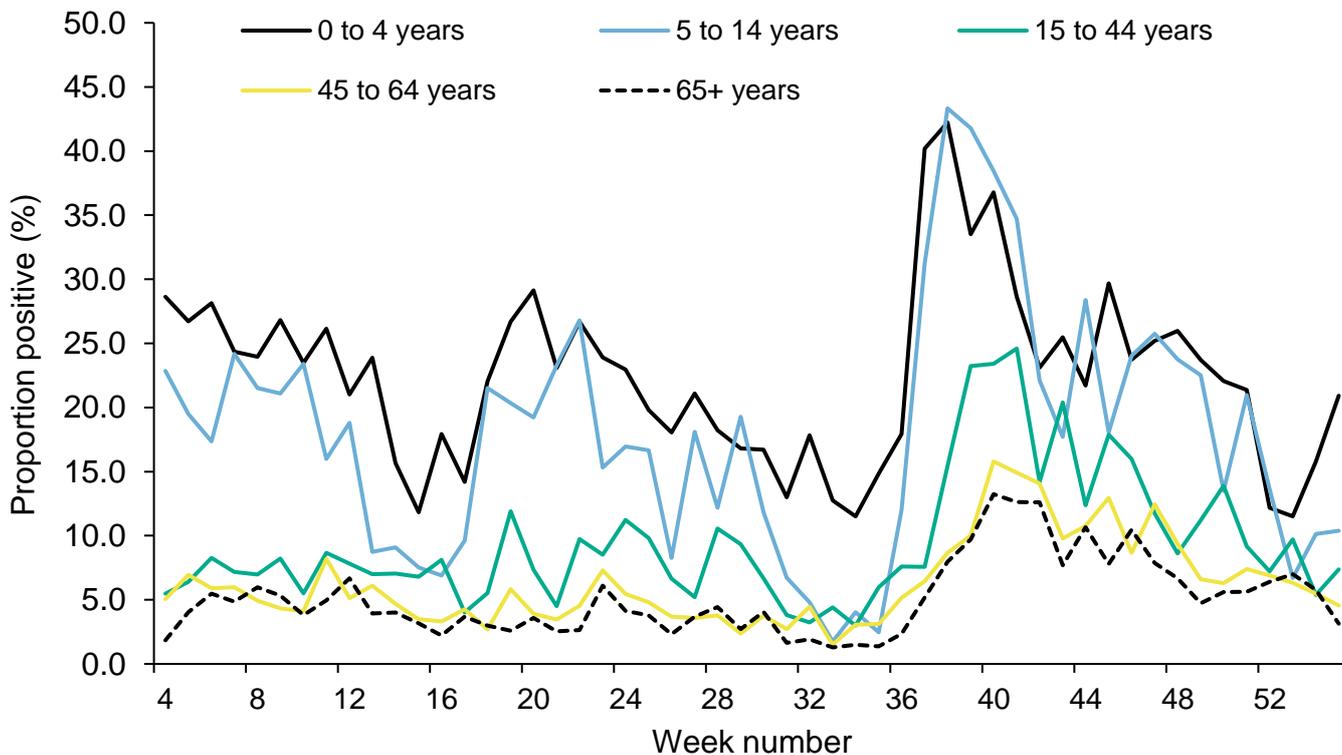
**Figure 13: Respiratory DataMart weekly positivity (%) for influenza by age, England**



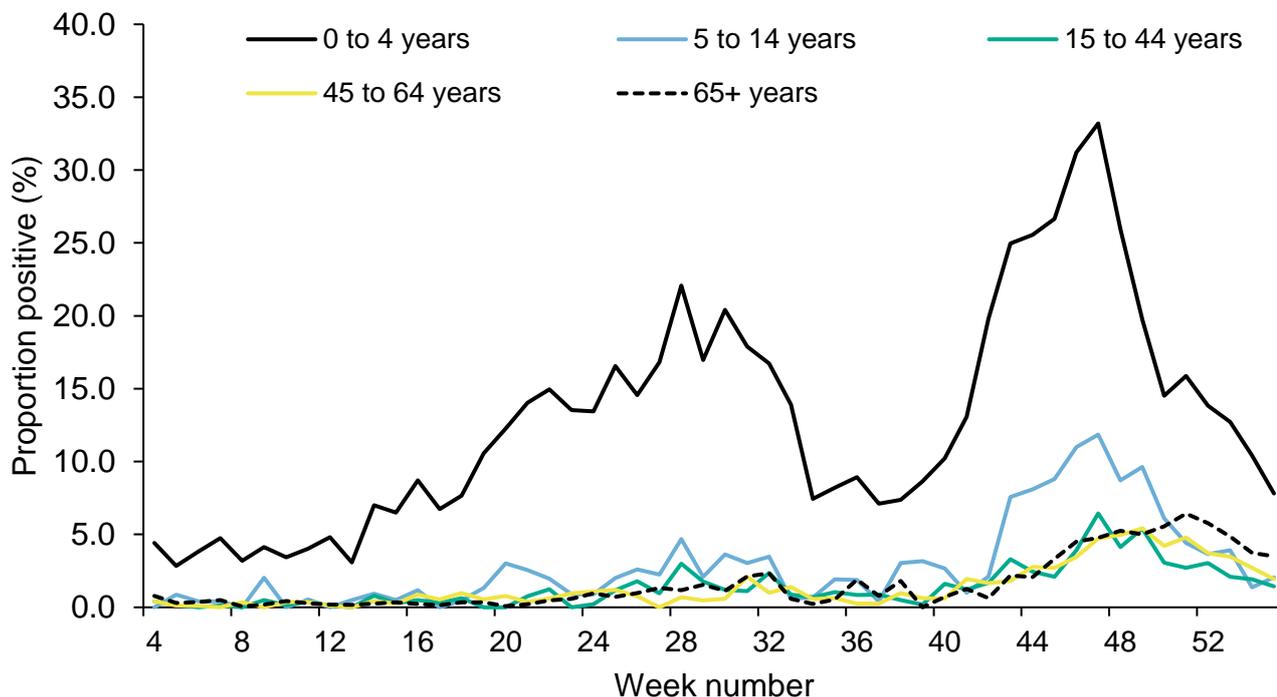
**Figure 14: Respiratory DataMart weekly positivity (%) for adenovirus by age, England**



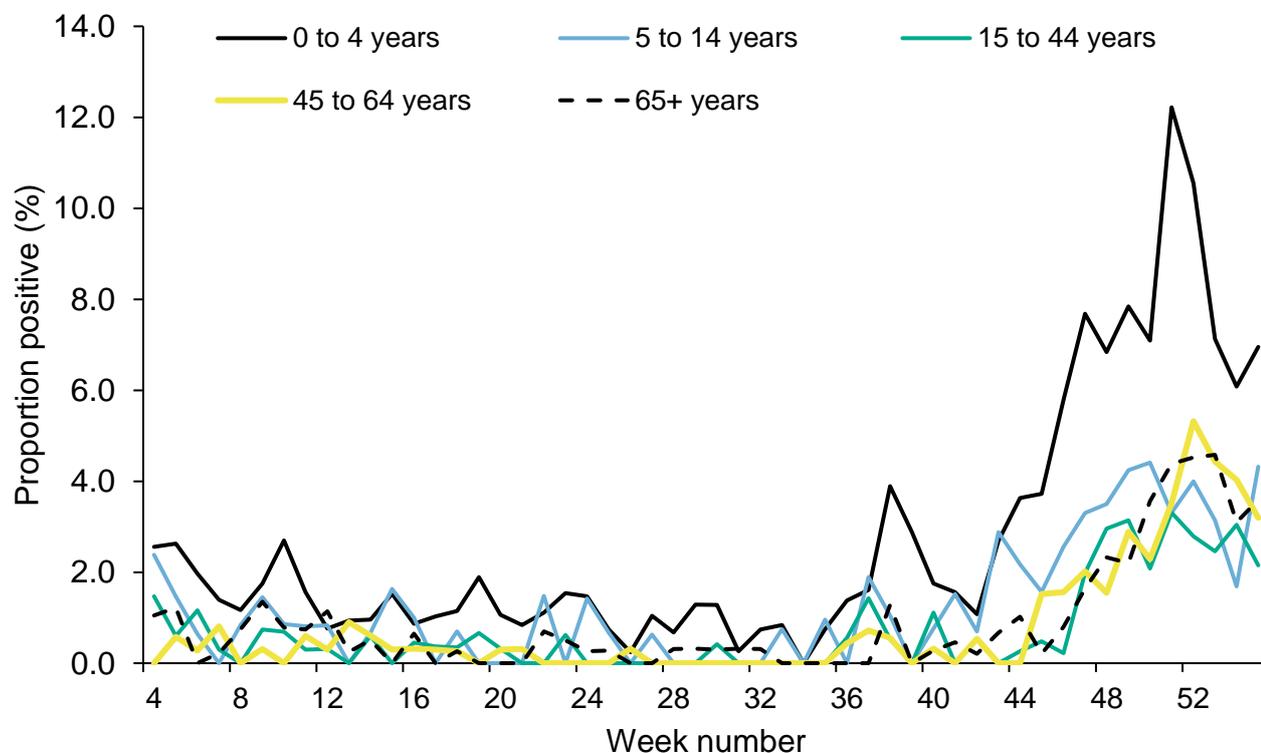
**Figure 15: Respiratory DataMart weekly positivity (%) for rhinovirus by age, England**



**Figure 16: Respiratory DataMart weekly positivity (%) for RSV by age, England**



**Figure 17: Respiratory DataMart weekly positivity (%) for hMPV by age, England**



# Community surveillance

## Acute respiratory infection incidents

Here we present data on acute respiratory infection (ARI) incidents in different settings that are reported to UKHSA Health Protection Teams (HPTs) and entered onto an online web-based platform called HPZone. Incidents are suspected outbreaks of acute respiratory infections linked to a particular setting. All suspected outbreaks are further investigated by the HPT in liaison with local partners.

The ARI definition includes presentations of both of influenza-like illness (ILI) and other acute viral respiratory infections (AVRI). Causal pathogens can include Influenza A and B, Respiratory Syncytial Virus (RSV), adenovirus, rhinovirus, parainfluenza, human metapneumovirus (hMPV) and SARS-CoV-2.

Data for England, Scotland and Northern Ireland are included in the UK figures.

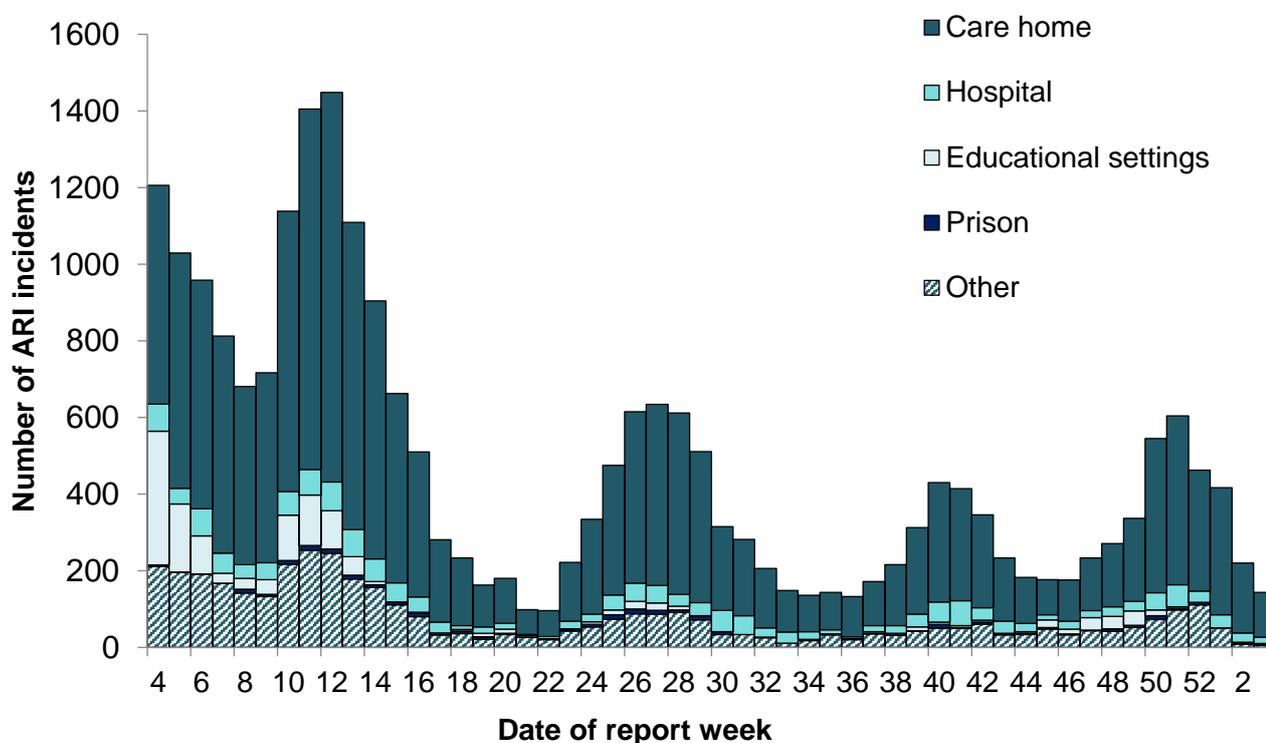
Data caveats:

1. The incidents captured on HPZone represent a subset of all ongoing ARI clusters and outbreaks in England rather than an exhaustive listing.
2. In addition, SARS-CoV2 testing policies and public health guidance for different settings changed over time. This means that any interpretation of seasonal and temporal trends since March 2020 should take this into account.
3. It should be noted that the denominator for the different settings will vary significantly. For example, there are fewer hospitals than workplaces. In addition, the propensity to report incidents to UKHSA also varies significantly by setting. This needs to be considered when interpreting the weekly number of reported incidents by setting and caution should be used when making comparisons between settings.
4. Considering the above, comparisons between regions and settings are not advised as they may be misleading.

144 new ARI incidents have been reported in week 3 in the UK (Figure 18):

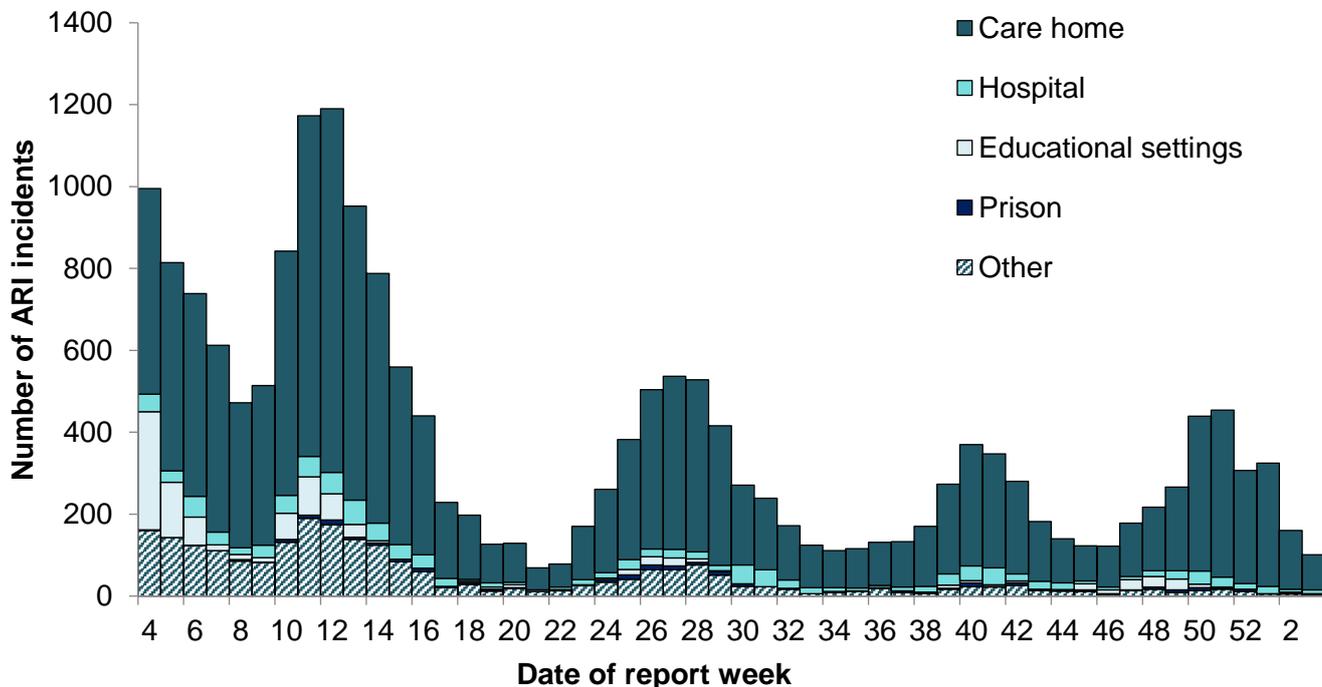
- 117 incidents were from care homes where 56 had at least one linked case that tested positive for SARS-CoV-2, 9 for influenza A(not subtyped) and 3 for RSV
- 17 incidents were from hospitals, where 11 had at least one linked case that tested positive for SARS-CoV-2 and 1 for influenza(not typed)
- 3 incidents were from prisons, where 2 had at least one linked case that tested positive for SARS-CoV-2
- 2 incidents were from educational settings, with no test result available
- 5 incidents were from other settings, where 3 had at least one linked case that tested positive for SARS-CoV-2

**Figure 18: Number of acute respiratory infection (ARI) incidents by setting, UK**

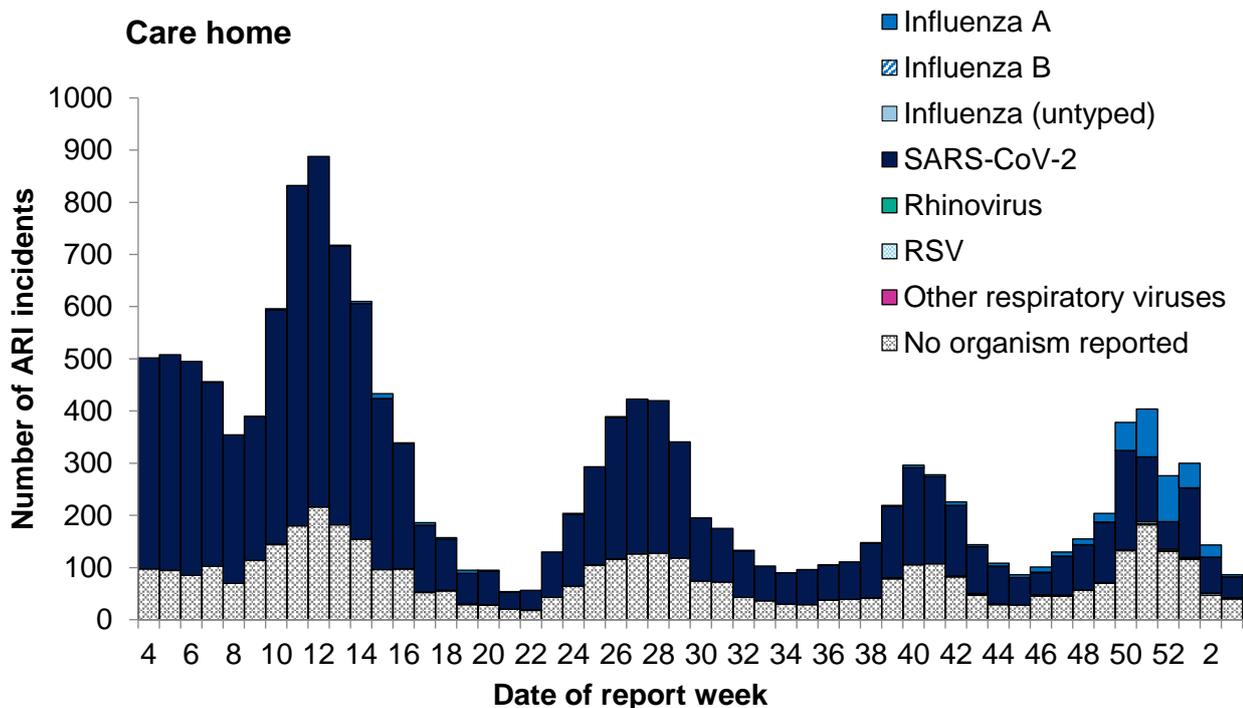


\*Excludes data from Wales

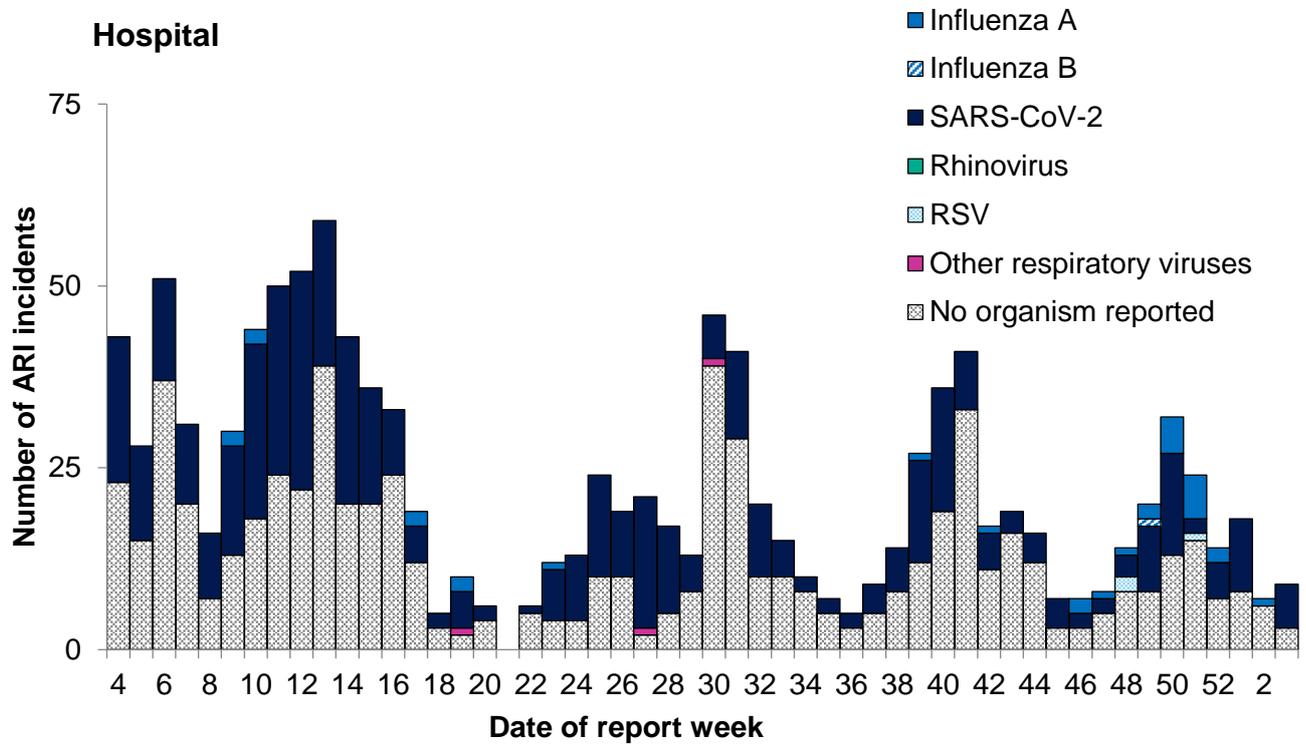
**Figure 19: Number of acute respiratory infection (ARI) incidents by setting, England**



**Figure 20: Number of acute respiratory infection (ARI) incidents in care homes by virus type, England**

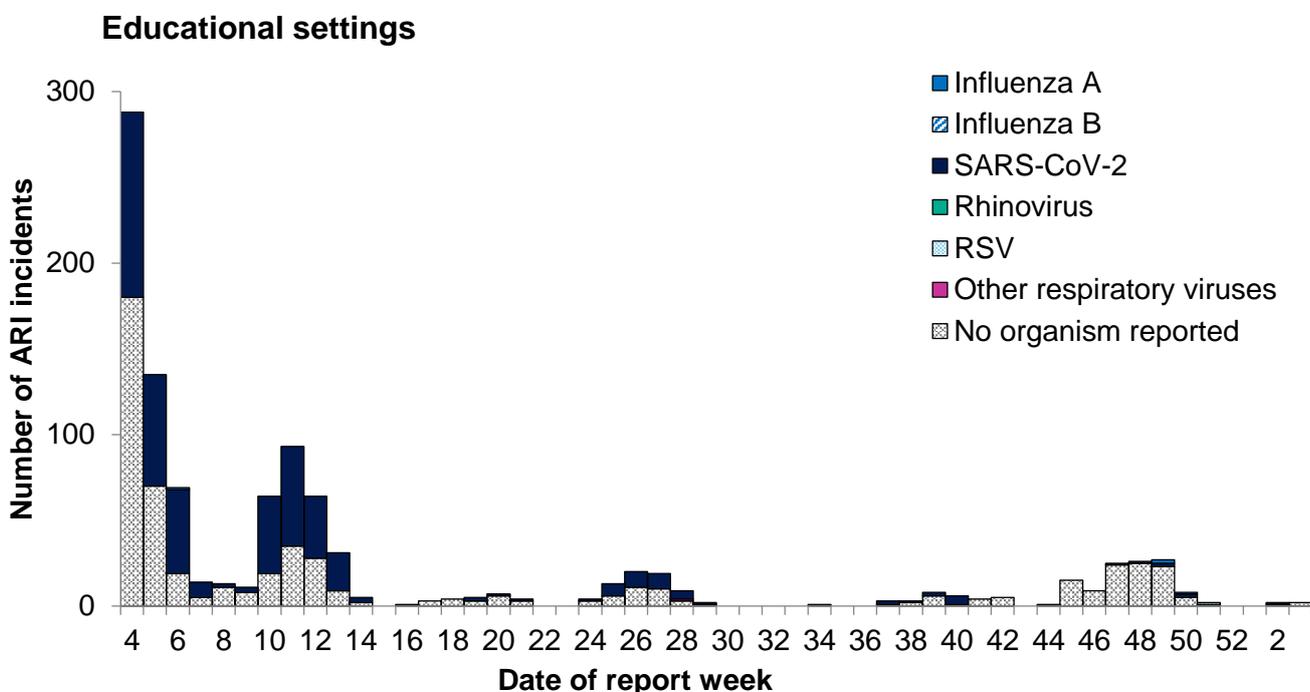


**Figure 21: Number of acute respiratory infection (ARI) incidents in hospitals by virus type, England**

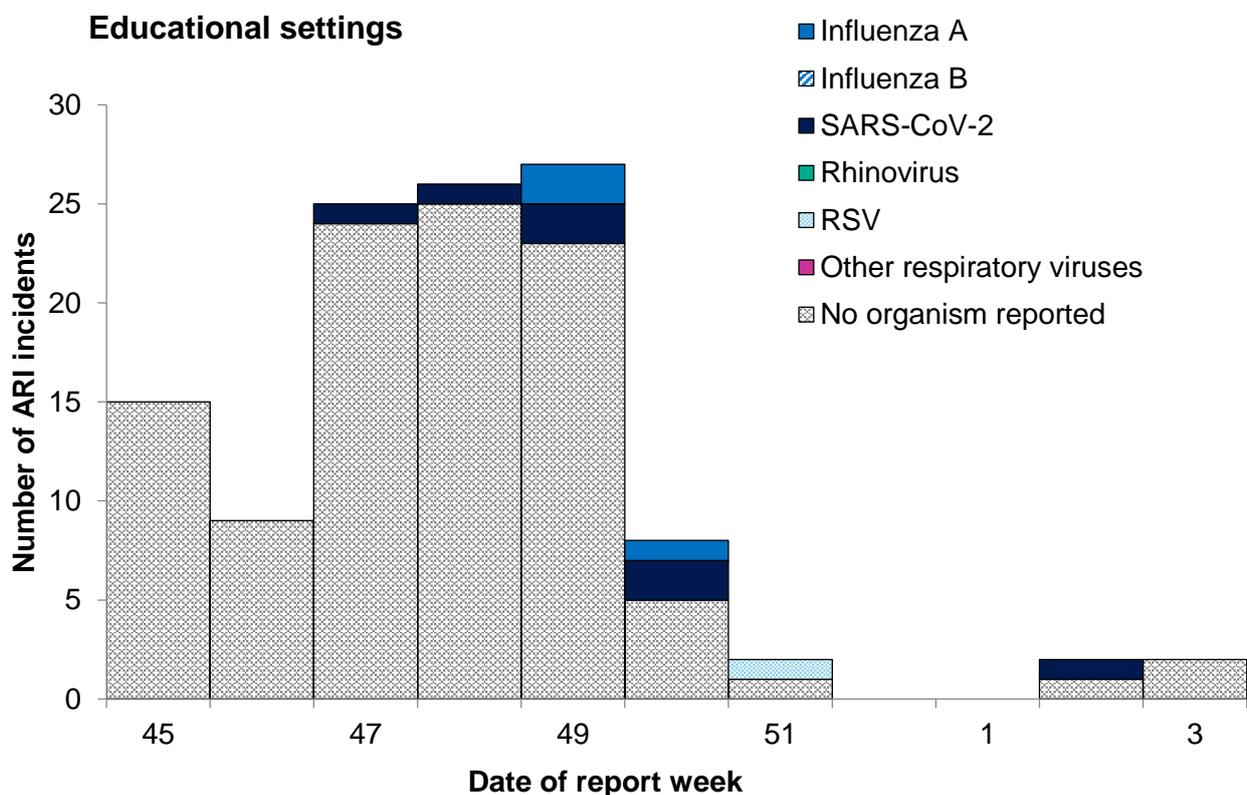


**Figure 22: Number of acute respiratory infection (ARI) incidents in educational settings by virus type, England (a) for the weeks 47 2021 to 46 2022 and (b) for the 2022 to 23 academic year**

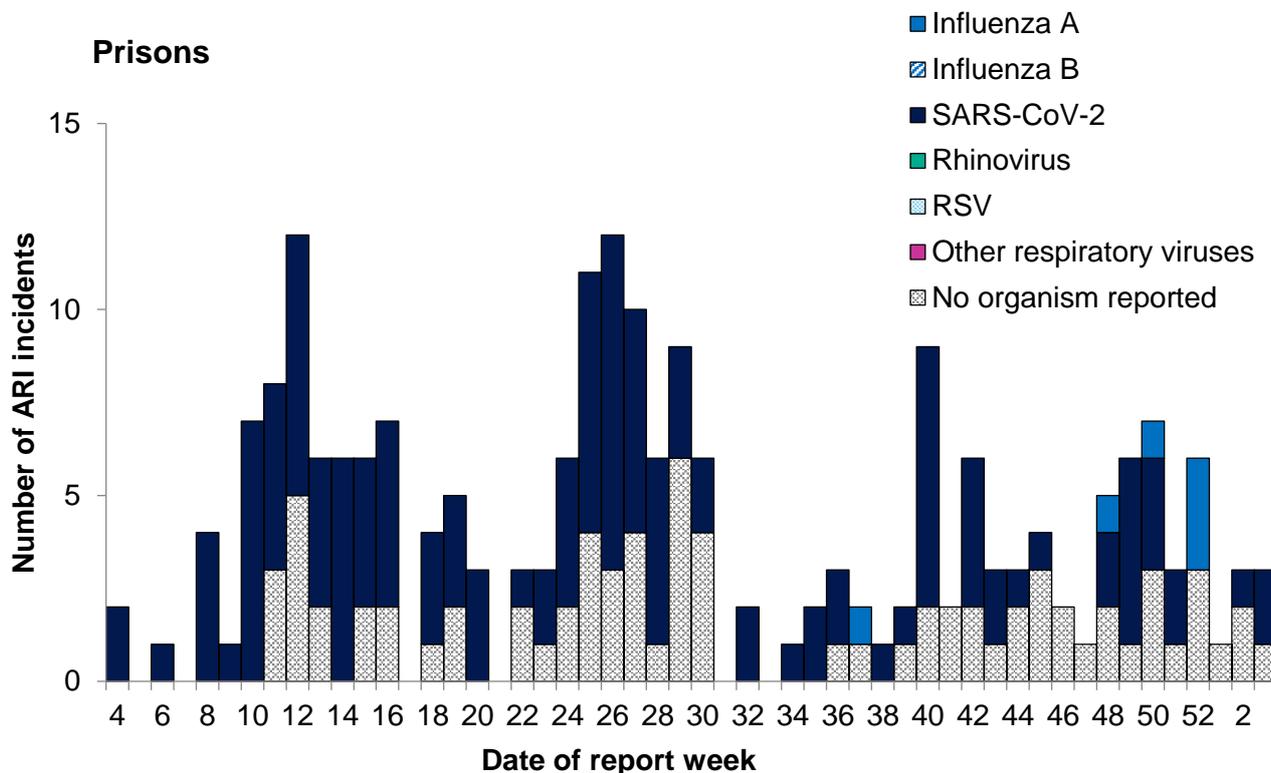
(a)



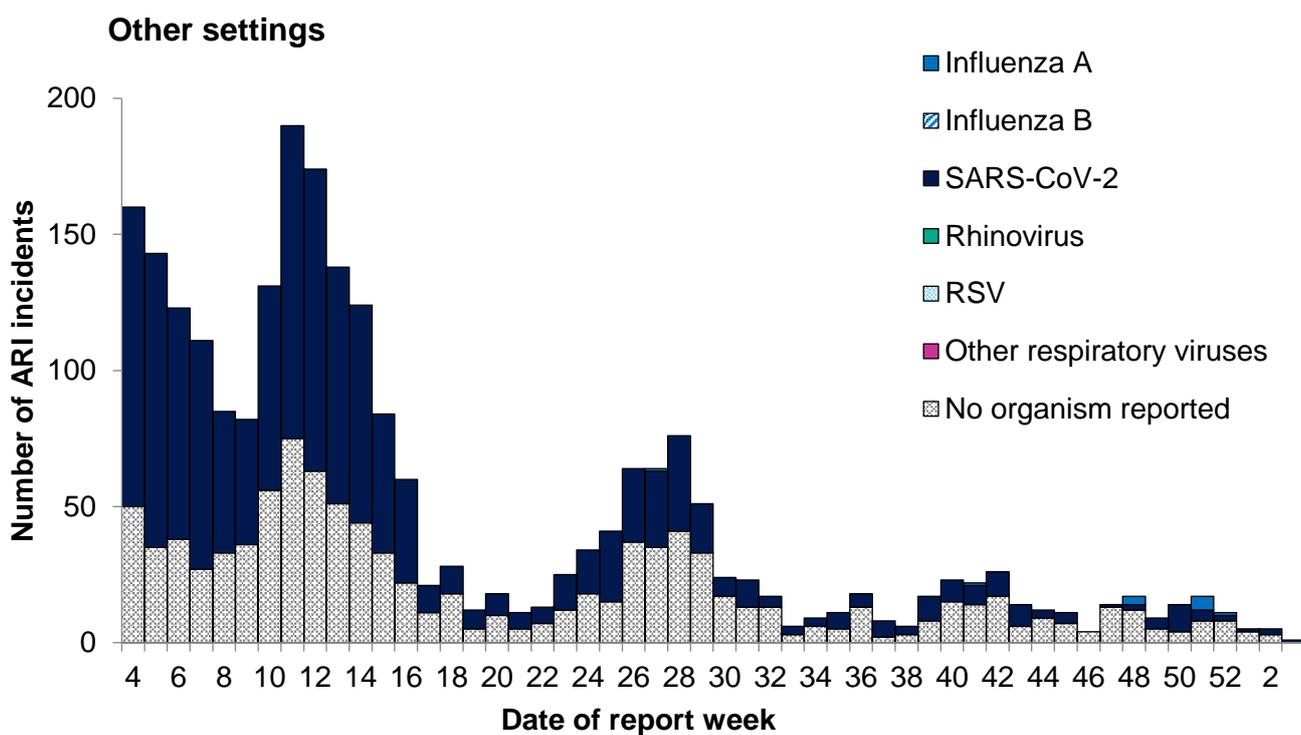
(b)



**Figure 23: Number of acute respiratory infection (ARI) incidents in prisons by virus type, England**



**Figure 24: Number of acute respiratory infection (ARI) incidents in other settings by virus type from, England**



**Table 1: Total number of situations and incidents by institution and UKHSA centres over the past 4 weeks with the total number in the last week in brackets**

<b>UKHSA Centres</b>	<b>Care home</b>	<b>Hospital</b>	<b>Educational settings</b>	<b>Prisons</b>	<b>Other settings</b>	<b>Total</b>
East of England	64(6)	1(0)	0(0)	6(1)	1(0)	72(7)
East Midlands	48(4)	1(1)	0(0)	0(0)	1(0)	50(5)
London	75(9)	34(6)	1(0)	2(0)	10(0)	122(15)
North East	69(5)	0(0)	0(0)	0(0)	0(0)	69(5)
North West	124(6)	0(0)	0(0)	1(1)	2(0)	127(7)
South East	37(4)	0(0)	0(0)	2(1)	1(0)	40(5)
South West	227(29)	0(0)	1(1)	0(0)	2(1)	230(31)
West Midlands	68(10)	12(2)	2(1)	1(0)	3(0)	86(13)
Yorkshire and Humber	94(13)	0(0)	0(0)	1(0)	2(0)	97(13)
<b>Grand Total</b>	<b>806(86)</b>	<b>48(9)</b>	<b>4(2)</b>	<b>13(3)</b>	<b>22(1)</b>	<b>893(101)</b>

## FluSurvey

An internet-based surveillance system has been developed based on FluSurvey. FluSurvey is a web tool survey designed to monitor trends of influenza-like illness (ILI) in the community using self-reported respiratory symptoms from registered participants. The platform has been adapted to capture respiratory symptoms, exposure risk and healthcare seeking behaviours among registered participants to contribute to national surveillance of COVID-19 activity as well as influenza activity since week 44 2020.

Note that ILI is defined as sudden onset of symptoms with at least one of fever (chills), malaise, headache, muscle pain and at least one of cough, sore throat, shortness of breath.

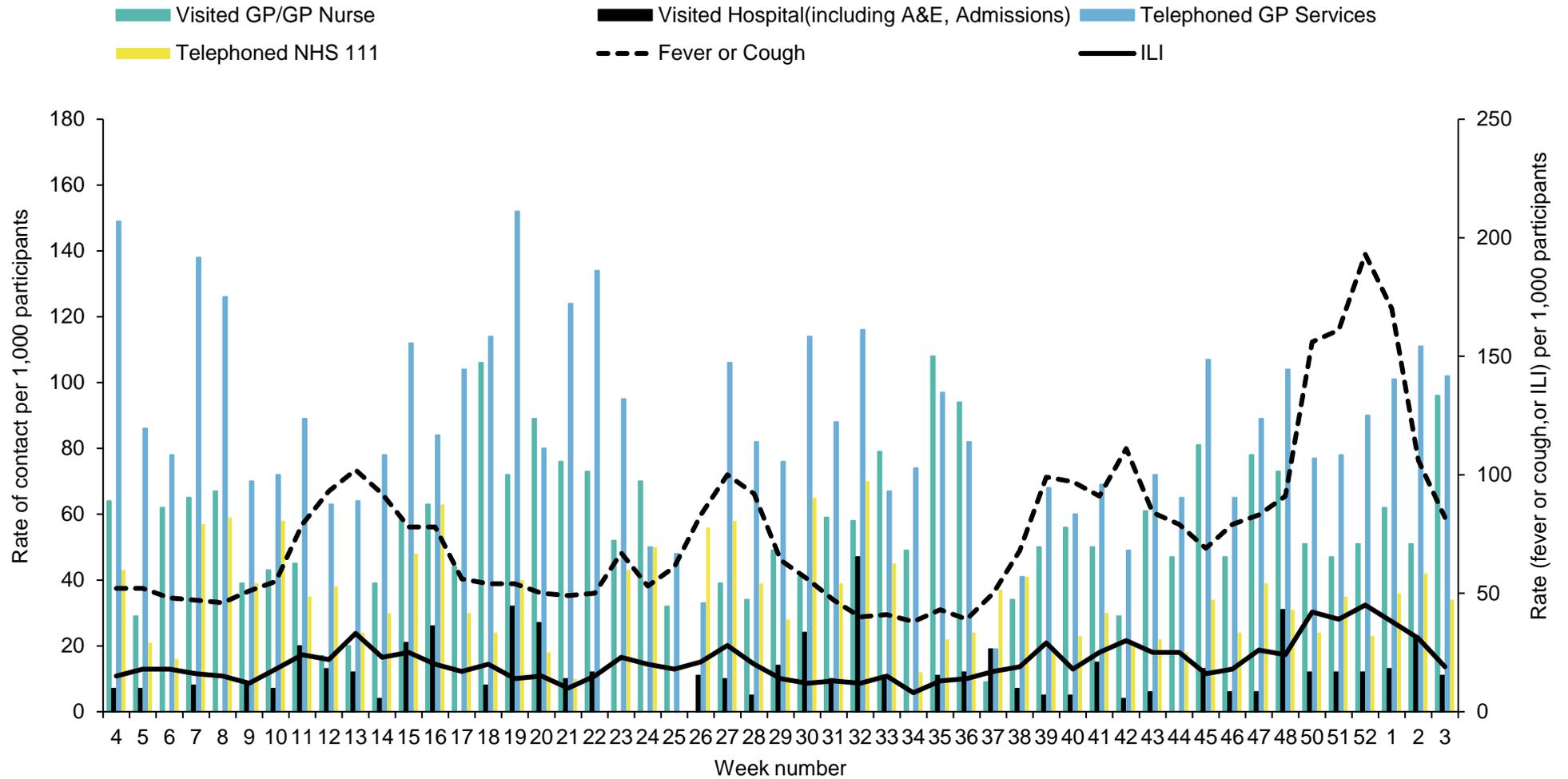
During week 3, there were 2,154 participants completing the weekly symptoms questionnaire of which 177 (8.2%) reported fever or cough and 40 (1.9%) reported influenza like illness (ILI).

Both COVID-19 related symptoms and influenza like illness (ILI) amongst participants completing the weekly symptoms survey continue to decrease for the third consecutive week.

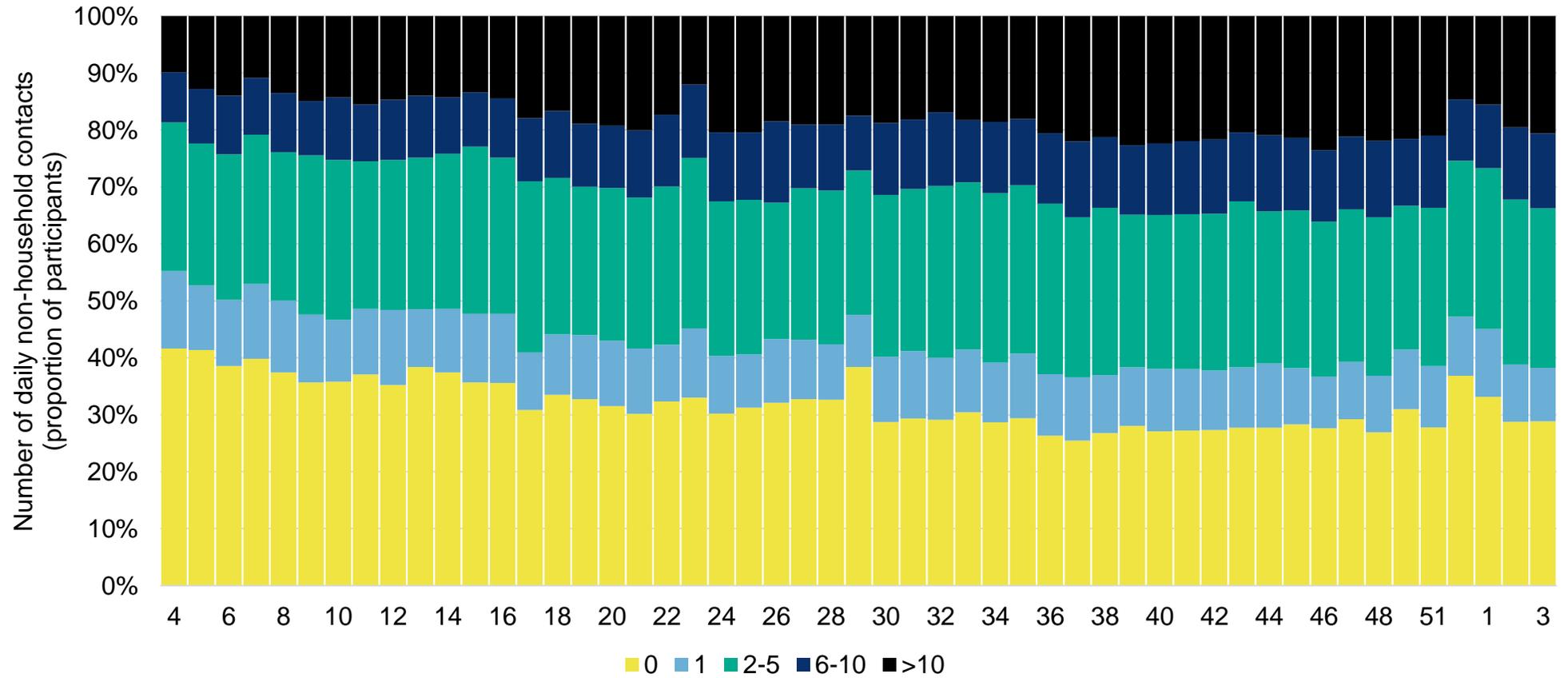
Healthcare seeking behaviour amongst participants reporting respiratory symptoms relating to COVID-19 (cough, fever or loss of smell) showed that participants were more likely to telephone their GP provider as a result of their symptoms when compared to other healthcare services (Figure 25).

Self-reported daily social contact patterns are also reported. A contact is defined as a person outside the household who is approached at a distance of less than one metre, on the day prior to survey completion. There remains variation on social mixing patterns amongst participants as people are meeting more individuals outside of their households (Figure 26).

**Figure 25: FluSurvey participants self-reporting fever or cough and ILI symptoms, and trends in healthcare seeking behaviour among these participants, England**



**Figure 26: FluSurvey participants' self-reported number of social contacts outside the household**

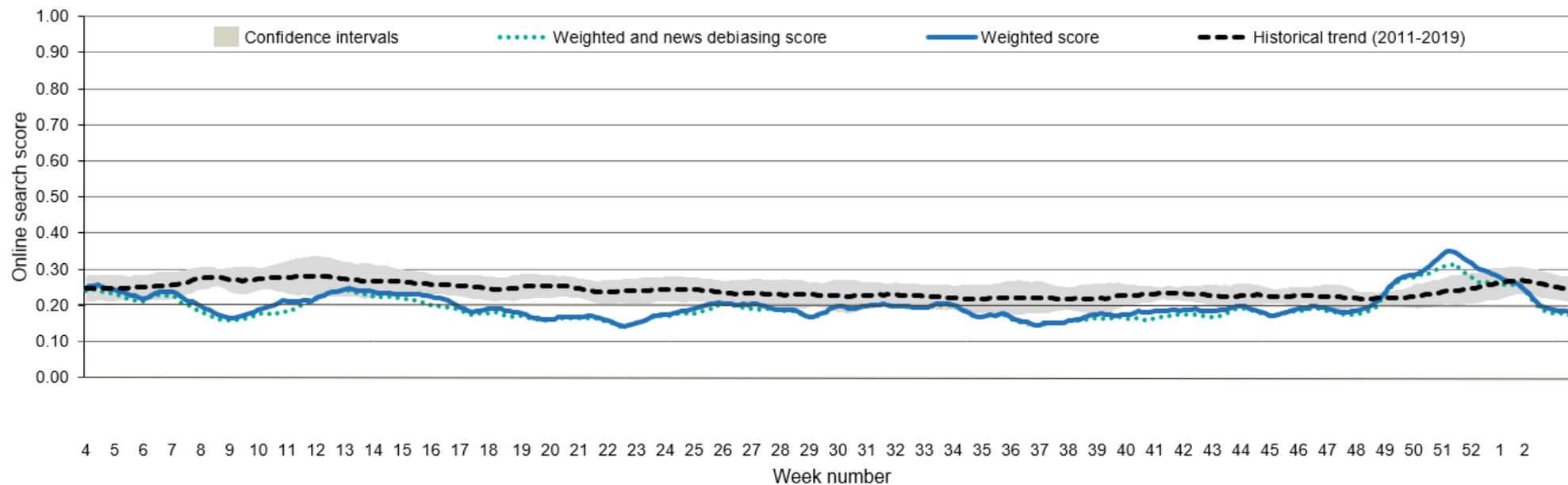


## Google search queries

This is a web-based syndromic surveillance system which uses daily search query frequency statistics obtained from the Google Health Trends API (Application Programming Interface). This model focuses on search queries about COVID-19 symptoms as well as generic queries about 'coronavirus' (for example 'COVID-19'). The search query frequency time series is weighted based on symptom frequency as reported in other data sources. Frequency of searches for symptoms is compared with a baseline calculated from historical daily data. [Further information on this model](#) is available online.

During week 3, the overall and media-debiasing weighted Google search scores decreased compared to week 2 (Figure 27).

**Figure 27: Normalised Google search score for COVID-19 symptoms, with weighted score for media-debiasing and historical trend, England**



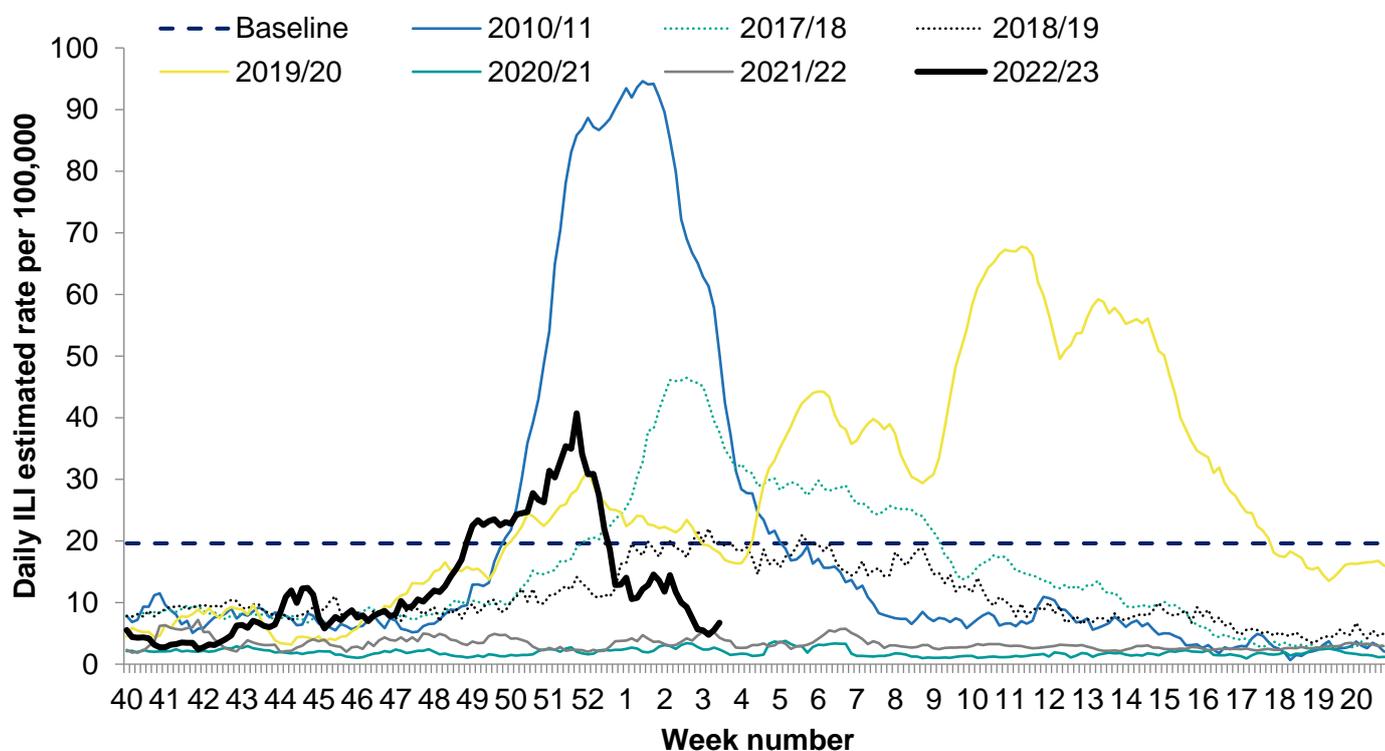
## Flu Detector

FluDetector is a web-based model which assesses internet-based search queries for ILI in the general population.

Daily ILI rate estimates are based on uniformly averaged search query frequencies for a week-long period (including the current day and the 6 days before it).

For week 3, the daily ILI rate decreased compared to week 2 and remained below the baseline threshold of 19.6 per 100,000 for the 2022 to 2023 season (Figure 28).

**Figure 28: Daily estimated ILI Google search query rates per 100,000 population, England**



## NHS 111

Please note that different syndromic surveillance indicators (NHS 111, GP in hours, GP out of hours and emergency department attendances) presented here have been included in previous versions of this report. All indicators previously presented will continue to be published in the [Syndromic Surveillance bulletins](#).

The [NHS 111 service](#) monitors daily trends in phone calls made to the service in England, to capture trends in infectious diseases such as influenza and norovirus.

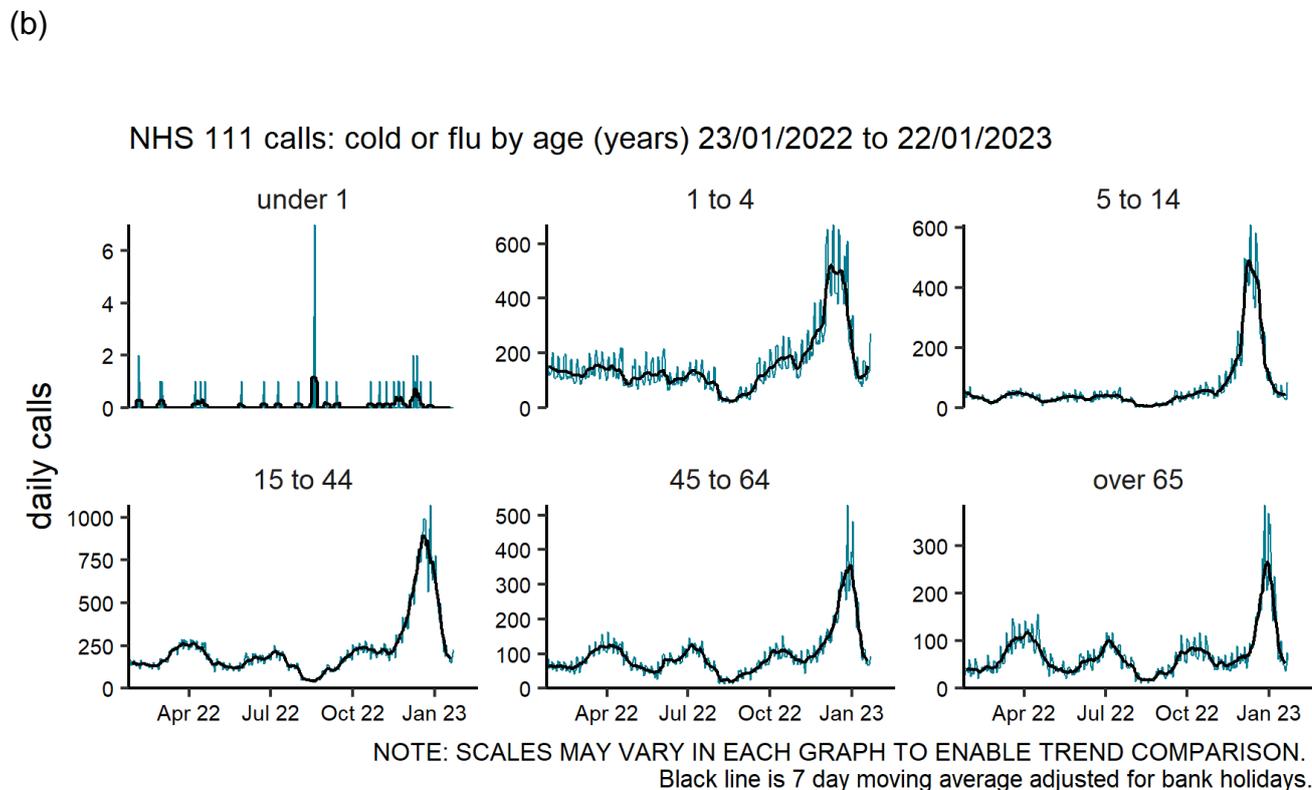
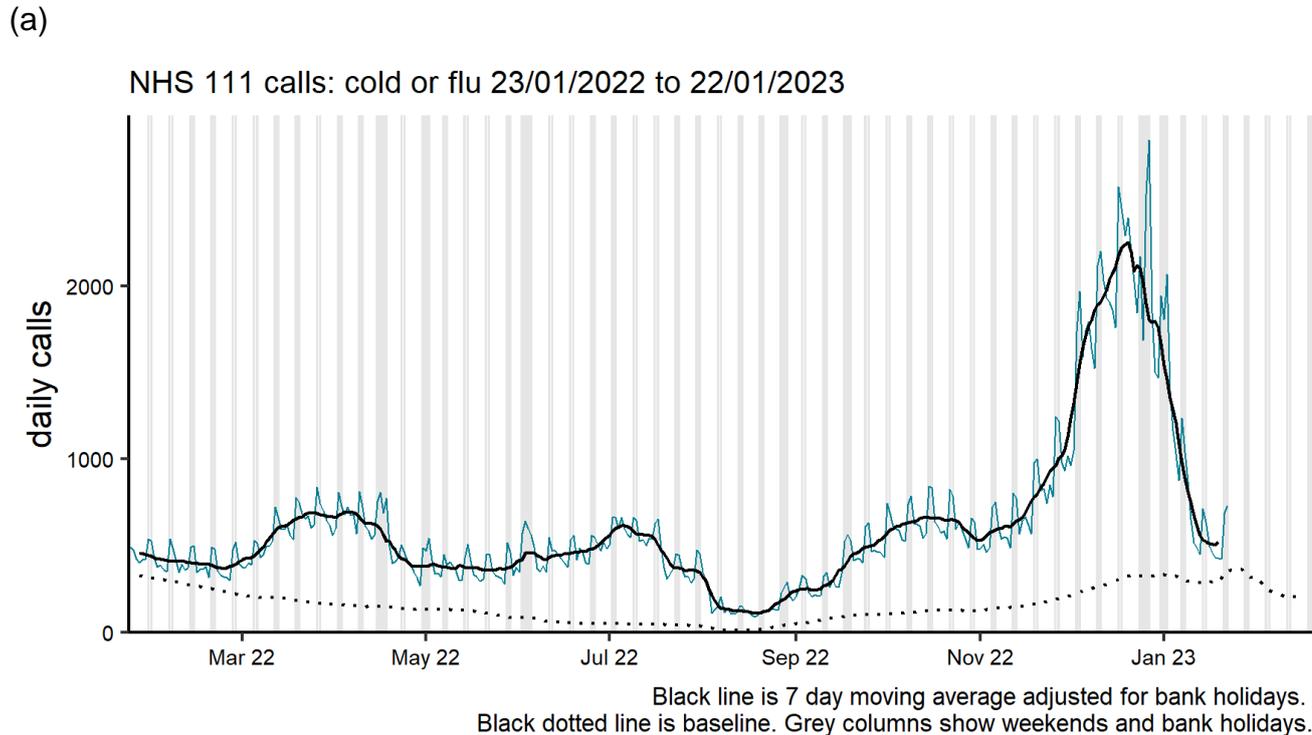
Please note that the number of NHS 111 calls are still lower than usual due to widely publicised disruption faced by a clinical software system. The NHS 111 call data presented in this report should therefore be interpreted with some caution.

During week 3, NHS 111 calls for cold or flu decreased nationally, though there have been small increases in children aged between 1 and 14 years old which are in line with seasonal expectations. Calls for cough decreased, except for children aged between 1 and 14 years old (Figure 29 and 30).

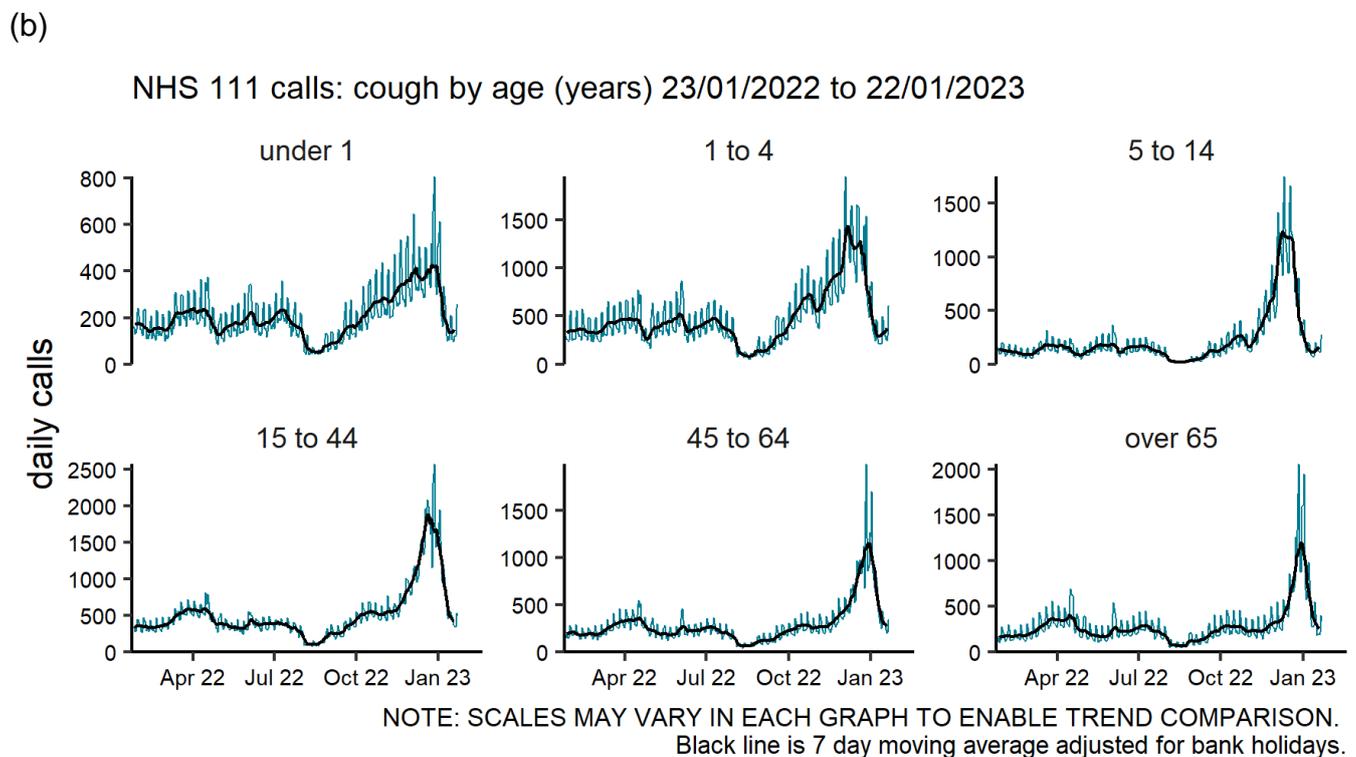
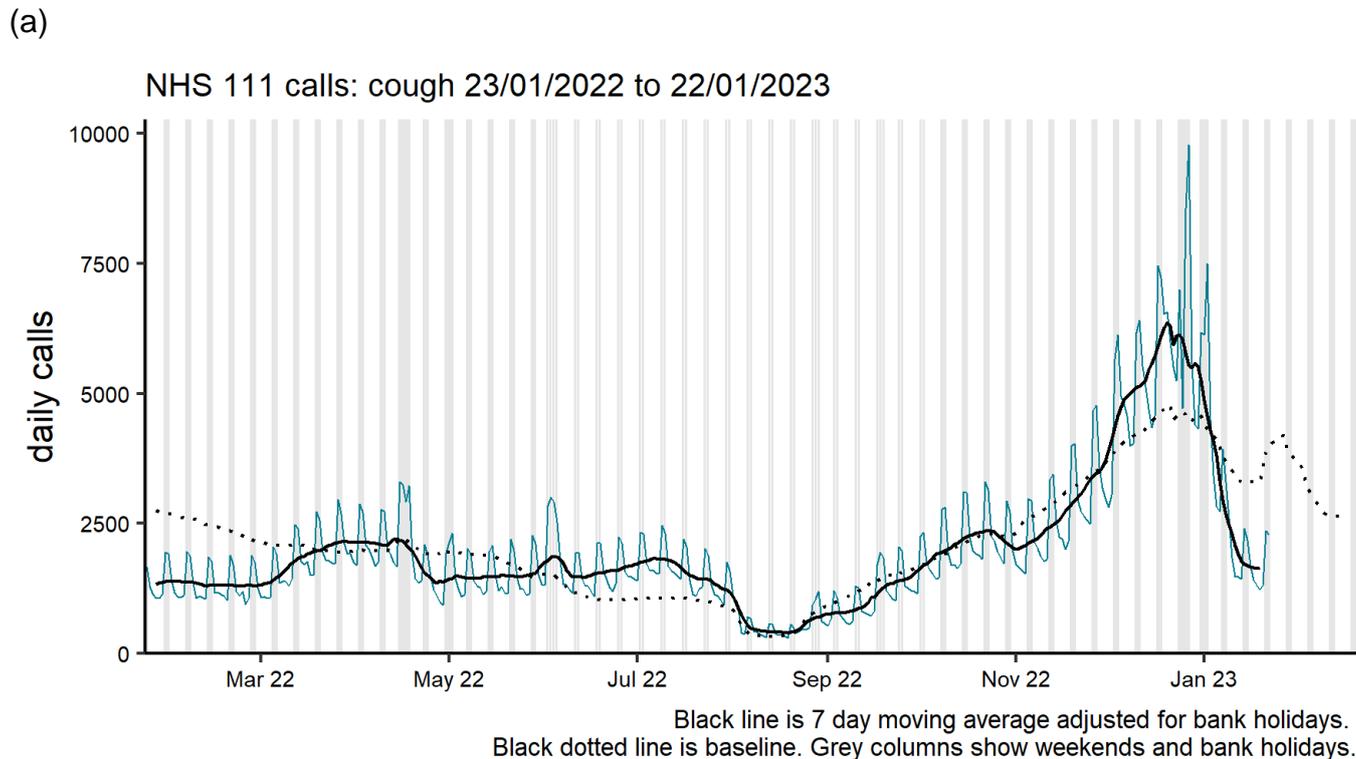
Please note that NHS 111 callers (from 11 May 2020) who are assessed as having probable COVID-19 symptoms are now triaged using symptom specific pathways such as cold or flu, which are included in routine syndromic indicators.

Further information about these caveats is available from the [Remote Health Advice Syndromic Surveillance bulletin](#).

**Figure 29: NHS 111 telephony indicators (and 7-day moving average) for number of daily cold or flu calls, England (a) nationally and (b) by age group**



**Figure 30: NHS 111 telephony indicators (and 7-day moving average) for number of daily cough calls, England (a) nationally and (b) by age group**

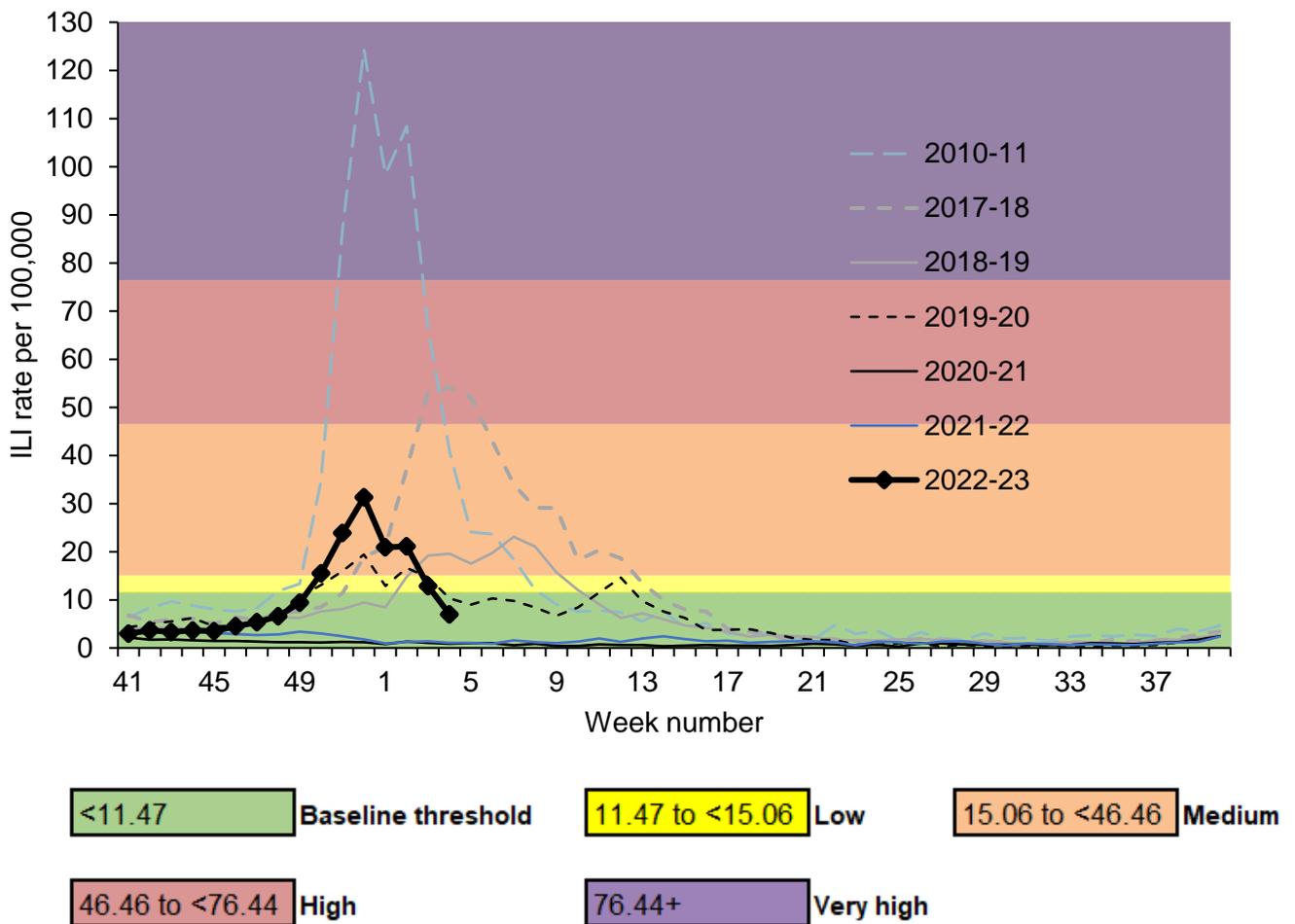


# Primary care surveillance

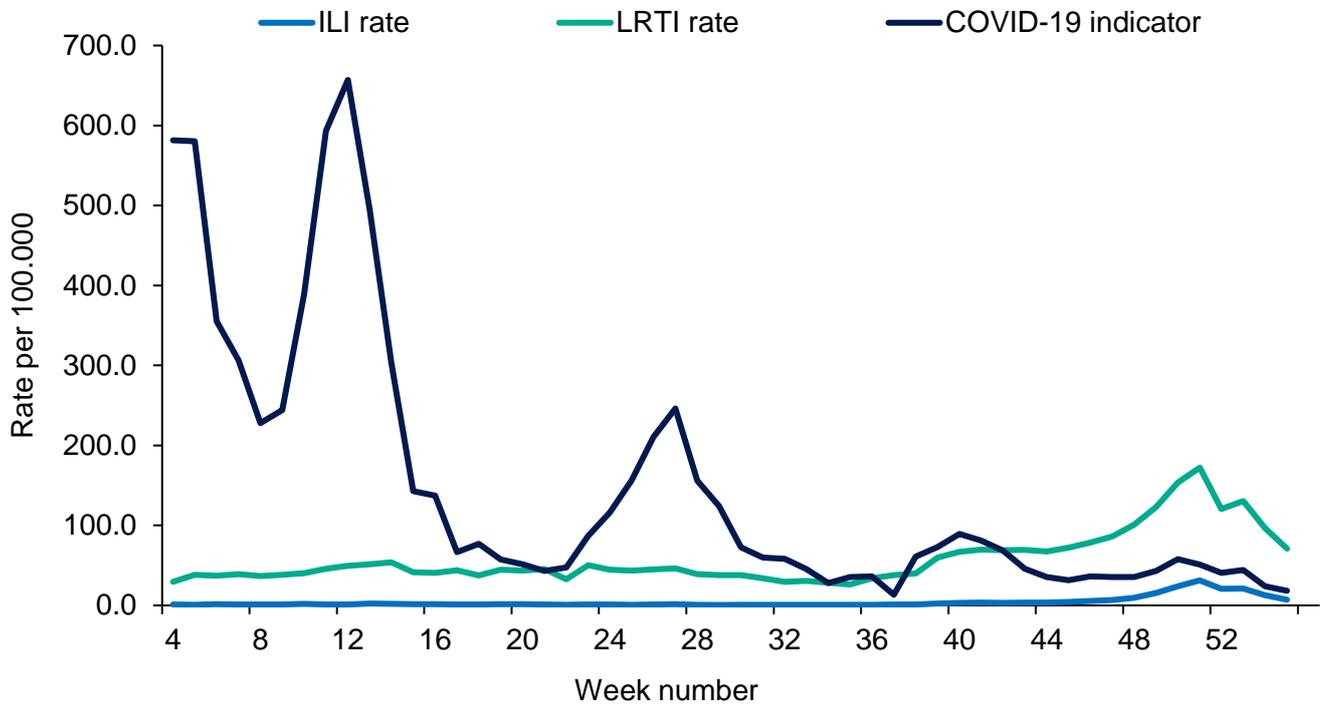
## RCGP (England)

The weekly ILI consultation rate through the RCGP surveillance was 7.0 per 100,000 registered population in participating GP practices in week 3 compared to 12.9 per 100,000 in the previous week. This returned back to baseline activity levels (less than 11.47 per 100,000) (Figure 31). By age group, the highest rates were seen in adults aged 75 and over years olds (10.4 per 100,000), followed by the 45 to 64 years olds (7.5 per 100,000). The lower respiratory tract infections (LRTI) consultation rate was at 71.0 per 100,000 in week 3, compared to 96.6 per 100,000 in the previous week. The COVID-19 indicator rate was at 18.2 per 100,000 in week 3 compared to 24.0 per 100,000 in the previous week (Figure 32).

**Figure 31: RCGP influenza-like illness (ILI) consultation rates, all ages, England**



**Figure 32: RCGP ILI, LRTI and COVID-19 indicator rates, England**



## UK

Overall, weekly ILI consultations rates decreased and returned below baseline activity levels in England and Wales. In Scotland and Northern Ireland, ILI consultations rates also decreased and remained below baseline activity levels.

By age group, the highest incidence was in adults aged 75 years old and over in England (10.4 per 100,000), in adults aged between 45 and 65 years old in Scotland (12.3 per 100,000) and in children under 1 years old in Wales (31.77 per 100,000) and in Northern Ireland (12.1 per 100,000).

**Table 2: GP ILI consultations in the UK for all ages with MEM (Moving Epidemic Method) 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
England (RCGP)	3.0	3.7	3.3	3.6	3.5	4.5	5.3	6.6	9.4	15.5	23.9	31.3	20.9	21.1	12.9	7.0
Wales	3.5	2.8	3.9	4.8	6.3	7.0	3.5	4.3	7.8	14.1	24.2	39.1	34.8	22.8	14.3	6.8
Scotland	2.1	1.8	4.0	3.8	3.5	4.8	4.1	3.1	5.9	7.2	11.1	20.2	31.9	20.7	15.9	9.7
Northern Ireland	1.3	2.2	1.8	3.5	3.0	3.7	3.5	4.9	5.0	6.0	9.4	17.8	14.0	17.7	10.3	6.4

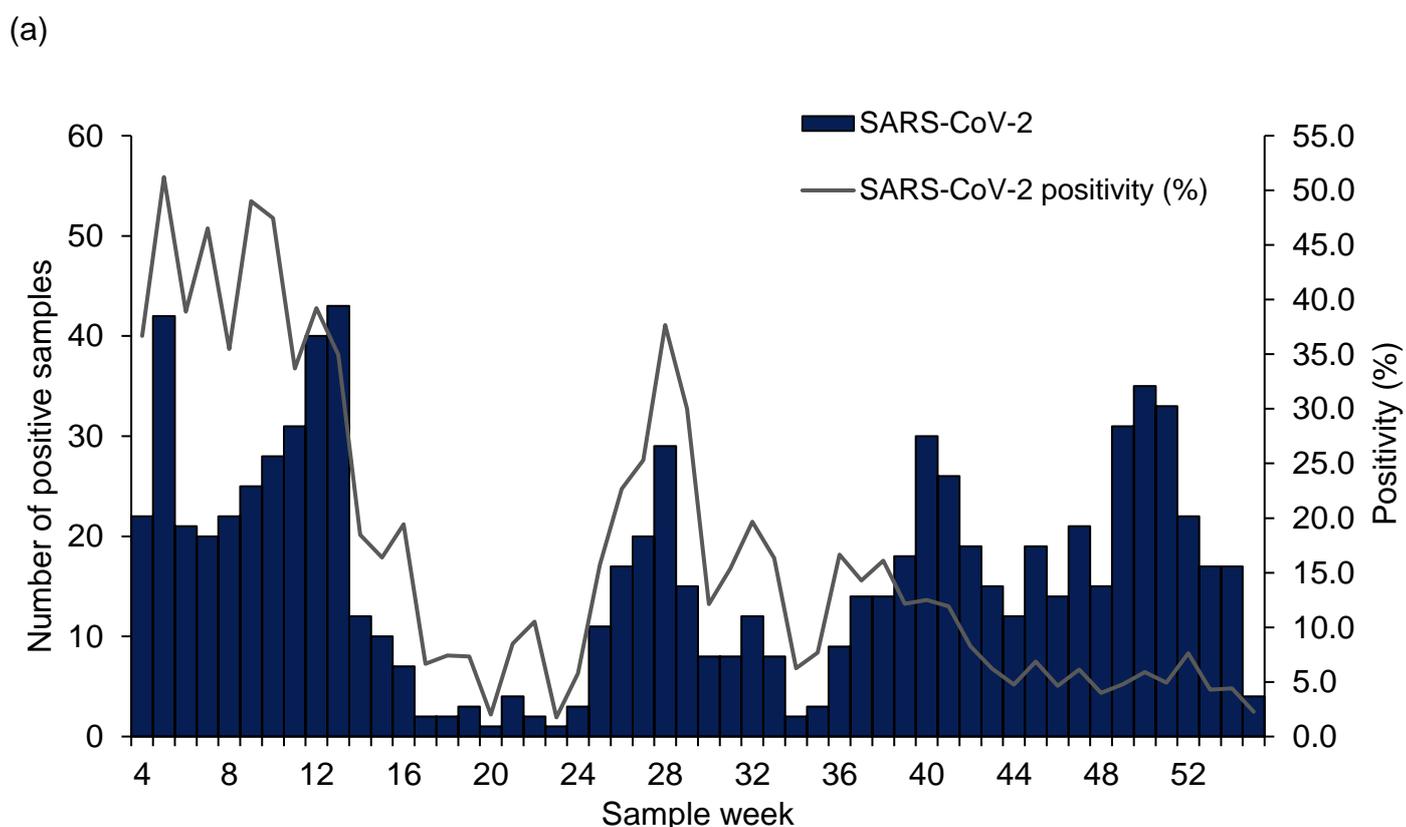
The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for GP ILI consultations for the start of influenza activity (based on 10 seasons excluding 2020 to 2021), in a standardised approach across Europe.

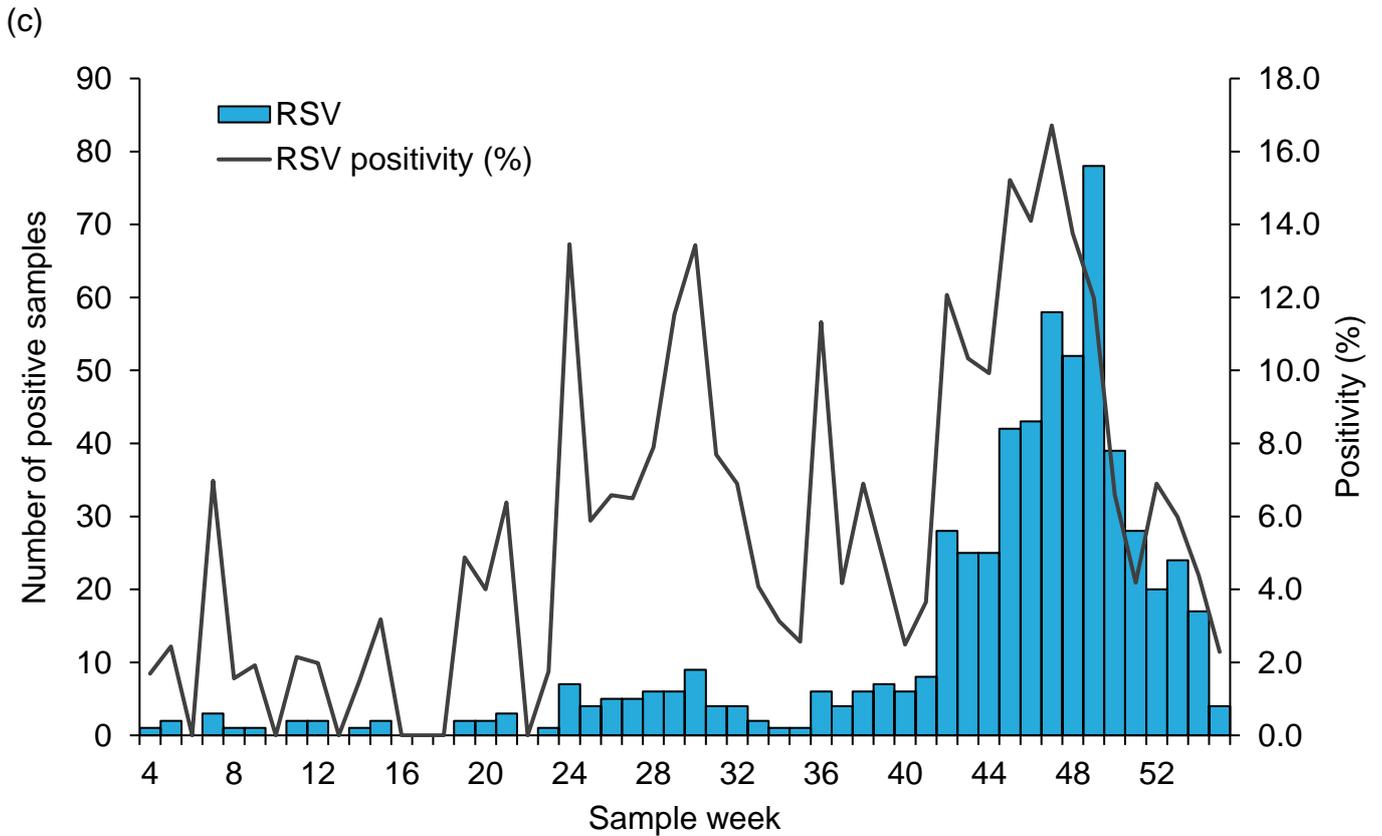
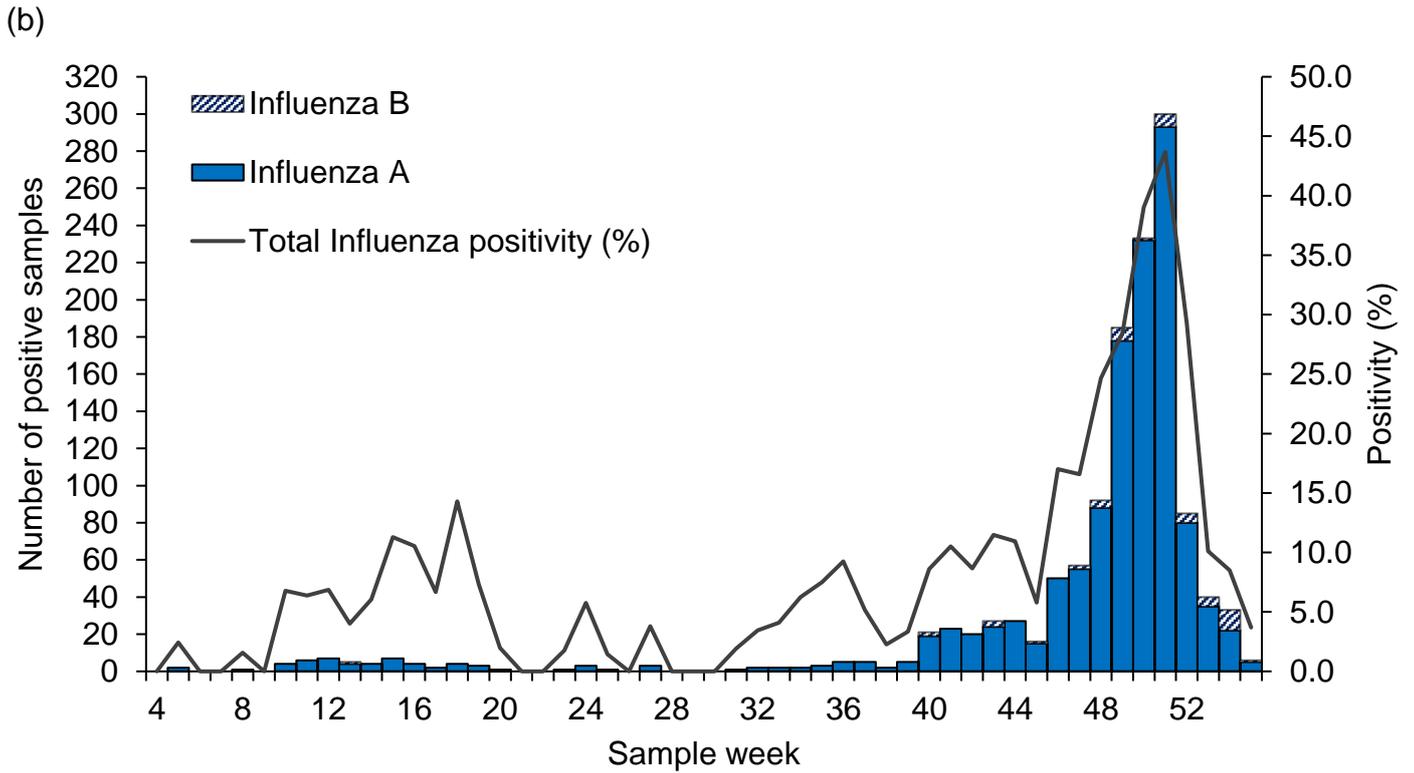
## Sentinel swabbing scheme in England

In week 3 2023, 175 samples were tested for SARS-CoV-2 through the GP sentinel swabbing scheme in England, of which 4 samples tested positive. 175 samples were tested for RSV, of which 4 tested positive. 163 samples were tested for influenza, of which 5 samples tested positive (Figure 33).

\* Please note that due to lower sample numbers, data from week 14 of 2022 onwards should be interpreted with caution.

**Figure 33: Number of positive samples and weekly positivity (%) for (a) COVID-19 and (b) Influenza and (c) RSV, GP sentinel swabbing scheme**





\*For the most recent week, more samples are expected to be tested therefore the graphs in Figure 33 should be interpreted with caution

\*Positivity (%) is not calculated when the total number tested is less than 10

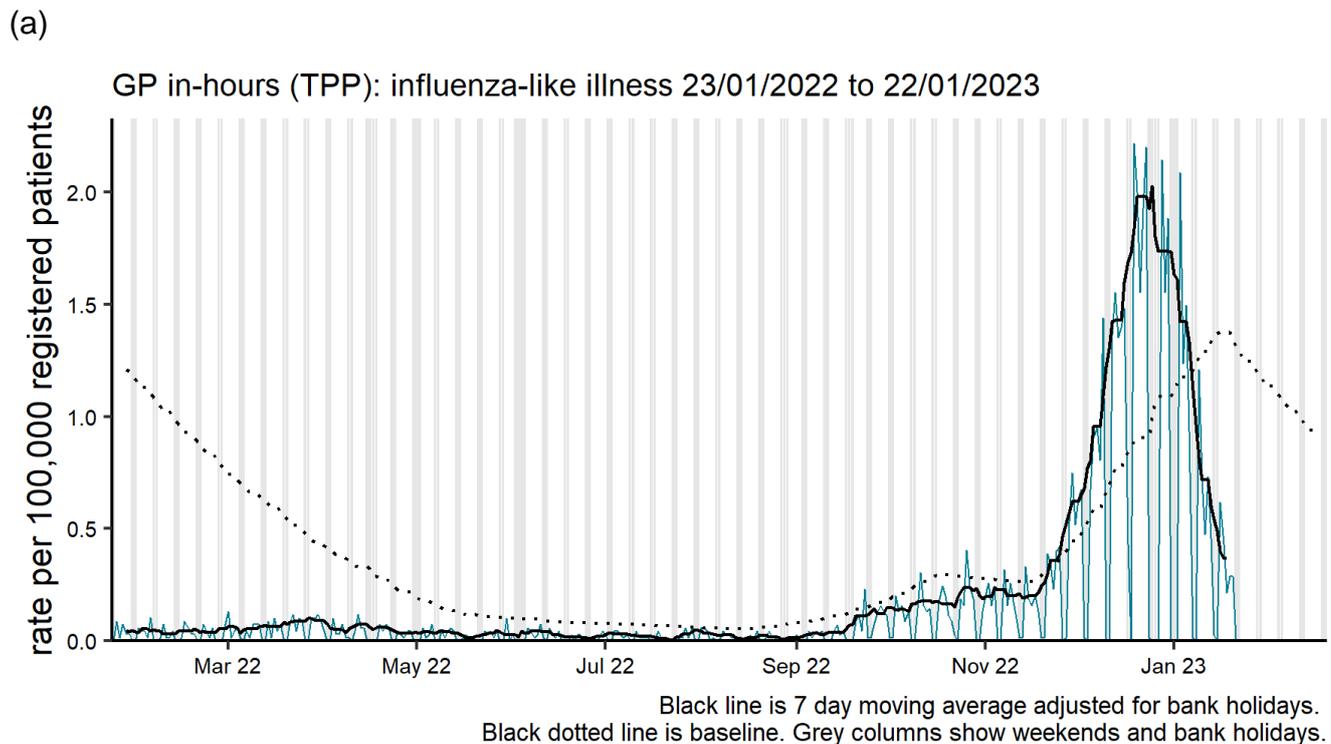
## GP In Hours, Syndromic Surveillance

The GP In Hours (GPIH) syndromic surveillance system monitors the number of GP visits during regular hours of known clinical indicators.

During week 3, the rate of GP in hours consultations for influenza-like illness decreased nationally, across most age groups and regions (Figure 34).

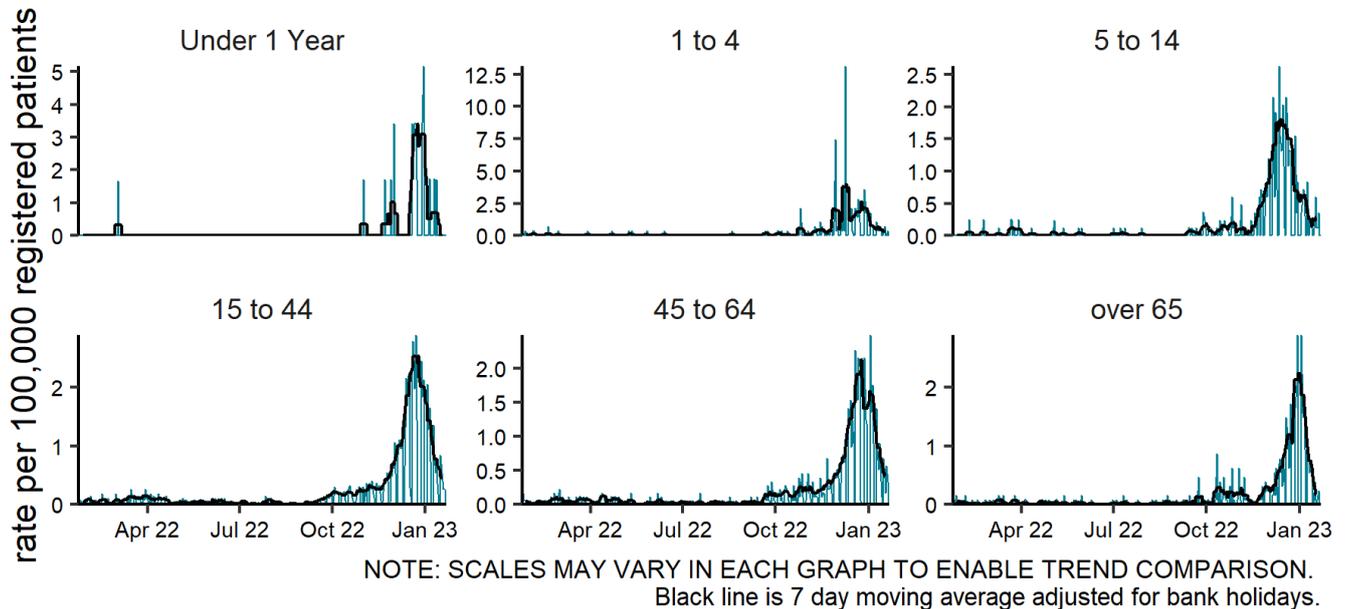
Further indicators and information about caveats are available from the [GP In Hours Syndromic Surveillance bulletin](#).

**Figure 34: GPIH clinical indicators for influenza-like illness GP consultations, England (a) nationally, (b) by age group and (c) by UKHSA centre**



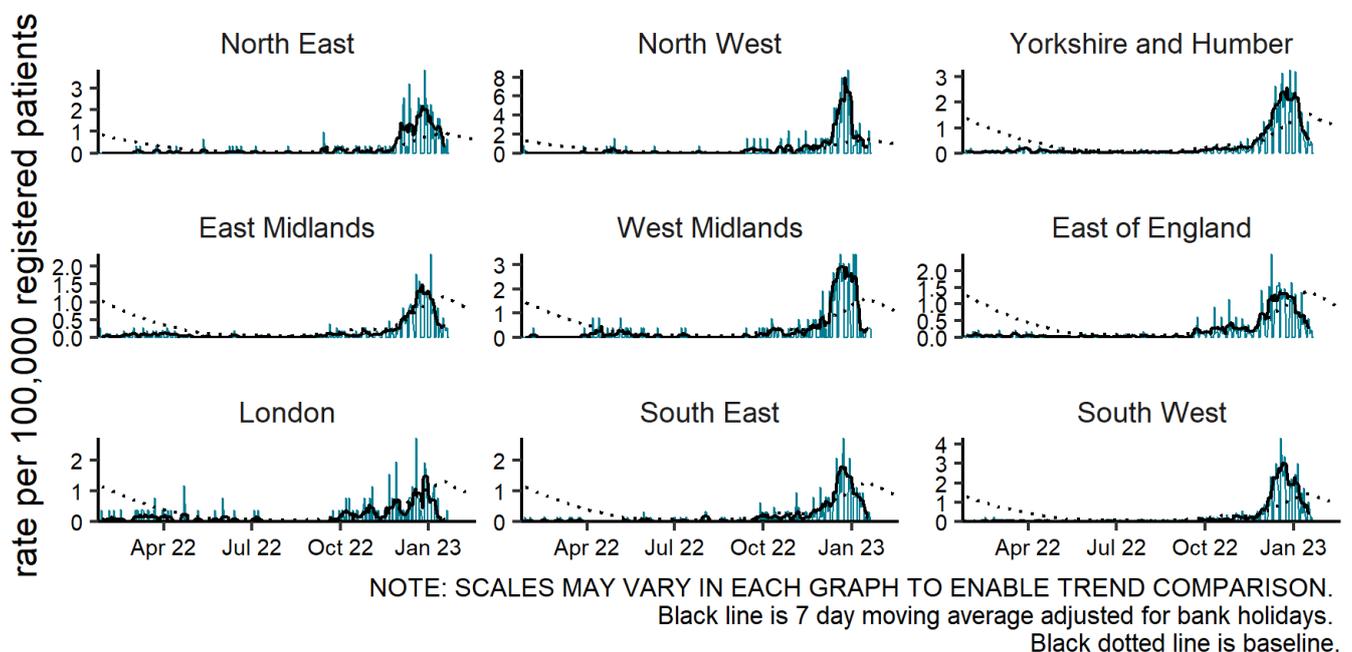
(b)

GP in-hours (TPP): influenza-like illness by age (years) 23/01/2022 to 22/01/2023



(c)

GP in-hours (TPP): influenza-like illness by region 23/01/2022 to 22/01/2023



GPIH Baselines are modelled from historical data to give current seasonally expected levels. GP consultations rates decreased during 2020 due to changes in guidance on accessing health care, therefore separate modelled estimates are provided to show seasonally expected levels pre-COVID-19.

## GP Out of Hours, Syndromic Surveillance

The GP Out of Hours (GPOOH) syndromic surveillance system monitors the numbers of daily unscheduled visits and calls to GPs during evenings, overnight, on weekends and on public holidays. This system covers around 55% of England's out of hour activity.

Due to a disruption with a GPOOH clinical software system provider, GPOOH data from 4 August onwards is not currently available. Data from GPOOH systems will be added back into this report once available. The most recent data is available in [previous reports](#).

## Secondary care surveillance

### SARI Watch

The Severe Acute Respiratory Infection (SARI) Watch surveillance system was established in 2020 to report the number of laboratory-confirmed influenza and COVID-19 cases admitted to hospital and critical care units (ICU and HDU) in NHS acute trusts across England. This has replaced the UK Severe Influenza Surveillance Schemes (USISS) Mandatory and Sentinel data collections for influenza surveillance used in previous seasons, and the COVID-19 hospitalisations in England surveillance system (CHESS) collections for COVID-19 surveillance.

The weekly rate of new admissions of COVID-19, influenza and RSV cases is based on the trust catchment population of those NHS Trusts who made a new return. This may differ from other published figures such as the total number of people currently in hospital with COVID-19.

The Moving Epidemic Method (MEM) thresholds for influenza hospital and ICU or HDU admissions are calculated based on the 2016 to 2017 to the 2021 to 2022 seasons (data from 2020 to 2021 was excluded due to the COVID-19 pandemic). These thresholds have been applied to data from the 2022 to 2023 season onwards.

Trends in hospital and critical care admission rates need to be interpreted in the context of testing recommendations. Please note that routine asymptomatic testing for SARS-CoV-2 through NHS settings has been paused from 31 August 2022, therefore SARI-Watch data should be interpreted with this in mind.

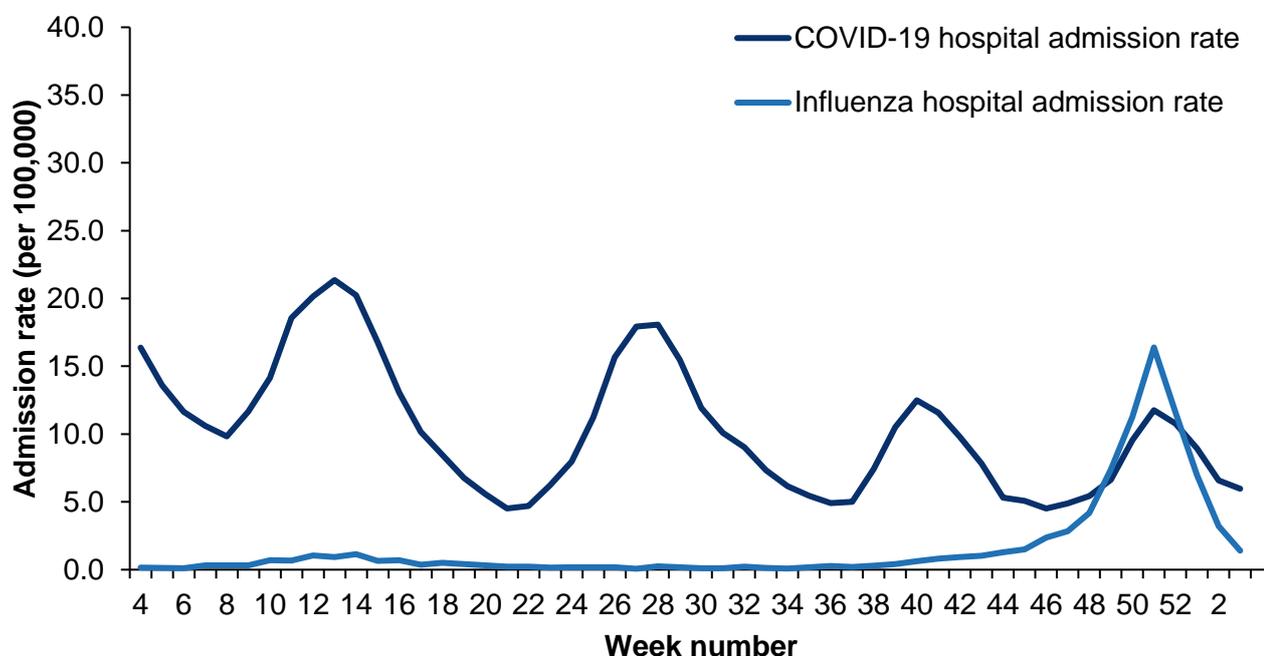
## Hospitalisations, SARI Watch

In week 3 (ending 22 January 2023), the overall weekly hospital admission rate for COVID-19 decreased to 5.97 per 100,000 compared to 6.59 per 100,000 in the previous week.

By UKHSA centre, the highest hospital admission rate for COVID-19 was observed in the North East. By age group, the highest hospital admission rate for confirmed COVID-19 continues to be in the 85 year olds and over (with a decrease in all of age groups in week 3).

In week 3 (ending 22 January 2023), the overall weekly hospital admission rate for influenza decreased to 1.41 per 100,000 compared to 3.21 per 100,000 in the previous week. The peak rate in week 52 2022 was revised slightly upwards to 16.39 per 100,000 due to further retrospective updates. The rate in other previous weeks were also revised due to retrospective updates. The rate in the latest week returns in the low impact range. By UKHSA Centre, the highest hospitalisation rate was observed in the East of England (2.87 per 100,000). By age group, the highest hospital admission rate for influenza was in the under 5 year olds (5.36 per 100,000) and in the 85 year olds and over (4.94 per 100,000). There were 99 new hospital admissions to sentinel Trusts for influenza (4 influenza A(H1N1)pdm09, 7 influenza A(H3N2), 65 influenza A(not subtyped) and 23 influenza B) in week 3.

**Figure 35: Weekly overall hospital admission rates of new COVID-19 and influenza positive cases per 100,000 population reported through SARI Watch, England**

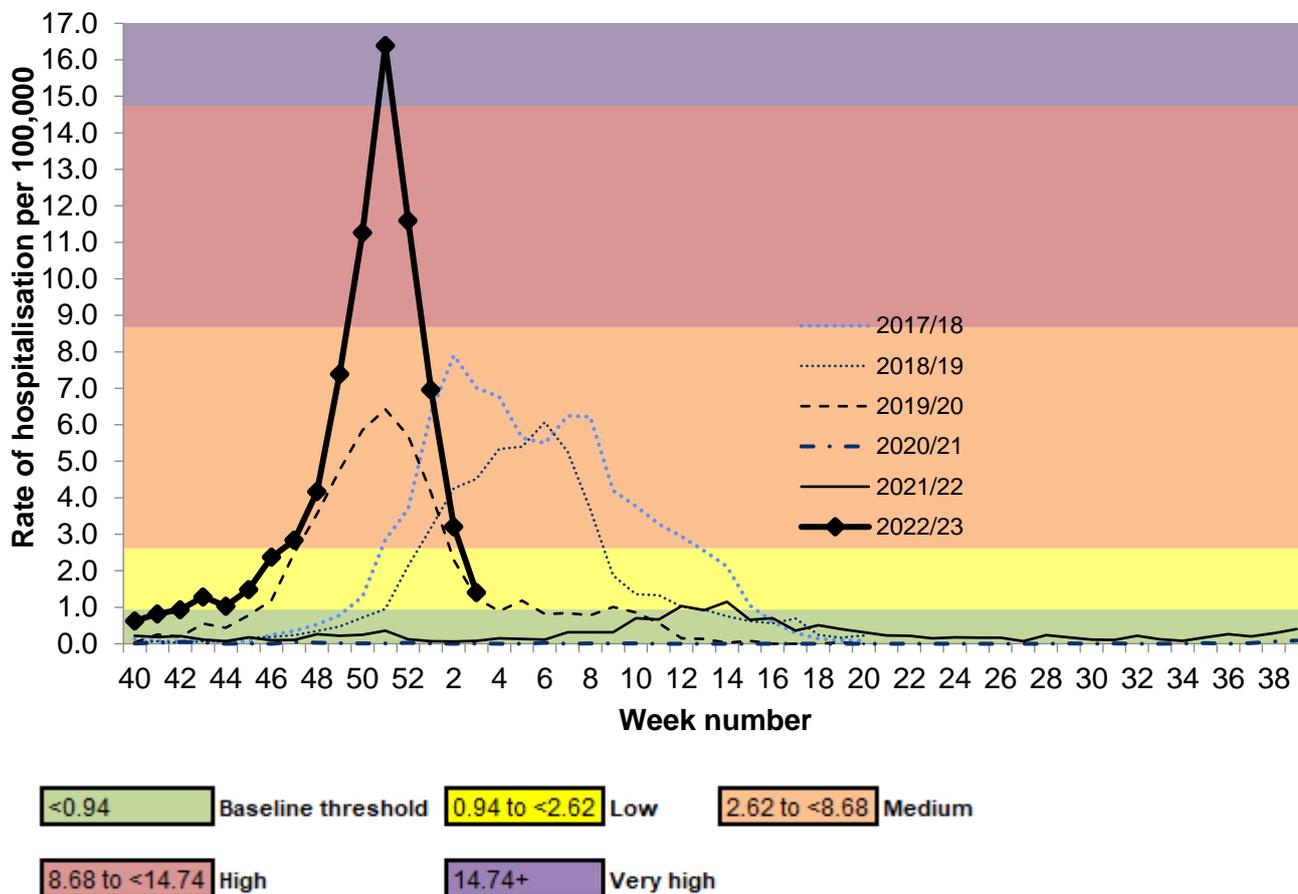


\* Influenza hospital admission rate based on 19 sentinel NHS trusts for week 3

\* COVID-19 hospital admission rate based on 89 NHS trusts for week 3

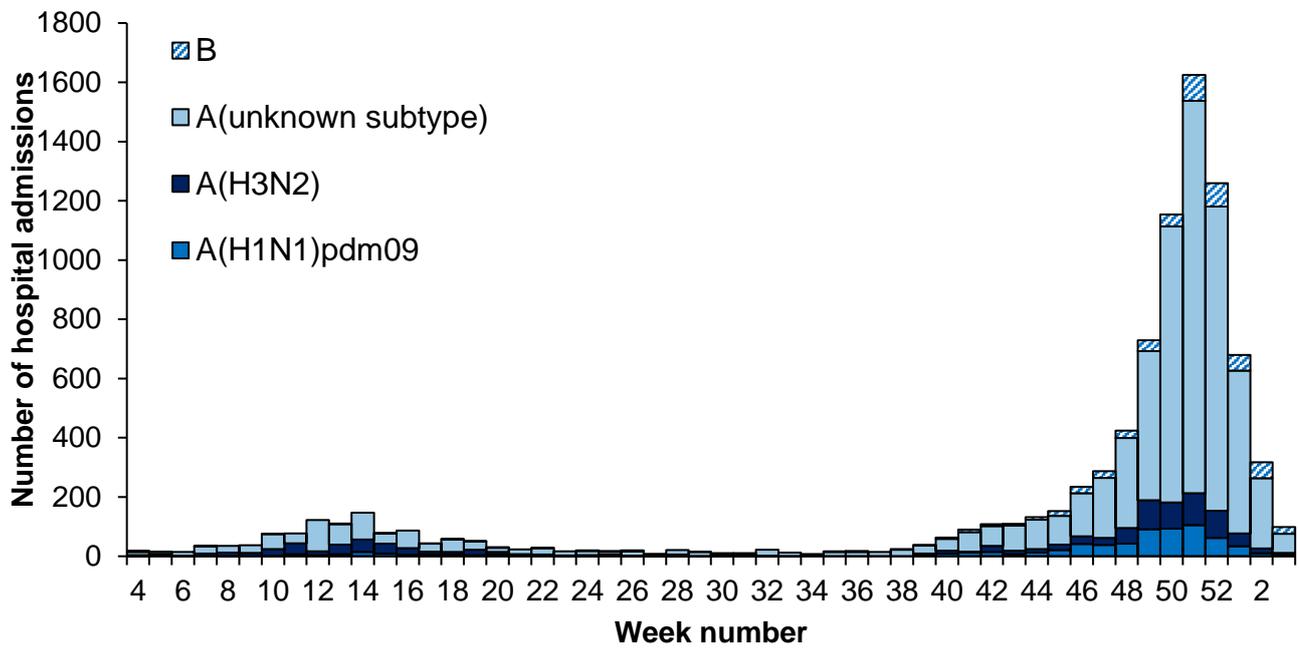
\* SARI Watch data is provisional

**Figure 36: Weekly overall influenza hospital admission rates per 100,000 trust catchment population with MEM thresholds, SARI Watch, England**



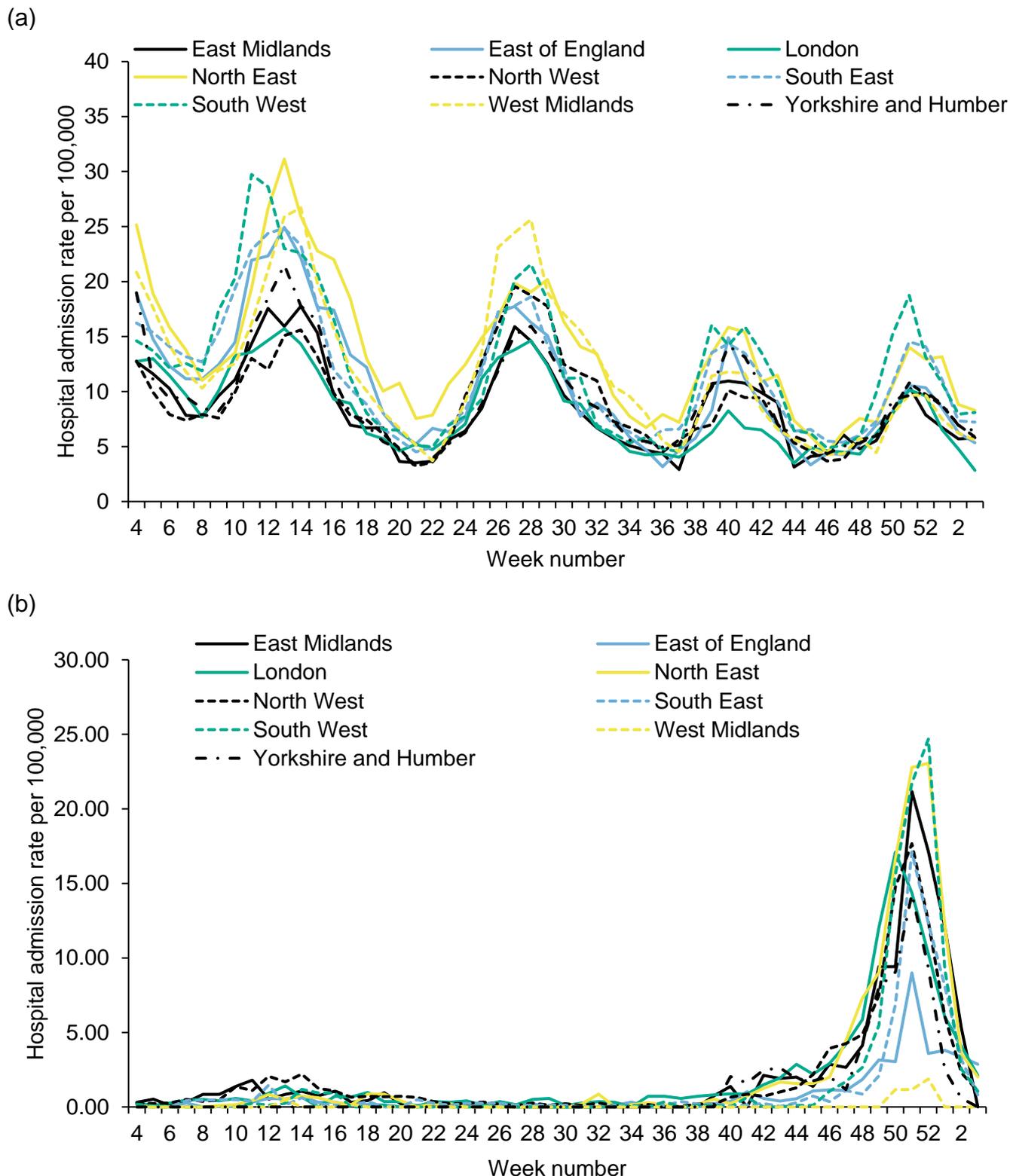
\* MEM thresholds are based on data from the 2016 to 2017 to the 2021 to 2022 seasons (data from 2020 to 2021 was excluded due to the COVID-19 pandemic).

**Figure 37: Weekly influenza hospital admissions by influenza type, SARI Watch, England**



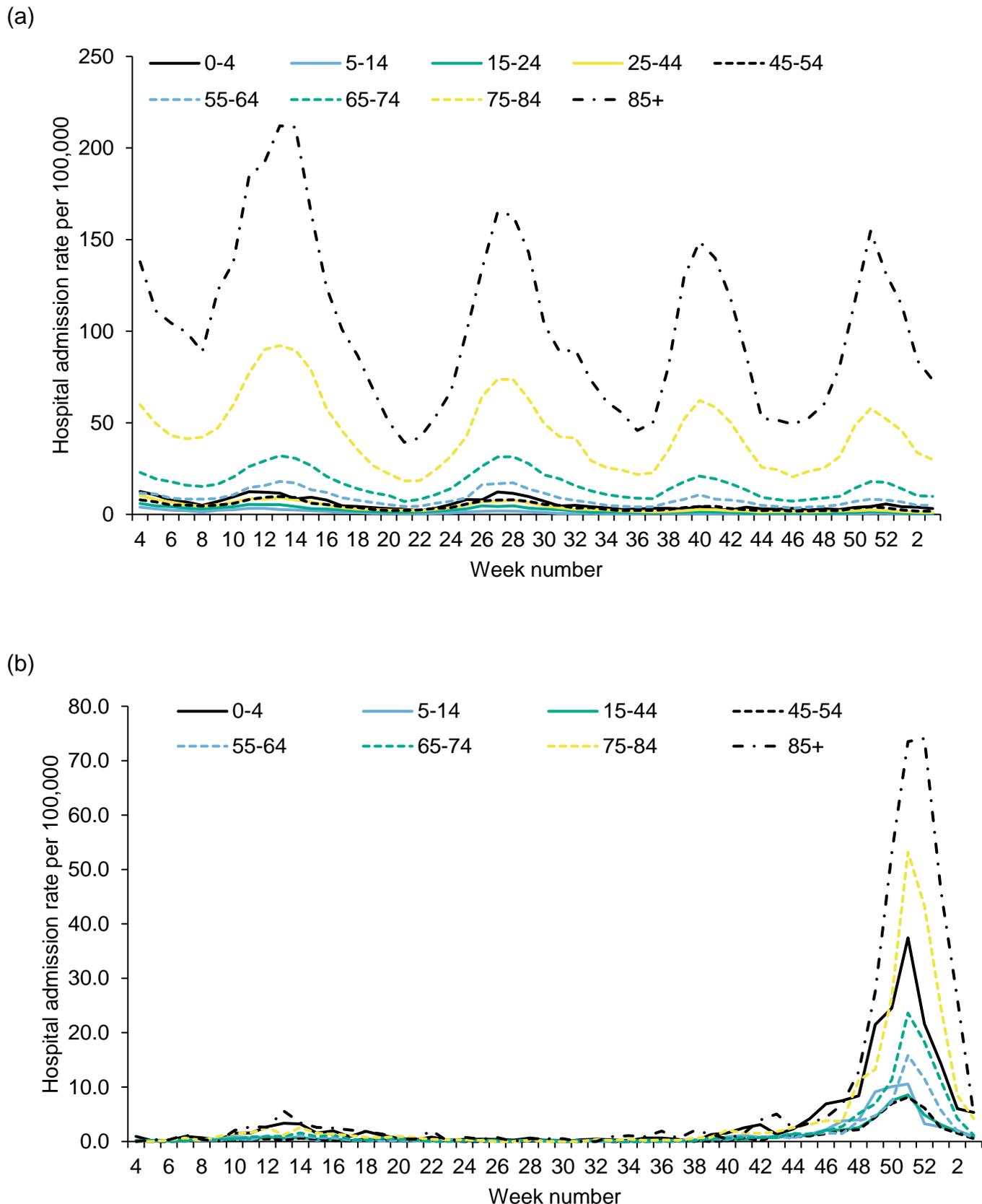
\*Number of influenza hospital admissions based on sentinel NHS trusts

**Figure 38: Weekly hospital admission rate by UKHSA centre for new (a) COVID-19 positive cases and (b) influenza reported through SARI Watch\***



\* Rates in some regions may not include all influenza surveillance sentinel sites from week to week

**Figure 39: Weekly hospital admission rate by age group for new (a) COVID-19 positive cases and (b) influenza reported through SARI Watch**



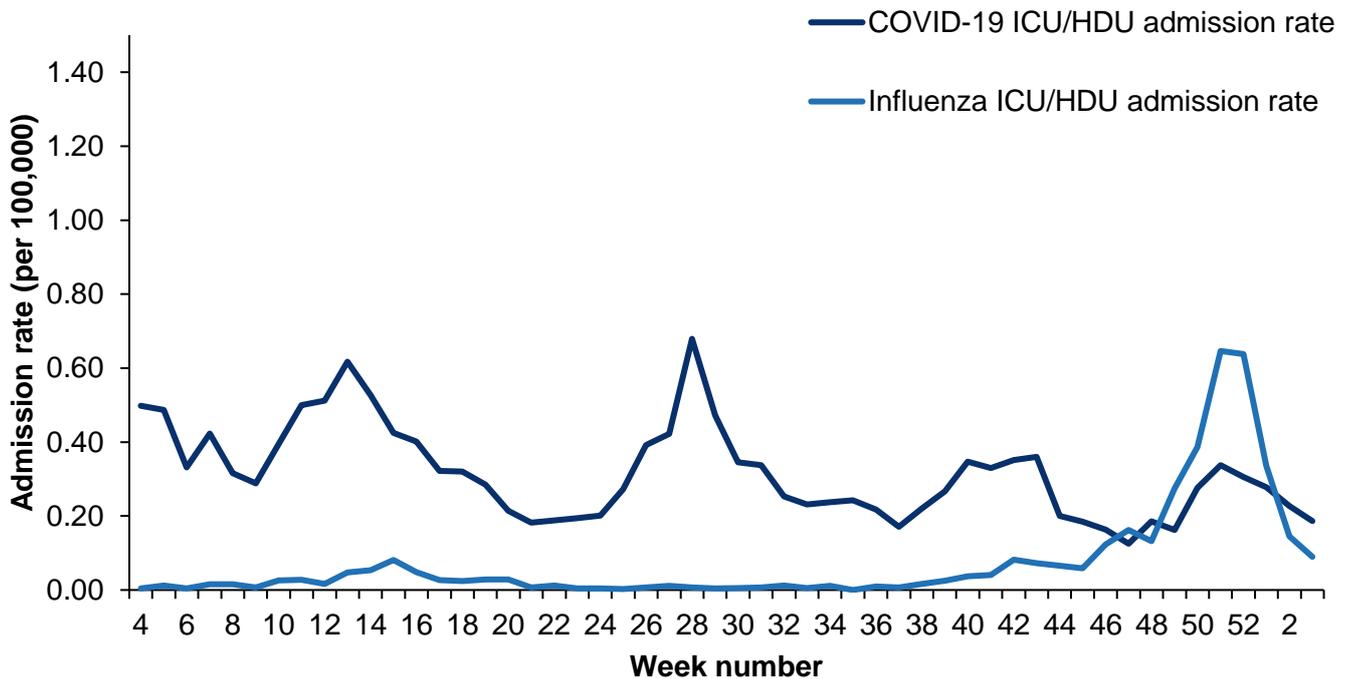
## ICU or HDU admissions, SARI Watch

In week 3 (ending 22 January 2023), the overall weekly ICU or HDU admission rates for COVID-19 remains very low, decreasing slightly to 0.19 per 100,000, compared to 0.23 per 100,000 the previous week. Note that ICU or HDU admissions rates may represent a lag from admission to hospital to an ICU or HDU ward.

By UKHSA centre, the highest ICU or HDU admission rates for COVID-19 were observed in London. By age group, the highest ICU or HDU admission rates for COVID-19 was observed in the 85 year olds and over.

In week 3, the overall ICU or HDU rate for influenza was 0.09 per 100,000 compared to 0.15 per 100,000 in the previous week. There were 35 new case report of an ICU or HDU admission for influenza in week 3 (7 influenza A(H1N1)pdm09, 7 influenza A(H3N2), 16 influenza A(not subtyped) and 5 influenza B).

**Figure 40: Weekly overall ICU or HDU admission rates of new COVID-19 and influenza positive cases per 100,000 population reported through SARI Watch, England**

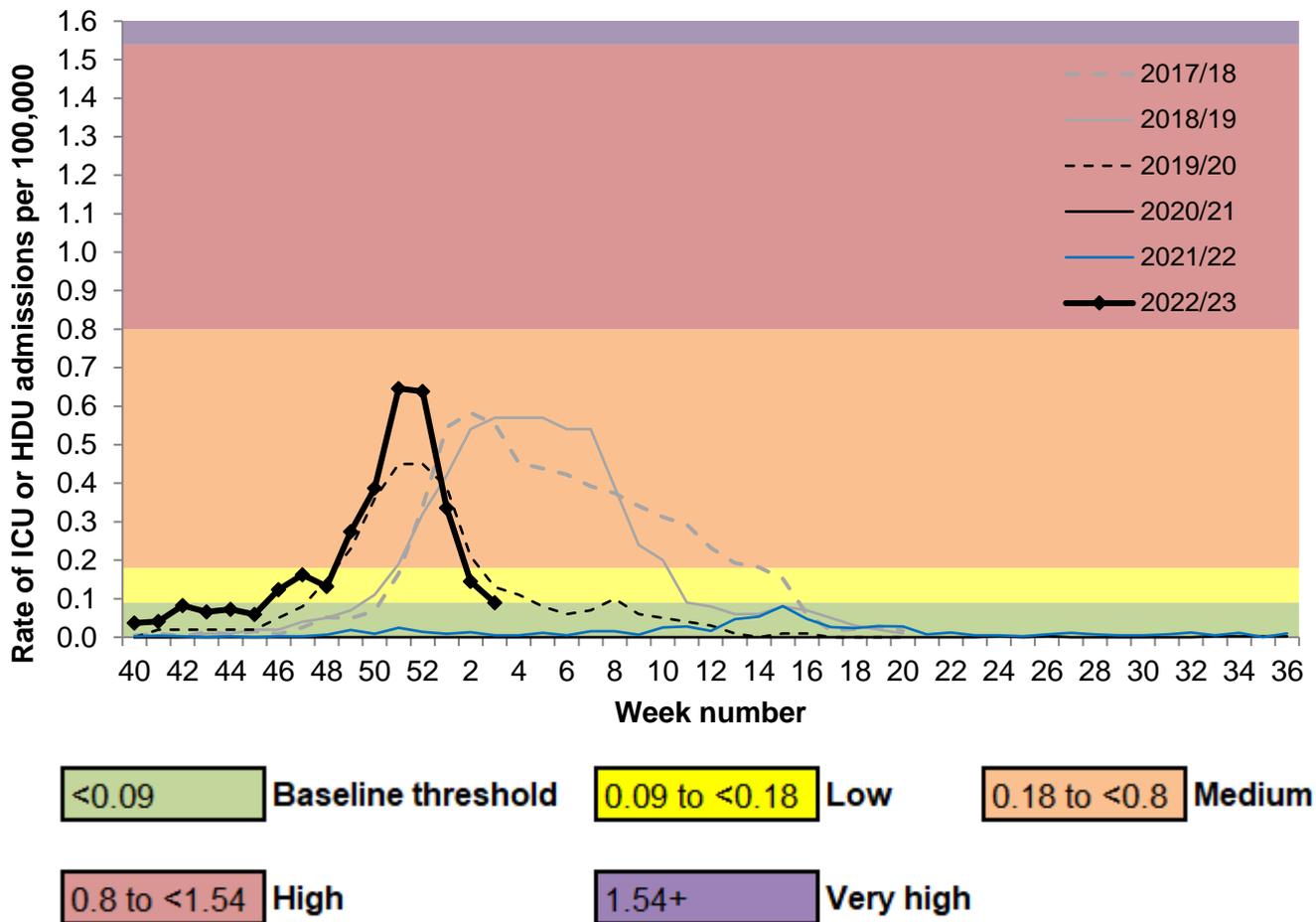


\* Influenza ICU or HDU admission rate based on 91 NHS trusts for week 3

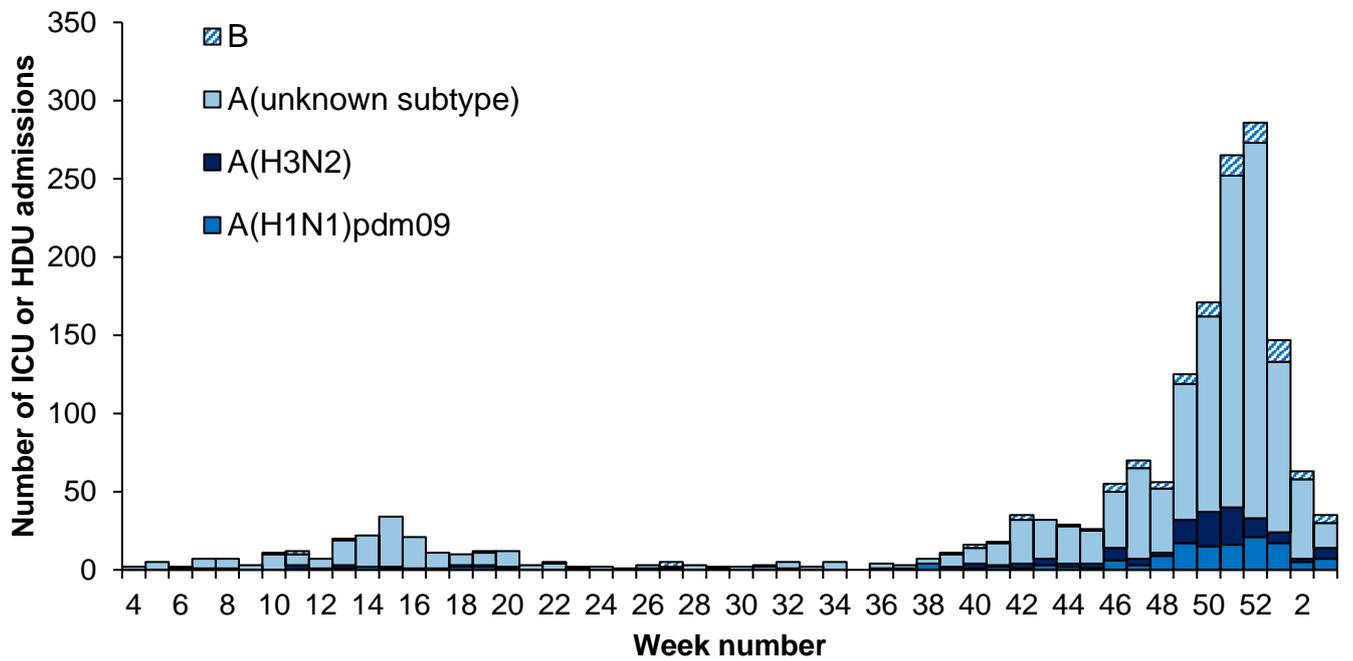
\* COVID-19 ICU or HDU admission rate based on 76 NHS trusts for week 3

\* SARI Watch data is provisional

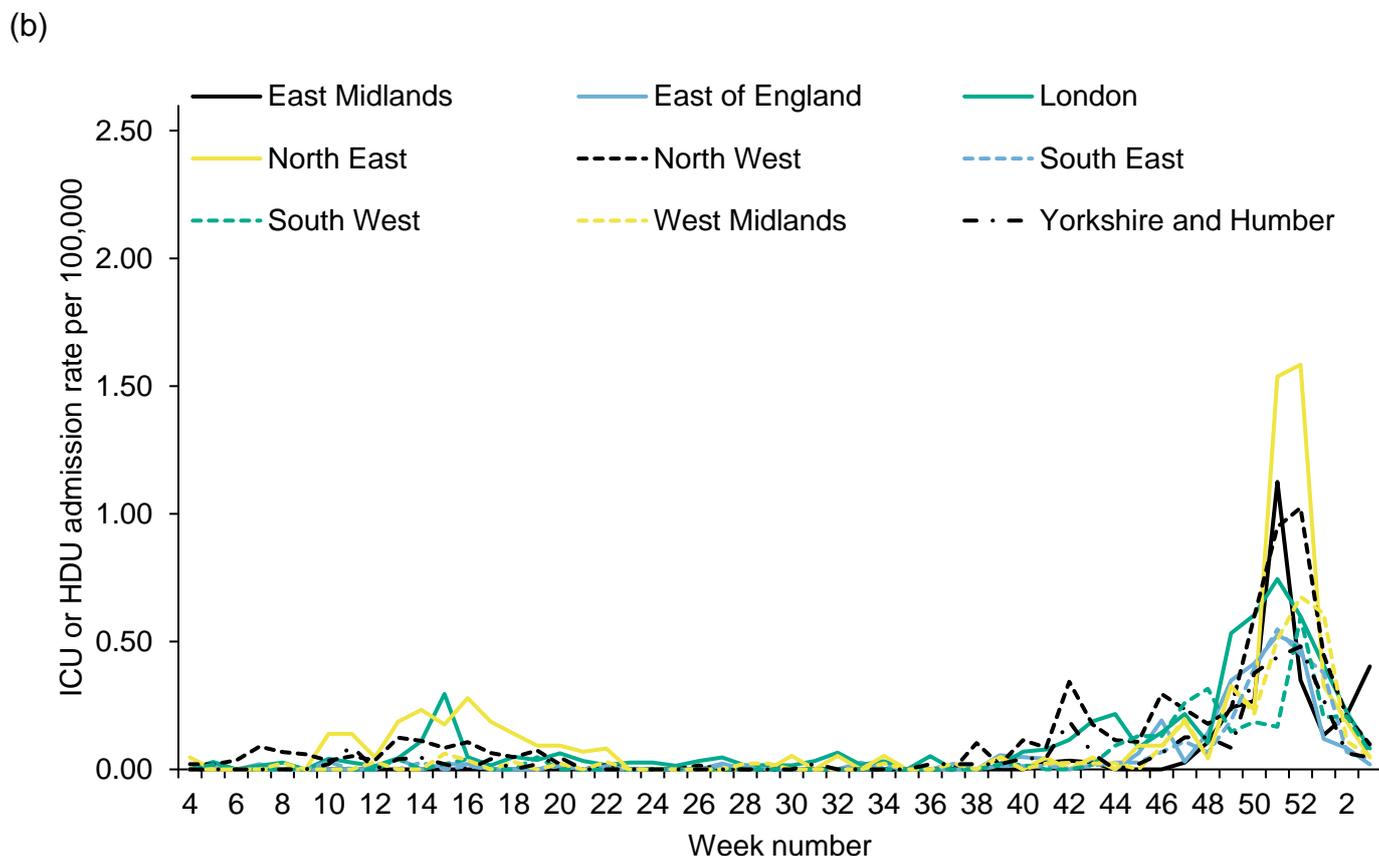
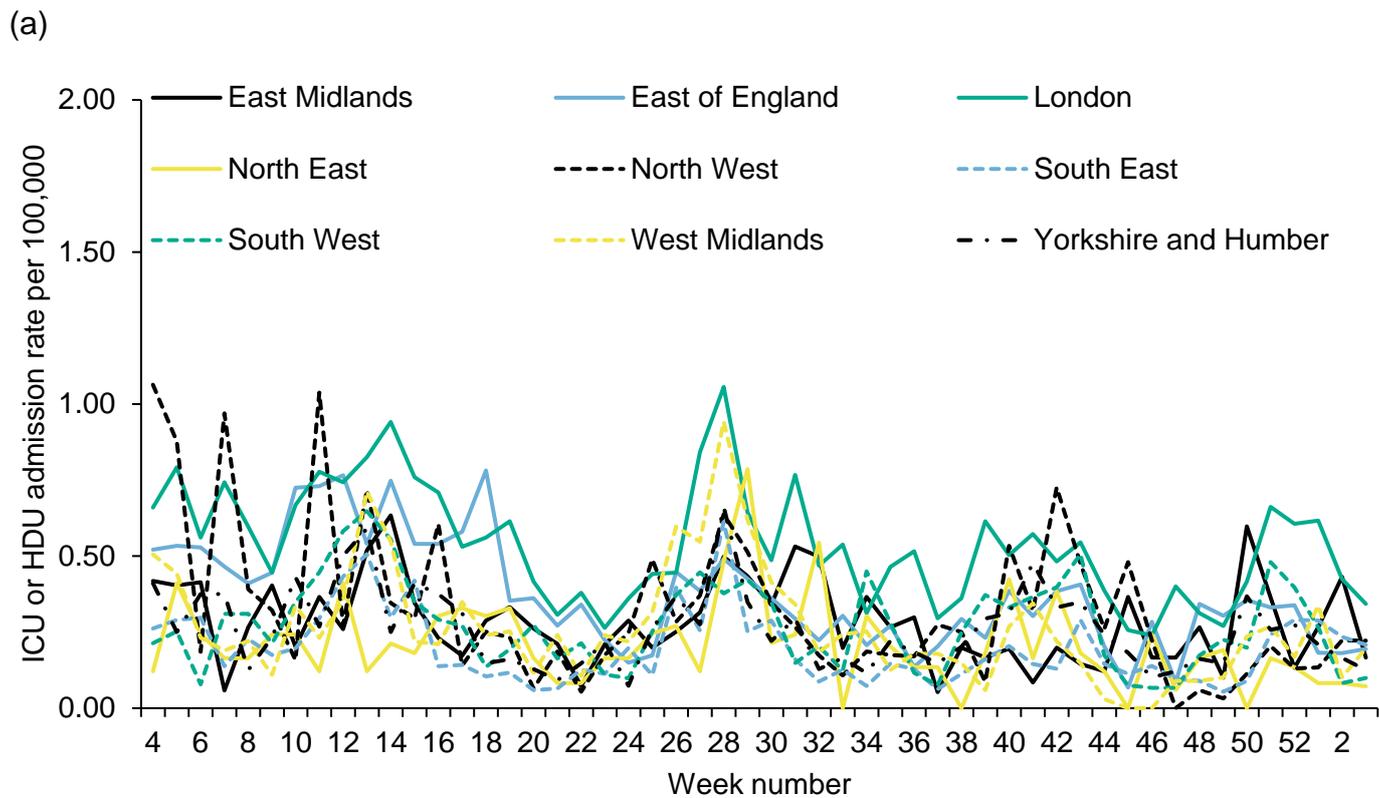
**Figure 41: Weekly overall influenza ICU or HDU admission rates per 100,000 trust catchment population with MEM thresholds, SARI Watch, England**



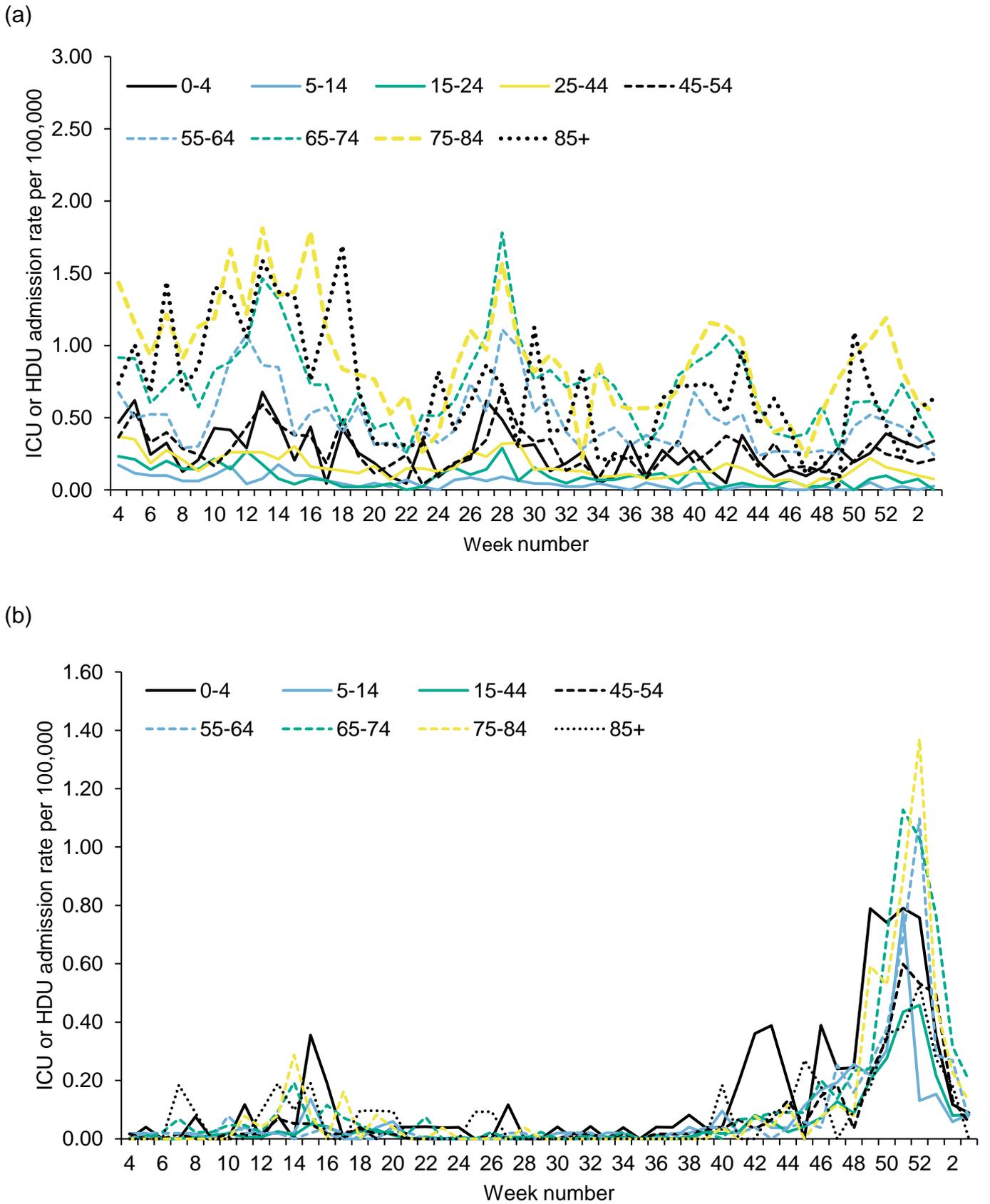
**Figure 42: Weekly influenza ICU or HDU admissions by influenza type, SARI Watch, England**



**Figure 43: Weekly ICU or HDU admission rate by UKHSA centre for new (a) COVID-19 positive cases and (b) influenza, reported through SARI Watch**



**Figure 44: Weekly ICU or HDU admission rate by age group for new (a) COVID-19 positive cases and (b) influenza, reported through SARI Watch**

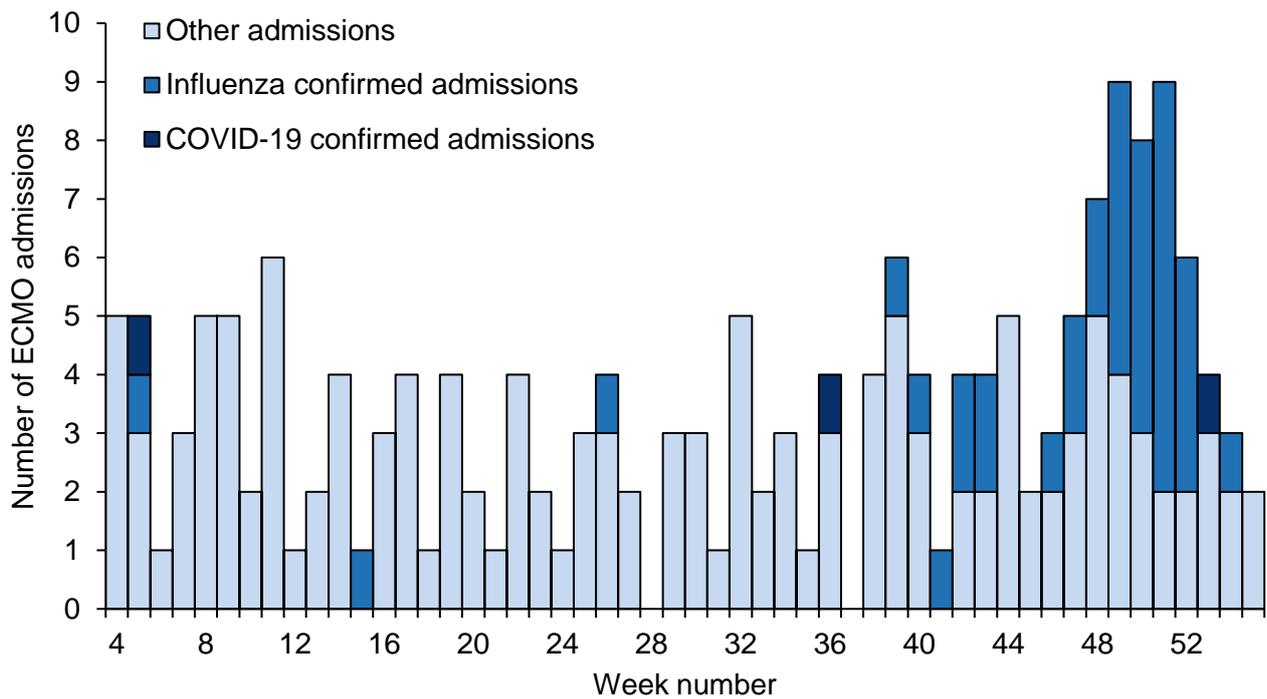


## ECMO, SARI Watch

There were 2 new laboratory confirmed ECMO admissions reported in week 3 from the 7 Severe Respiratory Failure (SRF) centres in the UK (Figure 45). No new COVID-19 and influenza admissions were reported.

**Figure 45: Laboratory confirmed ECMO admissions (COVID-19, influenza and non-COVID-19 confirmed) to Severe Respiratory Failure centres in the UK**

\* SARI Watch data is provisional

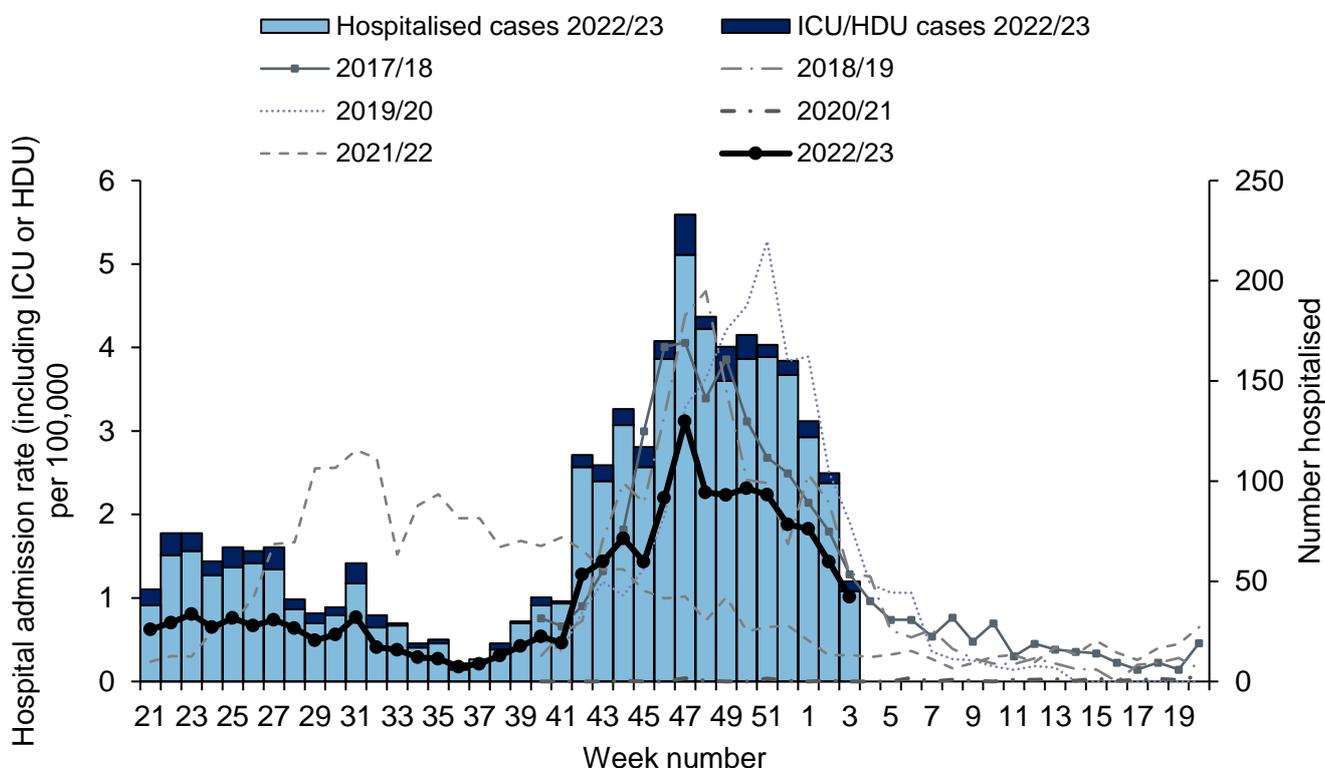


## RSV admissions, SARI Watch

Data on hospitalisations, including ICU or HDU admissions, with respiratory syncytial virus (RSV) are shown below. RSV SARI Watch surveillance is sentinel.

In week 3, the overall hospital admission rate continued to decrease for RSV at 1.01 per 100,000 compared to 1.44 per 100,000 in the previous week. The highest rates were seen in the under 5 year olds (8.21 per 100,000).

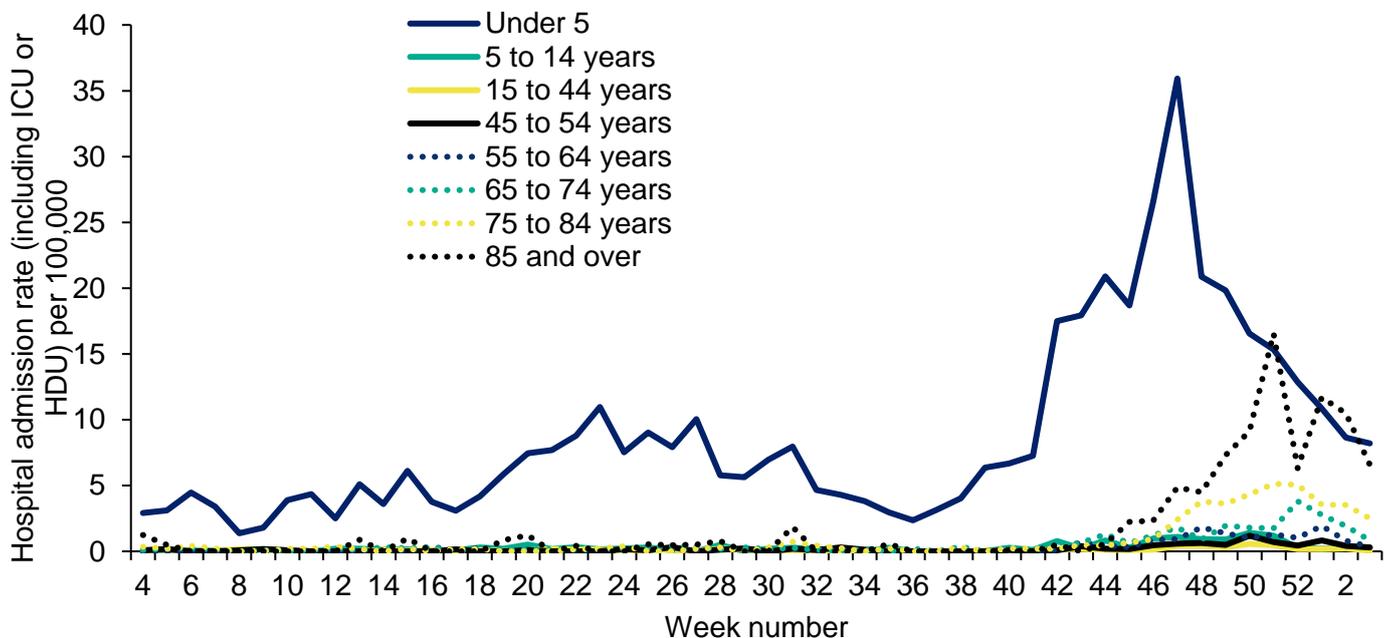
**Figure 46: Weekly overall hospital admission rates (including ICU or HDU) of RSV positive cases per 100,000 population reported through SARI Watch, England**



\* Please note that in previous seasons, RSV SARI Watch surveillance has run from week 40 to week 20. In the 2020 to 2021 season onwards this was extended to run throughout the year, to allow for surveillance of out-of-season trends.

**Figure 47: Weekly hospitalisation (including ICU or HDU) admission rates by age group for new RSV cases reported through SARI Watch, England**

\* SARI Watch data is provisional



\* Please note that rates are based on the number of hospitalised cases divided by the Trust catchment population, multiplied by 100,000.

## Emergency Department attendances, Syndromic surveillance

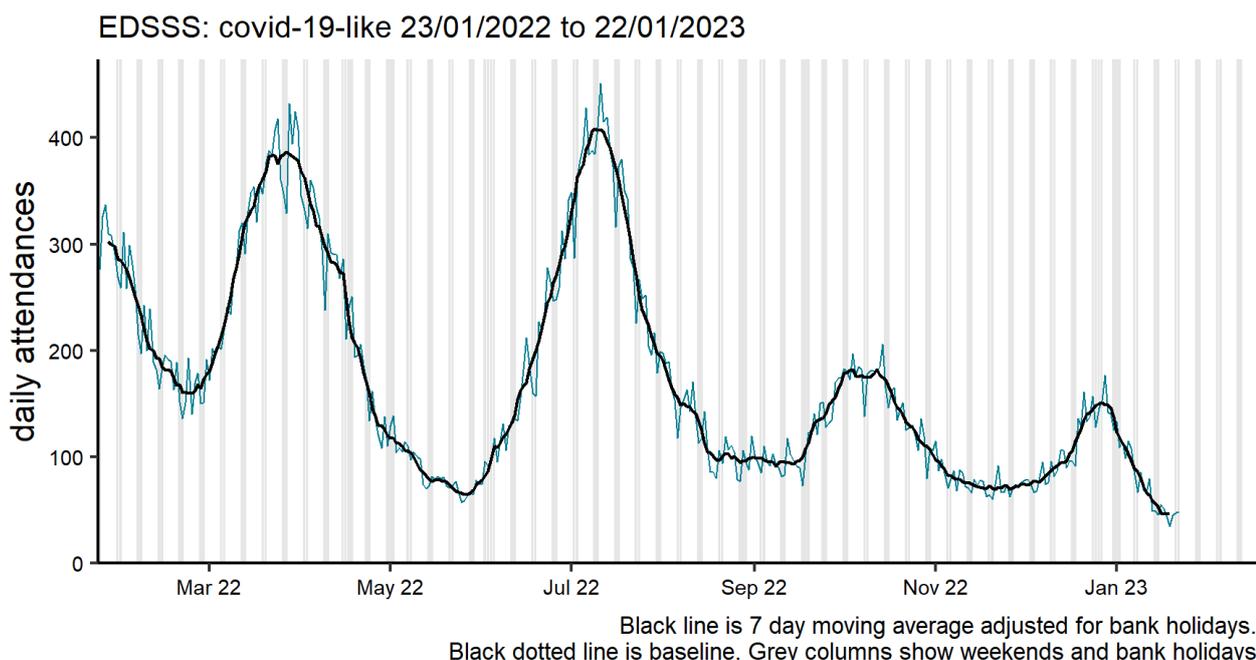
The [Emergency Department Syndromic Surveillance System \(EDSSS\)](#) monitors the daily visits in a network of emergency departments across England.

During week 3, attendances for acute respiratory infection decreased nationally, though there have been small increases in child age group between 1 and 14 years old which are in line with seasonal expectations. Attendances for influenza-like illness decreased slightly, in line with seasonal expectations. Attendances for acute bronchiolitis increased slightly nationally. Attendances for covid-like illness decreased slightly (Figures 48, 49, 50 and 51).

Please note: the COVID-19-like ED indicator is an underestimation of the number of COVID-19 attendances as it only includes attendances with a COVID-19-like diagnosis as their primary diagnosis. The EDSSS COVID-19-like indicator should therefore be used to monitor trends in ED attendances and not to estimate actual numbers of COVID-19 ED attendances. Further information about these caveats is available from the [Emergency Department Syndromic Surveillance](#) bulletin.

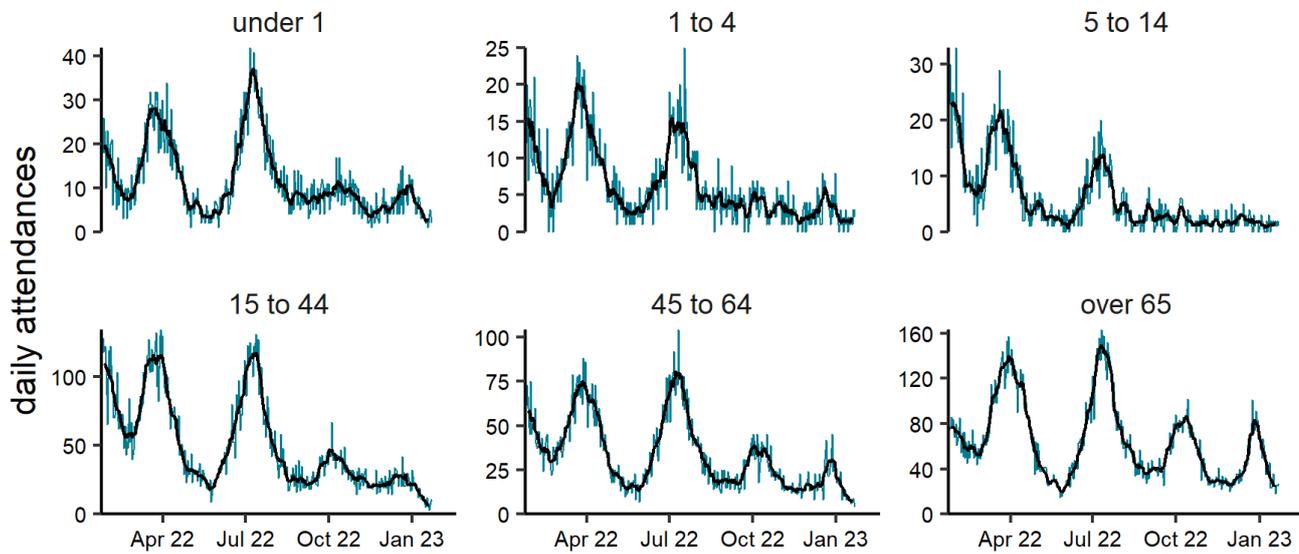
**Figure 48: Daily ED attendances for COVID-19-like infections, England (a) nationally, (b) by age group and (c) by UKHSA centre**

(a)



(b)

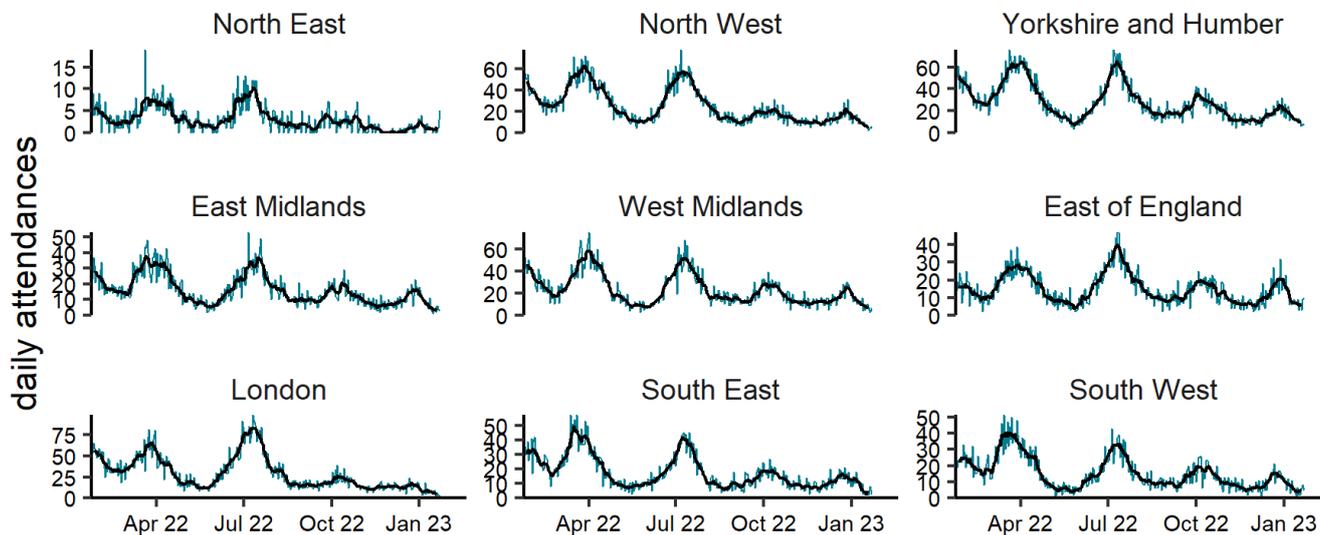
EDSSS: covid-19-like by age (years) 23/01/2022 to 22/01/2023



NOTE: SCALES MAY VARY IN EACH GRAPH TO ENABLE TREND COMPARISON.  
Black line is 7 day moving average adjusted for bank holidays.

(c)

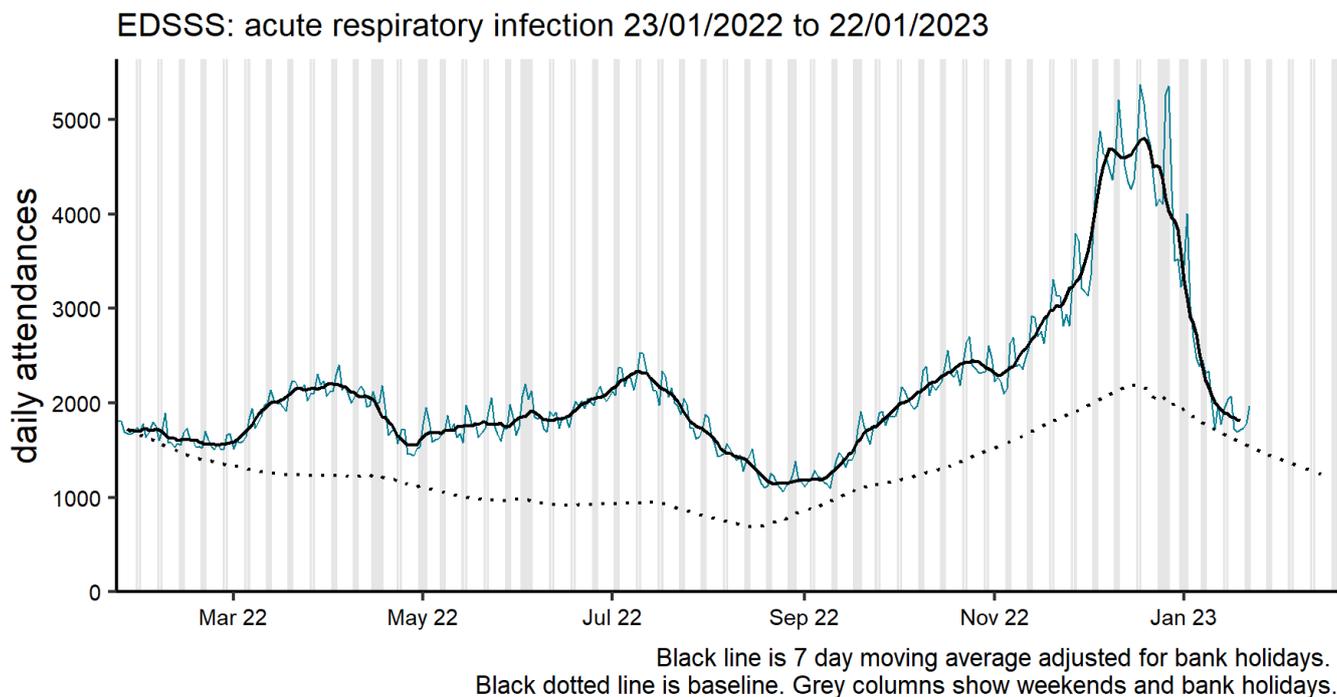
EDSSS: covid-19-like by region 23/01/2022 to 22/01/2023



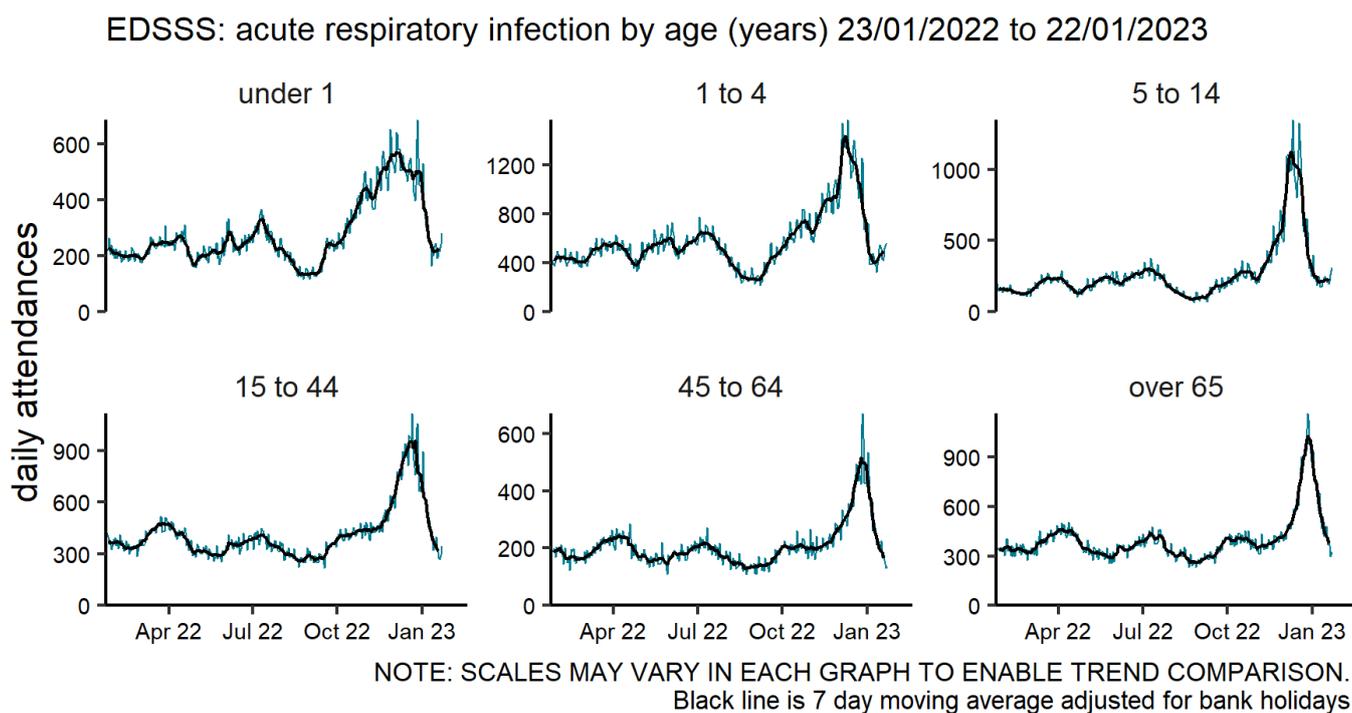
NOTE: SCALES MAY VARY IN EACH GRAPH TO ENABLE TREND COMPARISON.  
Black line is 7 day moving average adjusted for bank holidays.  
Black dotted line is baseline.

**Figure 49: Daily ED attendances for acute respiratory infection, England (a) nationally, (b) by age group and (c) by UKHSA centre**

(a)

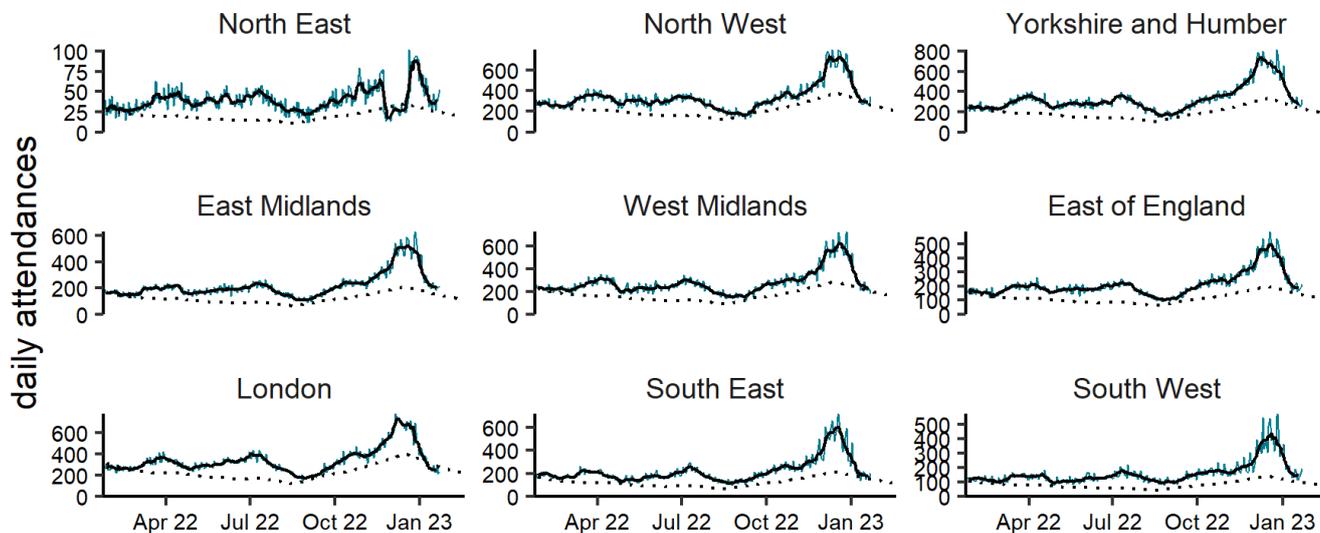


(b)



(c)

EDSSS: acute respiratory infection by region 23/01/2022 to 22/01/2023

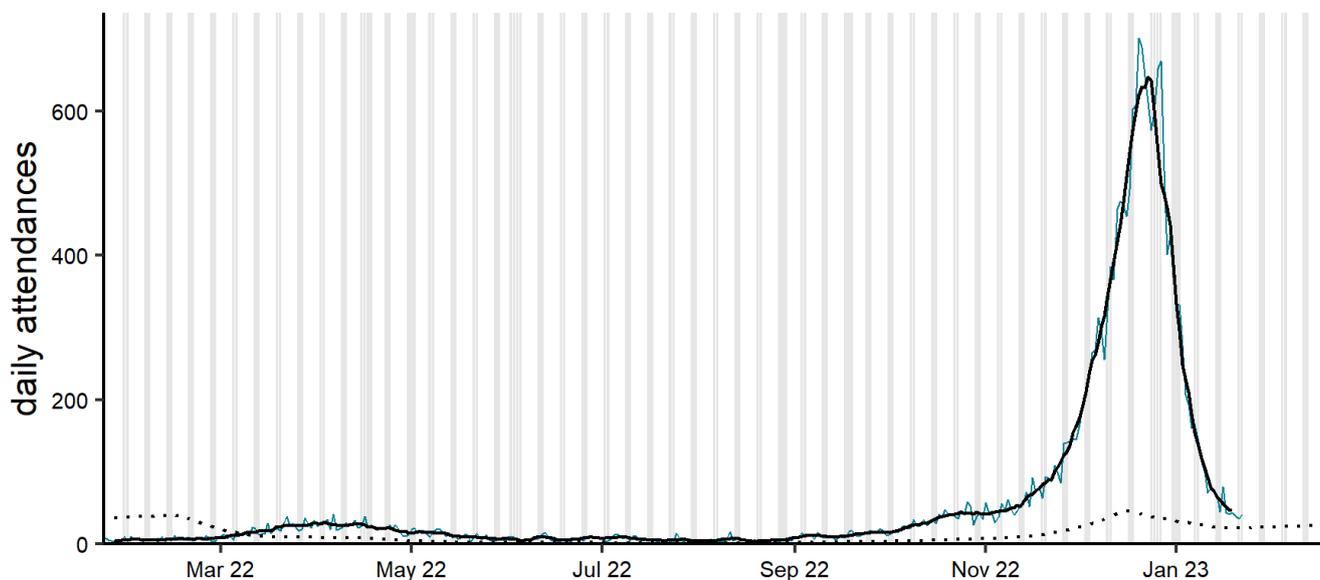


NOTE: SCALES MAY VARY IN EACH GRAPH TO ENABLE TREND COMPARISON.  
 Black line is 7 day moving average adjusted for bank holidays.  
 Black dotted line is baseline.

**Figure 50: Daily ED attendances for influenza-like illness, England (a) nationally, (b) by age group and (c) by UKHSA centre**

(a)

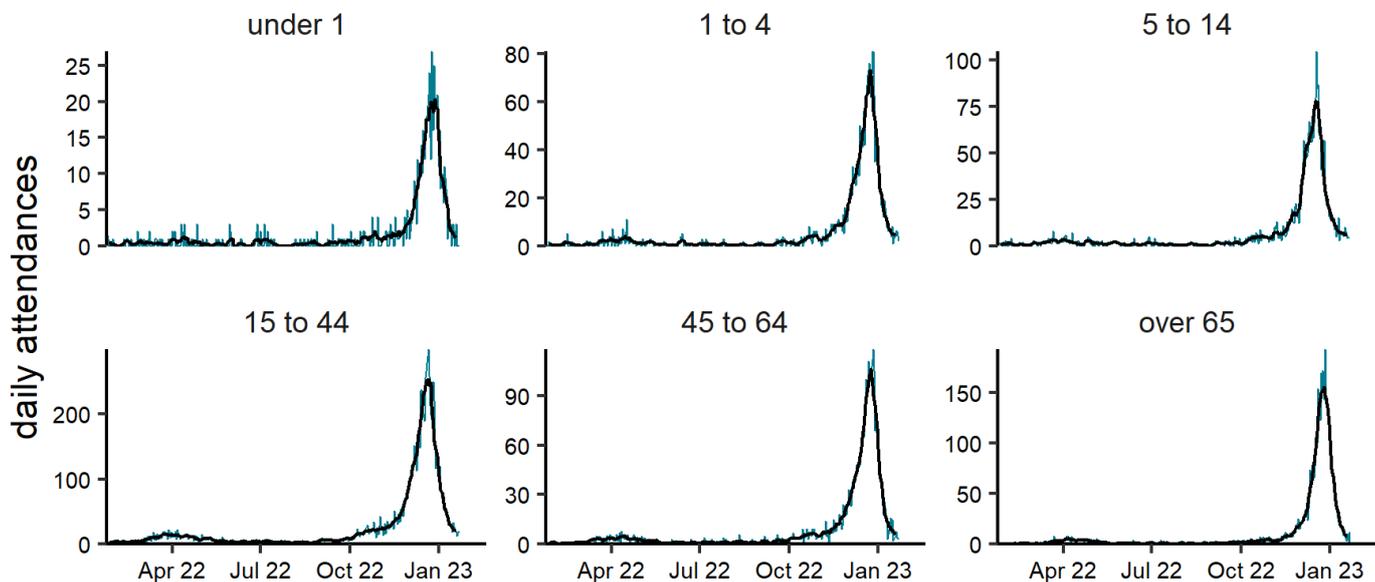
EDSSS: influenza-like illness 23/01/2022 to 22/01/2023



Black line is 7 day moving average adjusted for bank holidays.  
 Black dotted line is baseline. Grey columns show weekends and bank holidays.

(b)

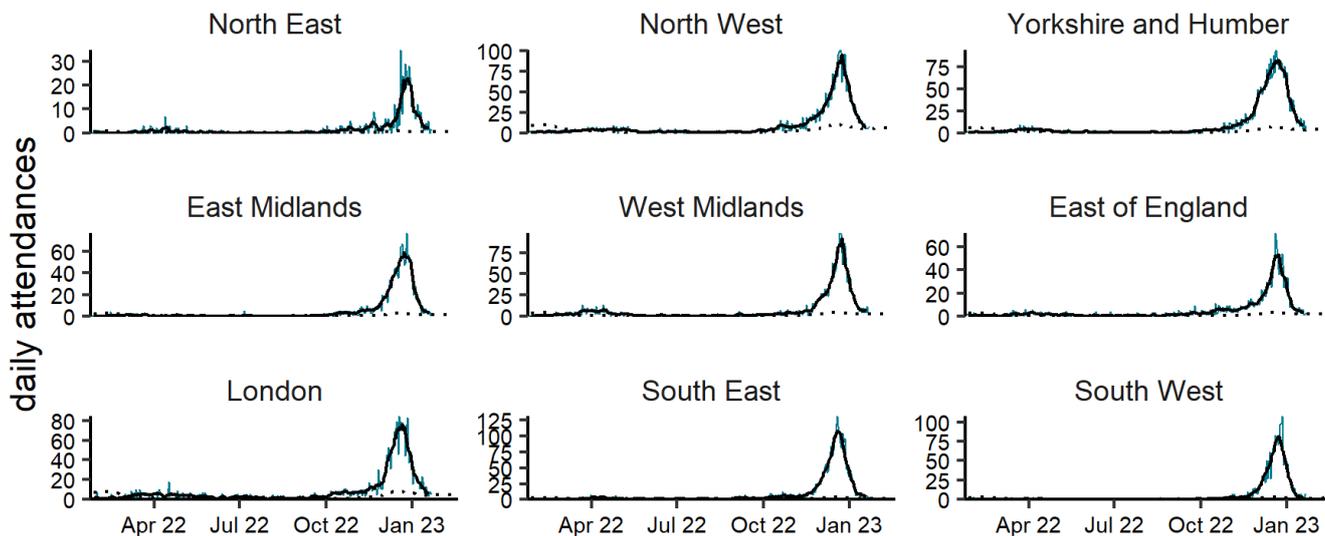
EDSSS: influenza-like illness by age (years) 23/01/2022 to 22/01/2023



NOTE: SCALES MAY VARY IN EACH GRAPH TO ENABLE TREND COMPARISON.  
Black line is 7 day moving average adjusted for bank holidays.

(c)

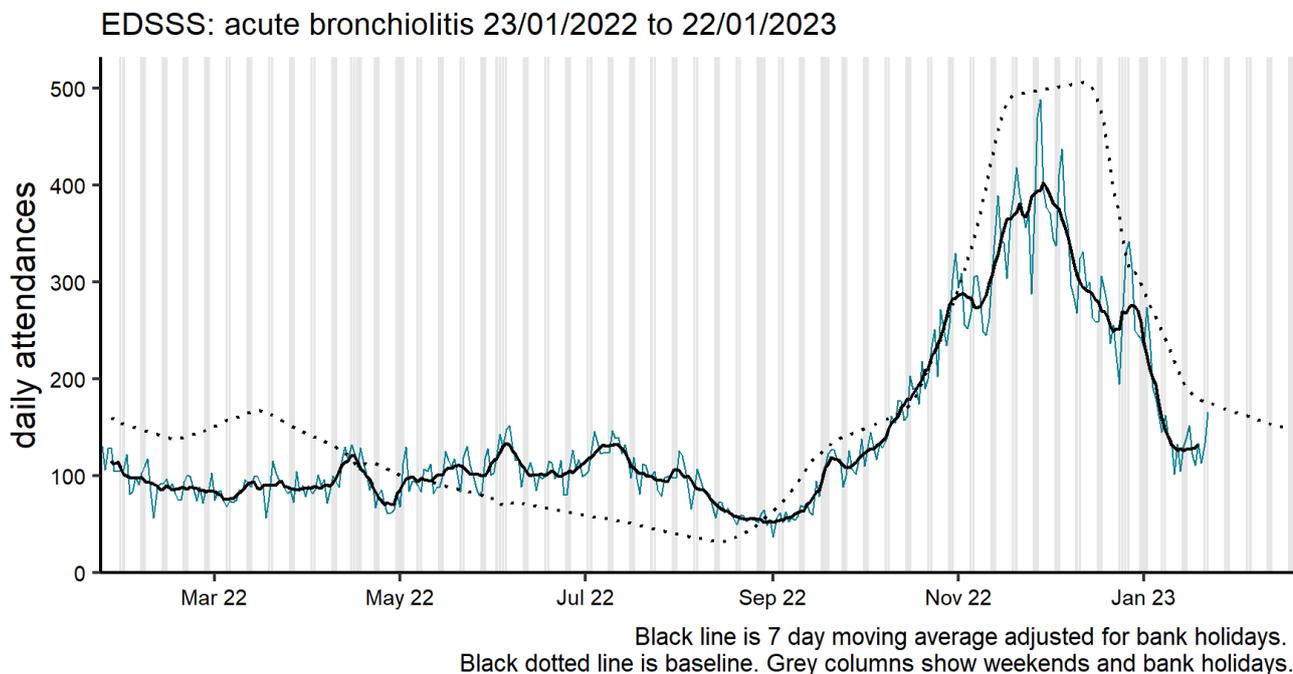
EDSSS: influenza-like illness by region 23/01/2022 to 22/01/2023



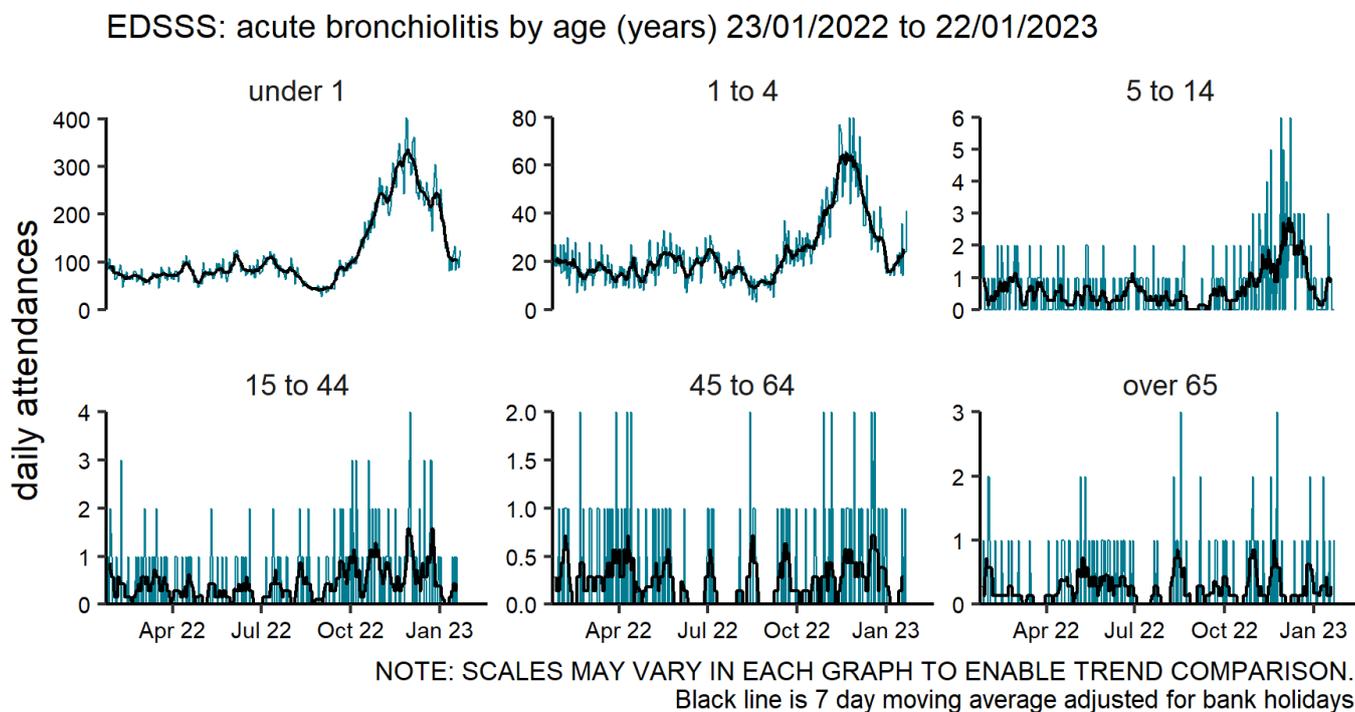
NOTE: SCALES MAY VARY IN EACH GRAPH TO ENABLE TREND COMPARISON.  
Black line is 7 day moving average adjusted for bank holidays.  
Black dotted line is baseline.

**Figure 51: Daily ED attendances for acute bronchiolitis, England (a) nationally, (b) by age group and (c) by UKHSA centre**

(a)

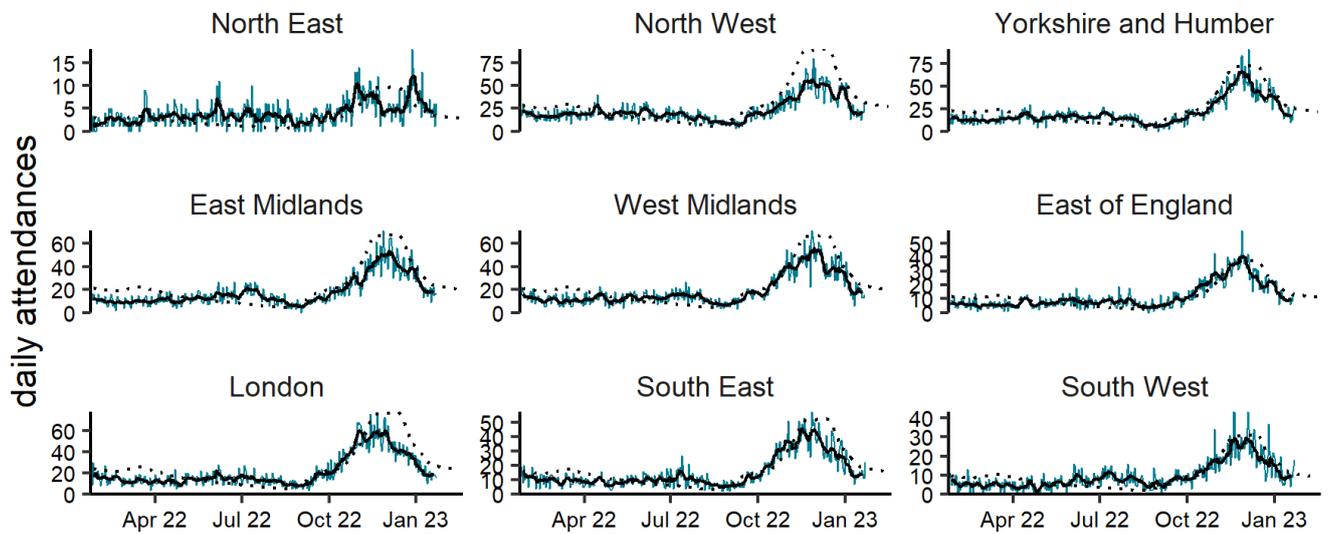


(b)



(c)

EDSSS: acute bronchiolitis by region 23/01/2022 to 22/01/2023



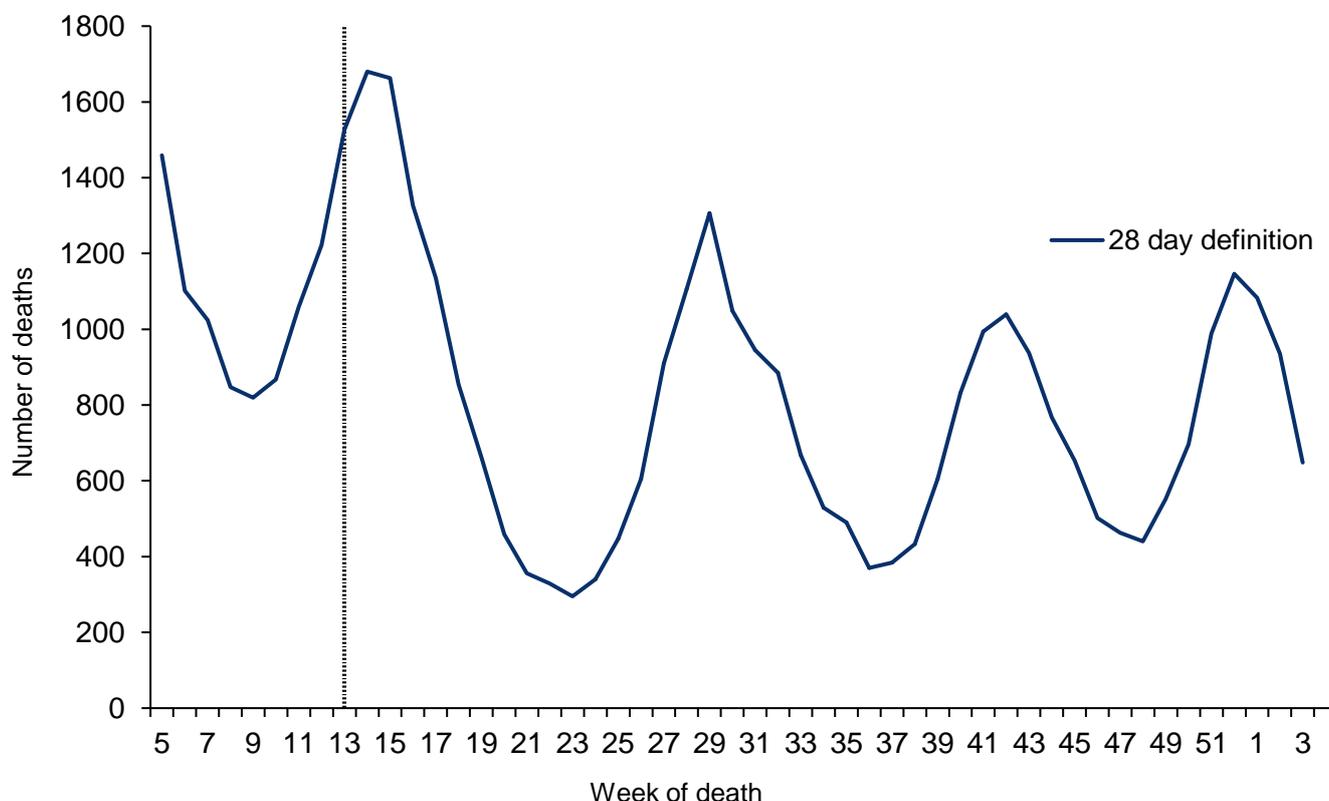
NOTE: SCALES MAY VARY IN EACH GRAPH TO ENABLE TREND COMPARISON.  
Black line is 7 day moving average adjusted for bank holidays.  
Black dotted line is baseline.

# Mortality surveillance

## COVID-19 deaths

COVID-19 related deaths by the 28 day definition are reported below. This metric includes a death in a person with a positive COVID-19 test who died within (equal to or less than) 28 days of the first positive specimen date in the most recent episode of infection.

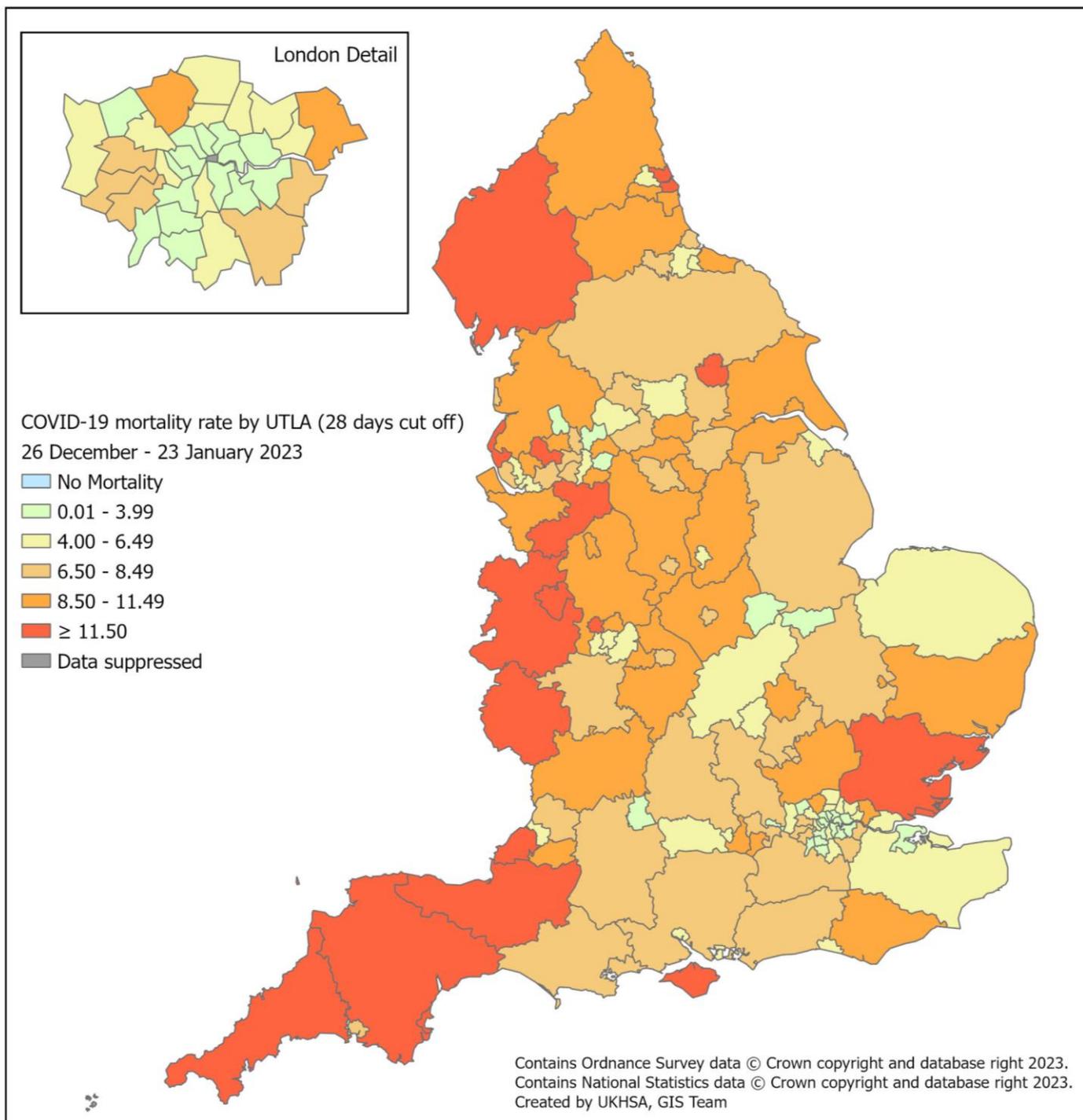
**Figure 52: Number of deaths by week of death and time since a positive COVID-19 test (28 day definition), England**



\* Vertical dotted line indicates the end of provision of free universal testing for the general public in England, as outlined in the plan for [living with COVID-19](#).

\* Data is shown by the week of death. This gives the most accurate analysis of this time progression, however, for the most recent weeks' numbers more deaths are expected to be registered therefore this should be interpreted with caution.

**Figure 53: Cumulative mortality rate of COVID-19 cases per 100,000 population tested under Pillars 1 and 2 for the weeks 52 to 3 by 28 day definition**



## Daily excess all-cause mortality (England)

Deaths occurring from 1 January 2020 to 18 January 2023 were assessed to calculate the daily excess above a baseline using age-group and region specific all cause deaths as provided daily by the General Register Office (GRO). The deaths were corrected to allow for delay to registration based on past data on these delays. The baseline until November 2020 was from the same day of the year in the previous 5 years plus or minus 7 days with an extrapolated time trend. The baseline from December 2020 to March 2021 only uses the same days +/- 7 days from the past 3 low flu years with no trend, and the baseline from April 2021 onwards is set to be the same as the previous years baseline. Along with the baseline 2 and 3 standard deviation (SD) limits shown (Figure 54).

Weeks in which at least 2 days exceeded the 3SD threshold are shown in Table 3 and the daily difference from the baseline by age and region is given in Figures 55 and 56.

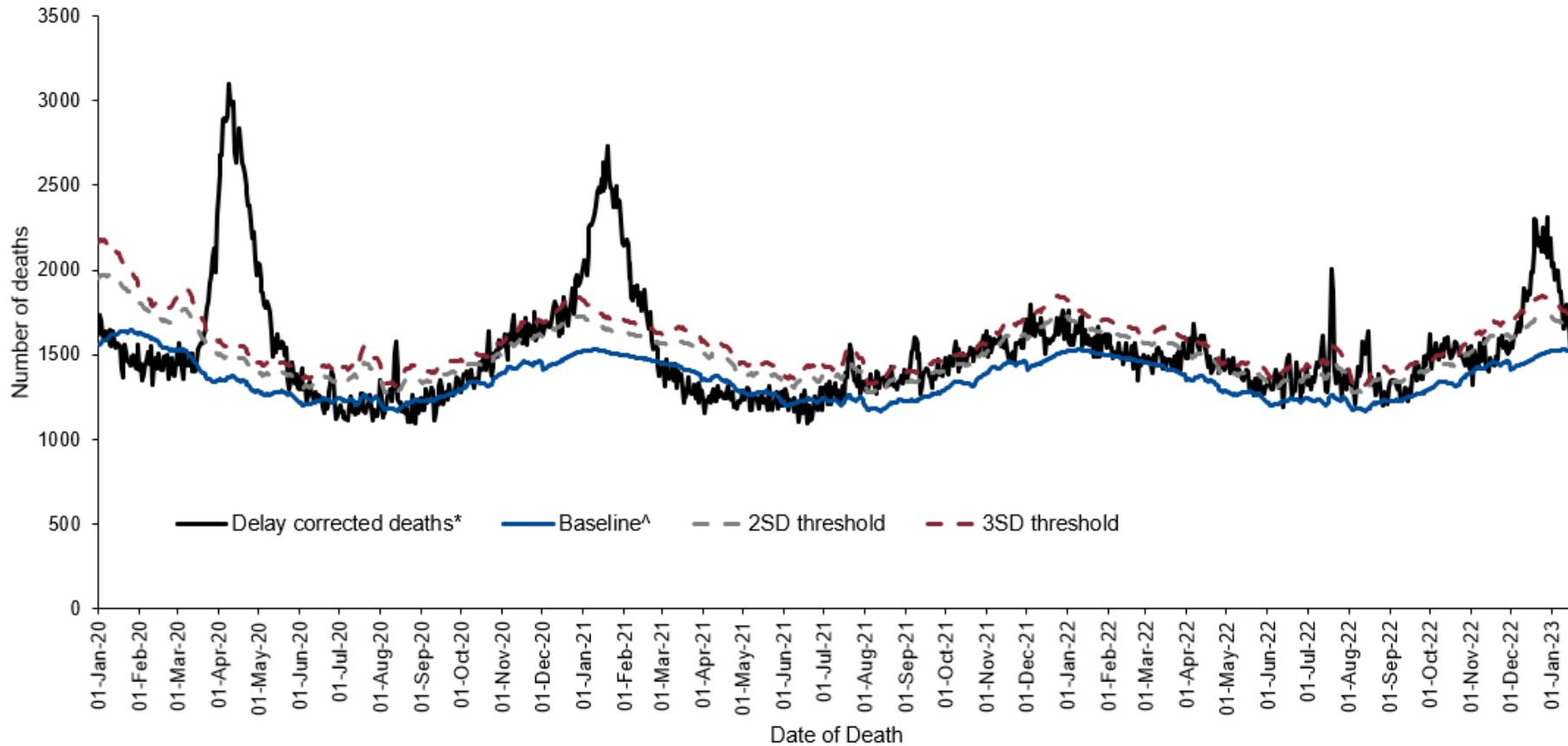
Note that as this data is by date of death with delay corrections, numbers are subject to change each week, particularly for more recent days. The current week's model supersedes models presented in previous week.

Excess all-cause mortality was observed in week 2.

Note that level 3 heat-health alerts were issued for June 17 to 18, July 11 to 21, and August 9 to 16 2022, and a level 4 heat-health alert issued for July 18 to 19 2022.

Other measures of excess mortality published by UKHSA are the [Fingertips excess mortality in England report](#), which uses ONS death registration data and [the all-cause mortality surveillance report](#), which uses the EuroMOMO model to measure excess deaths.

**Figure 54: Daily excess all-cause deaths in all ages, England, 1 January 2020 to 18 January 2023**



^Baseline calculation:

January to November 2020: same day in previous 5 years plus or minus 1 week with a linear trend.

December 2020 to March 2021: past 3 low flu years plus or minus 2 weeks, no trend.

March 2021 onwards: same baseline as 2020.

\*Corrected for delay to registration from death.

**Table 3: Excess all-cause deaths by (a) age group and (b) UKHSA centres, England**

(a)

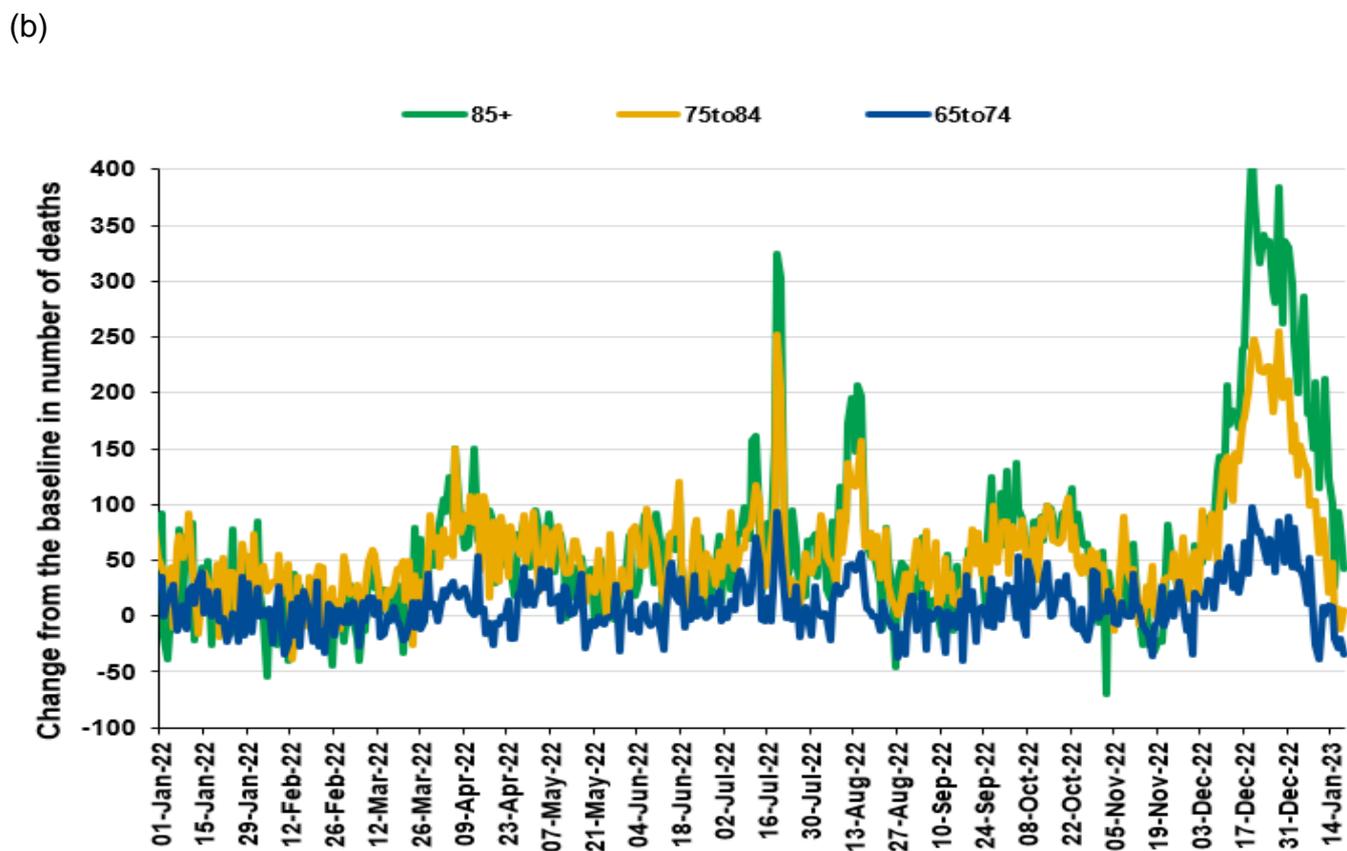
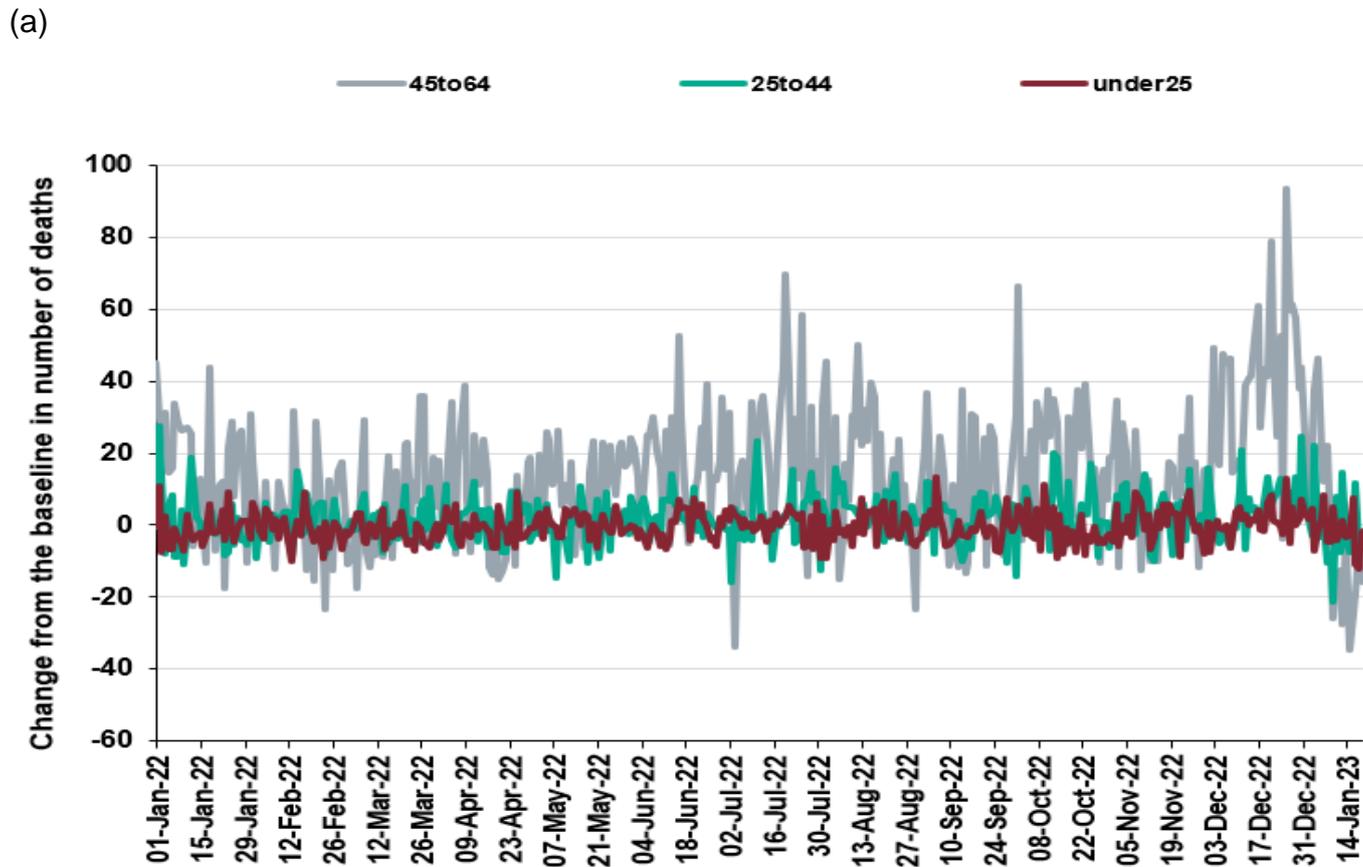
Age Group	Excess detected in week 2 2023	Weeks in excess from week 10 to 53 2020	Weeks in excess from week 1 to 52 2021	Weeks in excess from week 1 to 52 2022	Weeks in excess from week 2 2023
All	✓	13 to 21, 33, 43, 45, 50, 52 to 53	01 to 07, 29, 31 to 32, 35 to 36, 40 to 44, 48	14 to 15, 17 to 18, 23 to 24, 27 to 29, 32 to 33, 39 to 42, 50 to 52	01 to 02
under 25	x	None	None	None	None
25 to 44	x	14 to 16	None	None	None
45 to 64	x	12 to 19, 49 to 50, 52 to 53	01 to 08, 23, 29 to 30, 36, 41 to 44, 48 to 49	29, 49 to 52	None
65 to 74	x	13 to 19, 46, 48, 52 to 53	01 to 07, 36, 43, 48	50 to 52	None
75 to 84	x	13 to 21, 33, 45, 49, 52 to 53	01 to 07, 32, 36, 40, 42	14 to 18, 22 to 25, 28 to 29, 31 to 32, 38 to 42, 49 to 52	01
85+	✓	13 to 21, 33, 53	01 to 07, 31, 36	28 to 29, 32, 39, 41, 50 to 52	01 to 02

Weekly National Influenza and COVID-19 Report: week 4 report (up to week 3 data)

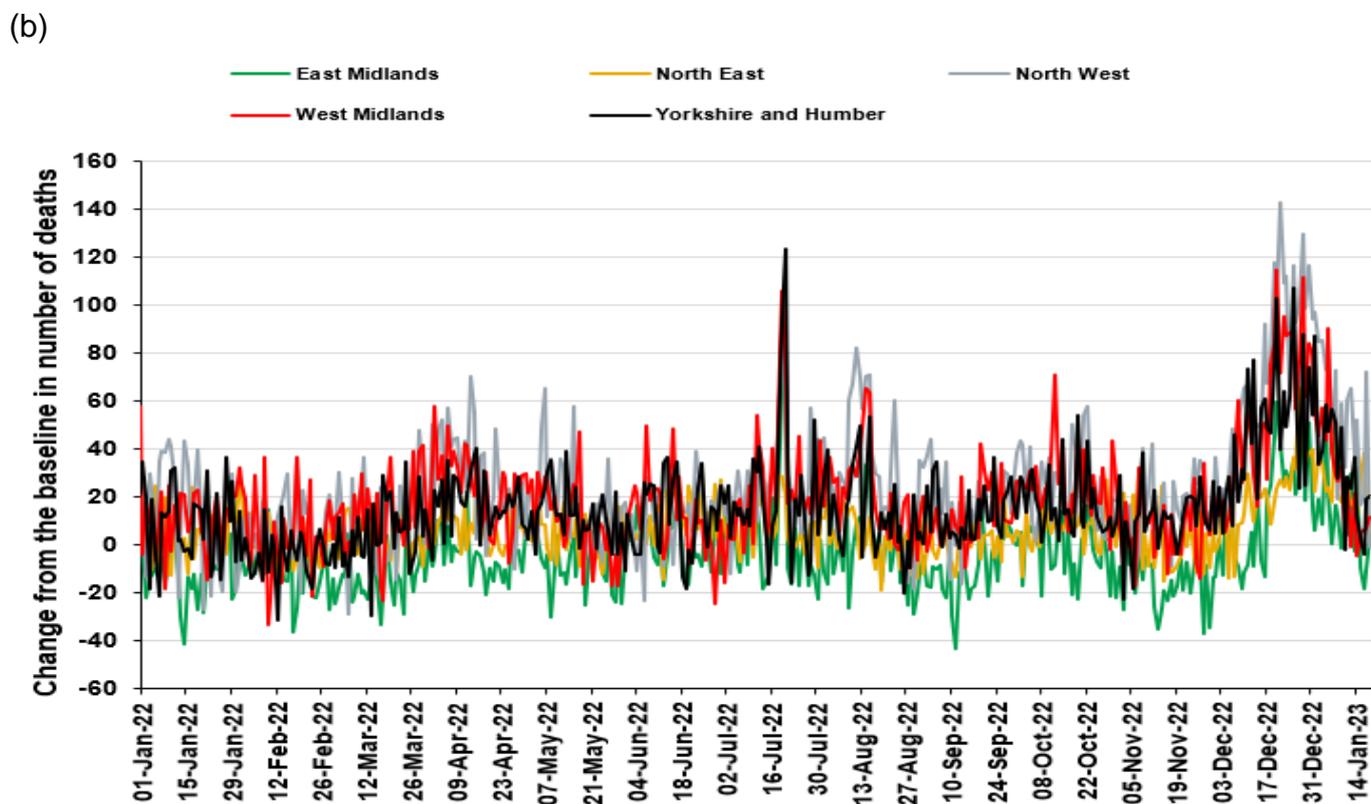
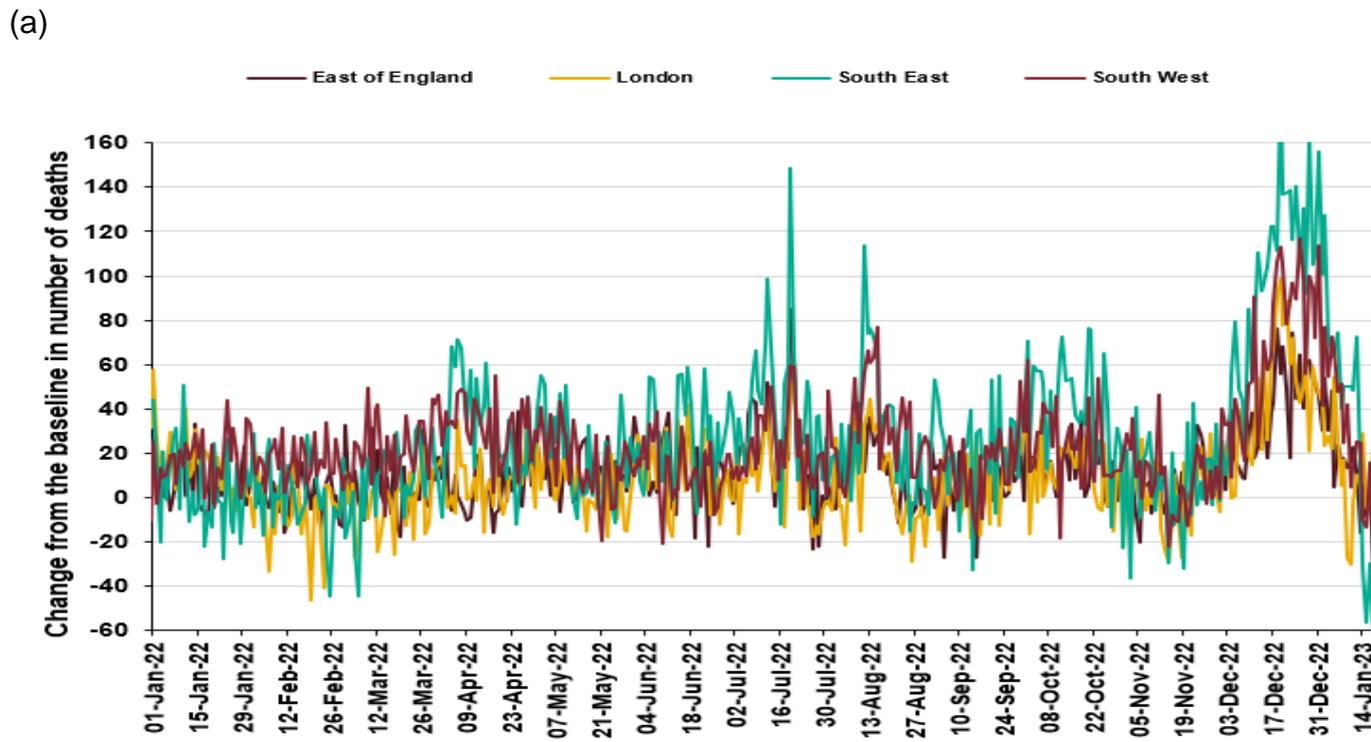
b)

UKHSA Centres	Excess detected in week 2 2023	Weeks in excess from week 10 to 53 2020	Weeks in excess from week 1 to 52 2021	Weeks in excess from week 1 to 52 2022	Weeks in excess from week 2 2023
East of England	x	14 to 19, 52 to 53	01 to 07	23, 27, 29, 51 to 52	None
East Midlands	x	13 to 19, 48	01 to 07	29, 52	None
London	x	12 to 19, 33, 52 to 53	01 to 06, 36	50 to 52	None
North East	x	14 to 21	02 to 04	52	01
North West	✓	13 to 19, 33, 42 to 47	01 to 07, 31 to 32, 36, 43	14 to 15, 29 to 30, 32, 42, 50 to 52	01 to 02
South East	x	13 to 21, 33, 50 to 53	01 to 07, 36, 41, 49	14, 28, 32, 40 to 42, 49 to 52	None
South West	x	13 to 19, 33	02 to 07, 29, 36	29, 32, 34, 39, 50 to 52	01
West Midlands	x	13 to 20, 45, 48	01 to 07, 29, 36, 40, 48	13, 28 to 29, 32, 41 to 42, 51 to 52	01
Yorkshire and Humber	x	14 to 21, 23, 43 to 50	02 to 04, 32, 35 to 36	29, 32, 42, 50 to 52	01

**Figure 55: Daily excess all-cause deaths by age group, England, 1 January 2022 to 18 January 2023**



**Figure 56: Daily excess all-cause deaths by UKHSA centre, England, 1 January 2022 to 18 January 2023**



# Microbiological surveillance

## Influenza virus characterisation

UKHSA 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.

Between week 40 2022 and week 4 2023, the UKHSA Respiratory Virus Unit have genetically characterised, by sequencing of the haemagglutinin (HA) gene, 1,883 influenza A viruses (1,229 A(H3N2) and 654 A(H1N1)pdm09 viruses) and 30 influenza B viruses.

The 1,229 influenza A(H3N2) viruses genetically characterised, all belong in the genetic subclade 3C.2a1b.2a.2. The Northern Hemisphere 2022/23 influenza A(H3N2) vaccine strain (an A/Darwin/9/2021-like virus) also belongs in this 3C.2a1b.2a.2 genetic subclade.

The 654 influenza A(H1N1)pdm09 viruses characterised to date this season, all belong in genetic subgroup 6B.1A.5a.2. The Northern Hemisphere 2022/23 influenza A(H1N1)pdm09 vaccine strain (an A/Victoria/2570/2019-like virus) also belongs in genetic subclade 6B.1A.5a, within the 6B.1A.5a.2 cluster.

Thirty influenza B/Victoria lineage viruses have been genetically characterised, all belonging in subclade V1A3, within the subgroup V1A3a.2. The Northern Hemisphere 2022/23 influenza B/Victoria lineage vaccine strain (a B/Austria/1359417/2021-like virus) also belongs in this V1A3a.2 subclade/group.

The Respiratory Virus Unit has confirmed by genome sequencing the detection of live attenuated influenza vaccine (LAIV) viruses in two influenza A positive samples and 6 influenza B positive samples collected since week 40, all from children aged 2 to 16 years of age.

## Influenza antiviral susceptibility

Influenza positive samples are genome sequenced and screened for mutations in the virus neuraminidase (NA) and the cap-dependent endonuclease (PA) genes known to confer neuraminidase inhibitor or baloxavir resistance, respectively. The samples tested are routinely obtained for surveillance purposes, but diagnostic testing of patients suspected to be infected with antiviral-resistant virus is also performed.

Influenza virus sequences from samples collected between week 40 2022 and week 4 2023 have been analysed. No viruses with known markers of resistance to neuraminidase inhibitors were detected in 1,068 A(H3N2), 604 A(H1N1)pdm09 and 30 Influenza B NA sequences analysed. No viruses with known markers of resistance to baloxavir marboxil were detected in 874 A(H3N2), 456 A(H1N1)pdm09 and 27 influenza B PA sequences analysed.

**Table 4: Antiviral susceptibility of influenza positive samples tested at UKHSA-RVU**

(Sub)type	Neuraminidase Inhibitors		Baloxavir	
	Susceptible	Reduced Susceptibility	Susceptible	Reduced Susceptibility
A(H3N2)	1068	0	874	0
A(H1N1)pdm09	604	0	456	0
B/Victoria-lineage	30	0	27	0

## SARS-CoV-2 variants

UKHSA conducts genomic surveillance of SARS-CoV-2 variants.

This section provides an overview of new and current circulating variants in England.

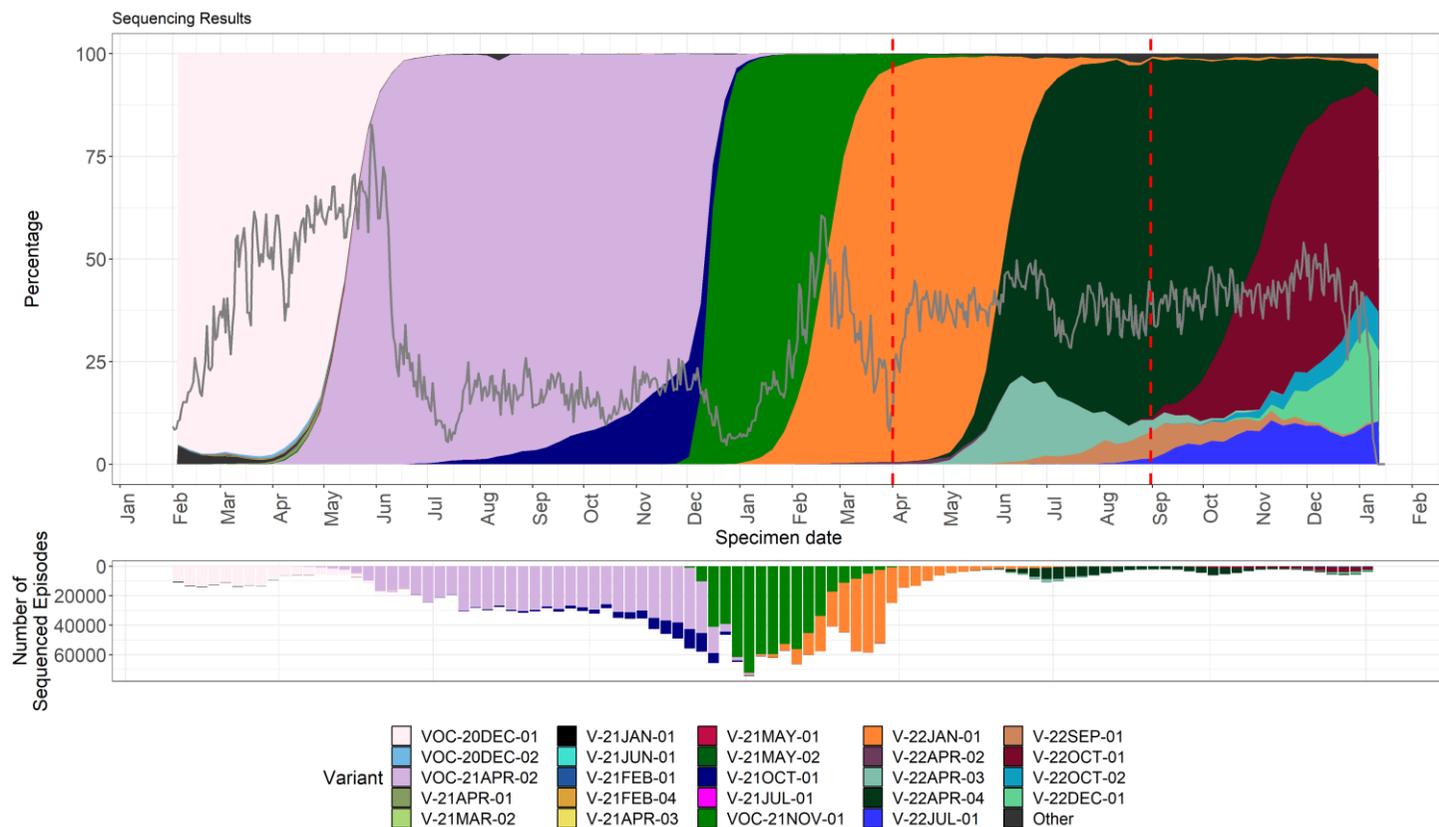
Detailed surveillance of particular variants of concerns can be found in recent [technical briefings](#).

Information on whole genome sequencing coverage can be found in the accompanying slide set.

The prevalence of different UKHSA-designated variants amongst sequenced episodes is presented in Figure 57.

Of the sequenced episodes from 19 December 2022 to 17 January 2023, 52.3% were classified as BQ.1 (V-22OCT-01), 17.4% as CH.1.1 (V-22DEC-01), 10.5% as BA.2.75 (V-22JUL-01), 9.3% as XBB (V-22OCT-02), 6.4% as BA.5 (V-22APR-04) and 2.9% as BA.2 (V-22JAN-01).

**Figure 57. Prevalence of SARS-CoV-2 variants amongst available sequences episodes for England from 1 February, as of 17 January 2023**



The grey line indicates proportion of cases sequenced.

The vertical dashed lines (red) denote changes in policies:

- April line denotes the start of England's 'Living with COVID' Plan.
- End of August line denotes the change in asymptomatic testing

Note: Recombinants such as XD, are not specified but are largely within the 'Other' group currently as numbers are too small.

As of week 2 2023, BQ.1 continues to be the most commonly circulating variant in England (Table 5).

**Table 5. Total distribution of SARS-CoV-2 variants detected in England in the last 12 weeks, up to week 2 (week ending 15 January 2023)**

Variant	Other names by which this variant is known	Total confirmed (sequencing) cases in the last 12 weeks	Last reported specimen date
VOC-21APR-02	Delta	2	26/12/2022
VOC-21NOV-01	Omicron BA.1	12	07/01/2023
V-22JAN-01	Omicron BA.2	307	10/01/2023
V-22APR-03	Omicron BA.4	51	03/01/2023
V-22APR-04	Omicron BA.5	8598	10/01/2023
V-22JUL-01	Omicron BA.2.75	3865	11/01/2023
V-22SEP-01	Omicron BA.4.6	481	06/01/2023
V-22OCT-01	Omicron BQ.1	24207	11/01/2023
V-22OCT-02	Omicron XBB	2332	10/01/2023
V-22DEC-01	Omicron CH.1.1	5266	11/01/2023

\*Sequencing data has a lag of approximately two weeks therefore the presented numbers should be interpreted in this context

\*Cumulative numbers may be revised up or down as a results of reclassification of results, re-infections and changes to diagnostic tests, new variants, or public health management levels

\*Confirmed individuals are confirmed COVID-19 cases with a validated sequencing result meeting the confirmed case definitions

## Antimicrobial susceptibility

Table 6 shows in the 12 weeks up to week 3 2023, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA (Methicillin-resistant *Staphylococcus aureus*) and MSSA (methicillin-susceptible *Staphylococcus aureus*) tested and susceptible to antibiotics. These organisms are the important 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 6: Antimicrobial susceptibility surveillance in lower respiratory tract**

Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	3,169	88
	Macrolides	3,589	84
	Tetracycline	3,366	83
<i>H. influenzae</i>	Amoxicillin or ampicillin	15,820	40
	Co-amoxiclav	18,716	47
	Macrolides	3,738	5
	Tetracycline	18,571	98
<i>S. aureus</i>	Methicillin	6,482	92
	Macrolides	7,648	70
MRSA	Clindamycin	360	46
	Tetracycline	422	74
MSSA	Clindamycin	4,404	77
	Tetracycline	5,281	94

\* Macrolides = erythromycin, azithromycin and clarithromycin

Data source: UKHSA's SGSS Antimicrobial Resistance (AMR) module, please note that this is different to the data source used in the reports published between weeks 41, 2020 to 5, 2021 inclusive of the 2020 to 2021 influenza season when the SGSS Communicable Disease Report (CDR) module was used instead due to a UKHSA SGSS AMR data infrastructure issue which has now been resolved. Therefore, the above results are not directly comparable to the results reported between weeks 41, 2020 and 5, 2021. The AMR module of SGSS was used during the 2019 to 2020 influenza season. There has been a reduction in the total number of bacterial positive lower respiratory tract clinical samples reported to UKHSA since mid-March 2020.

## COVID-19 sero-prevalence surveillance

Since week 42 2021, updates on COVID-19 sero-prevalence estimates have been published in the weekly [COVID-19 vaccine surveillance report](#).

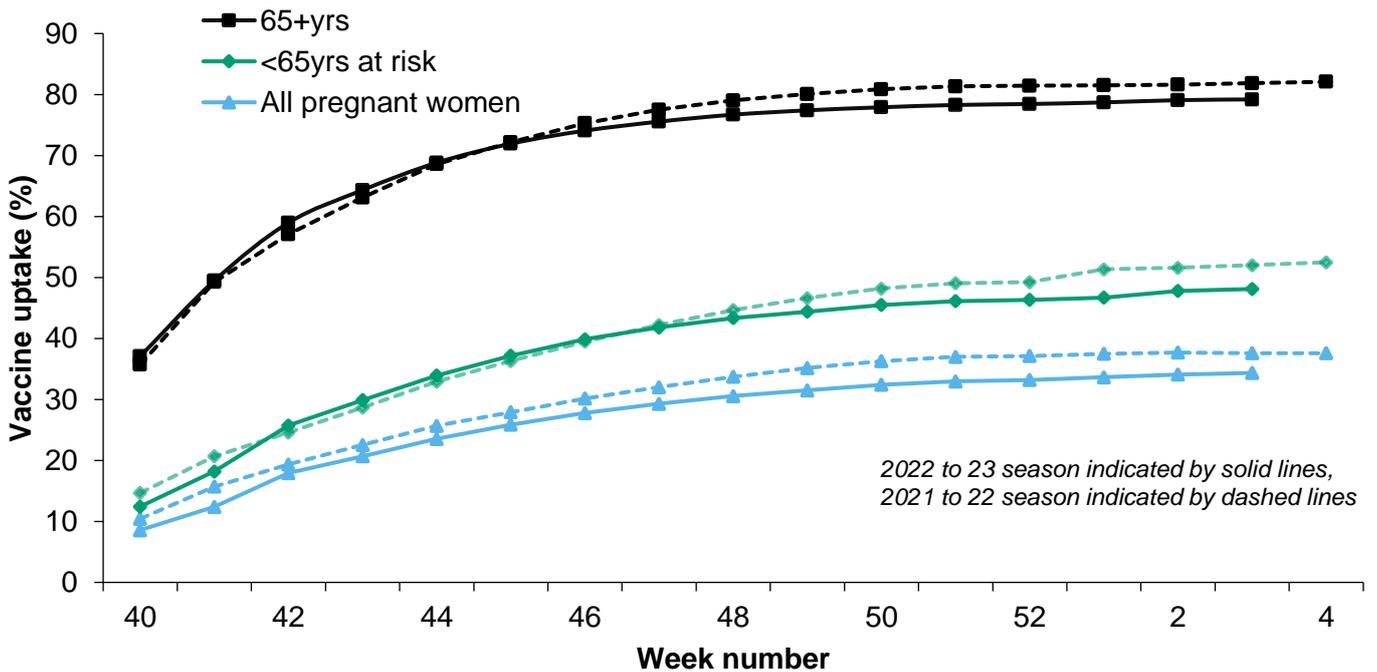
# Influenza vaccination

## Influenza vaccine uptake in GP patients

Up to week 3 of 2023, in 96.6% of GP practices reporting weekly to ImmForm for the main collection, the provisional proportion of people in England who had received the 2022 to 2023 influenza vaccine in targeted groups was as follows:

- 48.1% in under 65 years in a clinical risk group
- 34.3% in all pregnant women
- 79.2% in all 65 year olds and over
- 39.9% in those aged 50 to 64 who are not in a clinical risk group

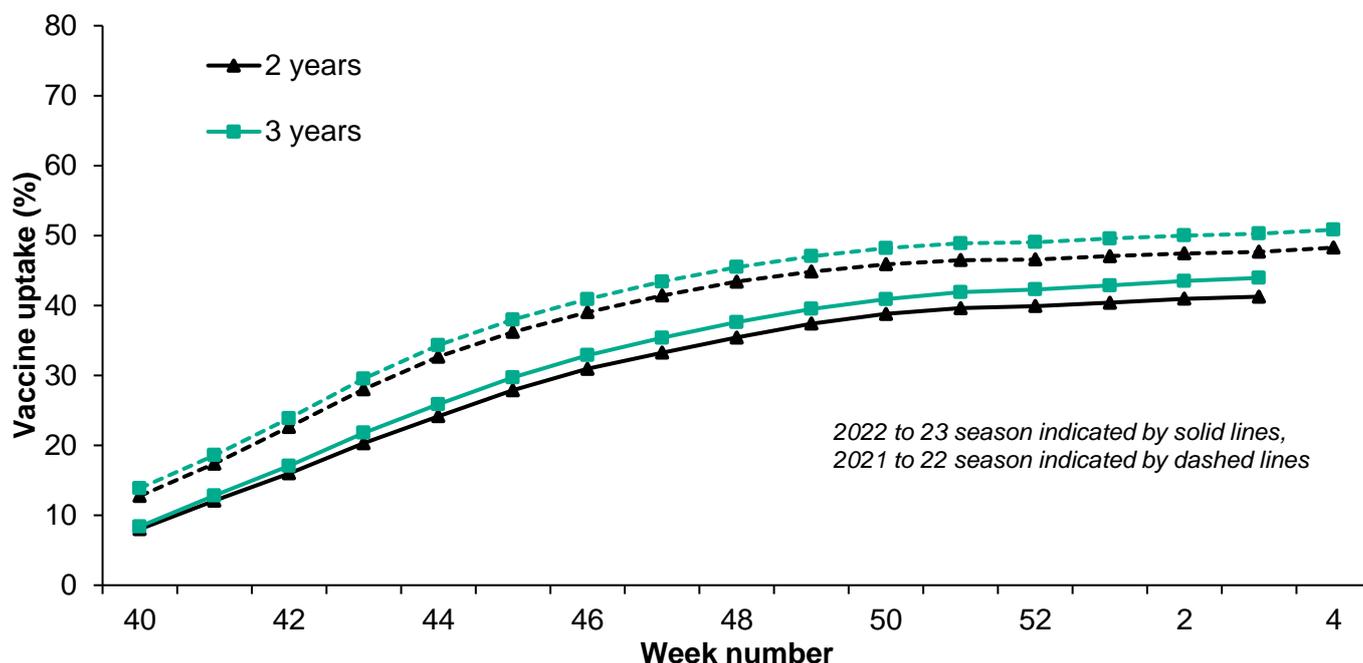
**Figure 58: Cumulative weekly influenza vaccine uptake by target group in England**



In 2022 to 2023, all 2 and 3 year olds continue to be eligible for influenza vaccination through their GPs. Up to week 3 of 2023, in 98.6% of GP practices reporting weekly to ImmForm for the childhood collection, the provisional proportion of children in England who had received the 2022 to 2023 influenza vaccine in targeted groups was as follows:

- 41.3% in all 2 year olds
- 43.9% in all 3 year olds

**Figure 59: Cumulative weekly influenza vaccine uptake in 2 and 3 year olds, in England**



This week, [monthly data](#) which cover vaccinations that were given between 1 September and 31 December 2022 for GP patients, frontline healthcare workers and school aged children has been published for the fourth time this season and comparator data is available for previous seasons. The [monthly GP report](#) includes ethnicity data for at risk groups, pregnant women and 65 years and over.

For at risk groups aged 16 to under 65 years when grouped by ethnicity, the highest vaccine uptake was seen in some White (British and Irish) and some Asian (Bangladeshi, Indian, Chinese, Any other Asian background) groups with the lowest uptake seen in some Black groups (Caribbean, Mixed White and Black Caribbean, Any other Black background).

For pregnant women, when grouped by ethnicity, the highest vaccine uptake was seen in the Chinese group and some White (British and Irish) and some Asian (Indian, Any other Asian background and Mixed White and Asian) groups, with the lowest uptake seen in some Black ethnicities (Caribbean, Mixed White and Black Caribbean, Any Other Black background).

For 65 years and over when grouped by ethnicity, the highest vaccine uptake was seen in the White British group with the lowest uptake seen in Black groups and the Pakistani group.

## Influenza vaccine uptake in school age children

This week, provisional [monthly data](#) on influenza vaccine uptake in children of school years Reception to Year 11 was published, showing the provisional proportion of children who received the 2022 to 2023 influenza vaccine via school, pharmacy or GP practice between 1 September and 31 December 2022. For primary school aged children uptake is higher at this timepoint in the season than last season, but below that seen in the 2020 to 2021 season (which saw the highest on record for primary school aged children).

## Influenza vaccine uptake in healthcare workers

This week, provisional [monthly data](#) on influenza vaccine uptake in frontline healthcare workers was published, showing vaccine uptake at national, commissioning region, and Trust level, and by staff group, between 1 September and 31 December 2022.

# COVID-19 vaccination

## COVID-19 vaccine uptake in England

COVID-19 vaccinations began in England on 8 December 2020 during week 50 2020 (week ending 13 December 2020). Cumulative data up to week 3 2023 (week ending 22 January 2023) was extracted from the National Immunisation Management Service (NIMS). The data presented this week is the provisional proportion of living people resident in England who had received COVID-19 vaccinations. Individuals vaccinated in England who have a registered address outside of England or where their address, age, or sex is unknown have been excluded. Due to changes in GP practice lists, in order to include newly registered patients and remove those who are no longer resident, there will be slight variation to the figures to reflect those who are currently resident in England.

Age is calculated on the date data is extracted. The weekly vaccine coverage data is extracted on a Tuesday with data capped to the previous Sunday and all backing data is updated each week going back to the start of the programme.

Data is provisional and subject to change following further validation checks. Any changes to historic figures will be reflected in the most recent publication. Please note that numbers published by UKHSA are for public health surveillance purposes only.

### Autumn Booster Campaign

Immunity derived from vaccination declines over time and following on from the Spring campaign, the JCVI has recommended an Autumn Booster campaign with the primary objective to boost immunity in those at higher risk from COVID-19 and thereby optimise protection against severe COVID-19, specifically hospitalisation and death, over winter 2022 to 2023.

The Autumn booster data reported below covers any booster dose administered from the 1 September 2022 provided there is at least 3 months from the previous dose. Eligible groups for the Autumn booster campaign are defined in the COVID-19 healthcare guidance [Green Book](#) and include residents in a care home for older adults, staff working in care homes for older adults, frontline health and social care workers, all adults aged 50 years and over, persons aged 5 to 49 years in a clinical risk group, household contacts of people with immunosuppression, and carers.

Table 7 presents coverage as measured against the total population and includes people who are not yet due to have their Autumn booster. It is important that unvaccinated individuals, especially vulnerable adults, receive a primary course of vaccination, irrespective of whether individuals have had previous infection. Table 8 should be interpreted in the context of Table 7 which shows how recently a person who is living and resident in England has been vaccinated either through the primary vaccination campaign or a subsequent booster campaign. This helps

us understand the data in the context of vaccine waning across the whole COVID-19 programme.

By the end of week 3 2023 (week ending 22 January 2023), 64.6% (15,068,059 out of 23,321,310) of all people aged over 50 years old had been vaccinated with an Autumn booster dose since 1 September 2022, Table 7 and Figure 58. Vaccine uptake of those aged over 80 years old was 82.4% (2,453,433 out of 2,977,001).

**Table 7: Provisional cumulative people vaccinated by age with a booster of COVID-19 vaccine from the 1 September 2022 as part of the Autumn booster campaign in England**

National	People in NIMS cohort who are living and resident in England	Vaccinated with an Autumn booster since 1 September 2022*	Percentage vaccine uptake
Over 80	2,977,001	2,453,433	82.4
75 to under 80	2,425,201	2,001,288	82.5
70 to under 75	2,727,843	2,154,978	79.0
65 to under 70	3,042,087	2,187,404	71.9
60 to under 65	3,694,713	2,268,272	61.4
55 to under 60	4,203,369	2,193,893	52.2
50 to under 55	4,251,096	1,808,791	42.5
Total aged 50 and over	23,321,310	15,068,059	64.6

\*Autumn booster defined as any additional dose of vaccine after a 2 dose primary course provided there is an interval of at least 3 months, and it is given since the 1 September 2022.

**Figure 60: Cumulative weekly COVID-19 vaccine uptake by age in those who are living and resident in England for those vaccinated with an Autumn booster since 1 September 2022**

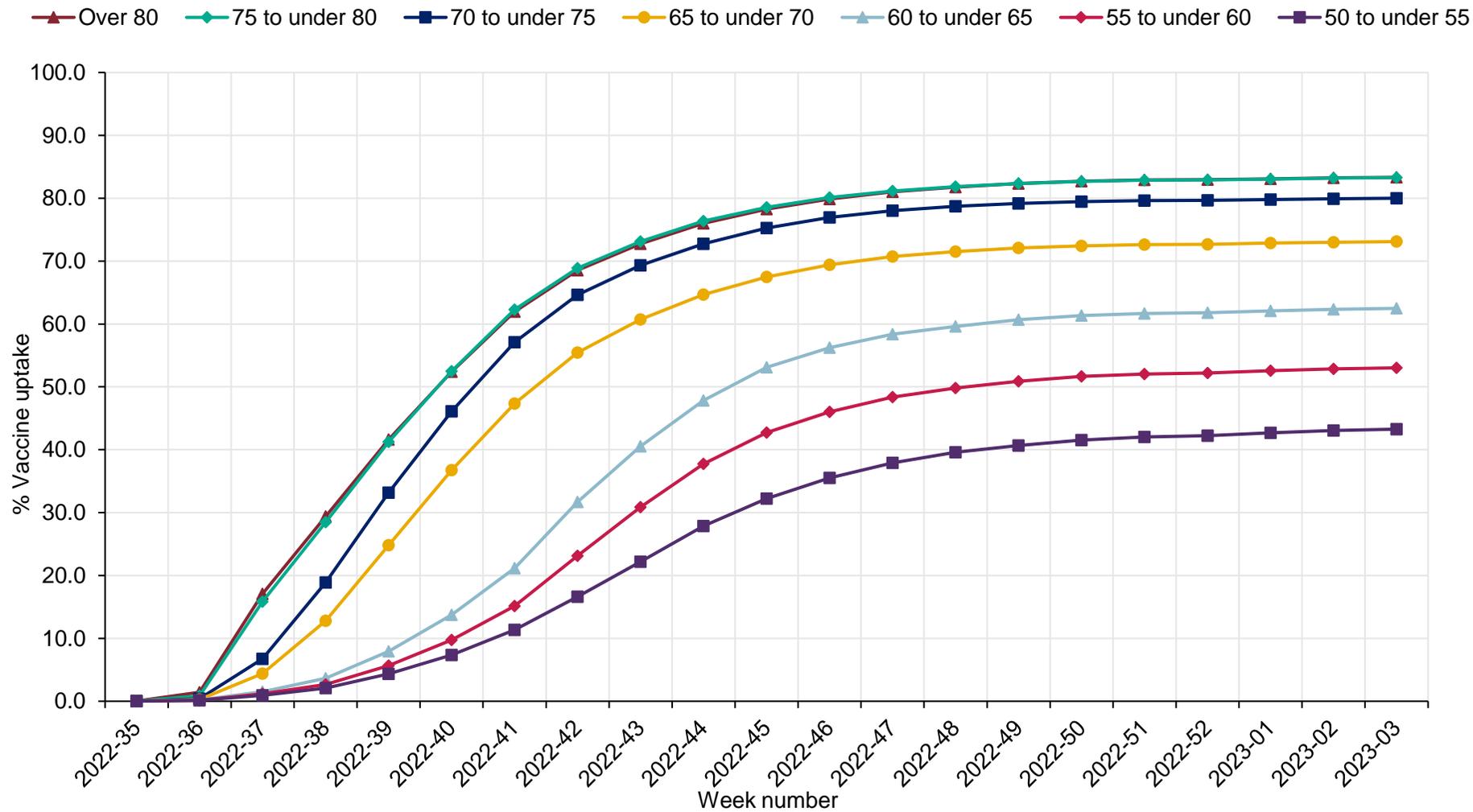


Table 8 presents data by eligibility at the end of December 2022 for the autumn booster campaign if they have completed a primary course of 2 doses and are at least 3 months (84 days) from their previous dose.

**Table 8: Provisional cumulative people vaccinated with an autumn booster COVID-19 vaccine against those eligible by the end of December 2022**

Age at end of December	Eligible by the end of December	Of those eligible by the end of December, numbers vaccinated	Percentage vaccine uptake eligible end of December
Over 80	2,800,800	2,430,535	86.8
75 to under 80	2,290,504	1,990,163	86.9
70 to under 75	2,538,737	2,156,794	85.0
65 to under 70	2,755,814	2,184,170	79.3
60 to under 65	3,283,805	2,266,874	69.0
55 to under 60	3,659,201	2,197,490	60.1
50 to under 55	3,580,325	1,823,814	50.9
Total aged 50 and over	20,909,186	15,049,840	72.0

Please note that this uses a different age cut off definition to the rest of the report and is therefore not a subset of other tables.

Eligible population figures in this table do not include those who are aged 50 and over and have not been vaccinated; unvaccinated people are taken into consideration in the coverage tables above. This table is based on those who have been vaccinated and may include those who are no longer resident in England or have an unknown address.

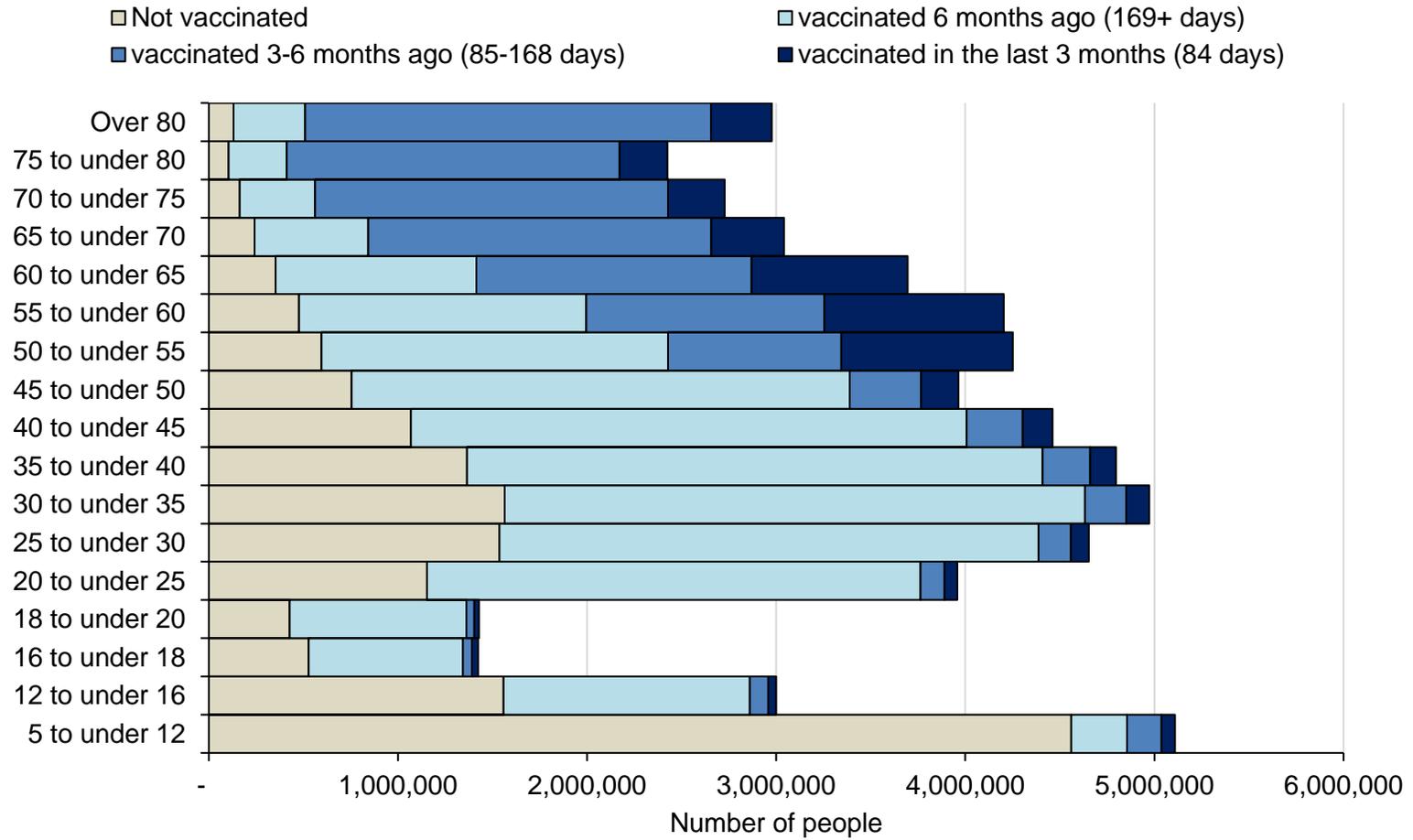
## Proportion of people vaccinated by time since last vaccination

**Table 9: Provisional cumulative people vaccinated with any dose of COVID-19 vaccine in the last 3 months, 3 to 6 months and vaccinated more than 6 months ago**

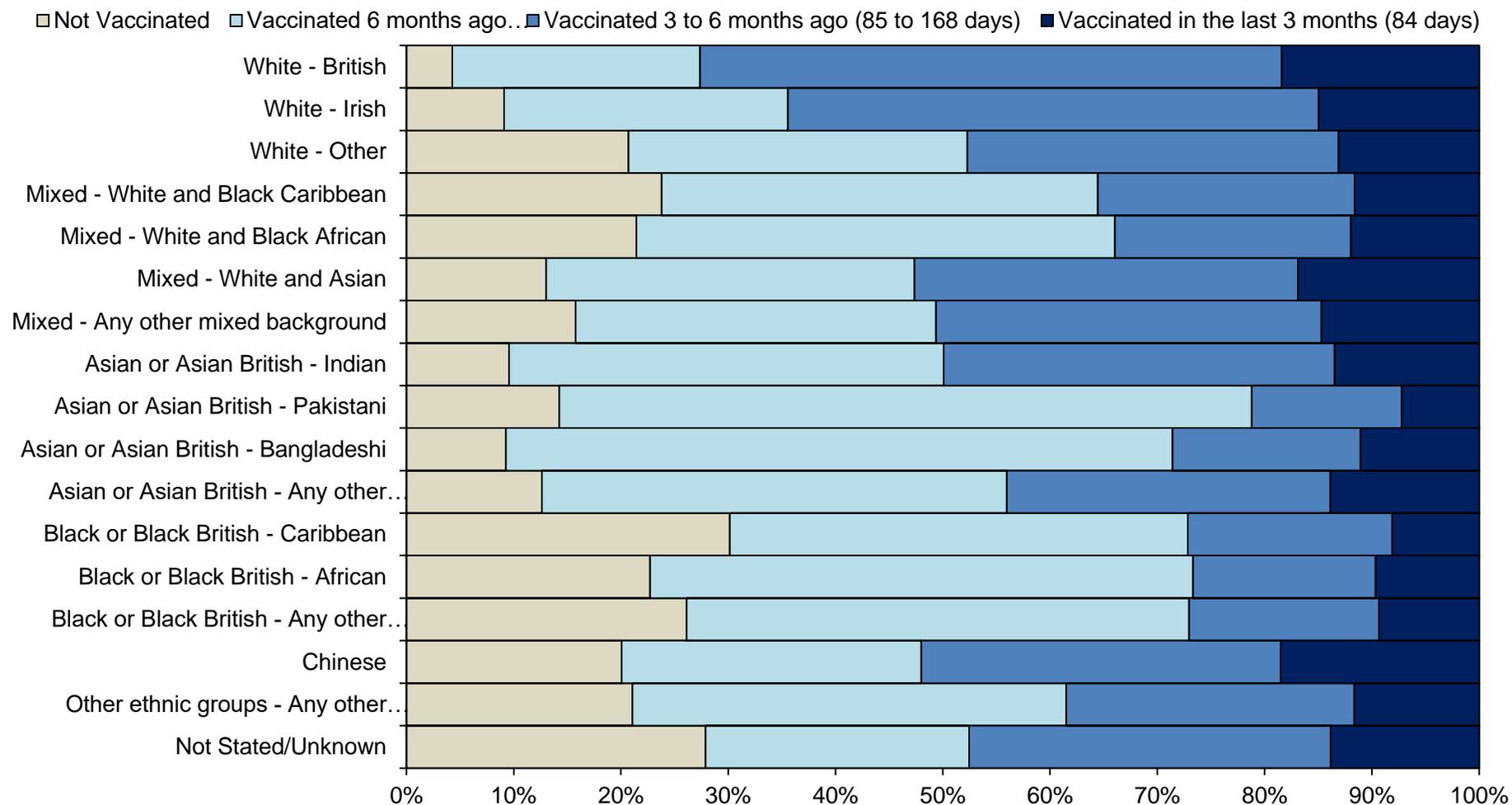
National	People in NIMS cohort who are living and resident in England	Vaccinated in the last 3 months (84 days)		Vaccinated 3 to 6 months ago (85 to 168 days)		Vaccinated 6 months ago (169 or more days)	
		Numbers vaccinated	Percentage vaccinated	Numbers vaccinated	Percentage vaccinated	Numbers vaccinated	Percentage vaccinated
Over 80	2,977,001	321,915	10.8	2,146,112	72.1	378,363	12.7
75 to under 80	2,425,201	254,162	10.5	1,759,713	72.6	306,665	12.6
70 to under 75	2,727,843	299,626	11.0	1,866,292	68.4	398,146	14.6
65 to under 70	3,042,087	385,149	12.7	1,813,838	59.6	600,906	19.8
60 to under 65	3,694,713	825,047	22.3	1,455,574	39.4	1,060,368	28.7
55 to under 60	4,203,369	948,853	22.6	1,258,343	29.9	1,519,344	36.1
50 to under 55	4,251,096	907,400	21.3	915,385	21.5	1,833,160	43.1
45 to under 50	3,963,041	197,798	5.0	376,868	9.5	2,632,811	66.4
40 to under 45	4,460,881	156,622	3.5	297,730	6.7	2,937,969	65.9
35 to under 40	4,795,841	135,385	2.8	251,638	5.2	3,043,299	63.5
30 to under 35	4,972,983	121,941	2.5	217,994	4.4	3,069,003	61.7
25 to under 30	4,652,865	94,567	2.0	171,126	3.7	2,851,010	61.3
20 to under 25	3,956,836	67,659	1.7	125,871	3.2	2,609,268	65.9
18 to under 20	1,428,063	24,589	1.7	41,238	2.9	935,058	65.5
16 to under 18	1,423,352	31,452	2.2	47,832	3.4	816,104	57.3
12 to under 16	3,000,418	42,049	1.4	97,529	3.3	1,302,085	43.4
5 to under 12	5,109,291	72,422	1.4	181,879	3.6	295,082	5.8

Table 9 is presented to provide an overview of how recently a person has been vaccinated either through the primary vaccination campaign or subsequent booster campaigns. This helps us understand the data in the context of vaccine waning across the whole COVID-19 programme. Breakdowns by Ethnicity, and IMD, by age can be found in the backing tables.

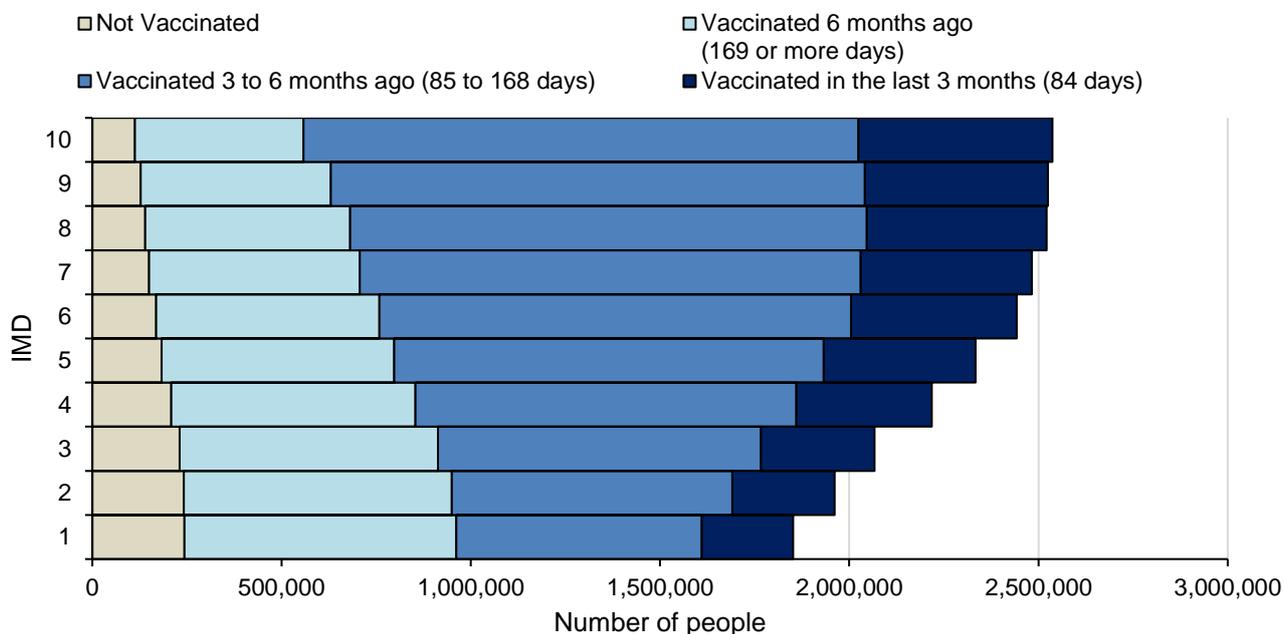
**Figure 61: Provisional cumulative people vaccinated with any dose of COVID-19 vaccine in the last 3 months, 3 to 6 months and vaccinated more than 6 months ago**



**Figure 62: Provisional data on the proportion of people vaccinated with any dose of COVID-19 vaccine in the last 3 months, 3 to 6 months and vaccinated more than 6 months ago by ethnicity in those living and resident in England, aged 50 and over**



**Figure 63: Provisional cumulative people vaccinated with any dose of COVID-19 vaccine in the last 3 months, 3 to 6 months and vaccinated more than 6 months ago by indices of multiple deprivation (IMD)\* in those living and resident in England, aged 50 and over**



\*Decile 1 represents the most deprived 10% (or decile) of small areas in England and Decile 10 represents the least deprived 10% (or decile) of small areas in England.

For a regional breakdown of the ethnicity data, please see the data file that accompanies this report.

## Immunosuppression

Provisional autumn booster vaccine uptake data in living and resident people identified as immunosuppressed in England to the end week 3 (week ending 22 January 2023) was 68.6%, Table 10. Many people in this group have been vaccinated more recently and are still becoming eligible for their autumn booster. Table 11 is presented to provide an overview of how recently a person identified as immunosuppressed has been vaccinated either through the primary vaccination campaign or a subsequent booster campaign. This helps us understand the data in the context of vaccine waning across the whole COVID-19 programme and shows that most people identified as immunosuppressed have been recently vaccinated. This can be seen in Table 11, in which 69.5% of people identified as immunosuppressed are covered by a vaccine given in the last 6 months.

**Table 10: Vaccine uptake in people identified as immunosuppressed in England with a booster of COVID-19 vaccine from the 1 September 2022 as part of the Autumn booster campaign\***

Immuno-suppression	People in NIMS cohort who are living and resident in England	Vaccinated with an autumn booster since 1 September 2022*	Percentage vaccine uptake
England	487,669	334,358	68.6

\*Autumn booster defined as any additional dose of vaccine after a 2 dose primary course provided there is an interval of at least 3 months, and it is given since the 1 September 2022

**Table 11: People identified as immunosuppressed in England vaccinated with any dose of COVID-19 vaccine in the last 3 months, 3 to 6 months and vaccinated more than 6 months ago**

People in NIMS Immuno-suppression cohort who are living and resident in England	Vaccinated in the last 3 months (84 days)		Vaccinated 3 to 6 months ago (85 to 168 days)		Vaccinated 6 months ago (169 or more days)	
	Numbers vaccinated	Percentage vaccinated	Numbers vaccinated	Percentage vaccinated	Numbers vaccinated	Percentage vaccinated
487,669	83,578	17.1	255,145	52.3	127,859	26.2

Detailed information on the NHS Digital characterisation of the immunosuppressed group can be found on the [NHS Digital website](#).

For COVID-19 data on the real-world effectiveness of the COVID-19 vaccines, and on COVID-19 vaccination in pregnancy, please see [the COVID-19 vaccine surveillance reports](#).

For COVID-19 management information on the number of COVID-19 vaccinations provided by the NHS in England, please see the [COVID-19 vaccinations](#) webpage.

For UK COVID-19 daily vaccination figures and definitions, please see the [Vaccinations' section of the UK COVID-19 dashboard](#)

The population coverage data representing the evergreen offer of doses 1, 2, and 3 has changed little in recent months and are no longer presented in both the UKHSA weekly flu and COVID-19 surveillance reports and in the UK COVID-19 Dashboard. Both the UKHSA weekly flu and COVID-19 surveillance reports and in the UK COVID-19 Dashboard now highlight data on the most recent vaccination campaign in those at higher risk from COVID-19 as immunity derived from vaccination declines over time. The overall vaccine uptake in the living and resident population for those with at least dose 1, 2 and 3 doses is still available within the backing tables for this section and in the dashboard APIs.

For a summary of the differences in denominators used to present administrative vaccine uptake by NHS England and vaccine coverage by UKHSA since the start of the COVID-19 programme, please see explainer [here](#). Please note that some administrative vaccine uptake data uses an ONS mid-year estimate as a denominator because not all devolved administrations have a national vaccine register. Please note that not everyone in the numerator will be in the denominator for administrative vaccine uptake where ONS mid-year estimates are used.

## International update

### Global COVID-19 update

For further information on the global COVID-19 situation please see the [World Health Organization \(WHO\) COVID-19 situation reports](#).

### Global influenza update

Updated 23 January 2023 (based on data up to 8 January 2023) ([WHO website](#)).

Globally, influenza activity decreased but remained somewhat elevated due to activity in the northern hemisphere. Influenza A viruses predominated with a slightly larger proportion of A(H1N1)pdm09 viruses detected among the subtyped influenza A viruses during this reporting period.

In the countries of North America, most indicators of influenza activity decreased to levels similar or below levels typically observed this time of year. Influenza A(H3N2) was the predominant virus detected.

In Europe, overall influenza activity decreased but influenza positivity from sentinel sites remained above the epidemic threshold at the regional level. Overall, influenza A viruses predominated with similar proportions of A(H1N1)pdm09 and A(H3N2) influenza viruses detected in primary care sentinel sites but with regional differences. Many countries reported high or very high intensity, and more than half reported widespread activity. Indicators of influenza activity (influenza like illness (ILI), acute respiratory infection (ARI), severe acute respiratory infection (SARI), influenza-associated hospitalizations) decreased in many countries while other countries reported increases.

In central Asia, influenza activity decreased overall with influenza A(H1N1)pdm09 viruses predominant followed by influenza B viruses, but with some differences in trends by country.

In Northern Africa, influenza detections decreased after a peak in week 52, with all seasonal influenza subtypes detected.

In Western Asia, influenza activity decreased overall with all seasonal influenza subtypes detected, though increased activity was reported in some countries.

In East Asia, influenza activity of predominantly influenza A(H3N2) viruses remained low overall though detections continued to be reported at elevated levels in Mongolia and

the Republic of Korea. In the Caribbean and Central American countries, influenza activity of predominantly influenza A(H3N2) viruses was low overall but remained elevated in Mexico.

In the tropical countries of South America, influenza detections were generally low, and influenza A(H3N2) and influenza B viruses predominated. Influenza positivity was at a moderate level in Ecuador.

In tropical Africa, influenza activity was highest in eastern Africa but remained low overall with detections of all seasonal influenza subtypes reported.

In Southern Asia, influenza activity was low and continued to decrease with influenza A(H1N1)pdm09 predominant and influenza A(H3N2) and influenza B also reported.

In South-East Asia, detections of predominantly influenza B remained elevated due to continued detections reported in Malaysia.

In the temperate zones of the southern hemisphere, influenza activity decreased to low levels.

The WHO GISRS laboratories tested more than 563,948 specimens during that time period. 84,596 were positive for influenza viruses, of which 79,268 (93.7%) were typed as influenza A and 5,328 (6.3%) as influenza B. Of the subtyped influenza A viruses, 8,225 (51.9%) were influenza A(H1N1)pdm09 and 7,621 (48.1%) were influenza A(H3N2). Of the type B viruses for which lineage was determined, all 394 (100%) belonged to the B/Victoria lineage.

## Influenza in Europe

Updated for data for week 2 2023 ([Joint ECDC-WHO Europe Influenza weekly update](#)).

The percentage of sentinel primary care specimens from patients presenting with ILI or ARI symptoms that tested positive for an influenza virus remained above the epidemic threshold (10%) and decreased to 22% from 29% in the previous week.

For week 2 2023, of 40 countries and areas reporting on intensity of influenza activity, 4 reported baseline intensity (Iceland, Ukraine, United Kingdom (Northern Ireland) and Uzbekistan), 7 reported low intensity (Belgium, France, Hungary, Luxembourg, Montenegro, Netherlands and United Kingdom (Scotland)), 18 reported medium intensity (across the Region), 9 reported high intensity (across the Region) and 2 reported very high intensity (Finland and Russian Federation).

Of 40 countries and areas reporting on geographic spread of influenza viruses, 3 reported sporadic spread (Azerbaijan, United Kingdom (Northern Ireland) and Uzbekistan), 2 reported local spread (Malta and Slovakia), 5 reported regional spread (Bosnia and Herzegovina, Bulgaria, Montenegro, Serbia and Kosovo) and 30 reported widespread activity (across the Region).

For week 2 2023, 822 (22%) of 3 679 sentinel specimens tested positive for an influenza virus; 87% were type A and 13% were type B. Of 511 subtyped A viruses, 60% were A(H1)pdm09 and 40% A(H3). All 13 type B viruses ascribed to a lineage were B/Victoria.

Of 33 countries and areas across the Region that each tested at least 10 sentinel specimens in week 2 2023, 29 reported a positivity rate above 10% (median 26%; range 15% to 71%), of which 7 reported positivity above 40%: Republic of Moldova (71%), Montenegro (62%), Armenia (60%), Finland (55%), Slovenia (47%), Israel (45%) and Poland (41%).

For the season to date, 13,219 (23%) of 58,465 sentinel specimens tested positive for an influenza virus. More influenza type A (n=12,299, 93%) than type B (n=920, 7%) viruses have been detected. Of 9,992 subtyped A viruses, 7,274 (73%) were A(H3) and 2,718 (27%) were A(H1)pdm09. All 260 influenza type B viruses ascribed to a lineage were B/Victoria (72% of type B viruses were reported without a lineage).

For week 2 2023, 10,894 of 78,699 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 an influenza virus; 9,402 (86%) were type A and 1,492 (14%) were type B. Of 2,341 subtyped A viruses, 1,813 (77%) were A(H1)pdm09 and 528 (23%) A(H3). All 26 type B viruses ascribed to a lineage were B/Victoria.

For the season to date, more influenza type A (n=133,767, 93%) than type B (n=9,968, 7%) viruses have been detected. Of 41,965 subtyped A viruses, 22,543 (54%) were A(H1)pdm09 and 19,422 (46%) were A(H3). All 625 influenza type B viruses ascribed to a lineage were B/Victoria (94% of type B viruses were reported without a lineage).

## Influenza in North America

For further information on influenza in the United States of America please see the [Centre for Disease Control weekly influenza surveillance report](#). For further information on influenza in Canada please see the [Public Health Agency weekly influenza report](#).

## Influenza in Australia

For further information on influenza in Australia please see the [Australian Influenza Surveillance Report and Activity Updates](#).

## Other respiratory viruses

### Avian influenza and other zoonotic influenza

[Latest WHO update on 5 January 2023](#)

From 12 November 2022 to 5 January 2023, one human case of infection with an influenza A(H5N6) virus, three human cases of infection with avian influenza A(H9N2) viruses, and one human case of infection with an influenza A(H1N2) variant virus were reported officially.

The overall public health risk from currently known influenza viruses at the human-animal interface has not changed, and the likelihood of sustained human-to-human transmission of these viruses remains low. Human infections with viruses of animal origin are expected at the human-animal interface wherever these viruses circulate in animals.

### Middle East respiratory syndrome coronavirus (MERS-CoV)

From April 2012 to October 2022, a total of 2,600 laboratory-confirmed cases of MERS-CoV and 935 associated deaths were reported globally to [WHO](#) under the International Health Regulations (IHR 2005).

Between 29 December 2021 and 31 October 2022, four laboratory-confirmed cases of MERS-CoV were reported to WHO by the Ministry of Health of the Kingdom of Saudi Arabia. No deaths were reported ([WHO website](#)).

On 28 April 2022, the National IHR Focal point of Oman notified WHO of one case of MERS-CoV in Oman ([WHO website](#)).

Between 22 March and 3 April 2022, the National IHR Focal Point of Qatar reported 2 laboratory-confirmed cases of Middle East respiratory syndrome coronavirus (MERS-CoV) infection to the WHO ([WHO website](#)).

A total of 5 cases of Middle East respiratory syndrome coronavirus, MERS-CoV, (3 imported and 2 linked cases) have been confirmed in the UK through ongoing surveillance since September 2012.

[Further information on management and guidance of possible cases](#) is available online. The latest [ECDC MERS-CoV risk assessment](#) highlights that risk of widespread transmission of MERS-CoV remains very low.

## Related links

[Previous national COVID-19 reports](#)

[Previous weekly influenza reports](#)

[Annual influenza reports](#)

[COVID-19 vaccine surveillance reports](#)

[Previous COVID-19 vaccine surveillance reports](#)

[Public Health England \(PHE\) monitoring of the effectiveness of COVID-19 vaccination](#)

[Investigation of SARS-CoV-2 variants of concern: technical briefings](#)

[Sources of surveillance data for influenza, COVID-19 and other respiratory viruses](#)

UKHSA has delegated authority, on behalf of the Secretary of State, to process Patient Confidential Data under Regulation 3 The Health Service (Control of Patient Information) Regulations 2002

Regulation 3 makes provision for the processing of patient information for the recognition, control and prevention of communicable disease and other risks to public health.

# About the UK Health Security Agency

The [UK Health Security Agency](#) is an executive agency, sponsored by the [Department of Health and Social Care](#).

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