UK Health Security Agency

Weekly national Influenza and COVID-19 surveillance report

Week 16 report (up to week 15 data)

20 April 2023

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 15 (between 10 and 16 April 2023) and for some indicators daily data up to 18 April 2023.

Overall

Data in this week's report may be subject to changes in COVID-19 testing policy as well as the Easter Monday bank holiday. In week 15, from most indicators, influenza activity remained low and stable compared with week 14. COVID-19 activity decreased across most indicators compared with the previous week.

COVID-19

COVID-19 case rates through Pillar 1 decreased in week 15, in all age groups and regions, and most ethnic groups.

Through Respiratory Datamart, SARS-CoV-2 positivity remained stable at 7.8% compared with 8.3% in the previous week.

Through primary care surveillance, COVID-19 indicators remained stable compared with the previous week.

The overall number of reported confirmed COVID-19 outbreaks remained stable compared with the previous week. The highest number of incidents continue to be in care homes, with 25 confirmed SARS-CoV-2 outbreaks occurring in England in week 15 compared with 23 in week 14.

Overall, COVID-19 hospitalisations decreased slightly in week 15 compared with week 14. Hospitalisations were highest in the 85 years and over age group. ICU admission rates due to COVID-19 remained stable. Through syndromic surveillance indicators, emergency department attendances for covid-like illness decreased.

Deaths with COVID-19 decreased in week 15 compared with week 14.

Influenza

The majority of influenza detections in the most recent week have been influenza B across a number of surveillance systems.

In Respiratory Datamart, influenza positivity remained low and stable at 1.1% in week 15 compared with 1.5% in week 14, with highest positivity seen in the 15 to 44 years old age group at 3.7%. Influenza B positivity remained low at 0.9% in week 15 compared with 1.4% in week 14.

Through primary care surveillance, the influenza-like-illness consultations indicator decreased in week 14 compared with the previous week and was within the baseline activity level range.

No confirmed influenza outbreaks were reported in week 15 in England.

Influenza hospital admissions decreased in week 15 compared with the previous week and is within the baseline range of activity. By UKHSA Centre, the highest hospitalisation rate was observed in the East of England. By age group, the highest hospital admission rate for influenza was in adults aged 85 years and over. Influenza ICU admissions remained stable in week 15 and remained within the baseline range of activity.

Emergency department attendances for influenza-like illness remained stable nationally.

RSV

In Respiratory Datamart, the overall positivity for RSV remained low at 0.6%, with the highest positivity in those aged under 5 years at 2.5%. In week 15, the overall hospital admission rate for RSV remained low at 0.11 per 100,000. Emergency department attendances for acute bronchiolitis decreased nationally**.**

Other viruses

Adenovirus positivity remained stable at 3.5%, with the highest positivity in those aged 5 to 14 years old at 12.3%. Human metapneumovirus (hMPV) positivity remained stable at 2.2%, with the highest positivity in those aged 65 years and over at 2.3%. Parainfluenza positivity increased slightly to 6.1%, with the highest positivity in those aged under 5 years old at 15.4%. Rhinovirus positivity remained stable at 13.0% overall, with the highest positivity in those aged under 5 years old at 27.4%.

Other indicators

There was no excess mortality in week 14.

During week 15, NHS 111 calls for cough and calls for cold or flu increased slightly nationally.

The primary care lower respiratory tract infection rate remained stable in week 15.

Emergency department attendances for acute respiratory infection decreased nationally.

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 16 April 2023, a total of 2,066,349 episodes have been confirmed for COVID-19 in England under Pillar 1, and 18,714,492 episodes under Pillar 2, since the beginning of the pandemic. COVID-19 case rates through Pillar 1 decreased in week 15, across all age groups, regions, and most ethnic groups. The number of Pillar 1 COVID-19 episodes decreased to 3,775 in week 15 compared with 4,617 in week 14.

Data notes:

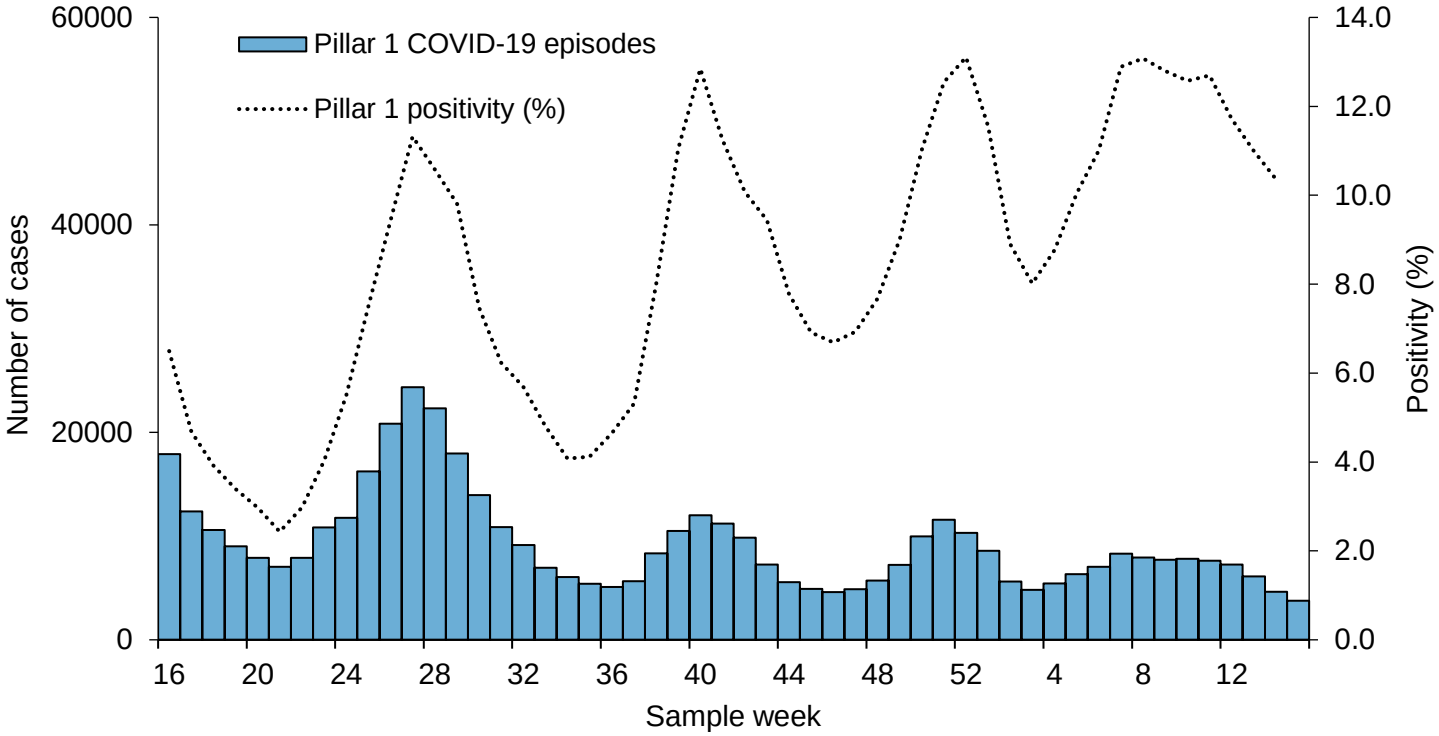
Changes to testing policies over time may affect positivity rates and incidence rates and should be interpreted accordingly. From 31 January 2022, UK Health Security Agency (UKHSA) moved all COVID-19 case reporting in England to use a new episode-based definition which includes possible reinfections. 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. Additionally, further changes in testing policy are in effect since 1 April 2023, which may affect case rates and positivity rates.

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

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

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

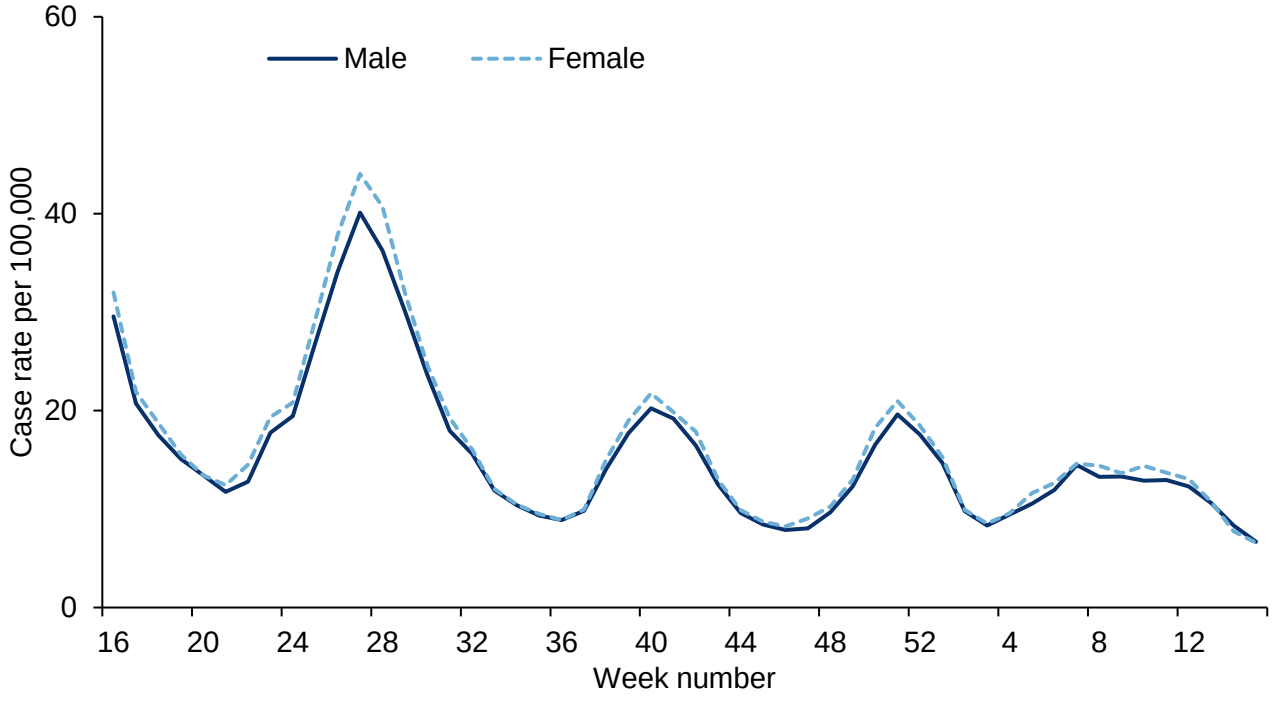


Figure 3: Weekly confirmed COVID-19 case rates per 100,000, by episode, tested under Pillar 1, by age group

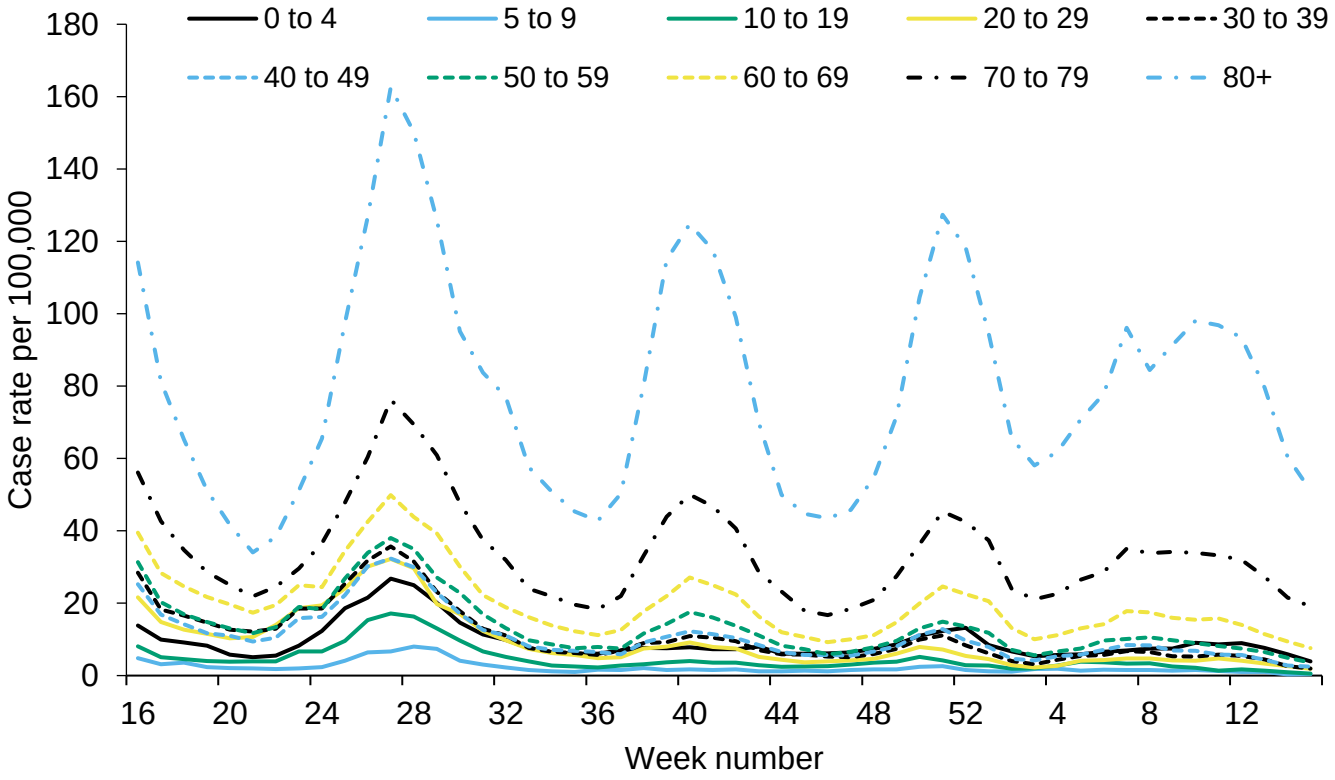


Figure 4: Weekly PCR positivity (%) of confirmed COVID-19 cases tested overall and by sex under Pillar 1

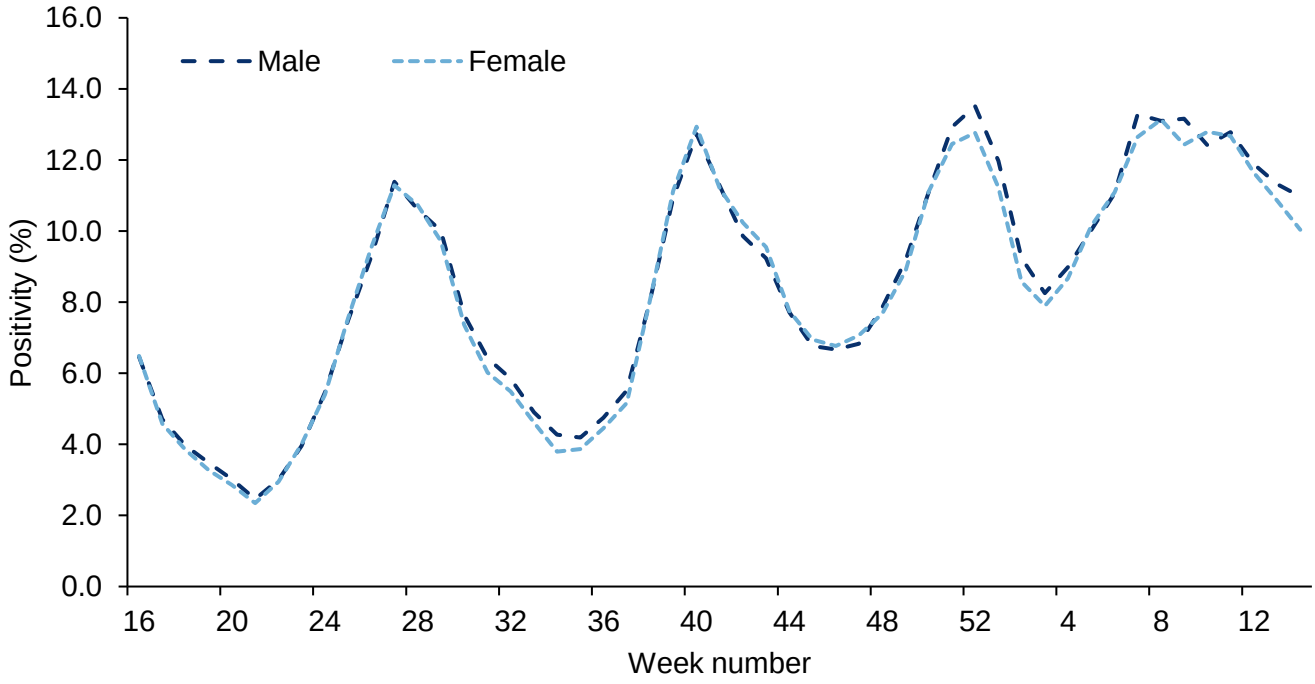
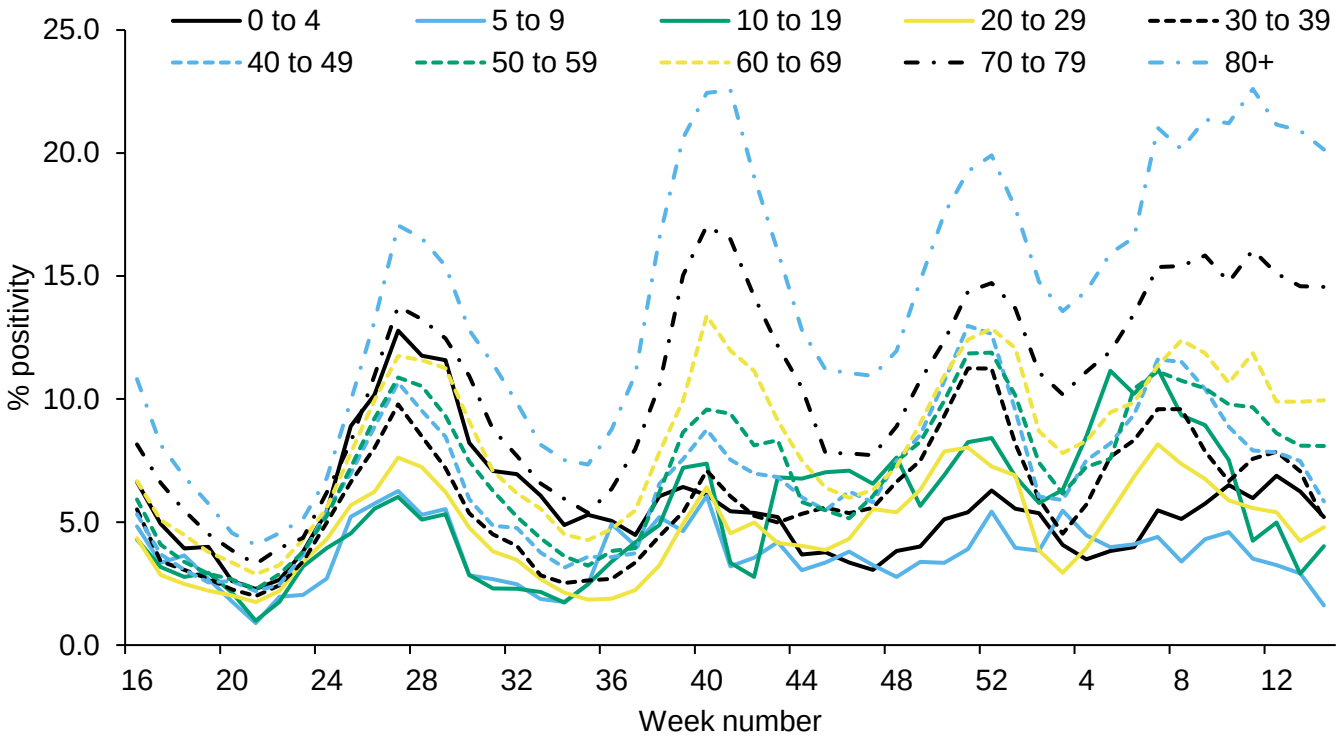
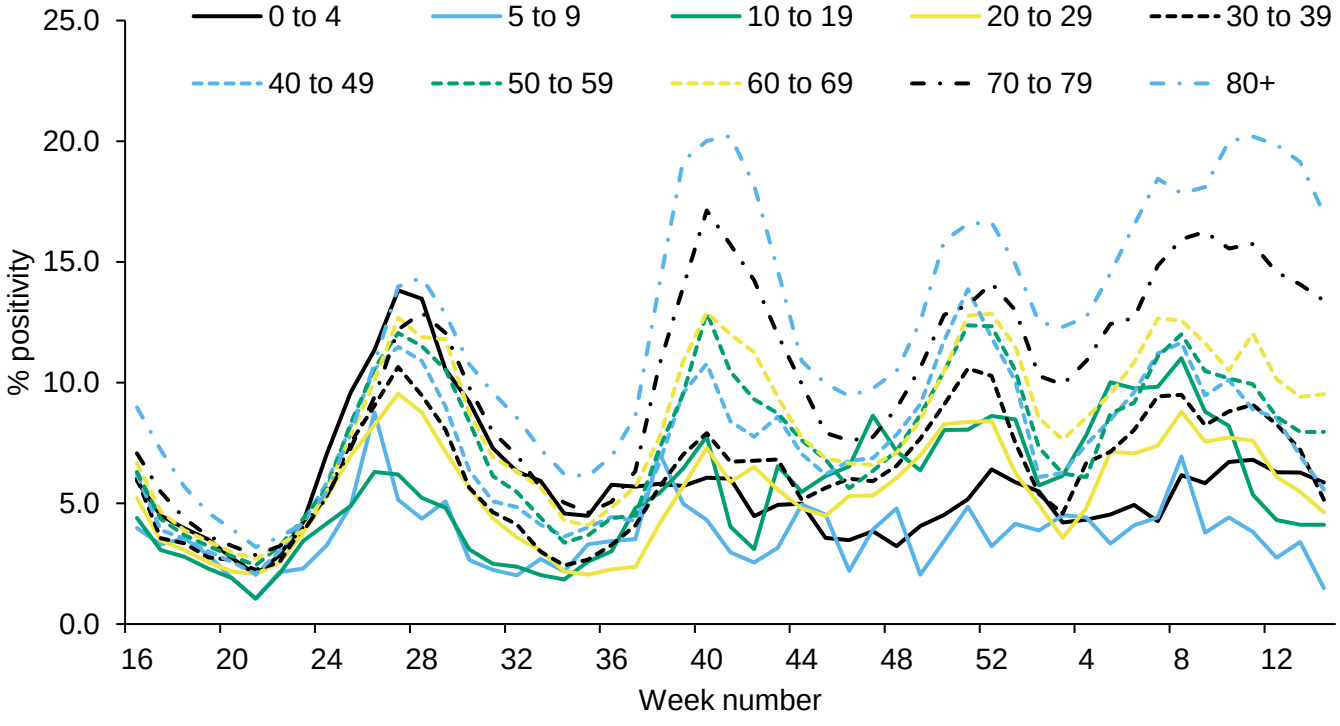


Figure 5: Weekly PCR positivity (%) of confirmed COVID-19 cases tested under Pillar 1, (a) by male and age group and (b) by female and age group

(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

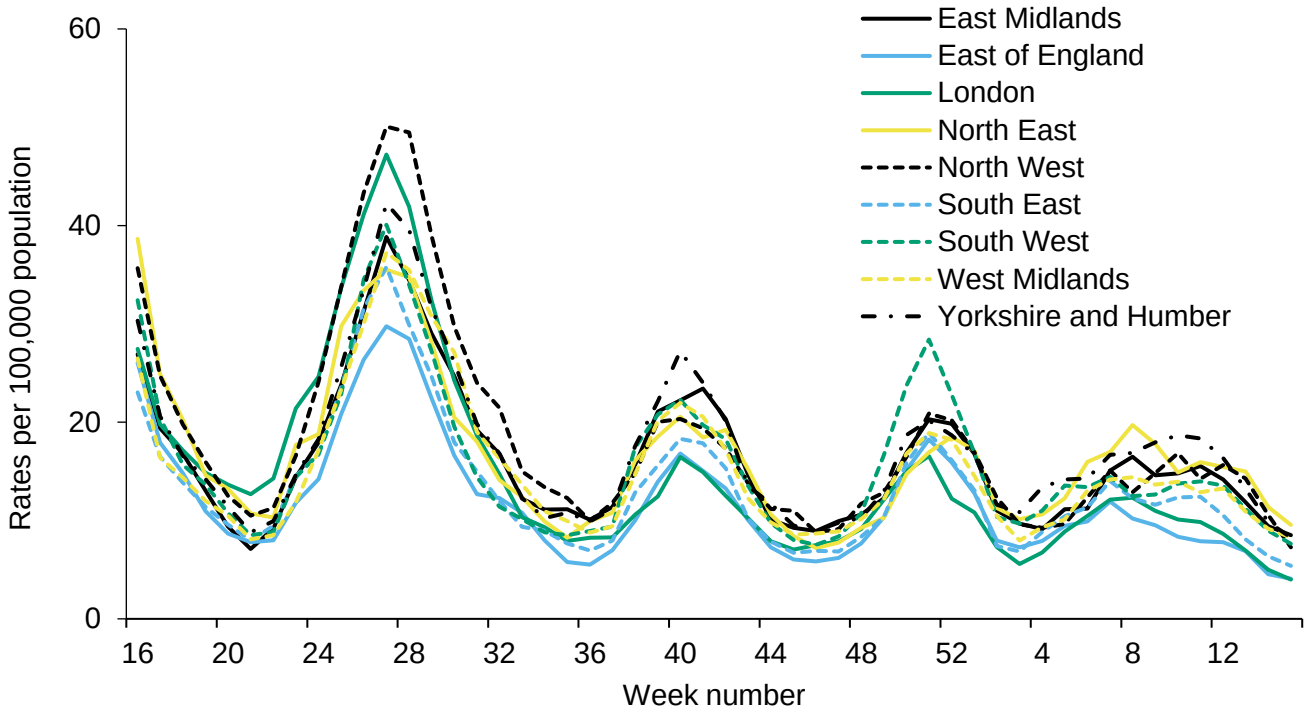


Figure 7: Weekly PCR positivity of confirmed COVID-19 cases tested under Pillar 1 (%) by UKHSA centres and sample week

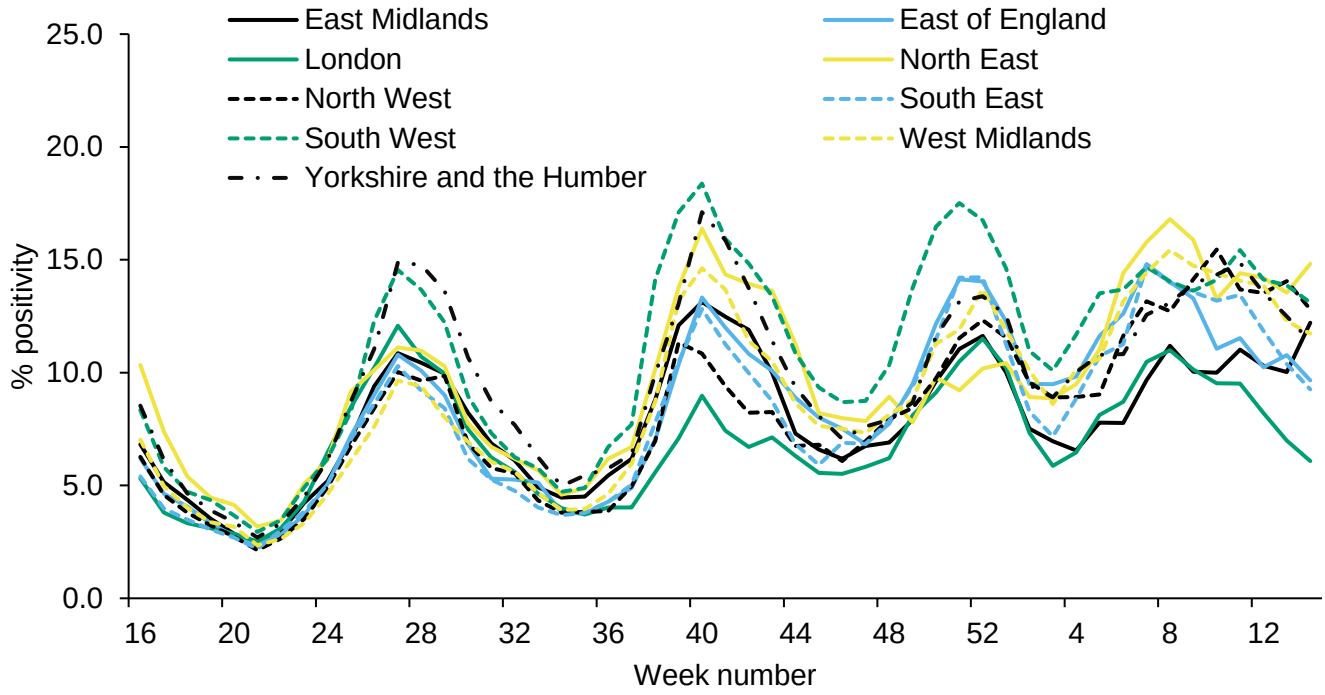
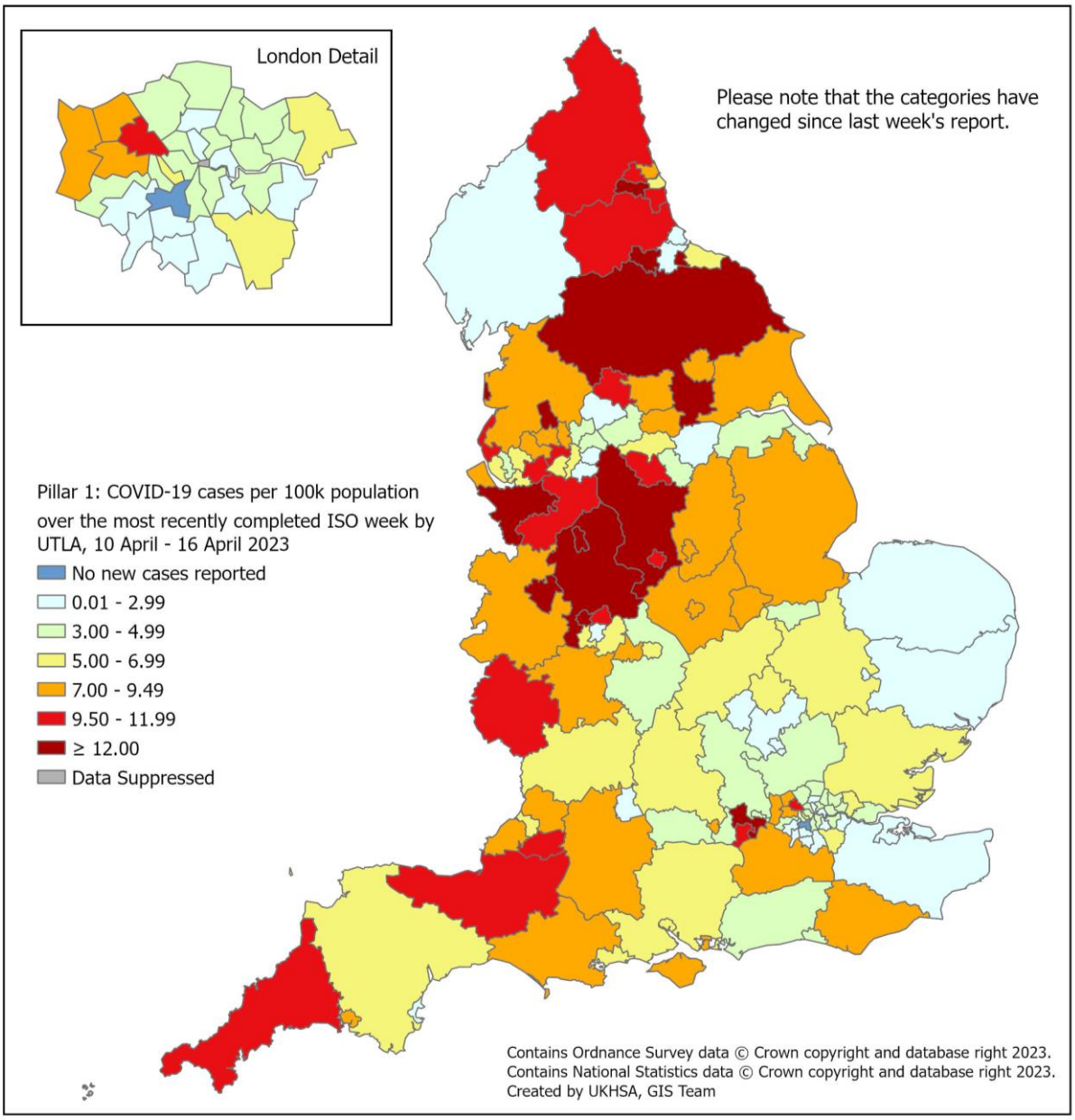
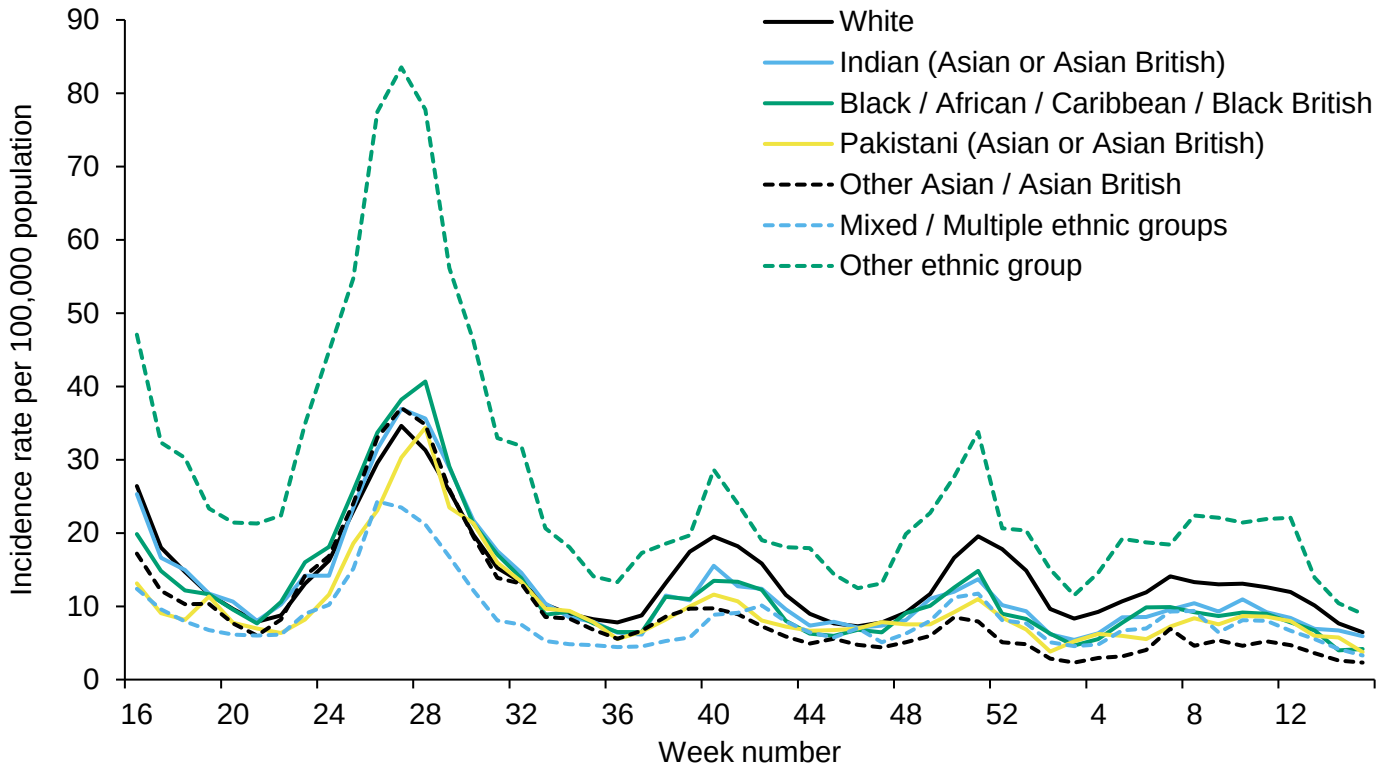


Figure 8: Weekly rate of COVID-19 episodes per 100,000 population (Pillar 1), by upper-tier local authority (UTLA), England (box shows enlarged map of London area)



Ethnicity

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



Respiratory DataMart system (England)

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

In week 15, data is based on reporting from 13 out of the 16 sentinel laboratories.

In week 15, 10,288 respiratory specimens reported through the Respiratory DataMart System were tested for SARS-CoV-2. 804 samples were positive for SARS-CoV-2 with an overall positivity of 7.8%, which decreased compared with 8.3% the previous week. The highest positivity was seen in those aged 65 years and over at 11.1%.

In week 15, 5,172 respiratory specimens reported through the Respiratory DataMart System were tested for influenza. 59 samples tested positive for influenza; one influenza A(H1N1)pdm09, 9 influenza A(not subtyped) and 49 influenza B (Figure 12). Overall, influenza positivity remained low and stable at 1.1% in week 15 compared with 1.5% the previous week, with the highest positivity seen in the 15 to 44 year old age group at 3.7%, compared with 5.1% in the previous week. Influenza B positivity remained low at 0.9% in week 15 compared with 1.4% in week 14. Influenza A(H3N2) remained low at 0.0%, the same as the previous week and influenza A(H1N1)pdm09 positivity remained low at 0.0% in week 15, the same as the previous week.

Adenovirus positivity remained stable at 3.5%, with the highest positivity in those aged 5 to 14 years old at 12.3%.

Human metapneumovirus (hMPV) positivity remained stable at 2.2% from 2.0% the previous week, with the highest positivity in children under 5 years old at 4.6%.

Parainfluenza positivity is increasing over a few weeks and in week 15 positivity is at 6.1%, with the highest positivity in children under 5 years old at 15.4%.

Rhinovirus positivity overall increased to 13.0% from 11.9% in the previous week, with the highest positivity in those aged under 5 years old at 27.4%.

The overall positivity for RSV remained low at 0.6%, with the highest positivity in those aged under 5 years old at 2.5%.

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

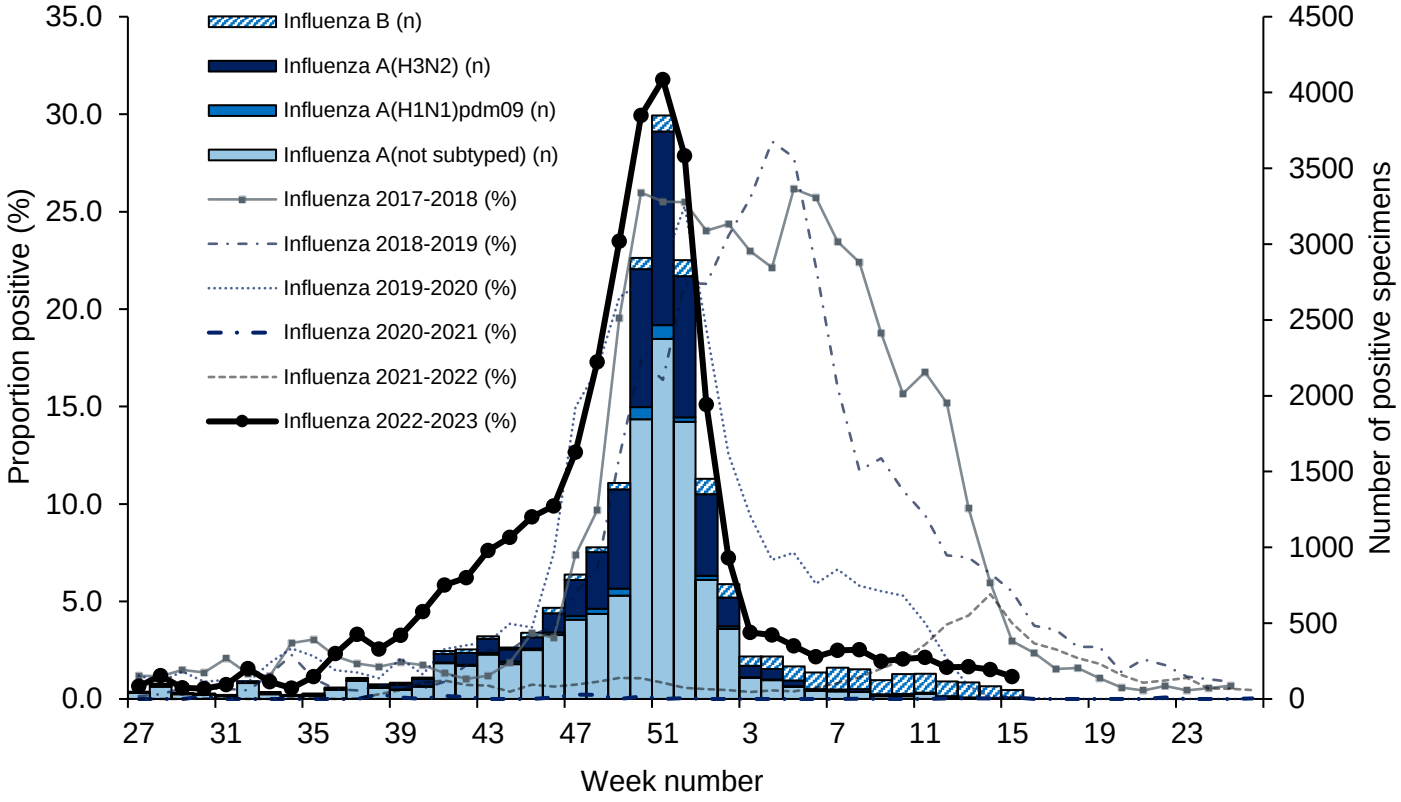


Figure 11: Respiratory DataMart weekly positivity (%) for SARS-CoV-2, England

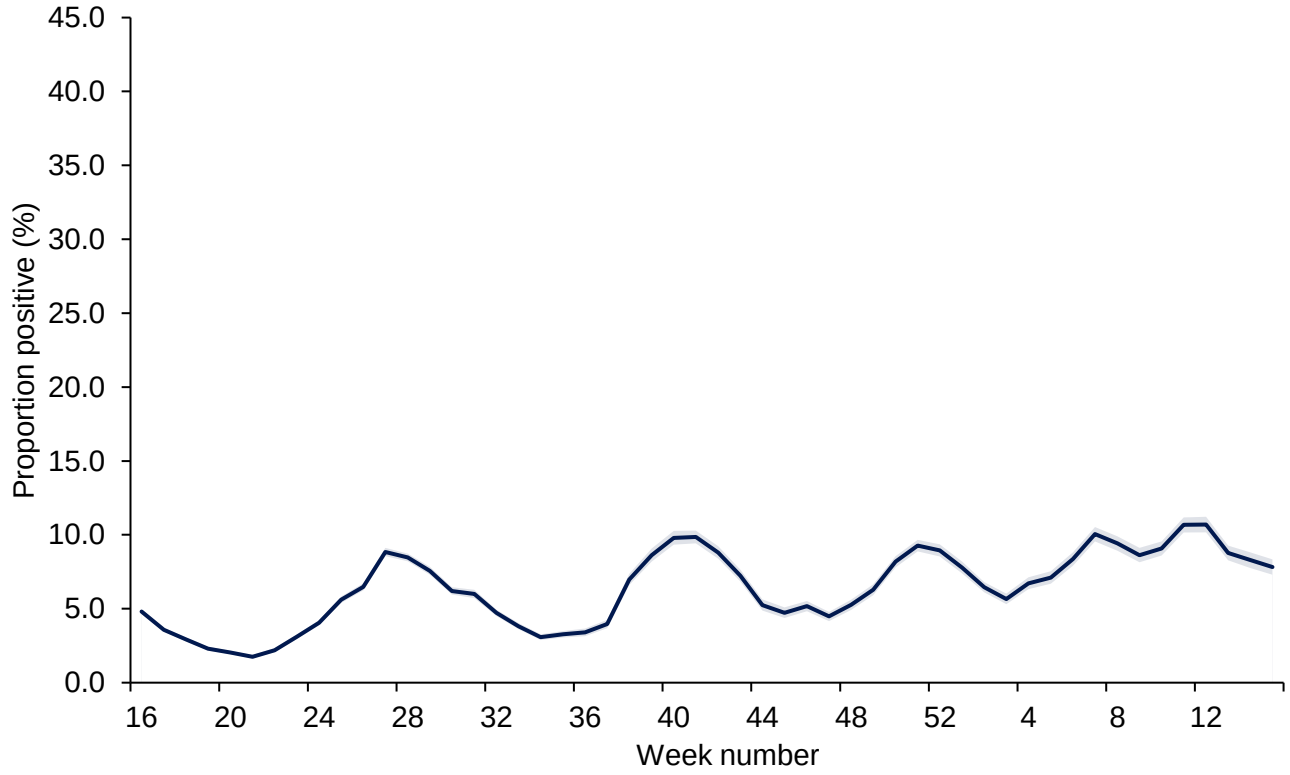


Figure 12: Respiratory DataMart weekly positivity (%) for influenza, England

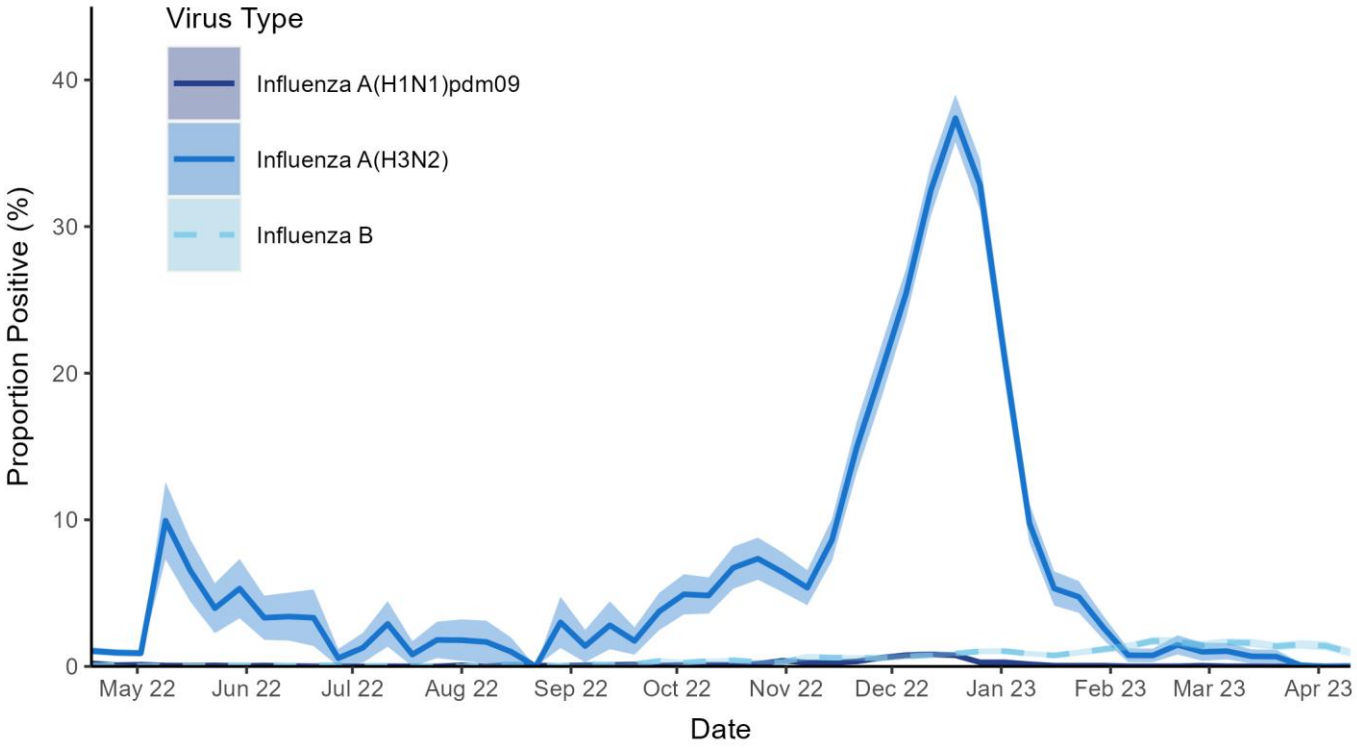


Figure 13: Respiratory DataMart weekly positivity (%) for influenza by age, England

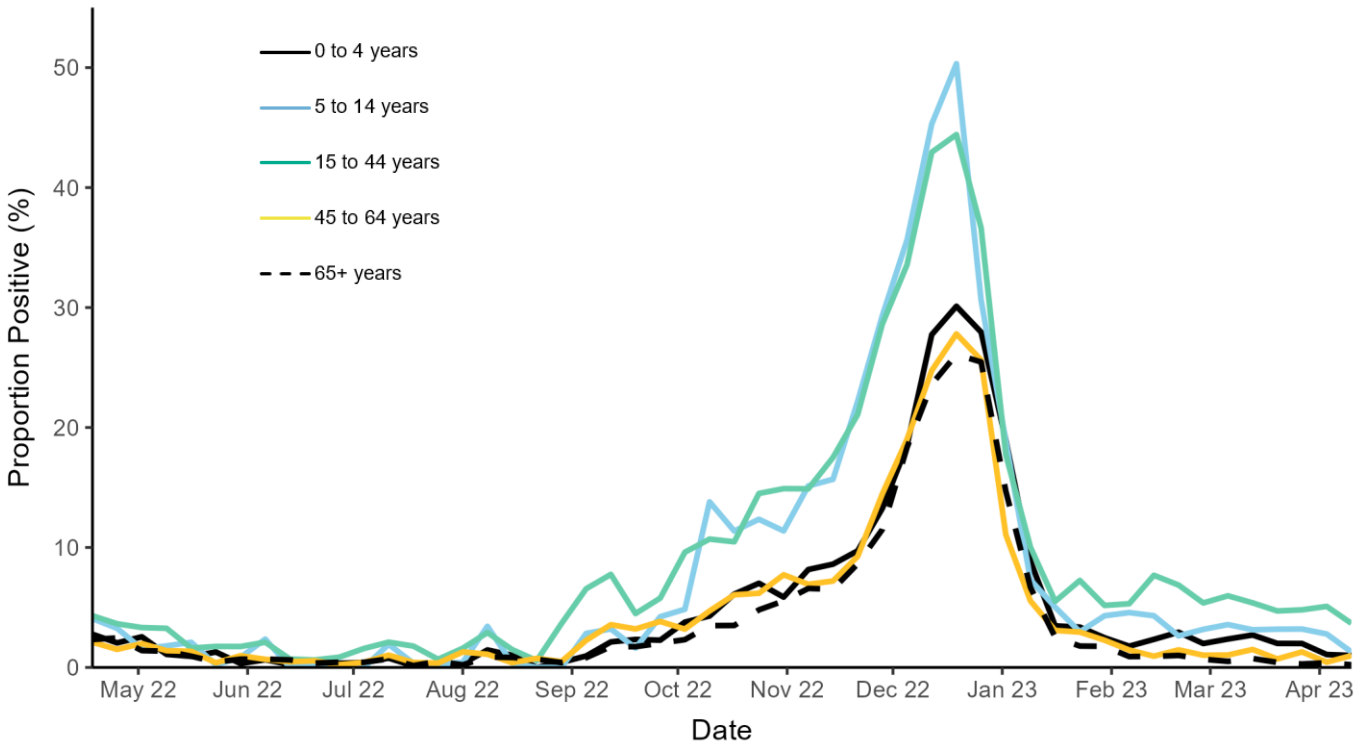


Figure 14: Respiratory DataMart weekly positivity (%) for other viruses, England

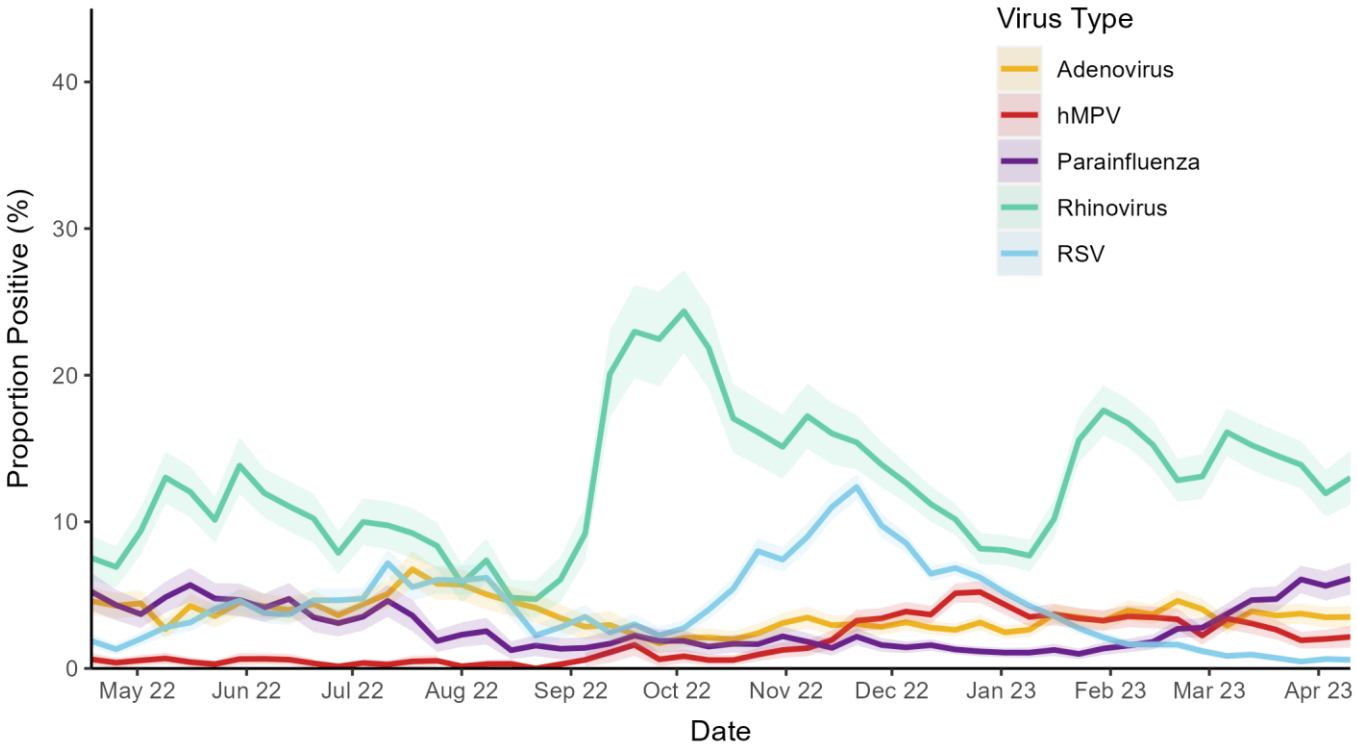


Figure 15: Respiratory DataMart weekly positivity (%) for adenovirus by age, England

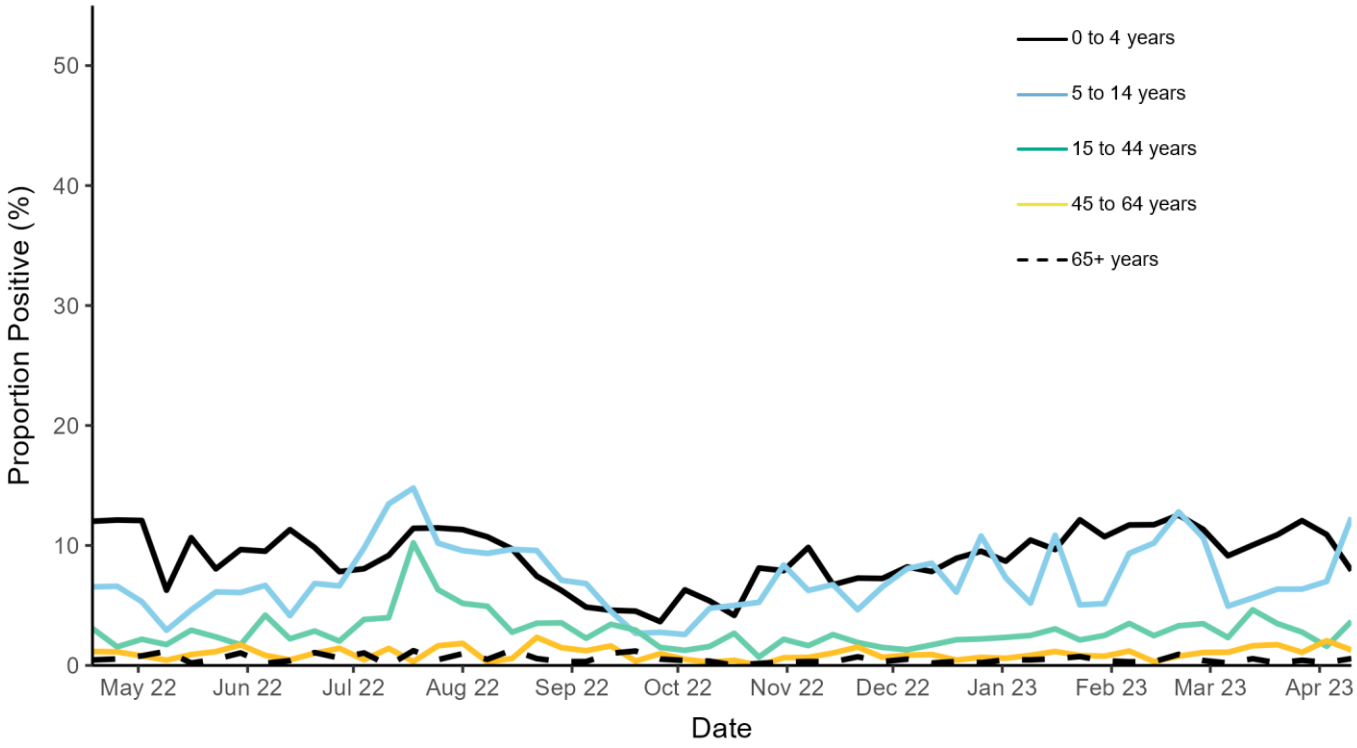


Figure 16: Respiratory DataMart weekly positivity (%) for hMPV by age, England

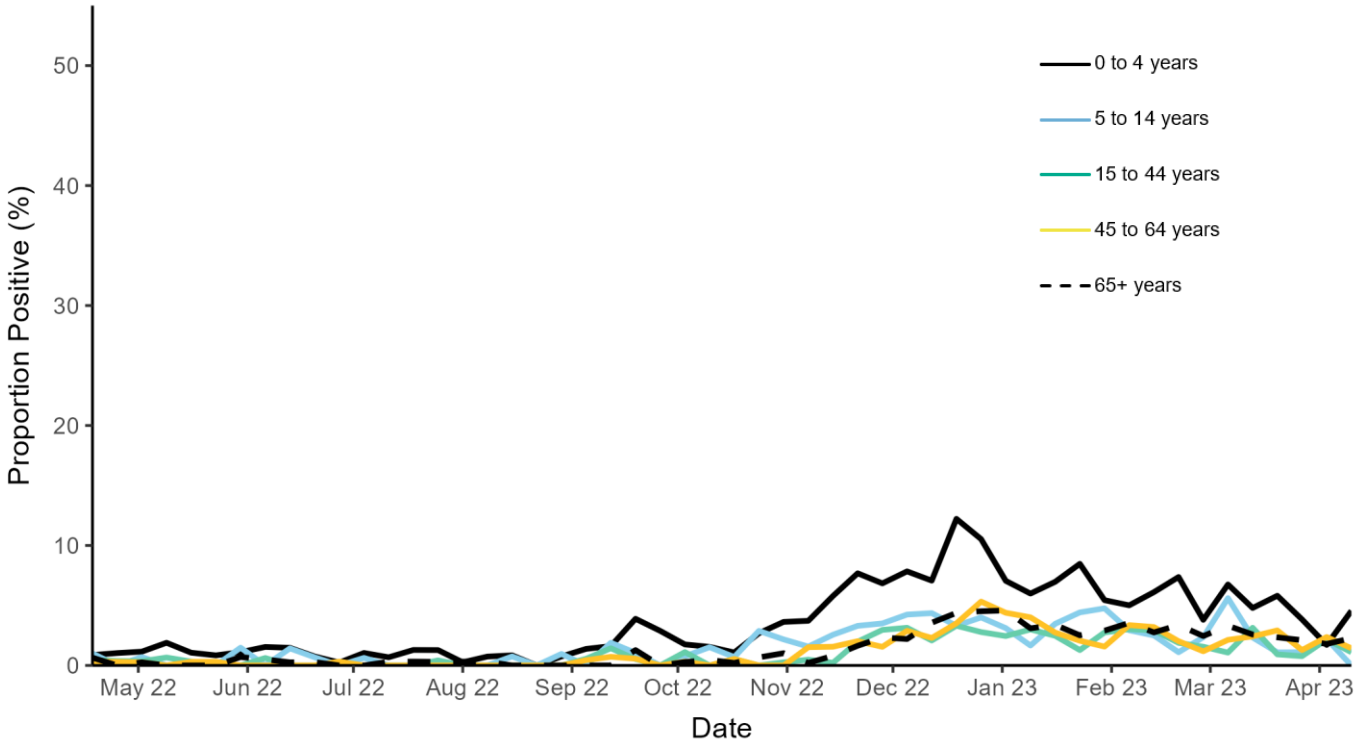


Figure 17: Respiratory DataMart weekly positivity (%) for parainfluenza by age, England

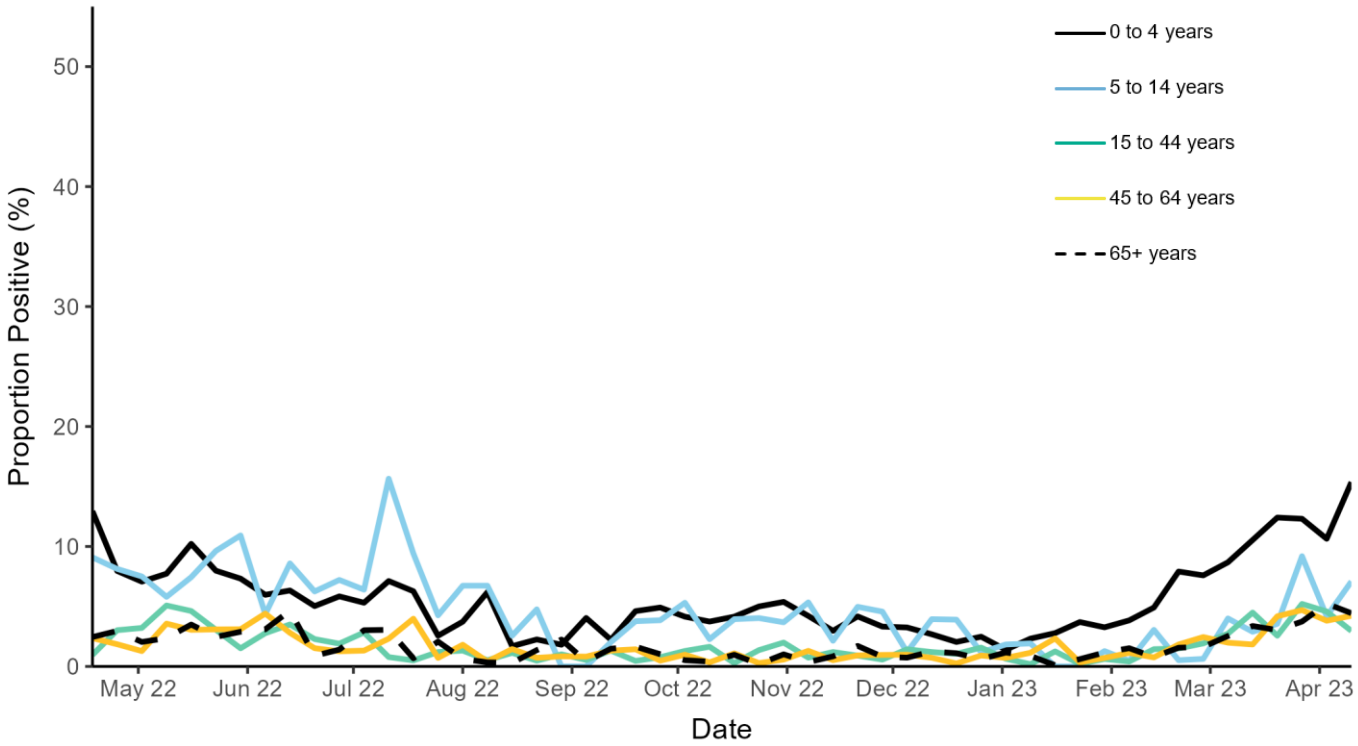


Figure 18: Respiratory DataMart weekly positivity (%) for rhinovirus by age, England

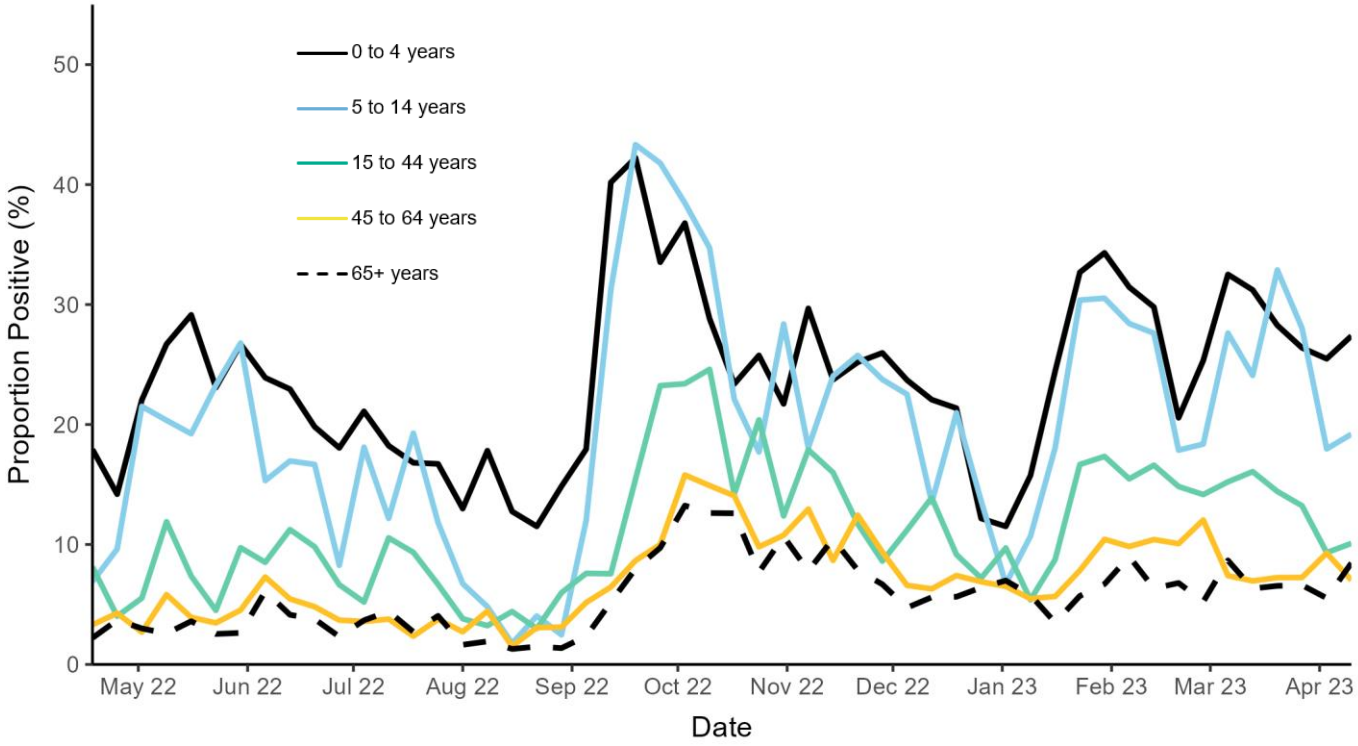
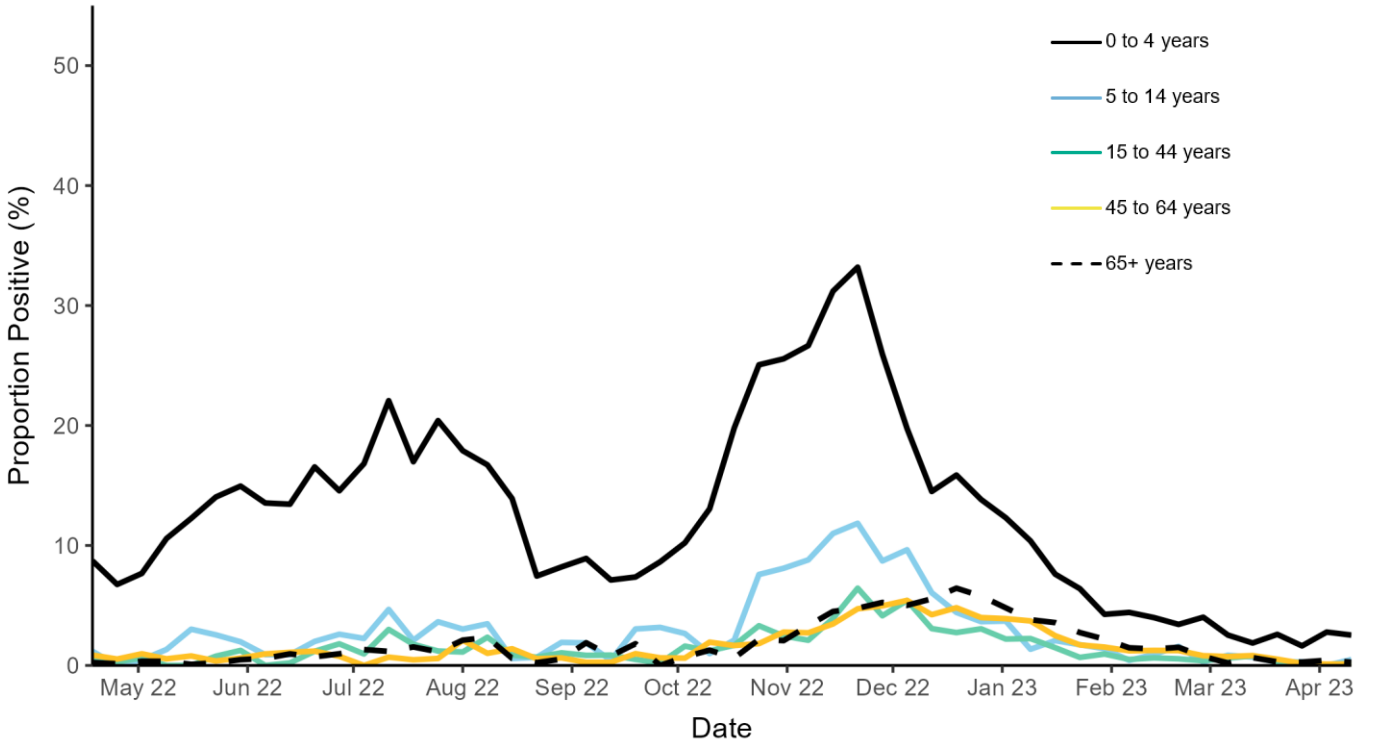


Figure 19: Respiratory DataMart weekly positivity (%) for RSV by age, England



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 the HPZone case and incident management system. Incidents are suspected outbreaks of acute respiratory infections linked to a particular setting. All suspected outbreaks are further investigated by the HPT in liaison with local partners.

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

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

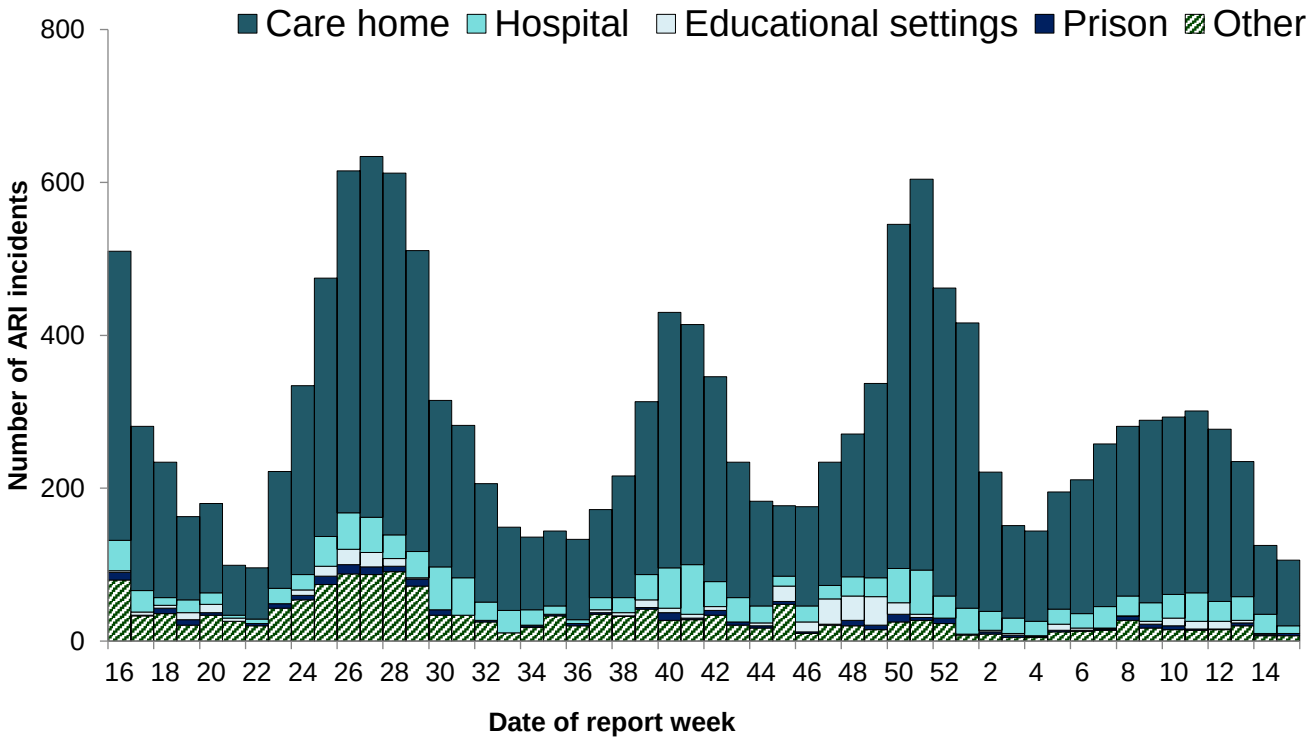
Data caveats:

1. The incidents captured on HPZone represent a subset of all ongoing ARI clusters and outbreaks in England rather than an exhaustive listing.
2. In addition, SARS-CoV-2 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.

106 new ARI incidents have been reported in week 15 in the UK (Figure 20):

- 86 incidents were from care homes, where 45 had at least one linked case that tested positive for SARS-CoV-2
- Ten incidents were from hospitals, where five had at least one linked case that tested positive for SARS-CoV-2
- Three incidents were from prisons, where two had at least one linked case that tested positive for SARS-CoV-2
- Seven incidents were from other settings, where three had at least one linked case that tested positive for SARS-CoV-2

Figure 20: Number of acute respiratory infection (ARI) incidents by setting, UK



*Excludes data from Wales

Figure 21: Number of acute respiratory infection (ARI) incidents by setting, England

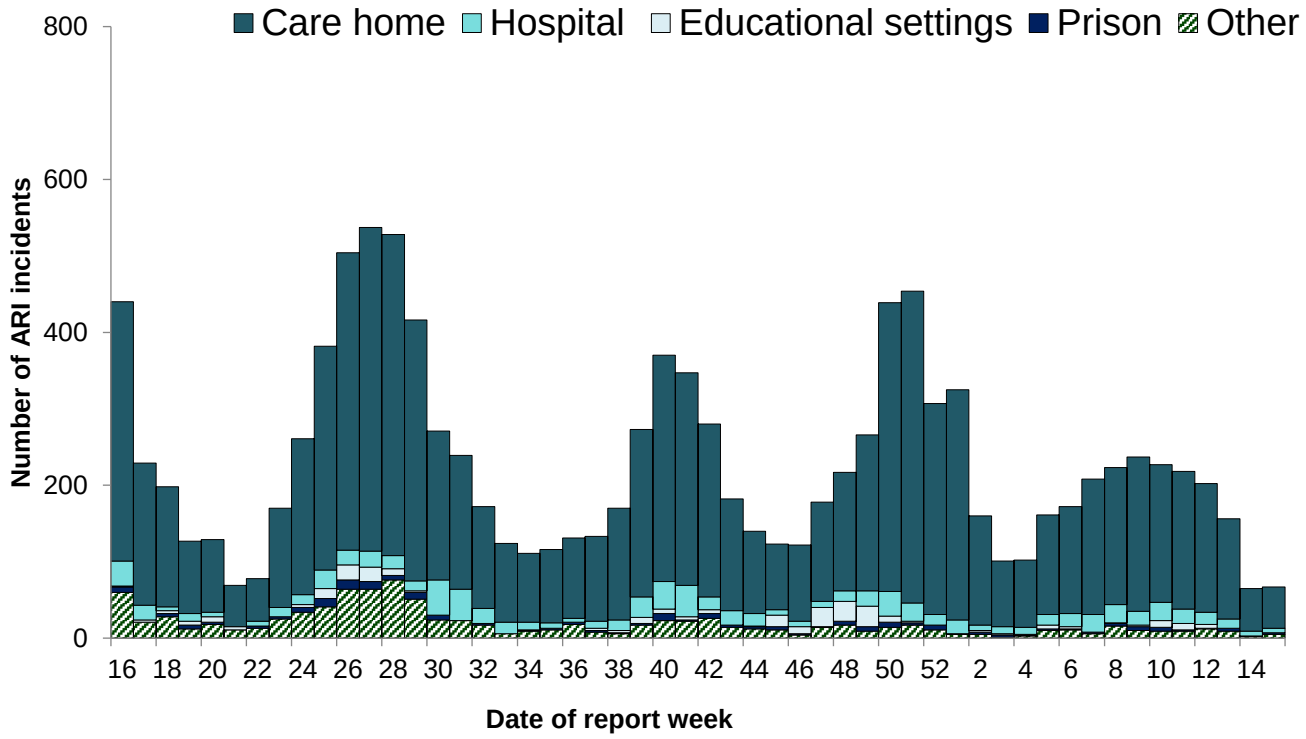


Figure 22: Number of acute respiratory infection (ARI) incidents in care homes by virus type, England

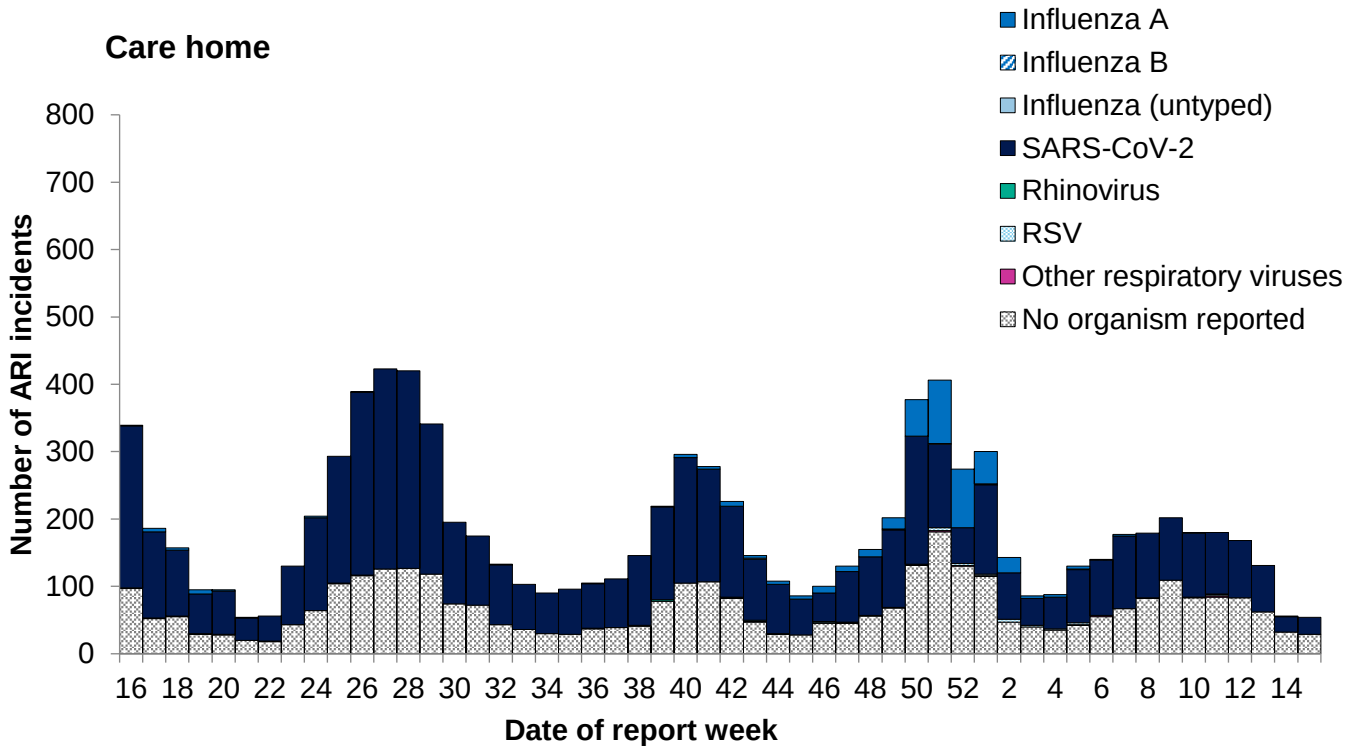


Figure 23: Number of acute respiratory infection (ARI) incidents in hospitals by virus type, England

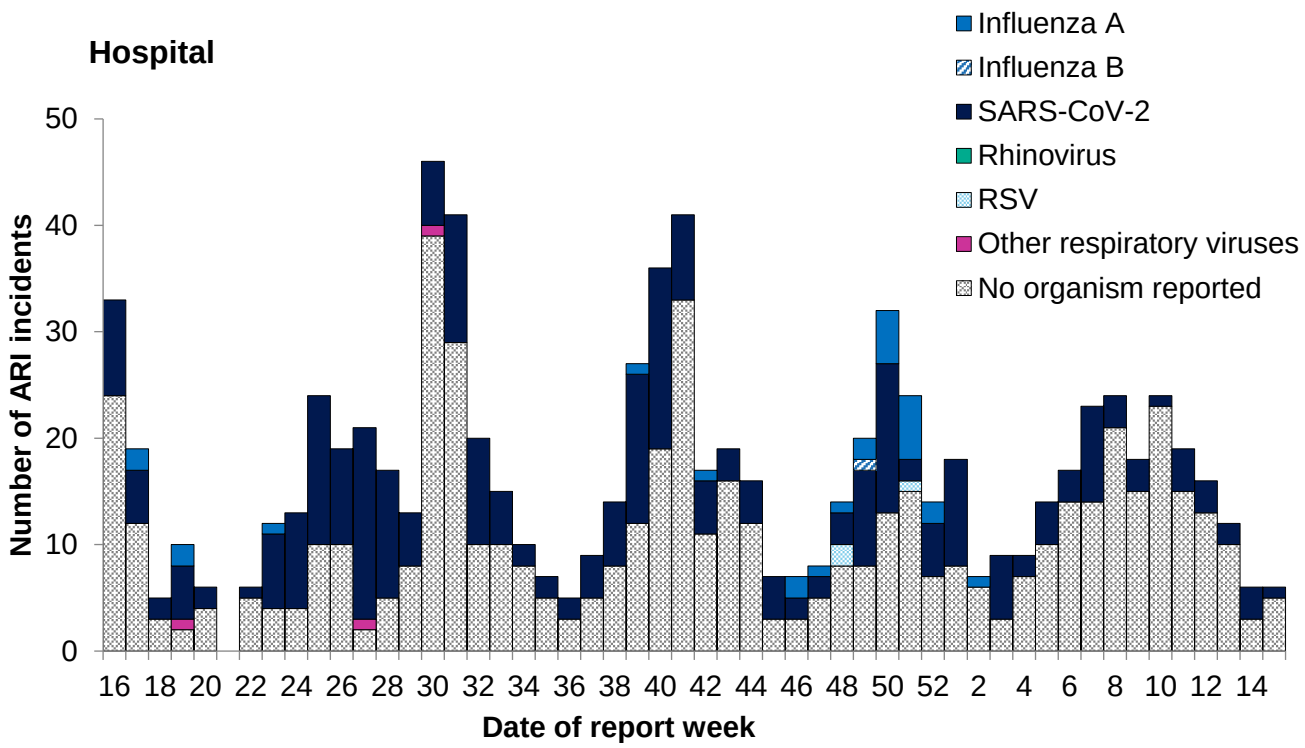
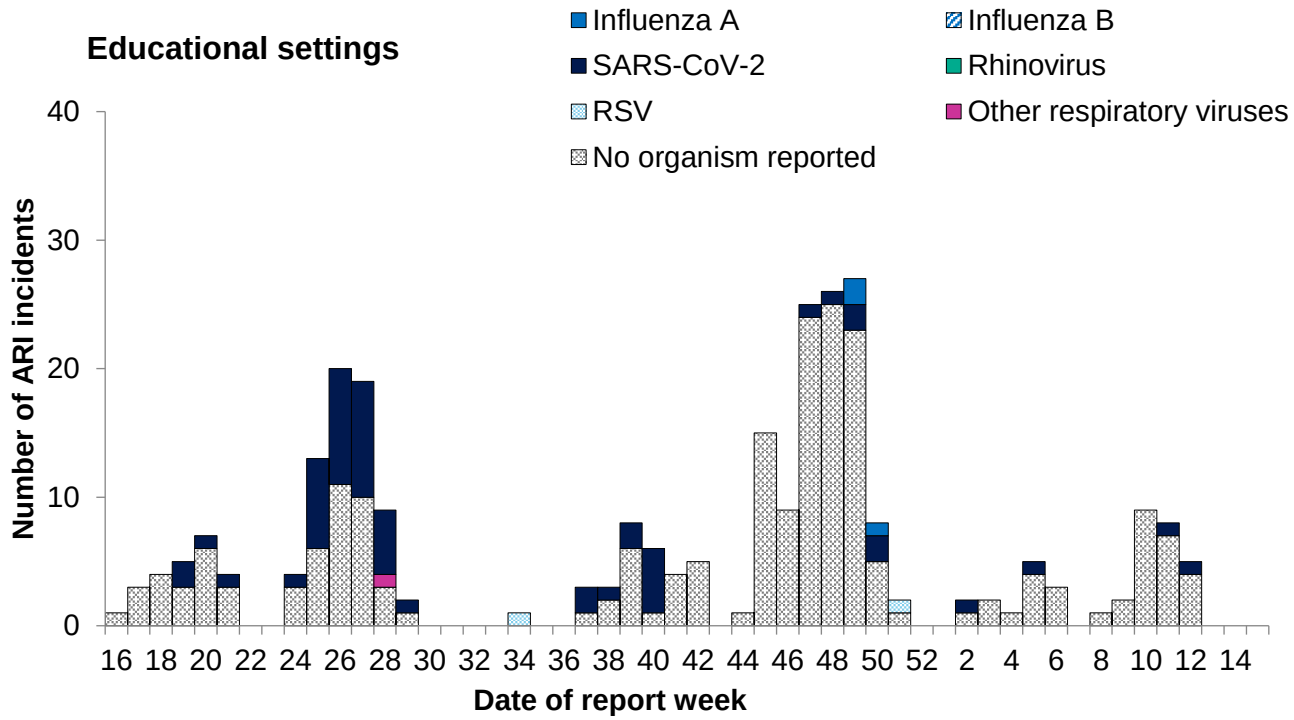


Figure 24: Number of acute respiratory infection (ARI) incidents in educational settings by virus type, England (a) for the weeks 16 2022 to 15 2023 and (b) for the 2022 to 2023 academic year

(a)



(b)

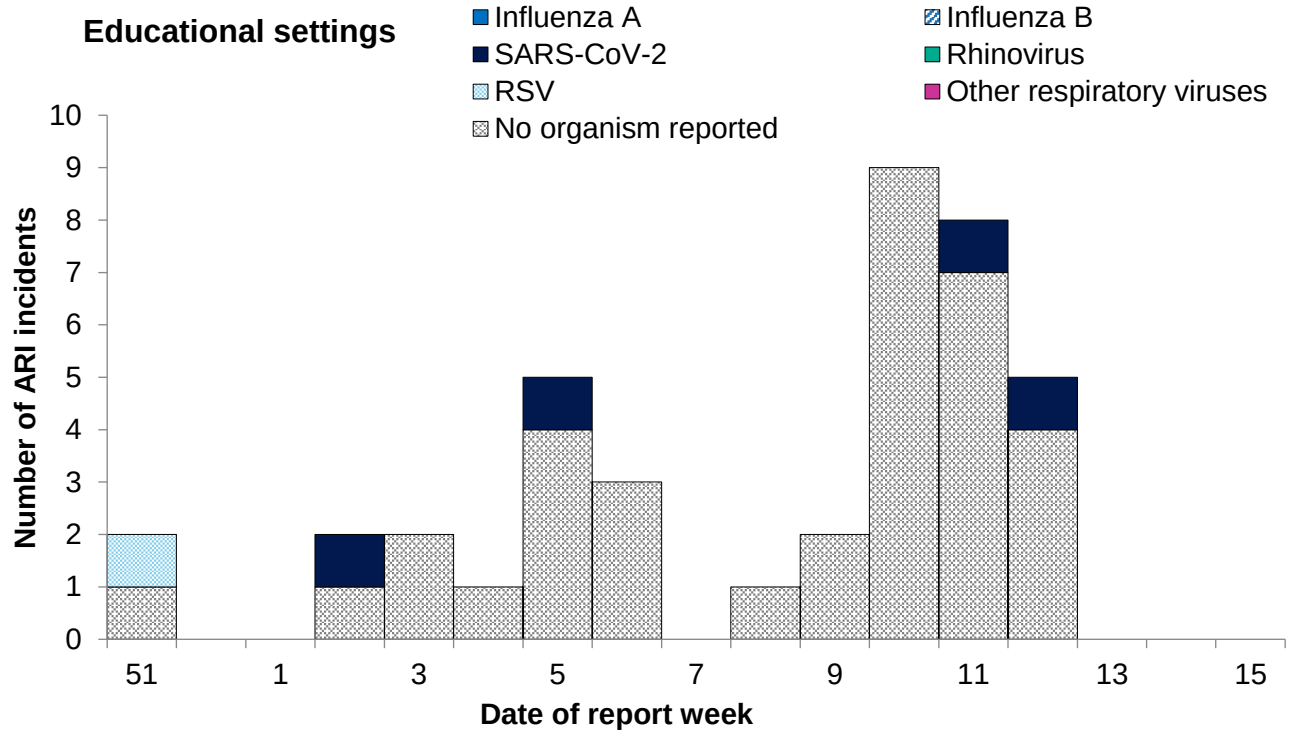


Figure 25: Number of acute respiratory infection (ARI) incidents in prisons by virus type, England

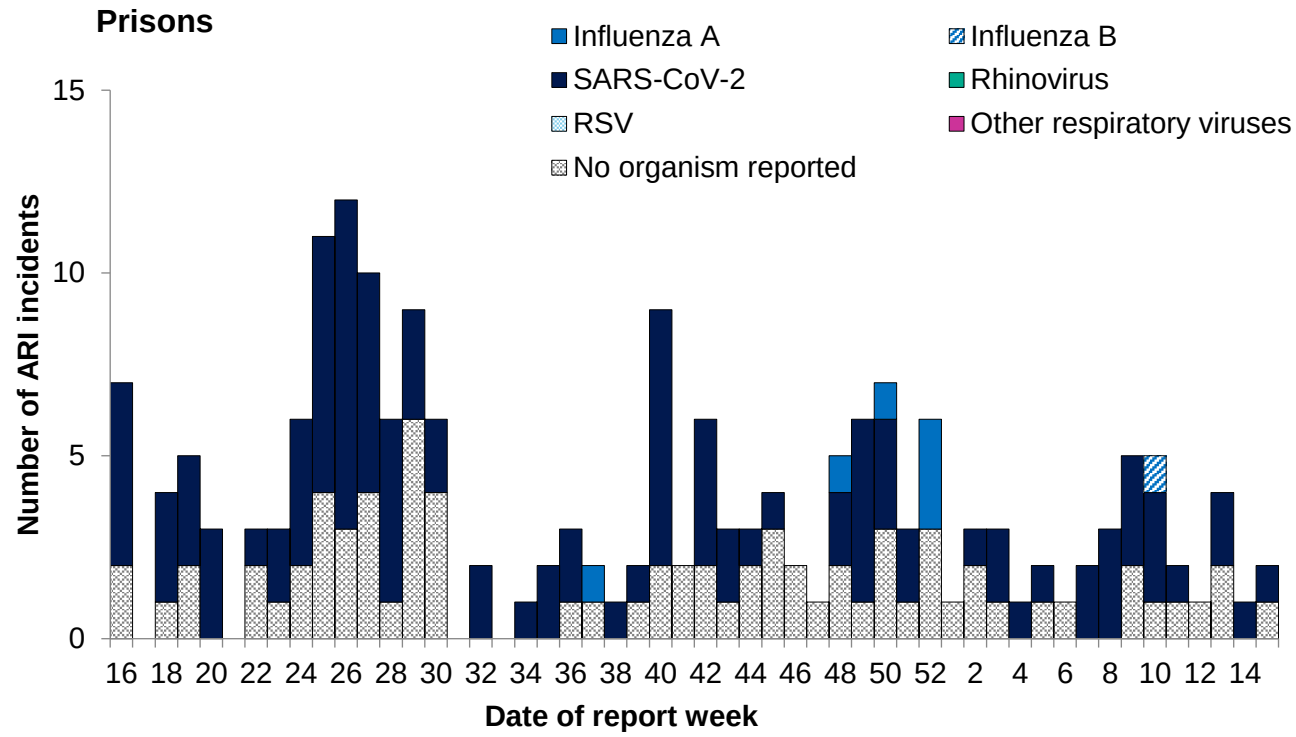


Figure 26: Number of acute respiratory infection (ARI) incidents in other settings by virus type from, England

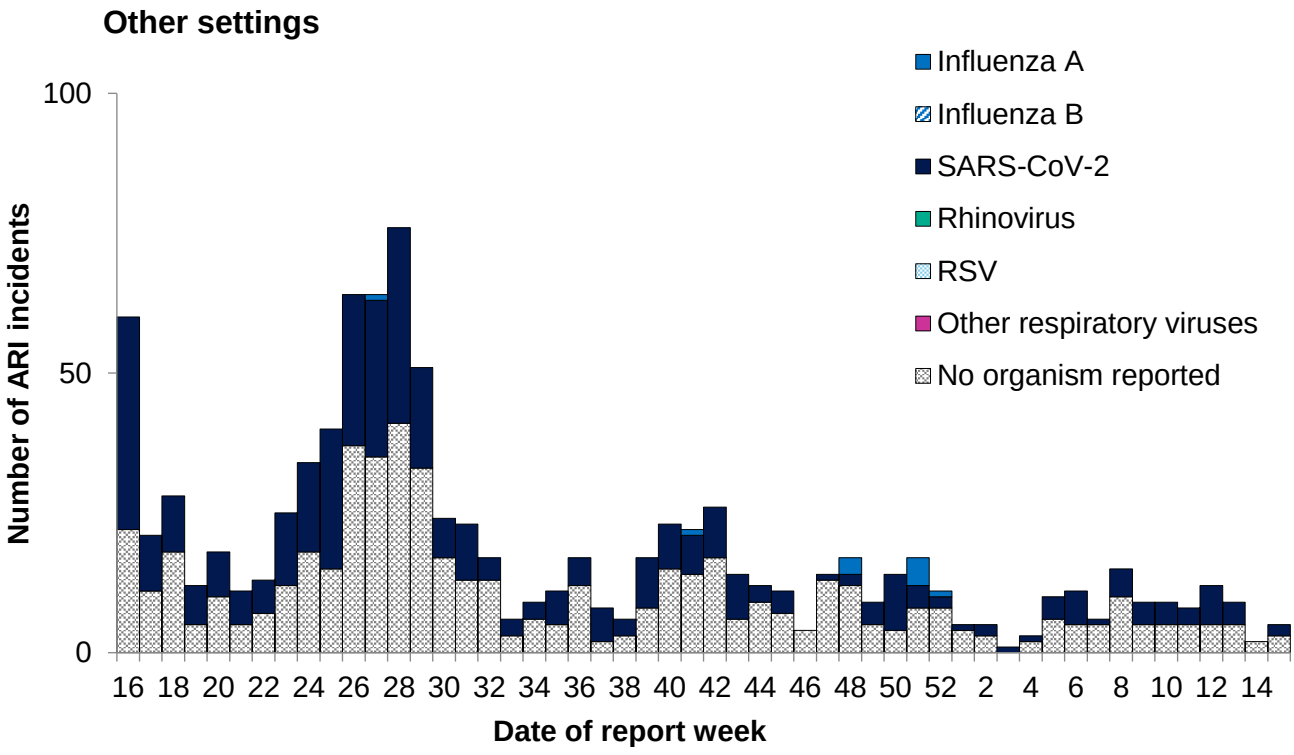


Table 1: Total number of situations and incidents by institution and UKHSA centres over the past 4 weeks with the total number in the last week in brackets

UKHSA Centres	Care Home	Hospital	Educational Setting	Prison	Other	Grand Total
East of England	14(2)	0(0)	0(0)	4(1)	0(0)	18(3)
East Midlands	4(0)	0(0)	0(0)	3(1)	0(0)	7(1)
London	57(6)	31(5)	2(0)	0(0)	11(1)	101(12)
North East	95(14)	0(0)	1(0)	0(0)	1(0)	97(14)
North West	6(0)	1(0)	1(0)	0(0)	1(0)	9(0)
South East	1(0)	0(0)	0(0)	0(0)	0(0)	1(0)
South West	151(26)	0(0)	0(0)	0(0)	7(2)	158(28)
West Midlands	28(1)	4(1)	0(0)	1(0)	2(1)	35(3)
Yorkshire and Humber	53(5)	4(0)	1(0)	0(0)	6(1)	64(6)
Grand Total	**409(54)**	**40(6)**	**5(0)**	**8(2)**	**28(5)**	**490(67)**

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 15, there were 1,994 participants completing the weekly symptoms questionnaire of which 144 (7.2%) reported fever or cough and 40 (2.0%) reported influenza like illness (ILI).

Both COVID-19 related symptoms and influenza like illness (ILI) amongst participants completing the weekly symptoms survey remained relatively similar to data reported in week 14.

Healthcare seeking behaviour amongst participants reporting respiratory symptoms relating to COVID-19 (cough, fever or loss of smell) showed that participants reporting symptoms were more likely to visit their GP provider (Figure 27).

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 28).

Figure 27: FluSurvey participants self-reporting fever or cough and ILI symptoms, and trends in healthcare seeking behaviour among these participants, England

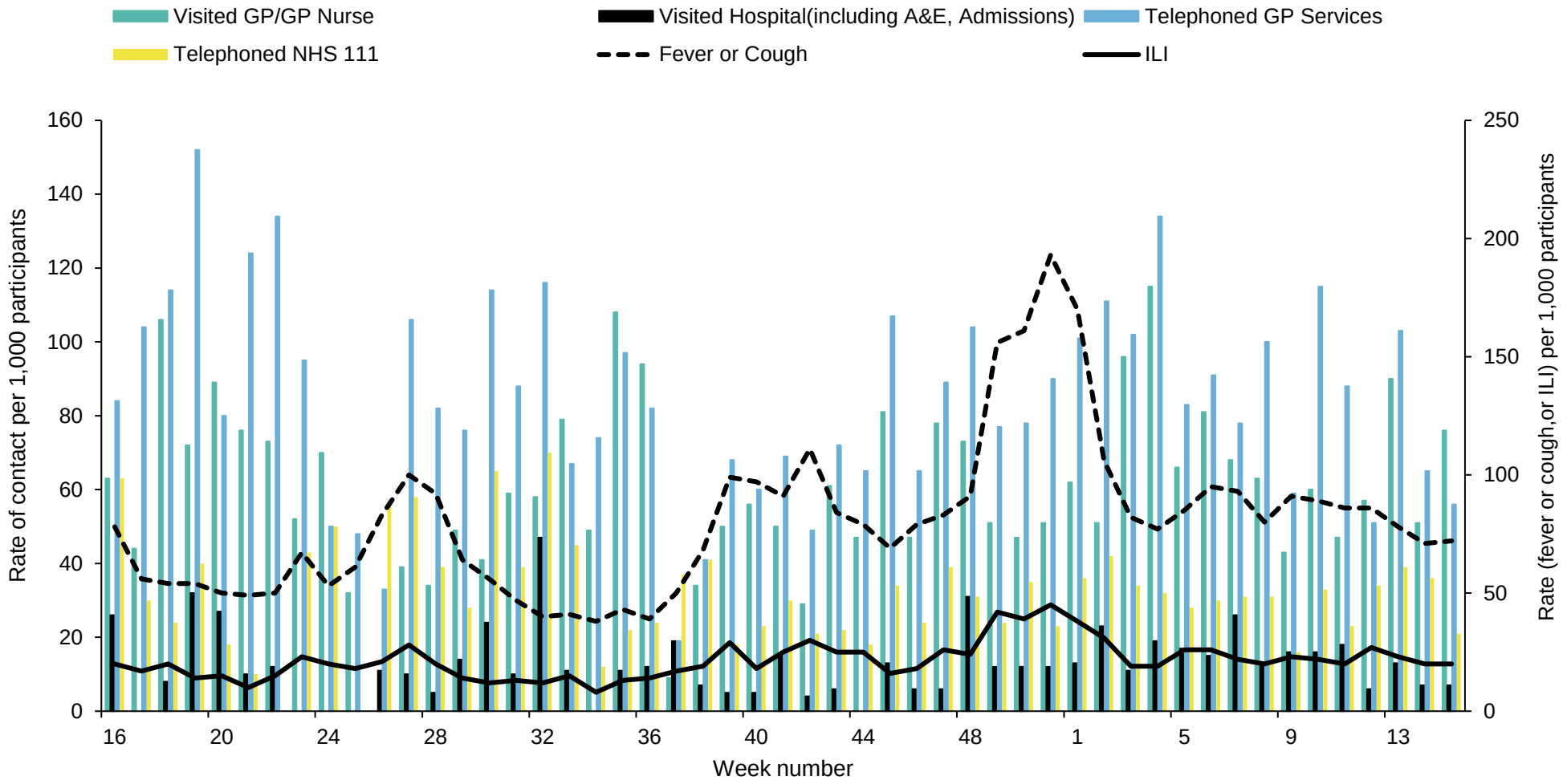
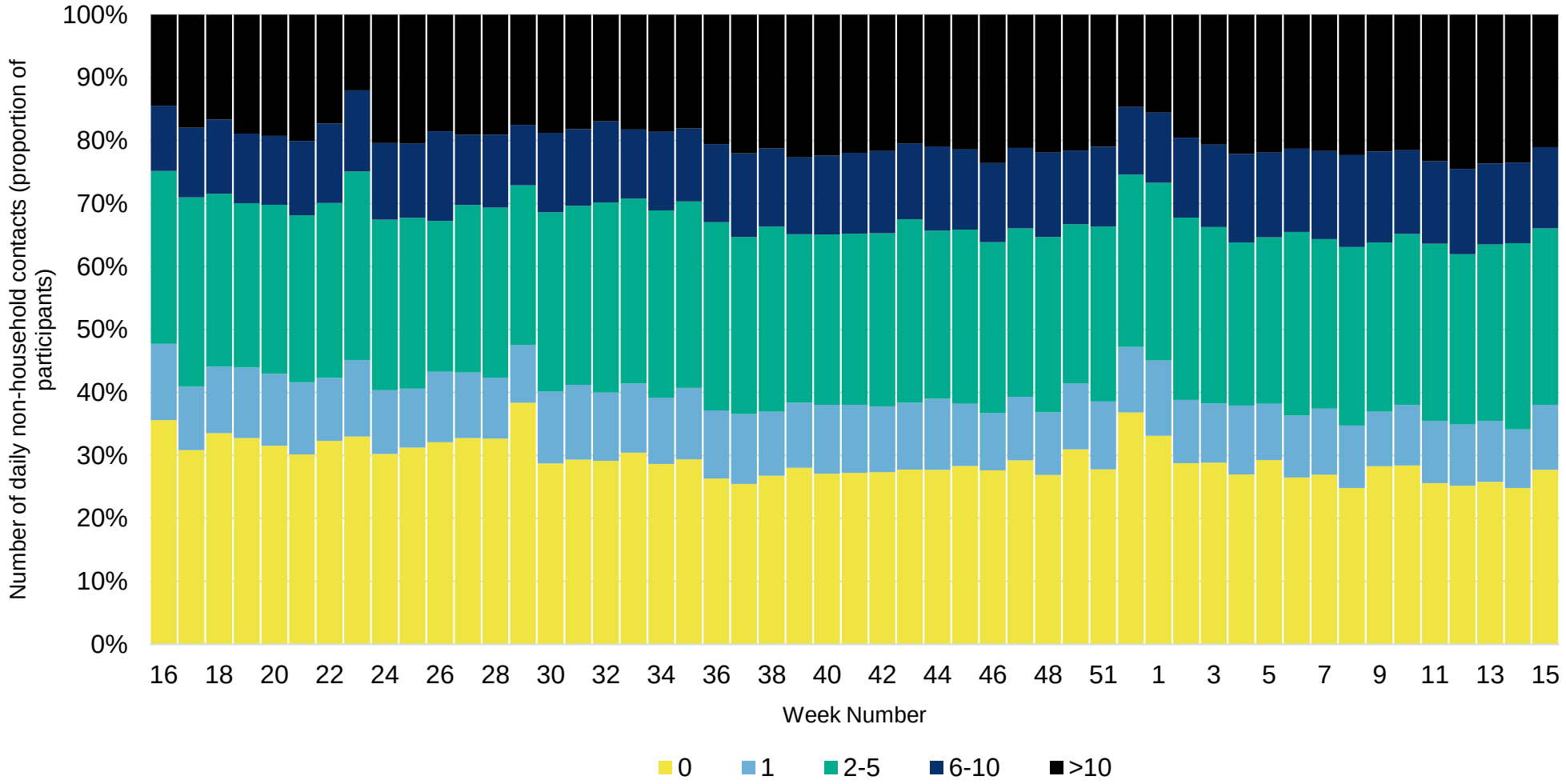


Figure 28: FluSurvey participants' self-reported number of social contacts outside the household

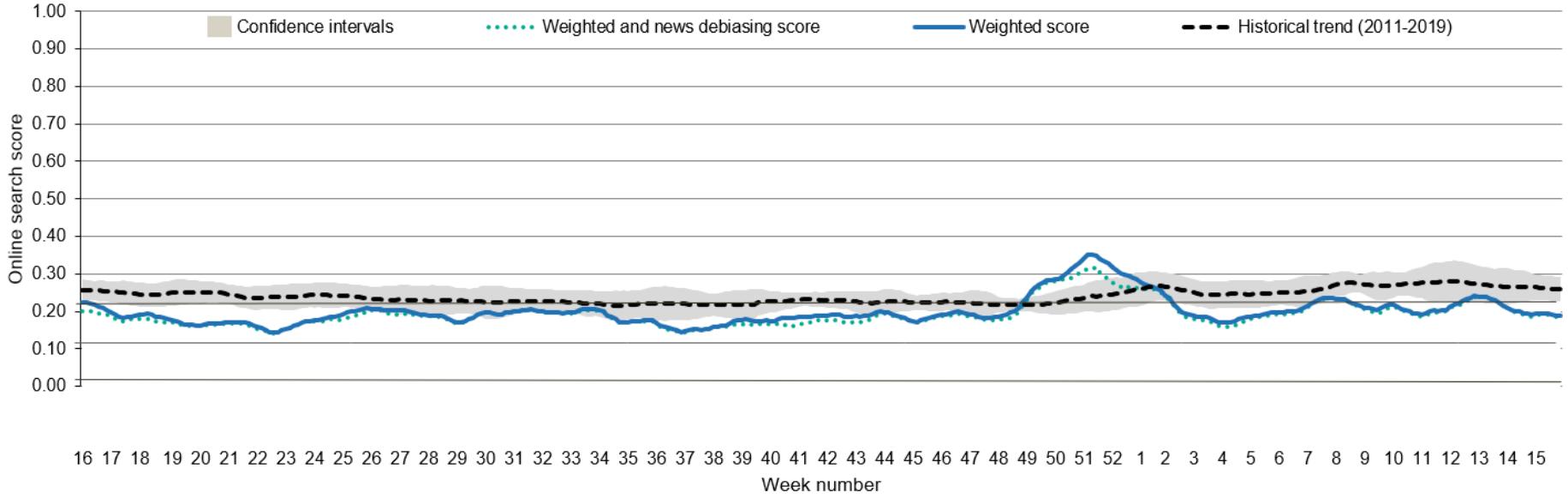


Google search queries

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 15, the overall and media-debiasing weighted Google search scores remained stable compared to week 14 (Figure 29).

Figure 29: Normalised Google search score for COVID-19 symptoms, with weighted score for media-debiasing and historical trend, England



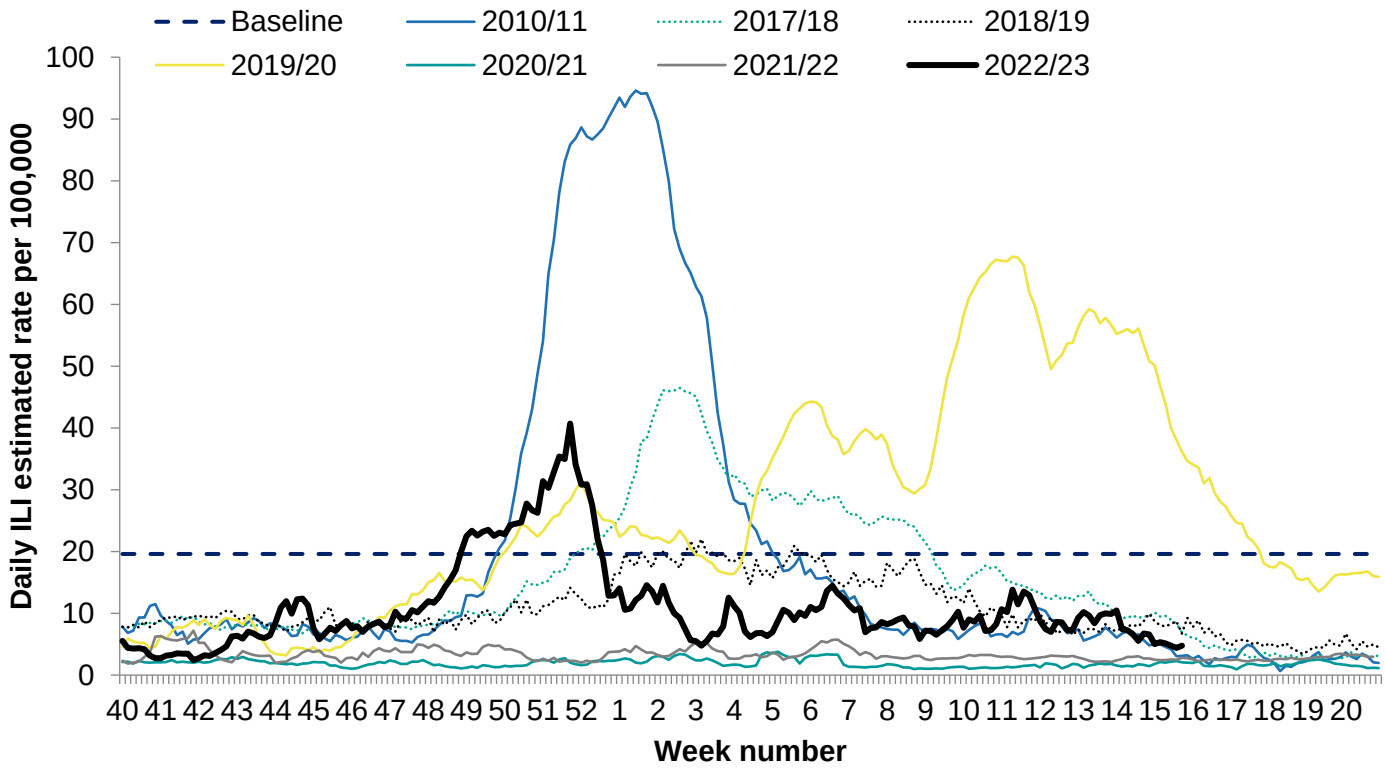
Flu Detector

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 15, the daily ILI rate decreased slightly compared to week 14 and remained below the baseline threshold of 19.6 per 100,000 for the 2022 to 2023 season (Figure 30).

Figure 30: Daily estimated ILI Google search query rates per 100,000 population, England



NHS 111

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

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

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

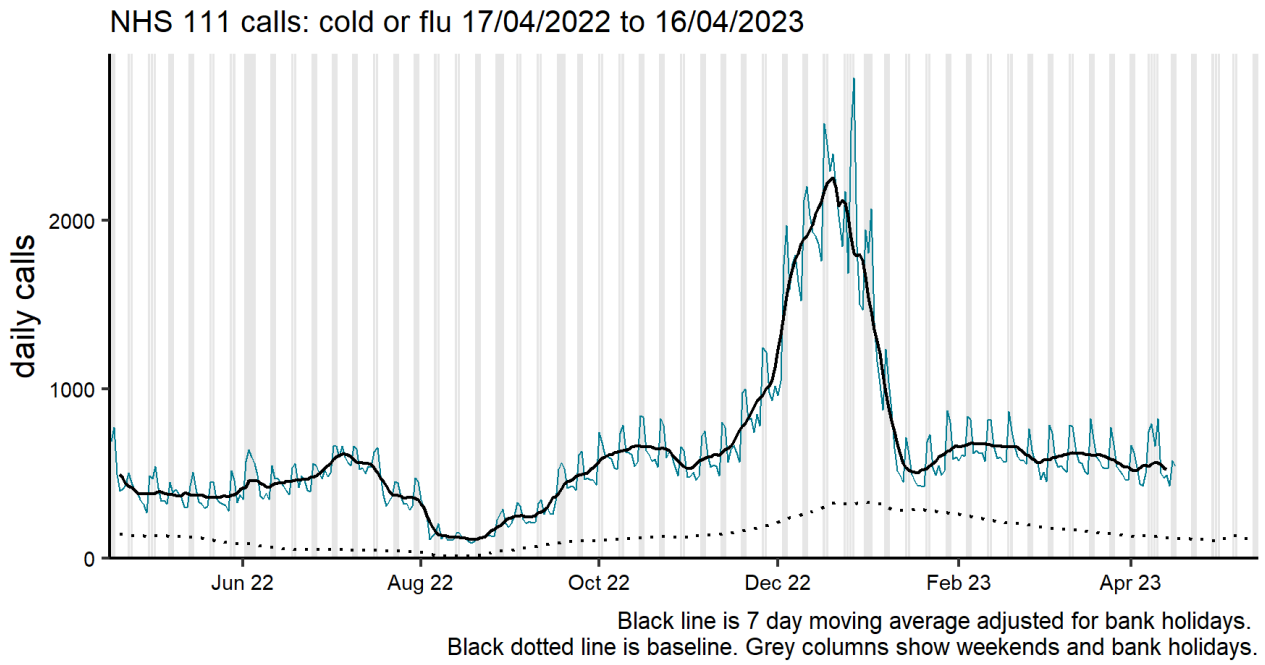
During week 15, NHS 111 calls for cough and calls for cold or flu increased slightly nationally (Figure 31 and 32), particularly in those aged over 15 years. This should be interpreted in the light of service provision during the Easter bank holiday.

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 31: 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)

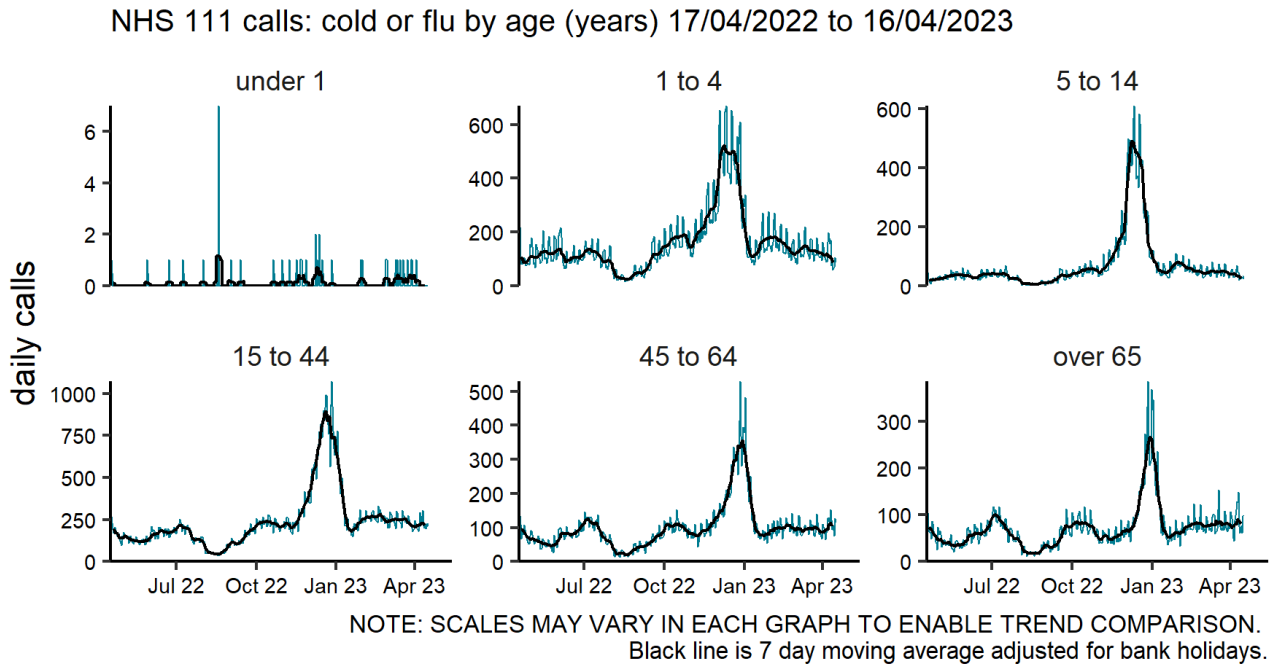
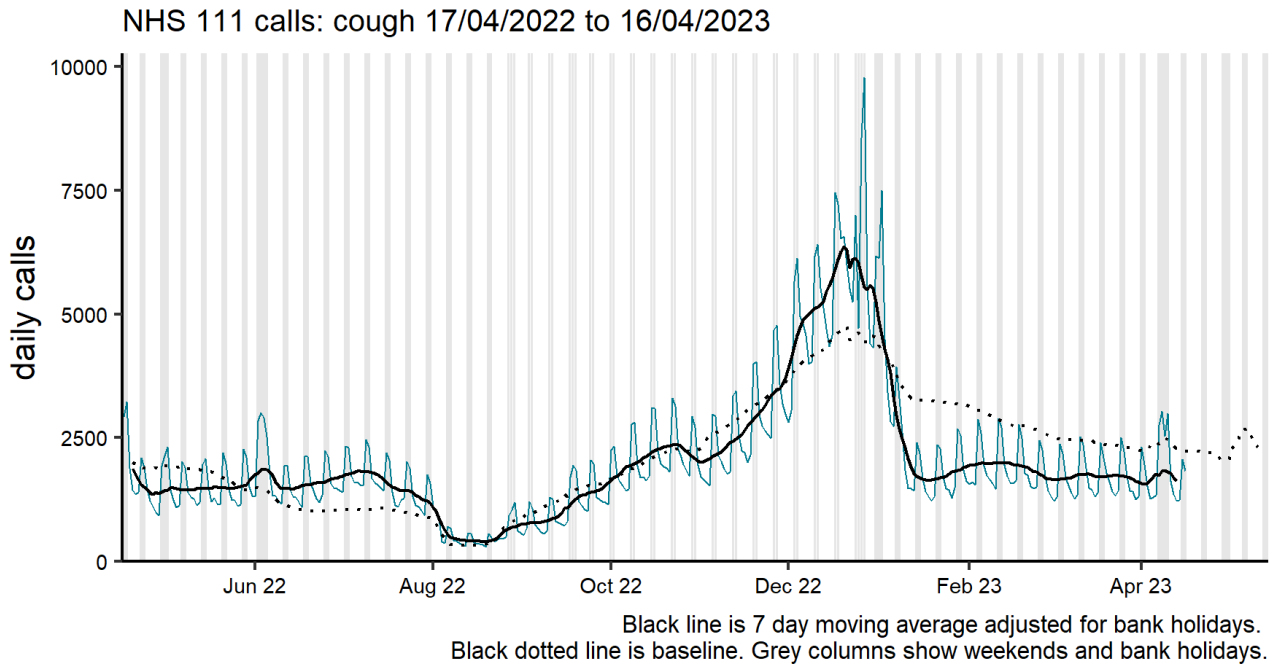
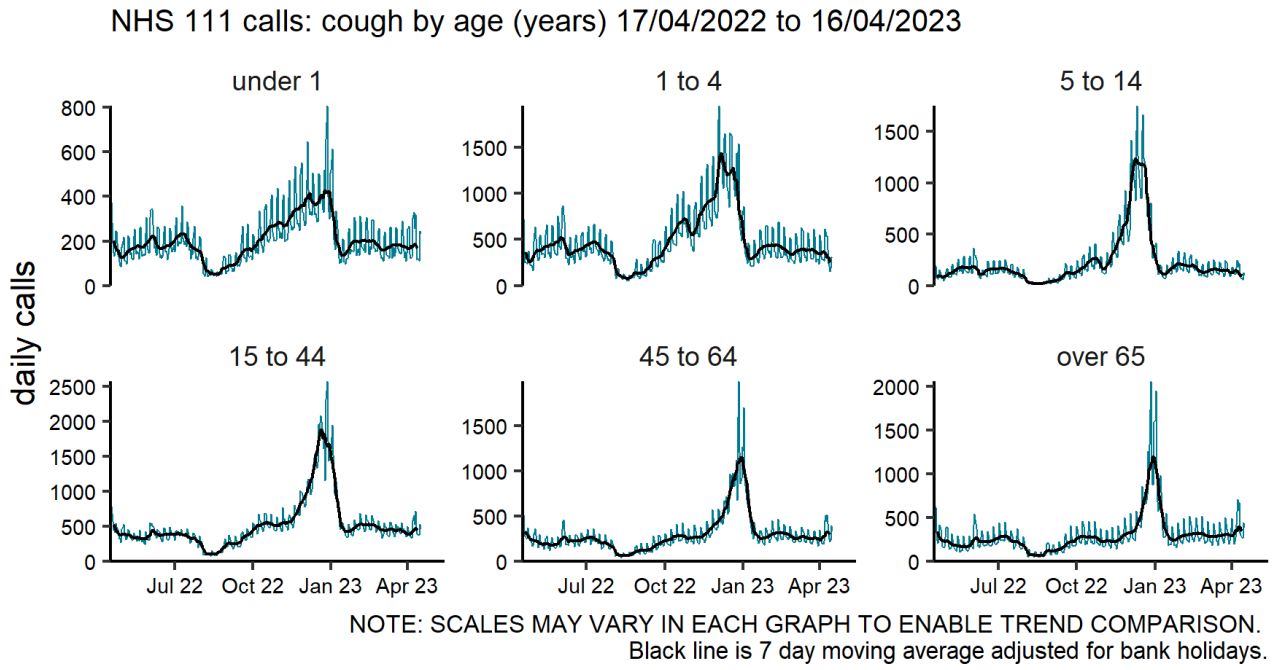


Figure 32: NHS 111 telephony indicators (and 7-day moving average) for number of daily cough calls, England (a) nationally and (b) by age group

(a)



(b)



Primary care surveillance

RCGP (England)

The weekly ILI consultation rate through the RCGP surveillance decreased to 1.6 per 100,000 registered population in participating GP practices in week 15 compared to 1.7 per 100,000 in the previous week and remained within baseline activity levels (less than 11.47 per 100,000) (Figure 33). By age group, the highest rates were seen in those aged between 15 and 44 years (2.4 per 100,000) followed by those aged between 45 and 64 years old (1.6 per 100,000). The lower respiratory tract infections (LRTI) consultation rate remained stable at 50.3 per 100,000 in week 15 compared to 47.4 per 100,000 in the previous week. The COVID-19 indicator rate increased slightly to 21.3 per 100,000 in week 15 compared to 17.4 per 100,000 in the previous week (Figure 34).

Figure 33: RCGP influenza-like illness (ILI) consultation rates, all ages, England

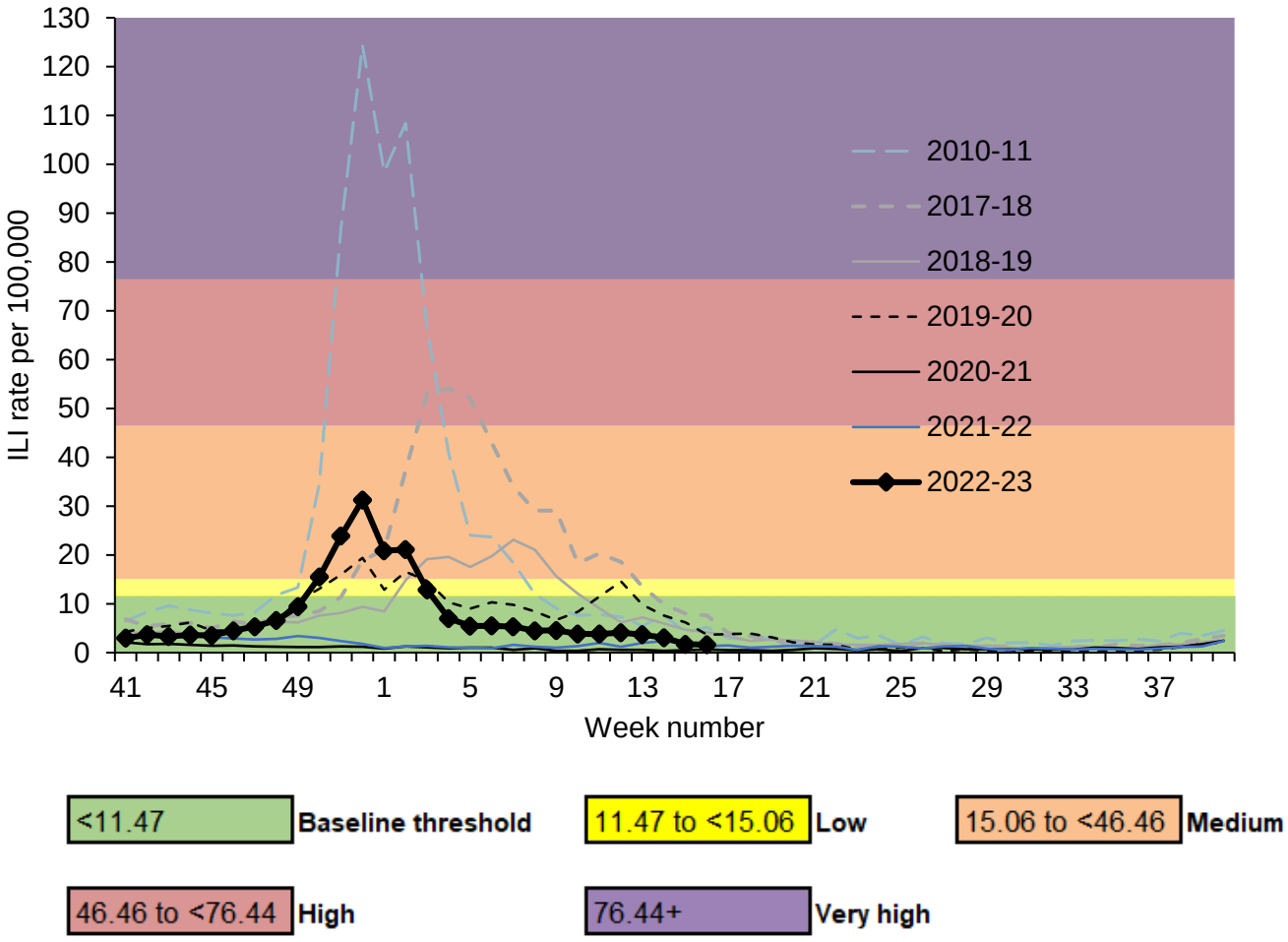
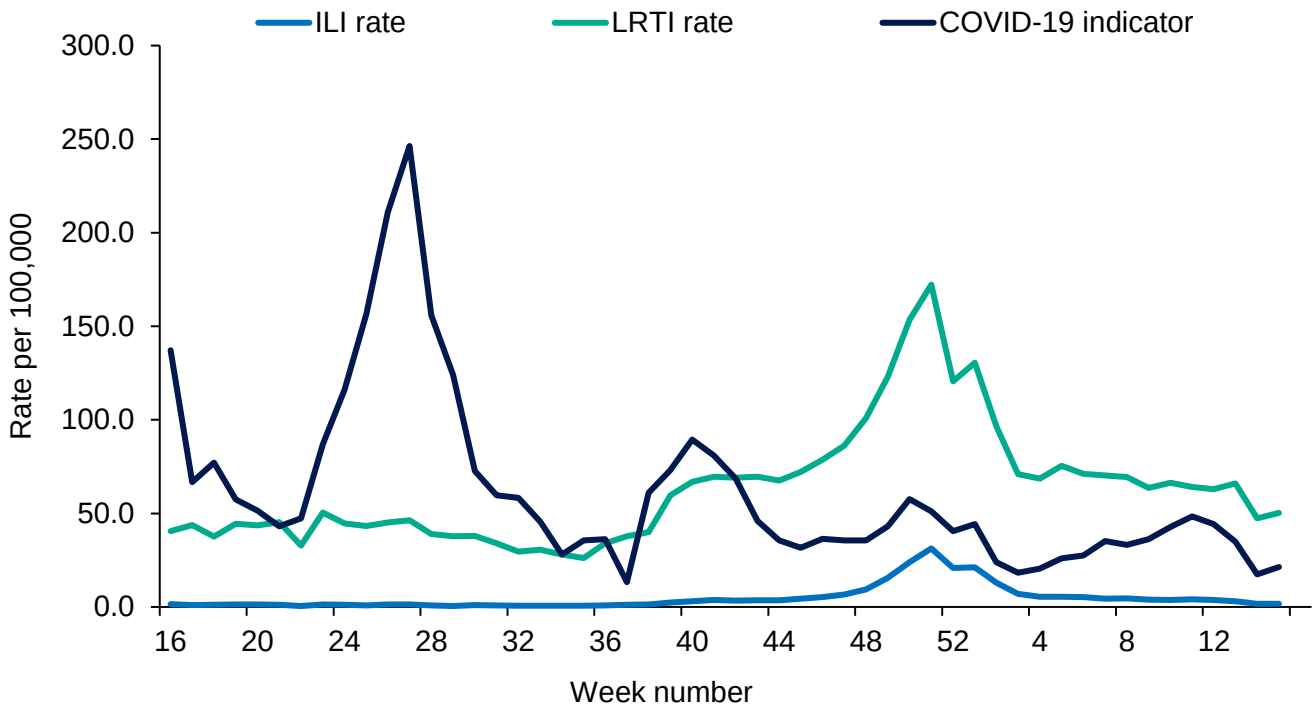


Figure 34: RCGP ILI, LRTI and COVID-19 indicator rates, England



UK

Overall, weekly ILI consultations remained at baseline activity levels in all devolved administrations.

By age group, the highest incidence was in those aged between 15 and 44 years in England (2.4 per 100,000), in adults aged 75 years and above in Scotland (4.9 per 100,000), in those aged between 45 and 64 years in Northern Ireland (2.1 per 100,000), and in those aged between 45 and 64 years in Wales (7.3 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																								
	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
England (RCGP)	3.3	3.6	3.5	4.5	5.3	6.6	9.4	15.5	23.9	31.3	20.9	21.1	12.9	7.0	5.5	5.5	5.3	4.5	4.6	3.8	3.8	4.1	4.3	3.1	1.7	1.6
Wales	3.9	4.8	6.3	7.0	3.5	4.3	7.8	14.1	24.2	39.1	34.8	22.8	14.3	6.8	3.3	5.2	4.9	4.5	3.2	3.9	5.5	2.2	3.8	4.0	2.3	3.9
Scotland	4.0	3.8	3.5	4.8	4.1	3.1	5.9	7.2	11.1	20.2	31.9	20.7	15.9	9.7	5.7	3.8	6.1	3.9	5.9	3.0	3.9	2.5	2.1	1.9	1.8	3.4
Northern Ireland	1.8	3.5	3.0	3.7	3.5	4.9	5.0	6.0	9.4	17.8	14.0	17.7	10.3	6.4	3.3	4.2	3.4	2.6	3.3	2.7	3.0	3.0	4.3	2.2	2.2	1.5

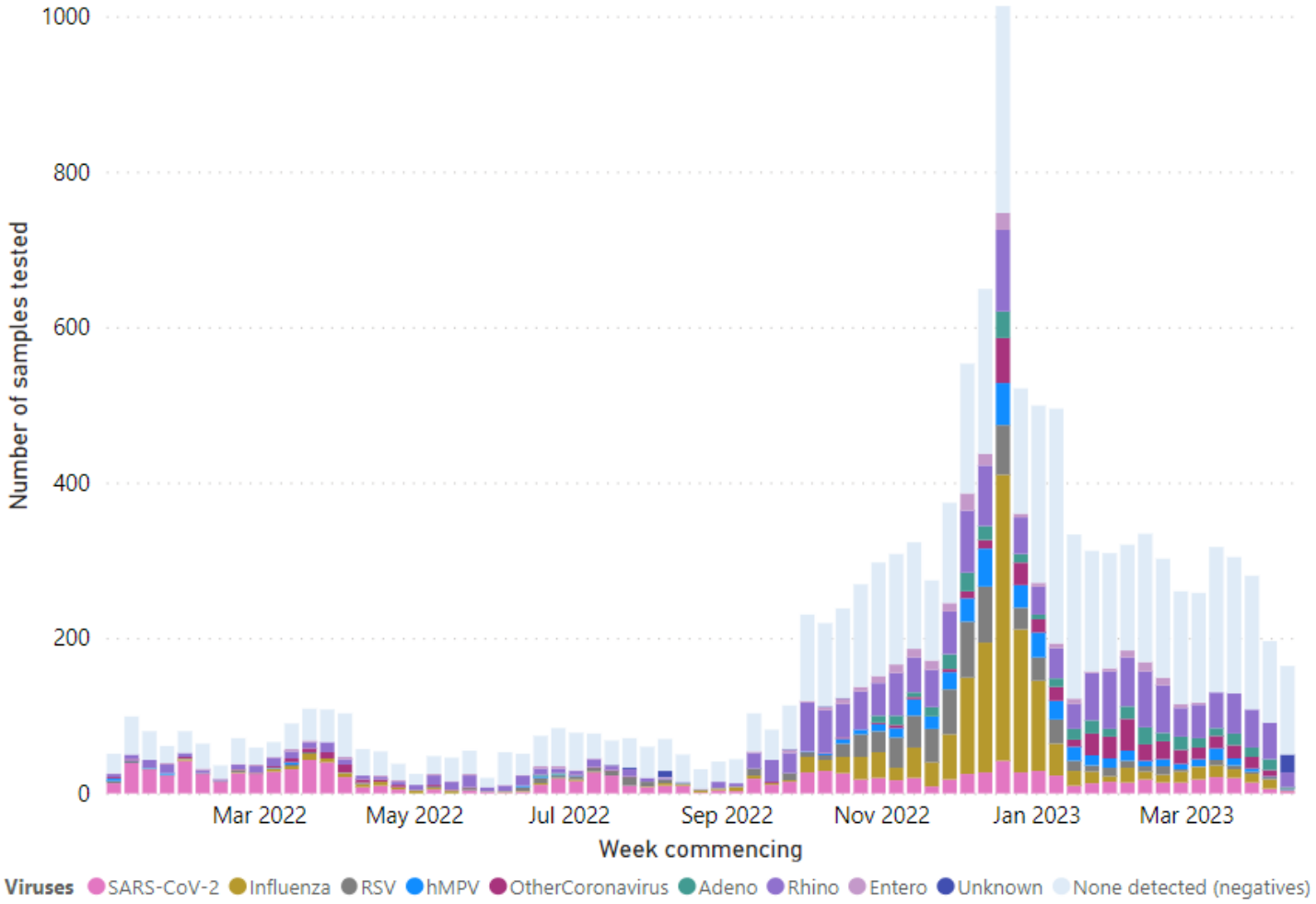
The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for GP ILI consultations for the start of influenza activity (based on 10 seasons excluding 2020 to 2021), in a standardised approach across Europe.

Sentinel swabbing scheme in England

Based on the date samples were received in the reference laboratory, in week 15 2023 (week commencing 10 April 2023) 162 samples were tested through the GP sentinel swabbing scheme in England, of which 27 samples tested positive (Figure 35). Among positive samples with a known virus type, 70.4% were for rhinovirus, 11.1% for SARS-CoV-2, 7.4% for adenovirus, 3.7% for influenza, 3.7% for seasonal coronaviruses and 3.7% for hMPV (Figure 36).

Based on the date samples were taken, sample numbers were too low this week to update Figure 37 and Figure 38. Data for the most recent week will be updated retrospectively. Positivity (%) was not calculated as the total number tested based on sample date was less than 20 (Figure 38).

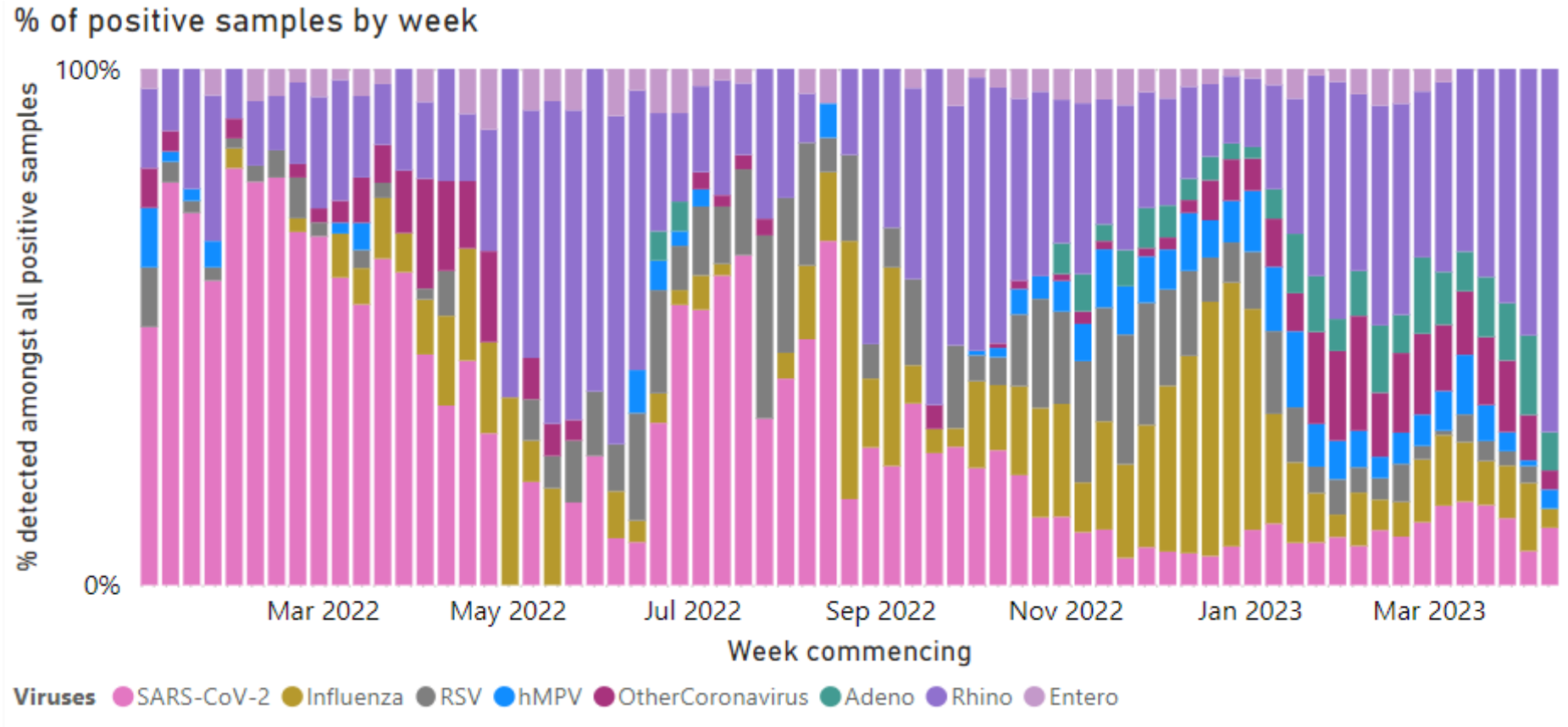
Figure 35: Number of samples tested for SARS-Cov-2, influenza, and other respiratory viruses in England by week, GP sentinel swabbing



Unknown category corresponds to samples with no result yet.

Source: RCGP Research and Surveillance Centre sentinel primary care practices (RCGP Virology Dashboard)

Figure 36. Proportion of detections of SARS-CoV-2, influenza, and other respiratory viruses amongst virologically positive respiratory surveillance samples in England by week, GP sentinel swabbing scheme



Source: RCGP Research and Surveillance Centre sentinel primary care practices (RCGP Virology Dashboard)

Figure 37: Number of positives samples for influenza A (by subtype) and B in England by week, GP sentinel swabbing

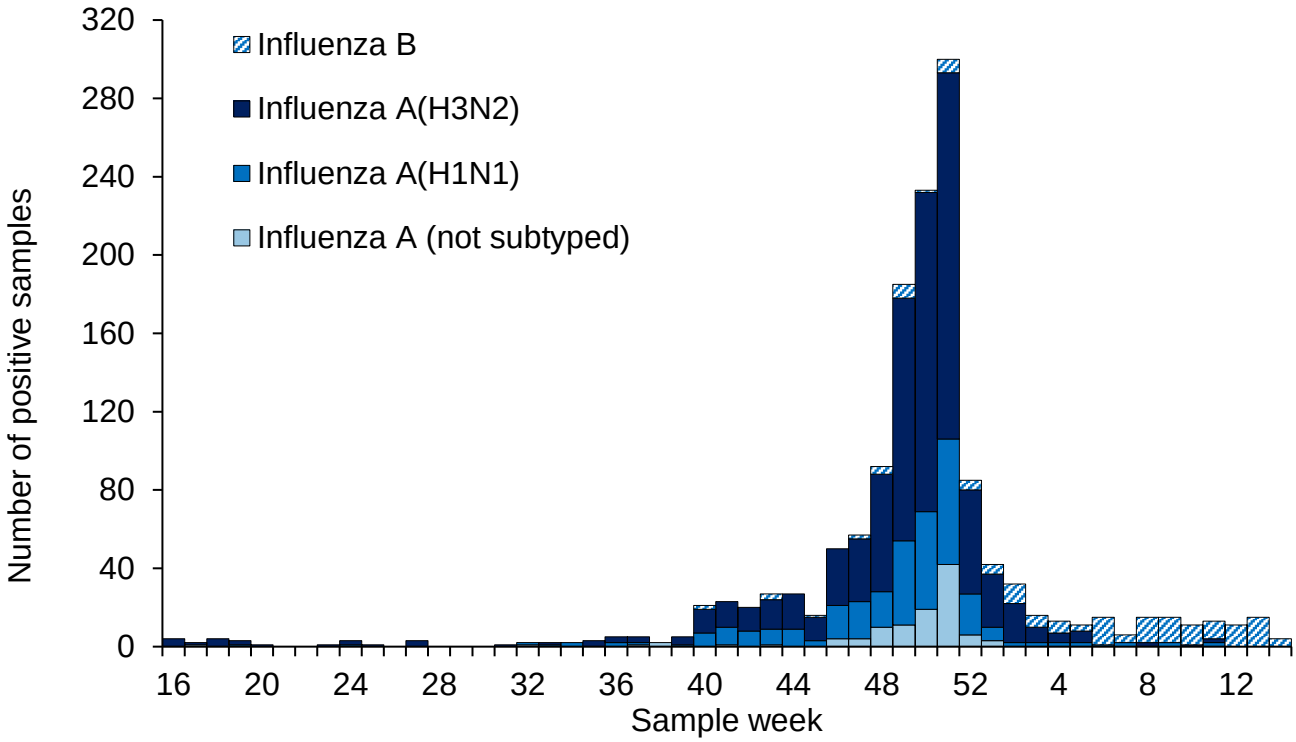
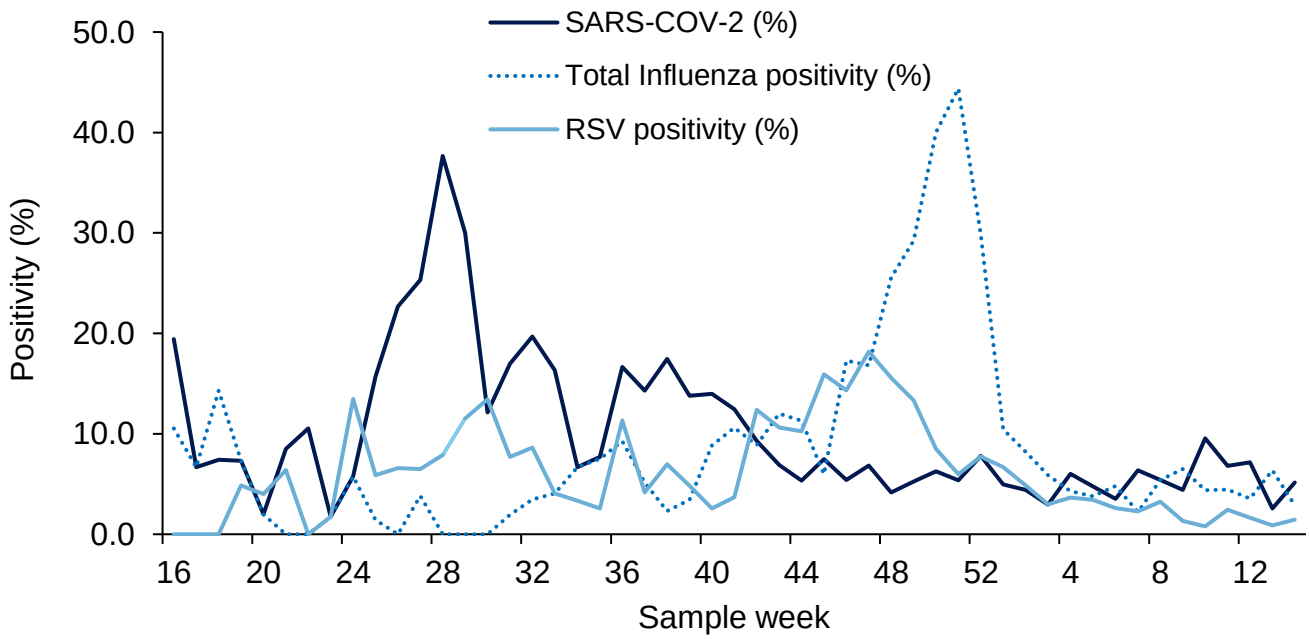


Figure 38: Weekly positivity (%) for COVID-19, Influenza and RSV in England by week, GP sentinel swabbing



GP In Hours, Syndromic Surveillance

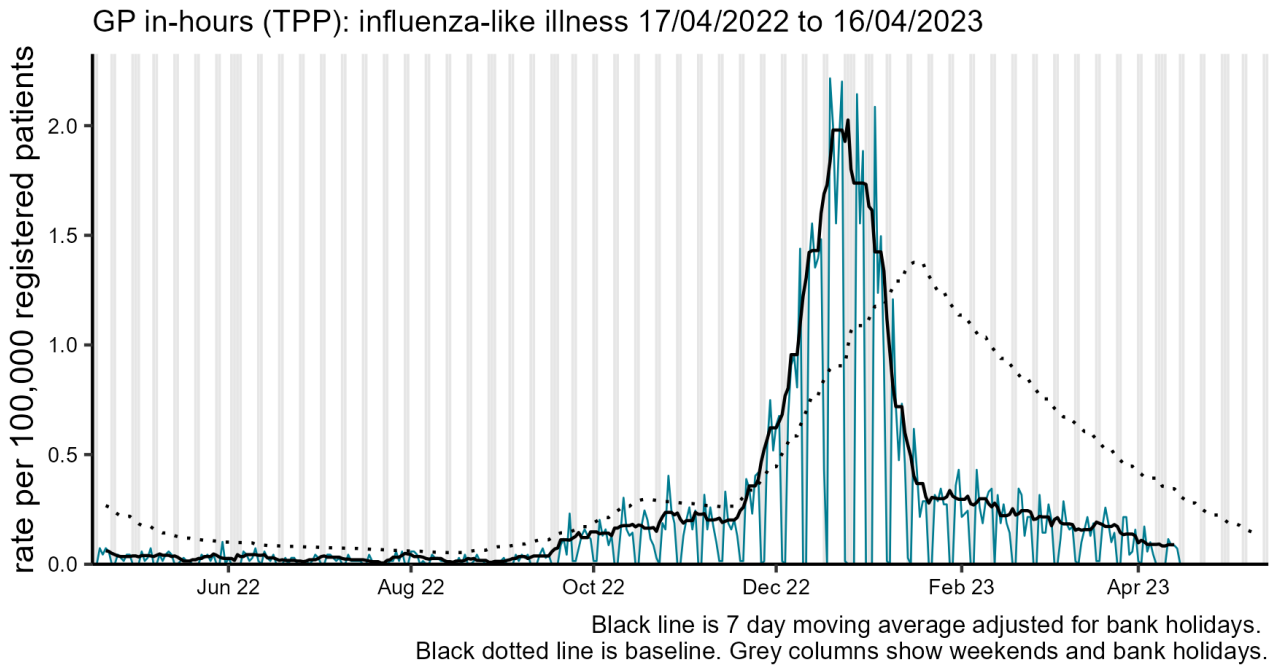
The GP In Hours (GPIH) syndromic surveillance system monitors the number of GP visits during regular hours of known clinical indicators.

During week 15, the rate of GP in hours consultations for influenza-like illness were declining nationally and remained below the baseline levels (Figure 39).

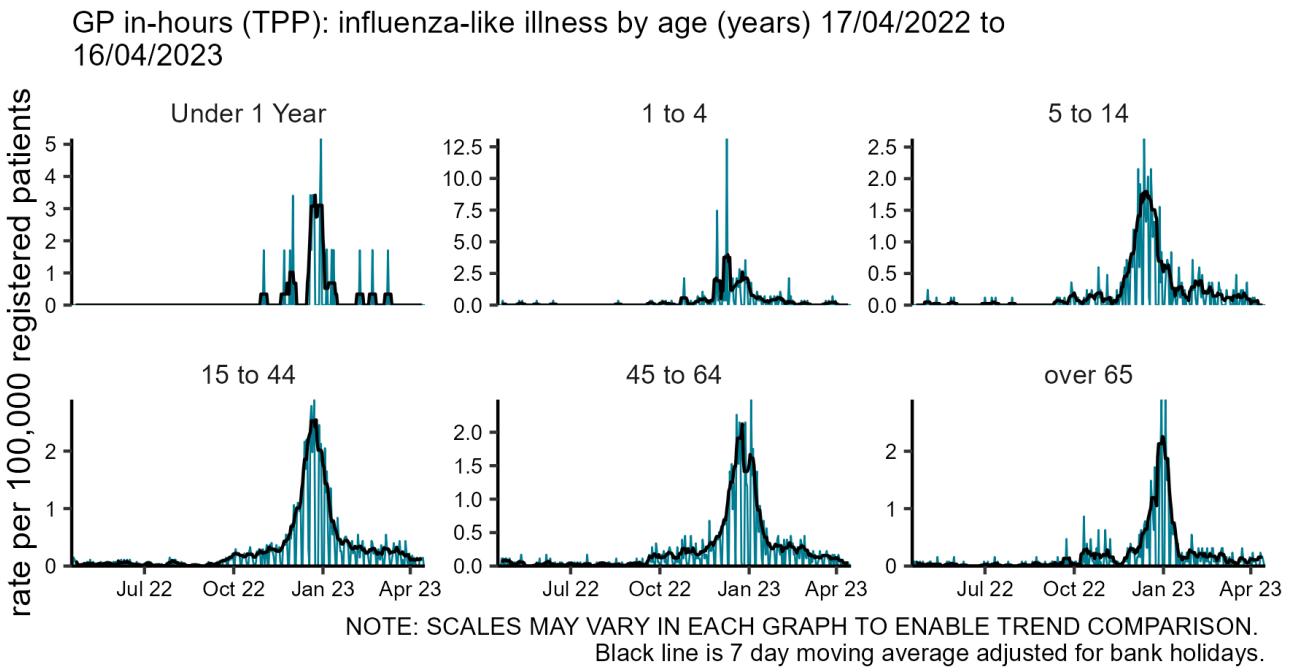
Further indicators and information about caveats are available from the GP In Hours Syndromic Surveillance bulletin.

Figure 39: GPIH clinical indicators for influenza-like illness GP consultations, England (a) nationally, (b) by age group and (c) by UKHSA centre

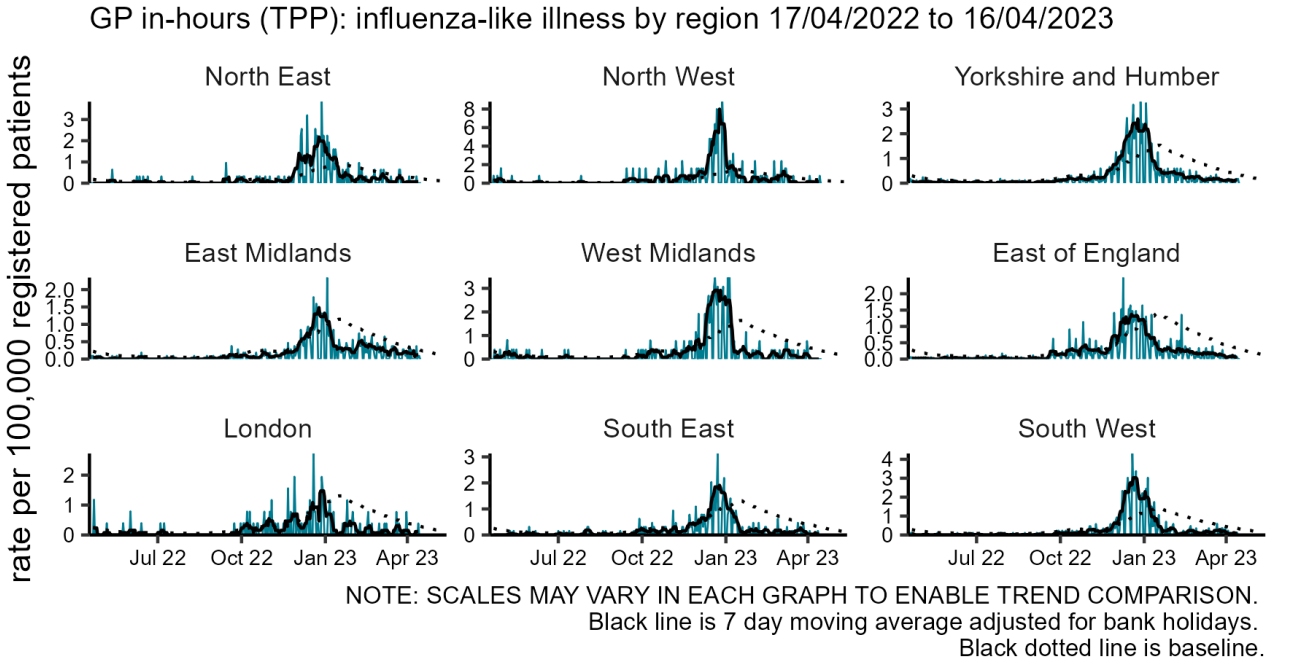
(a)



(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.

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

Secondary care surveillance

SARI Watch

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

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

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

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

Similarly trends in influenza hospitalisation and critical care admission should be interpreted in the context of testing practices. In recent years there has been wider implementation of rapid molecular point of care tests for influenza in hospital settings. From a public health surveillance perspective it is important to consider a step change in influenza case ascertainment in more recent years.

On 16 February 2023, UKHSA issued a reminder to acute Trusts that influenza A samples from critical care should be subtyped in line with existing guidance. This may impact on the ratio of subtyped to unsubtyped in surveillance data.

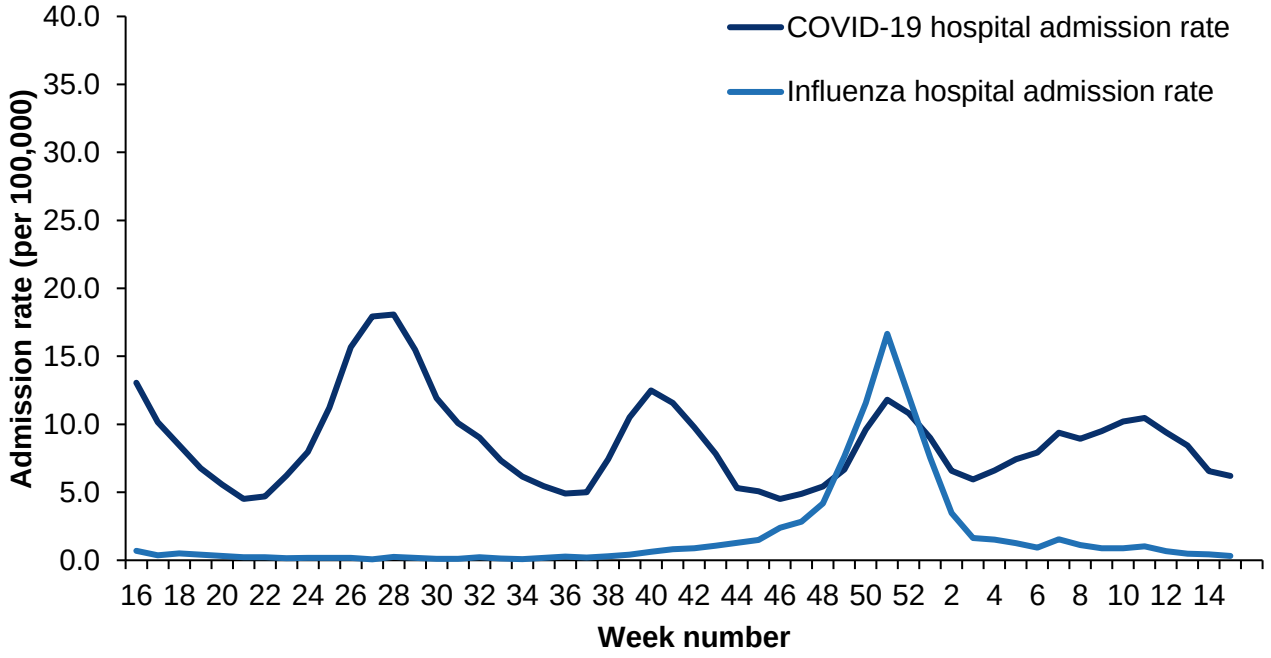
Hospitalisations, SARI Watch

In week 15 (ending 16 April 2023), the overall weekly hospital admission rate for COVID-19 decreased slightly to 6.21 per 100,000 compared to 6.54 per 100,000 in the previous week.

By UKHSA centre, the highest hospital admission rate for COVID-19 was observed in the North East. By age group, the highest hospital admission rate for confirmed COVID-19 continues to be in those aged 85 year olds and over.

In week 15 (ending 16 April 2023), the overall weekly hospital admission rate for influenza decreased to 0.32 per 100,000 compared to 0.45 per 100,000 in the previous week. The rate in the latest week remained within baseline activity levels. By UKHSA Centre, the highest hospitalisation rate was observed in East of England (1.01 per 100,000). By age group, the highest hospital admission rate for influenza was in the 85 years and older age group (1.99 per 100,000). There were 27 new hospital admissions to sentinel Trusts for influenza (one influenza A(H1N1)pdm09, two influenza A(not subtyped) and 24 influenza B in week 15.

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

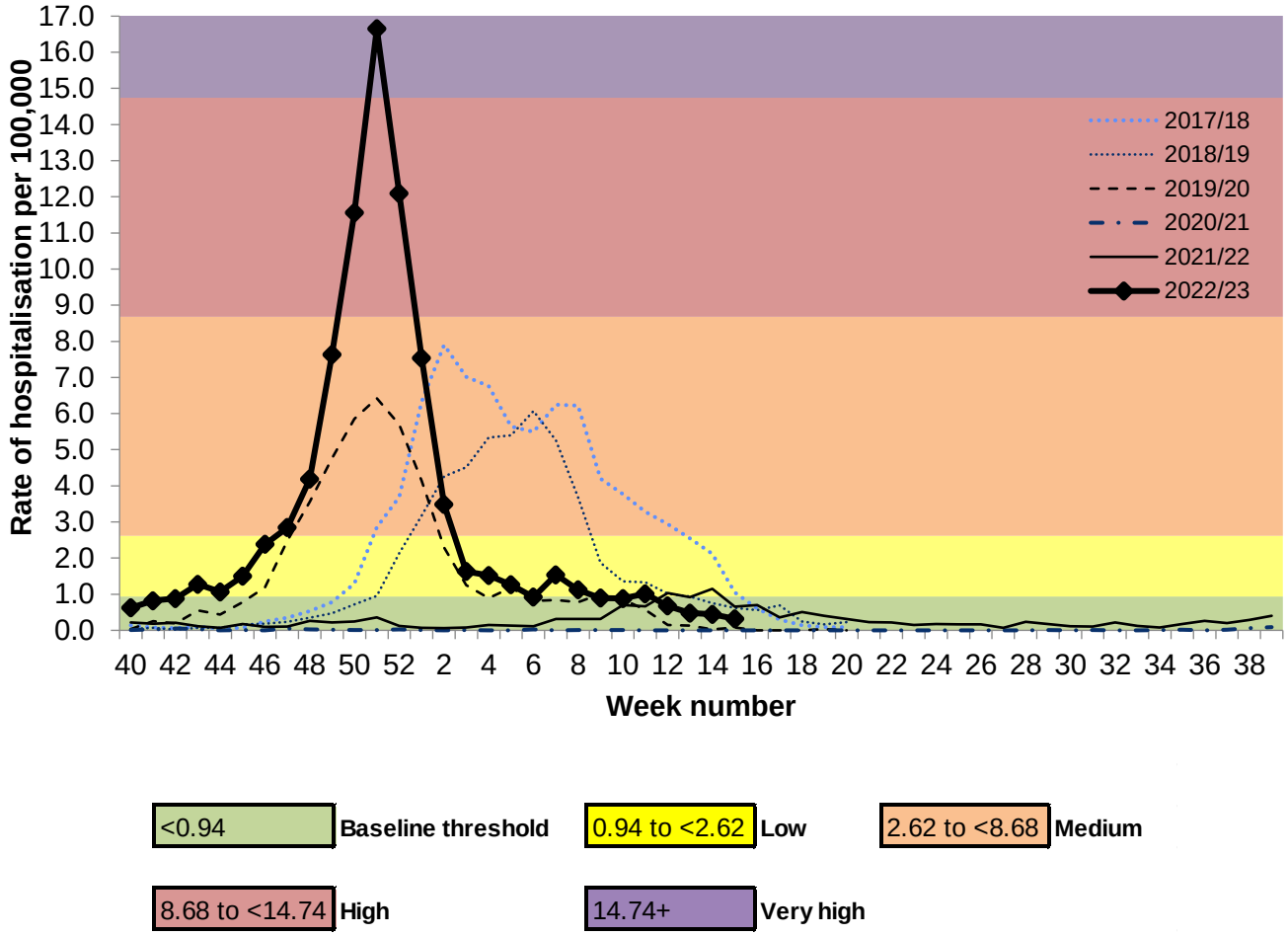


* Influenza hospital admission rate based on 21 sentinel NHS trusts for week 15

* COVID-19 hospital admission rate based on 88 NHS trusts for week 15

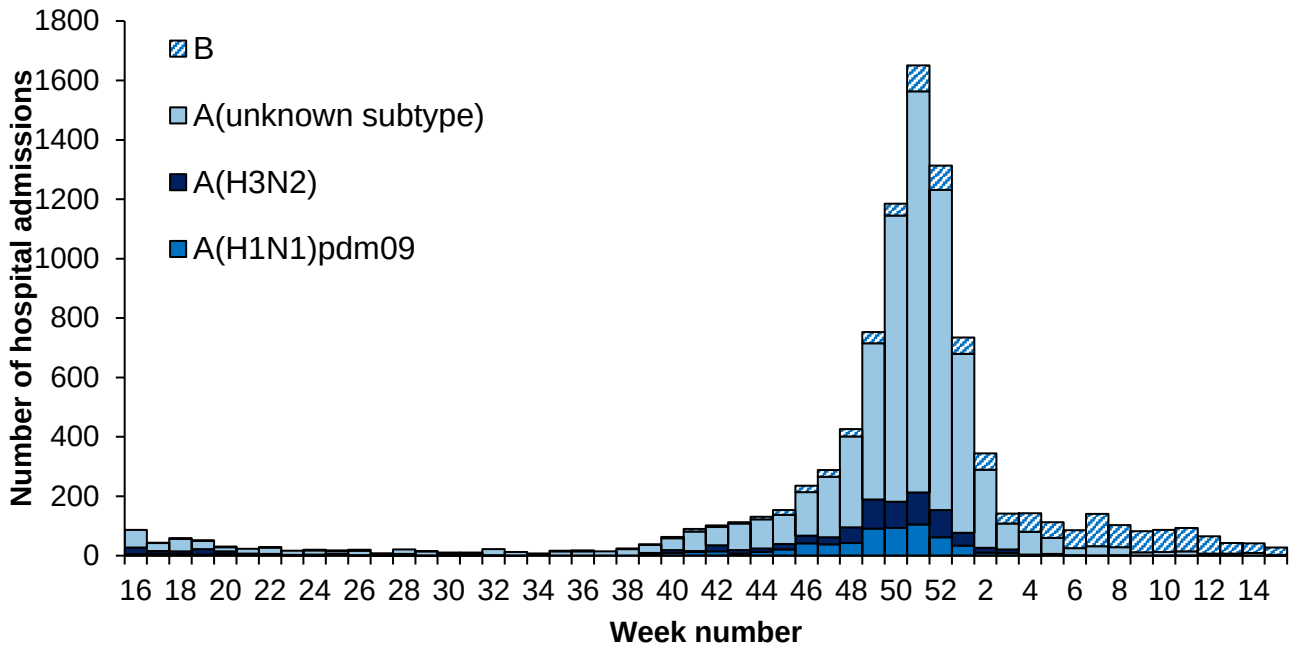
* SARI Watch data is provisional

Figure 41: 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).

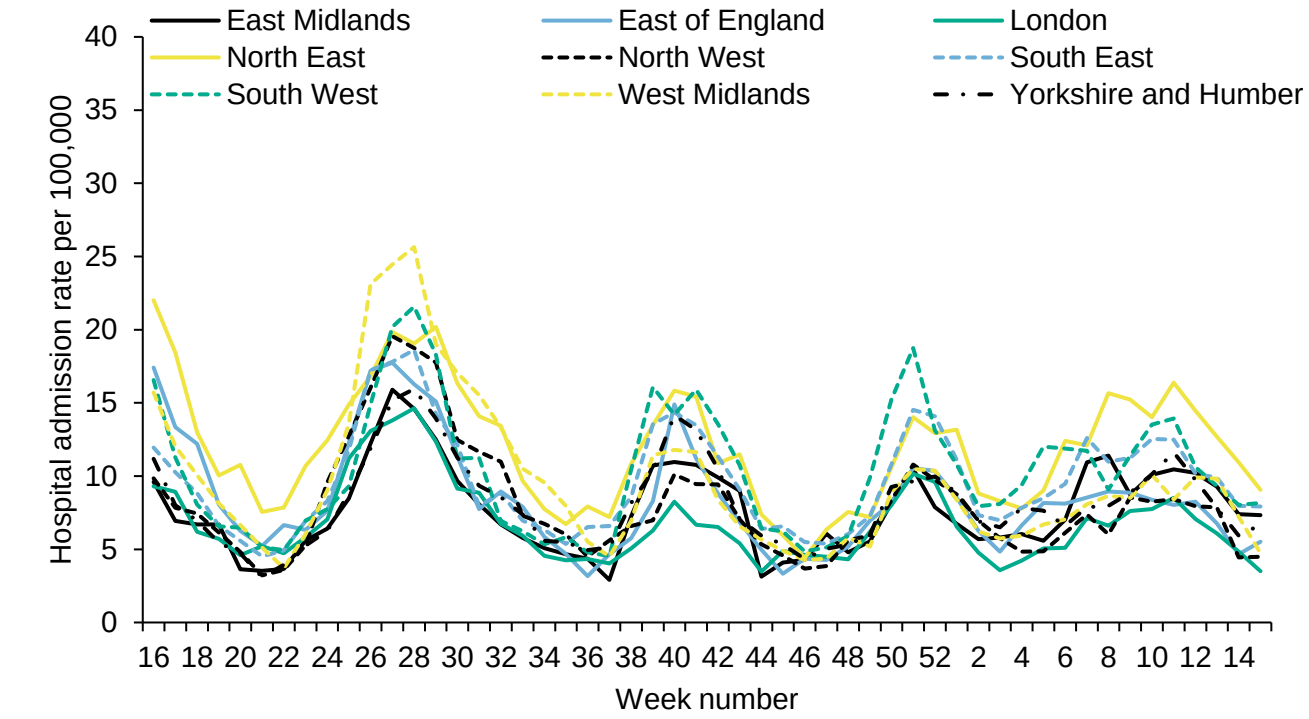
Figure 42: Weekly influenza hospital admissions by influenza type, SARI Watch, England



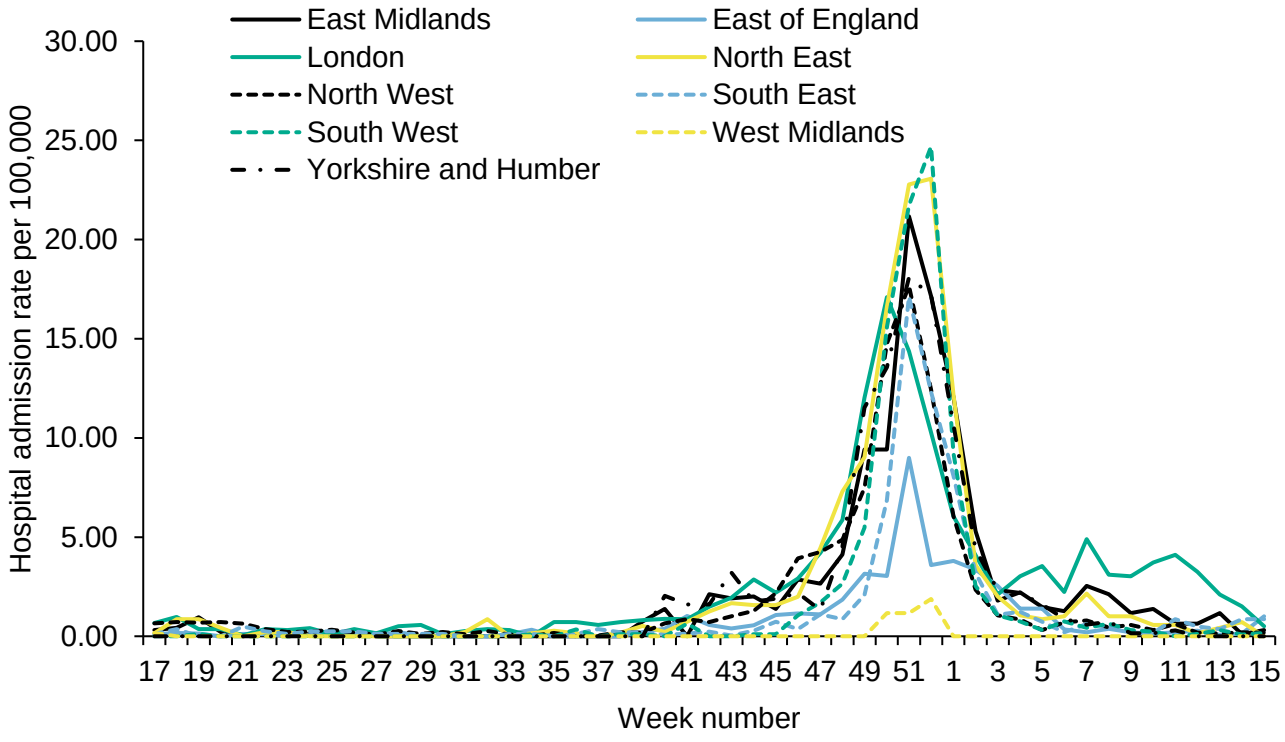
*Number of influenza hospital admissions based on sentinel NHS trusts

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

(a)



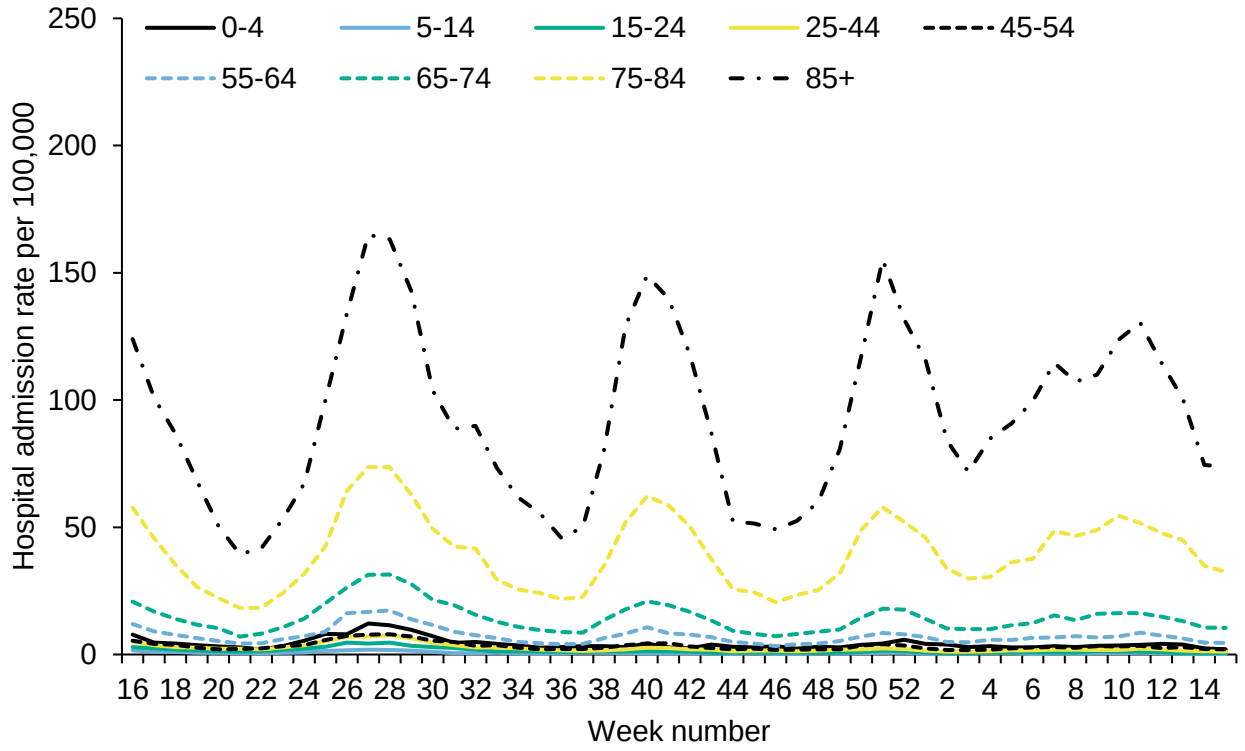
(b)



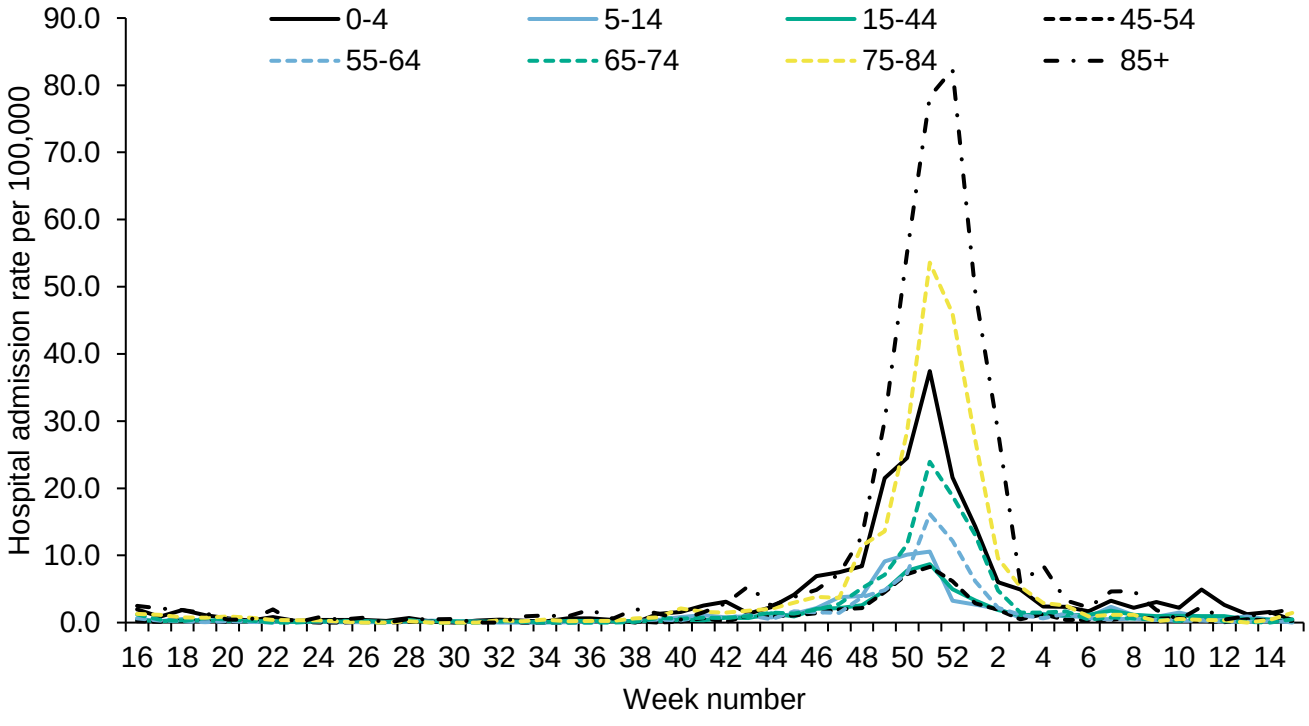
** Rates in some regions may not include all influenza surveillance sentinel sites from week to week*

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

(a)



(b)



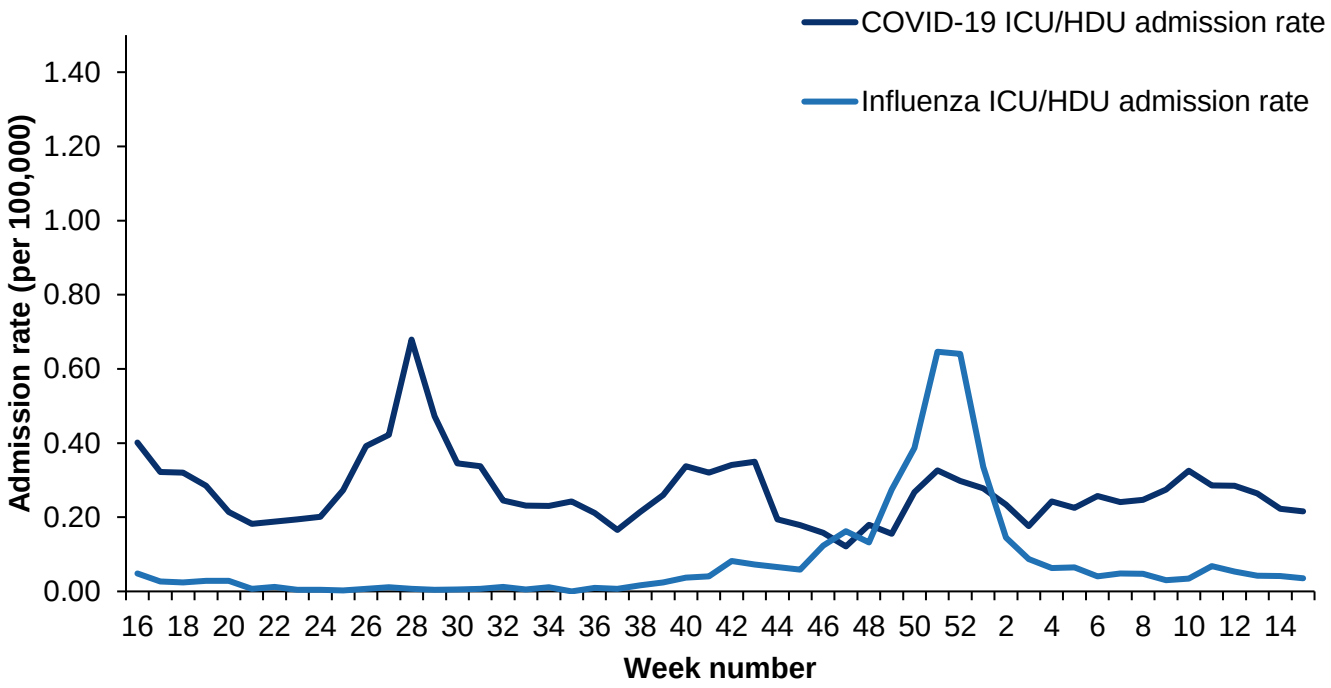
ICU or HDU admissions, SARI Watch

In week 15 (ending 16 April 2023), the overall weekly ICU or HDU admission rates for COVID-19 remained low with small fluctuations. The rate in week 15 was stable at 0.22 per 100,000, the same as the previous week. Note that ICU or HDU admissions rates may represent a lag from admission to hospital to an ICU or HDU ward.

By UKHSA centre, the highest ICU or HDU admission rates for COVID-19 were observed in London. By age group, the highest ICU or HDU admission rates for COVID-19 were observed in the 75 to 84 year olds.

In week 15, the overall ICU or HDU rate for influenza remained stable at 0.04 per 100,000, the same as the previous week. The rate in the latest week remained within baseline activity levels. There were 14 new case reports of an ICU or HDU admission for influenza in week 15 (one influenza A(H1N1)pdm09, six Influenza A(not subtyped) and seven influenza B).

Figure 45: 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 93 NHS trusts for week 15

* COVID-19 ICU or HDU admission rate based on 83 NHS trusts for week 15

* SARI Watch data is provisional

Figure 46: Weekly overall influenza ICU or HDU admission rates per 100,000 trust catchment population with MEM thresholds, SARI Watch, England

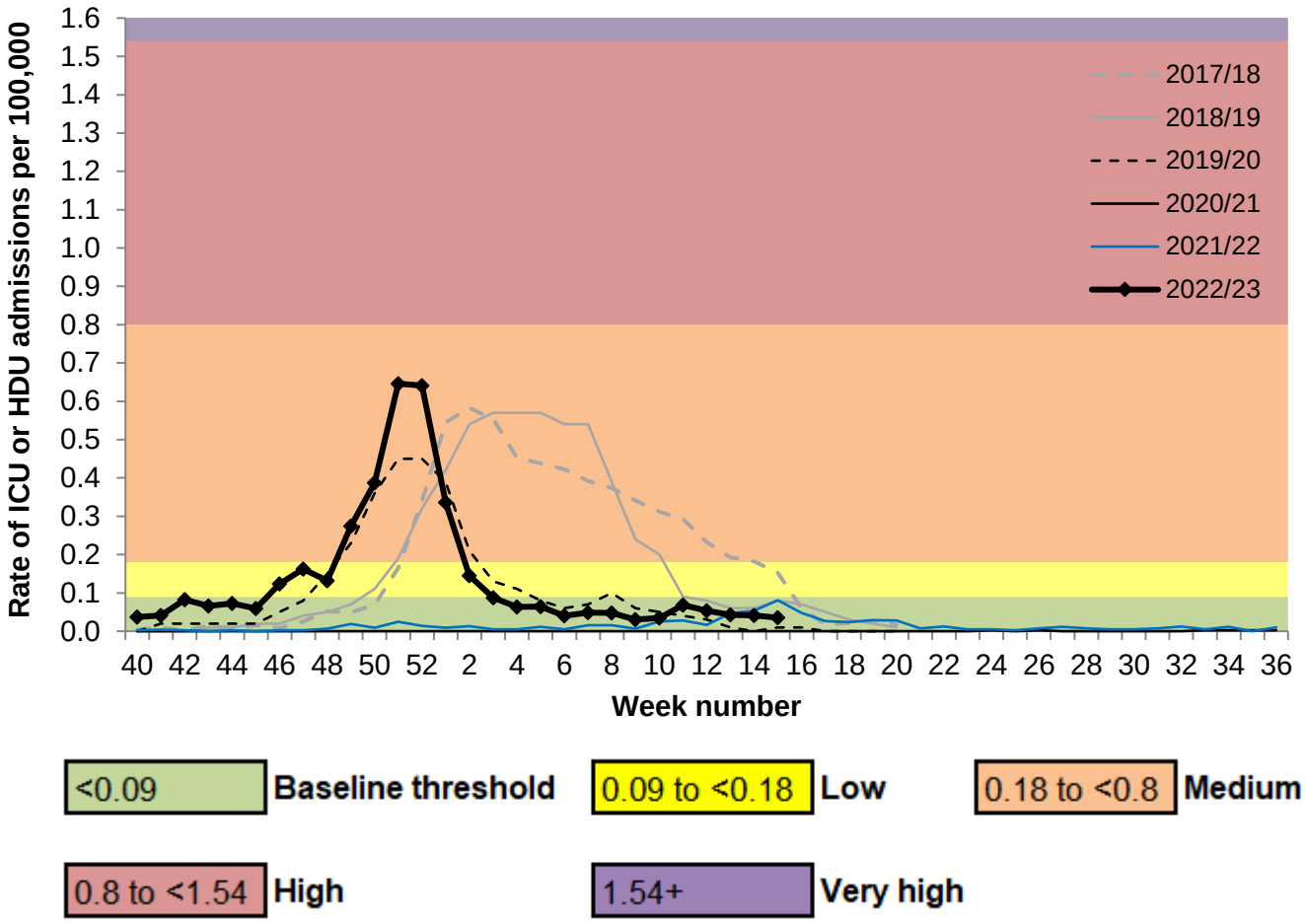


Figure 47: Weekly influenza ICU or HDU admissions by influenza type, SARI Watch, England

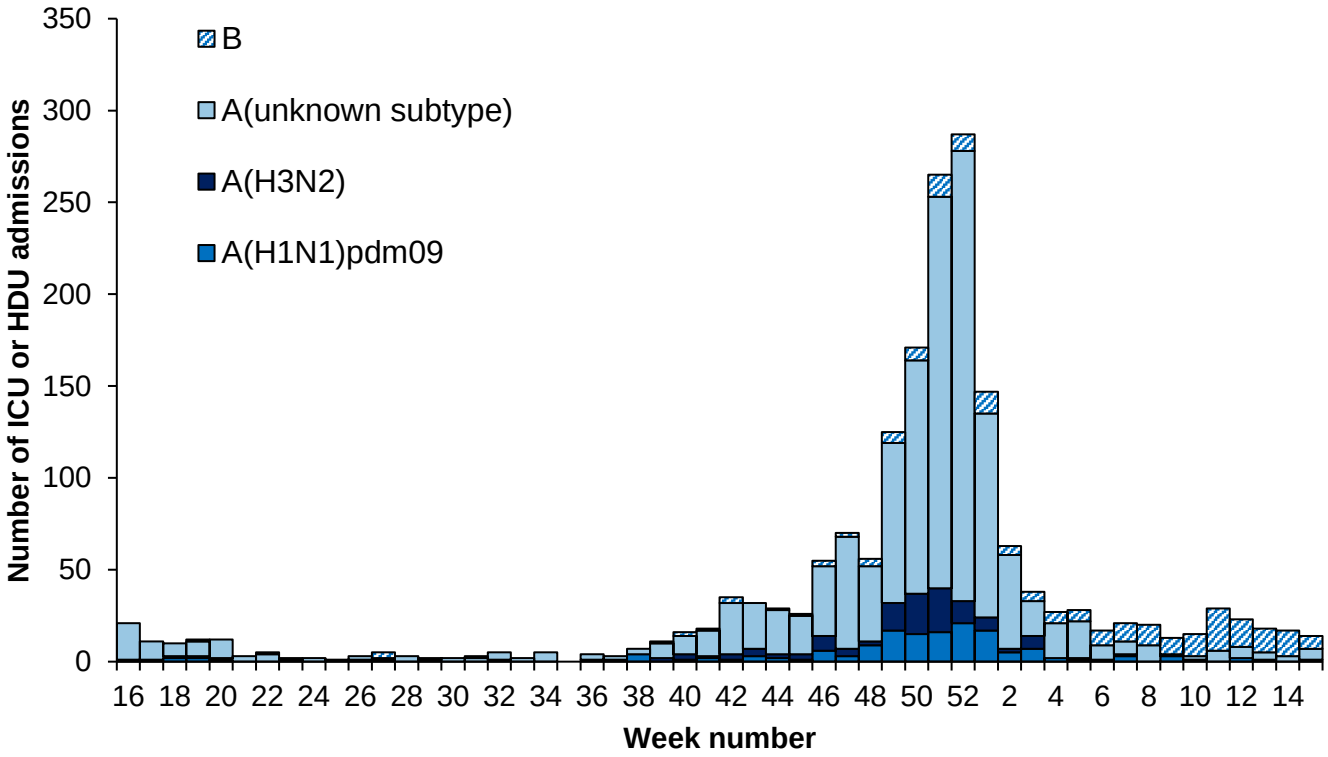
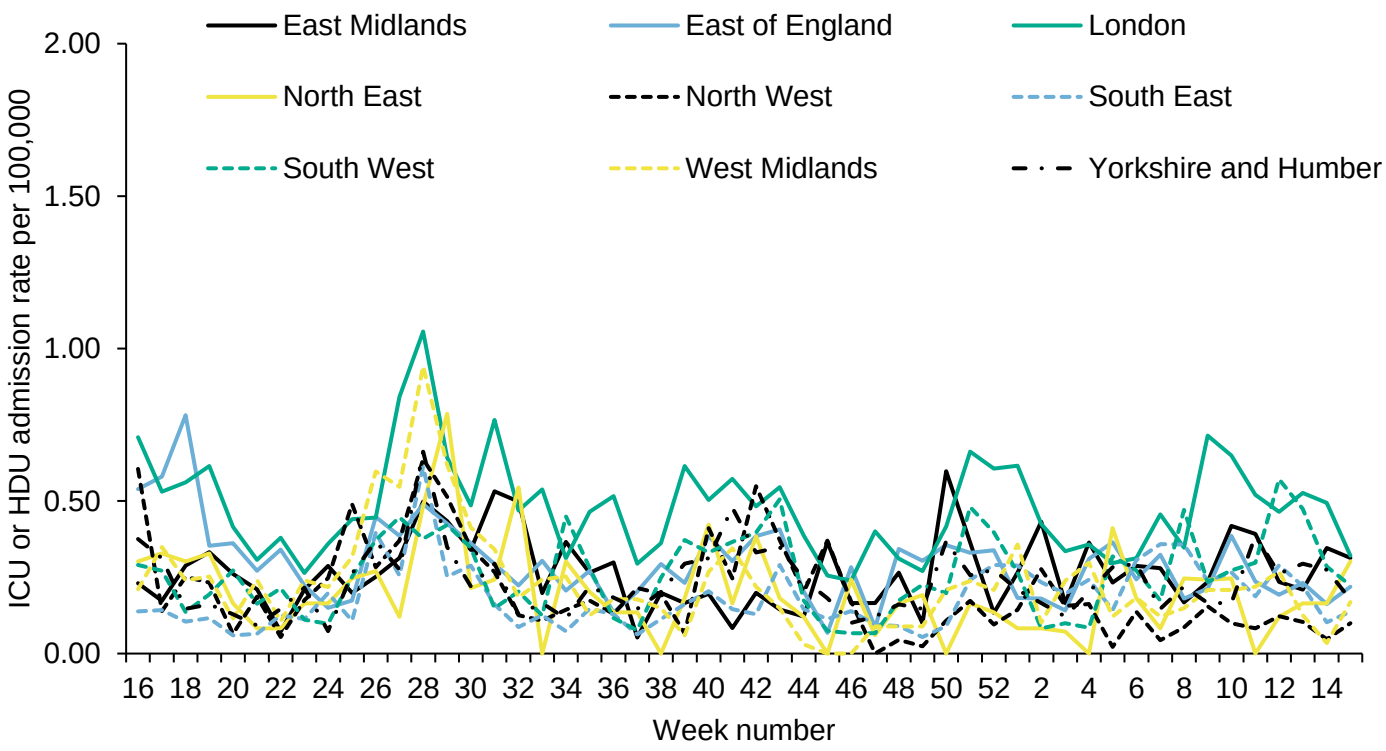


Figure 48: Weekly ICU or HDU admission rate by UKHSA centre for new (a) COVID-19 positive cases and (b) influenza, reported through SARI Watch

(a)



(b)

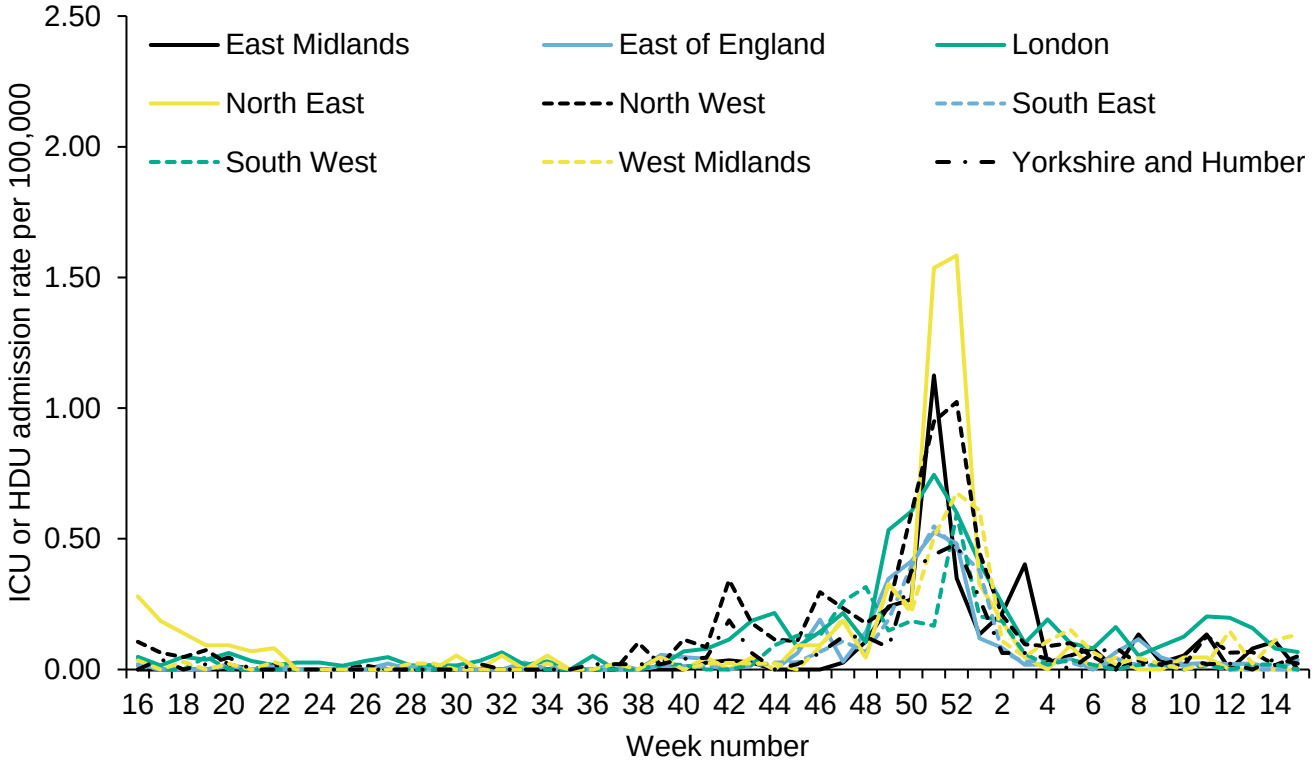
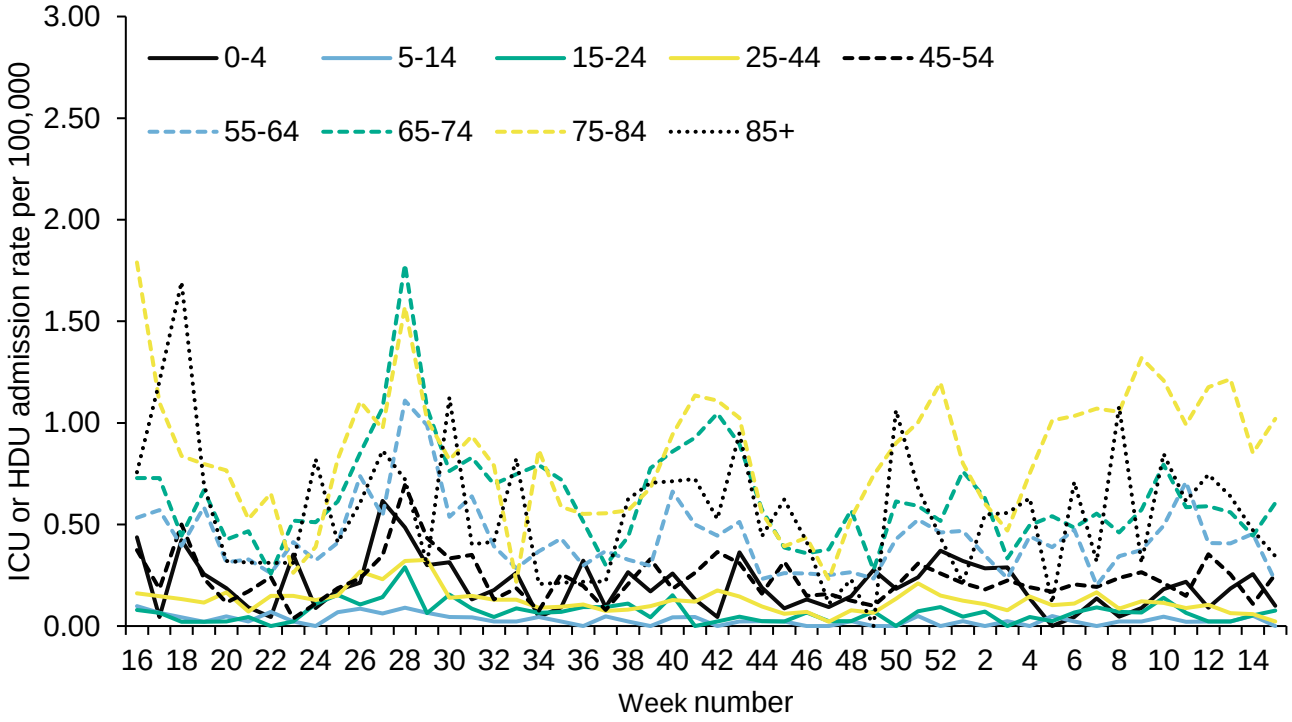
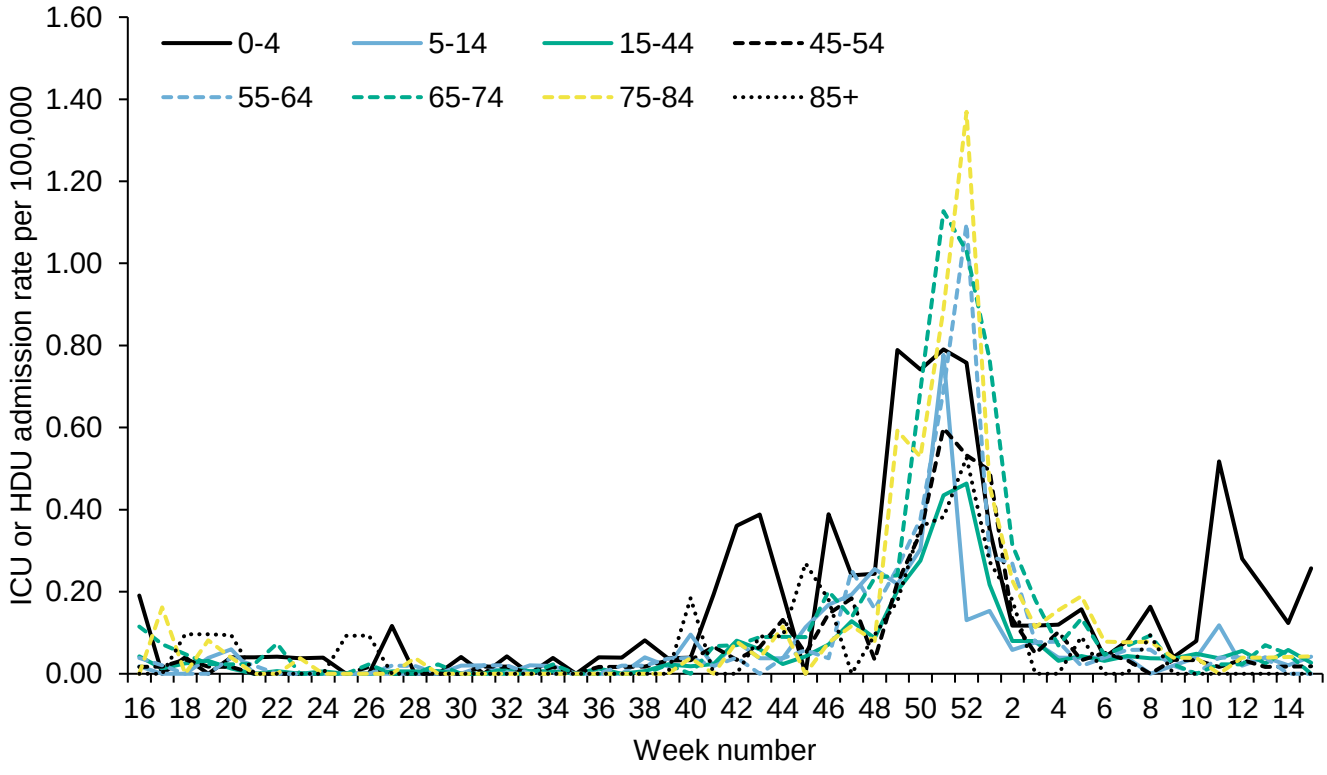


Figure 49: Weekly ICU or HDU admission rate by age group for new (a) COVID-19 positive cases and (b) influenza, reported through SARI Watch

(a)



(b)

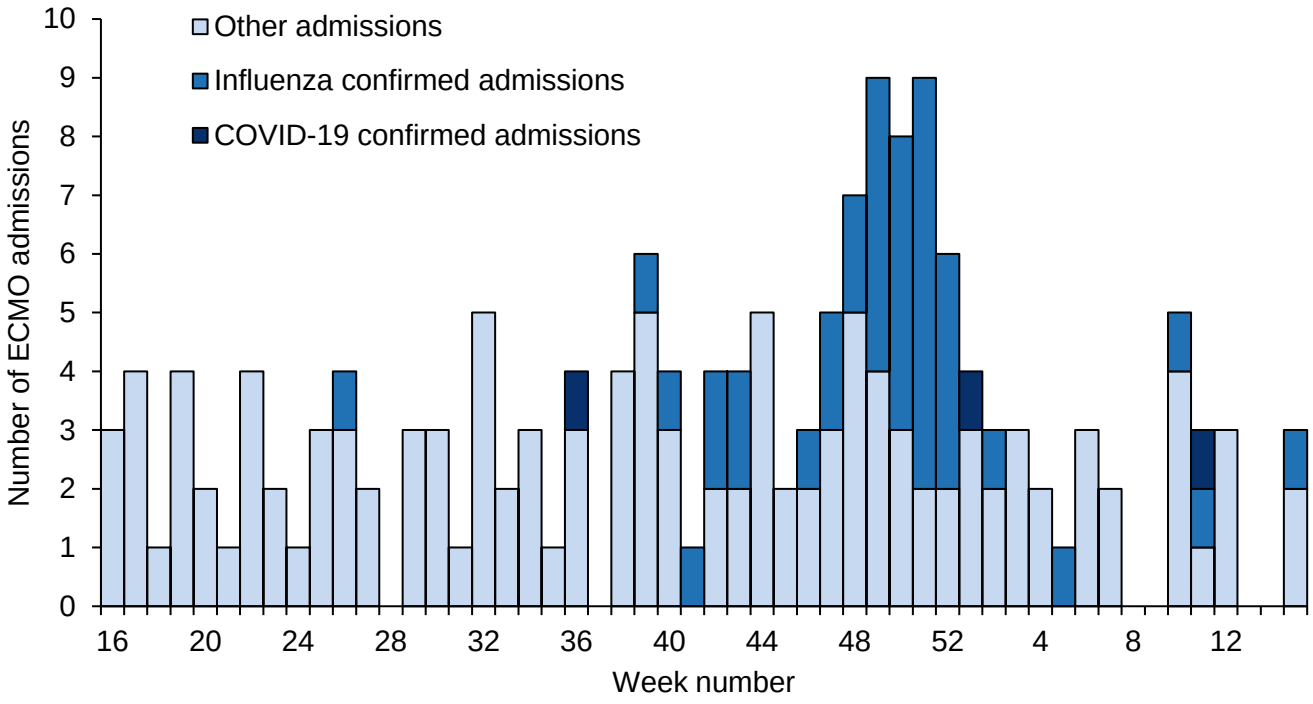


ECMO, SARI Watch

There were three new ECMO admissions in adults reported in week 15, one due to severe respiratory infection (influenza A(H1N1)pdm09, and two due to non-infectious causes. (Figure 50).

Figure 50: Laboratory confirmed ECMO admissions in adults (COVID-19, influenza and non-COVID-19 confirmed) to Severe Respiratory Failure centres in the UK

* SARI Watch data is provisional

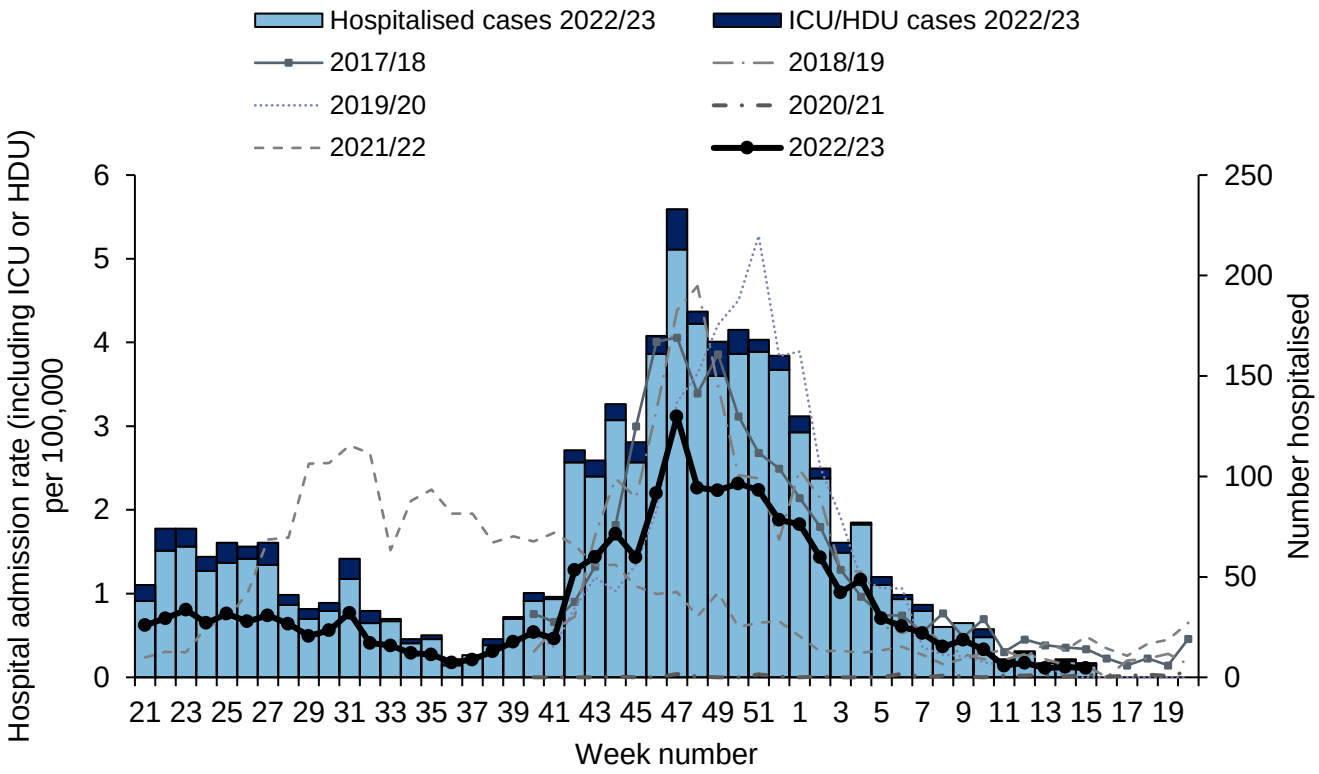


RSV admissions, SARI Watch

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

In week 15, the overall hospital admission rate for RSV continued to fluctuate at low levels. In week 15, the rate was 0.11 per 100,000, compared to 0.12 per 100,00 in the previous week. Hospital admission rates are fluctuating at low levels across all age groups.

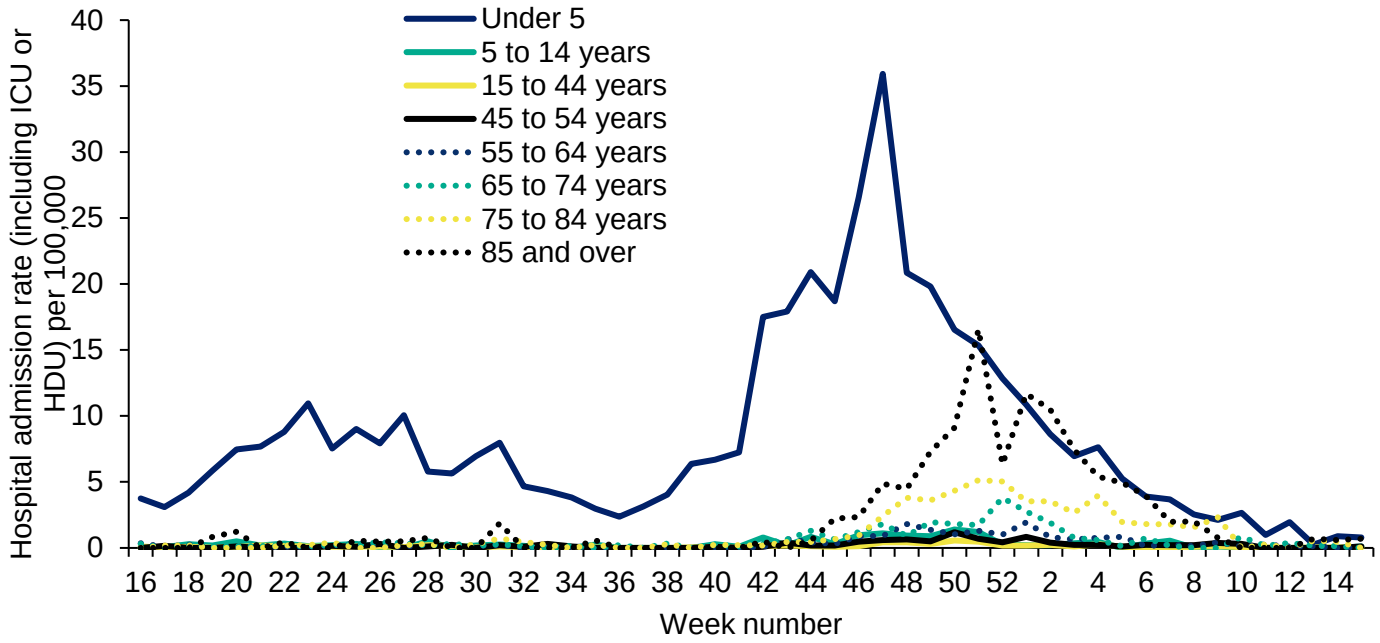
Figure 51: Weekly overall hospital admission rates (including ICU or HDU) of RSV positive cases per 100,000 population reported through SARI Watch, England



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

* SARI Watch data is provisional



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

Emergency Department attendances, Syndromic surveillance

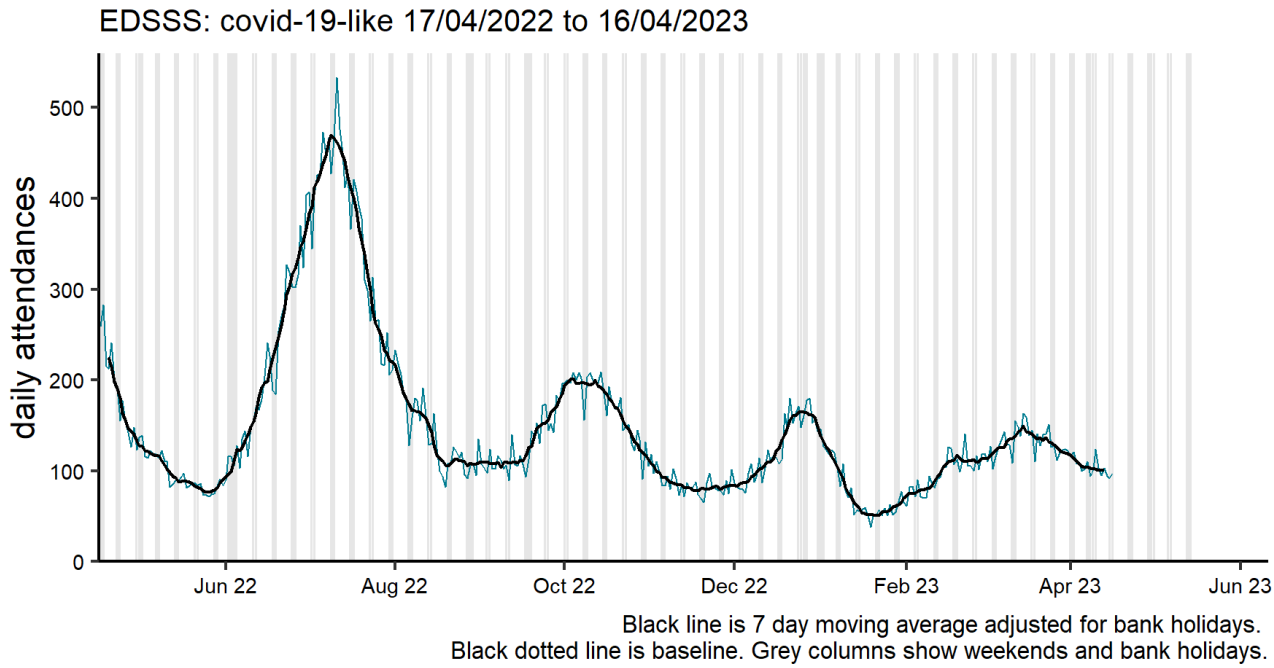
The Emergency Department Syndromic Surveillance System (EDSSS) monitors the daily visits in a network of emergency departments across England.

During week 15, attendances for covid-like illness, acute respiratory infection, influenza-like illness and acute bronchiolitis decreased nationally across all age groups (Figure 53, 54, 55 and 56).

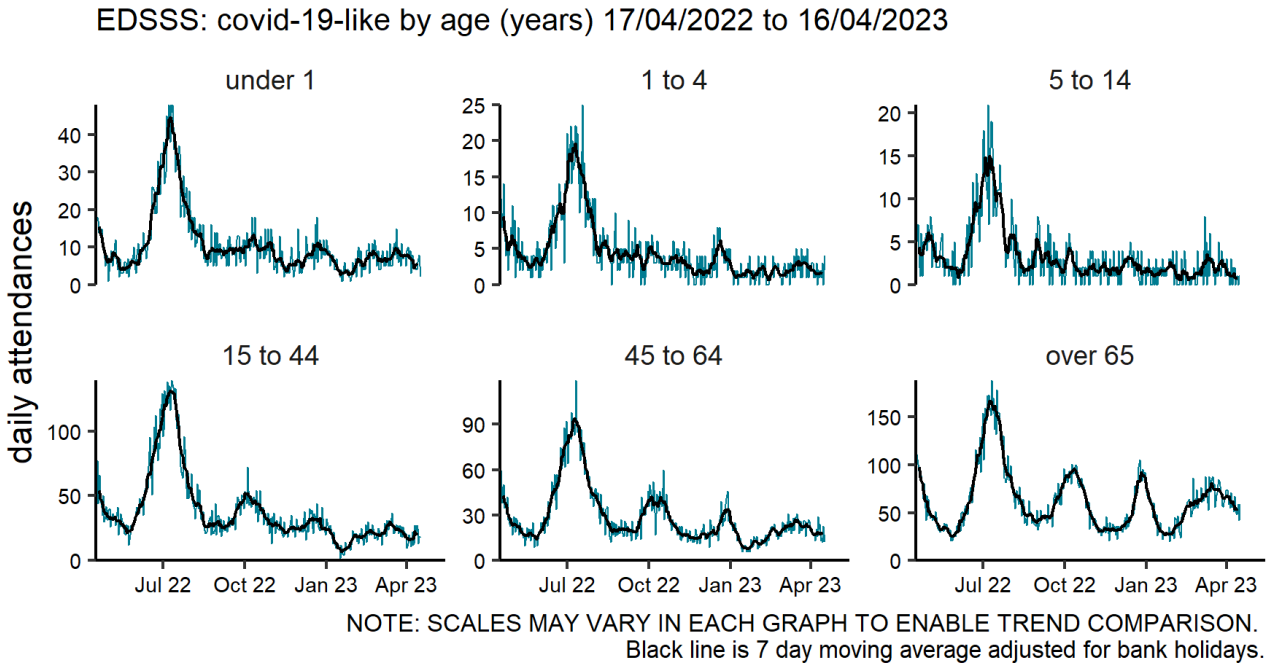
Please note: the COVID-19-like ED indicator is an underestimation of the number of COVID-19 attendances as it only includes attendances with a COVID-19-like diagnosis as their primary diagnosis. The EDSSS COVID-19-like indicator should therefore be used to monitor trends in ED attendances and not to estimate actual numbers of COVID-19 ED attendances. Remodelled EDSSS baselines have been refitted during week 6 to account for post-COVID-19 changes in health care seeking behaviour. Further information about these caveats is available from the Emergency Department Syndromic Surveillance bulletin.

Figure 53: Daily ED attendances for COVID-19-like infections, England (a) nationally, (b) by age group and (c) by UKHSA centre

(a)



(b)


EDSSS: covid-19-like by age (years) 17/04/2022 to 16/04/2023
under 1
1 to 4
5 to 14
15 to 44
45 to 64
over 65
daily attendances
Jul 22
Oct 22
Jan 23
Apr 23
NOTE: SCALES MAY VARY IN EACH GRAPH TO ENABLE TREND COMPARISON.
Black line is 7 day moving average adjusted for bank holidays.

(c)

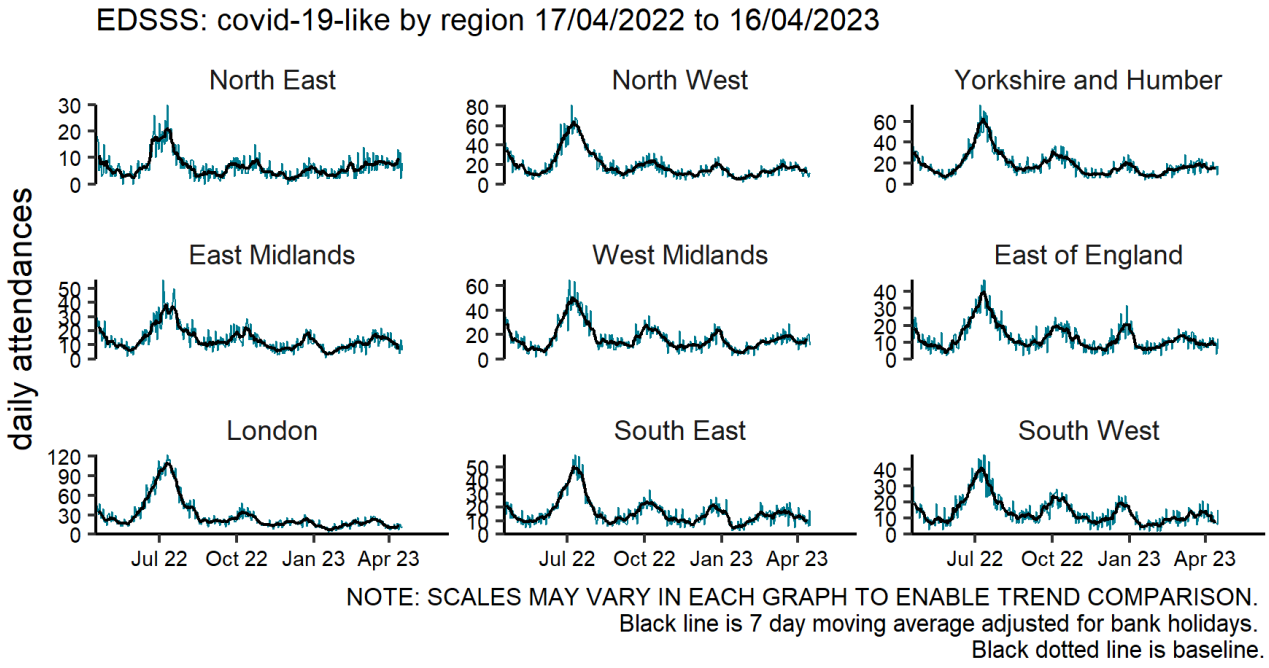
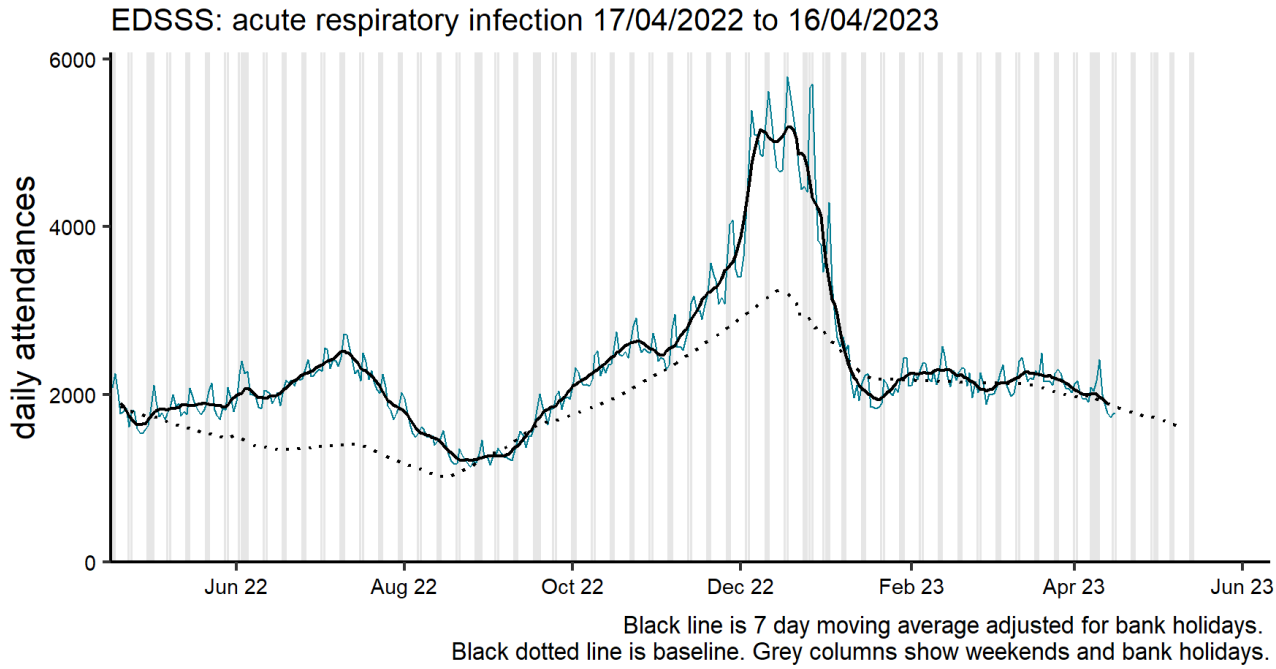
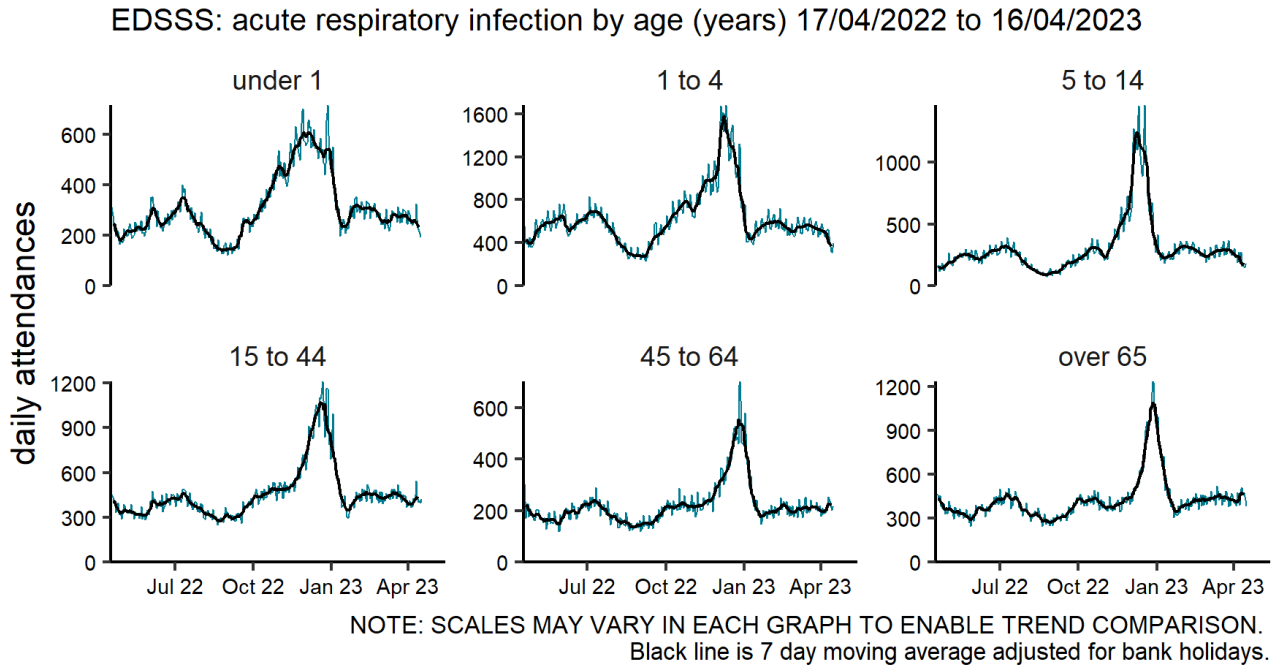

EDSSS: covid-19-like by region 17/04/2022 to 16/04/2023
North East
North West
Yorkshire and Humber
East Midlands
West Midlands
East of England
London
South East
South West
daily attendances
Jul 22
Oct 22
Jan 23
Apr 23
NOTE: SCALES MAY VARY IN EACH GRAPH TO ENABLE TREND COMPARISON.
Black line is 7 day moving average adjusted for bank holidays.
Black dotted line is baseline.

Figure 54: Daily ED attendances for acute respiratory infection, England (a) nationally, (b) by age group and (c) by UKHSA centre

(a)



(b)



(c)

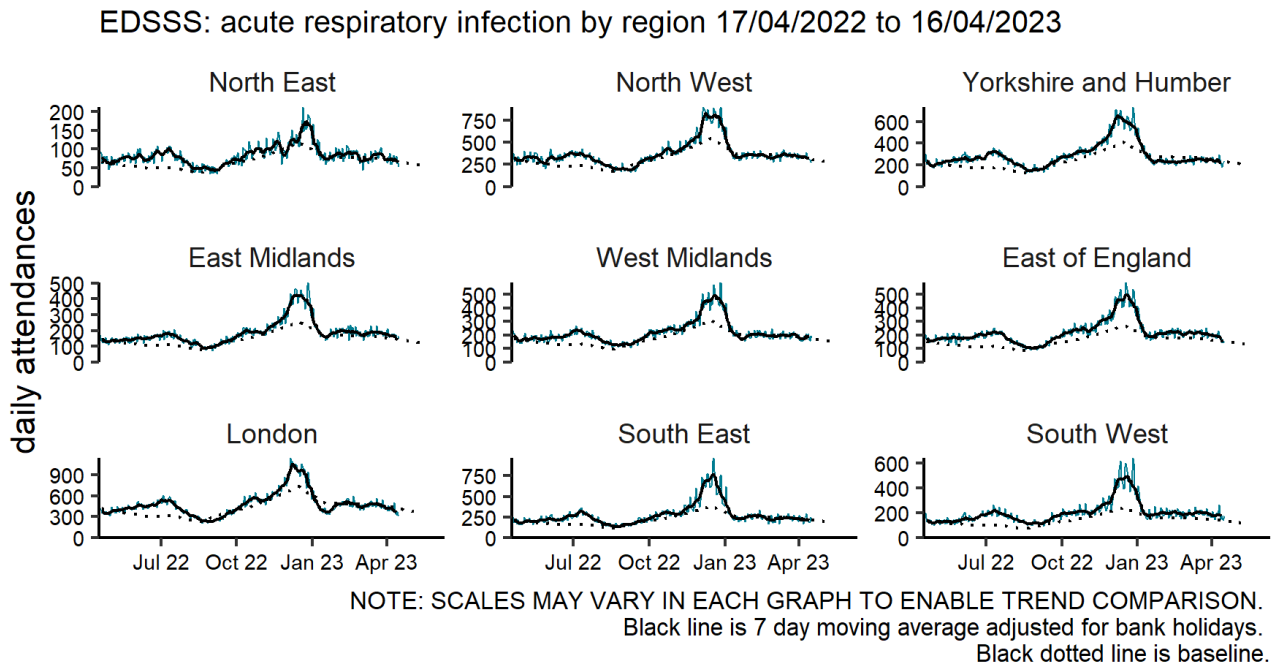
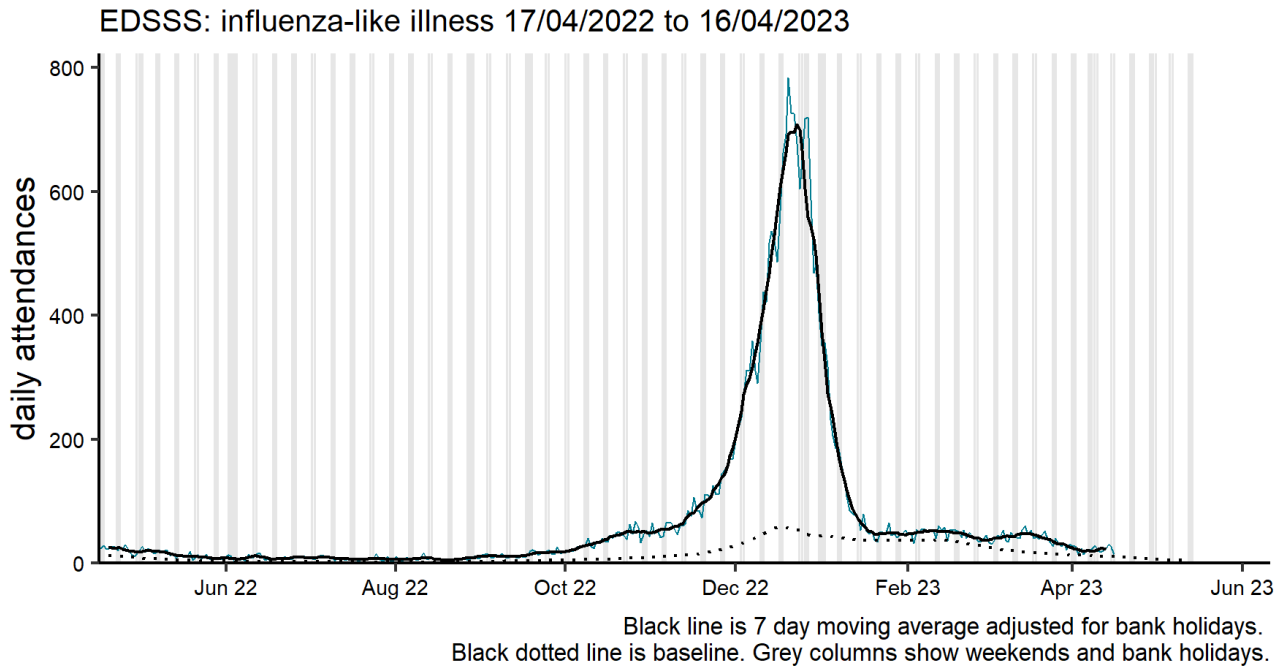
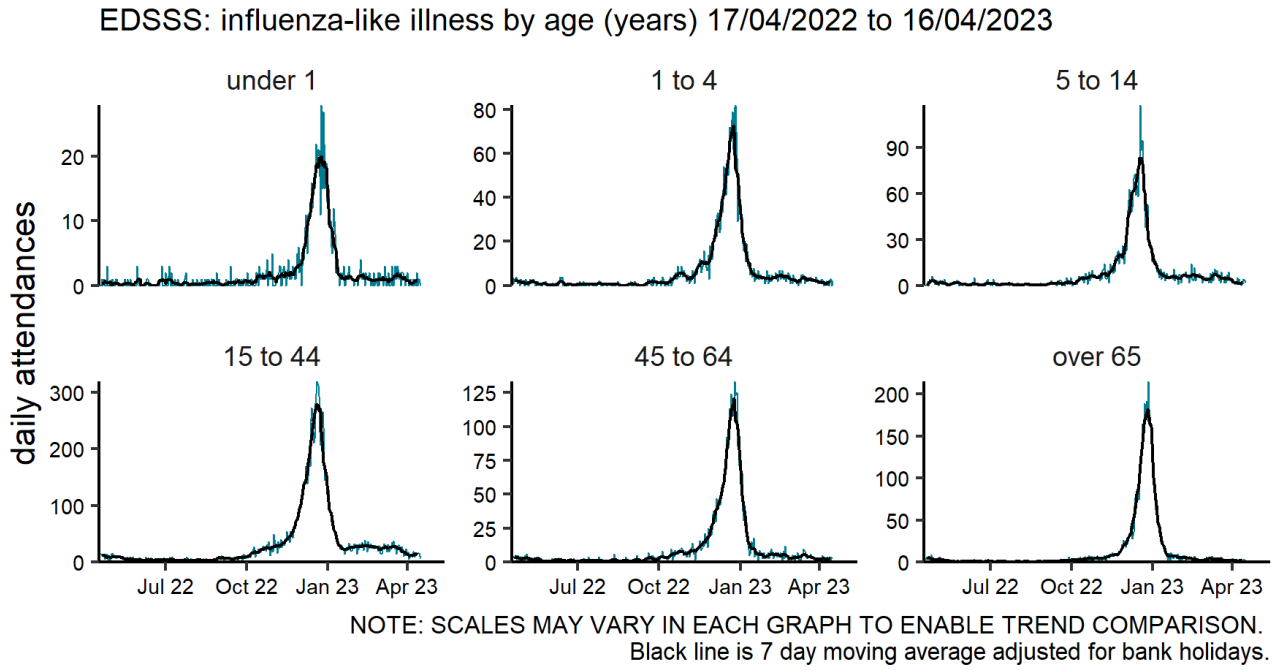


Figure 55: Daily ED attendances for influenza-like illness, England (a) nationally, (b) by age group and (c) by UKHSA centre

(a)



(b)


EDSSS: influenza-like illness by age (years) 17/04/2022 to 16/04/2023
under 1
1 to 4
5 to 14
15 to 44
45 to 64
over 65
daily attendances
Jul 22
Oct 22
Jan 23
Apr 23
NOTE: SCALES MAY VARY IN EACH GRAPH TO ENABLE TREND COMPARISON.
Black line is 7 day moving average adjusted for bank holidays.

(c)

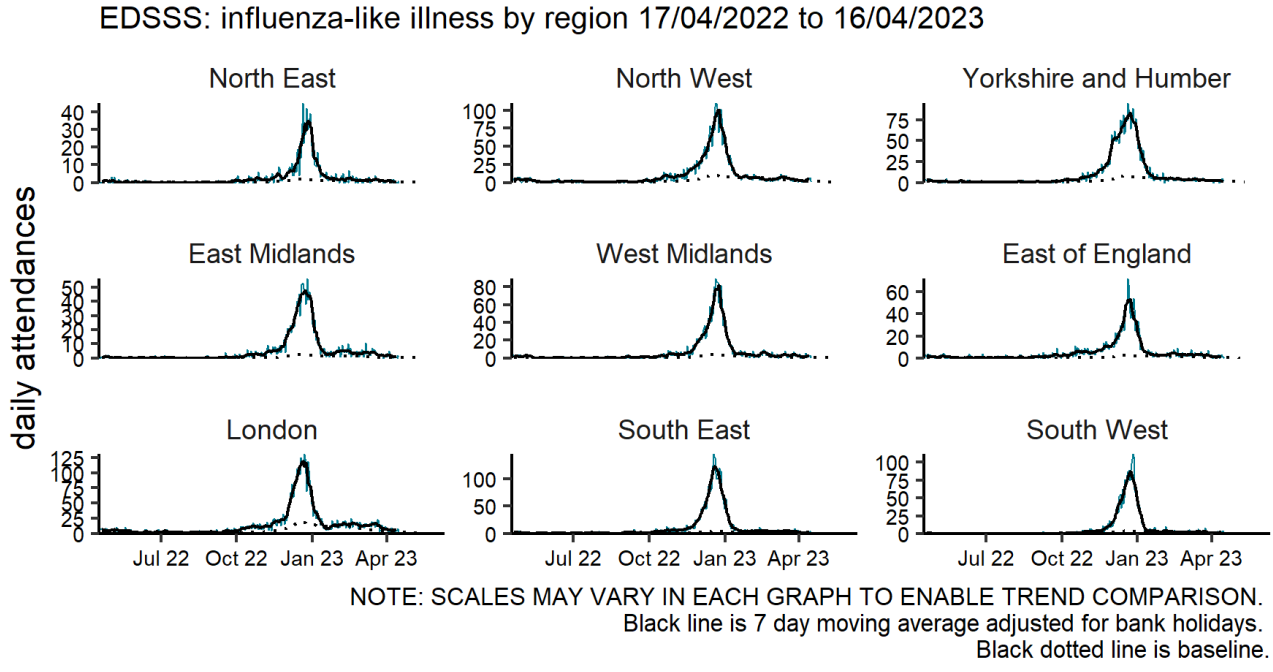
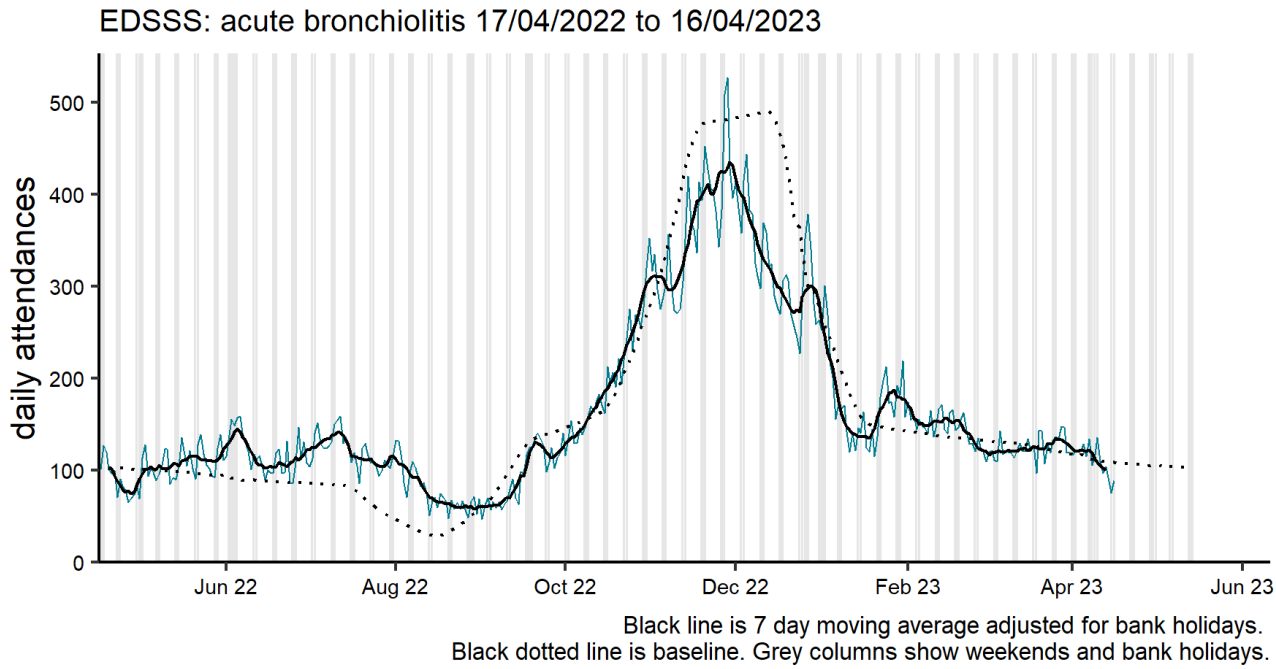
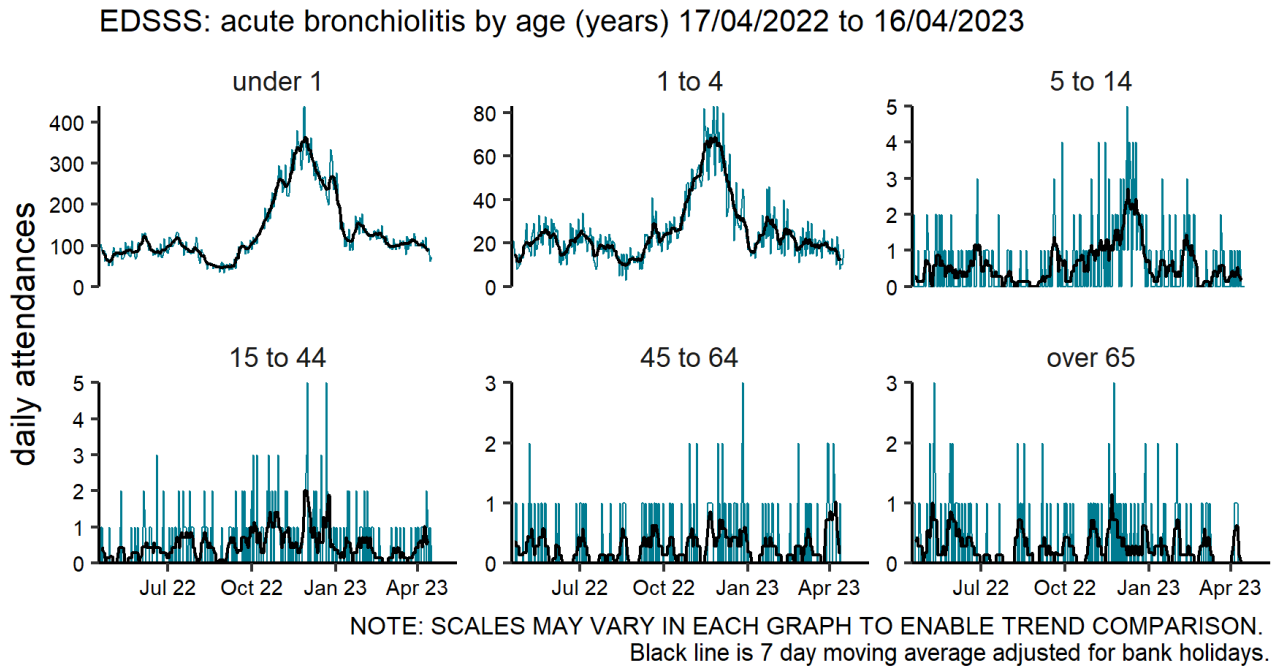

EDSSS: influenza-like illness by region 17/04/2022 to 16/04/2023
North East
North West
Yorkshire and Humber
East Midlands
West Midlands
East of England
London
South East
South West
daily attendances
Jul 22
Oct 22
Jan 23
Apr 23
NOTE: SCALES MAY VARY IN EACH GRAPH TO ENABLE TREND COMPARISON.
Black line is 7 day moving average adjusted for bank holidays.
Black dotted line is baseline.

Figure 56: Daily ED attendances for acute bronchiolitis, England (a) nationally, (b) by age group and (c) by UKHSA centre*

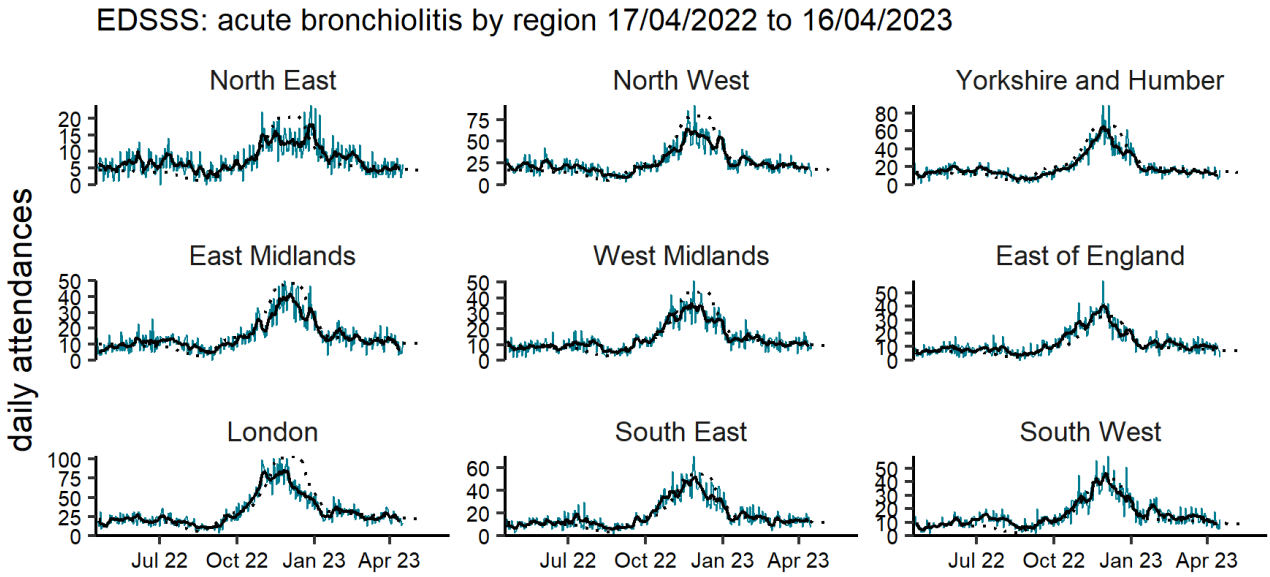
(a)



(b)



(c)



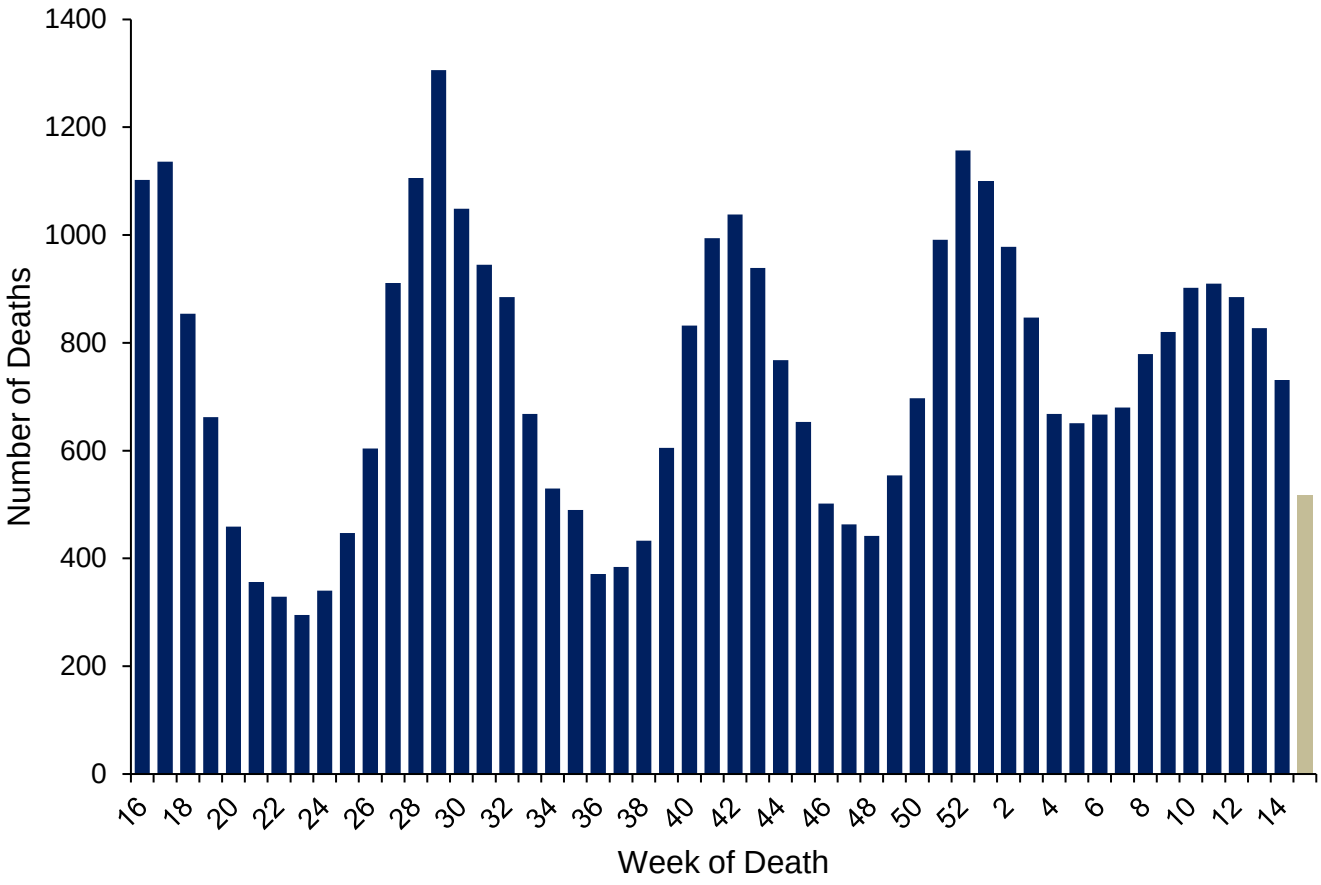
NOTE: SCALES MAY VARY IN EACH GRAPH TO ENABLE TREND COMPARISON.
Black line is 7 day moving average adjusted for bank holidays.
Black dotted line is baseline.

Mortality surveillance

COVID-19 deaths

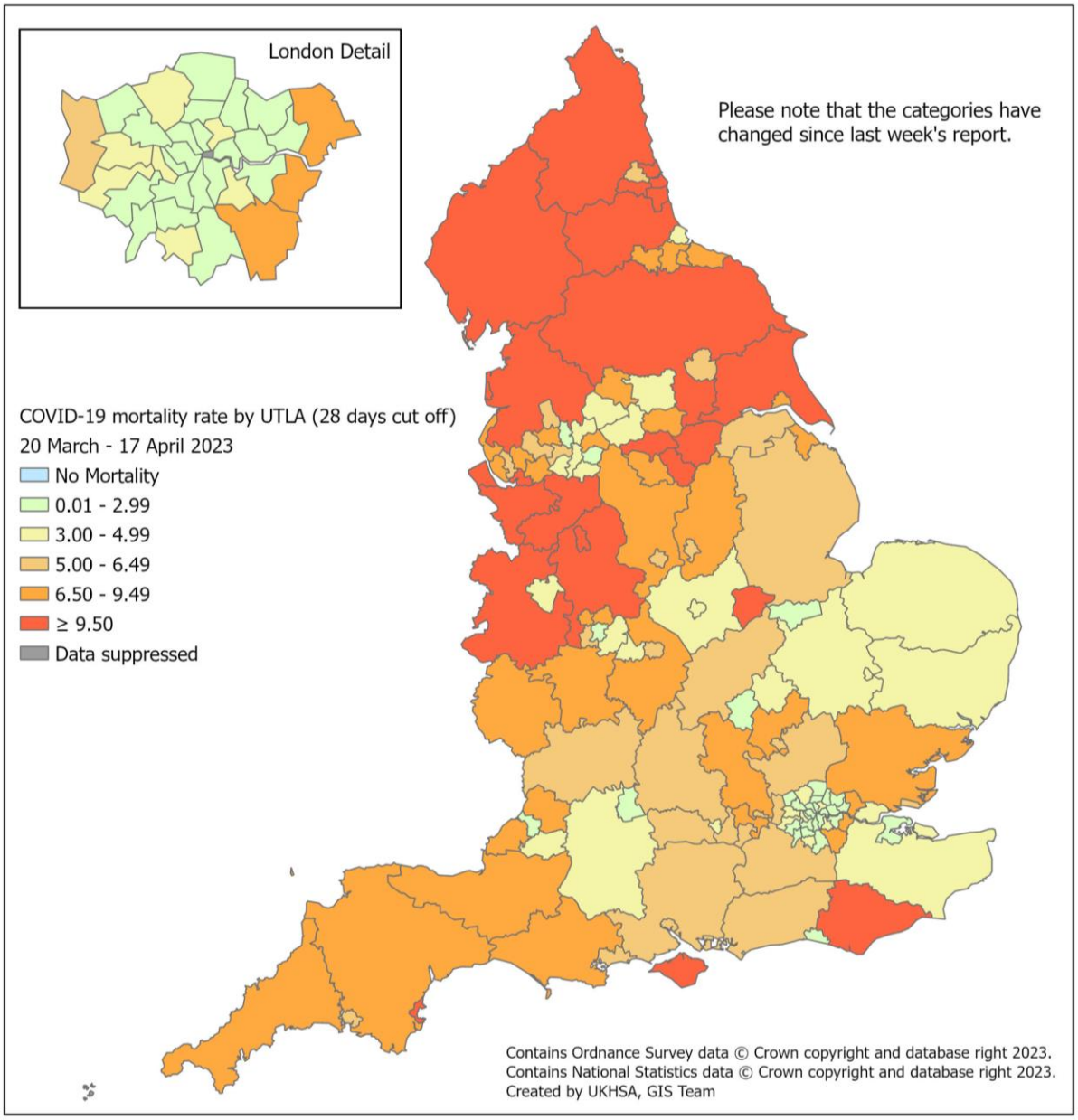
COVID-19 related deaths by the 28 day definition are reported below. This metric includes a death in a person with a positive COVID-19 test who died within (equal to or less than) 28 days of the first positive specimen date in the most recent episode of infection.

Figure 57: Weekly deaths within 28 days of a positive COVID-19 test, England*



*The most recent week is shaded grey due to reporting delay as more deaths are expected to be reported, therefore this should be interpreted with caution.

Figure 58: Cumulative mortality rate of deaths within 28 days of a positive COVID-19 test per 100,000 population for weeks 12 to 15



Daily excess all-cause mortality (England)

Deaths occurring from 1 January 2020 to 12 April 2023 were assessed to calculate the daily excess above a baseline using age-group and region specific all cause deaths as provided daily by the General Register Office (GRO). The deaths were corrected to allow for delay to registration based on past data on these delays. The baseline until November 2020 was from the same day of the year in the previous 5 years plus or minus 7 days with an extrapolated time trend. The baseline from December 2020 to March 2021 only uses the same days +/- 7 days from the past 3 low flu years with no trend, and the baseline from April 2021 onwards is set to be the same as the previous years baseline. Along with the baseline 2 and 3 standard deviation (SD) limits shown (Figure 59).

Weeks in which at least 2 days exceeded the 3SD threshold are shown in Table 3 and the daily difference from the baseline by age and region is given in Figures 60 and 61.

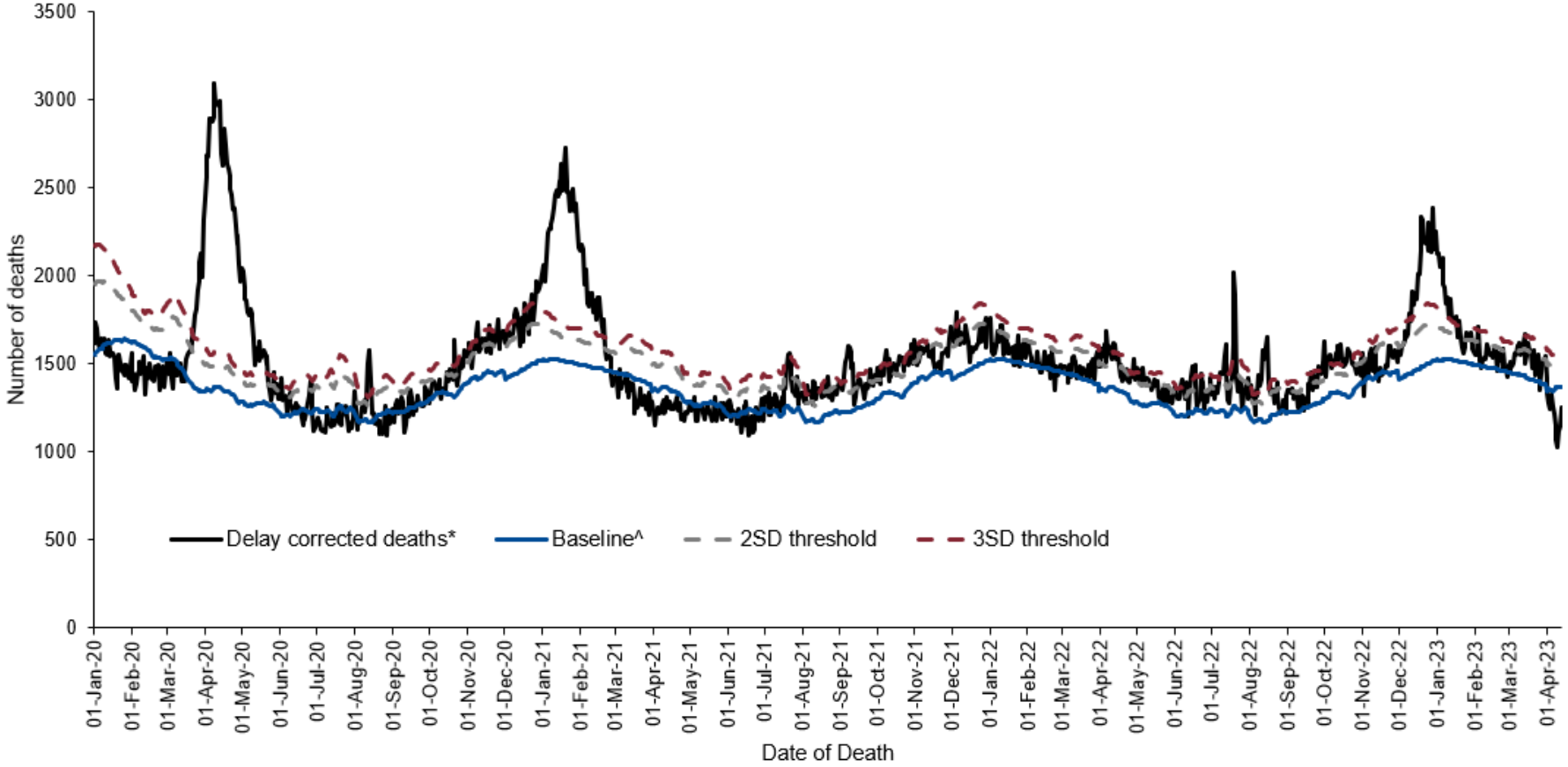
Note that as this data is by date of death with delay corrections, numbers are subject to change each week, particularly for more recent days, especially given recent bank holidays. The current week's model supersedes models presented in previous week.

There was no excess mortality in week 14.

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

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

Figure 59: Daily excess all-cause deaths in all ages, England, 1 January 2020 to 12 April 2023



^Baseline calculation:

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

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

March 2021 onwards: same baseline as 2020

*Corrected for delay to registration from death.

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

(a)

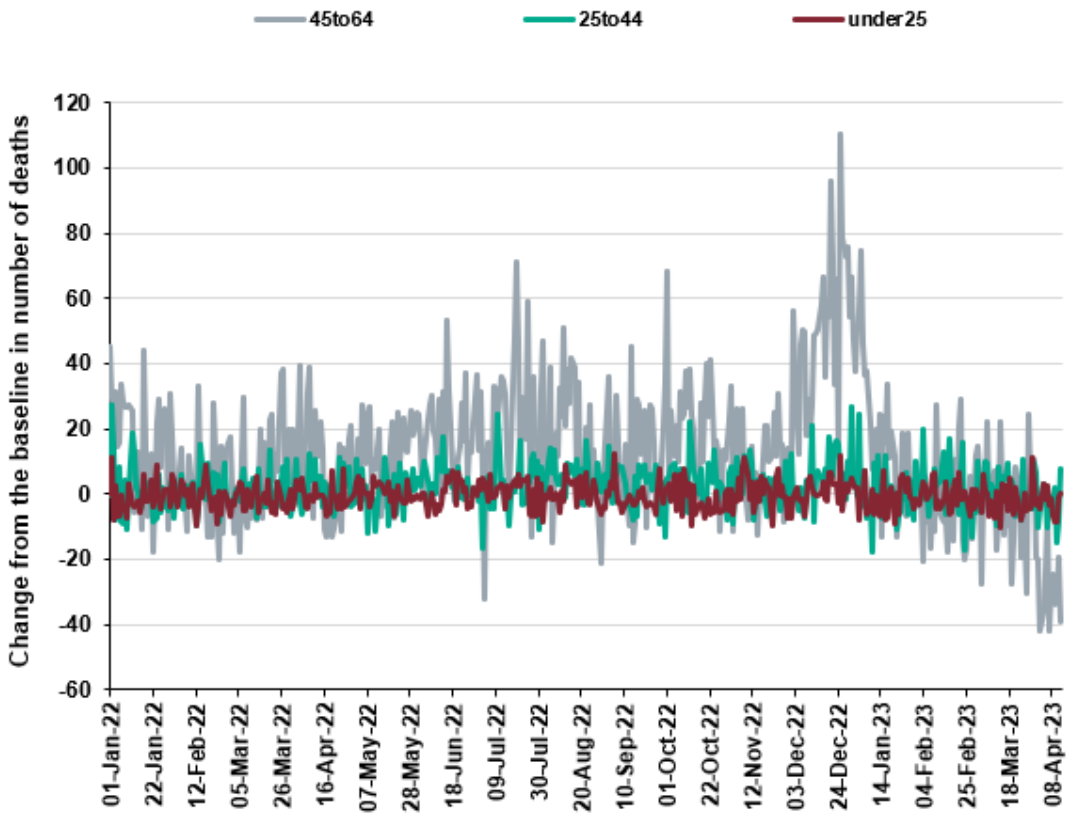
Age Group	Excess detected in week 14 2023	Weeks in excess from week 10 to 53 2020	Weeks in excess from week 1 to 52 2021	Weeks in excess from week 1 to 52 2022	Weeks in excess from week 1 2023
All	No	13 to 21, 33, 43, 45, 50, 52 to 53	01 to 07, 29, 31 to 32, 35 to 36, 40 to 44, 48	14 to 15, 17 to 18, 23 to 24, 27 to 29, 31 to 33, 39 to 42, 49 to 52	01 to 02
under 25	No	None	None	None	None
25 to 44	No	14 to 16	None	None	None
45 to 64	No	12 to 19, 49 to 50, 52 to 53	01 to 08, 23, 29 to 30, 36, 41 to 44, 48 to 49	29, 42, 49 to 52	01
65 to 74	No	13 to 19, 46, 48, 52 to 53	01 to 07, 36, 43, 48	32, 50 to 52	01
75 to 84	No	13 to 21, 33, 45, 49, 52 to 53	01 to 07, 32, 36, 40, 42	14 to 18, 22 to 25, 28 to 29, 31 to 32, 38 to 42, 49 to 52	01 to 02, 04, 10
85+	No	13 to 21, 33, 53	01 to 07, 31, 36	23, 28 to 29, 32, 39, 50 to 52	01 to 02

(b)

UKHSA Centres	Excess detected in week 14 2023	Weeks in excess from week 10 to 53 2020	Weeks in excess from week 1 to 52 2021	Weeks in excess from week 1 to 52 2022	Weeks in excess from week 1 2023
East of England	No	14 to 19, 52 to 53	01 to 07	23, 27, 29, 51 to 52	None
East Midlands	No	13 to 19, 48	01 to 07	29, 52	None
London	No	12 to 19, 33, 52 to 53	01 to 06, 36	29, 50 to 52	None
North East	No	14 to 21	02 to 04	52	01
North West	No	13 to 19, 33, 42 to 47	01 to 07, 31 to 32, 36, 43	14 to 15, 29 to 30, 32, 39, 42, 50 to 52	01 to 02
South East	No	13 to 21, 33, 50 to 53	01 to 07, 36, 41, 49	14, 28, 32, 40 to 42, 49 to 52	01 to 02
South West	No	13 to 19, 33	02 to 07, 29, 36	17, 29, 32, 34, 39, 50 to 52	01
West Midlands	No	13 to 20, 45, 48	01 to 07, 29, 36, 40, 48	13, 29, 32, 41, 51 to 52	01
Yorkshire and Humber	No	14 to 21, 23, 43 to 50	02 to 04, 32, 35 to 36	15, 29, 32, 42, 50 to 52	01

Figure 60: Daily excess all-cause deaths by age group, England, 1 January 2022 to 12 April 2023

(a)



(b)

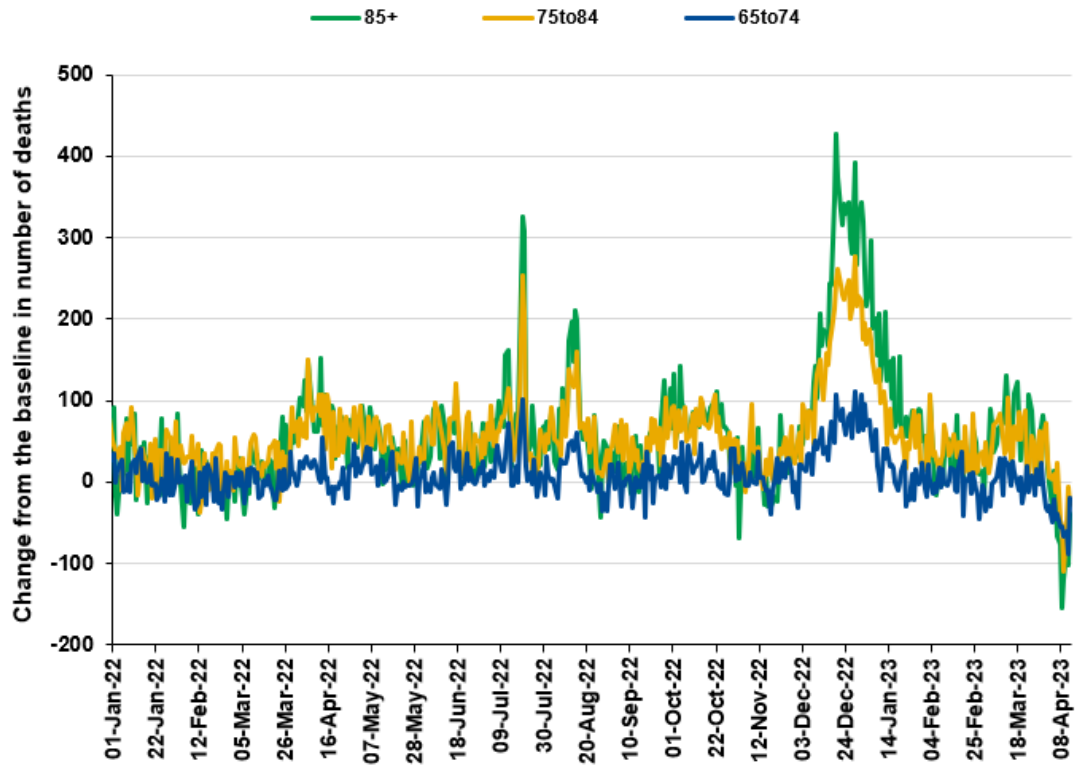
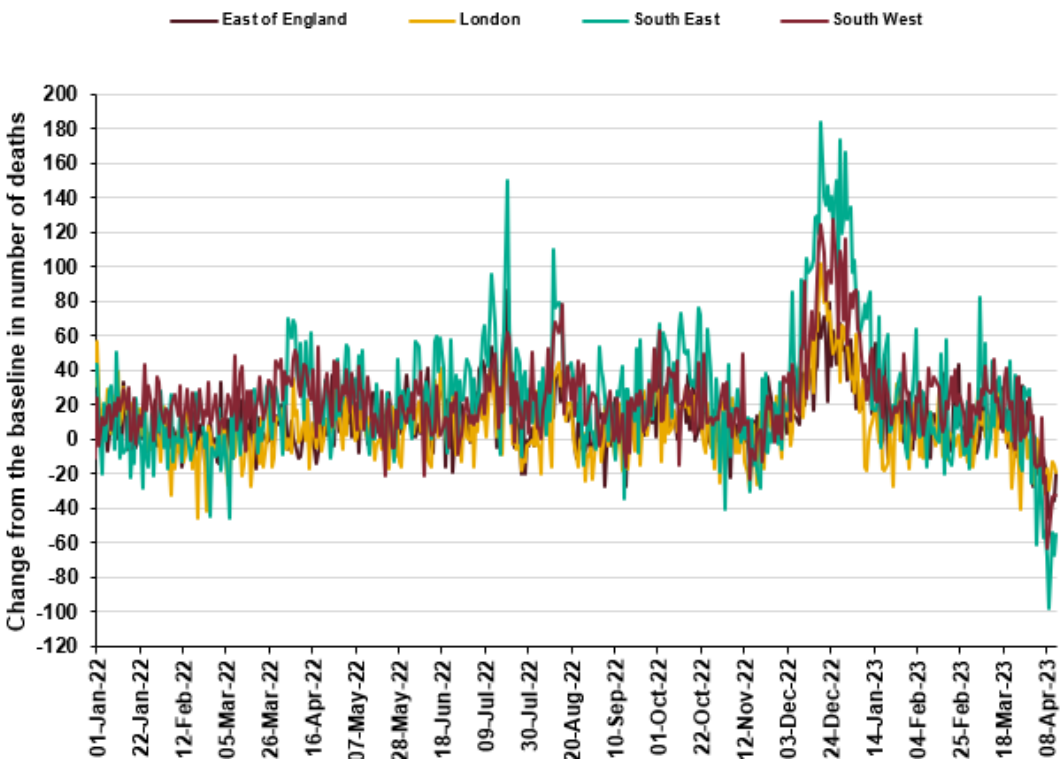
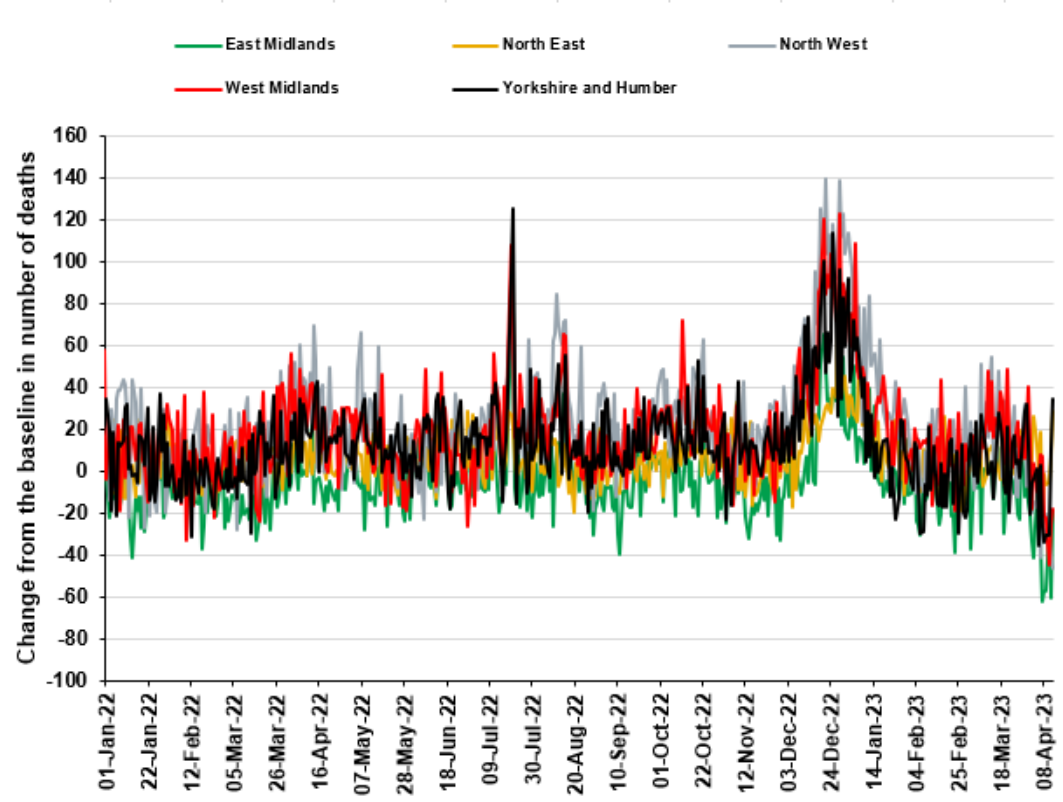


Figure 61: Daily excess all-cause deaths by UKHSA centre, England, 1 January 2022 to 12 April 2023

(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.

Between week 40 2022 and week 13 2023, the UKHSA Respiratory Virus Unit have genetically characterised, by sequencing of the haemagglutinin (HA) gene, 2,556 influenza A viruses (1,693 A(H3N2) and 863 A(H1N1)pdm09 viruses) and 114 influenza B viruses.

The 1,693 influenza A(H3N2) viruses genetically characterised, all belong in the genetic subclade 3C.2a1b.2a.2. The Northern Hemisphere 2022-23 influenza A(H3N2) vaccine strain (an A/Darwin/9/2021-like virus) also belongs in this 3C.2a1b.2a.2 genetic subclade.

The 863 influenza A(H1N1)pdm09 viruses characterised to date this season, all belong in genetic subgroup 6B.1A.5a.2. The Northern Hemisphere 2022-23 influenza A(H1N1)pdm09 vaccine strain (an A/Victoria/2570/2019-like virus) also belongs in genetic subclade 6B.1A.5a, within the 6B.1A.5a.2 cluster.

The 114 influenza B/Victoria lineage viruses have been genetically characterised, all belonging in subclade V1A3, within the subgroup V1A3a.2. The Northern Hemisphere 2022-23 influenza B/Victoria lineage vaccine strain (a B/Austria/1359417/2021-like virus) also belongs in this V1A3a.2 subclade/group.

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

Influenza antiviral susceptibility

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

Influenza virus sequences from samples collected between weeks 40 2022 and 13 2023 have been analysed. Analysis of 1,490 A(H3N2) viruses by sequencing found one oseltamivir resistant virus with an E119V amino acid substitution present as a mixed population (80% E119V) collected from an adult, post-oseltamivir treatment, in January 2023. An R292K mutation was detected transiently, in a viral subpopulation (25%), and was undetectable in a sample taken 9 days later, while the E119V mutation was maintained over 19 days. The patient was not treated with zanamivir. Of 803 A(H1N1)pdm09 NA sequences analysed, one oseltamivir resistant virus with an H275Y amino acid substitution present as a mixed population (80% H275Y) was detected. The sample was collected from an immune compromised adult, post oseltamivir treatment, in December 2022. No viruses with known markers of resistance to neuraminidase inhibitors were detected in 110 influenza B NA sequences analysed.

No viruses with known markers of resistance to baloxavir marboxil were detected in 1,200 A(H3N2), 607 A(H1N1)pdm09 and 85 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)	1,489	1	1,200	0
A(H1N1)pdm09	802	1	607	0
B/Victoria-lineage	110	0	85	0

SARS-CoV-2 variants

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

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

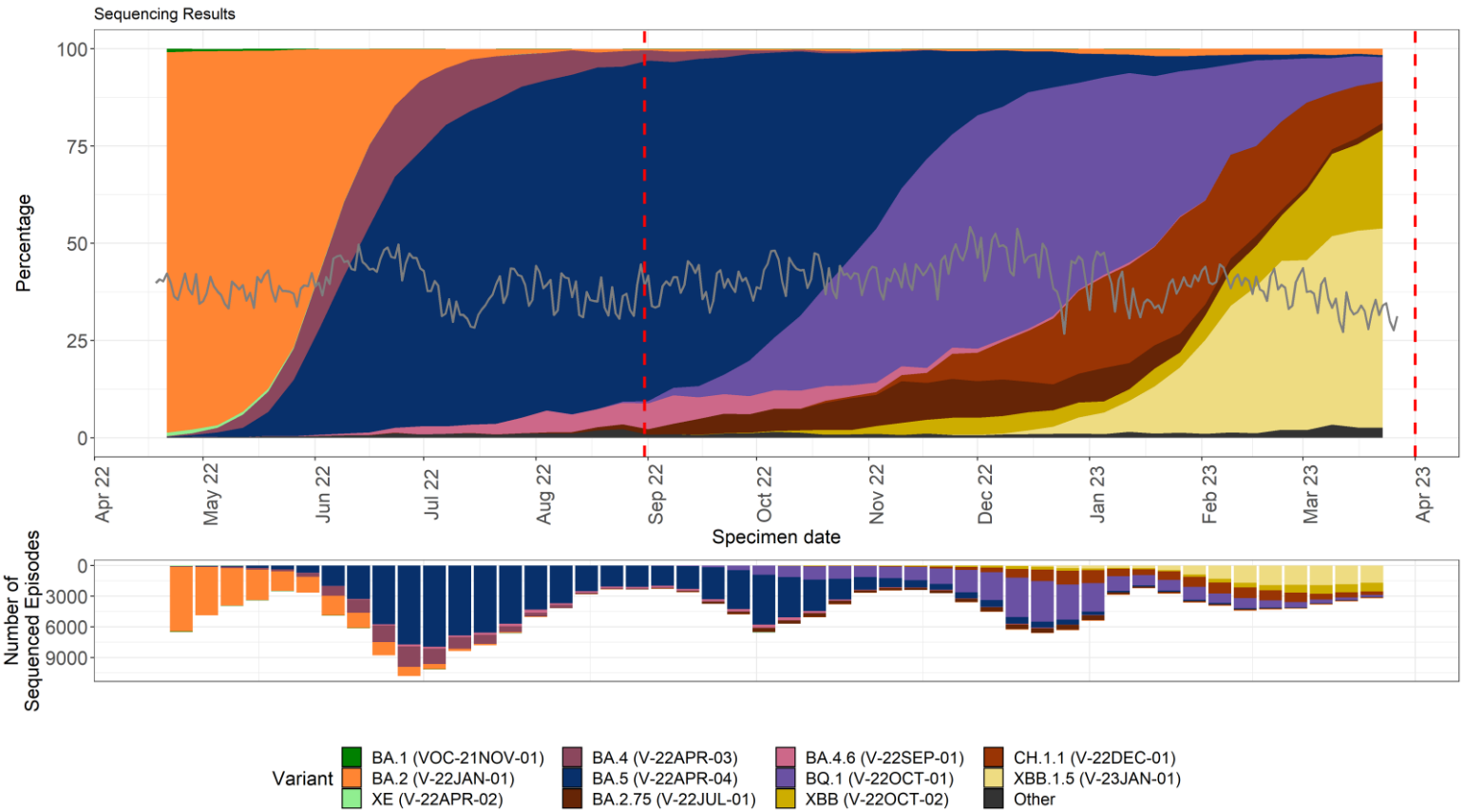
Detailed surveillance of particular variants of concerns can be found in recent technical briefings.

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

The prevalence of different UKHSA-designated variants amongst sequenced episodes is presented in Figure 62.

To account for sequencing delays, we report the proportion of variants from sequenced episodes between 27 March 2023 and 2 April 2023. Of those sequenced in this period, 53.1% were classified as XBB.1.5 (V-23JAN-01), 25.2% as XBB (V-22OCT-02), 10.3% as CH.1.1 (V-22DEC-01), 5.3% as BQ.1 (V-22OCT-01), 1.7% as BA.2.75 (V-22JUL-01), 1.7% as BA.2 (V-22JAN-01), 0.5% as BA.5 (V-22APR-04), and 2.4% as Other.

Figure 62. Prevalence of SARS-CoV-2 variants amongst available sequences episodes for England from 18 April 2022 up to 2 April 2023



The grey line indicates proportion of cases sequenced.
The vertical dashed lines (red) denote changes in policies:

- April 2022 denotes the start of England's 'Living with COVID' Plan.
- End of August line denotes the changes in asymptomatic testing
- April 2023 line denotes further changes in testing policy.

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

As of week 13 2023, XBB.1.5 remains the most commonly circulating variant in England (Table 5).

Table 5. Total distribution of SARS-CoV-2 variants detected in England in the last 12 weeks, up to week 13 (week ending 2 April 2023)

Variant	Other names by which this variant is known	Total confirmed (sequencing) cases in the last 12 weeks	Last reported specimen date
VOC-21NOV-01	Omicron BA.1	2	22/01/2023
V-22JAN-01	Omicron BA.2	640	02/04/2023
V-22APR-03	Omicron BA.4	4	16/02/2023
V-22APR-04	Omicron BA.5	825	30/03/2023
V-22JUL-01	Omicron BA.2.75	1,120	02/04/2023
V-22SEP-01	Omicron BA.4.6	33	23/02/2023
V-22OCT-01	Omicron BQ.1	8,760	02/04/2023
V-22OCT-02	Omicron XBB	5,603	02/04/2023
V-22DEC-01	Omicron CH.1.1	8,762	02/04/2023
V-23JAN-01	Omicron XBB.1.5	15,116	02/04/2023

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

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

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

Antimicrobial susceptibility

Table 6 shows in the 12 weeks up to week 15 2023, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA (Methicillin-resistant *Staphylococcus aureus*) and MSSA (methicillin-susceptible *Staphylococcus aureus*) tested and susceptible to antibiotics. These organisms are the important causes of community-acquired pneumonia (CAP), and the choice of antibiotics reflects the British Thoracic Society empirical guidelines for management of CAP in adults.

Table 6: Antimicrobial susceptibility surveillance in lower respiratory tract

Organism	Antibiotic	Specimens tested‡ (N)	Specimens susceptible (%)
S. pneumoniae	Penicillin	3,580	88
	Macrolides	4,033	83
	Tetracycline	3,766	83
H. influenzae	Amoxicillin/ampicillin	19,693	39
	Co-amoxiclav	24,731	46
	Macrolides	4,678	4
	Tetracycline	23,553	99
S. aureus	Methicillin	6,956	94
	Macrolides	8,225	70
MRSA	Clindamycin	321	50
	Tetracycline	392	76
MSSA	Clindamycin	4,767	75
	Tetracycline	5,561	93

* Macrolides = erythromycin, azithromycin and clarithromycin

‡ Specimen types = lower respiratory tract, bronchial, lung, alveolar lavage, pleura, chest, sputum, endotracheal aspirate, and pleural fluid

Data source: UKHSA's SGSS AMR module, please note that this is different to the data source used in the reports published between weeks 41 2020 to 05 2021 inclusive of the 2020/21 influenza season when the SGSS CDR module was used instead due to a PHE (now 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 05 2021. The AMR module of SGSS was used during the 2019/20 influenza season.

COVID-19 vaccination

Please note that we are pausing the update for this section whilst we prepare for the Spring 2023 vaccination campaign which began on 3 April 2023.

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 10 2023 (week ending 12 March 2023) was extracted from the National Immunisation Management Service (NIMS). The data presented this week is the provisional proportion of living people resident in England who had received COVID-19 vaccinations. Individuals vaccinated in England who have a registered address outside of England or where their address, age, or sex is unknown have been excluded. Due to changes in GP practice lists, in order to include newly registered patients and remove those who are no longer resident, there will be slight variation to the figures to reflect those who are currently resident in England.

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

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

Autumn Booster Campaign

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

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

Table 7 presents coverage as measured against the total population and includes people who are not yet due to have their Autumn booster. It is important that unvaccinated individuals, especially vulnerable adults, receive a primary course of vaccination, irrespective of whether individuals have had previous infection. To understand the data in the context of vaccine waning

across the whole COVID-19 programme, we present Table 8 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. Now that the Autumn booster campaign has ended, we have removed tables related to the eligible population at the end of December 2022, and the immunosuppression cohort. We will provide new data on the anticipated Spring booster campaign when data becomes available.

By the end of week 10 2023 (week ending 12 March 2023), 65.7% (15,098,879 out of 22,970,162) of all people aged over 50 years old who are living and resident in England who had been vaccinated with an Autumn booster dose since 1 September 2022, Table 7 and Figure 63. Vaccine uptake of those aged over 80 years old was 83.8% (2,469,906 out of 2,948,380).

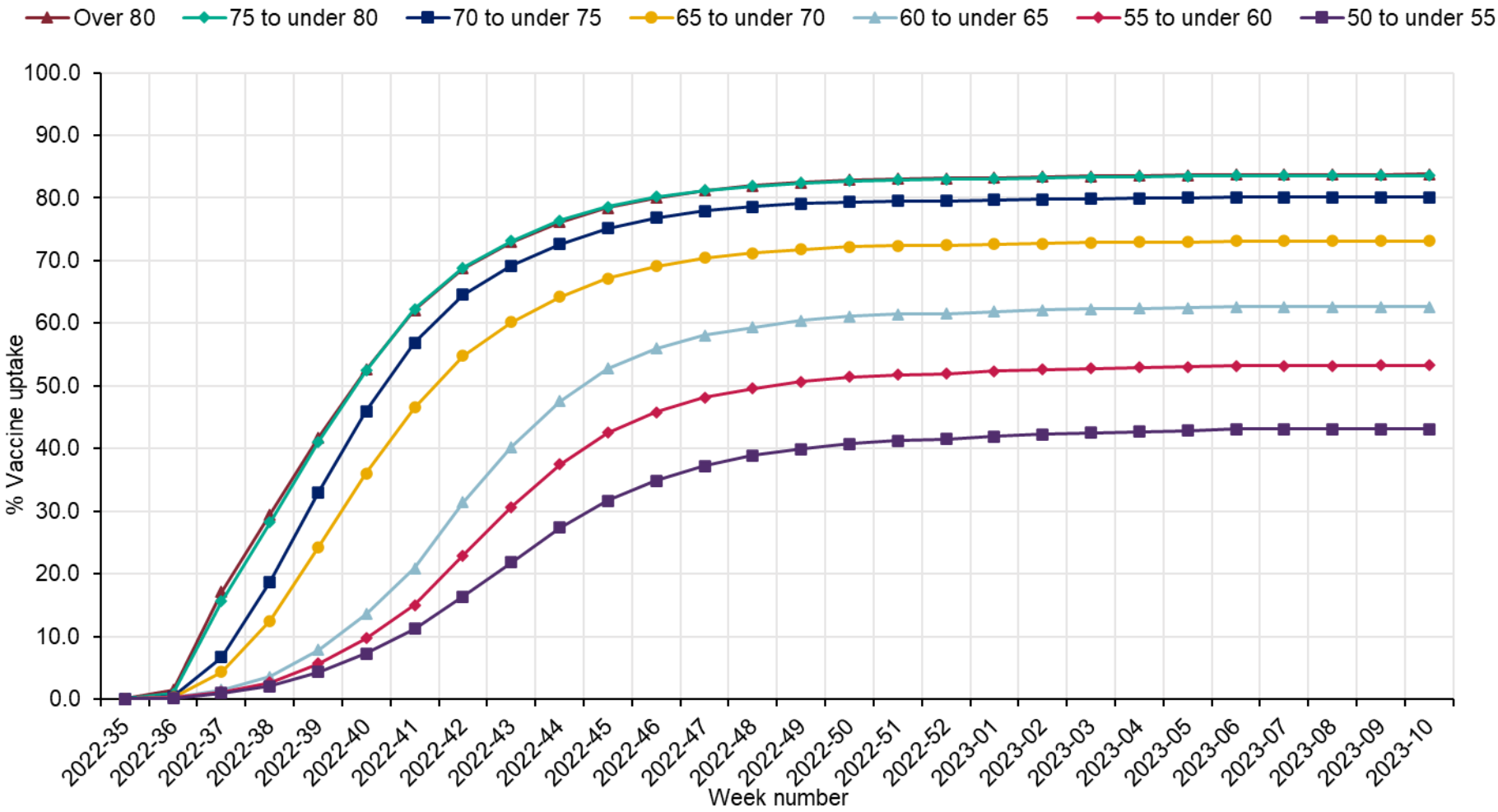
Table 7: Provisional cumulative people vaccinated by age with a booster of COVID-19 vaccine from the 1 September 2022 as part of the Autumn booster campaign in England**

National	People in NIMS cohort who are living and resident in England	Vaccinated with an Autumn booster since 1 September 2022*	Percentage vaccine uptake
Over 80	2,948,380	2,469,906	83.8
75 to under 80	2,414,946	2,018,140	83.6
70 to under 75	2,681,947	2,148,906	80.1
65 to under 70	2,998,038	2,192,140	73.1
60 to under 65	3,637,027	2,278,631	62.7
55 to under 60	4,129,437	2,198,448	53.2
50 to under 55	4,160,387	1,792,708	43.1
Aged 50 and over	22,970,162	15,098,879	65.7

*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.

**Please note this table was last updated in the week 11 report (data up to week 10).

Figure 63: Cumulative weekly COVID-19 vaccine uptake by age in those who are living and resident in England for those vaccinated with an Autumn booster since 1 September 2022*



*Please note this figure was last updated in the week 11 report (data up to week 10).

Proportion of people vaccinated by time since last vaccination

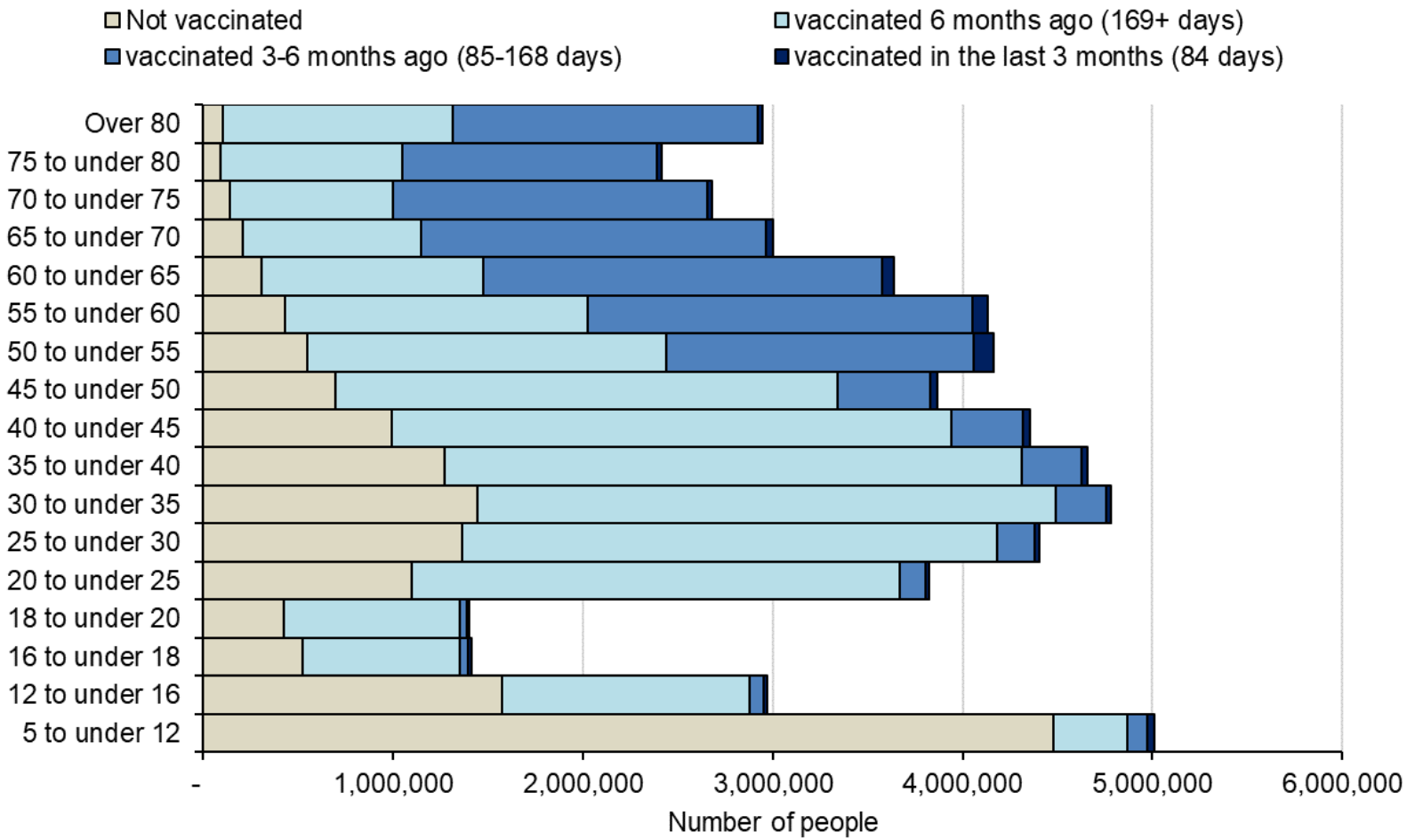
Table 8: Provisional cumulative people vaccinated with any dose of COVID-19 vaccine in the last 3 months, 3 to 6 months and vaccinated more than 6 months ago*

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	2,948,379	30,161	1.0	1,601,777	54.3	1,211,920	41.1
75 to under 80	2,414,946	24,218	1.0	1,342,809	55.6	959,367	39.7
70 to under 75	2,681,947	25,497	1.0	1,660,357	61.9	858,346	32.0
65 to under 70	2,998,038	32,958	1.1	1,819,359	60.7	939,999	31.4
60 to under 65	3,637,027	60,903	1.7	2,104,436	57.9	1,164,315	32.0
55 to under 60	4,129,437	80,489	1.9	2,023,489	49.0	1,594,721	38.6
50 to under 55	4,160,387	101,721	2.4	1,618,083	38.9	1,895,846	45.6
45 to under 50	3,868,231	41,326	1.1	483,408	12.5	2,644,896	68.4
40 to under 45	4,353,677	34,002	0.8	379,299	8.7	2,946,666	67.7
35 to under 40	4,658,685	31,568	0.7	315,470	6.8	3,041,320	65.3
30 to under 35	4,783,825	30,220	0.6	265,882	5.6	3,043,071	63.6
25 to under 30	4,404,988	25,245	0.6	197,374	4.5	2,818,512	64.0
20 to under 25	3,823,570	19,588	0.5	134,165	3.5	2,572,355	67.3
18 to under 20	1,399,061	10,150	0.7	40,394	2.9	926,847	66.2
16 to under 18	1,411,538	16,434	1.2	45,324	3.2	825,758	58.5
12 to under 16	2,972,034	22,040	0.7	71,217	2.4	1,306,026	43.9
5 to under 12	5,011,923	36,742	0.7	108,107	2.2	387,771	7.7

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.

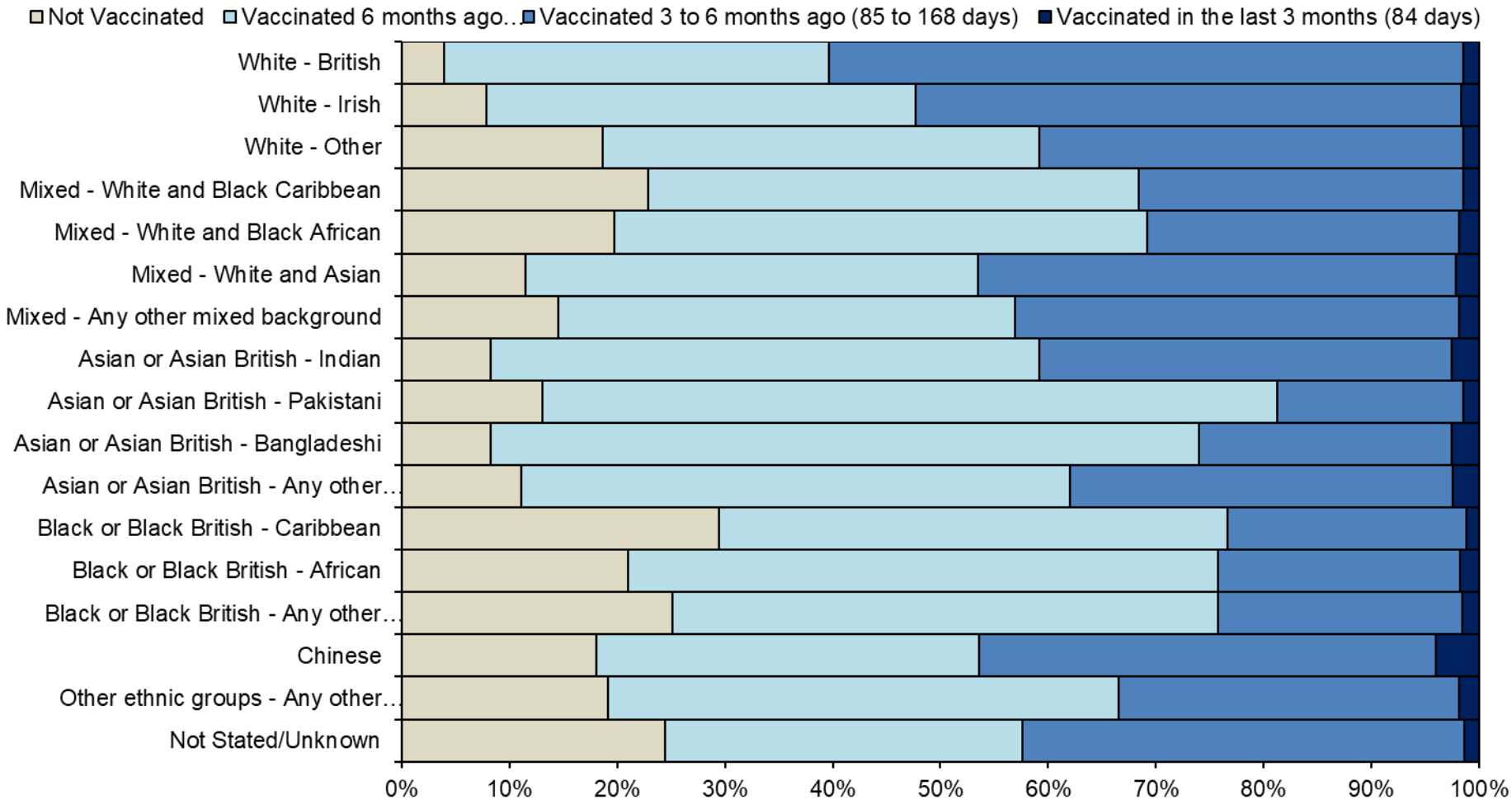
*Please note this table was last updated in the week 11 report (data up to week 10).

Figure 64: 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*



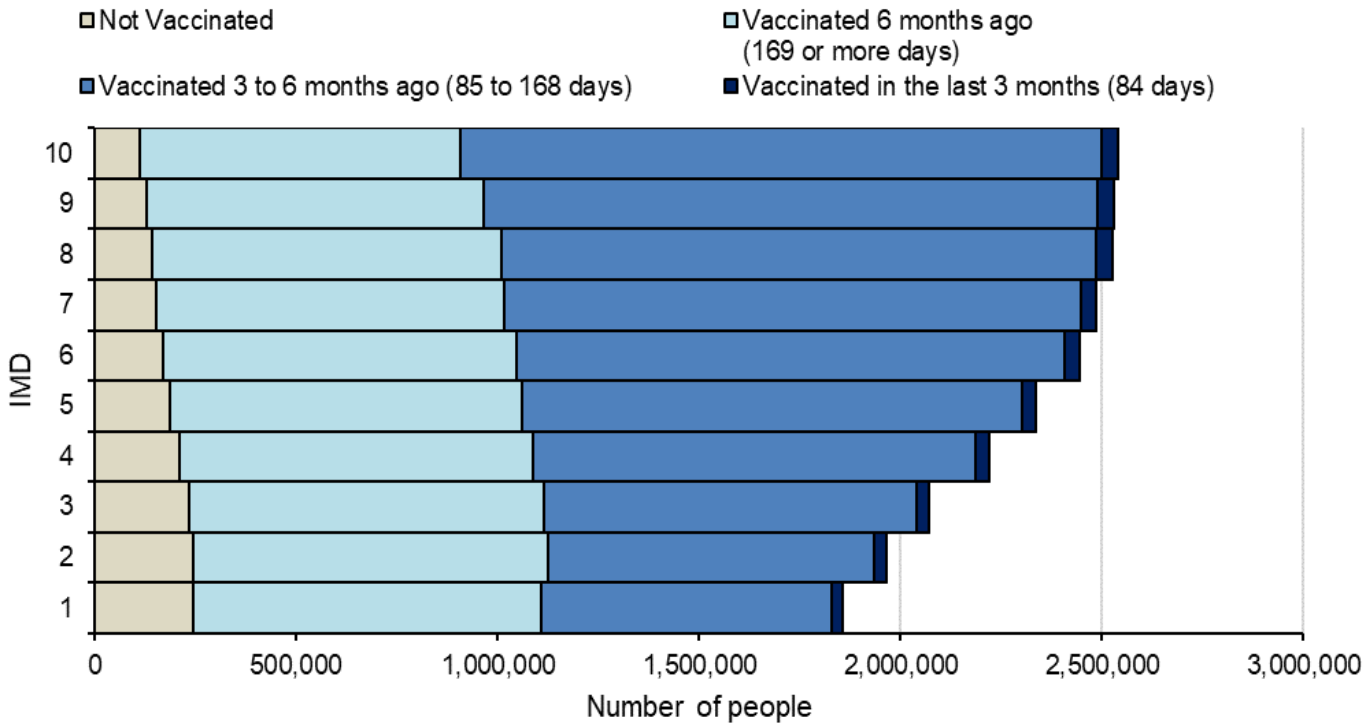
*Please note this figure was last updated in the week 11 report (data up to week 10).

Figure 65: Provisional data on the proportion of people vaccinated with any dose of COVID-19 vaccine in the last 3 months, 3 to 6 months and vaccinated more than 6 months ago by ethnicity in those living and resident in England, aged 50 and over*



*Please note this figure was last updated in the week 11 report (data up to week 10)

Figure 66: Provisional cumulative people vaccinated with any dose of COVID-19 vaccine in the last 3 months, 3 to 6 months and vaccinated more than 6 months ago by indices of multiple deprivation (IMD)* in those living and resident in England, aged 50 and over**



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

**Please note this figure was last updated in the week 11 report (data up to week 10)

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

Detailed information on the NHS Digital characterisation of the immunosuppressed group can be found on the NHS Digital website.

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

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

For UK COVID-19 daily vaccination figures and definitions, please see the Vaccinations' section of the UK COVID-19 dashboard

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

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

International update

Global COVID-19 update

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

Global influenza update

Updated 17 April 2023 (based on data up to 2 April 2023) (WHO website).

Globally, influenza detections decreased steeply in January after a peak in late 2022. Detections in 2022 were predominantly influenza A(H3N2). After the end of January 2023, activity increased again with a higher proportion of influenza A(H1N1)pdm09 and B virus detections until a peak around week 10, after which detections have decreased.

In the countries of North America, most indicators of influenza activity were at levels typically observed towards the end of the season. Influenza A viruses predominated in the United States of America (USA), with influenza A(H1N1)pdm09 accounting for the majority of subtyped viruses, whereas influenza B viruses predominated in Canada.

In Europe, overall influenza detections decreased and influenza positivity from sentinel sites decreased to 16% but remained above the epidemic threshold at the regional level. Out of 41 countries, 13 reported moderate intensity, with the remainder reporting low or below baseline intensity. Out of 40 countries, 20 continued to report widespread activity. Overall, influenza B viruses predominated in both sentinel and non-sentinel surveillance as all subregions experienced a wave of influenza B activity after an initial influenza A wave. Of the few influenza A viruses detected, the majority were influenza A(H1N1)pdm09. Influenza detections decreased or were stable in most countries except in Lithuania and Norway where very slight increases were reported.

In Central Asia, sporadic influenza detections were reported in Kazakhstan (influenza A(H1N1)pdm09) and Tajikistan.

In Northern Africa, influenza detections were very low.

In Western Asia, influenza activity overall decreased but continued to be reported in some countries with detections of all seasonal influenza subtypes.

In East Asia, influenza activity continued to be driven predominantly by A(H1N1)pdm09 detections in China, which appeared to reach a peak and decrease slightly. Slight

increases in some indicators of influenza activity were reported in China and South Korea.

In the Caribbean and Central American countries, influenza activity of mainly influenza B/Victoria lineage viruses was low, although increases in influenza activity were reported in Belize and Guatemala where activity was close to the moderate threshold.

In the tropical countries of South America, influenza remained low with all seasonal subtypes detected and influenza B viruses predominant. Increasing trends in influenza activity and detections were reported in Brazil and Peru however activity remained low. In Bolivia, SARI activity remained high and RSV activity increased.

In tropical Africa, influenza activity increased in some countries of Western Africa while detections were low across reporting countries in Middle and Eastern Africa.

In Southern Asia, influenza activity remained low with influenza A(H3N2) and B/Victoria lineage viruses predominating.

In South-East Asia, influenza activity remained elevated mainly due to influenza B detections in Malaysia and influenza A(H3N2) in Singapore. In the temperate zones of the southern hemisphere, influenza activity remained low however influenza activity increased slightly in Chile and Australia.

The WHO GISRS laboratories tested more than 381,110 specimens during that time period. 40,010 were positive for influenza viruses, of which 30,057 (75.1%) were typed as influenza A and 9,953 (24.9%) as influenza B. Of the sub-typed influenza A viruses, 18,779 (70.4%) were influenza A(H1N1)pdm09 and 7,890 (29.6%) were influenza A(H3N2). Of the characterized B viruses, 100% (1,163) belonged to the B/Victoria lineage.

Influenza in Europe

Updated data for week 14 2023 (Joint ECDC-WHO Europe Influenza weekly update).

The percentage of all sentinel primary care specimens from patients presenting with ILI or ARI symptoms that tested positive for an influenza virus fluctuated to 15% in week 14 2023 from 16% in the previous week and remaining above the epidemic threshold (10%).

Of 41 countries and areas reporting on geographic spread of influenza viruses, 3 reported no activity (Georgia, Kazakhstan and Kyrgyzstan), 9 reported sporadic spread (eastern, northern and southern Region), 5 reported local spread (France, Malta, Serbia, Slovakia and Kosovo, 8 reported regional spread (Albania, Austria, Bosnia and Herzegovina, Czechia, Lithuania, Moldova, Romania and Ukraine) and 16 reported widespread activity (across the Region).

For week 14 2023, 328 (15%) of 2,118 sentinel specimens tested positive for an influenza virus; 83% were type B and 17% were type A. Of 14 subtyped A viruses, 86% were A(H1)pdm09 and 14% A(H3). All 53 type B viruses ascribed to a lineage were B/Victoria. Of 29 countries and areas across the Region that each tested at least 10 sentinel specimens in week 14/2023, 15 reported a rate of influenza virus detections above 10%: Estonia (46%), Slovakia (45%), Hungary (38%), France (29%), Poland (29%), Germany (27%), Romania (25%), Slovenia (25%), Luxembourg (24%), Kosovo (24%), Norway (23%), Armenia (19%), Austria (15%), Ukraine (14%) and Italy (12%).

For the season to date, 27,003 (23%) of 116,620 sentinel specimens tested positive for an influenza virus. More influenza type A (n=19,291, 71%) than type B (n=7,712, 29%) viruses have been detected. Of 15,613 subtyped A viruses, 10,023 (64%) were A(H3) and 5,590 (36%) were A(H1)pdm09. All 2,272 influenza type B viruses ascribed to a lineage were B/Victoria (71% of type B viruses were reported without a lineage).

For week 14 2023, 2,429 of 44,097 specimens from non-sentinel sources (such as hospitals, schools, primary care facilities not involved in sentinel surveillance, or nursing homes and other institutions) tested positive for an influenza virus; 754 (31%) were type A and 1,675 (69%) were type B. Of 67 subtyped A viruses, 50 (75%) were A(H1)pdm09 and 17 (25%) A(H3). Of 83 type B viruses ascribed to a lineage, 74 (89.2%) were B/Victoria and 9 (10.8%) were B/Yamagata reported by a single country. The B/Yamagata reports are under investigation.

For the season to date, more influenza type A (n=191,407, 76%) than type B (n=59,143, 24%) viruses have been detected. Of 55,749 subtyped A viruses, 30,774 (55%) were A(H1)pdm09 and 24,975 (45%) were A(H3). Of 4,379 influenza type B viruses ascribed to a lineage, 4,370 were B/Victoria and 9 were B/Yamagata (93% of type B viruses were reported without a lineage). These reported B/Yamagata viruses are under investigation. The confirmed B/Yamagata LAIV infections are not included in the season’s count.

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 3 March 2023

From 27 January to 3 March 2023, 3 human cases of infection with influenza A(H5N1) viruses, 1 human case of infection with an influenza A(H5N6) virus and 2 human cases of infection with influenza A(H9N2) viruses were reported officially. Additionally, 2 human cases of infection with influenza A(H9N2) viruses and 2 human cases of infection with influenza A(H1N1) 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.

Latest UKHSA avian influenza technical briefing 29 March 2023

See also the WHO Disease Outbreak News Reports for more information.

Middle East respiratory syndrome coronavirus (MERS-CoV)

From April 2012 to March 2023, a total of 2,604 laboratory-confirmed cases of MERS-CoV and 936 associated deaths were reported globally to WHO under the International Health Regulations (IHR 2005).

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

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

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

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

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

Related links

Previous national COVID-19 reports

Previous weekly influenza reports

Annual influenza reports

COVID-19 vaccine surveillance reports

Previous COVID-19 vaccine surveillance reports

Public Health England (PHE) monitoring of the effectiveness of COVID-19 vaccination

Investigation of SARS-CoV-2 variants of concern: technical briefings

Sources of surveillance data for influenza, COVID-19 and other respiratory viruses

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

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

About the UK Health Security Agency

The UK Health Security Agency is an executive agency, sponsored by the Department of Health and Social Care.

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