



Public Health
England

Protecting and improving the nation's health

Weekly national Influenza and COVID-19 surveillance report

**Week 44 report (up to week 43 data)
29 October 2020**

Executive summary

This report summarises the information from the surveillance systems which are used to monitor Coronavirus Disease 2019 (COVID-19), influenza, and other seasonal respiratory viruses in England. References to COVID-19 represent the disease name and SARS-CoV-2 represent the virus name. The report is based on data from week 43 (between 19 and 25 October 2020) and for some indicators daily data up to 27 October 2020.

Several surveillance indicators suggest that COVID-19 activity at a national level has continued to increase further during week 43. There is currently limited testing for other respiratory viruses, however, laboratory indicators suggest that influenza activity is low and rhinovirus activity has decreased over the past five weeks.

Detections of COVID-19 cases in England continued to increase in week 43. Incidence and positivity rates remain highest in the North of England. By age group, cases rates were highest in the 20 to 29 year olds with decreases continuing to be noted in the 10 to 19 year olds. Positivity rates were highest in the 80+ year olds tested through both Pillar 1 (NHS and PHE testing) and in the 10 to 19 year olds tested through Pillar 2 (community testing).

Through Respiratory Datamart, there was one influenza positive sample (1 influenza A(H3)) detected in week 43. Rhinovirus activity remains high but has decreased.

The overall number of acute respiratory infection incidents reported to PHE Health Protection Teams have increased from 1125 in the previous week to 1312 in week 43 in England. In the majority of these incidents SARS-CoV-2 has been detected. Increases were seen in incidents reported in care home, workplace and other settings in week 43.

The majority of community and syndromic indicators decreased or remained stable during week 43. General practice (GP) influenza-like illness (ILI) consultations remained low in all UK schemes.

Through the UK GP swabbing scheme, SARS-CoV-2 positivity among patients contacting their GP with influenza like illness or lower respiratory tract infection symptoms increased from 12.2% in week 42 to 19.5% in week 43.

The overall COVID-19 confirmed hospital and ICU/HDU admission rates continued to increase further whilst the influenza confirmed hospital and ICU/HDU admission rates remained low.

Emergency department attendances for COVID-19 like diagnosis have increased further in week 43 whilst those for acute respiratory infections remained stable.

The number of COVID-19 confirmed deaths increased further. No overall excess all-cause mortality was observed in week 42 however excess all-cause mortality was noted in the North West for week 42.

Overall estimated national seroprevalence based on blood donor samples was 5.6% with the highest seroprevalence by region seen in London and by age group in young adults.

Influenza vaccine uptake is the highest it has ever been at this point in the season for those aged 65+ and in 2 and 3 year olds. For those in at-risk groups uptake is higher than last season and comparable to seasons before that and for pregnant women is slightly higher compared to last season.

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Laboratory surveillance

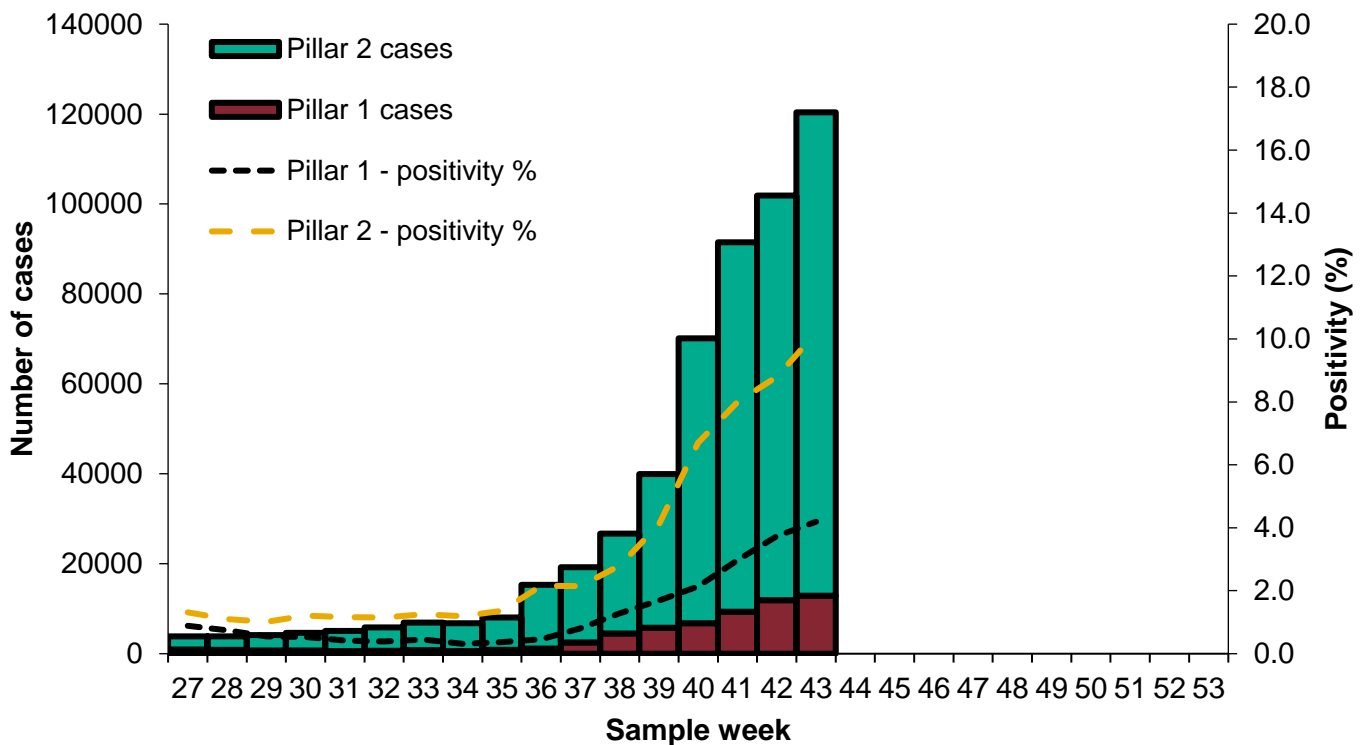
Confirmed COVID-19 cases (England)

As of 09:00 on 27 October 2020, a total of 777,774 have been confirmed positive for COVID-19 in England under Pillar 1 and 2.

Overall case numbers and positivity remained high in both Pillar 1 and 2, in week 43, with the majority of cases reported from Pillar 2. The highest case rates and positivity were seen in the 20 to 29 year olds in Pillar 1 and 2. A decline in case rates is noted in the 10 to 19 year olds. Cases rates and positivity continue to be highest in the North of England.

From the week 42 report onwards, case rates in Figures 3,4,7 and 9 have been calculated using mid-2019 ONS population estimates

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



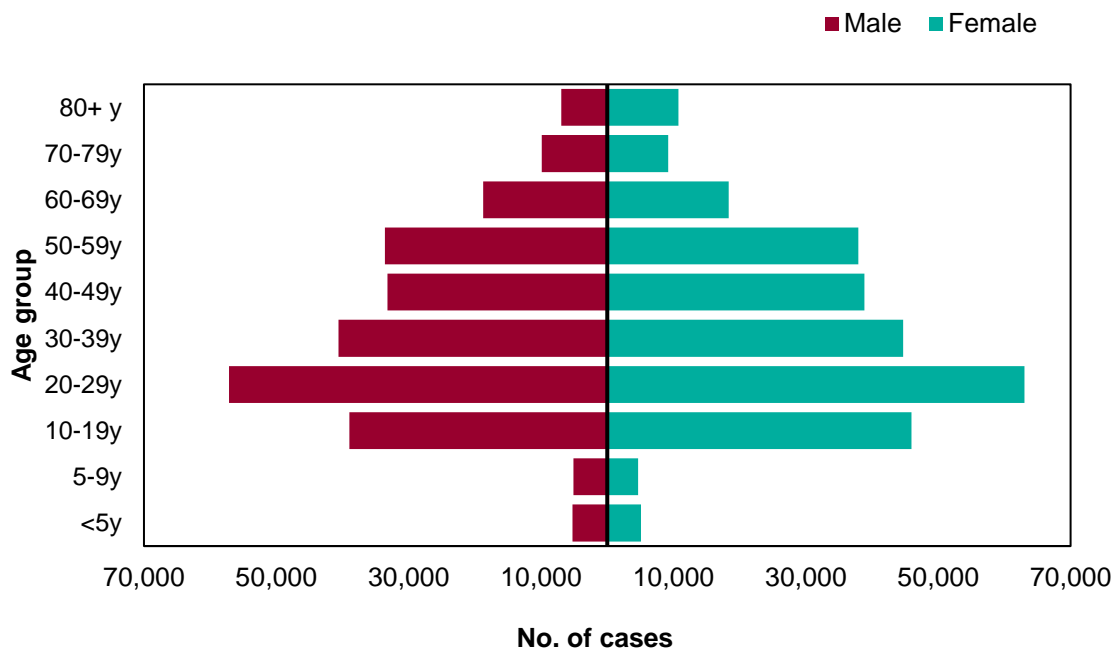
*The data are shown by the week the specimen was taken from the person being tested. This gives the most accurate analysis of this time progression, however, for the most recent week results for more samples are expected therefore this should be interpreted with caution.

*Positivity data was previously deduplicated across the course of the pandemic to prevent persistent infections being counted as new cases. Since week 40, positivity is calculated as the number of individuals testing positive during the week divided by the number of individuals tested during the week. This approach accounts for the increasing number of individuals who will have been tested multiple times as the pandemic progresses.

Age and sex

Figure 2: Age/sex pyramids for laboratory confirmed COVID-19 cases tested under Pillar 1 and 2 (a) cumulative number since week 27 (n=527,940), and (b) in weeks 42 and 43 (n=219,619)

(a)



(b)

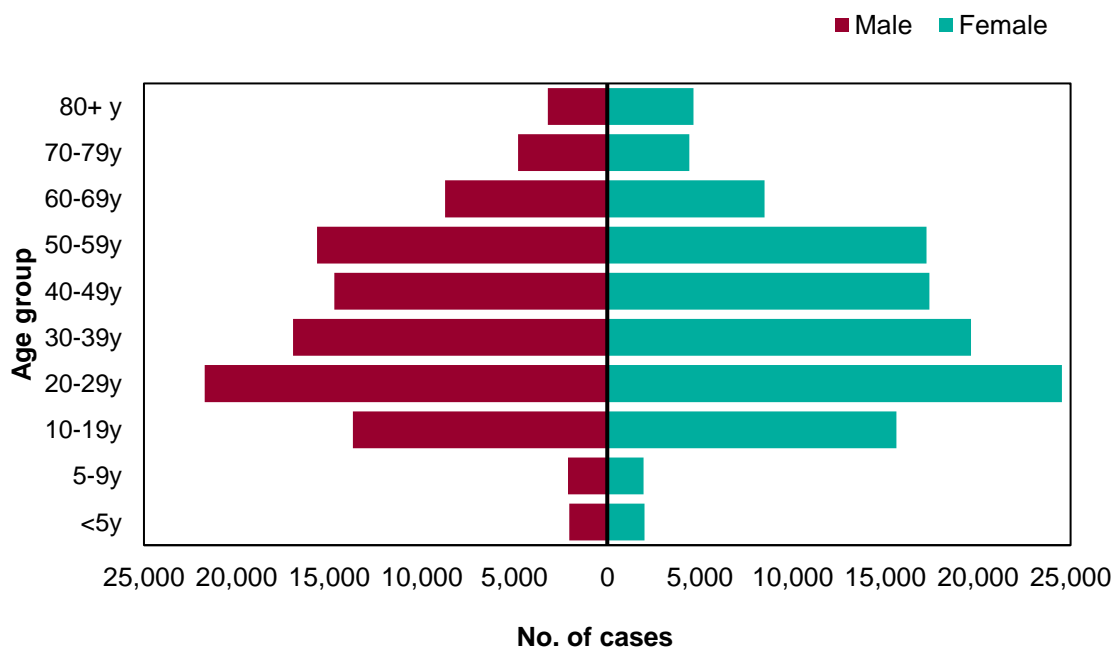


Figure 3: Weekly laboratory confirmed COVID-19 case rates per 100,000, tested under Pillar 1 and Pillar 2, by sex

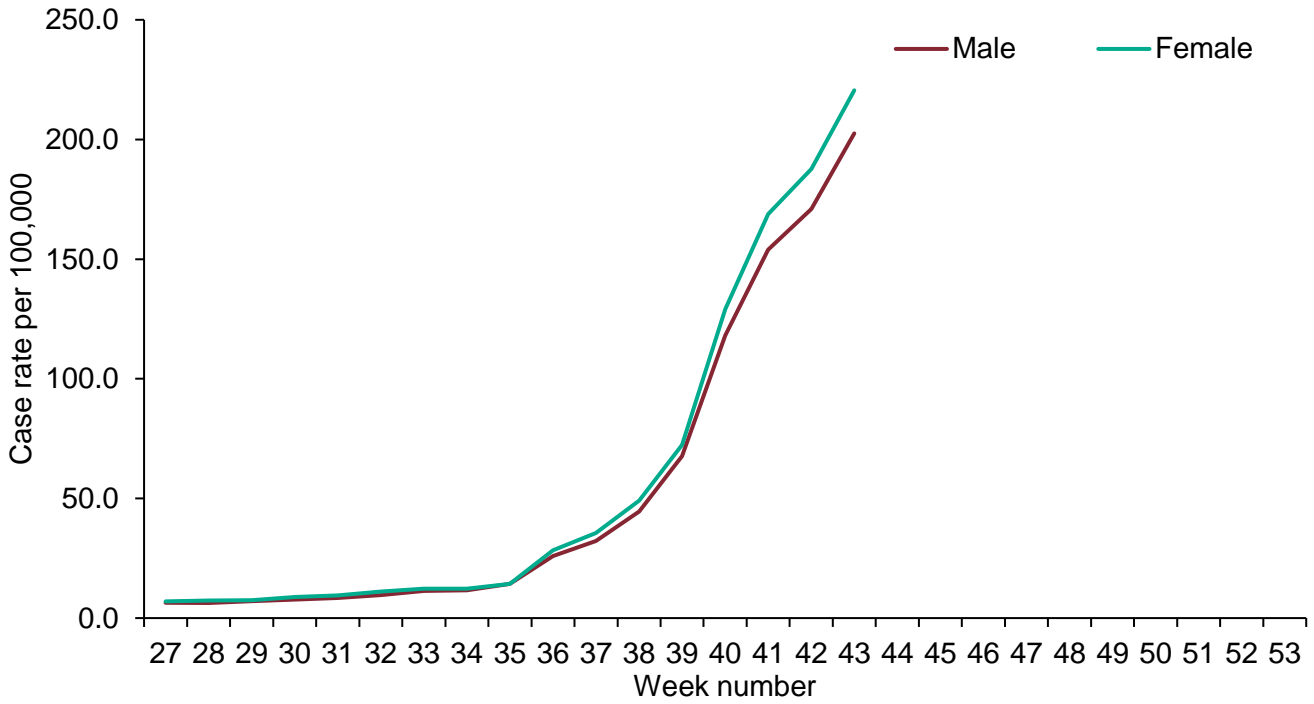


Figure 4: Weekly laboratory confirmed COVID-19 case rates per 100,000, tested under Pillar 1 and Pillar 2, by age group

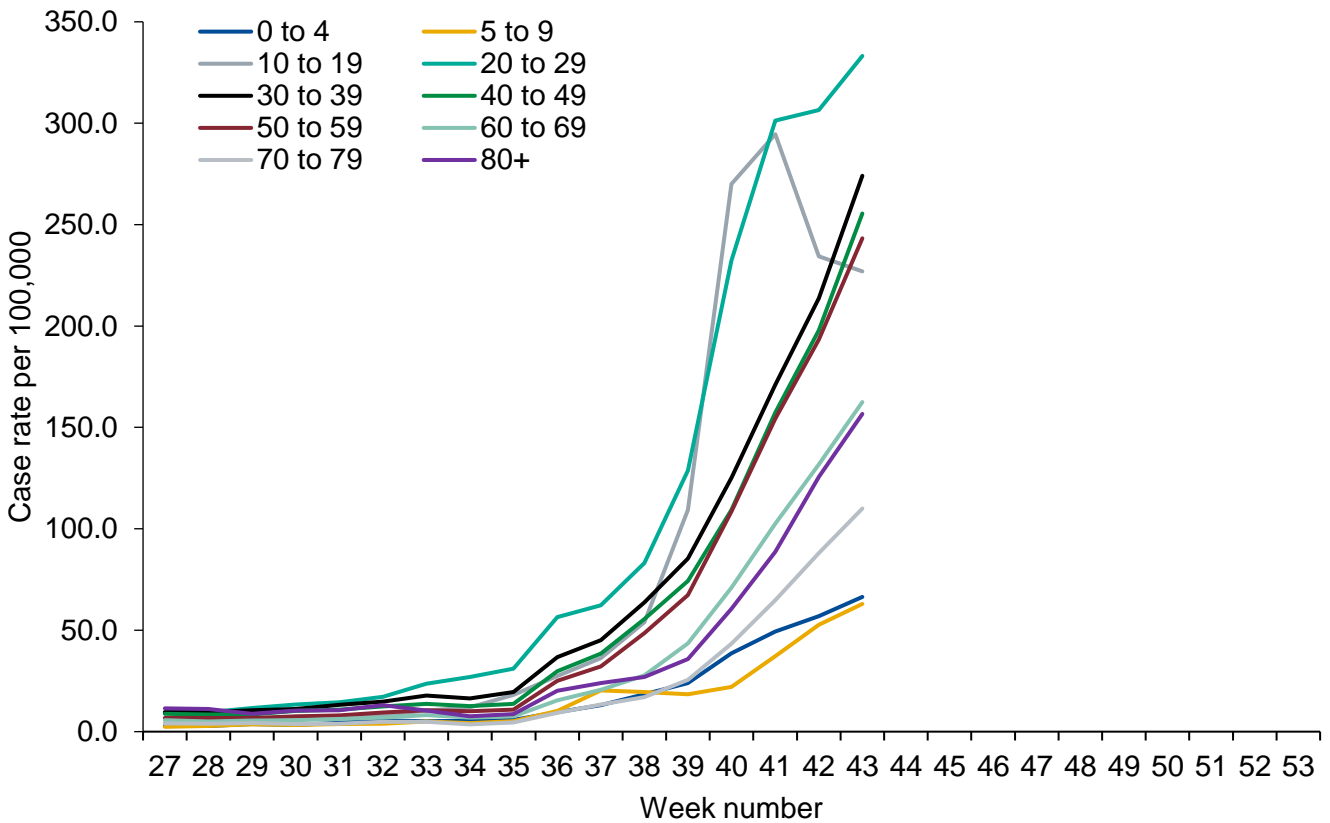
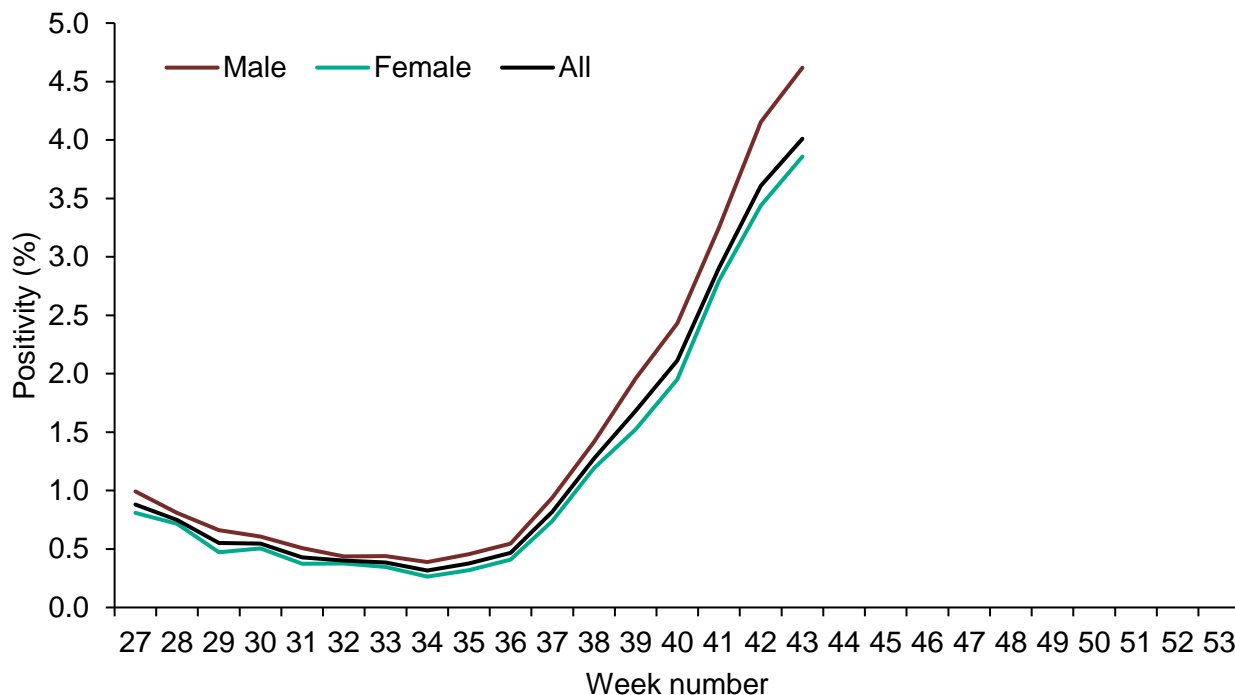


Figure 5: Weekly positivity (%) of laboratory confirmed COVID-19 cases tested overall and by sex under (a) Pillar 1 and (b) Pillar 2, (SGSS and Respiratory DataMart)

(a)



(b)

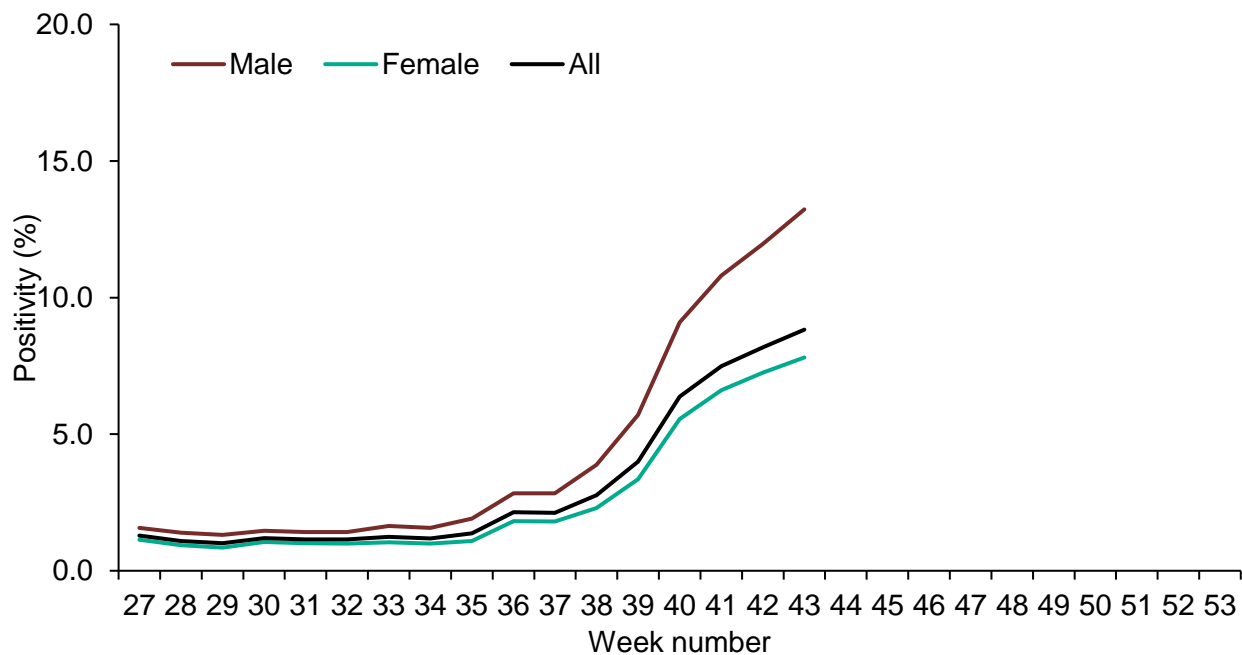
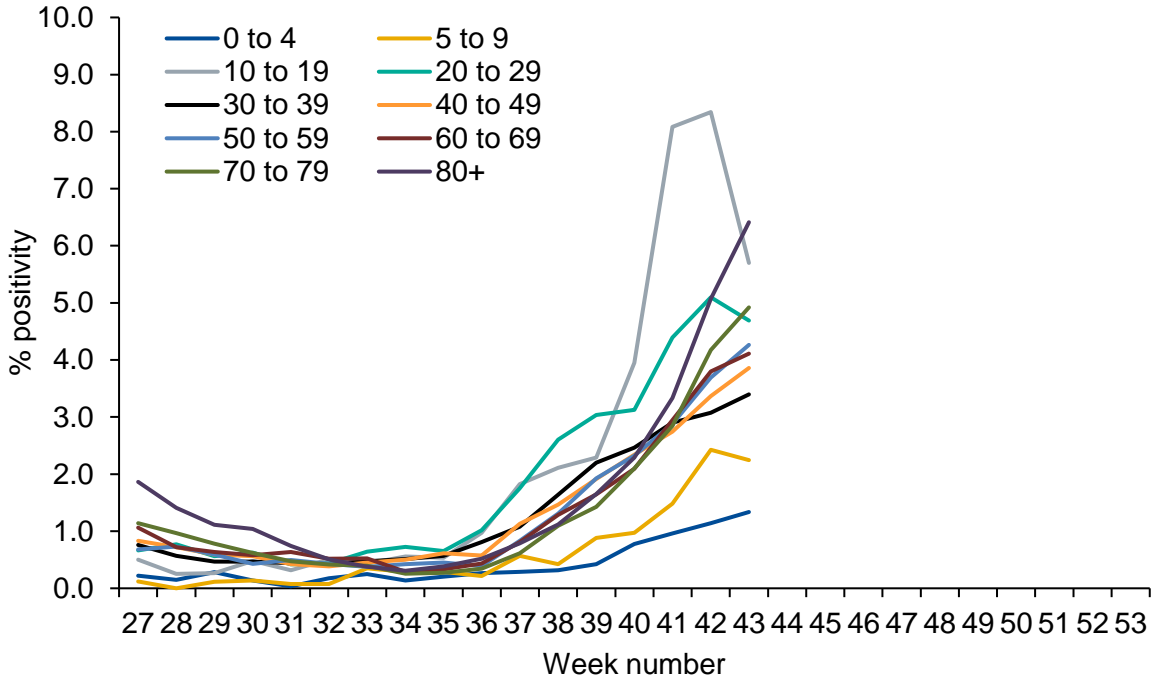
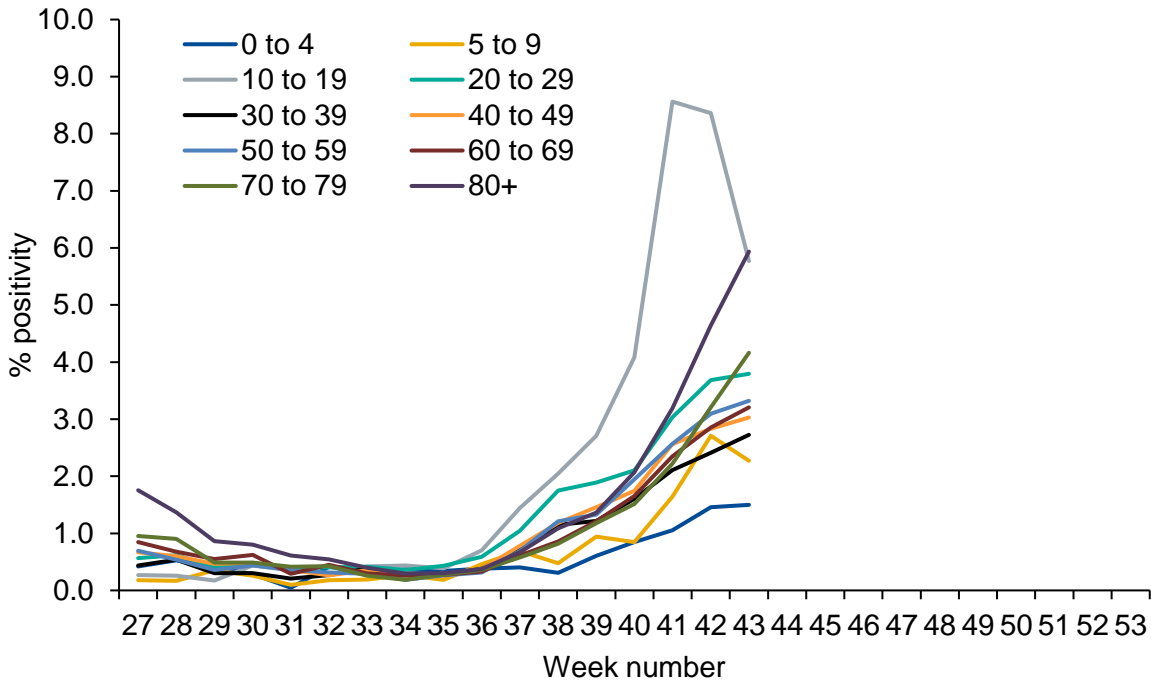


Figure 6: Weekly positivity (%) of laboratory confirmed COVID-19 cases tested under Pillar 1, (a) by male and age group and (b) by female and age group and; under Pillar 2, (c) by male and age group and (d) by female and age group, (SGSS and Respiratory DataMart)

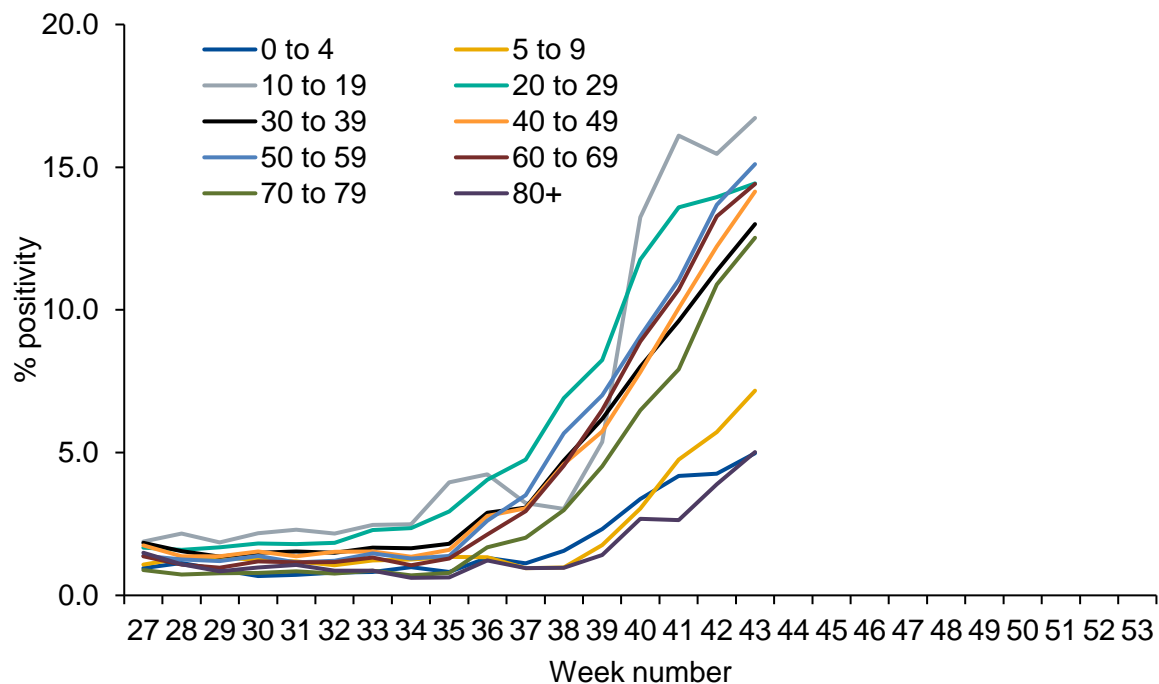
(a) Pillar 1 - Male



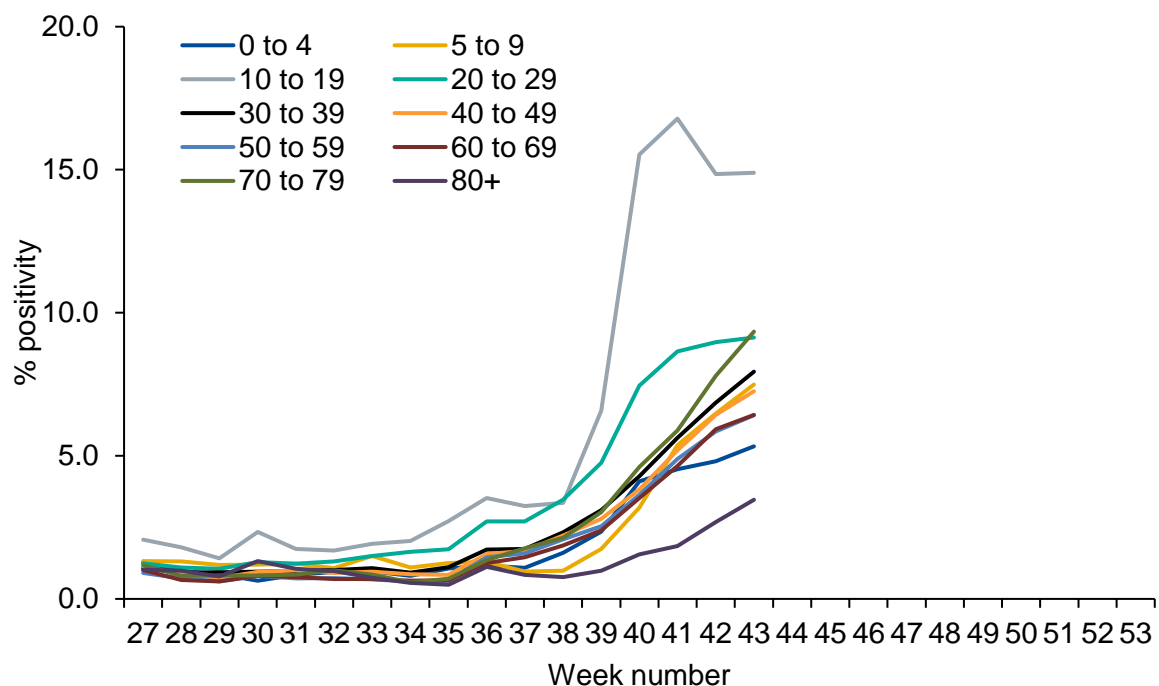
(b) Pillar 1 - Female



(c) Pillar 2 - Male



(d) Pillar 2 - Female



Geography

Table 1: Cumulative number of cases under Pillar 1 and 2 (n=763,045) and cumulative number of cases since week 27 under Pillar 1 and 2 (n=528,085)

PHE Centres	Cumulative Pillar 1 + 2 cases	Cumulative since week 27, Pillar 1 + 2 cases
North East	56,514	41,474
North West	195,127	152,880
Yorkshire and Humber	115,145	86,443
West Midlands	79,787	54,643
East Midlands	71,932	51,285
East of England	51,439	27,315
London	89,021	55,365
South East	67,125	34,406
South West	36,955	24,274

Figure 7: Weekly laboratory confirmed COVID-19 case rates per 100,000 population tested under Pillar 1 and Pillar 2, by PHE Centres and sample week

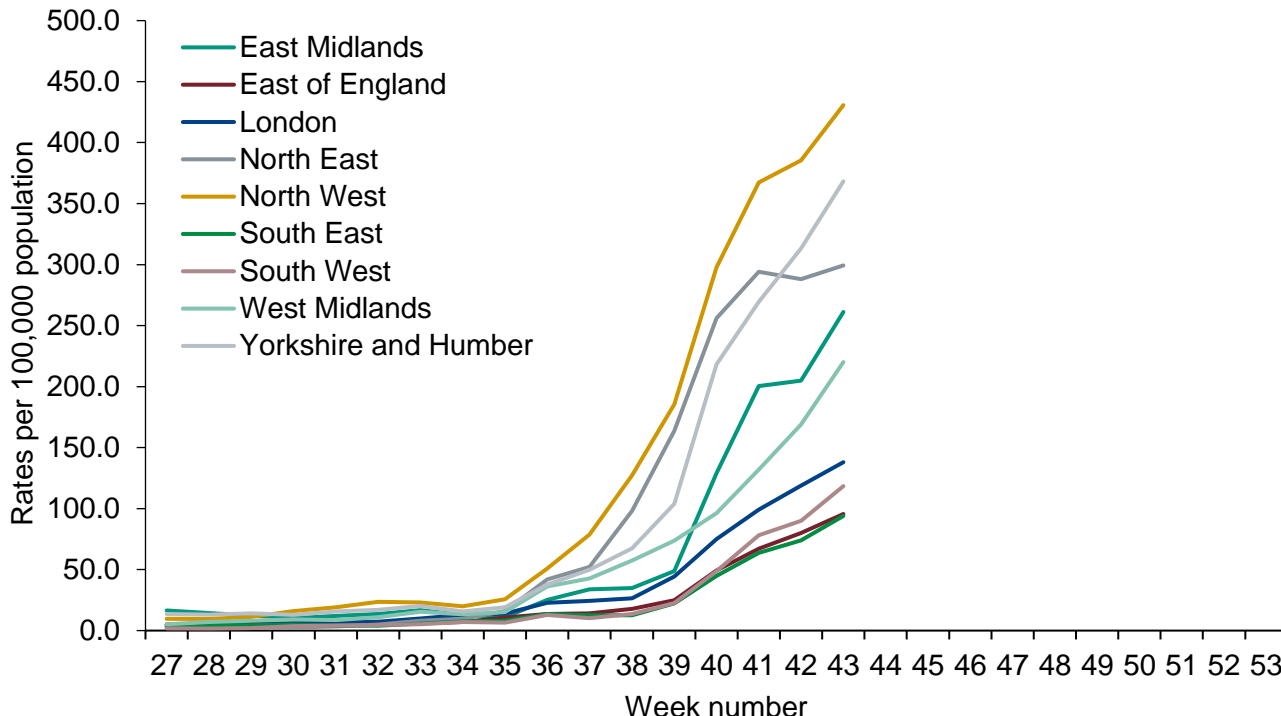


Figure 8: Weekly positivity of laboratory confirmed COVID-19 cases tested under (a) Pillar 1 (%) and (b) Pillar 2 (%), by PHE Centres and sample week, (SGSS and Respiratory DataMart)

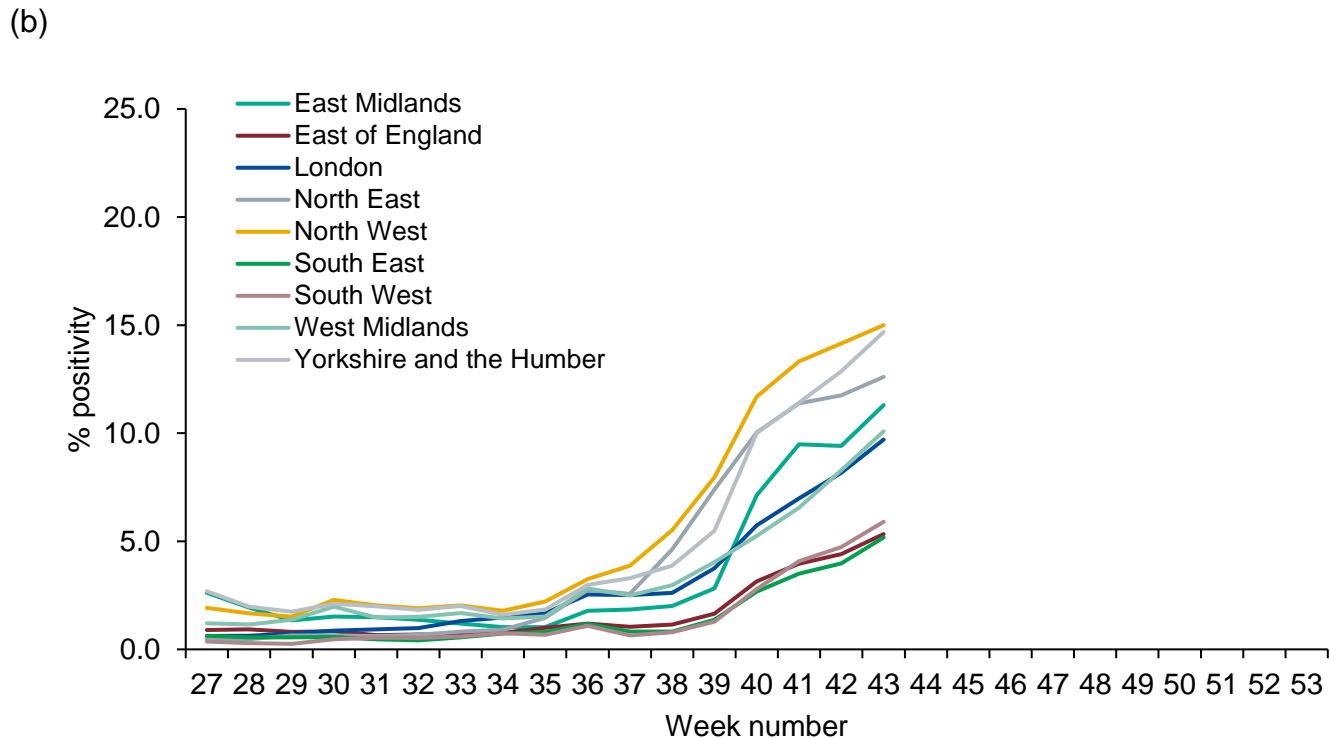
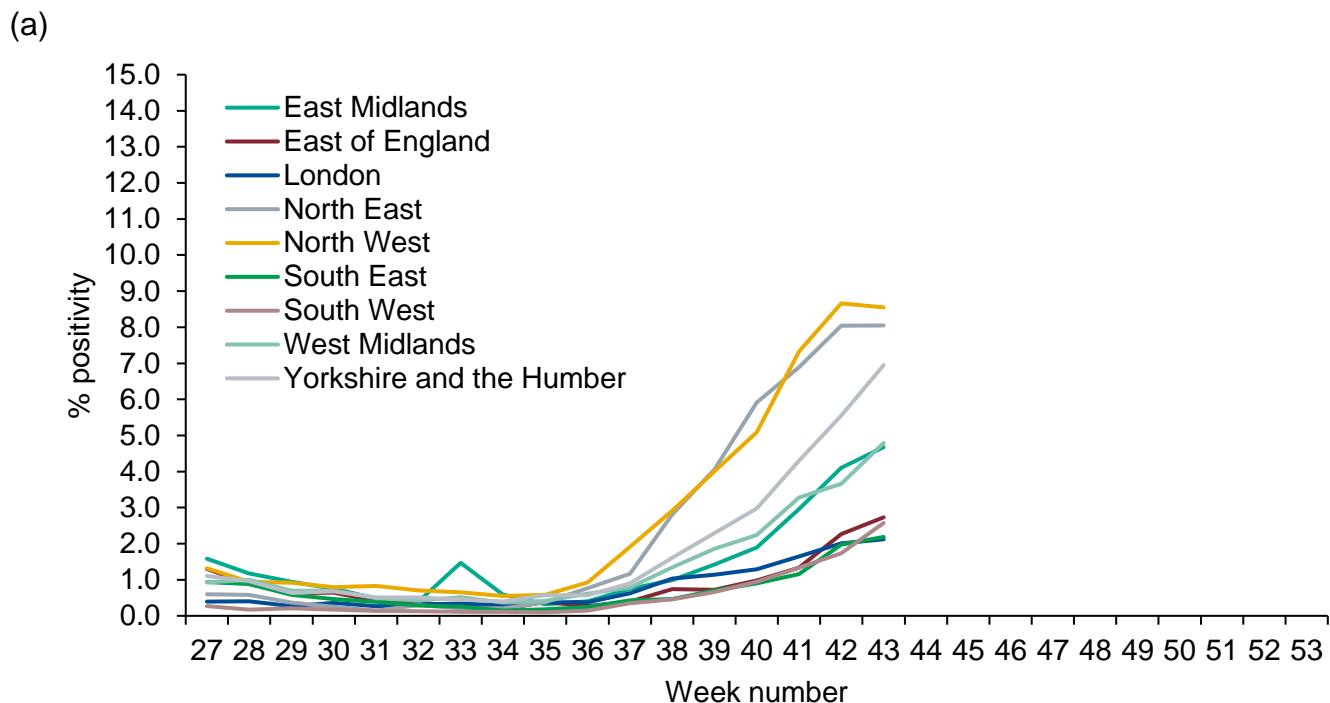
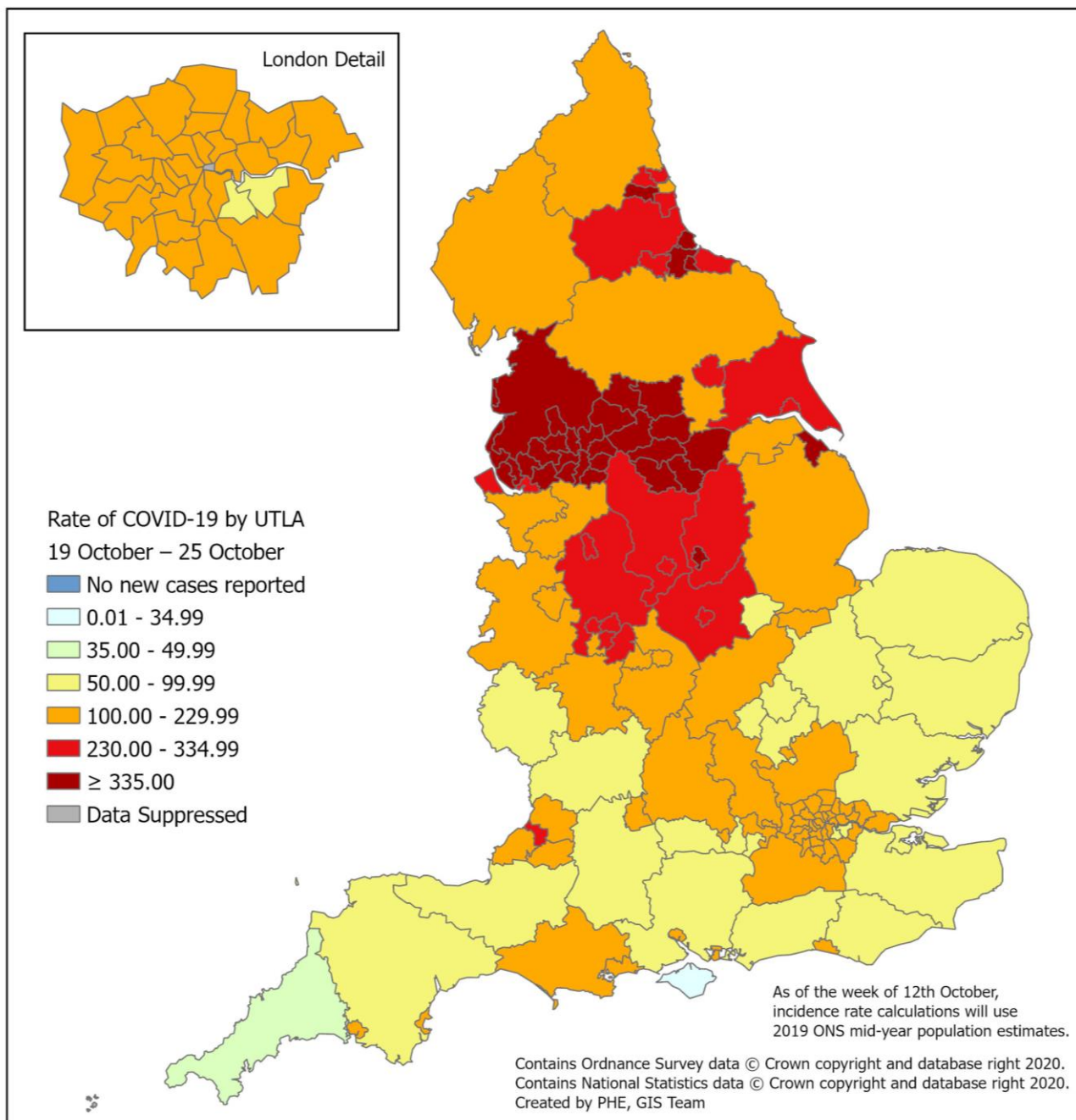
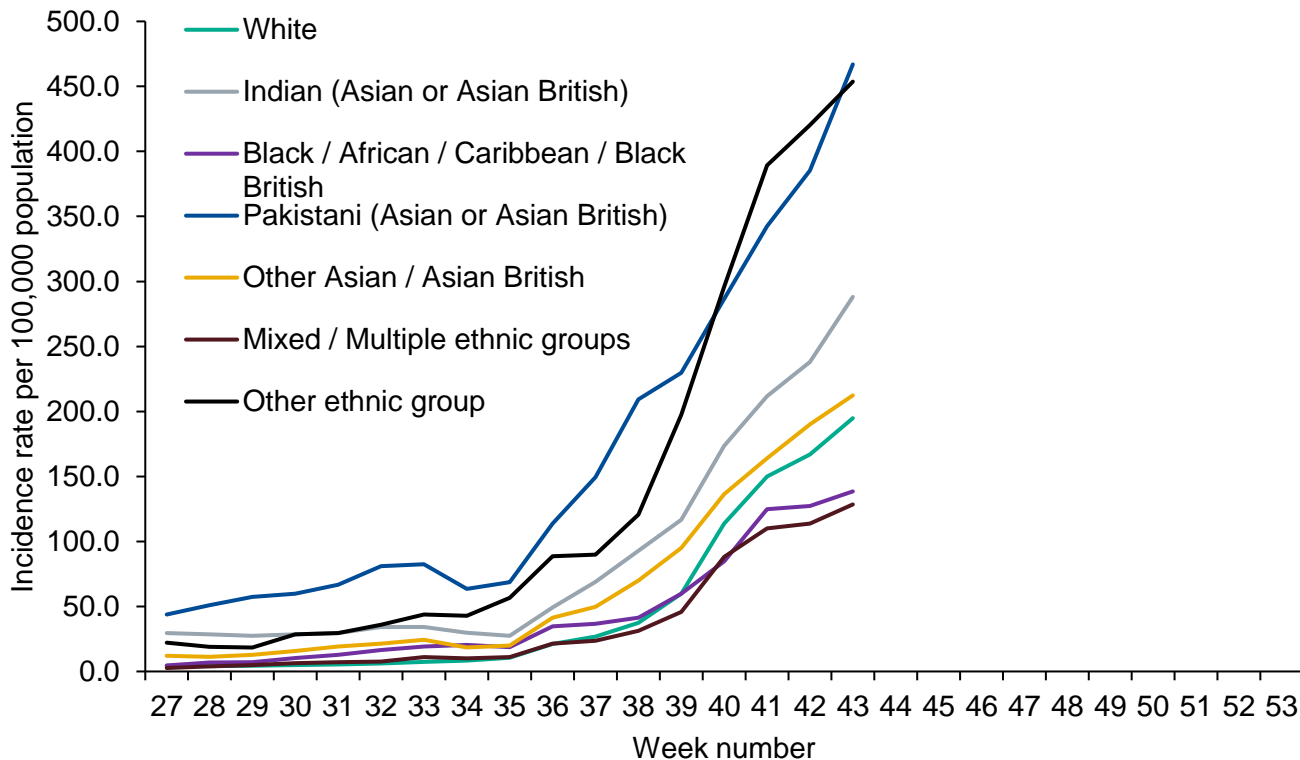


Figure 9: Weekly rate of COVID-19 cases per 100,000 population tested under Pillar 1 and 2, by upper-tier local authority, England (box shows enlarged map of London area)



Ethnicity

Figure 10: Weekly incidence per 100,000 population by ethnicity, England



*the incidence rates on Figure 10 have been calculated using the mid-2018 ONS population estimates

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. 16 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 43 2020, out of the 97,454 respiratory specimens reported through the Respiratory DataMart System (based on data received from 13 out of 16 laboratories), 4,799 samples were positive for SARS-CoV-2 with an overall positivity of 4.9%. The highest positivity was noted in the 65+ year olds at 5.5% in week 43. The overall influenza positivity was low at 0.1% in week 43, with one sample (1 influenza A(H3)) testing positive (out of 837 tested) (Figure 11).

Rhinovirus positivity continued to decrease at 14.8% in week 43 compared to 19.3% in the previous week (Figure 12). The highest positivity by age group for rhinovirus was noted in the less than 5 year olds in week 43 (Figure 13). Respiratory syncytial virus (RSV), adenovirus, parainfluenza and human metapneumovirus (hMPV) positivity all remained low at 0.0%, 1.8%, 0.1% and 0.4% respectively in week 43 (Figure 12).

Figure 11: DataMart samples positive for influenza and weekly positivity (%) for influenza and SARS-CoV-2, England

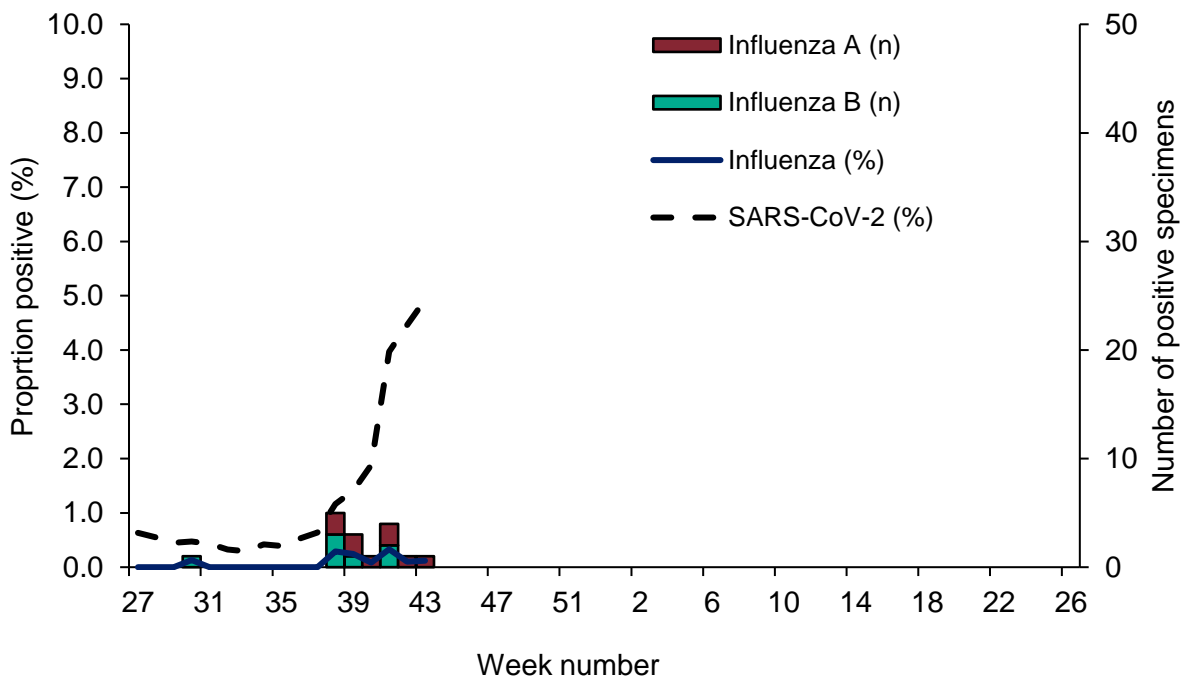


Figure 12: DataMart weekly positivity (%) for other respiratory viruses, England

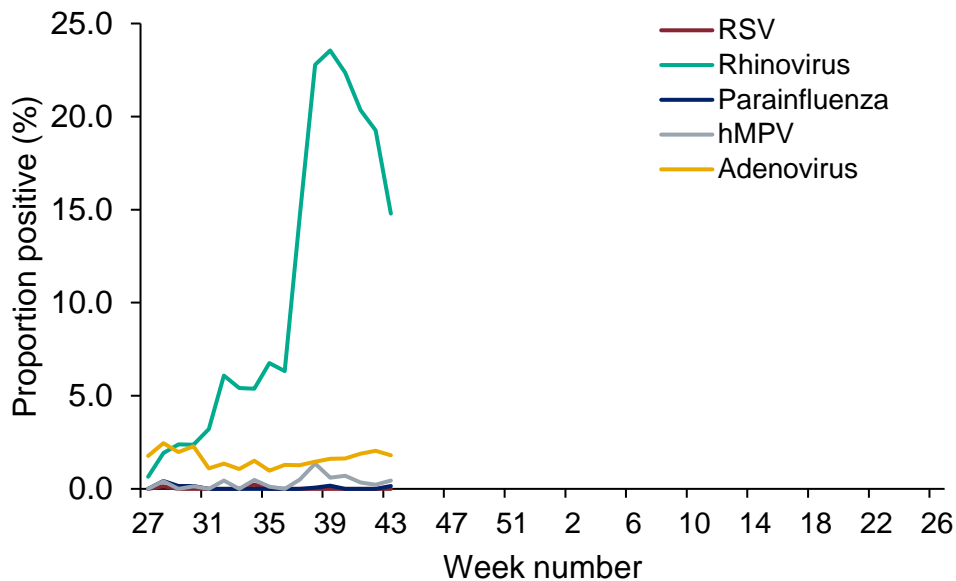
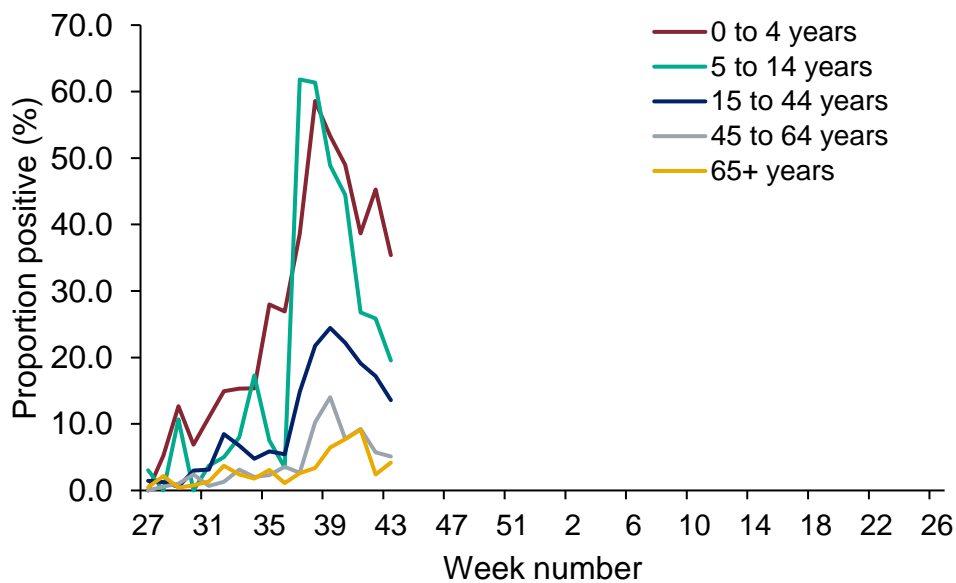


Figure 13: DataMart weekly positivity (%) for rhinovirus by age, England



Community surveillance

Acute respiratory infection incidents

Information on acute respiratory infection (ARI) incidents is based on situations reported to PHE Health Protection Teams (HPTs). These include:

- confirmed outbreaks of acute respiratory infections ie two or more laboratory confirmed cases (SARS-CoV-2, influenza or other respiratory pathogens) linked to a particular setting
- setting situations where an outbreak is suspected

All suspected outbreaks are further investigated by the HPT in liaison with local partners and a significant proportion do not meet the criteria of a confirmed outbreak. For example if suspected cases test negative for COVID19 or other respiratory pathogens, or cases are subsequently found not to have direct links to the setting. Since Pillar 2 testing became open to everyone during week 21 more incidents of mild disease have been detected in settings with healthy young populations.

Processes for reporting ARI incidents vary between PHE Centres. The denominator (the overall number of settings in each category) will differ by the setting category, for example there are fewer hospitals than workplaces, as will the propensity to report incidents to PHE. Therefore these data are more useful for monitoring trends over time than making comparisons across setting categories.

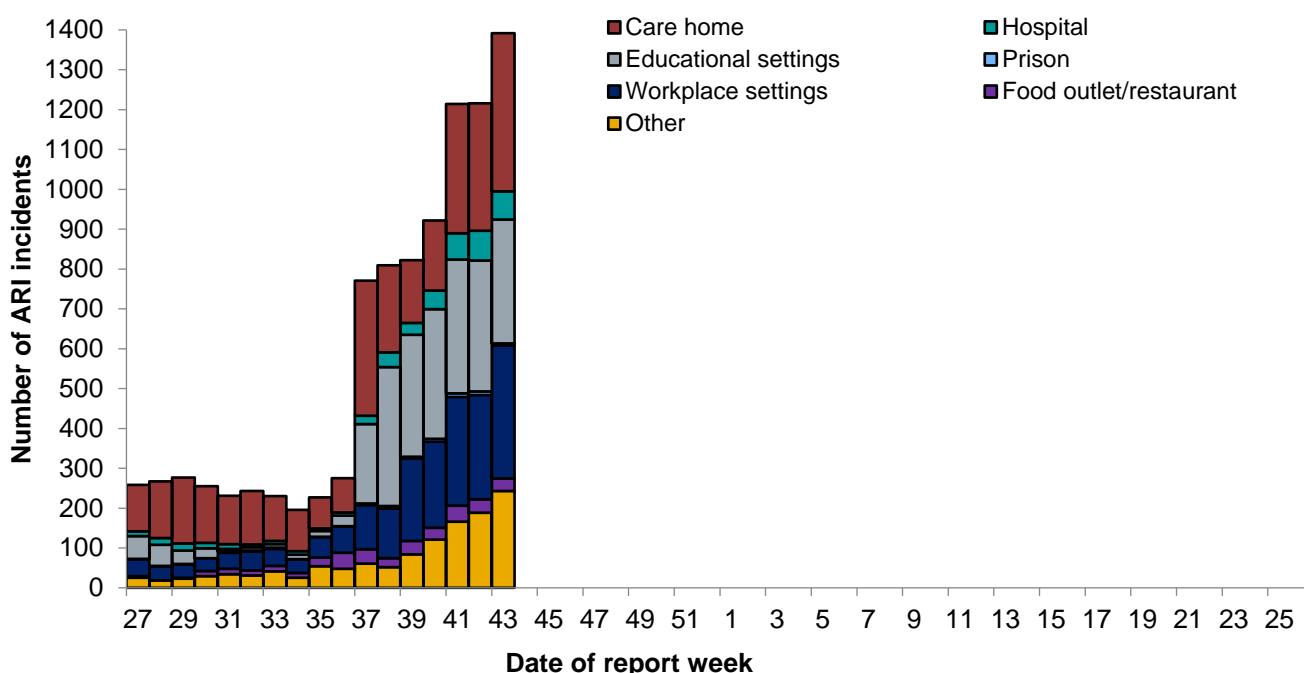
The number of incidents in each setting with at least one laboratory confirmed case of COVID19 are reported below. A national school helpline started operating on 17 September 2020 and a Universities helpline started operating on 7 October. This is likely to have had an impact on the number of situations/outbreaks being reported to HPTs in these settings

1392 new ARI incidents have been reported in week 43 in the UK (Figure 14):

- 397 incidents were from care homes where 282 had at least one linked case that tested positive for SARS-CoV-2
- 71 incidents were from hospitals where 59 had at least one linked case that tested positive for SARS-CoV-2
- 311 incidents were from educational settings where 234 had at least one linked case that tested positive for SARS-CoV-2
- 5 incidents were from prisons where 4 had at least one linked case that tested positive for SARS-CoV-2

- 334 incidents were from workplace settings where 228 had at least one linked case that tested positive for SARS-CoV-2
- 31 incidents were from food outlet/restaurant settings where 23 had at least one linked case that tested positive for SARS-CoV-2
- 243 incidents were from the other settings category where 153 had at least one linked case that tested positive for SARS-CoV-2

Figure 14: Number of acute respiratory infection (ARI) incidents by institution, UK



*excludes data from Wales

Figure 15: Number of acute respiratory infection (ARI) incidents by institution, England

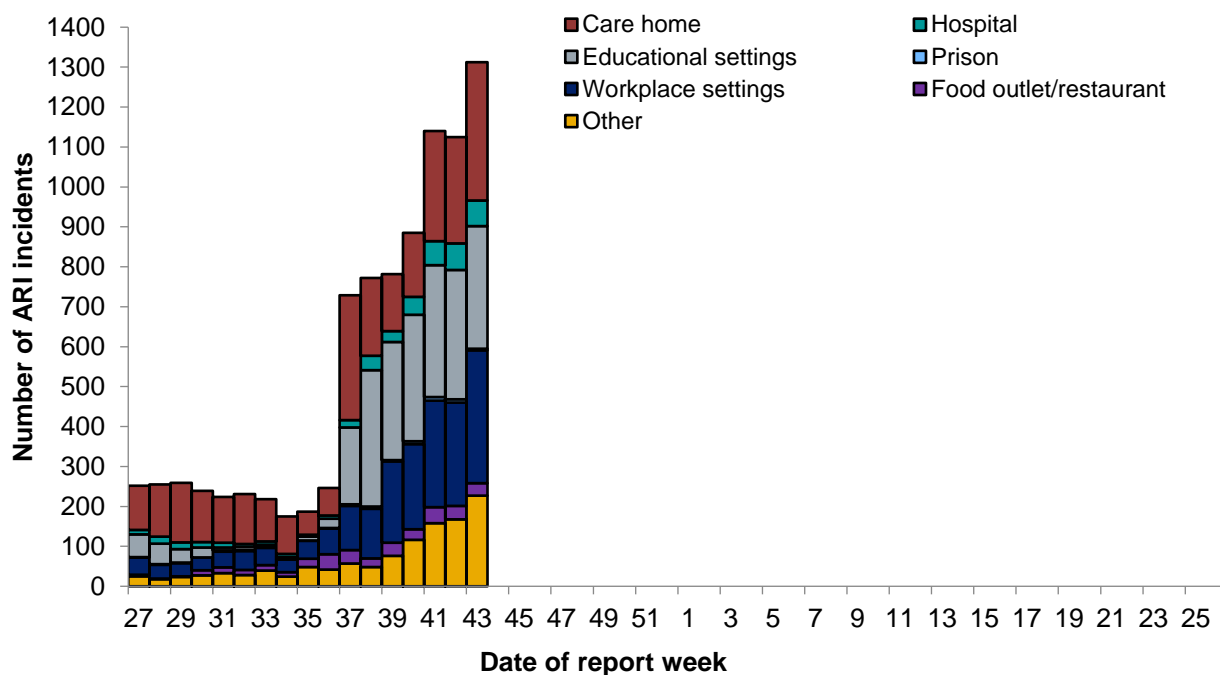


Figure 16: Number of acute respiratory infection (ARI) incidents in care homes by virus type from week 27, England

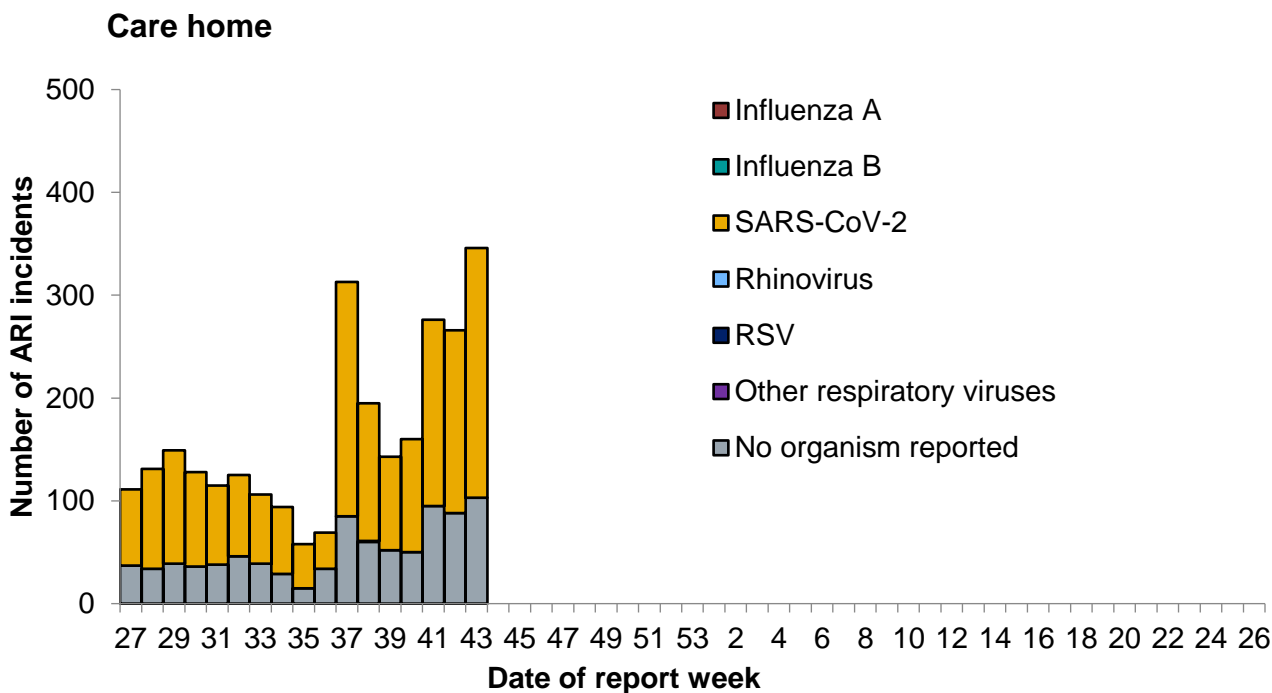


Figure 17: Number of acute respiratory infection (ARI) incidents in hospitals by virus type from week 27, England

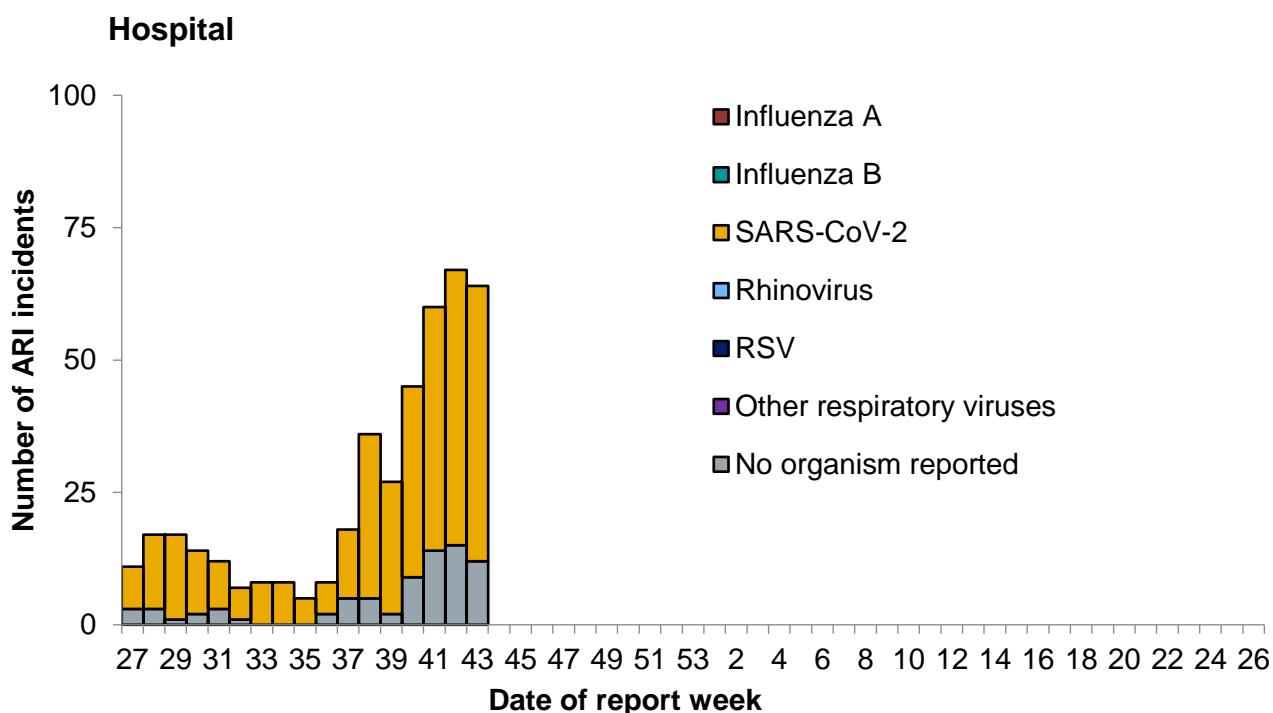


Figure 18: Number of acute respiratory infection (ARI) incidents in educational settings by virus type from week 27, England

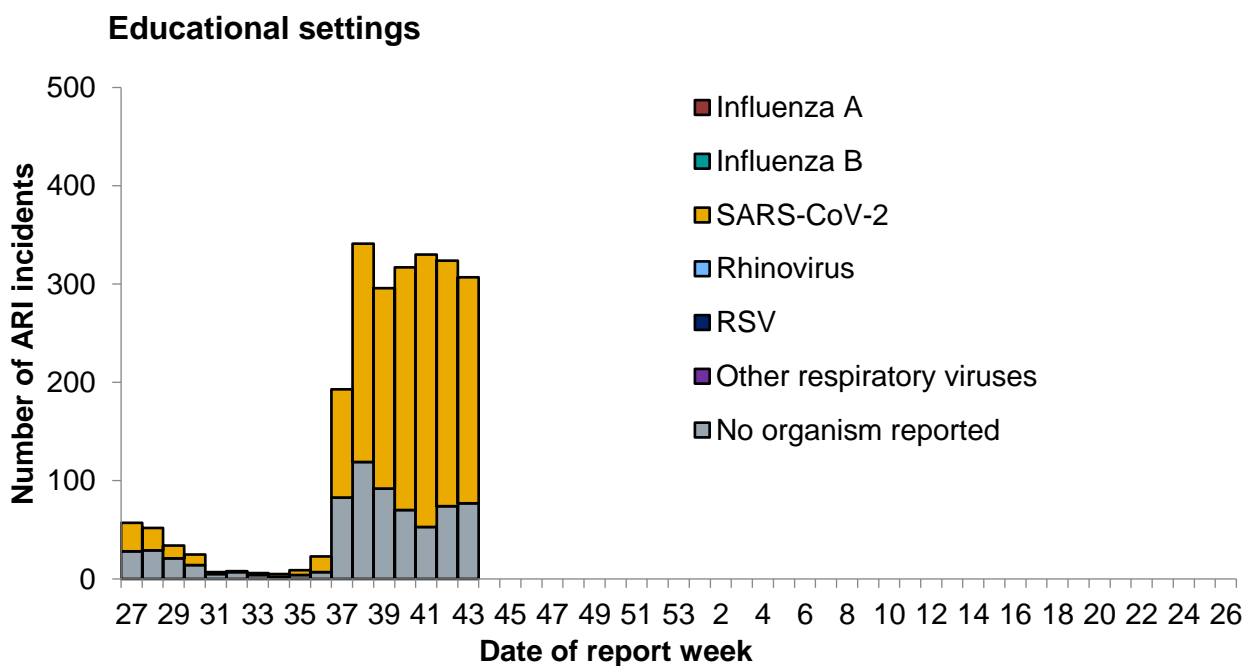


Figure 19: Number of acute respiratory infection (ARI) incidents in prisons by virus type from week 27, England

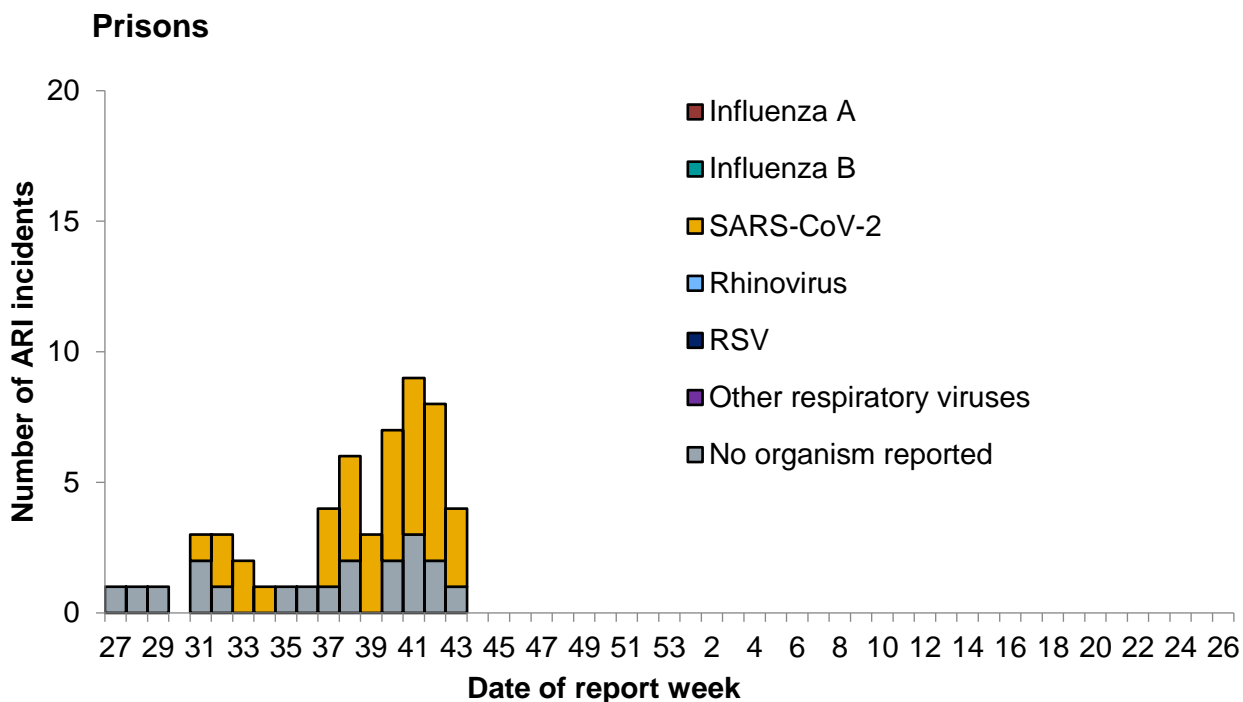


Figure 20: Number of acute respiratory infection (ARI) incidents in workplace settings by virus type from week 27, England

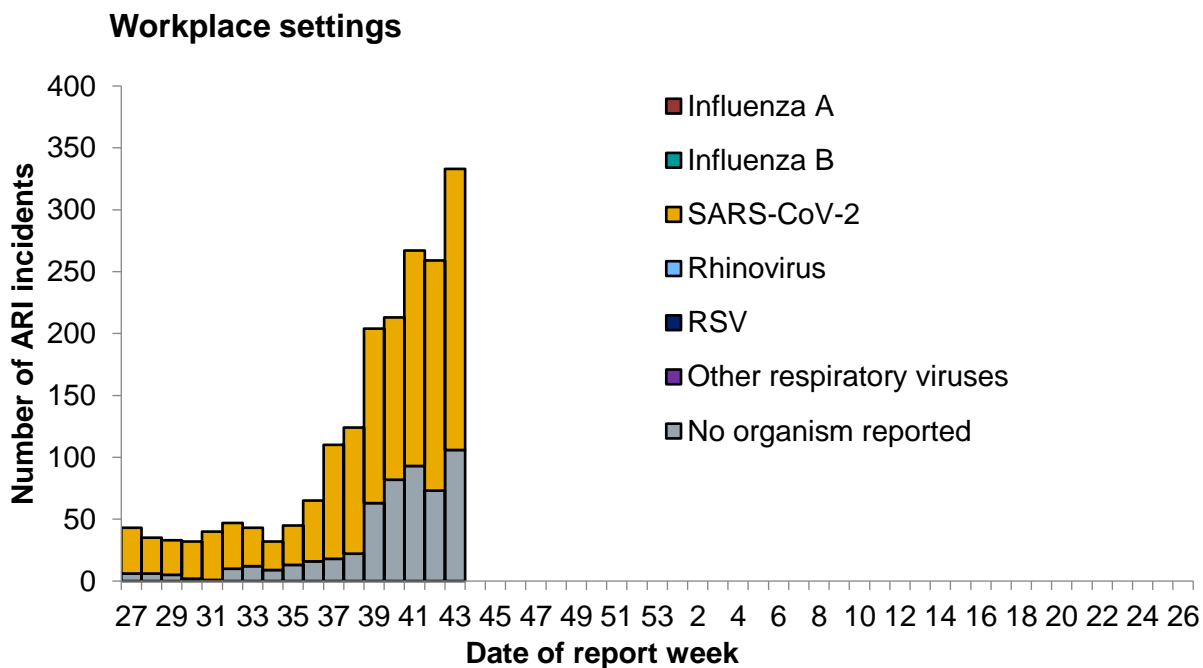


Figure 21: Number of acute respiratory infection (ARI) incidents in food outlet/restaurants settings by virus type from week 27, England

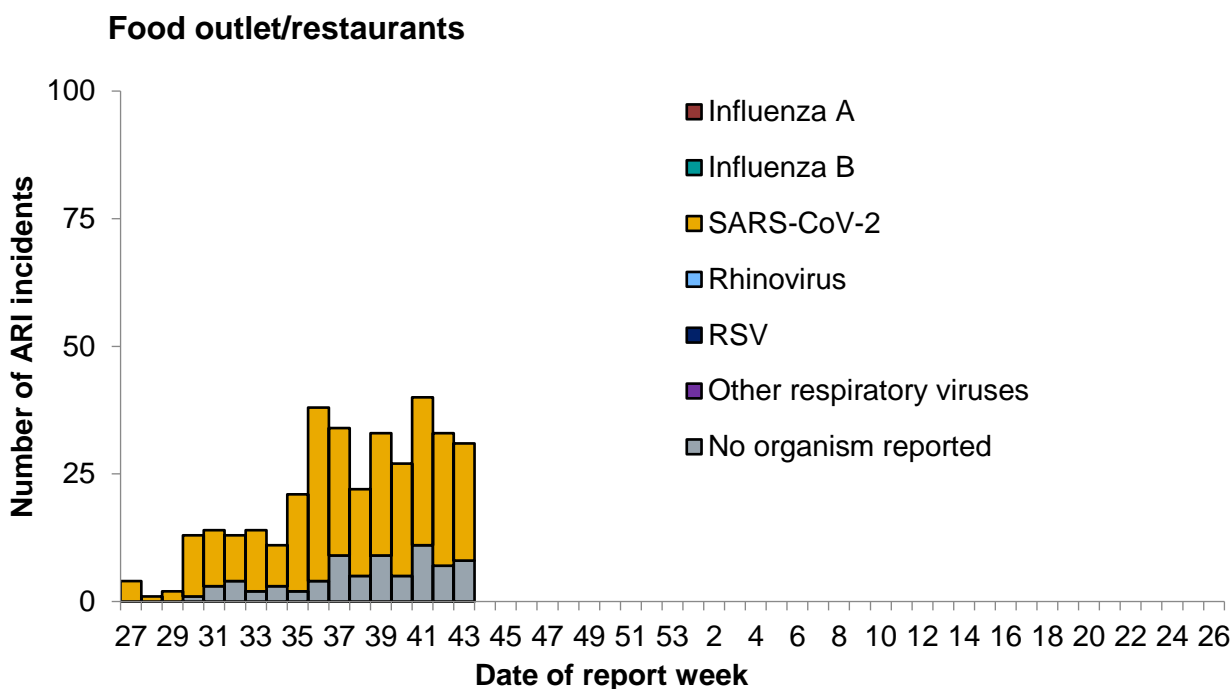


Figure 22: Number of acute respiratory infection (ARI) incidents in other settings settings by virus type from week 27, England

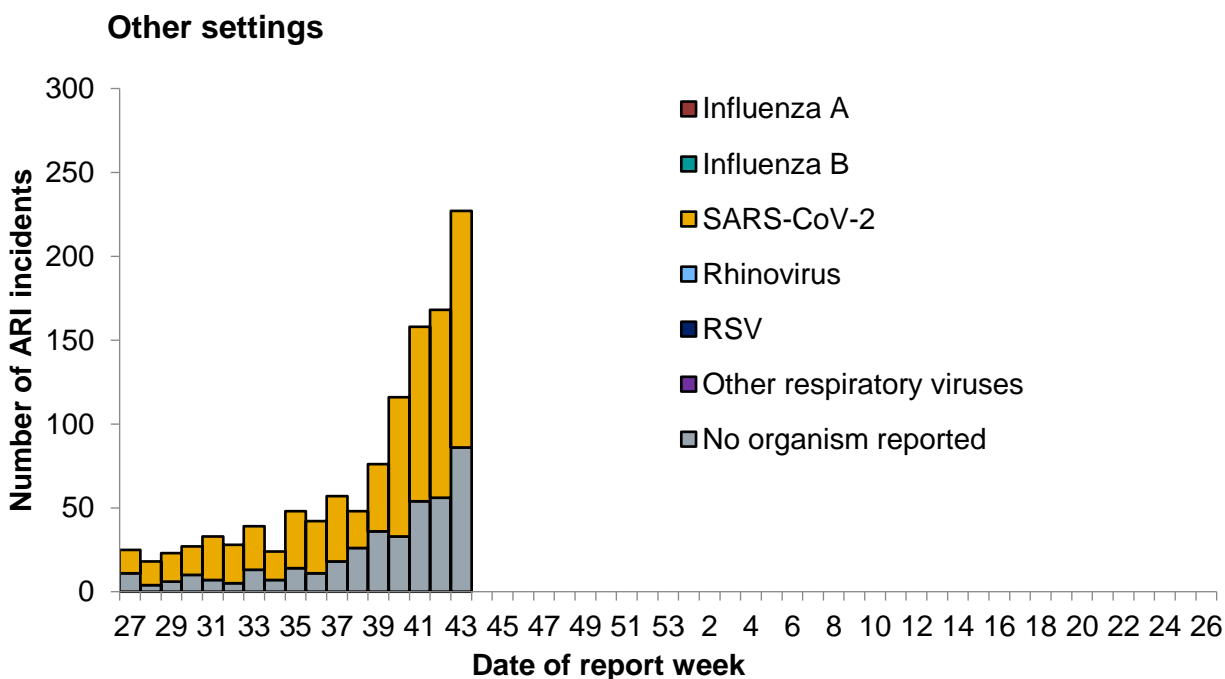


Table 2: Total number of situations/incidents by institution and PHE Centres over the past four weeks with the total number in the last week in brackets

PHE Centres	Care home	Hospital	Educational settings	Prisons	Workplace settings	Food outlet/restaurant settings	Other settings	Total
East of England	127(41)	12(3)	32(12)	2(1)	44(10)	3(2)	20(6)	240(75)
East Midlands	87(43)	40(14)	145(26)	2(0)	100(33)	22(1)	36(10)	432(127)
London	77(27)	45(19)	277(59)	5(0)	174(75)	22(5)	37(12)	637(197)
North East	91(18)	0(0)	32(1)	1(0)	28(7)	1(0)	41(14)	194(40)
North West	189(65)	40(5)	139(9)	1(0)	183(40)	13(3)	203(64)	768(186)
South East	125(39)	20(5)	182(68)	6(1)	79(30)	14(6)	47(22)	473(171)
South West	116(38)	9(1)	116(38)	2(1)	74(28)	20(5)	41(14)	378(125)
West Midlands	109(30)	58(16)	183(50)	6(1)	235(66)	20(5)	93(42)	704(210)
Yorkshire and Humber	127(45)	12(1)	172(44)	3(0)	155(44)	16(4)	151(43)	636(181)
Total	1048(346)	236(64)	1278(307)	28(4)	1072(333)	131(31)	669(227)	4462(1312)

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 43, the highest percentage of confirmed COVID-19 cases by type of residence was seen in residential dwelling (Table 3).

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

Type of residence	week 37	week 38	week 39	week 40	week 41	week 42	week 43
Residential dwelling (including houses, flats, sheltered accommodation)	80.6	80.9	79.3	78.0	79.5	81.3	81.6
Undetermined	15.1	15.3	16.2	15.2	14.5	13.3	14.2
Care/Nursing home	2.6	1.8	1.4	1.5	1.4	1.7	1.7
Residential institution (including residential education)	0.5	0.5	1.1	2.4	2.3	1.6	0.9
House in multiple occupancy (HMO)	0.4	0.6	1.0	1.6	0.9	0.8	0.6
Medical facilities (including hospitals and hospices, and mental health)	0.4	0.5	0.3	0.3	0.3	0.3	0.2
Other property classifications	0.4	0.4	0.5	0.7	0.9	0.8	0.6
Prisons, detention centres, secure units	0.0	0.0	0.2	0.2	0.1	0.1	0.2
No fixed abode	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Overseas address	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Medical Officers of Schools Association (MOSA) & PHE surveillance scheme

Boarding schools in England within the MOSA network are recruited each season to report various respiratory related illnesses including influenza like illnesses (ILI).

Data will be reported from week 45.

If you are a MOSA school and would like to participate in this scheme, please email mosa@phe.gov.uk for more information.

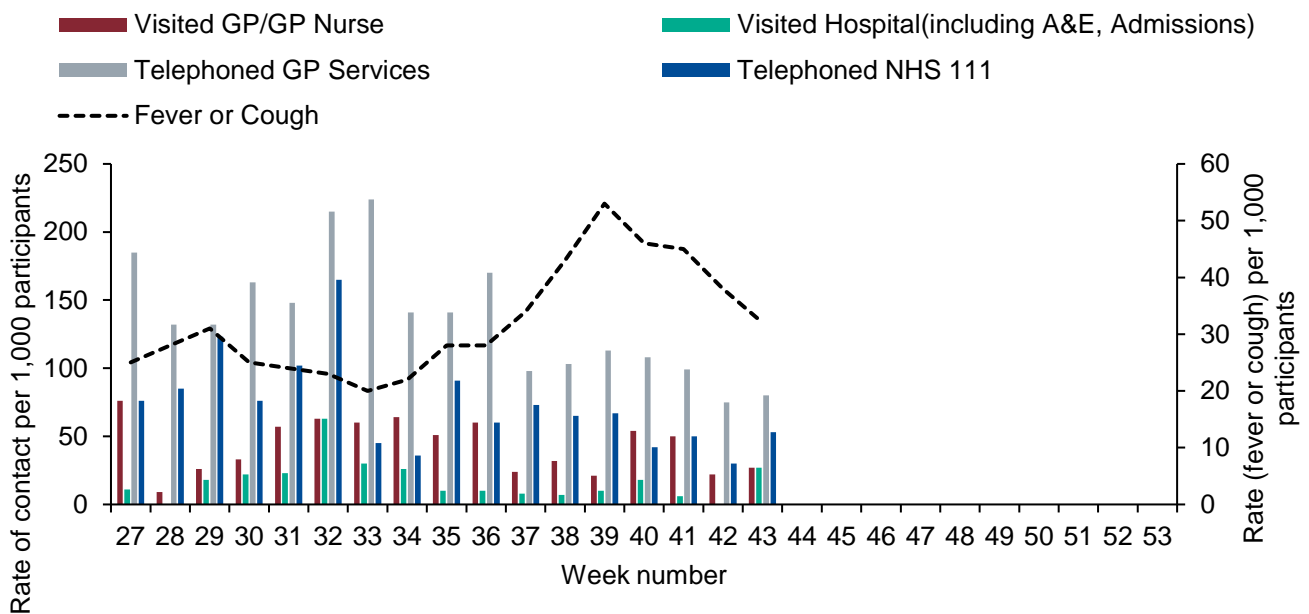
FluSurvey

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.

A total of 3,536 participants completed the weekly COVID-19 surveillance survey in week 43, of which 113 (3.2%) reported fever or cough. The most commonly reported method of access to healthcare services continue to be through telephoning a GP practice in week 43 (Figure 23).

ILI data will be reported from week 45.

Figure 23: Rate of contact with different healthcare services among FluSurvey participants reporting fever or cough symptoms, England

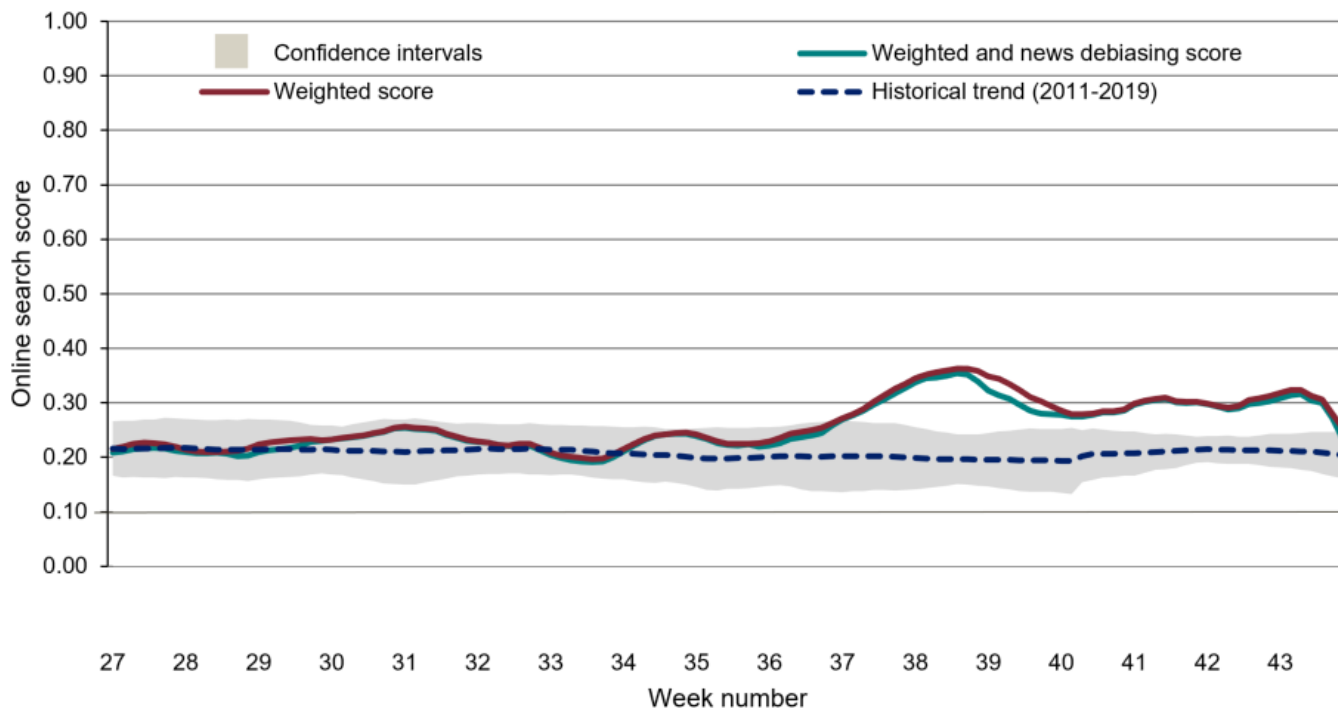


Google search queries

This is a web-based syndromic surveillance system which uses daily search query frequency statistics obtained from the Google Health Trends API [1]. This model focuses on search queries about COVID-19 symptoms as well as generic queries about “coronavirus” (e.g. “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.

During week 43, the overall and media-debiasing weighted Google search scores decreased (Figure 24).

Figure 24: Normalised Google search score for COVID-19 symptoms, with weighted score for media-debiasing and historical trend, England



NHS 111

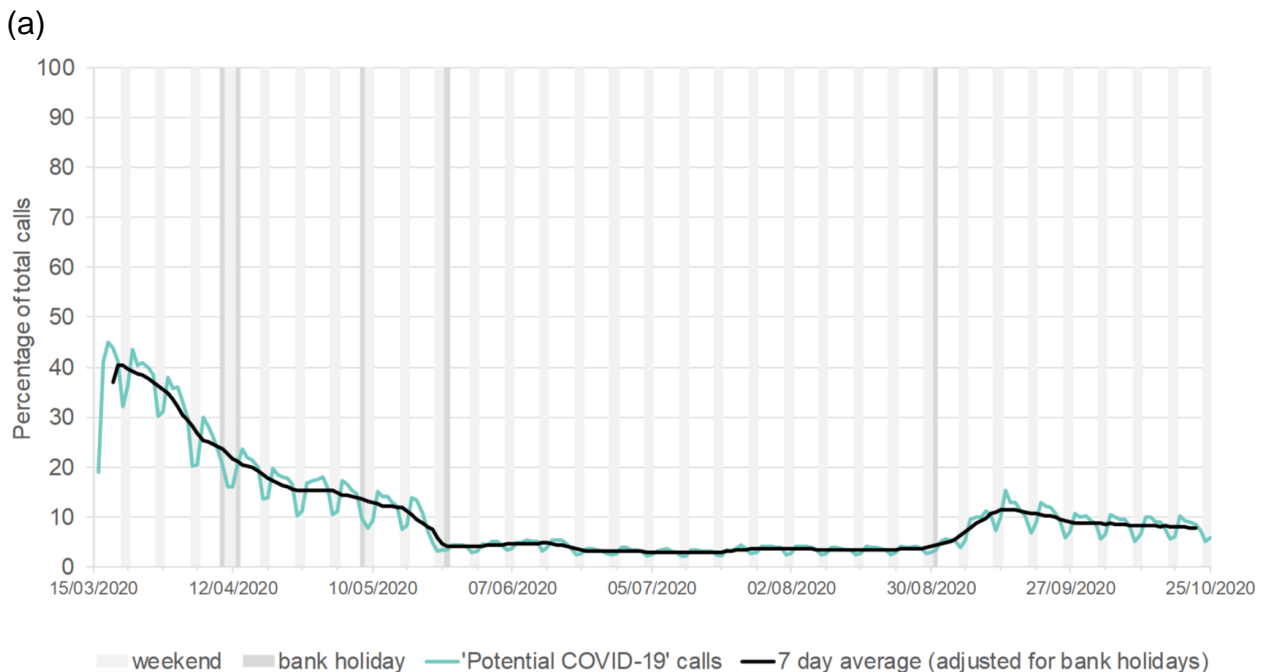
The NHS 111 service monitors daily trends in phone calls made to the service in England, to capture trends in infectious diseases such as influenza and norovirus.

Up to 25 October 2020, the daily percentage of NHS 111 'potential COVID-19-like' calls (as a percentage of total NHS 111 calls) remained stable whereas the number of online assessments are decreased slightly. The daily percentage of cold/flu calls (as a percentage of total NHS 111 calls) and cold/flu completed online assessments decreased (Figure 25 and 26). The daily percentage of loss of taste or smell calls and online assessments remained stable.

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

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

Figure 25: NHS 111 telephony indicators (and 7-day moving average) for (a) daily potential COVID-19 calls, (b) daily cold/flu calls and (c) daily loss of taste or smell calls, as a percentage of total calls for all ages, England



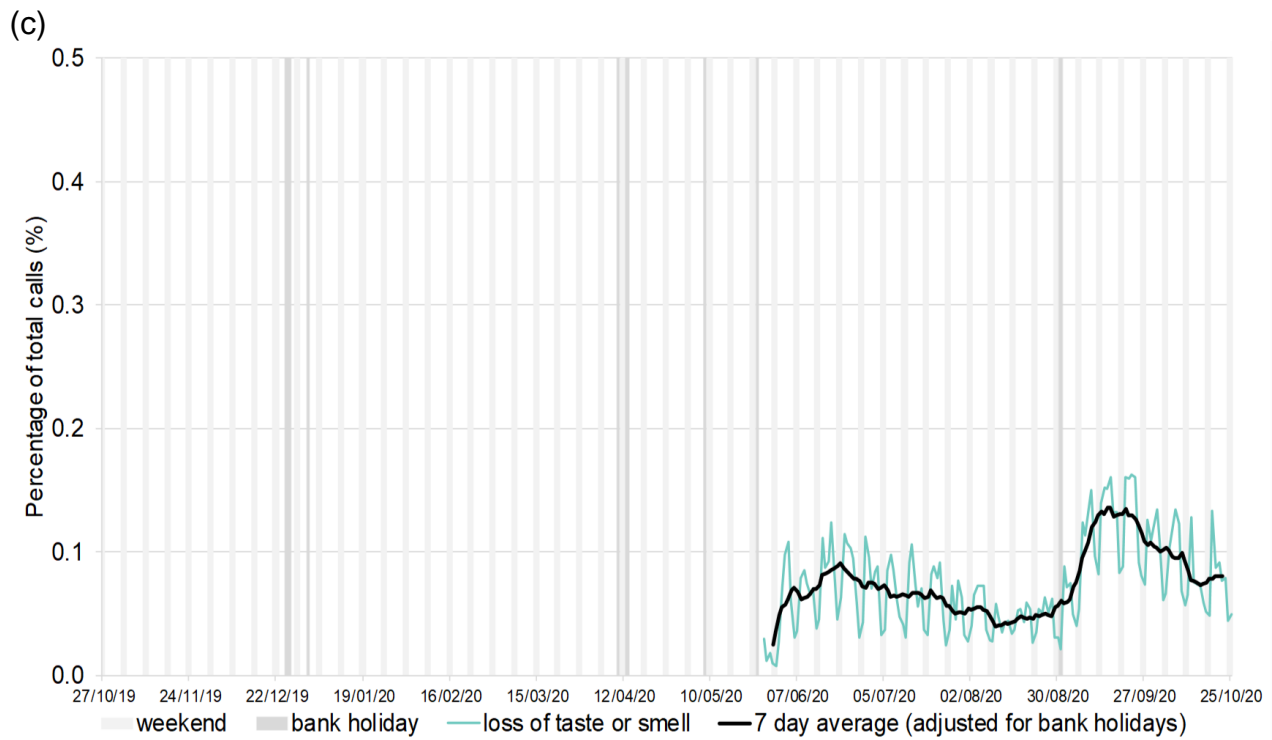
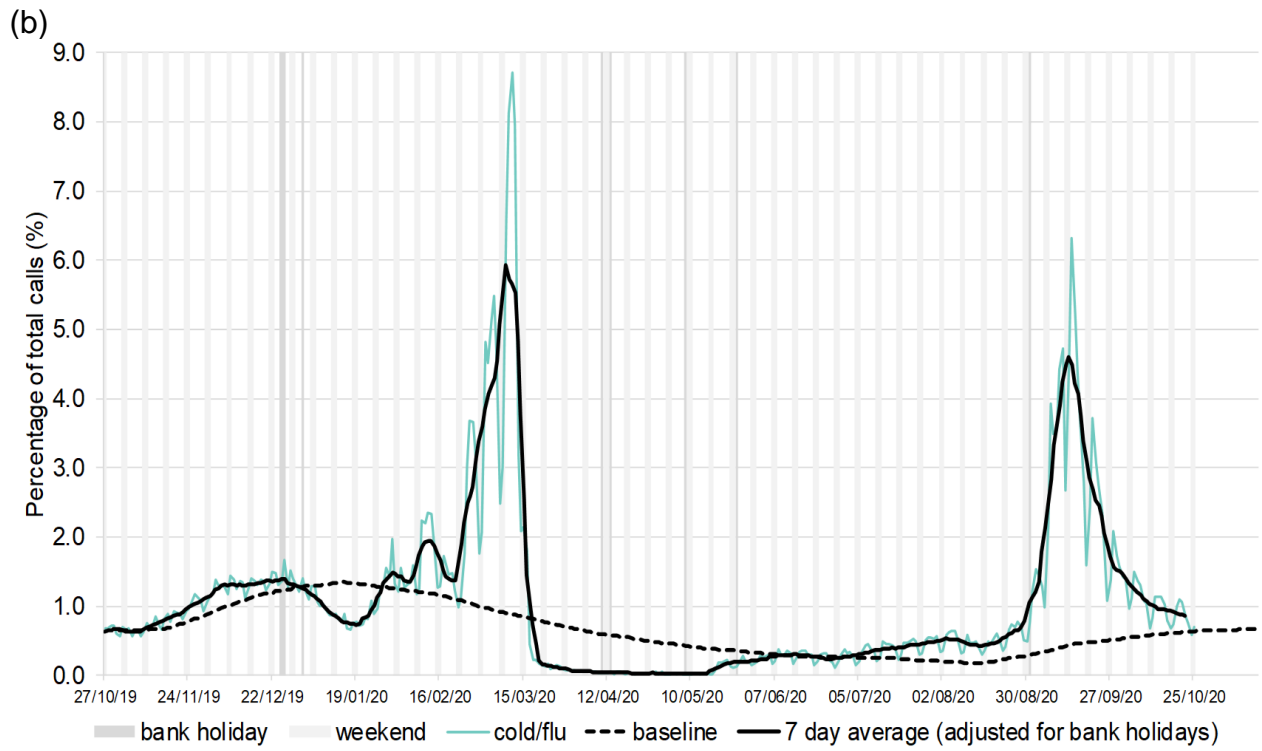
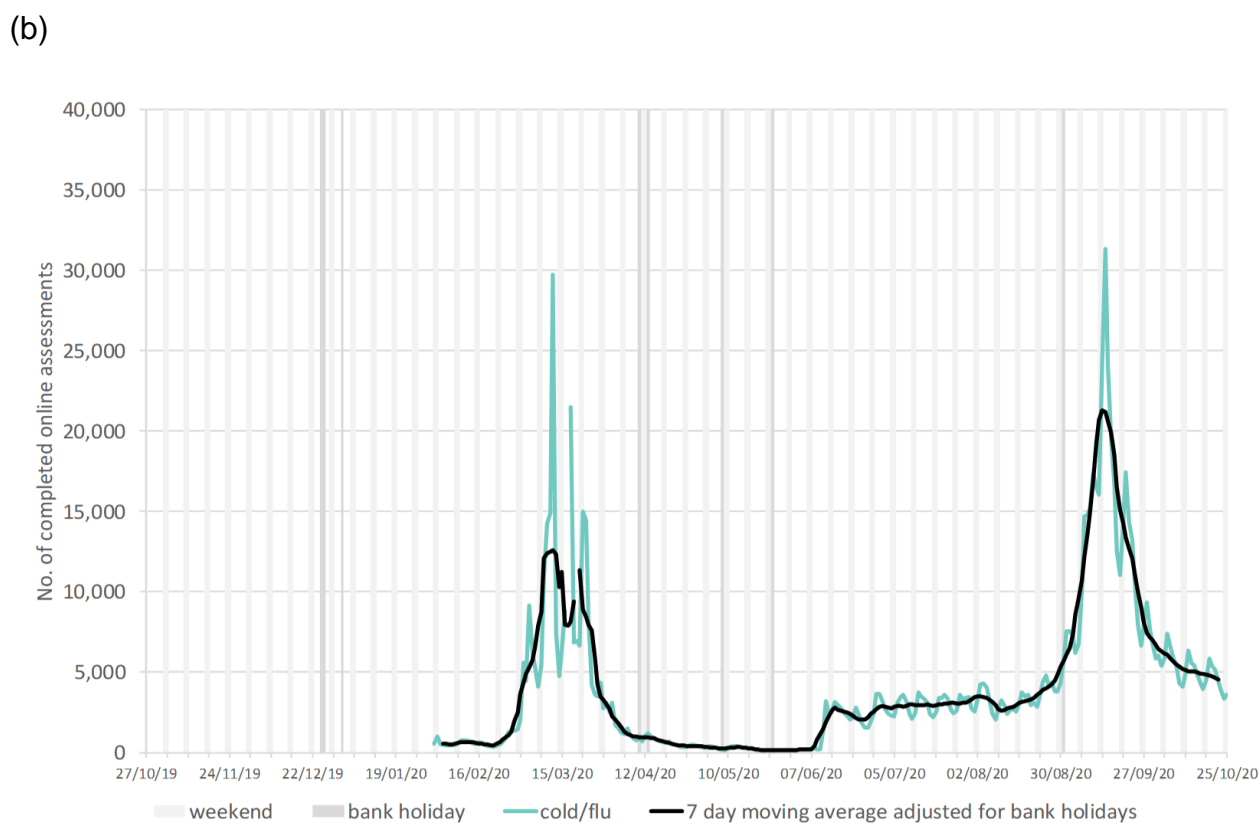
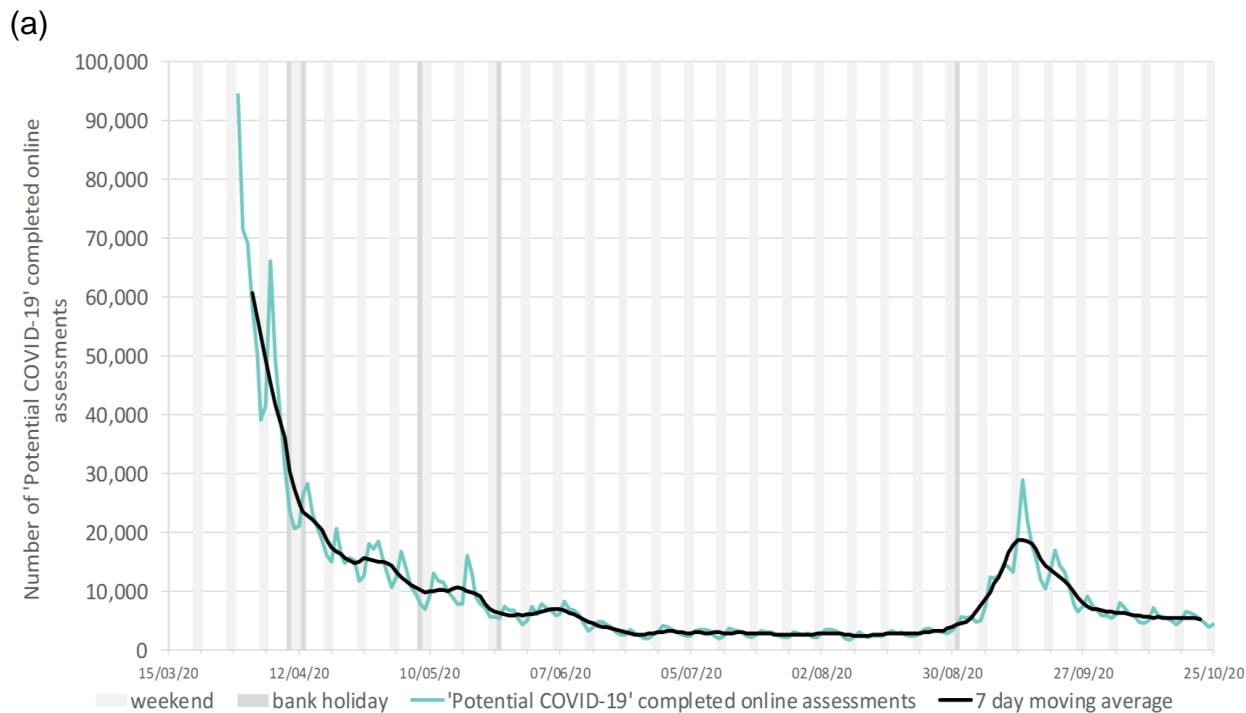
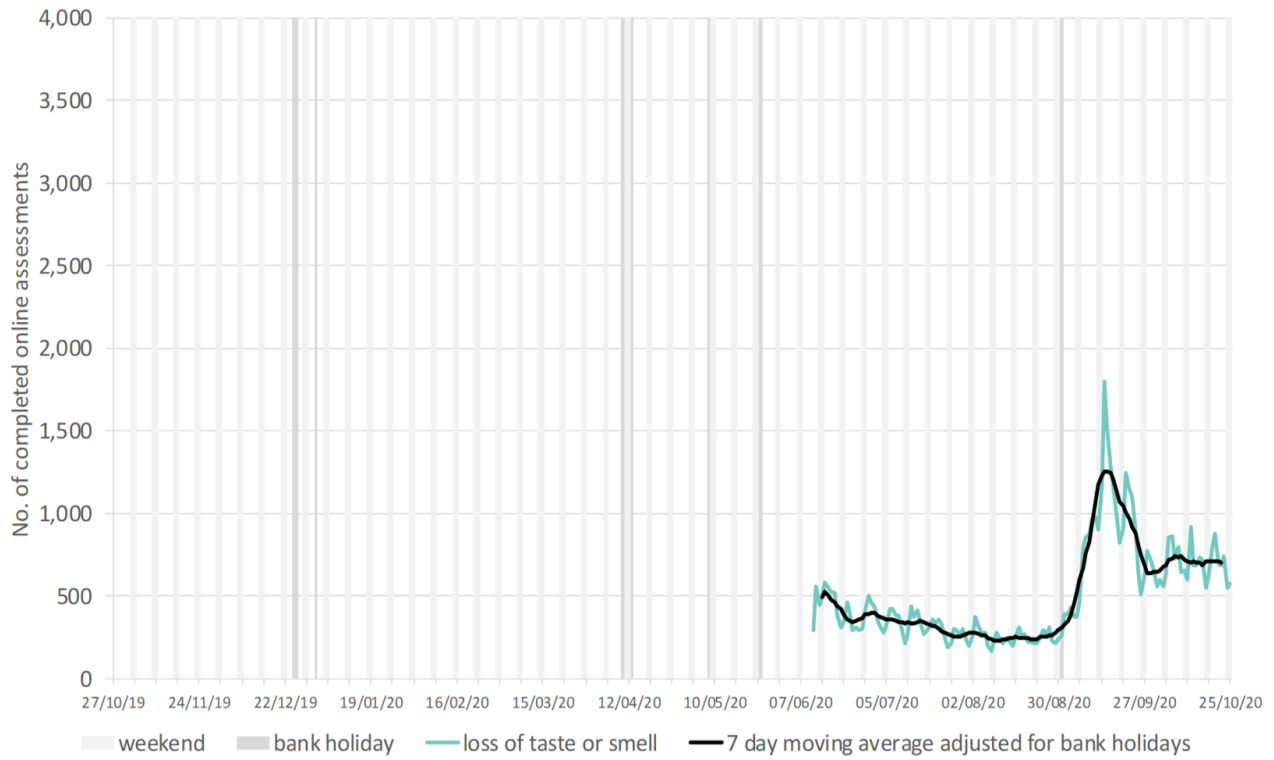


Figure 26: NHS 111 completed online assessments (and 7-day moving average) for (a) daily potential COVID-19 online assessments, (b) daily cold/flu online assessments and (c) daily loss of taste or smell online assessments, as the number of completed online assessments for all ages, England



(c)



Primary care surveillance

RCGP (England)

The weekly ILI consultation rate through the RCGP surveillance was 1.6 per 100,000 registered population in participating GP practices in week 43 compared to the 1.8 per 100,000 in the previous week. This is below the baseline threshold (12.2 per 100,000) (Figure 27). By age group, the highest rates were seen in the under 1 year olds (5.6 per 100,000) and in the 75+ year olds (2.6 per 100,000). The Lower Respiratory Tract Infections (LRTI) consultation rate was at 22.2 per 100,000 in week 43, which was similar to the rate of 22.1 per 100,000 from the previous week. The COVID-19-like indicator consultation rate increased at 51.9 per 100,000 in week 43 compared to 63.5 per 100,000 in the previous week (Figure 28).

Figure 27: RCGP ILI consultation rates, all ages, England

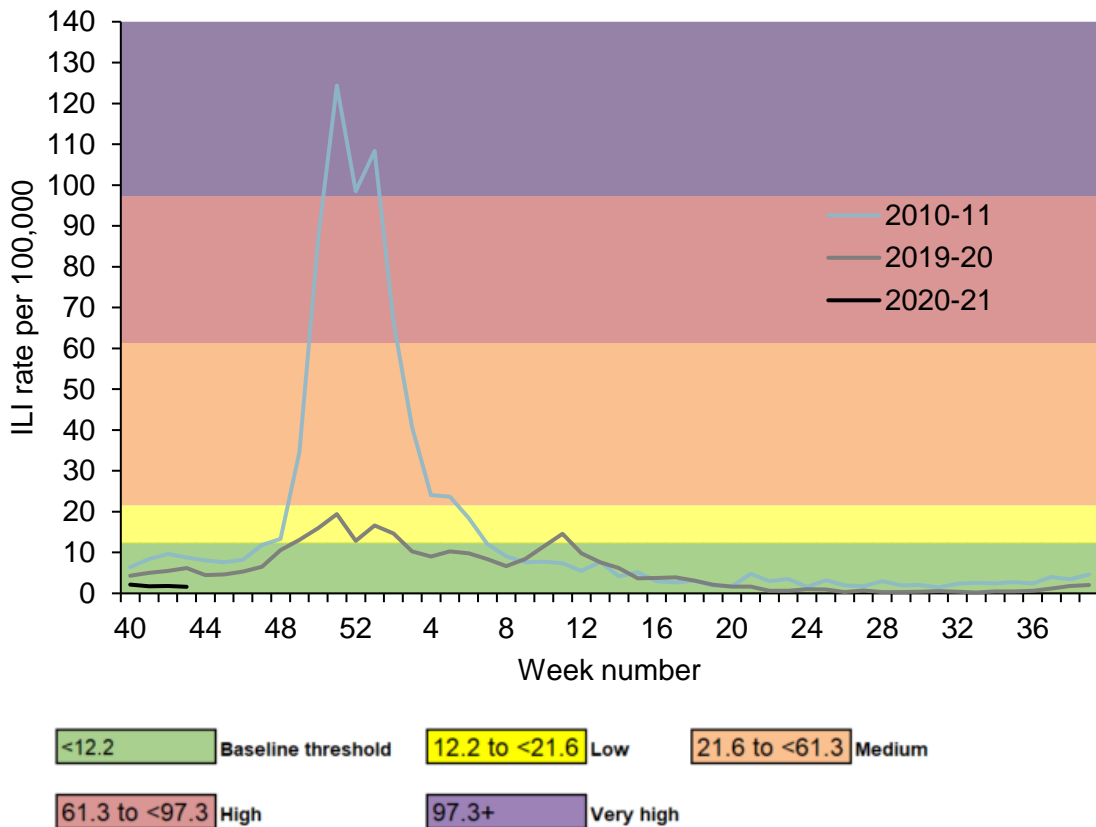
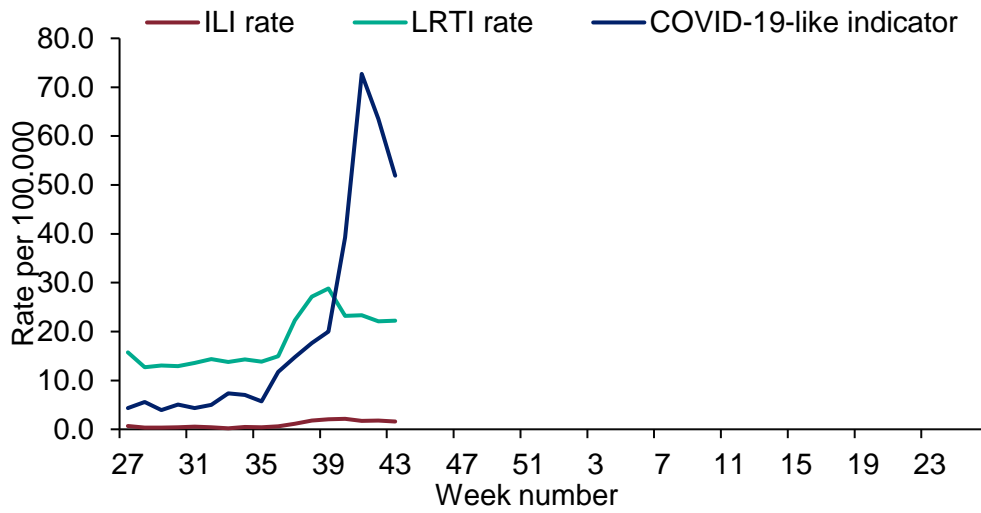


Figure 28: RCGP ILI, LRTI and COVID-19-like indicator consultation rates, England



UK

Overall, weekly ILI consultations rates were below baseline levels in Scotland, Northern Ireland and Wales in week 43 (Table 4).

By age group, the highest rates were seen in the 75+ year olds in Scotland (2.1 per 100,000), in the 15 to 44 year olds in Wales (1.4 per 100,000) and in the 1 to 4 year olds in Northern Ireland (2.4 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	1	2	3	4
England (RCGP)	2.1	1.7	1.8	1.6													
Wales	1.0	1.0	1.0	0.8													
Scotland	0.5	0.7	0.5	0.6													
Northern Ireland	1.3	1.5	2.2	1.4													

The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for GP ILI consultations for the start of influenza activity (based on 10 seasons excluding 2009/10), in a standardised approach across Europe. For MEM threshold values for each country, please visit:

<https://www.gov.uk/guidance/sources-of-uk-flu-data-influenza-surveillance-in-the-uk#clinical-surveillance-through-primary-care>

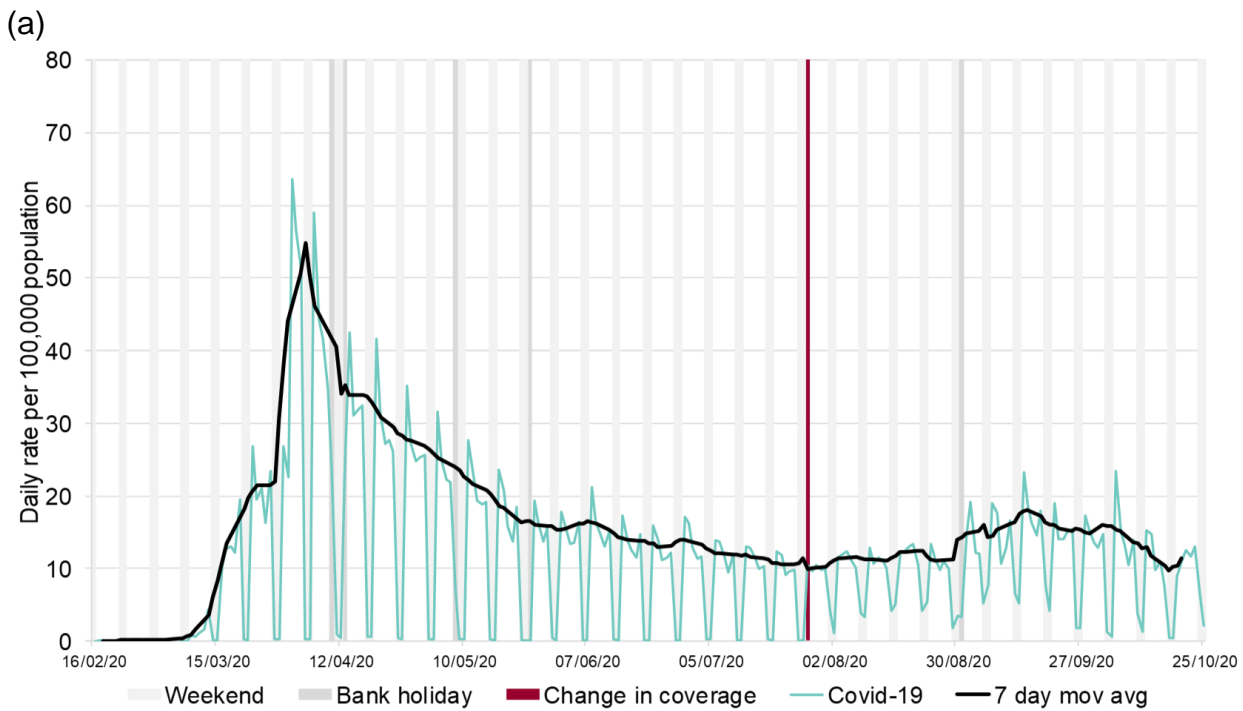
GP In Hours, Syndromic Surveillance

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

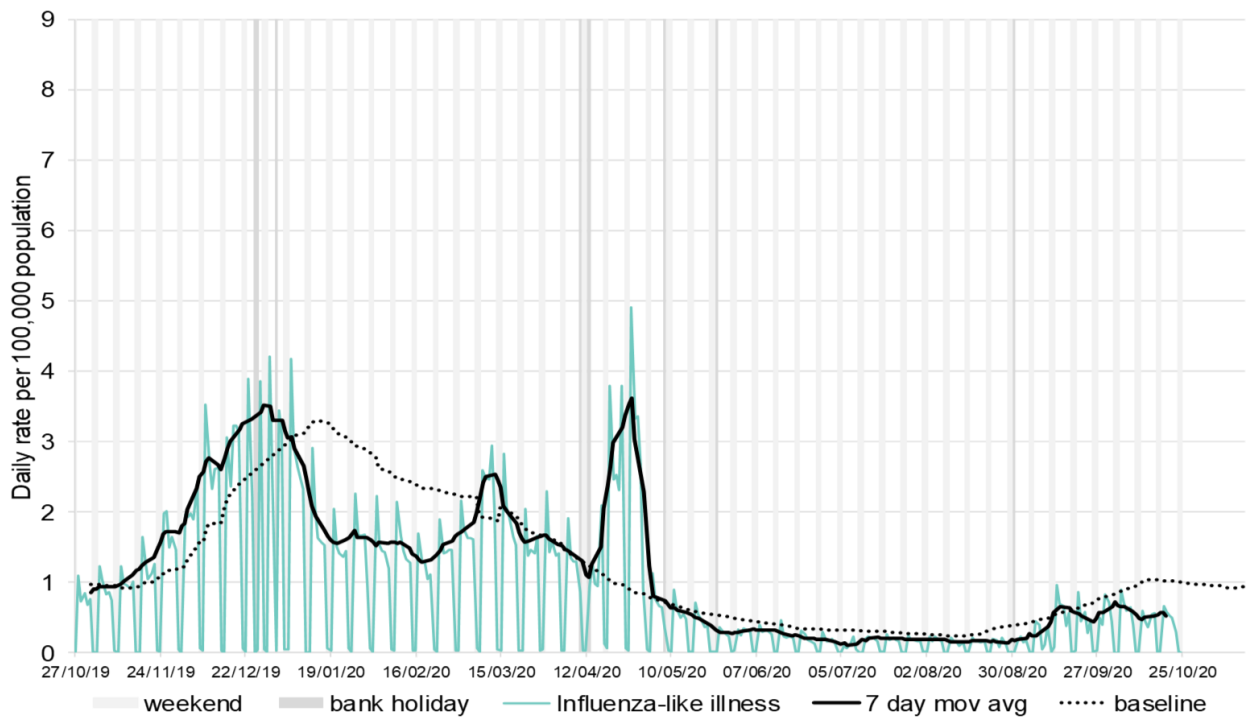
Up to 25 October 2020, GPIH consultations for potential COVID-19-like consultations and ILI consultations remained stable (Figure 29). Please note that the GPIH COVID-19-like indicator presented in this report is derived from a reduced denominator population, compared to ILI.

Please note GP data should be interpreted with caution due to changes in advice regarding accessing GP surgeries due to COVID-19. Further information about these caveats is available from the [PHE GP In Hours Syndromic Surveillance bulletin](#).

Figure 29: GPIH clinical indicators for (a) potential COVID-19 GP consultations and (b) influenza-like illness GP consultations, England



(b)

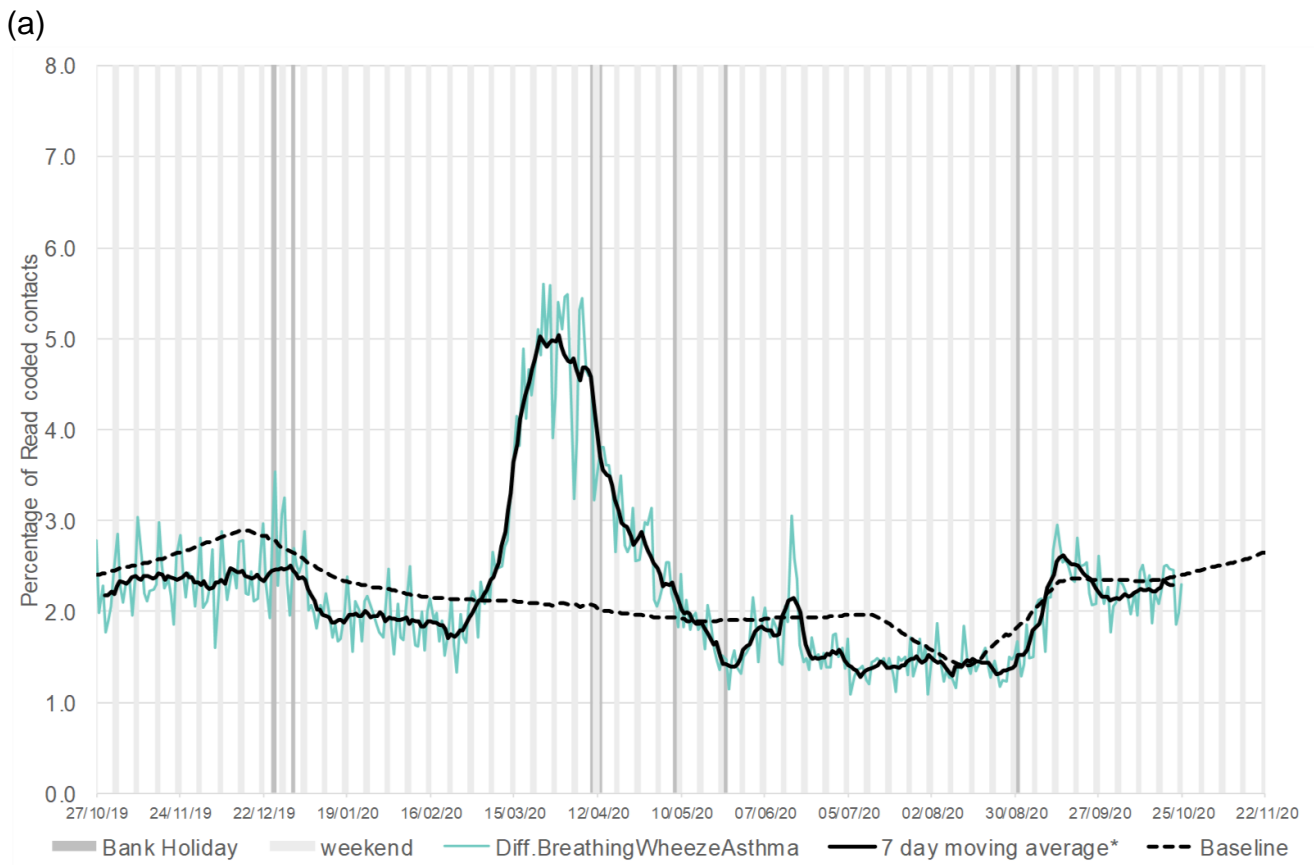


GP Out of Hours, Syndromic Surveillance

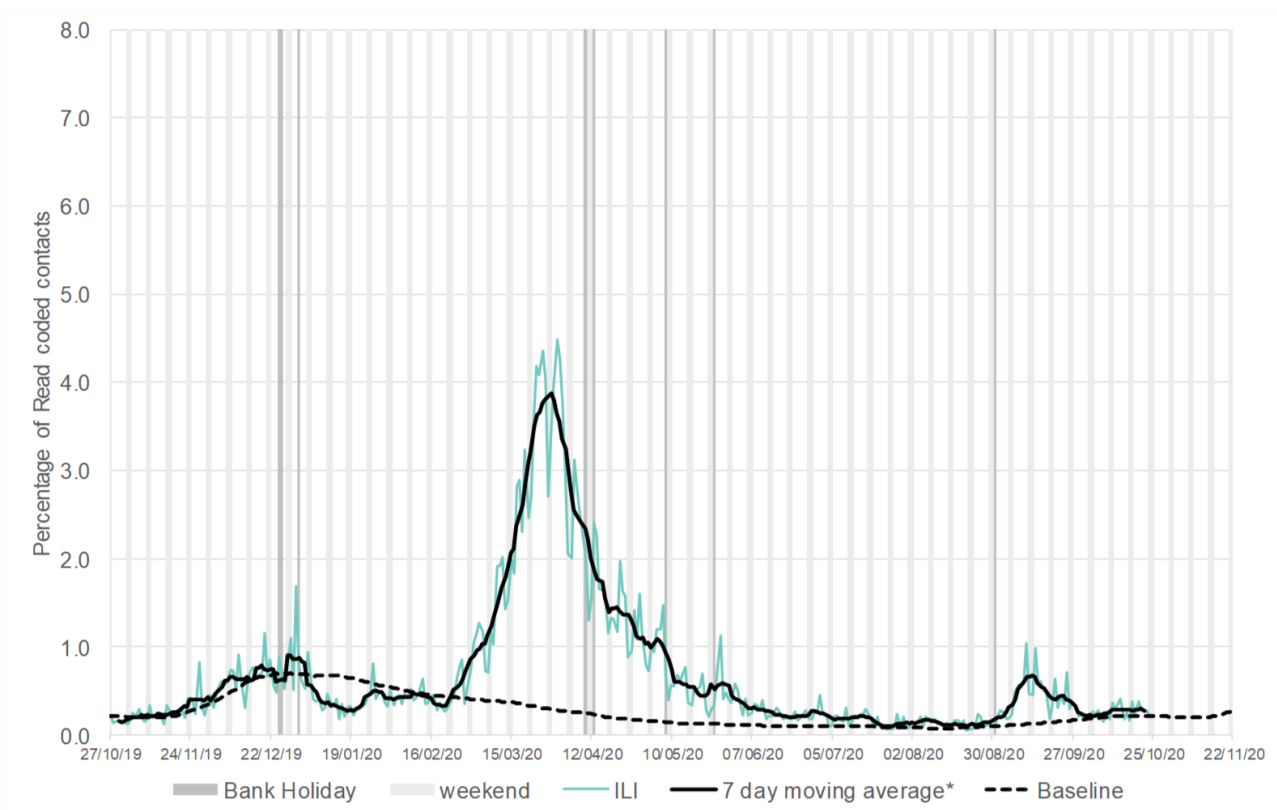
The GP Out of Hours (GPOOH) syndromic surveillance system monitors the numbers of daily unscheduled visits and calls to GPs during evenings, overnight, on weekends and on public holidays. Both systems cover around 55% of England’s population.

Up to 25 October 2020, GP out-of-hours and unscheduled care consultations for acute respiratory infections, influenza-like illness and difficulty breathing/asthma/wheeze remained stable (Figure 30).

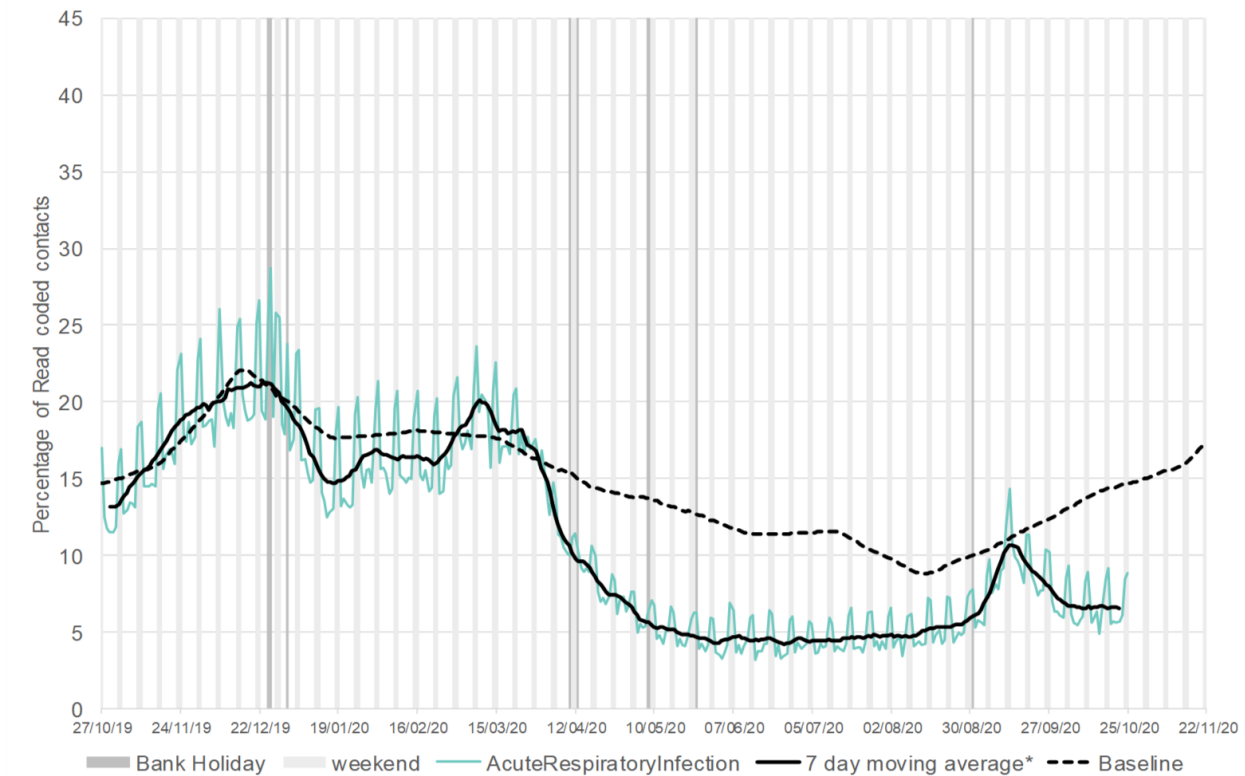
Figure 30: GPOOH daily contacts (%) for (a) difficulty breathing/wheeze/asthma, (b) influenza-like illness and (c) acute respiratory infections, England



(b)



(c)

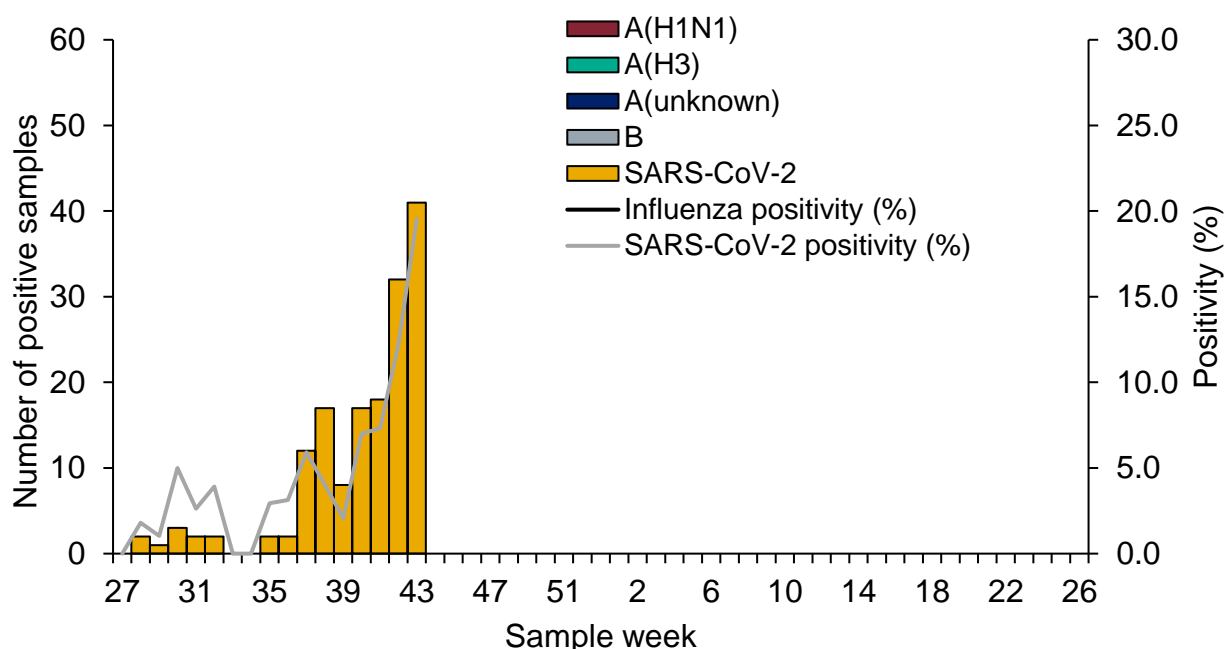


Sentinel swabbing scheme in England and the Devolved Administrations

In week 43 2020, 41 samples tested positive for SARS-CoV-2 with an overall positivity of 19.5% (41/210) compared to 12.2% (32/263) in the previous week, through the UK GP sentinel swabbing schemes (Figure 31).

Samples up to week 41 were only tested for SARS-CoV-2.

Figure 31: Number of influenza and COVID-19 positive samples and weekly positivity (%), UK GP sentinel swabbing scheme



*For the most recent week, more samples are expected to be tested therefore the graph in Figure 31 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/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 and influenza 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.

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

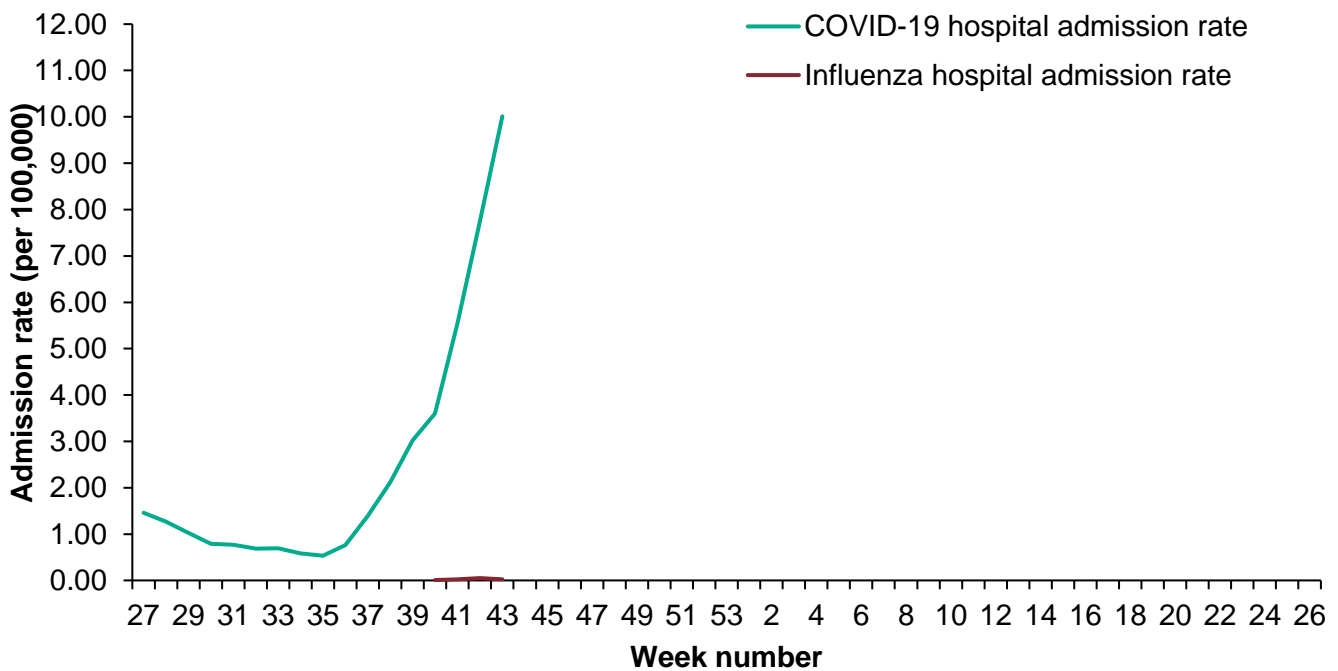
Hospitalisations, SARI Watch

In week 43, the weekly hospital admission rate for COVID-19 increased further whilst the hospital admission rate for influenza was low.

The hospitalisation rate for COVID-19 was at 10.01 per 100,000 in week 43 compared to 7.74 per 100,000 in the previous week. The hospitalisation rate for influenza was at 0.03 per 100,000 in week 43 compared to 0.05 per 100,000 in the previous week; and there were three new confirmed influenza (two influenza A(unknown subtype) and one influenza B) hospital admissions reported.

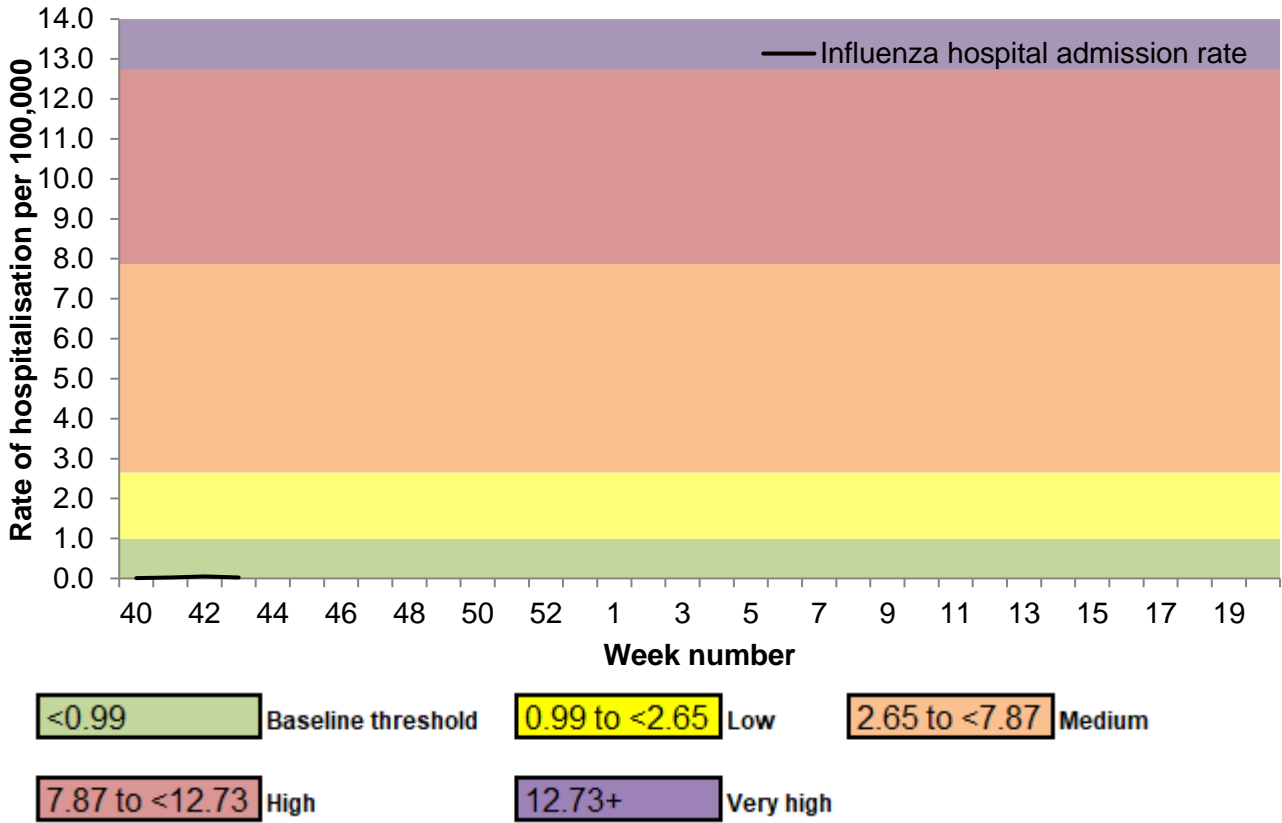
By NHS regions, the highest hospital admission rate for COVID-19 were observed in the North West and for influenza in the East of England. By age groups, the highest hospital admission rate for confirmed COVID-19 and influenza were in the 85+ year olds and in the 0 to 4 year olds respectively.

Figure 32: Weekly overall hospital admission rates per 100,000 of new COVID-19 and influenza positive cases reported through SARI Watch, England



- * influenza hospital admission rate is reported from week 40 2020 onwards
- * influenza hospital admission rate based on 30 sentinel NHS trusts for week 43
- * COVID-19 hospital admission rate based on 119 NHS trusts for week 43

Figure 33: Weekly overall influenza hospital admission rates per 100,000 trust catchment population with MEM thresholds, SARI Watch, England



* the MEM thresholds used are those from the 2019/20 season due to the pandemic

Figure 34: Weekly influenza hospital admissions by influenza type, SARI Watch, England

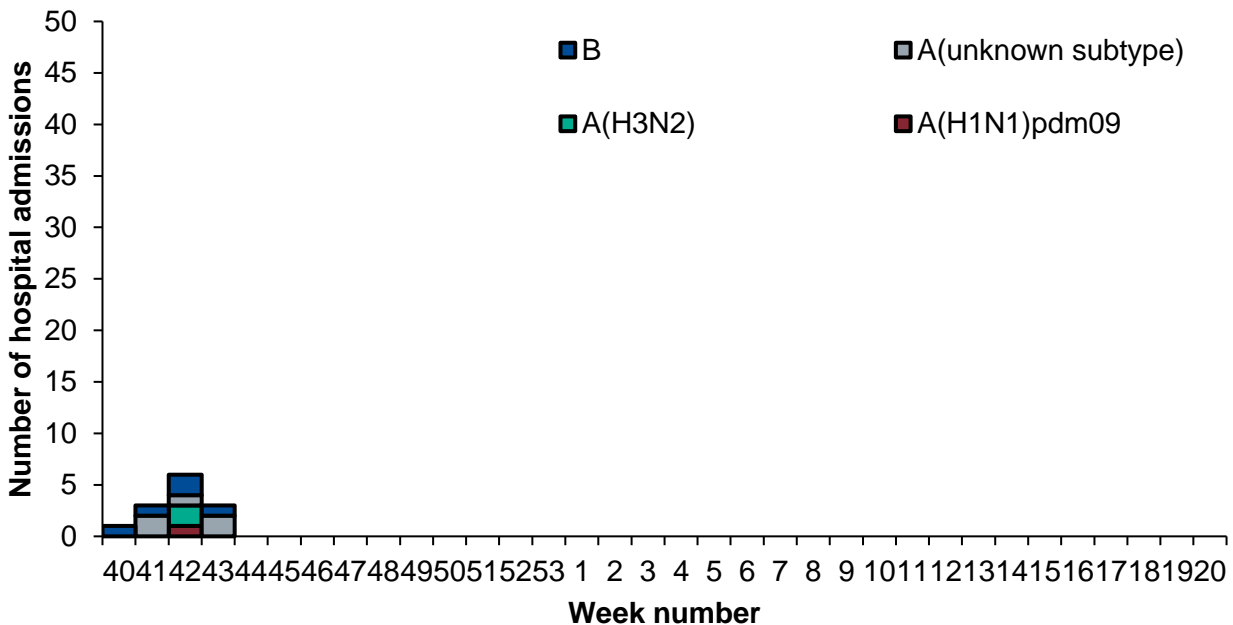
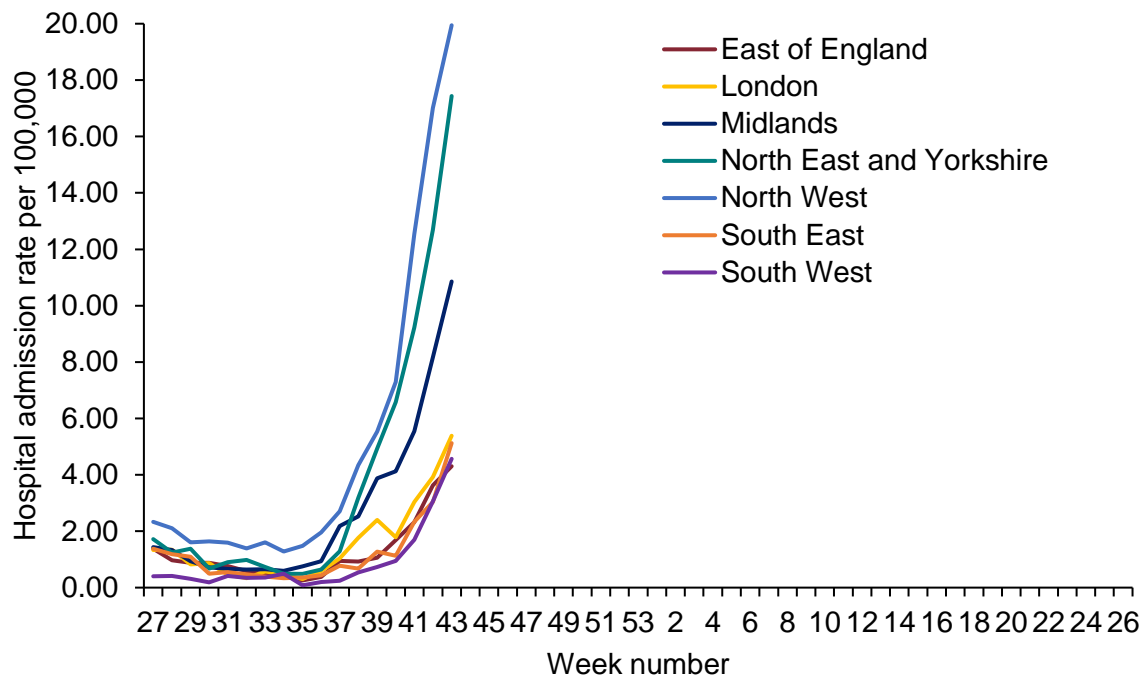


Figure 35: Weekly hospital admission rate by NHS region for new (a) COVID-19 positive cases and (b) influenza reported through SARI Watch

(a)



(b)

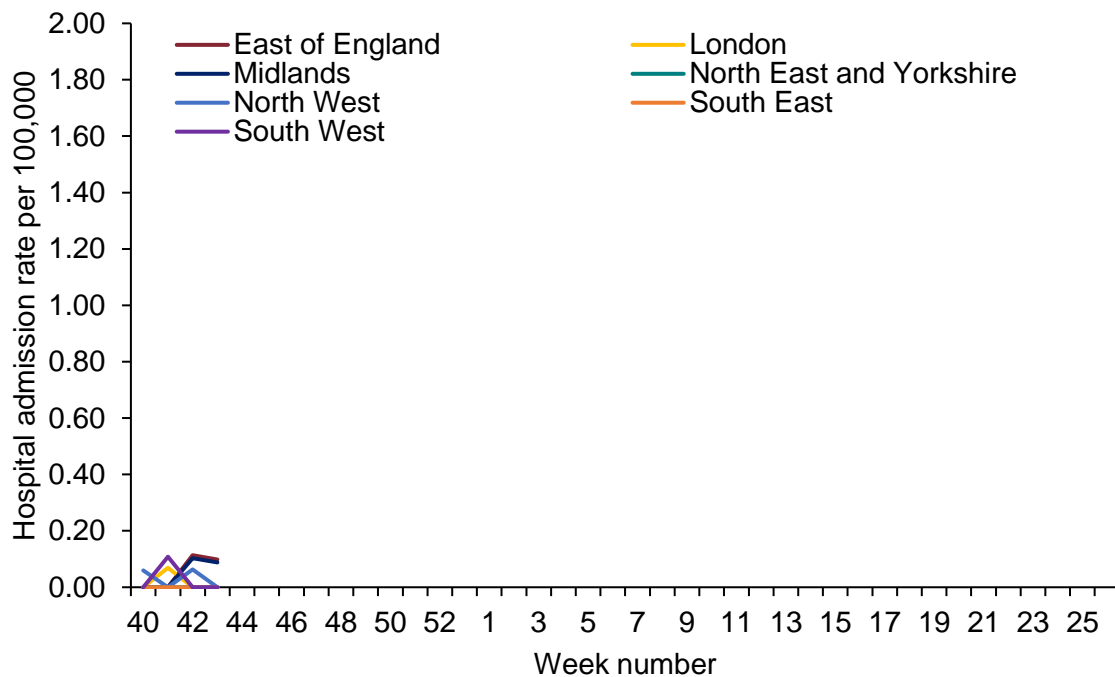
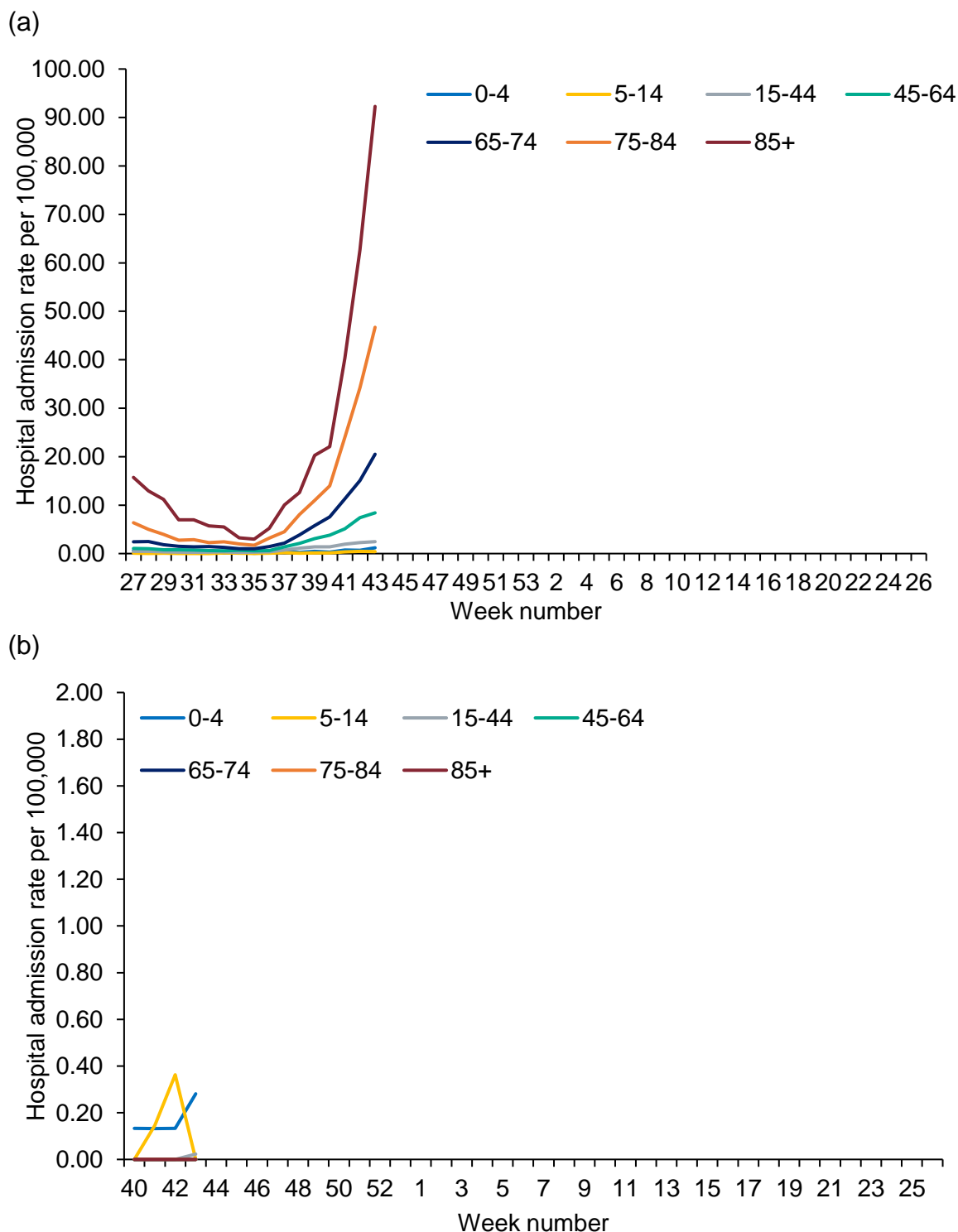


Figure 36: Weekly hospital admission rate by age group for new (a) COVID-19 positive cases and (b) influenza reported through SARI Watch



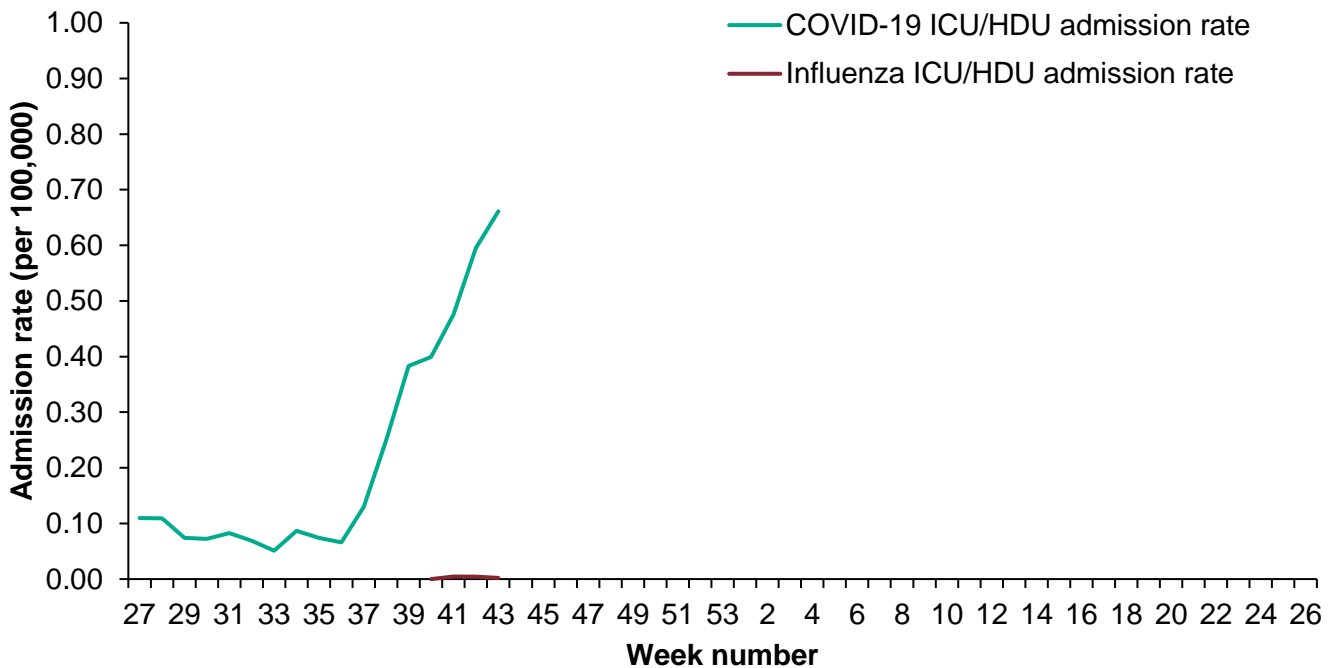
ICU/HDU admissions, SARI Watch

In week 43, the weekly ICU/HDU admission rates for COVID-19 increased whilst the ICU/HDU admission rate for influenza was low.

The ICU/HDU rate for COVID-19 was at 0.66 per 100,000 in week 43 (based on data reported from 115 NHS Trusts) compared to 0.60 per 100,000 in the previous week. The ICU/HDU rate for influenza was at 0.00 per 100,000 in week 43 (based on data reported from 107 NHS Trusts) and there was one influenza (one influenza A(unknown subtype)) confirmed ICU/HDU admission.

By NHS regions, the highest ICU/HDU admission rates for COVID-19 and influenza were observed in the North West and the Midlands respectively. By age groups, the highest ICU/HDU admission rates for COVID-19 and influenza were observed in the 65 to 74 year olds and in the 5 to 14 year olds respectively.

Figure 37: Weekly overall ICU/HDU admission rates per 100,000 of new COVID-19 and influenza positive cases reported through SARI Watch, England



- * influenza ICU/HDU admission rate is reported from week 40 2020 onwards
- * influenza ICU/HDU admission rate based on 107 NHS trusts for week 43
- * COVID-19 ICU/HDU admission rate based on 115 NHS trusts for week 43

Figure 38: Weekly overall influenza ICU/HDU admission rates per 100,000 trust catchment population with MEM thresholds, SARI Watch, England

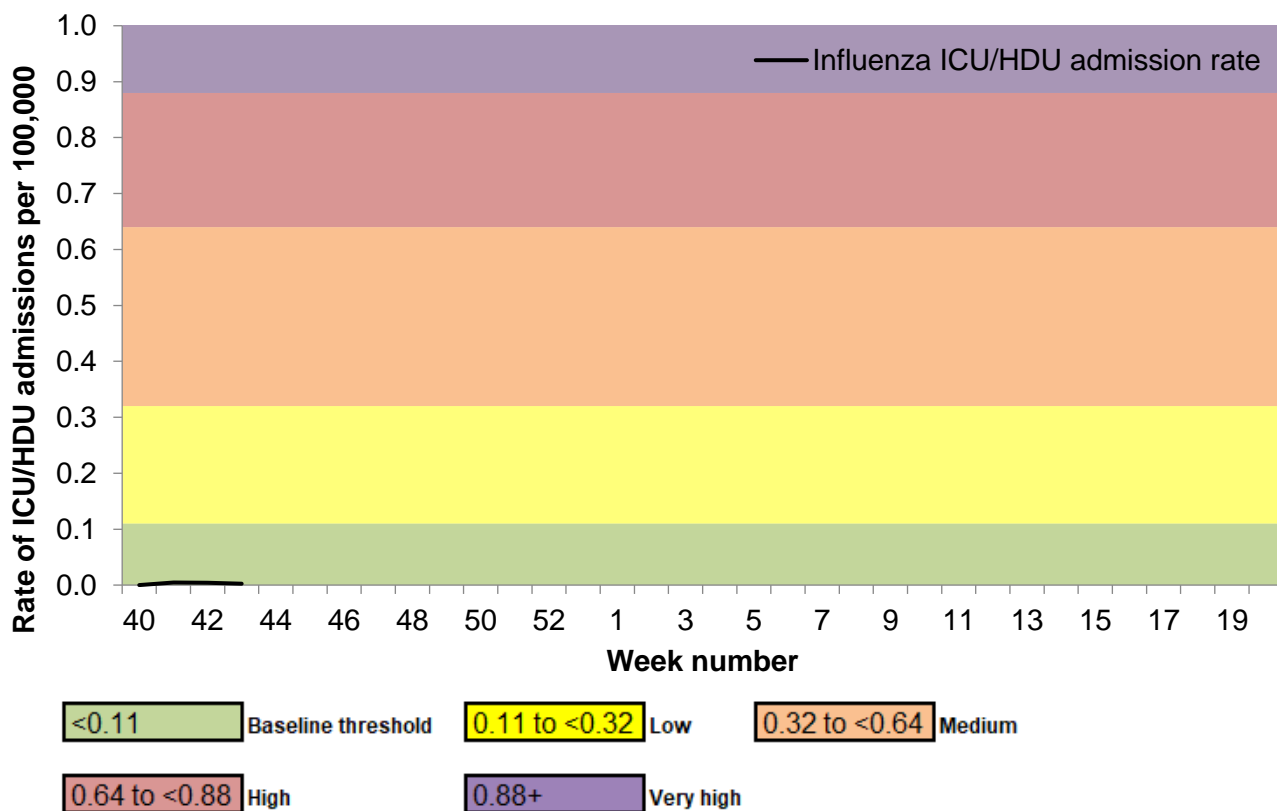


Figure 39: Weekly influenza ICU/HDU admissions by influenza type, SARI Watch, England

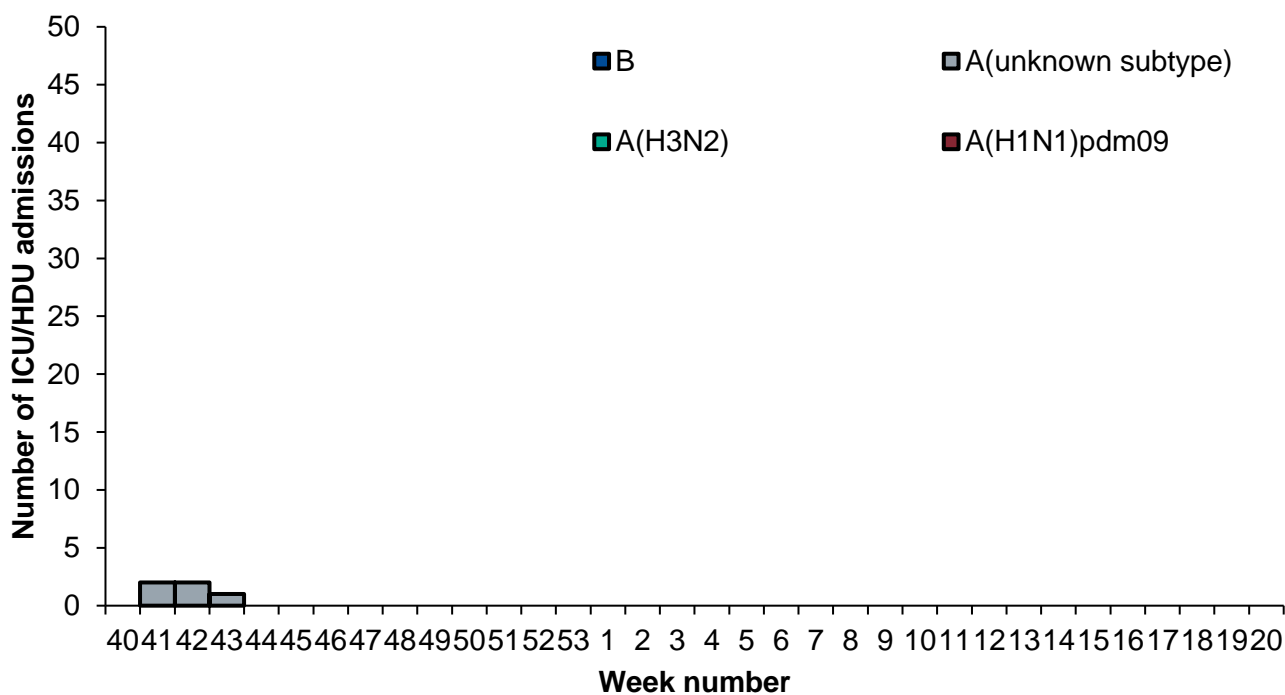


Figure 40: Weekly ICU/HDU admission rate by NHS region for new (a) COVID-19 positive cases and (b) influenza reported through SARI Watch

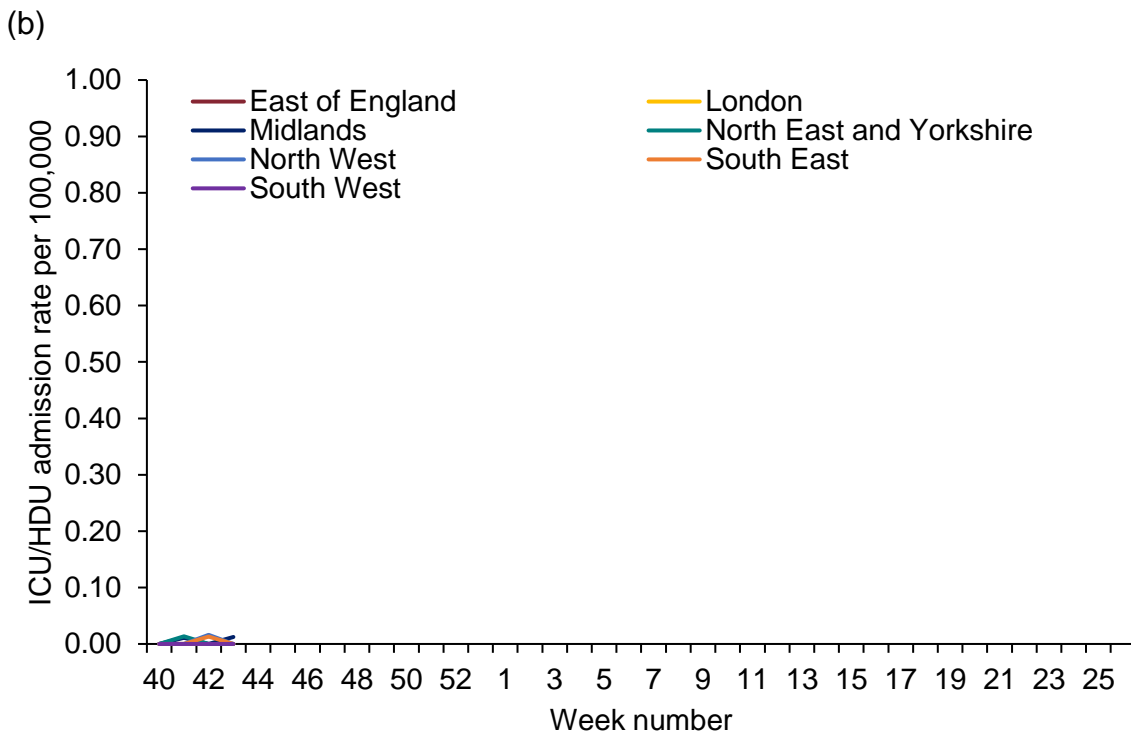
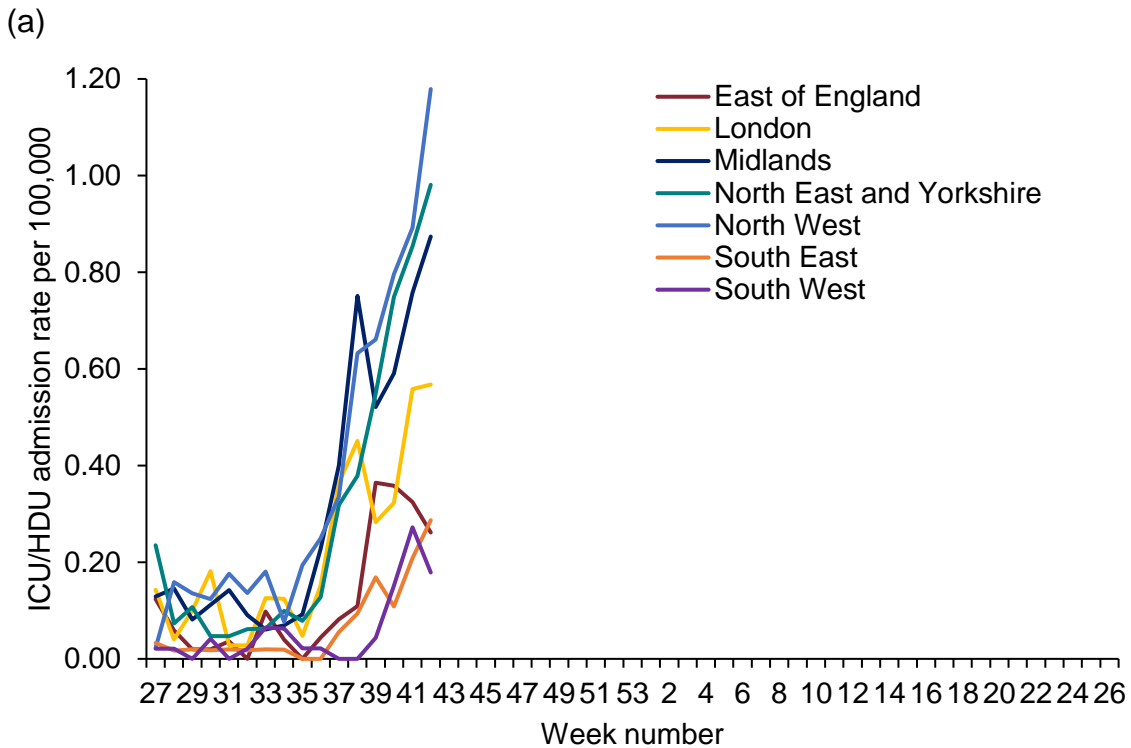
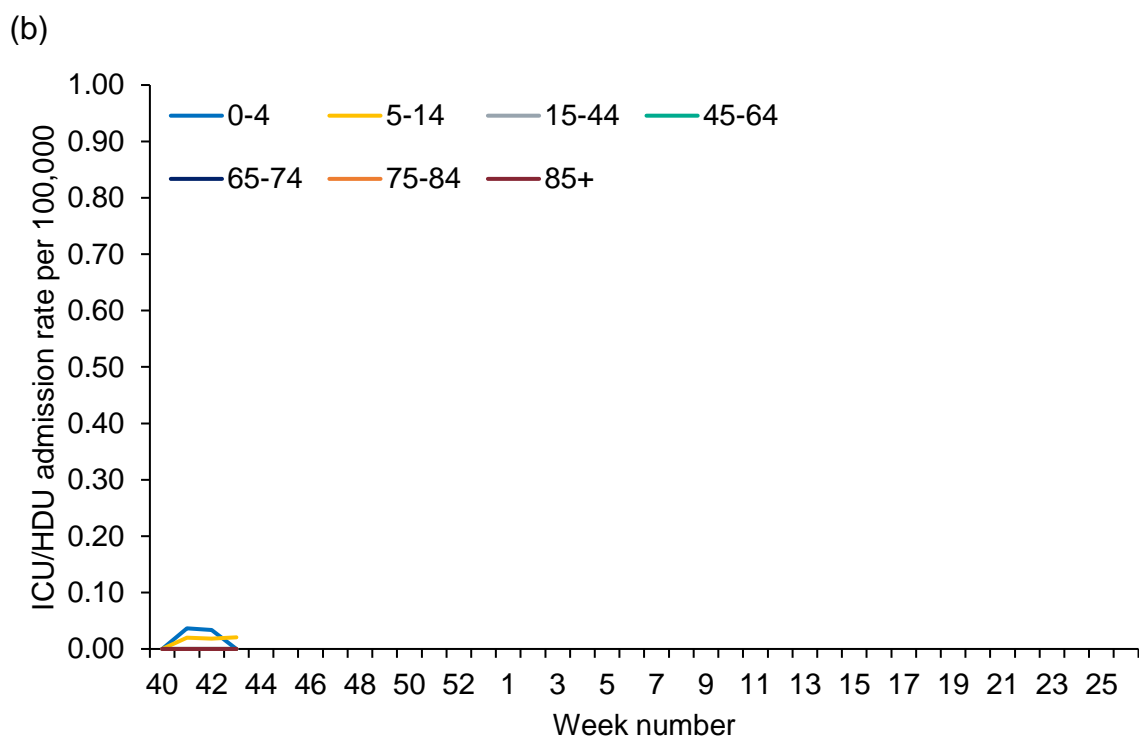
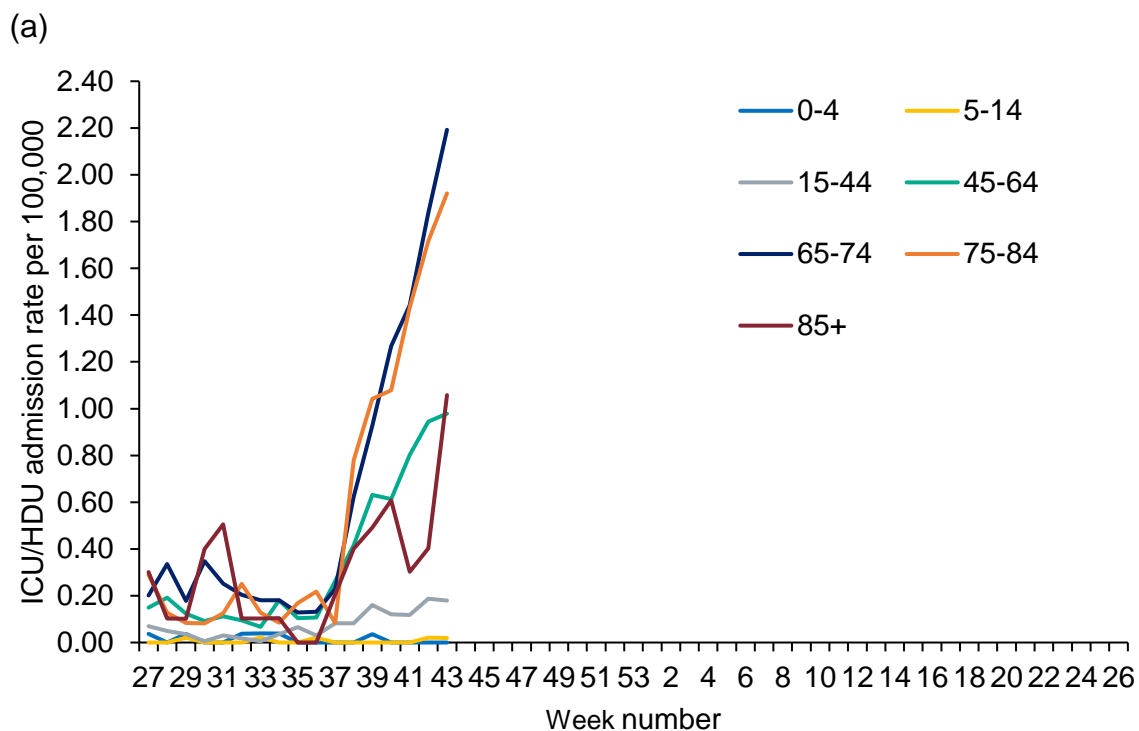


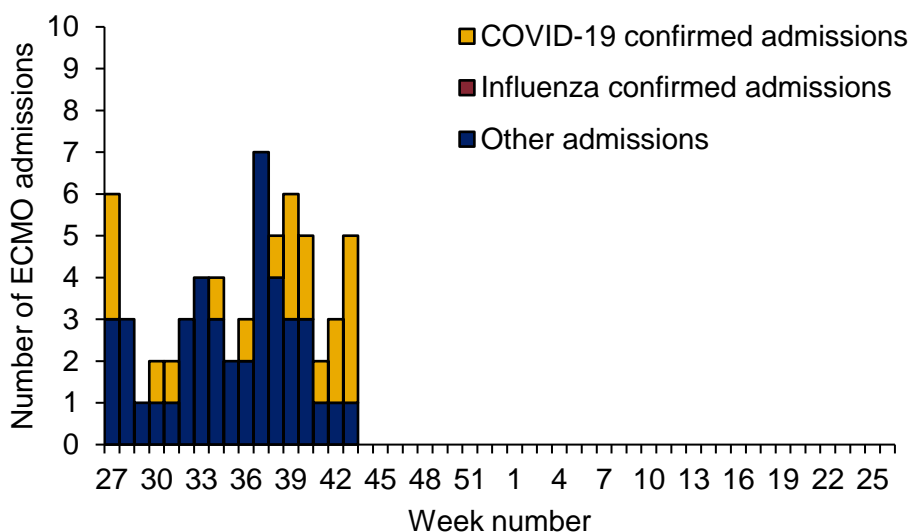
Figure 41: Weekly ICU/HDU admission rate by age group for new (a) COVID-19 positive cases and (b) influenza reported through SARI Watch



ECMO, SARI Watch

Between 3 March and 27 October 2020, a total of 238 laboratory confirmed COVID-19 admissions have been reported from the 5 SRFs in England. There were four new laboratory confirmed COVID-19 admissions reported in week 43 (Figure 42).

Figure 42: Laboratory confirmed ECMO admissions (COVID-19, influenza and non-COVID-19 confirmed) to Severe Respiratory Failure centres in England



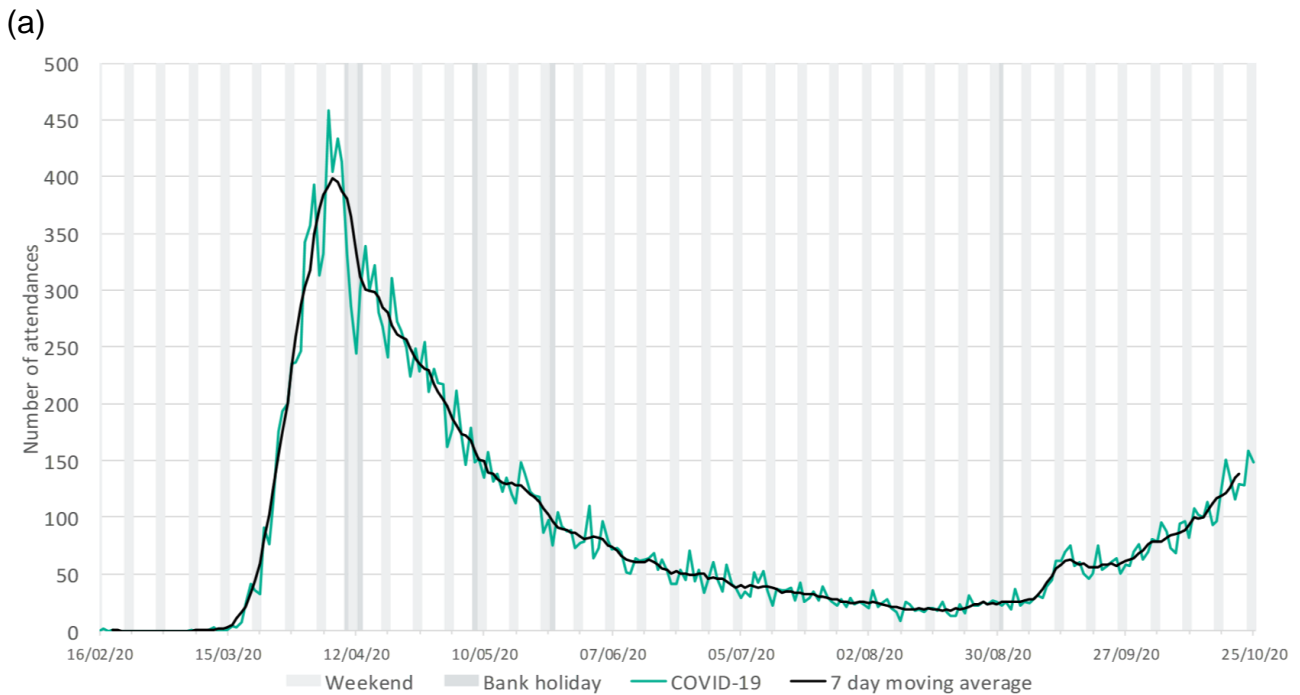
Emergency Department attendances, Syndromic surveillance

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

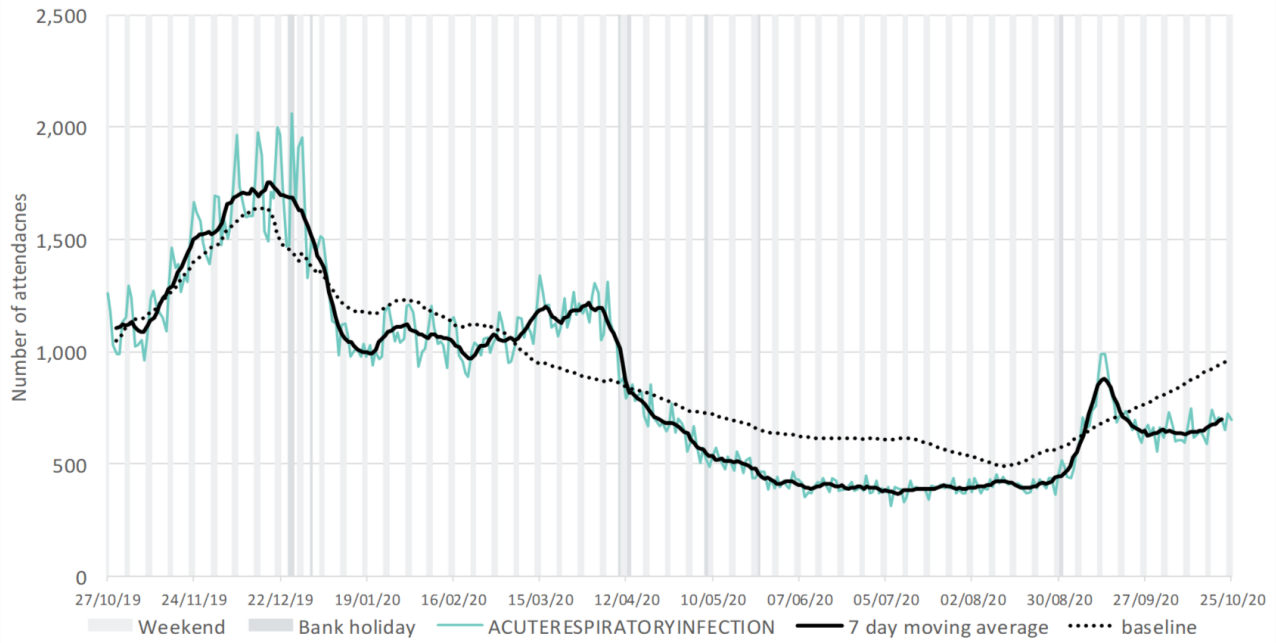
Up to 25 October 2020, the daily number of ED attendances for all ages as reported by 73 EDs, for COVID-19-like attendances increased while attendances for acute respiratory infections remained stable (Figure 43).

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 [PHE Emergency Department Syndromic Surveillance bulletin](#).

Figure 43: Daily ED attendances for (a) COVID-19-like and (b) acute respiratory infections, all ages, England



(b)



Mortality surveillance

Cumulative COVID-19 deaths

Changes to the definitions of COVID-19 related deaths in England are described in more detail in an [accompanying PHE 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 44 represents these differences by definition.

Figure 44: Number of deaths since week 27 by week of death and time since laboratory confirmation of COVID-19, England

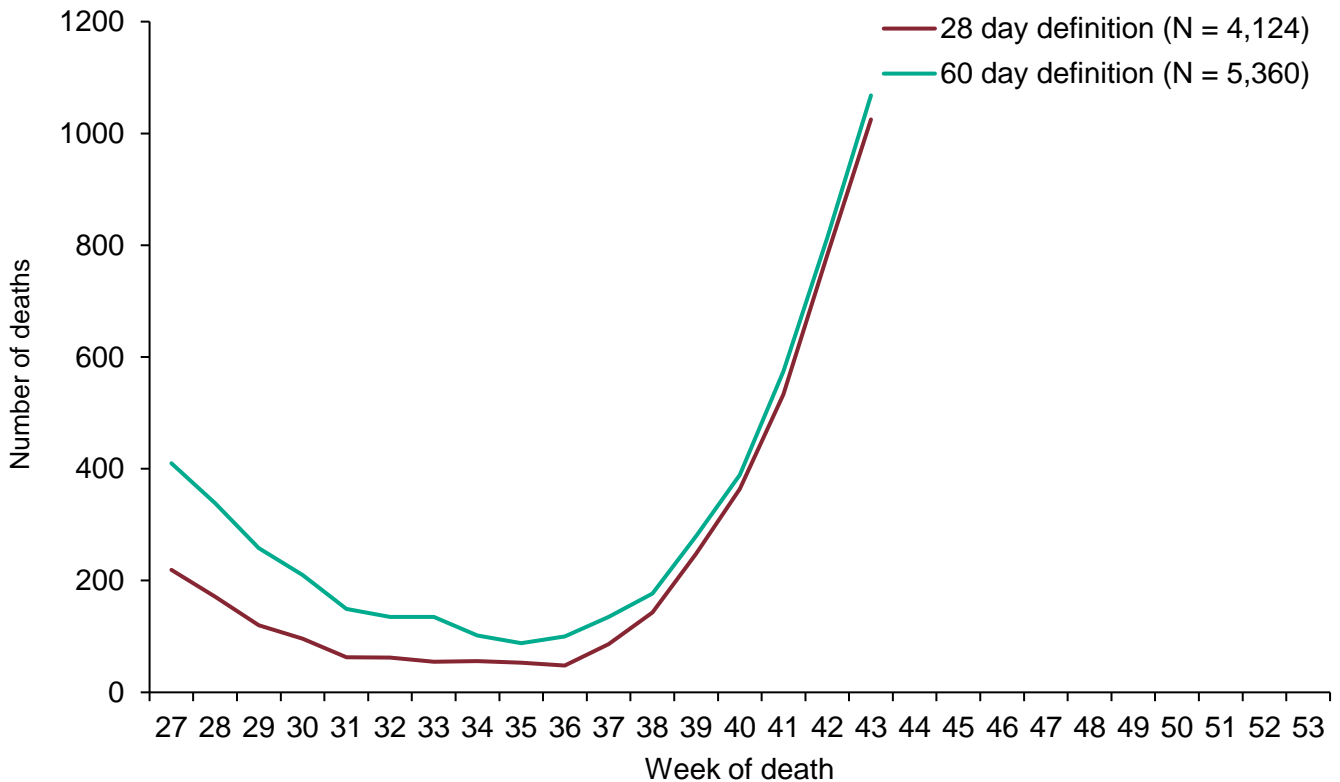


Figure 45: Age/sex pyramid of laboratory confirmed COVID-19 deaths, since week 27

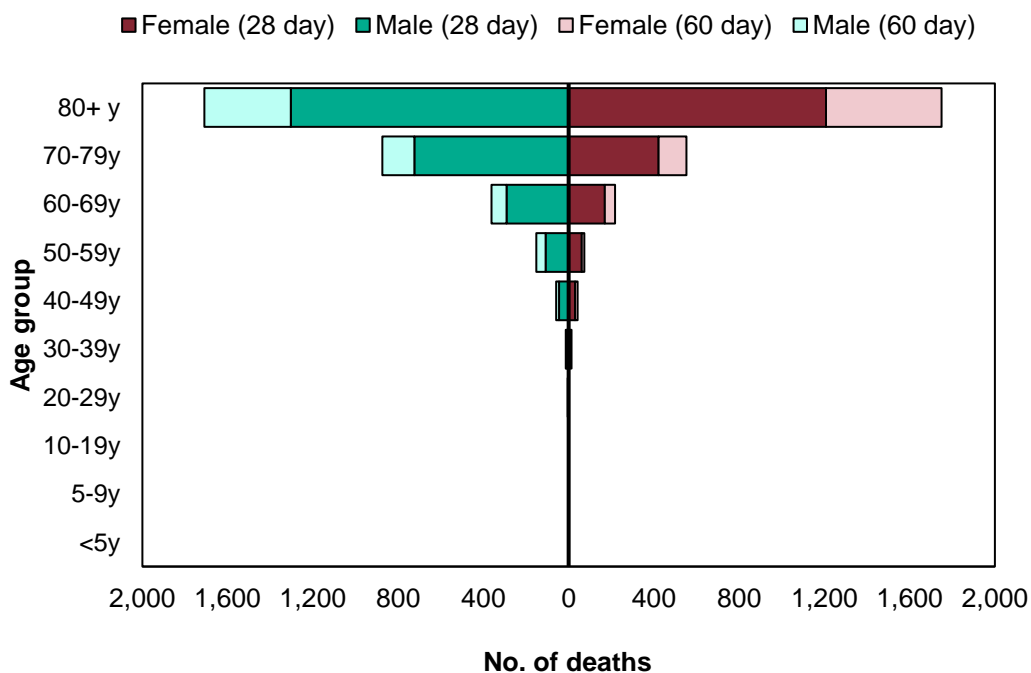


Table 5: Ethnic group (%) of COVID-19 deaths and time since laboratory confirmation of COVID-19, England

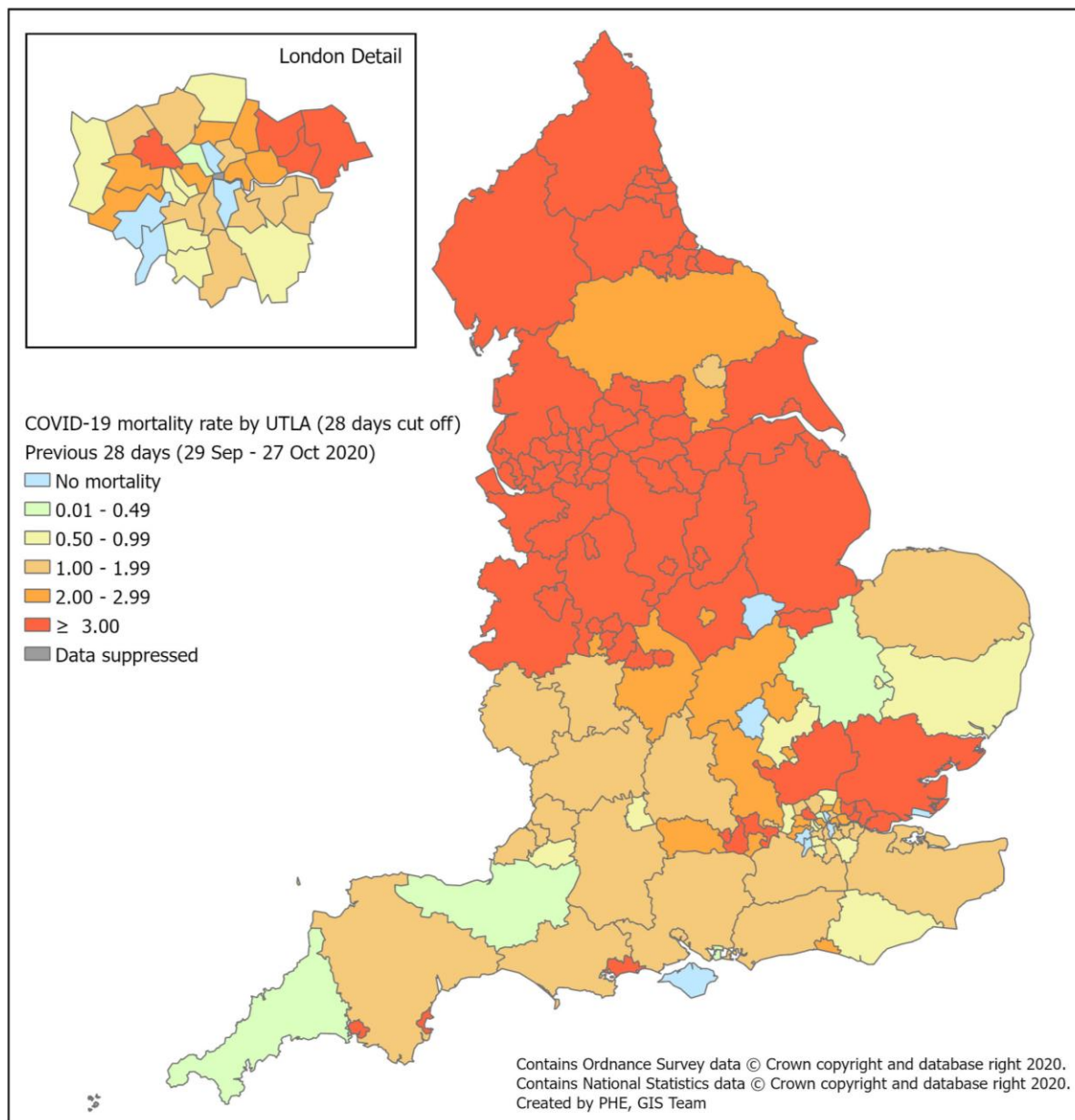
Ethnicity	28 day definition	60 day definition
White	86.3	87.9
Asian / Asian British	10.0	8.5
Black / African / Caribbean / Black British	1.9	1.9
Mixed / Multiple ethnic groups	0.4	0.4
Other ethnic group	1.4	1.4

Table 6: Cumulative number of COVID-19 deaths since week 27 and time since laboratory confirmation of COVID-19 by PHE Centres

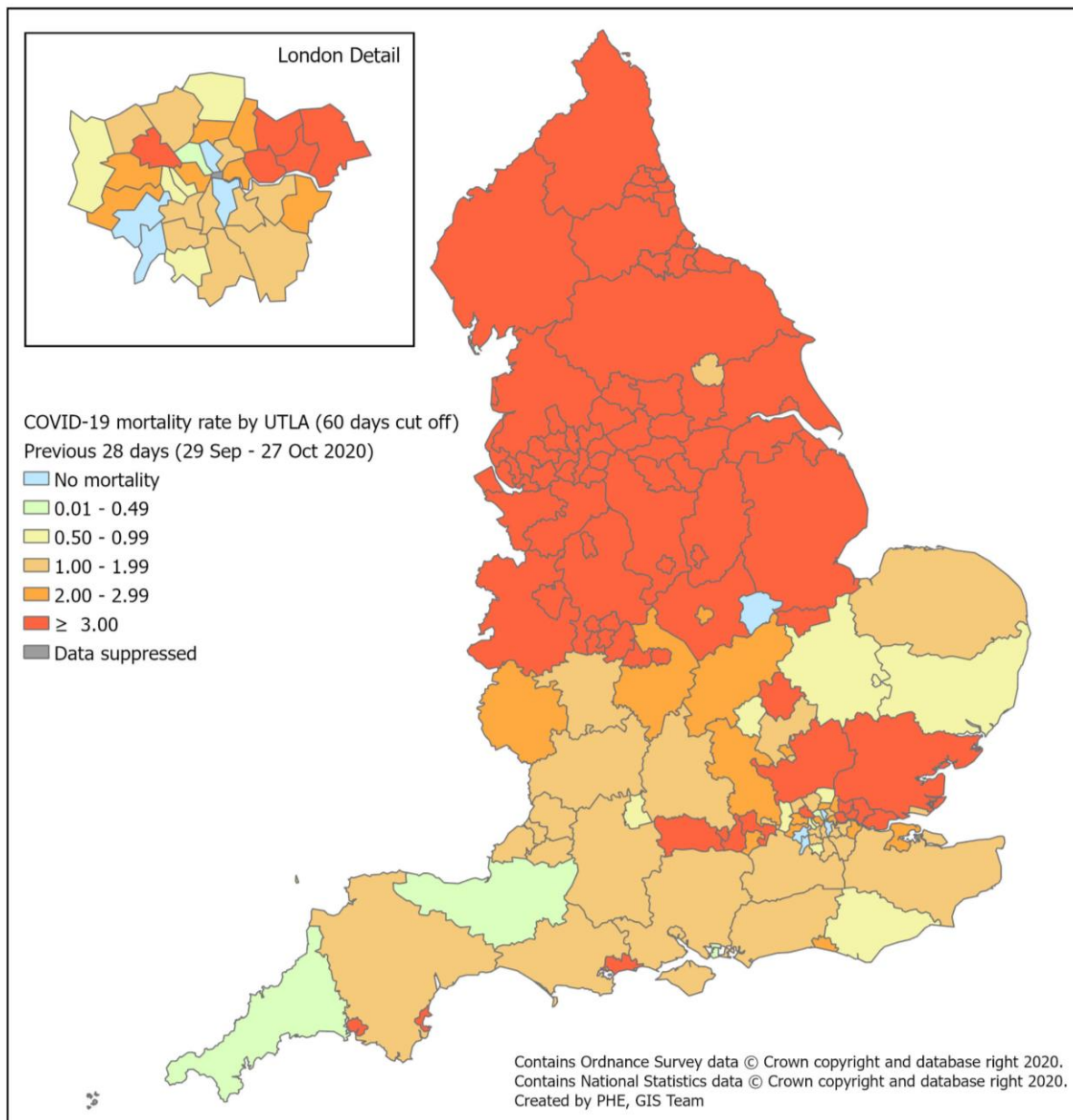
PHE Centres	28 day definition	60 day definition
North East	422	503
North West	1,414	1,702
Yorkshire & Humber	600	781
West Midlands	407	565
East Midlands	386	527
East of England	301	480
London	277	386
South East	377	620
South West	122	180

Figure 46: Cumulative mortality rate of COVID-19 cases per 100,000 population tested under Pillar 1 and 2 for the past four weeks by (a) 28 day definition and (b) 60 day definition

(a)



(b)



* Figure 46 has been calculated using mid-2019 ONS population estimates

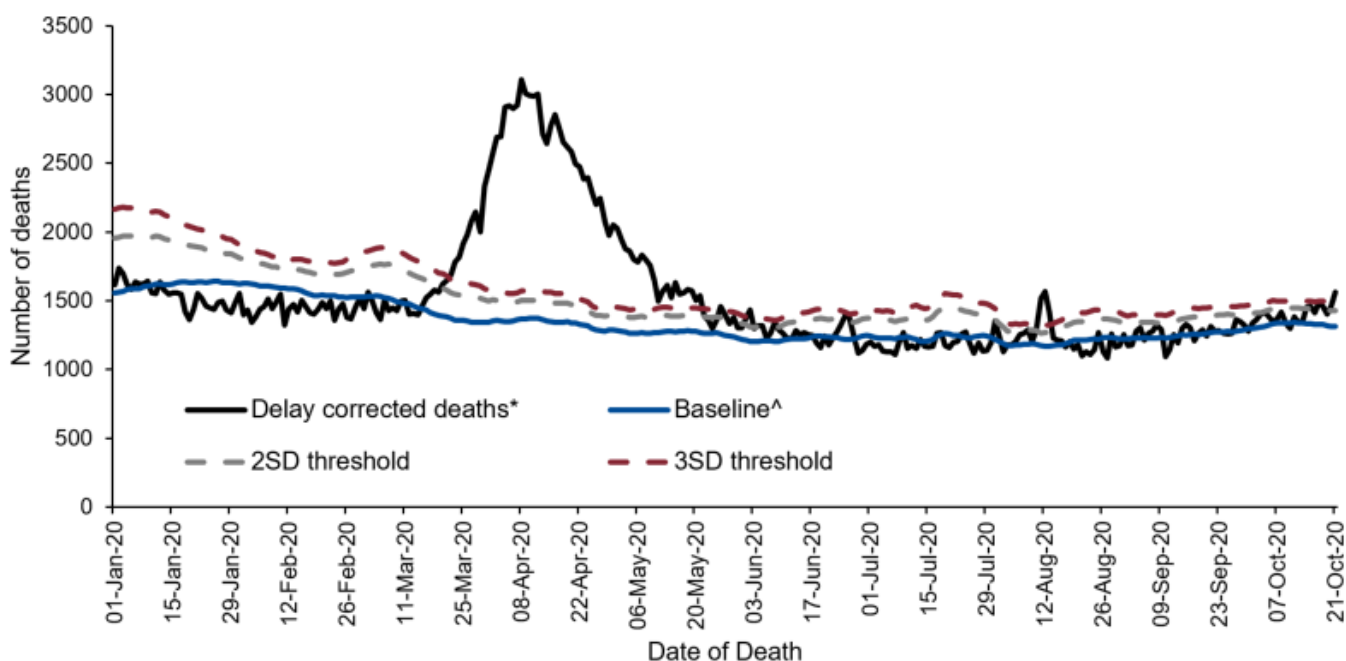
Daily excess all-cause mortality (England)

Deaths occurring from 1 January to 21 October 2020 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 +/- 7 days with an extrapolated time trend, and with 2 and 3 standard deviation (SD) limits shown (Figure 47).

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 47. 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.

No significant excess all-cause mortality was observed in week 42 overall or by age group, however subnationally excess was noted in the North West. The excess noted in week 33 coincides with a heat wave (Figure 47, 48 and Table 7).

Figure 47: Daily excess all-cause deaths in all ages, England, 1 January 2020 to 21 October 2020



^ based on same day in previous 5 years +/- 1 week with a linear trend projected

* corrected for delay to registration from death

Table 7: Excess all-cause deaths by (a) age group and (b) PHE centres , England

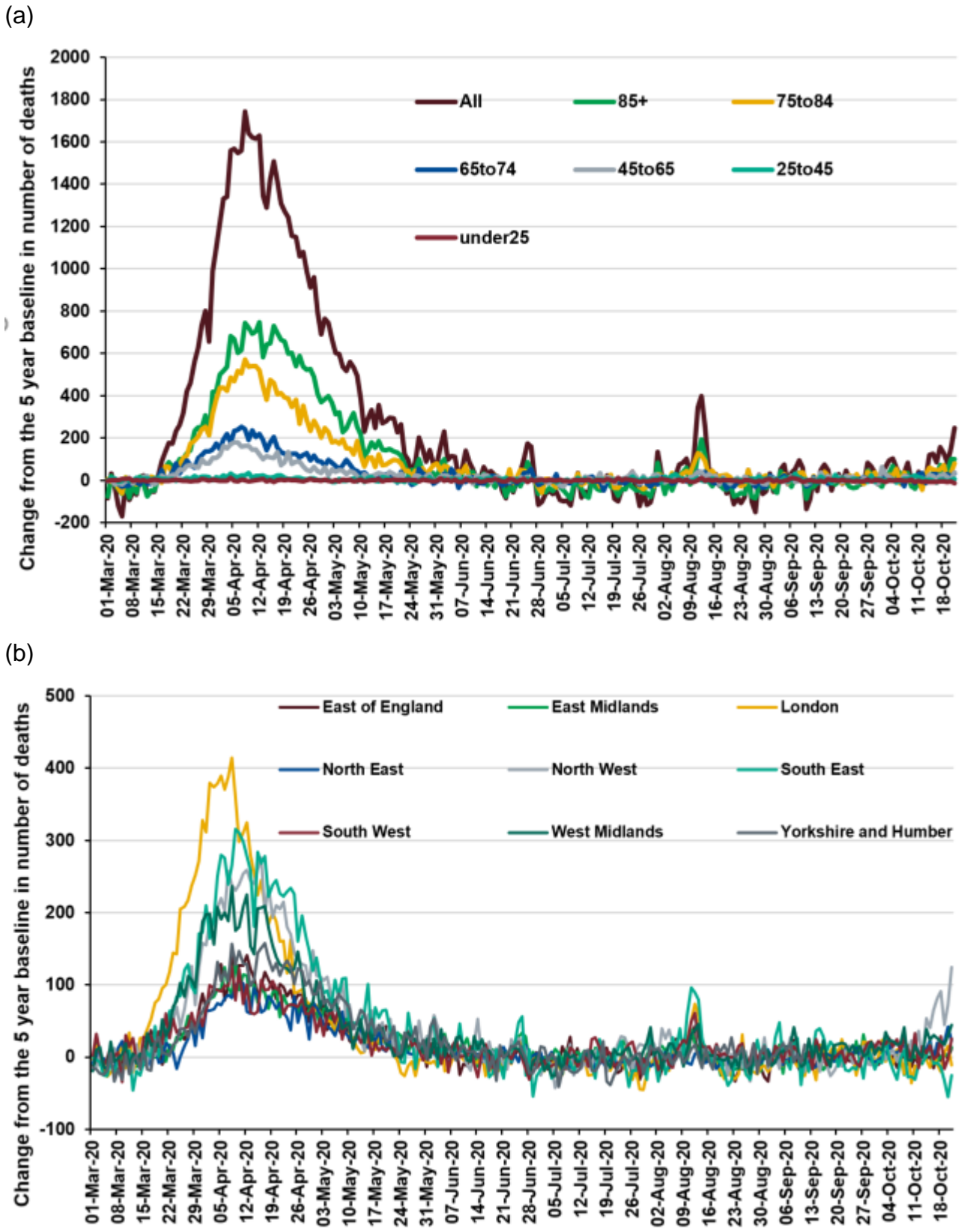
(a)

Age Group	Excess detected in week 42 2020?	Weeks in excess since week 10 2020
All	x	13 to 21, 23, 33
under 25	x	None
25 to 44	x	14 to 16, 32
45 to 64	x	12 to 19
65 to 74	x	13 to 19
75 to 84	x	13 to 21, 33
85+	x	13 to 21, 33

(b)

PHE Centres	Excess detected in week 42 2020?	Weeks in excess since week 10 2020
East of England	x	14 to 19
East Midlands	x	13 to 19
London	x	12 to 19,33
North East	x	14 to 21
North West	✓	13 to 20, 33,42
South East	x	13 to 21, 33
South West	x	14 to 19, 33
West Midlands	x	13 to 20
Yorkshire and Humber	x	14 to 21, 23

Figure 48: Daily excess all-cause deaths by (a) age group and (b) PHE centres , England, 1 March 2020 to 21 October 2020



Microbiological surveillance

Virus characterisation

PHE 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

In week 43, no influenza viruses were characterised by PHE Respiratory Virus Unit (RVU).

Antiviral susceptibility

Influenza positive samples are screened for mutations in the virus neuraminidase gene known to confer oseltamivir and/or zanamivir resistance. Additionally, testing of influenza A(H1N1)pdm09, A(H3N2), and influenza B virus isolates for neuraminidase inhibitor susceptibility (oseltamivir and zanamivir) is performed at PHE-RVU using a functional assay. The data summarized below combine the results of both testing methods. The samples tested are routinely obtained for surveillance purposes, but diagnostic testing of patients suspected to be infected with neuraminidase inhibitor-resistant virus is also performed.

In week 43, no influenza viruses were tested for antiviral susceptibility.

Antimicrobial susceptibility

Table 8 shows in the 12 weeks up to week 43 2020, 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 8: Antimicrobial susceptibility surveillance in lower respiratory tract

Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	714	86
	Macrolides	769	76
	Tetracycline	766	77
<i>H. influenzae</i>	Amoxicillin/ampicillin	3,758	62
	Co-amoxiclav	4,052	74
	Macrolides	794	5
	Tetracycline	4,178	97
<i>S. aureus</i>	Methicillin	2,752	93
	Macrolides	2,974	70
MRSA	Clindamycin	116	39
	Tetracycline	148	73
MSSA	Clindamycin	1,832	75
	Tetracycline	2,480	93

* Macrolides = erythromycin, azithromycin and clarithromycin

Data source: PHE's SGSS CDR module. Please note that this is different to the data source used during the 2019/20 influenza season when the SGSS AMR module was used, and so the results are not directly comparable.

There has been a reduction in the total number of bacterial positive lower respiratory tract clinical samples reported to PHE since mid-March 2020

COVID-19 sero-prevalence surveillance

In this week's report the results from testing samples provided by healthy adult blood donors aged 17 years and older, supplied by the NHS Blood and Transplant (NHS BT collection) between weeks 17 -42 are summarised. Donor samples from two different geographic regions (approximately 1000 samples per region) in England are tested each week. Since week 26, an exclusion of donors aged 70 years and older donating throughout lockdown was lifted, and therefore data since then include donors in this older age group.

Seroprevalence in Adults aged 17 years and older (Blood Donors)

The results presented here are based on testing using the Euroimmun assay for blood donor samples collected between weeks 17-42. This week's report includes the results of testing the 7th set of samples from South East (week 42) and the East of England (week 42).

This report presents seropositivity estimates using a 4-week rolling prevalence for national and regional estimates. Seroprevalence estimates reported are based on seropositivity which are unadjusted for the sensitivity and specificity of the assays used. This is because assay sensitivity will change according to the time since infection in these cohorts due to waning of antibodies.

National Prevalence

Overall population weighted (by age group, sex and NHS region) antibody prevalence using the Euroimmun assay among blood donors aged 17 years and older in England was 5.6% (95% CI 5.1% - 6.2%) for the period 23rd September– 18th October (weeks 39-42). Estimates are based on 8082 samples, of which 495 were positive. This compares with 5.7% (95% CI 5.2%-6.3%) for the period of 24th August – 18th September (weeks 35-38). Changes in prevalence over time need to take into account demographic changes in the donor population, with later data including donors aged 70 years and older who were previously excluded from donating during lockdown. Waning immunity is also likely to be a contributing factor.

Regional Prevalence over Time

Seropositivity (weighted by age group and sex) vary across the country and over time. Figure 49 shows the overall 4-weekly rolling proportion seropositive in each region over time. Seropositivity estimates are plotted on the mid-point of the 4-weekly period.

In London where estimates have consistently been highest, the 4-weekly rolling seropositivity increased from 11.9% (week 16-19) to 13.7% (weeks 20-23). From week 24 seropositivity declined and plateaued with estimates at 7.8% in weeks 30-33. This was then followed by a rise in seropositivity to 10.4% (95% CI 9.1% - 12%) in weeks 34-

37 and a recent slight decline to 8.9% (95% CI 7.8% - 10.2%) in weeks 39-42. Contributory factors to this fluctuation are likely to include variability in the precise locations of sampling within London and changes in exposure of donors. Increases in seropositivity observed in weeks 34-37 in part may reflect samples being tested from donors who were likely to be returning to donate having donated in earlier parts of the epidemic when incidence was high.

In the East of England seropositivity was 4.0% (95% CI 3% - 5.3%) in the most recent data (weeks 39-42) fluctuating between 4.1% (95% CI 3.0% - 5.7%) in weeks 32-35 and 5.9% (95% CI 4.6% - 7.6%) in weeks 35-38.

Seropositivity in the South East region was 3.5% (95% CI 2.5% - 4.8%) in the latest data (weeks 39-42) lower than the 5.1% (95% CI 3.3% - 7.7%) observed in weeks 33-36. Seropositivity in the South West region was 3.5% (95% CI 2.5 - 4.8%) in (weeks 39-42) lower than the 4.1% (95% CI 2.9% - 5.8%) observed in the previous survey in weeks 37-40.

In the North East and Yorkshire NHS region the seropositivity has increased to 5.6% (95% CI 4.3%-7.3%) in weeks 39-42 compared with 3.7% (95% CI 2.7%-5.0%) in week 36-39.

Data from the Midlands also show a higher proportion seropositive at 6.8% (95% CI 5.3%-8.8%) in weeks 39-42. This compares to 5.5% (95% CI 4.3%-7.0%) in weeks 36-39.

Data from the North West show that seropositivity was 5.9% (95% CI 4.4% - 7.9%) in weeks 35-38 and more recently 5.3% in weeks 39-42 (95% CI 4.1-6.9%) showing a continued plateauing.

The change in proportion seropositive observed in some regions is likely to be largely driven by changes in the precise locations of sample collection. However, the most recent increases observed in the Midlands and North East regions cannot be fully explained by this and are likely to reflect increased transmission, consistent with other surveillance data. Increases in seropositivity reflect transmission occurring at least two to three weeks previously given the time taken to generate an antibody response following infection. Declines in prevalence observed during the summer months can be partially explained by demographic differences in the donor population as lockdown measures were relaxed. Examples include a reduction in attendance of regular donors in August and that donors aged 70 years and above were not allowed to donate during lockdown, but this exclusion was lifted from week 26. Waning immunity will also be a contributing factor to the lower prevalence.

Prevalence by age group

Population weighted antibody prevalence (unadjusted) estimates have generally remained highest in donors aged 17-29 and decline with age, with lowest prevalence in donors aged 70-84. Donors aged 70-84 years are only included from week 26 onward as this age group, who were advised to shield during lockdown, have been able to return to donor clinics since then (Figure 50).

The largest variation over time are observed in those aged 17 to 29, prevalence has decreased from 10.8% (95% CI 9.0%-12.9%) in weeks 19 to 22 to 8.1% (95% CI 6.7%-9.9%) in weeks 39 to 42. Recently there has been an increase in prevalence in donors aged 50-59 from 5.2% (95% CI 4.2% - 6.3%) in week 35 to 38 to 7.2% (95% CI 6.1%-8.6%) in week 39 to 42.

Figure 49: 4-weekly rolling SARS-CoV-2 antibody seroprevalence (% seropositive) in blood donors by region, using Euroimmun test; error bars show 95% confidence intervals

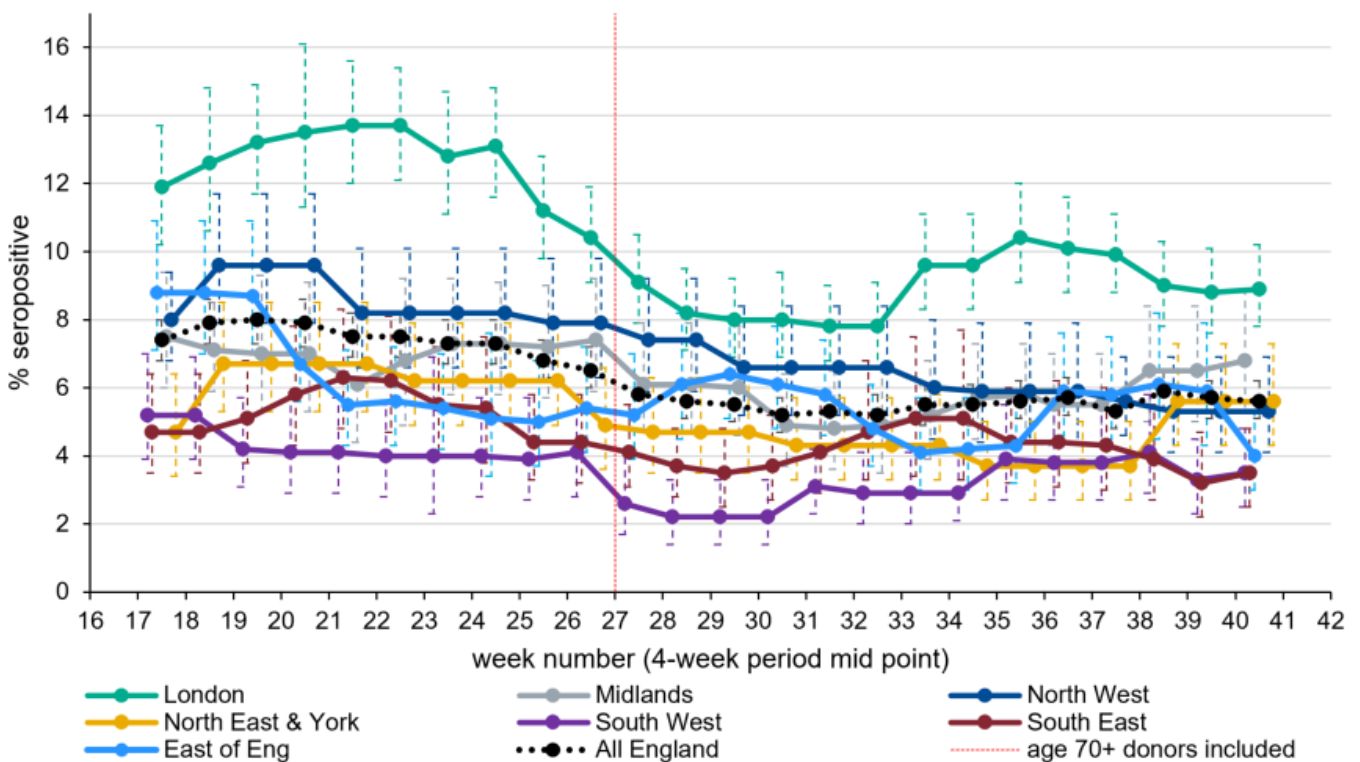
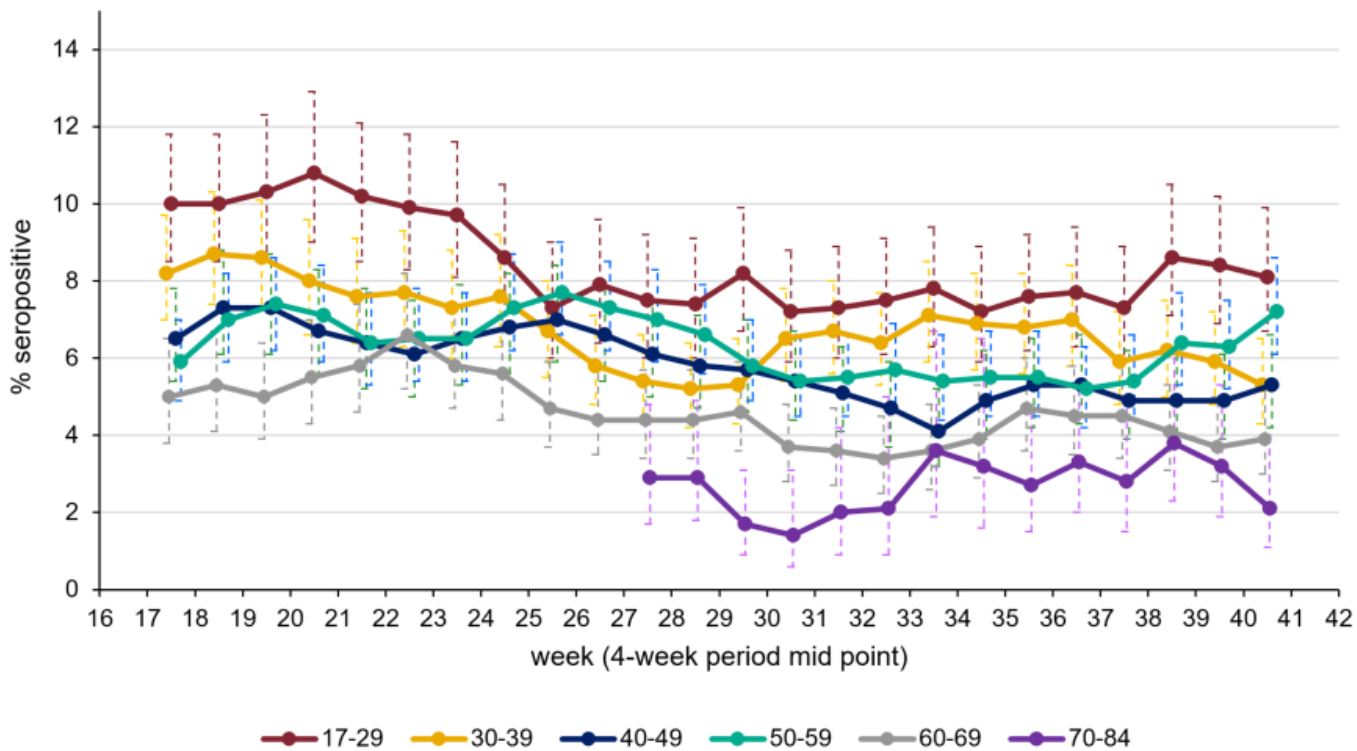


Figure 50: Population weighted 4-weekly rolling SARS-CoV-2 antibody seroprevalence (% seropositive) in blood donors by age group, using Euroimmun test; error bars show 95% confidence intervals.



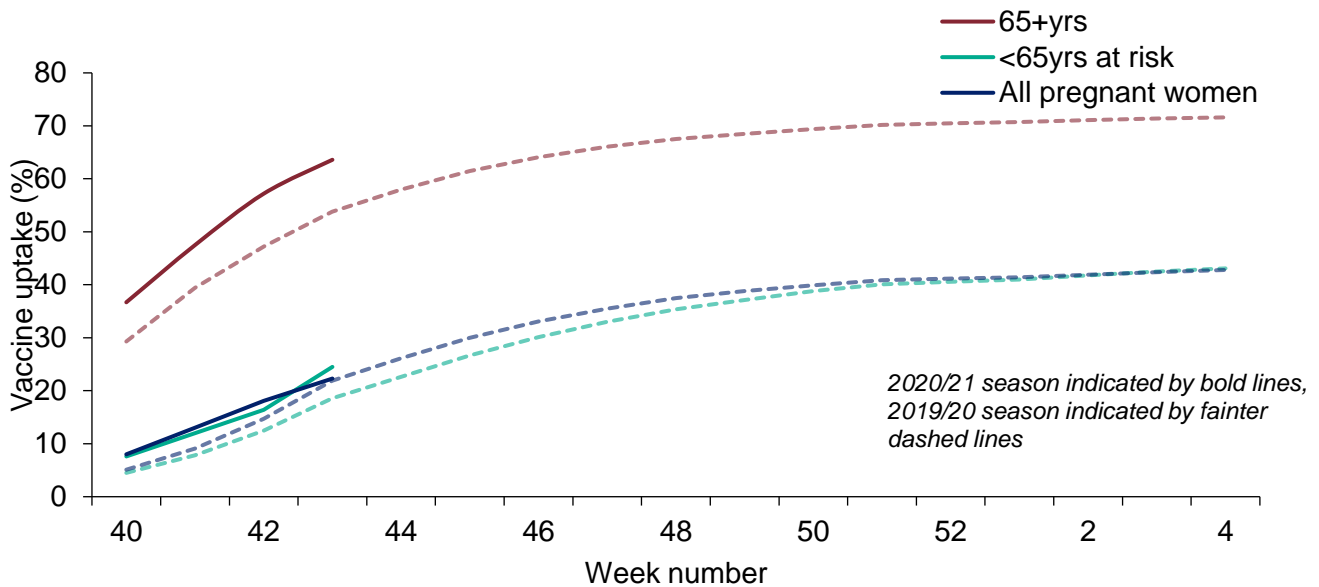
Influenza vaccination

Influenza vaccine uptake in GP patients

Up to week 43 2020 in 89.6% of GP practices reporting weekly to Immform for the main collection, the provisional proportion of people in England who had received the 2020/21 influenza vaccine in targeted groups was as follows (Figure 51):

- 24.5% in under 65 years in a clinical risk group
- 22.3% in pregnant women
- 63.6% in 65+ year olds

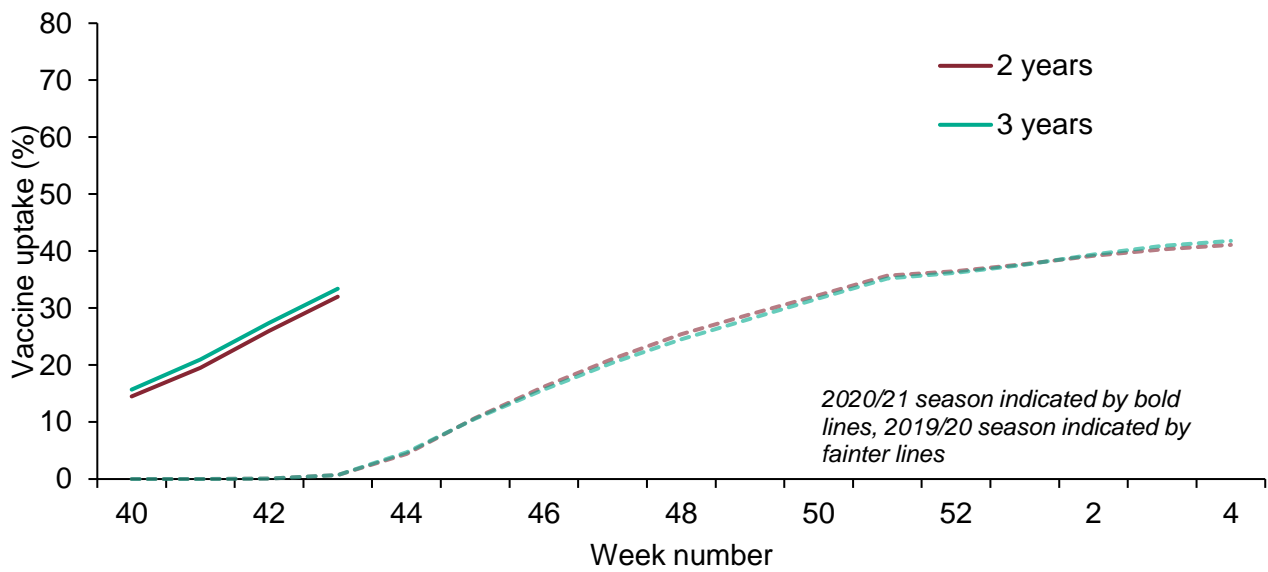
Figure 51: Cumulative weekly influenza vaccine uptake by target group in England



In 2020/21, all 2 and 3 year olds continue to be eligible for influenza vaccination through their GPs. Up to week 43 2020, in 97.5% of GP practices reporting weekly to Immform for the childhood collection, the provisional proportion of children in England who had received the 2020/21 influenza vaccine in targeted groups was as follows (Figure 52):

- 32.0% in 2 year olds
- 33.4% in 3 year olds

Figure 52: Cumulative weekly influenza vaccine uptake in 2 and 3 year olds, in England



Influenza vaccine uptake in school age children

The first report on influenza vaccine uptake in school age children (Year Reception to Year 7) will be published in November 2020.

Influenza vaccine uptake in healthcare workers

The first report on influenza vaccine uptake in healthcare workers will be published in November 2020.

International update

Global COVID-19 update

Globally, up to 27 October 2020, a total of 43,681,873 cases of COVID-19 infection have been reported worldwide, including 1,162,371 COVID-19 related deaths.

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

Figure 53: Global map of cumulative COVID-19 cases

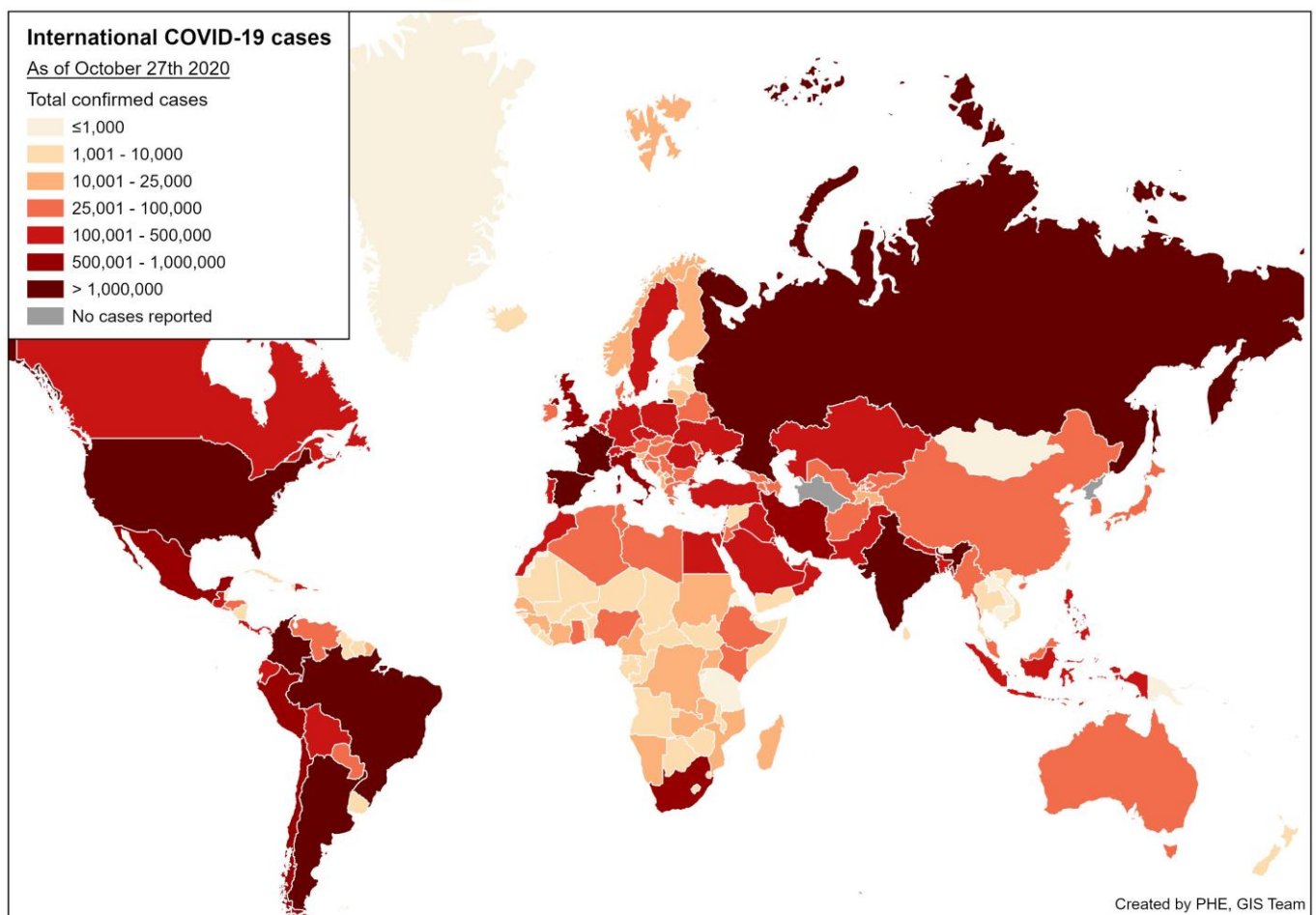
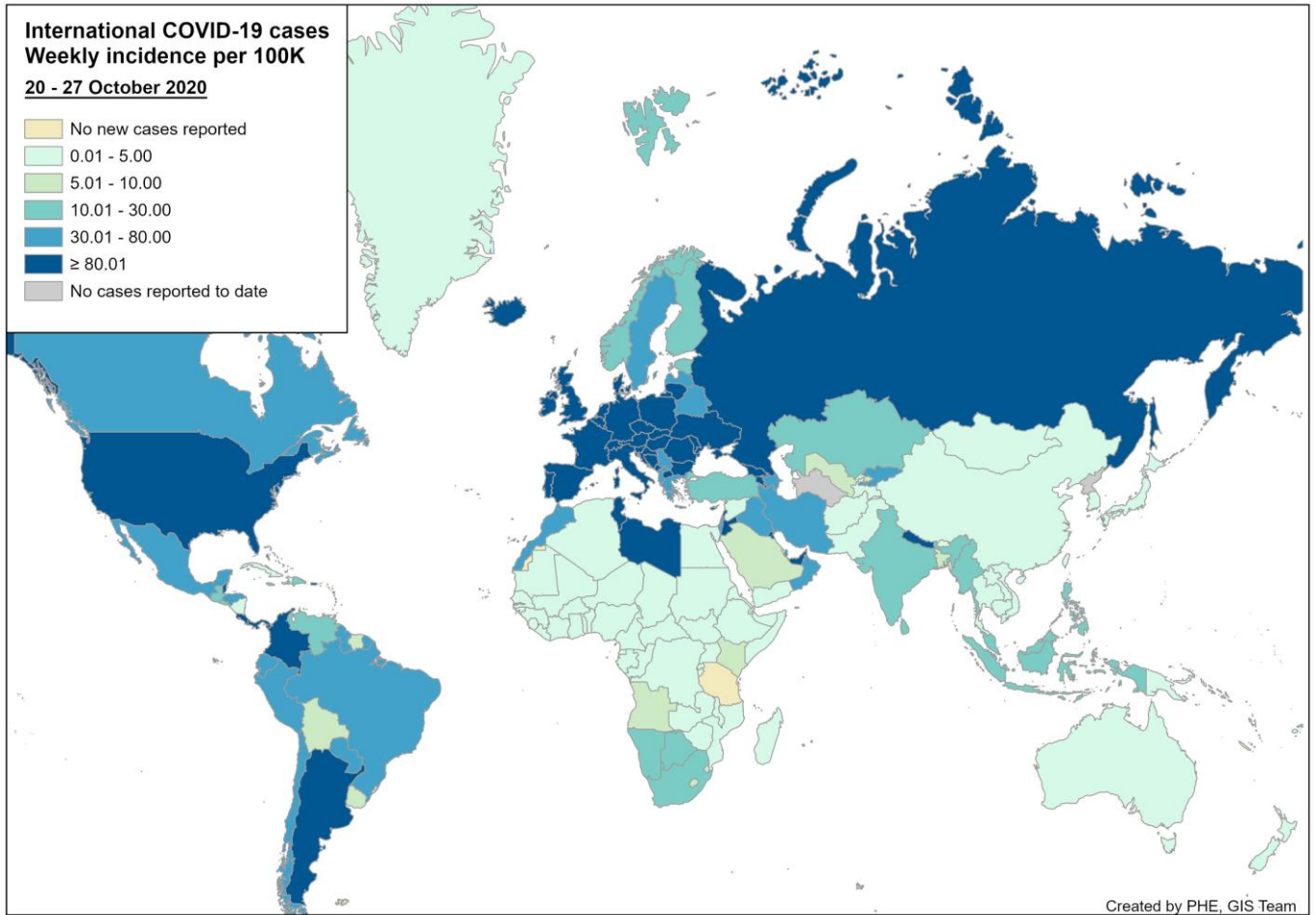


Figure 54: Global map of weekly COVID-19 case incidence rate per 100,000, week 43 2020



Global influenza update

Updated on 28 October 2020 (based on data up to 11 October 2020) ([WHO website](#))

In the temperate zone of the northern hemisphere, influenza activity remained below inter-seasonal levels. In the temperate zones of the southern hemisphere, the influenza season remained low or below baseline overall. Worldwide, of the very low numbers of detections reported, seasonal influenza A(H3N2) viruses accounted for the majority of detections.

In the countries of North America, influenza activity indicators, including the percent of tests positive for influenza, were at very low levels.

In Europe, influenza activity remained at inter-seasonal levels though sporadic detections were reported across reporting countries.

In Central Asia and Northern Africa, there were no influenza updates for this reporting period.

In Western Asia, there were no or sporadic influenza detections across reporting countries.

In East Asia, influenza illness indicators and influenza activity remained at inter-seasonal levels in most reporting countries

In the Caribbean and Central American countries, there were no influenza detections reported.

In tropical South America, there were no influenza detections across reporting countries.

In tropical Africa, influenza activity was reported in Côte d'Ivoire and Mali.

In Southern Asia there were sporadic influenza detections across reporting countries.

In South East Asia, increased influenza detections were reported in Cambodia and Lao People's Democratic Republic (PDR).

In Oceania, ILI and other influenza activity indicators remained below usual levels for this time of year in general.

The WHO GISRS laboratories tested more than 81257 specimens between 28 September 2020 and 11 October 2020. 172 were positive for influenza viruses, of which 108 (62.8%) were typed as influenza A and 64 (37.2%) as influenza B. Of the sub-typed

influenza A viruses, 4 (6.1%) were influenza A(H1N1pdm09) and 62 (93.9%) were influenza A (H3N2). Of the characterized B viruses, 2 (8%) belonged to the B-Yamagata lineage and 23 (92%) to the B-Victoria lineage.

Influenza in Europe

Updated on 26 October 2020 ([Joint ECDC-WHO Europe Influenza weekly update](#))

For week 42 2020, influenza activity remained at interseasonal levels throughout Europe.

Of 29 countries and areas that reported on the intensity indicator, 24 reported activity at baseline levels, and 5 reported low intensity (Azerbaijan, Belgium, Denmark, Estonia and Slovakia) for week 42 2020. Of 30 countries and areas that reported on geographic spread, 24 reported no activity and 5 reported sporadic spread (Azerbaijan, Denmark, Portugal, United Kingdom (Scotland) and Slovakia) for week 42 2020.

For week 42 2020, of 151 sentinel specimens tested for influenza viruses, none were positive.

There were no hospitalized laboratory-confirmed influenza cases in ICUs for week 42 2020 and since the start of the season.

There were no laboratory-confirmed influenza cases in wards outside ICUs for week 42 2020 and since the start of the season.

Influenza in the Northern Hemisphere

Influenza activity remains low in the United States of America and in Canada.

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

Latest update on 10 July 2020 ([WHO website](#))

Influenza A(H5) viruses:

According to reports received by the World Organisation for Animal Health (OIE), various influenza A(H5) subtypes continue to be detected in birds in Africa, Europe and Asia.

Influenza A(H7N9) viruses:

There have been no publicly available reports from animal health authorities in China or other countries on influenza A(H7N9) virus detections in animals in recent months.

Influenza A(H9N2) viruses:

Between **9 May and 10 July 2020** two new laboratory-confirmed human cases of influenza A(H9N2) virus infections were reported from China.

Middle East respiratory syndrome coronavirus (MERS-CoV)

Latest update on 27 October 2020 ([WHO website](#))

Up to 27 October 2020, a total of five cases of Middle East respiratory syndrome coronavirus, MERS-CoV, (three imported and two linked cases) have been confirmed in the UK. On-going surveillance has identified 1,816 suspected cases in the UK since September 2012 that have been investigated for MERS-CoV and tested negative.

From **1 April to 31 May 2020**, the National IHR Focal Point of Saudi Arabia reported 9 new cases of MERS-CoV infection, including five deaths.

Globally, since September 2012, [WHO](#) has been notified of 2,562 laboratory-confirmed cases of infection with MERS-CoV, including 881 related deaths. Further information on management and guidance of possible cases is available [online](#). The latest ECDC MERS-CoV risk assessment can be found [here](#), where it is highlighted 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](#)

[Sources of influenza surveillance data](#)

[Sources of COVID-19 surveillance data](#)

PHE 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 <http://www.legislation.gov.uk/uksi/2002/1438/regulation/3/made>. 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 Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-leading science, research, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health and Social Care, and a distinct delivery organisation with operational autonomy. We provide government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific and delivery expertise and support.

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