UK Health Security Agency

Weekly national Influenza and COVID-19 surveillance report

Week 50 report (up to week 49 data)

16 December 2021

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 49 (between 6 December and 12 December 2021) and for some indicators daily data up to 14 December 2021.

Surveillance indicators suggest that at a national level COVID-19 activity increased in most indicators in week 49 of 2021. Laboratory indicators suggest that influenza activity is low.

Overall COVID-19 case rates increased in week 49. Case rates increased in most groups – by region increases were greatest in London, by age group: among young adults and by ethnic group: among black ethnic groups. Overall there was a small increase in PCR positivity compared to the previous week.

The overall number of reported acute respiratory incidents increased slightly in the past week. There was a continued decrease in the number of incidents in educational settings, and an increase in other settings. SARS-CoV-2 was identified in the majority of these.

COVID-19 hospitalisations increased slightly in week 49. Deaths with COVID-19 decreased in the most recent week.

COVID-19 vaccine coverage for all ages was 67.9% for dose 1 at the end of week 49. COVID-19 vaccine coverage was 62.2% for dose 2 at the end of week 49, reaching over 90% in all cohorts over the age of 65 years. COVID-19 vaccine coverage for all ages for dose 3 was at 31.4% at the end of week 49, reaching over 80% in all cohorts over the age of 70.

Through Respiratory Datamart, influenza positivity is low but increased slightly to 1.2% in week 49. Other indicators for influenza such as hospital admissions and GP influenza-like illness consultation rates remain very low. Respiratory syncytial virus positivity decreased to 2.9% in week 49, while rhinovirus positivity remained stable at 11.4% in week 49. Human metapneumovirus (hMPV) positivity increased to 10.5% in week 49, while parainfluenza and adenovirus positivity remained low at 1.1% and 3.1% respectively.

Influenza vaccine uptake is 80.1% in people aged 65 years and over which is higher than the uptake achieved during the same week in previous seasons. Compared to the same week in the previous season, for those in at-risk groups uptake is comparable or higher than the previous seven seasons. For pregnant women uptake is lower than the same week in the previous eight seasons. Uptake in 2 and 3-year old children is lower than the same time last year but higher than the previous seven seasons before that. Weekly vaccine coverage data are provisional.

Please note that there will be no publication of this report in week 52 2021. Publication will resume in week 1 2022.

Laboratory surveillance

Confirmed COVID-19 cases (England)

As of 9am on 14 December 2021, a total of 9,275,513 first positive cases have been confirmed for COVID-19 in England under Pillars 1 and 2, since the beginning of the pandemic.

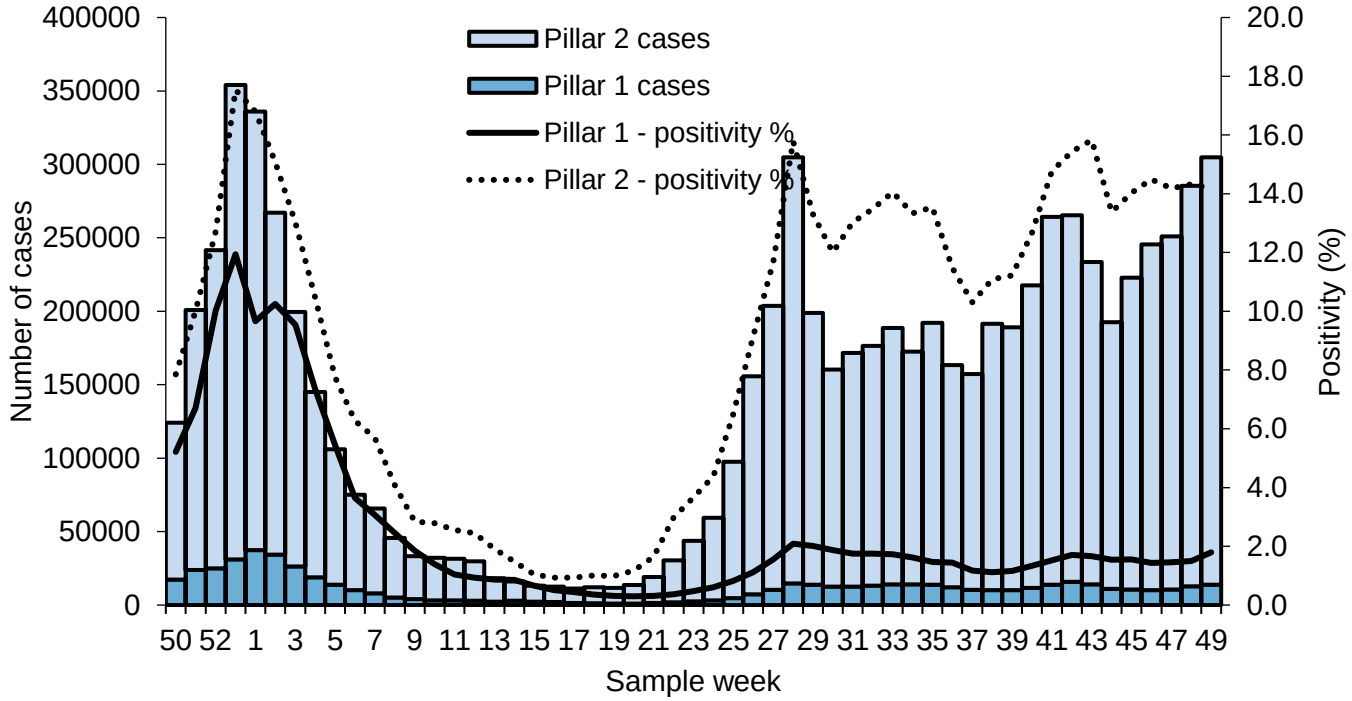
Overall COVID-19 case rates increased in week 49. Case rates increased in most groups – by region increases were greatest in London, by age group: among young adults and by ethnic group: among black ethnic groups. Overall there was a small increase in PCR positivity compared to the previous week.

From the week 32 report onwards, case rates have been updated to use the latest ONS population estimates for mid-2020. Previously case rates were calculated using the mid-2019 population estimates. Rates by ethnicity and 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 Polymerase Chain Reaction (PCR) testing only, unless otherwise stated (for example figure 2).

Changes to testing policies over time may impact on positivity rates.

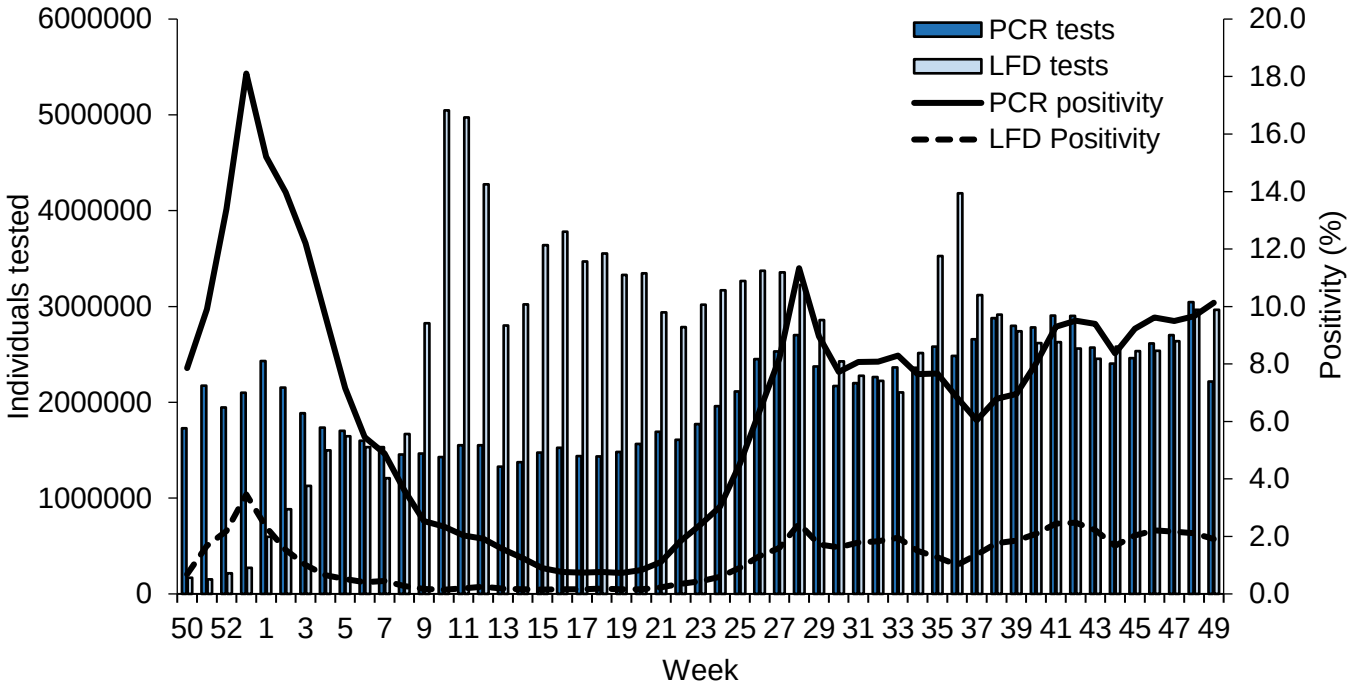
Figure 1: Confirmed COVID-19 cases tested under Pillar 1 and Pillar 2, based on sample week with overall weekly PCR positivity for Pillars 1 and 2 (%)



* The data are 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

* Positivity (excluding Figure 2) is calculated as the number of individuals testing positive during the week divided by the number of individuals tested during the week through Polymerase Chain Reaction (PCR) testing
* Data source: Second Generation Surveillance System (SGSS)

Figure 2: Weekly positivity (%) of confirmed COVID-19 and number of individuals tested by type of test, under Pillar 1 and 2



* For Figure 2 positivity is calculated as the number of individuals testing positive using a specific test type during the week, divided by the number of individuals tested using that specific test type during the week
* Please note that an individual may appear under both PCR and LFD tests if they have been tested using both test types in a given week

Age and sex

Figure 3: Age-sex pyramids for confirmed COVID-19 cases tested under Pillars 1 and 2 in weeks 48 and 49 (n=587,882)

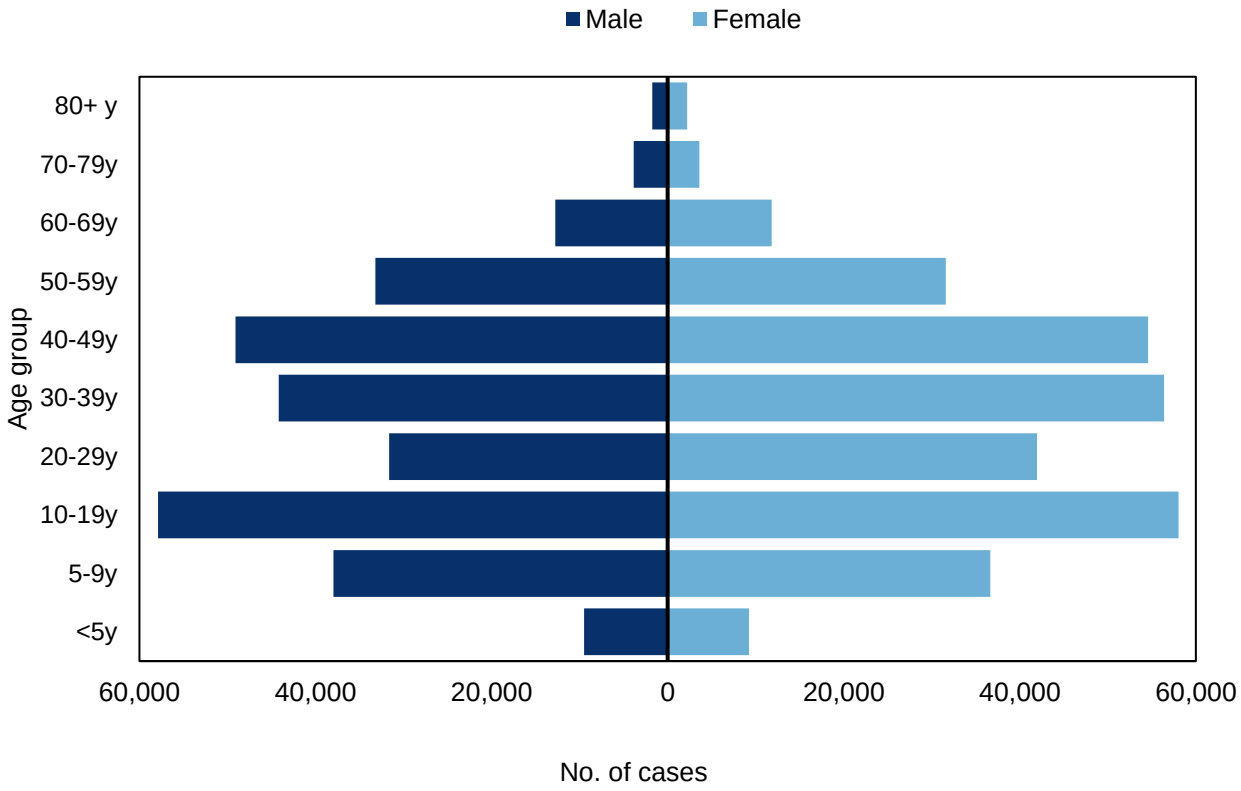


Figure 4: Weekly confirmed COVID-19 case rates per 100,000, tested under Pillar 1 and Pillar 2, by sex

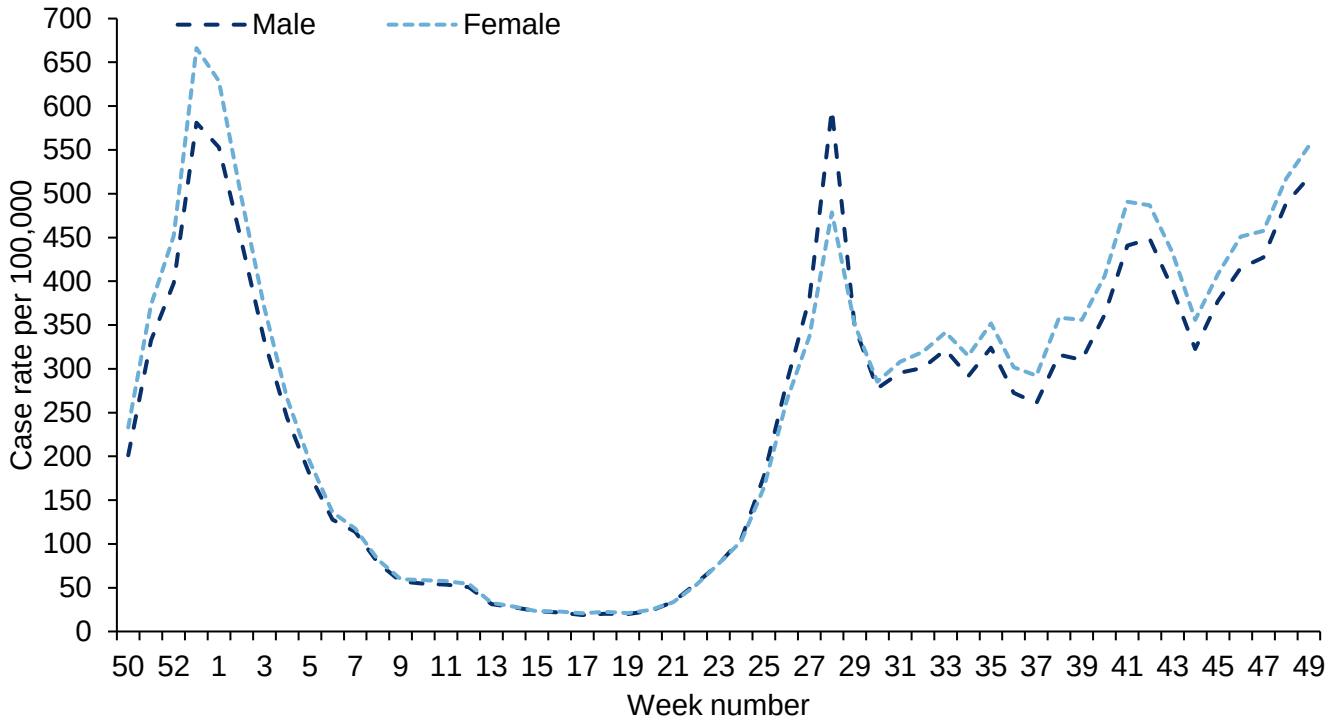


Figure 5: Weekly confirmed COVID-19 case rates per 100,000, tested under Pillar 1 and Pillar 2, by age group

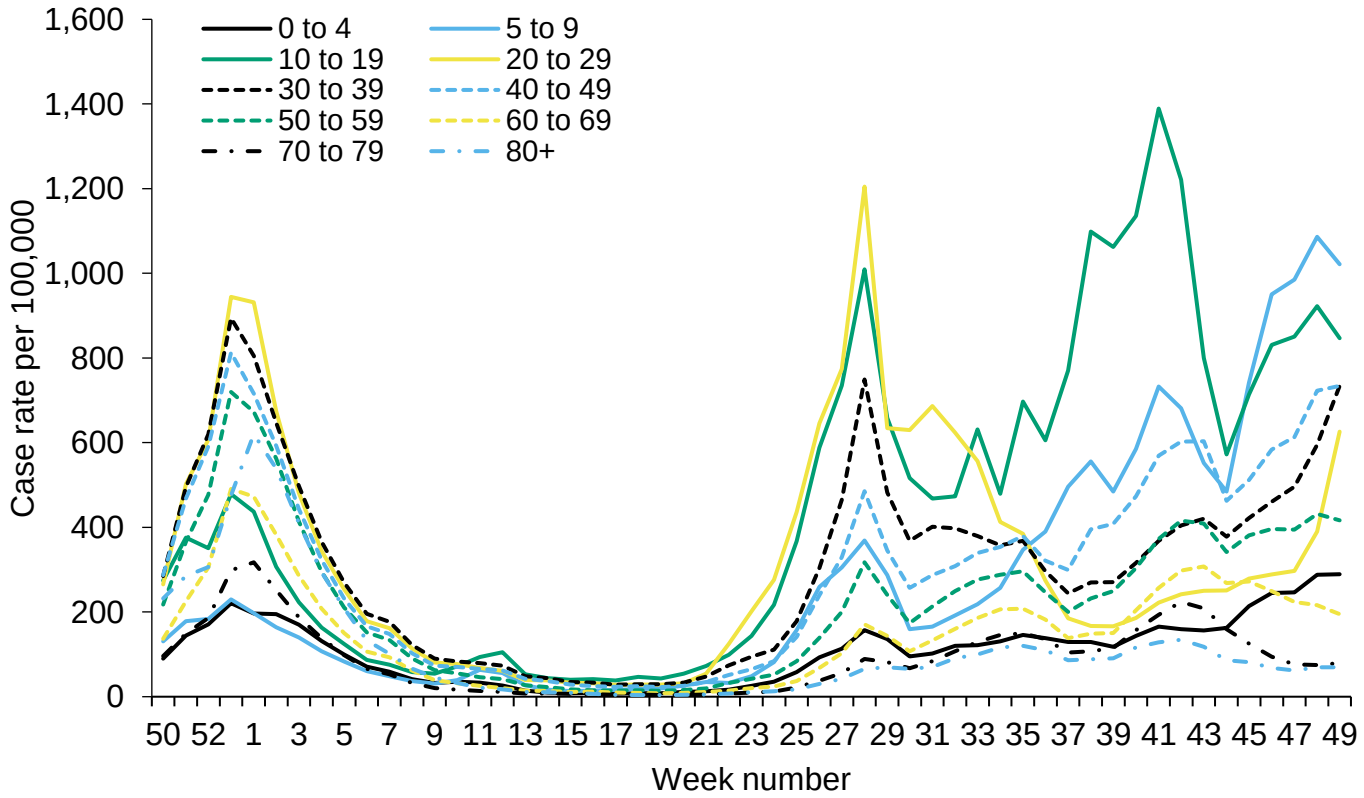
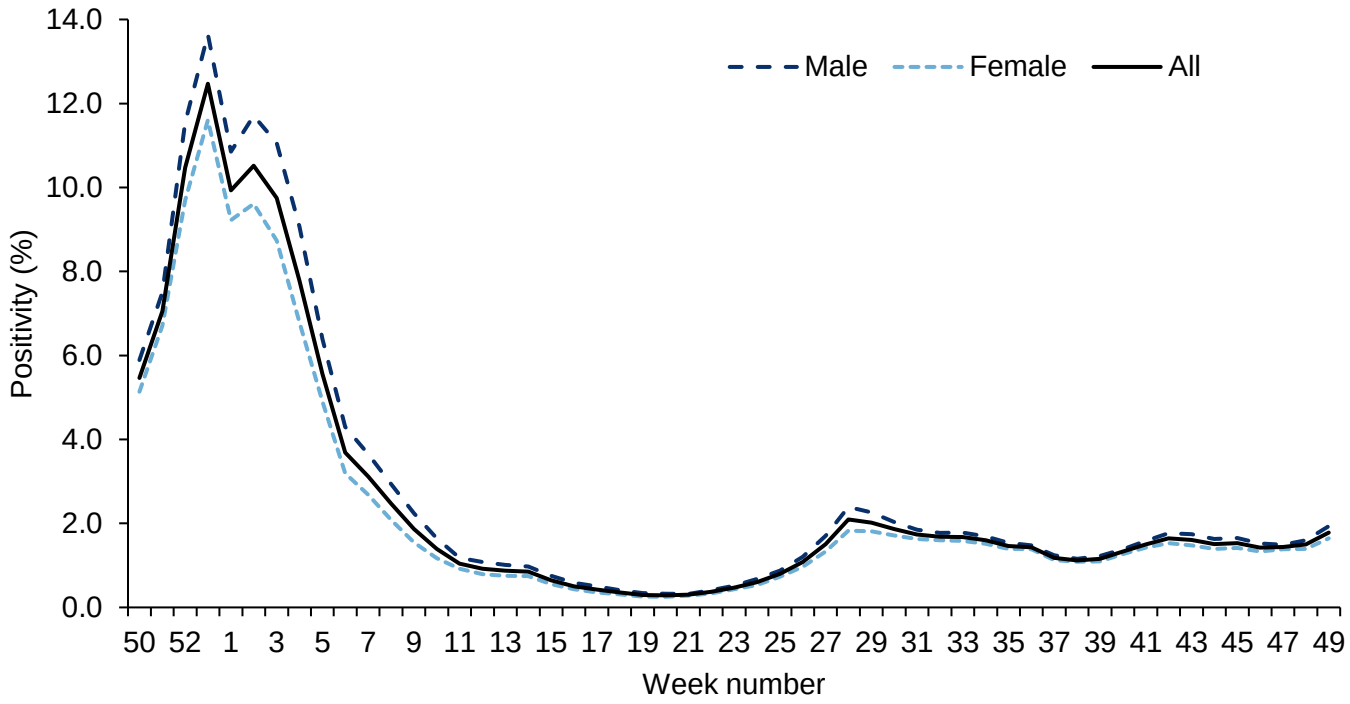


Figure 6: Weekly PCR positivity (%) of confirmed COVID-19 cases tested overall and by sex under (a) Pillar 1 and (b) Pillar 2

(a)



(b)

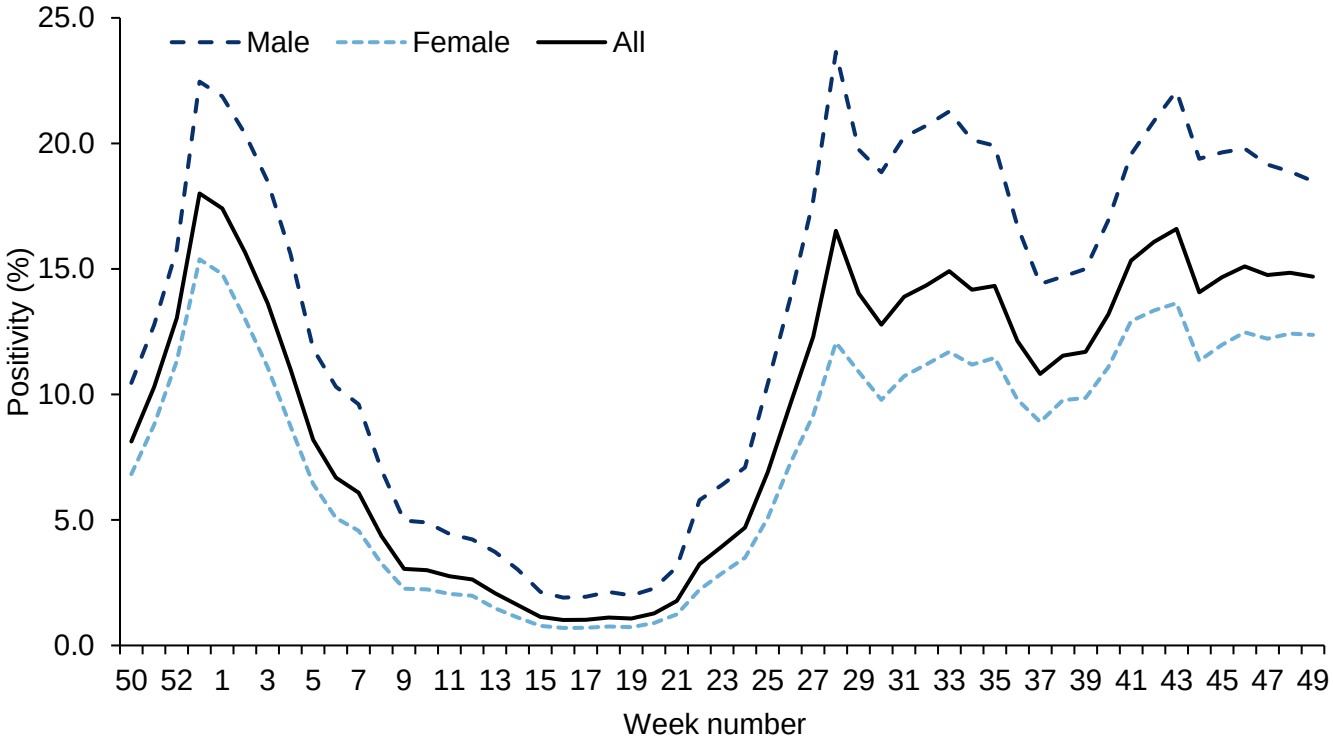
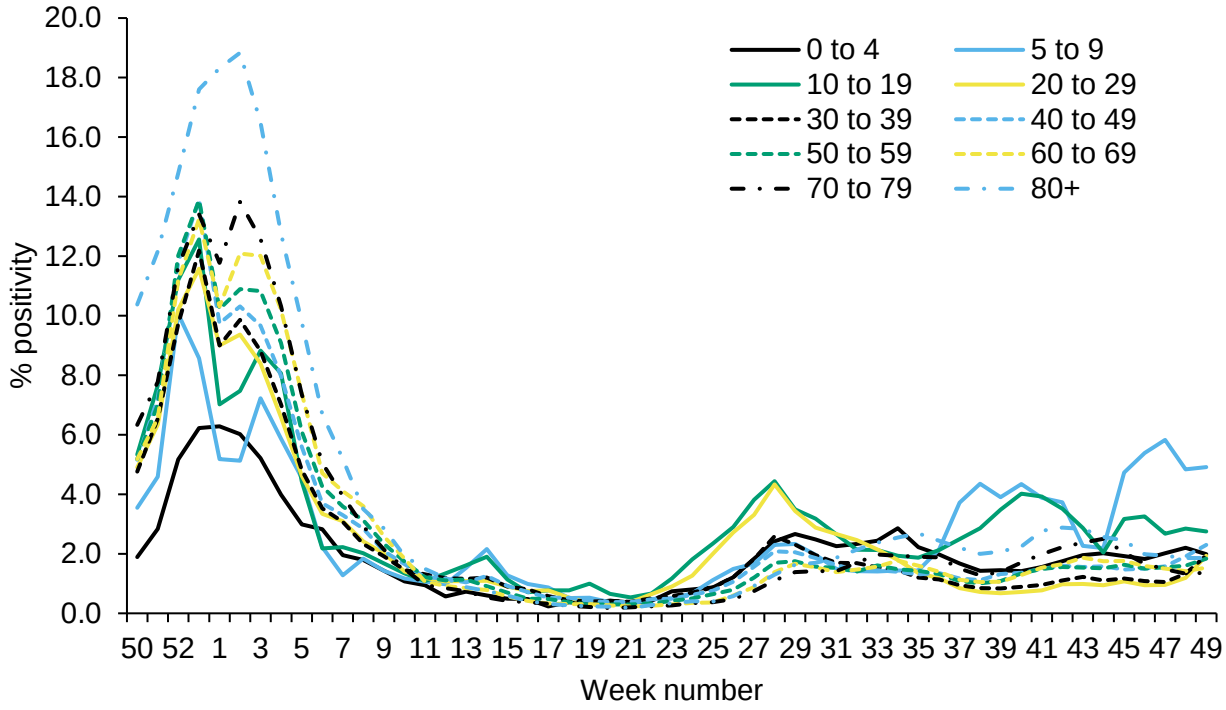
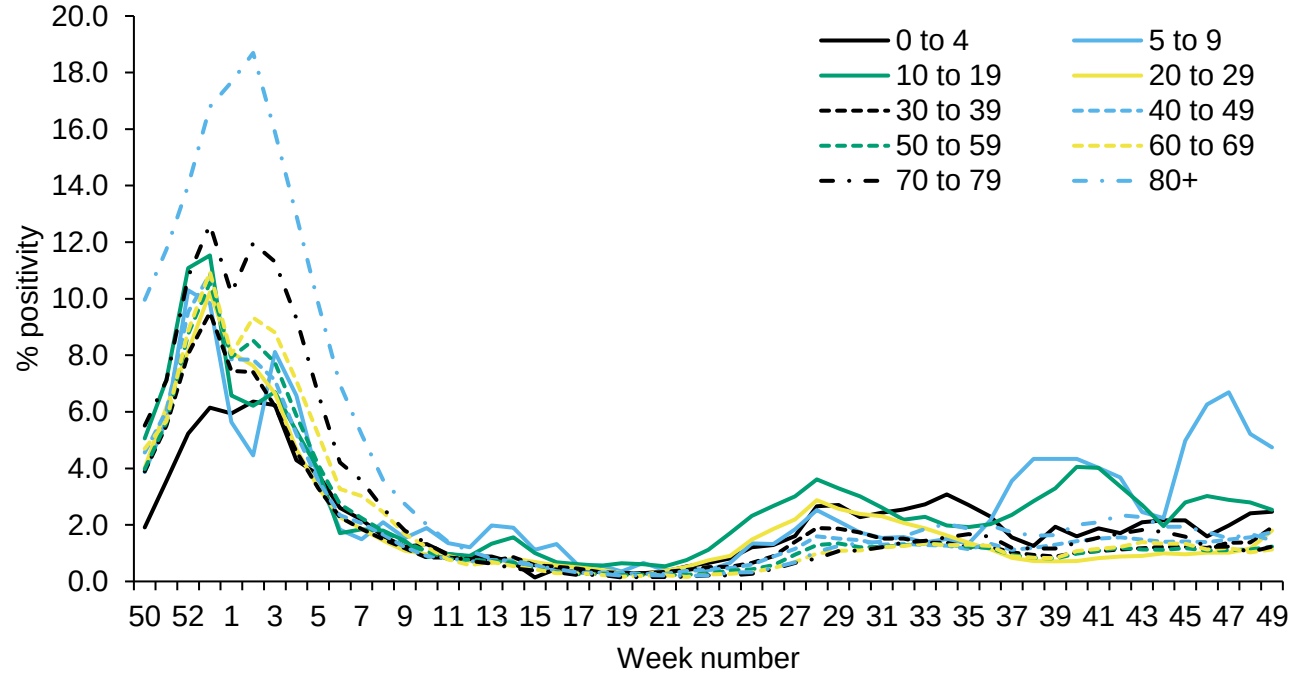


Figure 7: Weekly PCR positivity (%) of confirmed COVID-19 cases tested under Pillar 1, (a) by male and age group and (b) by female and age group and; under Pillar 2, (c) by male and age group and (d) by female and age group

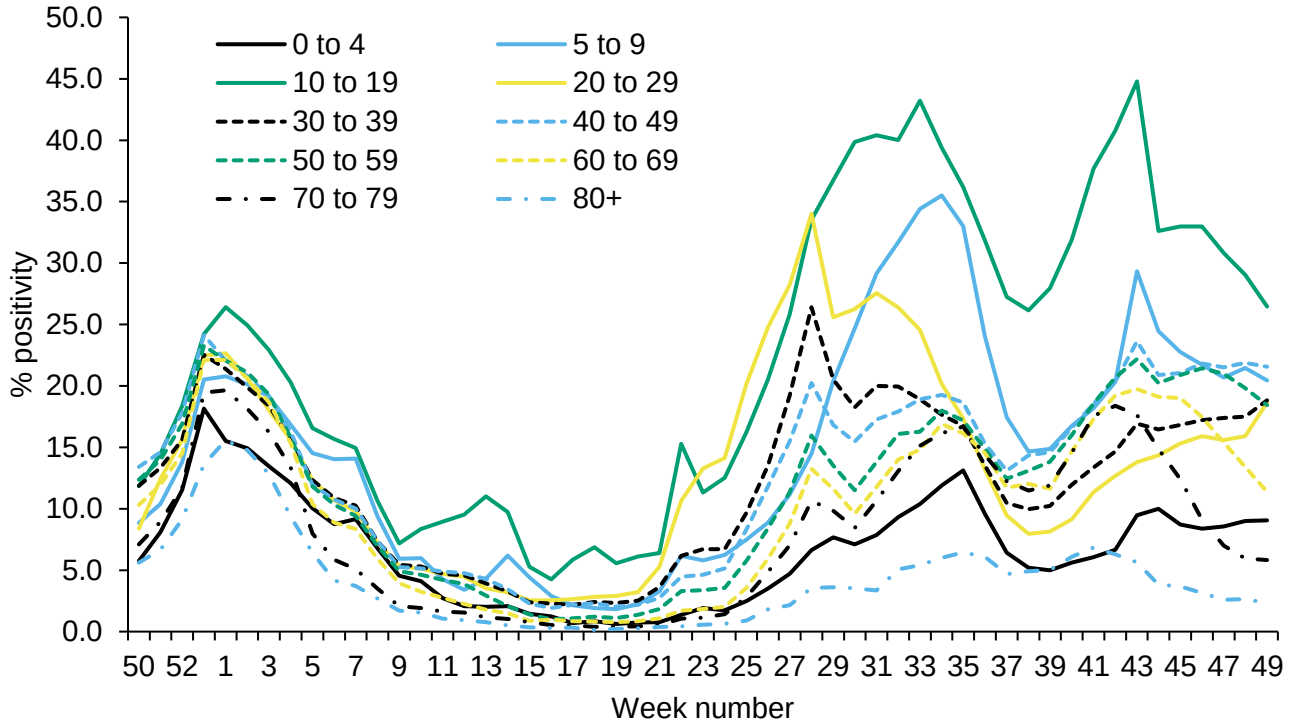
(a) Pillar 1 - Male



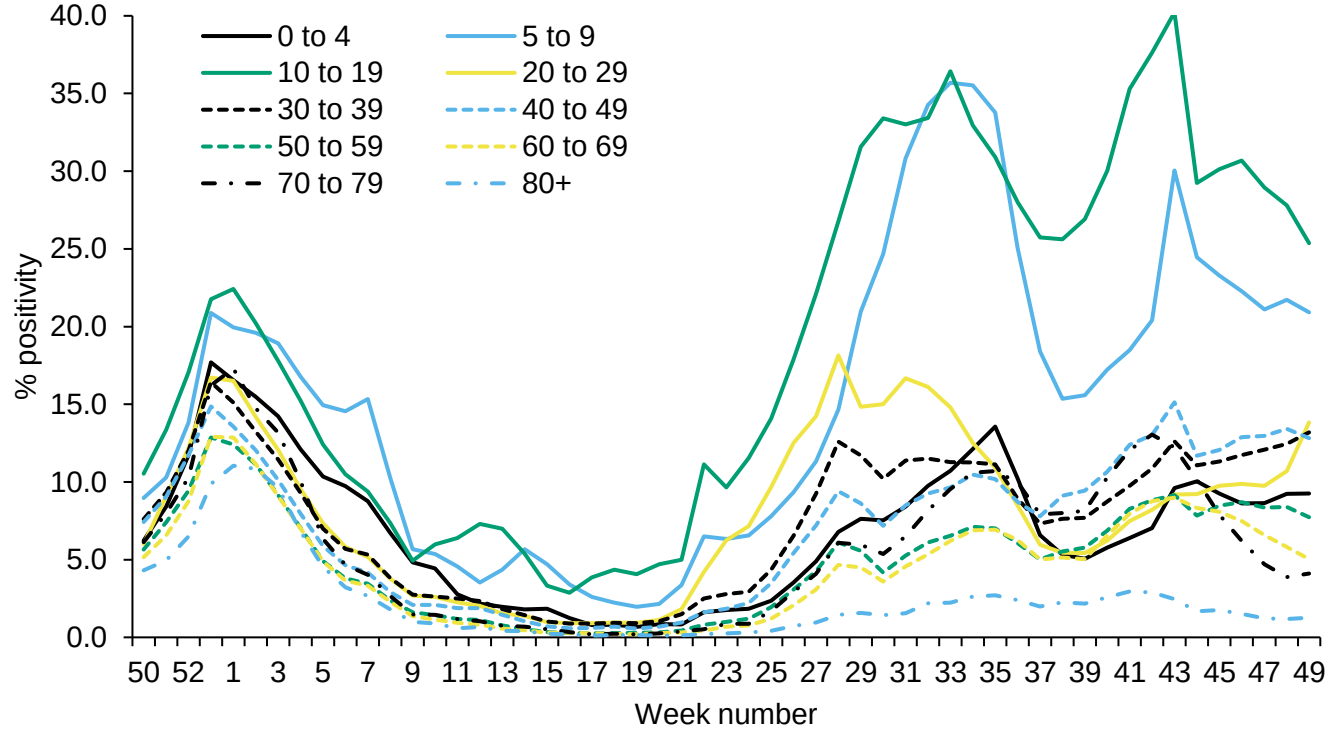
(b) Pillar 1 - Female



(c) Pillar 2 – Male



(d) Pillar 2 – Female



Geography

Figure 8: Weekly confirmed COVID-19 case rates per 100,000 population (Pillar 1 and Pillar 2), by UKHSA Centres and sample week

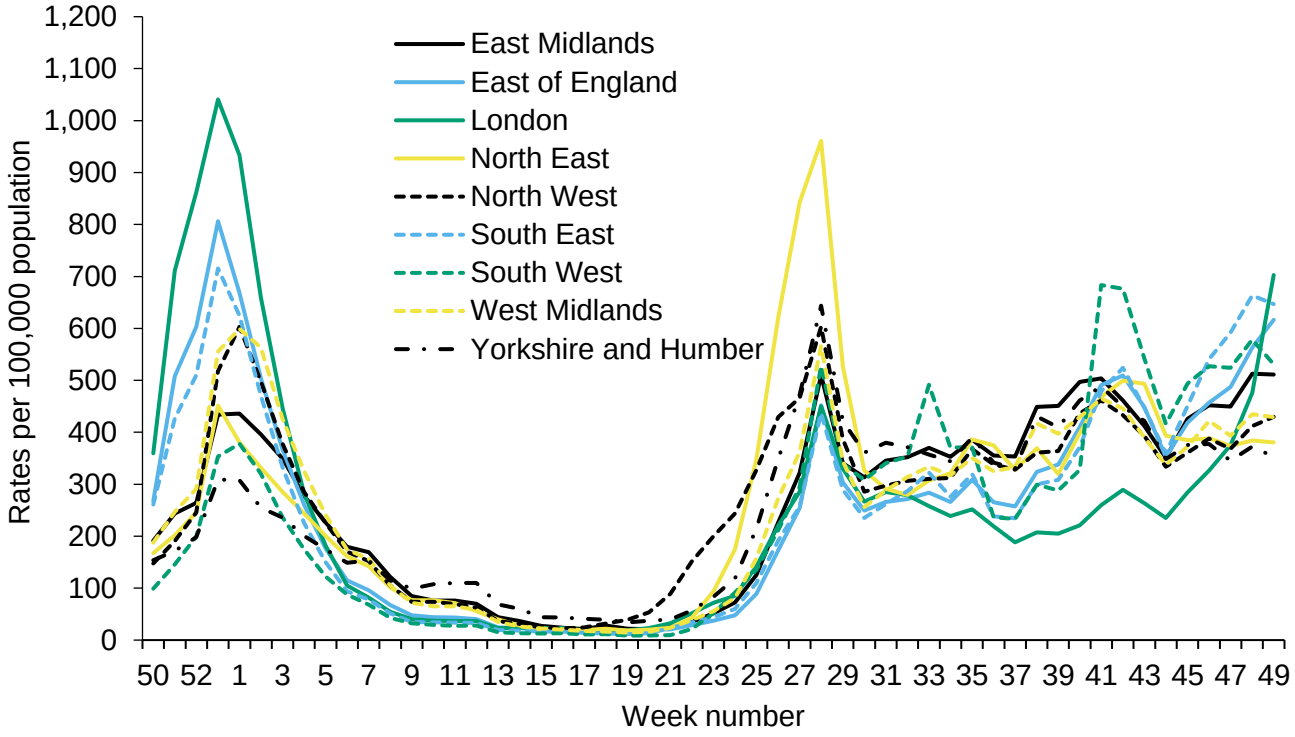
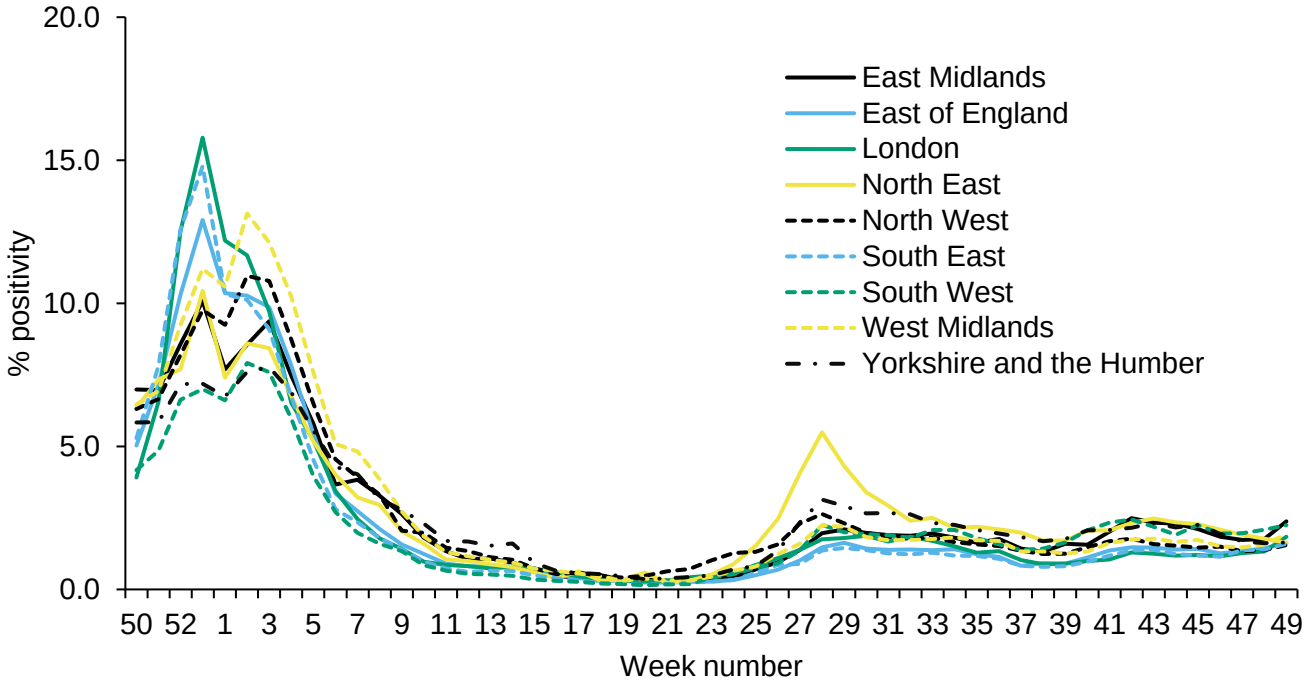


Figure 9: Weekly PCR positivity of confirmed COVID-19 cases tested under (a) Pillar 1 (%) and (b) Pillar 2 (%), by UKHSA Centres and sample week

(a)



(b)

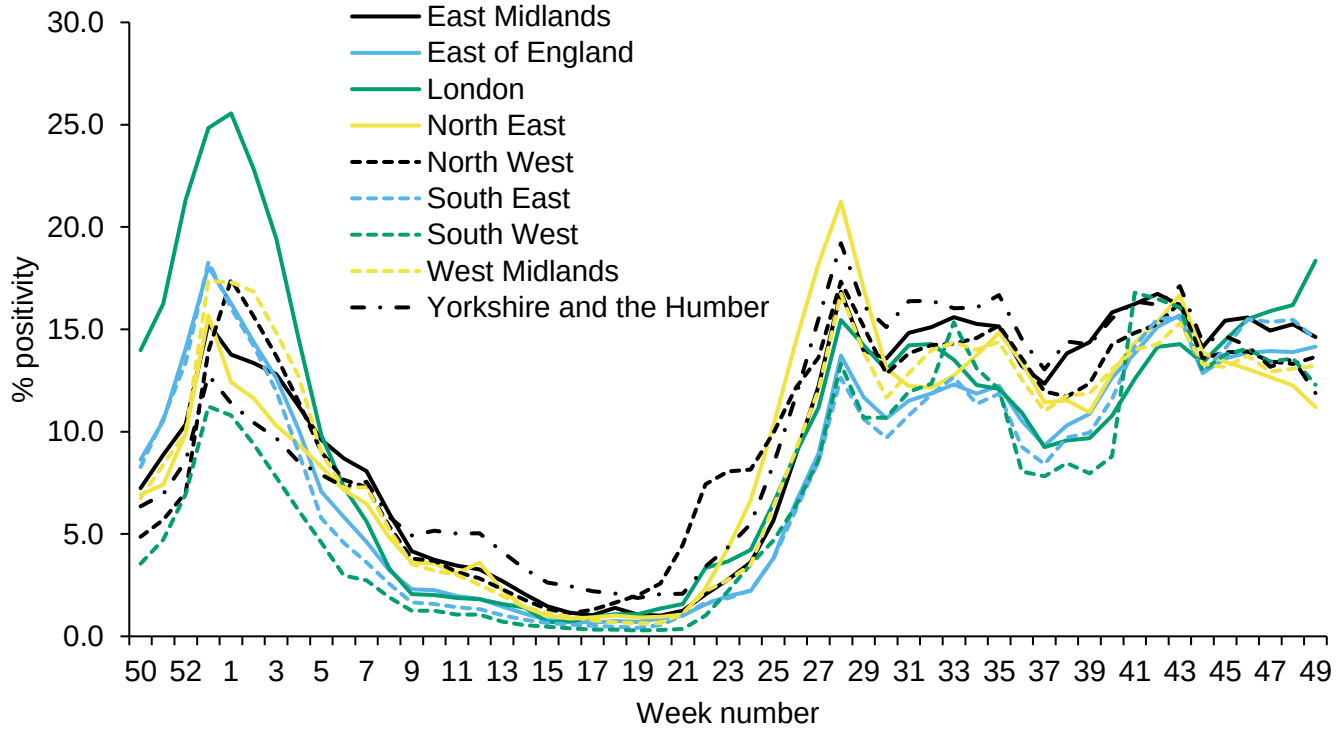
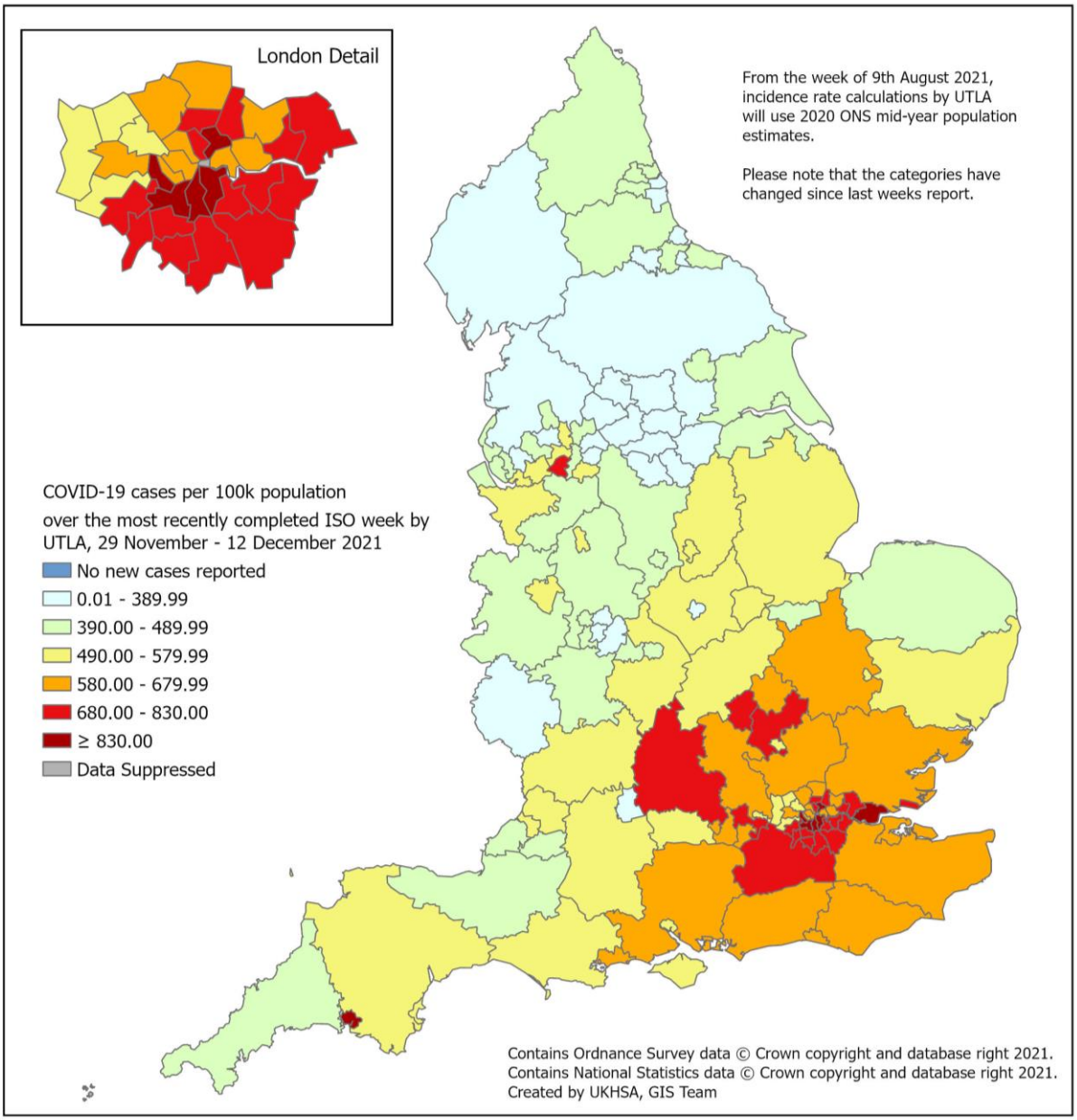
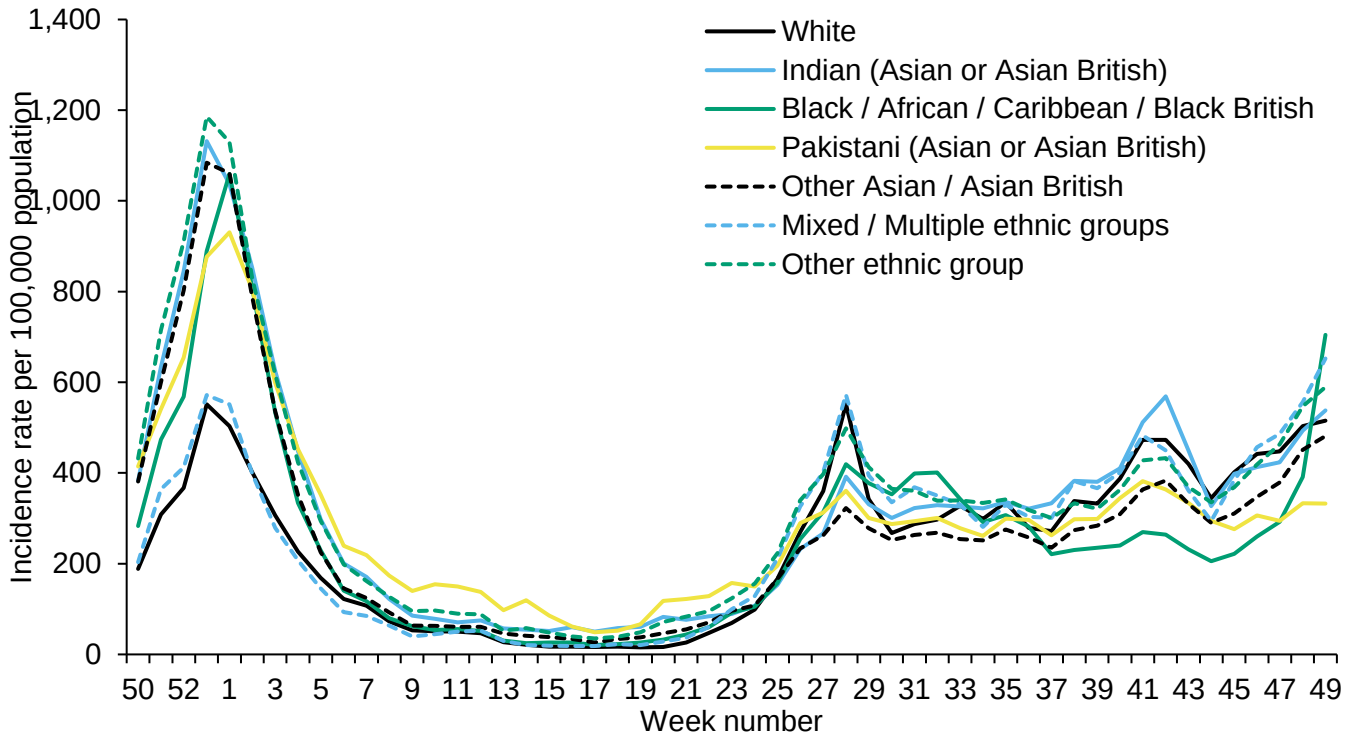


Figure 10: Weekly rate of COVID-19 cases per 100,000 population (Pillar 1 and 2), by upper-tier local authority, England (box shows enlarged map of London area)



Ethnicity

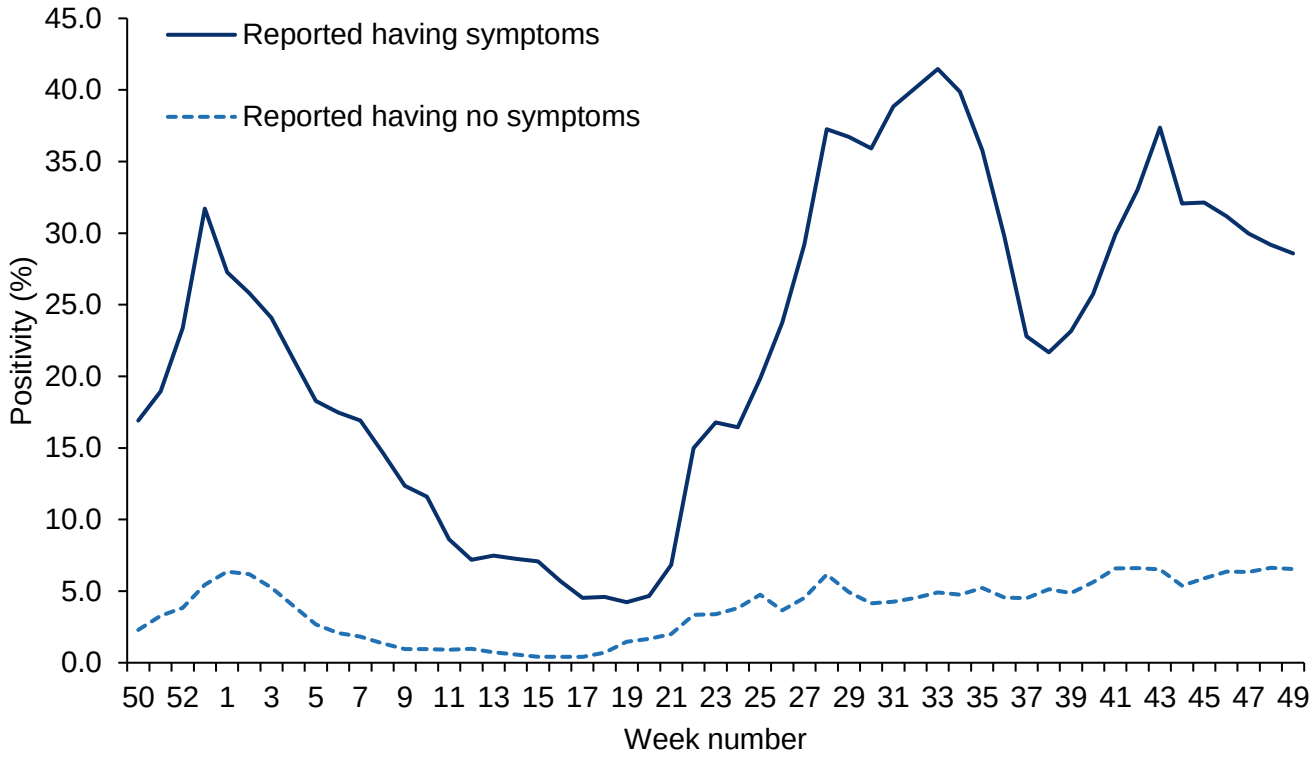
Figure 11: Weekly incidence per 100,000 population by ethnicity, England



*the incidence rates on Figure 11 have been calculated using the mid-2019 ONS population estimates

Positivity by symptoms

Figure 12: Weekly PCR positivity (%) of confirmed COVID-19 cases by symptoms reported on Pillar 2 test request



Possible SARS-CoV-2 reinfection in England

Please note that this section will be updated monthly. Last update was published 18 November 2021.

The following figures present population data based on the first time that individuals tested positive for SARS-CoV-2 through PCR and/or lateral flow device testing in England together with those who have tested positive for SARS-CoV-2 through PCR and/or lateral flow testing with an interval of at least 90 days between two consecutive positive tests. To the end of week 43 in 2021 (to 31 October 2021) 72,264 possible reinfections have been identified, of which 441 have been confirmed by identification of genetically distinct specimens from each illness episode to end September 2021 (see Table 1).

For a possible reinfection to be categorised as confirmed it requires sequencing of a specimen at each episode and for the later specimen to be genetically distinct from that sequenced from the earlier episode. Availability of such dual sequencing is currently very low for several reasons; sequencing was not widely undertaken early in the pandemic; LFD test results do not allow sequencing and some PCR samples have a low viral load where sequencing cannot be undertaken. To meet the definition of a probable reinfection requires sequencing at the later episode that identifies a variant that was not circulating at the time of the earlier episode. Further details on the methodology, as well as additional data on reinfections are available in the graph set published alongside this report.

It is important to consider reinfections in the context of first infections and there is a 90-day delay before people with a first infection can become eligible for reinfection.

Table 1 summarises the definitions of different categories of COVID-19 infection accompanied by totals generated to 31 October 2021 (end week 43 2021) and review of 9,195 possible reinfections with sequencing data available to end October 2021. These data are skewed by the limited availability of sequencing data, particularly in the early months of the pandemic. Widespread routine testing of asymptomatic individuals is in place and this, together with surge testing, will lead to an increased number of asymptomatic reinfections being identified.

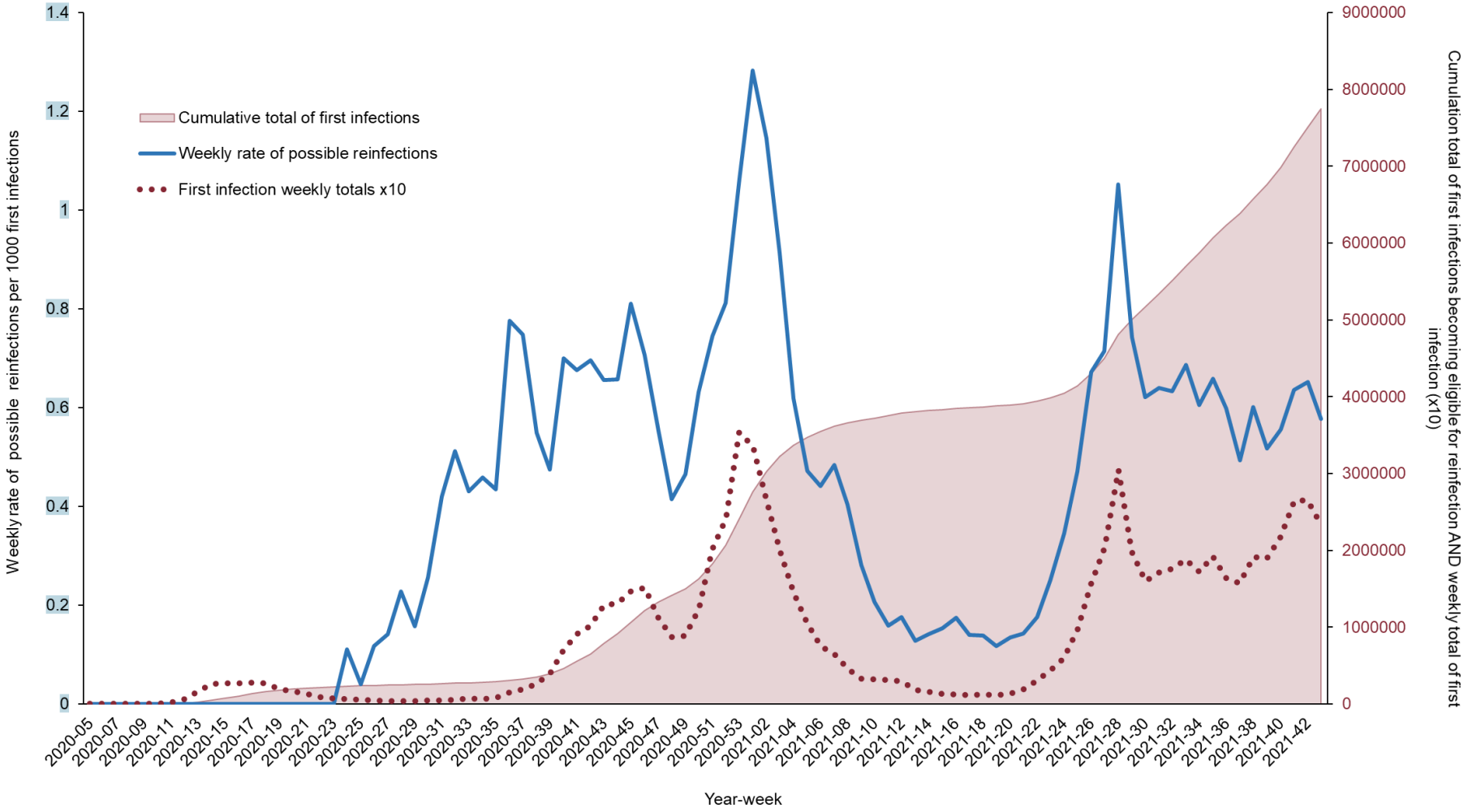
Figure 13 shows the weekly rates of possible reinfections per 1000 first infections based on a cumulative denominator derived from total individuals with a first SARS-CoV-2 positive test result at a point 13 weeks (91 days) before the second positive test result together with the cumulative total of first infections (secondary Y-axis) and total first infections (secondary Y-axis) by week of onset.

Table 1: Different categories of COVID-19 infection with current totals generated by ongoing analysis in England to 31st October 2021 (end week 43 2021)

Infection type	Definition	Current totals
Primary infection/ first positive	the first positive PCR/ LFD test result for an individual	**7.9 million first positives**
Possible reinfection	identified based on two sequential positive test results (PCR or LFD) at least 90 days apart	**72,264 possible reinfections**
Probable reinfection	where only reinfection sample is available, and this is congruent with contemporaneous phylogeny OR the second event identifies a variant which was not in circulation at the time of first infection	**4,191 classified as probable***
Confirmed reinfection	sequencing of a specimen at each episode of a possible reinfection with the later specimen genetically distinct from that sequenced at first episode	**441 confirmed reinfections***
Persistent infection	Nominally repeat test positives at between 14 and <90-day intervals (likely associated with immunosuppression)	Unquantified

*This is out of 9,195 samples with sequencing data available to end October 2021

Figure 13: The weekly rate of possible COVID-19 reinfections with cumulation of first infections becoming eligible for reinfection and weekly total of first infection* (England only to week 43 2021)



*These data have been derived independently based on Pillar 1 and Pillar 2 datasets and may therefore differ to previously published data

Respiratory DataMart system (England)

The Respiratory Datamart system was initiated 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 facilitate comparison with data on other respiratory viruses.

In week 49 2021, out of the 112,173 respiratory specimens reported through the Respiratory DataMart System (based on data received from 16 out of 17 laboratories), 2,503 samples were positive for SARS-CoV-2 with an overall positivity of 2.2%. The highest positivity was noted in the 5 to 14-year olds at 8.9% in week 49.

The overall influenza positivity is low but increased slightly to 1.2% in week 49, with 68 of the 5,772 samples testing positive for influenza (including 26 influenza A(H3N2), 35 influenza A(not subtyped) and 7 influenza B).

Respiratory syncytial virus (RSV) positivity decreased to 2.9% in week 49, with the highest positivity in the under 5-year olds at 8.7%. Rhinovirus positivity remained stable at 11.4% in week 49. Human metapneumovirus (hMPV) positivity continued to increase from 9.6% in week 48 to 10.5% in week 49. Adenovirus positivity increased to 3.1%, while parainfluenza positivity remained low at 1.1% in week 49 (Figure 16).

Figure 14: DataMart samples positive for influenza and weekly positivity (%) for influenza, England

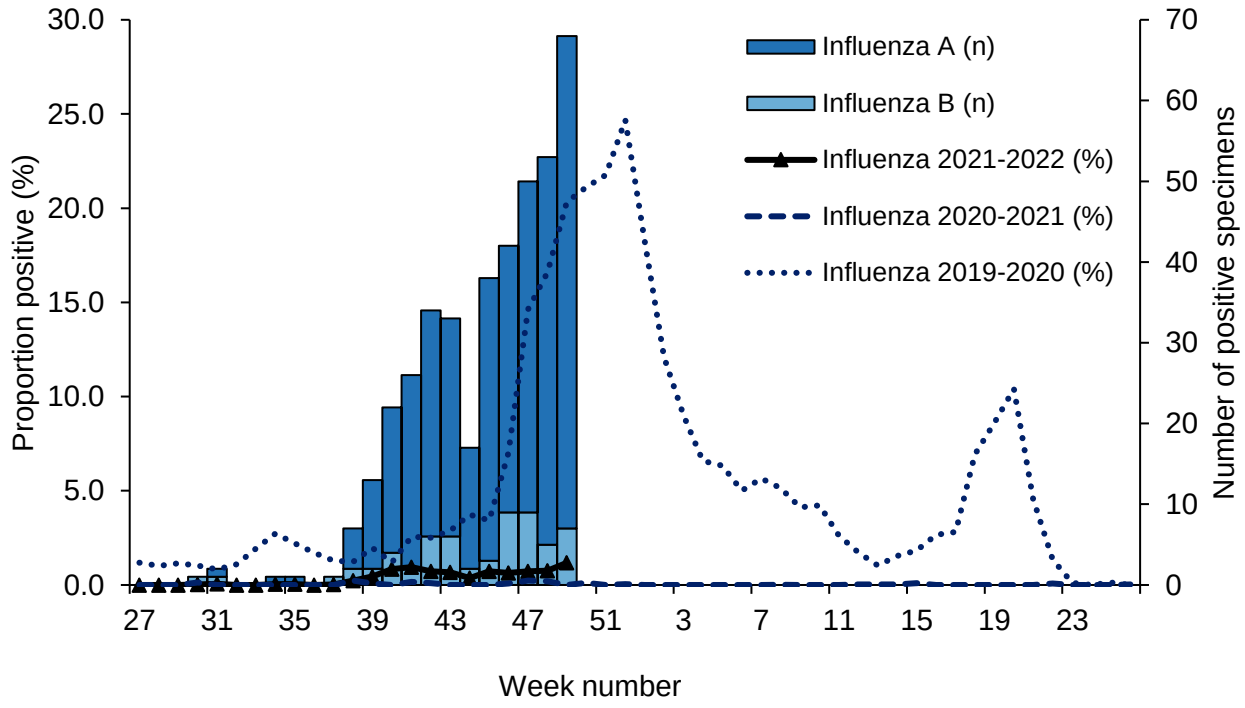


Figure 15: DataMart weekly positivity (%) for SARS-CoV-2, England

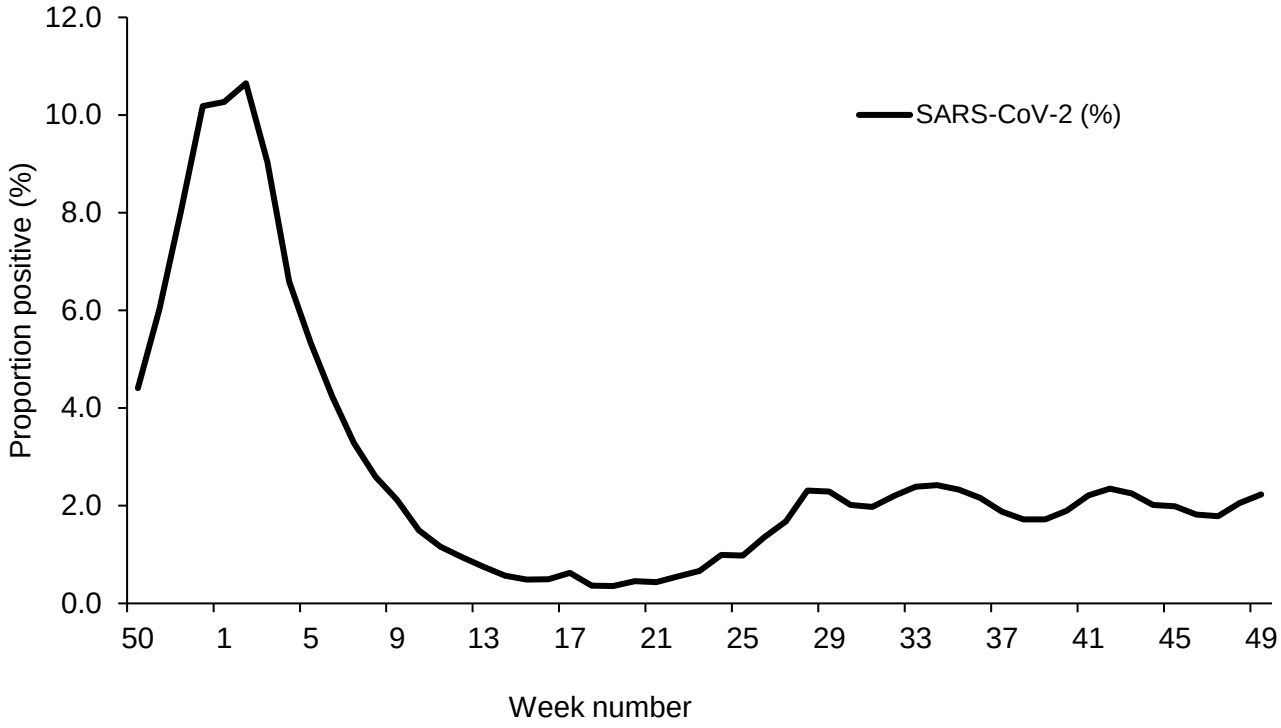


Figure 16: DataMart weekly positivity (%) for other respiratory viruses, England

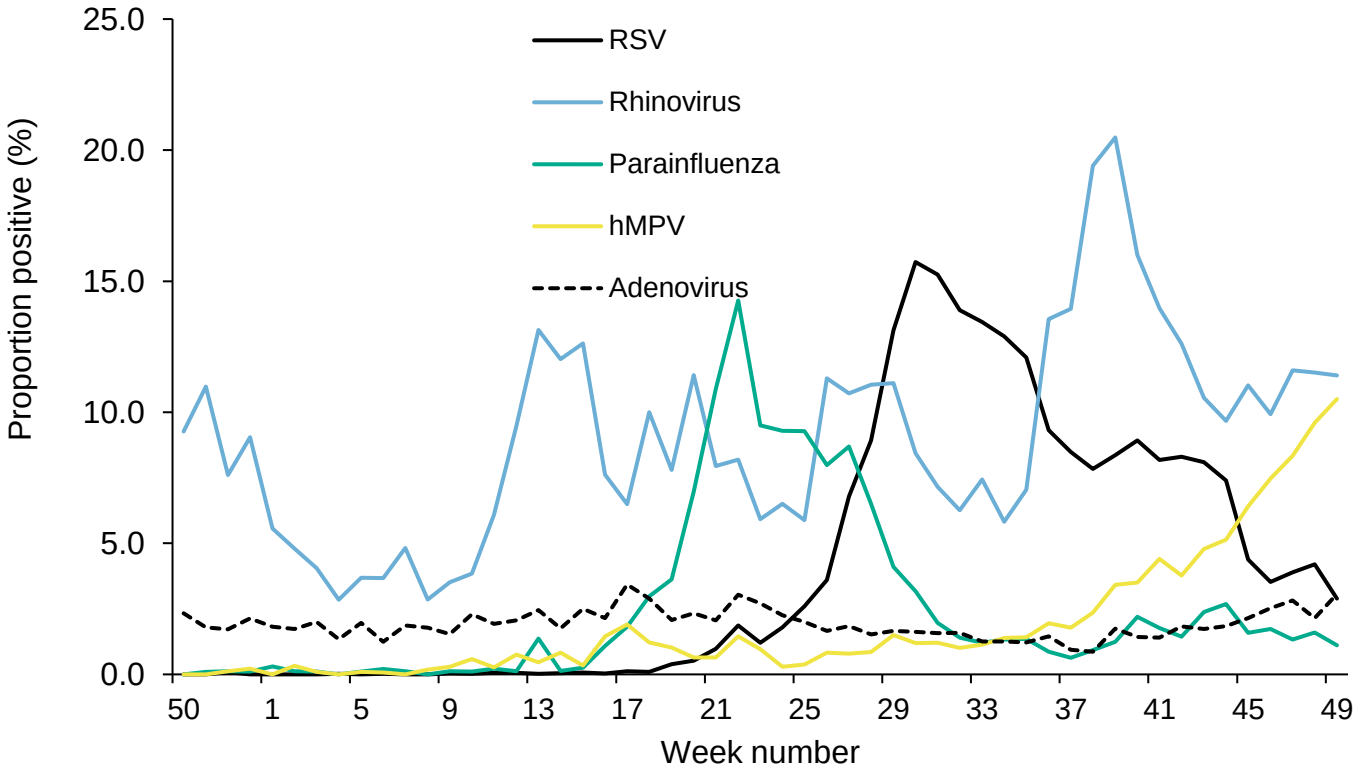


Figure 17: DataMart weekly positivity (%) for rhinovirus by age, England

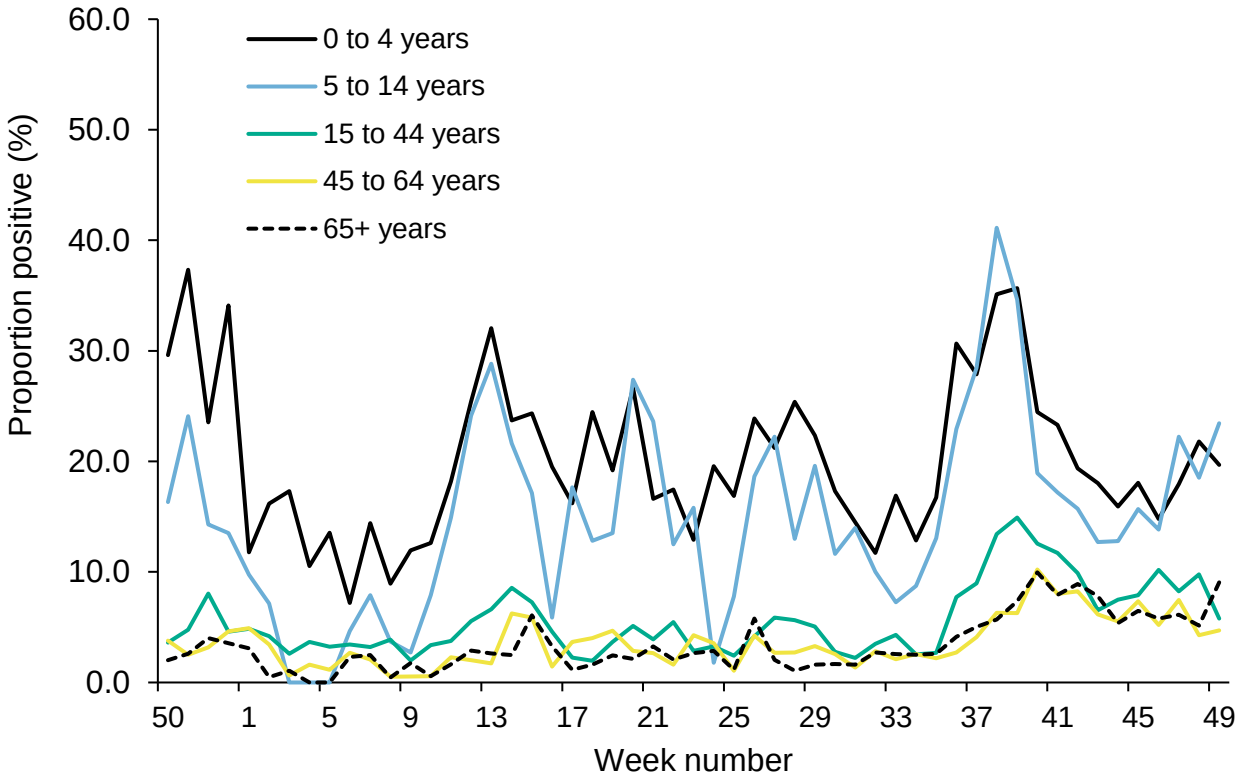
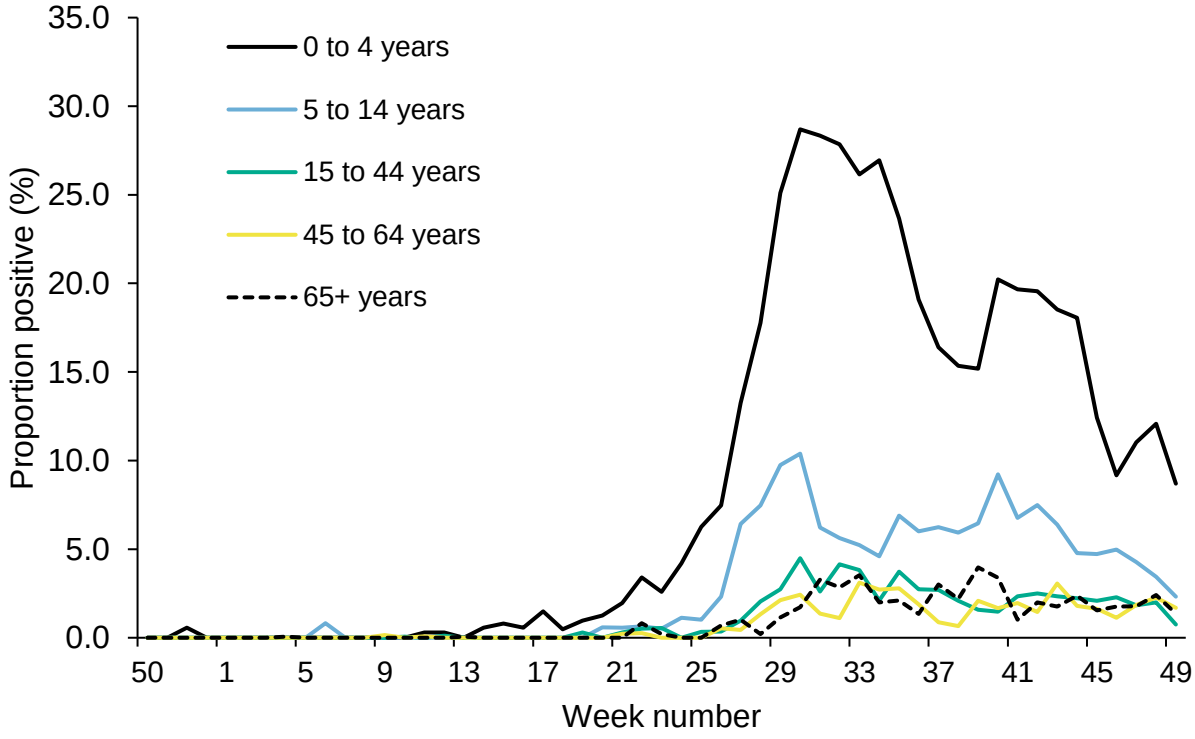


Figure 18: DataMart weekly positivity (%) for RSV by age, England



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. A subset of these will meet the criteria of a confirmed outbreak, that is, where 2 or more laboratory confirmed cases (SARS-CoV-2, influenza or other respiratory pathogens) are linked to a particular setting. Incidents where suspected cases test negative for COVID-19 or other respiratory pathogens, or cases are subsequently found not to have direct links to the setting are discarded.
The number of ARI incidents in each setting with at least one laboratory confirmed case of COVID-19 (or other respiratory pathogen) are reported below. As outlined above, only a subset of these will go on to be confirmed as outbreaks.
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. A variety of arrangements are in place across UKHSA Centres, with local authorities and other stakeholders supporting HPTs in outbreak investigation in some areas without HPZone reporting. As a result, the number of outbreaks reported for some of the regions are underestimates.
2. For this academic year (2021 to 2022) the thresholds for reporting an outbreak in an educational setting have been revised. Clusters and outbreaks are now reported to the Health protection Team if either of the two following criteria are met:

- 5 cases or 10% test-confirmed cases of COVID-19 within 10 days (whichever is reached first), among students or staff
- Evidence of severe illness e.g. students or staff members admitted to hospital or a death as a result of a COVID–19 infection
- For special education needs schools, residential schools and settings that operate with 20 or fewer children, pupils, students and staff at any one time, clusters and outbreaks are reported if the following criteria is met:
- 2 children, pupils, students and staff, who are likely to have mixed closely, test positive for COVID-19 within a 10-day period

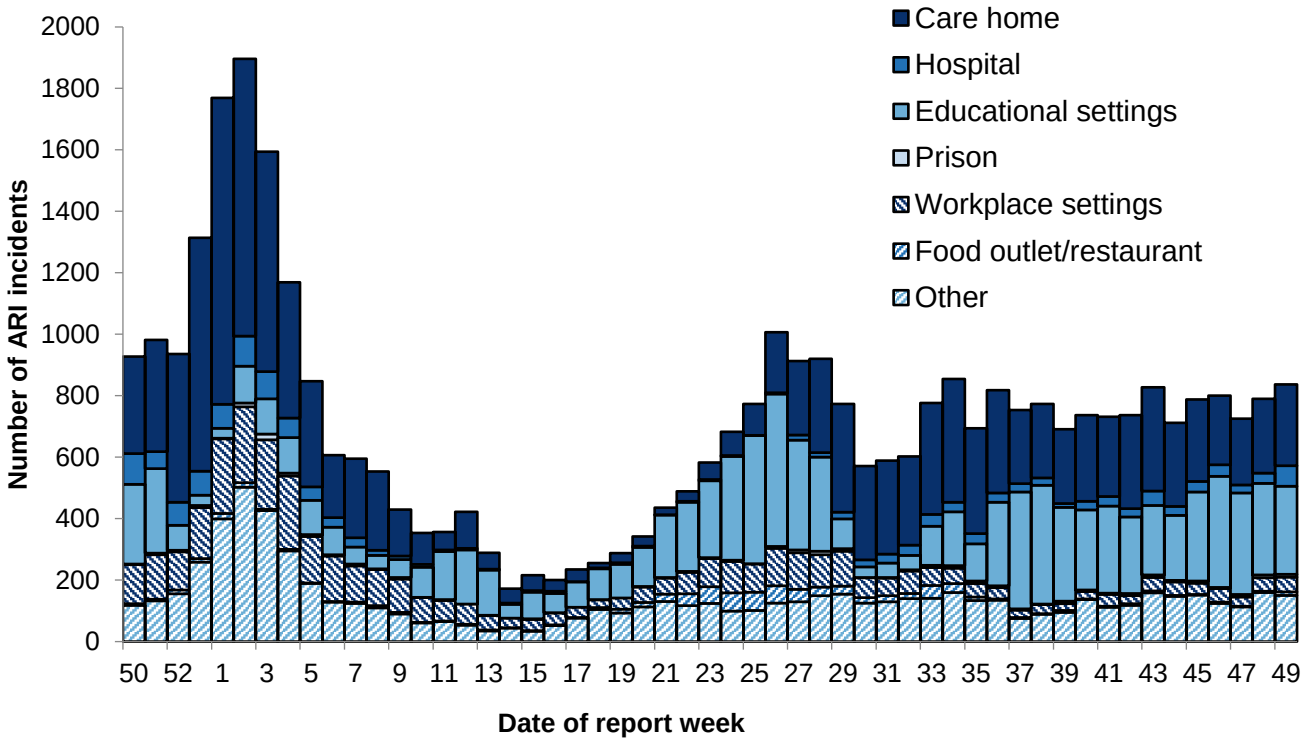
For more information on managing COVID-19 in educational settings please refer to the framework. This should be taken into consideration when comparing 2021-2022 season data against 2020-2021 season data.

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 taken into account when interpreting the weekly number of reported incidents by setting and caution should be used when making comparisons between settings.
4. In light of the above, comparisons between Regions and settings are not advised as they may be misleading.

837 new ARI incidents have been reported in week 49 in the UK (Figure 19):

- 265 incidents were from care homes where 192 had at least one linked case that tested positive for SARS-CoV-2, 1 tested positive for influenza A(not subtyped), 3 tested positive for rhinovirus and 1 each for hMPV, RSV and parainfluenza
- 287 incidents were from educational settings where 197 had at least one linked case that tested positive for SARS-CoV-2
- 66 incidents were from hospitals, where 39 had at least one linked case that tested positive for SARS-CoV-2 and 2 tested positive for RSV
- 48 incidents were from workplace settings where 39 had at least one linked case that tested positive for SARS-CoV-2
- 12 incidents were from food outlets or restaurants and all tested positive for SARS-CoV-2
- 9 incidents were from prisons where 8 had at least one linked case testing positive for SARS-CoV-2
- 150 incidents were from other settings where 102 had at least one linked case that tested positive for SARS-CoV-2

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



*Excludes data from Wales

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

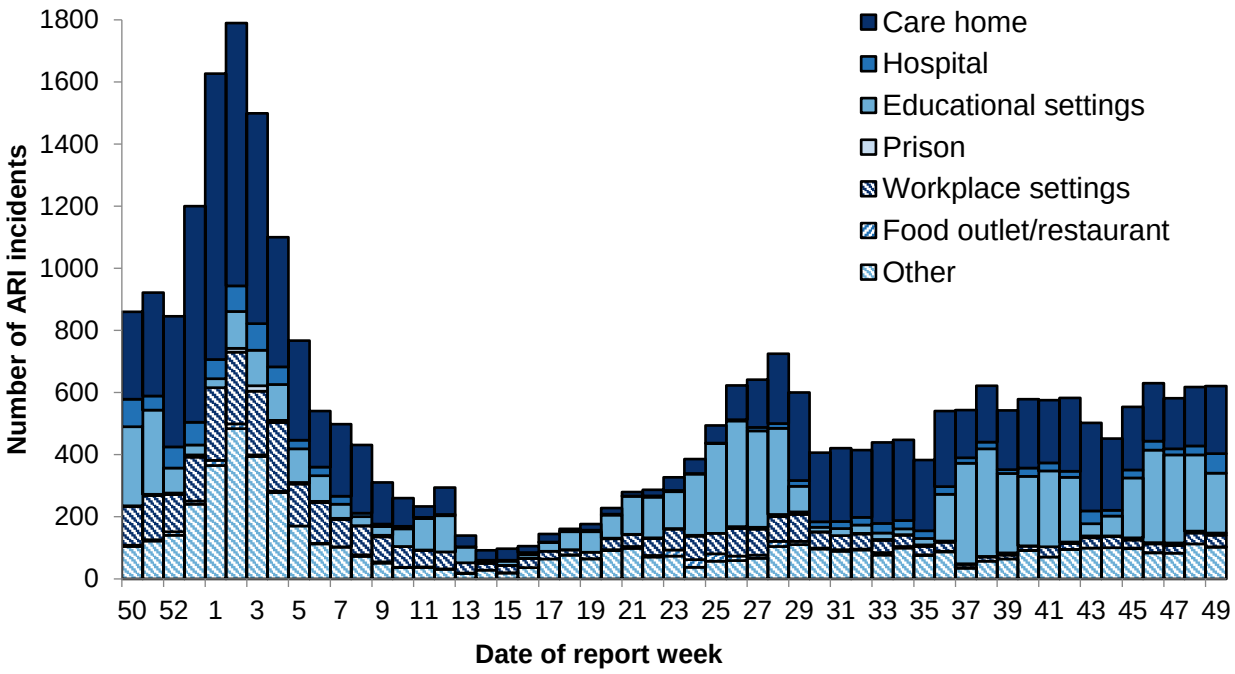


Figure 21: Number of acute respiratory infection (ARI) incidents in care homes by virus type, England

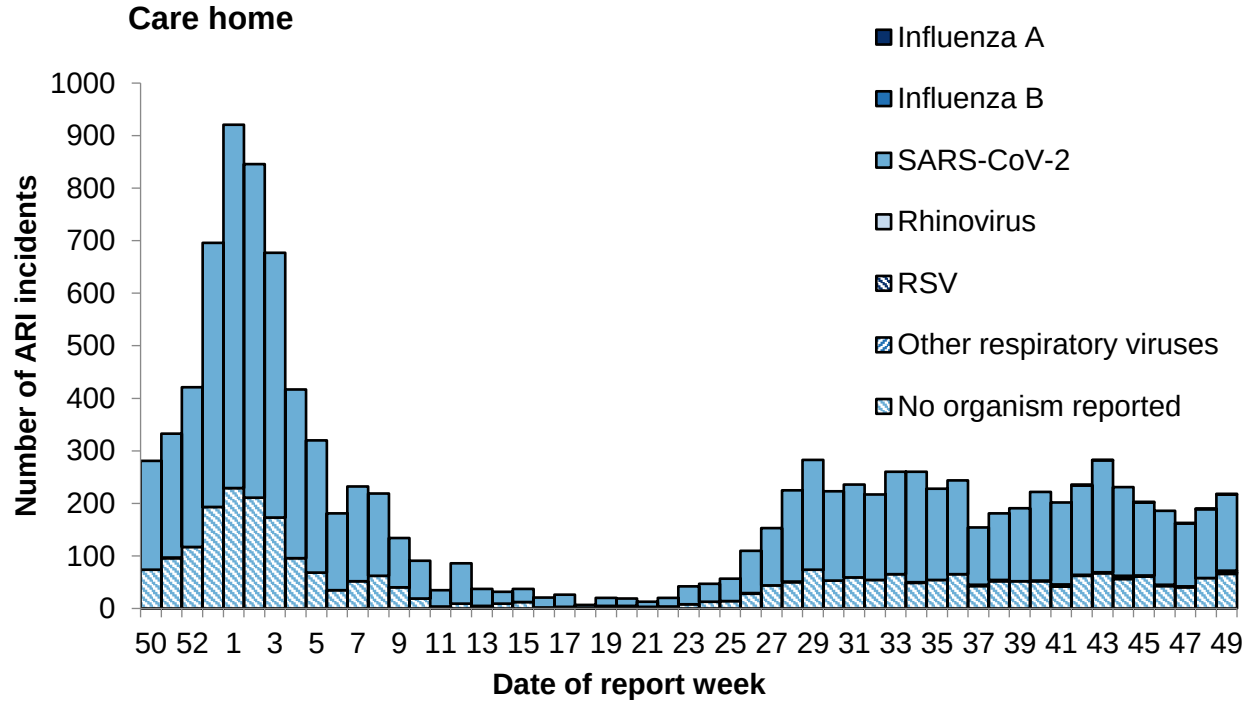


Figure 22: Number of acute respiratory infection (ARI) incidents in hospitals by virus type, England

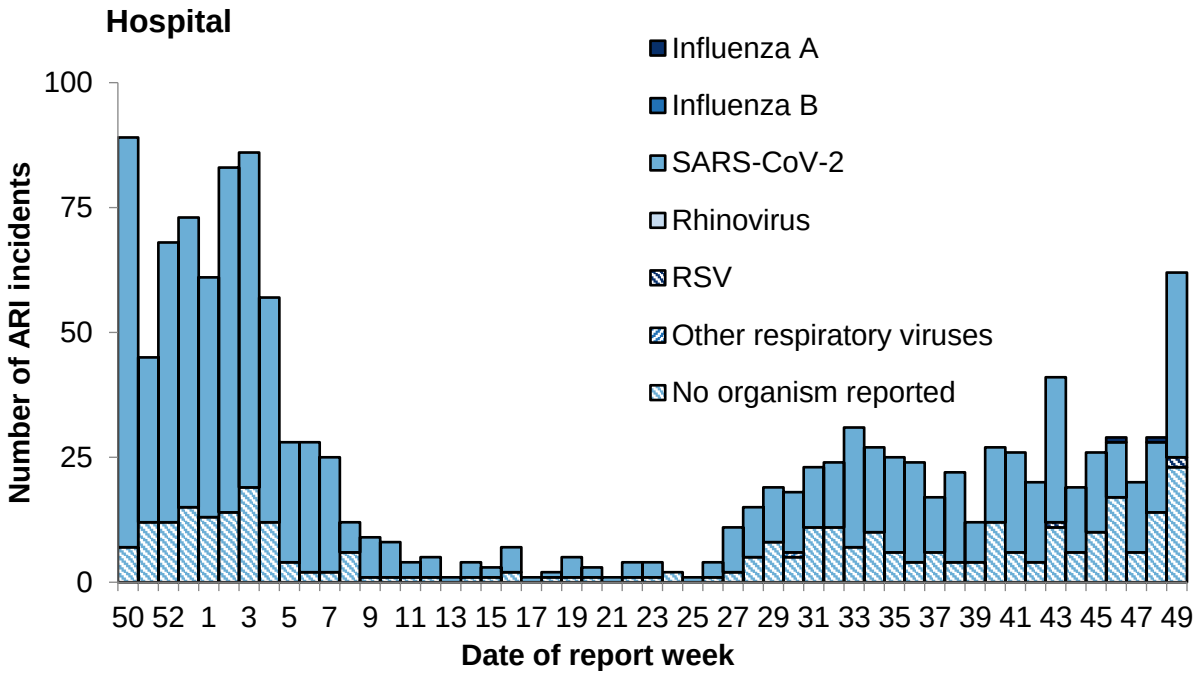


Figure 23: Number of acute respiratory infection (ARI) incidents in educational settings by virus type, England

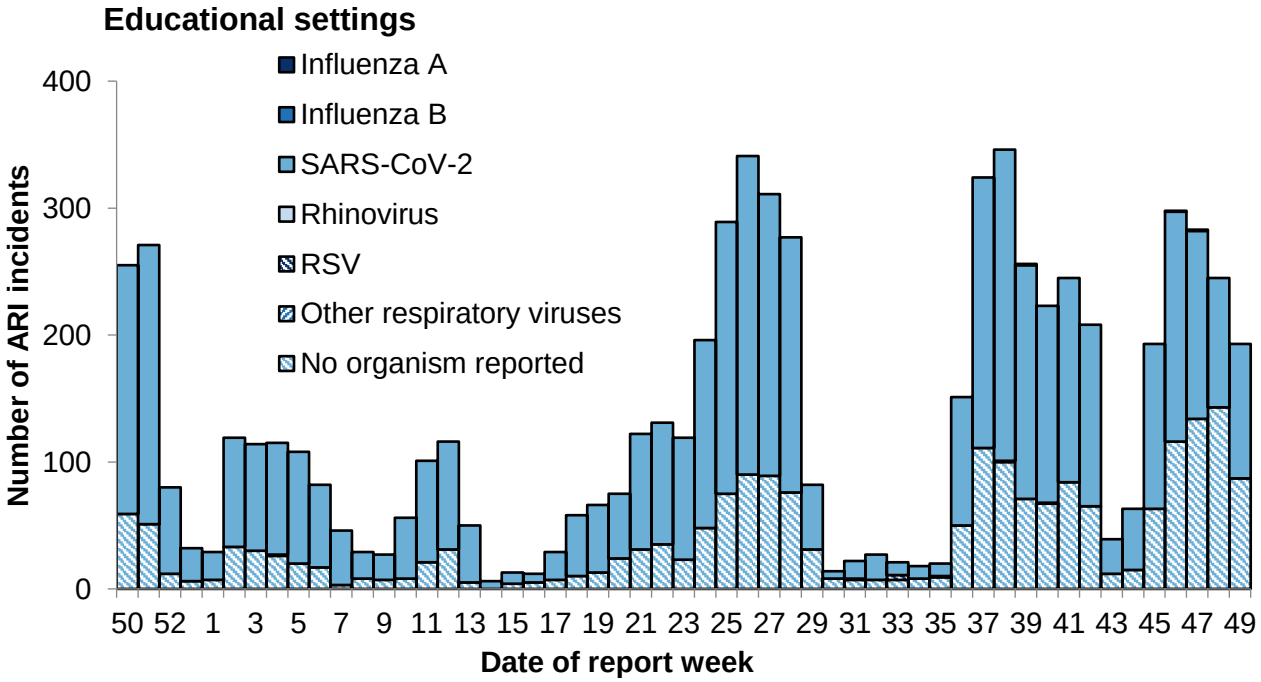


Figure 24: Number of acute respiratory infection (ARI) incidents in prisons by virus type, England

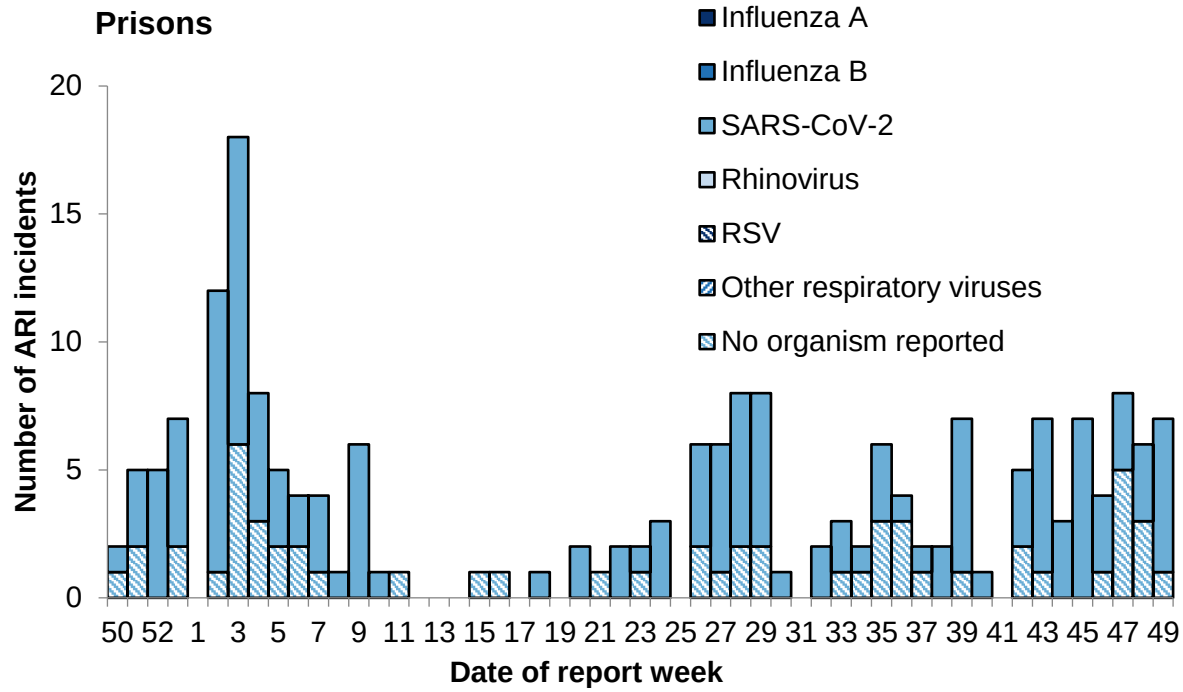


Figure 25: Number of acute respiratory infection (ARI) incidents in workplace settings by virus type, England

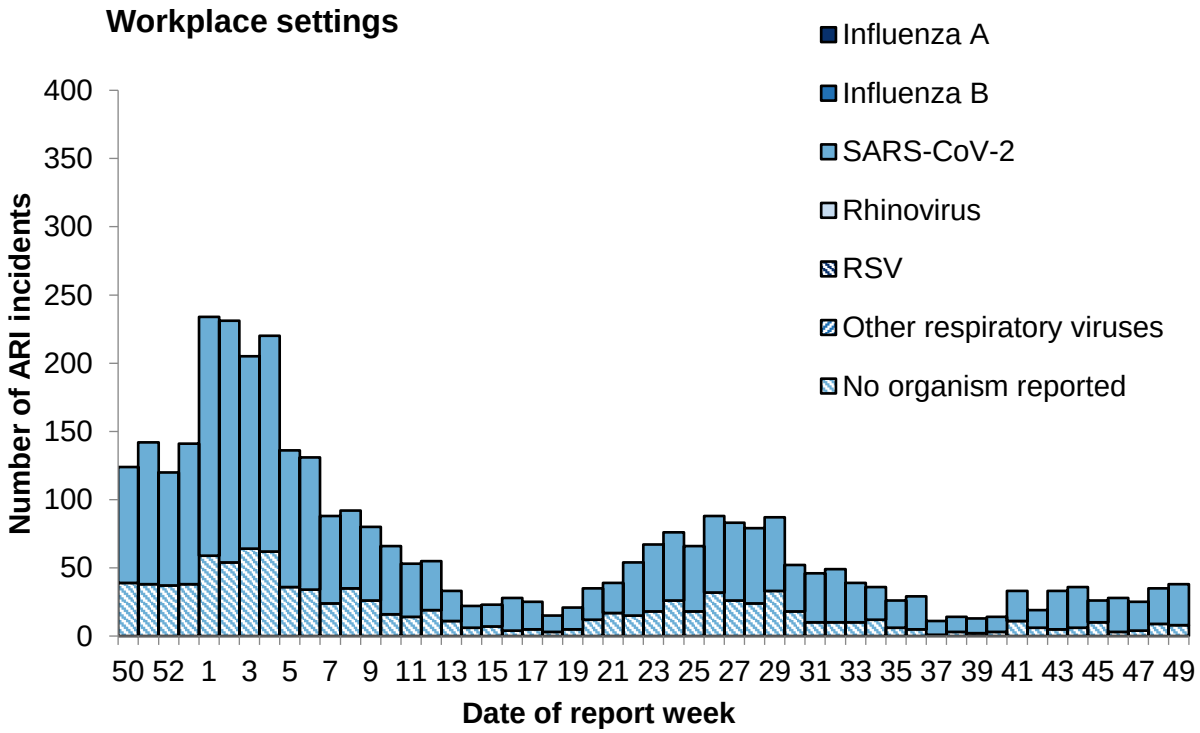


Figure 26: Number of acute respiratory infection (ARI) incidents in food outlet or restaurant settings by virus type, England

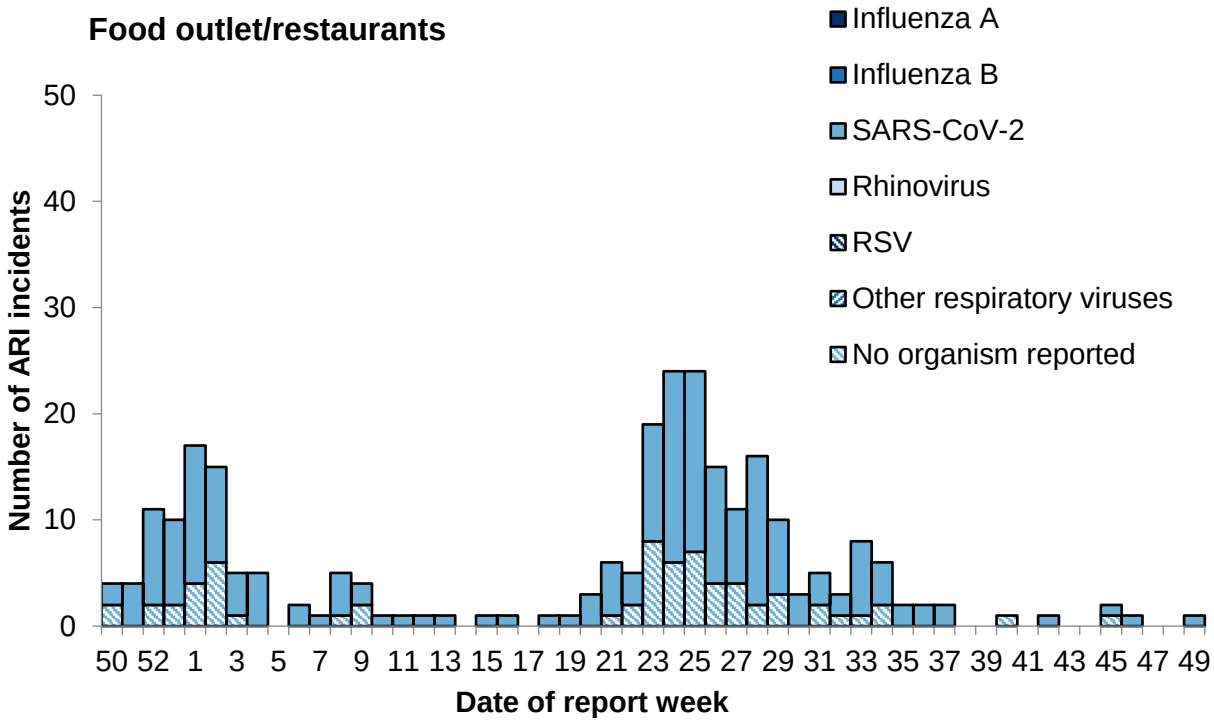


Figure 27: Number of acute respiratory infection (ARI) incidents in other settings by virus type from, England

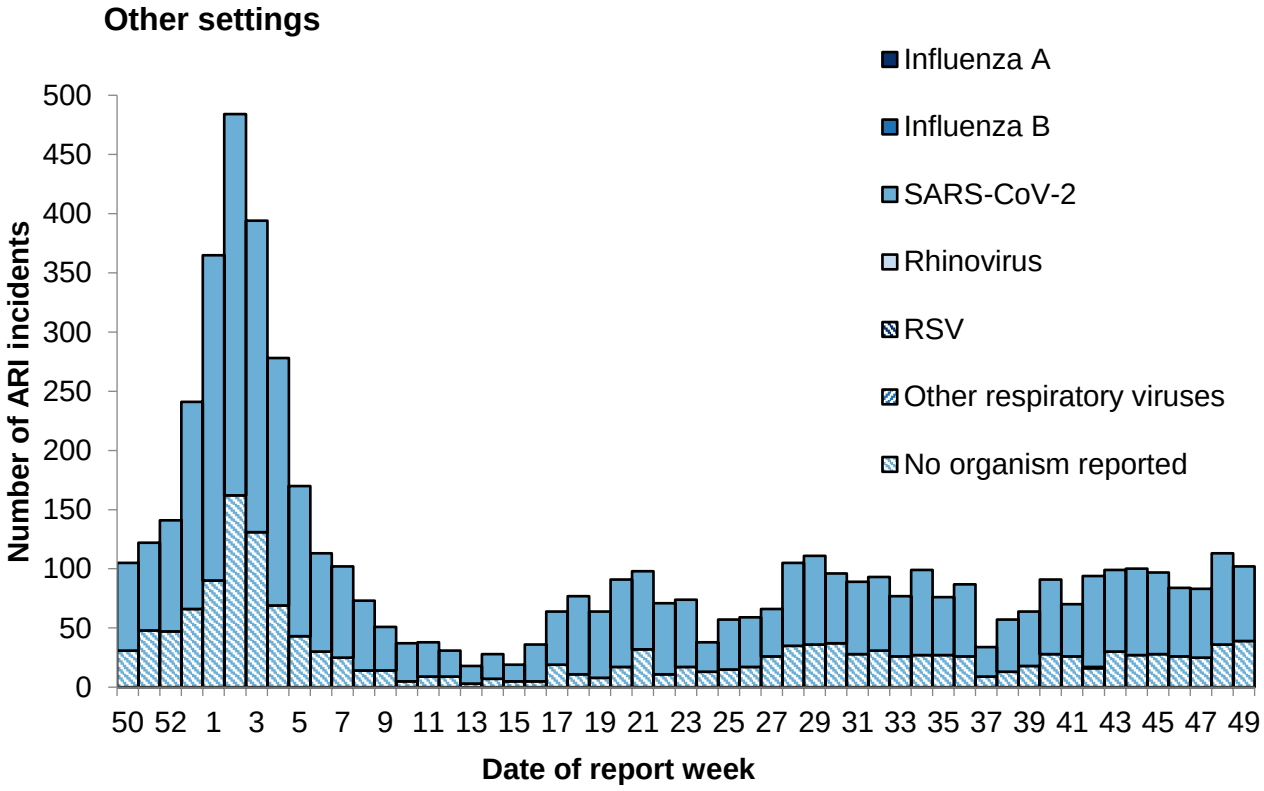


Table 2: Total number of situations and incidents by institution and UKHSA Centres over the past 4 weeks with the total number in the last week in brackets

UKHSA Centres	Care home	Hospital	Educational settings	Prisons	Workplace settings	Food outlet/ restaurant settings	Other settings	Total
East of England	71(21)	15(6)	9(3)	2(0)	5(0)	0(0)	46(14)	148(44)
East Midlands	74(21)	12(5)	96(21)	2(1)	42(20)	0(0)	57(12)	283(80)
London	61(27)	69(28)	432(82)	4(1)	8(3)	0(0)	69(31)	643(172)
North East	58(11)	2(0)	3(0)	1(0)	1(1)	0(0)	8(2)	73(14)
North West	86(28)	5(4)	62(16)	1(0)	44(10)	1(1)	44(8)	243(67)
South East	151(47)	14(4)	233(23)	9(2)	7(1)	1(0)	49(11)	464(88)
South West	170(47)	3(2)	82(19)	0(0)	7(2)	0(0)	59(12)	321(82)
West Midlands	26(4)	16(9)	70(20)	6(3)	9(1)	0(0)	21(7)	148(44)
Yorkshire and Humber	60(12)	4(4)	32(9)	0(0)	3(0)	0(0)	29(5)	128(30)
Total	757(218)	140(62)	1019(193)	25(7)	126(38)	2(1)	382(102)	2451(621)

COVID-19 cases by type of residence

Table 3 shows the proportion of confirmed COVID-19 cases according to their type of residence. Property classifications are derived from Ordnance Survey AddressBase and are matched to address details within the laboratory data. Properties are identified by unique property reference number (UPRN) and basic land property unit (BLPU). Cases with poor or no address data which failed the address matching and are classed as 'undetermined'. No fixed abode and overseas addresses identified by recording in the laboratory data.

In week 49, the highest percentage of confirmed COVID-19 cases by type of residence was seen in residential dwellings (Table 3).

Table 3: Type of residence of confirmed COVID-19 cases by percentage of total weekly cases

Type of residence	Week 44	Week 45	Week 46	Week 47	Week 48	Week 49
Residential dwelling (including houses, flats, sheltered accommodation)	95.9	96.0	96.2	95.9	95.4	95.1
Undetermined	2.1	1.9	1.9	2.0	2.6	2.5
Care/Nursing home	0.5	0.4	0.3	0.3	0.3	0.3
Residential institution (including residential education)	0.1	0.2	0.2	0.2	0.1	0.3
Other property classifications	0.5	0.6	0.5	0.6	0.5	0.6
House in multiple occupancy (HMO)	0.2	0.2	0.2	0.3	0.3	0.4
Medical facilities (including hospitals and hospices, and mental health)	0.5	0.5	0.6	0.5	0.6	0.6
Prisons, detention centres, secure units	0.2	0.2	0.1	0.2	0.1	0.2
Overseas address	0.0	0.0	0.0	0.0	0.0	0.0
No fixed abode	0.0	0.0	0.0	0.0	0.0	0.0

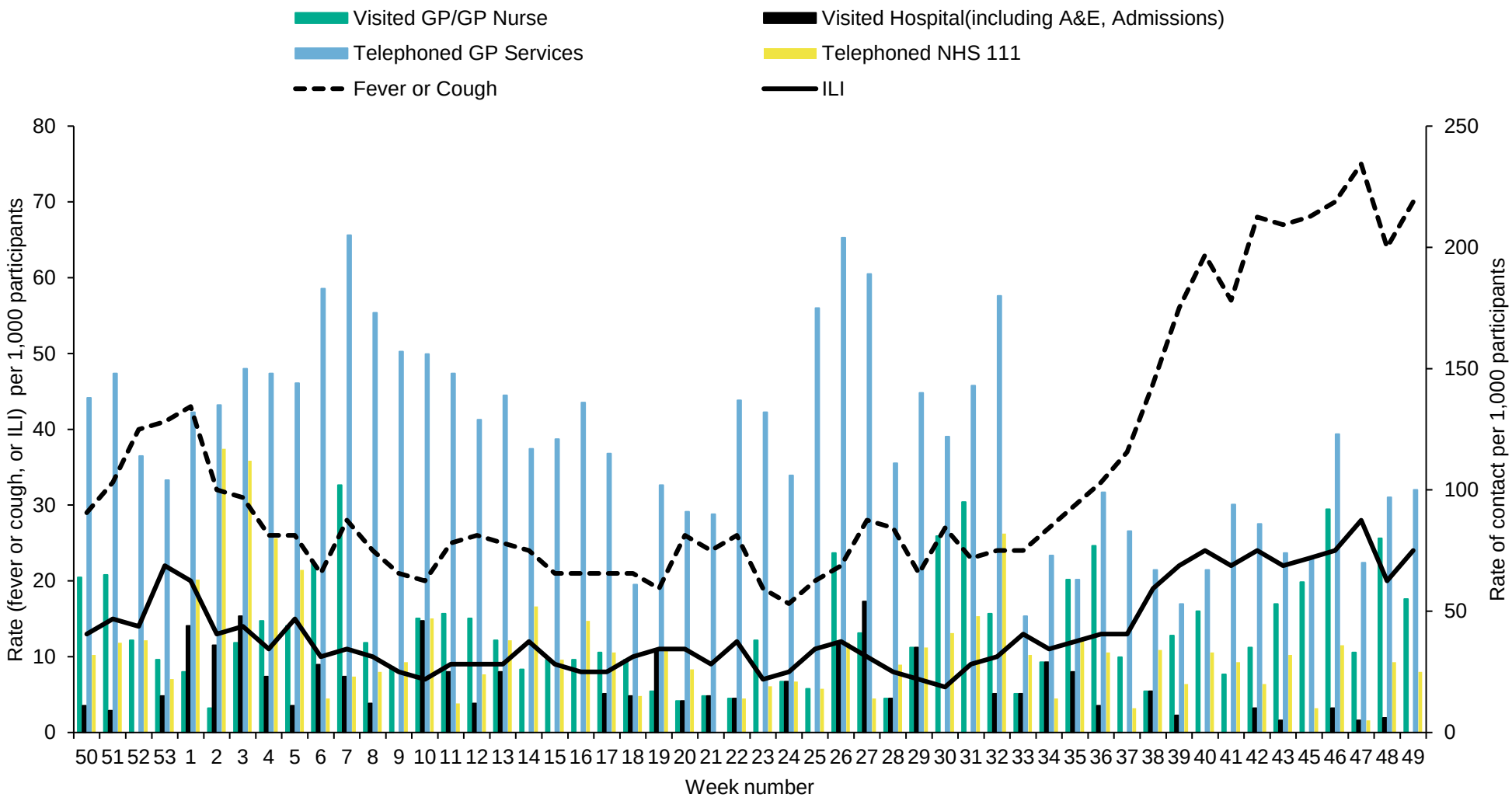
FluSurvey

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: 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.

A total of 2,845 participants completed the weekly surveillance survey in week 49, of which 200 (7.0%) reported fever or cough and 69 (2.4%) reported influenza-like illness (ILI). The most commonly used healthcare services reported by respondents remains telephoning a GP practice (Figure 28).

Figure 28: FluSurvey participants self-reporting fever or cough and ILI symptoms, and trends in healthcare seeking behaviour among these participants, England



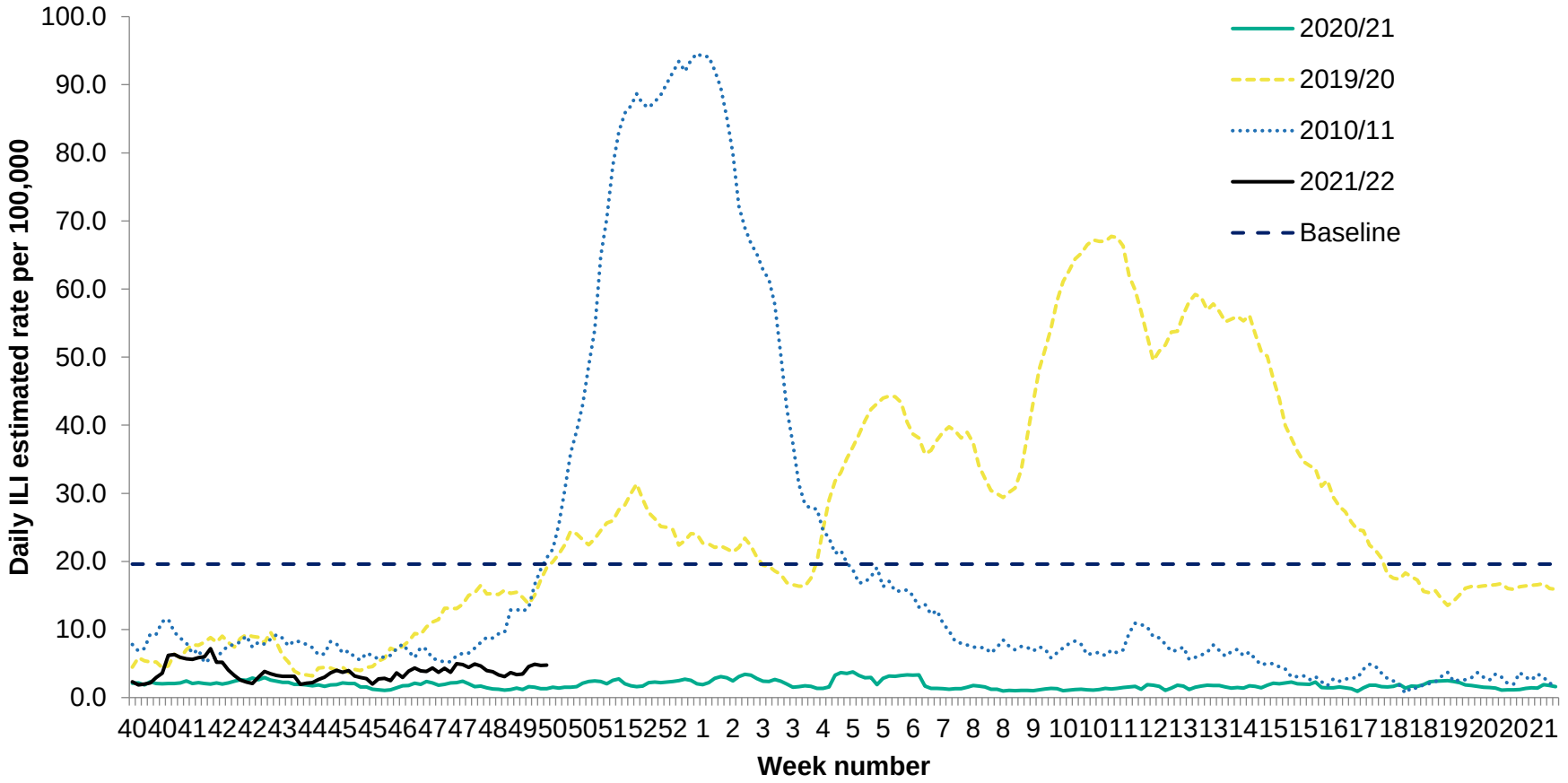
FluDetector

FluDetector is a web-based model which assesses internet-based search queries for influenza-like illness (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 six days before it).

For week 49, the daily ILI rate remained low and below the baseline threshold of 19.6 per 100,000 for the 2021 to 2022 season (Figure 29).

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

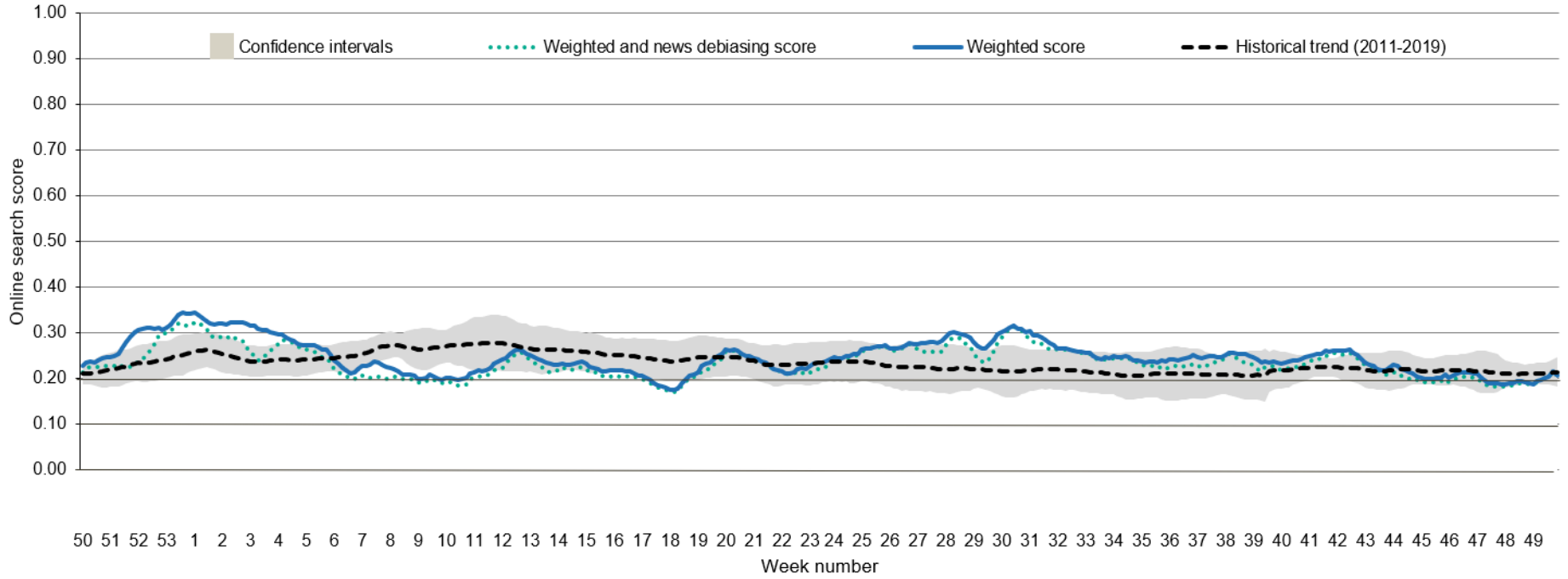


Google search queries

This is a web-based syndromic surveillance system which uses daily search query frequency statistics obtained from the Google Health Trends API. 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 has been 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 49, the overall and media-debiasing weighted Google search scores remained stable (Figure 30).

Figure 30: Normalised Google search score for COVID-19 symptoms, with weighted score for media-debiasing and historical trend, 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.

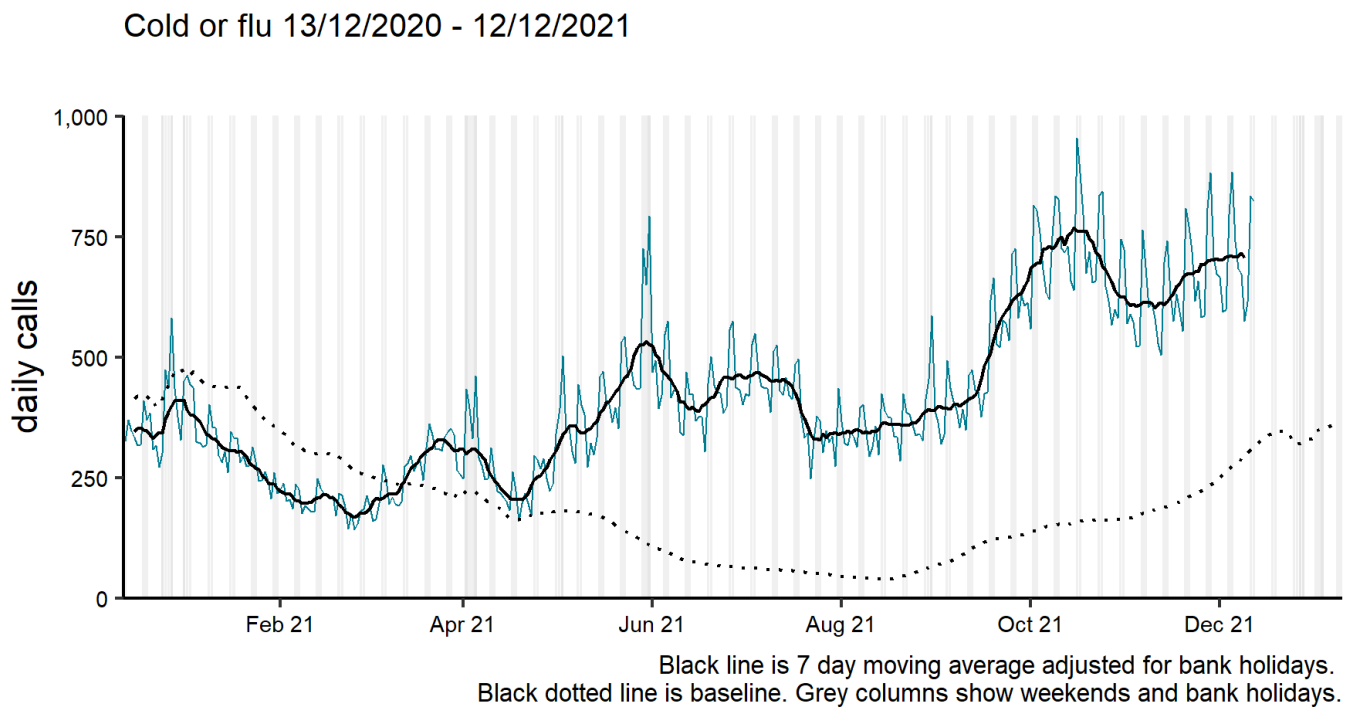
Up to 12 December, calls for cold/flu continued to increase in the 15 to 44 years age group. Calls for cough are also increasing in the over 15 age groups (Figure 31 and 32).

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/flu calls, England (a) nationally and (b) by age group

(a)



(b)

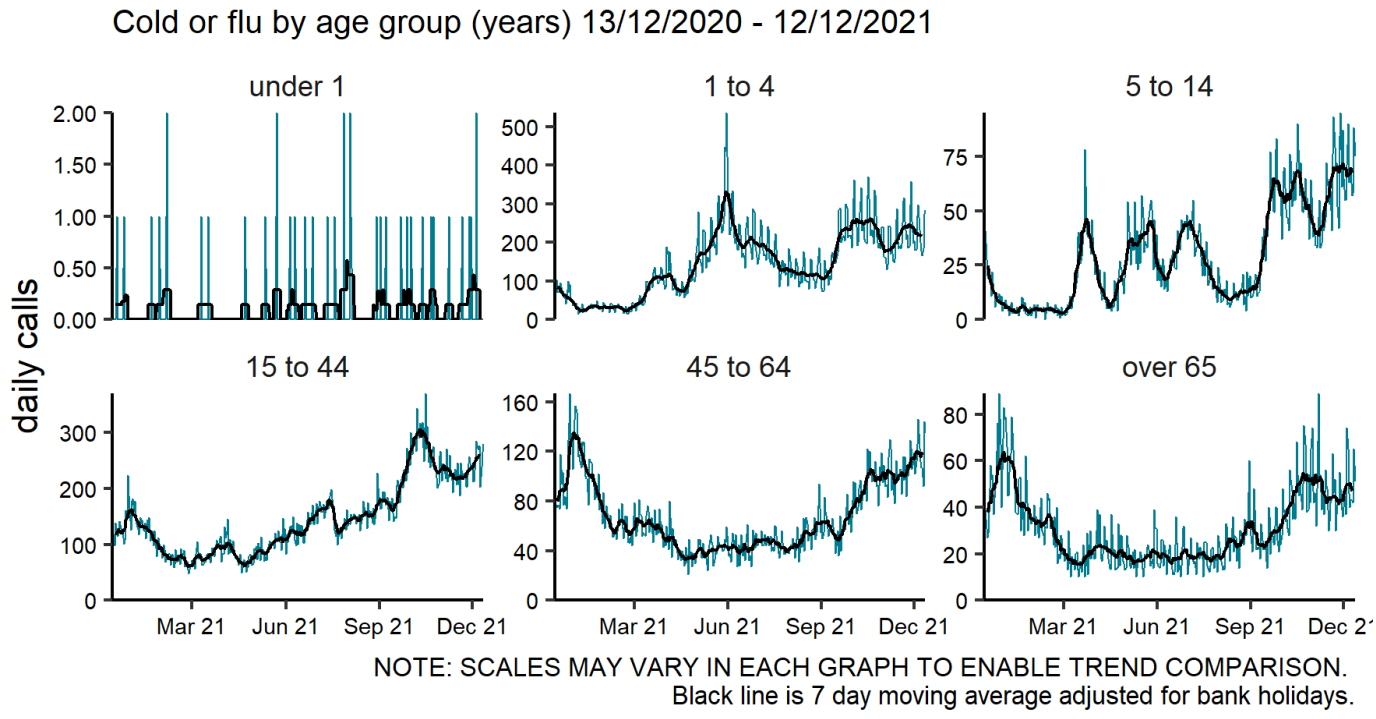
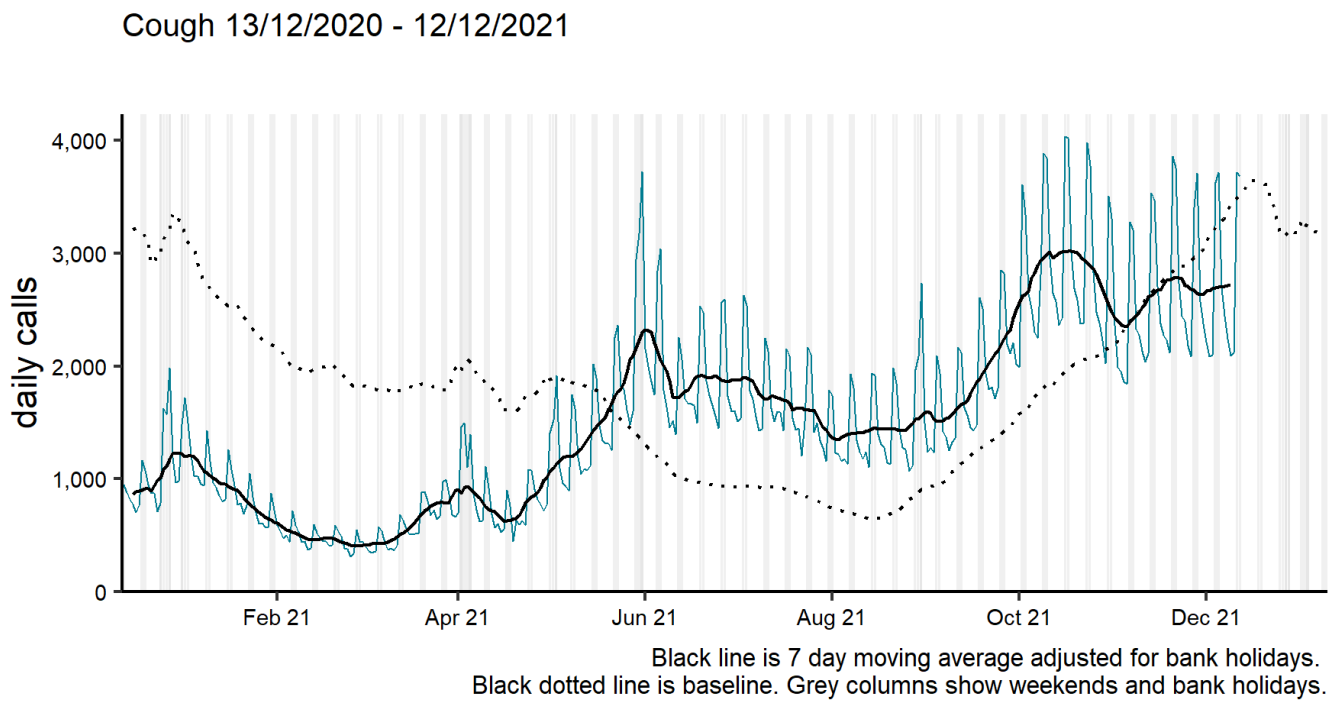
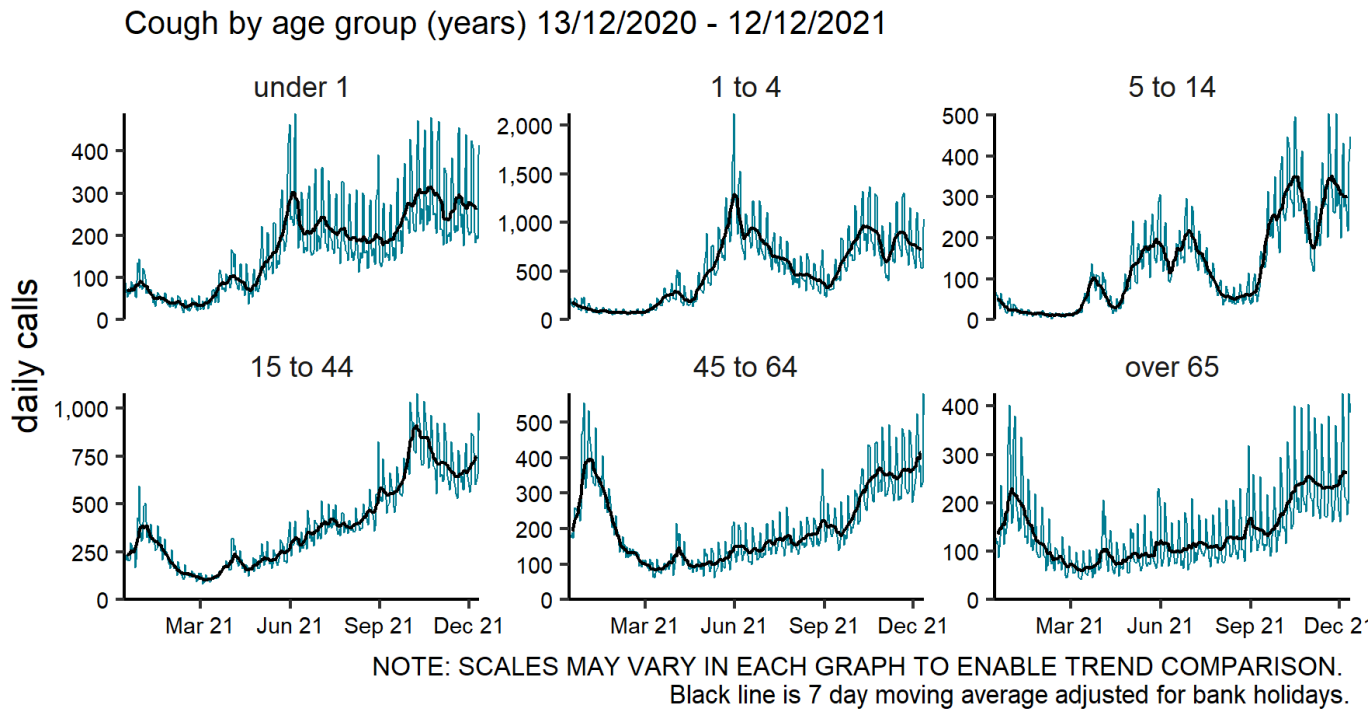


Figure 32: NHS 111 telephony indicators (and 7-day moving average) for number of daily cough calls, England (a) nationally and (b) by age group

(a)



(b)



Primary care surveillance

RCGP (England)

The weekly ILI consultation rate through the RCGP surveillance was 3.0 per 100,000 registered population in participating GP practices in week 49 compared to 3.4 per 100,000 in the previous week. This is below the baseline threshold (12.2 per 100,000) (Figure 33). By age group, the highest rates were seen in the under 1-year olds (6.8 per 100,000). The Lower Respiratory Tract Infections (LRTI) consultation rate was at 64.7 per 100,000 in week 49, compared to the rate of 64.0 per 100,000 in the previous week. The COVID-19 indicator rate was at 358.7 per 100,000 in week 49 compared to a rate of 342.2 per 100,000 in the previous week (Figure 34).

Figure 33: RCGP ILI consultation rates, all ages, England

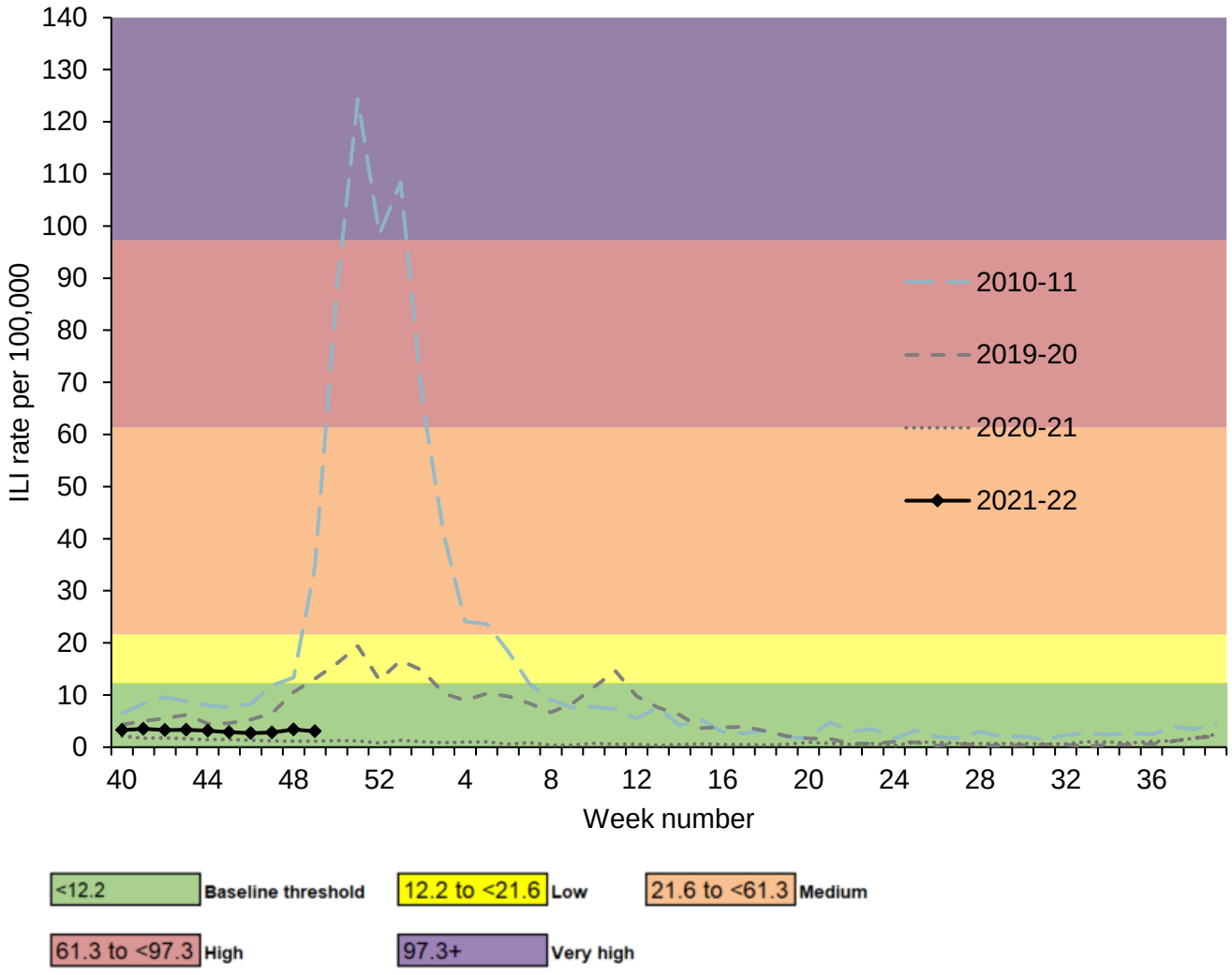
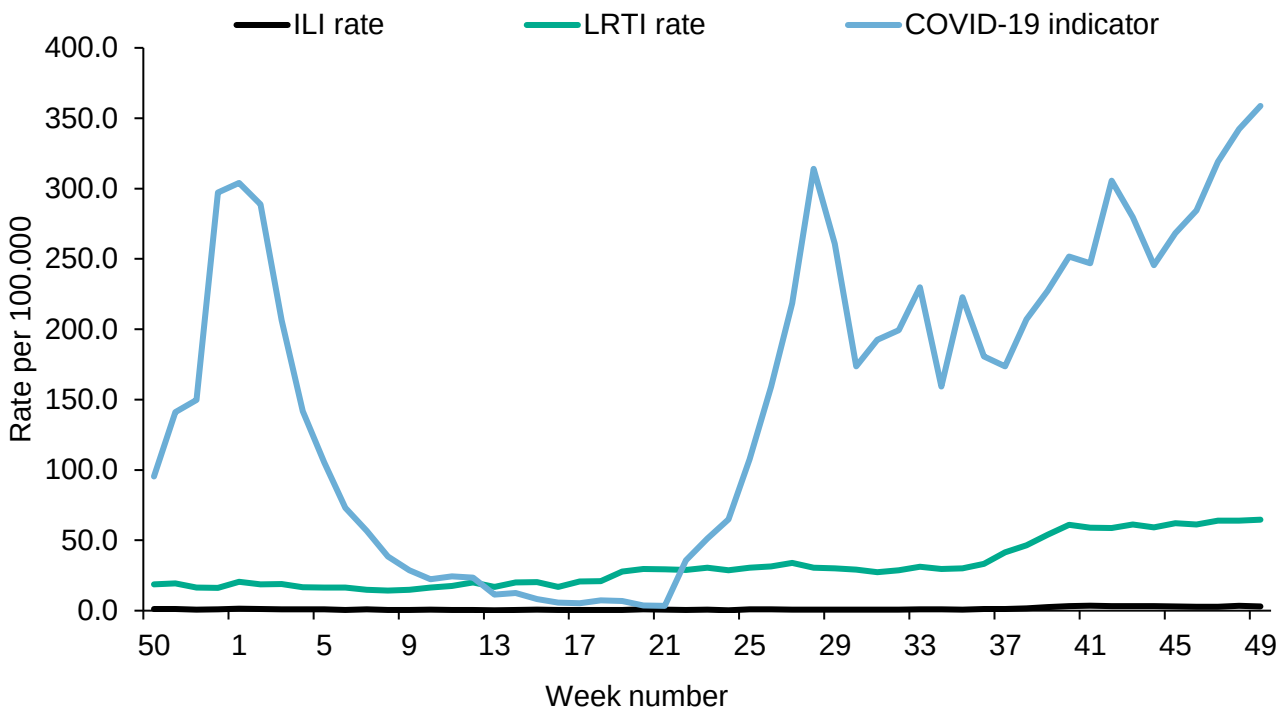


Figure 34: RCGP ILI, LRTI and COVID-19 indicator rates, England



UK

Overall, weekly ILI consultations rates were below baseline levels in all UK schemes (Table 4).

By age group, the highest rates were seen in the 45 to 64-year olds in Scotland (7.7 per 100,000), the 65 to 74-year olds in Wales (4.5 per 100,000) and the under 1-year olds in Northern Ireland (6.3 per 100,000).

Table 4: GP ILI consultations in the UK for all ages with MEM 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)	3.3	3.5	3.3	3.3	3.1	2.9	2.7	2.8	3.4	3.0			
Wales	3.3	3.8	1.8	1.5	2.8	2.0	2.5	2.8	2.7	2.8			
Scotland	0.8	2.3	3.6	2.8	0.9	2.5	1.9	2.1	4.0	4.8			
Northern Ireland	1.5	2.2	1.2	1.7	1.6	1.7	2.3	2.3	2.8	1.5			

Baseline threshold | Low | Medium | High | Very high

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 2009 to 2010), 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.

GP In Hours, Syndromic Surveillance

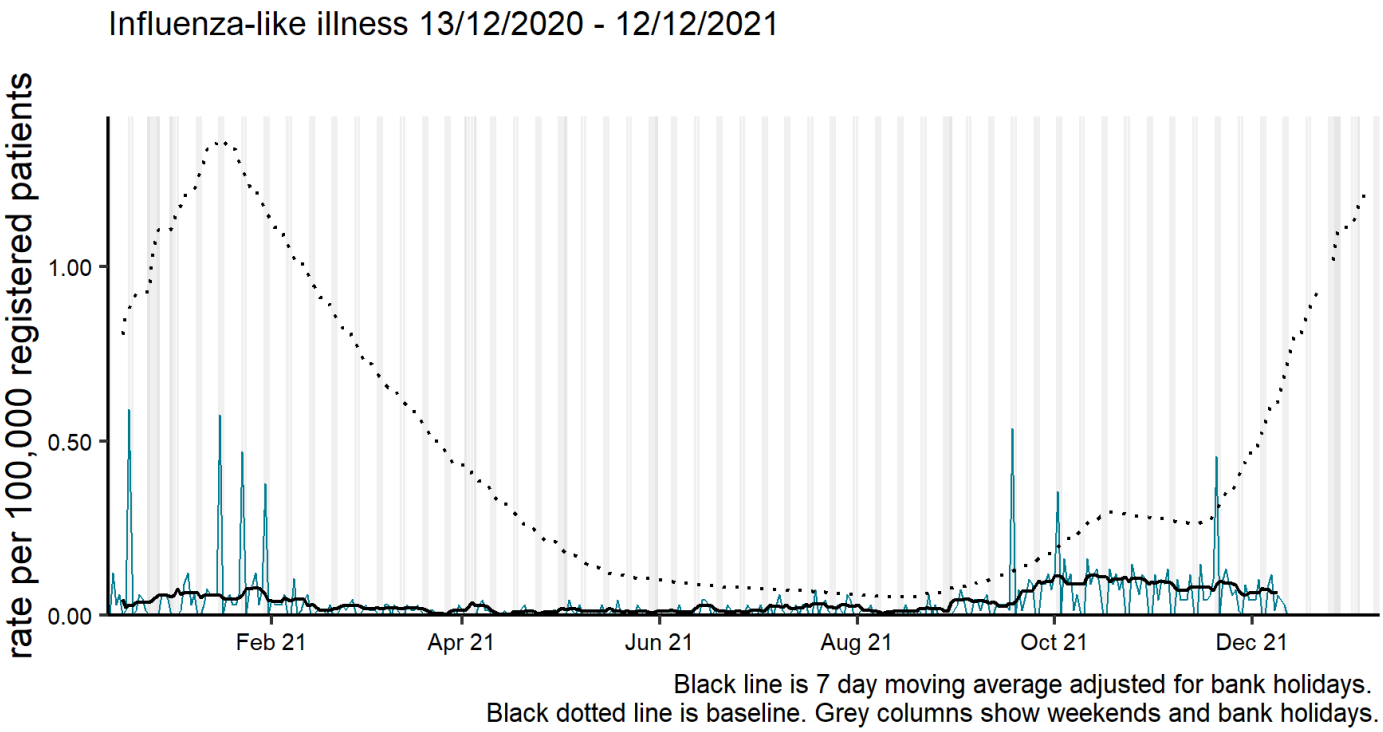
The GP In Hours (GPIH) syndromic surveillance system monitors the number of GP visits during regular hours of known clinical indicators.

Up to 12 December, GP in-hours consultations for influenza-like illness (ILI) remained stable (Figure 35).

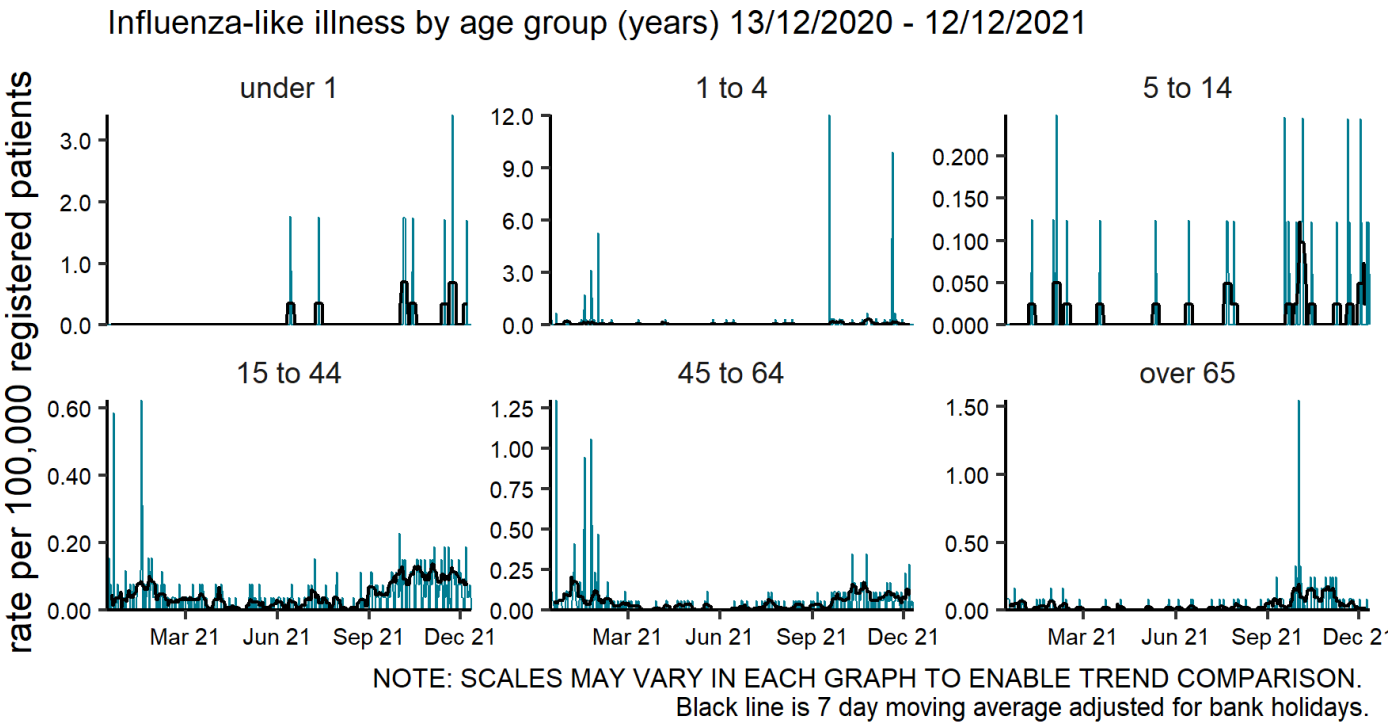
Further indicators and information about caveats are available from the GP In Hours Syndromic Surveillance bulletin.

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

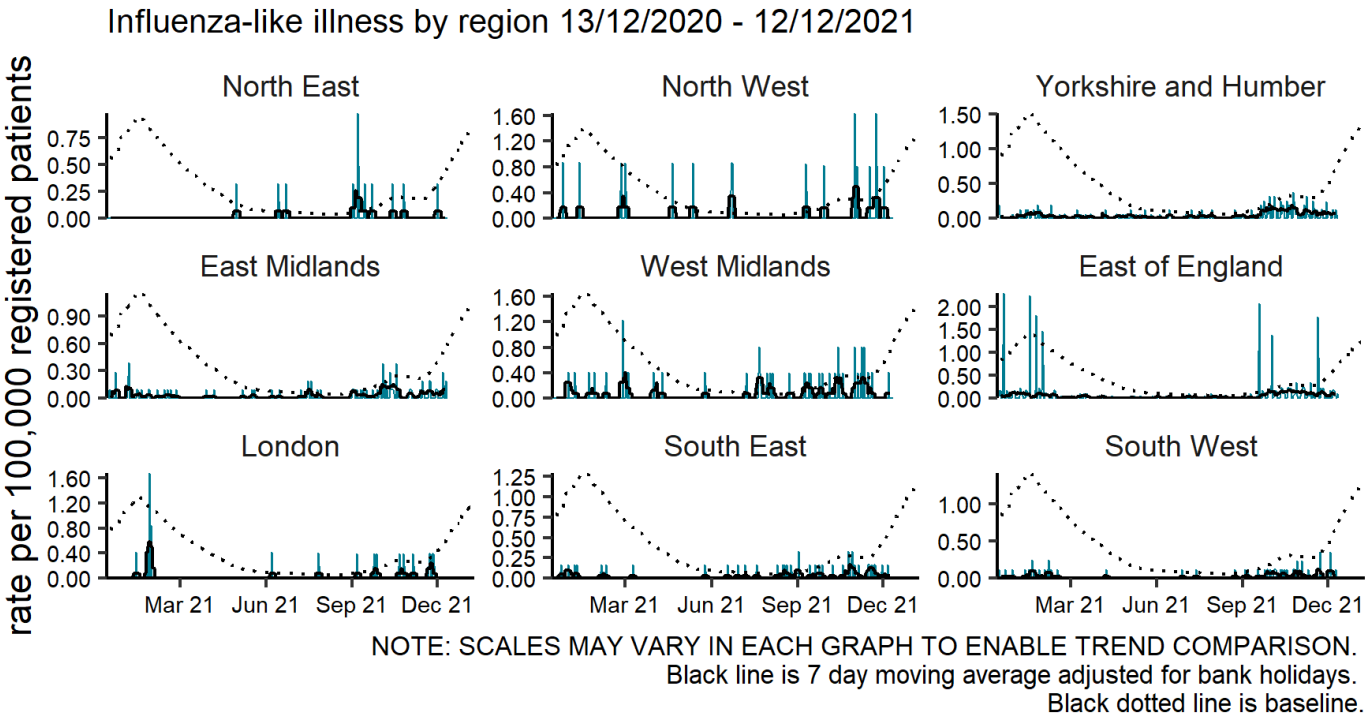
(a)



(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.

Up to 12 December, GP out-of-hours and unscheduled care consultations for ARI remained stable. ILI consultations are at expected levels for the time of year (Figure 36 and 37).

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

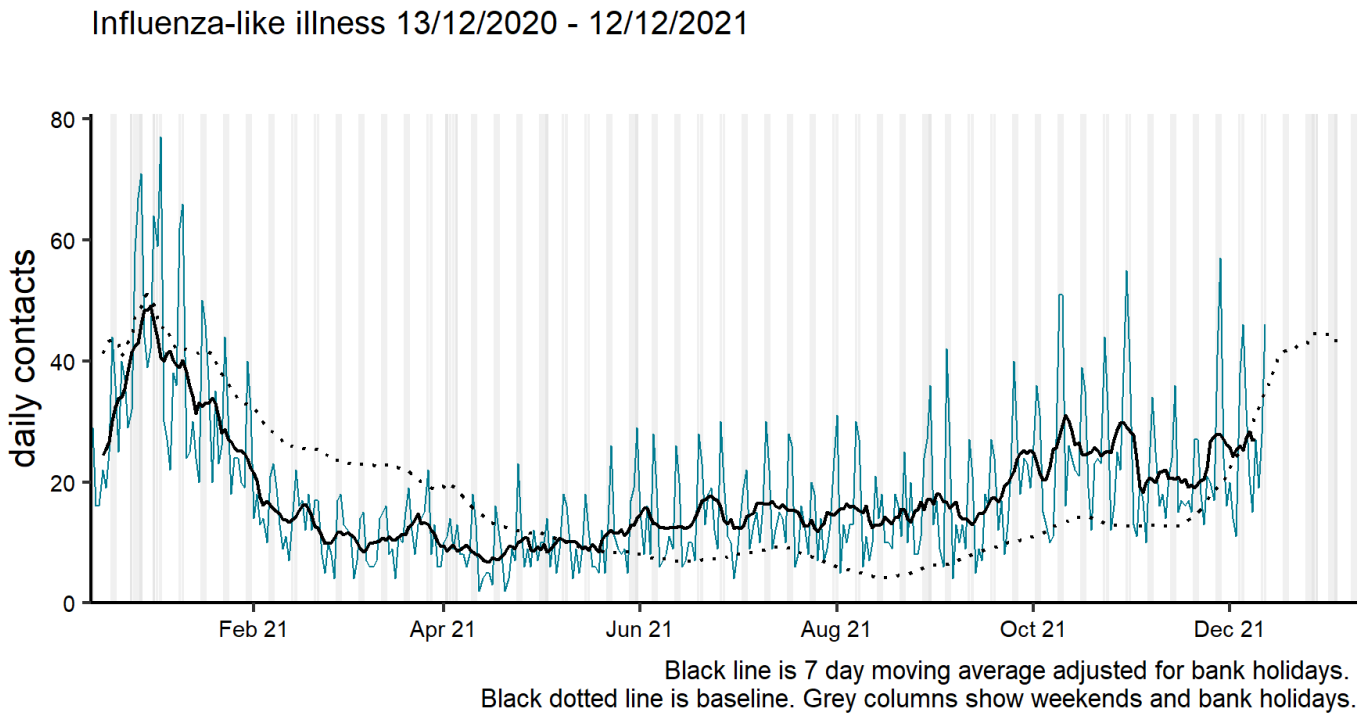
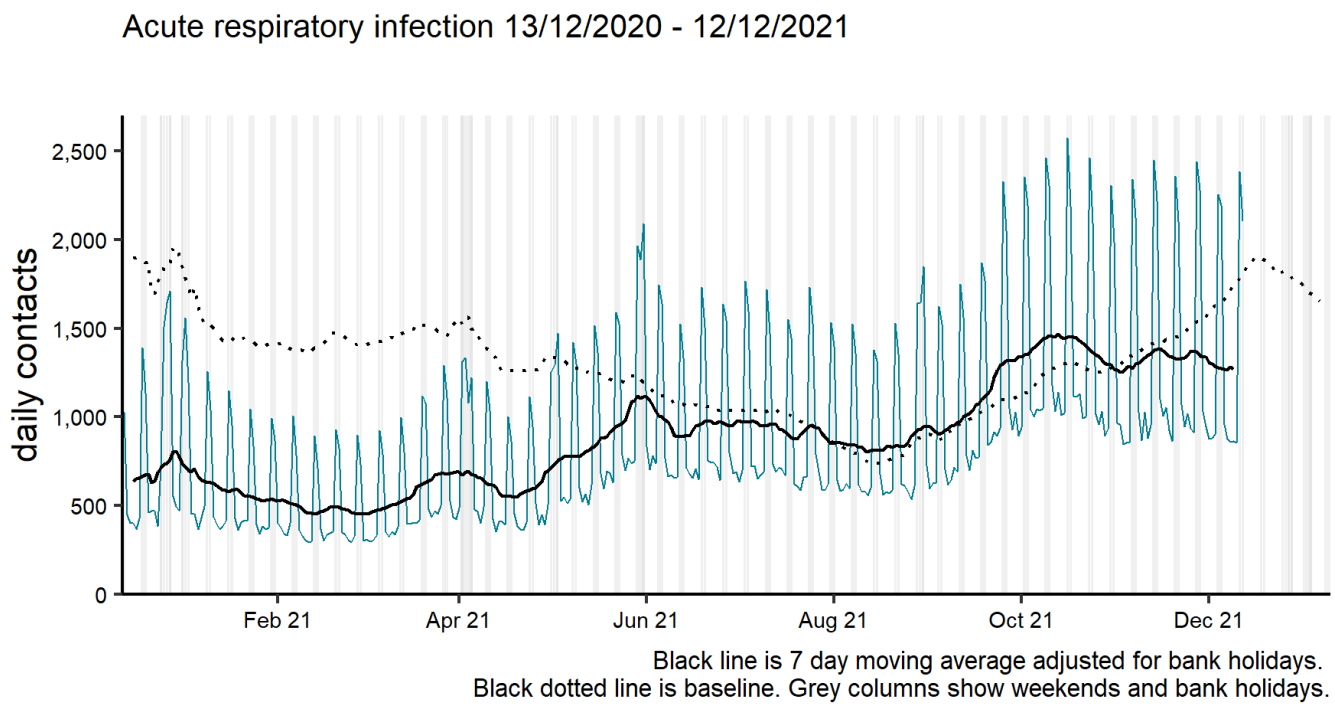
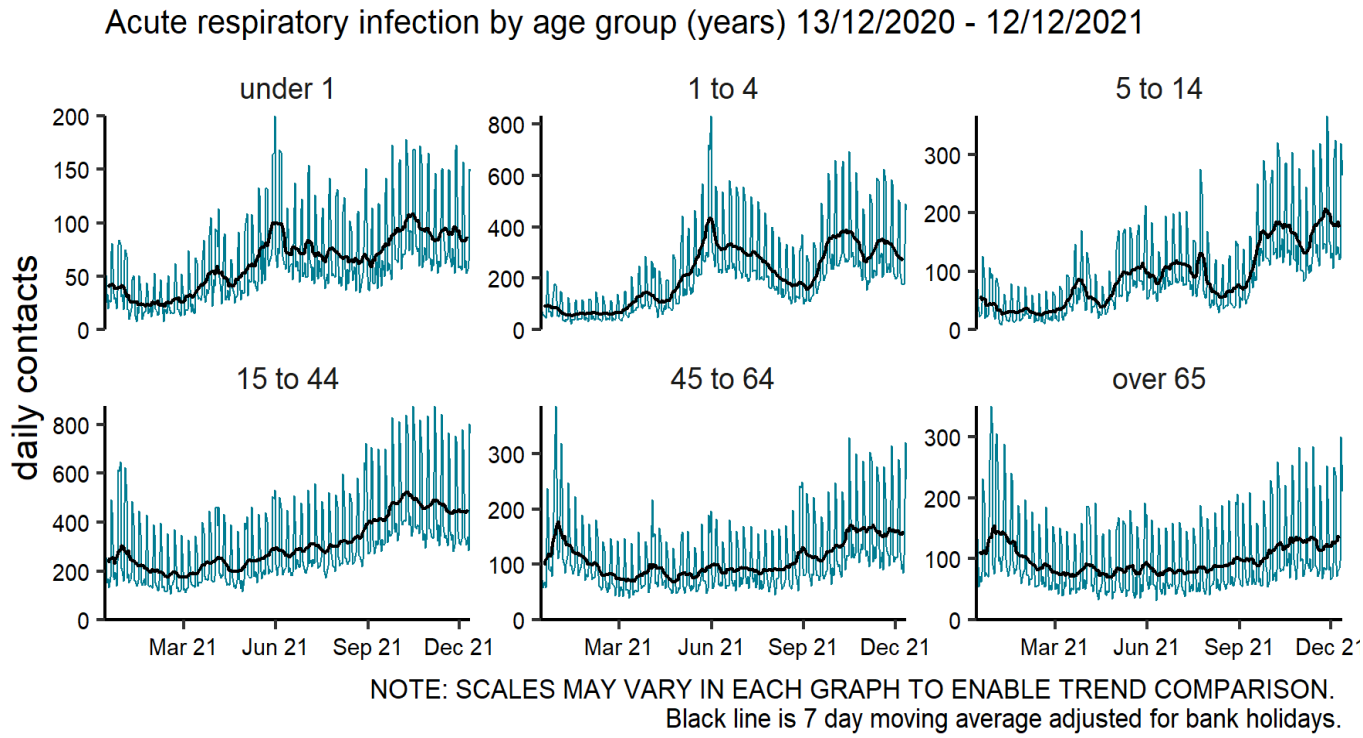


Figure 37: GPOOH number of daily contacts for acute respiratory infections, England (a) nationally and (b) by age group

(a)



(b)



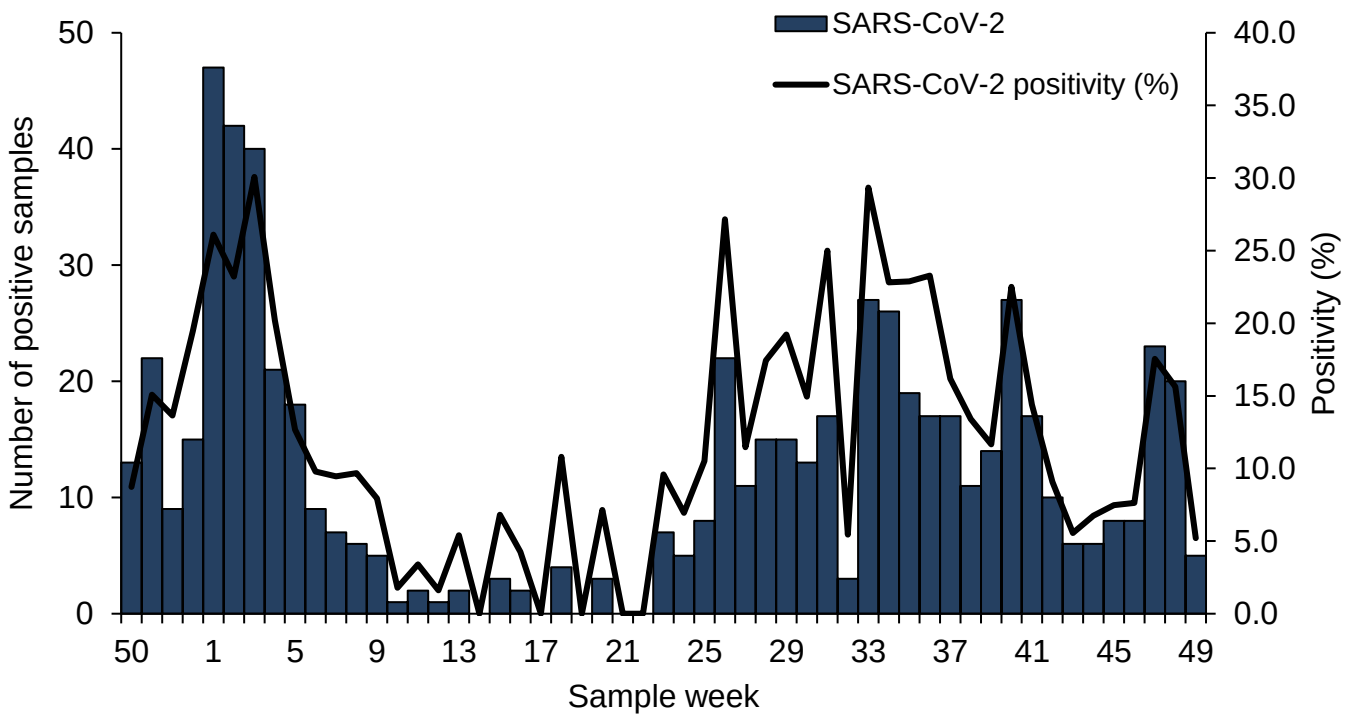
Sentinel swabbing scheme in the UK

In week 49 2021, 5 samples tested positive for SARS-CoV-2 with an overall positivity of 5.2% (5 out of 96) through the UK GP sentinel swabbing schemes (Figure 38).

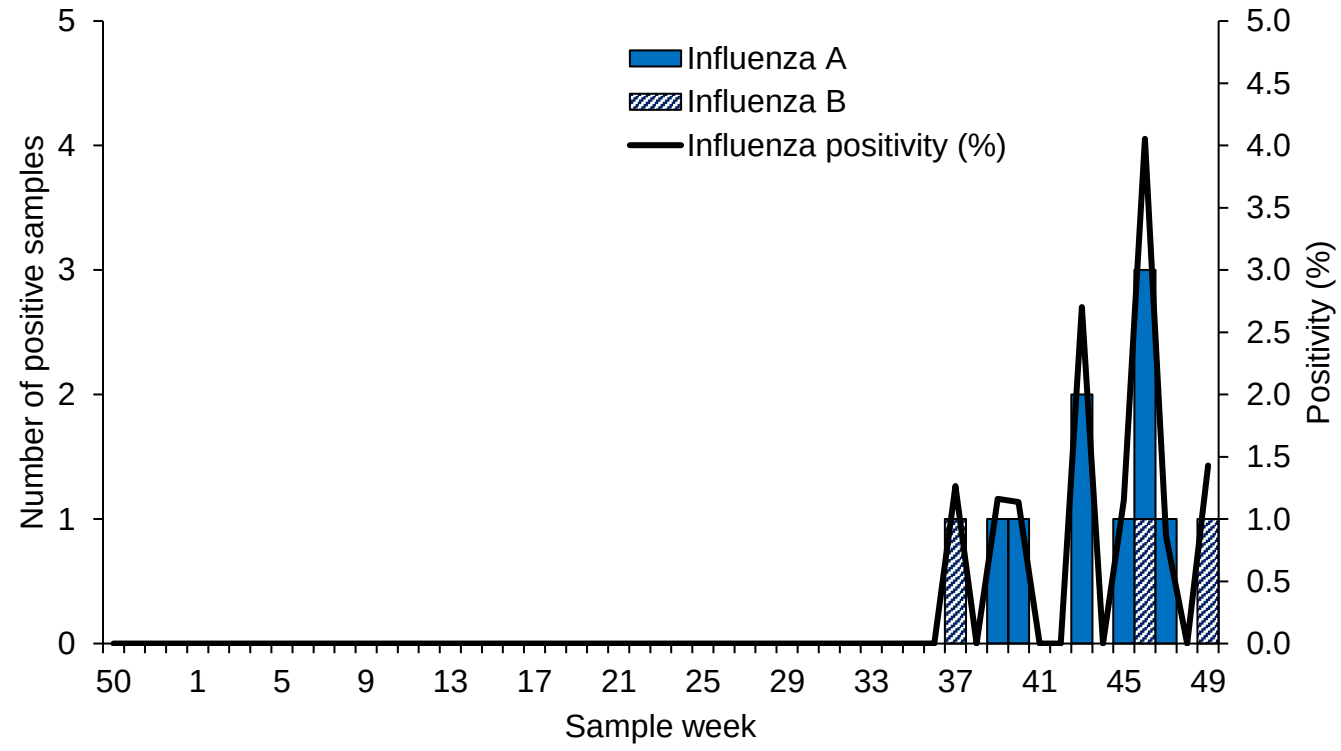
In week 49, 1 sample tested positive for influenza (influenza B) in England through the GP sentinel swabbing scheme with an overall positivity of 1.4% (1 out of 70), while 3 samples tested positive for RSV in England, with an overall positivity of 4.2% (3 out of 71).

Figure 38: Number of positive samples and weekly positivity (%) for (a) COVID-19 and (b) Influenza and (c) RSV, GP sentinel swabbing scheme

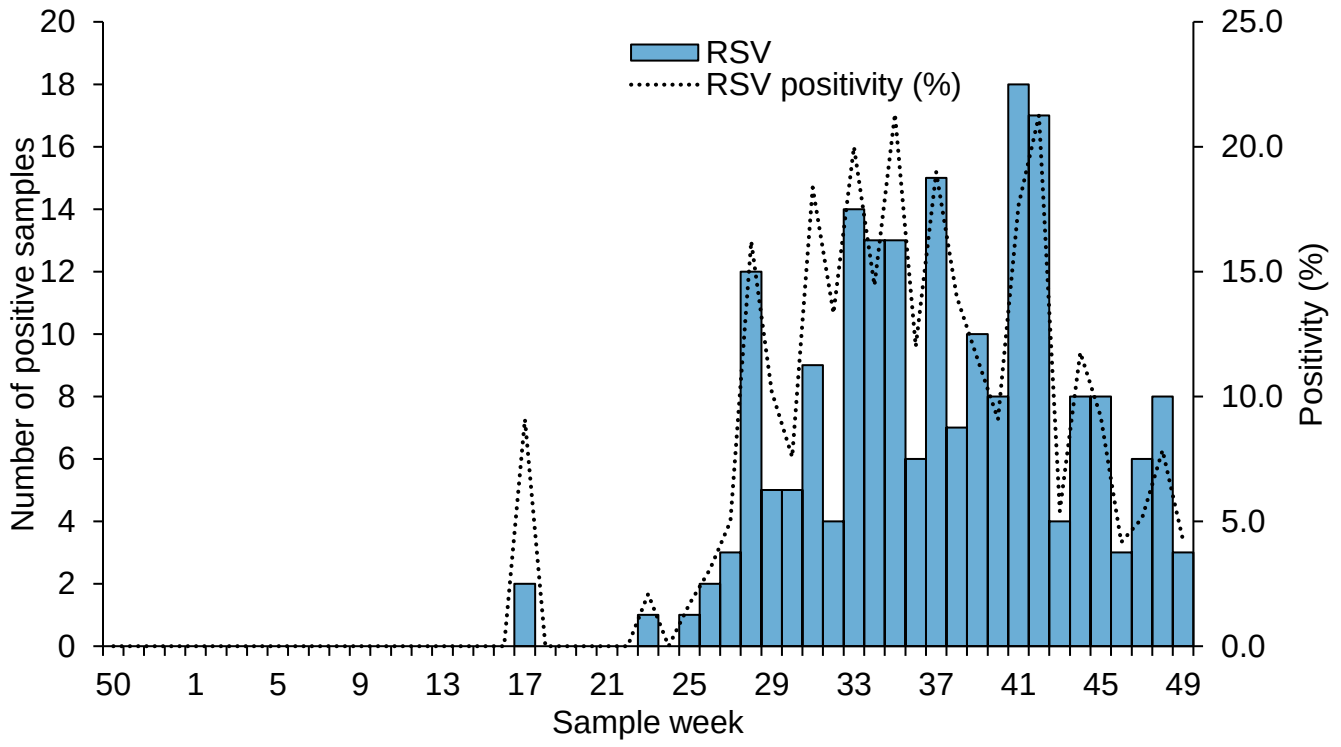
(a)



(b)



(c)



*For the most recent week, more samples are expected to be tested therefore the graphs in Figure 38 should be interpreted with caution

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

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 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 2014 to 2015 to the 2018 to 2019 seasons (data from 2019 to 2020 was excluded due to the COVID-19 pandemic). These thresholds have been applied to data from the 2019-20 season onwards.

Trends in hospital and critical care admission rates need to be interpreted in the context of testing recommendations.

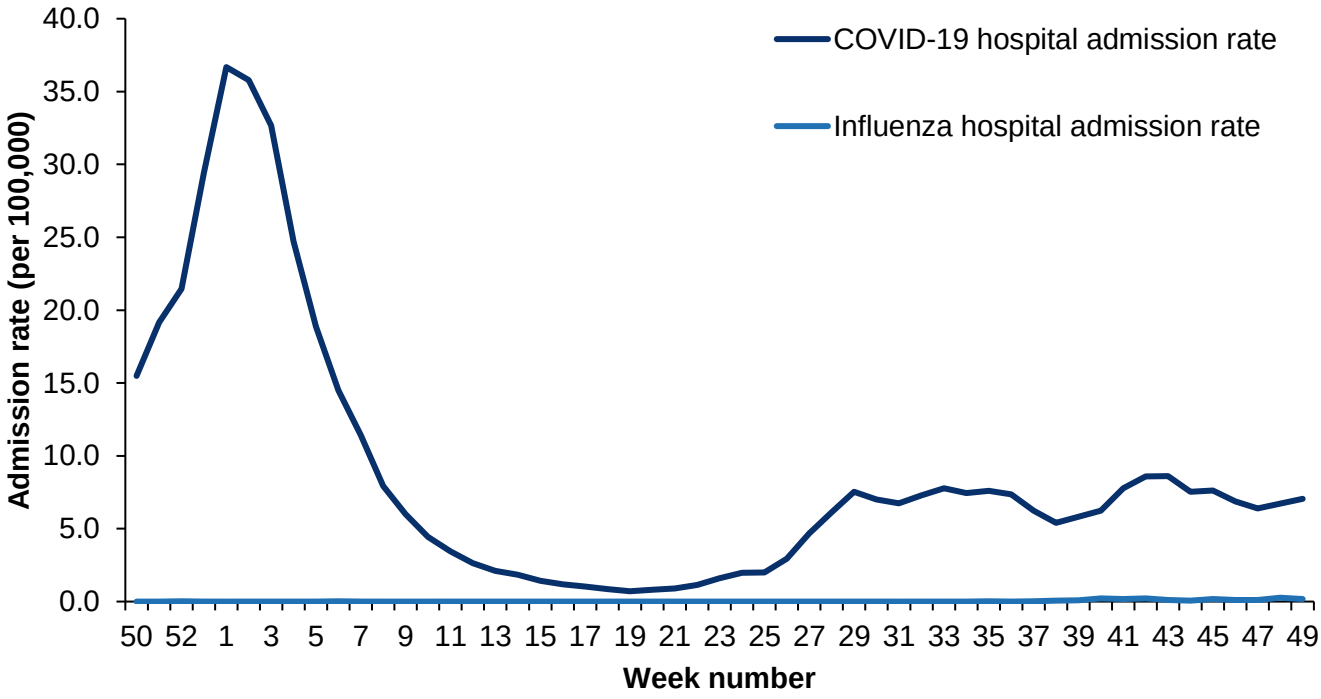
Hospitalisations, SARI Watch

In week 49, the overall weekly hospital admission rate for COVID-19 increased slightly. There were 20 new hospital admissions to sentinel Trusts for influenza (2 influenza A(H3N2), 15 influenza A(not subtyped) and 3 influenza B) in week 49.

The hospitalisation rate for COVID-19 was at 7.06 per 100,000 in week 49 compared to 6.71 per 100,000 in the previous week. The hospitalisation rate for influenza was at 0.17 per 100,000 in week 49 compared to 0.26 per 100,000 in the previous week.

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

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



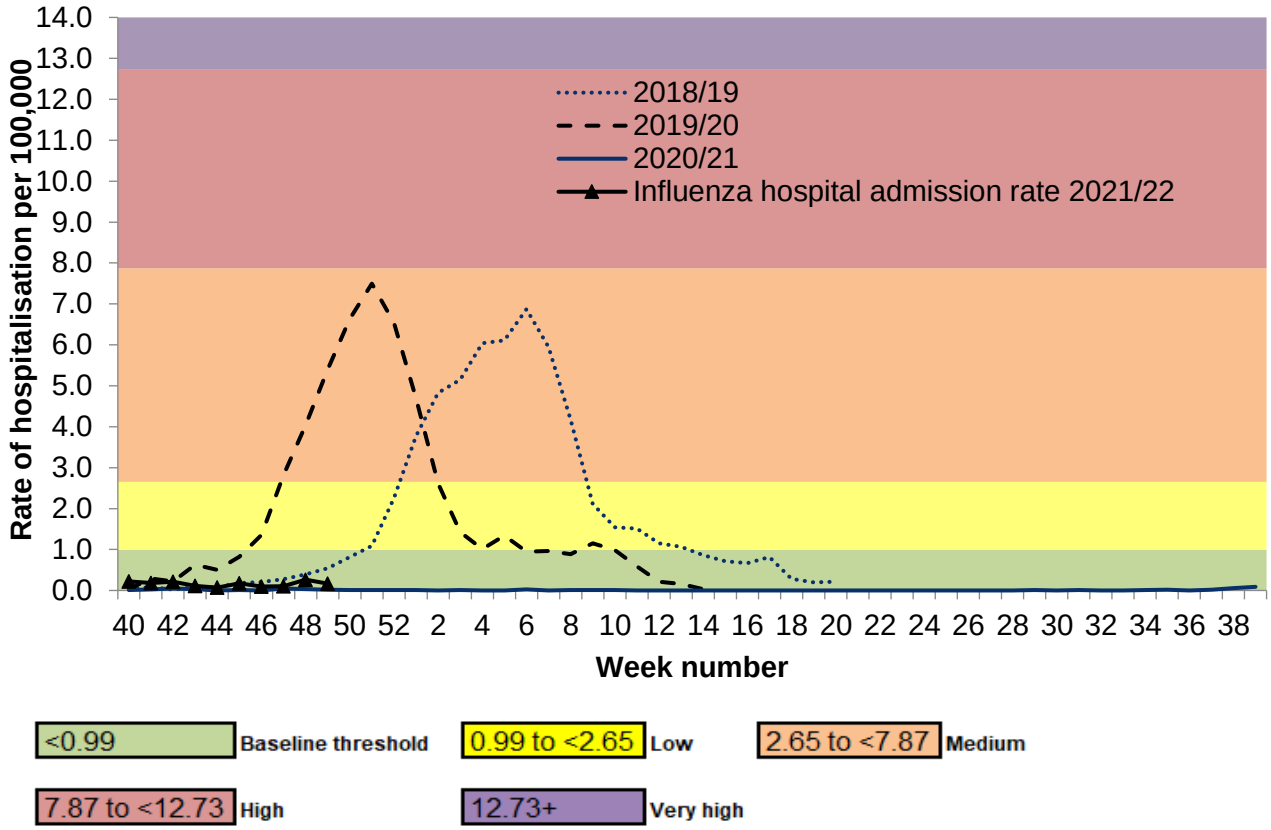
* influenza hospital admission rate is reported from week 50 2020 onwards

* influenza hospital admission rate based on 27 sentinel NHS trusts for week 49

* COVID-19 hospital admission rate based on 105 NHS trusts for week 49

* SARI Watch data are provisional

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



* MEM thresholds are based on data the 2014 to 2015 to the 2018 to 2019 seasons (data from 2019 to 2020 was excluded due to the COVID-19 pandemic).

Figure 41: Weekly influenza hospital admissions by influenza type, SARI Watch, England

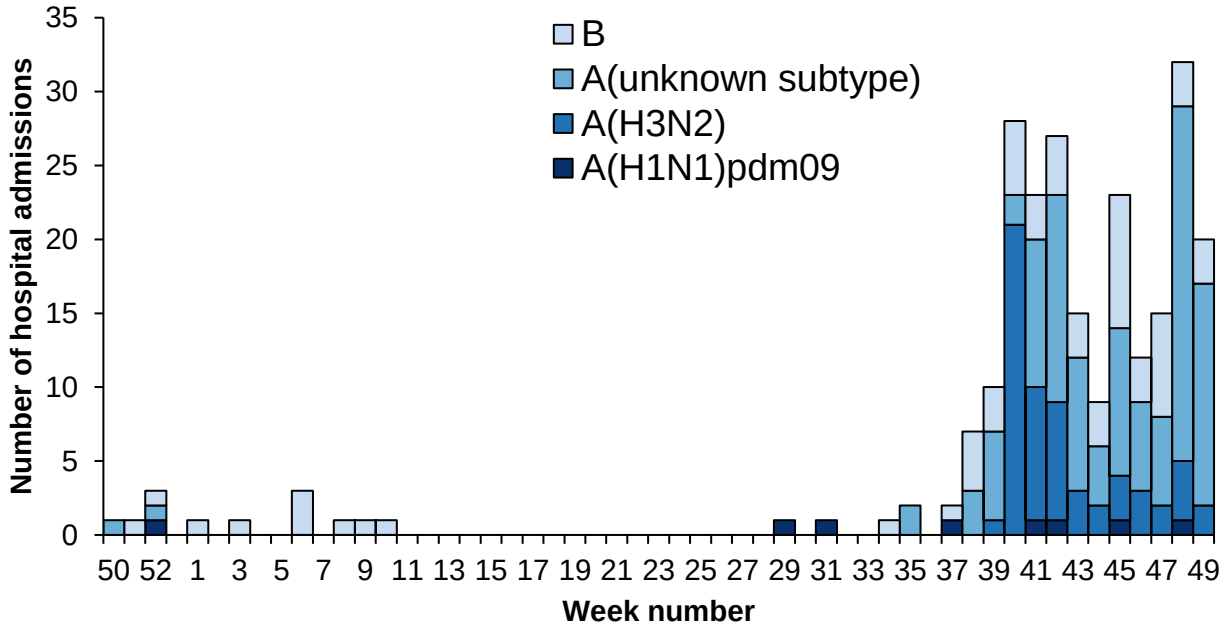
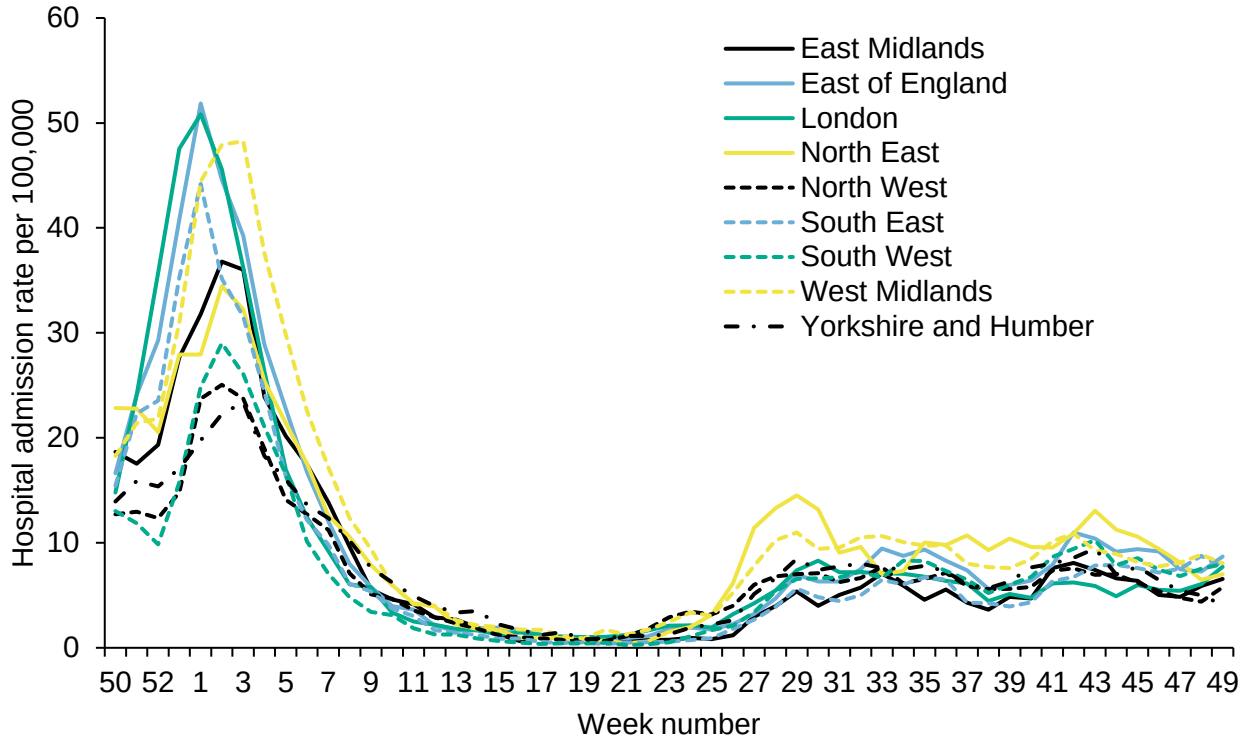


Figure 42: Weekly hospital admission rate by UKHSA Centre for new (a) COVID-19 positive cases and (b) influenza reported through SARI Watch

(a)



(b)

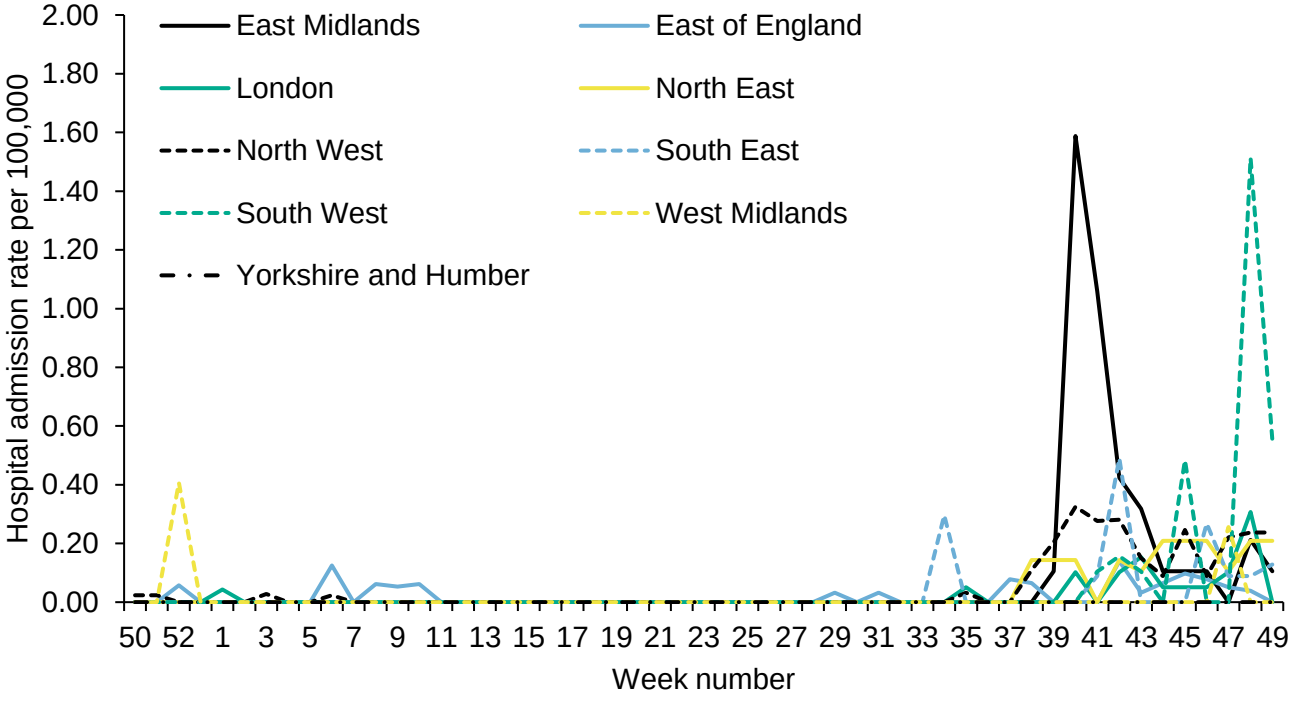
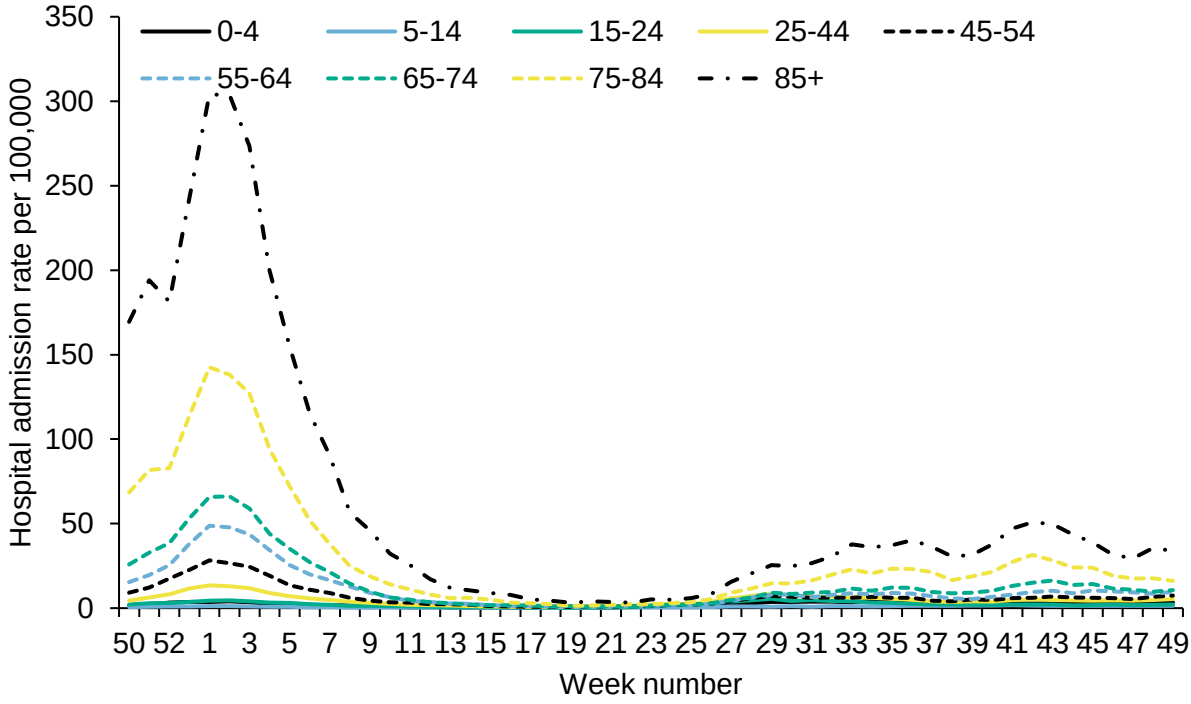
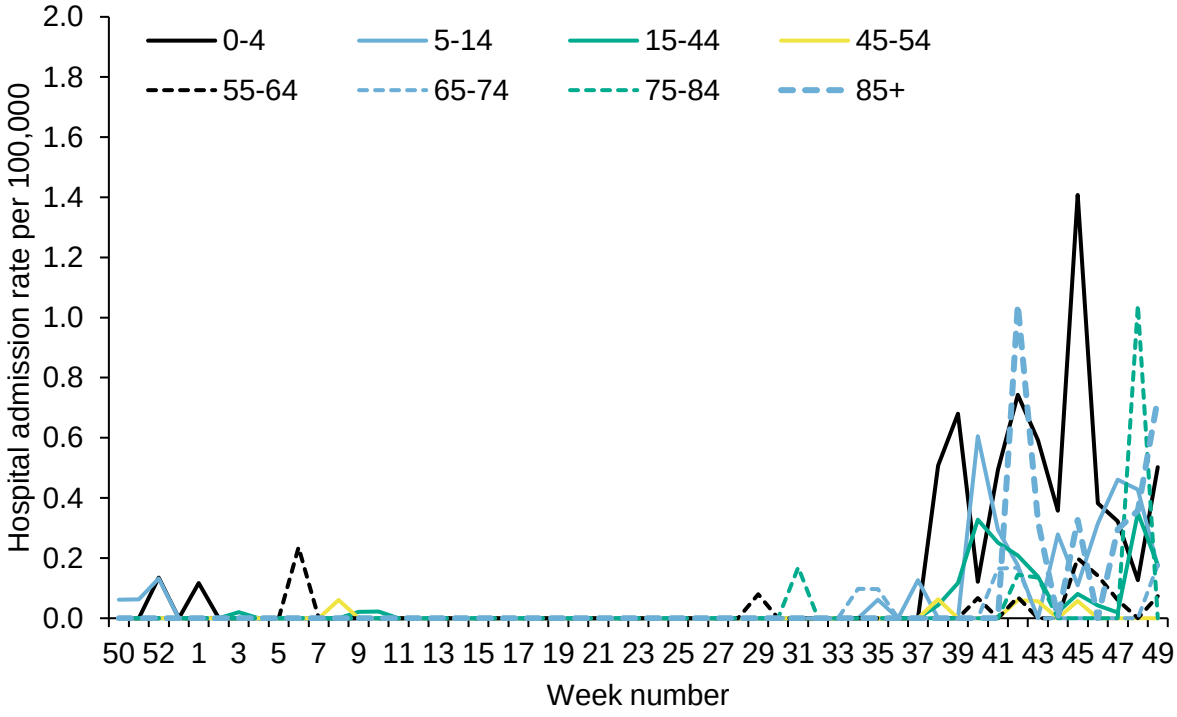


Figure 43: Weekly hospital admission rate by age group for new (a) COVID-19 positive cases and (b) influenza reported through SARI Watch

(a)



(b)



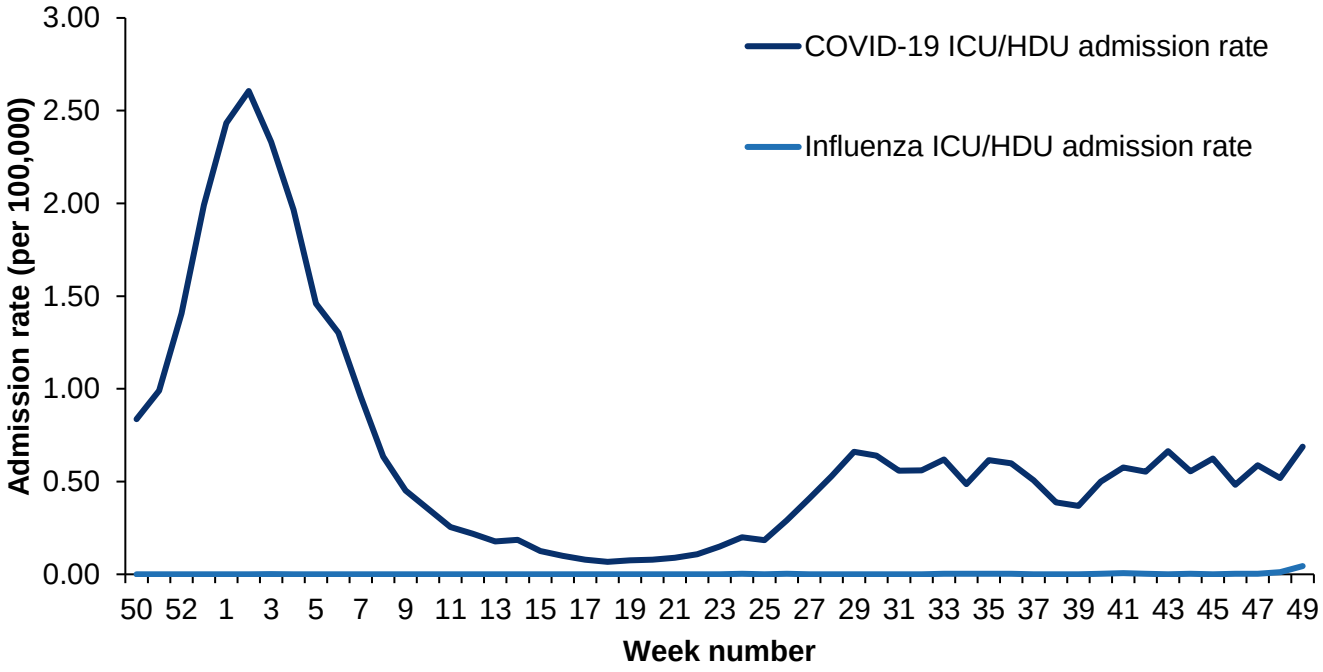
ICU or HDU admissions, SARI Watch

In week 49, the overall weekly ICU or HDU admission rates for COVID-19 increased slightly. There were 17 new case reports of ICU or HDU admissions for influenza (11 influenza A(H1N1)pdm09, 3 influenza A(H3N2), 1 influenza A(not subtyped) and 2 influenza B in week 49.

The ICU or HDU rate for COVID-19 was at 0.69 per 100,000 in week 49 compared to 0.52 per 100,000 in the previous week. The ICU or HDU rate for influenza was at 0.04 per 100,000 in week 49 compared to 0.01 per 100,000 in the previous week.

By UKHSA Centre, the highest ICU or HDU admission rates for COVID-19 were observed in the North East. By age groups, the highest ICU or HDU admission rates for COVID-19 were observed in the 55 to 64-year olds.

Figure 44: 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 is reported from week 50 2020 onwards

* influenza ICU or HDU admission rate based on 93 NHS trusts for week 49

* COVID-19 ICU or HDU admission rate based on 101 NHS trusts for week 49

* SARI Watch data are provisional

Figure 45: Weekly overall influenza ICU or HDU admission rates per 100,000 trust catchment population with MEM thresholds, SARI Watch, England

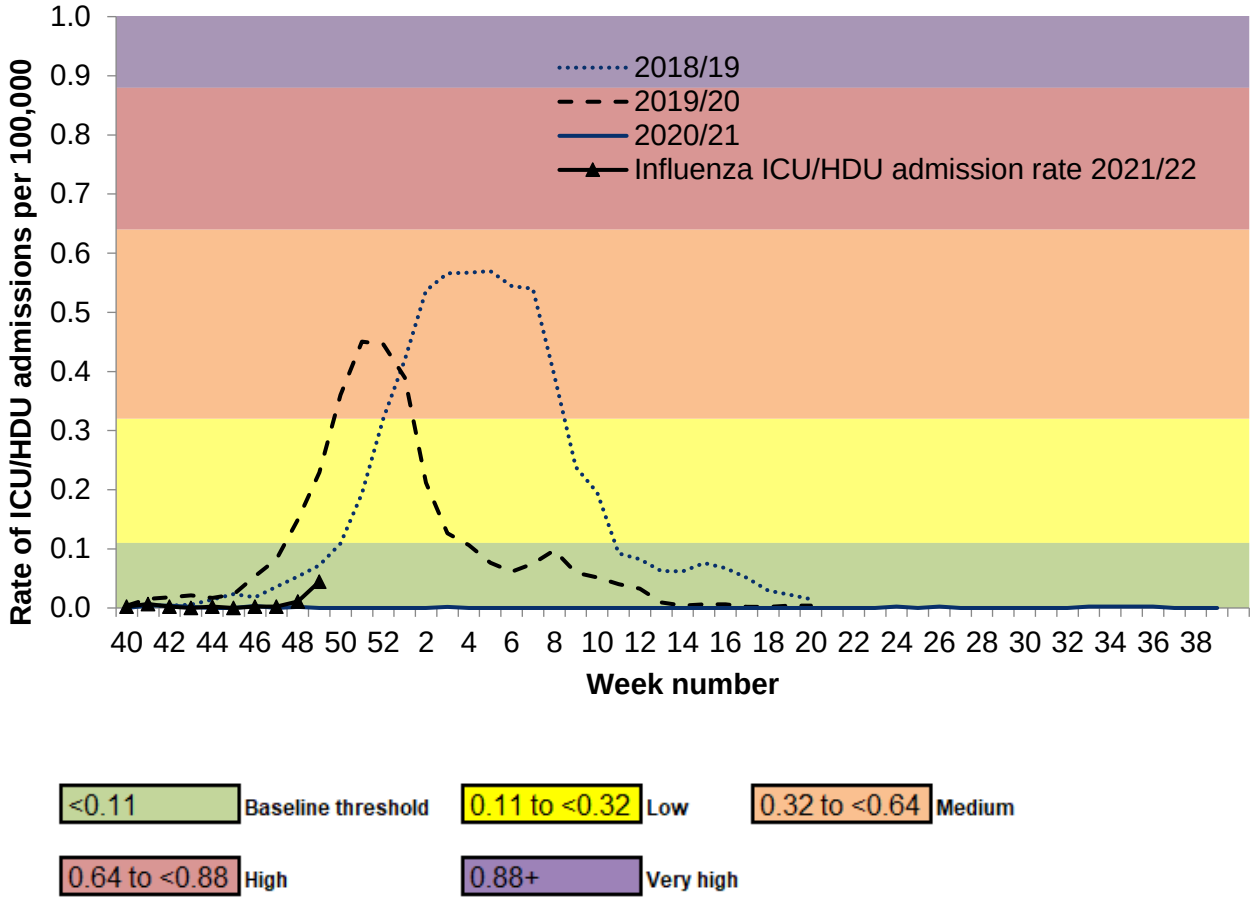


Figure 46: Weekly influenza ICU or HDU admissions by influenza type, SARI Watch, England

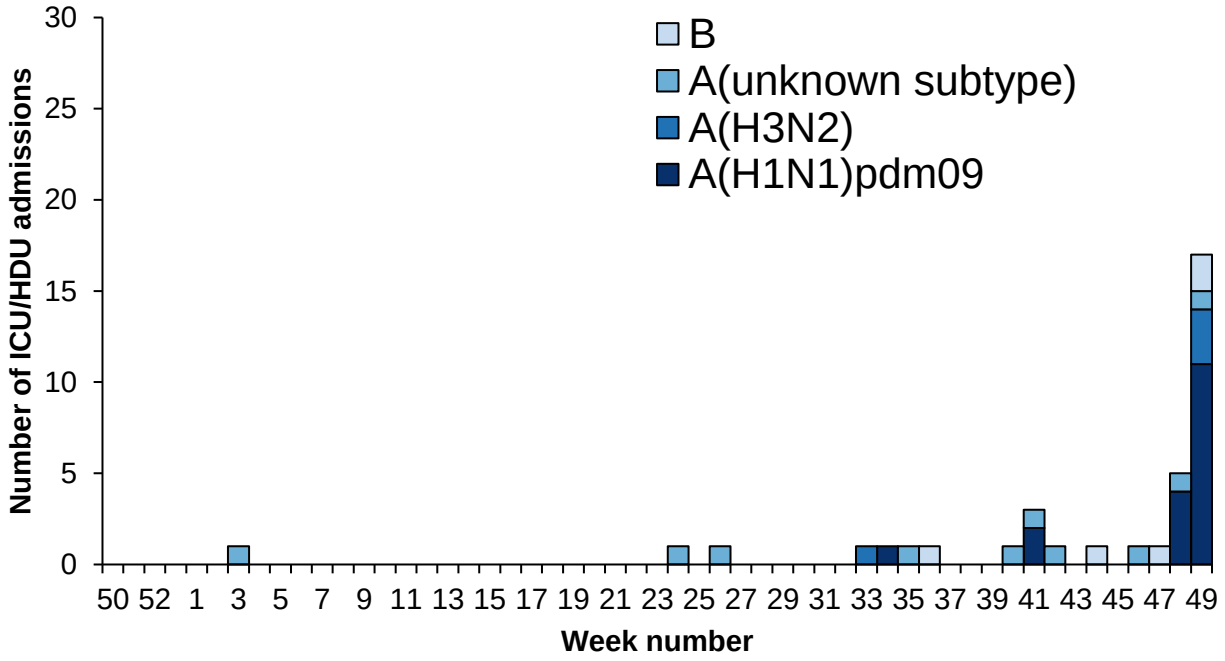
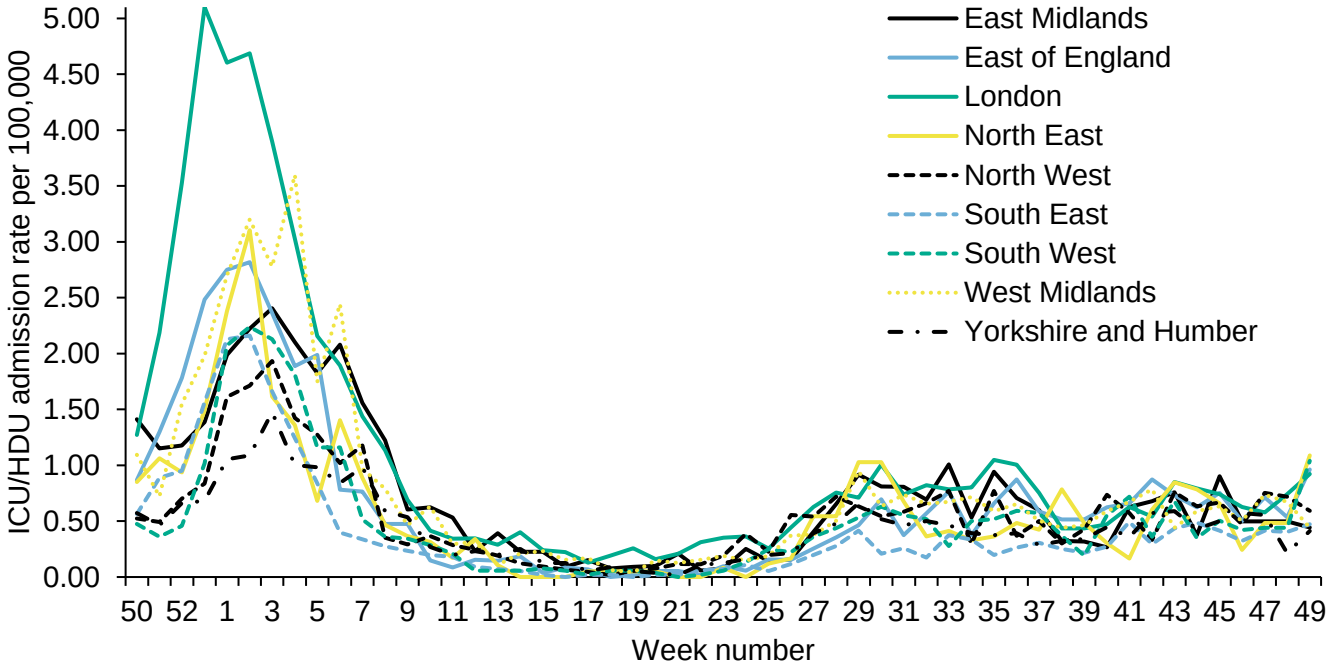


Figure 47: Weekly ICU or HDU admission rate by UKHSA Centre for new (a) COVID-19 positive cases and (b) influenza, reported through SARI Watch

(a)



(b)

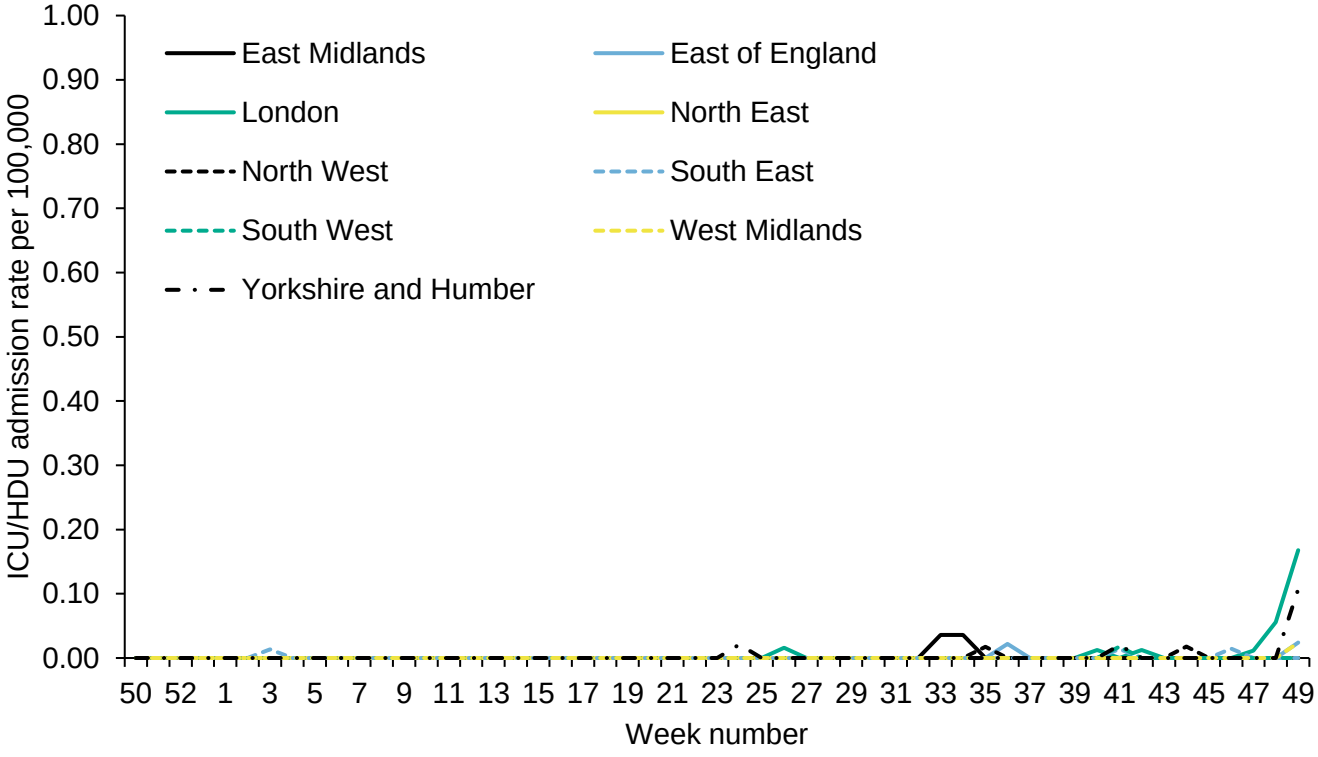
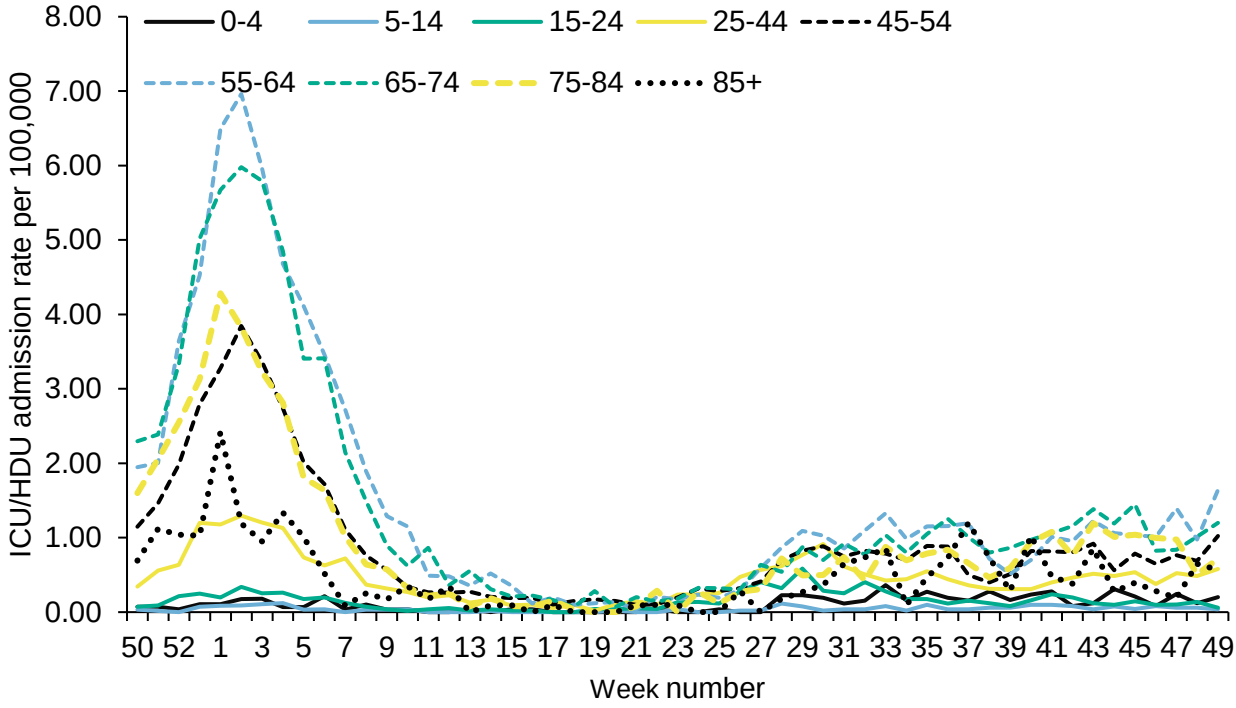
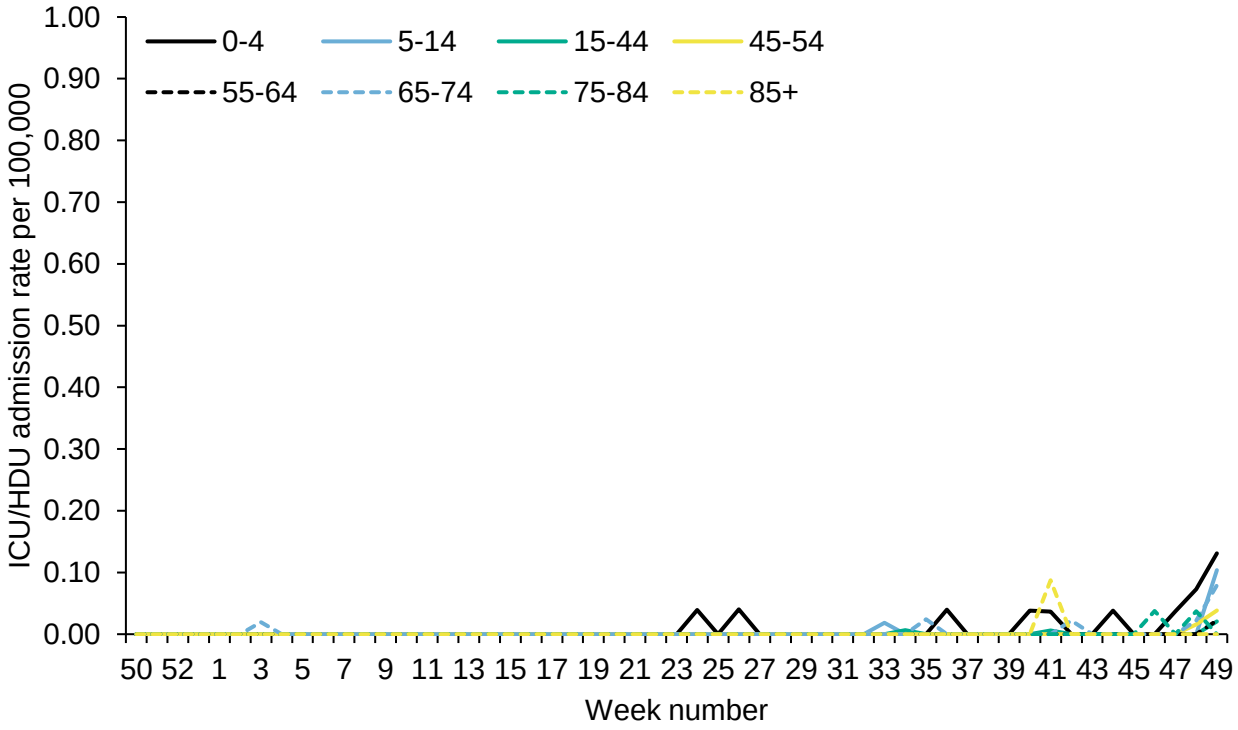


Figure 48: Weekly ICU or HDU admission rate by age group for new (a) COVID-19 positive cases and (b) influenza, reported through SARI Watch

(a)



(b)

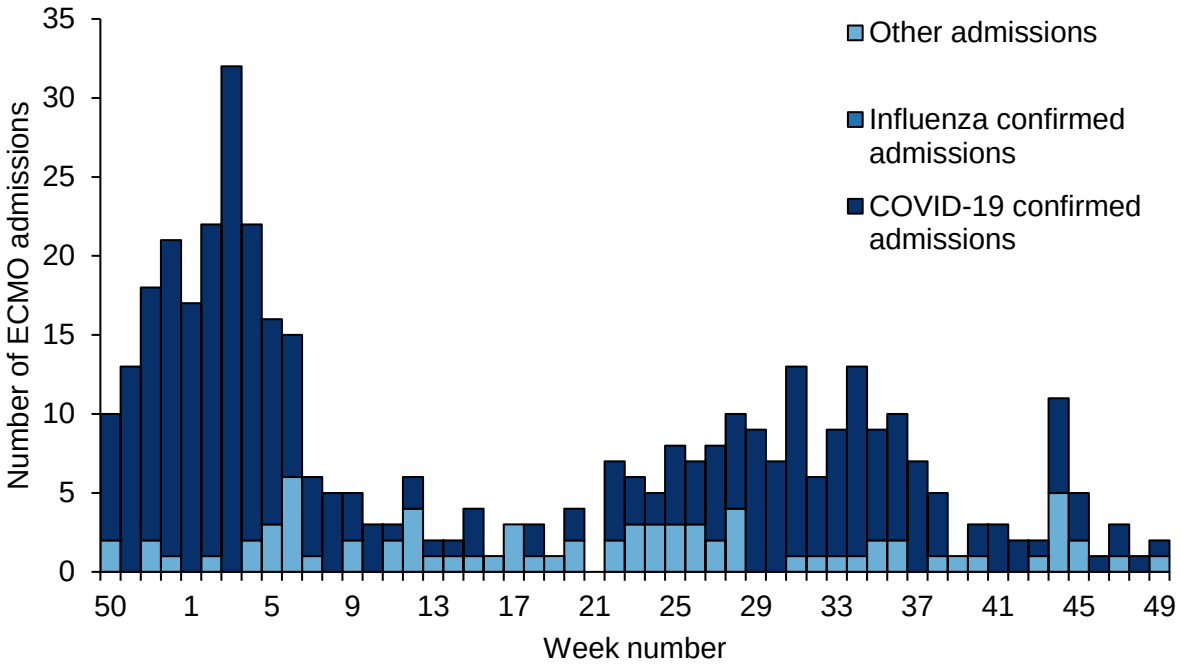


ECMO, SARI Watch

From week 50 2020, a total of 329 laboratory confirmed COVID-19 admissions have been reported from the 6 Severe Respiratory Failure (SRF) centres in the UK.

There was 1 new laboratory confirmed COVID-19 admission reported in week 49 (Figure 49).

Figure 49: Laboratory confirmed ECMO admissions (COVID-19, influenza and non-COVID-19 confirmed) to Severe Respiratory Failure centres in the UK

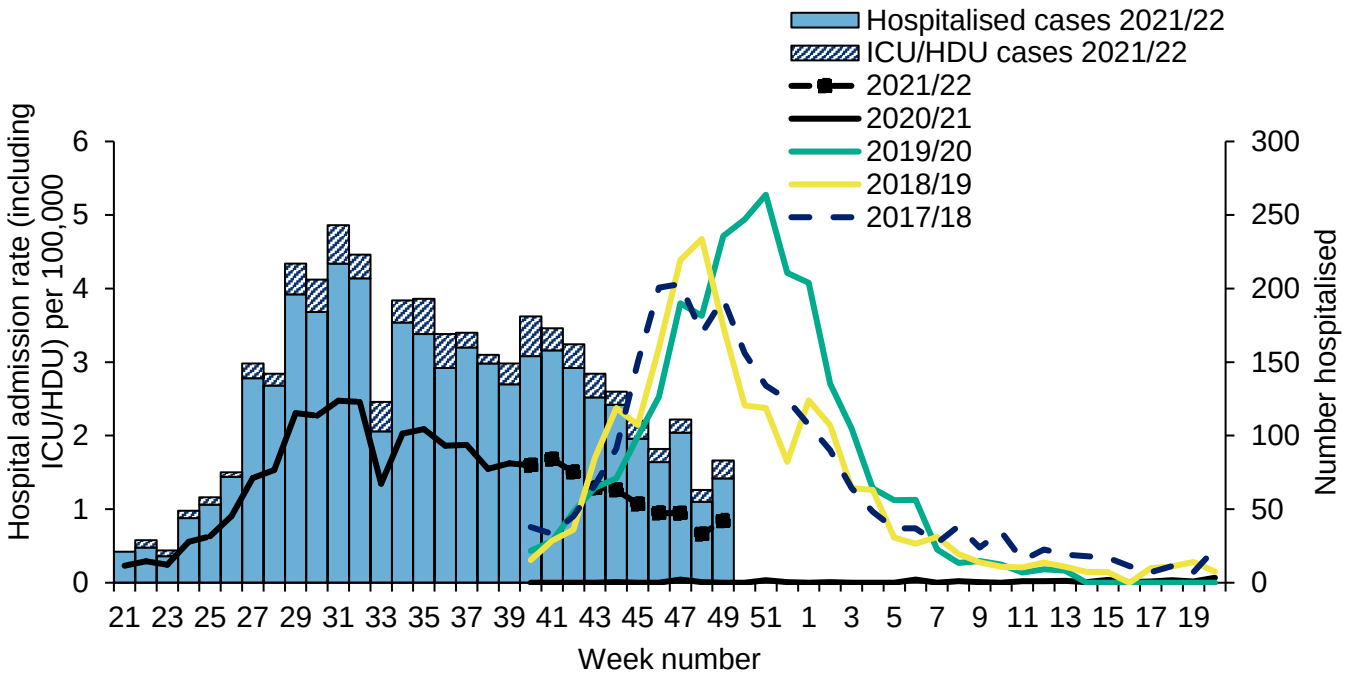


* SARI Watch data are provisional

RSV admissions, SARI Watch

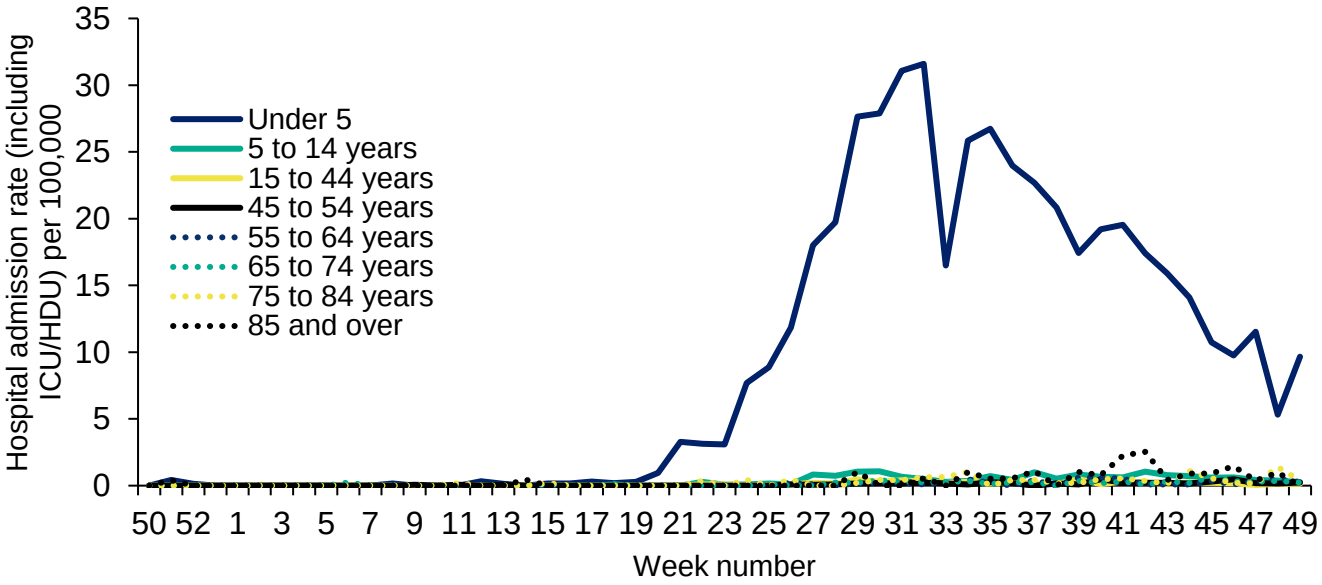
Data on hospitalisations, including ICU/HDU admissions, with Respiratory Syncytial Virus (RSV) are shown below. RSV SARI Watch surveillance is sentinel.

Figure 50: Weekly overall hospital admission rates (including ICU/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 this was extended to run throughout the year, to allow for surveillance of out-of-season trends

Figure 51: Weekly hospitalisation (including ICU/HDU) admission rates by age group for new RSV cases reported through SARI Watch in 2020 to 2021, 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 are provisional

Emergency Department attendances, Syndromic surveillance

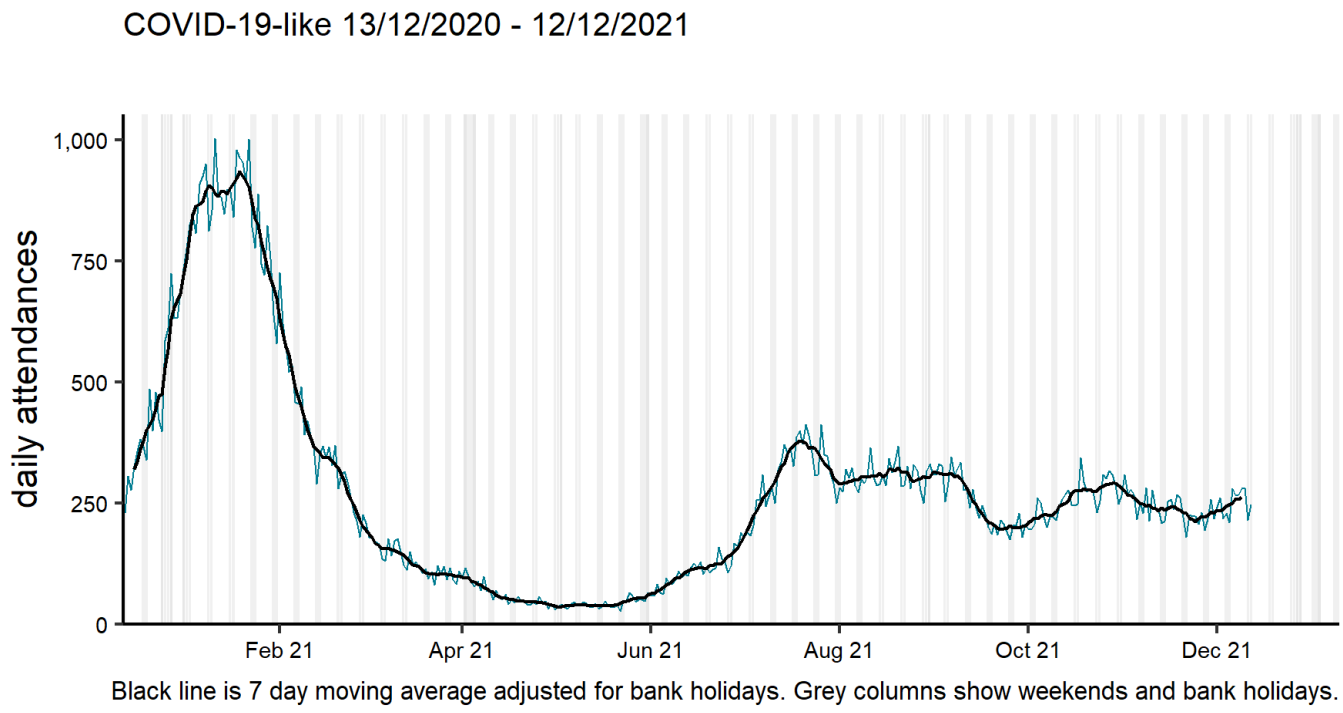
The Emergency Department Syndromic Surveillance System (EDSSS) monitors the daily visits in a network of emergency departments across England.

Up to 12 December, the daily number of ED attendances as reported by 127 EDs for acute respiratory infection were stable nationally. COVID-19-like attendances increased in London (Figure 52).

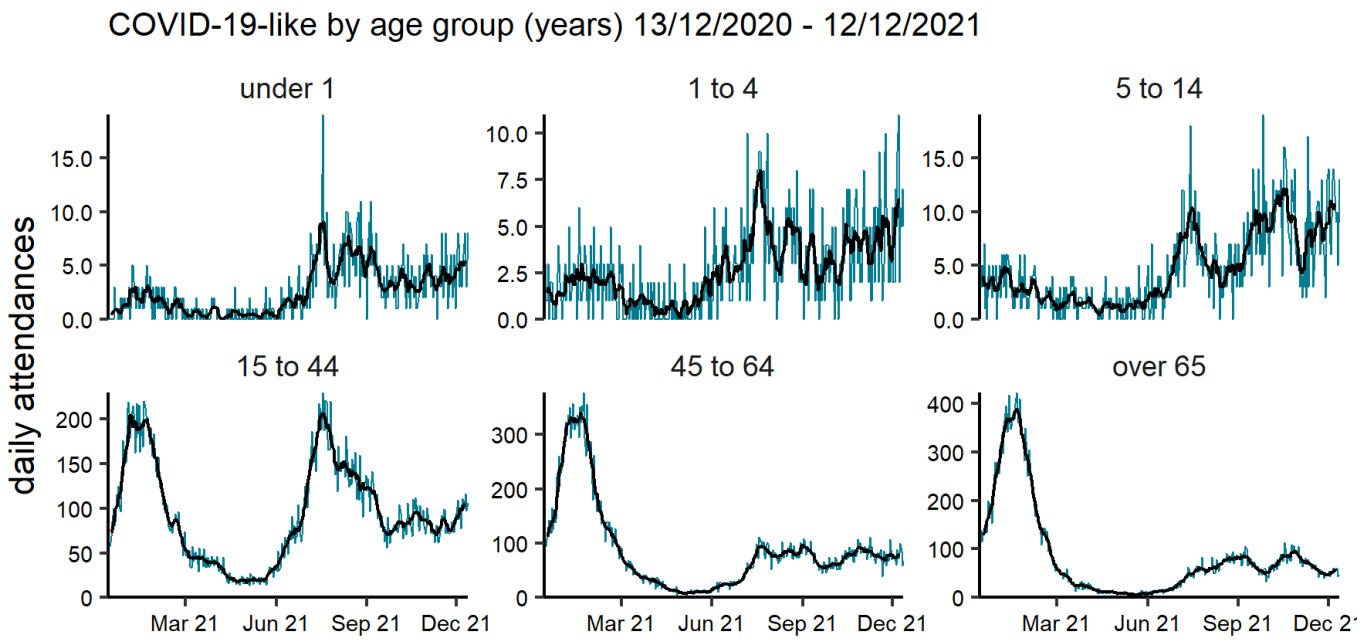
Please note: the COVID-19-like ED indicator is an underestimation of the number of COVID-19 attendances as it only includes attendances with a COVID-19-like diagnosis as their primary diagnosis. The EDSSS COVID-19-like indicator should therefore be used to monitor trends in ED attendances and not to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

Figure 52: Daily ED attendances for COVID-19-like infections, England (a) nationally, (b) by age group and (c) by UKHSA Centre

(a)

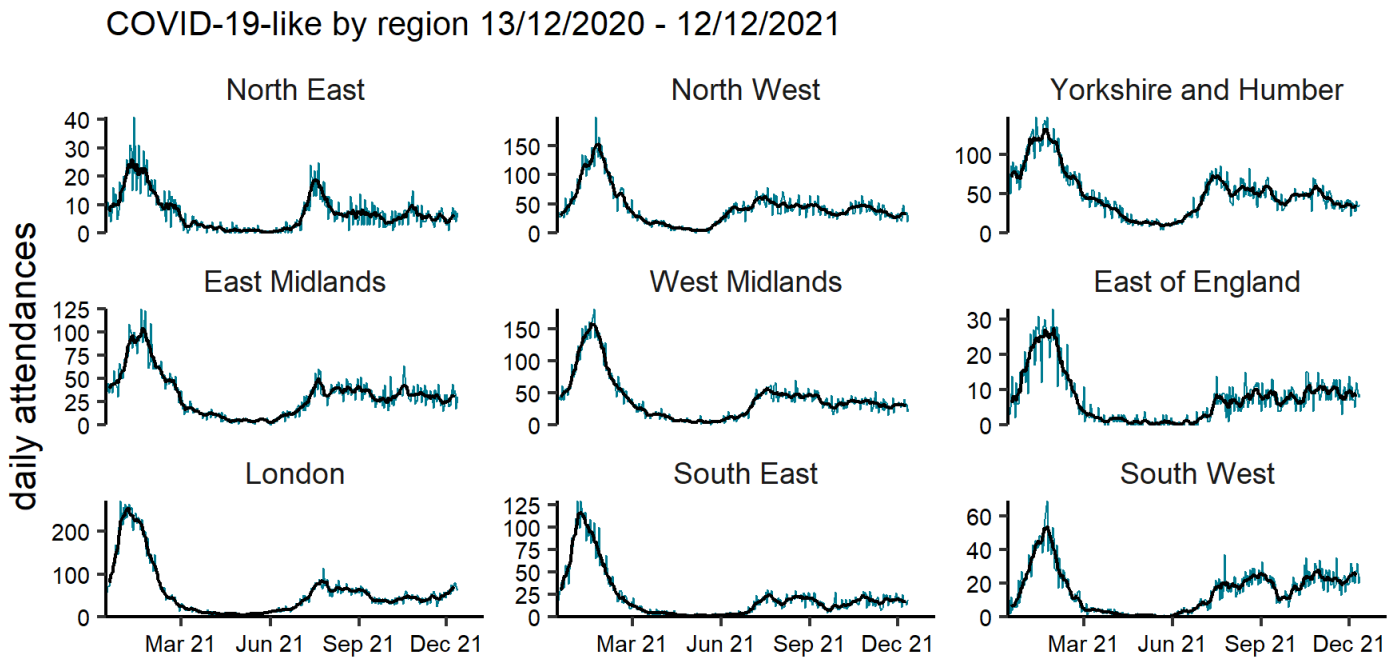


(b)



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

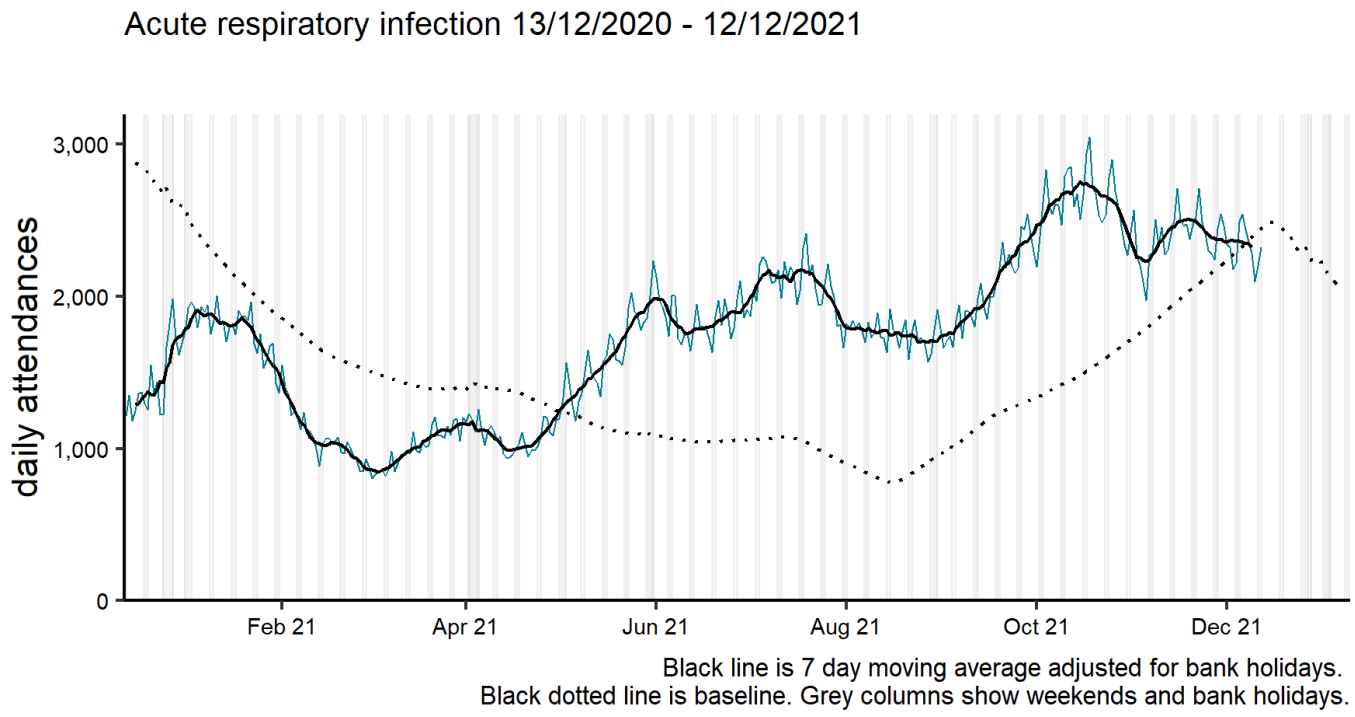
(c)



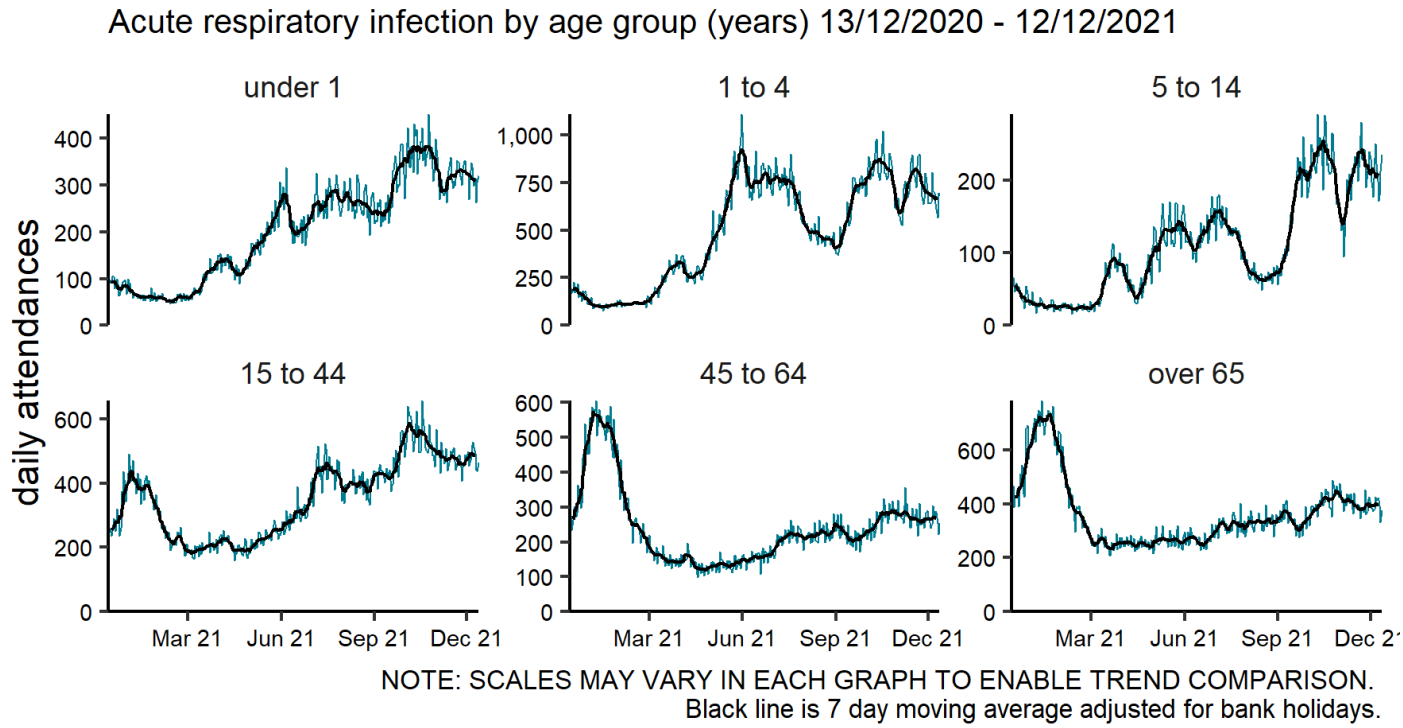
NOTE: SCALES MAY VARY IN EACH GRAPH TO ENABLE TREND COMPARISON.
Black line is 7 day moving average adjusted for bank holidays.

Figure 53: Daily ED attendances for acute respiratory infections, England (a) nationally, (b) by age group and (c) by UKHSA Centre

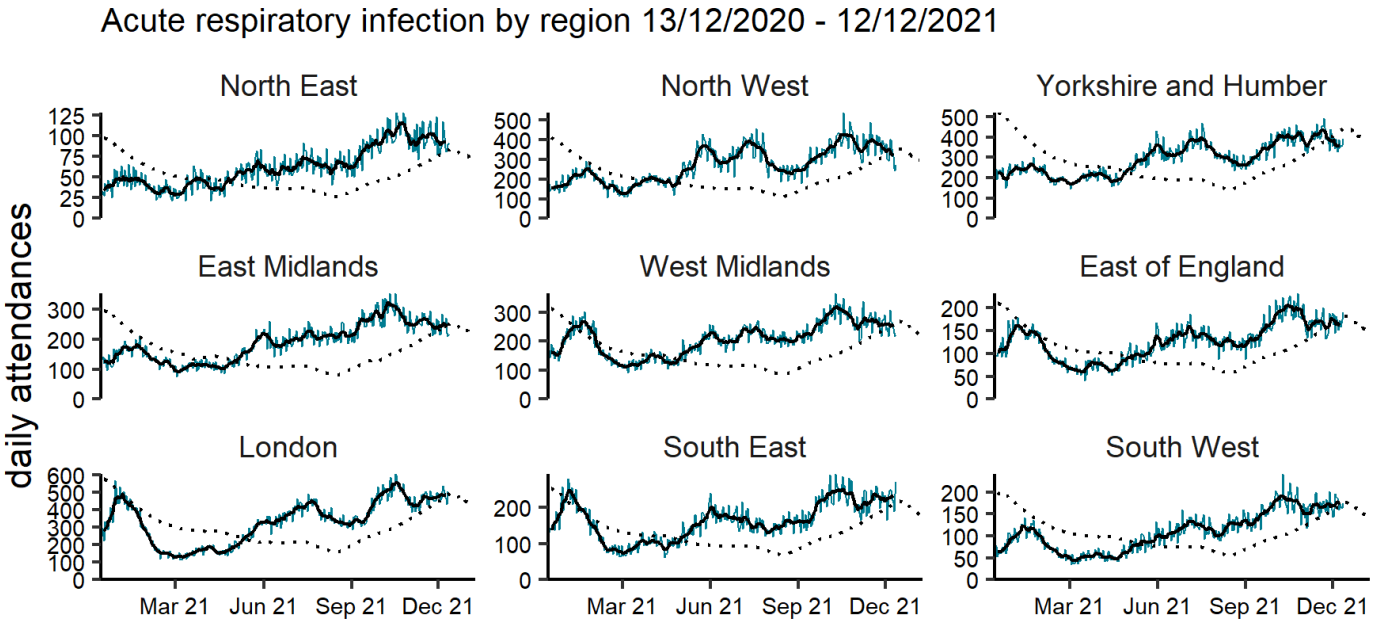
(a)



(b)



(c)


Acute respiratory infection by region 13/12/2020 - 12/12/2021
North East
North West
Yorkshire and Humber
East Midlands
West Midlands
East of England
London
South East
South West
daily attendances
Mar 21
Jun 21
Sep 21
Dec 21
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

Changes to the definitions of COVID-19 related deaths in England are described in more detail in an accompanying technical summary.

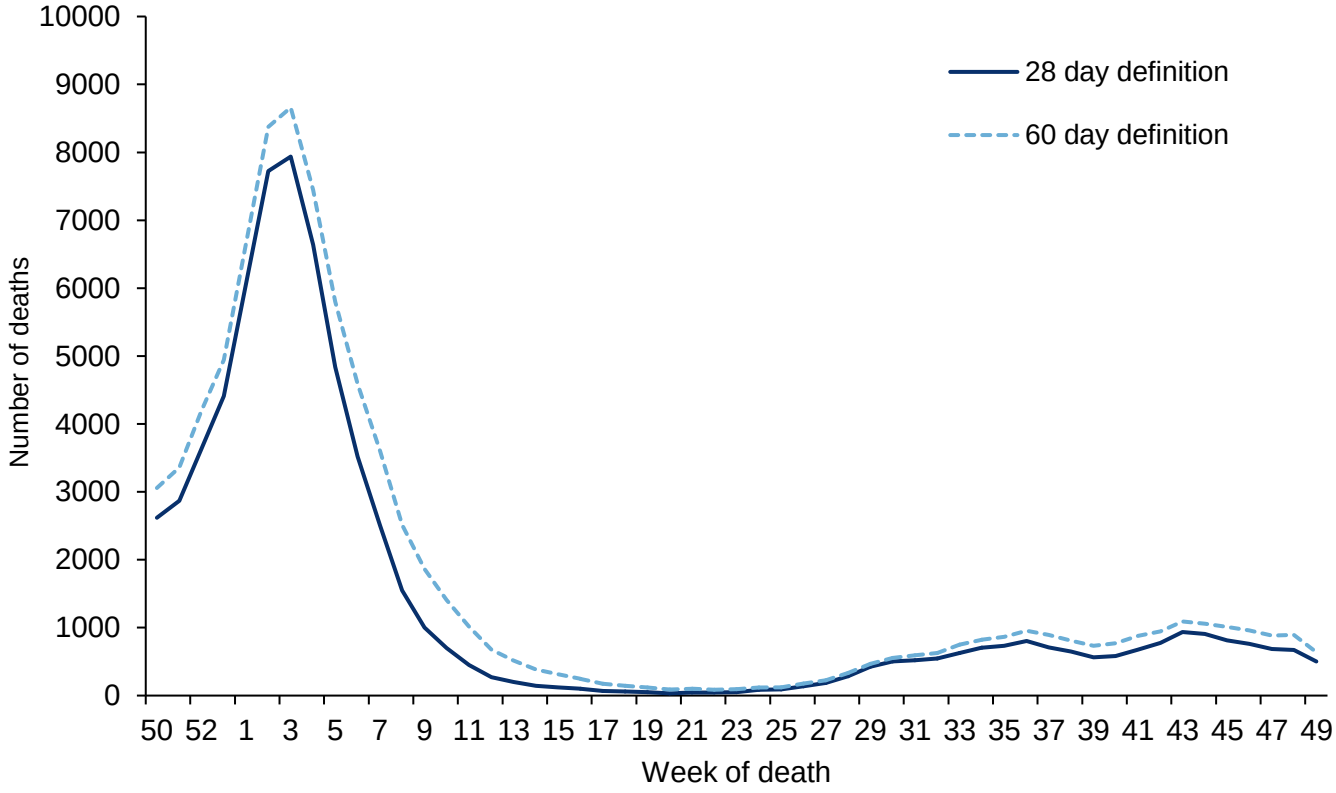
The current definitions used for mortality surveillance of COVID-19 in England are:

(a) 28 day definition: A death in a person with a laboratory-confirmed positive COVID-19 test and died within (equal to or less than) 28 days of the first positive specimen date

(b) 60 day definition: A death in a person with a laboratory-confirmed positive COVID-19 test and either: died within 60 days of the first specimen date OR died more than 60 days after the first specimen date only if COVID-19 is mentioned on the death certificate

The introduction of these definitions will affect the numbers which have been presented in past reports and therefore Figure 54 represents these differences by definition.

Figure 54: Number of deaths since by week of death and time since laboratory confirmation of COVID-19, England



*The data are 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: Age-sex pyramid of laboratory confirmed COVID-19 deaths, for the past year

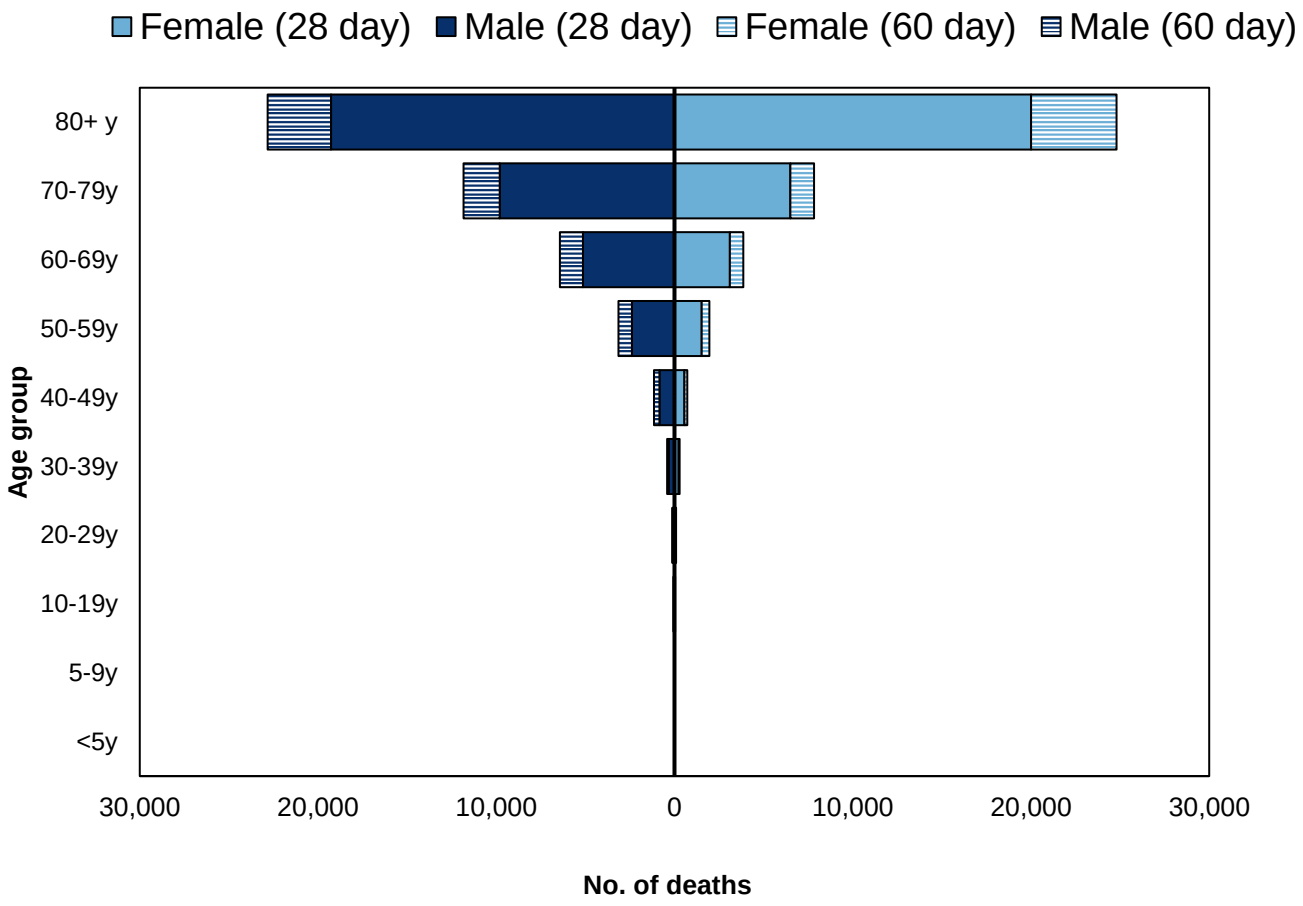


Table 5: Ethnic group (%) of COVID-19 deaths and time since laboratory confirmation of COVID-19, England, for the past year

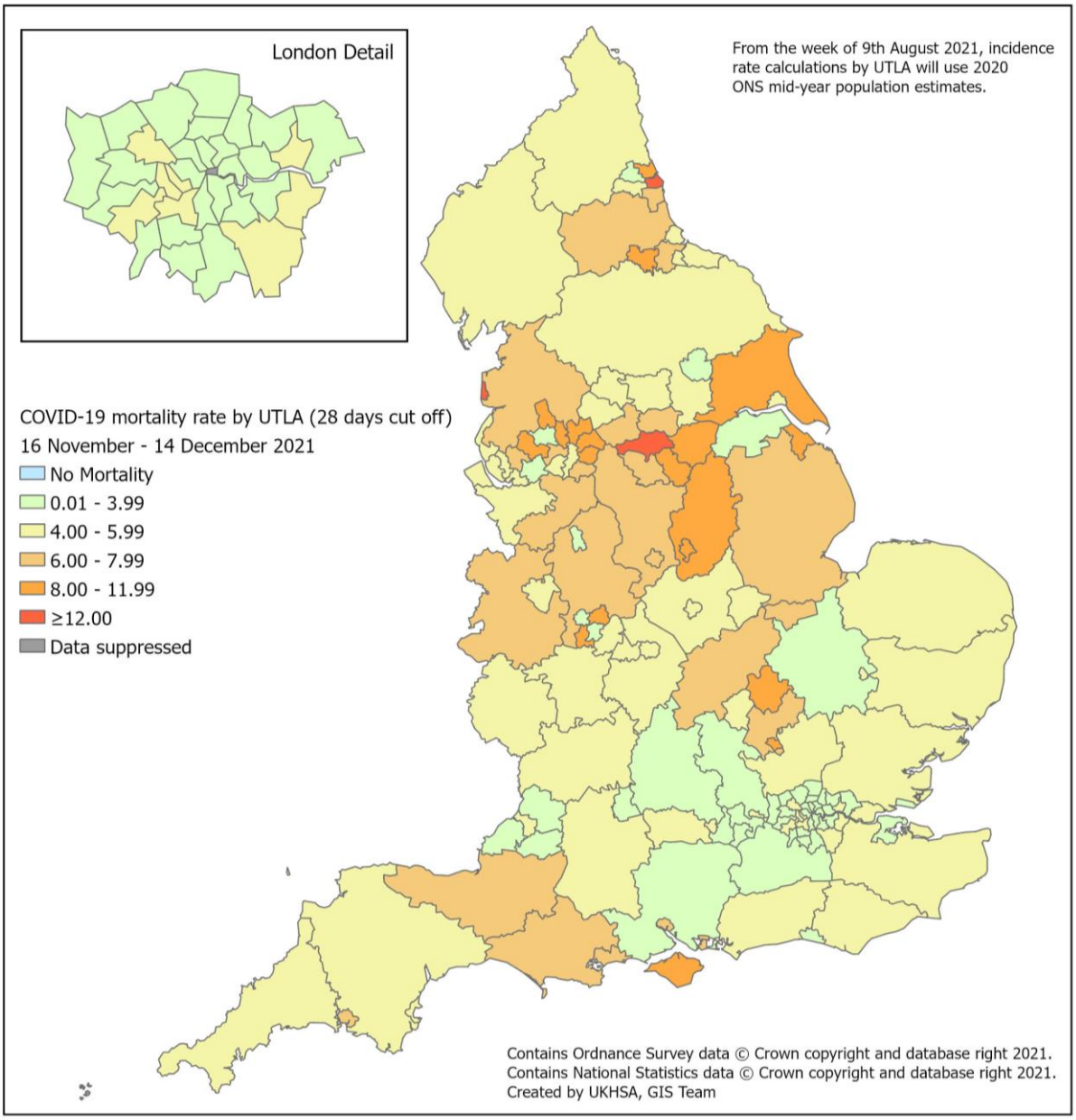
Ethnicity	28 day definition	60 day definition
White	88.2	88.3
Asian / Asian British	7.3	7.3
Black / African / Caribbean / Black British	3.3	3.3
Mixed / Multiple ethnic groups	0.5	0.5
Other ethnic group	0.6	0.6

Table 6: Cumulative number of COVID-19 deaths since and time since laboratory confirmation of COVID-19 by UKHSA Centres, for the past year

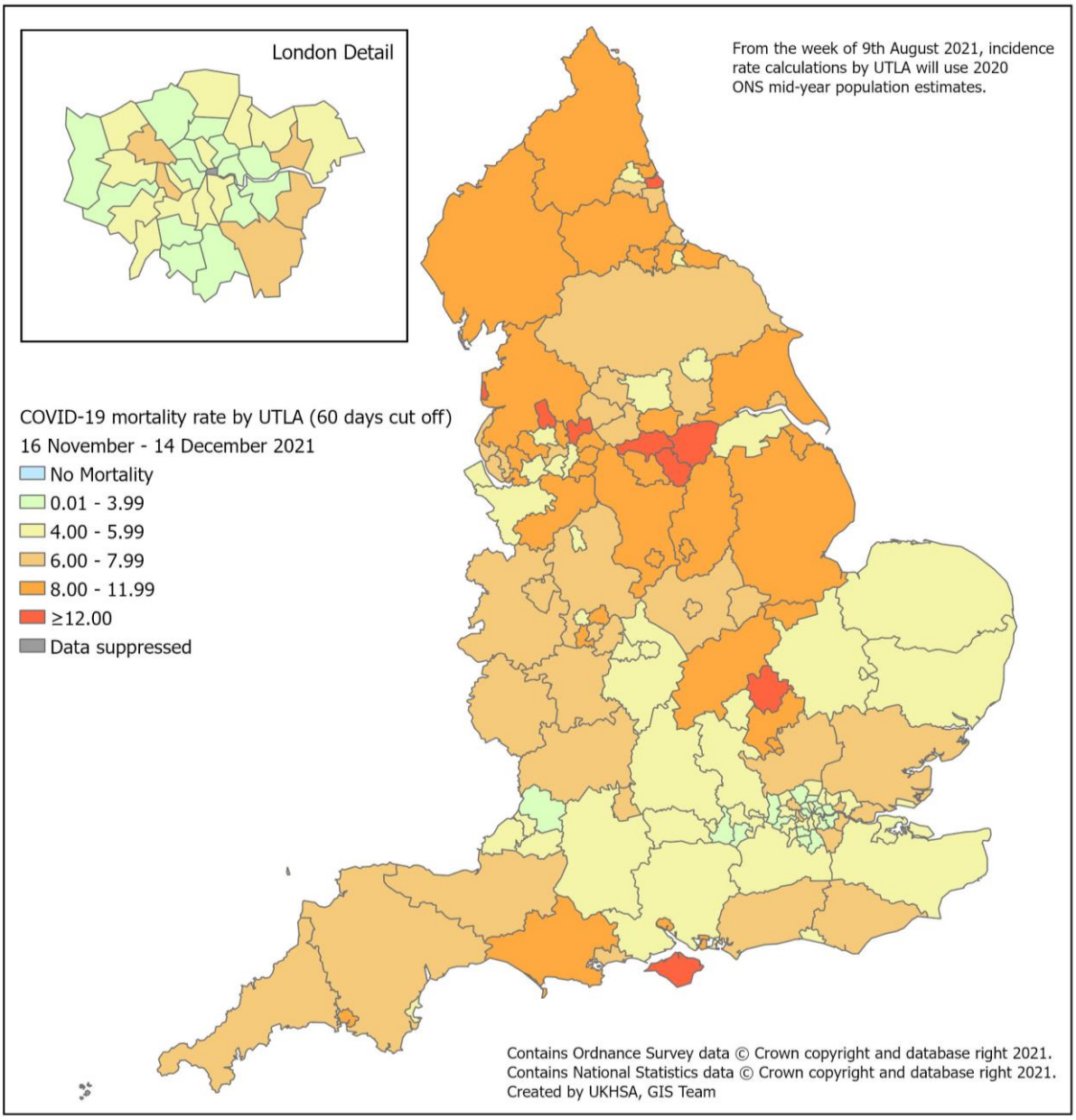
UKHSA Centres	28 day definition	60 day definition
North East	3,327	4,144
North West	9,532	11,829
Yorkshire and Humber	6,004	7,497
West Midlands	8,116	10,068
East Midlands	6,328	7,802
East of England	9,739	11,700
London	9,599	11,748
South East	11,702	14,134
South West	5,156	6,187

Figure 56: Cumulative mortality rate of COVID-19 cases per 100,000 population tested under Pillars 1 and 2 for the past 4 weeks by (a) 28 day definition and (b) 60 day definition

(a)



(b)


London Detail
From the week of 9th August 2021, incidence rate calculations by UTLA will use 2020 ONS mid-year population estimates.
COVID-19 mortality rate by UTLA (60 days cut off)
16 November - 14 December 2021
No Mortality
0.01 - 3.99
4.00 - 5.99
6.00 - 7.99
8.00 - 11.99
≥12.00
Data suppressed
Contains Ordnance Survey data © Crown copyright and database right 2021.
Contains National Statistics data © Crown copyright and database right 2021.
Created by UKHSA, GIS Team

Daily excess all-cause mortality (England)

Deaths occurring from 1 January 2020 to 8 December 2021 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 57).

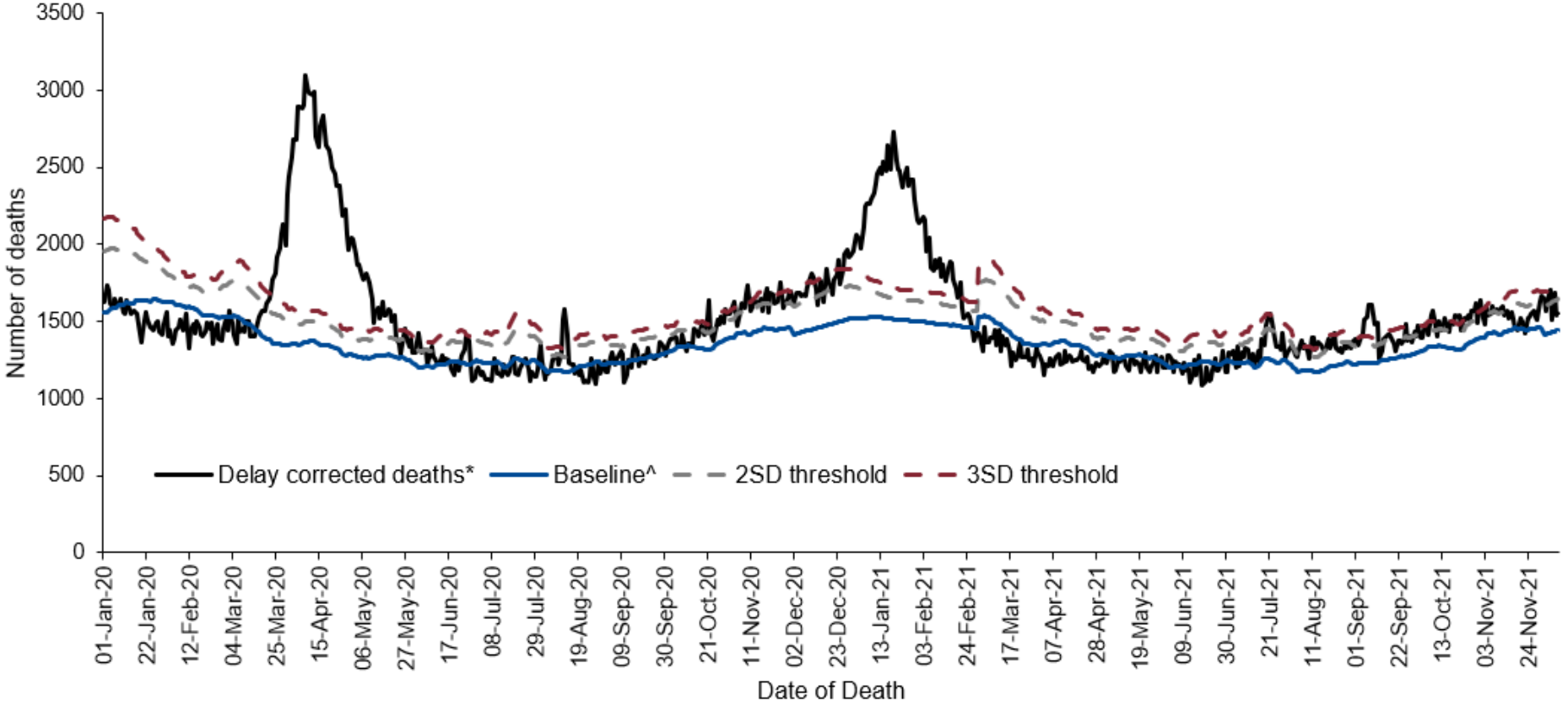
Weeks in which at least 2 days exceeded the 3SD threshold are shown in Table 7 and the daily difference from the baseline by age and region is given in Figure 56.

Note that as these data are 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 48 overall or by age. Excess all-cause mortality was observed in the West Midlands in week 48. Week 36 2021 included a heatwave period of three days with high temperatures (mean Central England Temperature >20c) which may have contributed to the excess seen in this week. The excess mortality noted in week 33 2020 and week 29 2021 coincide with heat waves (Figure 57, 58 and Table 7).

Figure 57: Daily excess all-cause deaths in all ages, England, 1 January 2020 to 8 December 2021



^Baseline calculation:

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

December 2020 to February 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 7: Excess all-cause deaths by (a) age group and (b) UKHSA centres, England

(a)

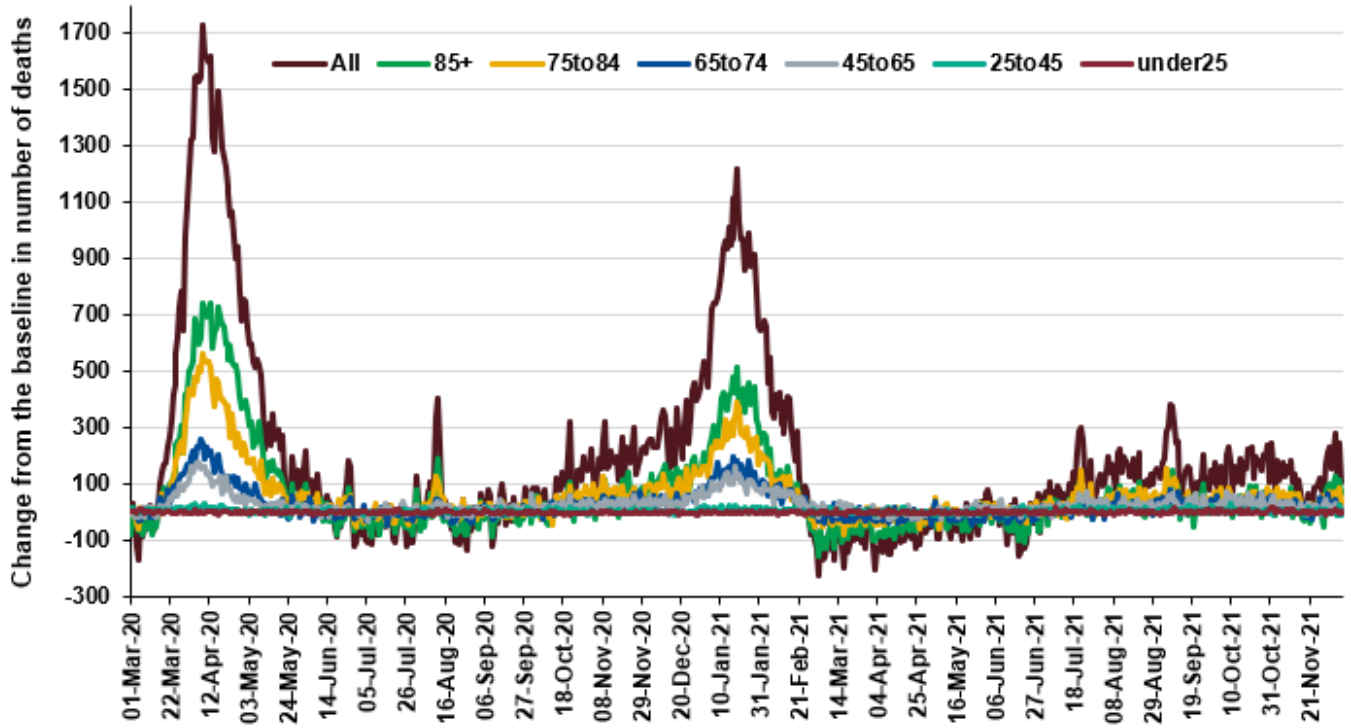
Age Group	Excess detected in week 48 2021?	Weeks in excess from week 10 to 53 2020	Weeks in excess from week 01 to 48 2021
All	x	13 to 21, 33, 43, 45, 50, 52 to 53	01 to 07, 31 to 32, 35 to 36, 40 to 43
under 25	x	None	None
25 to 44	x	14 to 16	37, 39
45 to 64	x	12 to 19, 49 to 50, 52 to 53	01 to 08, 29 to 30, 36, 38, 40 to 43
65 to 74	x	13 to 19, 46, 48, 52 to 53	01 to 07, 36, 43
75 to 84	x	13 to 21, 33, 45, 49, 52 to 53	01 to 07, 32, 36, 40
85+	x	13 to 21, 33, 53	01 to 07, 36

(b)

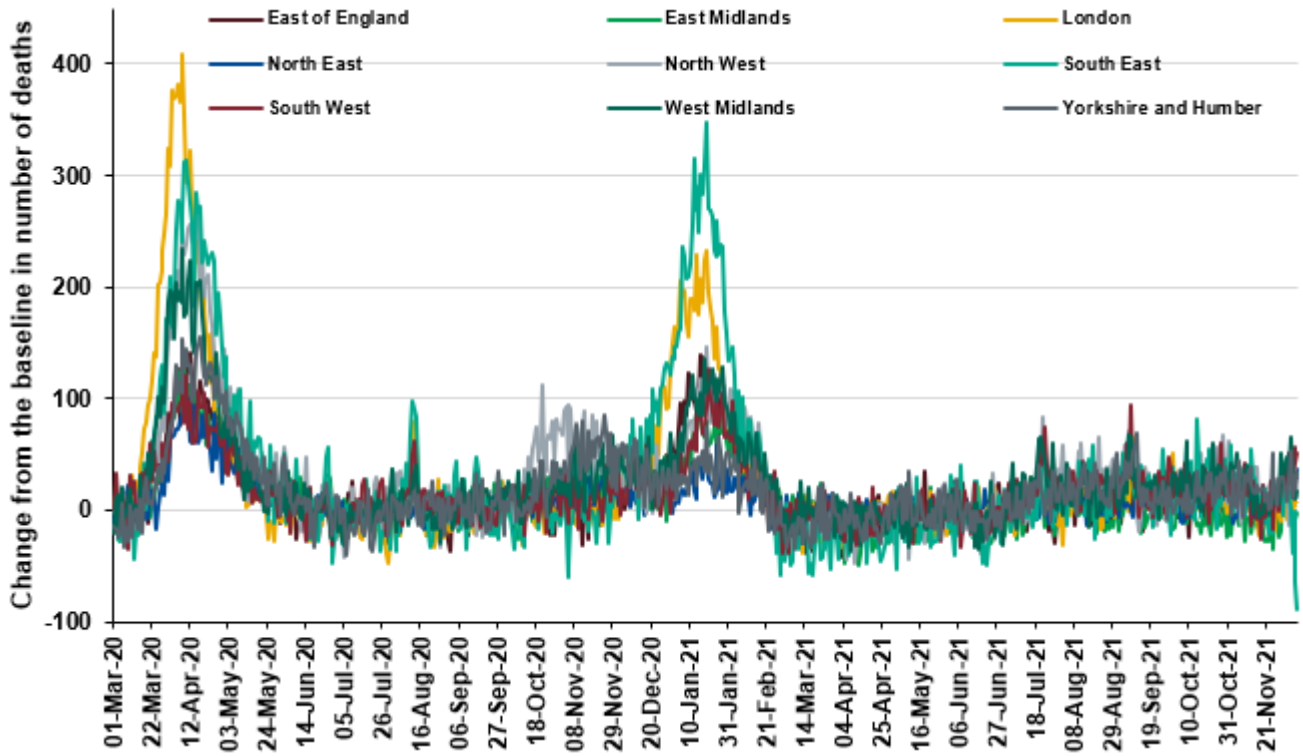
UKHSA Centres	Excess detected in week 48 2021?	Weeks in excess from week 10 to 53 2020	Weeks in excess from week 01 to 48 2021
East of England	x	14 to 19, 52 to 53	01 to 07
East Midlands	x	13 to 19, 48	01 to 07
London	x	12 to 19, 33, 52 to 53	01 to 06, 36
North East	x	14 to 21	02 to 04
North West	x	13 to 19, 33, 42 to 47	01 to 07, 32, 36, 43
South East	x	13 to 21, 33, 50 to 53	01 to 07, 36
South West	x	13 to 19, 33	02 to 07, 29, 36
West Midlands	✓	13 to 20, 45, 48	01 to 07, 29, 36, 40, 48
Yorkshire and Humber	x	14 to 21, 23, 43 to 50	02 to 04, 35 to 36

Figure 58: Daily excess all-cause deaths by (a) age group and (b) UKHSA centres, England, 1 March 2020 to 8 December 2021

(a)



(b)



Microbiological surveillance

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.

Since week 40 2021, the UKHSA Respiratory Virus Unit has genetically characterised 108 influenza A(H3N2) viruses, of which 13 were detected in weeks 34-39, after the lifting of legal restrictions on social contact in England on July 19 2021 and prior to the official start of the influenza season in week 40, and 92 were known to be collected in weeks 40-47. Of the characterised influenza A(H3N2) viruses where the age of the individual sampled is known, 68%, are from individuals in age groups that would not normally be eligible for influenza vaccination.

Sequencing of the haemagglutinin (HA) gene shows that these A(H3N2) viruses belong in genetic subclade 3C.2a1b, within a cluster designated 3C.2a1b.2a.2. The Northern Hemisphere 2021/22 influenza A(H3N2) vaccine strain (an A/Cambodia/e0826360/2020-like virus) also belongs in genetic subclade 3C.2a1b, within the 2a.1 genetic group.

Four influenza B viruses, detected in weeks 37,40 and 46 2021, have been genetically characterised to date and belong in genetic clade 1A.3 of the B/Victoria lineage, characterised by deletion of three amino acids in the haemagglutinin (HA), in a subgroup designated 1A.3a.2. The N. Hemisphere 2021/22 B/Victoria-lineage quadrivalent and trivalent vaccine component virus (a B/Washington/02/2019-like virus) belongs in genetic clade 1A.3.

Two influenza A(H1N1)pdm09 influenza virus have been characterised to date this season, one collected in week 40 from a returning traveller from West Africa and belonging in genetic subgroup 6B.1A.5a, within a cluster designated 6B.1A.5a.1, and the other in week 45 and also belonging in genetic subgroup 6B.1A.5a, within a cluster designated 6B.1A.5a.2. The Northern Hemisphere 2021/22 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 detection of circulating A(H3N2) and influenza B viruses is in accordance with predominant detections internationally over the period of August and September 2021, and from week 40 to date.

The Respiratory Virus Unit has confirmed by genome sequencing the detection of live attenuated influenza vaccine (LAIV) viruses in 26 influenza A and/or influenza B positive samples collected since week 37, from children aged 2 to ≤16 years of age.

Antiviral susceptibility

Influenza positive samples are screened for mutations in the virus neuraminidase and 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.

The NA genes of 97 A(H3N2), 2 A(H1N1)pdm09 and 2 B/Victoria-lineage viruses were sequenced, and no viruses with known markers of resistance to neuraminidase inhibitors were detected. The PA gene of 88 A(H3N2), 2 A(H1N1)pdm09 and 2 B/Victoria-lineage viruses were also sequenced, and no viruses with known markers of resistance to baloxavir marboxil were detected.

Table 8: Antiviral susceptibility of influenza positive samples tested at UKHSA-RVU

(Sub)type	Neuraminidase Inhibitors		Baloxavir	
	Susceptible	Resistant	Susceptible	Resistant
A(H3N2)	97	0	88	0
A(H1N1)pdm09	2	0	2	0
B/Victoria-lineage	2	0	2	0

SARS-CoV-2 variants

UKHSA conducts surveillance of SARS-CoV-2 variants. Further information including an overview of variants, information on new variants and detailed surveillance of particular variants of concern can be found on GOV.UK and in the latest technical briefing.

Antimicrobial susceptibility

Table 9 shows in the 12 weeks up to week 49 2021, the proportion of all lower respiratory tract isolates of Streptococcus pneumoniae, Haemophilus influenzae, Staphylococcus aureus, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community-acquired pneumonia (CAP) and the choice of antibiotics reflects the British Thoracic Society empirical guidelines for management of CAP in adults.

Table 9: Antimicrobial susceptibility surveillance in lower respiratory tract

Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
S. pneumoniae	Penicillin	1,758	86
	Macrolides	1,967	82
	Tetracycline	1,960	84
H. influenzae	Amoxicillin/ampicillin	9,094	56
	Co-amoxiclav	10,092	60
	Macrolides	2,666	6
	Tetracycline	10,356	98
S. aureus	Methicillin	4,850	93
	Macrolides	5,508	70
MRSA	Clindamycin	261	49
	Tetracycline	305	72
MSSA	Clindamycin	3,603	77
	Tetracycline	4,210	93

* Macrolides = erythromycin, azithromycin and clarithromycin

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 to 2021 influenza season when the SGSS 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 05 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

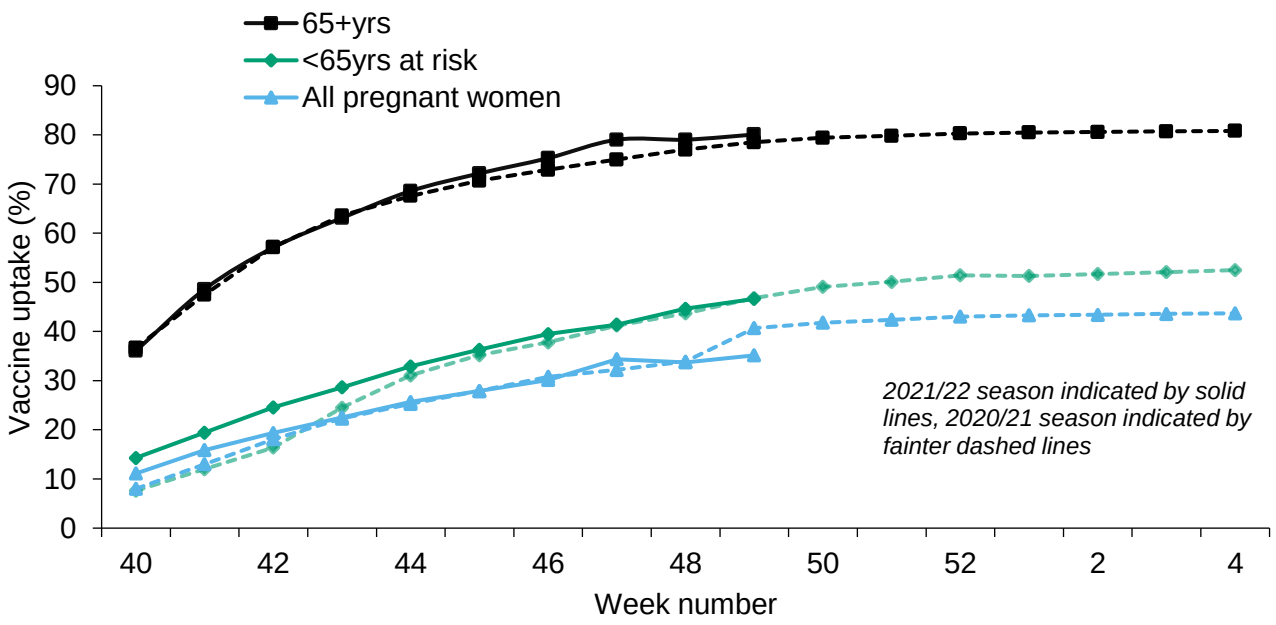
Influenza vaccine uptake in GP patients

Up to week 49 2021 in 94.6 % of GP practices reporting weekly to ImmForm for the main collection, the provisional proportion of people in England who had received the 2021 to 2022 influenza vaccine in targeted groups was as follows:

- 46.6% in under 65 years in a clinical risk group
- 35.1% in all pregnant women
- 80.1% in all 65-year olds and over
- 82.7% in 65-year olds and over and in a clinical risk group
- 41.8% in those aged 50 to 64 who are NOT in a clinical risk group

Weekly vaccine coverage data are provisional. The sample of GP practices included in the data may change from week to week, resulting in changes to reported cumulative uptake.

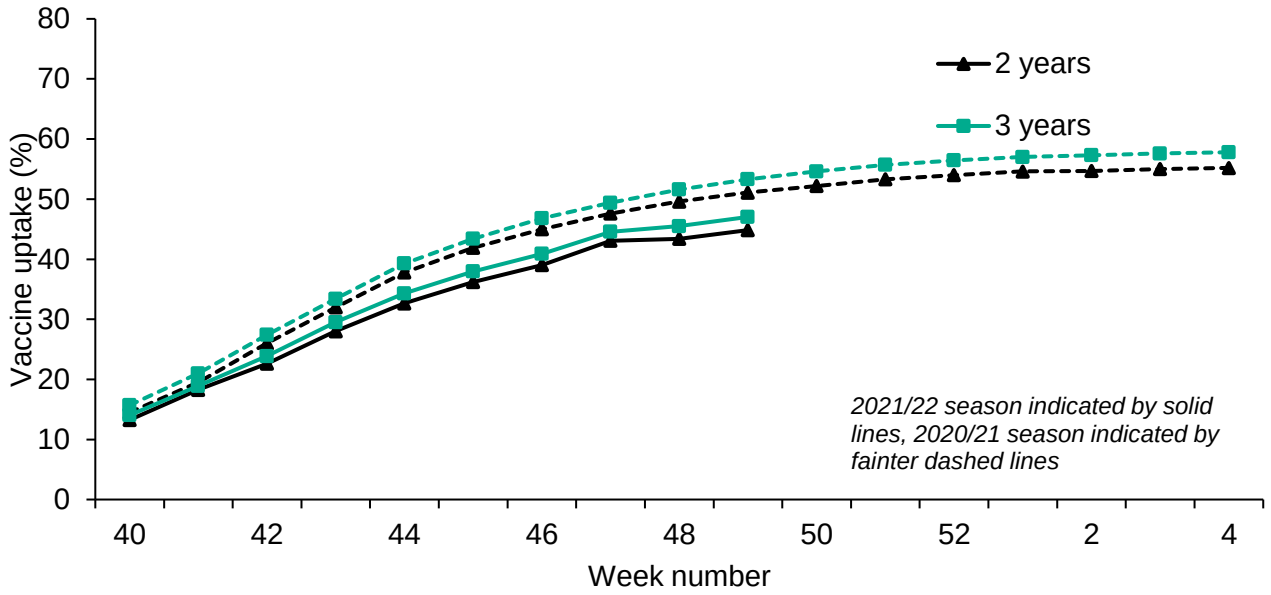
Figure 59: Cumulative weekly influenza vaccine uptake by target group in England



In 2021 to 2022, all 2 and 3-year olds continue to be eligible for influenza vaccination through their GPs. Up to week 49 2021, in 95.2% of GP practices reporting weekly to ImmForm for the childhood collection, the provisional proportion of children in England who had received the 2021 to 2022 influenza vaccine in targeted groups was as follows:

- 44.8% in all 2-year olds
- 47.0% in all 3-year olds

Figure 60: 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 49 2021 (week ending 12 December 2021) was extracted from the National Immunisation Management Service (NIMS). The data presented this week is the provisional proportion of living people in England who had received at least one dose, two doses and three doses of a COVID-19 vaccination by age group. The overall vaccine uptake in the population for those with at least dose 1 was 67.9%, 62.2% for dose 2 and 31.4% for dose 3. The breakdown by sex showed vaccine uptake in males was 65.5% and 70.2% in females for dose 1. For dose 2 vaccine uptake by sex was 59.7% in males and 64.8% in females. For dose 3 vaccine uptake by sex was 28.5% in males and 34.6% in females. The vaccine uptake rate in adults aged 18 and over was 80.7% (40,428,895/50,076,652) for dose 1; 77.1% (38,627,544/50,076,652) for dose 2 and 39.3% (19,701,918/ 50,076,652) for dose 3.

Table 10: Provisional cumulative COVID-19 vaccine uptake by age in England

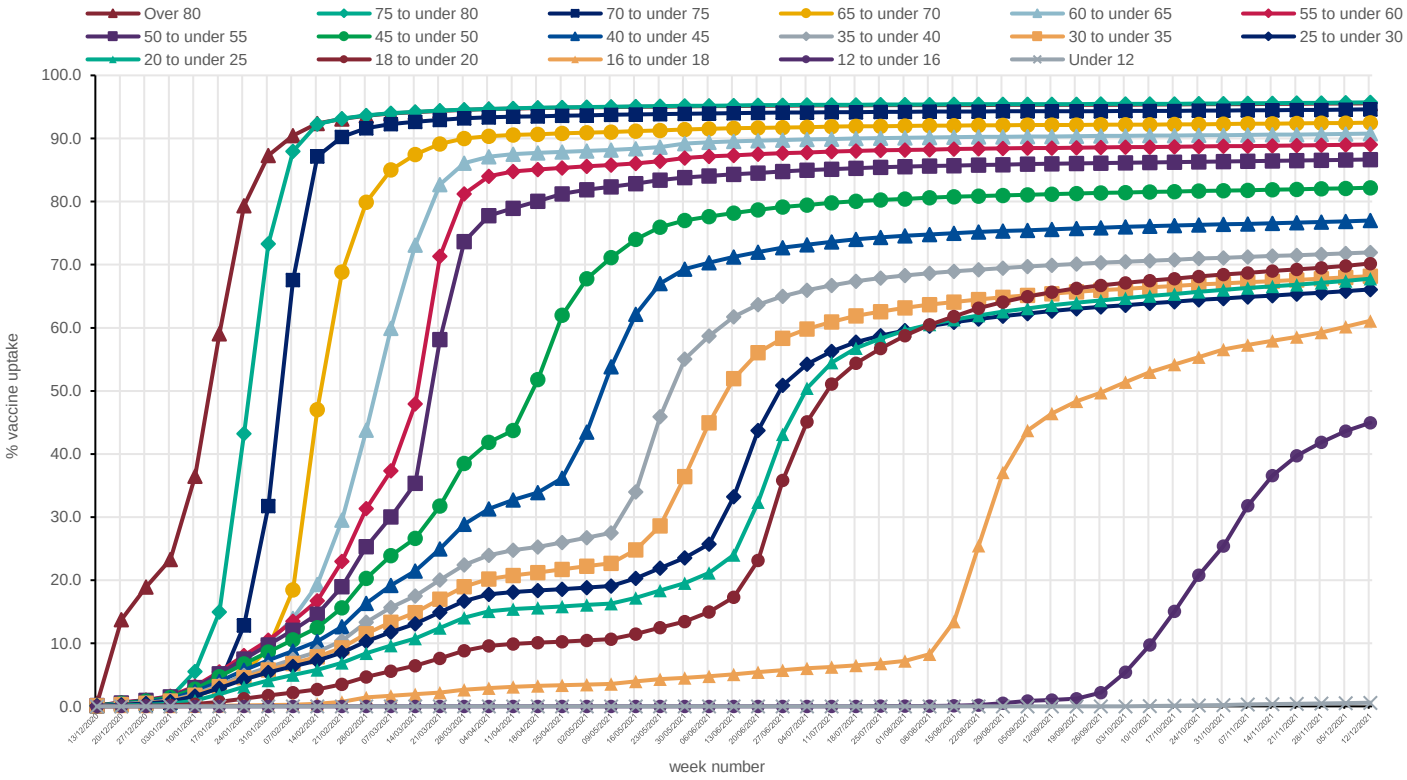
NATIONAL	People in NIMS cohort	Vaccinated with at least 1 dose		Vaccinated with at least 2 doses		Vaccinated with at least 3 doses	
		Number vaccinated	% vaccine uptake	Number vaccinated	% vaccine uptake	Number vaccinated	% vaccine uptake
Over 80	2,810,937	2,686,133	95.6	2,664,728	94.8	2,417,771	86.0
75 to under 80	2,152,469	2,060,428	95.7	2,045,065	95.0	1,902,768	88.4
70 to under 75	2,858,805	2,705,042	94.6	2,681,932	93.8	2,463,950	86.2
65 to under 70	2,918,117	2,699,831	92.5	2,667,360	91.4	2,312,344	79.2
60 to under 65	3,506,658	3,183,119	90.8	3,129,701	89.3	2,395,216	68.3
55 to under 60	4,118,936	3,667,689	89.0	3,593,353	87.2	2,387,322	58.0
50 to under 55	4,244,867	3,679,286	86.7	3,587,248	84.5	2,109,156	49.7
45 to under 50	3,992,459	3,282,024	82.2	3,168,419	79.4	1,201,911	30.1
40 to under 45	4,206,248	3,238,895	77.0	3,088,277	73.4	937,667	22.3
35 to under 40	4,581,767	3,296,480	71.9	3,092,713	67.5	555,946	12.1
30 to under 35	4,822,845	3,288,439	68.2	3,022,818	62.7	440,304	9.1
25 to under 30	4,515,129	2,983,619	66.1	2,692,311	59.6	325,766	7.2
20 to under 25	3,973,325	2,693,343	67.8	2,360,600	59.4	210,937	5.3
18 to under 20	1,374,090	964,567	70.2	833,019	60.6	40,860	3.0
16 to under 18	1,370,808	837,733	61.1	387,656	28.3	16,334	1.2
12 to under 16	2,881,170	1,295,051	44.9	25,034	0.9	149	0.0
Under 12	8,395,689	49,106	0.6	214	0.0	1	0.0
Total*	**62,724,319**	**42,611,175**	**67.9**	**39,040,796**	**62.2**	**19,718,497**	**31.4**

*Caution should be exercised when summing the regional or age figures as the sum of the regions will not equal the England total. This is due to individuals vaccinated in England who have a registered address in Scotland or Wales or where their address is unknown. There were also vaccinations where the individual had an unknown region and age group.

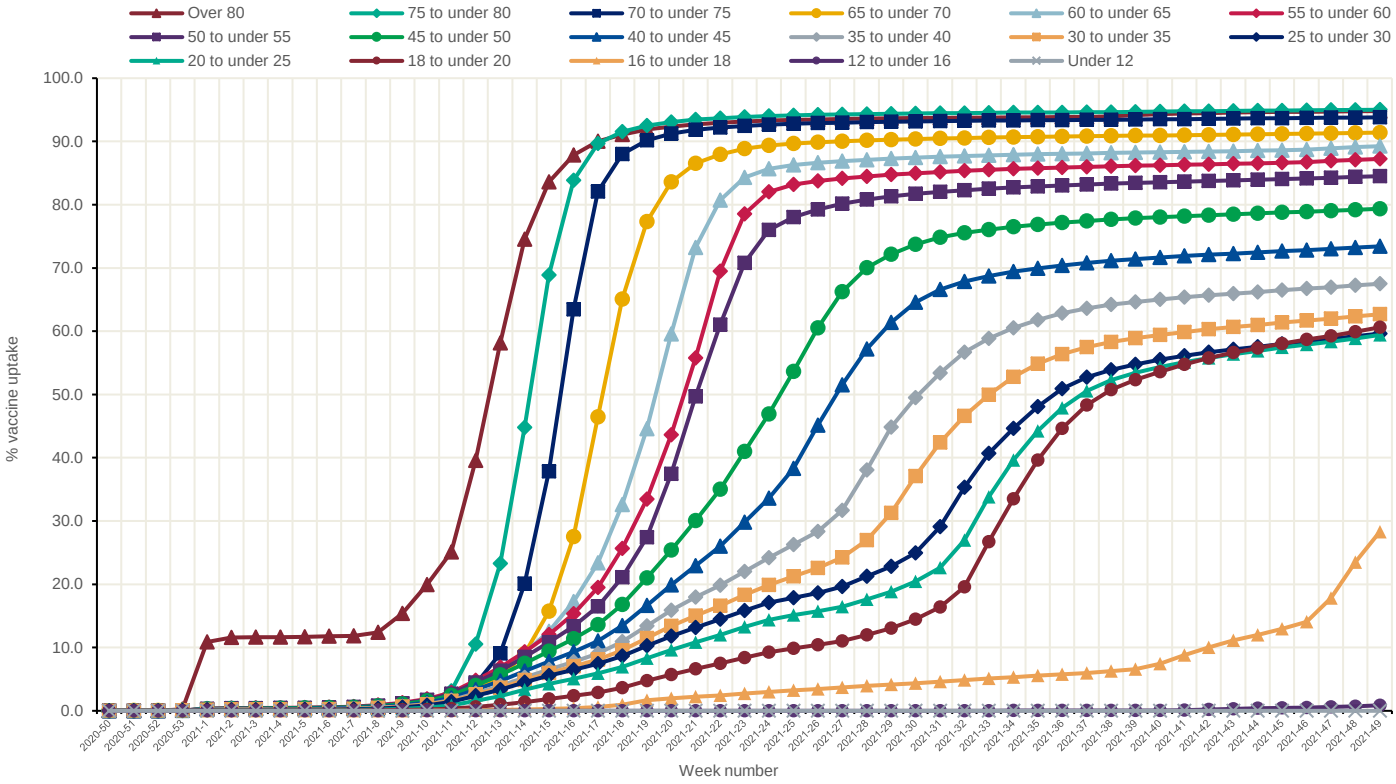
Data are provisional and subject to change following further validation checks. Any changes to historic figures will be reflected in the most recent publication. Please note that numbers published by UKHSA are for public health surveillance purposes only.

Figure 61: Cumulative weekly COVID-19 vaccine uptake by age in England for (a) Dose 1, (b) Dose 2 and (c) Dose 3

(a)



(b)


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
Under 12
% vaccine uptake
Week number

(c)

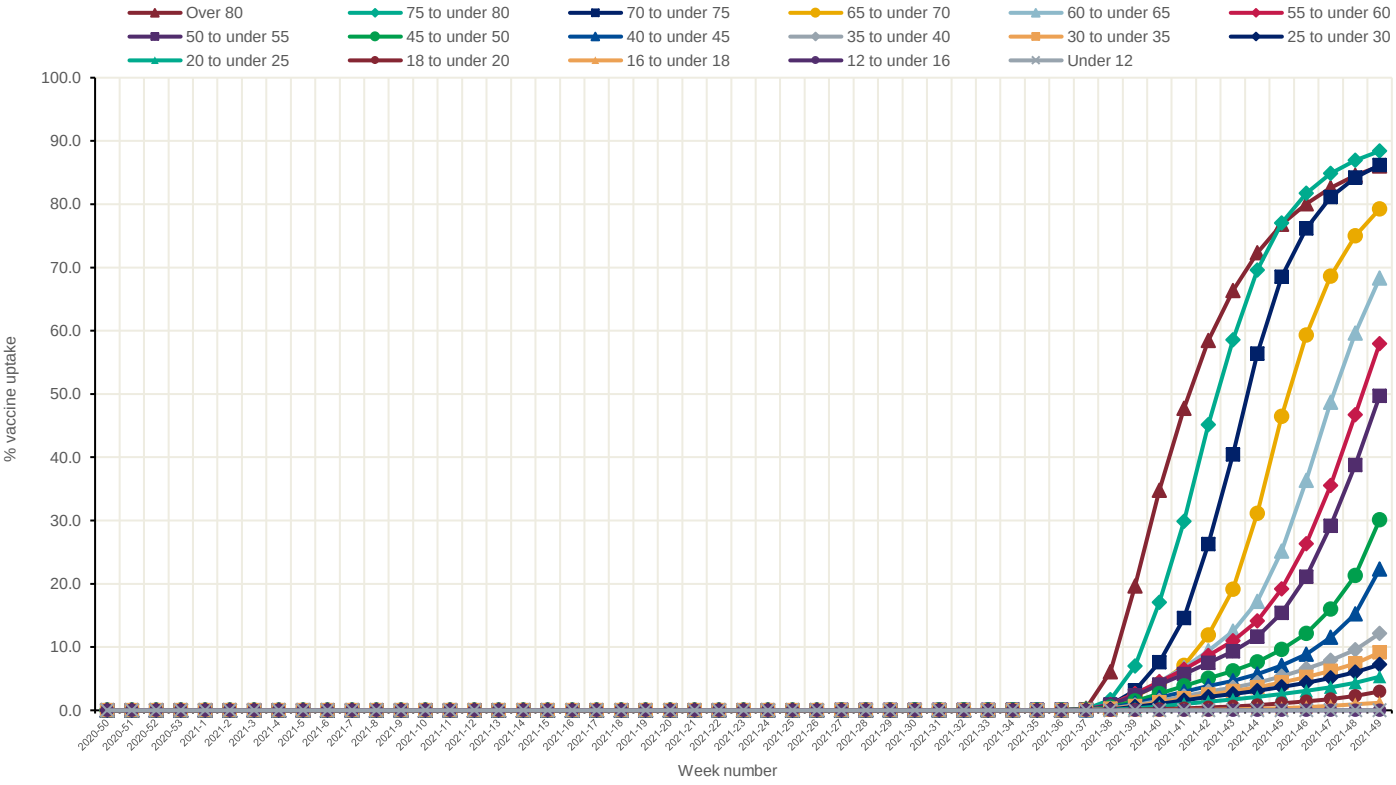

Over 80
75 to under 80
70 to under 75
65 to under 70
60 to under 65
55 to under 60
50 to under 55
45 to under 50
40 to under 45
35 to under 40
30 to under 35
25 to under 30
20 to under 25
18 to under 20
16 to under 18
12 to under 16
Under 12
% vaccine uptake
Week number

Figure 62: Age-Sex pyramid for COVID-19 vaccine uptake by age in England for Dose 1

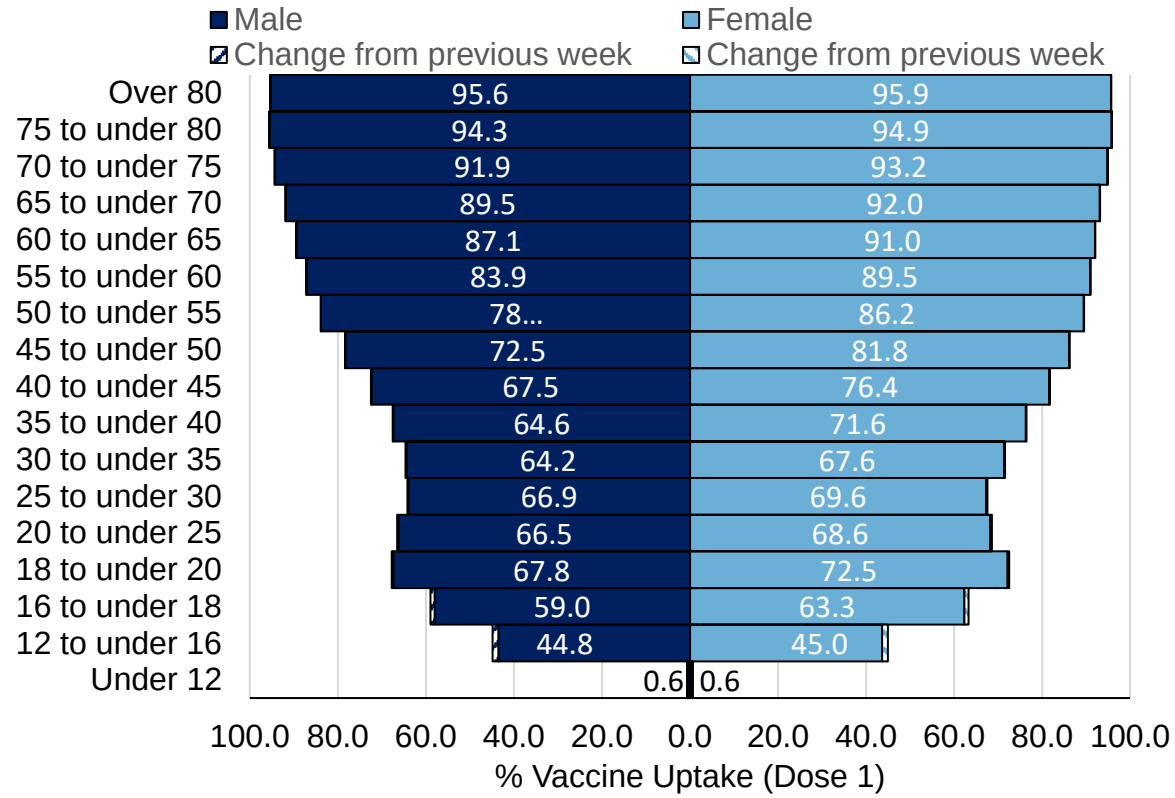


Figure 63: Age-Sex pyramid for COVID-19 vaccine uptake by age in England for Dose 2

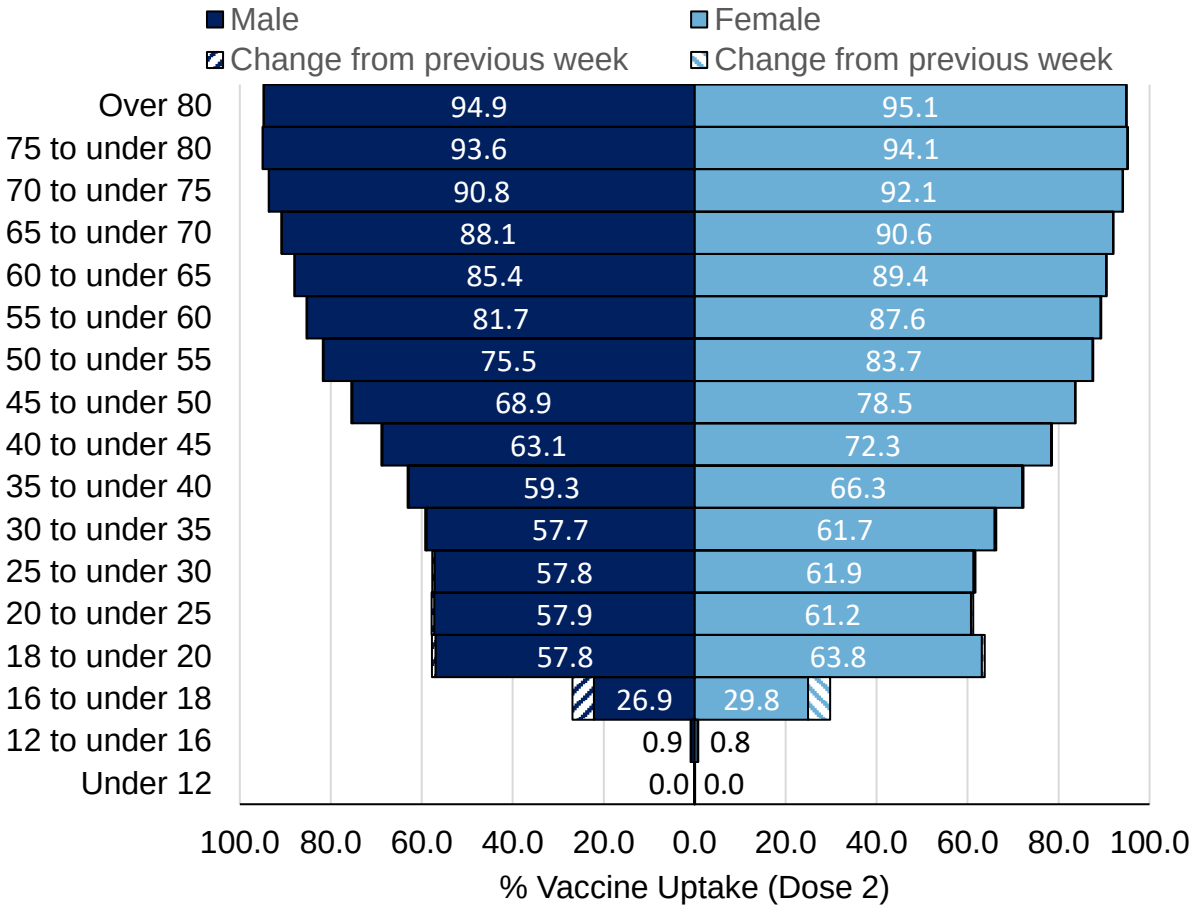
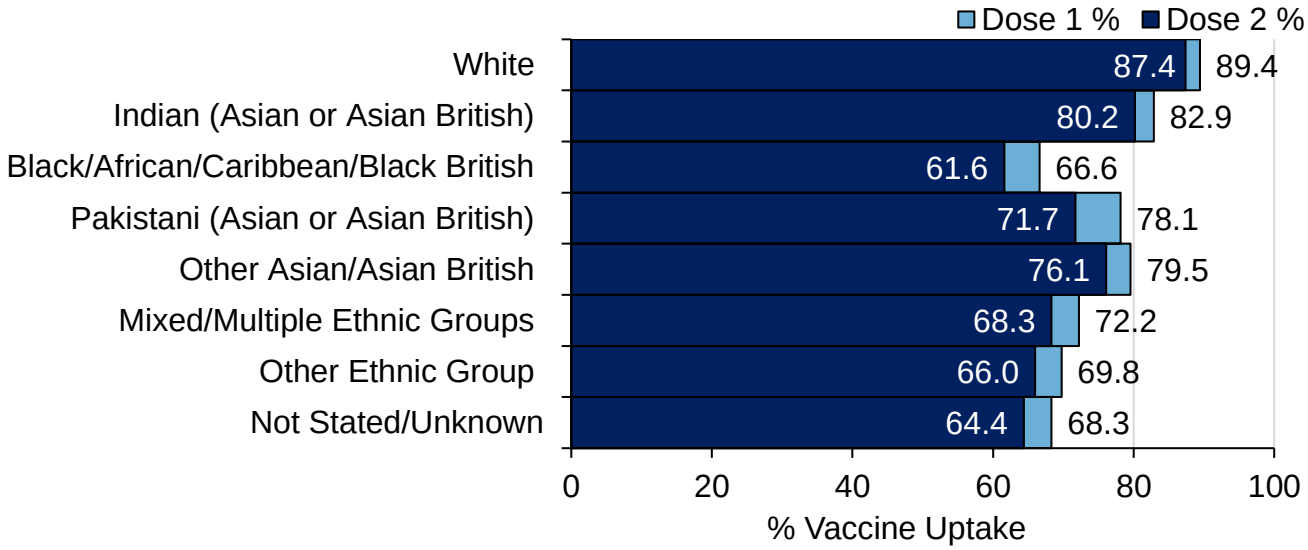


Figure 64: Cumulative weekly COVID-19 vaccine uptake by ethnicity in those living and resident in England, aged 30 and over.



For a regional breakdown of the ethnicity data, please see the backing tables that accompany this report.

From the 6 January 2021 (week 1 2021), the JCVI advises initially prioritising delivery of the first vaccine dose to maximise the public health impact in the short term and reduce the number of preventable deaths from COVID-19. See statement.

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

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

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.

International update

Global COVID-19 update

Globally, up to 14 December 2021, a total of 270,006,870 cases of COVID-19 infection have been reported worldwide, including 5,311,993 COVID-19 related deaths.

For further information on the global COVID-19 situation please see the WHO COVID-19 situation reports.

Figure 65: Global map of cumulative COVID-19 cases

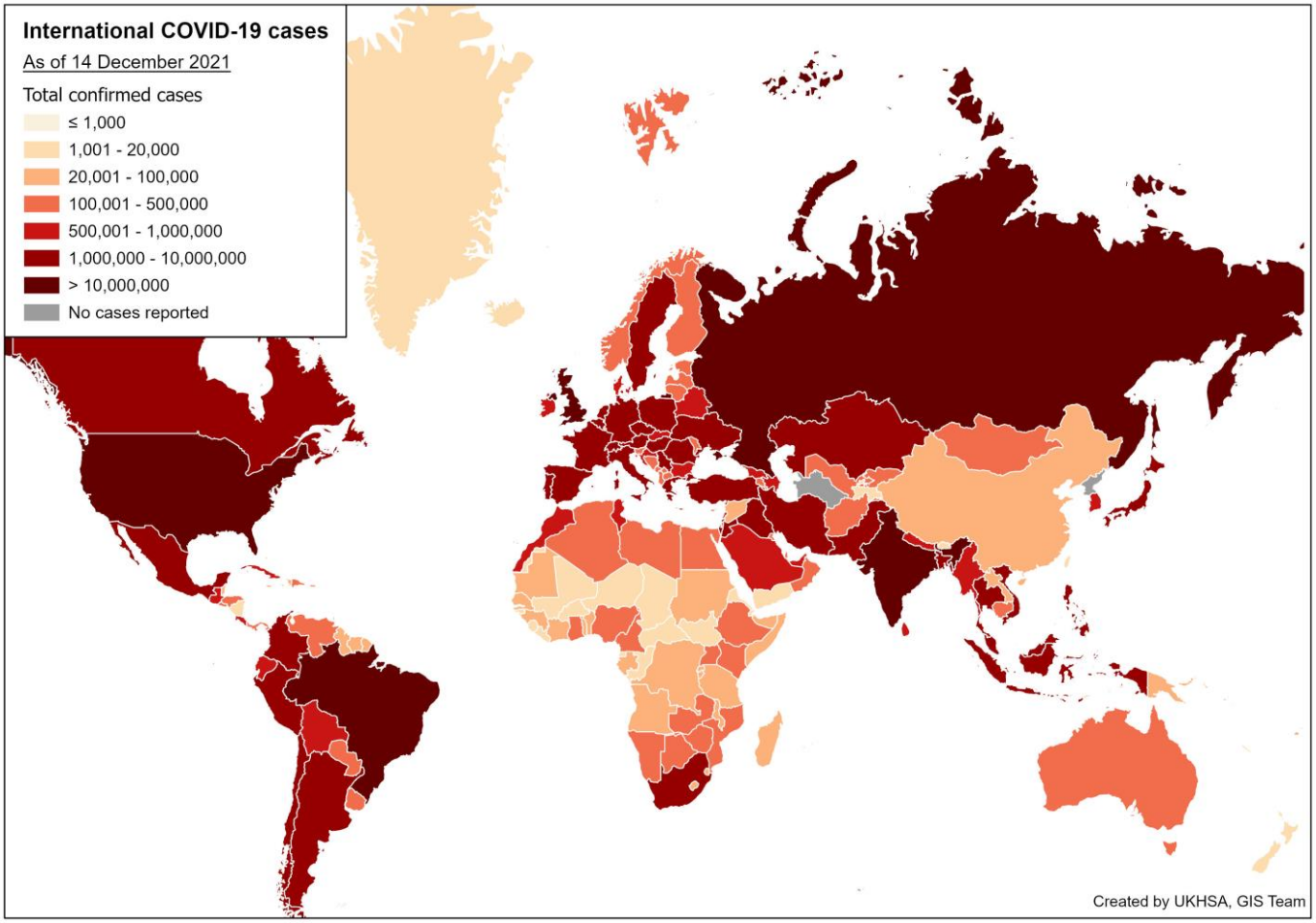
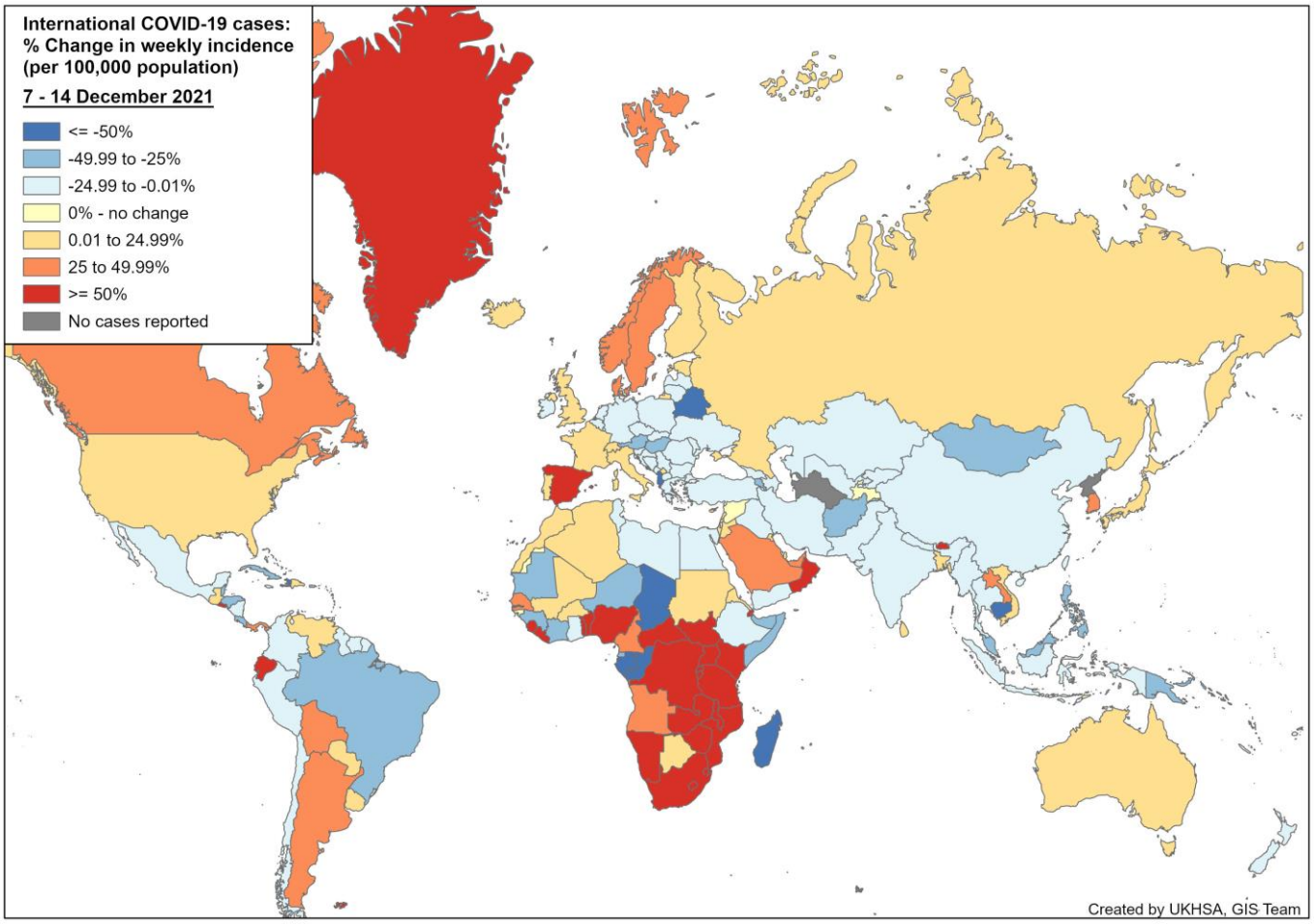


Figure 66: Global map of percentage change in weekly COVID-19 case incidence rate per 100,000 population compared to the previous week



Global influenza update

Updated on 6 December 2021 (based on data up to 21 November 2021) (WHO website).

In the temperate zones of the northern hemisphere, influenza activity remained at interseasonal levels. Both influenza A and B were detected. In the temperate zones of the southern hemisphere, influenza activity remained low in Oceania and temperate South America but was increased in South Africa.

In the Caribbean and Central American countries, sporadic influenza A(H3N2) and B virus detections were reported in some countries. In the tropical countries of South America, influenza A(H3N2) was detected in Brazil.

In Western Africa, influenza A viruses, and particularly (H1N1)pdm09 viruses, remain dominant with influenza B detections reported only in Burkina Faso. Influenza detections in several countries decreased (Senegal and Togo) or were sporadic (Côte D'Ivoire and Nigeria). Burkina Faso and Ghana reported similar numbers of detections to previous weeks, while Mauritania reported a relatively large number of A(H1N1)pdm09 viruses, having not reported any detections for several months.

In Northern Africa, no influenza detections were reported.

In Eastern Africa, influenza A and B viruses were detected in similar proportions. Madagascar reported only influenza B (Victoria lineage where determined). Ethiopia and Kenya reported both influenza A(H3N2) and influenza B detections. An influenza A (H3N2) epidemic is ongoing in Mayotte, where detections and influenza activity indicators remain at similar levels to the previous reporting period. In Réunion there has been an increase in influenza activity indicators and in detections of influenza A(H3N2) in recent weeks, which might indicate a pre-epidemic period which is delayed relative to previous years. Zambia reported influenza A (H1N1)pdm09 viruses.

In South Africa, the number of influenza virus detections continued to increase. Influenza A viruses predominate – especially (H1N1)pdm09 viruses – with some influenza B (Victoria lineage where determined). The detection rate for influenza in ILI surveillance primary health clinics decreased from high to below the seasonal threshold, while the detection rate in pneumonia surveillance remained low.

In Southern Asia, influenza detections were reported in Bangladesh, India, Iran and the Maldives. Influenza A(H3N2) predominated in the subregion, with some detections of influenza A(H1N1)pdm09 and influenza B. Bangladesh reported influenza A(H1N1)pdm09 and some detections of influenza A(H3N2). India reported decreasing detections of predominantly influenza B/Victoria and some detections of influenza A(H3N2). Iran and the Maldives reported predominantly influenza A(H3N2) and some detections of influenza

B. The Maldives also reported influenza A(H1N1)pdm09 detections. No influenza detections were reported in South East Asia

In the countries of North America, influenza activity indicators and detections were at low levels with detections of influenza A and B viruses. In Canada, influenza-like illness (ILI) activity remained below expected levels. In the United States of America (USA), ILI activity increased slightly but remained similar to levels seen in previous years at this time of year and below the national threshold. Influenza detections increased but remained low, with influenza A(H3N2) predominating. The percentage of deaths attributed to pneumonia, influenza or COVID-19 remained above the epidemic threshold for pneumonia and influenza mortality established from historical data.

In Europe, influenza activity remained low overall though detections appeared to be at levels similar to pre-covid-19-pandemic seasons in some countries. Detections of predominately influenza A(H3N2) viruses were reported across the region.

In Central Asia, influenza A(H3N2) detections were reported in Kyrgyzstan and Uzbekistan)and influenza A (not subtyped) were reported in Tajikistan.

In Oceania, influenza is being detected at very low levels, even below the already low detection rate in 2020, despite ongoing testing.

In Western Asia, the number of influenza detections reported in Iraq, Israel, Lebanon, Oman and the United Arab Emirates has increased in recent weeks. Iraq, Israel, Jordan and Lebanon reported influenza A(H3N2) virus detections. Oman and the United Arab Emirates reported mainly influenza A(H3N2) virus detections followed by A(H1N1)pdm09 and influenza B/Victoria lineage detections. Similarly, Qatar reported mainly influenza A and a few influenza B viruses, with the majority of the subtyped influenza A viruses being identified as influenza A(H3N2). Saudi Arabia reported one influenza A virus detection.

In East Asia, influenza illness indicators remained low. Influenza B/Victoria lineage detections increased in China, with a particularly steep increase in northern provinces. One influenza A(H3N2) detection was reported from China. The number of detections remains low compared to previous seasons. Hong Kong SAR, China reported very few detections of influenza A(H3N2) and influenza B. In Mongolia, the proportion of hospitalizations and deaths due to pneumonia remained high but decreased relative to previous weeks.

The WHO GISRS laboratories tested more than 335 864 specimens during that time period. 3844 were positive for influenza viruses, of which 1658 (43.1%) were typed as influenza A and 2186 (56.9%) as influenza B. Of the sub-typed influenza A viruses, 109 (10.7%) were influenza A(H1N1)pdm09 and 909 (89.3%) were influenza A(H3N2). Of the characterized B viruses, 1984 (100%) to the B-Victoria lineage.

Influenza in Europe

Updated on 15 December 2021 (Joint ECDC-WHO Europe Influenza weekly update)

Up to week 48 of 2021, influenza activity has been increasing with different levels of activity across Europe, with a dominant circulation of mostly influenza A(H3) viruses.

For week 48 2021, of 1,178 sentinel specimens tested for influenza viruses, 56 were positive. So far in the 2021 to 2022 influenza season, of 12,121 sentinel specimens tested for influenza viruses, 218 were positive.

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.

Other respiratory viruses

Avian influenza

On 29 October 2021, two new cases of human infection with avian influenza A(H5N6) virus, with onset dates of 29 August and 20 October 2021, were reported from the National Health Commission of the People's Republic of China to WHO in the Western Pacific Region. To date, a total of 52 laboratory-confirmed cases of human infection with influenza A(H5N6) virus including 26 deaths have been reported to WHO in the Western Pacific Region since 2014. Prior to this, the last case was reported from China with an onset date of 3 October 2021.

Middle East respiratory syndrome coronavirus (MERS-CoV)

Latest update on 17 November 2021 (WHO website).

Up to 17 August 2021, a total of 5 cases of Middle East respiratory syndrome coronavirus, MERS-CoV, (three imported and 2 linked cases) have been confirmed in the UK through the on-going surveillance since September 2012.

On 2 February 2021, the National IHR Focal Point of the United Arab Emirates (UAE) notified WHO of one laboratory-confirmed case of MERS-CoV (WHO website).

Between 12 March and 31 July 2021, the National IHR Focal Point of Saudi Arabia reported four additional cases of Middle East Respiratory Syndrome Coronavirus (MERS-CoV) infection, including one associated death. (WHO website).

On 17 November 2021, the National IHR Focal Point of the United Arab Emirates (UAE) notified WHO of one laboratory-confirmed case of Middle East respiratory syndrome coronavirus (MERS-CoV) in UAE (WHO website).

From September 2012 until 18 November 2021, a total of 2,583 laboratory-confirmed cases of MERS-CoV and 888 associated deaths were reported globally to WHO under the International Health Regulations (IHR 2005).

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

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

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

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