



UK Health  
Security  
Agency

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

Week 48 report (up to week 47 data)

1 December 2022

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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](#).

## Corrections

This report was corrected on 2 December 2022 after errors in the executive summary and in Table 8 were found. In the third paragraph of the executive summary, the age group and the percentage increase in parainfluenza positivity were corrected. Table 8 was replaced as the entirety as an old version of this table was accidentally included.

## 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 47 (between 21 and 27 November 2022) and for some indicators daily data up to 29 November 2022.

At a national level, COVID-19 activity decreased in most indicators in week 47 of 2022. Influenza activity increased this week across surveillance indicators.

COVID-19 case rates through Pillar 1 decreased in week 47 overall, in all age groups, genders, regions and ethnic groups. Pillar 1 positivity also decreased in week 47 overall.

V-22OCT-01 (Omicron BQ.1) is now the dominant variant in England, making up 50.4% of sequenced cases in week up to and including 19 November. V-22JUL-01 (Omicron BA.2.75) also continues to increase in prevalence.

Through Respiratory Datamart, influenza positivity increased to 10.5% in week 47; with highest positivity seen in the 5 to 14 years age group at 18.5%. SARS-CoV-2 positivity remained stable at 5.1%. Respiratory syncytial virus (RSV) positivity increased to 12.7% in week 47, with the highest positivity in the under 5 year olds at 34.4%. Adenovirus positivity remained stable in week 47 at 2.7%. Rhinovirus positivity decreased to 12.1% overall. Parainfluenza positivity increased to 2.5%. Human metapneumovirus (hMPV) positivity increased to 3.5%.

The overall number of reported acute respiratory infection (ARI) incidents increased compared to the previous week, with the highest number of incidents continuing to be in care homes (83 with COVID-19 detected). The number of influenza confirmed outbreaks in care homes decreased. Through NHS 111, calls for cold/flu and for cough increased nationally.

Through primary care surveillance, influenza-like-illness consultations increased but remained below baseline. The lower respiratory tract infection indicator increased slightly, while the COVID-19 indicator remained stable. Through sentinel GP swabbing, SARS-CoV-2 positivity decreased to 1.4%, influenza positivity slightly decreased to 13.0%, while RSV positivity increased to 20.3%.

Overall, COVID-19 hospitalisations and ICU admissions increased in week 47. Hospitalisations were highest in the 85 years and over age group. Influenza hospital admissions increased,

reaching the medium activity threshold. Influenza admissions were highest in the under 5 year olds and 85 years and over age groups. Influenza ICU admissions increased and within medium intensity range. The RSV hospitalisation rate increased in the under 5 year age group. Emergency department attendances for COVID-19-like illnesses remained stable while acute respiratory infections and influenza-like-illness increased.

Deaths with COVID-19 decreased in week 46. No excess deaths were observed in week 46.

The COVID-19 Autumn booster vaccination campaign commenced in early September. By the end of week 47, 62.4% of all people aged over 50 years old had been vaccinated with an Autumn booster dose.

Influenza vaccine uptake for the 2022 to 2023 influenza season has been reported weekly since week 41. The trend in vaccine uptake compared to the previous 2021 to 2022 season is comparable for 65 year olds and over, for those under 65 years in clinical risk groups, and for pregnant women, but lower in and 2 and 3 year olds.



# 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 November 2022, a total of 1,919,994 episodes have been confirmed for COVID-19 in England under Pillar 1, and 18,363,974 episodes have been confirmed for COVID-19 in England under Pillar 2, since the beginning of the pandemic.

COVID-19 case rates through Pillar 1 decreased in week 47 overall, in all age groups, genders, regions and ethnic groups. Pillar 1 positivity also decreased in week 47 overall.

### 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](#).

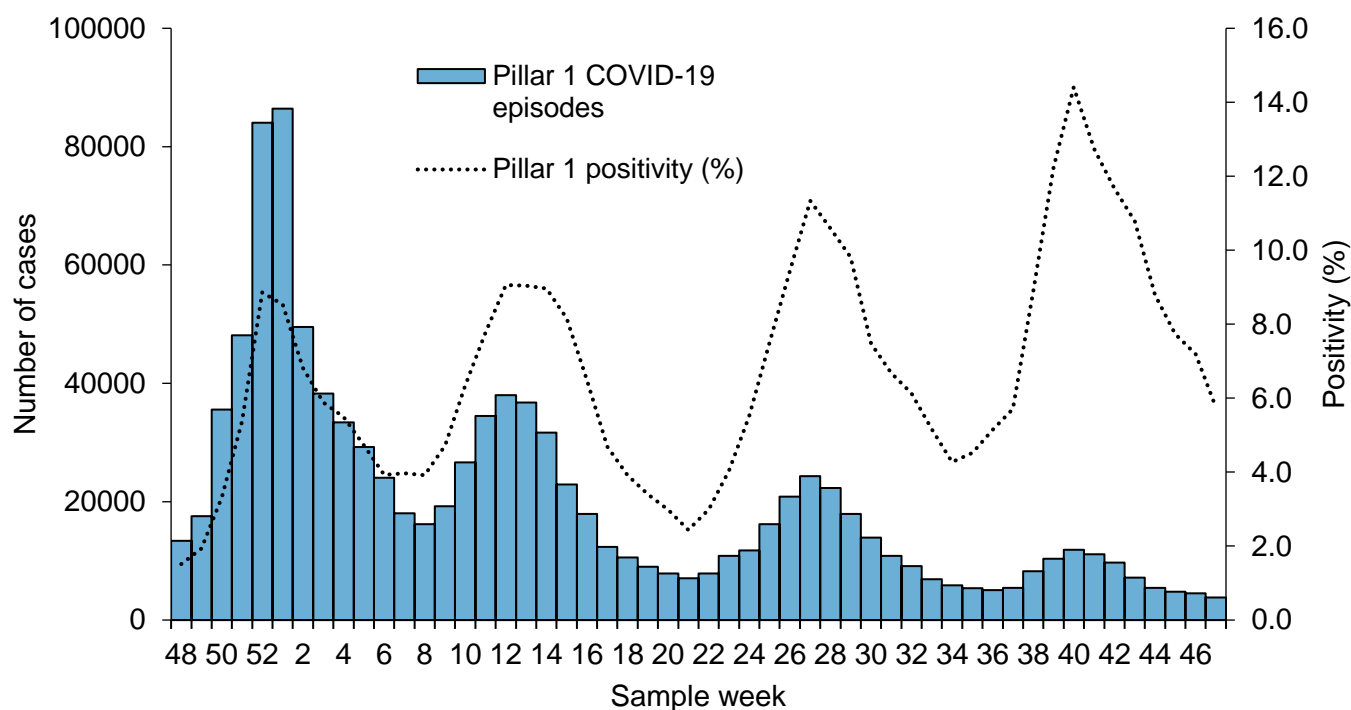
From the week 32 2021 report onwards, case rates have been updated to use the latest Office for National Statistics (ONS) population estimates for mid-2020. Previously case rates were calculated using the mid-2019 population estimates. Rates by ethnicity and Indices of Multiple Deprivation (IMD) quantile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

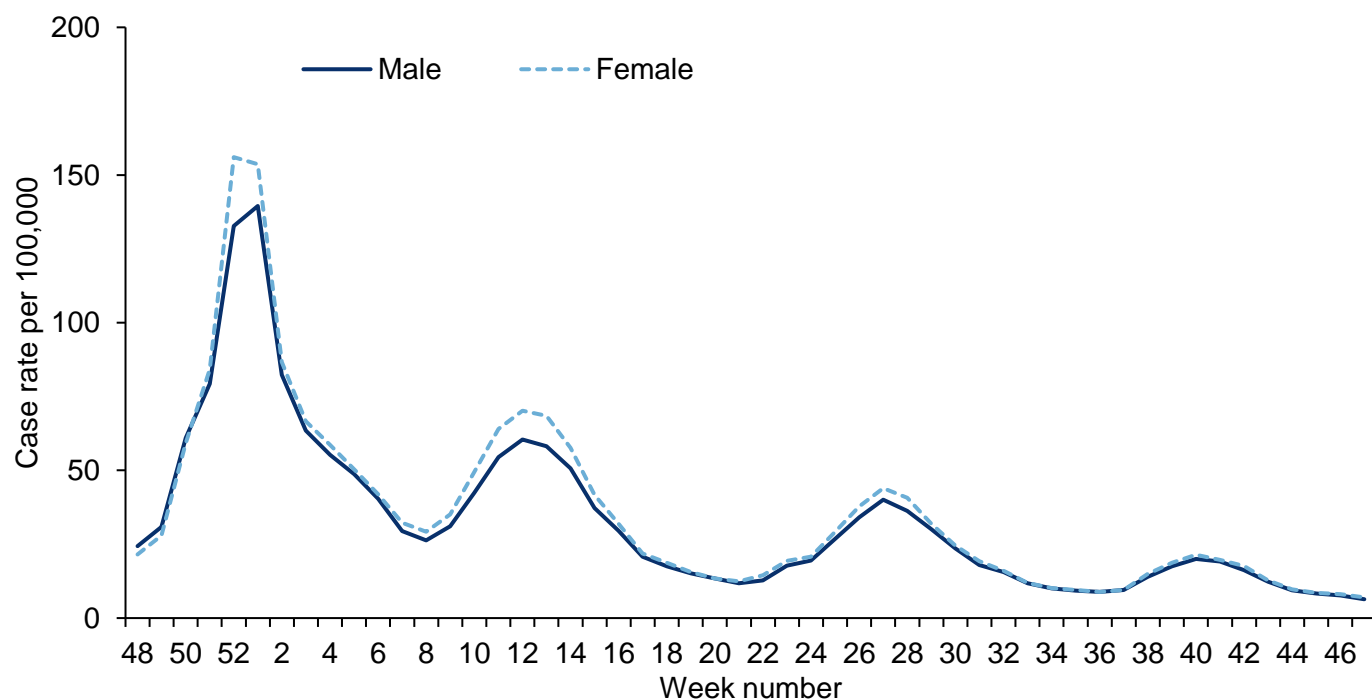
Data source: Second Generation Surveillance System (SGSS)

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



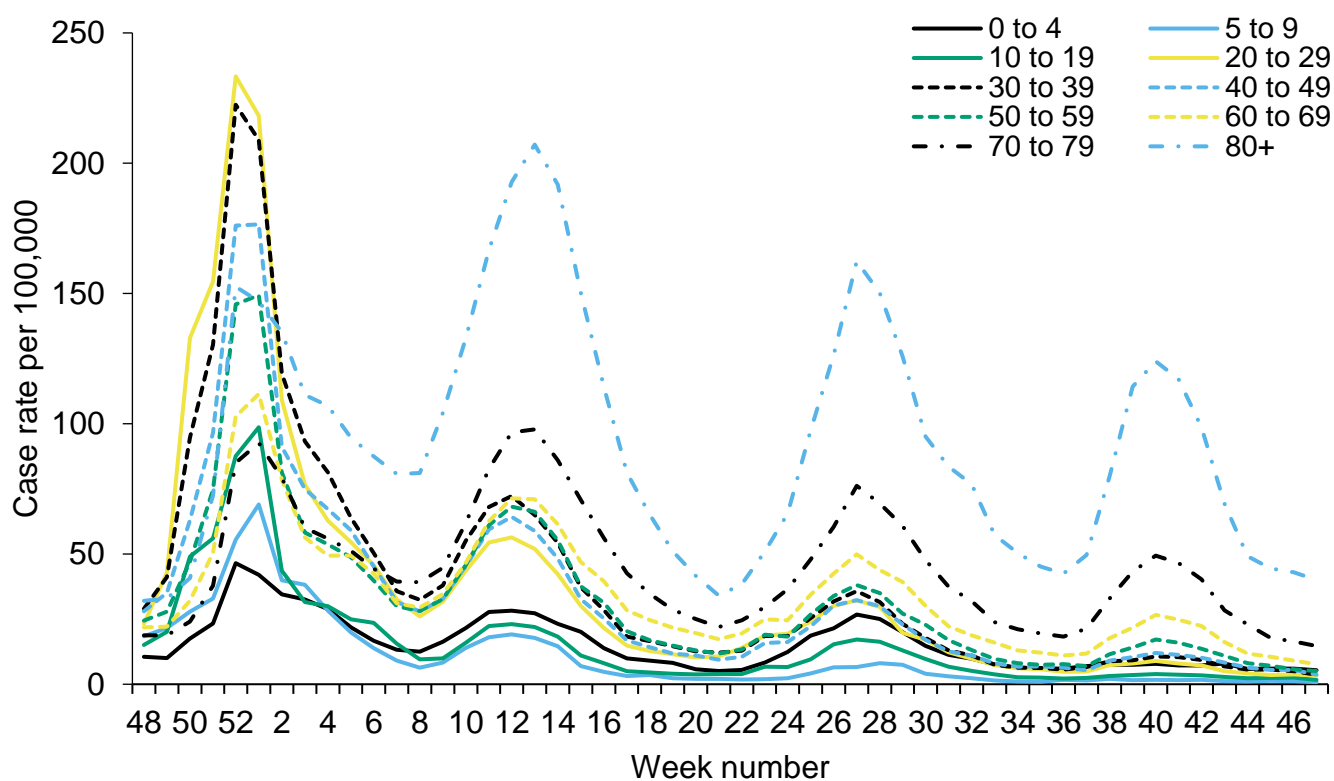
## Age and sex

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

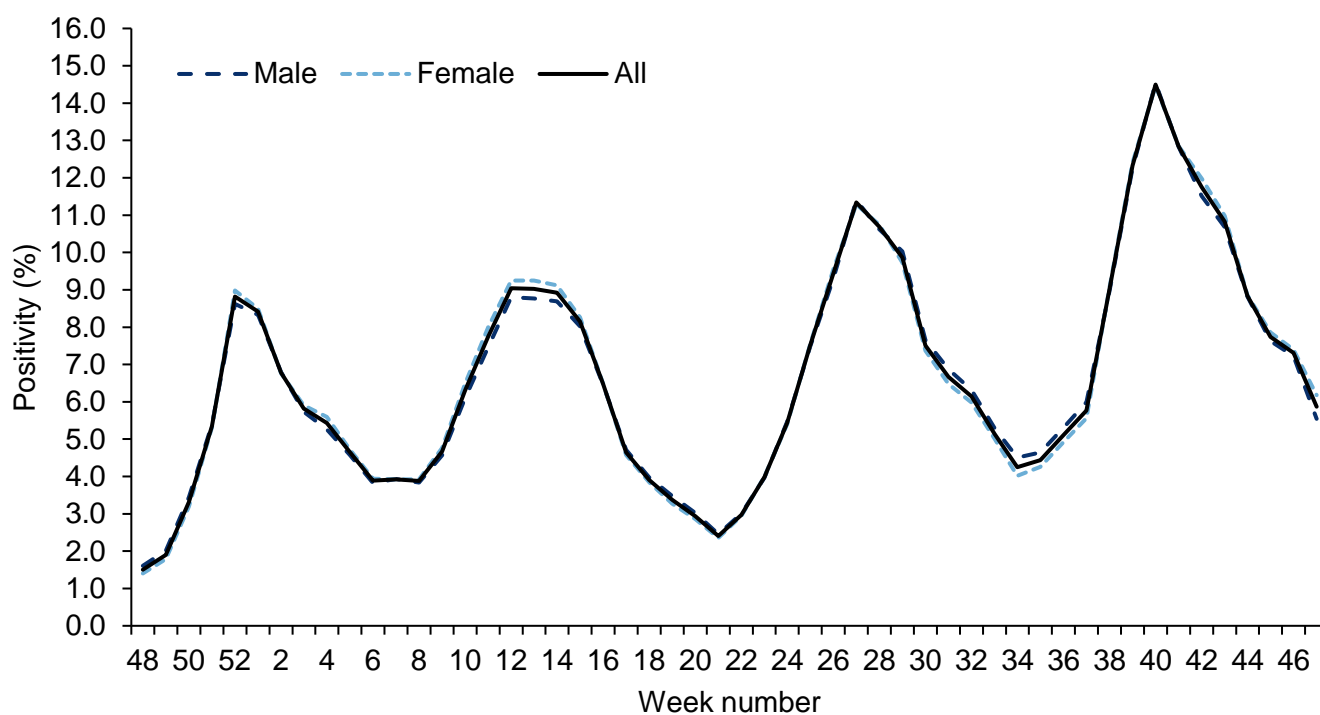




**Figure 3: Weekly confirmed COVID-19 case rates per 100,000, by episode, tested under Pillar 1, by age group**

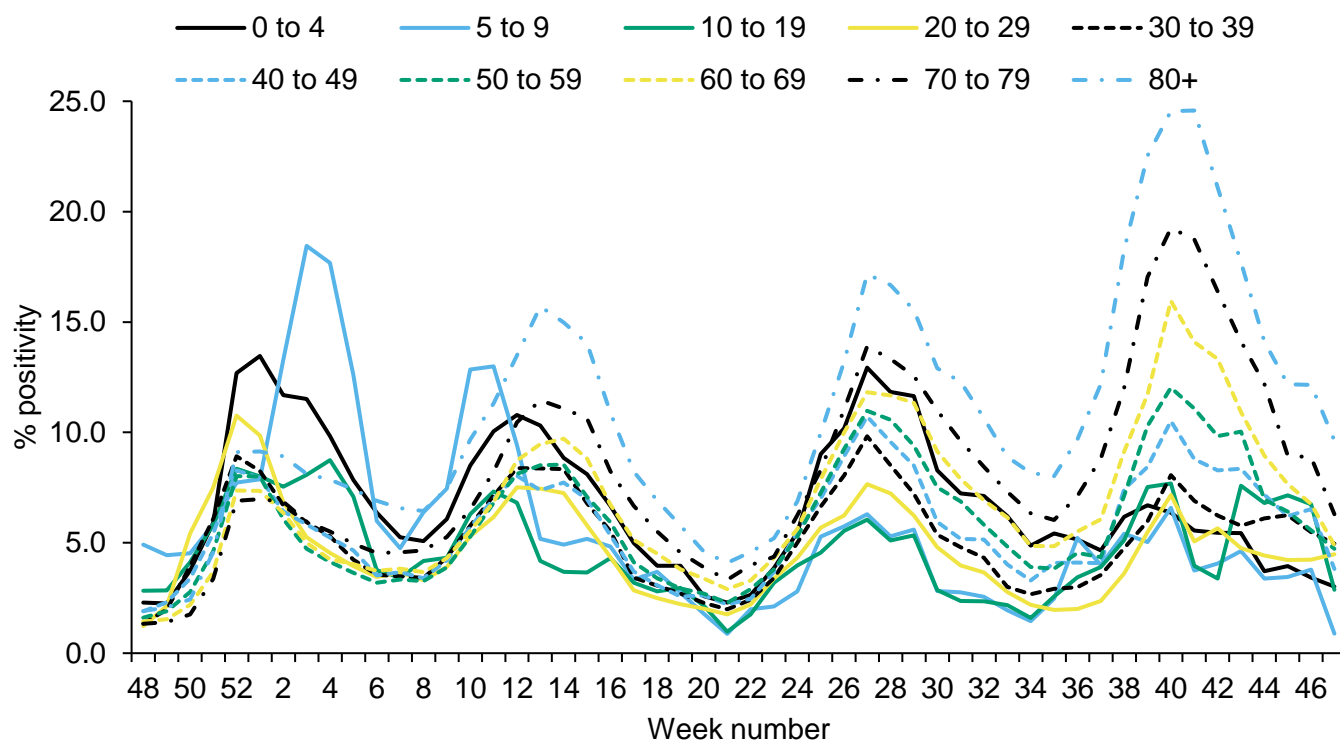


**Figure 4: Weekly PCR positivity (%) of confirmed COVID-19 cases tested overall and by sex under Pillar 1**

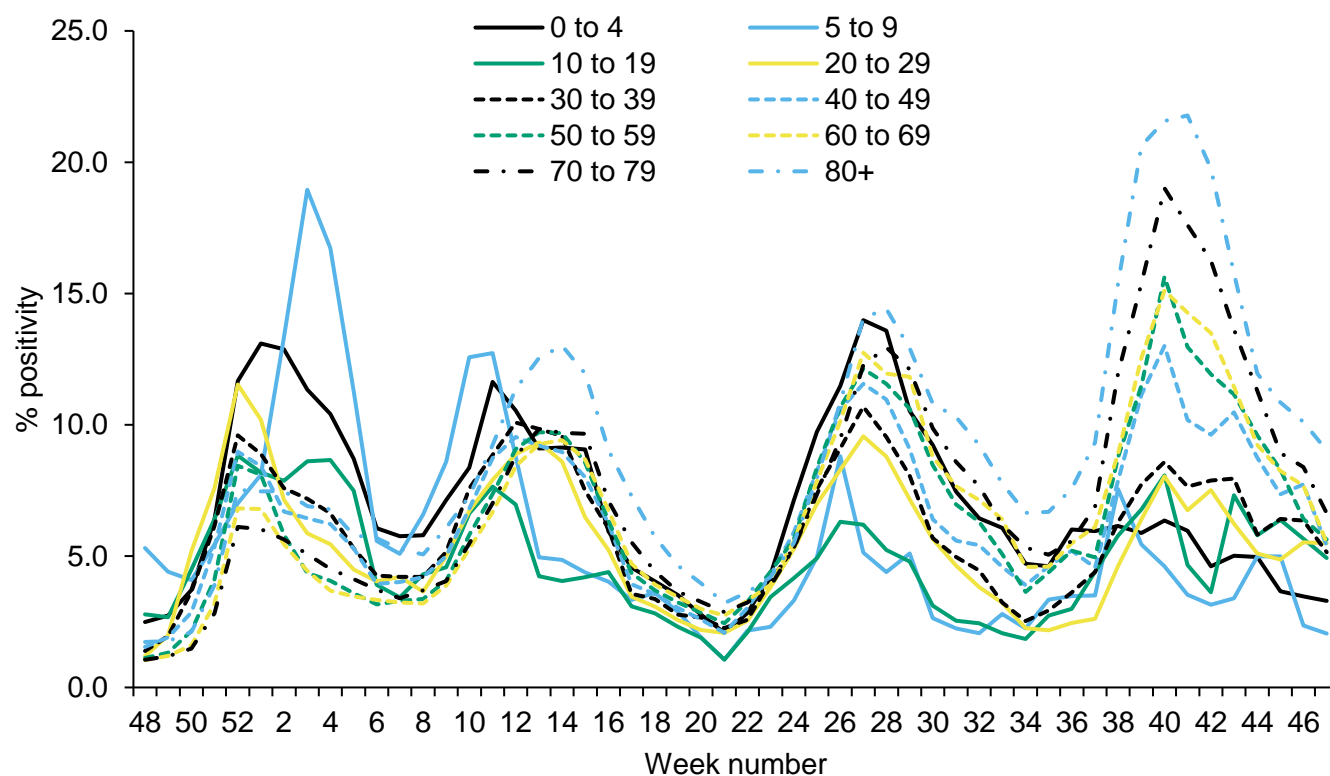


**Figure 5: Weekly PCR positivity (%) of confirmed COVID-19 cases tested under Pillar 1, (a) by male and age group and (b) by female and age group**

(a) Pillar 1 - Male

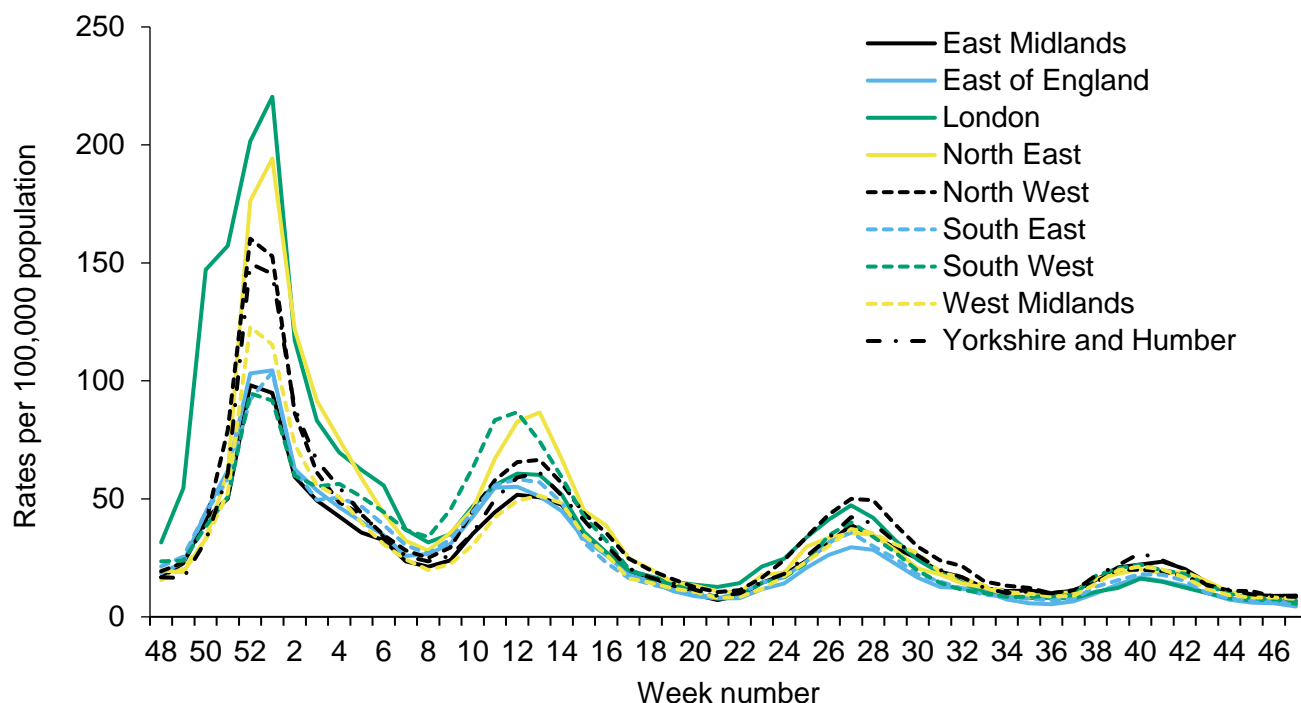


(b) Pillar 1 - Female

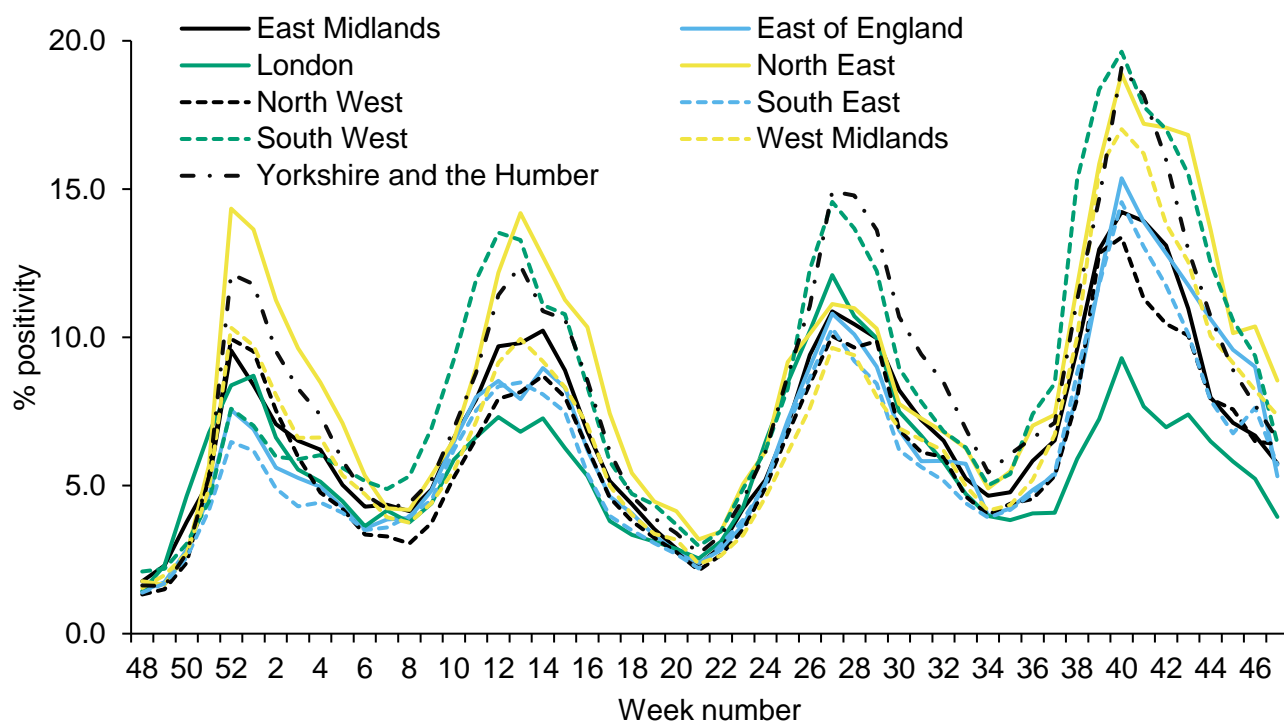


## Geography

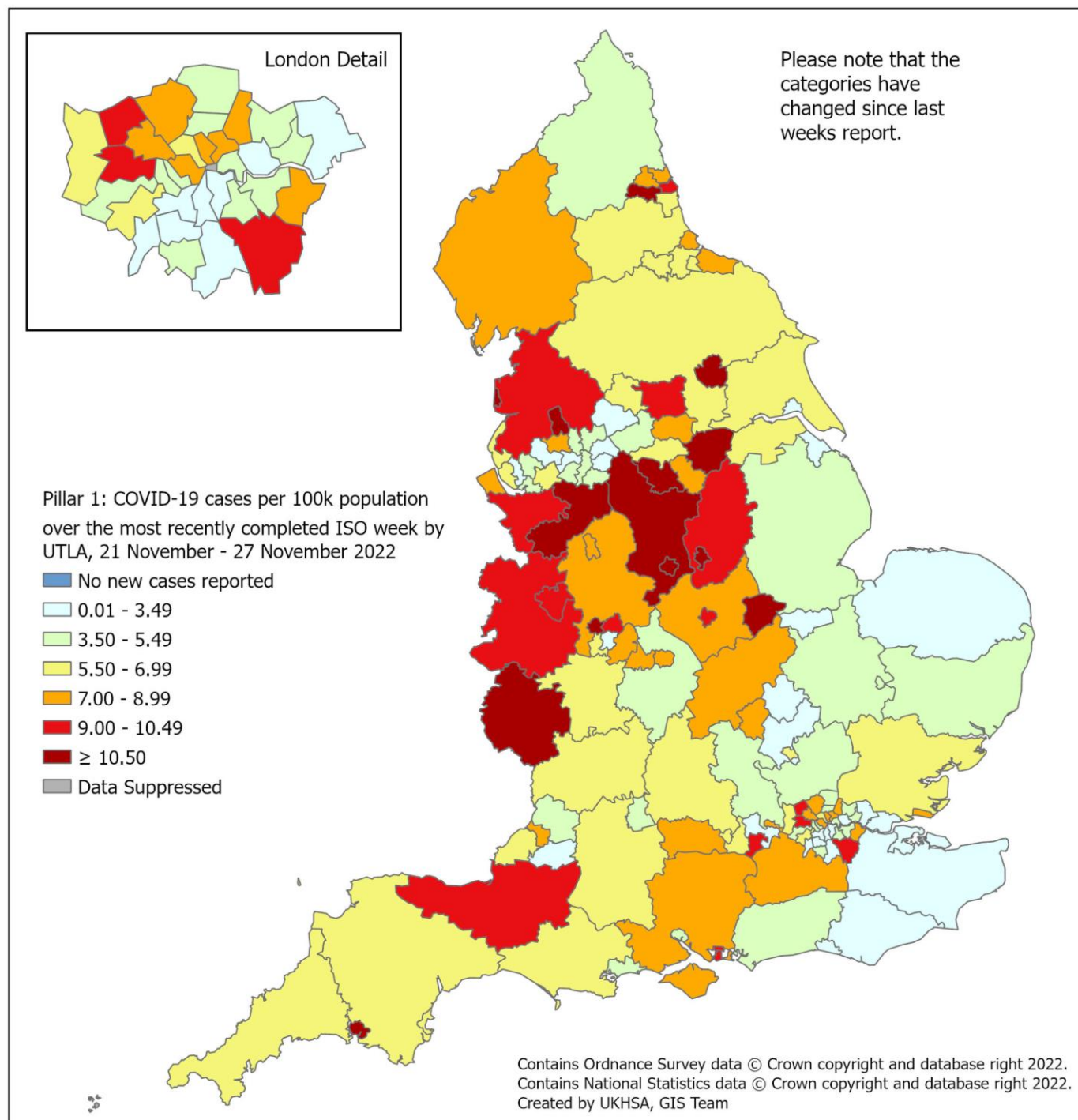
**Figure 6: Weekly confirmed COVID-19 case rates by episode, per 100,000 population (Pillar 1), by UKHSA centres and sample week**



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

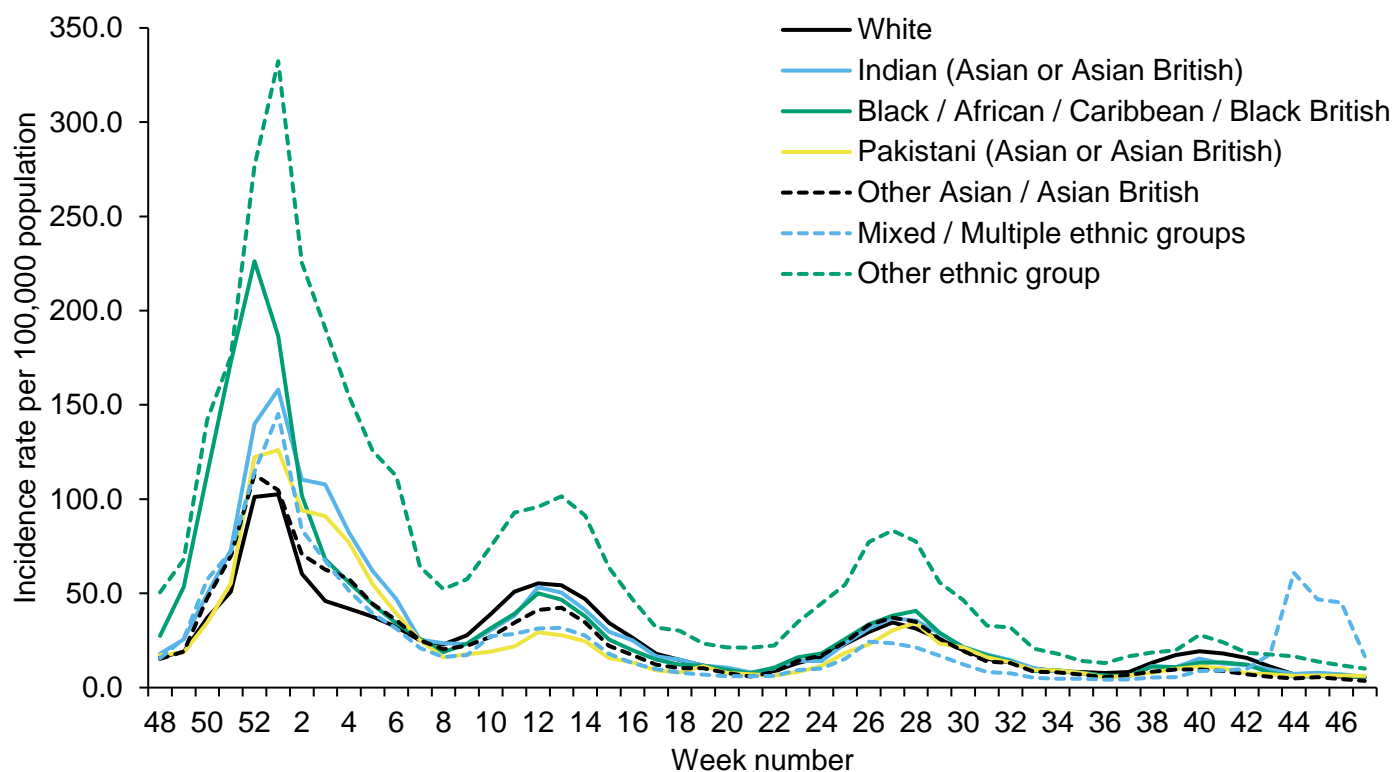


**Figure 8: Weekly rate of COVID-19 episodes per 100,000 population (Pillar 1), by upper-tier local authority (UTLA), England (box shows enlarged map of London area)**



## 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

## 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.

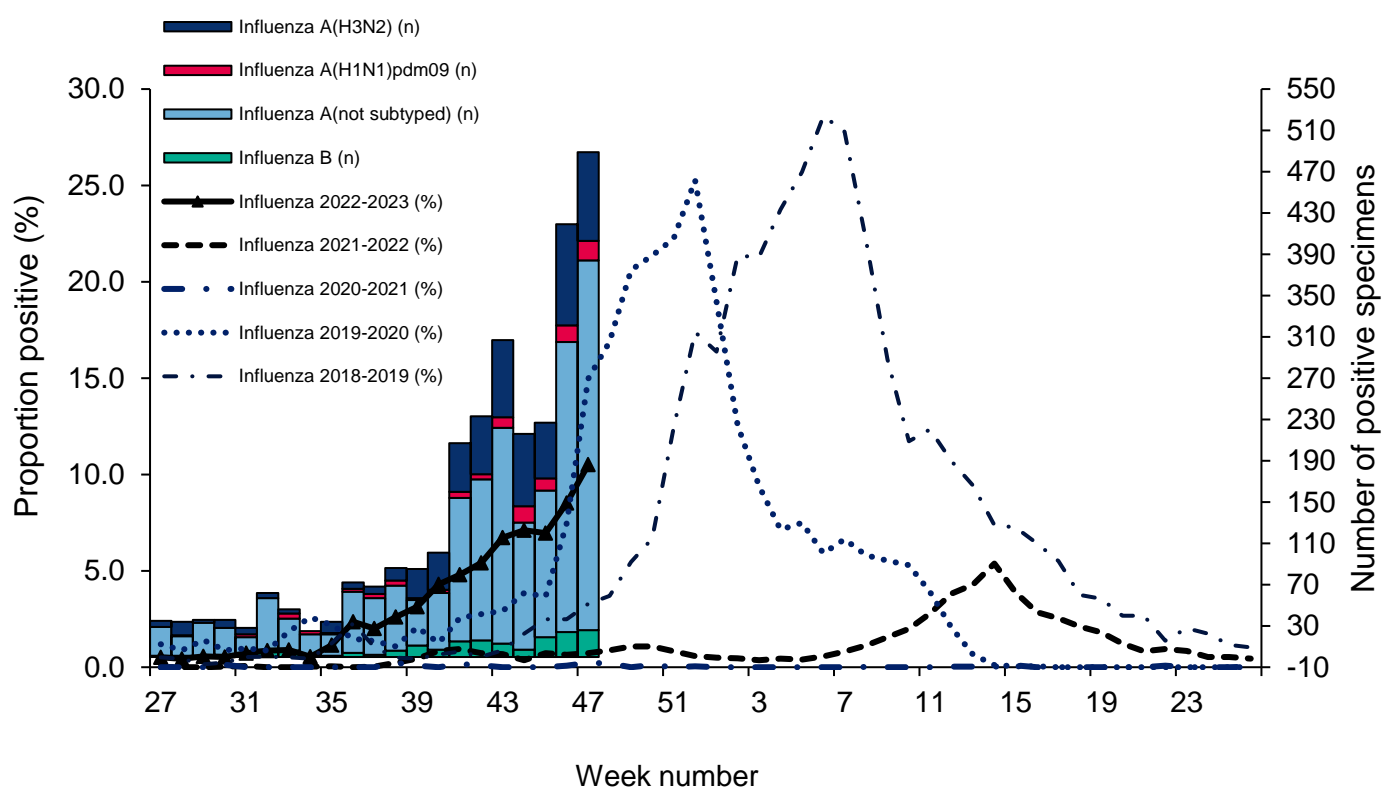
In week 47 of 2022, out of the 13,703 respiratory specimens reported through the Respiratory DataMart System (based on data received from 13 out of 16 laboratories), 705 samples were positive for SARS-CoV-2 with an overall positivity of 5.1% which was a slight decrease on the previous week. The highest positivity was seen in the 65 year olds and over at 6.2%.

Influenza positivity increased from 8.5% in week 46 to 10.5% in week 47 with 489 samples tested positive for influenza (86 flu A(H3), 19 flu A(H1N1)pdm09, and 358 flu A(not subtyped) and 26 flu B) in week 47.

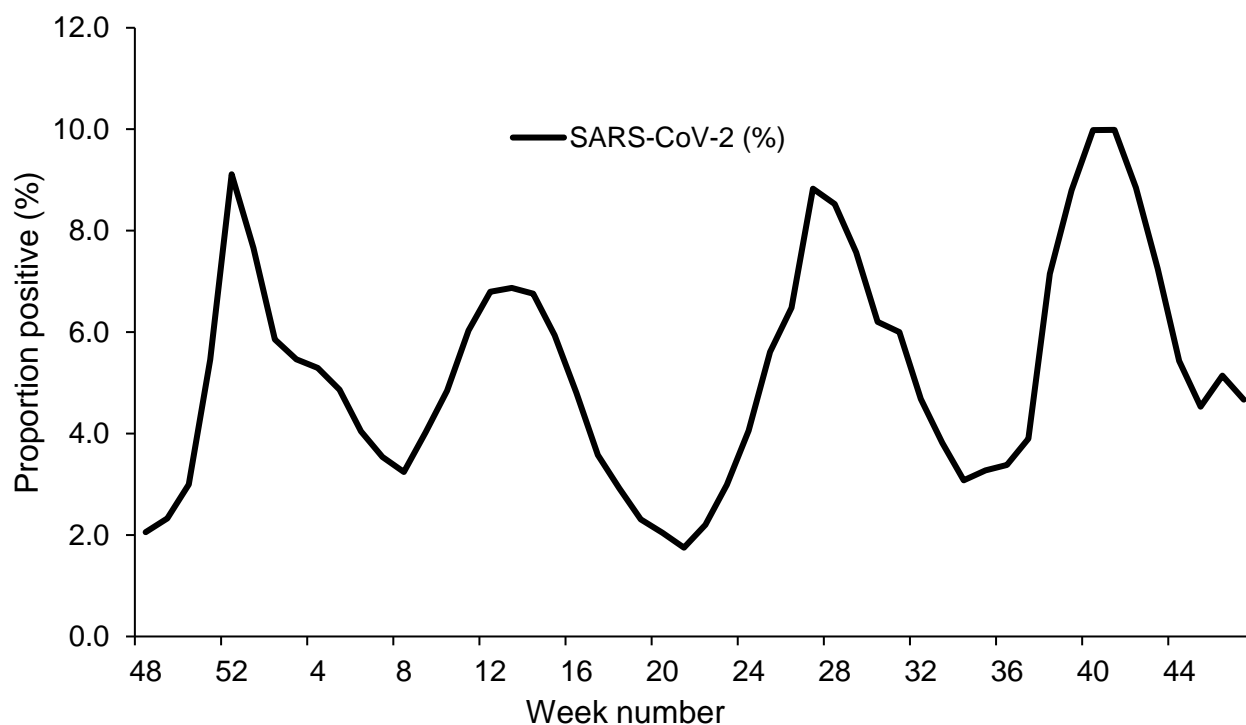
Adenovirus positivity remained low at 2.7% with the highest positivity of 6.4% in the <5 year olds.

Rhinovirus positivity decreased to 12.1% overall. Parainfluenza positivity slightly increased from 1.6% in week 46 to 2.5% in week 47. Human metapneumovirus (hMPV) positivity increased from 2.0% in week 46 to 3.5% in week 47 (Figure 12).

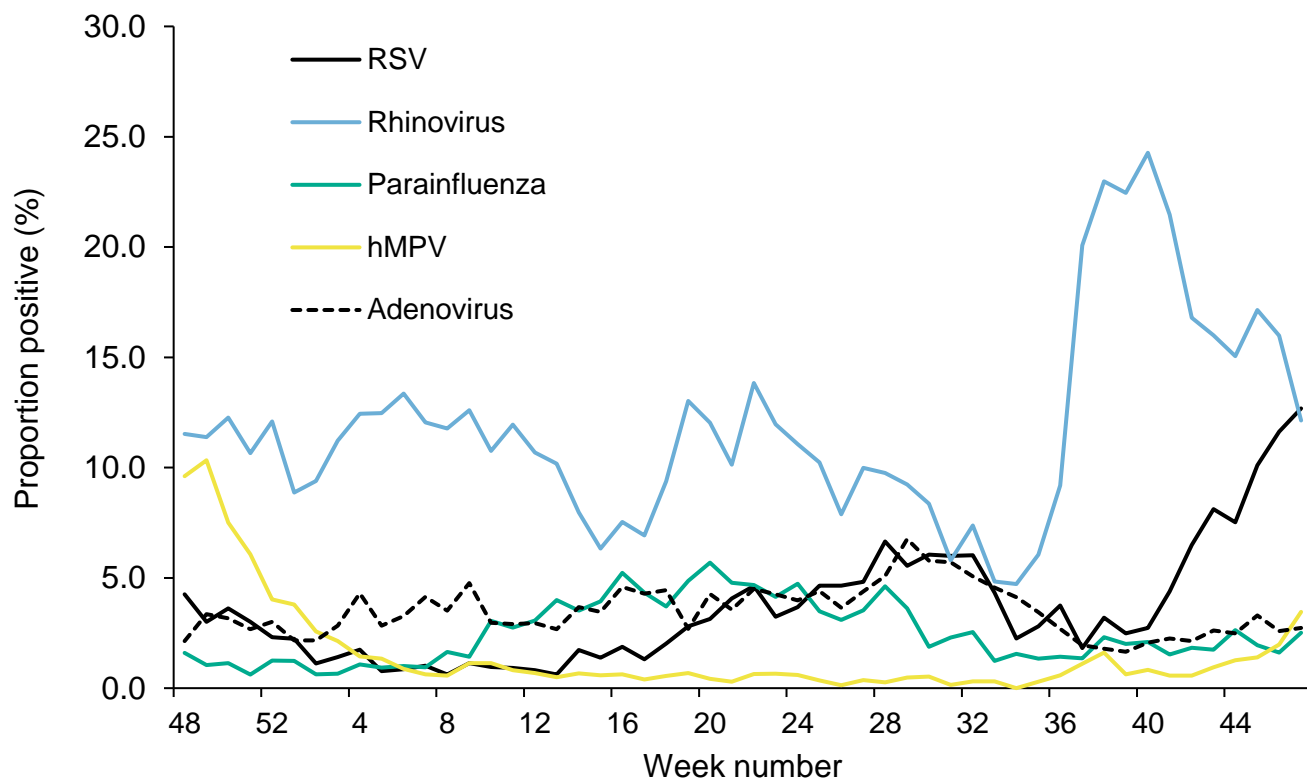
**Figure 10: Respiratory DataMart samples positive for influenza and weekly positivity (%) for influenza, England**



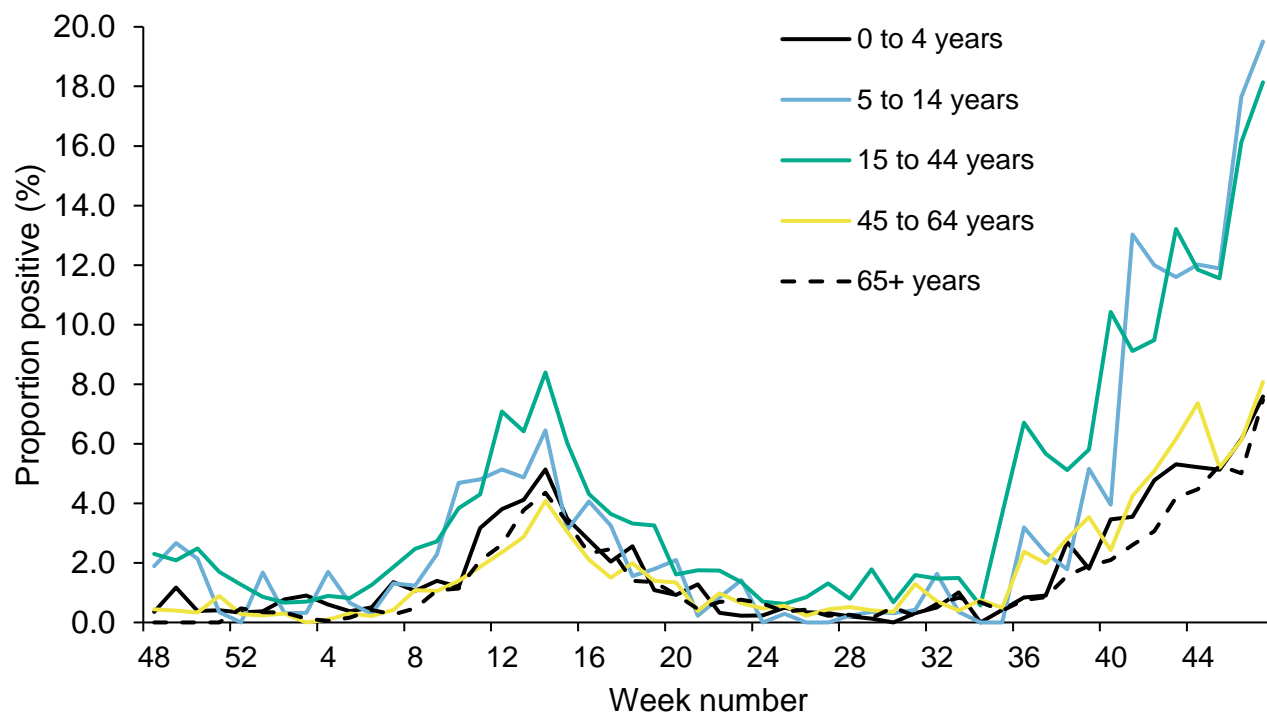
**Figure 11: Respiratory DataMart weekly positivity (%) for SARS-CoV-2, England**



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

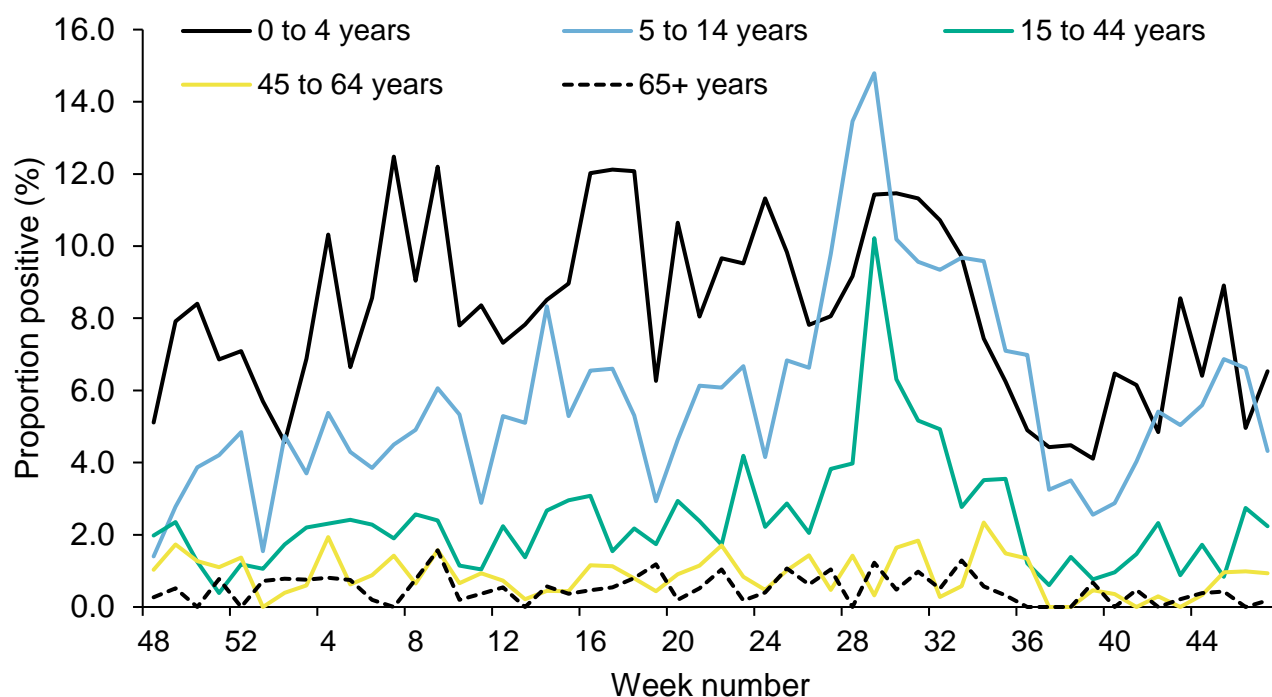


**Figure 13: Respiratory DataMart weekly positivity (%) for influenza by age, England**

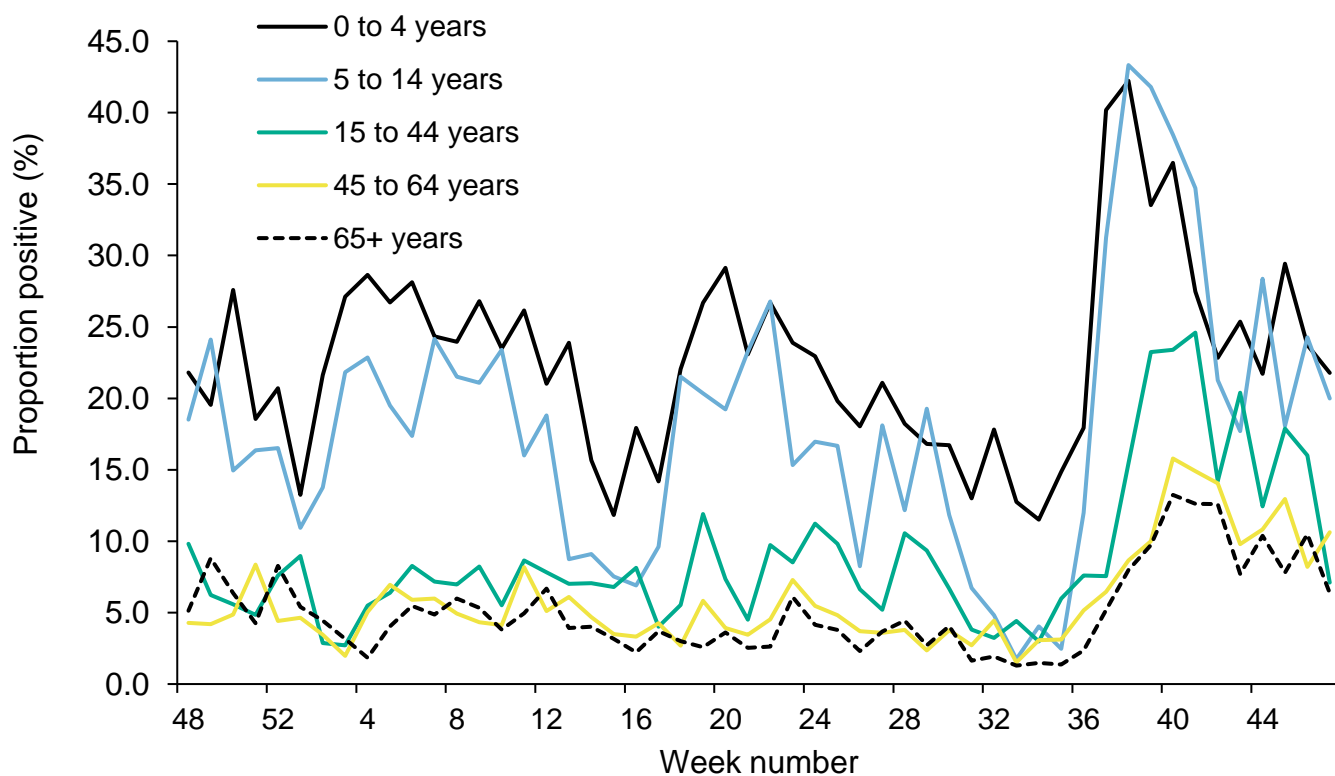




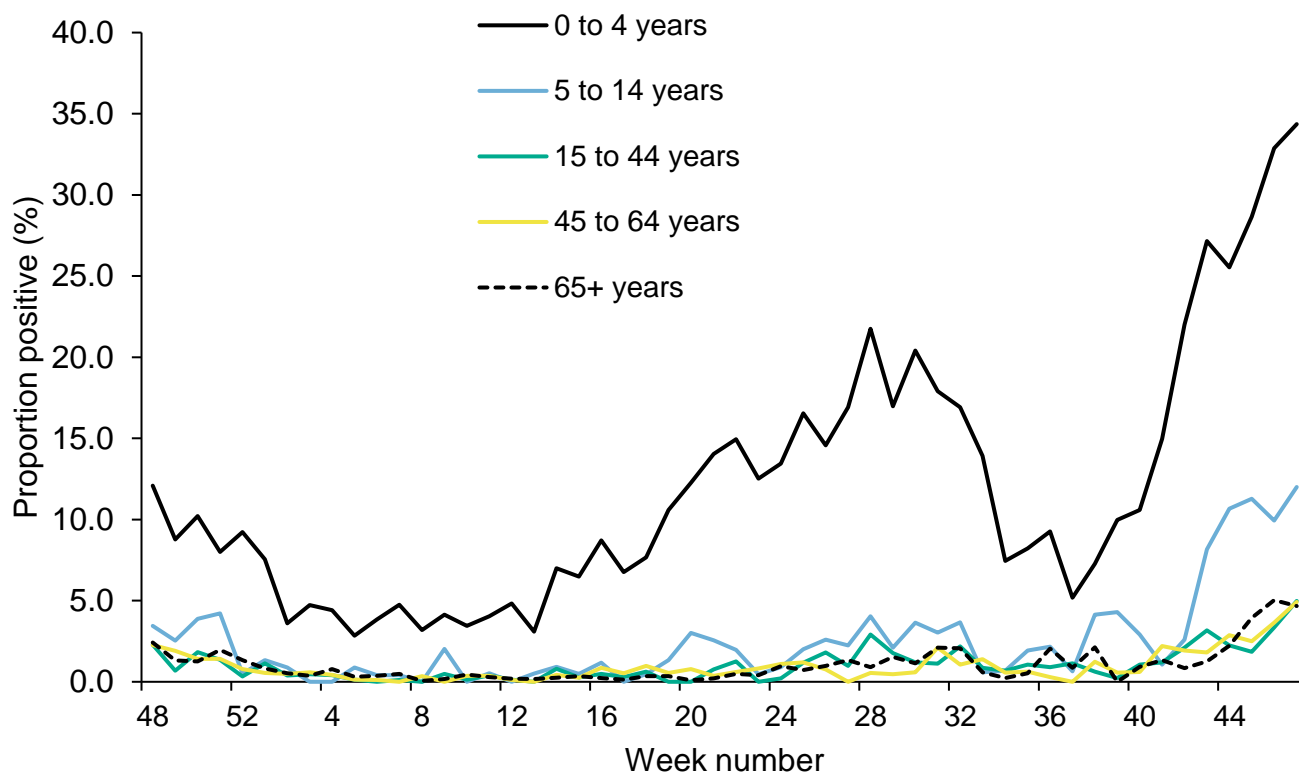
**Figure 14: Respiratory DataMart weekly positivity (%) for adenovirus by age, England**



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



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



# 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.

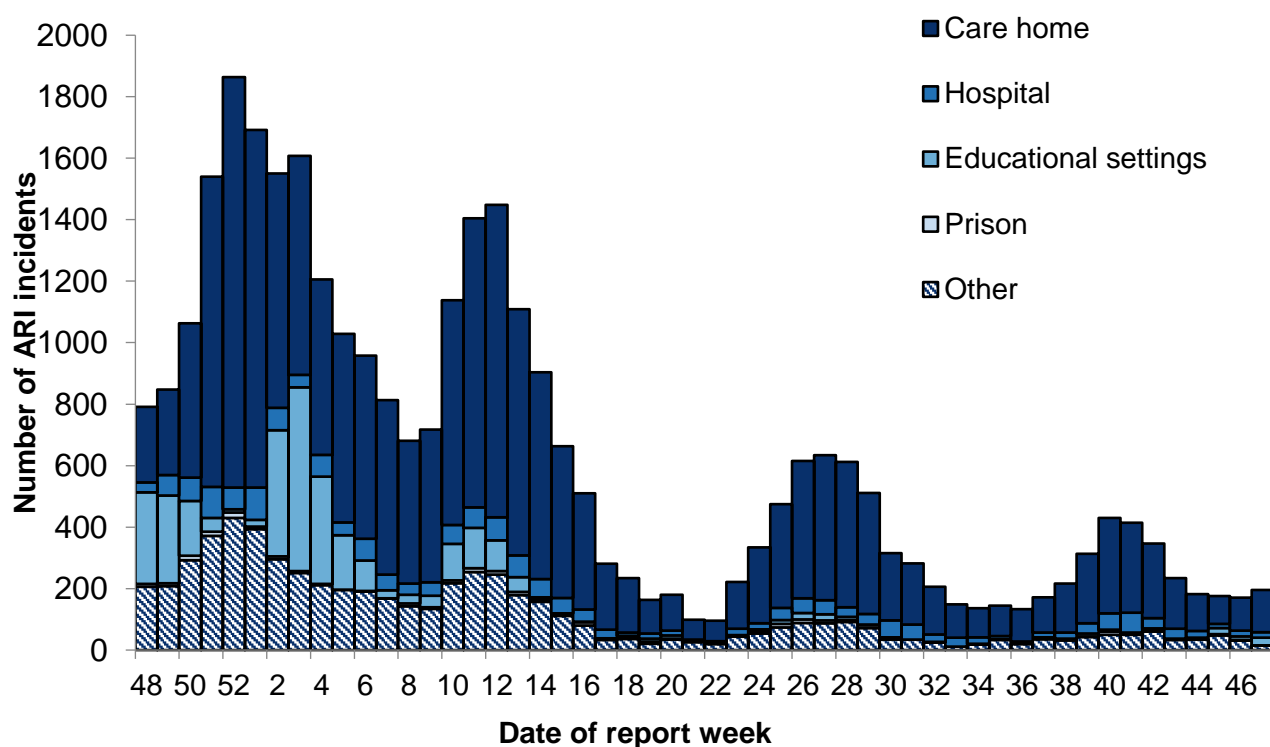
### Data caveats:

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.

223 new ARI incidents have been reported in week 47 in the UK (Figure 17):

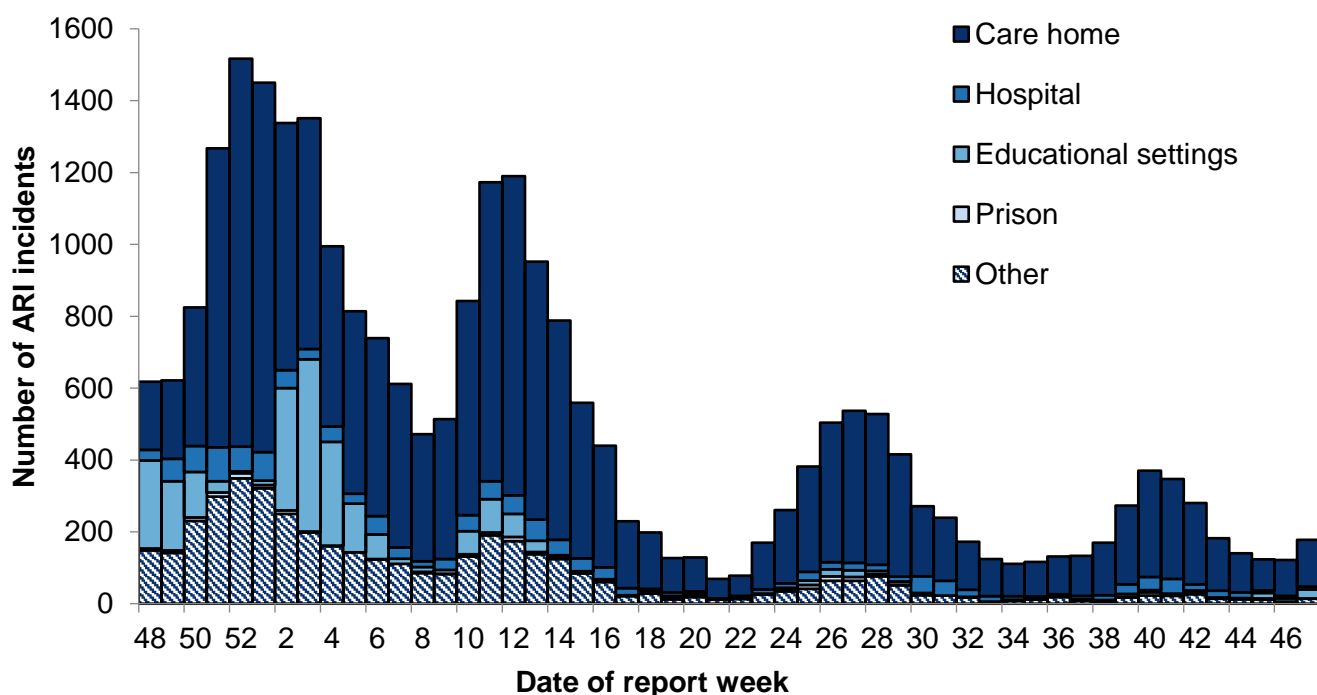
- 138 incidents were from care homes where 83 had at least one linked case that tested positive for SARS-CoV-2, 8 for influenza A(not subtyped), 1 for RSV and 1 for parainfluenza
- 18 incidents were from hospitals, where 11 had at least one linked case that tested positive for SARS-CoV-2, 2 for influenza A(not subtyped)
- 33 incidents were from educational settings, where 1 had at least one linked case that tested positive for SARS-CoV-2
- 1 incident was from a prison, with no test results available
- 43 incidents were from other settings where 9 had at least one linked case that tested positive for SARS-CoV-2

**Figure 17: Number of acute respiratory infection (ARI) incidents by setting, UK**

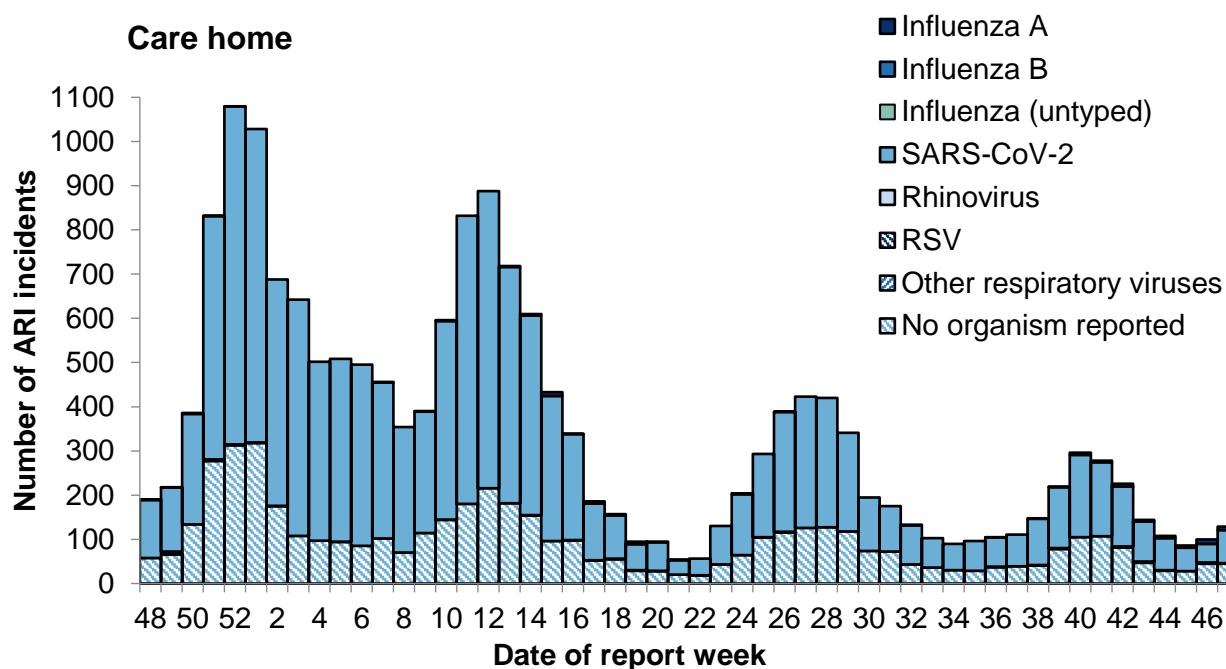


\*Excludes data from Wales

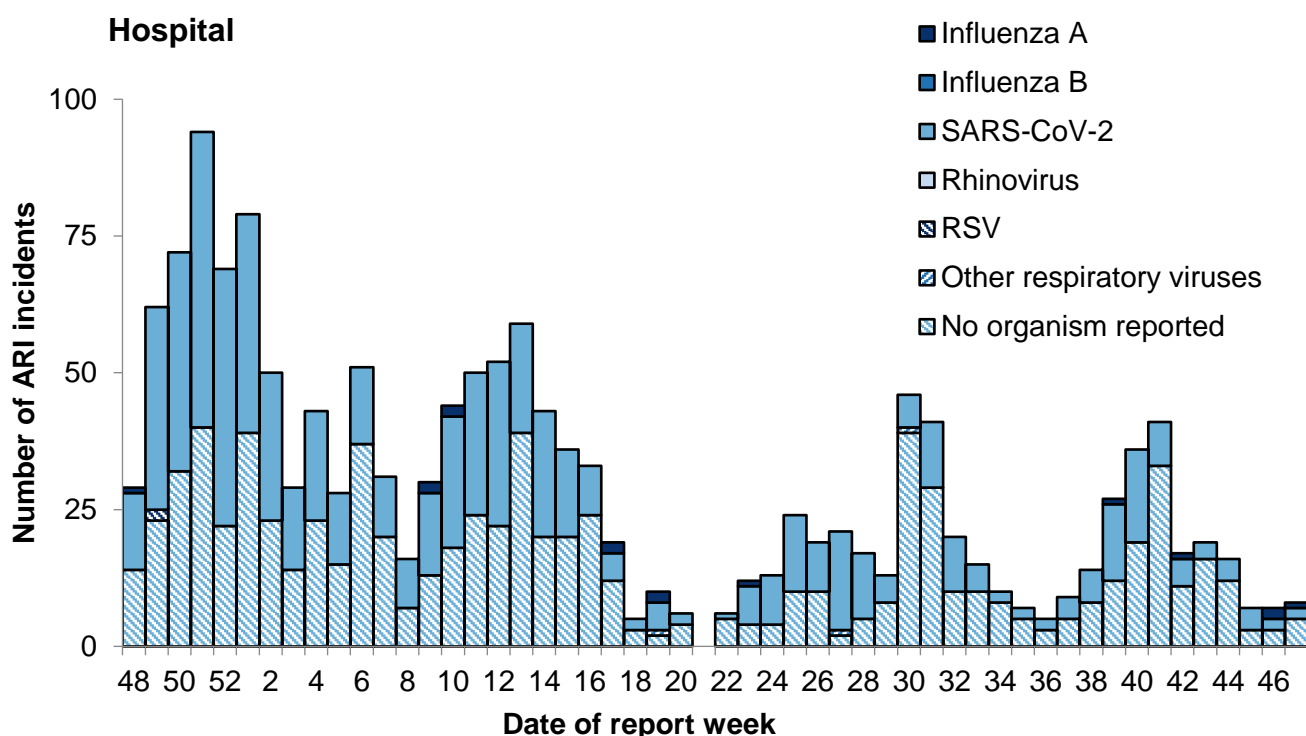
**Figure 18: Number of acute respiratory infection (ARI) incidents by setting, England**



**Figure 19: Number of acute respiratory infection (ARI) incidents in care homes by virus type, England**

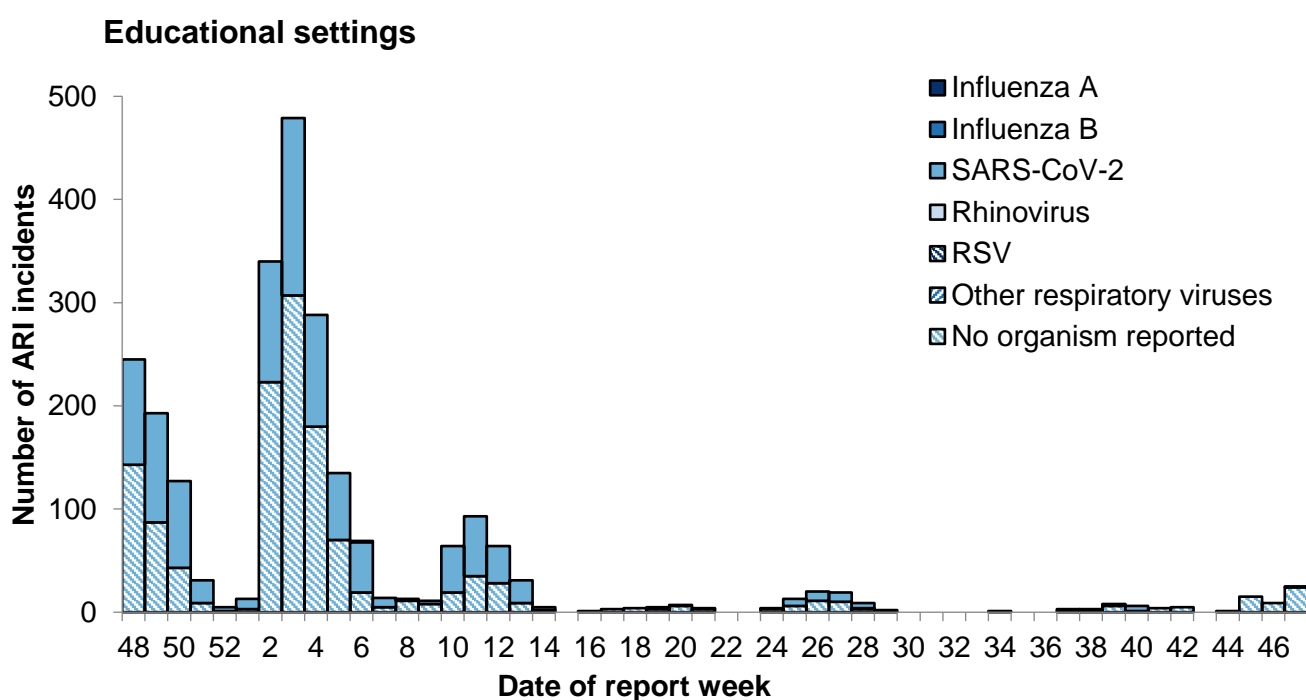


**Figure 20: Number of acute respiratory infection (ARI) incidents in hospitals by virus type, England**



**Figure 21: 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)

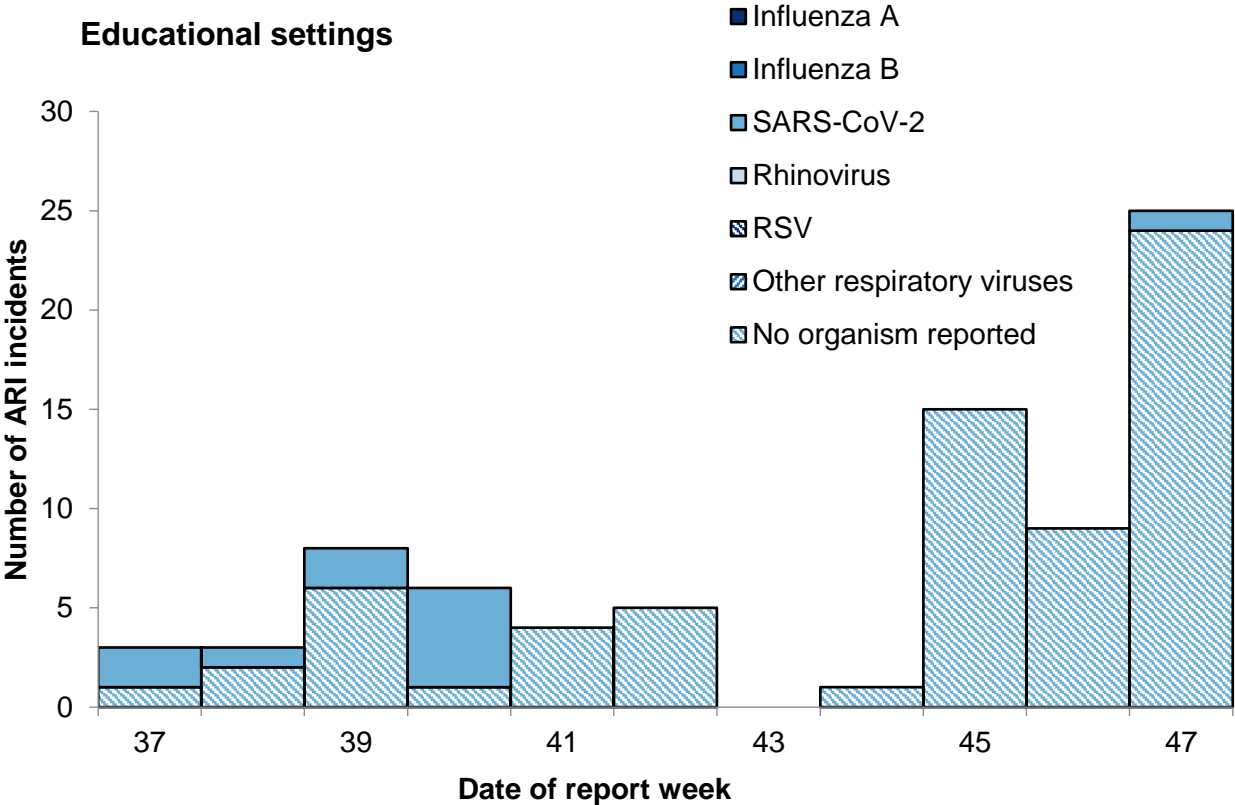
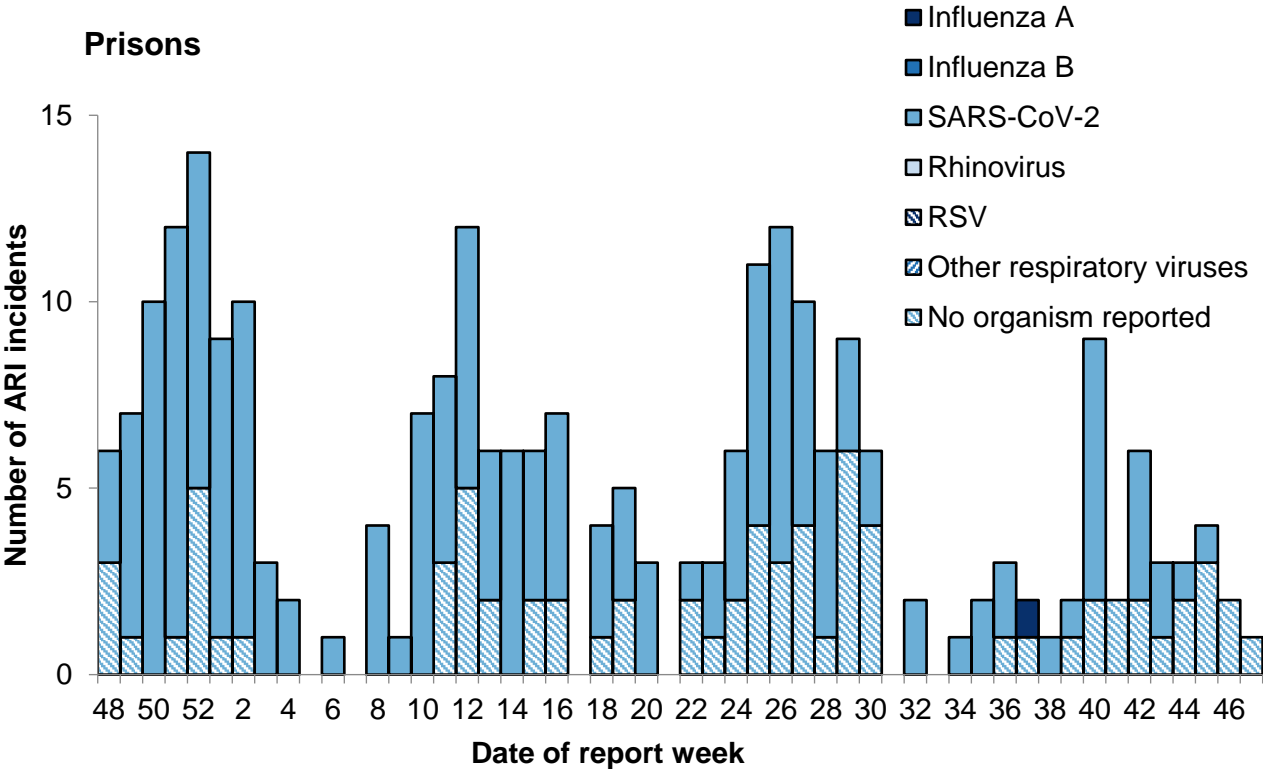
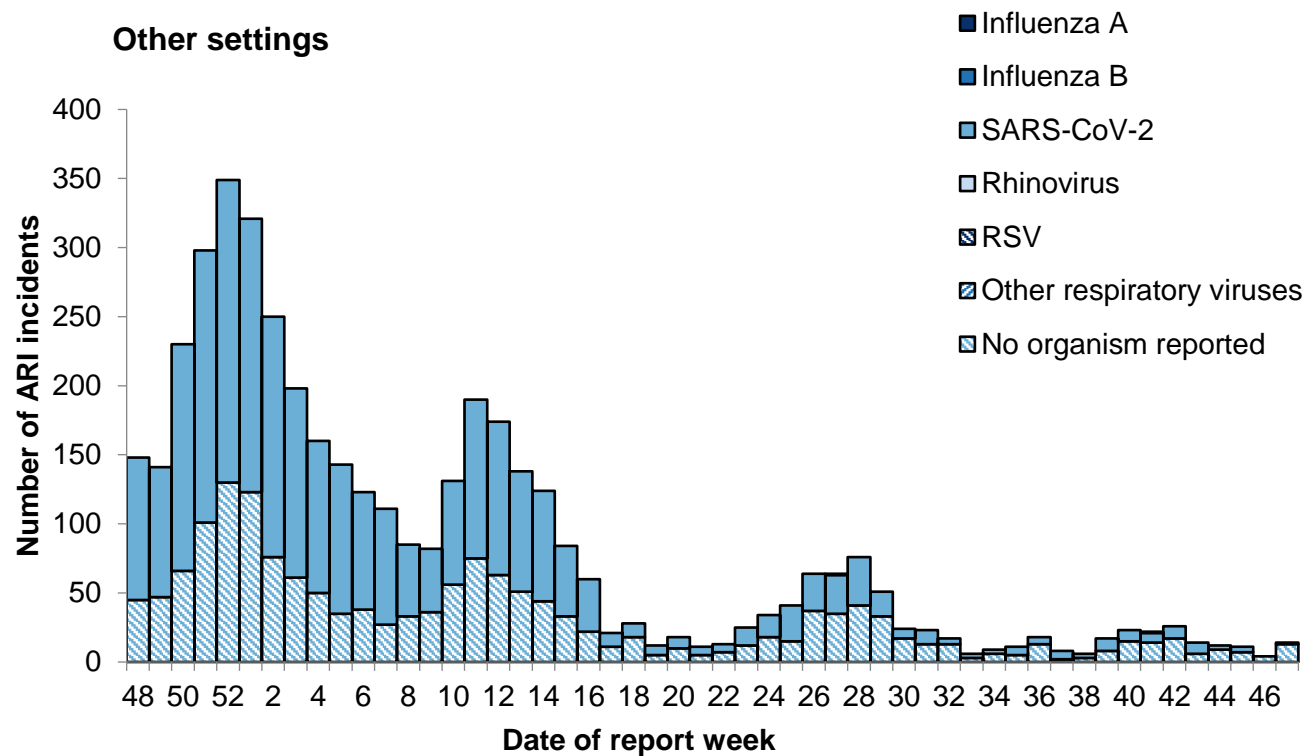


Figure 22: Number of acute respiratory infection (ARI) incidents in prisons by virus type, England



**Figure 23: 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**

UKHSA Centres	Care home	Hospital	Educational settings	Prisons	Other settings	Total
East of England	57(11)	0(0)	0(0)	2(0)	4(2)	63(13)
East Midlands	12(2)	1(0)	2(1)	0(0)	1(0)	16(3)
London	52(15)	29(4)	17(9)	1(0)	11(6)	110(34)
North East	29(13)	0(0)	4(3)	0(0)	0(0)	33(16)
North West	41(13)	4(1)	3(1)	0(0)	11(3)	59(18)
South East	6(3)	0(0)	2(1)	4(0)	0(0)	12(4)
South West	167(54)	0(0)	2(0)	0(0)	3(0)	172(54)
West Midlands	25(8)	4(3)	9(5)	3(1)	5(2)	46(19)
Yorkshire and Humber	35(11)	0(0)	11(5)	0(0)	6(1)	52(17)
Grand Total	424(130)	38(8)	50(25)	10(1)	41(14)	563(178)

## 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 47, there were 2,170 participants completing the weekly symptoms questionnaire of which 179 (8.3%) reported fever or cough and 56(2.6%) reported influenza like illness (ILI). There was an increase in COVID-19 related symptoms and influenza like illness (ILI) amongst participants completing the weekly symptoms survey in week 47. 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 24).

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 25).

**Figure 24: FluSurvey participants self-reporting fever or cough and ILI symptoms, and trends in healthcare seeking behaviour among these participants, England**

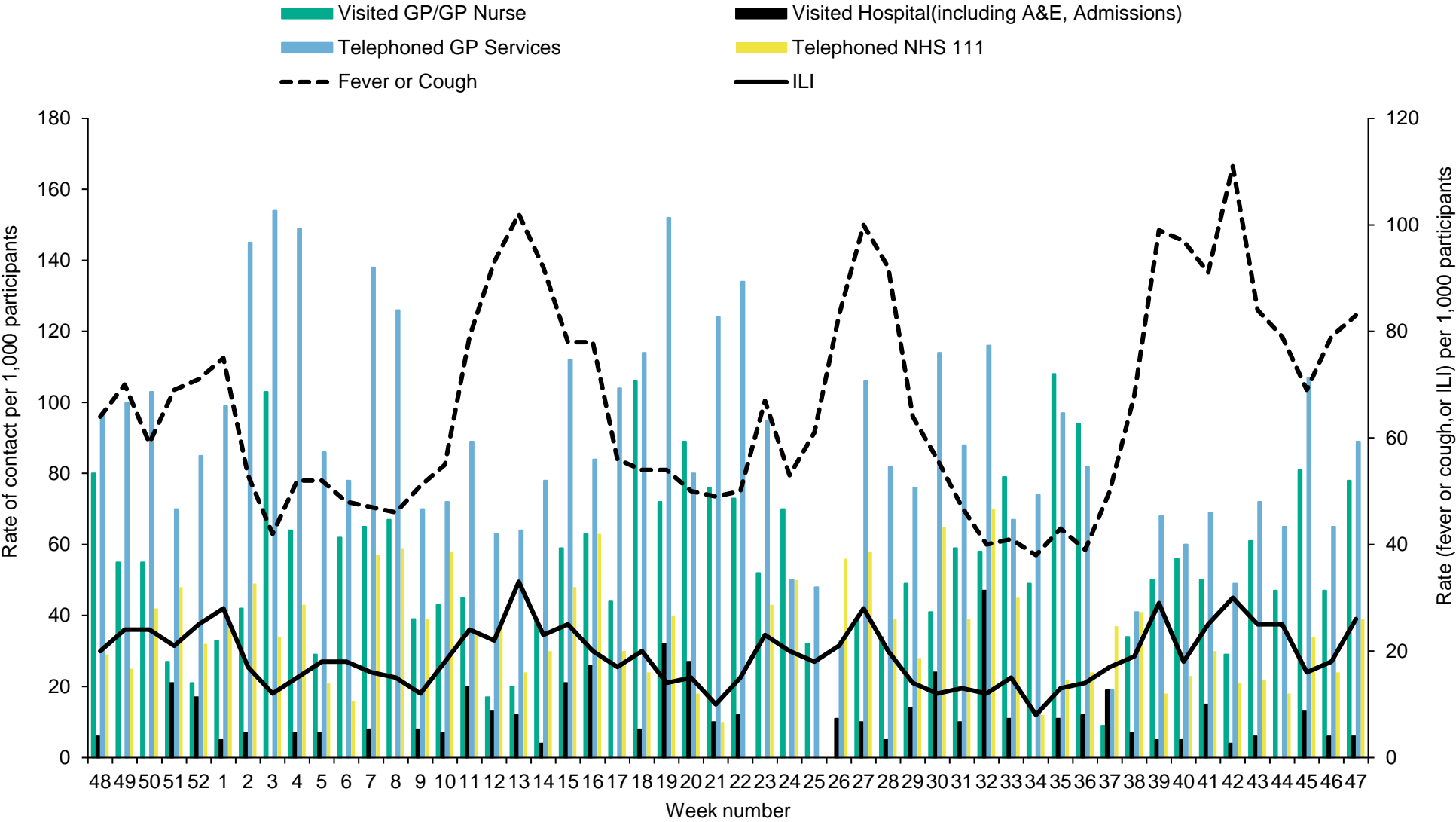
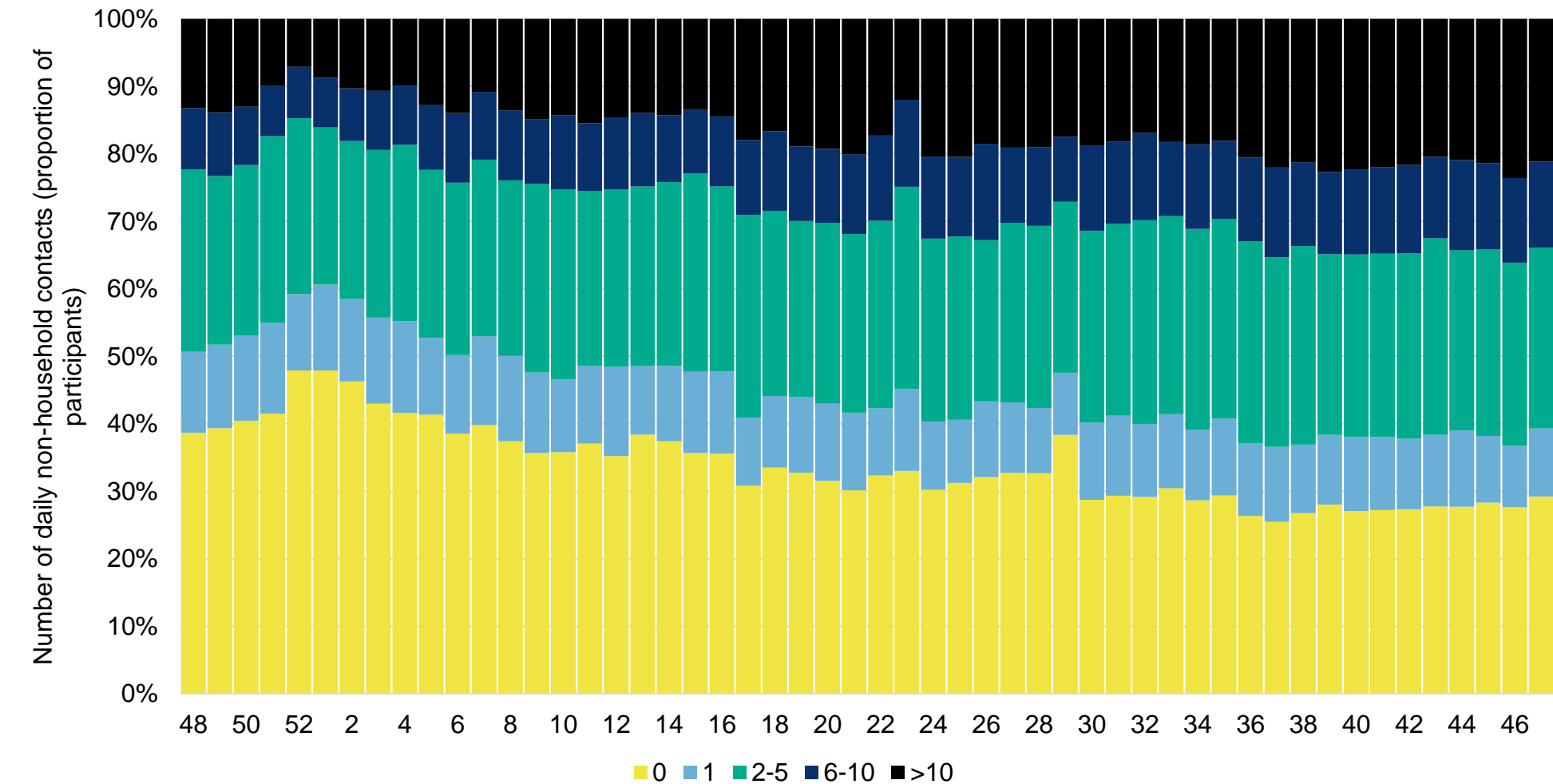


Figure 25: FluSurvey participants’ self-reported number of social contacts outside the household

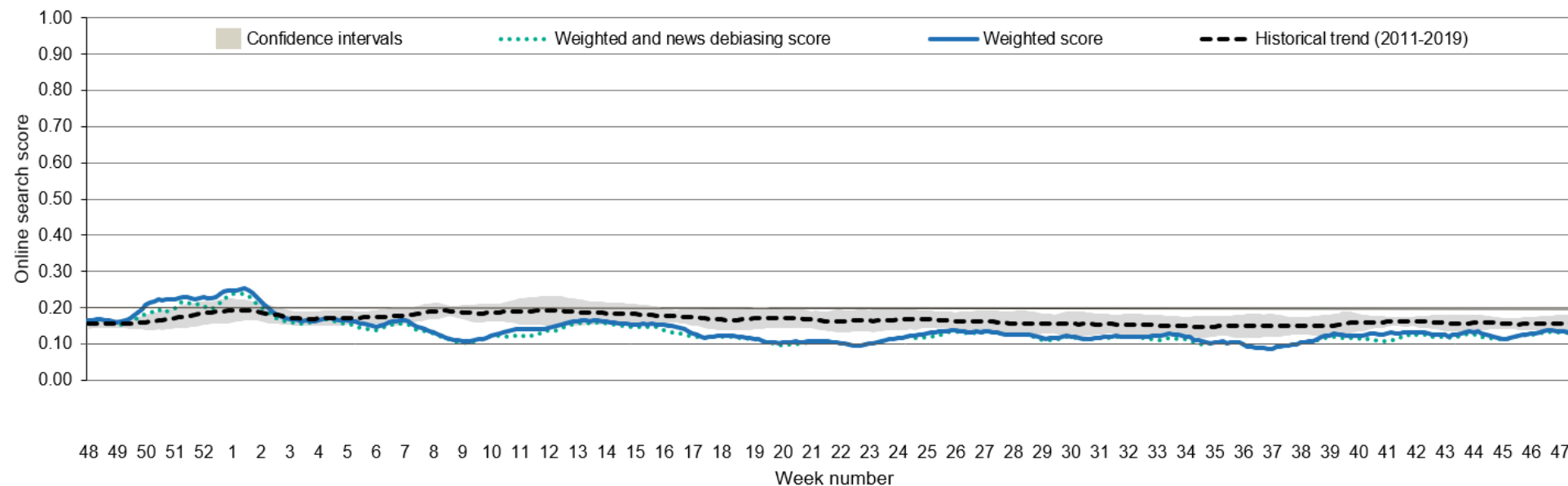


## Google search queries

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 47, the overall and media-debiasing weighted Google search scores slightly decreased compared to the previous week (Figure 26).

**Figure 26: Normalised Google search score for COVID-19 symptoms, with weighted score for media-debiasing and historical trend, England**



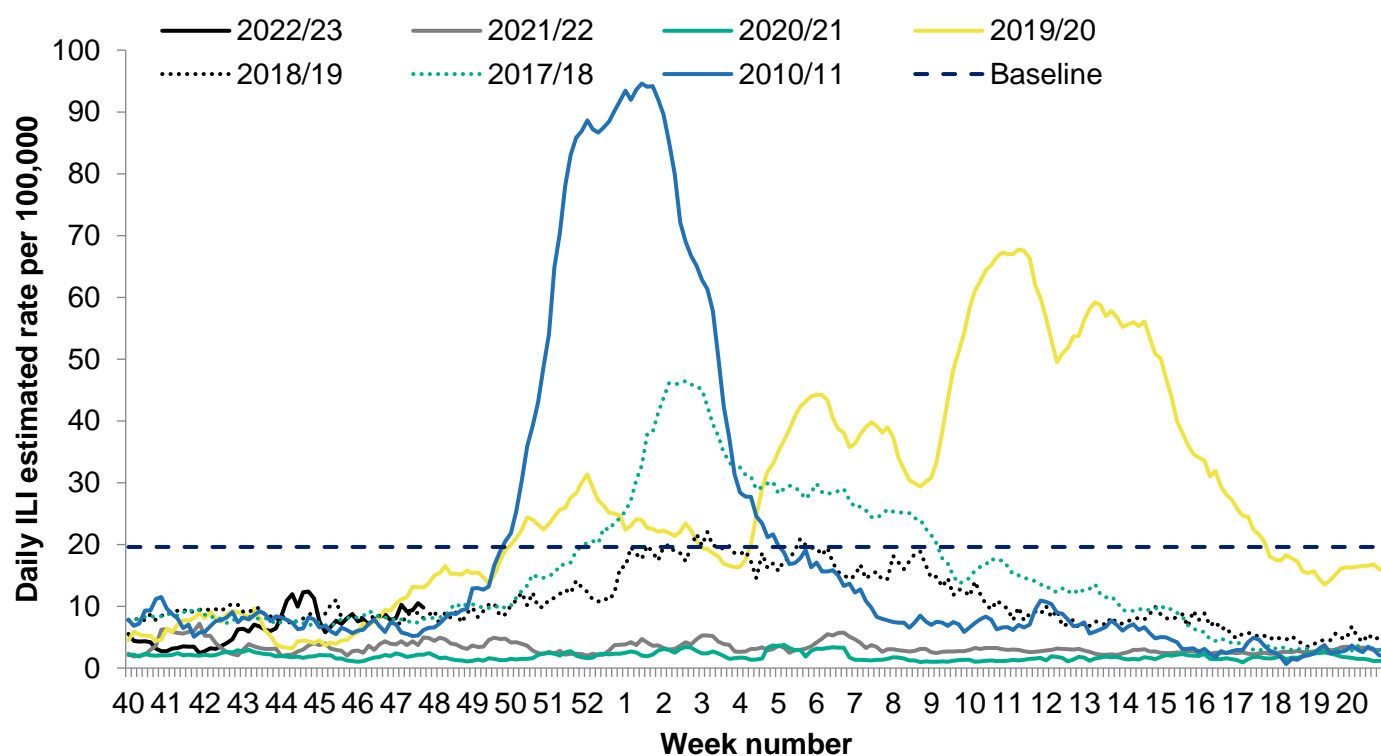
## Flu Detector

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 47, the daily ILI rate remained low and below the baseline threshold of 19.6 per 100,000 for the 2022 to 2023 season (Figure 27).

**Figure 27: 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) are presented here than 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.

Up to 20 November, the number of calls for cold/flu increased, notably in children aged 1 to 14 years. The number of calls for cough increased in those under 15 years of age (Figure 28 and 29).

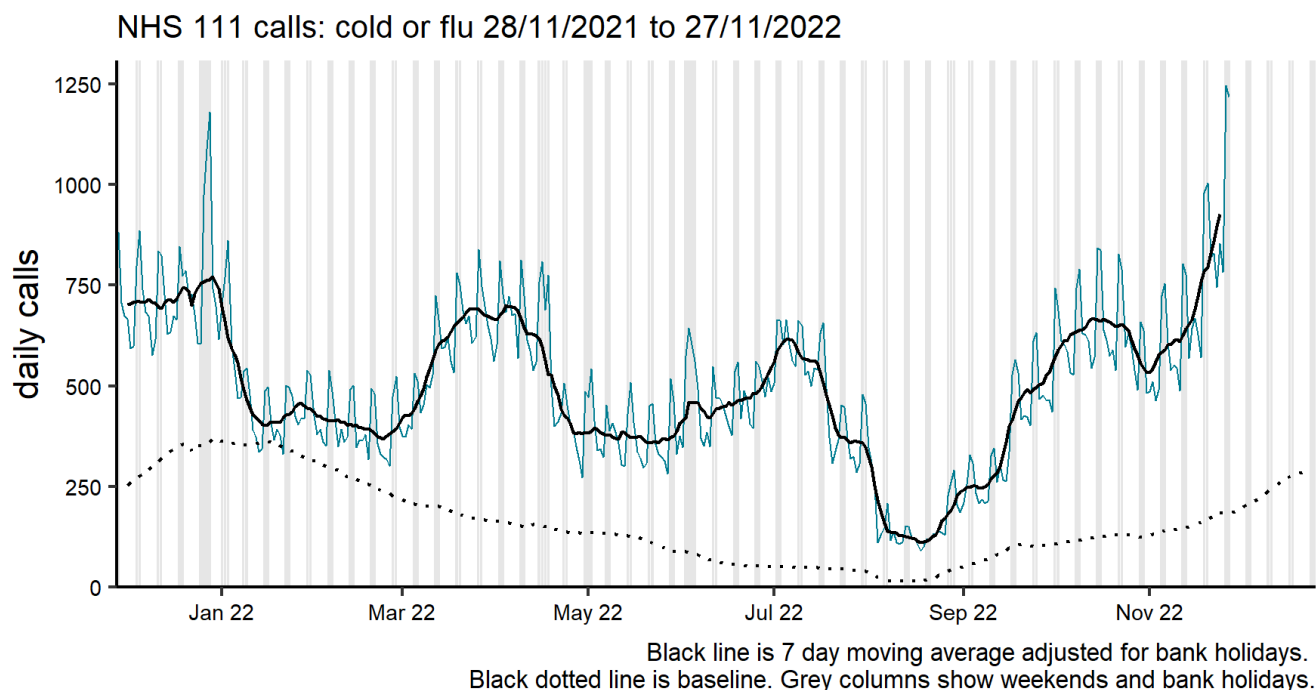
Please note that NHS 111 callers (from 11 May 2020) who are assessed as having probable COVID-19 symptoms are now triaged using symptom specific pathways such as cold or flu, which are included in routine syndromic indicators.

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

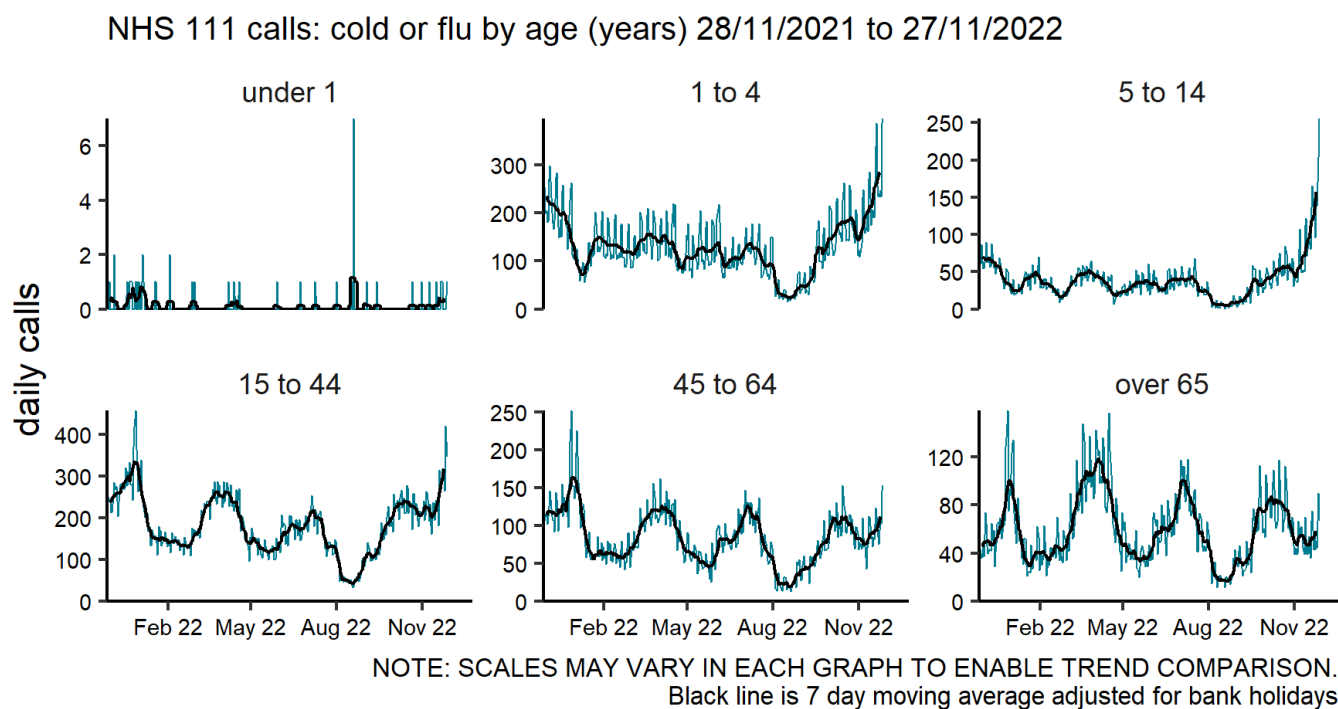


**Figure 28: NHS 111 telephony indicators (and 7-day moving average) for number of daily cold or flu calls, England (a) nationally and (b) by age group**

(a)

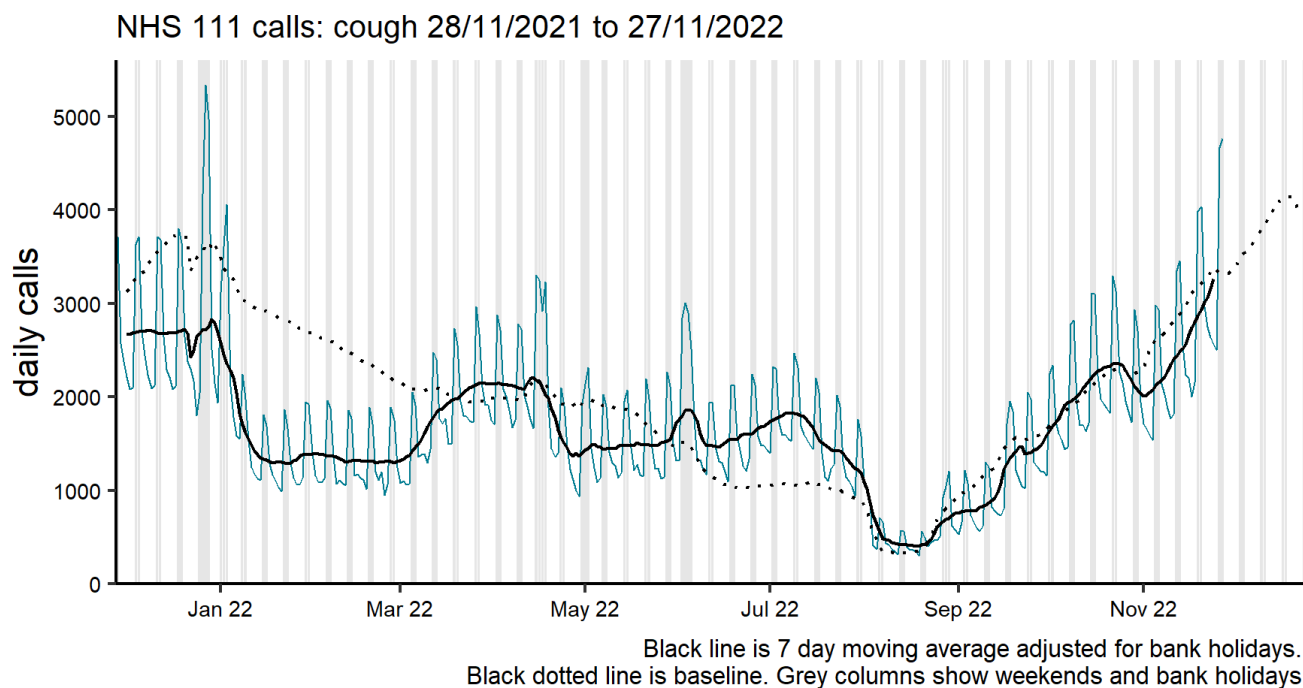


(b)

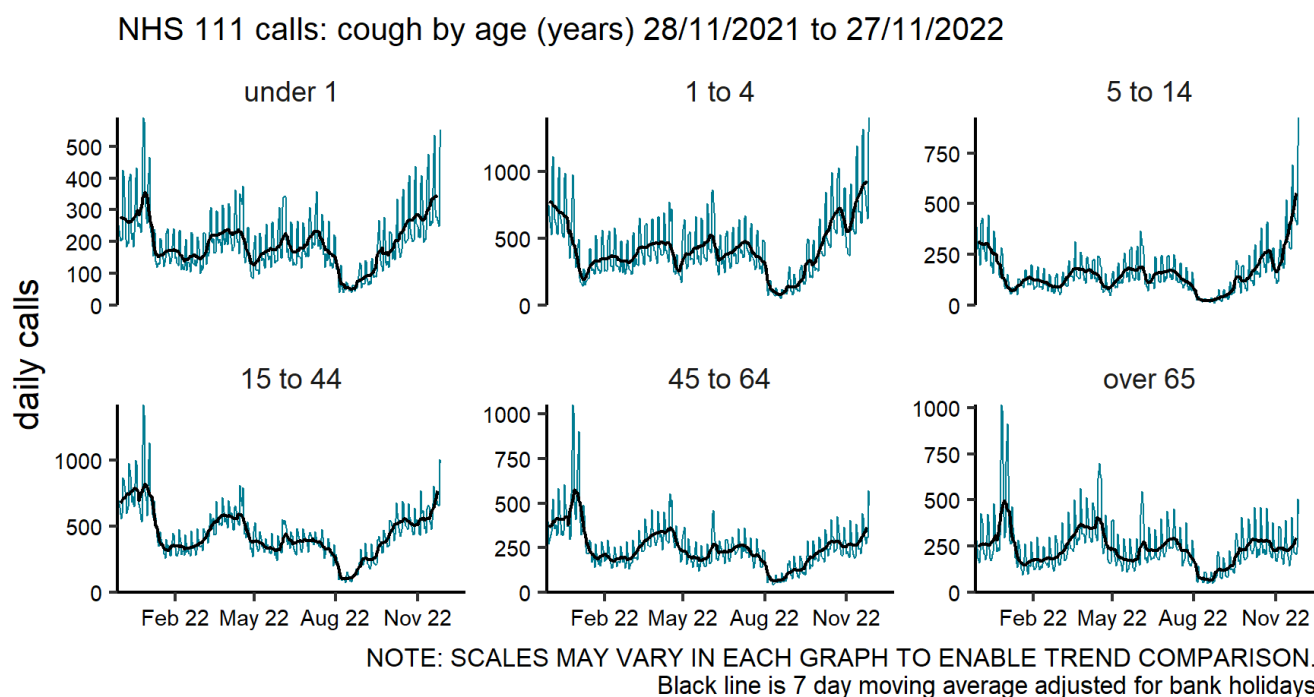


**Figure 29: NHS 111 telephony indicators (and 7-day moving average) for number of daily cough calls, England (a) nationally and (b) by age group**

(a)



(b)



# Primary care surveillance

## RCGP (England)

The weekly ILI consultation rate through the RCGP surveillance was 6.6 per 100,000 registered population in participating GP practices in week 47 compared to 5.3 per 100,000 in the previous week. This is below the baseline threshold (11.47 per 100,000) (Figure 30). By age group, the highest rates were seen in the 1 to 4 year olds (12.6 per 100,000). The lower respiratory tract infections (LRTI) consultation rate was at 86.3 per 100,000 in week 47, compared to the rate of 78.7 per 100,000 in the previous week. The COVID-19 indicator rate was at 35.6 per 100,000 in week 47 compared to a rate of 36.4 per 100,000 in the previous week (Figure 31).

**Figure 30: RCGP influenza-like illness (ILI) consultation rates, all ages, England**

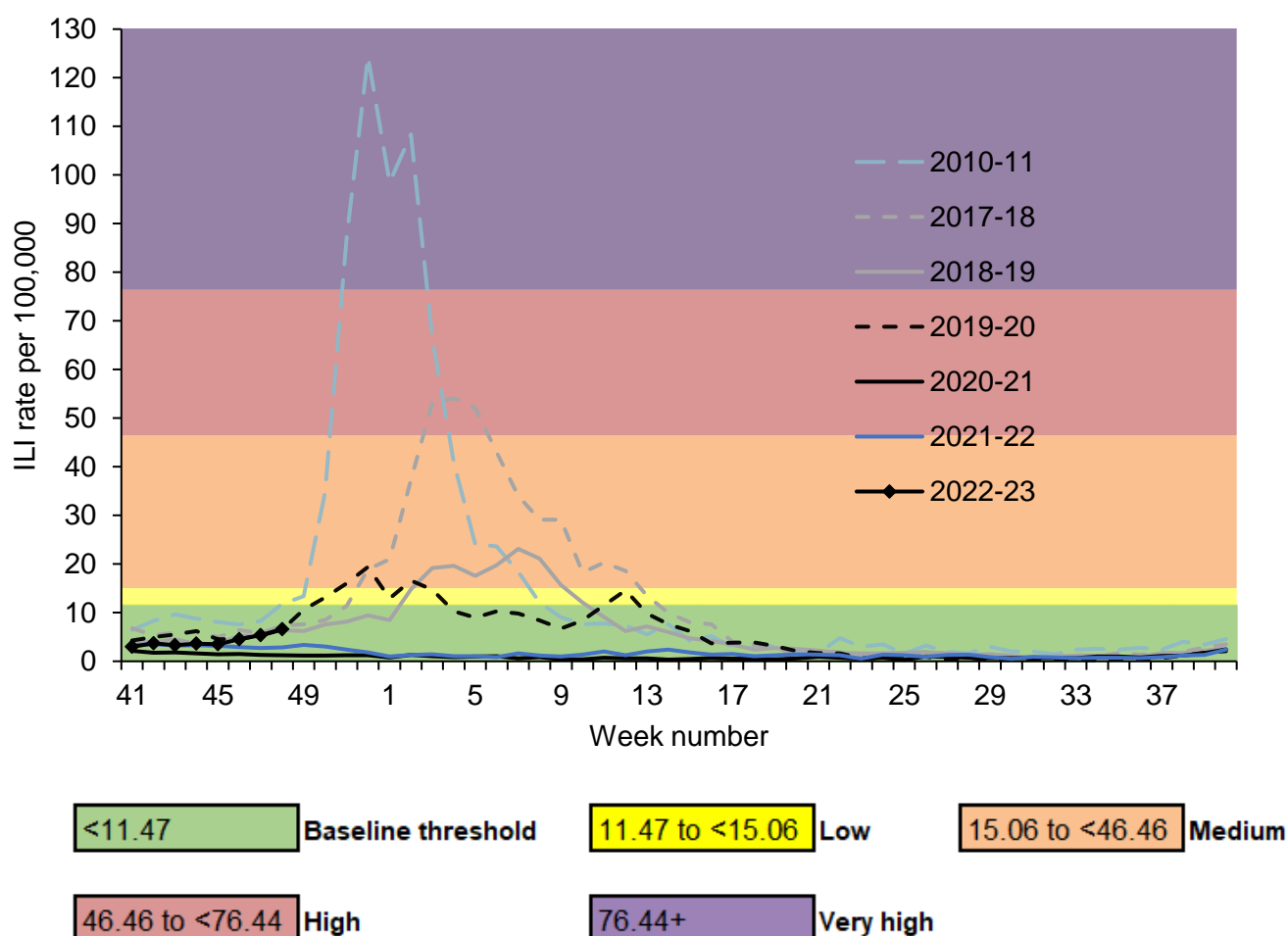
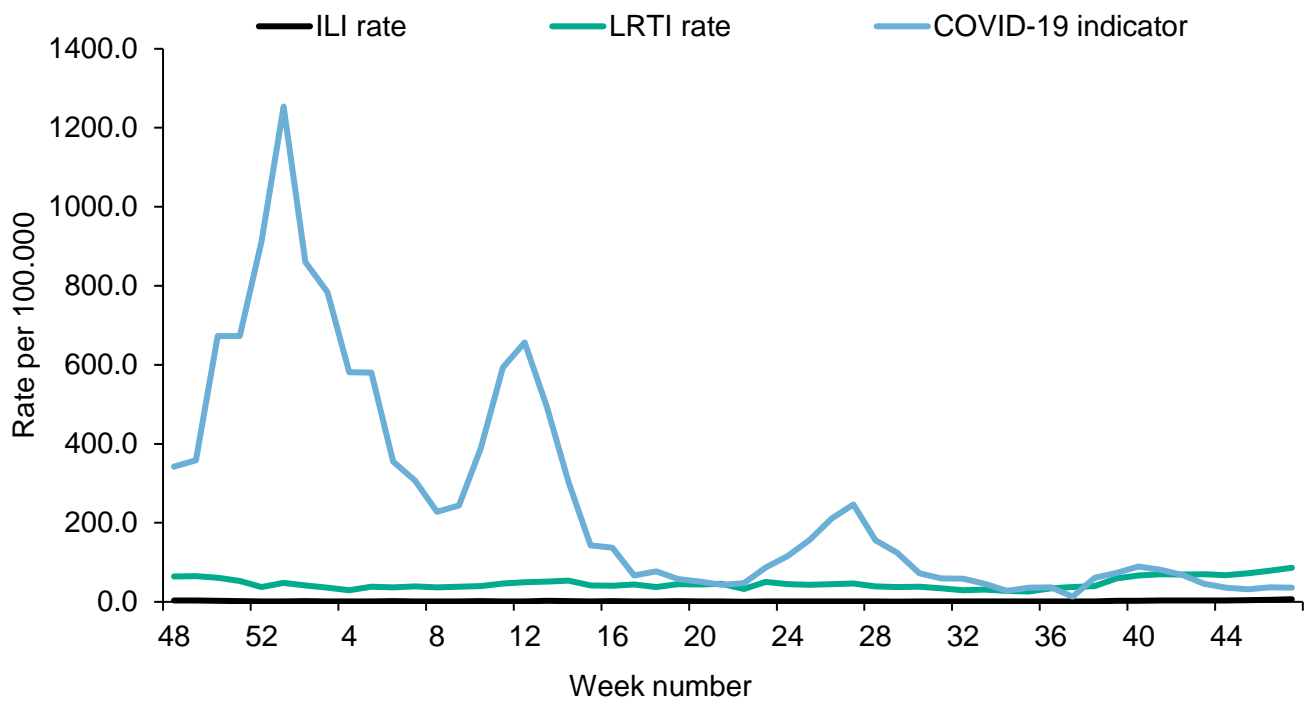


Figure 31: RCGP ILI, LRTI and COVID-19 indicator rates, England



## UK

Overall, weekly ILI consultations rates were below baseline levels in all UK schemes (Table 2).

By age group, the highest incidence age groups were in the 15 to 44 year olds in Wales (8.5 per 100,000), 1 to 4 year olds in England (12.6 per 100,000), under 1 year olds Northern Ireland (12.3 per 100,000) and 15 to 44 year olds (3.6 per 100,000) and 45 to 64 year olds (3.6 per 100,000) in Scotland.

**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
England (RCGP)	3.0	3.7	3.3	3.6	3.5	4.5	5.3	6.6					
Wales	3.5	2.8	3.9	4.8	6.3	7.0	3.5	4.3					
Scotland	2.1	1.8	4.0	3.8	3.5	4.8	4.6	3.0					
Northern Ireland	1.3	2.2	1.8	3.5	3.0	3.7	3.5	4.9					

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

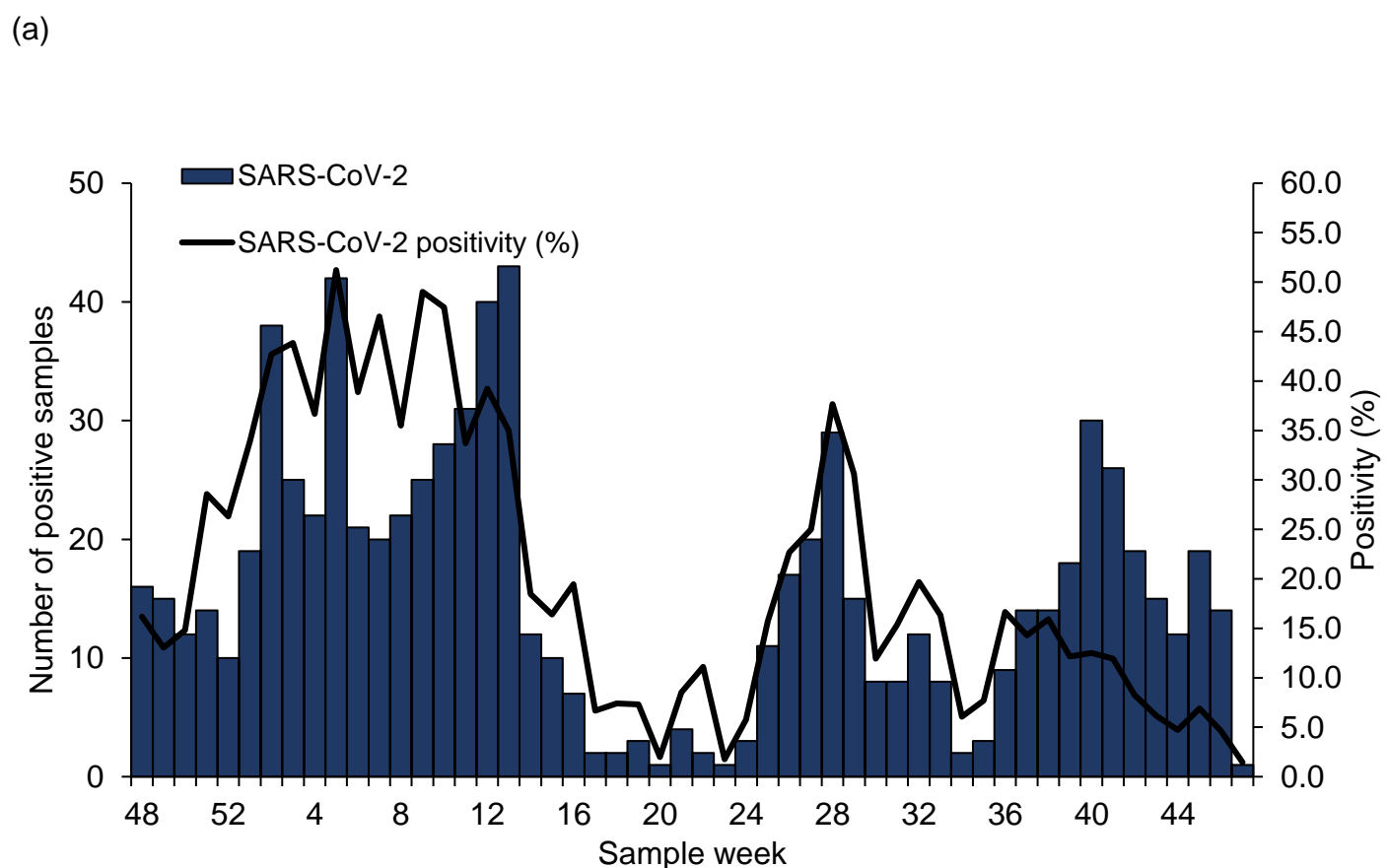
## Sentinel swabbing scheme in England

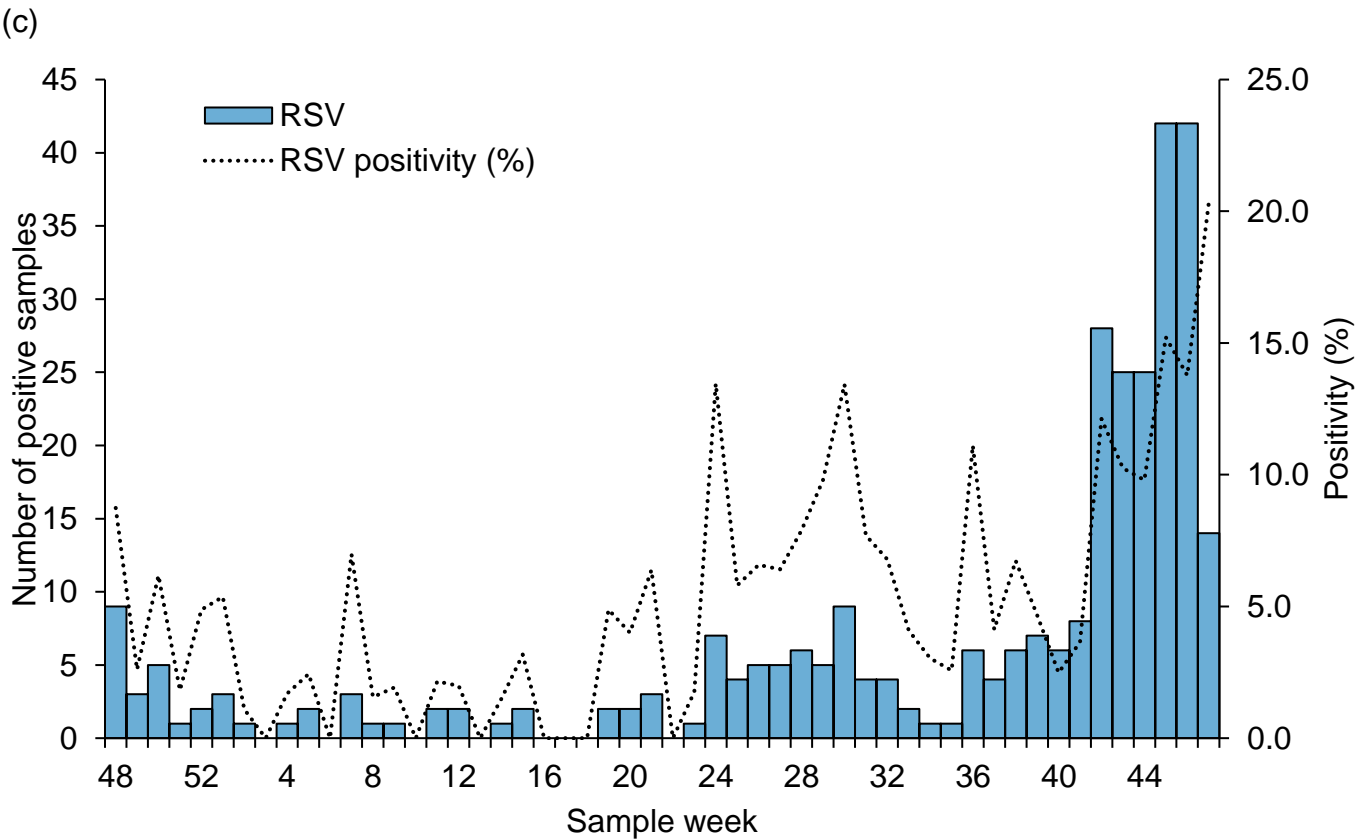
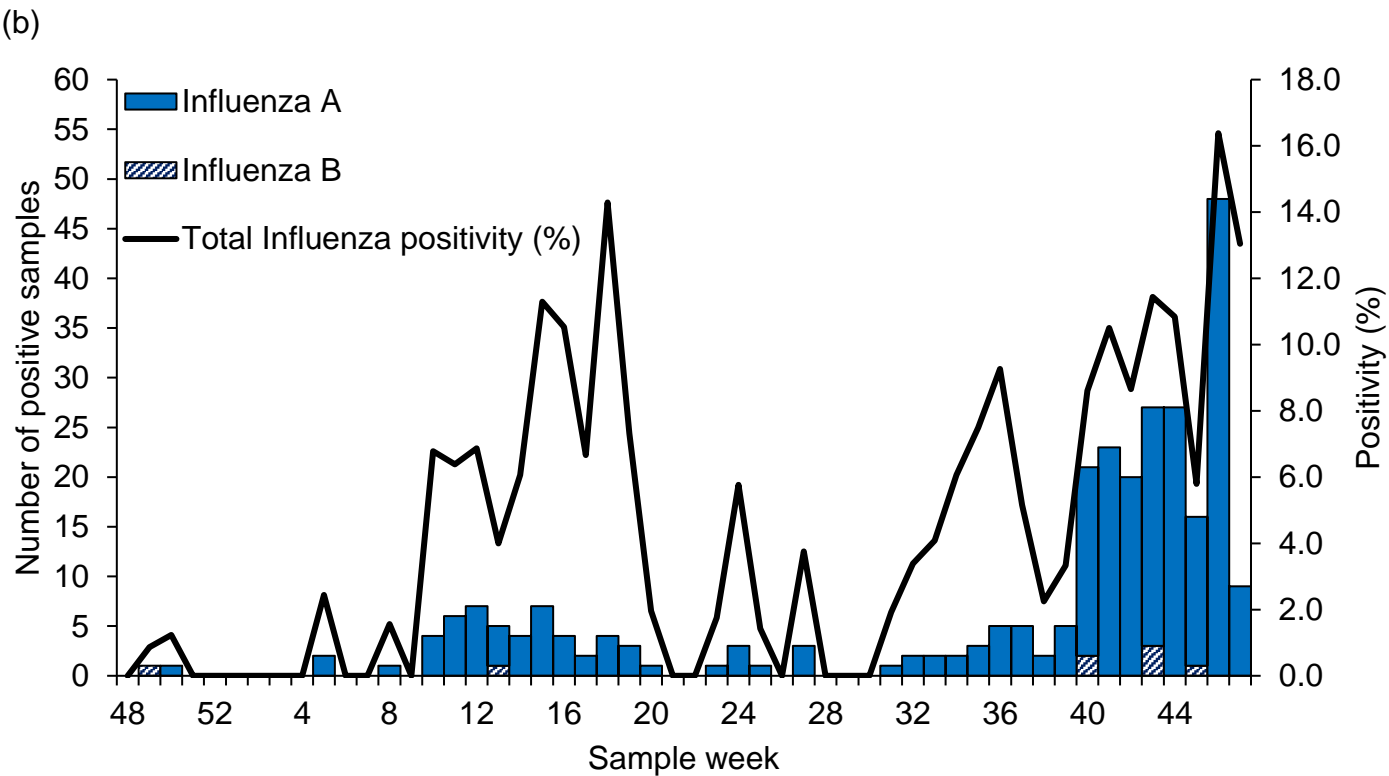
In week 47 2022, 1 sample tested positive for SARS-CoV-2 through the GP sentinel swabbing scheme in England (Figure 32).

In week 47 2022, 14 samples tested positive for RSV and 9 samples tested positive for influenza in England through the GP sentinel swabbing scheme.

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

**Figure 32: 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 34 should be interpreted with caution

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

## GP In Hours, Syndromic Surveillance

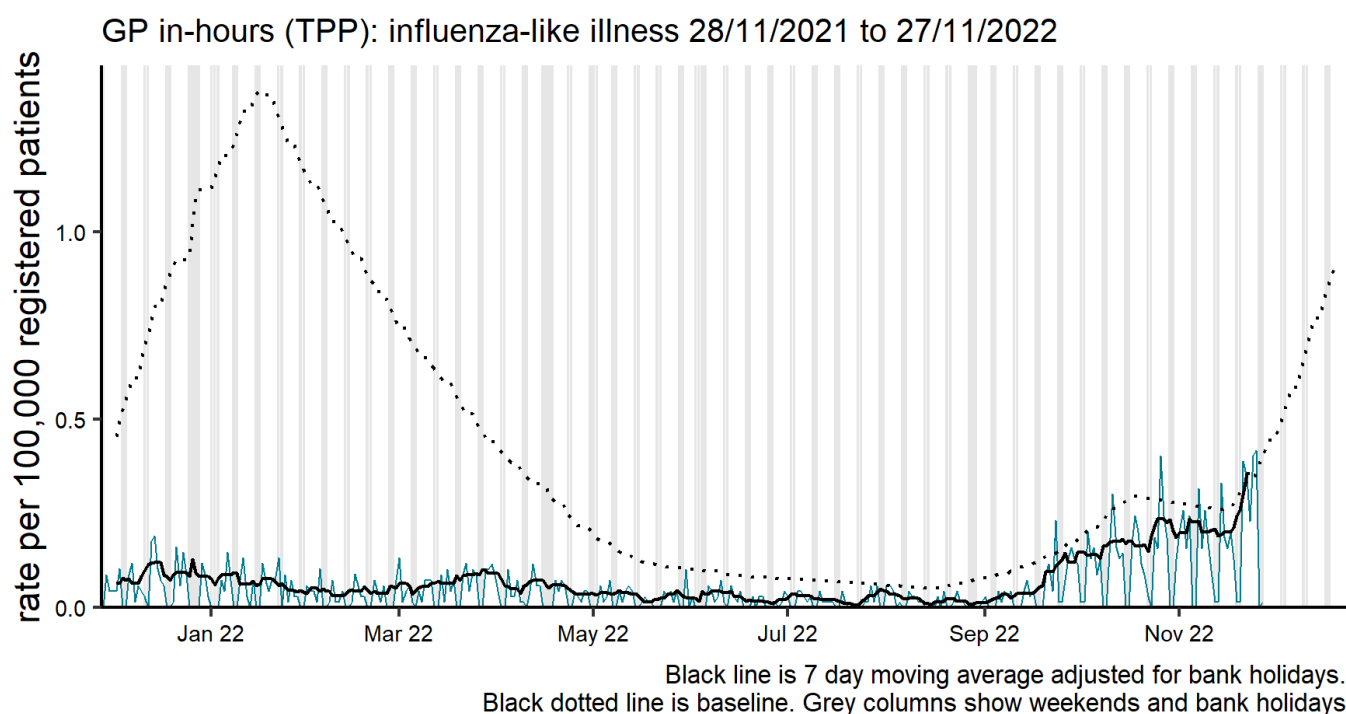
The GP In Hours (GPIH) syndromic surveillance system monitors the number of GP visits during regular hours of known clinical indicators.

The national rate of GP in-hours consultations for influenza-like illness consultations has increased (Figure 33).

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

**Figure 33: GPIH clinical indicators for influenza-like illness GP consultations, England (a) nationally, (b) by age group and (c) by UKHSA centre**

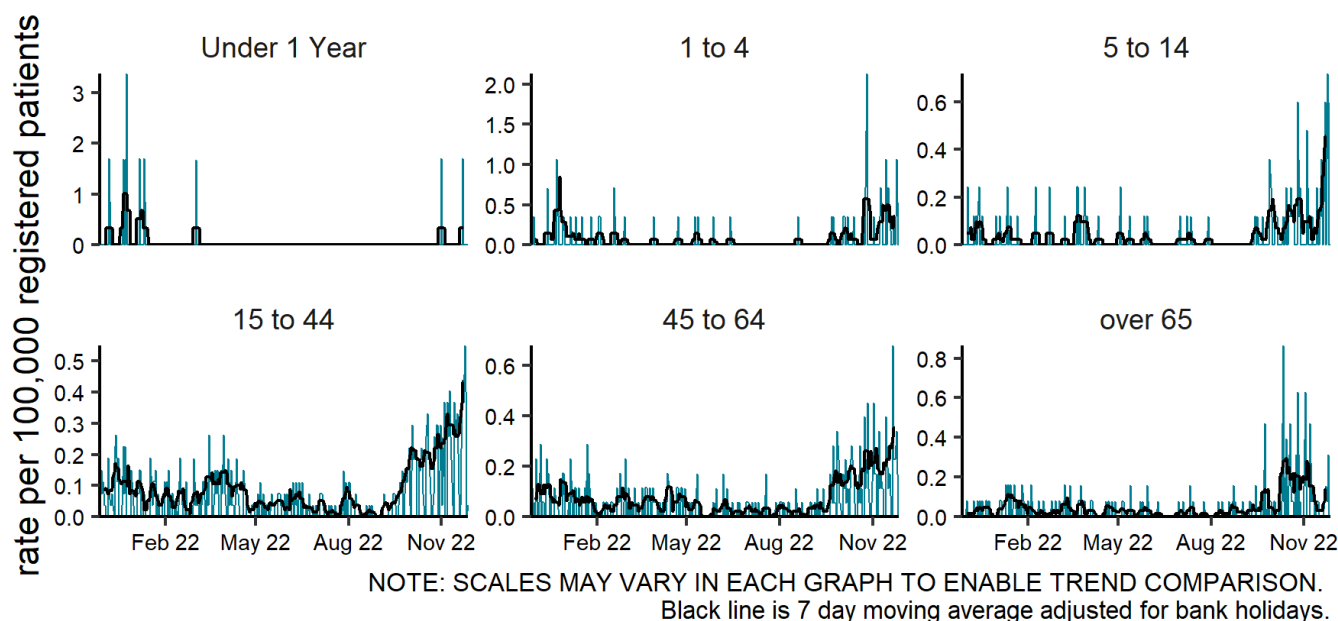
(a)





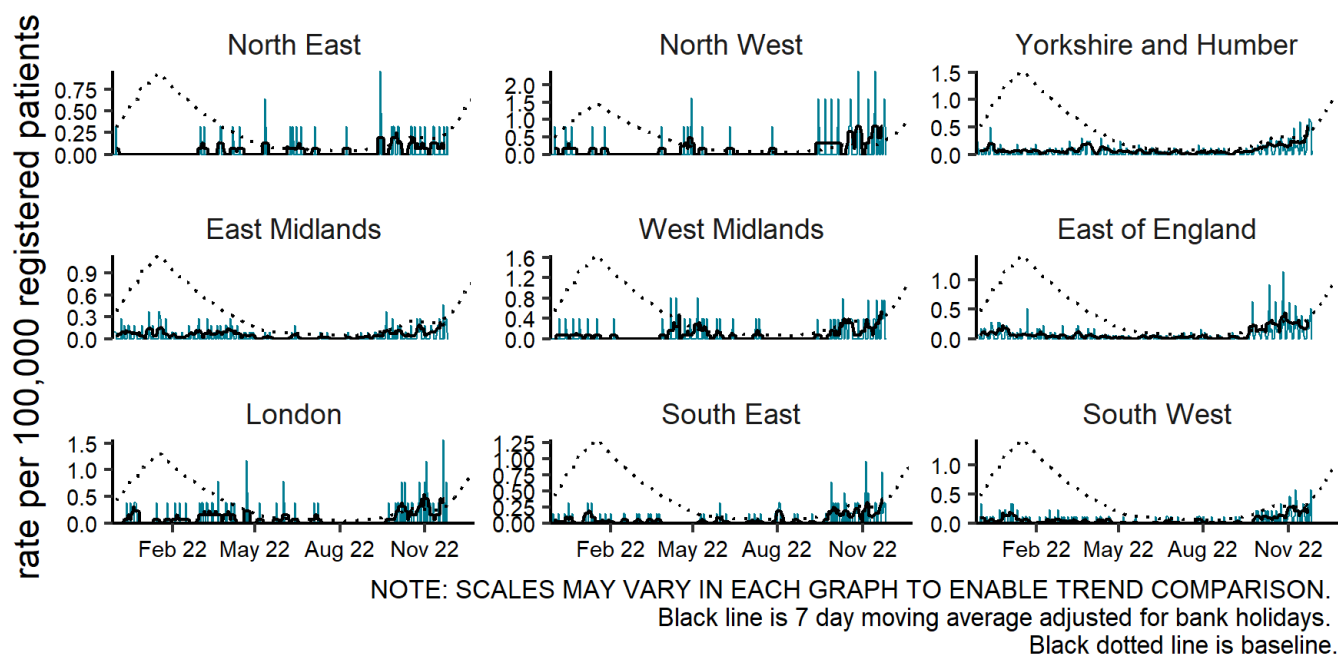
(b)

GP in-hours (TPP): influenza-like illness by age (years) 28/11/2021 to 27/11/2022



(c)

GP in-hours (TPP): influenza-like illness by region 28/11/2021 to 27/11/2022



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 through NHS settings has been paused from 31 August 2022, therefore SARI-Watch data should be interpreted with this in mind.

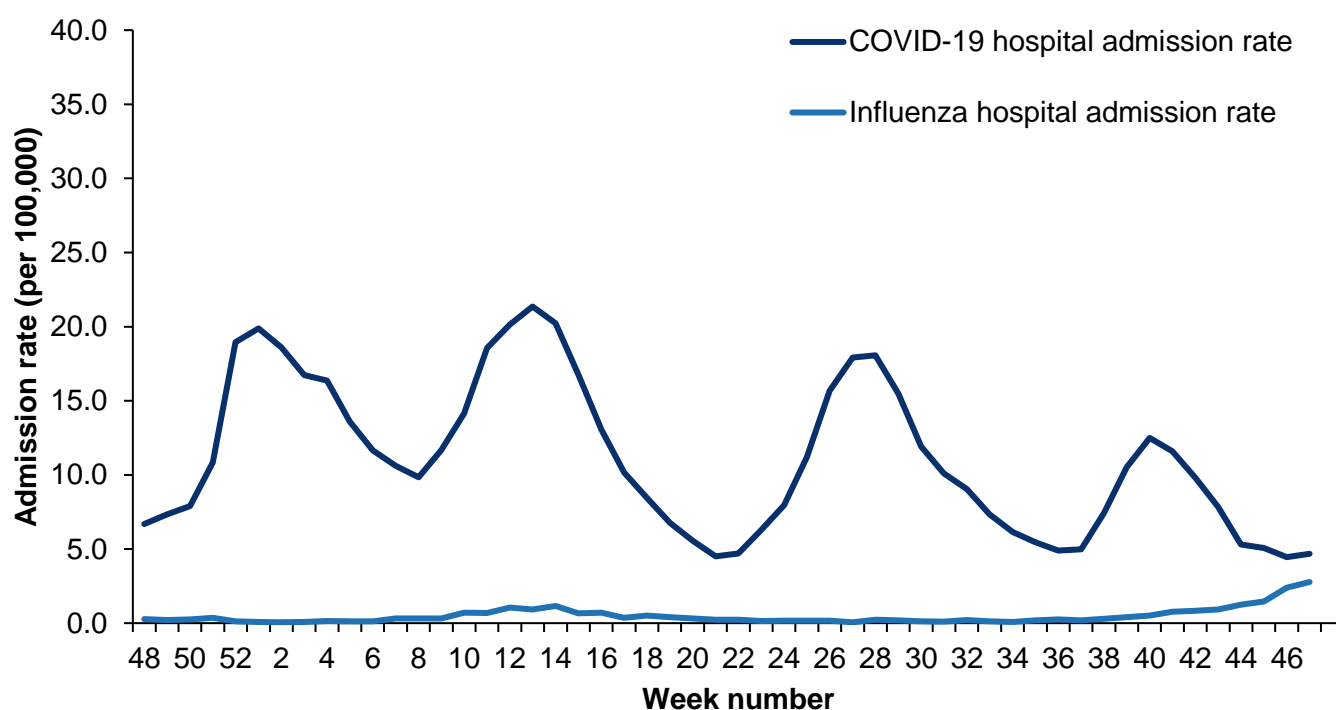
## Hospitalisations, SARI Watch

In week 47, the overall weekly hospital admission rate for COVID-19 slightly increased to 4.69 per 100,000 compared to 4.45 per 100,000 in the previous week.

By UKHSA centre, the highest hospital admission rate for COVID-19 was observed in the East Midlands. By age group, the highest hospital admission rate for confirmed COVID-19 was in the 85 year olds and over.

In week 47, the overall weekly hospital admission rate for influenza increased to 2.78 per 100,000 compared to 2.39 per 100,000 in the previous week. There were 264 new hospital admissions to sentinel Trusts for influenza (33 influenza A(H1N1)pdm09, 16 influenza A(H3N2), 195 influenza A(not subtyped) and 20 influenza B) in week 47.

**Figure 34: Weekly overall hospital admission rates of new COVID-19 and influenza positive cases per 100,000 population reported through SARI Watch, England**

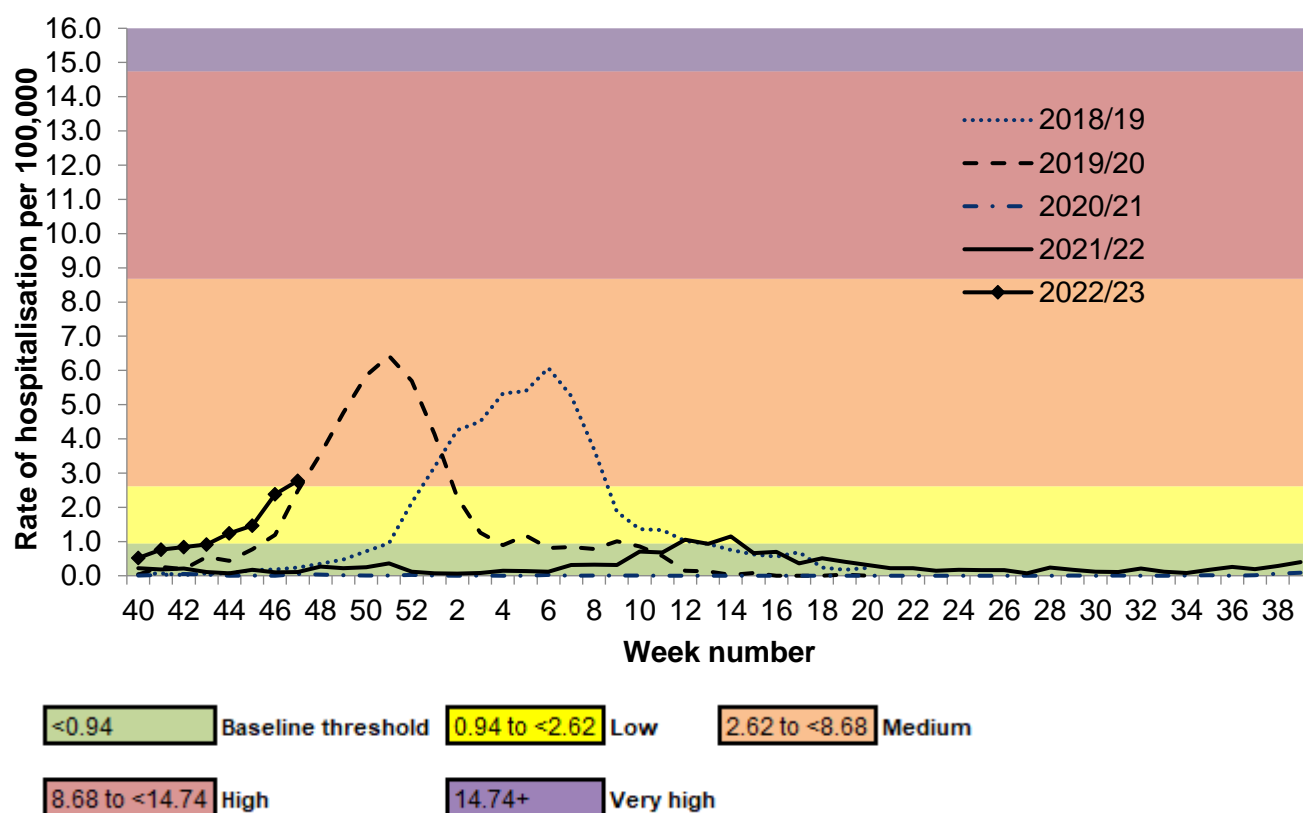


\* Influenza hospital admission rate based on 23 sentinel NHS trusts for week 46

\* COVID-19 hospital admission rate based on 91 NHS trusts for week 46

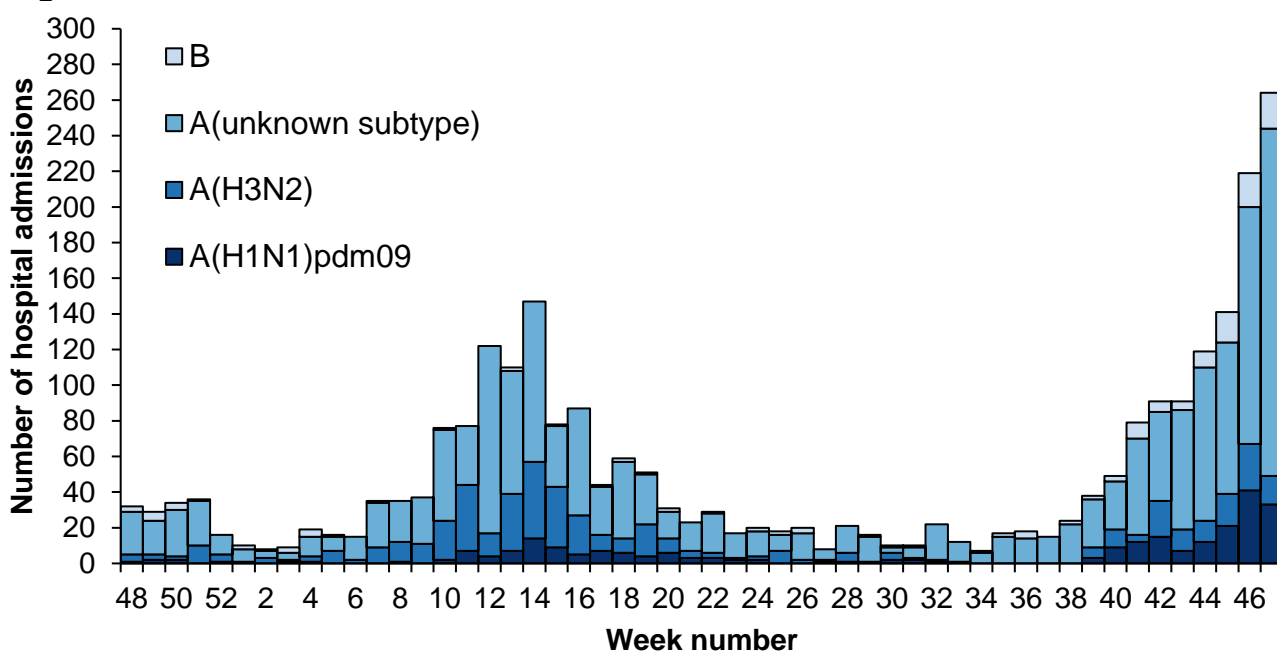
\* SARI Watch data is provisional

**Figure 35: Weekly overall influenza hospital admission rates per 100,000 trust catchment population with MEM thresholds, SARI Watch, England**



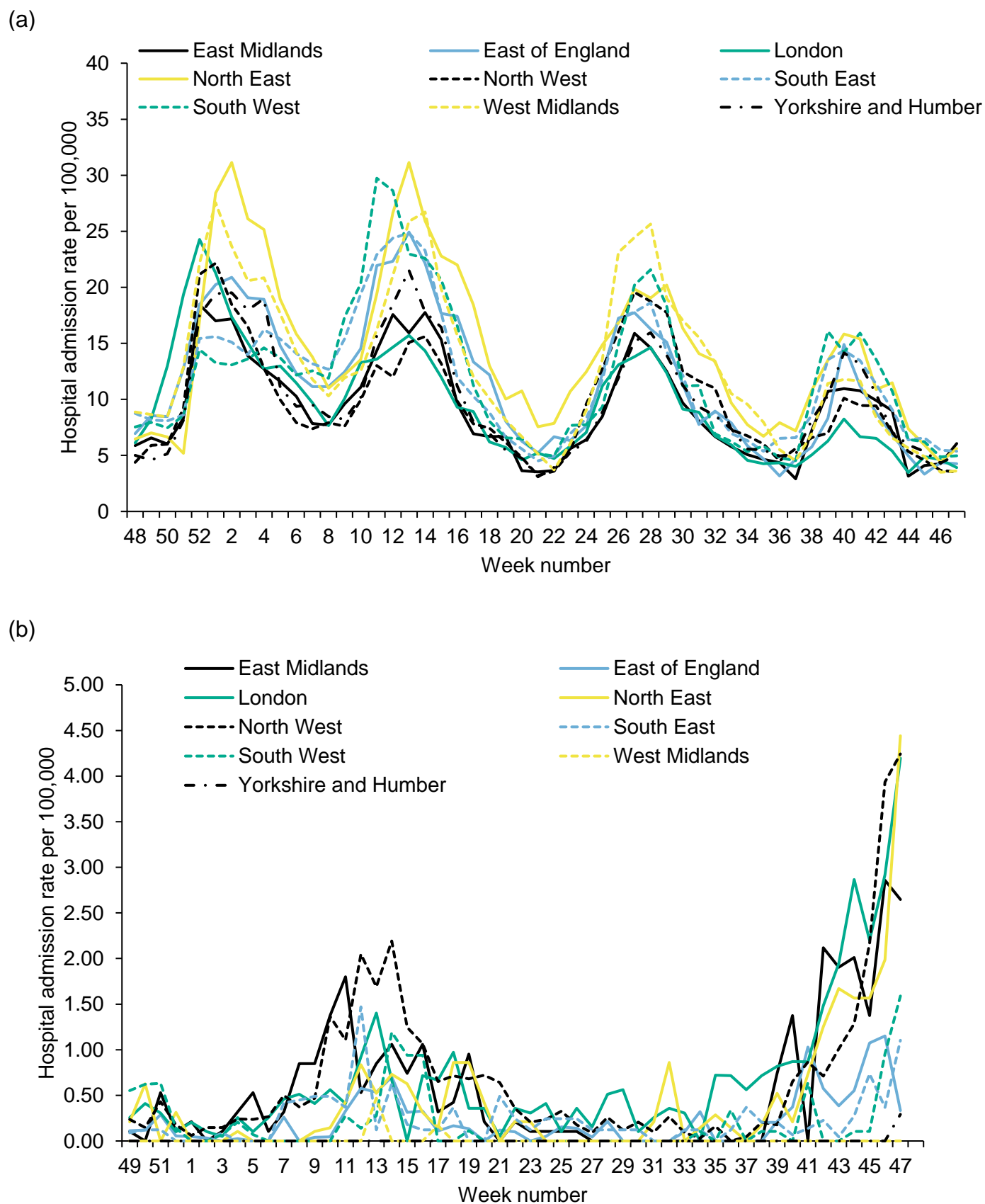
\* MEM thresholds are based on data from the 2016 to 2017 to the 2021 to 2022 seasons (data from 2020 to 2021 was excluded due to the COVID-19 pandemic).

**Figure 36: Weekly influenza hospital admissions by influenza type, SARI Watch, England**

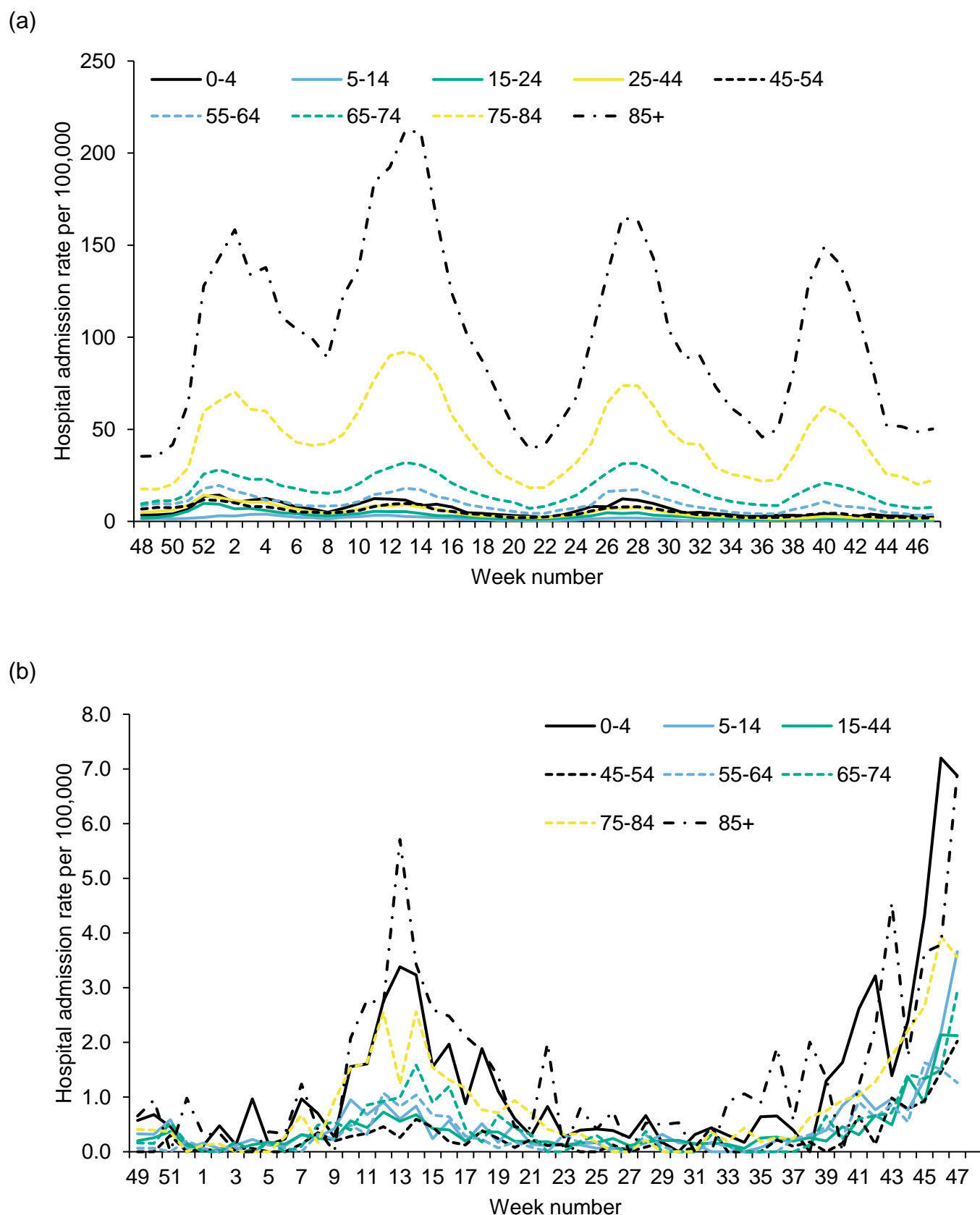


\*number of influenza hospital admissions based on sentinel NHS trusts

**Figure 37: Weekly hospital admission rate by UKHSA centre for new (a) COVID-19 positive cases and (b) influenza reported through SARI Watch**



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



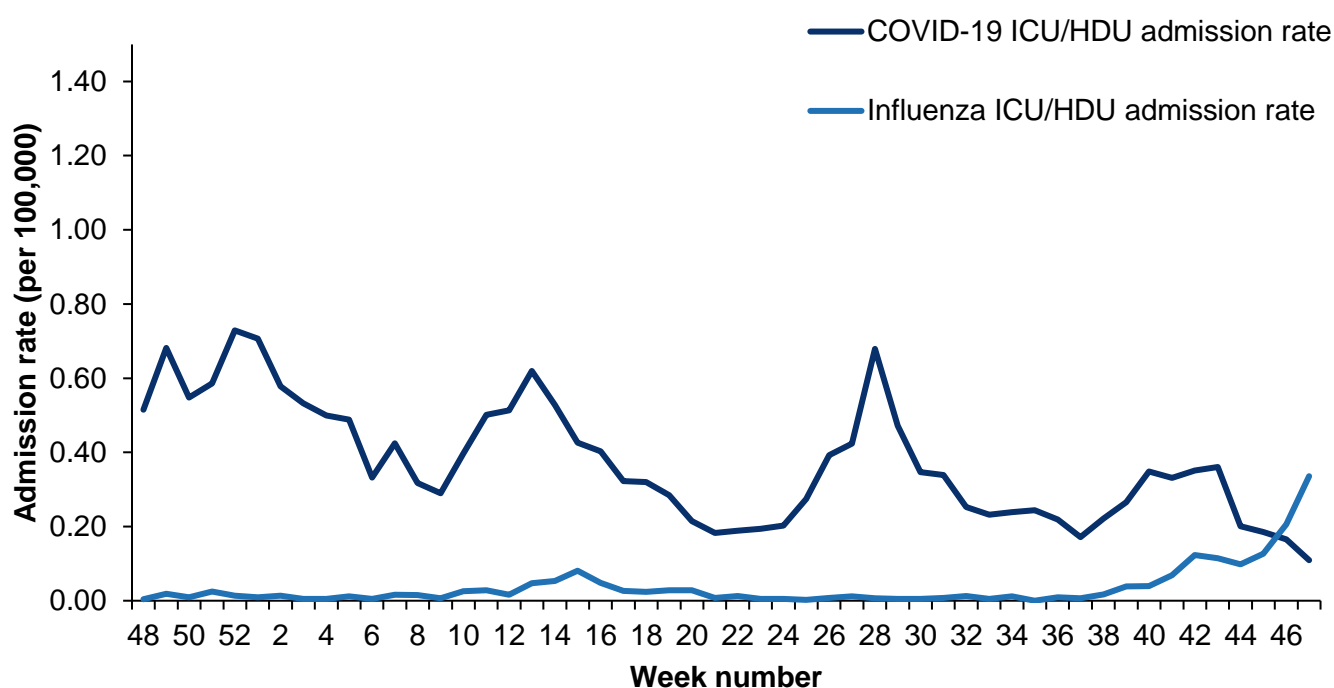
## ICU or HDU admissions, SARI Watch

In week 47, the overall weekly ICU or HDU admission rates for COVID-19 decreased to 0.11 per 100,000 compared to 0.17 per 100,000 in 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 groups, the highest ICU or HDU admission rates for COVID-19 were observed in the 65 to 74 year olds.

In week 47, the overall ICU or HDU rate for influenza was 0.34 per 100,000 compared to 0.21 per 100,000 in the previous week. There were 140 new case report of an ICU or HDU admission for influenza in week 47 (3 influenza A(H1N1)pdm09, 4 influenza A(H3N2), 112 influenza A(not subtyped) and 21 influenza B).

**Figure 39: Weekly overall ICU or HDU admission rates of new COVID-19 and influenza positive cases per 100,000 population reported through SARI Watch, England**



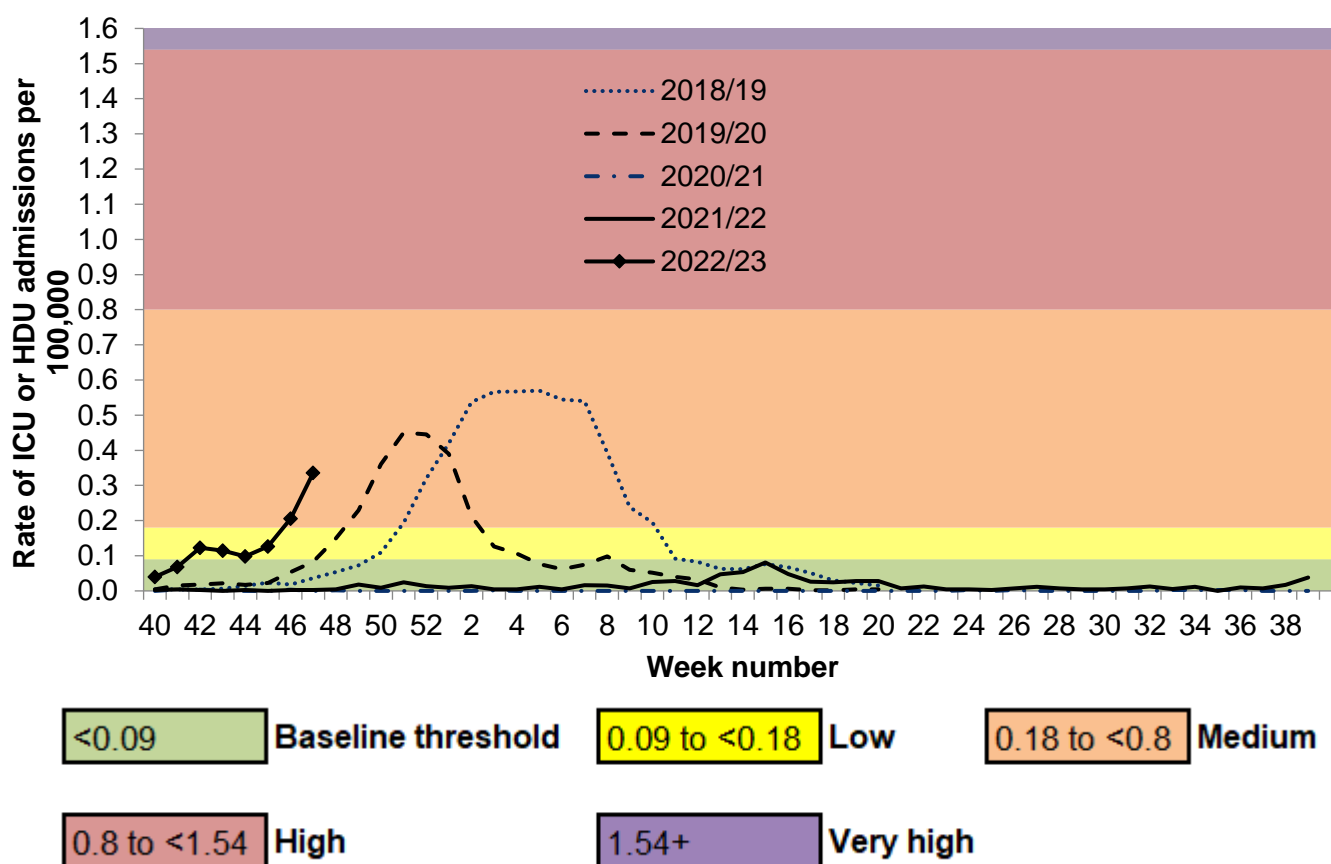
\* Influenza ICU or HDU admission rate based on 99 NHS trusts for week 46

\* COVID-19 ICU or HDU admission rate based on 82 NHS trusts for week 46

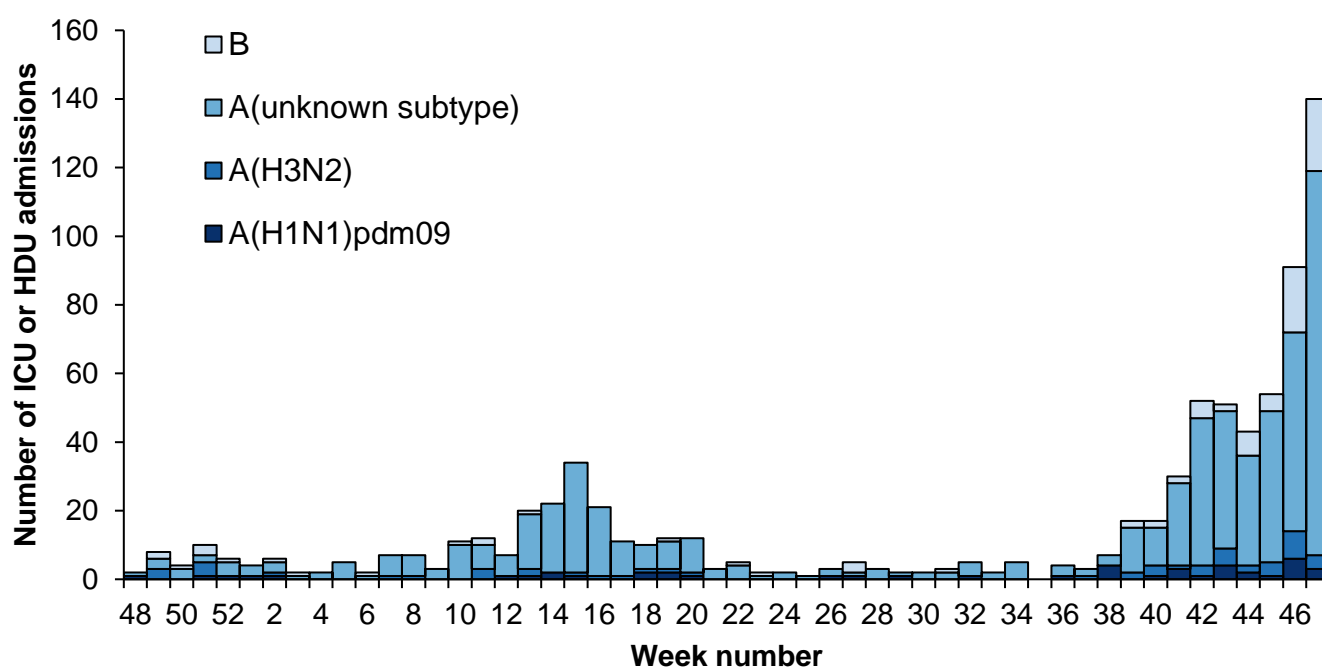
\* SARI Watch data is provisional



**Figure 40: Weekly overall influenza ICU or HDU admission rates per 100,000 trust catchment population with MEM thresholds, SARI Watch, England**

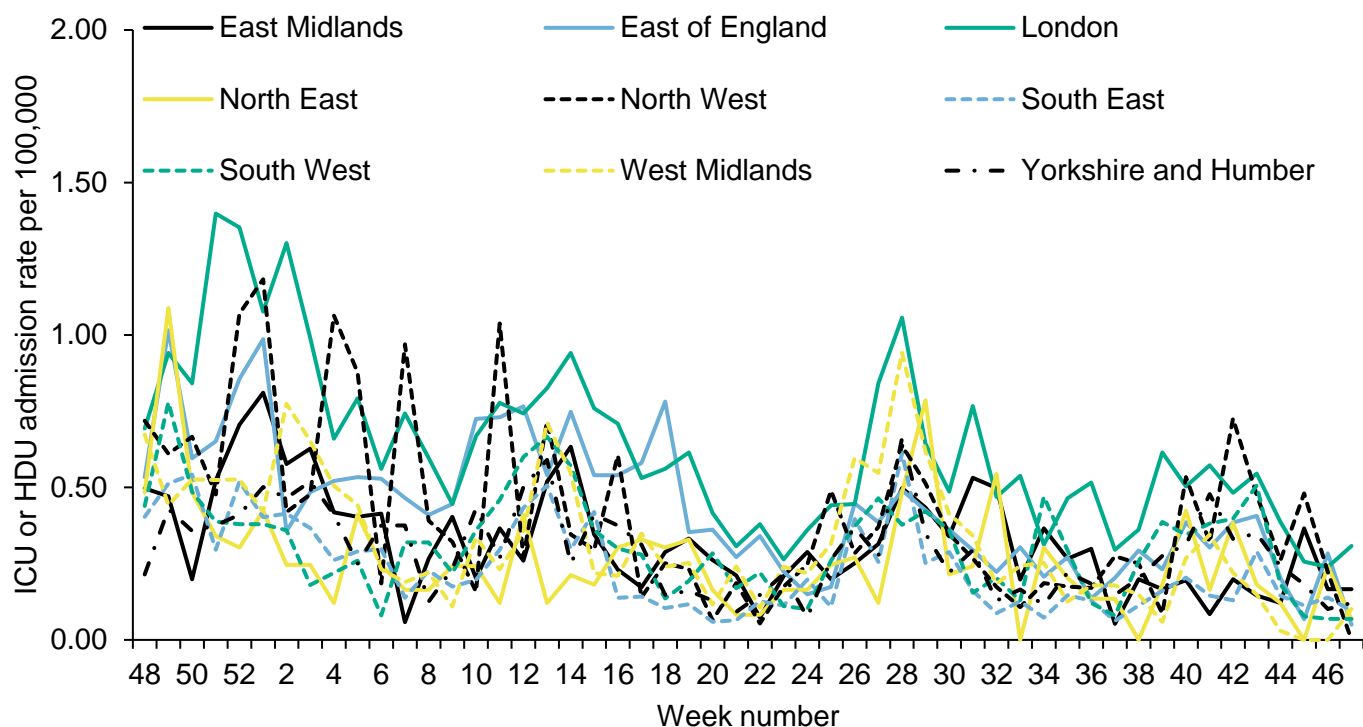


**Figure 41: Weekly influenza ICU or HDU admissions by influenza type, SARI Watch, England**

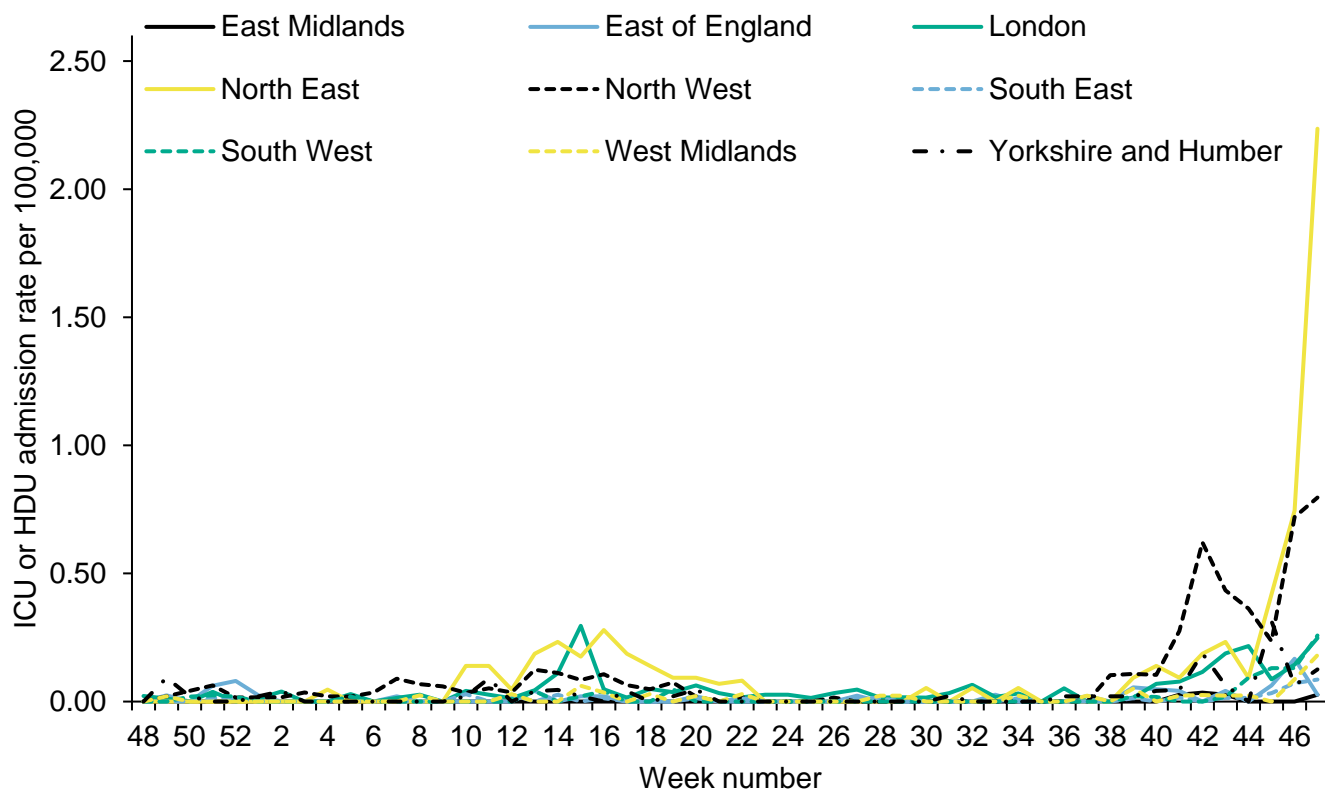


**Figure 42: Weekly ICU or HDU admission rate by UKHSA centre for new (a) COVID-19 positive cases and (b) influenza, reported through SARI Watch**

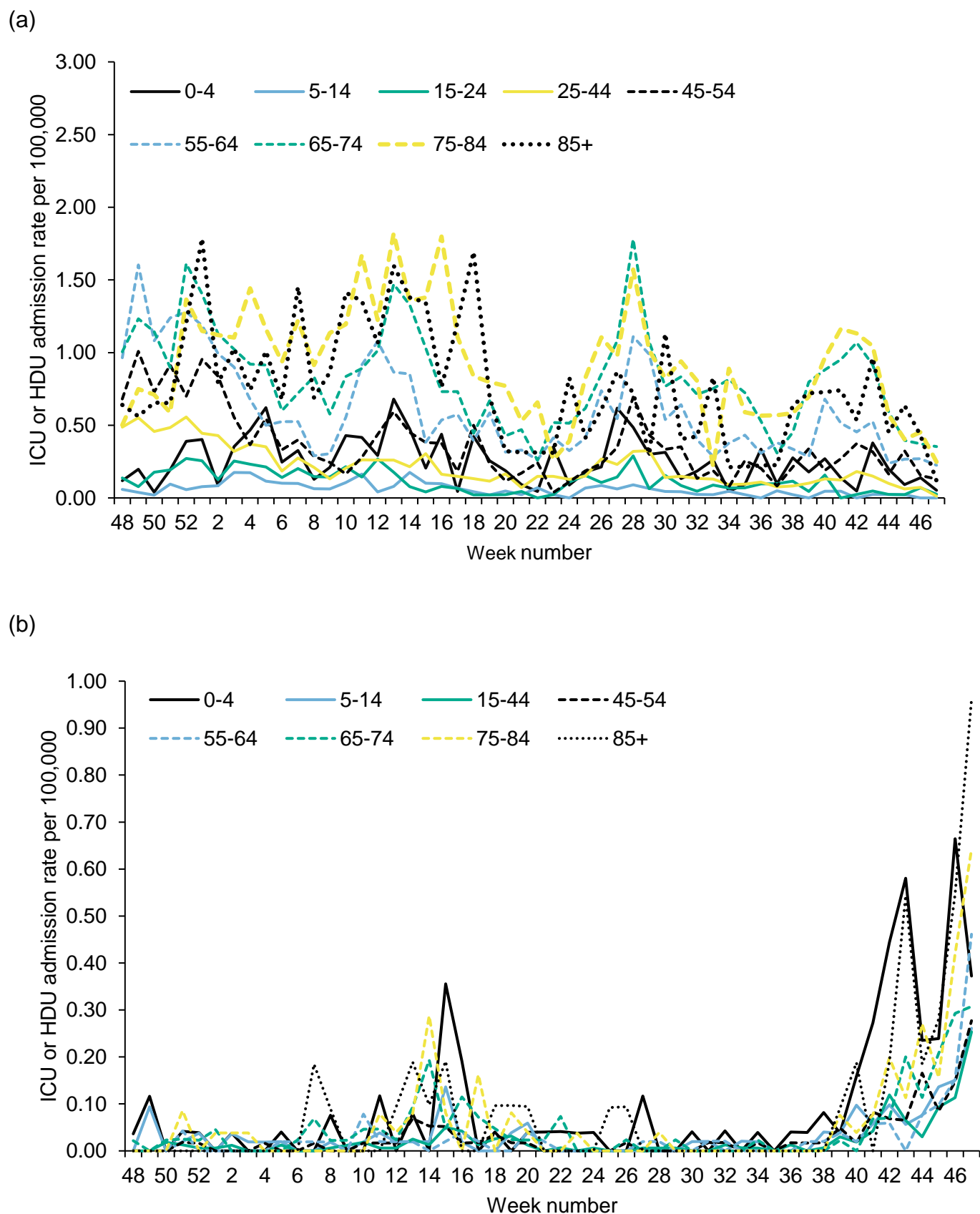
(a)



(b)



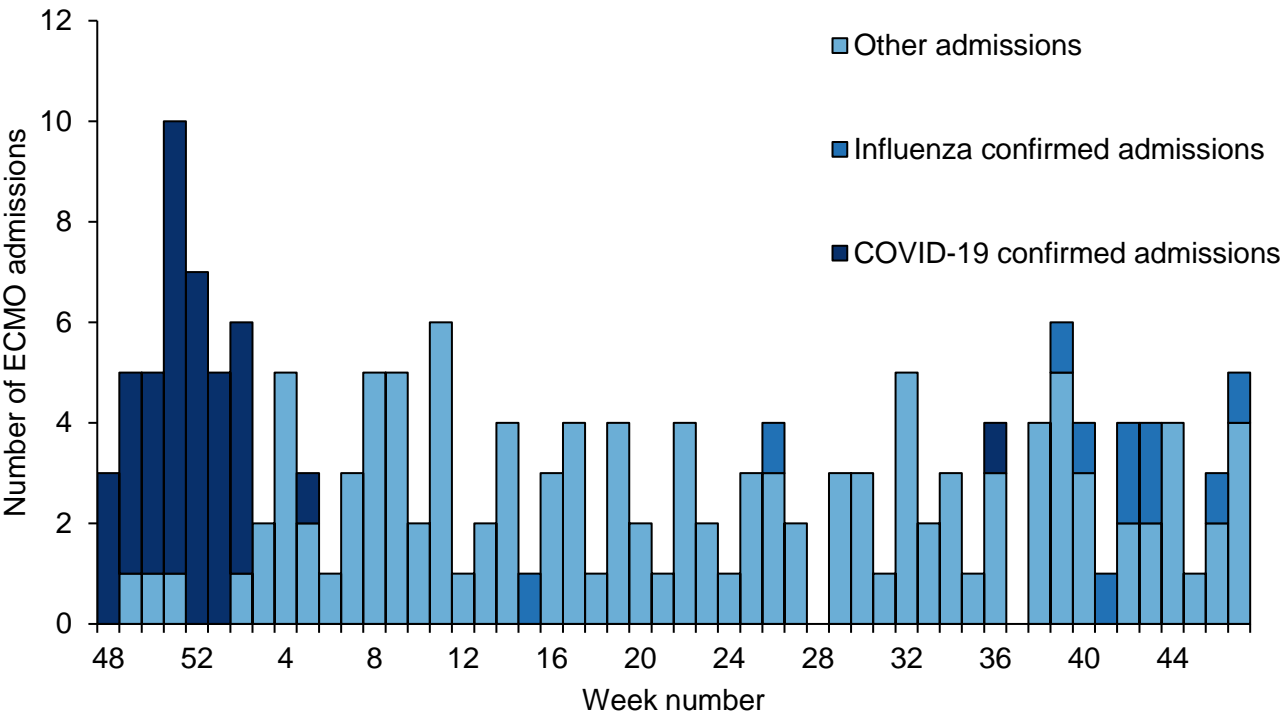
**Figure 43: Weekly ICU or HDU admission rate by age group for new (a) COVID-19 positive cases and (b) influenza, reported through SARI Watch**



## ECMO, SARI Watch

There was one new laboratory confirmed influenza admission reported in week 47 from the 6 Severe Respiratory Failure (SRF) centres in the UK (Figure 44). No new COVID admissions were reported.

**Figure 44: Laboratory confirmed ECMO admissions (COVID-19, influenza and non-COVID-19 confirmed) to Severe Respiratory Failure centres in the UK**

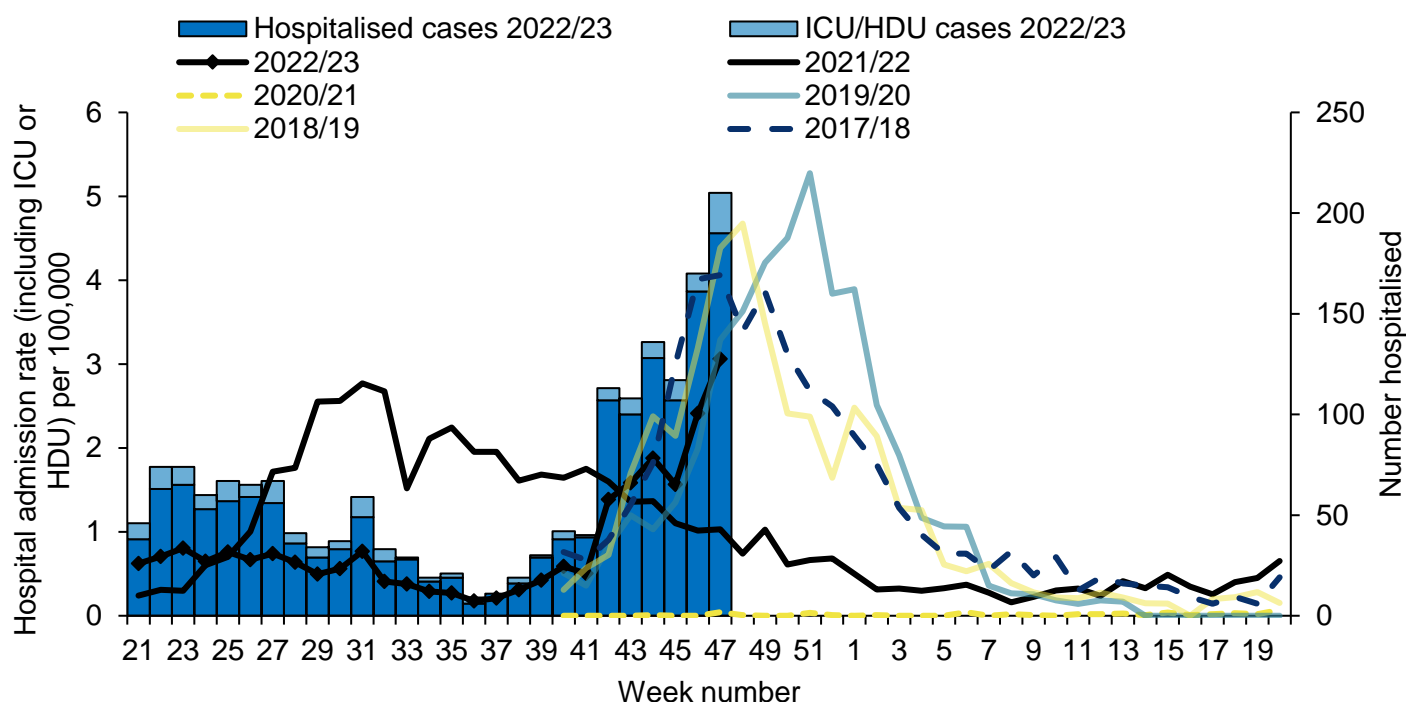


\* SARI Watch data is provisional

## RSV admissions, SARI Watch

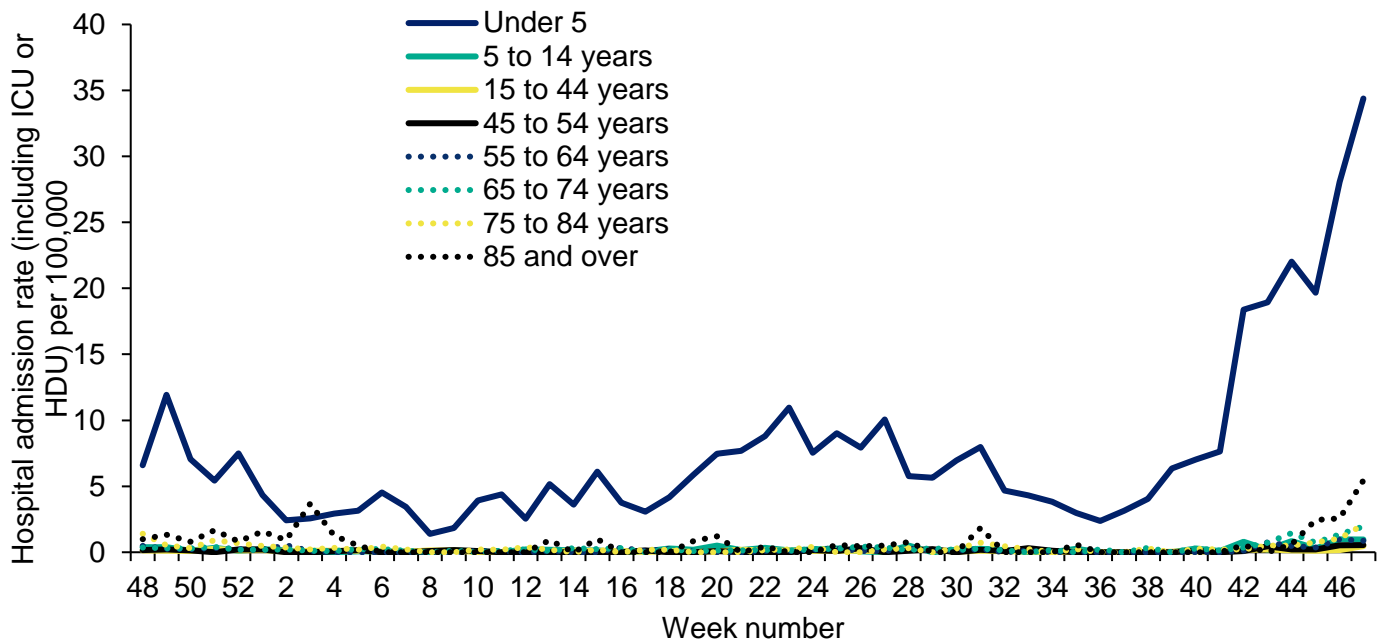
Data on hospitalisations, including ICU or HDU admissions, with respiratory syncytial virus (RSV) are shown below. RSV SARI Watch surveillance is sentinel.

**Figure 45: 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 46: Weekly hospitalisation (including ICU or HDU) admission rates by age group for new RSV cases reported through SARI Watch, England**



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

\* SARI Watch data is provisional

## Emergency Department attendances, Syndromic surveillance

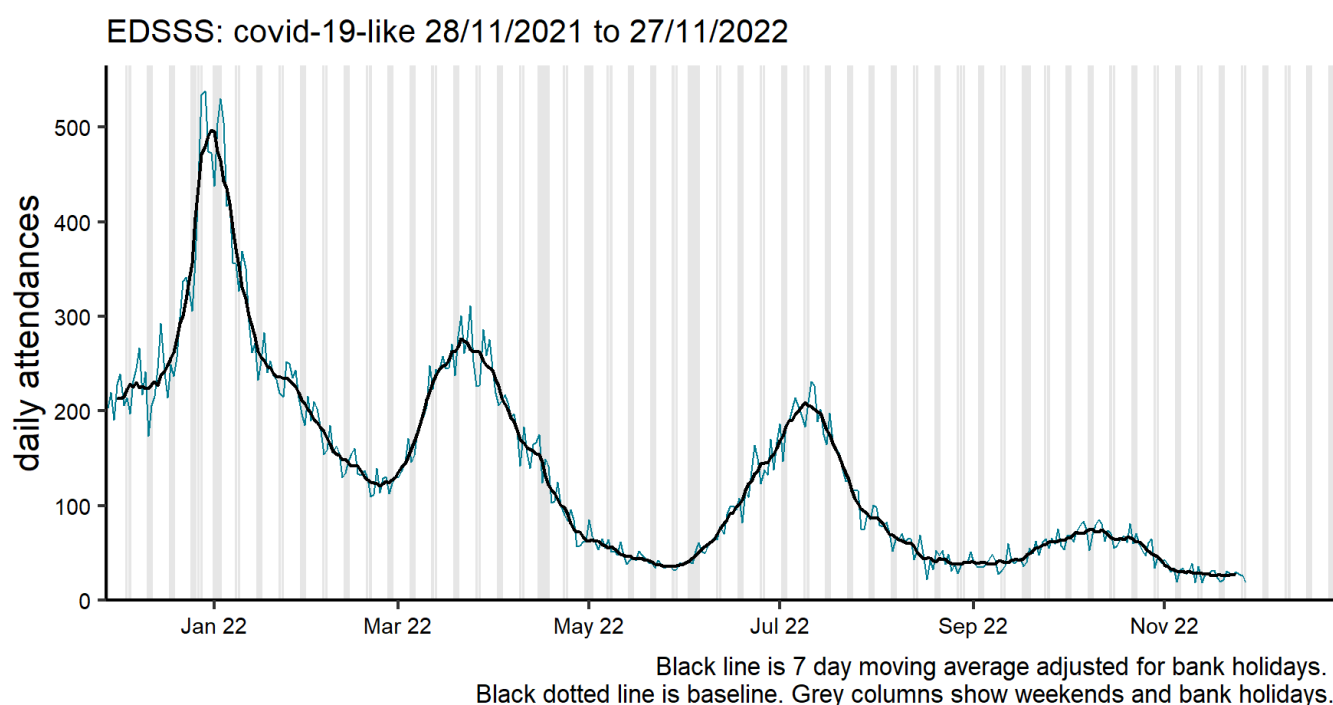
The [Emergency Department Syndromic Surveillance System \(EDSSS\)](#) monitors the daily visits in a network of emergency departments across England.

Up to 27 November, ED attendances as reported by 143 EDs for acute respiratory infection increased, particularly in the under 15 years age groups. ED attendances for COVID-19-like were stable nationally. ED attendances for influenza-like illness increased across most age groups. (Figures 47, 48 and 49).

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.

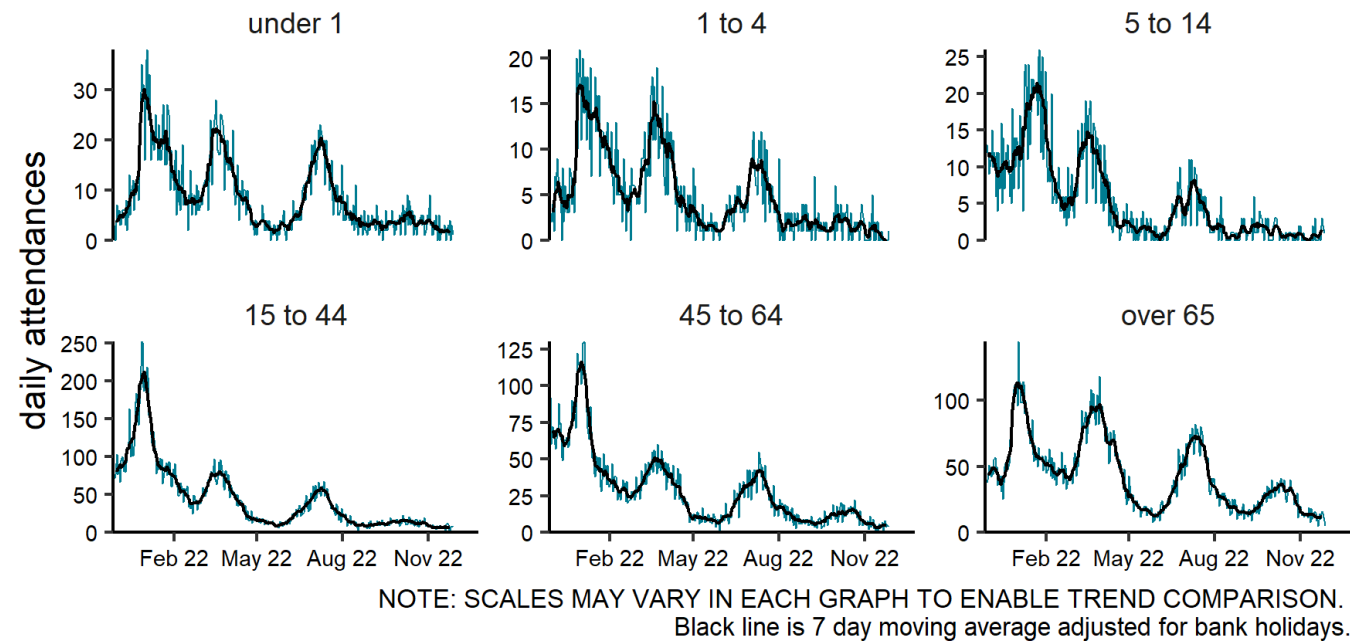
**Figure 47: Daily ED attendances for COVID-19-like infections, England (a) nationally, (b) by age group and (c) by UKHSA centre**

(a)



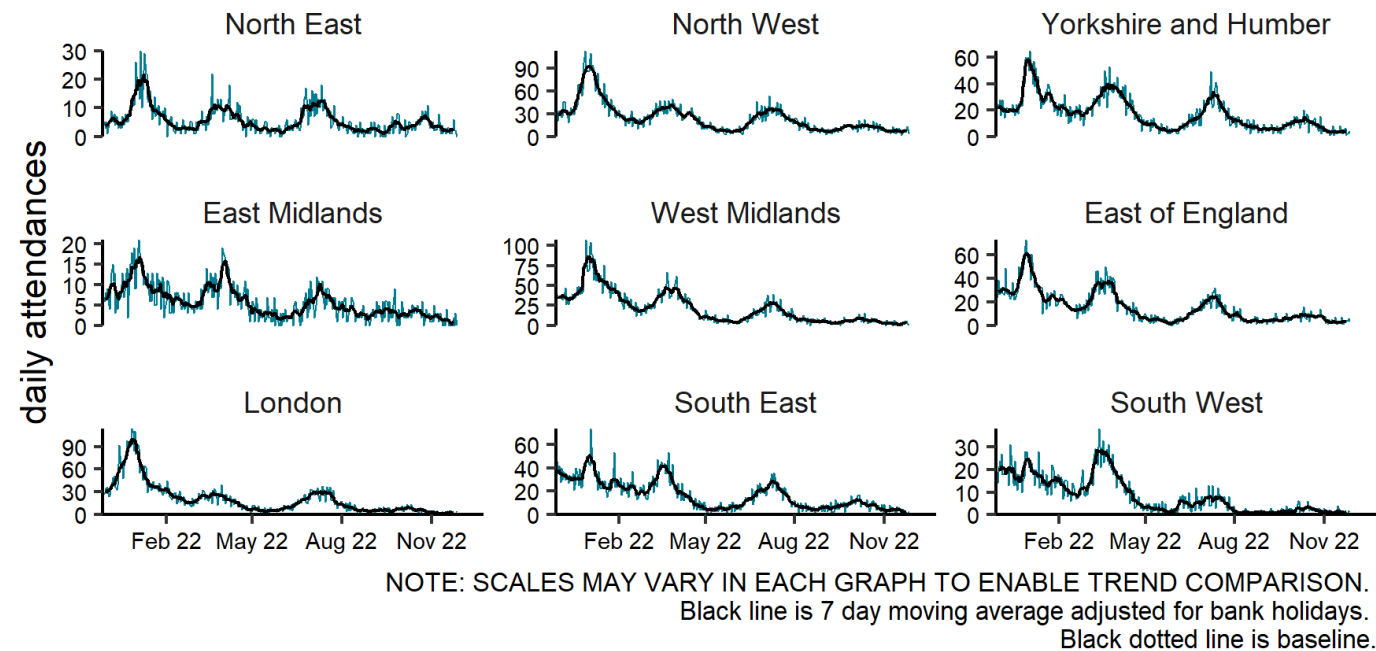
(b)

EDSSS: covid-19-like by age (years) 28/11/2021 to 27/11/2022



(c)

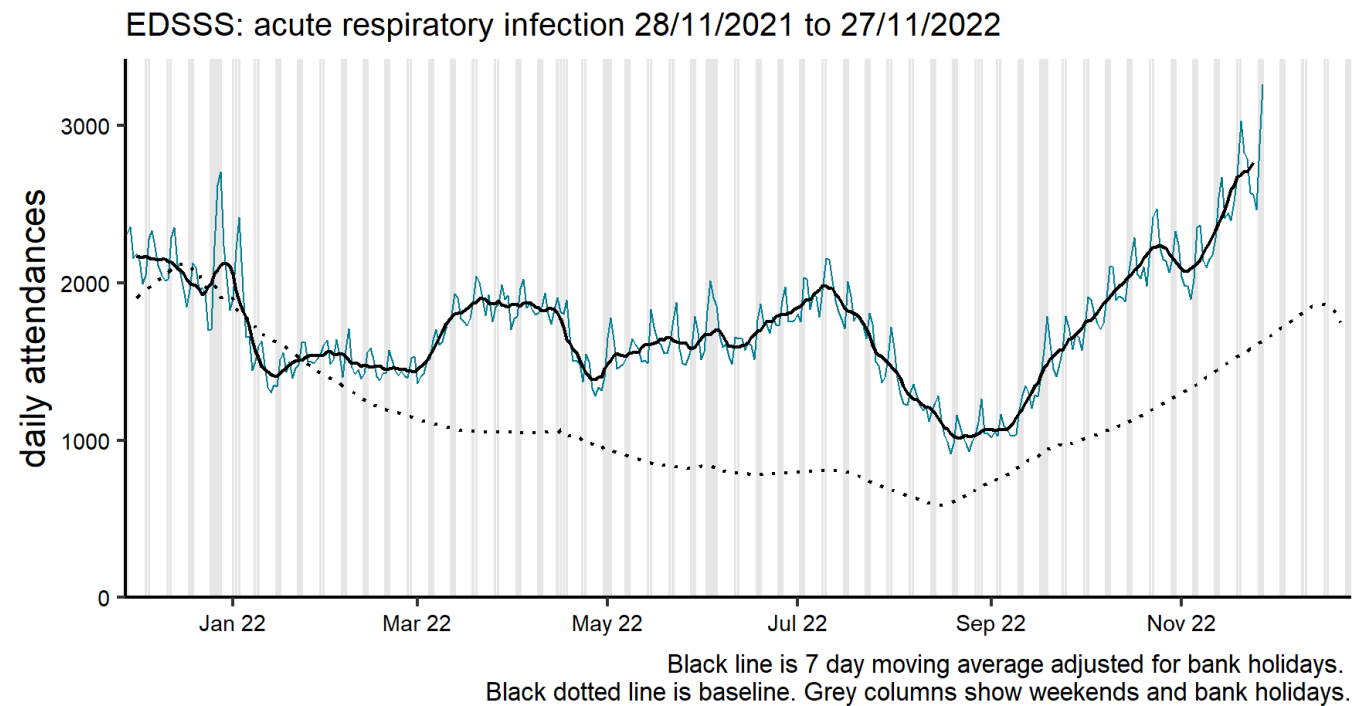
EDSSS: covid-19-like by region 28/11/2021 to 27/11/2022



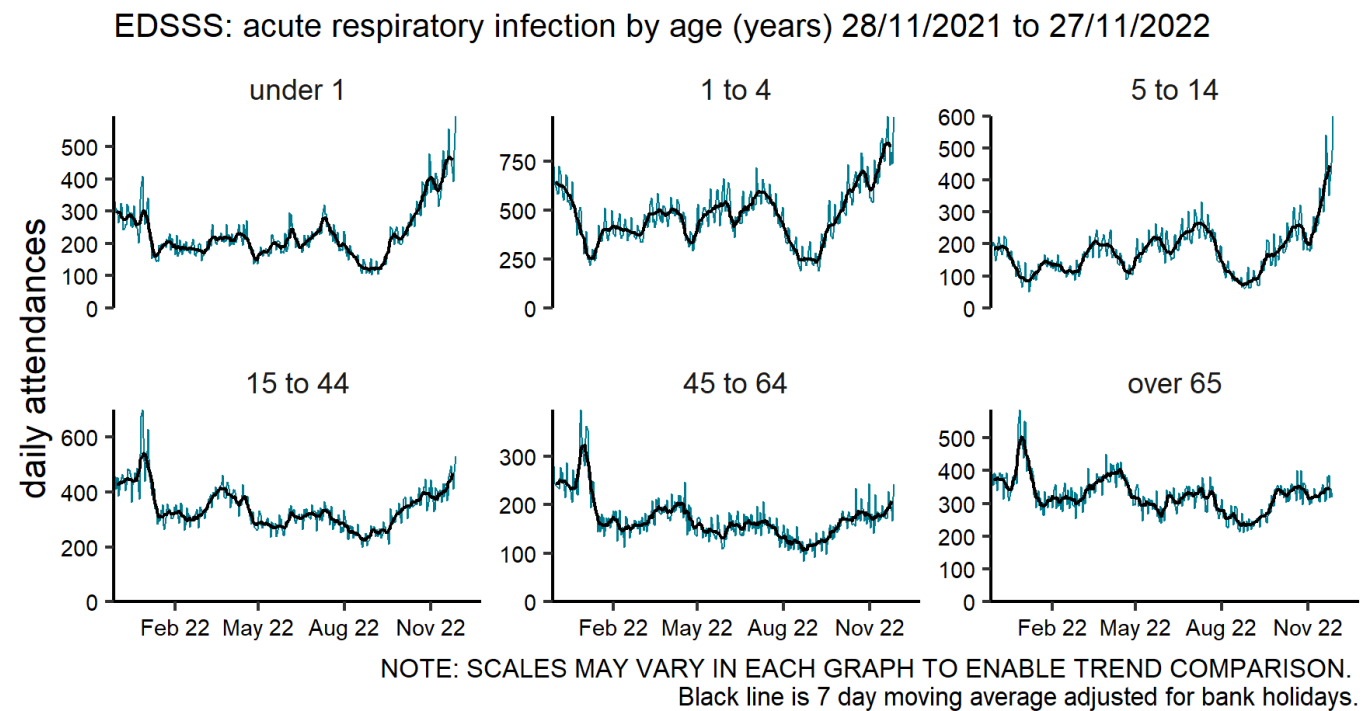


**Figure 48: Daily ED attendances for acute respiratory infection, England (a) nationally, (b) by age group and (c) by UKHSA centre**

(a)

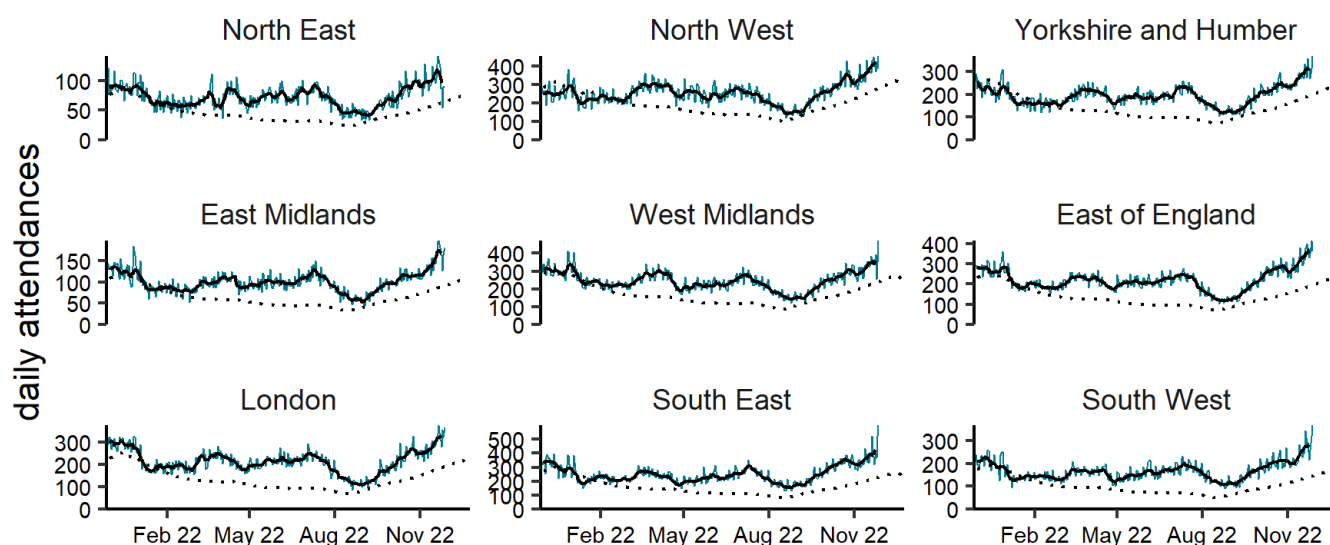


(b)



(c)

EDSSS: acute respiratory infection by region 28/11/2021 to 27/11/2022

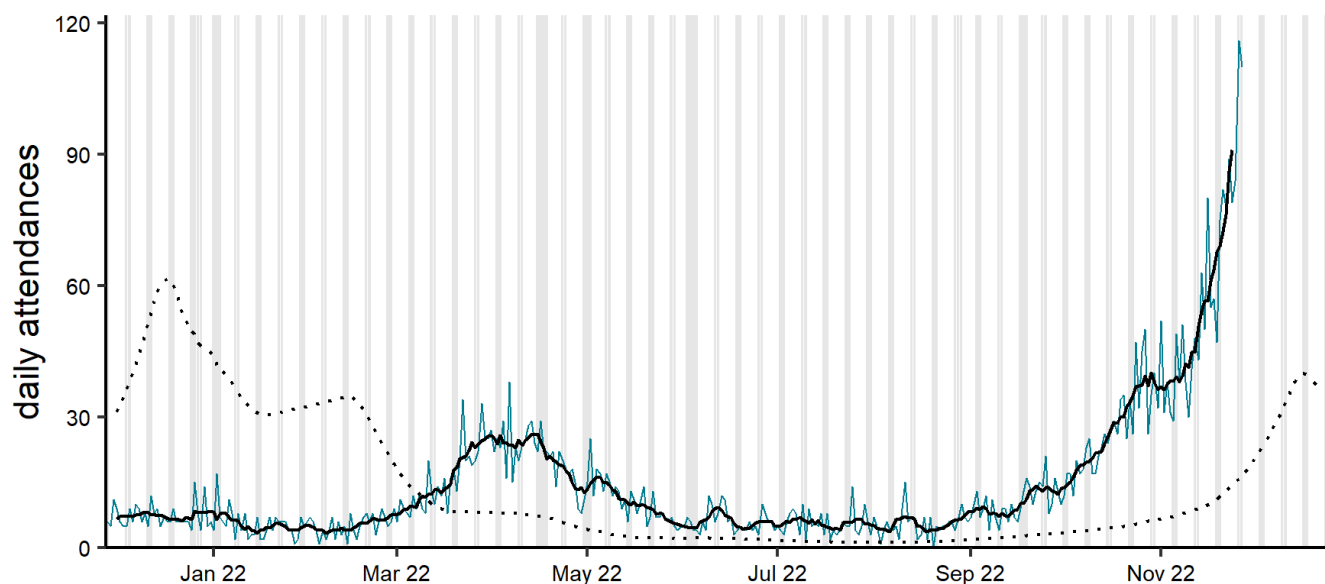


NOTE: SCALES MAY VARY IN EACH GRAPH TO ENABLE TREND COMPARISON.  
Black line is 7 day moving average adjusted for bank holidays.  
Black dotted line is baseline.

**Figure 49: Daily ED attendances for influenza-like illness, England (a) nationally, (b) by age group and (c) by UKHSA centre**

(a)

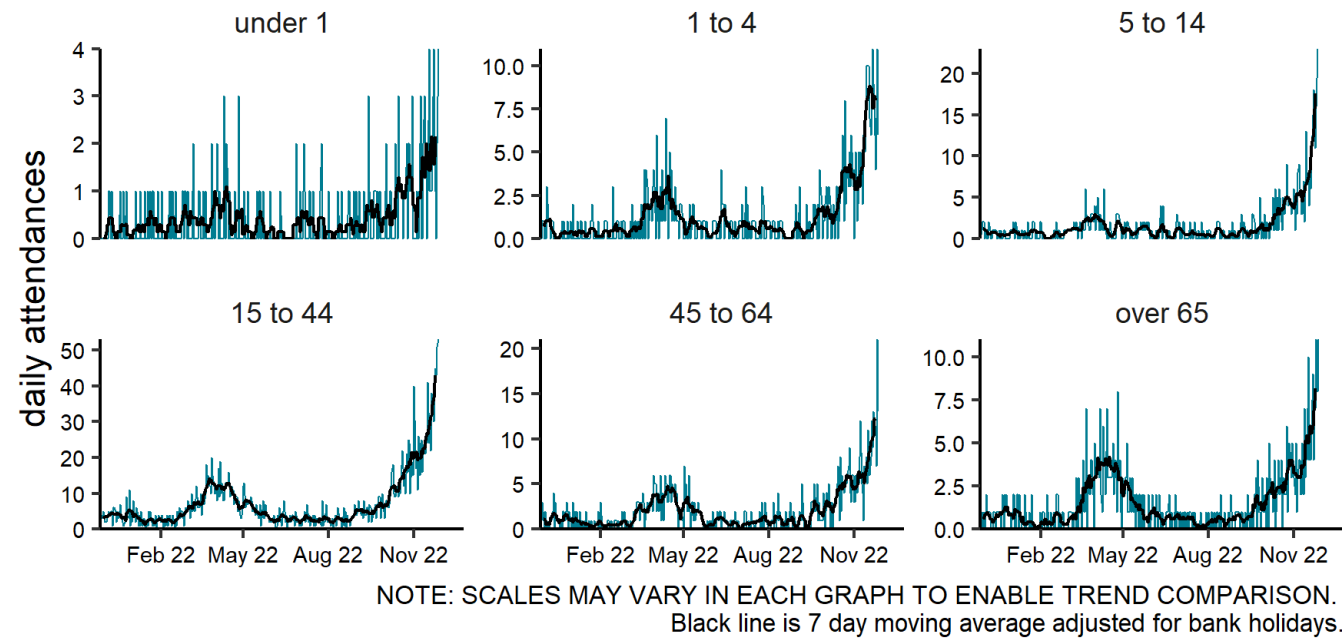
EDSSS: influenza-like illness 28/11/2021 to 27/11/2022



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

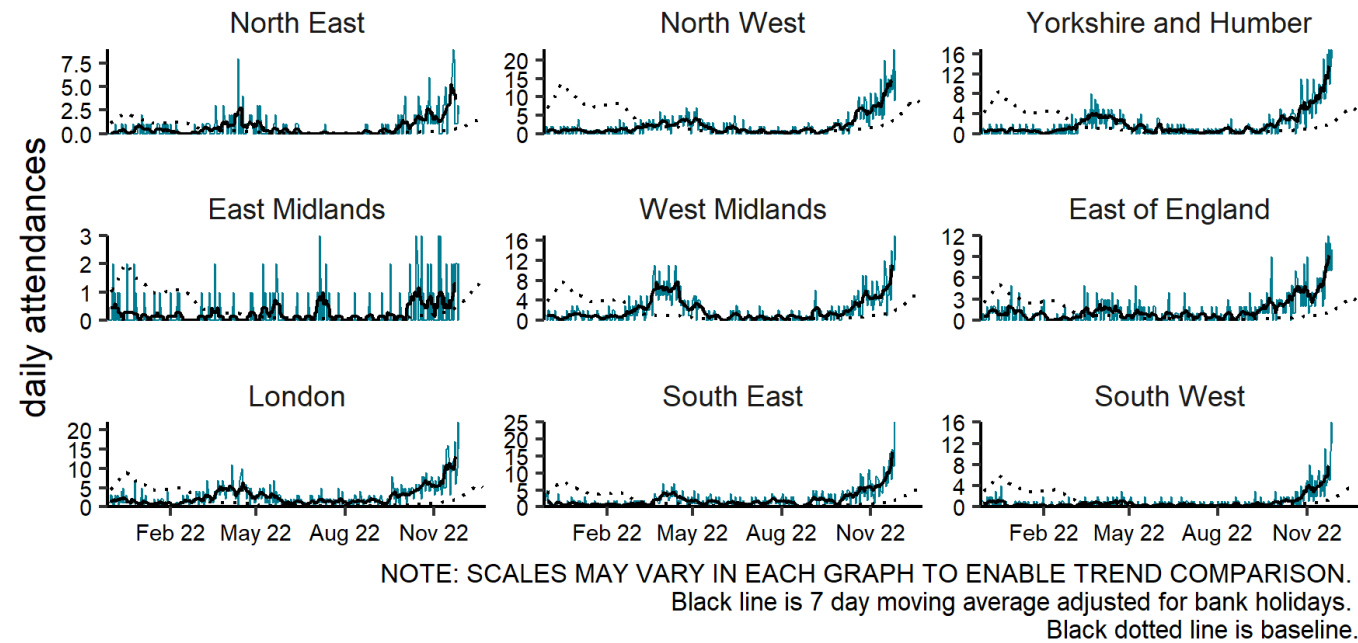
(b)

EDSSS: influenza-like illness by age (years) 28/11/2021 to 27/11/2022



(c)

EDSSS: influenza-like illness by region 28/11/2021 to 27/11/2022

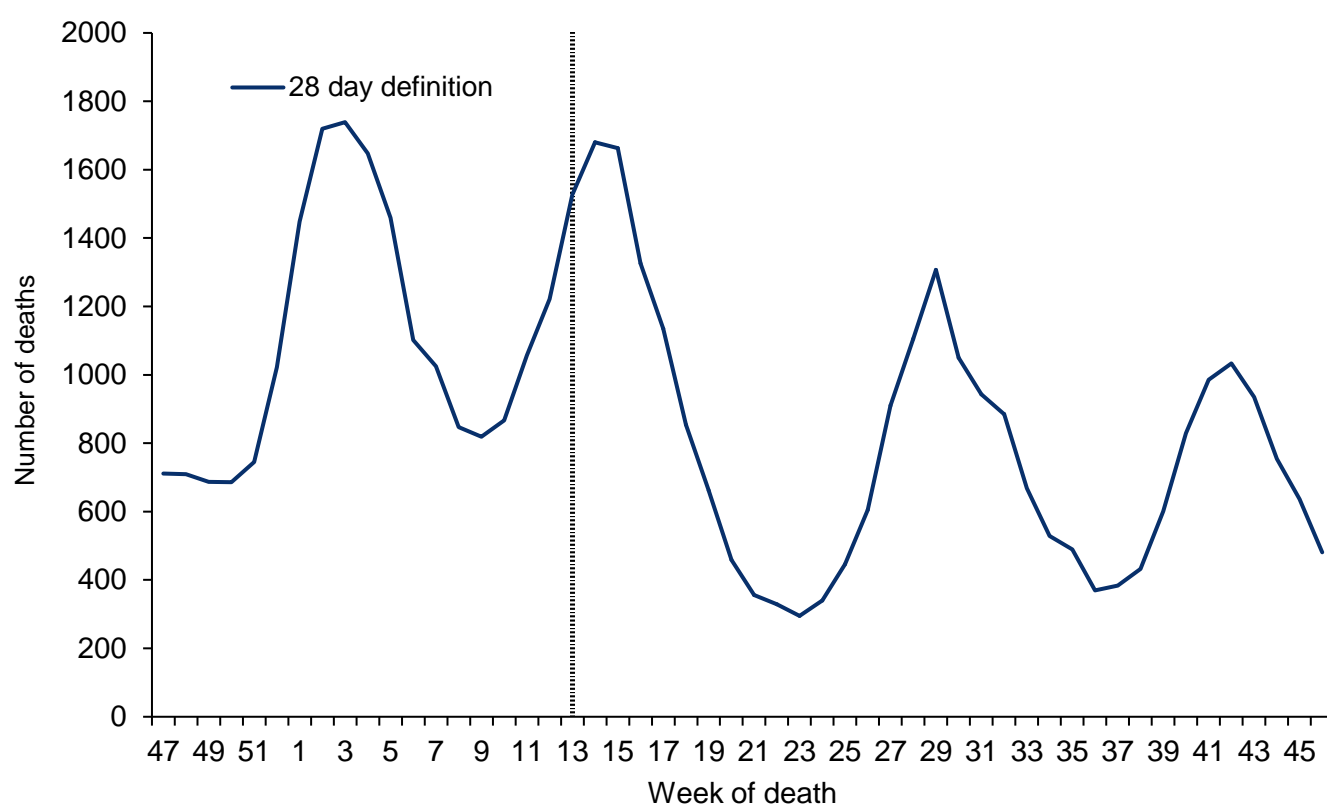


## Mortality surveillance

### 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.

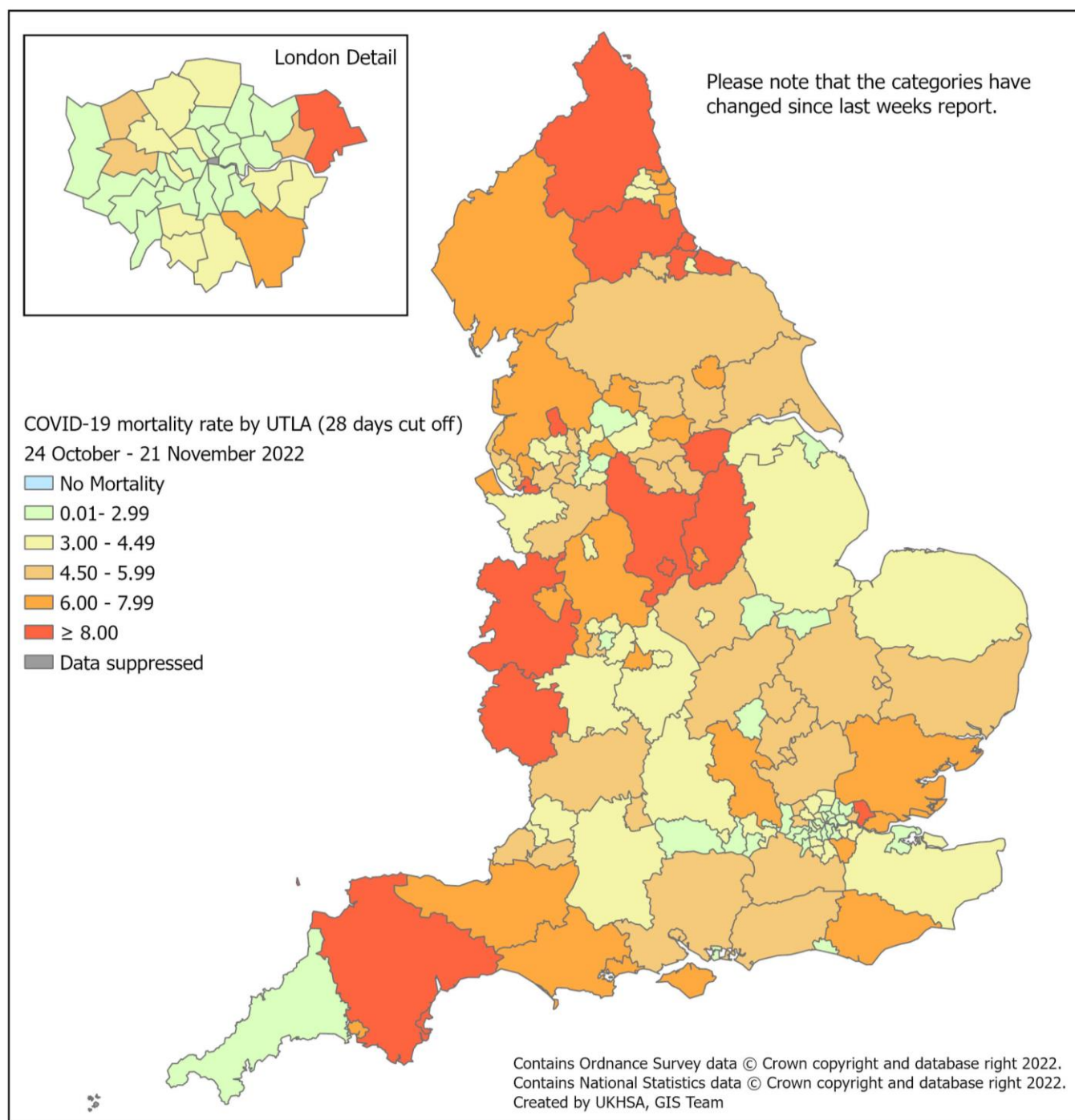
**Figure 50: Number of deaths by week of death and time since a positive COVID-19 test (28 day definition), England**



\* 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 51: Cumulative mortality rate of COVID-19 cases per 100,000 population tested under Pillars 1 and 2 for the weeks 42 to 46 by 28 day definition**



## Daily excess all-cause mortality (England)

Deaths occurring from 1 January 2020 to 23 November 2022 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 and the baseline was from the same day of the year in the previous 5 years plus or minus 7 days with an extrapolated time trend, and with 2 and 3 standard deviation (SD) limits shown (Figure 52).

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 Figure 54.

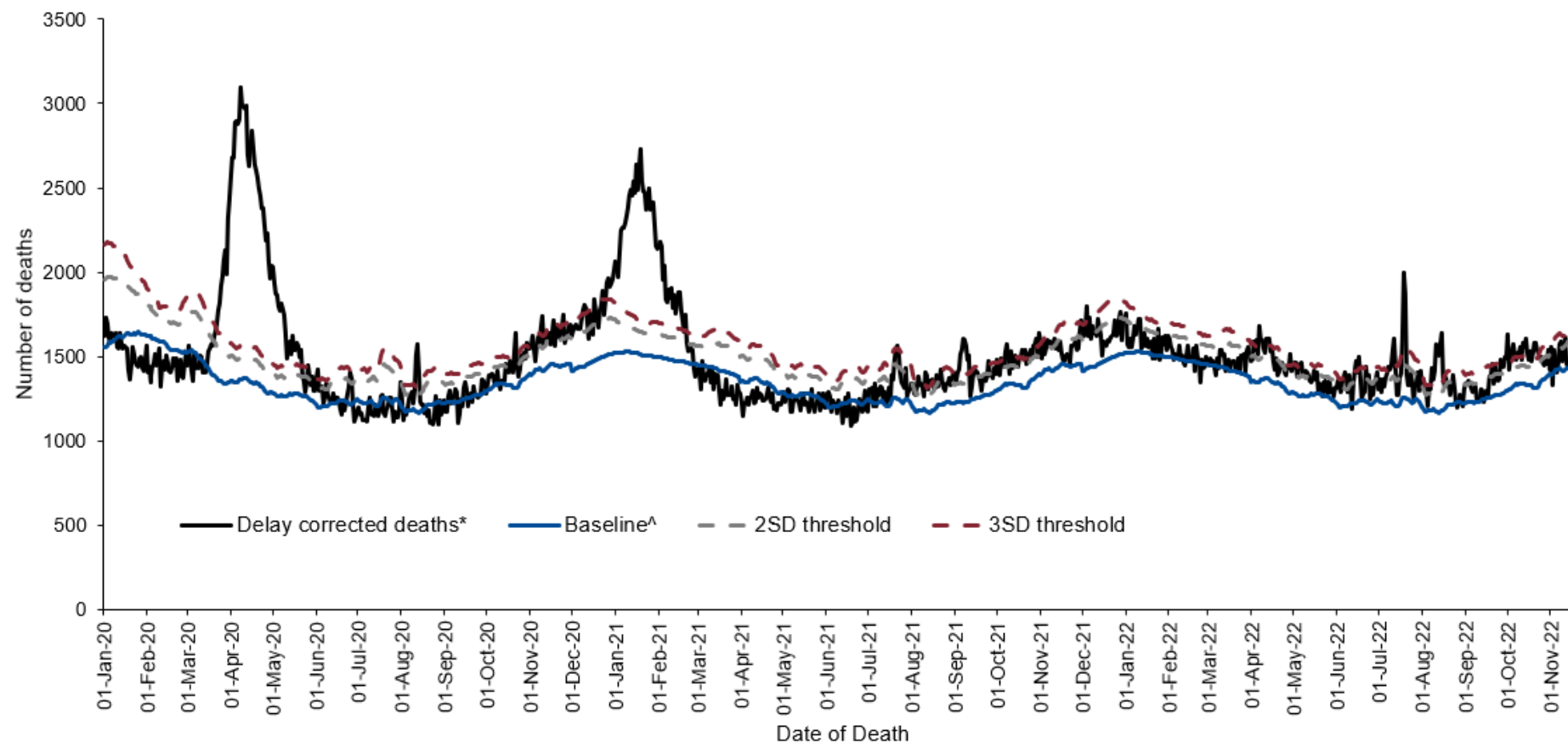
Note that as this data is by date of death with delay corrections, numbers are subject to change each week, particularly for more recent days. The current week's model supersedes models presented in previous week.

Excess all-cause mortality was observed in four of the last eight weeks, week 39, 40, 41 and 42.

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 52: Daily excess all-cause deaths in all ages, England, 1 January 2020 to 23 November 2022**



^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 46 2022?	Weeks in excess from week 10 to 53 2020	Weeks in excess from week 1 to 52 2021	Weeks in excess from week 1 2022
All	x	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
under 25	x	None	None	None
25 to 44	x	14 to 16	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
65 to 74	x	13 to 19, 46, 48, 52 to 53	01 to 07, 36, 43, 48	32, 40
75 to 84	x	13 to 21, 33, 45, 49, 52 to 53	01 to 07, 32, 36, 40, 42	14 to 19, 22 to 24, 27 to 29, 31 to 32, 36, 38 to 42
85+	x	13 to 21, 33, 53	01 to 07, 31, 36	28 to 29, 32, 39, 41 to 42

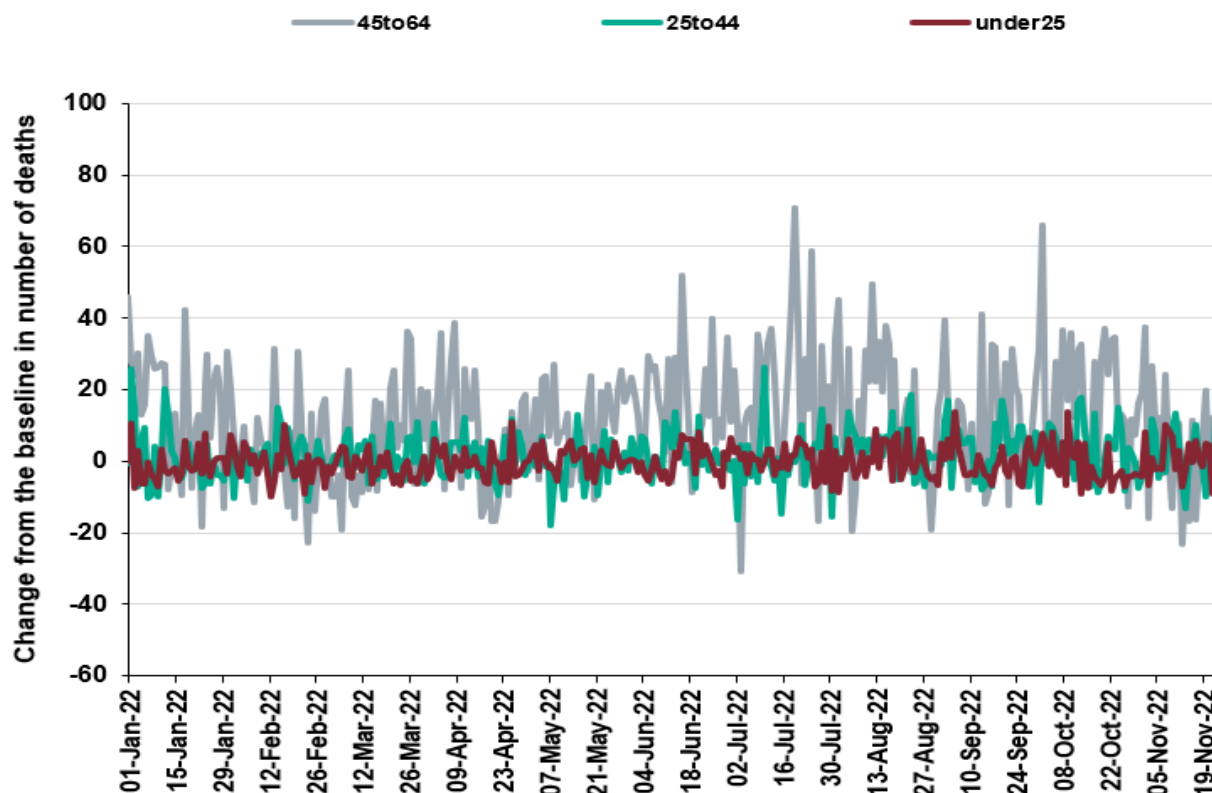
(b)

UKHSA Centres	Excess detected in week 46 2022?	Weeks in excess from week 10 to 53 2020	Weeks in excess from week 1 to 52 2021	Weeks in excess from week 1 2022
East of England	x	14 to 19, 52 to 53	01 to 07	23, 27, 29
East Midlands	x	13 to 19, 48	01 to 07	29
London	x	12 to 19, 33, 52 to 53	01 to 06, 36	None
North East	x	14 to 21	02 to 04	None
North West	x	13 to 19, 33, 42 to 47	01 to 07, 31 to 32, 36, 43	14 to 15, 29 to 30, 32, 42
South East	x	13 to 21, 33, 50 to 53	01 to 07, 36, 41, 49	14, 32, 40 to 42
South West	x	13 to 19, 33	02 to 07, 29, 36	29, 32, 34, 39
West Midlands	x	13 to 20, 45, 48	01 to 07, 29, 36, 40, 48	13, 29, 32, 41 to 42
Yorkshire and Humber	x	14 to 21, 23, 43 to 50	02 to 04, 32, 35 to 36	29, 32

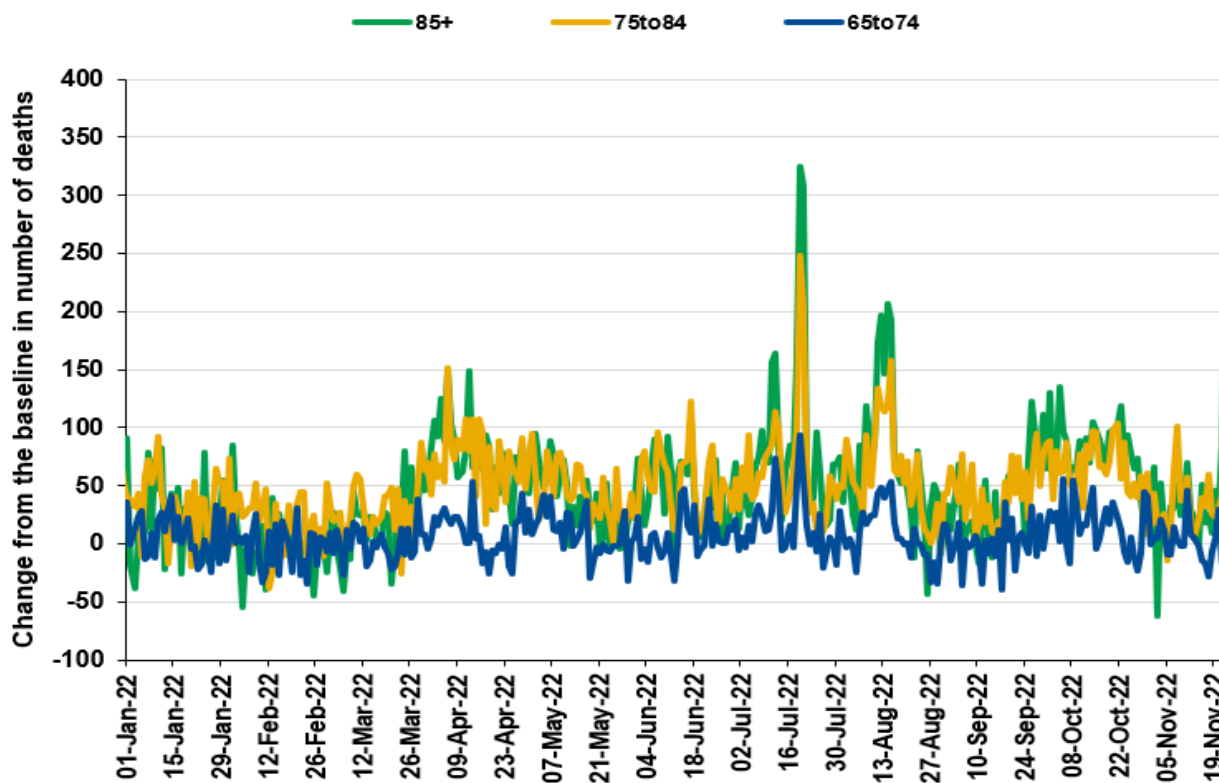


**Figure 53: Daily excess all-cause deaths by age group, England, 1 January to 23 November 2022**

(a)

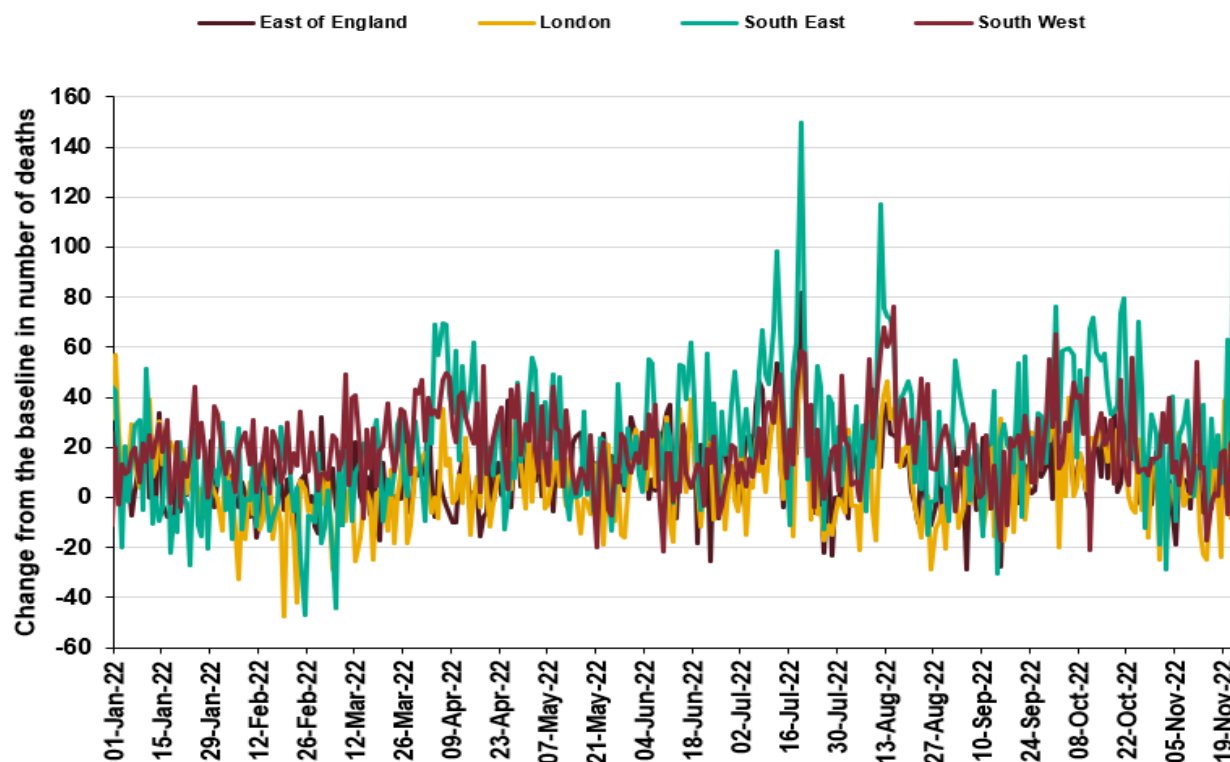


(b)

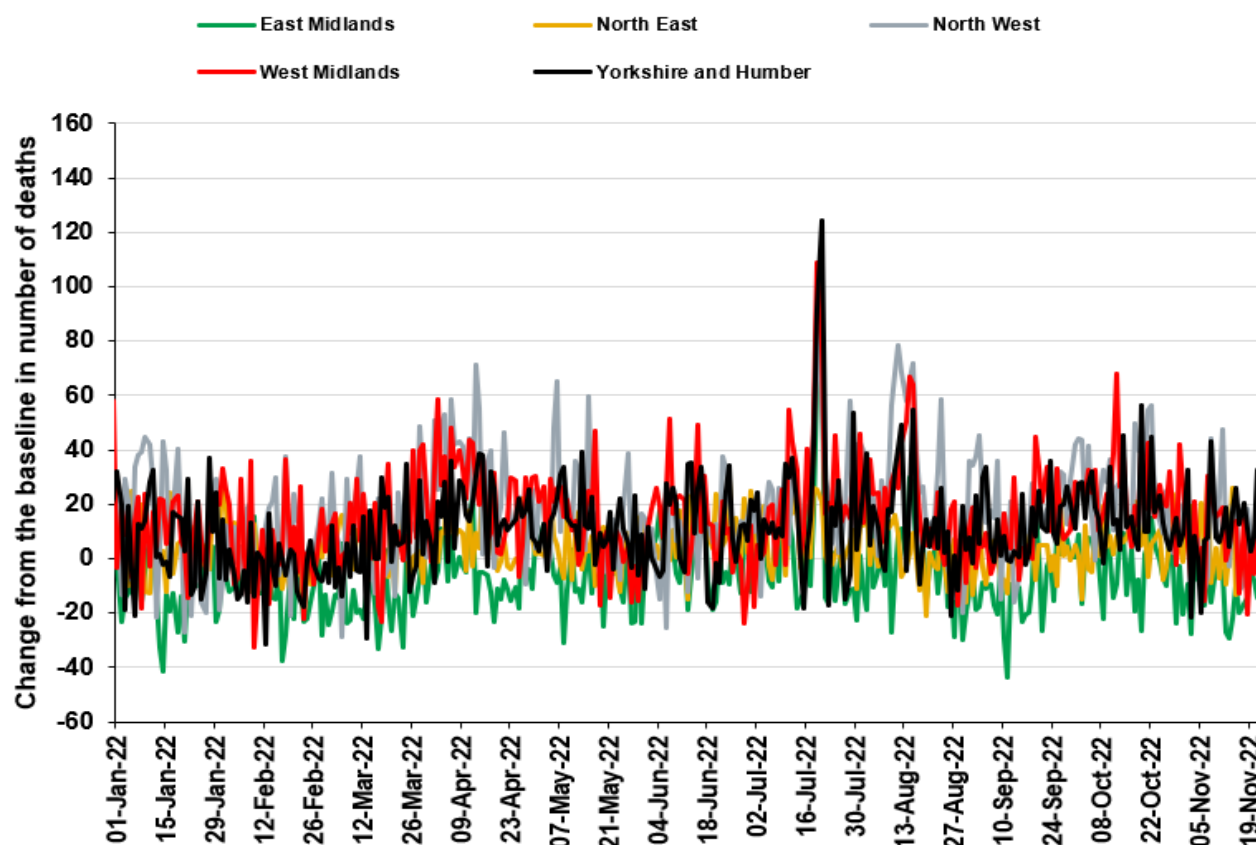


**Figure 54: Daily excess all-cause deaths by UKHSA centre, England, 1 January to 23 November 2022**

(a)



(b)



# 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.

As of week 48, 2022, the UKHSA Respiratory Virus Unit have genetically characterised 398 influenza A viruses (199 A(H3N2) and 199 A(H1N1)pdm09 viruses) and 3 influenza B viruses that were detected since week 34 2022 (W/C 22 August 2022), by sequencing of the haemagglutinin (HA) gene.

The 199 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 199 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.

Three influenza B/Victoria lineage viruses have been genetically characterised, both 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.

It is too early to predict which influenza lineages will dominate throughout the season, and a close watch will be kept on the proportion of different viruses circulating to assist with the evaluation of vaccine effectiveness.

## 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 weeks 34/2022 and 46/2022 have been analysed. No viruses with known markers of resistance to neuraminidase inhibitors were detected in 181 A(H3N2), 185 A(H1N1)pdm09 and 3 Influenza B NA sequences analysed. No viruses with known markers of resistance to baloxavir marboxil were detected in 152 A(H3N2), 155 A(H1N1)pdm09 and 2 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)	181	0	152	0
A(H1N1)pdm09	185	0	155	0
B/Victoria-lineage	3	0	2	0

## SARS-CoV-2 variants

This section is updated fortnightly.

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 55.

Of the sequenced episodes from 30 October 2022 to 19 November 2022, 0.8% were BA.2 (V-22JAN-01), 0.8% were BA.4.6 (V-22SEP-01), 31.0% were BA.5 (V-22APR-04), 50.4% were BQ.1 (V-22OCT-01), 10.9% were BA.2.75 (V-22JUL-01), and 6.2% were classified as XBB (V-22OCT-02).

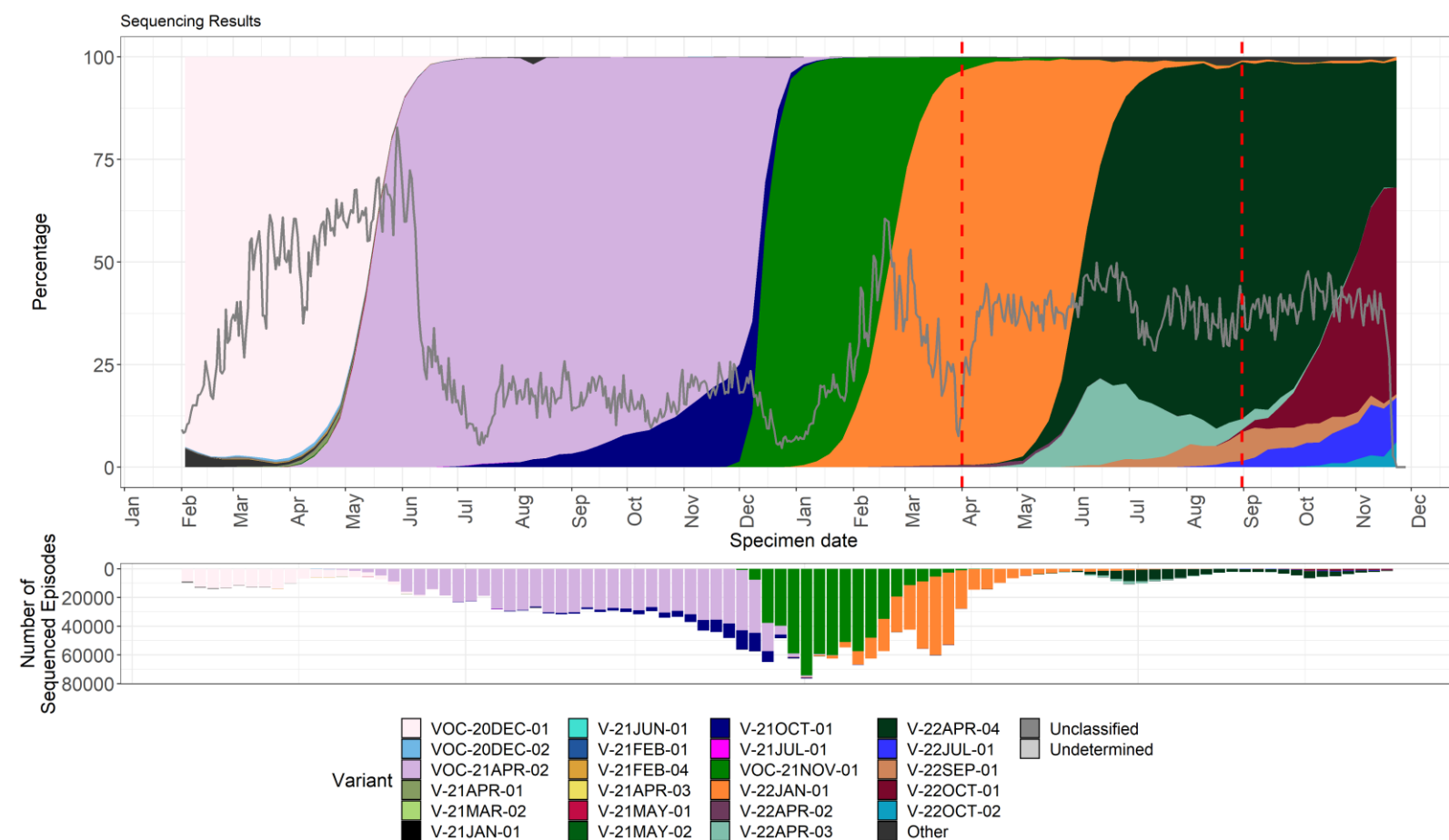
**Figure 55. Prevalence of SARS-CoV-2 variants amongst available sequences episodes for England from 1 February, as of 29 November 2022**

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 47 2022, BA.5 and BQ.1 are the predominant circulating variants in England (Table 5).

**Table 5. Total distribution of SARS-CoV-2 variants detected in England in the last 12 weeks, up to week 47 (week ending 27 November 2022)**

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	1	04-11-2022
VOC-21NOV-01	Omicron BA.1	15	13-11-2022
V-22JAN-01	Omicron BA.2	174	21-11-2022
V-22APR-03	Omicron BA.4	352	19-11-2022
V-22APR-04	Omicron BA.5	27,113	22-11-2022
V-22JUL-01	Omicron BA.2.75	2,698	23-11-2022
V-22SEP-01	Omicron BA.4.6	1,727	20-11-2022
V-22OCT-01	Omicron BQ.1	8,350	22-11-2022
V-22OCT-02	Omicron XBB	329	21-11-2022

\*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 47 2022, 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 (%)
<b><i>S. pneumoniae</i></b>	Penicillin	1,751	88
	Macrolides	1,945	82
	Tetracycline	1,790	82
<b><i>H. influenzae</i></b>	Amoxicillin or ampicillin	7,679	44
	Co-amoxiclav	9,113	49
	Macrolides	1,966	4
	Tetracycline	9,233	98
<b><i>S. aureus</i></b>	Methicillin	4,445	93
	Macrolides	5,238	70
<b>MRSA</b>	Clindamycin	215	45
	Tetracycline	268	74
<b>MSSA</b>	Clindamycin	3,019	74
	Tetracycline	3,682	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](#).

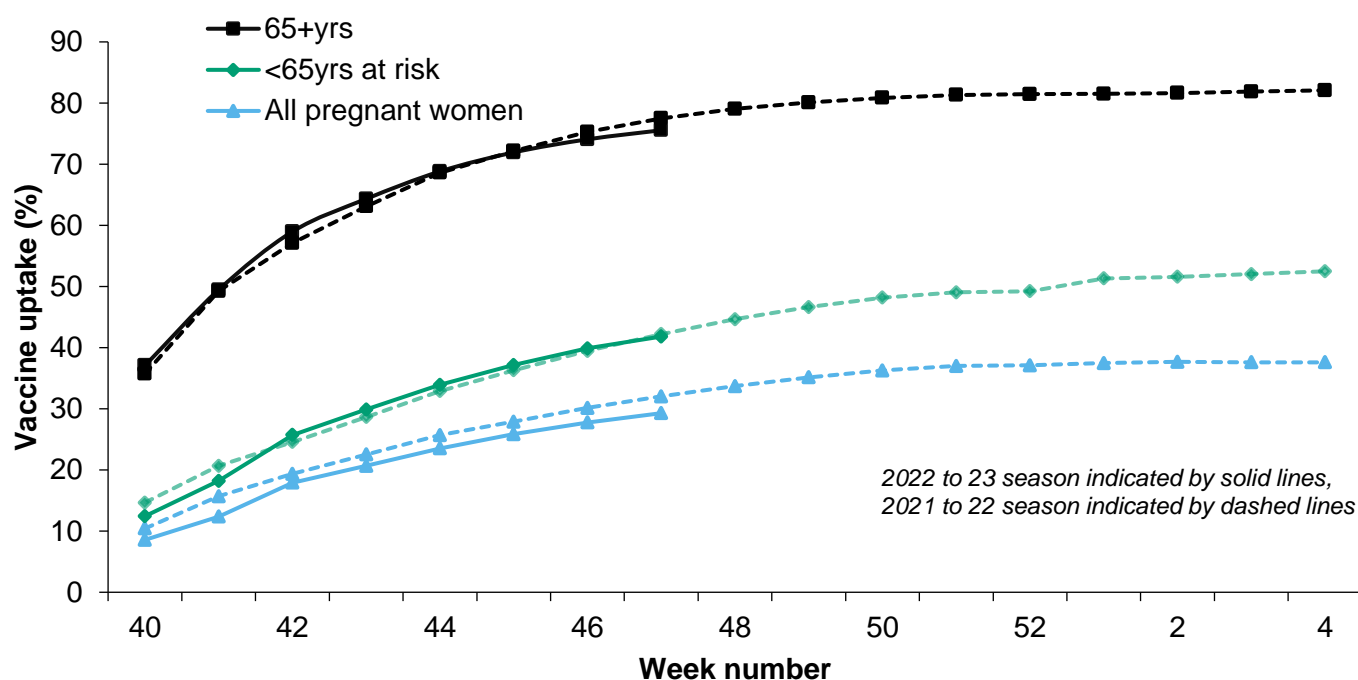
# Influenza vaccination

## Influenza vaccine uptake in GP patients

Up to week 47 of 2022, in 95.6% 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:

- 41.8% in under 65 years in a clinical risk group
- 29.3% in all pregnant women
- 75.5% in all 65 year olds and over
- 34.7% in those aged 50 to 64 who are not in a clinical risk group

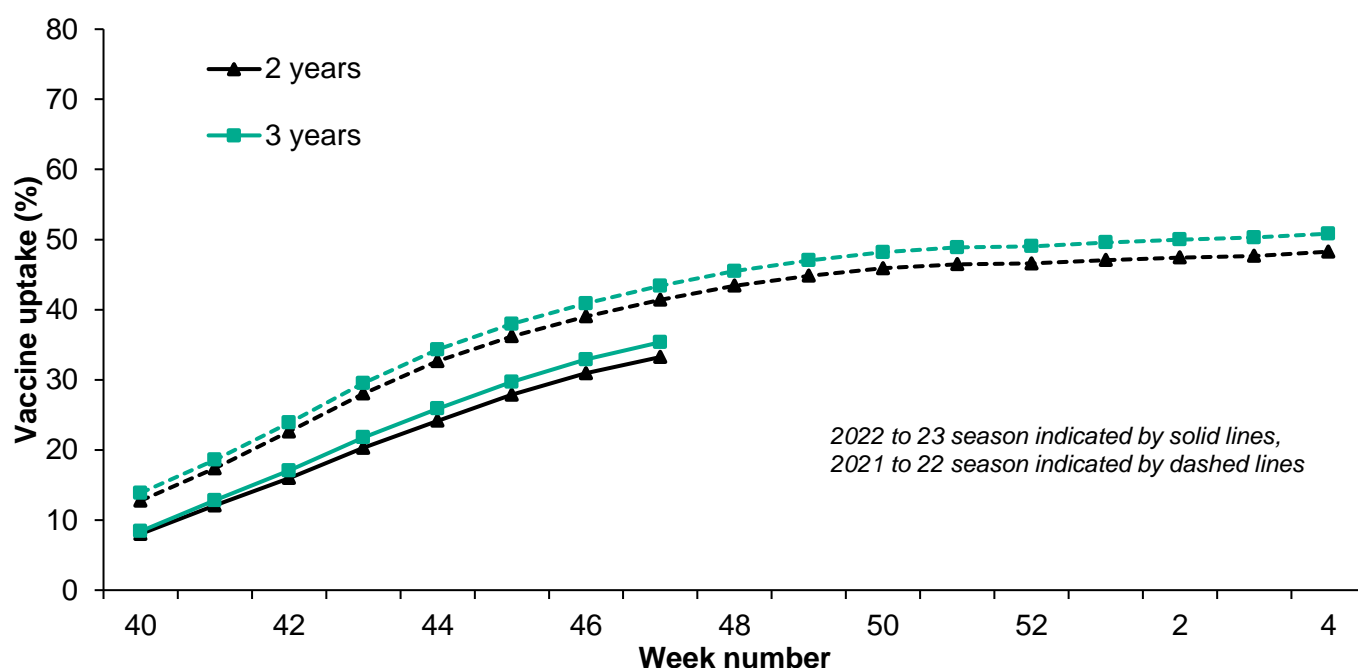
**Figure 56: Cumulative weekly influenza vaccine uptake by target group in England**



In 2022 to 2023, all 2 and 3 year olds continue to be eligible for influenza vaccination through their GPs. Up to week 47 of 2022, in 97.2% 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:

- 33.2% in all 2 year olds
- 35.4% in all 3 year olds

**Figure 57: Cumulative weekly influenza vaccine uptake in 2 and 3 year olds, in England**



On 24 November 2022, monthly data which cover vaccinations that were given between 1 September and 31 October 2022 for GP patients, frontline healthcare workers and school aged children were published for the second 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) ethnicities with the lowest uptake seen in some Black ethnicities (Caribbean, Mixed White and Black Caribbean, Any other Black background) and the Pakistani group. For pregnant women, when grouped by ethnicity, the highest vaccine uptake was seen in Chinese ethnicity and some White (British and Irish) and some Asian (Indian, Mixed White and Asian, Any other Asian background) ethnicities, with the lowest uptake seen in some Black ethnicities (Caribbean, Any Other Black background, Mixed White and Black Caribbean, African) and the Pakistani group. For 65 years and over when grouped by ethnicity, the highest vaccine uptake was seen in White – British with the lowest uptake seen in Black ethnicities groups and the Pakistani group.

## Influenza vaccine uptake in school age children

On 24 November 2022, provisional monthly data on influenza vaccine uptake in children of school years Reception to Year 6 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 October 2022. Vaccine uptake is the highest on record at this timepoint in the season for primary school aged children.

## Influenza vaccine uptake in healthcare workers

On 24 November 2022, 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 October 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 47 2022 (week ending 27 November 2022) 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.

Tables 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 5 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 47 2022 (week ending 27 November 2022), 62.4% (14,285,061 out of 22,900,721) of all people aged over 50 years old had been vaccinated with an Autumn booster dose since 1 September 2022, Table 5 and Figure 55. Vaccine uptake of those aged over 80 years old was 80.8% (2,377,006 out of 2,943,612).

**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**

<b>National</b>	<b>People in NIMS cohort who are living and resident in England</b>	<b>Vaccinated with an Autumn booster since 1 September 2022*</b>	<b>Percentage vaccine uptake</b>
Over 80	2,943,612	2,377,006	80.8
75 to under 80	2,384,968	1,935,204	81.1
70 to under 75	2,700,084	2,112,848	78.3
65 to under 70	2,973,378	2,115,204	71.1
60 to under 65	3,605,213	2,118,146	58.8
55 to under 60	4,122,101	2,010,993	48.8
50 to under 55	4,171,365	1,615,660	38.7
Total aged 50 and over	22,900,721	14,285,061	62.4

\*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 58: 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**

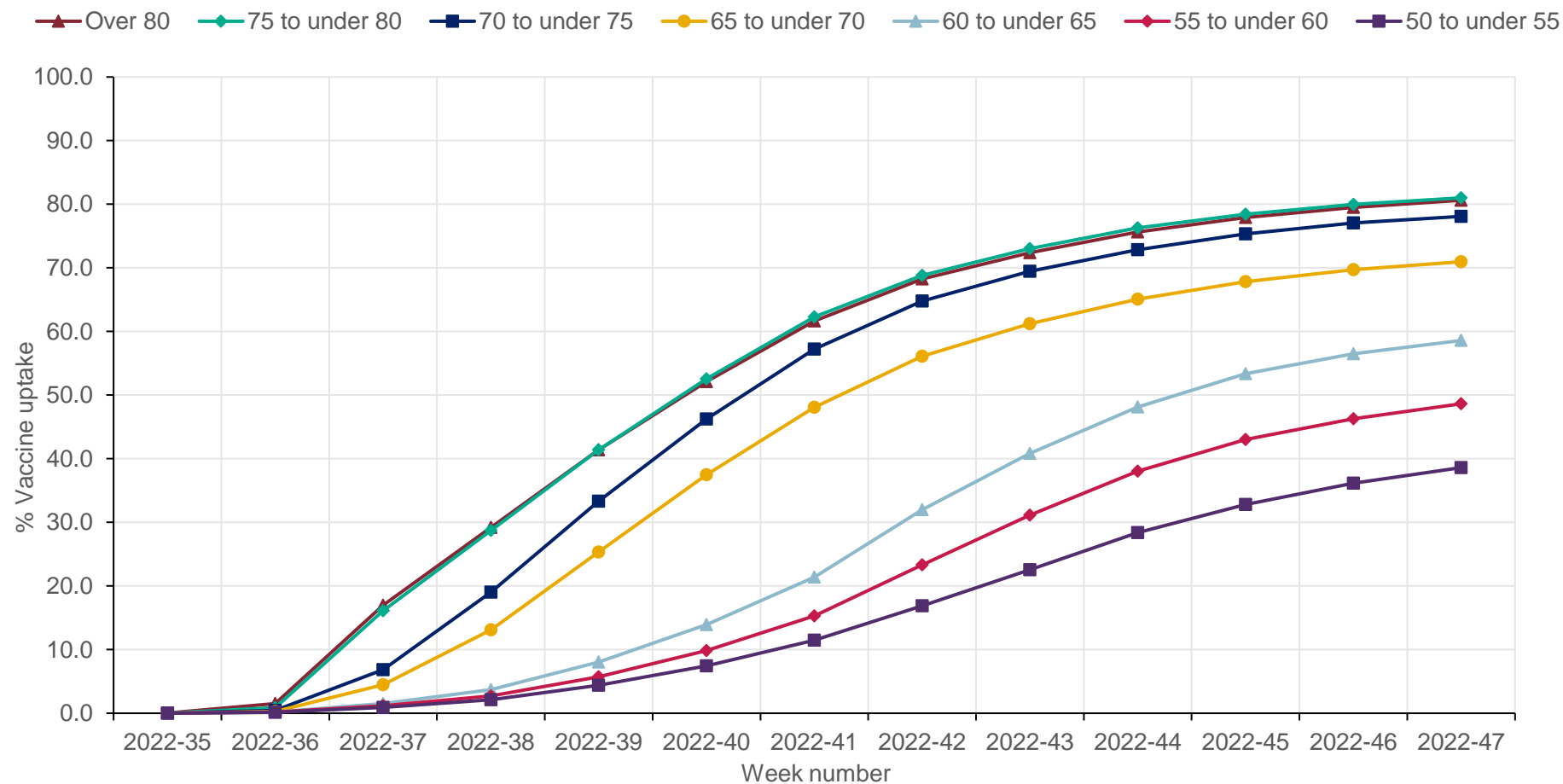


Table 8 presents data by eligibility at the end of December 2022 for the autumn booster campaign are calculated using the same method where a person is eligible after a 2 dose primary course provided there is an interval of at least 3 months since their last dose.

**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	2,831,533	2,376,964	83.9
75 to under 80	2,291,205	1,935,179	84.5
70 to under 75	2,551,736	2,112,837	82.8
65 to under 70	2,754,735	2,115,198	76.8
60 to under 65	3,279,581	2,118,130	64.6
55 to under 60	3,660,952	2,010,974	54.9
50 to under 55	3,586,917	1,615,642	45.0
Total aged 50 and over	20,956,659	14,284,924	68.2

Table 8 looks at people aged 50 and over at the end of December 2022 who are eligible for an autumn booster if they have completed a primary course of 2 doses and are at least 3 months (84 days) from their previous dose. 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.



Weekly National Influenza and COVID-19 Report: week 48 report (up to week 47 data)

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.

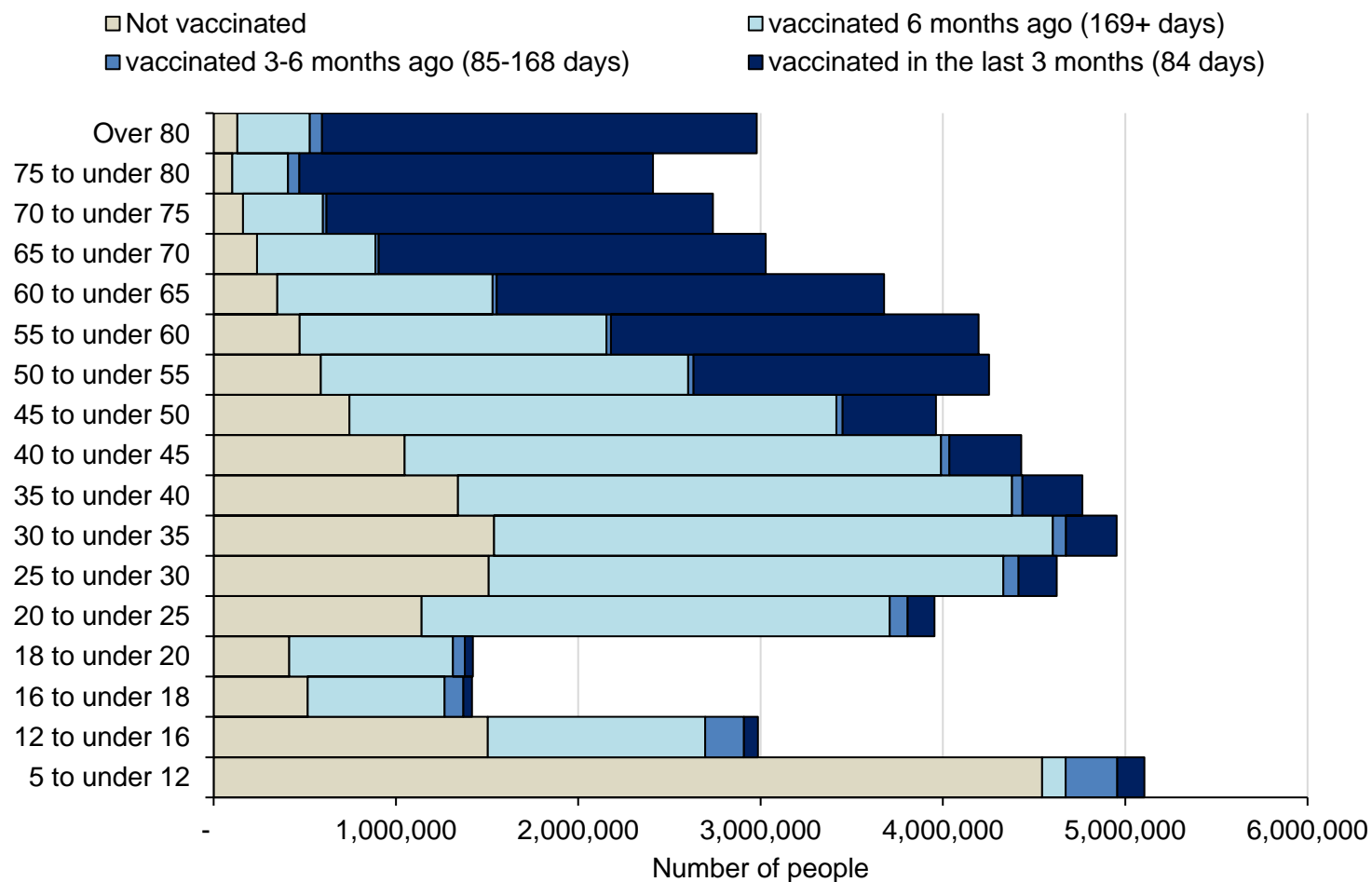
## Proportion of people vaccinated by time since last vaccination

**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**

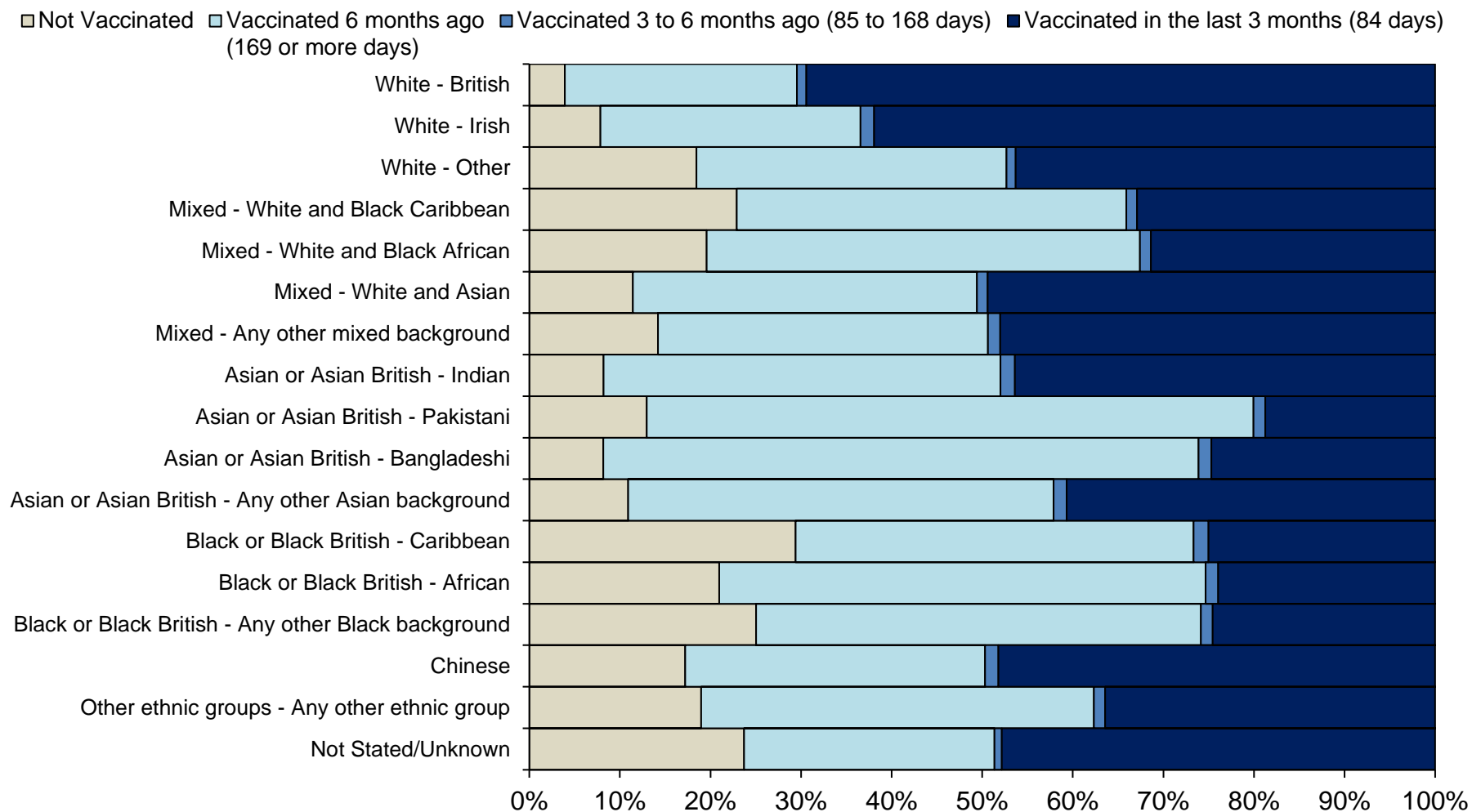
National	People in NIMS cohort who are living and resident in England	Vaccinated in the last 3 months (84 days)		Vaccinated 3 to 6 months ago (85 to 168 days)		Vaccinated 6 months ago (169 or more days)	
		Numbers vaccinated	Percentage vaccinated	Numbers vaccinated	Percentage vaccinated	Numbers vaccinated	Percentage vaccinated
Over 80	2,979,097	2,384,051	80.0	67,258	2.3	398,494	13.4
75 to under 80	2,410,167	1,940,651	80.5	60,830	2.5	306,085	12.7
70 to under 75	2,738,088	2,119,595	77.4	19,461	0.7	437,614	16.0
65 to under 70	3,027,497	2,121,855	70.1	18,846	0.6	648,691	21.4
60 to under 65	3,676,932	2,124,206	57.8	22,204	0.6	1,181,847	32.1
55 to under 60	4,196,475	2,016,589	48.1	25,895	0.6	1,682,707	40.1
50 to under 55	4,252,924	1,620,933	38.1	29,947	0.7	2,013,757	47.3
45 to under 50	3,962,703	512,170	12.9	35,340	0.9	2,670,663	67.4
40 to under 45	4,429,903	394,274	8.9	46,460	1.0	2,942,166	66.4
35 to under 40	4,764,270	327,425	6.9	58,579	1.2	3,037,833	63.8
30 to under 35	4,953,622	279,055	5.6	71,546	1.4	3,064,186	61.9
25 to under 30	4,624,841	210,046	4.5	83,207	1.8	2,823,359	61.0
20 to under 25	3,953,645	147,087	3.7	98,868	2.5	2,567,612	64.9
18 to under 20	1,421,735	43,676	3.1	64,888	4.6	899,270	63.3
16 to under 18	1,416,594	47,446	3.3	102,703	7.2	750,123	53.0
12 to under 16	2,986,194	78,078	2.6	211,791	7.1	1,191,843	39.9
5 to under 12	5,105,422	149,938	2.9	282,748	5.5	129,339	2.5

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.

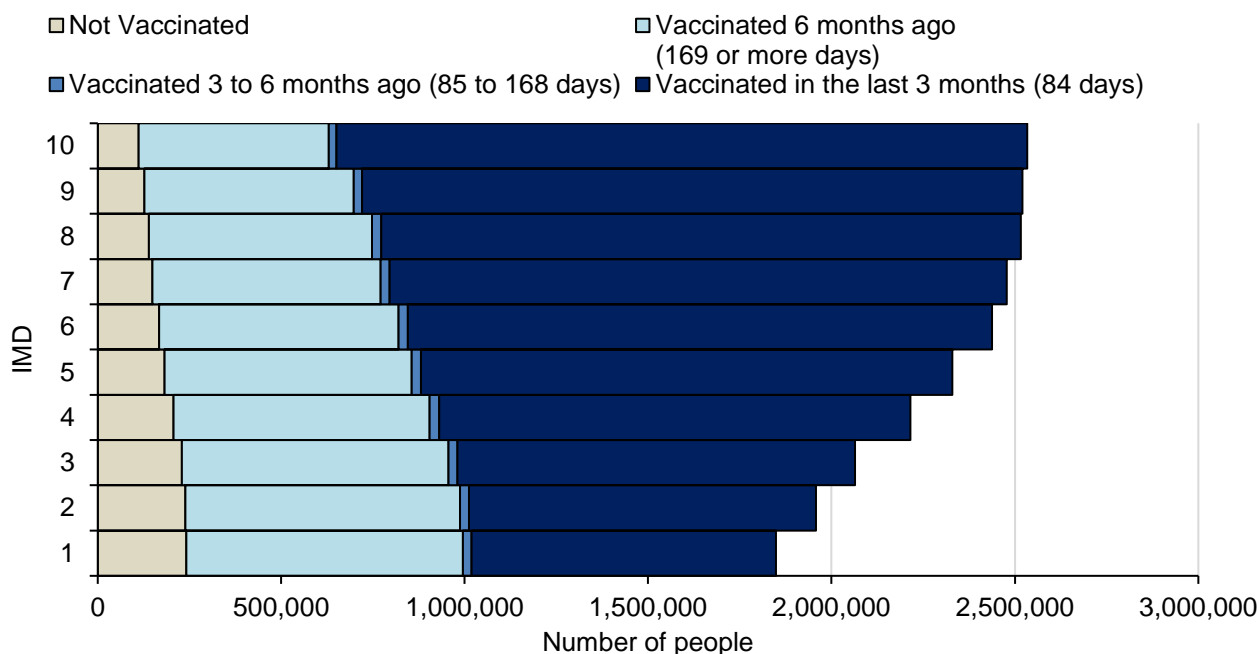
**Figure 59: Provisional cumulative people vaccinated with any dose of COVID-19 vaccine in the last 3 months, 3 to 6 months and vaccinated more than 6 months ago**



**Figure 60 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 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 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

Table 10 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. Many people in this group have been vaccinated more recently and are still becoming eligible for their autumn booster. This can be seen in Table 8, in which 70.4% of people identified as immunosuppressed are covered by a vaccine given in the last 6 months.

**Table 10: 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
494,833	317,122	64.1	31,082	6.3	125,323	25.3

For 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 the 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 Organisation \(WHO\) COVID-19 situation reports](#).

### Global influenza update

Updated on 28 November 2022 (based on data up to 13 November 2022) ([WHO website](#)).

Globally, influenza activity increased and where subtyped, influenza A(H3N2) viruses predominated.

In the countries of North America, influenza positivity and influenza-like-illness (ILI) activity increased steeply in recent weeks, indicating an earlier start of the influenza season in comparison with pre-COVID-19-pandemic seasons. Influenza A(H3N2) was the predominant virus detected.

In Europe, overall influenza activity continued to increase with influenza positivity reported above epidemic threshold in some countries. Influenza A viruses predominated among the reported detections in general, with A(H3N2) viruses accounting for the majority of subtyped influenza A viruses.

In central Asia, Kazakhstan reported high influenza activity with B/Victoria-lineage viruses predominating.

In East Asia, influenza activity of predominantly influenza A(H3N2) remained stable at intermediate levels overall.

In Western Asia influenza activity remained elevated, especially in some countries of the Arabian Peninsula.

In the Caribbean and Central American countries, influenza activity of predominately influenza A(H3N2) increased in Mexico but remained low in most other reporting countries.

In the tropical countries of South America, influenza detections were low and A(H3N2) detections predominated.



In tropical Africa, influenza activity remained low with detections of influenza A(H1N1)pdm09, A(H3N2) and B/Victoria reported.

In Southern Asia, influenza activity increased steeply mainly due to elevated activity reported in Iran (Islamic Republic of). Influenza A(H3N2) was the most frequently detected subtype in the subregion.

In South East Asia, detections of predominantly influenza A(H3N2) and influenza B continued to decrease.

In the temperate zones of the southern hemisphere, influenza activity continued to decrease in most reporting countries, except in temperate South America where activity increased in Argentina and Chile.

In Oceania, influenza activity remained low overall with a few detections of influenza A viruses reported in Australia. Influenza activity remained very low in New Zealand and the hospitalization rate for SARI in children under five years and those over 80 years of age decreased significantly in recent weeks. In the Pacific Islands, ILI activity overall was low or decreased except in Fiji and Tuvalu.

In South Africa, detections of influenza A(H3N2) and influenza B/Victoria continued to decrease and influenza detection rates in ILI and pneumonia surveillance returned to inter-seasonal levels. There were few SARS-CoV-2 or RSV detections and the detection rate for RSV in children under five years of age remained below the epidemic threshold.

In temperate South America, influenza detections remained elevated in Argentina and Chile. In Argentina, influenza B was predominant followed by influenza A(H1N1)pdm09 and positivity remained elevated at a moderate level while ILI was low. In Chile, influenza A(H3N2) predominated, and percent positivity and ILI rates reached extraordinary levels, while the SARI rate remained low. In Uruguay, influenza detections of B/Victoria lineage were low. RSV remained low in the subregion.

The WHO GISRS laboratories tested more than 465,365 specimens during that time period. 56 551 were positive for influenza viruses, of which 53,829 (95.2%) were typed as influenza A and 2,722 (4.8%) as influenza B. Of the sub-typed influenza A viruses, 2,024 (16.3%) were influenza A(H1N1)pdm09 and 10, 356 (83.7%) were influenza A(H3N2). Of the characterized B viruses (550), 100% belonged to the B-Victoria lineage.

## Influenza in Europe

Updated for data for week 46 2022 ([Joint ECDC-WHO Europe Influenza weekly update](#)).

The percentage of all sentinel primary care specimens from patients presenting with ILI or ARI symptoms that tested positive for an influenza virus remained stable at 12%. This is the second consecutive week above the epidemic threshold, which is set at 10%, and indicates the start of the influenza epidemic at the European Regional level.

For week 46 2022, of 39 countries and areas reporting on intensity of influenza activity, 18 reported baseline-intensity (across the Region), 18 reported low-intensity (across the Region), 1 reported medium-intensity (Romania) and 2 reported high-intensity (Kazakhstan and Malta).

Of 39 countries and areas reporting on geographic spread of influenza viruses, 8 reported no activity (Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Montenegro, Serbia, Slovakia and Kosovo (in accordance with UN Security Council Resolution 1,244 (1,999))), 19 reported sporadic spread (across the Region), 3 reported local spread (Austria, Malta and United Kingdom (Northern Ireland)), 7 reported regional spread (Albania, Finland, France, Kazakhstan, Republic of Moldova, Russian Federation and Ukraine) and 2 reported widespread activity (Germany and United Kingdom (Scotland)).

For week 46 2022, 331 (12%) of 2,777 sentinel specimens tested positive for influenza virus; 92% were type A and 8% were type B. Of 261 subtyped A viruses, 88% were A(H3) and 12% A(H1)pdm09. Of 3 type B viruses ascribed to a lineage, all were B/Victoria. Of 27 countries and areas across the Region that each tested at least 10 sentinel specimens in week 46 2022, 10 reported a rate of influenza virus detections above 10% (median 17%; range 11% - 100%): Kazakhstan (100%), Portugal (61%), Germany (29%), Kyrgyzstan (25%), Greece (21%), Netherlands (12%), Spain (12%), Israel (12%), United Kingdom (Scotland) (11%) and France (11%).

For the season to date, 1,519 (9%) of 16,959 sentinel specimens tested positive for an influenza virus. More influenza type A (n=1,326, 87%) than type B (n=193, 13%) viruses have been detected. Of 1,140 subtyped A viruses, 973 (85%) were A(H3) and 167 (15%) were A(H1)pdm09. Of 112 influenza type B viruses ascribed to a lineage, all were B/Victoria (42% of type B viruses were reported without a lineage).

For week 46 2022, 436 of 42,698 specimens from non-sentinel sources (such as hospitals, schools, primary care facilities not involved in sentinel surveillance, or nursing homes and other institutions) tested positive for influenza virus; 2,339 (96%) were type A and 97 (4%) were type B. Of 568 subtyped A viruses, 361 (64%) were A(H3) and 207 (36%) were A(H1)pdm09. Of 23 type B viruses ascribed to a lineage, all were Victoria lineage.

For the season to date, more influenza type A (n=10,689, 92%) than type B (n=976, 8%) viruses have been detected. Of 3,462 subtyped A viruses, 2 344 (68%) were A(H3) and 1,118 (32%) were A(H1)pdm09. Of 168 influenza type B viruses ascribed to a lineage, all were B/Victoria (83% 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 October 2022](#)

From 31 August to 5 October 2022, one human case of infection with an avian influenza A(H5N6) virus, one human case of infection with an avian influenza A(H10N3) virus, and one human case of infection with an influenza A(H1N1) variant virus were reported officially. Additionally, three human cases of infection with influenza A(H1N2) variant viruses were detected.

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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