UK Health Security Agency

Weekly national Influenza and COVID-19 surveillance report

Week 44 report (up to week 43 data)

3 November 2022

Contents

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 43 (between 24 and 30 October 2022) and for some indicators daily data up to 1 November 2022.

At a national level, COVID-19 activity decreased or remained stable in most indicators in week 43 of 2022. Surveillance indicators suggest increasing levels of influenza activity, with increases seen in multiple indicators.

COVID-19 case rates through Pillar 1 decreased slightly in week 43 overall in all age groups, genders, regions and ethnic groups. Overall Pillar 1 positivity decreased compared with the previous week. Routine asymptomatic testing through NHS settings has been paused from 31 August, this will have had an effect on Pillar 1 case rates and positivity rates.

Through Respiratory Datamart, influenza positivity continued to increase to 6.1% in week 43; positivity was highest in the 15 to 44 year old age group at 13.4% followed by the 5 to 14 year old age group at 10.4%. SARS-CoV-2 positivity decreased to 7.2%. Respiratory syncytial virus (RSV) positivity increased to 8.3% in week 43, with the highest positivity in the under 5 year old age group at 29.3%. Adenovirus positivity remained stable at 2.6%. Rhinovirus positivity decreased to 12.2% overall. Parainfluenza positivity remained low at 1.5%, while human metapneumovirus (hMPV) positivity remained low at 1.0% in week 43.

The overall number of reported acute respiratory incidents decreased compared with the previous week, with the highest number of incidents continuing to be in care homes. Through NHS 111, calls for flu or cold decreased nationally.

Through primary care surveillance, influenza like illness consultations remained stable and below baseline. The lower respiratory tract infection indicator remained stable, and the COVID-19 indicator decreased. Through sentinel GP swabbing, SARS-CoV-2 positivity decreased while influenza positivity remained stable.

Overall, COVID-19 hospitalisations admissions decreased in week 43 and are highest in the 85 years and over age group. Influenza hospital admissions decreased slightly and are also highest in the 85 years and over age group. Influenza ICU admissions were above the baseline threshold for a second week. The RSV hospitalisation rate increased in the under 5 years age group. Emergency department attendances for acute respiratory infections and influenza-like illness increased while COVID-19-like attendances decreased.

Deaths with COVID-19 increased in week 42 and no excess deaths were observed.

COVID-19 vaccine coverage for all ages was 70.8% for dose 1 and 67.3% for dose 2 at the end of week 43. COVID-19 vaccine coverage for all ages for dose 3 was at 53.2% at the end of week 43. The COVID-19 Autumn booster vaccination campaign commenced in early

September. By the end of week 43, 49.2% of all people aged over 50 years had been vaccinated with an Autumn booster dose.

Influenza vaccine uptake for the 2022 to 2023 influenza season was reported for the first time three weeks ago. The trend in vaccine uptake compared with the previous 2021 to 2022 season is comparable for those aged 65 year 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 1 November 2022, a total of 1,899,364 episodes have been confirmed for COVID-19 in England under Pillar 1, and 18,299,155 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 43 overall, in all age groups, genders, regions and ethnic groups. Overall Pillar 1 positivity decreased compared with the previous week.

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.

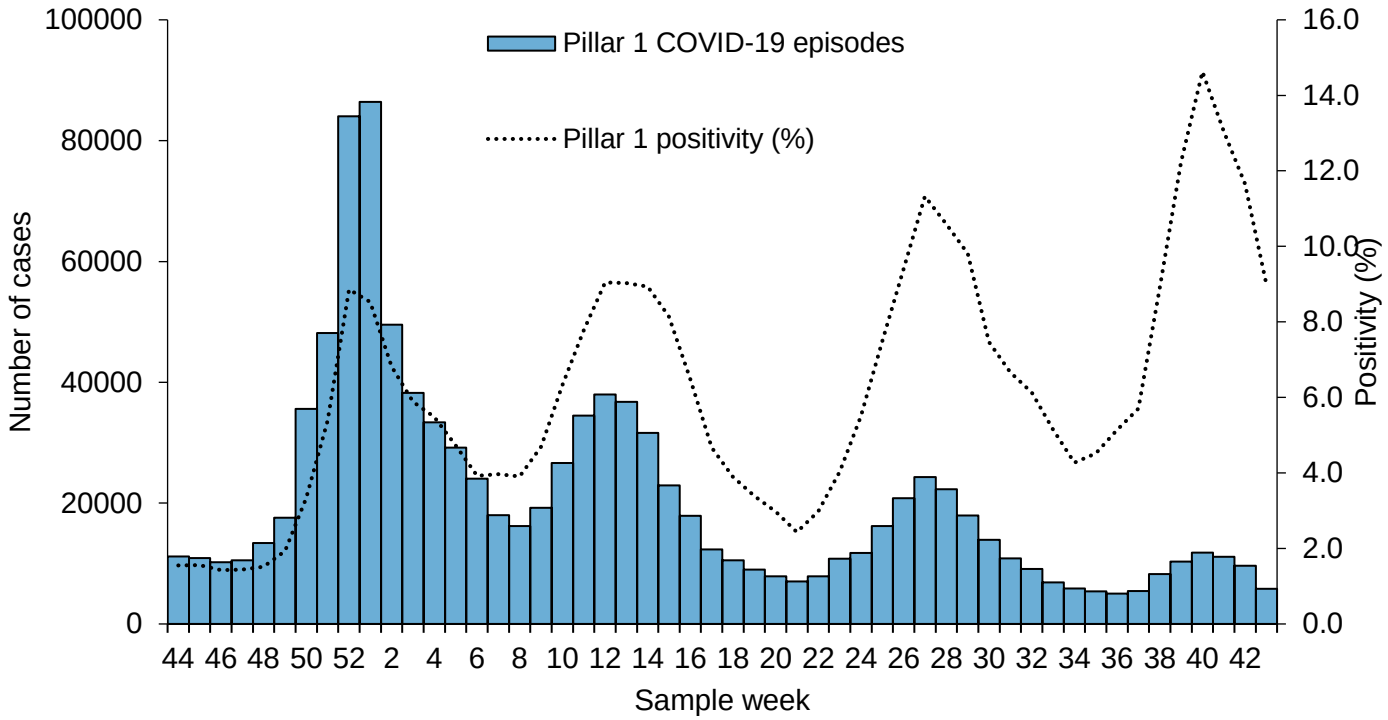
From the week 32 2021 report onwards, case rates have been updated to use the latest Office for National Statistics (ONS) population estimates for mid-2020. Previously case rates were calculated using the mid-2019 population estimates. Rates by ethnicity and Indices of Multiple Deprivation (IMD) quantile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

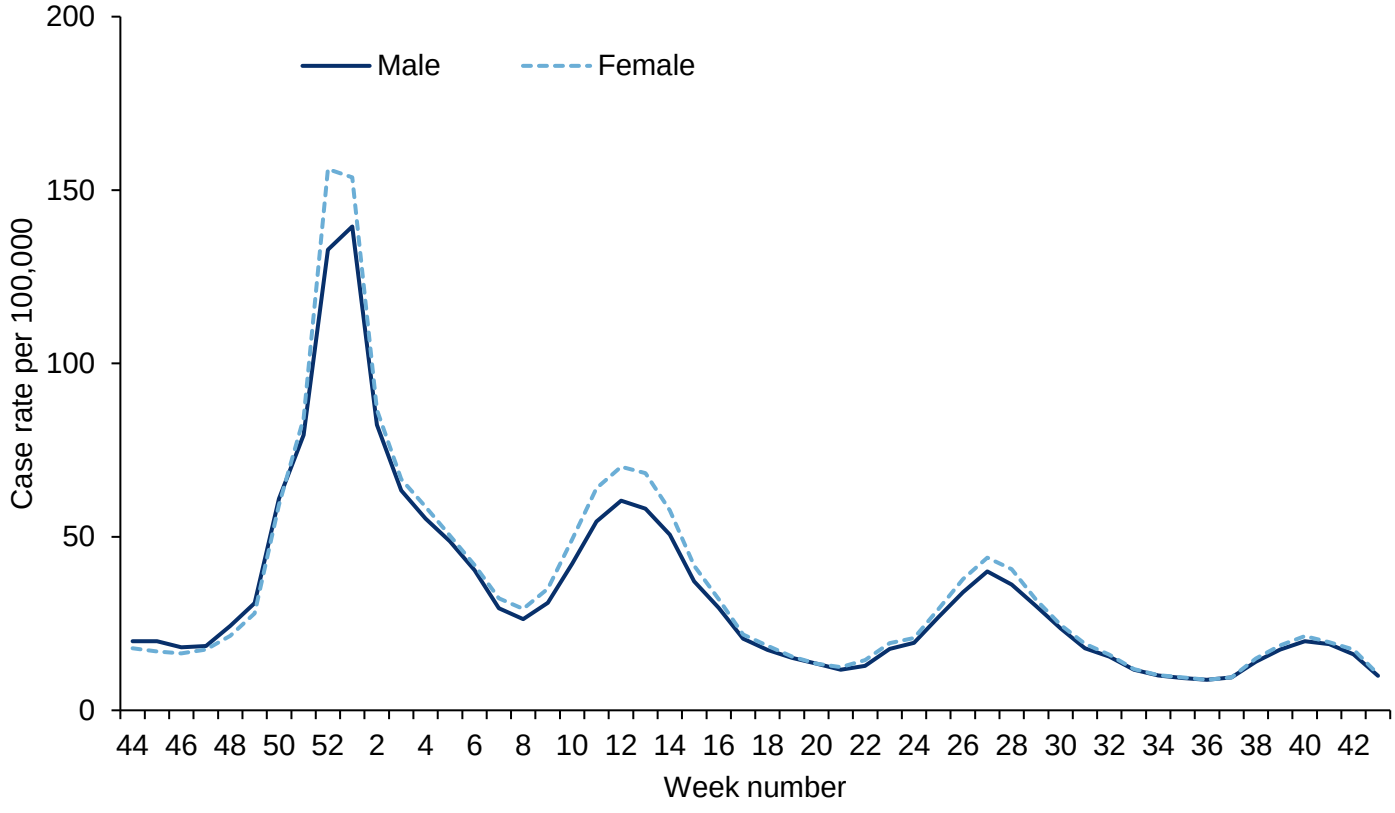


Figure 3: Weekly confirmed COVID-19 case rates per 100,000, by episode, tested under Pillar 1, by age group

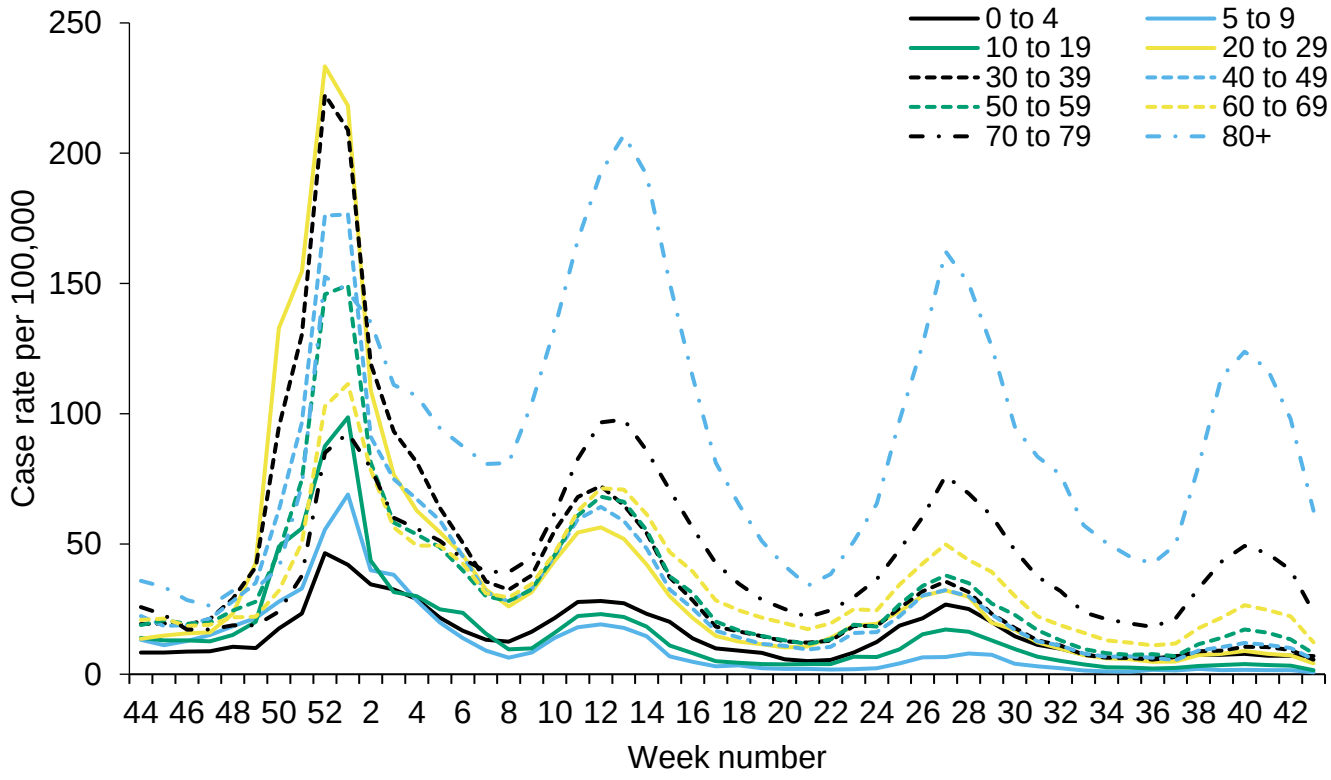


Figure 4: Weekly PCR positivity (%) of confirmed COVID-19 cases tested overall and by sex under Pillar 1

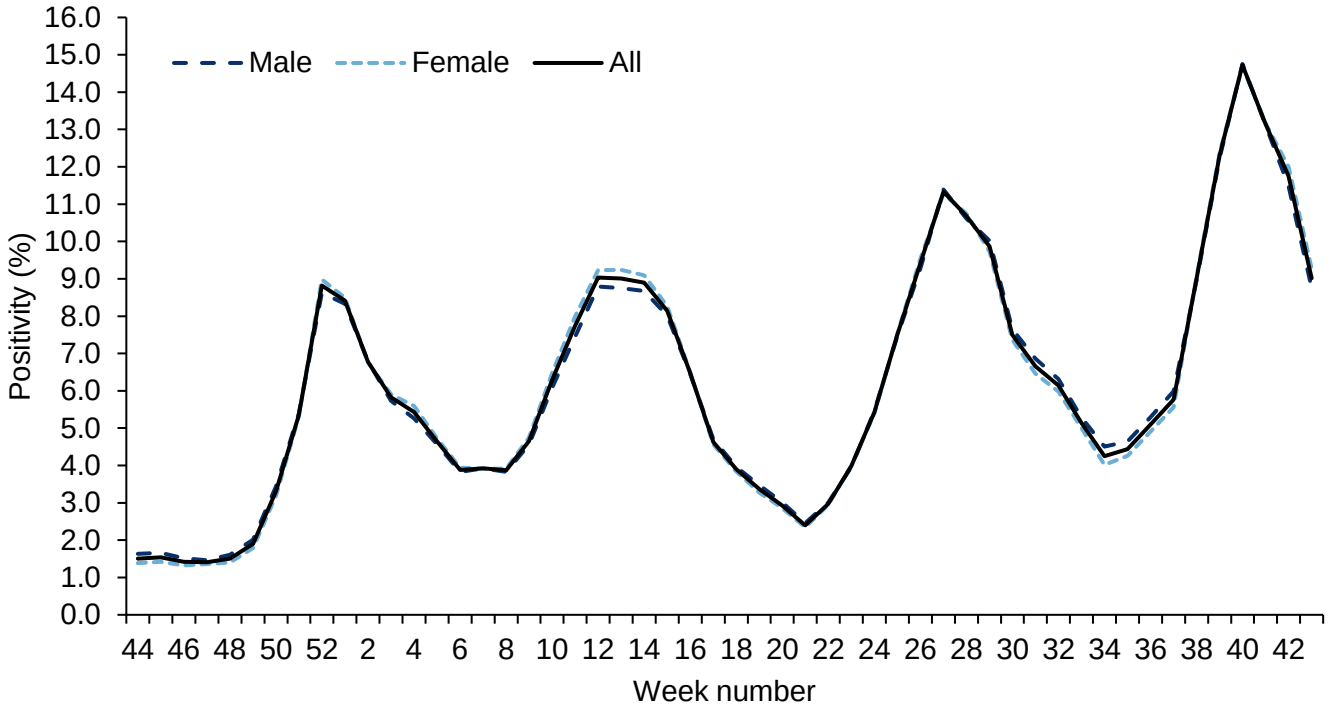
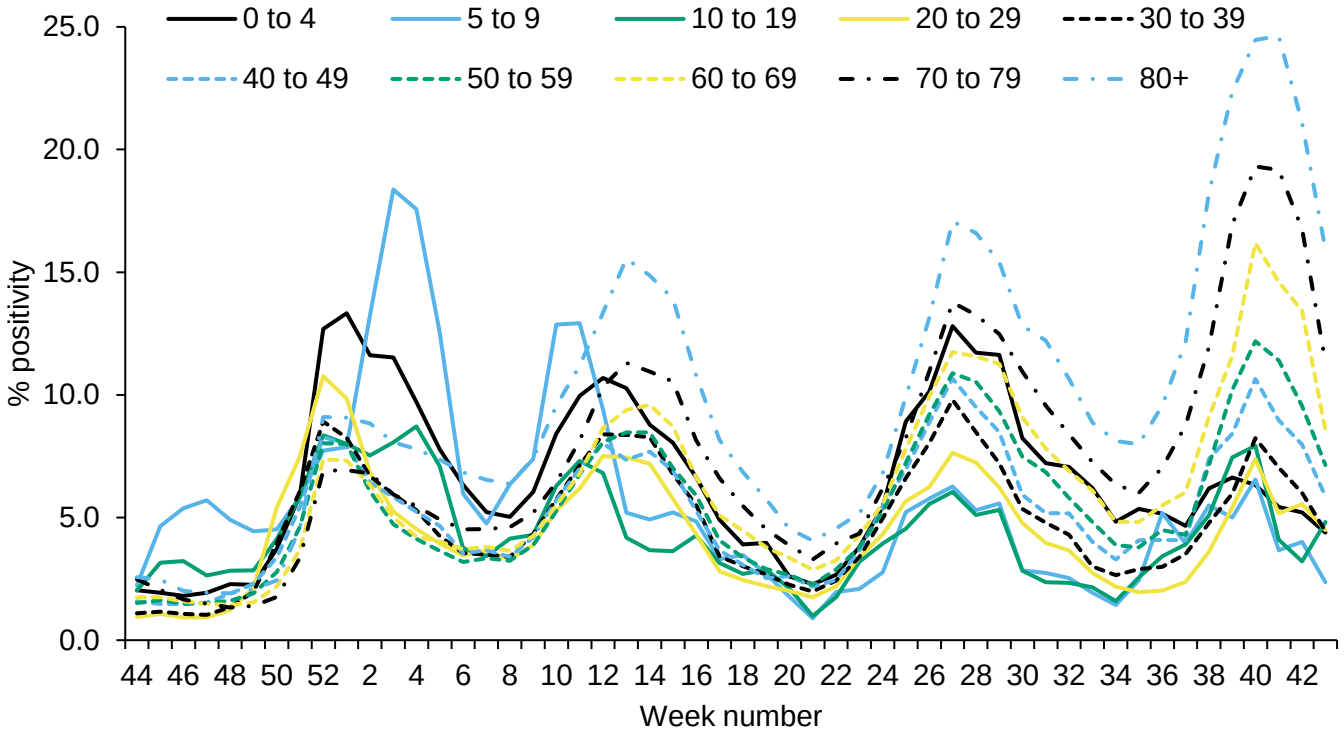
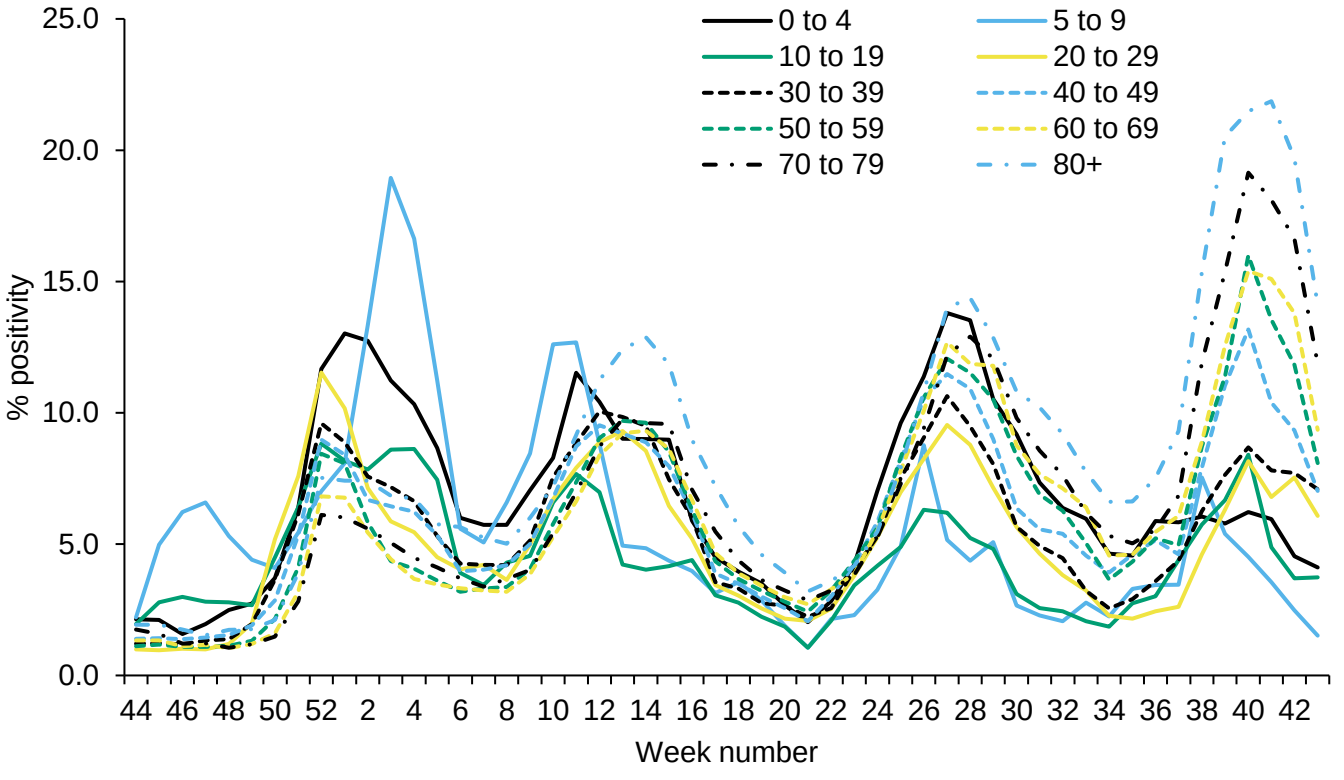


Figure 5: Weekly PCR positivity (%) of confirmed COVID-19 cases tested under Pillar 1, (a) by male and age group and (b) by female and age group

(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

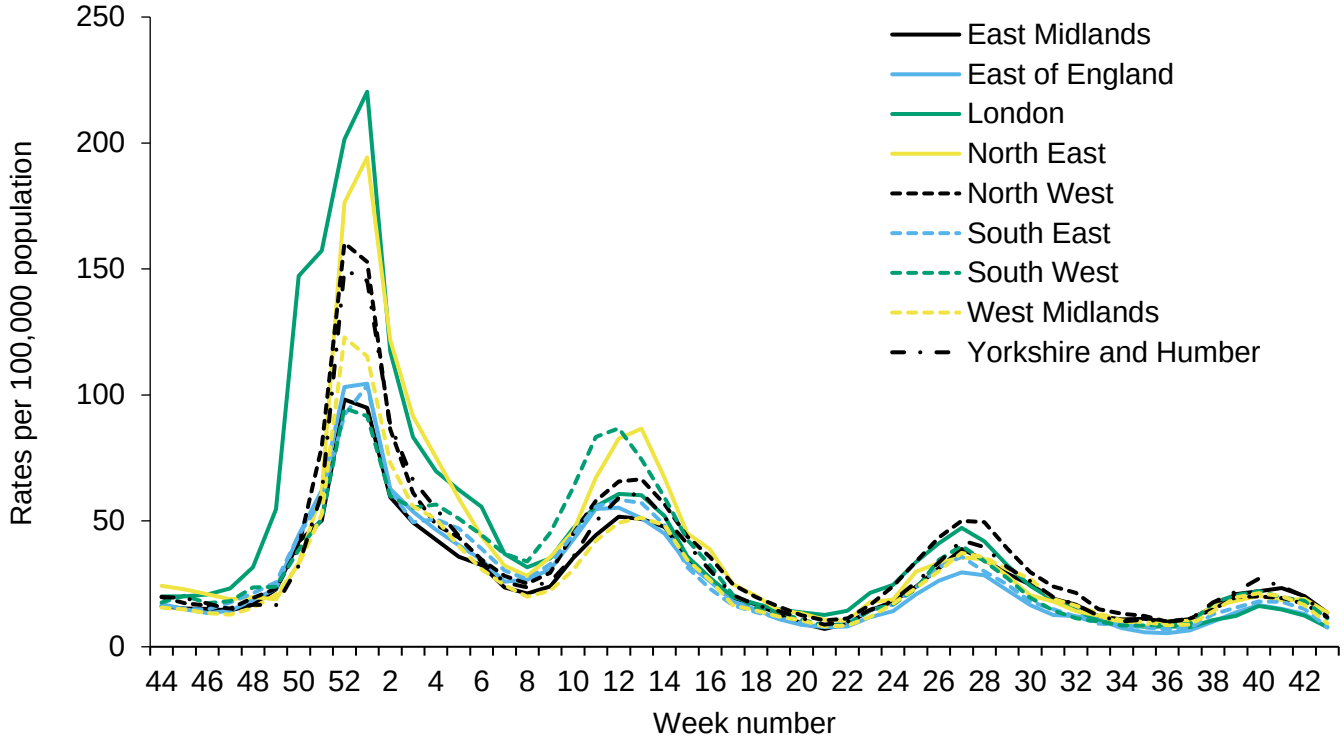


Figure 7: Weekly PCR positivity of confirmed COVID-19 cases tested under Pillar 1 (%) by UKHSA centres and sample week

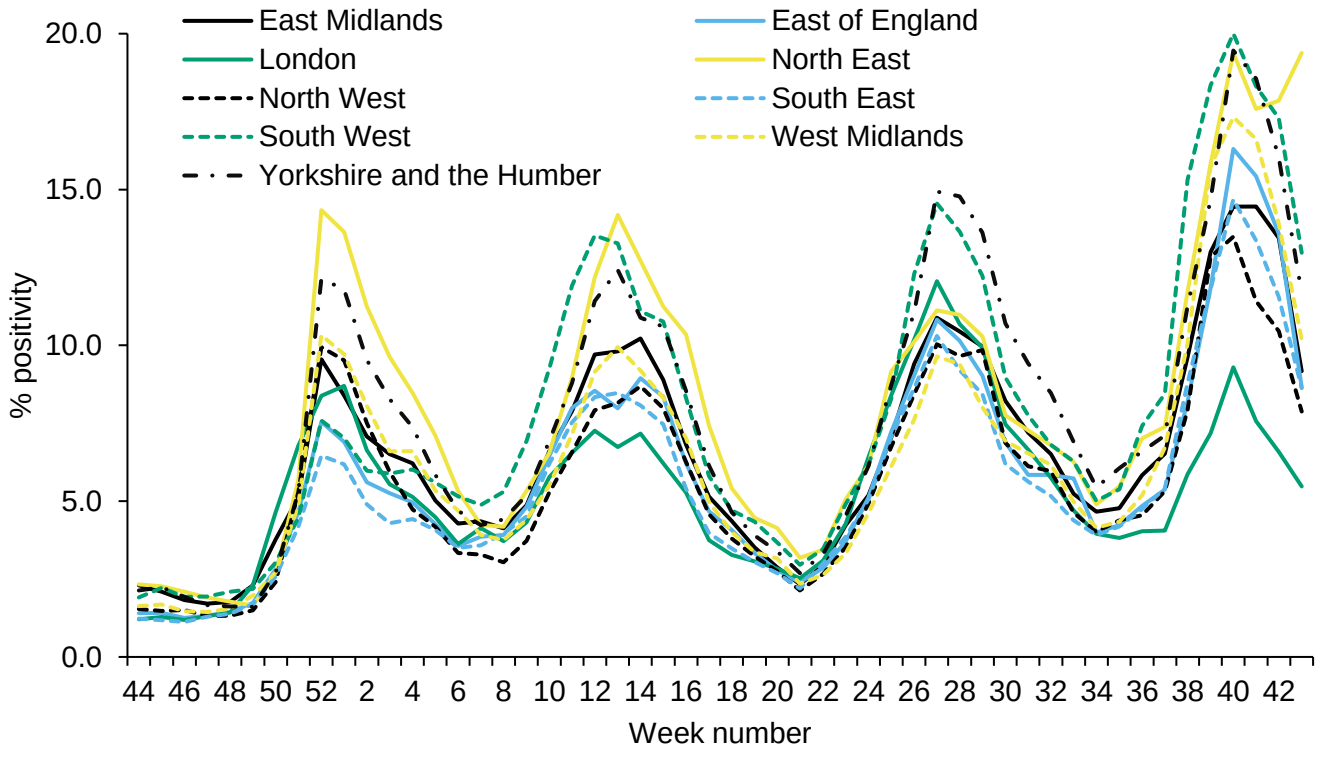
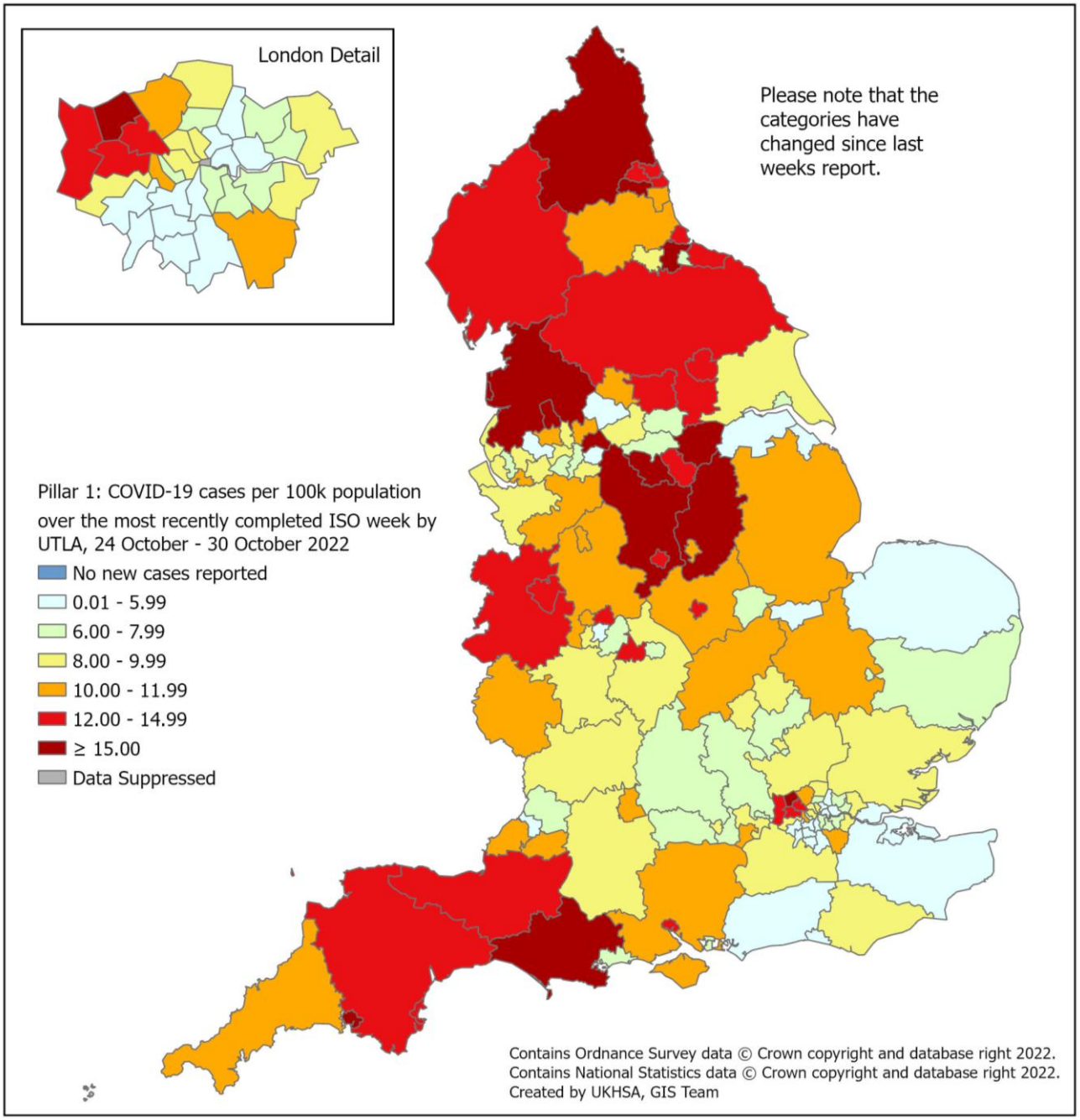
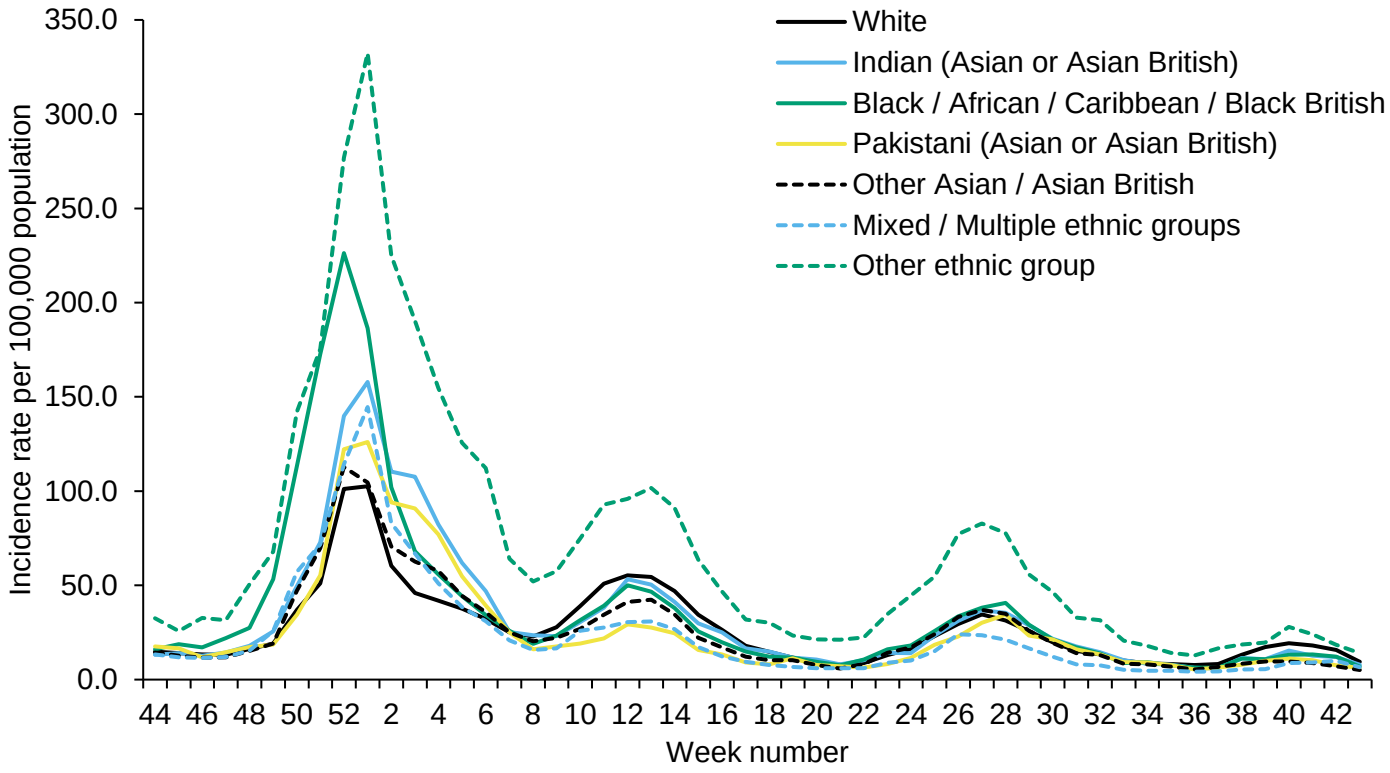


Figure 8: Weekly rate of COVID-19 episodes per 100,000 population (Pillar 1), by upper-tier local authority (UTLA), England (box shows enlarged map of London area)



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. Seventeen 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 43 of 2022, out of the 13,636 respiratory specimens reported through the Respiratory DataMart System (based on data received from 12 out of 16 laboratories), 981 samples were positive for SARS-CoV-2 with an overall positivity of 7.2%. The highest positivity was noted in the 65 year olds and over age group at 9.5%.

The overall influenza positivity continued to increase to 6.1% in week 43, with 243 samples testing positive for influenza (including 4 influenza A(H1N1)pdm09, 47 influenza A(H3), 182 influenza A(not subtyped) and 10 influenza B).

Respiratory syncytial virus (RSV) positivity increased to 8.3% in week 43, with the highest positivity in the under 5 year olds age group at 29.3%.

Adenovirus positivity remained stable at 2.6% in week 43. Rhinovirus positivity decreased to 12.2% overall. Parainfluenza positivity remained low at 1.5%. Human metapneumovirus (hMPV) positivity remained low at 1.0% in week 43 (Figure 12).

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

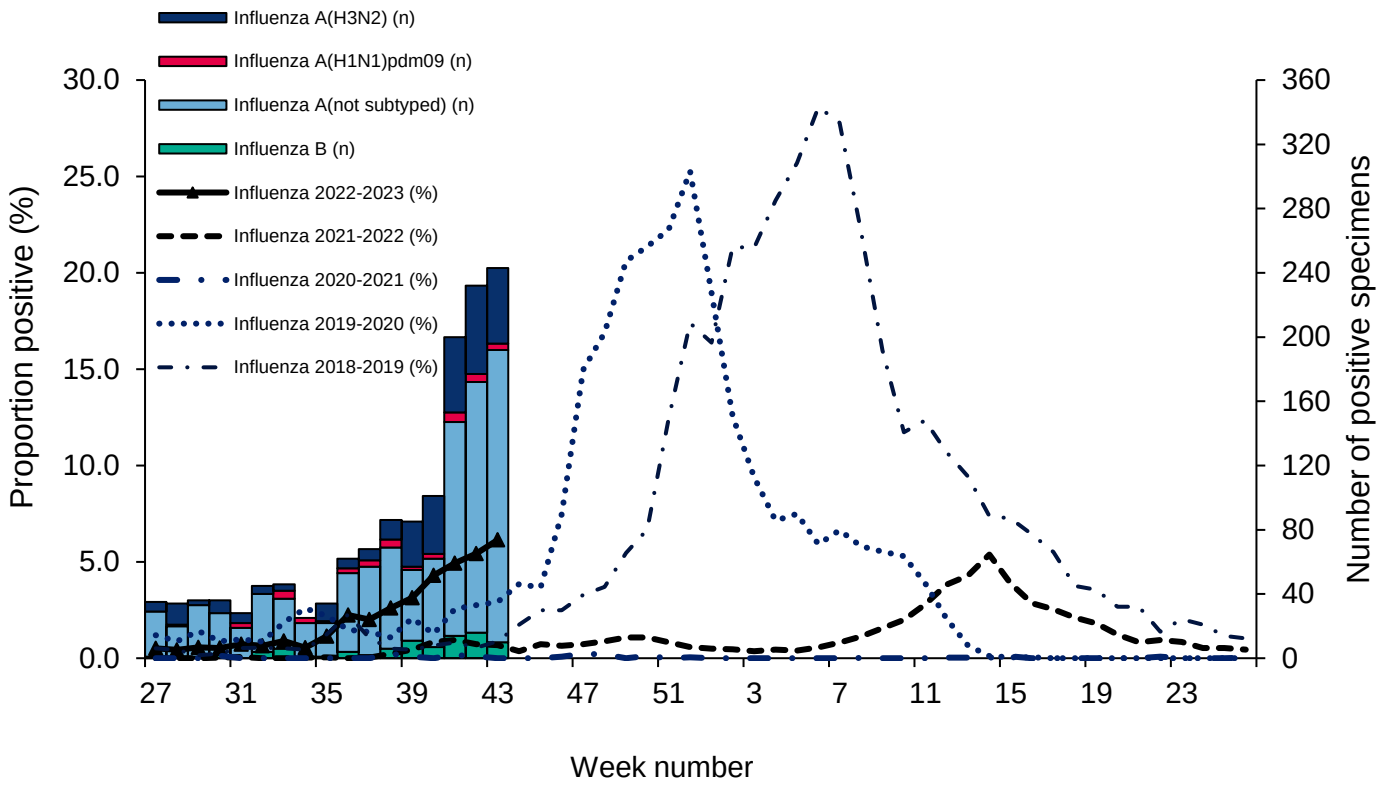


Figure 11: Respiratory DataMart weekly positivity (%) for SARS-CoV-2, England

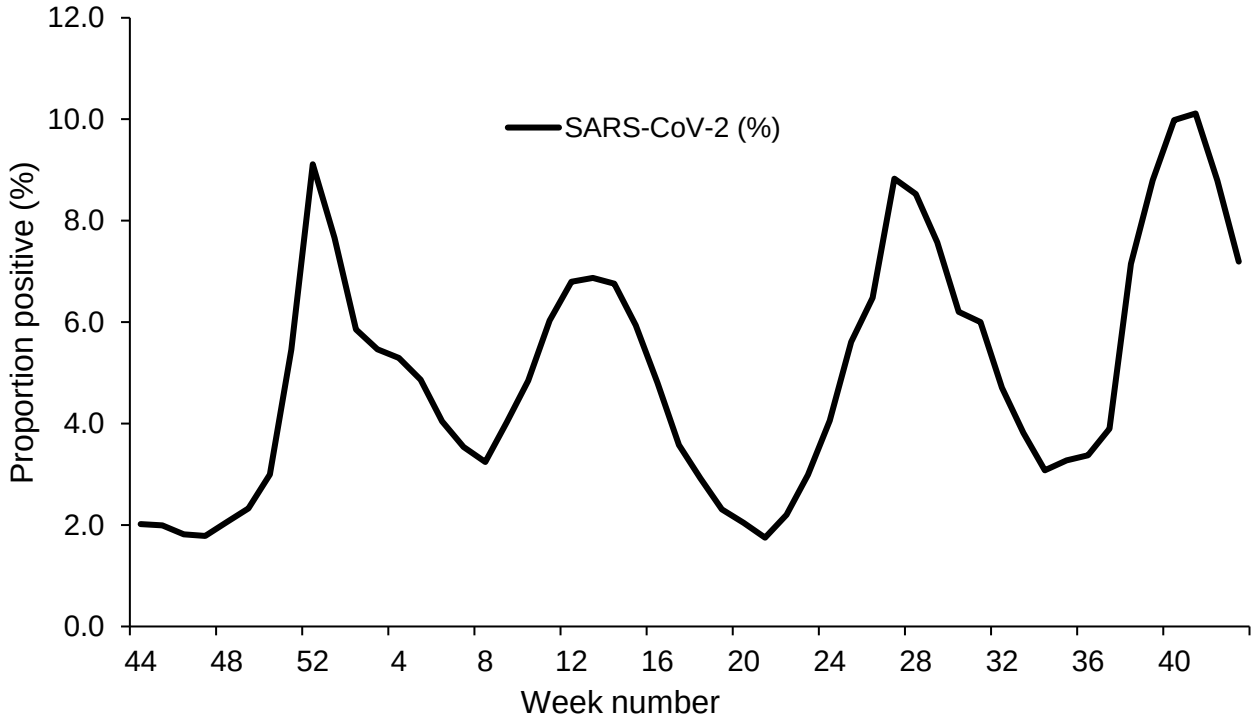


Figure 12: Respiratory DataMart weekly positivity (%) for other respiratory viruses, England

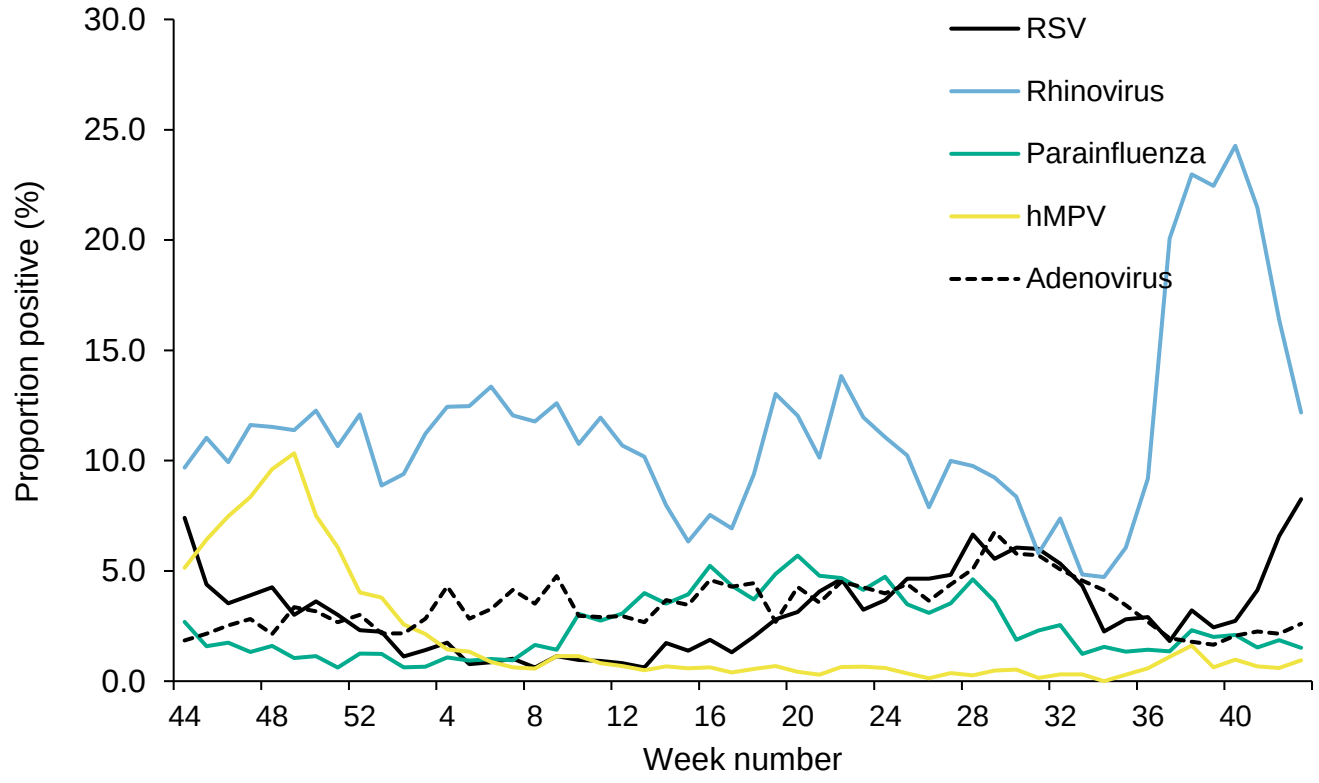


Figure 13: Respiratory DataMart weekly positivity (%) for influenza by age, England

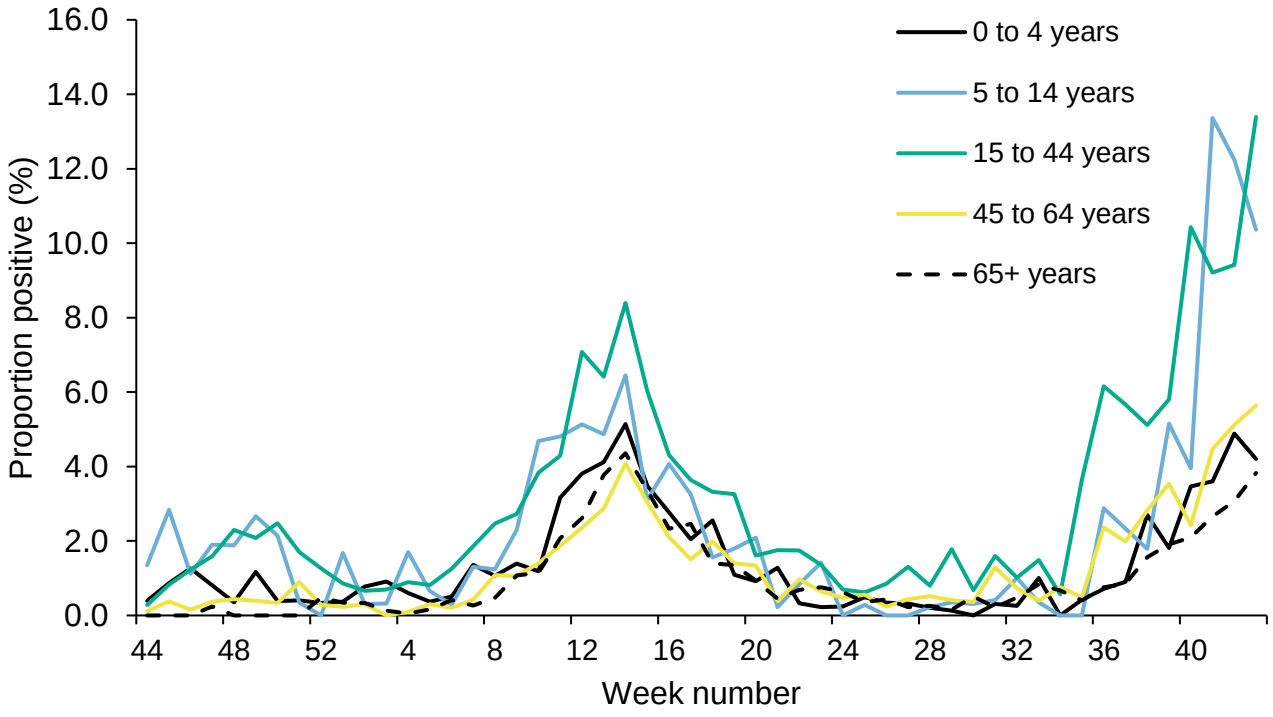


Figure 14: Respiratory DataMart weekly positivity (%) for adenovirus by age, England

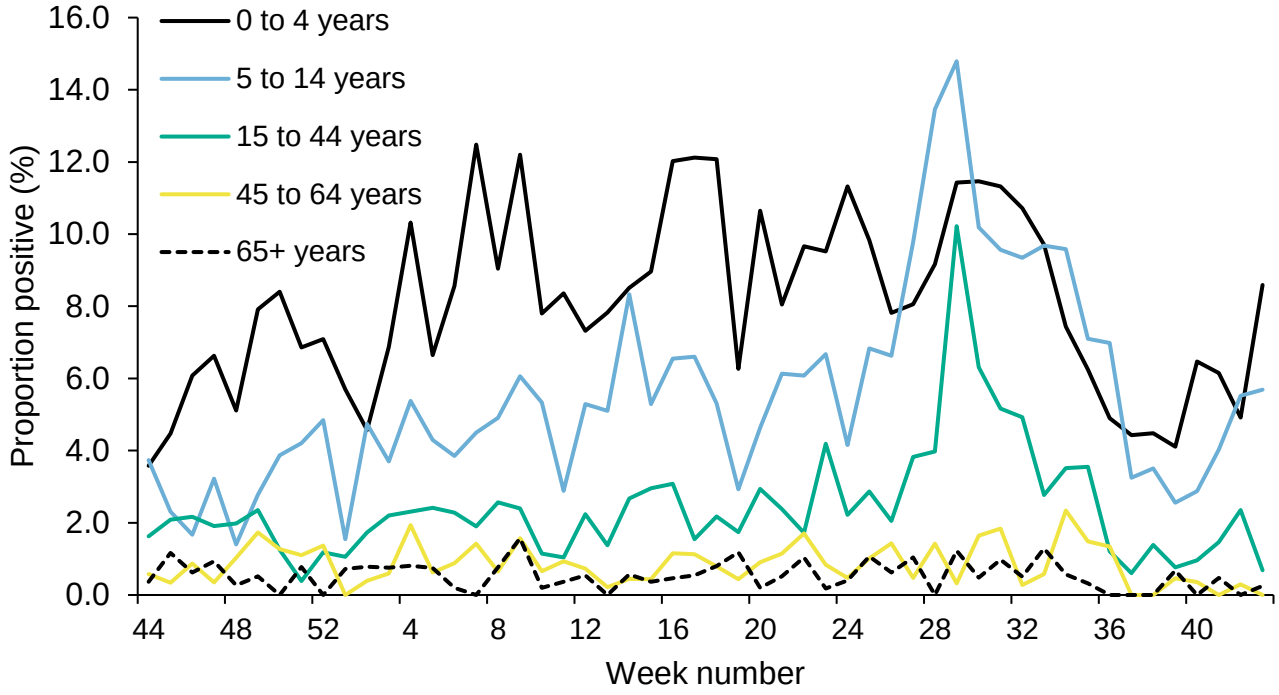


Figure 15: Respiratory DataMart weekly positivity (%) for rhinovirus by age, England

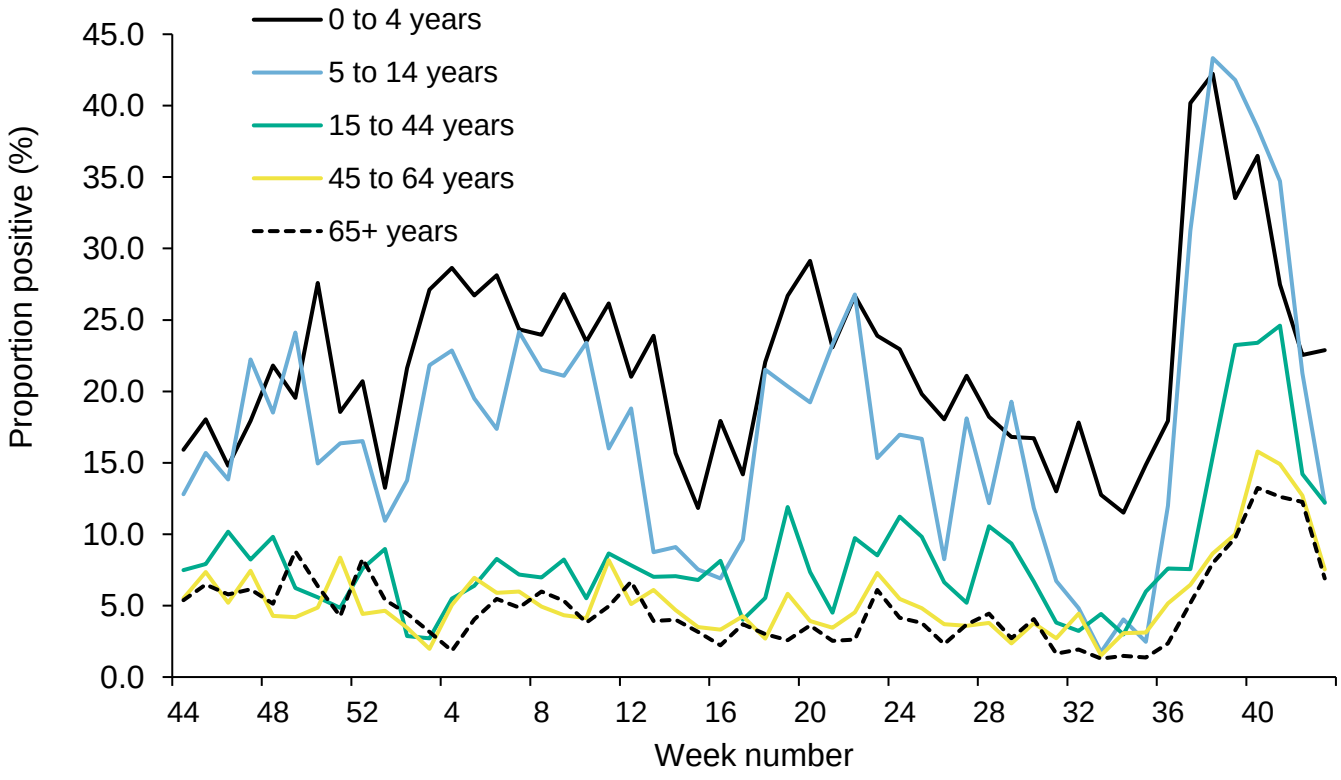
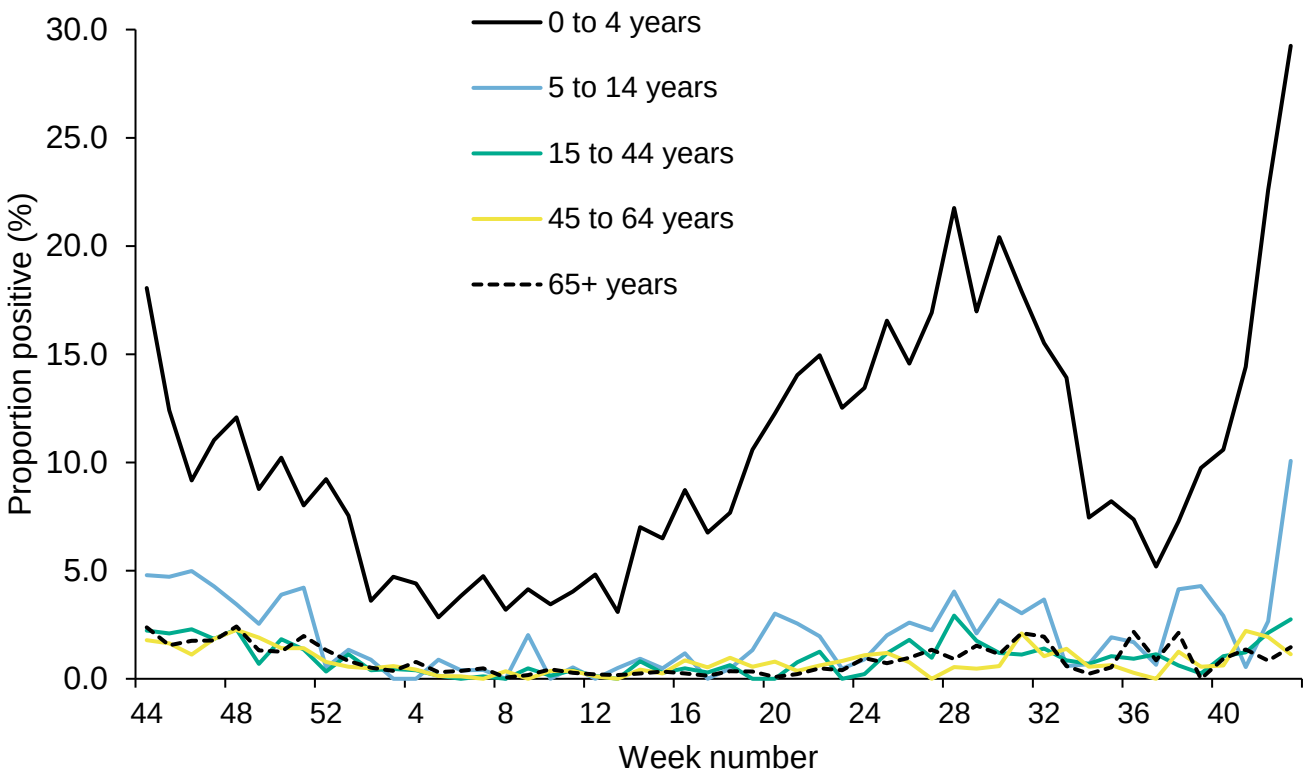


Figure 16: Respiratory DataMart weekly positivity (%) for RSV by age, England



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 an 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.

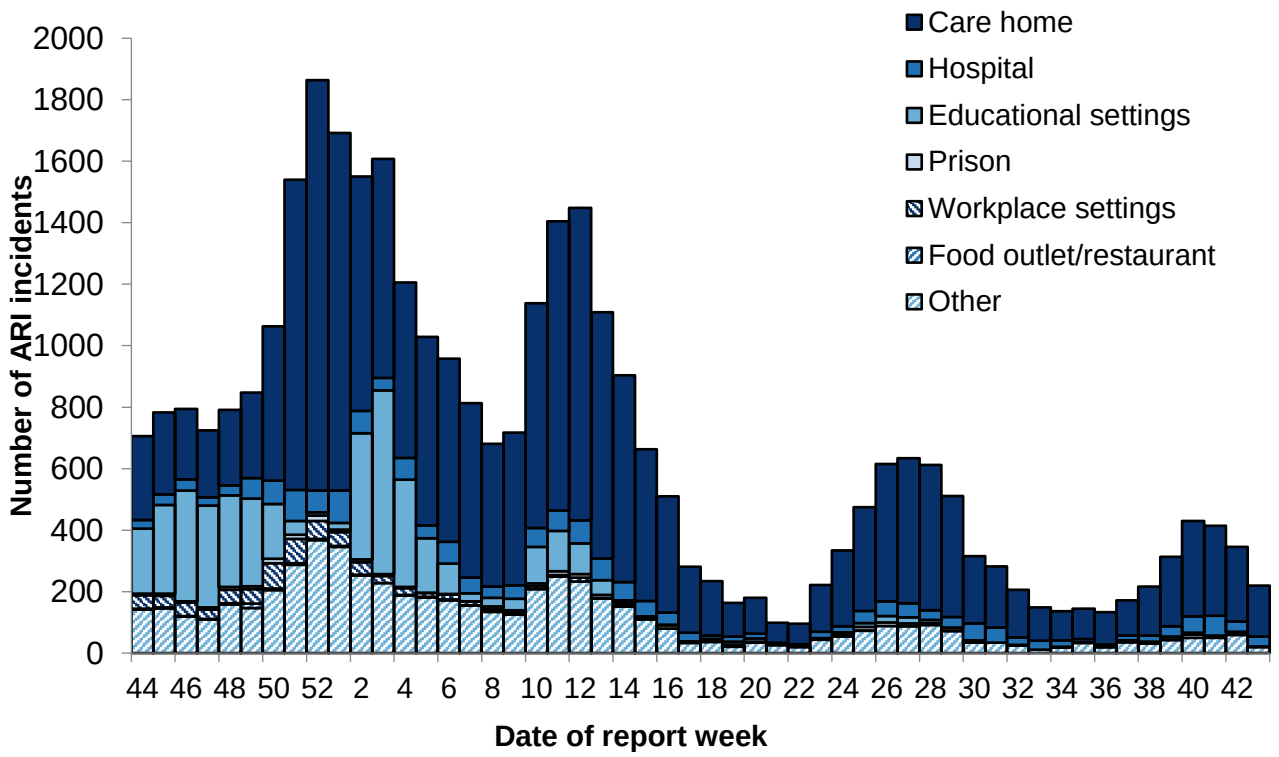
Data caveats:

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.

219 new ARI incidents have been reported in week 43 in the UK (Figure 17).

- 165 incidents were from care homes where 109 had at least one linked case that tested positive for SARS-CoV-2, 4 for influenza A(not subtyped), 2 for influenza(untyped), 2 for rhinovirus and 1 for RSV.
- 32 incidents were from hospitals, where 16 had at least one linked case that tested positive for SARS-CoV-2.
- No incidents were from educational settings.
- 3 incidents were from prisons, where 2 had at least one linked case that tested positive for SARS-CoV-2.
- No incidents were from workplace settings.
- No incidents were from a food outlet or restaurant setting.
- 19 incidents were from other settings where 8 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

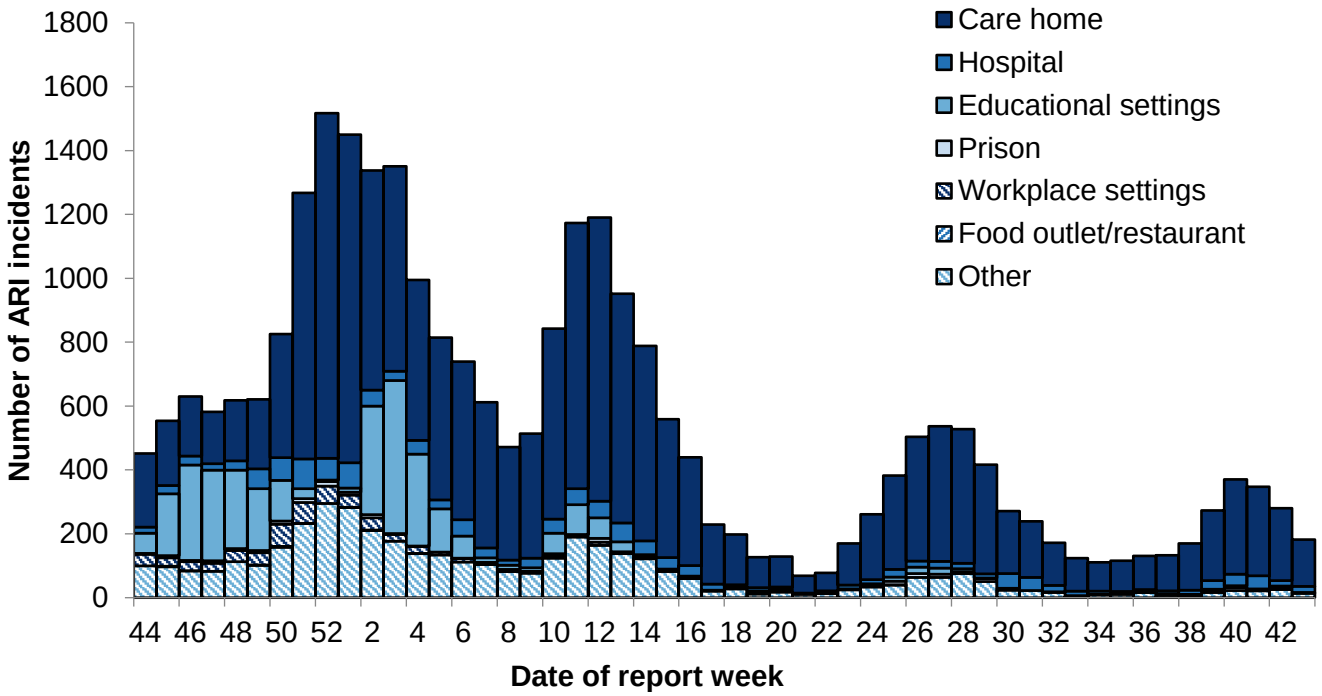


Figure 19: Number of acute respiratory infection (ARI) incidents in care homes by virus type, England

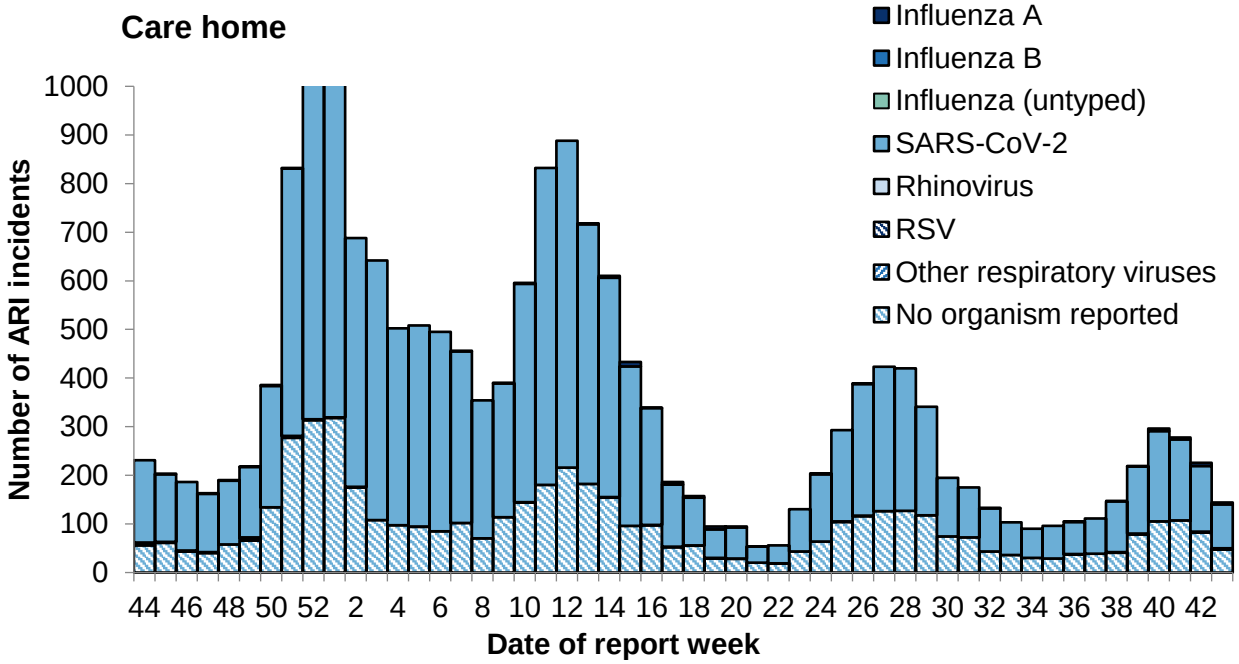


Figure 20: Number of acute respiratory infection (ARI) incidents in hospitals by virus type, England

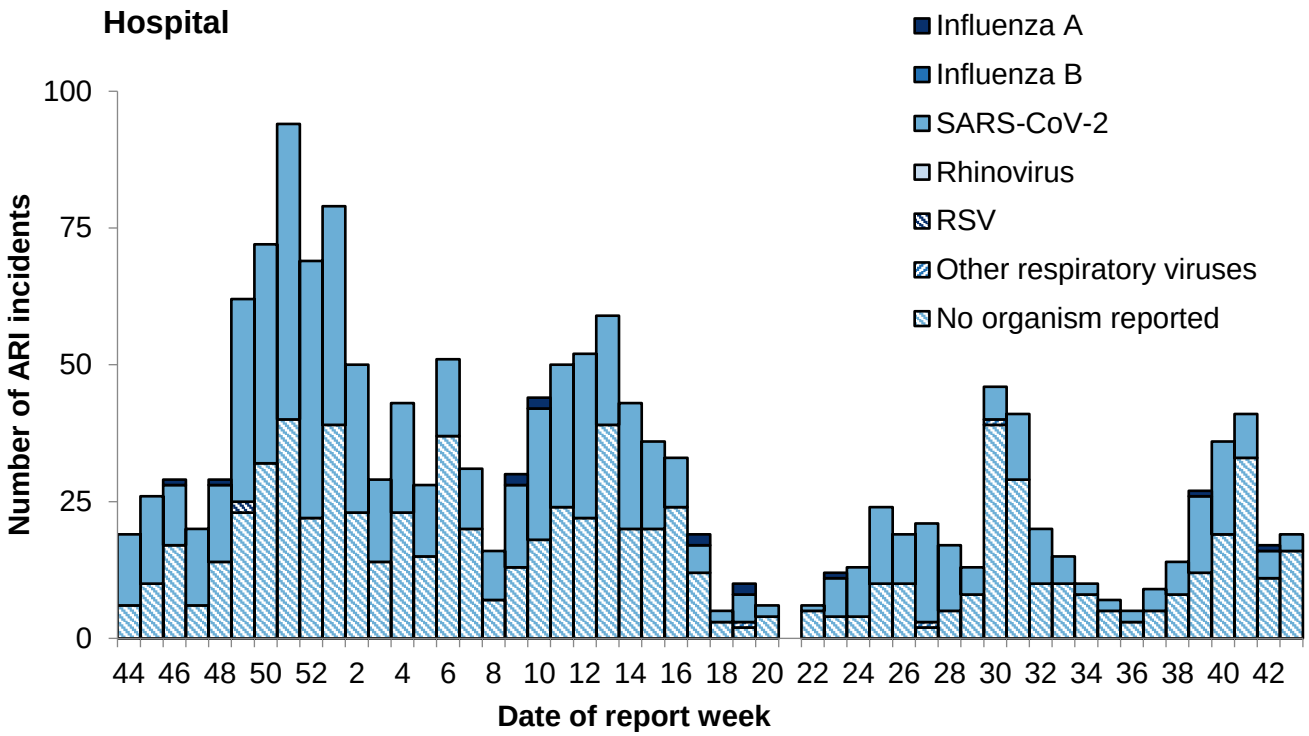


Figure 21: Number of acute respiratory infection (ARI) incidents in educational settings by virus type, England

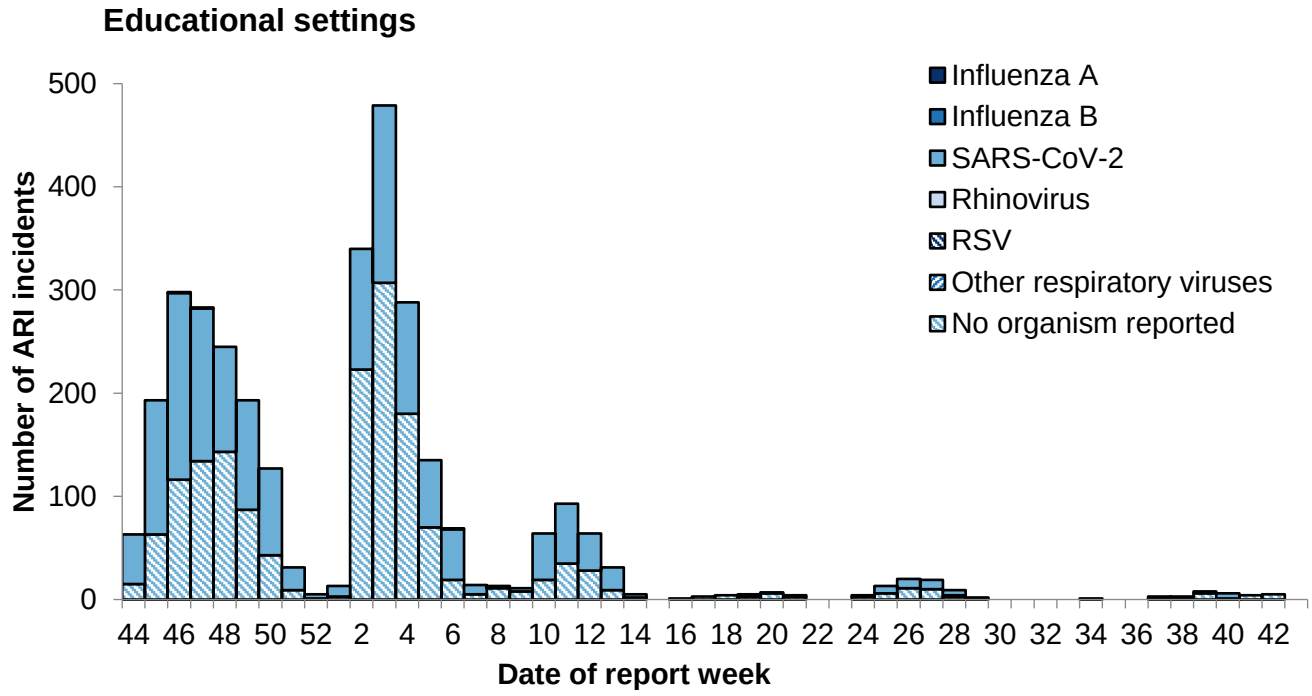


Figure 22: Number of acute respiratory infection (ARI) incidents in prisons by virus type, England

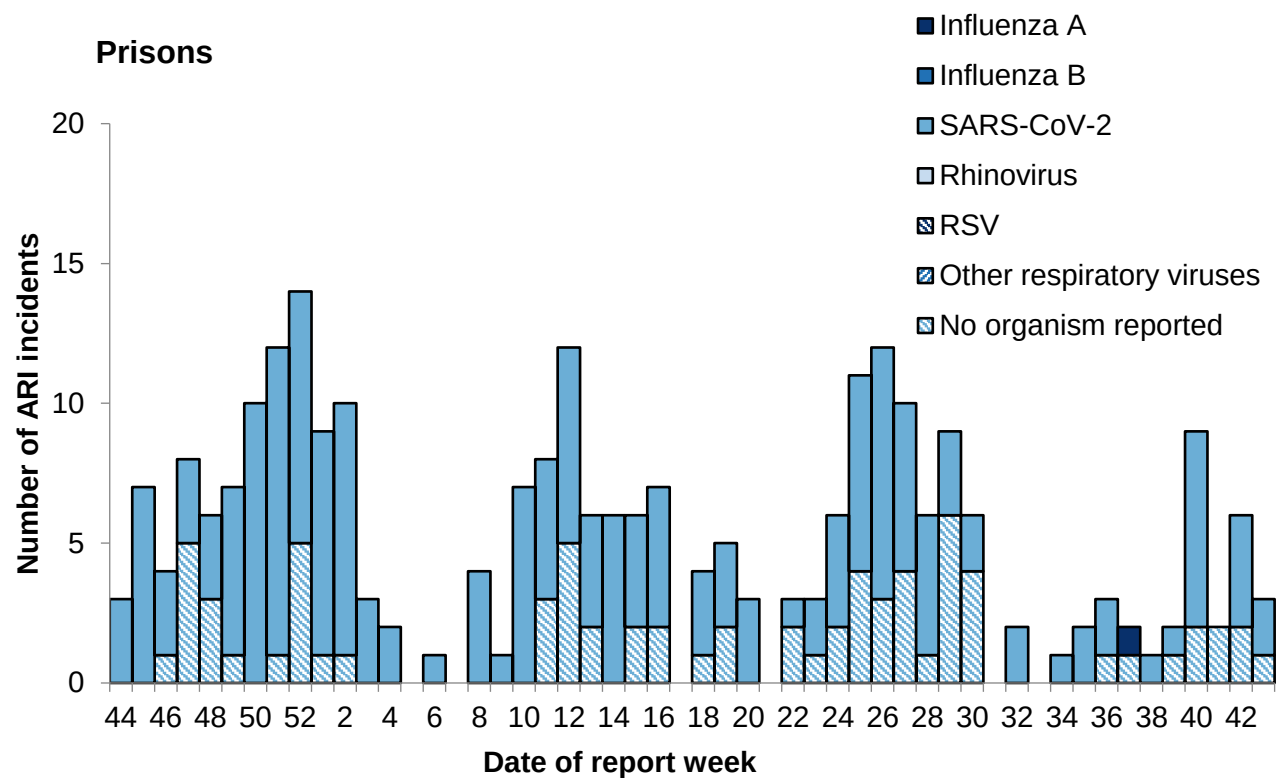


Figure 23: Number of acute respiratory infection (ARI) incidents in workplace settings by virus type, England

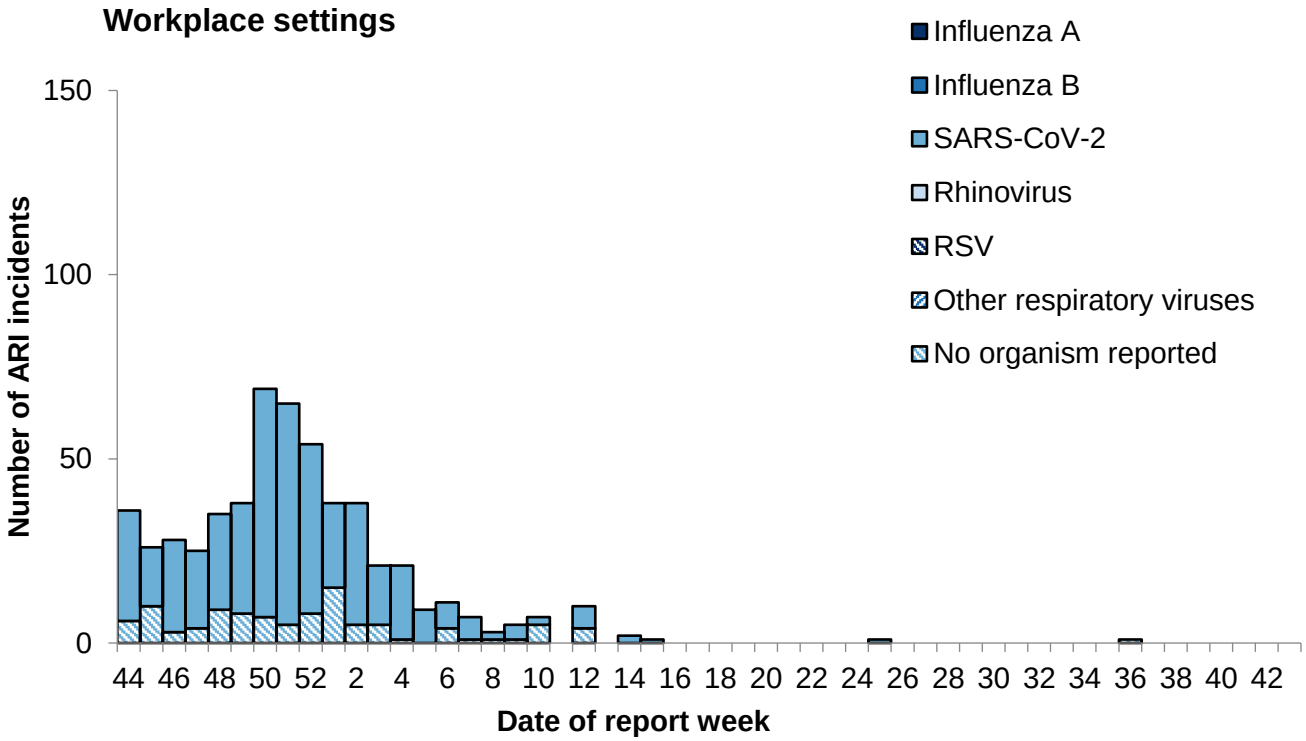


Figure 24: Number of acute respiratory infection (ARI) incidents in food outlet or restaurant settings by virus type, England

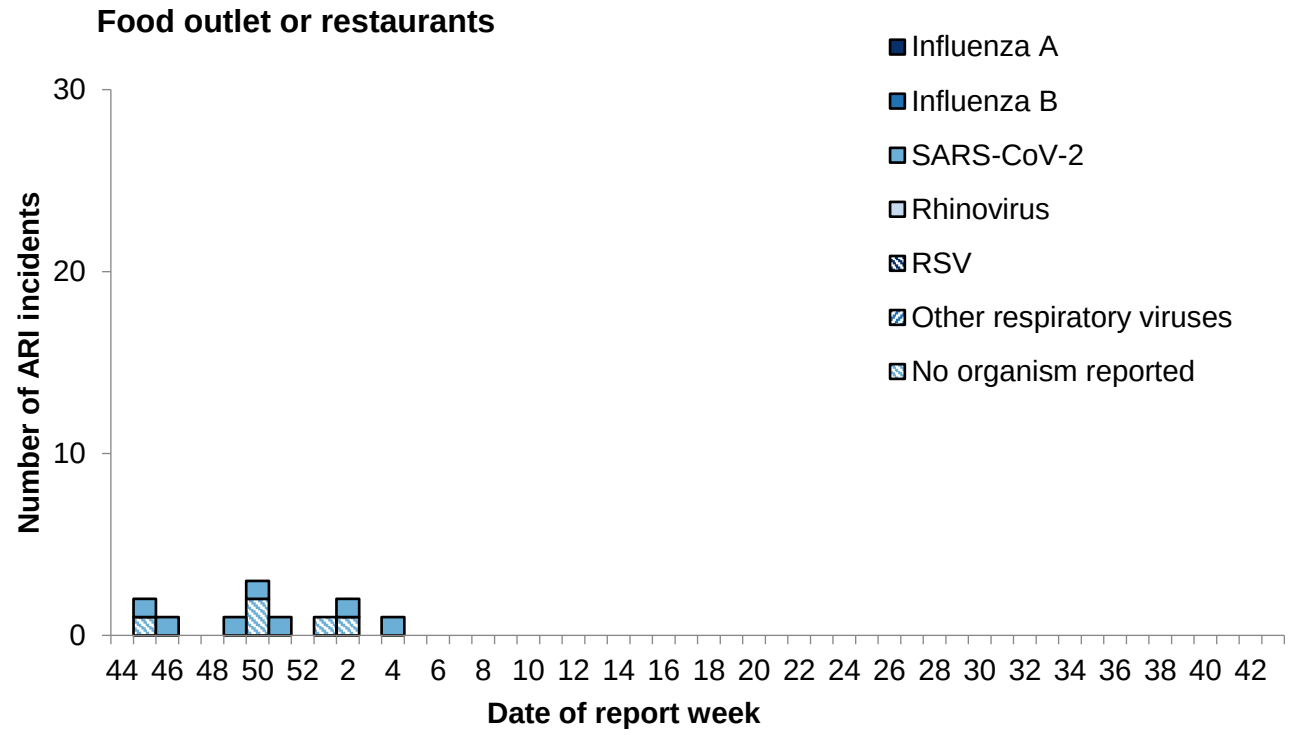


Figure 25: Number of acute respiratory infection (ARI) incidents in other settings by virus type from, England

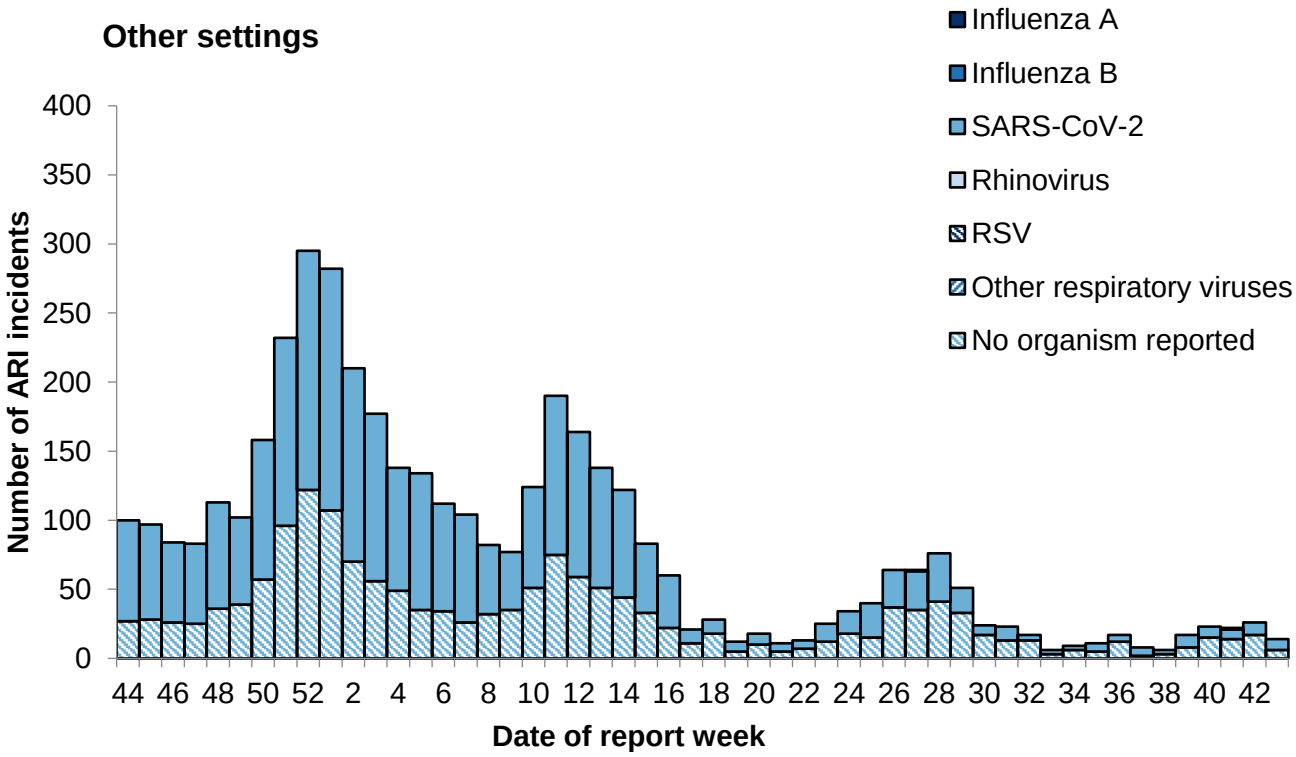


Table 1: Total number of situations and incidents by institution and UKHSA centres over the past 4 weeks with the total number in the last week in brackets

UKHSA Centres	Care home	Hospital	Educational settings	Prisons	Workplace settings	Food outlet/ restaurant settings	Other settings	Total
East of England	142(14)	2(1)	1(0)	5(2)	0(0)	0(0)	13(0)	163(17)
East Midlands	33(6)	1(1)	1(0)	3(0)	0(0)	0(0)	0(0)	38(7)
London	119(23)	77(16)	8(0)	0(0)	0(0)	0(0)	17(3)	221(42)
North East	64(7)	1(0)	1(0)	2(1)	0(0)	0(0)	6(0)	74(8)
North West	48(10)	5(0)	2(0)	1(0)	0(0)	0(0)	19(3)	75(13)
South East	16(3)	14(0)	0(0)	6(0)	0(0)	0(0)	0(0)	36(3)
South West	385(59)	1(0)	0(0)	0(0)	0(0)	0(0)	14(7)	400(66)
West Midlands	50(10)	10(1)	1(0)	1(0)	0(0)	0(0)	6(0)	68(11)
Yorkshire and Humber	89(14)	2(0)	1(0)	2(0)	0(0)	0(0)	10(1)	104(15)
Grand Total	946(146)	113(19)	15(0)	20(3)	0(0)	0(0)	85(14)	1179(182)

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.

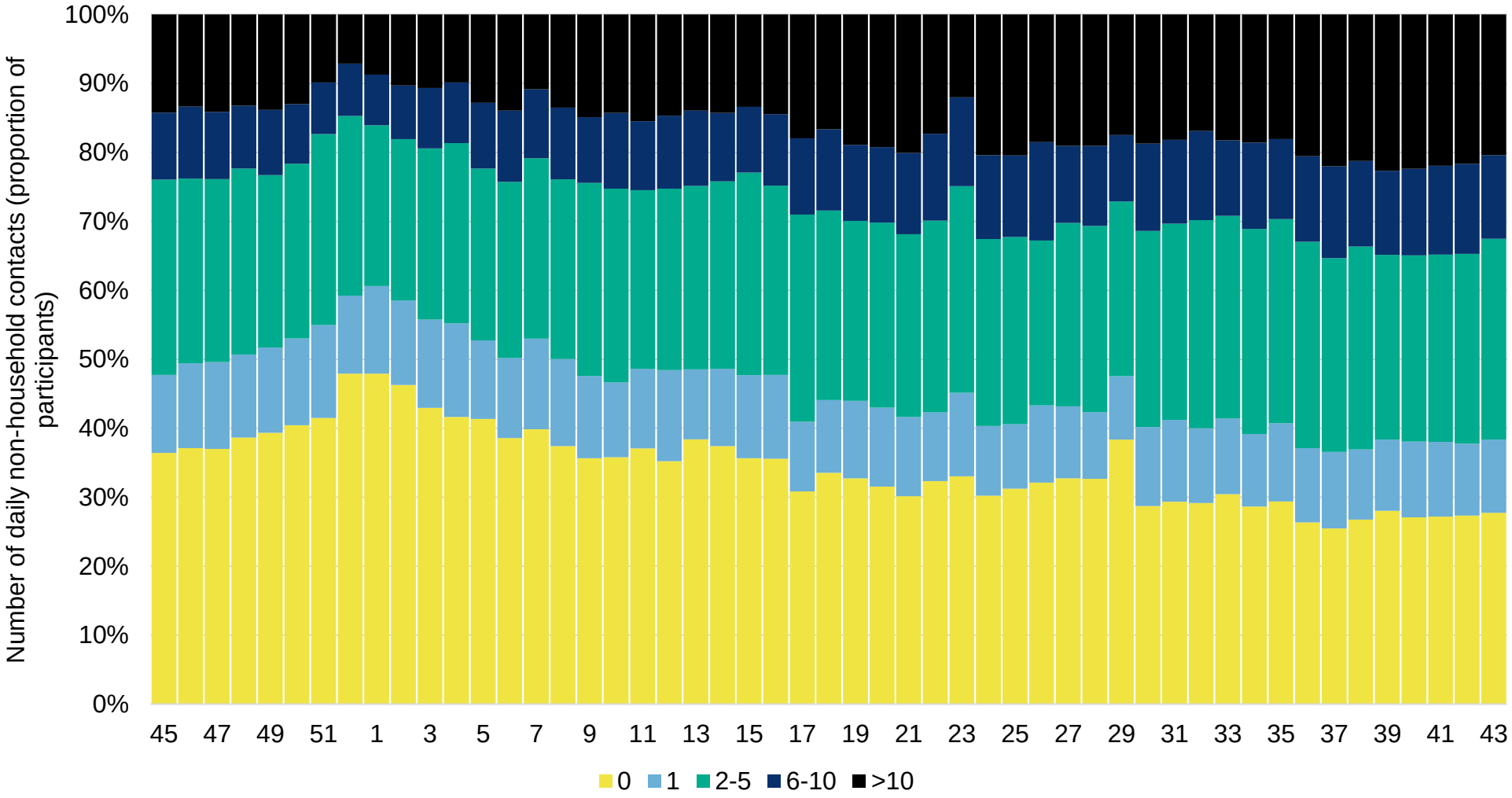
Note that ILI is defined as sudden onset of symptoms with at least one of fever (chills), malaise, headache, muscle pain and at least one of cough, sore throat, shortness of breath.

During week 43, there were 2,152 participants completing the weekly symptoms questionnaire of which 181 (8.4%) reported fever or cough and 54 (2.5%) reported influenza like illness (ILI). Both COVID-19 related symptoms and influenza like illness (ILI) decreased among participants completing the weekly symptoms survey. 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 with other healthcare services (Figure 26).

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

Figure 27: FluSurvey participants' self-reported number of social contacts outside the household

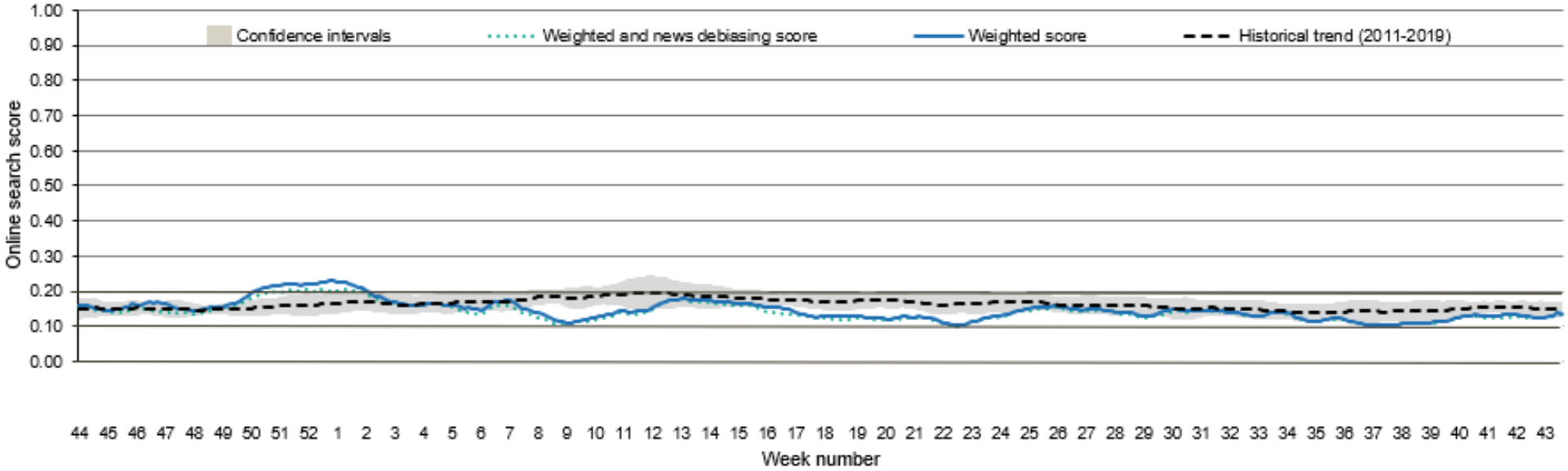


Google search queries

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 43, the overall and media-debiasing weighted Google search scores increased slightly compared with the previous week (Figure 28).

Figure 28: Normalised Google search score for COVID-19 symptoms, with weighted score for media-debiasing and historical trend, England



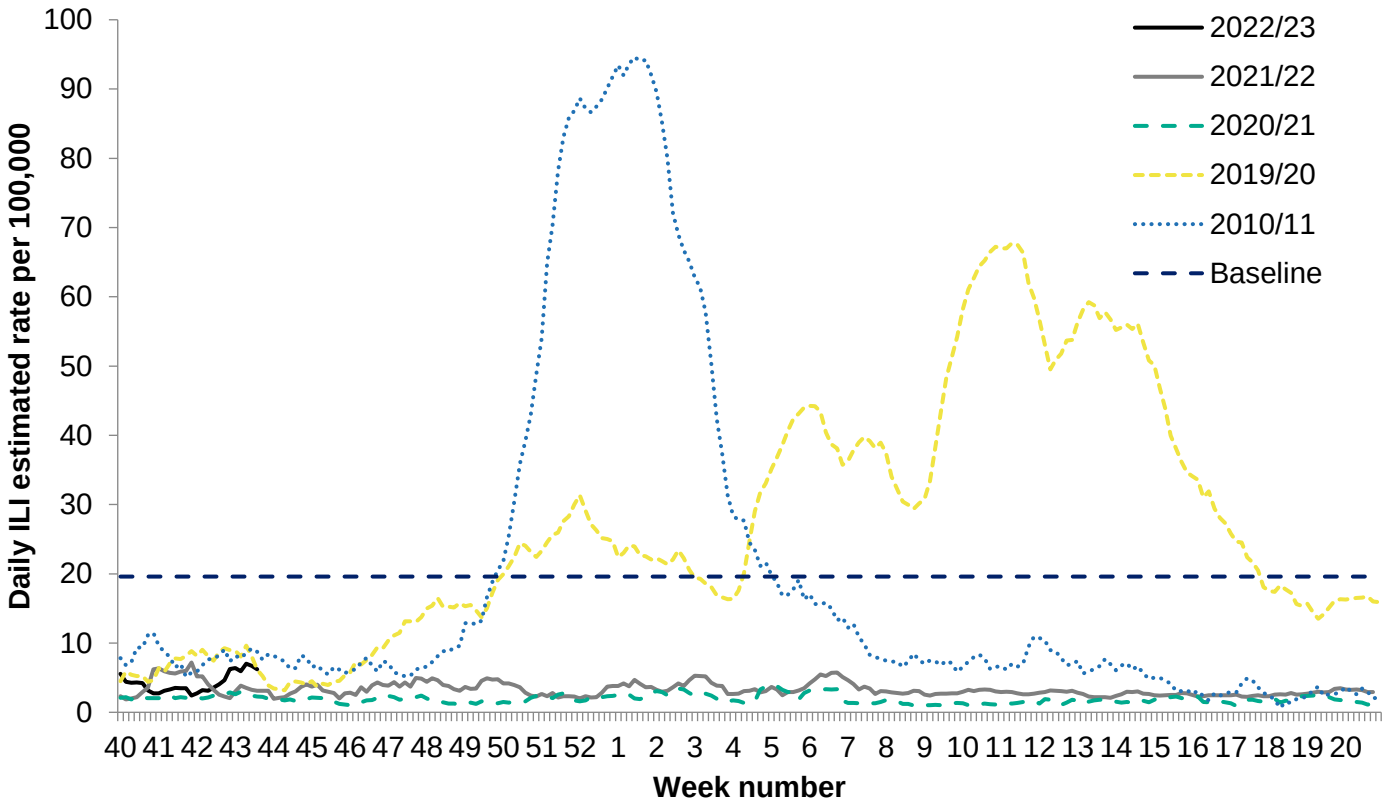
Flu Detector

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 43, the daily ILI rate remained low and below the baseline threshold of 19.6 per 100,000 for the 2022 to 2023 season (Figure 29).

Figure 29: Daily estimated ILI Google search query rates per 100,000 population, England



NHS 111

Please note that different syndromic surveillance indictors (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 indictors 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.

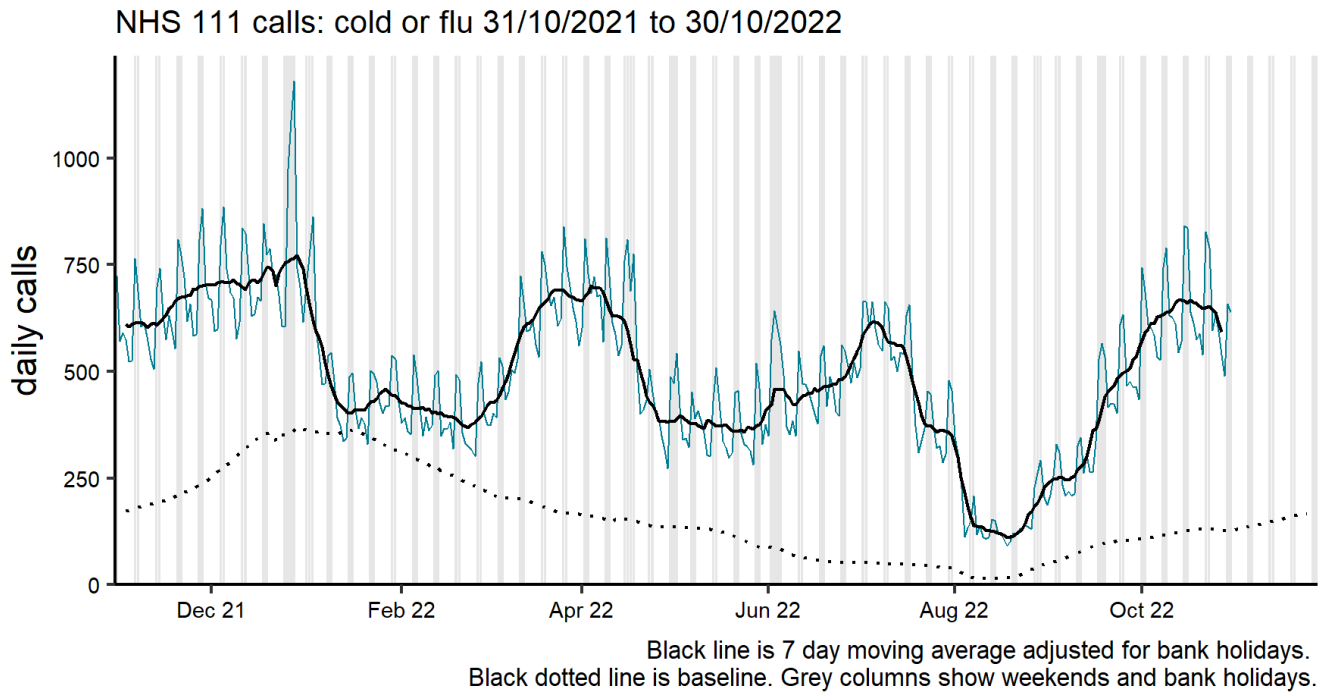
Up to 30 October, the number of calls for cough and cold or flu decreased nationally (Figure 30 and 31).

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 30: 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)

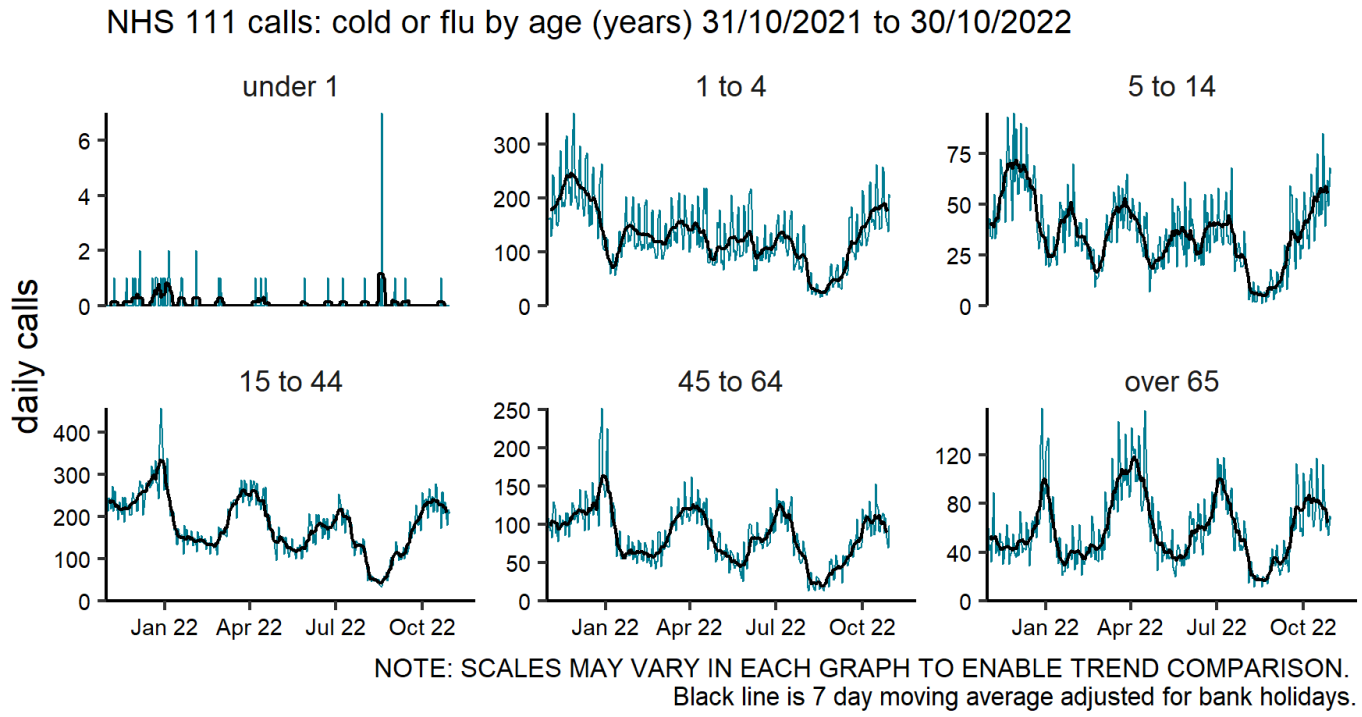
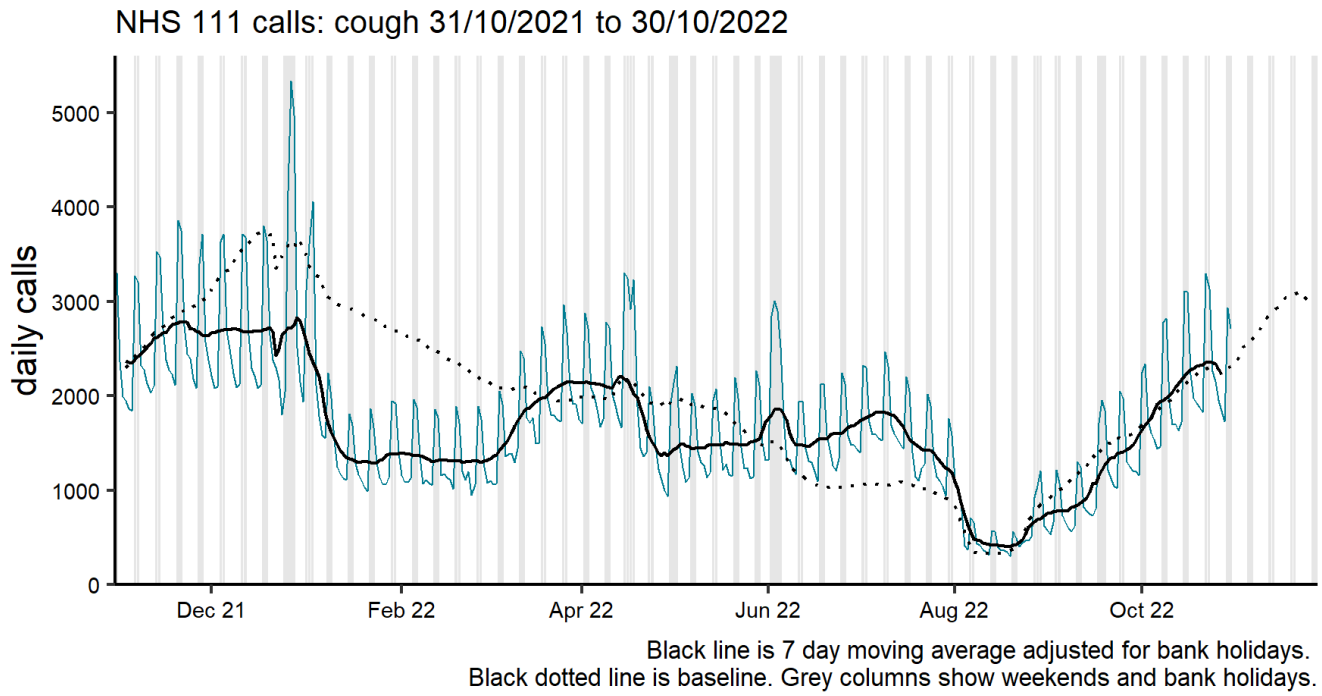
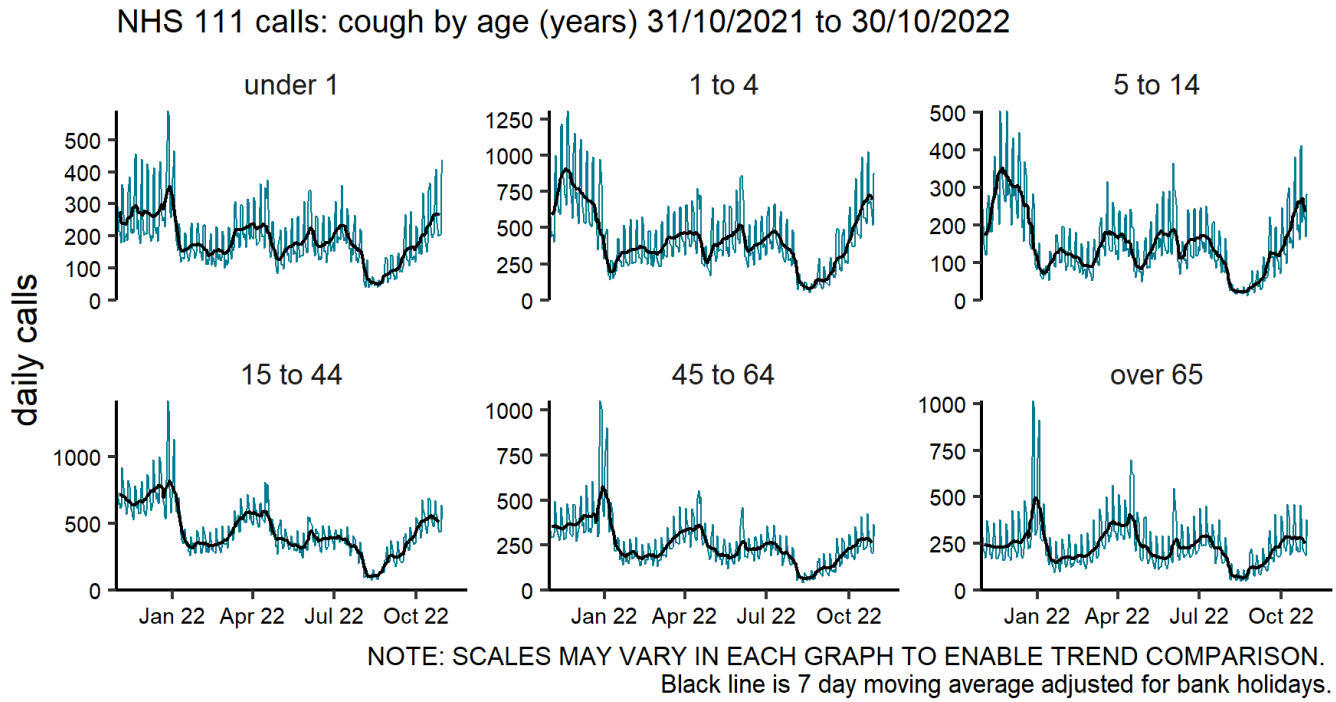


Figure 31: NHS 111 telephony indicators (and 7-day moving average) for number of daily cough calls, England (a) nationally and (b) by age group

(a)



(b)



Primary care surveillance

RCGP (England)

The weekly ILI consultation rate through the RCGP surveillance was 3.6 per 100,000 registered population in participating GP practices in week 43 compared with 3.3 per 100,000 in the previous week. This is below the baseline threshold (11.47 per 100,000) (Figure 32). By age group, the highest rates were seen in the under 1 year olds (13.6 per 100,000). The lower respiratory tract infections (LRTI) consultation rate was at 69.6 per 100,000 in week 43, compared with the rate of 69.1 per 100,000 in the previous week. The COVID-19 indicator rate was at 45.9 per 100,000 in week 43 compared with a rate of 68.5 per 100,000 in the previous week (Figure 33).

Figure 32: RCGP influenza-like illness (ILI) consultation rates, all ages, England

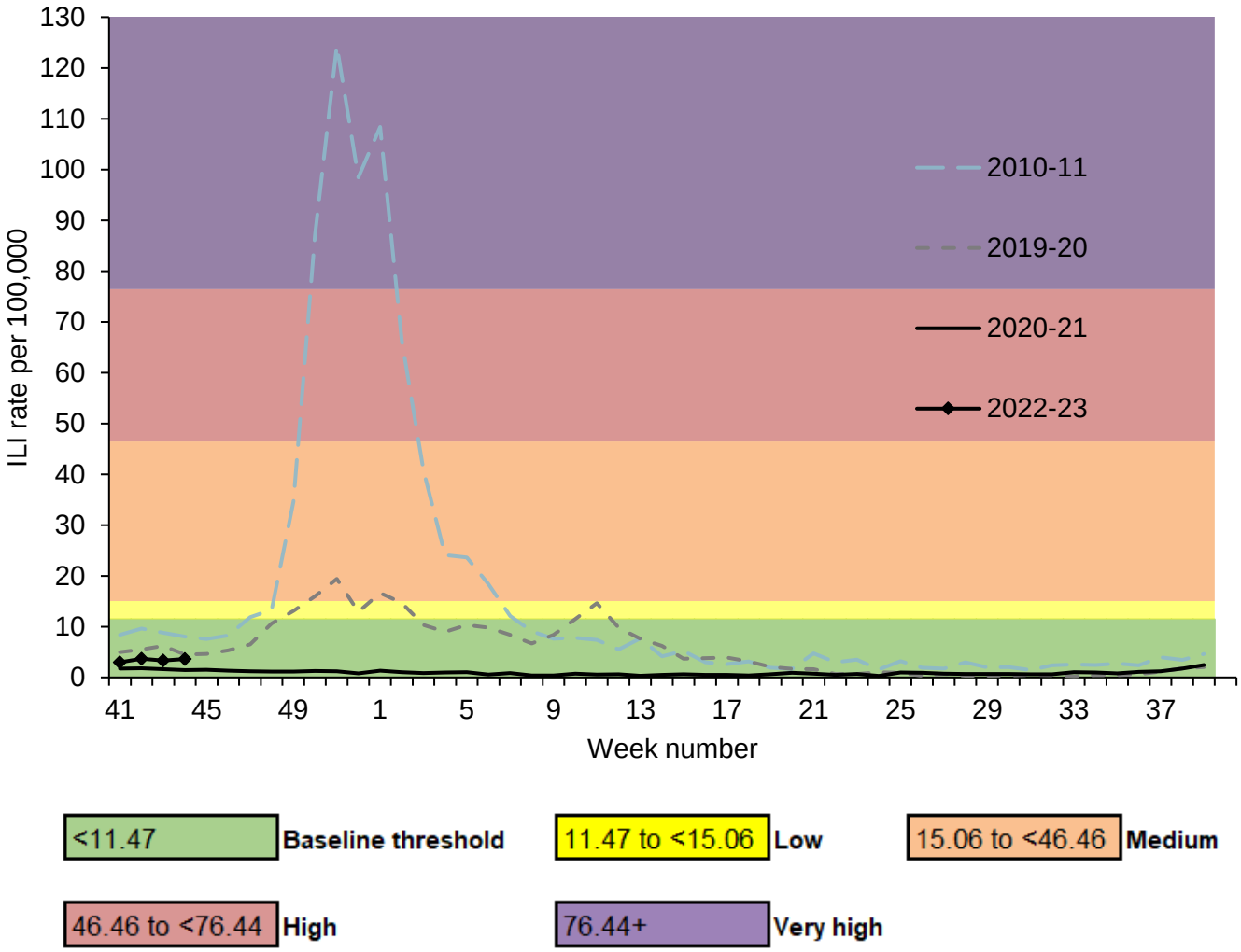
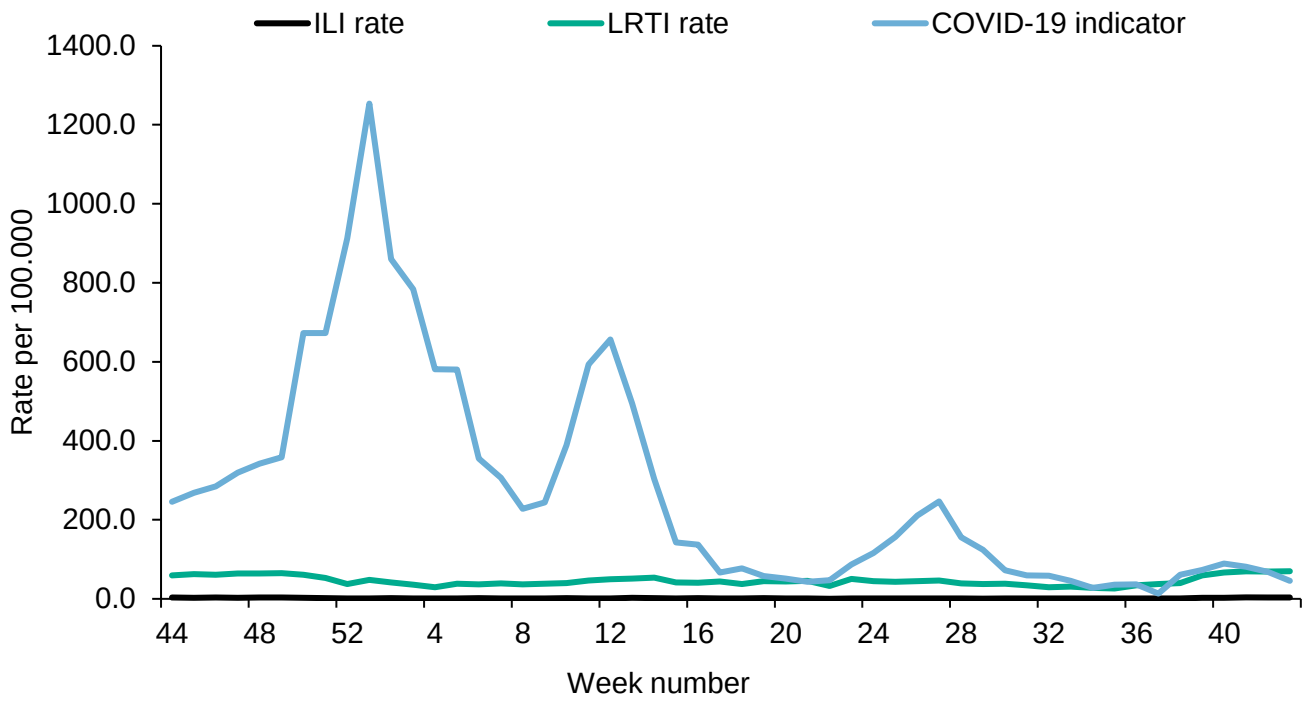


Figure 33: RCGP ILI, LRTI and COVID-19 indicator rates, England



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 under 1 year old age group in England (13.6 per 100,000), in the 45 to 64 year olds in Scotland (5.0 per 100,000), in the 15 to 44 year olds in Wales (7.6 per 100,000) and the 15 to 44 year olds and 65 to 74 year olds in Northern Ireland (4.4 per 100,000), (4.4 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
England (RCGP)	3.0	3.7	3.3	3.6									
Wales	3.5	2.8	3.9	4.8									
Scotland	2.1	1.8	3.9	3.8									
Northern Ireland	1.3	2.2	1.8	3.5									

The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for GP ILI consultations for the start of influenza activity (based on 10 seasons excluding 2020 to 2021), in a standardised approach across Europe. For MEM threshold values for each country, please visit the webpage Sources of UK flu data: influenza surveillance in the UK.

Sentinel swabbing scheme in England

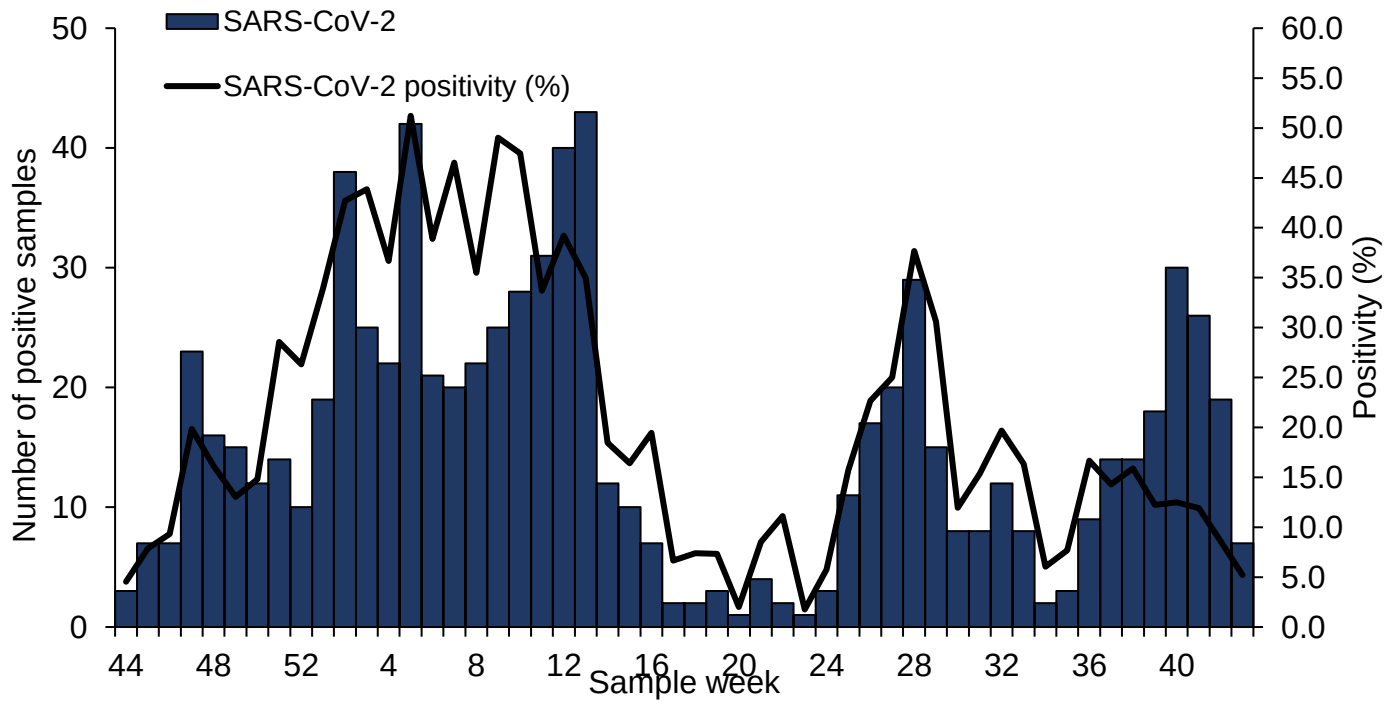
In week 43 2022, 7 samples tested positive for SARS-CoV-2 through the GP sentinel swabbing scheme in England (Figure 34).

In week 43 2022, 9 samples tested positive for RSV and 11 samples tested positive for influenza in England through the GP sentinel swabbing scheme.

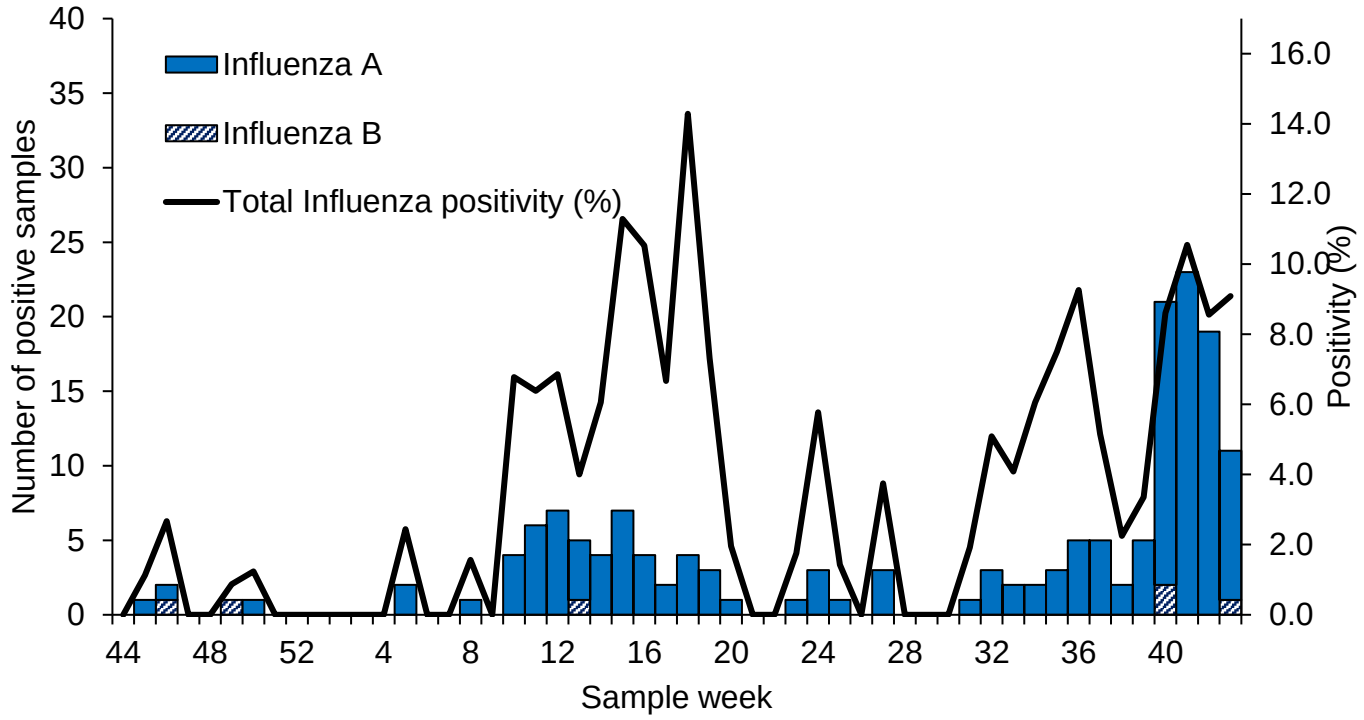
* Please note that due to lower sample numbers data from week 14 of 2022 onwards should be interpreted with caution.

Figure 34: Number of positive samples and weekly positivity (%) for (a) COVID-19 and (b) Influenza and (c) RSV, GP sentinel swabbing scheme

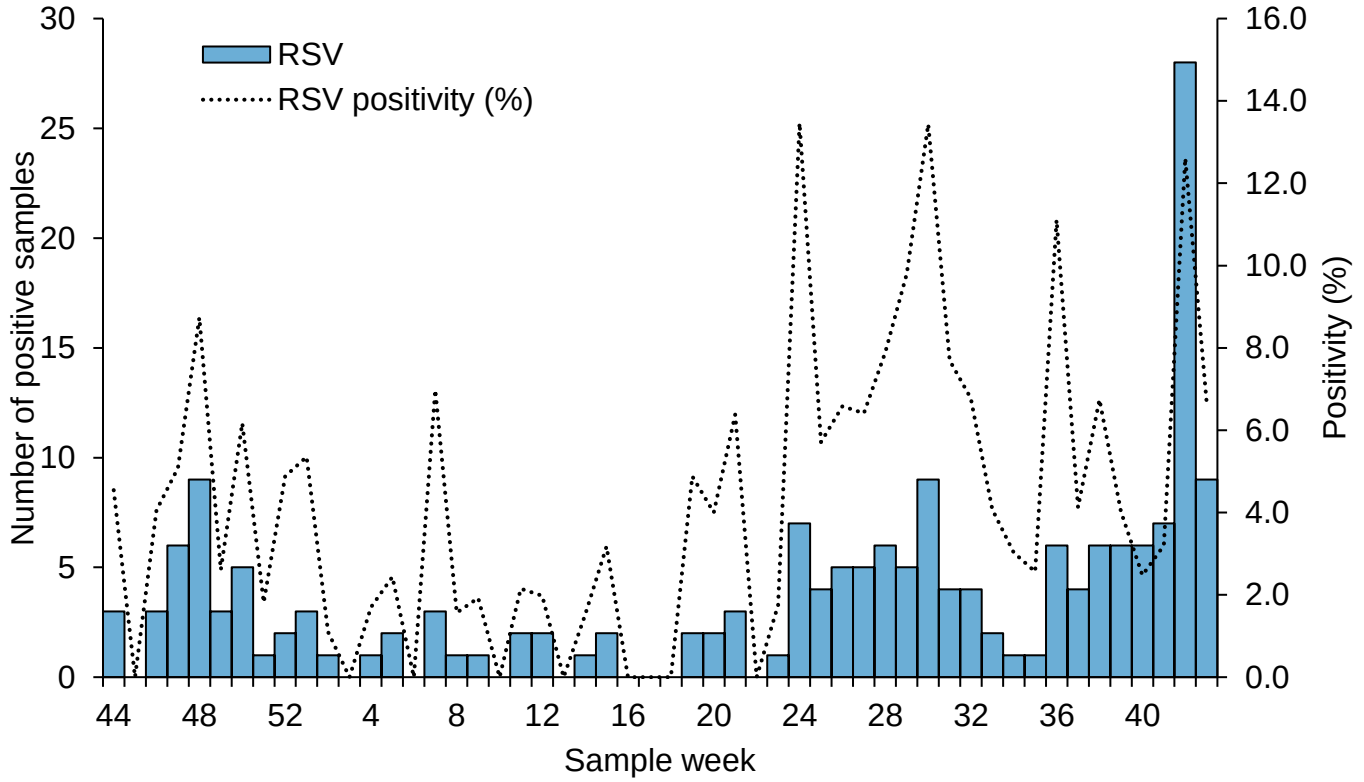
(a)



(b)



(c)



*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

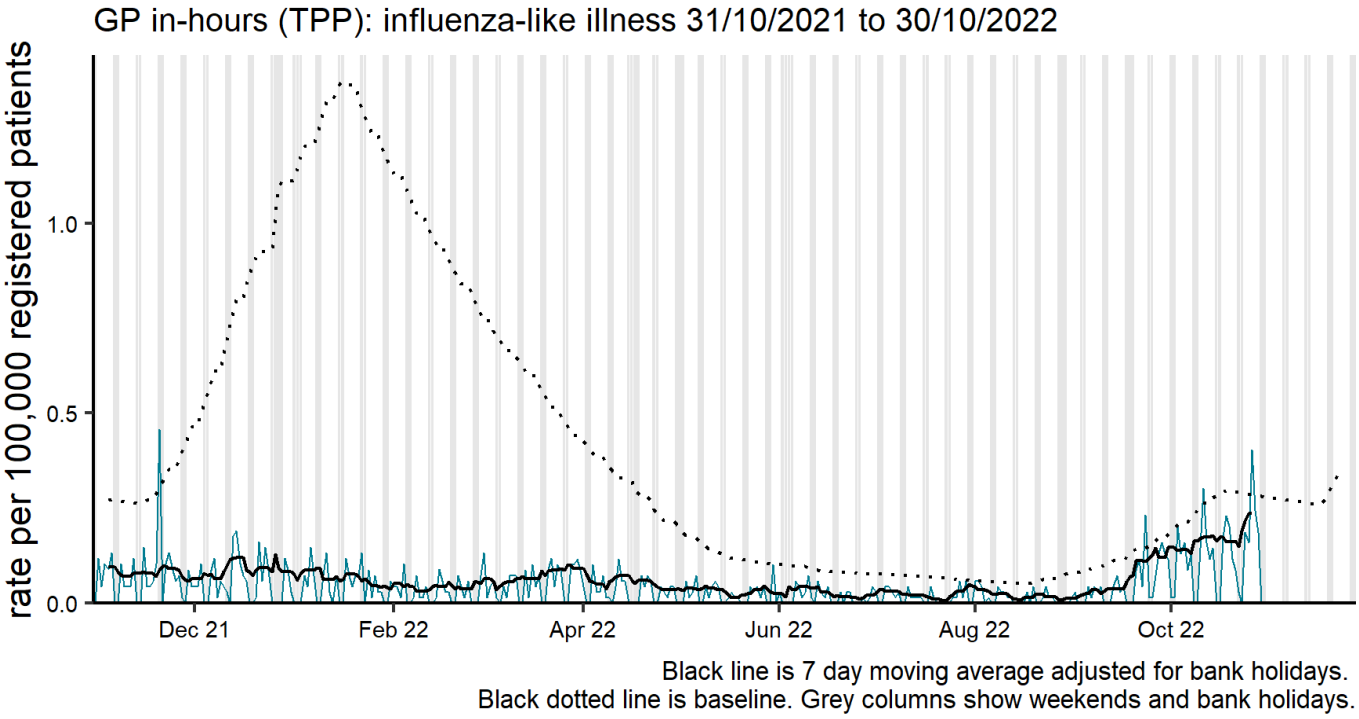
The GP In Hours (GPIH) syndromic surveillance system monitors the number of GP visits during regular hours of known clinical indicators.

Up to 30 October, GP in-hours consultations for influenza-like illness increased nationally, remaining below seasonally expected levels. There was a particular increase in influenza-like illness consultation rates in the North West region of England. (Figure 35).

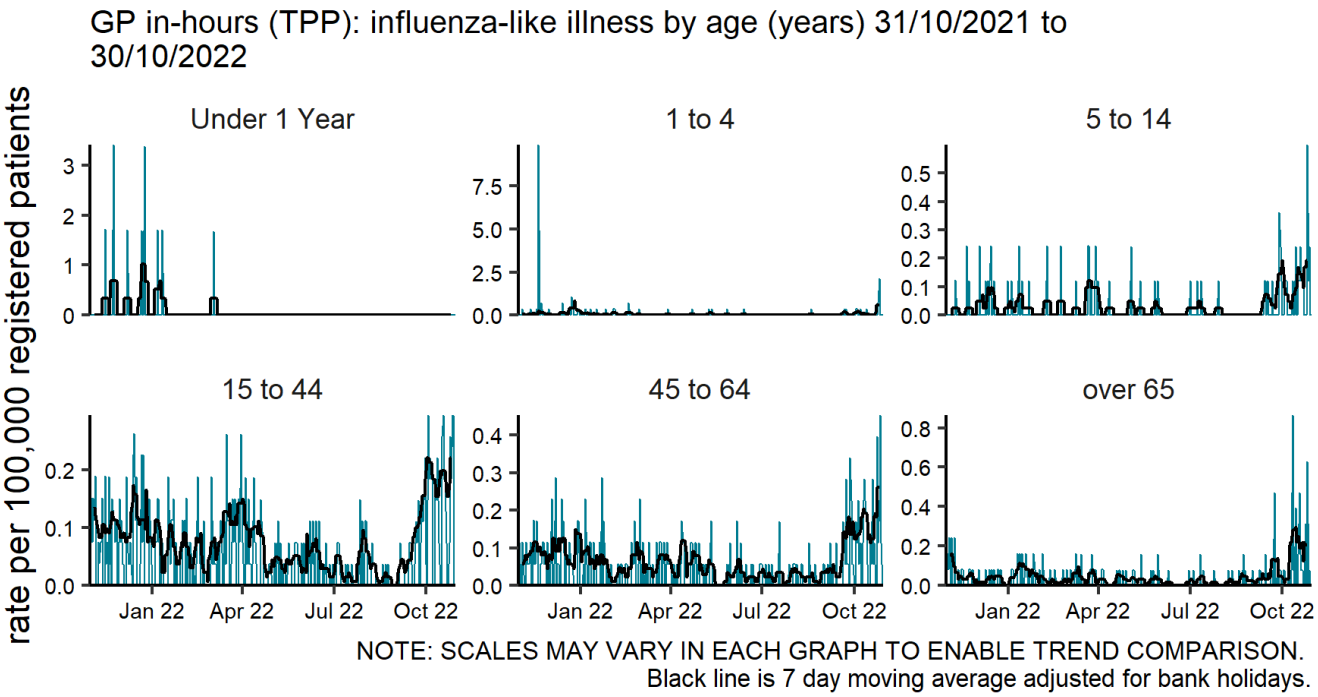
Further indicators and information about caveats are available from the GP In Hours Syndromic Surveillance bulletin.

Figure 35: GPIH clinical indicators for influenza-like illness GP consultations, England (a) nationally, (b) by age group and (c) by UKHSA centre

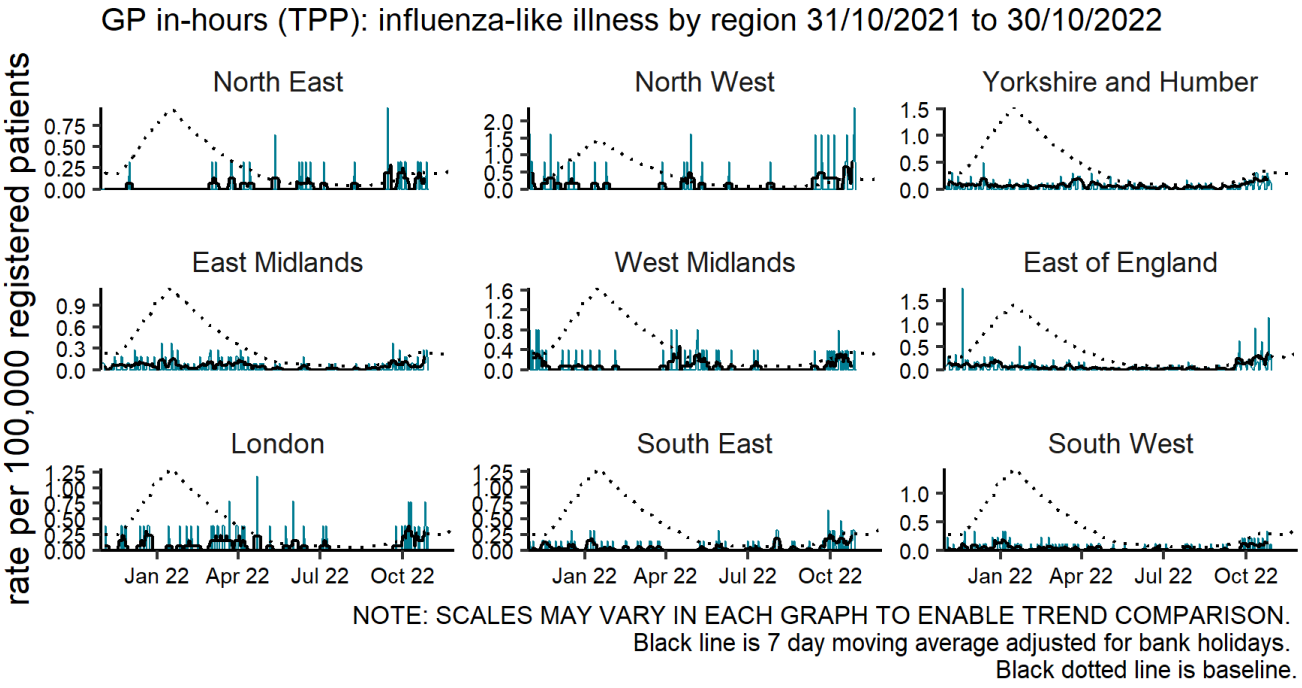
(a)



(b)



(c)



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.

Please note that due to a disruption with a GPOOH clinical software system provider, GPOOH data from 4 August onwards is not currently available (Figures 36 and 37).

Figure 36: GPOOH number of daily contacts for all ages for influenza-like illness, England

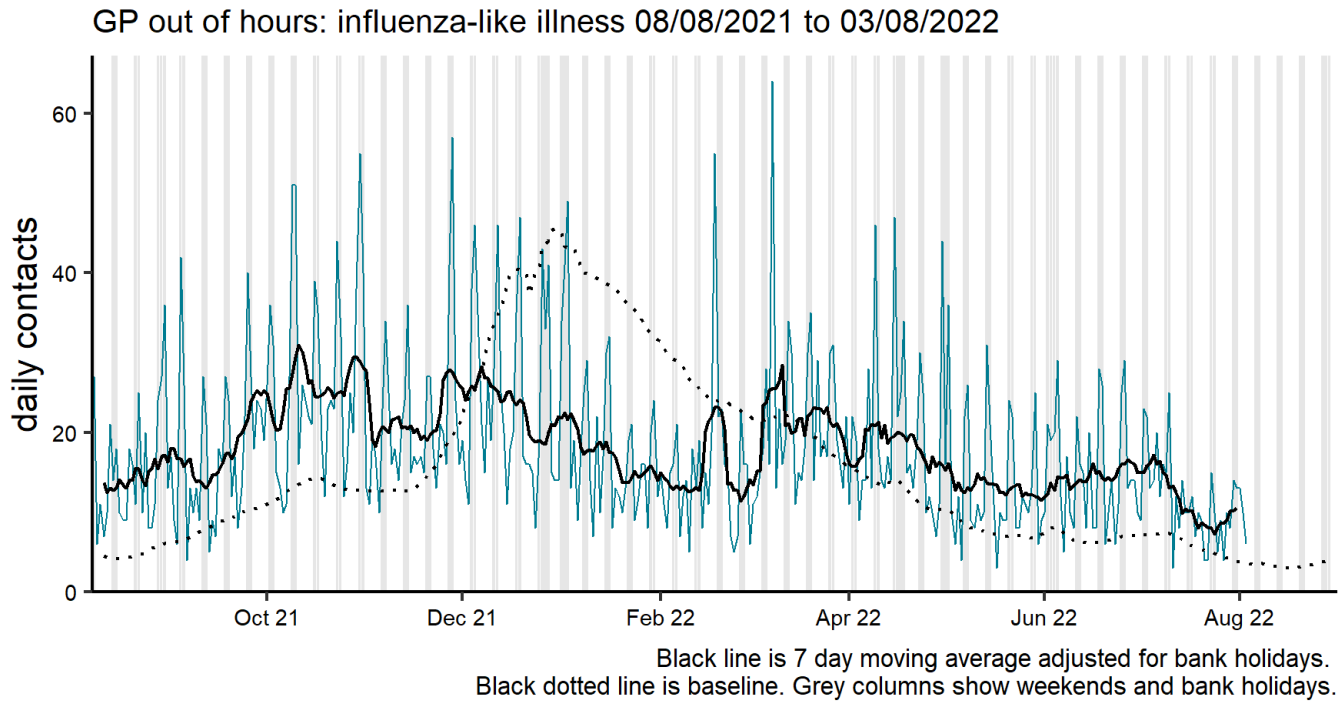
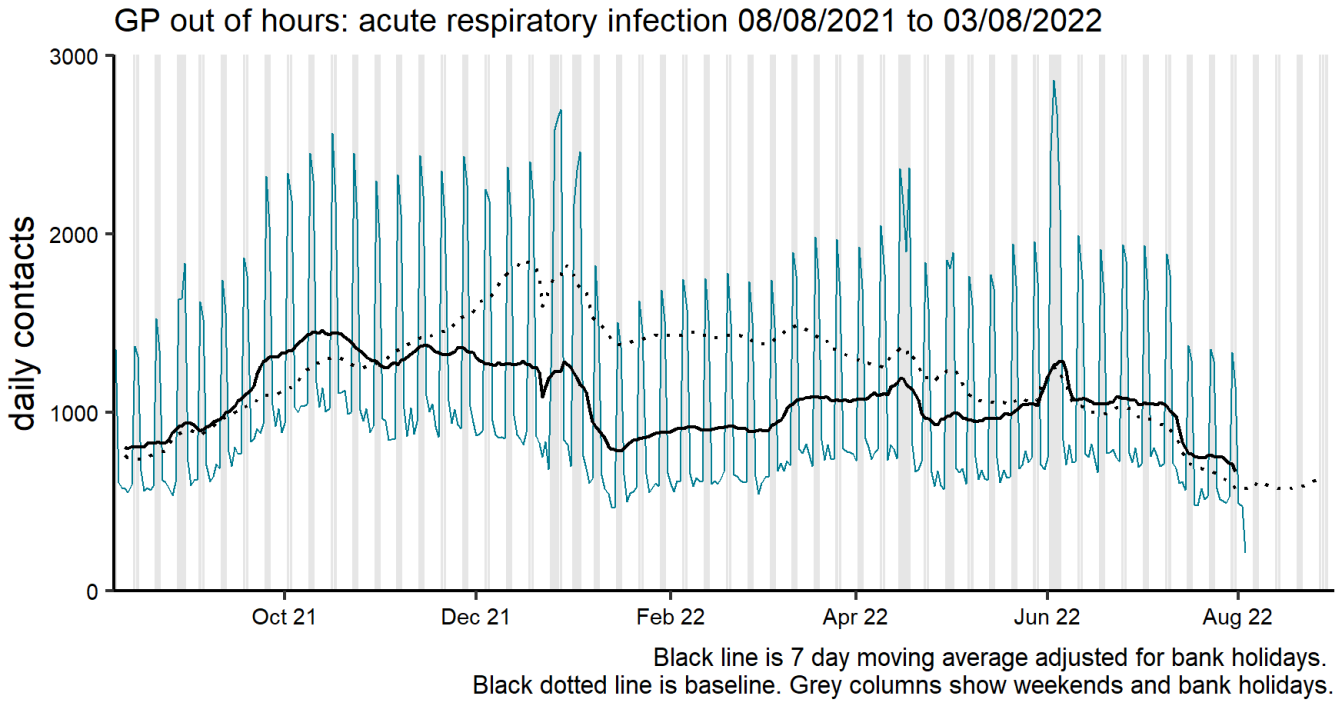
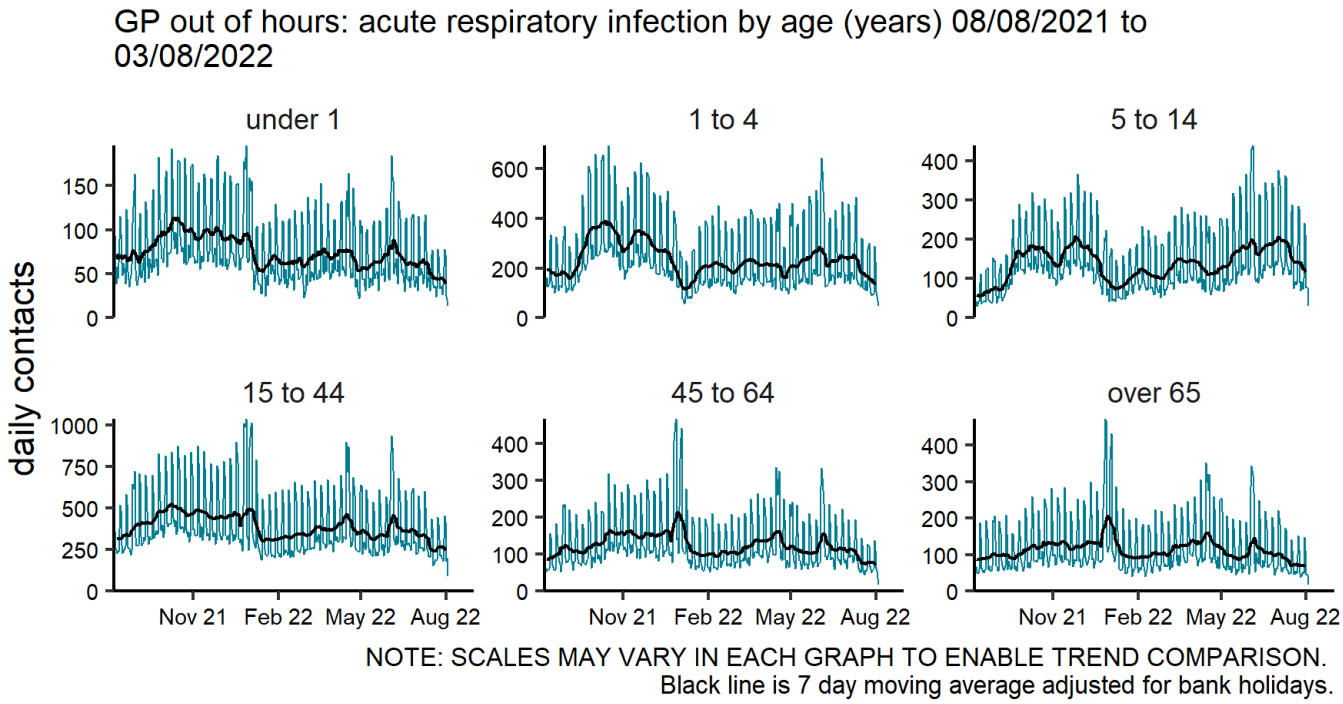


Figure 37: GPOOH number of daily contacts for acute respiratory infections, England (a) nationally and (b) by age group

(a)



(b)



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.

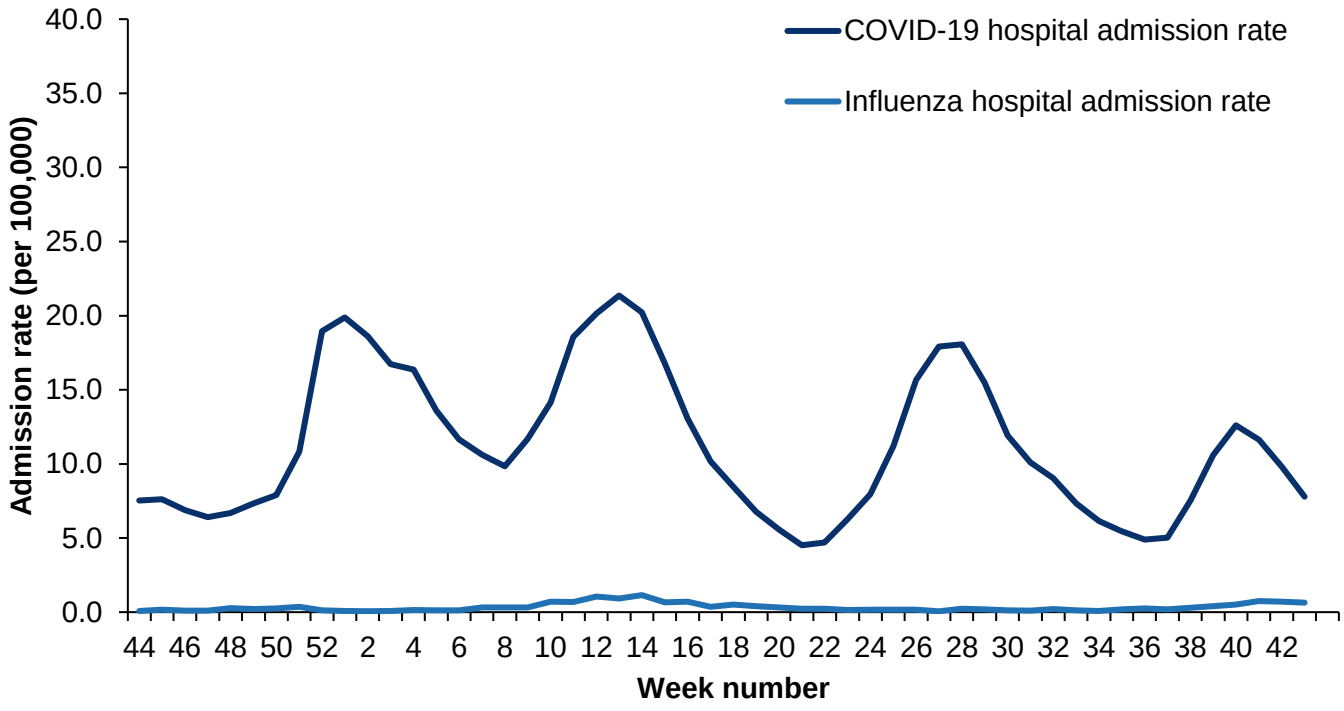
Hospitalisations, SARI Watch

In week 43, the overall weekly hospital admission rate for COVID-19 decreased to 7.78 per 100,000 compared with 9.82 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 was in the 85 year olds and over.

In week 43, the overall weekly hospital admission rate for influenza decreased to 0.65 per 100,000 compared with 0.71 per 100,000 in the previous week. There were 54 new hospital admissions to sentinel Trusts for influenza (2 influenza A(H1N1)pdm09, 3 influenza A(H3N2), 45 influenza A(not subtyped) and 4 influenza B) in week 43.

Figure 38: Weekly overall hospital admission rates of new COVID-19 and influenza positive cases per 100,000 population reported through SARI Watch, England

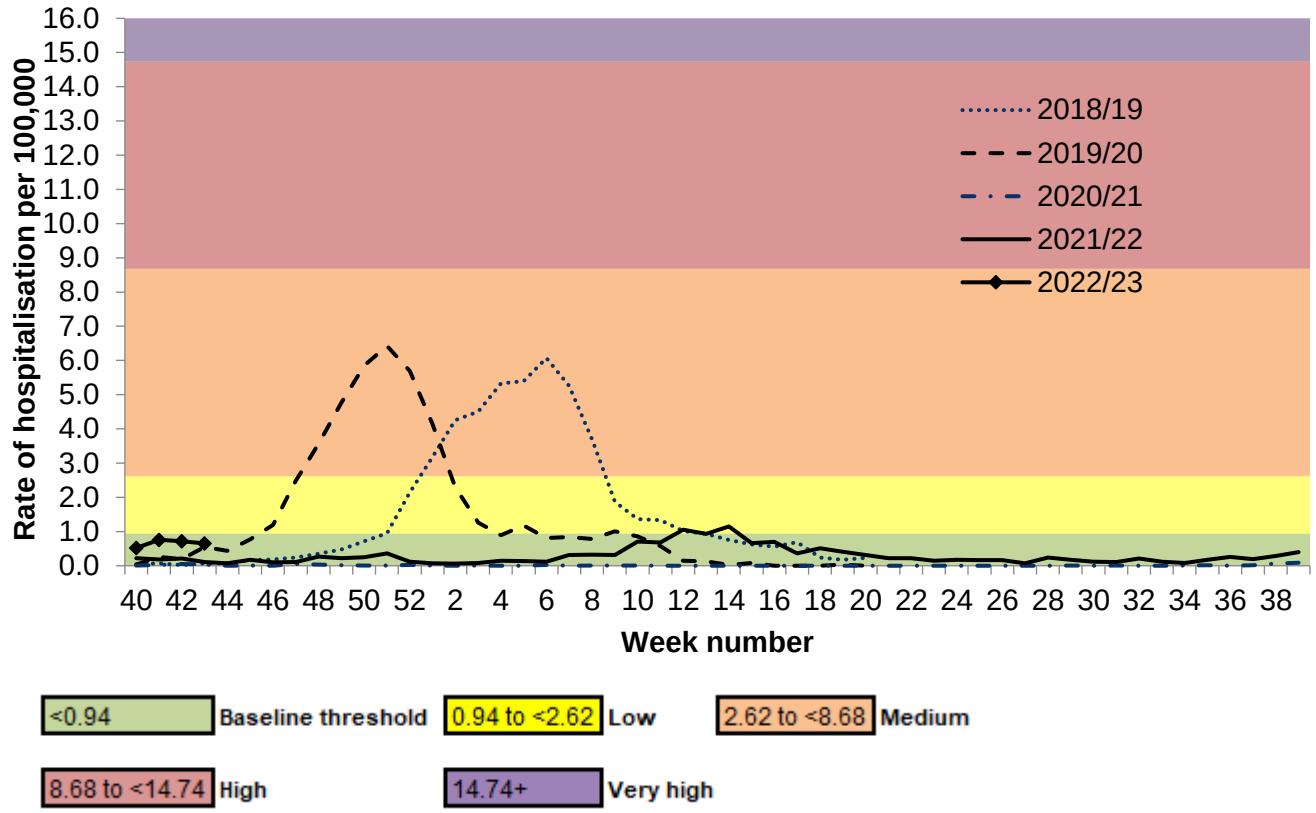


* Influenza hospital admission rate based on 22 sentinel NHS trusts for week 43

* COVID-19 hospital admission rate based on 95 NHS trusts for week 43

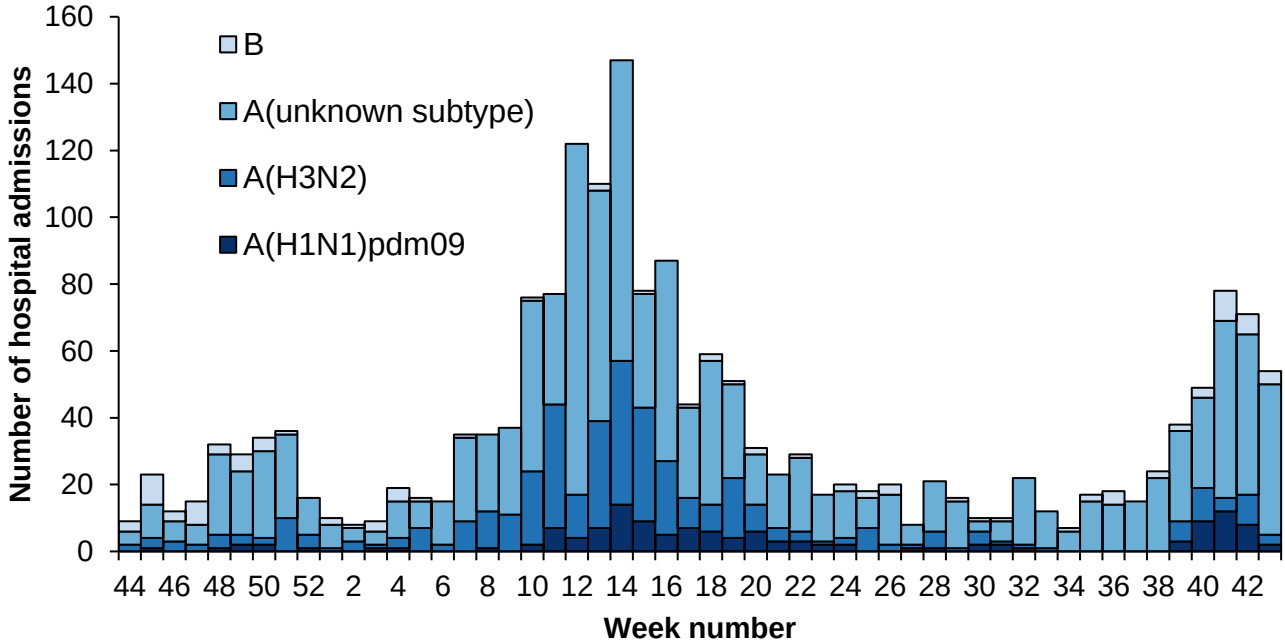
* SARI Watch data is provisional

Figure 39: 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).

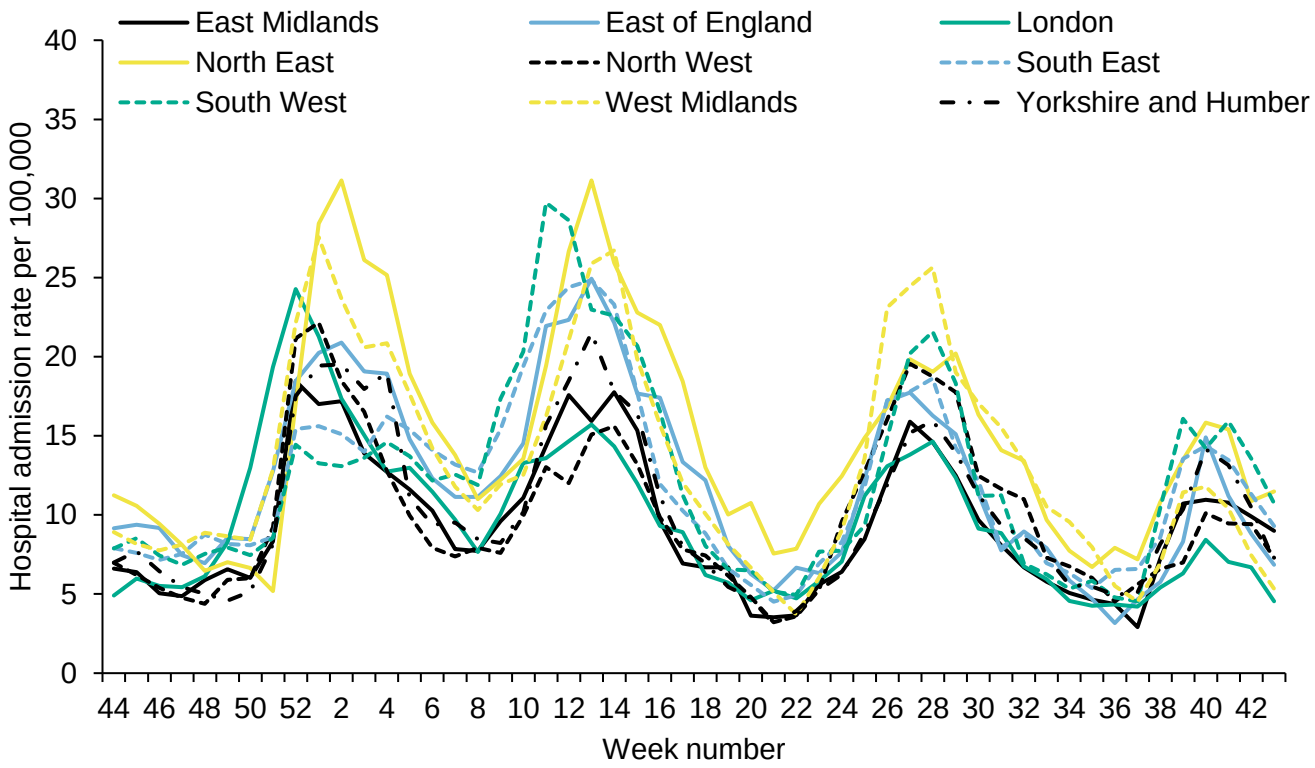
Figure 40: Weekly influenza hospital admissions by influenza type, SARI Watch, England



*number of influenza hospital admissions based on sentinel NHS trusts

Figure 41: Weekly hospital admission rate by UKHSA centre for new (a) COVID-19 positive cases and (b) influenza reported through SARI Watch

(a)



(b)

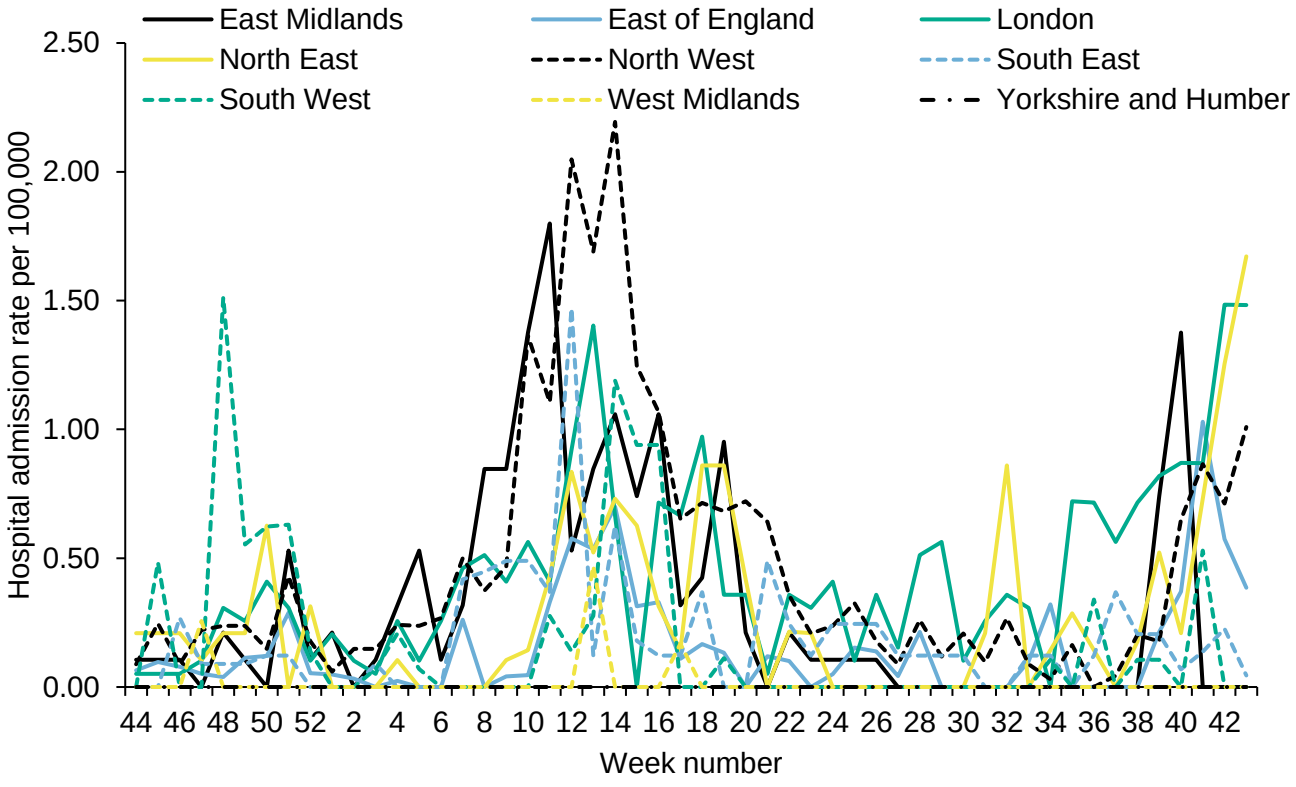
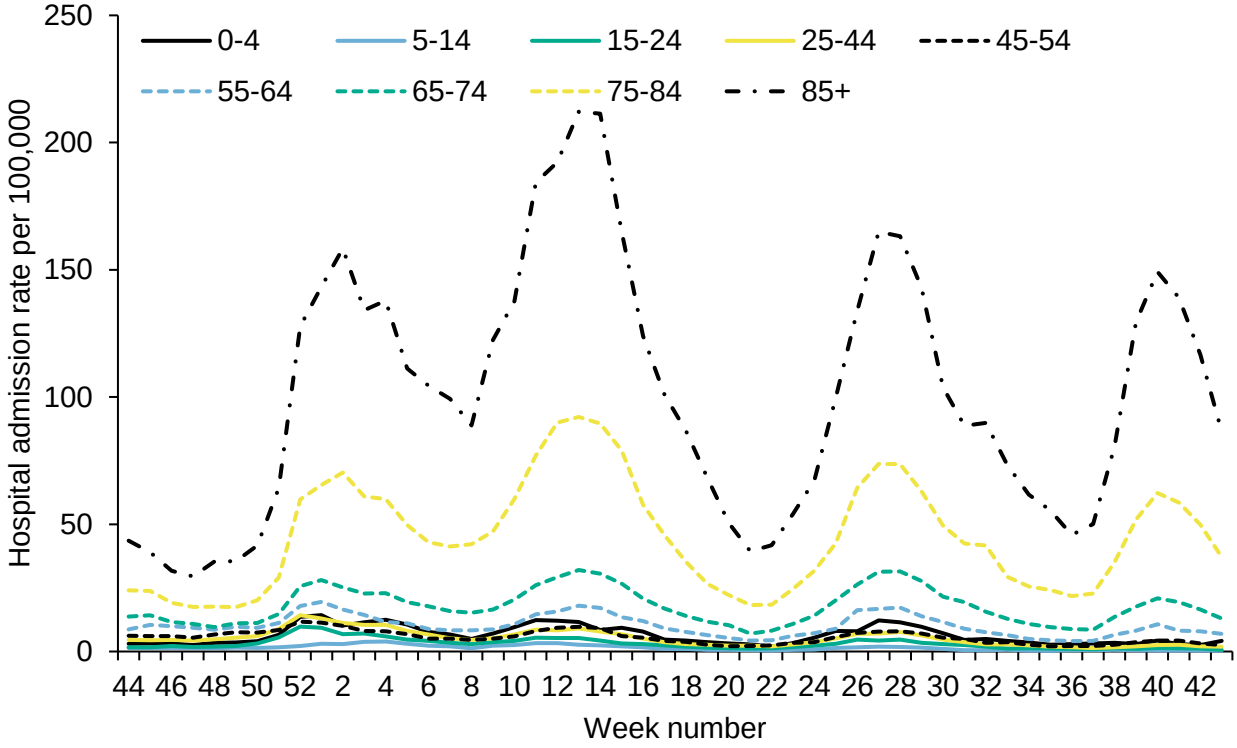
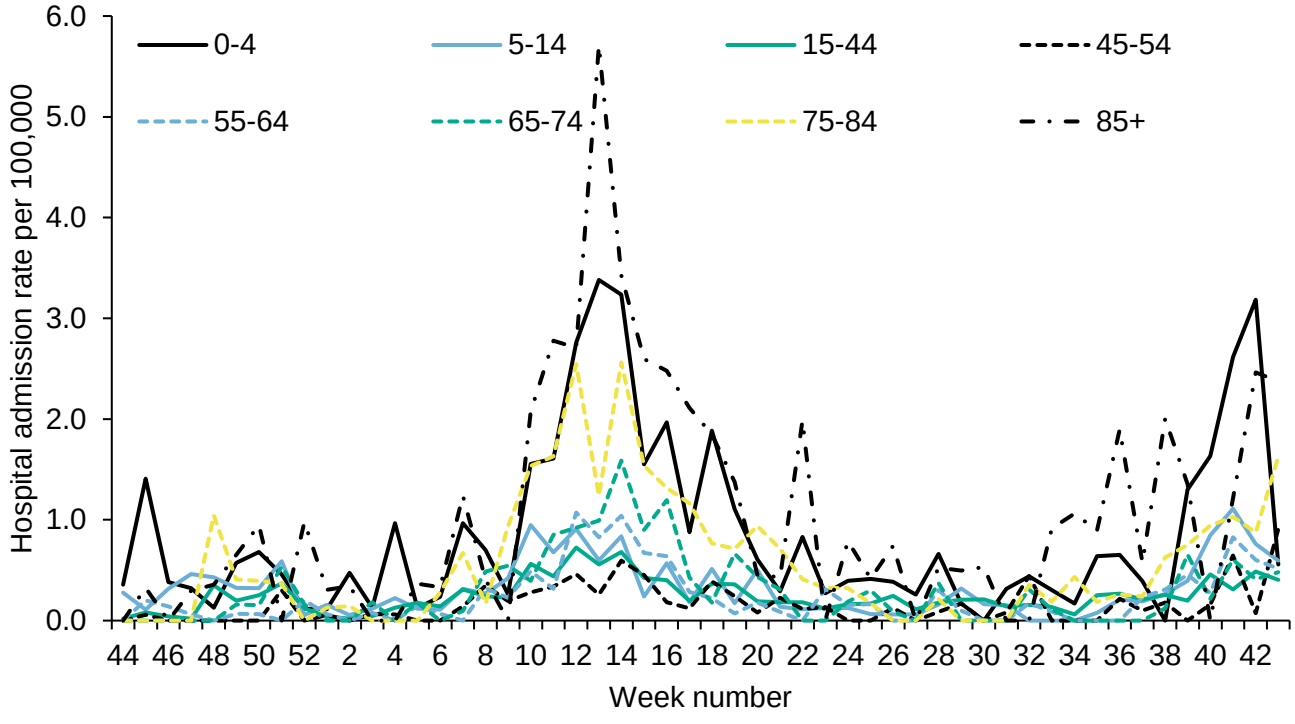


Figure 42: Weekly hospital admission rate by age group for new (a) COVID-19 positive cases and (b) influenza reported through SARI Watch

(a)



(b)



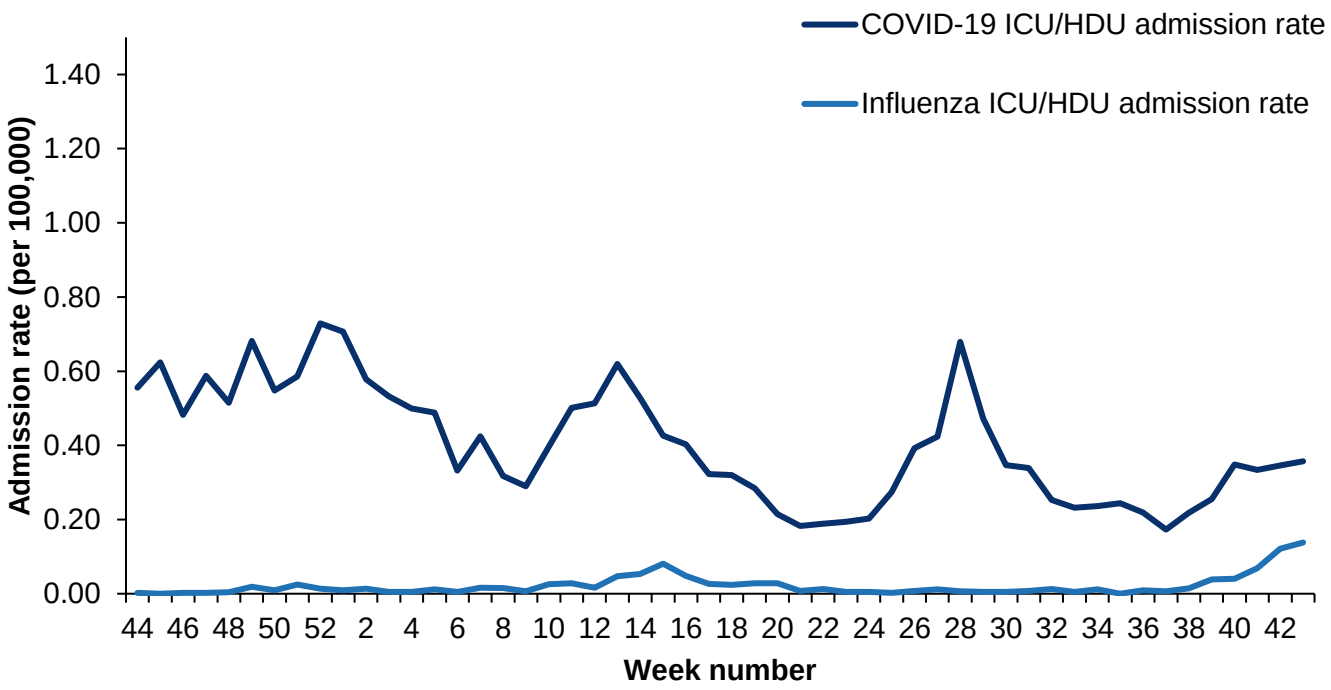
ICU or HDU admissions, SARI Watch

In week 43, the overall weekly ICU or HDU admission rates for COVID-19 slightly increased to 0.36 per 100,000 compared with 0.35 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 75 to 84 year olds.

In week 43, the overall ICU or HDU rate for influenza was 0.14 per 100,000 compared with 0.12 per 100,000 in the previous week. There were 57 new case report of an ICU or HDU admission for influenza in week 43 (2 influenza A(H1N1)pdm09, 4 influenza A(H3N2), 46 influenza A(not subtyped) and 5 influenza B).

Figure 43: 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 97 NHS trusts for week 43

* COVID-19 ICU or HDU admission rate based on 85 NHS trusts for week 43

* SARI Watch data is provisional

Figure 44: Weekly overall influenza ICU or HDU admission rates per 100,000 trust catchment population with MEM thresholds, SARI Watch, England

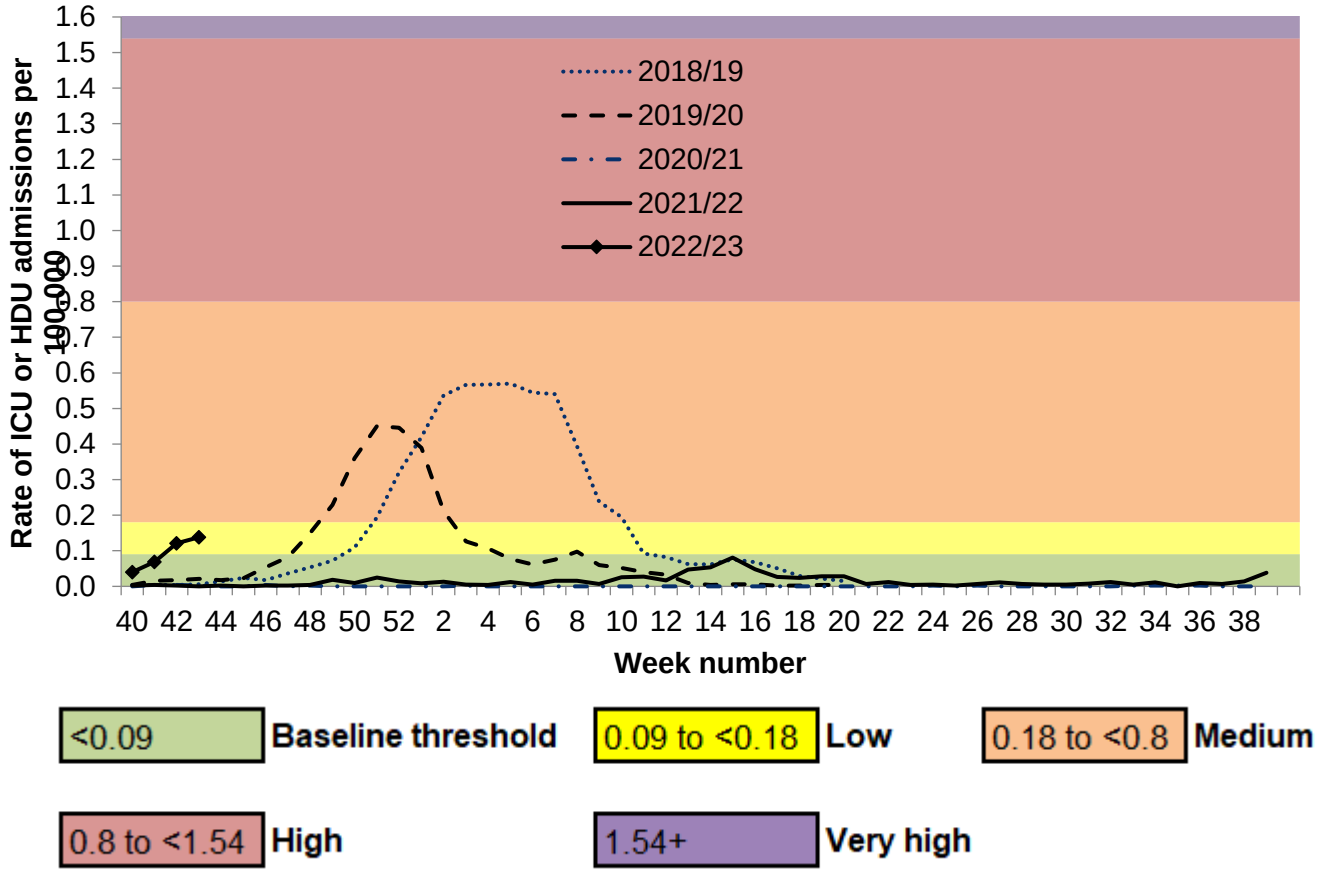


Figure 45: Weekly influenza ICU or HDU admissions by influenza type, SARI Watch, England

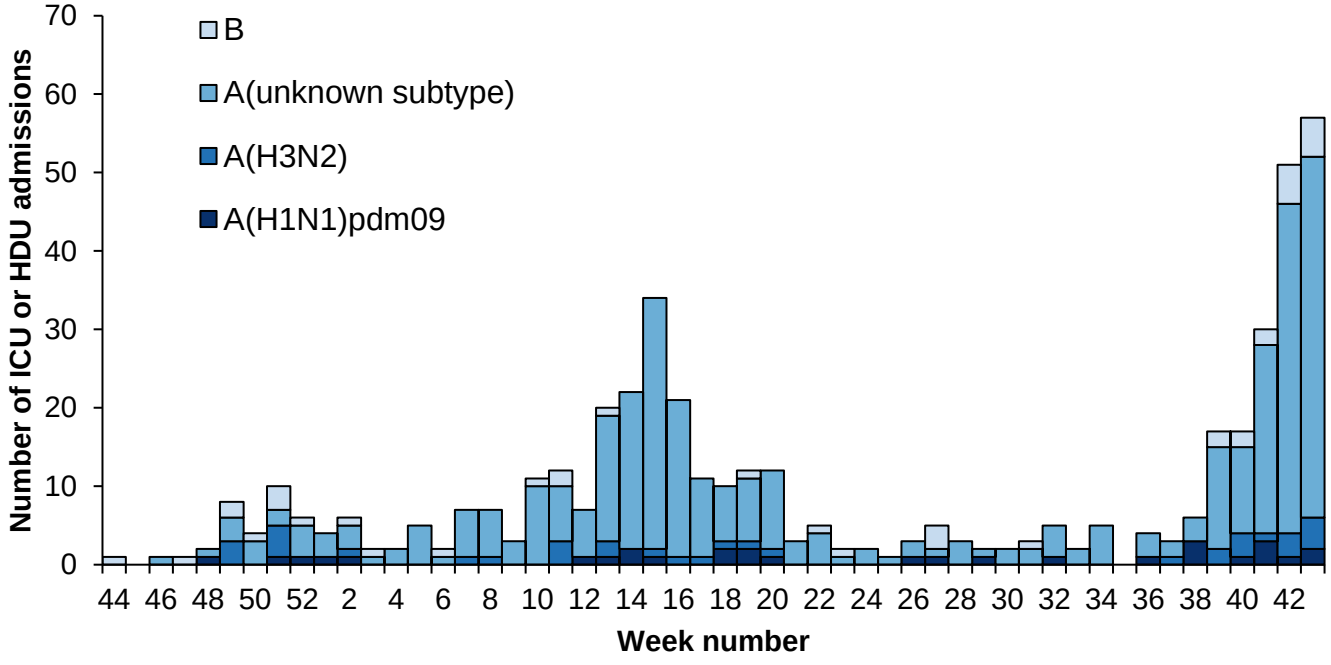
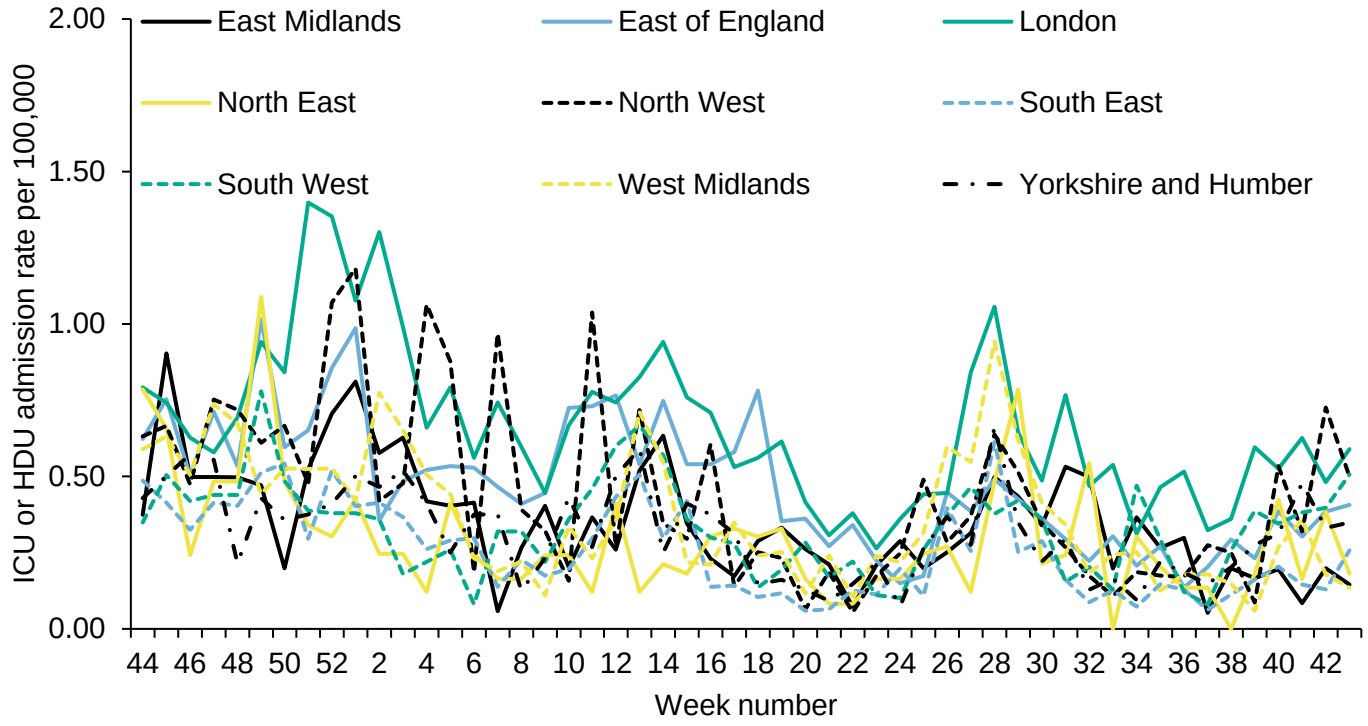


Figure 46: Weekly ICU or HDU admission rate by UKHSA centre for new (a) COVID-19 positive cases and (b) influenza, reported through SARI Watch

(a)



(b)

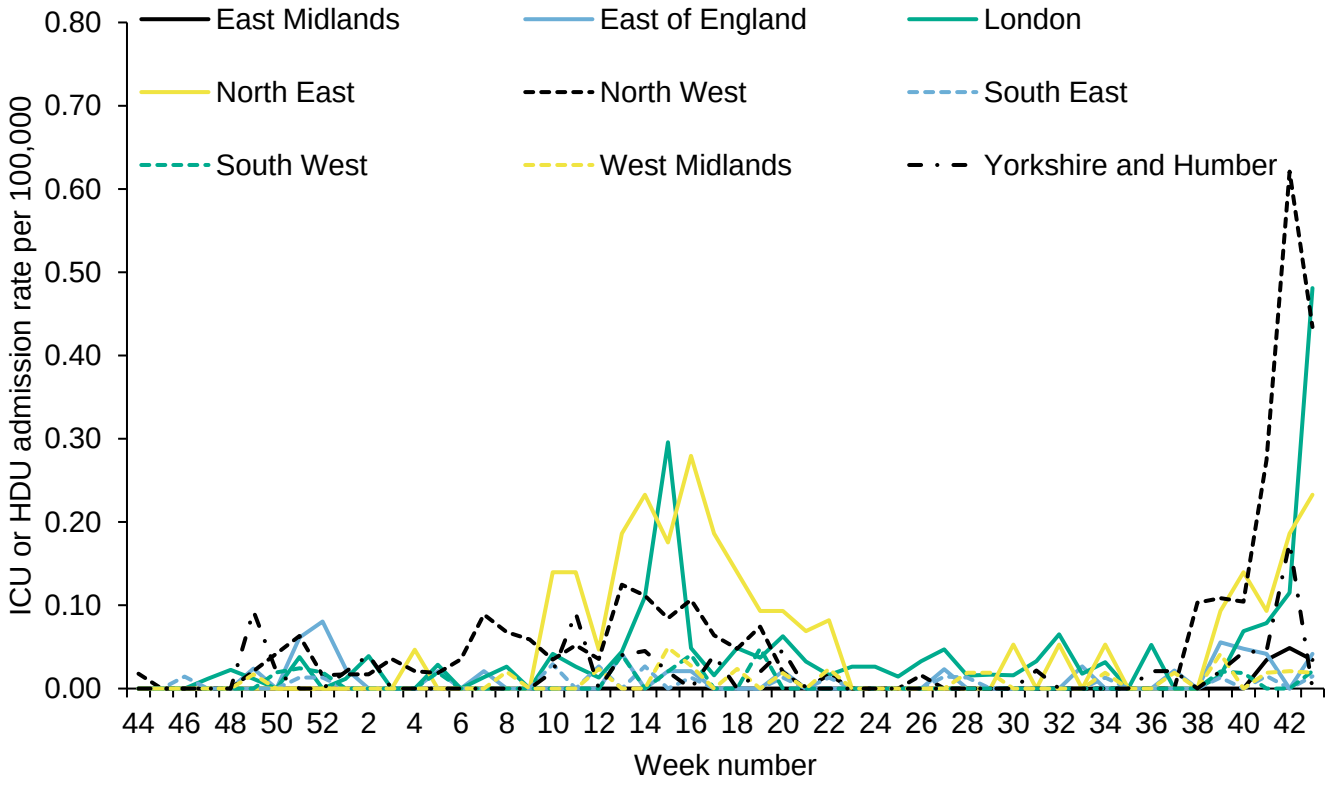
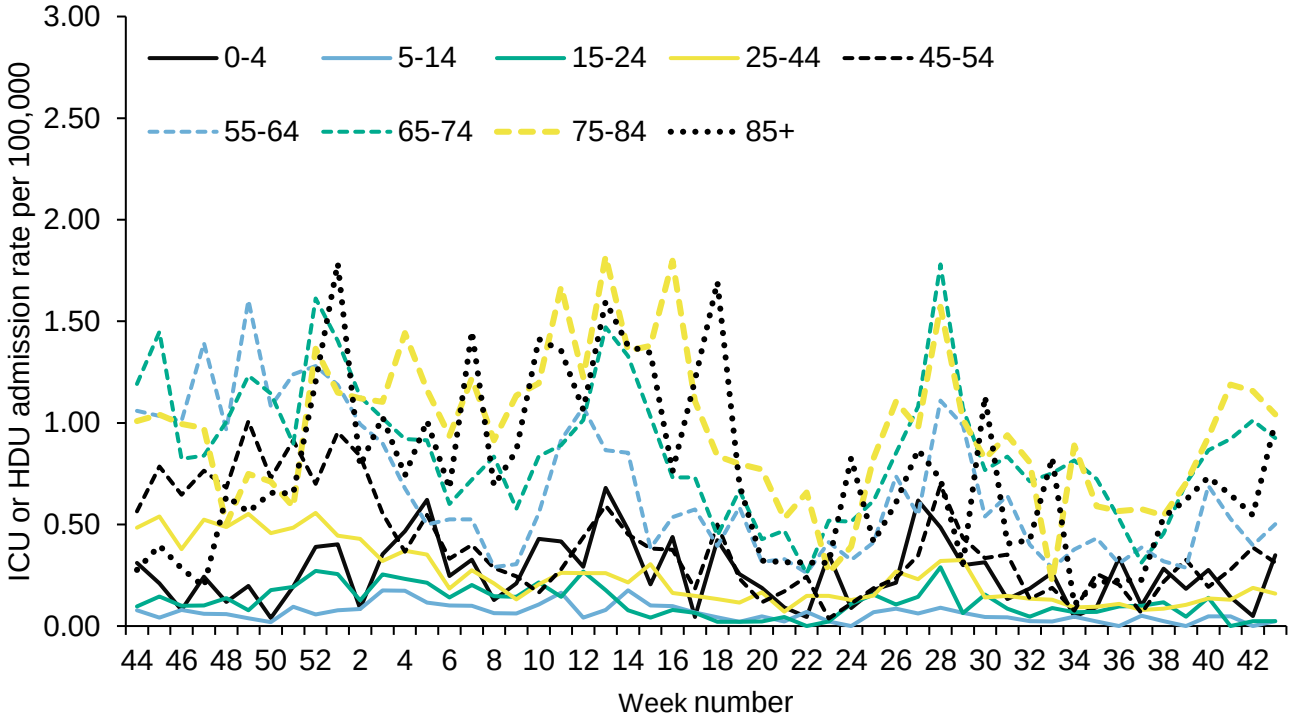
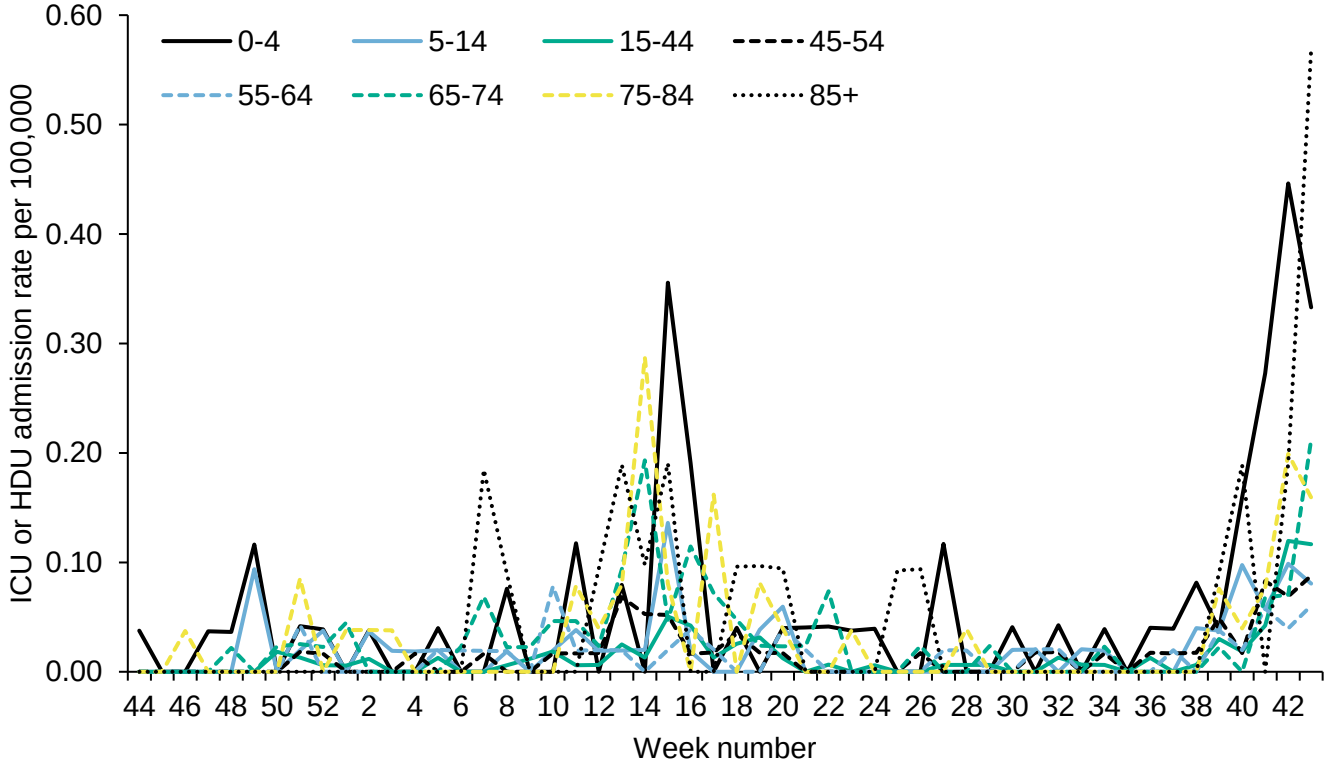


Figure 47: Weekly ICU or HDU admission rate by age group for new (a) COVID-19 positive cases and (b) influenza, reported through SARI Watch

(a)



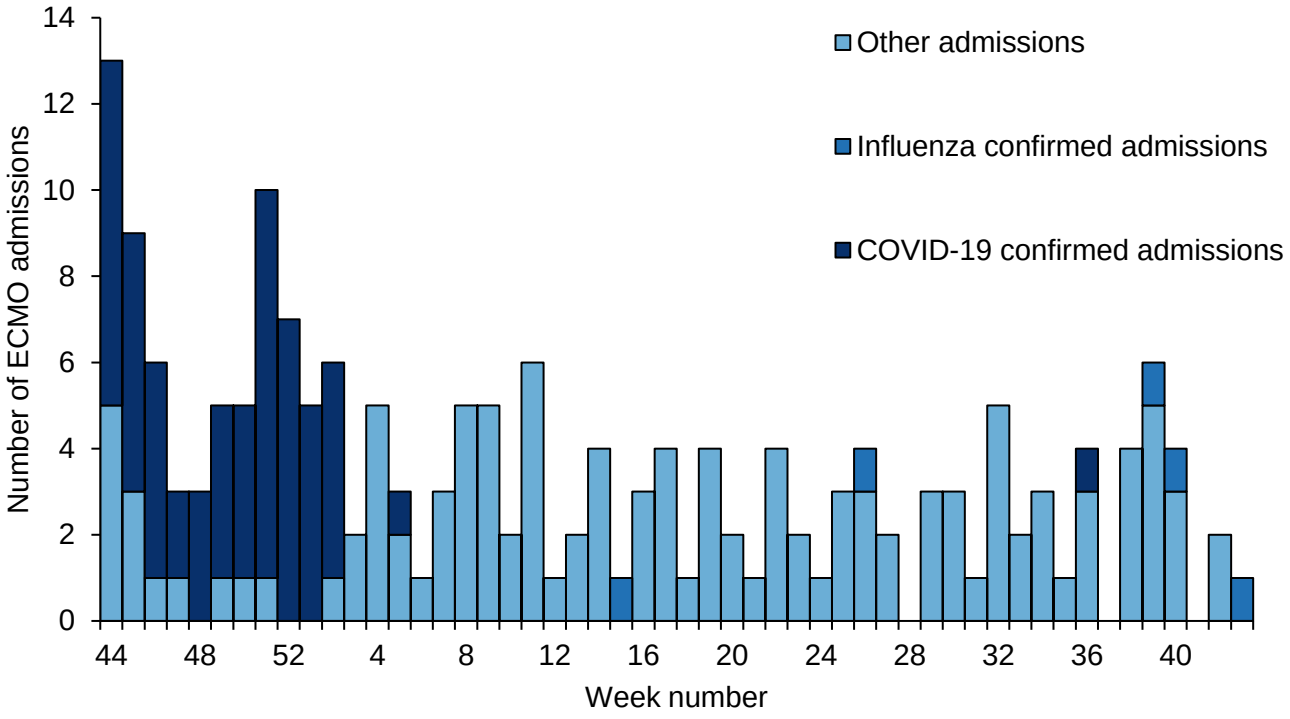
(b)



ECMO, SARI Watch

There was one new laboratory confirmed influenza admission reported in week 43 from the 6 Severe Respiratory Failure (SRF) centres in the UK (Figure 48). No new COVID-19 admissions were reported.

Figure 48: Laboratory confirmed ECMO admissions (COVID-19, influenza and non-COVID-19 confirmed) to Severe Respiratory Failure centres in the UK

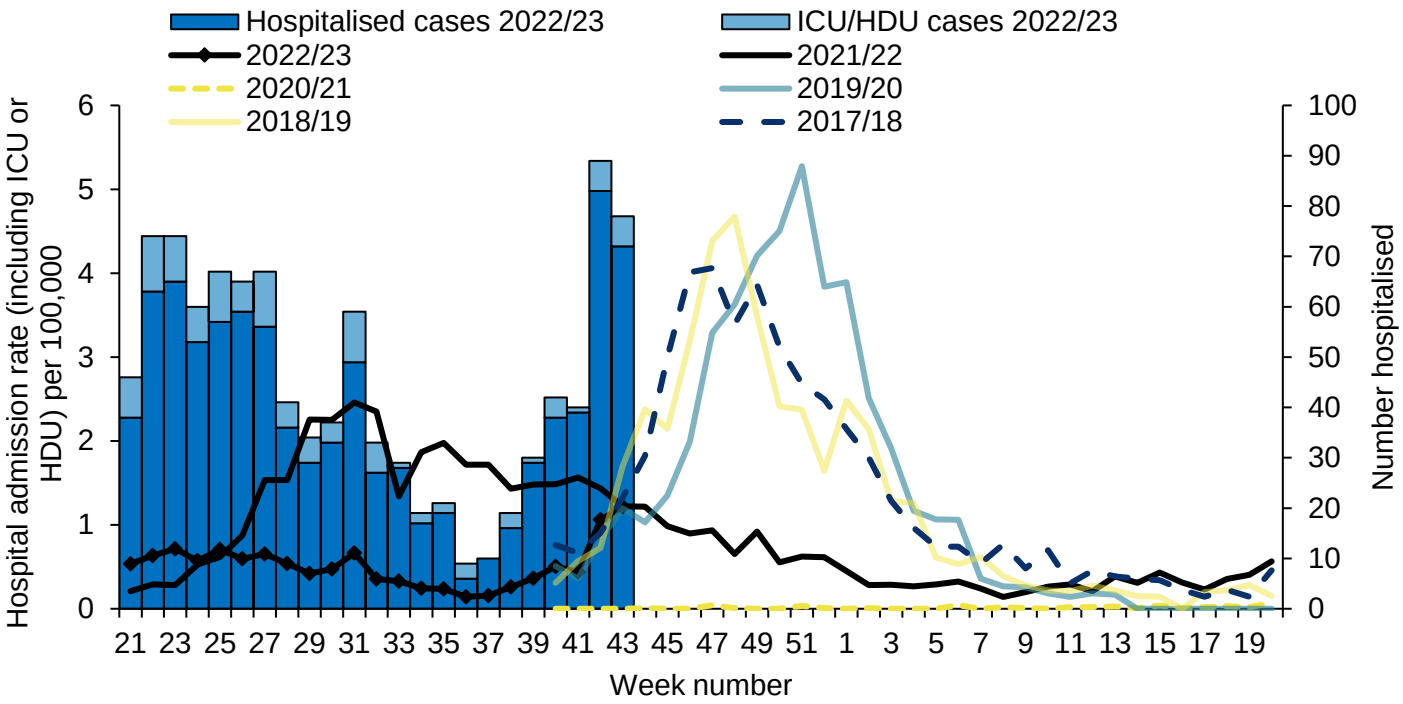


* SARI Watch data is provisional

RSV admissions, SARI Watch

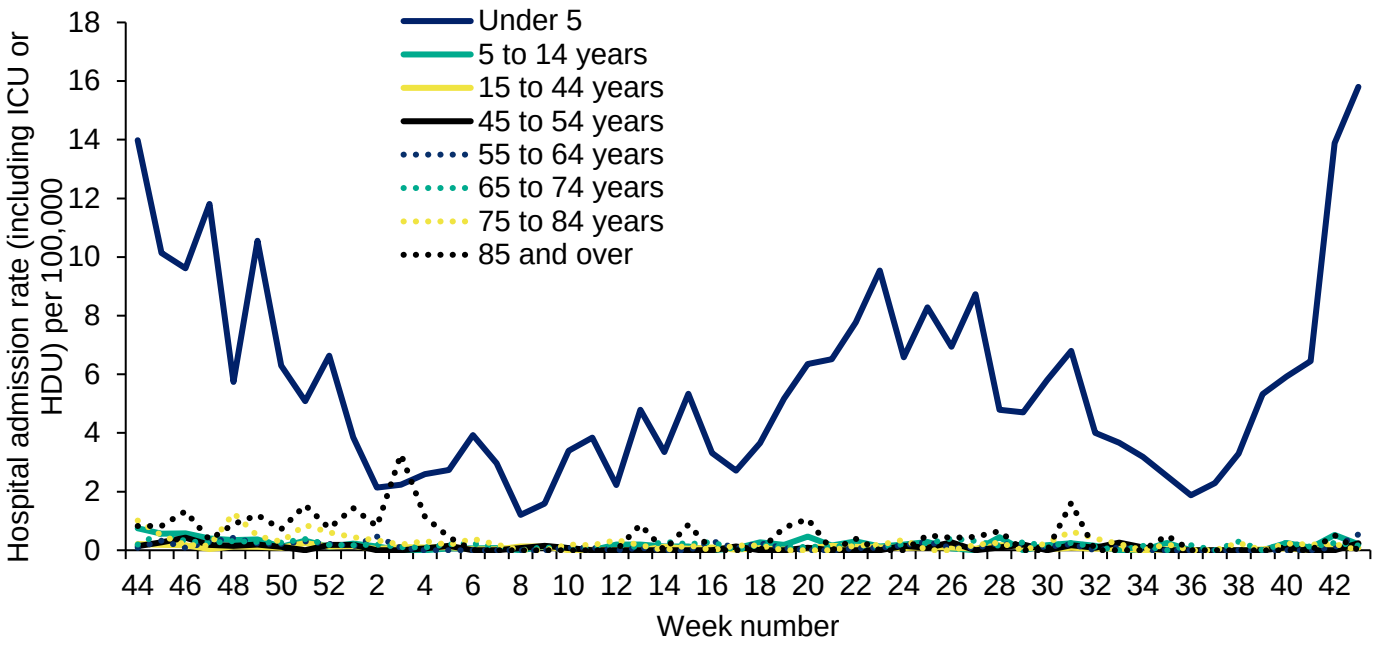
Data on hospitalisations, including ICU or HDU admissions, with respiratory syncytial virus (RSV) are shown below. RSV SARI Watch surveillance is sentinel.

Figure 49: 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 50: 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

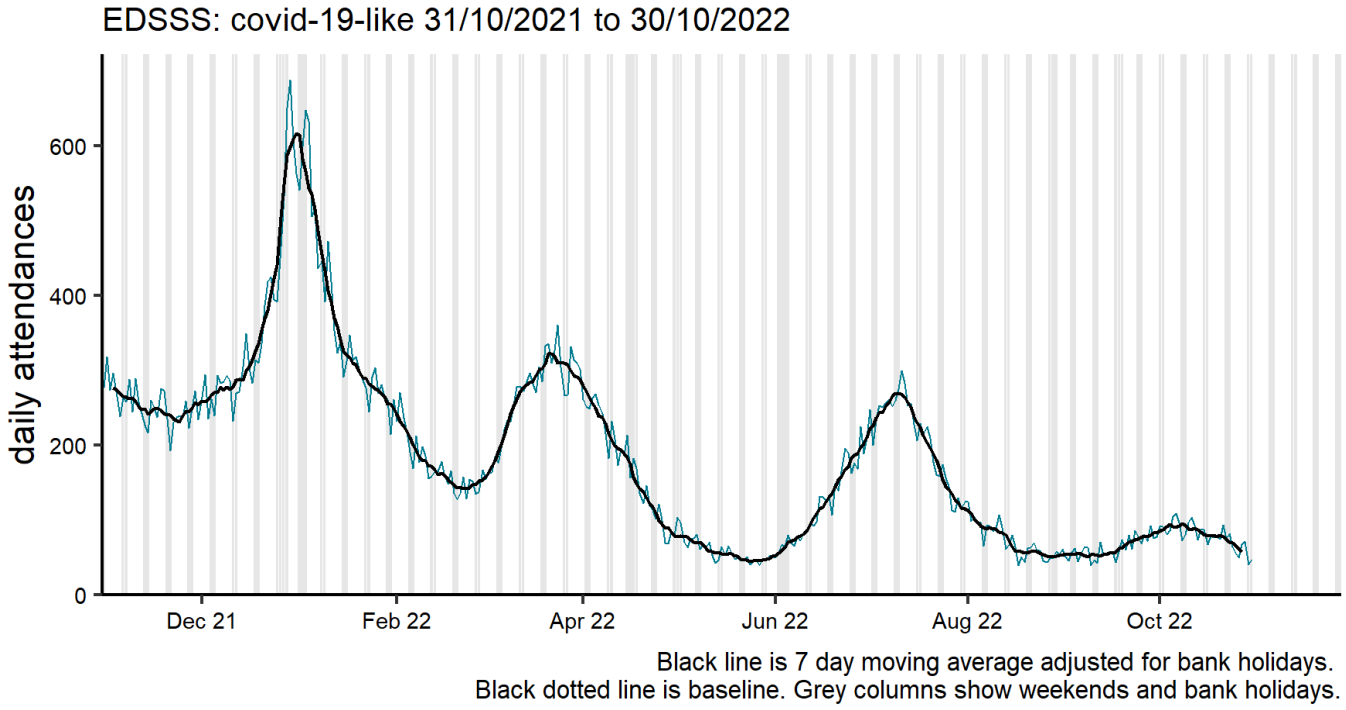
The Emergency Department Syndromic Surveillance System (EDSSS) monitors the daily visits in a network of emergency departments across England.

Up to 30 October, ED attendances as reported by 137 EDs for acute respiratory infection started to decrease apart of children under 1 years old. ED attendances for COVID-19-like-infections decreased nationally. ED attendances for influenza-like illness have increased nationally (Figures 51, 52 and 53).

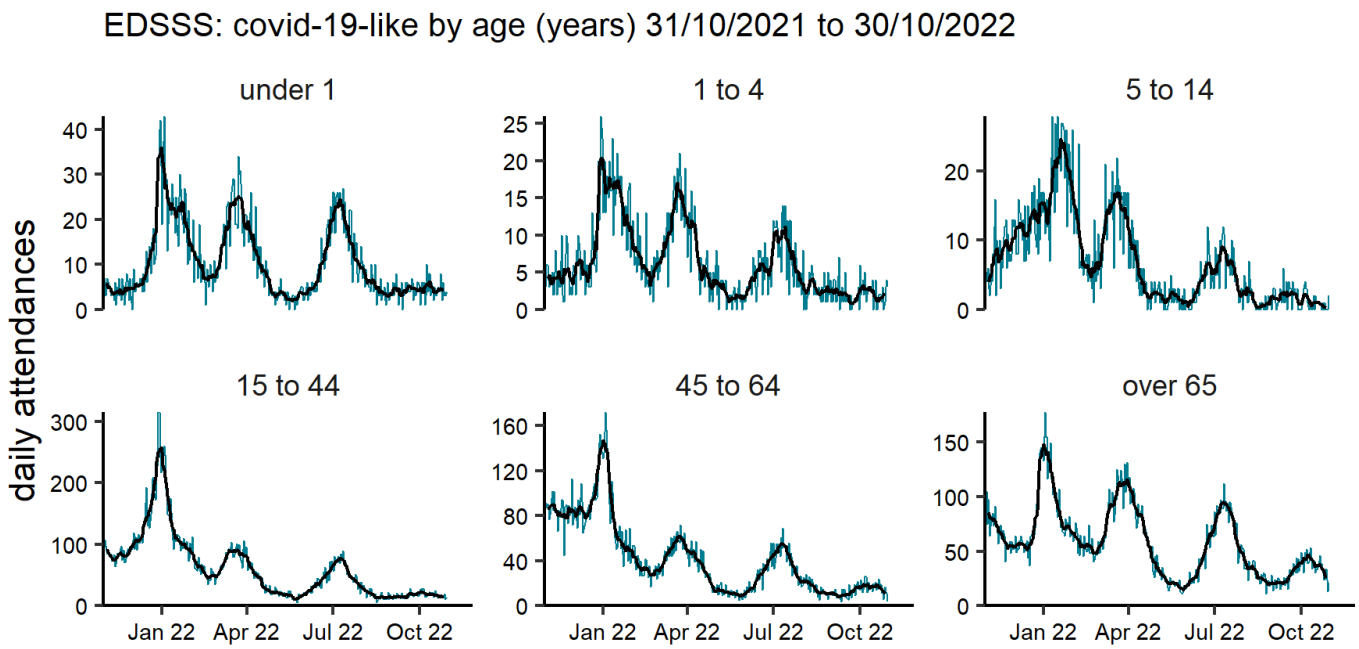
Please note: the COVID-19-like ED indicator is an underestimation of the number of COVID-19 attendances as it only includes attendances with a COVID-19-like diagnosis as their primary diagnosis. The EDSSS COVID-19-like indicator should therefore be used to monitor trends in ED attendances and not to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

Figure 51: Daily ED attendances for COVID-19-like infections, England (a) nationally, (b) by age group and (c) by UKHSA centre

(a)

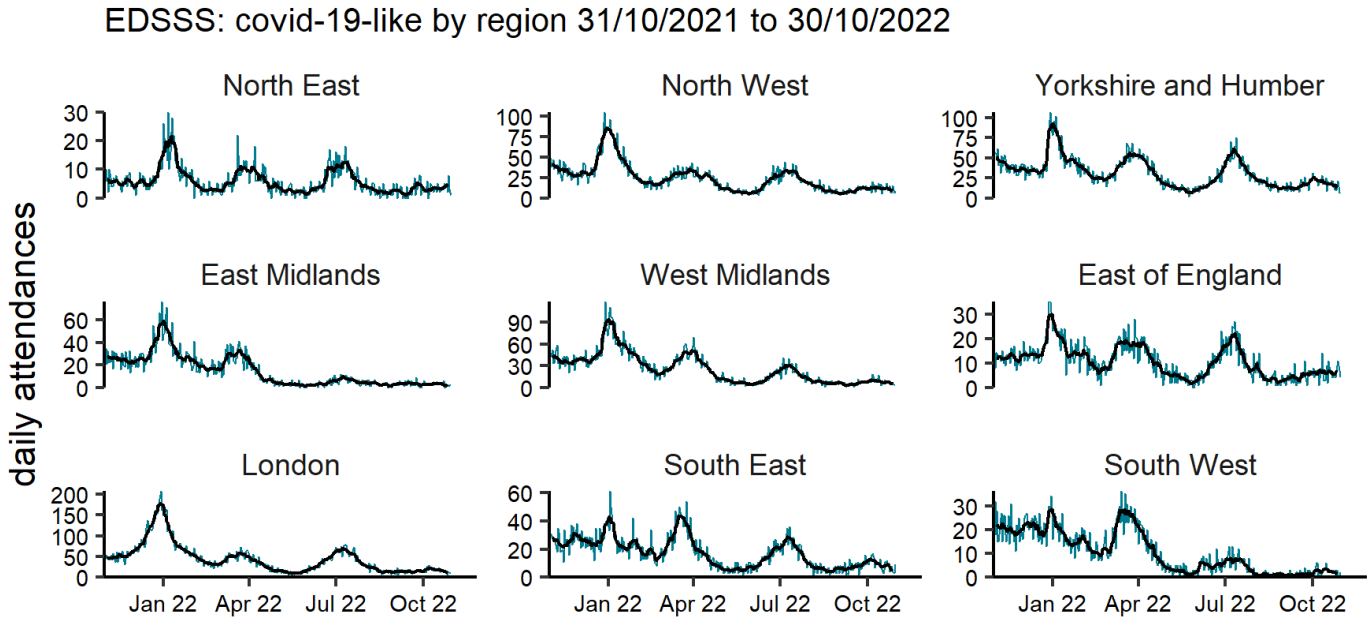


(b)



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

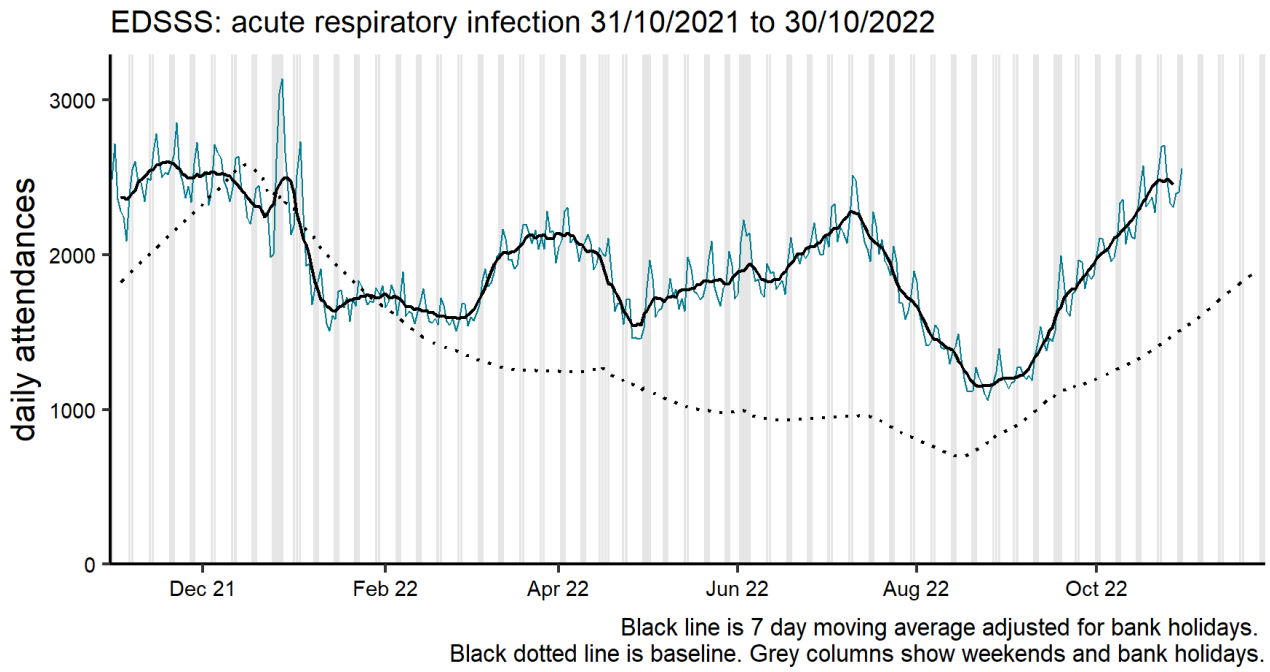
(c)



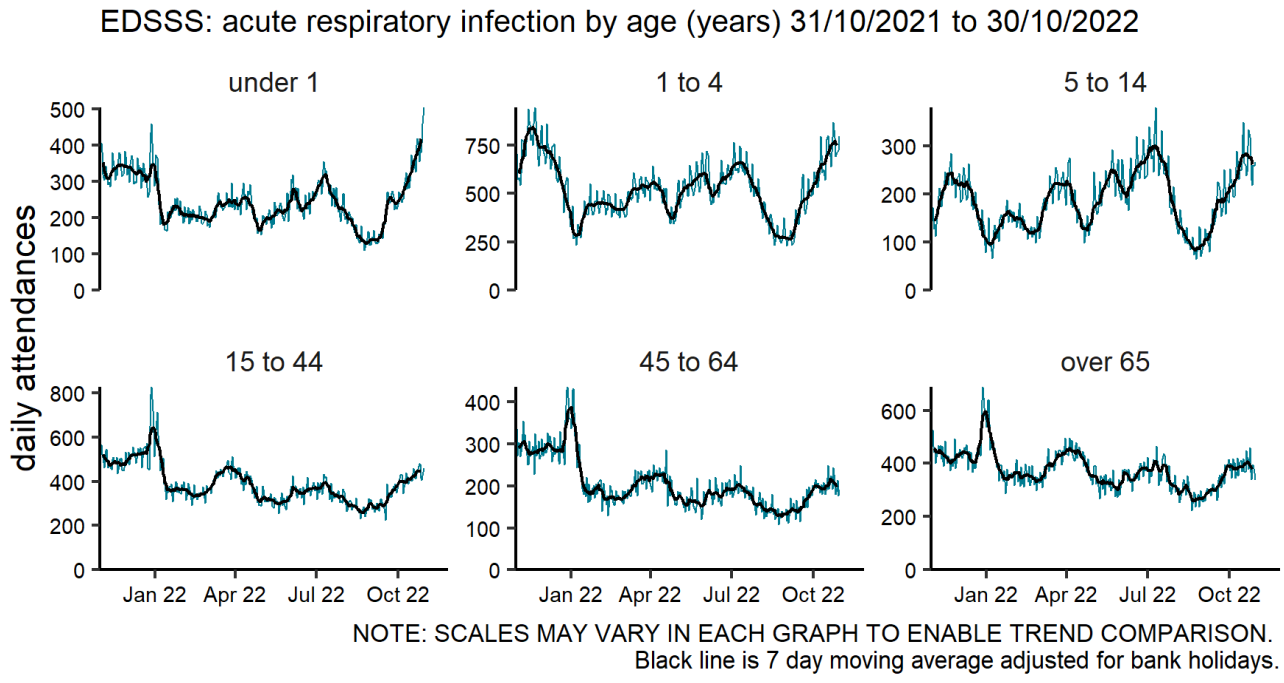
NOTE: SCALES MAY VARY IN EACH GRAPH TO ENABLE TREND COMPARISON.
Black line is 7 day moving average adjusted for bank holidays.
Black dotted line is baseline.

Figure 52: Daily ED attendances for acute respiratory infections, England (a) nationally, (b) by age group and (c) by UKHSA centre

(a)



(b)



(c)

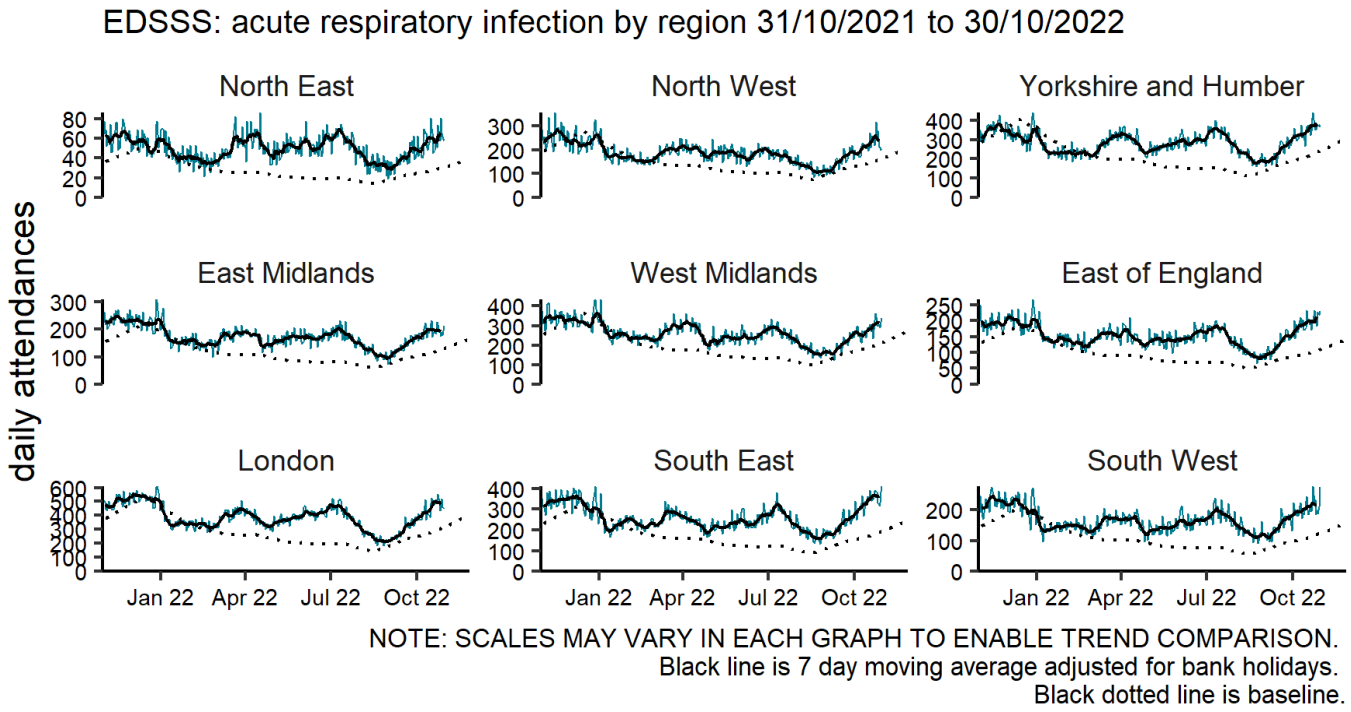
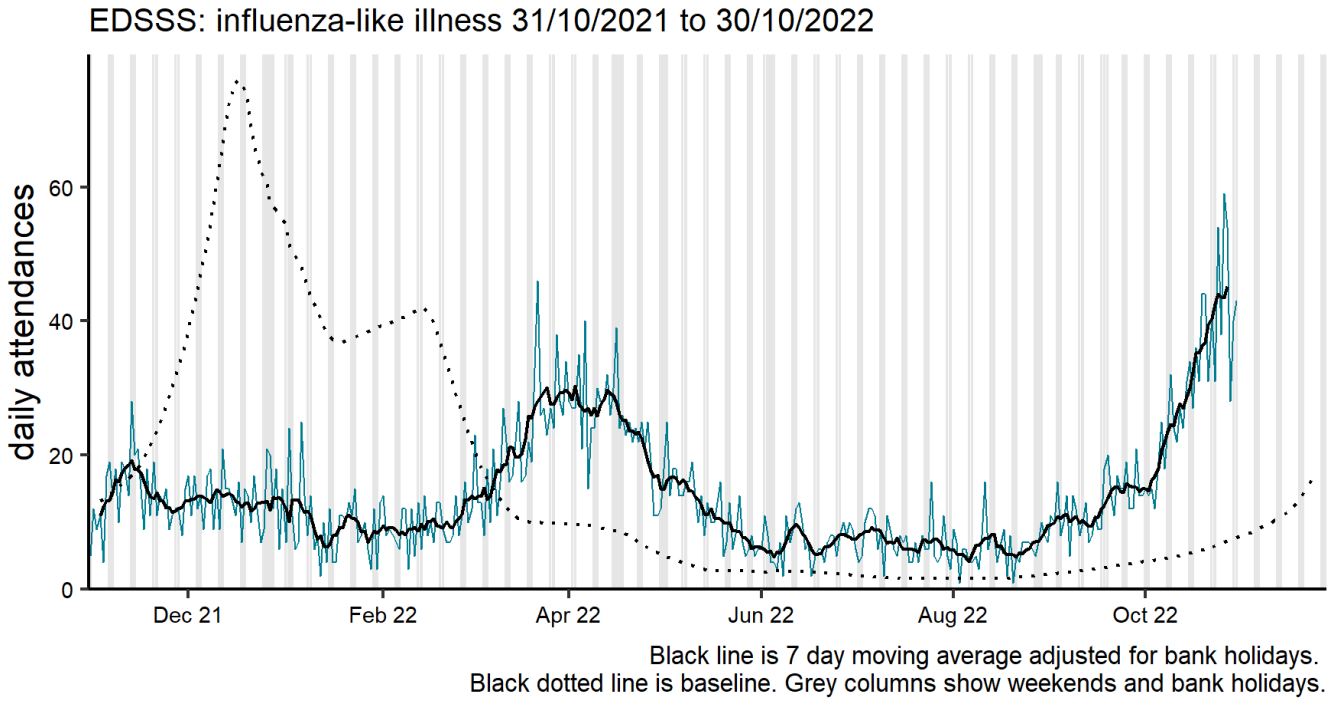
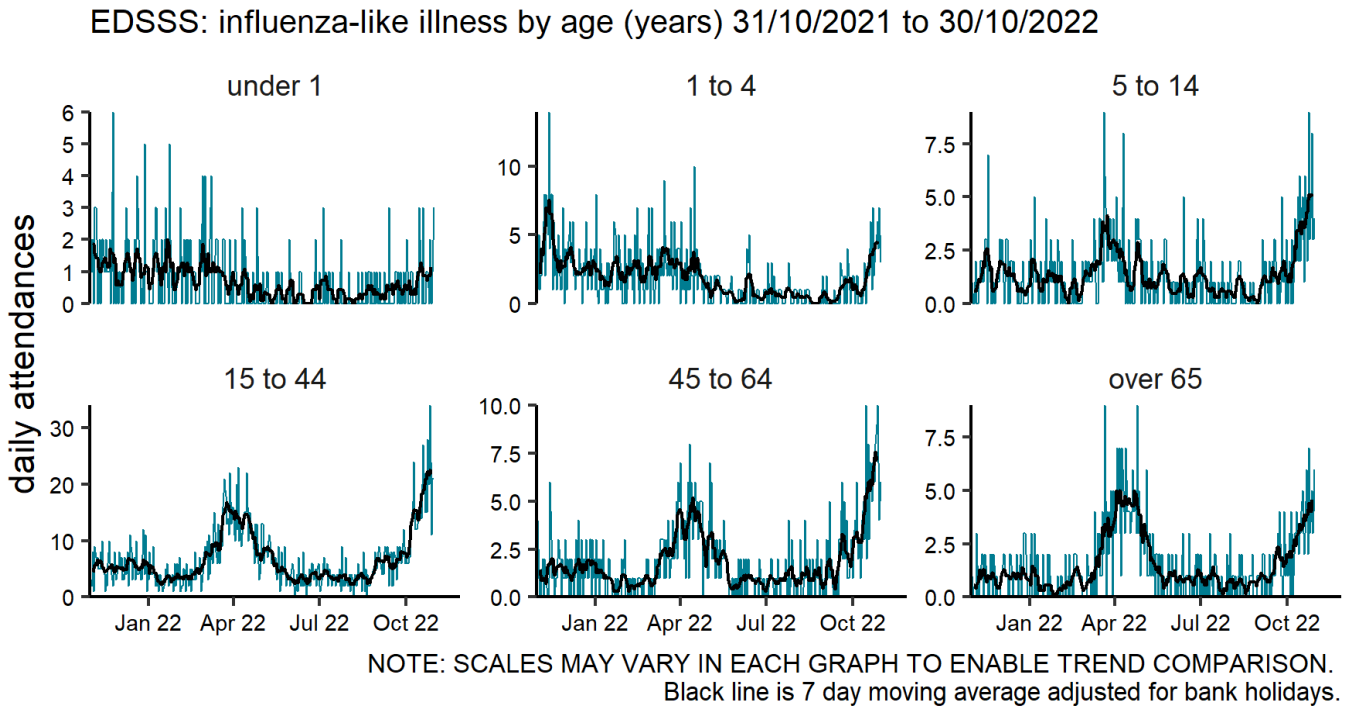


Figure 53: Daily ED attendances for influenza-like illness, England (a) nationally, (b) by age group and (c) by UKHSA centre

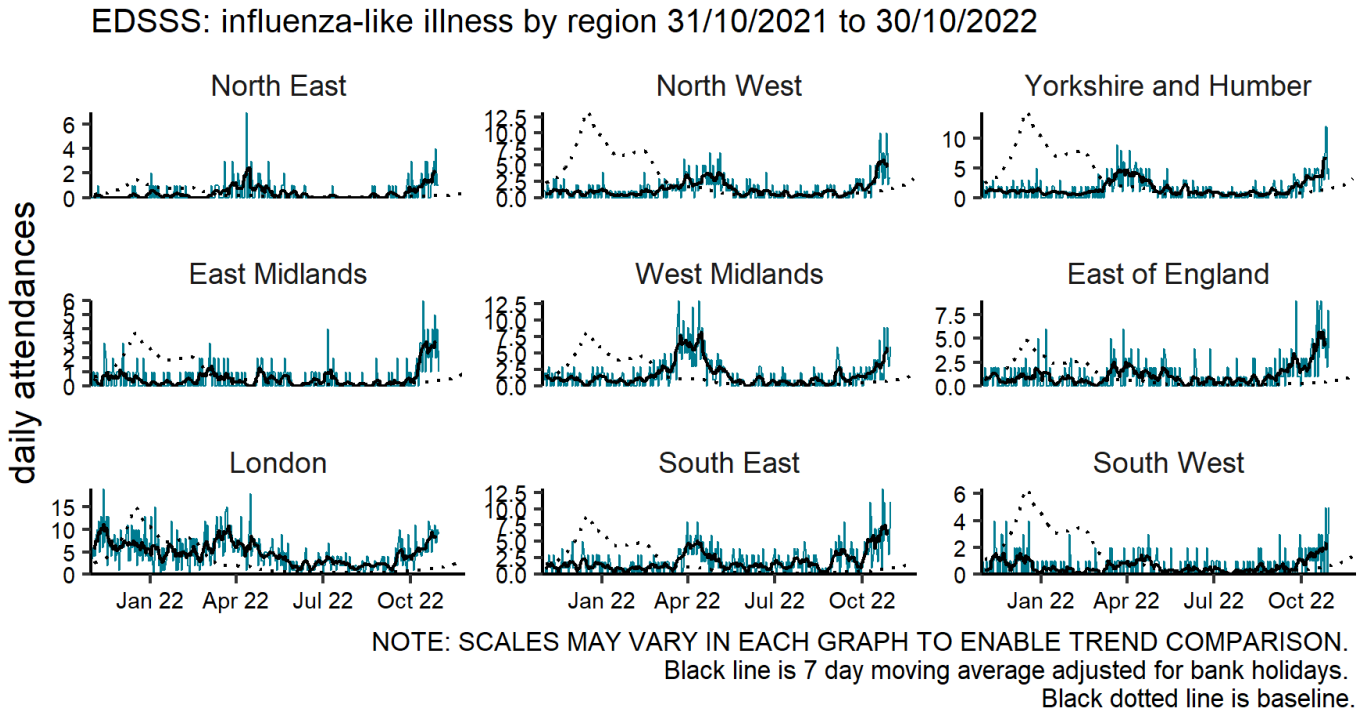
(a)



(b)


EDSSS: influenza-like illness by age (years) 31/10/2021 to 30/10/2022
under 1
1 to 4
5 to 14
15 to 44
45 to 64
over 65
daily attendances
Jan 22
Apr 22
Jul 22
Oct 22
NOTE: SCALES MAY VARY IN EACH GRAPH TO ENABLE TREND COMPARISON.
Black line is 7 day moving average adjusted for bank holidays.

(c)

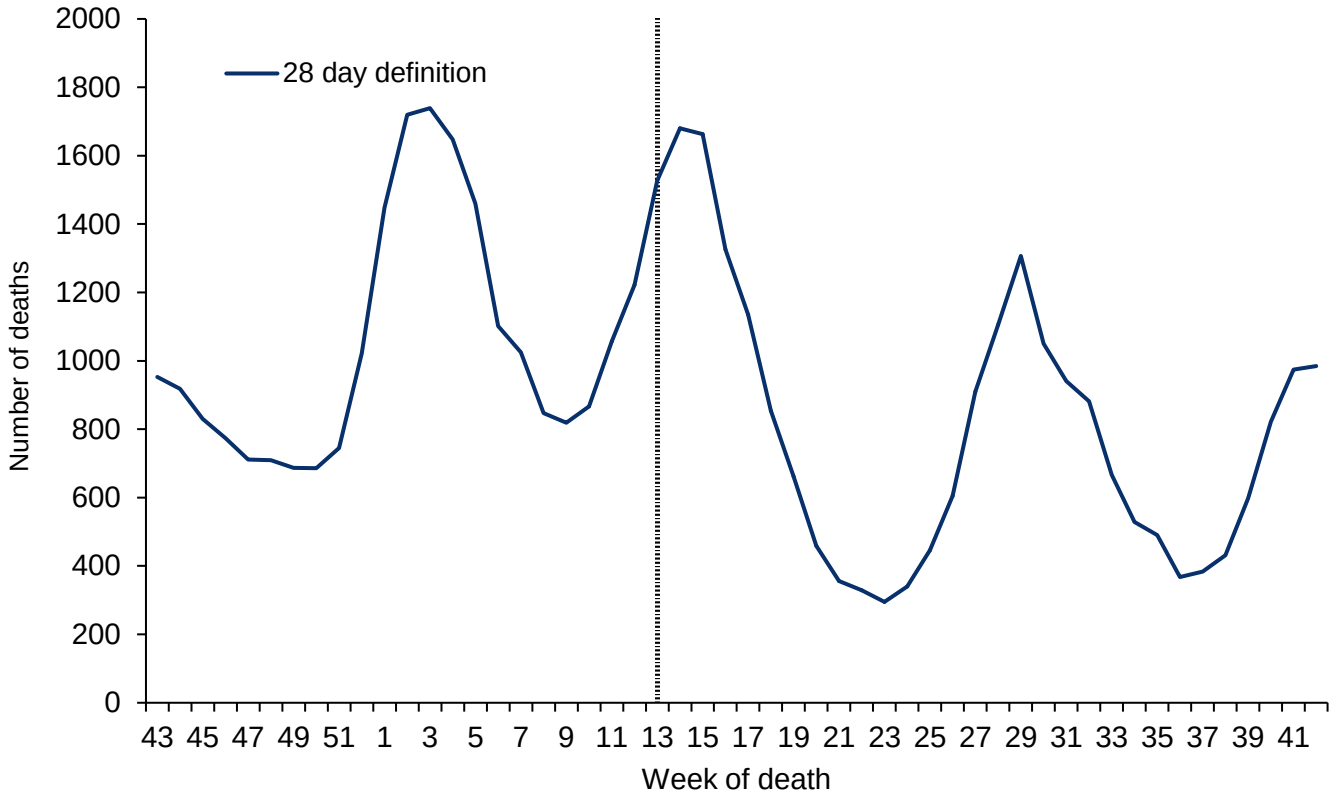

EDSSS: influenza-like illness by region 31/10/2021 to 30/10/2022
North East
North West
Yorkshire and Humber
East Midlands
West Midlands
East of England
London
South East
South West
daily attendances
Jan 22
Apr 22
Jul 22
Oct 22
NOTE: SCALES MAY VARY IN EACH GRAPH TO ENABLE TREND COMPARISON.
Black line 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.

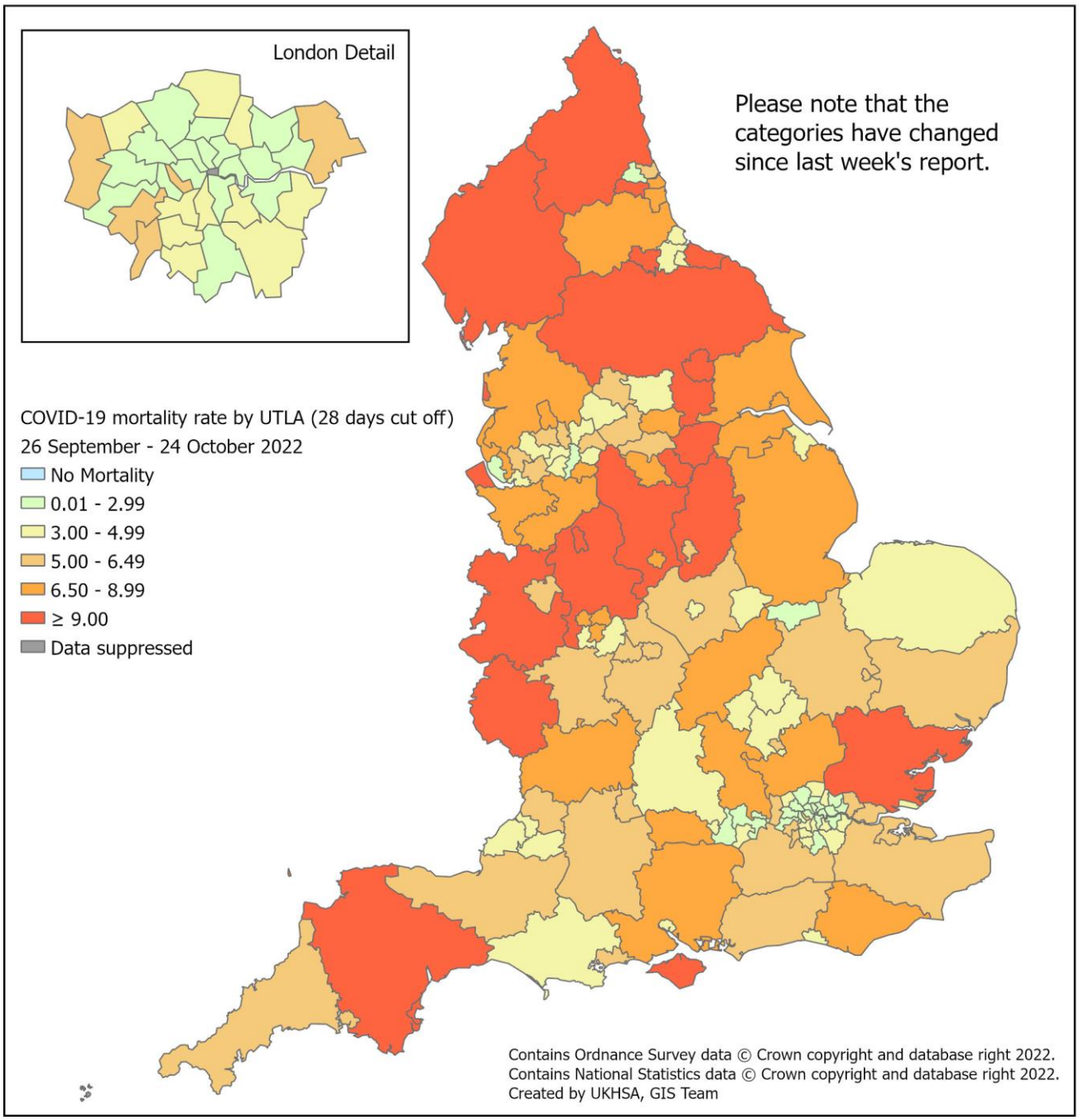
Figure 54: Number of deaths by week of death and time since a positive COVID-19 test (28 day definition), England



* 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 55: Cumulative mortality rate of COVID-19 cases per 100,000 population tested under Pillars 1 and 2 for the weeks 39 to 42 by 28 day definition



Daily excess all-cause mortality (England)

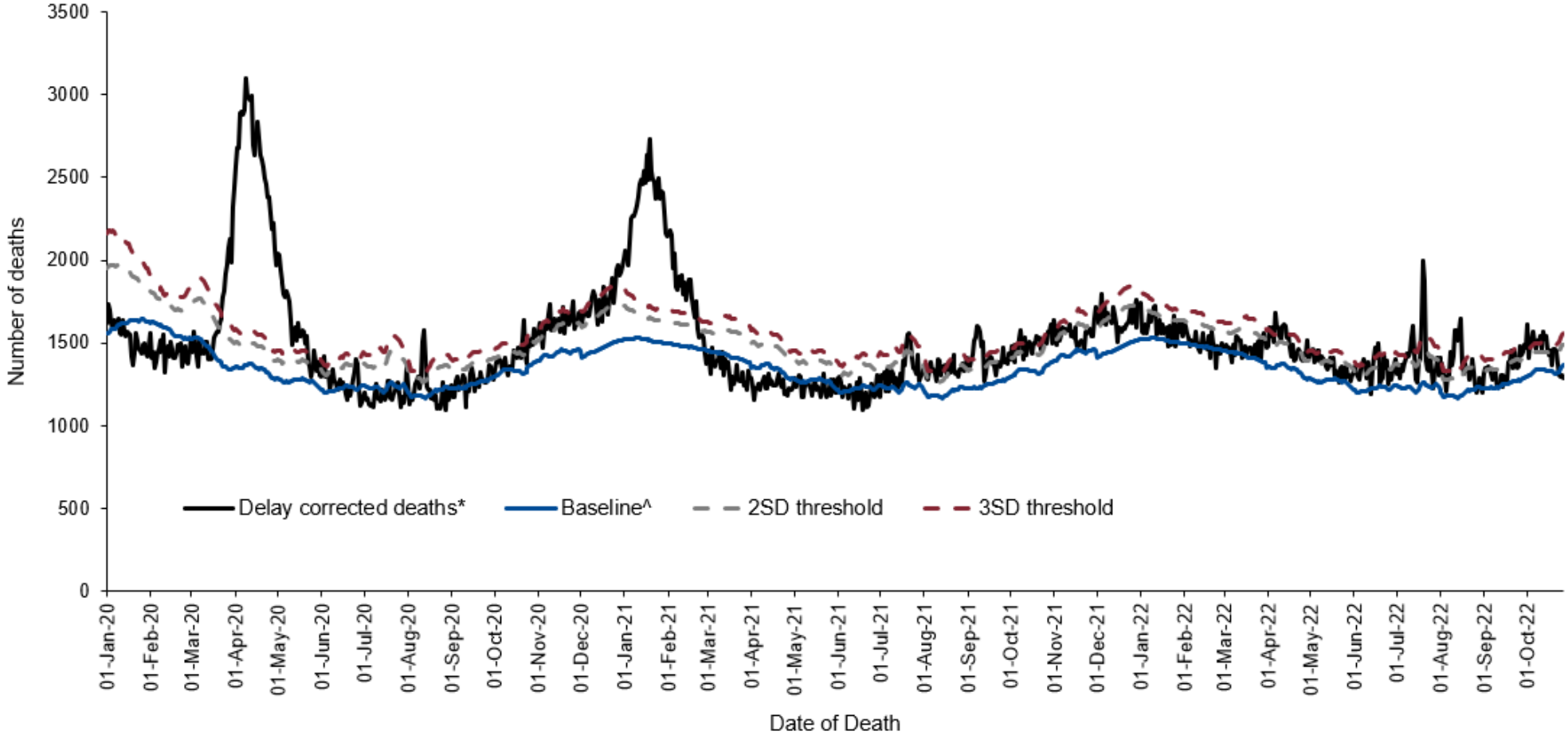
Deaths occurring from 1 January 2020 to 26 October 2022 were assessed to calculate the daily excess above a baseline using age-group and region specific all cause deaths as provided daily by the General Register Office (GRO). The deaths were corrected to allow for delay to registration based on past 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 56).

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 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.

No excess all-cause mortality was observed in week 42 overall. 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.

Figure 56: Daily excess all-cause deaths in all ages, England, 1 January 2020 to 26 October 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

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.

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

(a)

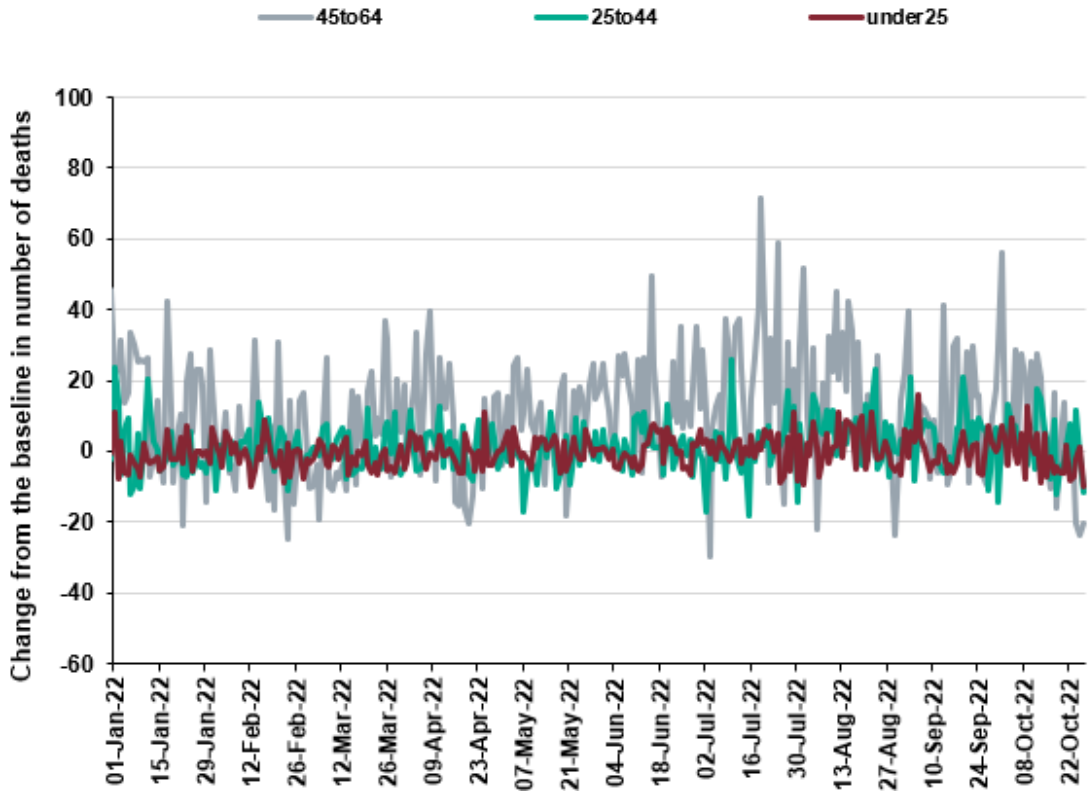
Age Group	Excess detected in week 42 2022?	Weeks in excess from week 10 to 53 2020	Weeks in excess from week 1 to 52 2021	Weeks in excess from week 1 2022
All	x	13 to 21, 33, 43, 45, 50, 52 to 53	01 to 07, 29, 31 to 32, 35 to 36, 40 to 44, 48	14 to 15, 18, 23 to 24, 27 to 29, 32 to 33, 39 to 41
under 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
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, 38 to 40
85+	x	13 to 21, 33, 53	01 to 07, 31, 36	28 to 29, 32, 39

(b)

UKHSA Centres	Excess detected in week 42 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	32
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
South East	x	13 to 21, 33, 50 to 53	01 to 07, 36, 41, 49	14, 32, 40 to 41
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 to 14, 28 to 29, 32
Yorkshire and Humber	x	14 to 21, 23, 43 to 50	02 to 04, 32, 35 to 36	15, 29, 32

Figure 57: Daily excess all-cause deaths by age group, England, 1 January to 26 October 2022

(a)



(b)

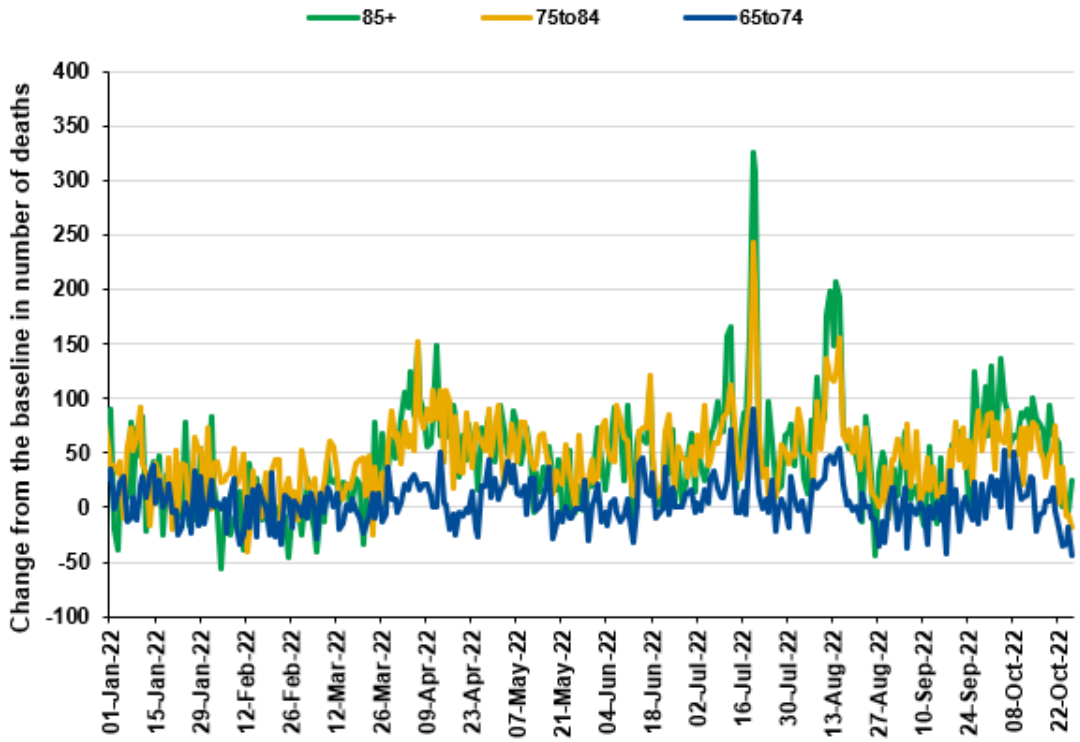
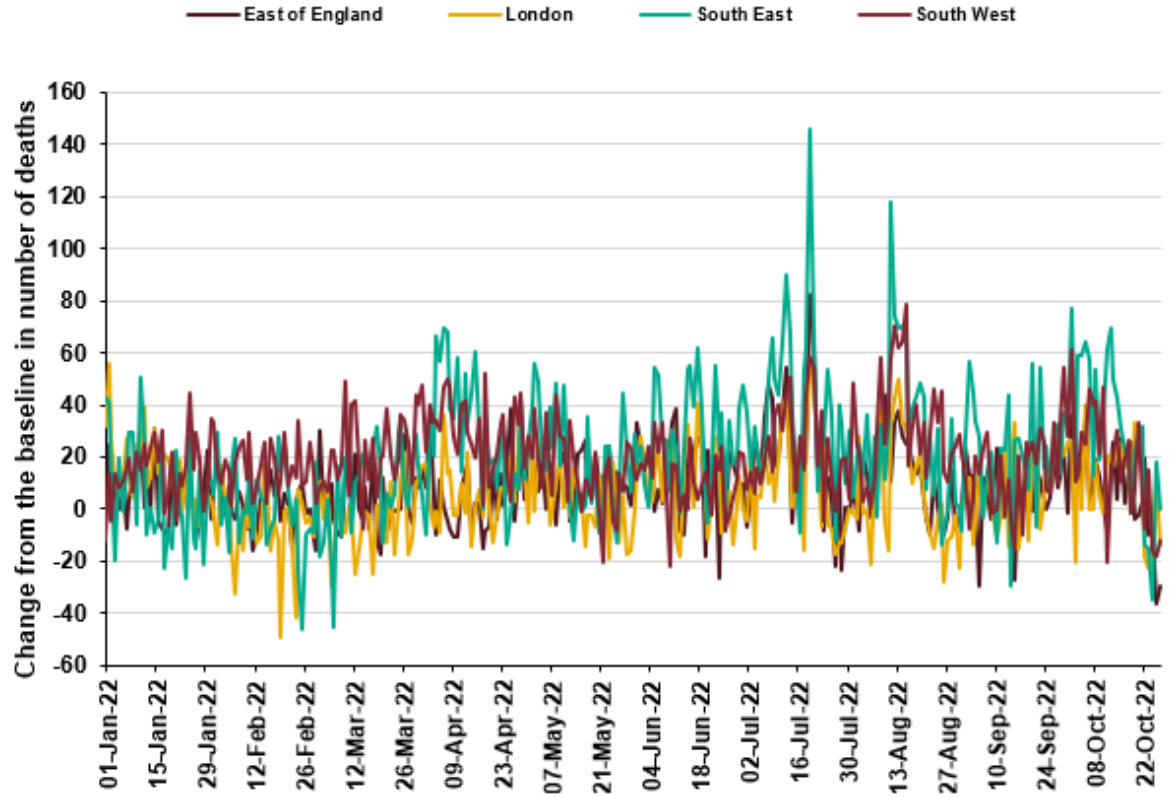
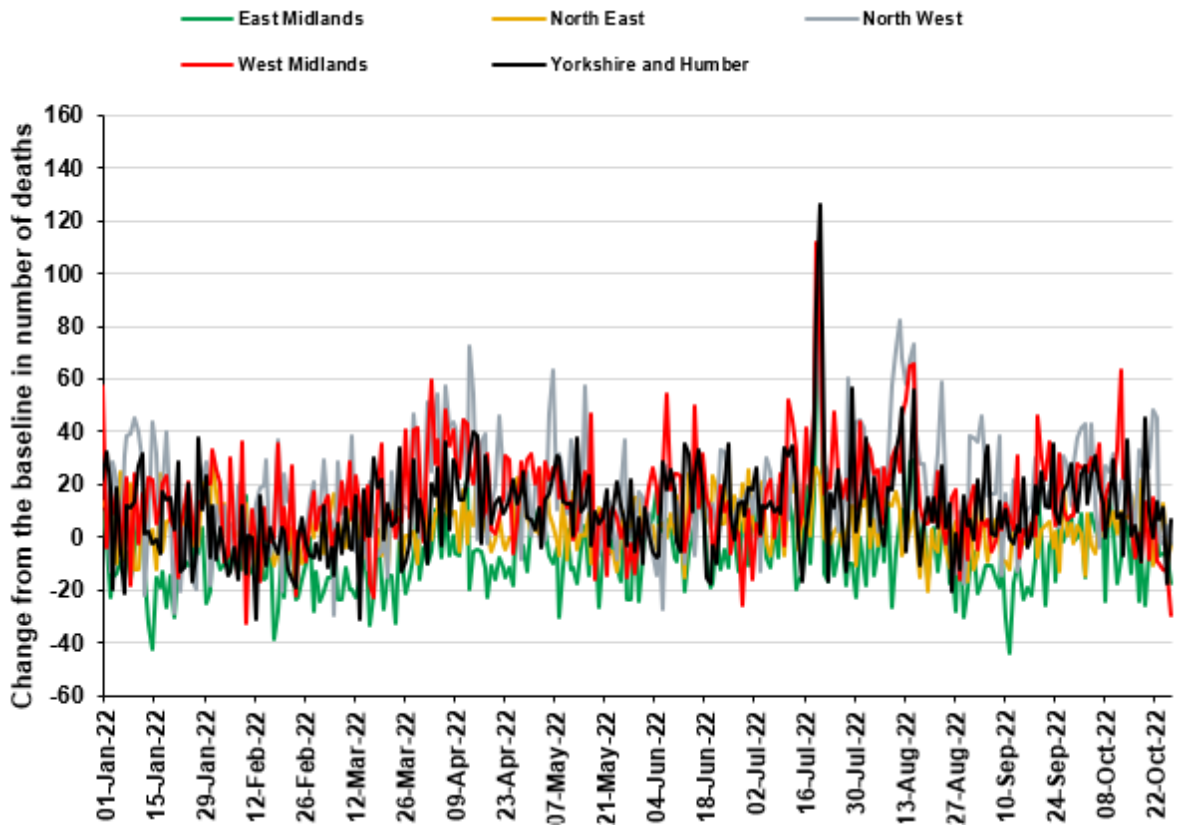


Figure 58: Daily excess all-cause deaths by UKHSA centre, England, 1 January to 26 October 2022

(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 44, 2022, the UKHSA Respiratory Virus Unit have genetically characterised 111 influenza A viruses (52 A(H3N2) and 59 A(H1N1)pdm09 viruses) and 3 influenza B viruses that were detected since week 34 2022 (week commencing 22 August 2022), by sequencing of the haemagglutinin (HA) gene.

The 52 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.

Fifty-nine influenza A(H1N1)pdm09 viruses have been characterised to date this season, all belonging 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 40 2022 have been analysed. No viruses with known markers of resistance to neuraminidase inhibitors were detected in 46 A(H3N2), 59 A(H1N1)pdm09 and 3 Influenza B NA sequences analysed. No viruses with known markers of resistance to baloxavir were detected in 39 A(H3N2), 51 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)	46	0	39	0
A(H1N1)pdm09	59	0	51	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.

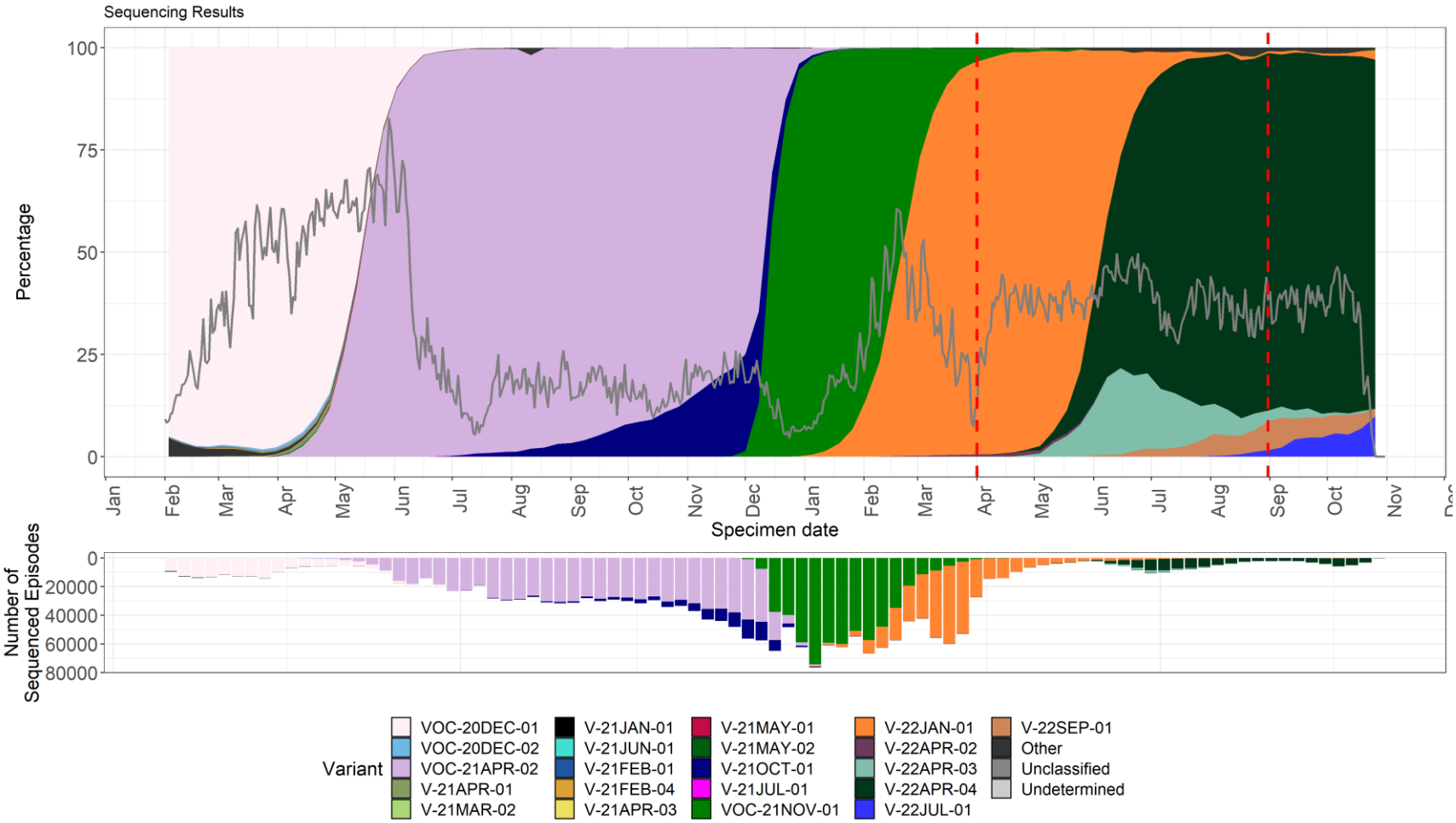
Detailed surveillance of particular variants of concerns can be found in recent technical briefings.

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 57.

Of the sequenced episodes from 01 February 2022 to 1 November 2022, 2.3% were BA.2 (V-22JAN-01), 0.3% were BA.1 (VOC-21NOV-01), 1.8% were BA.4.6 (V-22SEP-01), 85.4% were BA.5 (V-22APR-04), 9.9% were BA.2.75 (V-22JUL-01), and 0.3% were classified as Other.

Figure 59. Prevalence of SARS-CoV-2 variants amongst available sequences episodes for England from 1 February, as of 1 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 43 2022, BA.5 continues to be the predominant 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 43 (week ending 16 October 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	15-08-2022
VOC-21NOV-01	Omicron BA.1	19	23-10-2022
V-22JAN-01	Omicron BA.2	252	25-10-2022
V-22APR-03	Omicron BA.4	854	22-10-2022
V-22APR-04	Omicron BA.5	34871	26-10-2022
V-22JUL-01	Omicron BA.2.75	1580	26-10-2022
V-22SEP-01	Omicron BA.4.6	1977	24-10-2022

*****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 43 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 (%)
S. pneumoniae	Penicillin	1,466	87
	Macrolides	1,629	82
	Tetracycline	1,539	81
H. influenzae	Amoxicillin or ampicillin	7,068	44
	Co-amoxiclav	8,232	49
	Macrolides	1,706	4
	Tetracycline	8,441	98
S. aureus	Methicillin	4,256	93
	Macrolides	5,085	70
MRSA	Clindamycin	217	49
	Tetracycline	257	74
MSSA	Clindamycin	2,921	76
	Tetracycline	3,562	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

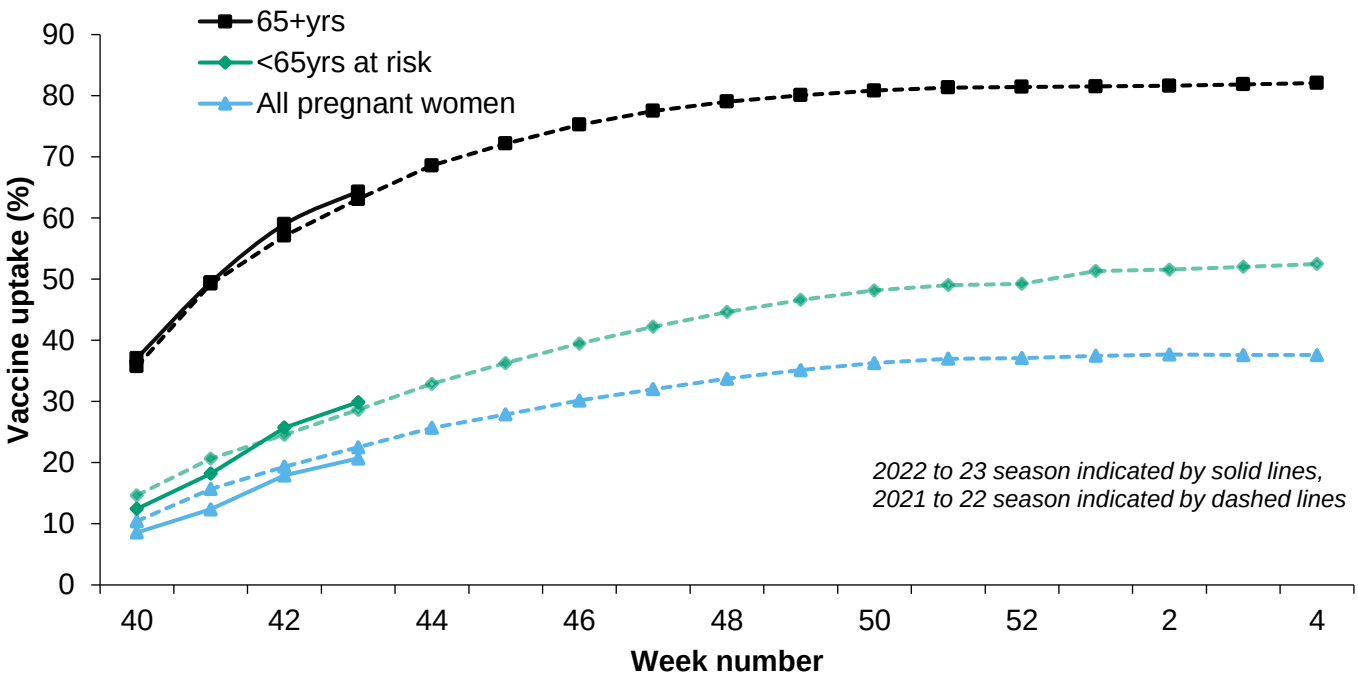
Influenza vaccine uptake in GP patients

Up to week 43 of 2022, in 89.3% 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:

- 29.9% in under 65 years in a clinical risk group
- 20.7% in all pregnant women
- 64.3% in all 65 year olds and over
- 20.5% in those aged 50 to 64 who are not in a clinical risk group

Weekly vaccine coverage data are provisional.

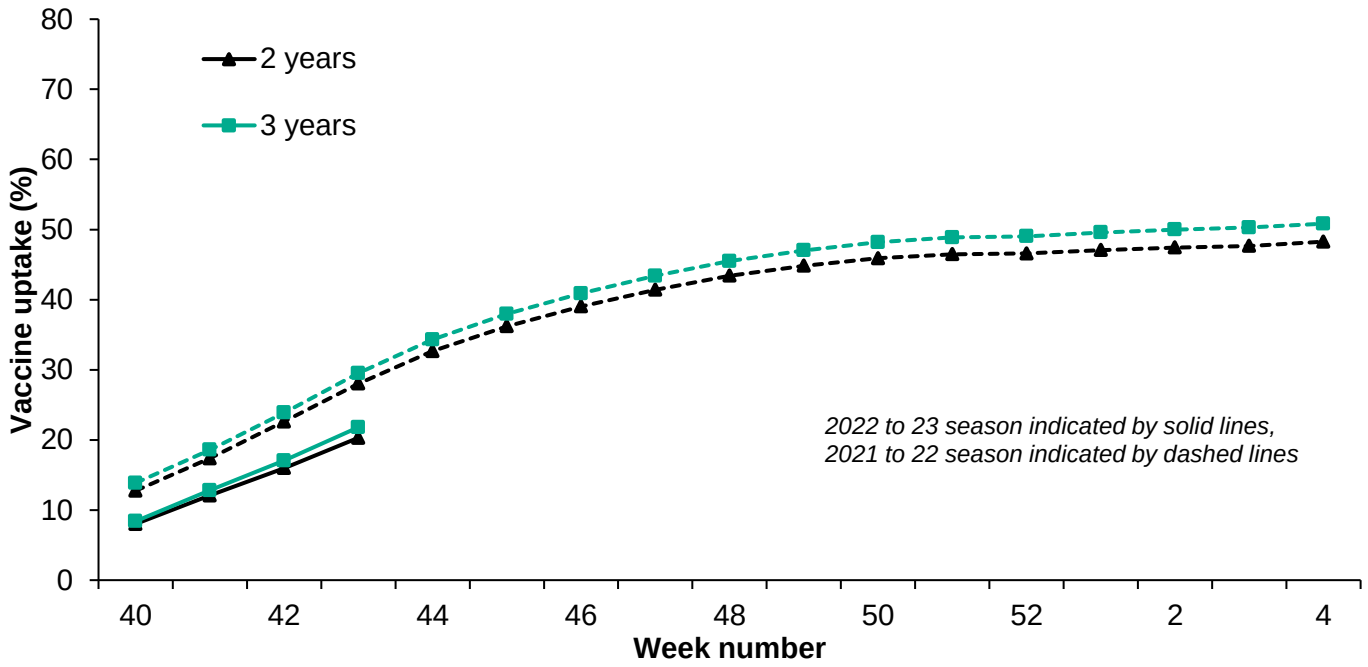
Figure 60: Cumulative weekly influenza vaccine uptake by target group in England



In 2022 to 2023, all 2 and 3 year olds continue to be eligible for influenza vaccination through their GPs. Up to week 43 of 2022, in 90.4% 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:

- 20.3% in all 2 year olds
- 21.8% in all 3 year olds

Figure 61: Cumulative weekly influenza vaccine uptake in 2 and 3 year olds, in England



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 43 2022 (week ending 30 October 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 at least one dose, 2 doses and 3 doses of a COVID-19 vaccination by age group. The overall vaccine uptake in the living and resident population for those with at least dose 1 was 70.8%, 67.3% for dose 2 and 53.2% for dose 3. The breakdown by sex showed vaccine uptake in males was 68.3% and 73.2% in females for dose 1. For dose 2 vaccine uptake by sex was 64.8% in males and 70.0% in females. For dose 3 vaccine uptake by sex was 50.4% in males and 56.2% in females. The vaccine uptake rate in adults aged 18 and over was 82.4% (41,141,468 out of 49,936,309) for dose 1; 79.6% (39,766,958 out of 49,936,309) for dose 2 and 65.8% (32,882,825 out of 49,936,309) for dose 3.

Table 7: Provisional cumulative COVID-19 vaccine uptake by age in England

NATIONAL	People in NIMS cohort who are living and resident in England	Vaccinated with at least 1 dose		Vaccinated with at least 2 doses		Vaccinated with at least 3 doses	
		Number vaccinated	% vaccine uptake	Number vaccinated	% vaccine uptake	Number vaccinated	% vaccine uptake
Over 80	2,939,140	2,834,341	96.4	2,819,012	95.9	2,759,770	93.9
75 to under 80	2,377,340	2,291,183	96.4	2,277,409	95.8	2,229,683	93.8
70 to under 75	2,705,430	2,569,821	95.0	2,548,730	94.2	2,472,622	91.4
65 to under 70	2,968,538	2,767,427	93.2	2,737,473	92.2	2,608,962	87.9
60 to under 65	3,597,793	3,297,039	91.6	3,254,170	90.4	3,018,431	83.9
55 to under 60	4,121,251	3,696,227	89.7	3,638,161	88.3	3,287,375	79.8
50 to under 55	4,172,403	3,637,907	87.2	3,566,452	85.5	3,115,149	74.7
45 to under 50	3,873,679	3,194,214	82.5	3,109,303	80.3	2,563,959	66.2
40 to under 45	4,292,836	3,339,266	77.8	3,221,820	75.1	2,506,496	58.4
35 to under 40	4,592,687	3,370,938	73.4	3,217,579	70.1	2,333,819	50.8
30 to under 35	4,749,286	3,352,805	70.6	3,160,091	66.5	2,148,076	45.2
25 to under 30	4,352,849	3,044,391	69.9	2,833,878	65.1	1,827,102	42.0
20 to under 25	3,812,295	2,753,246	72.2	2,511,447	65.9	1,561,562	41.0
18 to under 20	1,380,647	991,504	71.8	871,433	63.1	449,819	32.6
16 to under 18	1,394,758	897,756	64.4	711,299	51.0	194,051	13.9
12 to under 16	2,939,818	1,492,939	50.8	1,120,608	38.1	30,455	1.0
5 to under 12	5,004,614	560,394	11.2	323,220	6.5	5,268	0.1
Total*	**62,276,873**	**44,091,540**	**70.8**	**41,922,100**	**67.3**	**33,112,602**	**53.2**

*Caution should be exercised when summing the age figures as the sum of these will not equal the England total. This is due to individuals vaccinated in England where the individual had an unknown age group or where age is less than 5 years old. Individuals vaccinated in England who have a registered address outside of England or where their address is unknown have been excluded.

From 18 November 2021 (week 46 2021) UKHSA started to report on those in the population with at least 3 doses of COVID-19 vaccine. These figures count the number of doses a person has had in chronological order and includes vaccinations given before the start of the programme where data is available to provide a more complete record of the population coverage estimates.

Age was previously calculated as age on the 31 August 2021 (academic cohort for all ages). Please note that from 14 April 2022 (week 15 2022), 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.

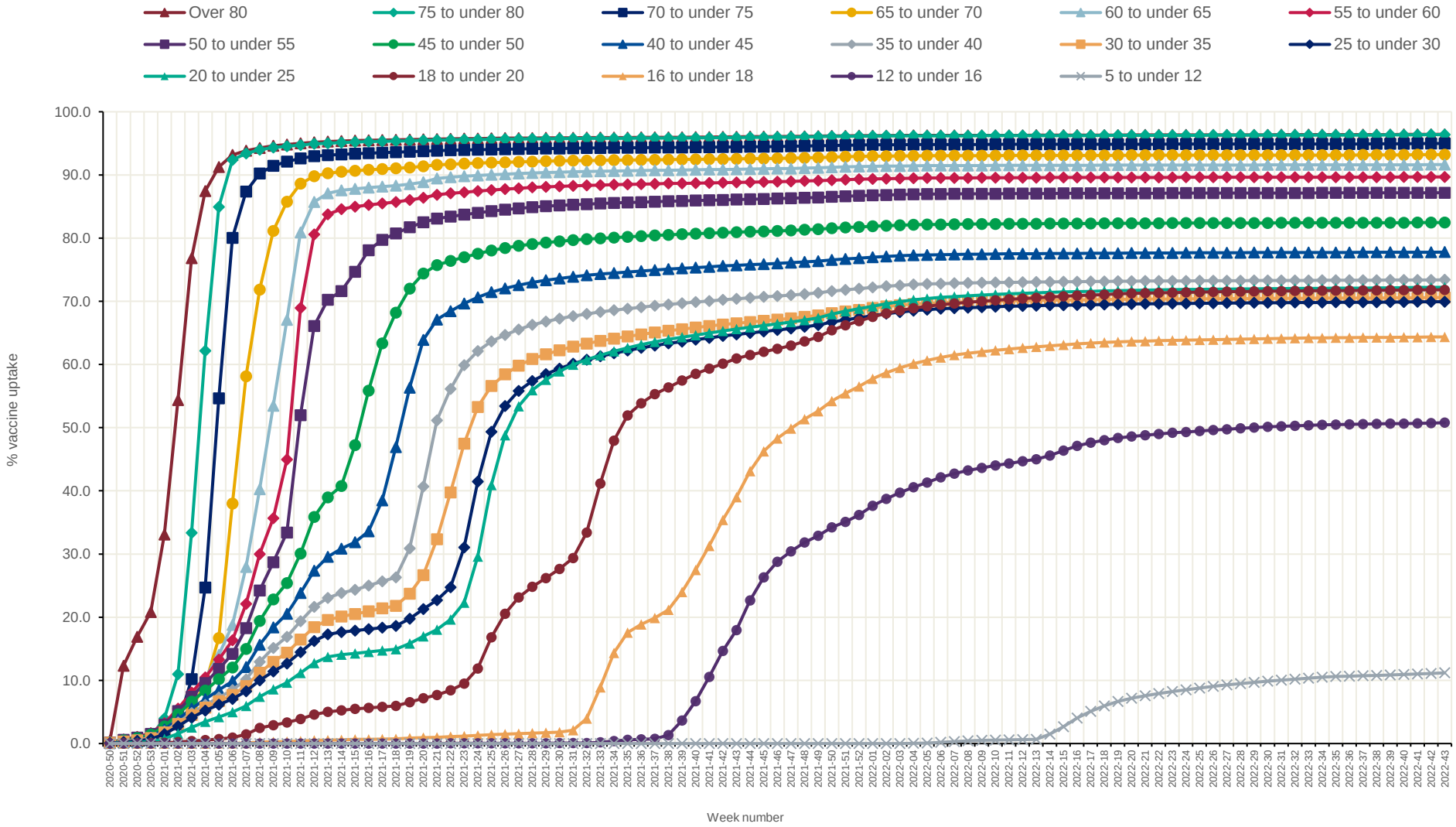
From 1 September 2022 (week 35 2022), the definition used in the table looking at eligibility by month for the spring booster campaign was changed from ‘6 months since the last dose’ to ‘3 months since the last dose’ to account for the earliest time a person can become eligible for the campaign. Eligibility table 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.

From 6 October 2022 (week 40 2022), all England coverage figures are of living people who are resident in England. Individuals vaccinated in England who have a registered address outside of England or where their address is unknown have been excluded.

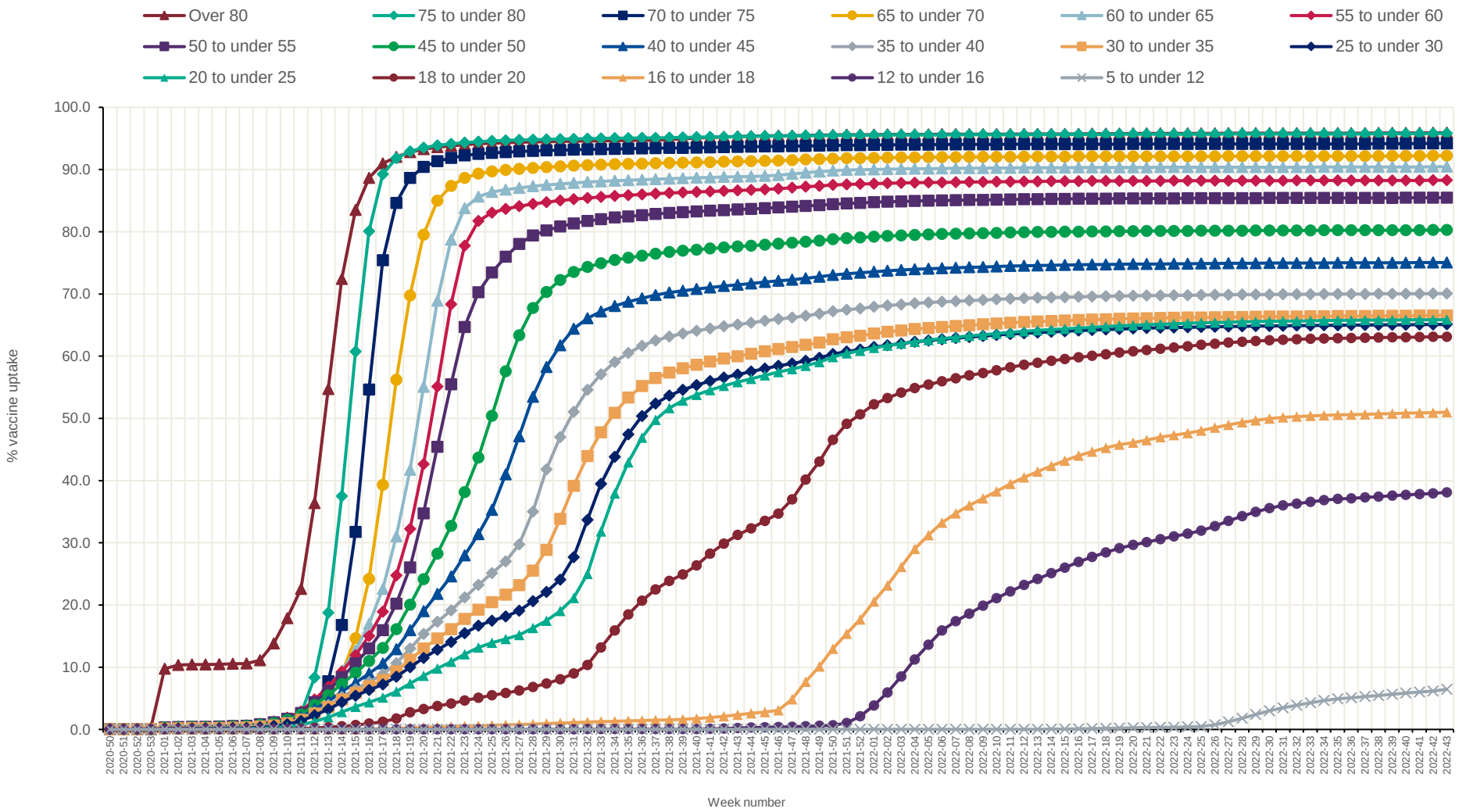
Data is provisional and subject to change following further validation checks. Any changes to historic figures will be reflected in the most recent publication. Please note that numbers published by UKHSA are for public health surveillance purposes only.

Figure 62: Cumulative weekly COVID-19 vaccine uptake by age in those who are living and resident in England for (a) Dose 1, (b) Dose 2 and (c) Dose 3 (please note the data for this graph is shown from week 36 (week ending 11 September 2021))

(a)



(b)



From the 6 January 2021 (week 1 of 2021), the Joint Committee on Vaccination and Immunisation (JCVI) advised initially prioritising delivery of the first vaccine dose to maximise the effect on public health in the short term and reduce the number of preventable deaths from COVID-19.

(c)

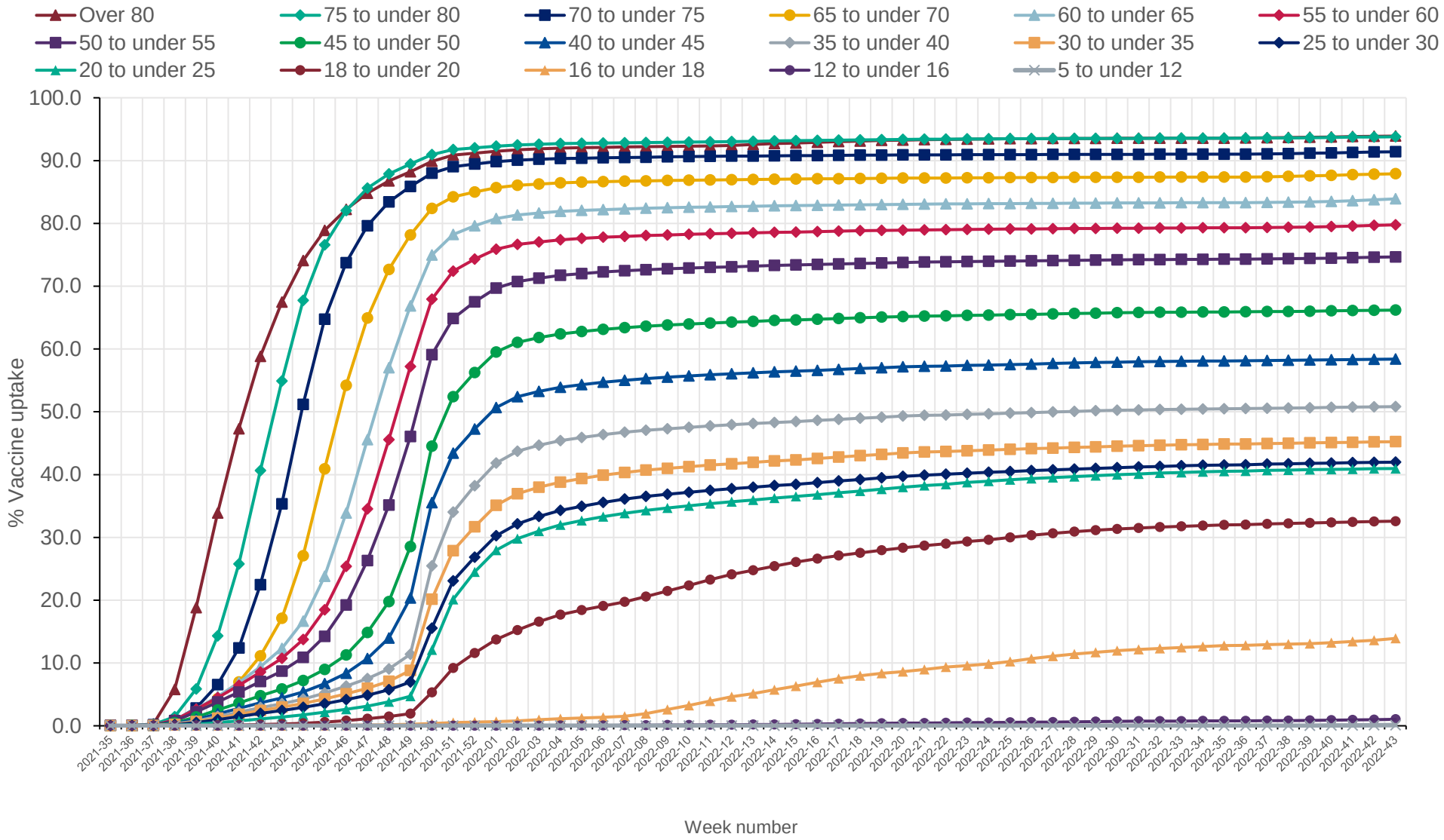

Over 80
75 to under 80
70 to under 75
65 to under 70
60 to under 65
55 to under 60
50 to under 55
45 to under 50
40 to under 45
35 to under 40
30 to under 35
25 to under 30
20 to under 25
18 to under 20
16 to under 18
12 to under 16
5 to under 12
% Vaccine uptake
Week number

Table 8: 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	2,939,140	2,134,821	72.6	179,978	6.1	529,617	18.0
75 to under 80	2,377,340	1,750,978	73.7	150,326	6.3	398,323	16.8
70 to under 75	2,705,430	1,890,344	69.9	34,421	1.3	656,611	24.3
65 to under 70	2,968,538	1,835,705	61.8	30,792	1.0	917,628	30.9
60 to under 65	3,597,793	1,482,403	41.2	36,065	1.0	1,802,078	50.1
55 to under 60	4,121,251	1,296,333	31.5	39,607	1.0	2,387,855	57.9
50 to under 55	4,172,403	957,447	22.9	43,176	1.0	2,665,768	63.9
45 to under 50	3,873,679	388,573	10.0	47,609	1.2	2,786,684	71.9
40 to under 45	4,292,836	301,285	7.0	61,025	1.4	3,014,668	70.2
35 to under 40	4,592,687	254,307	5.5	76,396	1.7	3,089,501	67.3
30 to under 35	4,749,286	221,174	4.7	93,651	2.0	3,099,696	65.3
25 to under 30	4,352,849	174,050	4.0	108,917	2.5	2,832,719	65.1
20 to under 25	3,812,295	130,060	3.4	135,825	3.6	2,550,827	66.9
18 to under 20	1,380,647	42,319	3.1	84,826	6.1	883,184	64.0
16 to under 18	1,394,758	50,474	3.6	124,551	8.9	727,341	52.1
12 to under 16	2,939,818	97,185	3.3	242,517	8.2	1,160,885	39.5
5 to under 12	5,004,614	217,162	4.3	245,844	4.9	100,953	2.0

Table 8 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 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

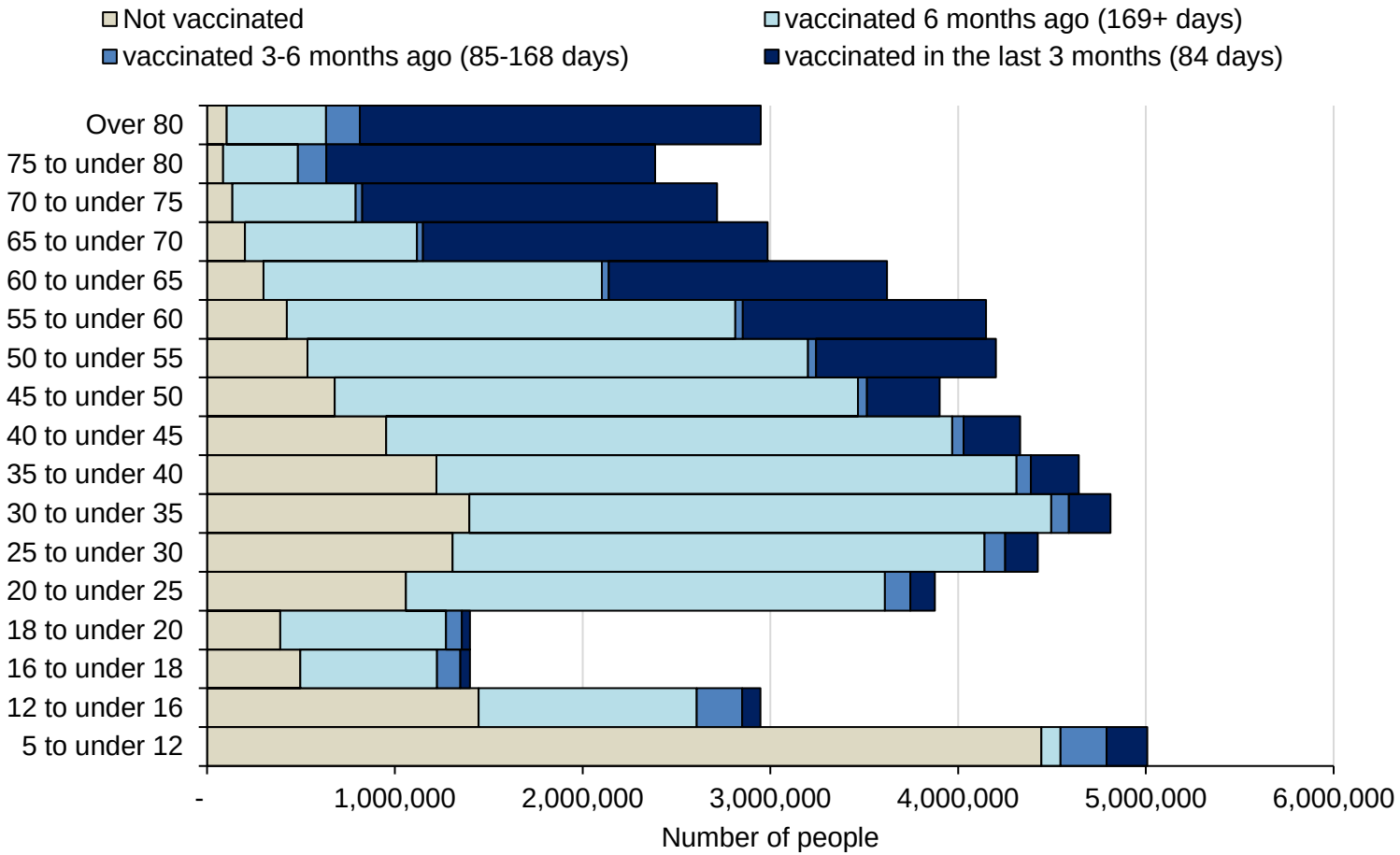


Figure 64: Age-Sex pyramid for COVID-19 vaccine uptake by age in those living and resident in England for dose 1

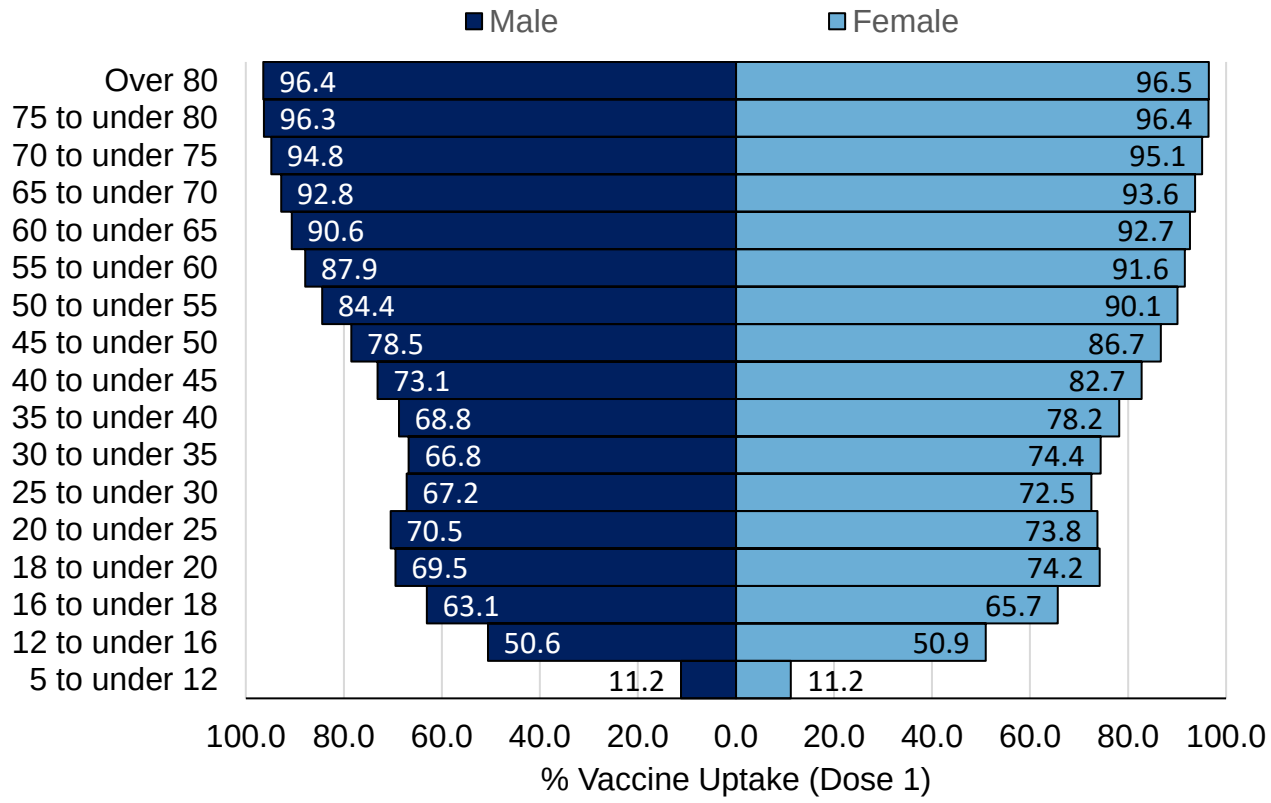


Figure 65: Age-Sex pyramid for COVID-19 vaccine uptake by age in those living and resident in England for dose 2

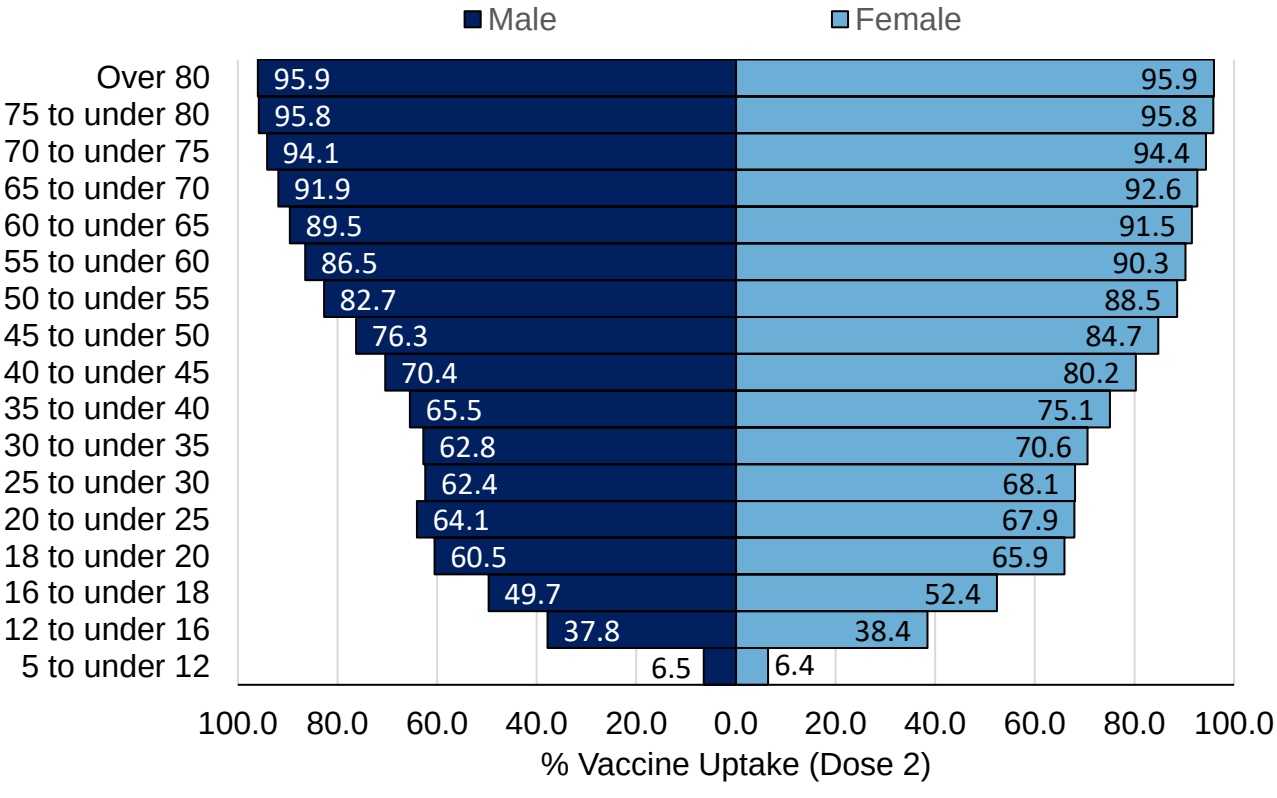
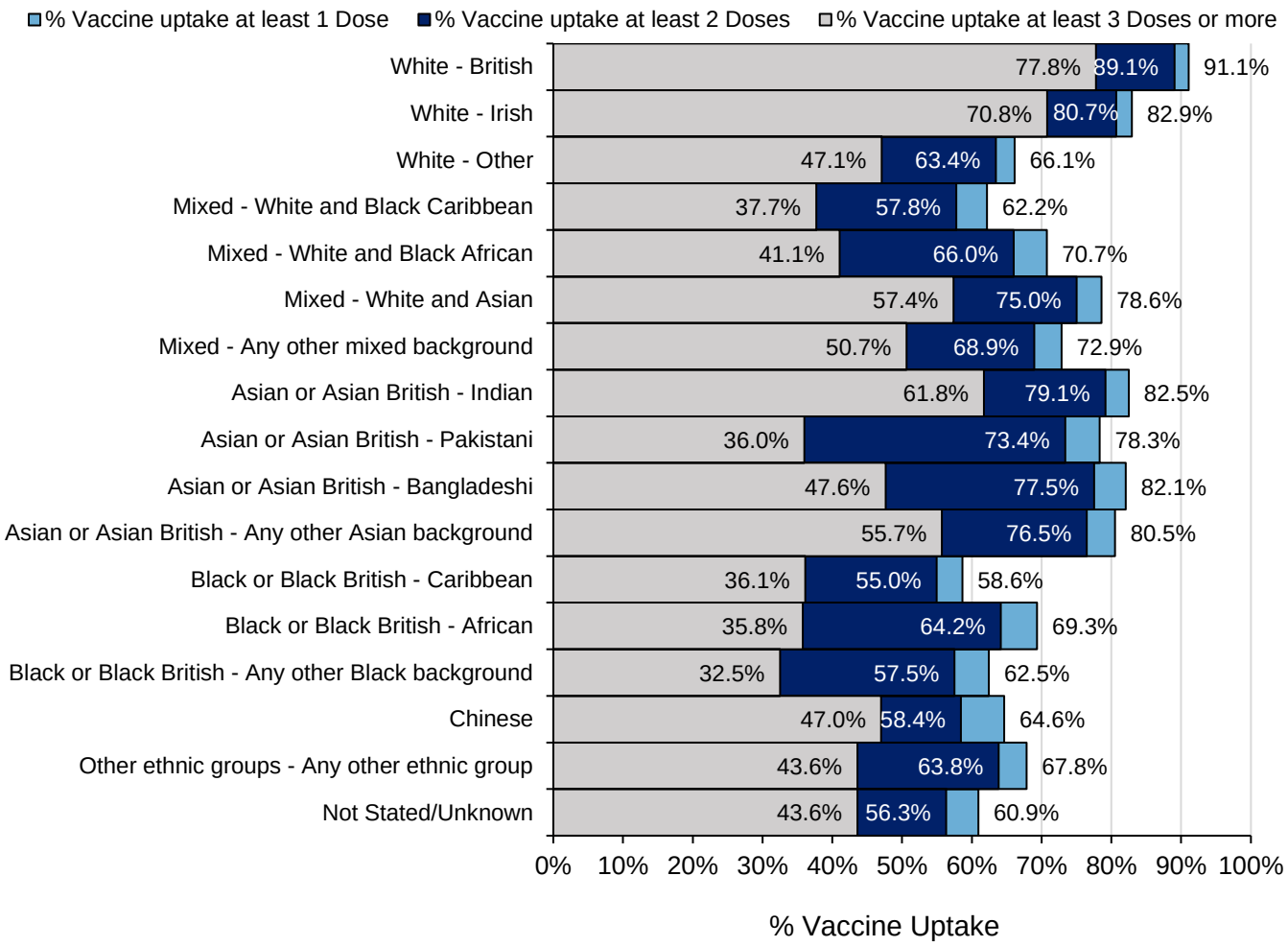


Figure 66: Cumulative weekly COVID-19 vaccine uptake by ethnicity in those living and resident in England, aged 18 and over



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

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 9 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 9 should be interpreted in the context of Table 6 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 43 2022 (week ending 30 October 2022), 49.2% (11,257,434 out of 22,881,895) of all people aged over 50 years old had been vaccinated with an Autumn booster dose since 1 September 2022, Table 9.

Table 9: 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	2,939,140	2,116,986	72.0
75 to under 80	2,377,340	1,733,274	72.9
70 to under 75	2,705,430	1,878,457	69.4
65 to under 70	2,968,538	1,824,633	61.5
60 to under 65	3,597,793	1,471,956	40.9
55 to under 60	4,121,251	1,285,599	31.2
50 to under 55	4,172,403	946,529	22.7
Total aged 50 and over	22,881,895	11,257,434	49.2

*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 10: 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	2,827,794	2,119,096	74.9
75 to under 80	2,284,382	1,734,390	75.9
70 to under 75	2,557,289	1,879,221	73.5
65 to under 70	2,750,865	1,825,722	66.4
60 to under 65	3,273,586	1,473,386	45.0
55 to under 60	3,660,976	1,286,818	35.1
50 to under 55	3,589,962	947,404	26.4
Total aged 50 and over	20,944,854	11,266,037	53.8

Table 10 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.

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.

Immunosuppression

Provisional vaccine uptake data in living and resident people identified as immunosuppressed in England to the end of week 43 (week ending 30 October 2022) can be found in Table 11. This shows that vaccine uptake in the 495,337 identified as immunosuppressed was 96.2% for at least dose 1, 95.1% for at least 2 doses and 89.7% for at least 3 doses.

Table 11: Vaccine uptake in people identified as immunosuppressed in England

Immuno-suppression	People in NIMs Cohort who are living and resident in England	Numbers vaccinated with at least 1 dose	Percentage vaccine uptake with at least 1 dose	Numbers vaccinated with at least 2 doses	Percentage vaccine uptake with at least 2 doses	Numbers vaccinated with at least 3 doses	Percentage vaccine uptake with at least 3 doses
England	495,337	476,395	96.2	471,232	95.1	444,272	89.7

Table 12: 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	495,337	256,747	51.8

*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

Tables 11 and 12 present coverage as measured against the total population of people identified as immunosuppressed. The current uptake of the autumn booster in people identified as immunosuppressed is 51.8%. 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 13, in which 66.2% of people identified as immunosuppressed are covered by a vaccine given in the last 6 months.

Table 13: 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

Immuno-suppression	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
England	495,337	264,329	53.4	63,343	12.8	148,723	30.0

Table 13 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.

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 counts of vaccinations, please see the Vaccinations' section of the UK COVID-19 dashboard.

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 17 October 2022 (based on data up to 2 October 2022) (WHO website).

Globally, influenza activity remained low with influenza A(H3N2) viruses predominant among detections. In the temperate zones of the southern hemisphere, overall influenza activity appeared to further decrease this reporting period, except in temperate South America where activity increased.

In Oceania, influenza detections of primarily influenza A(H1N1)pdm09 (among the subtyped influenza A viruses) and influenza-like activity (ILI) activity were at low levels overall.

In Southern Africa, there was a decrease in influenza activity with influenza A and B viruses reported.

In temperate South America, influenza detections increased due to increased activity in Argentina. Elsewhere, influenza activity remained low or below the seasonal threshold. Influenza A viruses predominated with A(H1N1)pdm09 predominant among subtyped viruses in Argentina and other countries reporting mostly A(H3N2) viruses.

In the Caribbean and Central American countries, low influenza activity was reported with influenza A(H3N2) most frequently detected.

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

In tropical Africa, influenza activity remained low with predominantly influenza B/Victoria lineage and A(H3N2) viruses detected but also A(H1N1)pdm09 detections reported in a few countries.

In Southern Asia, influenza detections were generally low or decreasing with predominantly A(H1N1)pdm09 viruses detected, but with influenza A(H3N2) and influenza B viruses also reported.

In South-East Asia, influenza activity continued to be reported, with trends varying by country. Influenza A(H3N2) viruses accounted for the majority of detections but influenza A(H1N1)pdm09 and B viruses were also reported.

In the countries of North America, influenza activity remained low at levels typically observed at this time of year. Influenza A(H3N2) was predominant among the few subtyped viruses.

In Europe, overall influenza activity remained at inter-seasonal levels with influenza detections and ILI activity slightly increased in only a few countries. Influenza A viruses predominated among the reported detections in general with A(H3N2) viruses accounting for the majority of subtyped influenza A virus detections.

In central Asia, Kazakhstan reported a few influenza B virus detections and ILI and severe acute respiratory infections (SARI) activity increased slightly in recent weeks.

In Northern Africa, no influenza detections were reported.

In East Asia, influenza activity of predominantly influenza A(H3N2) remained stable in general.

In Western Asia, detections of influenza slightly increased in some countries of the Arab Peninsula.

The WHO Global Influenza Surveillance and Response System (GISRS) laboratories tested more than 133,934 specimens during the period 19 September to 2 October 2022. A total of 5,323 were positive for influenza viruses, of which 4,706 (88.4%) were typed as influenza A and 617 (11.6%) as influenza B. Of the sub-typed influenza A viruses, 630 (18.3%) were influenza A(H1N1)pdm09 and 2,808 (81.7%) were influenza A(H3N2). Of the characterized B viruses, 208 (100%) belonged to the B Victoria lineage.

Influenza in Europe

Updated for data for week 42, 2022 (Joint ECDC-WHO Europe Influenza weekly update).

For the Region as a whole, influenza activity was at inter-seasonal levels.

For week 42 2022, of 40 countries and areas reporting on intensity of influenza activity, 31 reported baseline-intensity, eight reported low-intensity and one reported high-intensity (Malta). Of 40 countries and areas reporting on geographic spread of influenza viruses, 17 reported no activity, 17 reported sporadic spread, three reported local spread (Belarus Malta and United Kingdom (Northern Ireland)), one reported regional spread

(Germany) and two reported widespread activity (Kazakhstan and United Kingdom (Scotland)).

For week 42 2022, 135 (6%) of 2,084 sentinel specimens tested positive for influenza virus; 90% were type A and 10% were type B. Of 92 subtyped A viruses, 90% were A(H3) and 10% A(H1)pdm09. Of five type B viruses ascribed to a lineage, all were B/Victoria. Of 23 countries and areas across the Region that each tested at least 10 sentinel specimens in week 42 2022, four reported a rate of influenza virus detections at or above 10%: Germany (16%), Portugal (15%), Kazakhstan (11%) and Spain (10%).

For the season to date, 386 (7%) of 5,862 sentinel specimens tested positive for an influenza virus. More influenza type A (n=345, 89%) than type B (n=41, 11%) viruses have been detected. Of 278 subtyped A viruses, 238 (86%) were A(H3) and 40 (14%) were A(H1)pdm09. Of 26 influenza type B viruses ascribed to a lineage, all were B/Victoria (37% of type B viruses were reported without a lineage).

For week 42 2022, 750 of 38,688 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; 654 (87%) were type A and 96 (13%) were type B. Of 198 subtyped A viruses, 103 (52%) were A(H3) and 95 (48%) were A(H1)pdm09. One type B virus ascribed to a lineage was of the B/Victoria lineage.

For the season to date, more influenza type A (n=2 072, 89%) than type B (n=263, 11%) viruses have been detected. Of 817 subtyped A viruses, 531 (65%) were A(H3) and 286 (35%) were A(H1)pdm09. Of 65 influenza type B viruses ascribed to a lineage, all were B/Victoria (75% 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 August 2022, a total of 2,591 laboratory-confirmed cases of MERS-CoV and 894 associated deaths were reported globally to WHO under the International Health Regulations (IHR 2005).

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

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

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