Public Health England

Weekly Coronavirus Disease 2019 (COVID-19) Surveillance Report

Summary of COVID-19 surveillance systems

Year: 2020 Week: 34

This report summarises the information from the surveillance systems which are used to monitor the Coronavirus Disease 2019 (COVID-19) pandemic in England. More information on the surveillance systems are available here.

The report is based on week 33 (data between 10 August and 16 August 2020) and where available daily data up to 18 August 2020. References to COVID-19 represent the disease name and SARS-CoV-2 represent the virus name.

Summary

A number of COVID-19 surveillance indicators suggest a small increase in COVID-19 activity at a national level during week 33. Case detections in England increased from 5,763 in week 32 to 6, 418 in week 33. Increases in activity were noted in the North West, Yorkshire and Humber and the East Midlands. At a local authority level, incidence remain highest in Oldham, although this has decreased from the previous week. followed by Blackburn with Darwen. Case rates were highest in the 15-44 year age group. Pillar 2 positivity increased slightly compared to the previous week. An increase in Pillar 2 positivity was noted in the 15-44 year age group. Pillar 1 positivity increased in the East Midlands, which is likely to be linked to testing in a factory outbreak.

The following local authorities have been included in the watchlist following the weekly Local Action Committee meeting: Oldham, Blackburn with Darwen, Pendle, Leicester, Bradford, Manchester, Rochdale, Hyndburn, Calderdale, Preston, Burnley, Kirklees, Salford, Tameside, Bury, Trafford, Bolton, Stockport, Northampton, Birmingham, Luton, Swindon, Newark and Sherwood, Sandwell, Oadby and Wigston, Slough, Wakefield, Peterborough.

The overall number of acute respiratory infection incidents reported to PHE Health Protection Teams decreased slightly from the previous week. There have been declines in the number of incidents in care homes in comparison to the previous week.

Community and syndromic surveillance indicators remained stable during week 33.

Through the GP sentinel swabbing scheme, detections of cases continue to be low with an overall positivity of 0.0% among those with symptom onset (0/14) in week 33 compared to the same in the previous week. There has been a decline in testing through the GP sentinel scheme which is likely due to increased access to testing through other routes.

Emergency department attendances with a COVID-19-like diagnosis and overall hospitalisation and ICU/HDU admission rates for confirmed COVID-19 admissions remained stable. A slight increase in hospitalisation rates in the North West was seen.

COVID-19 deaths continue to decline and, while delays to death registrations can impact on the most recent data, there has been no detectable excess mortality since week 24 overall. Excess mortality was observed in the 25 to 44 years age group in week 32.

New adjusted seroprevalence estimates based on samples from adult blood donors in the North East and Yorkshire and Midlands were 5.0% and 4.6% respectively. The change in prevalence seen in some regions is likely to be largely driven by changes in the precise locations of sample collection and differences in the donor population as lockdown measures are relaxed. There is also some suggestion that waning immunity may be a contributing factor to declines in prevalence seen in some areas.

Following this week's meeting of the Local Action Committee, the Secretary of State for Health and Social Care, drawing on epidemiological advice from the CMO, NHS Test and Trace, JBC and PHE, has determined the following Watchlist (Table 1), highlighting the local authorities of greatest concern.

The Watchlist is produced by first considering the lower tier local authorities with the highest weekly incidence rate and its trend, combined with a range of other indicators including the test positivity rate, an assessment of the local response and plans, and the trend of other metrics such as healthcare activity and mortality. The classification decision is therefore a blended assessment drawing on professional judgement.

Whilst this list is determined at the granularity of lower tier local authority, the Contain Framework places responsibility for local action at the level of the upper tier local authority. Later in this report, we list the UTLA with the highest incidence rate in the country from a purely statistical viewpoint (Figure 11).

The Watchlist classification uses definitions as set out in the Contain Framework:

- Area(s) of concern—for areas with the highest prevalence, where the local area is taking targeted actions to reduce prevalence e.g. additional testing in care homes and increased community engagement with high risk groups
- Area(s) for enhanced support—for areas at medium/high risk of intervention where there is a more detailed plan, agreed with the national team and with additional resources being provided to support the local team (e.g. epidemiological expertise, additional mobile testing capacity)
- Area(s) of intervention—where there is divergence from the measures in place in the rest of England because of the significance of the spread, with a detailed action plan in place, and local resources augmented with a national support

Maps representing the areas from this week's Watchlist (Table 1) by Lower Layer Super Output Area (LSOA) are available here.

Table 1: Local Authority Watchlist areas

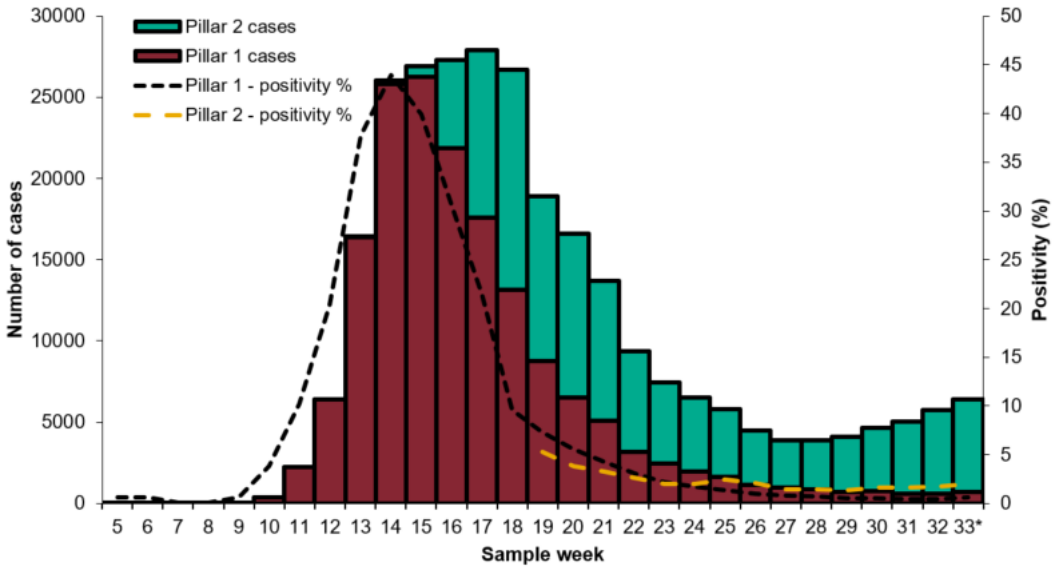
Lower Tier Local Authority	Individuals tested per day per 100,000 population (7 day moving average)	Trend	Incidence per 100,000 population (weekly)	Trend	Contain Framework Watchlist Status - week beginning 17 August 2020	Change in Watchlist Status from previous week	Area with household mixing prohibited?
Oldham *	215.7	↓	103.1	↑	Intervention	→	YES
Blackburn with Darwen**	204.9	↓	95.3	↑	Intervention	→	YES
Pendle *	257.6	↓	75.5	↓	Intervention	→	YES
Leicester	235.8	↓	60.5	↑	Intervention	→	YES
Bradford *	130.7	↓	54.7	↓	Intervention	→	YES
Manchester *	153.5	↓	47.3	↑	Intervention	→	YES
Rochdale *	200.6	↓	42.7	↑	Intervention	→	YES
Hyndburn *	150.6	↓	42.1	↑	Intervention	→	YES
Calderdale *	122.7	↓	40.9	↓	Intervention	→	YES
Preston	154.2	↓	40.9	↑	Intervention	→	YES
Burnley *	138.6	↓	37.3	↓	Intervention	→	YES
Kirklees *	120.1	↑	34.6	↑	Intervention	→	YES
Salford *	144.8	↓	32.2	↓	Intervention	→	YES
Tameside *	162.4	↓	29.8	↓	Intervention	→	YES
Bury *	132.4	↓	29.5	↓	Intervention	→	YES
Trafford *	152.3	↓	27.1	↑	Intervention	→	YES
Bolton *	133.7	↓	25.6	↓	Intervention	→	YES
Stockport *	198.6	↓	23.3	↓	Intervention	→	YES
Northampton***	195.1	↑	125.3	↑	Intervention	↑	NO
Birmingham	100.2	↑	30.2	↑	Enhanced Support	↑	NO
Luton	179.5	↓	26.6	↑	Enhanced Support	→	NO
Swindon	125.0	↑	41.9	↓	Concern	→	NO
Newark and Sherwood	178.7	↑	32.1	↑	Concern	→	NO
Sandwell	98.8	↓	28.4	↑	Concern	→	NO
Oadby and Wigston	124.2	↓	24.5	↑	Concern	→	NO
Slough	113.7	↓	22.8	↑	Concern	↑	NO
Wakefield	113.3	↓	21.4	↑	Concern	→	NO
Peterborough	97.1	↓	16.4	↑	Concern	→	NO
England	**107.7**	↓	**11.9**	↑			

Data for specimens taken between 07 August and 13 August as extracted on 18 August
*Local authority is part of an area in which overall infection rates are high, with household transmission a key infection pathway.
**Within this Local Authority the interventions have been restricted to the Blackburn wards.
***Northampton's increase in incidence is almost solely down to a workplace outbreak at the Greencore Factory
Trend arrow indicates whether there has been an increase, decrease or no change between this week and last week

As of 09:00 on 18 August 2020, a total of 2,376,297 people have been tested under Pillar 1. A total of 276,809 have been confirmed positive for COVID-19 in England under Pillar 1 and 2.

Overall case numbers and positivity continued to increase in week 33, with the majority of cases reported from Pillar 2. The highest number of cases continued to be seen in the 15-44 year olds followed by 85+ year olds. Rates and positivity of cases continue to be highest in the North and Central regions of England, with a notable increase in Pillar 1 positivity in East Midlands.

Figure 1: Laboratory confirmed COVID-19 cases tested under Pillar 1 (n=165,959) and Pillar 2 (n=110,839), based on sample week with overall positivity for Pillar 1 and 2 (%)



* For the most recent week, more samples are expected therefore the decrease seen in this graph should be interpreted with caution. 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, but it does mean that the latest days' figures may be incomplete.

Age and gender

Figure 2: Age/sex pyramids for laboratory confirmed COVID-19 cases tested under Pillar 1 and 2 (n=273,069)

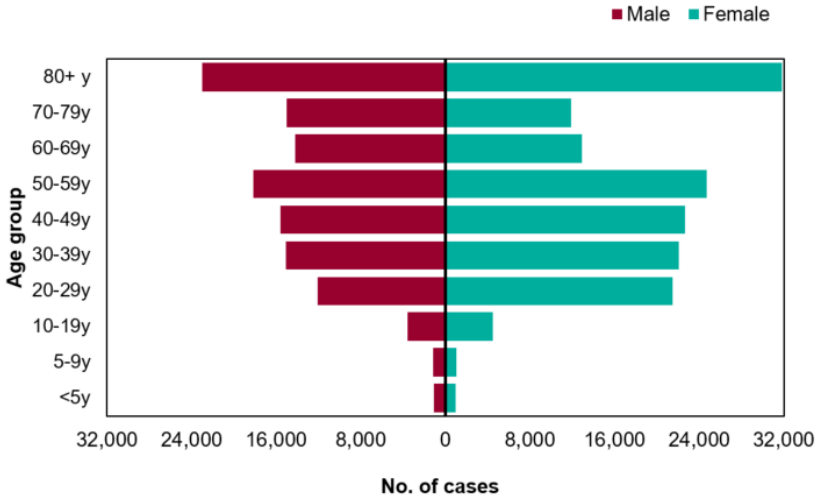


Figure 3: Weekly laboratory confirmed COVID-19 case rates per 100,000, tested under Pillar 1 and Pillar 2, by sex

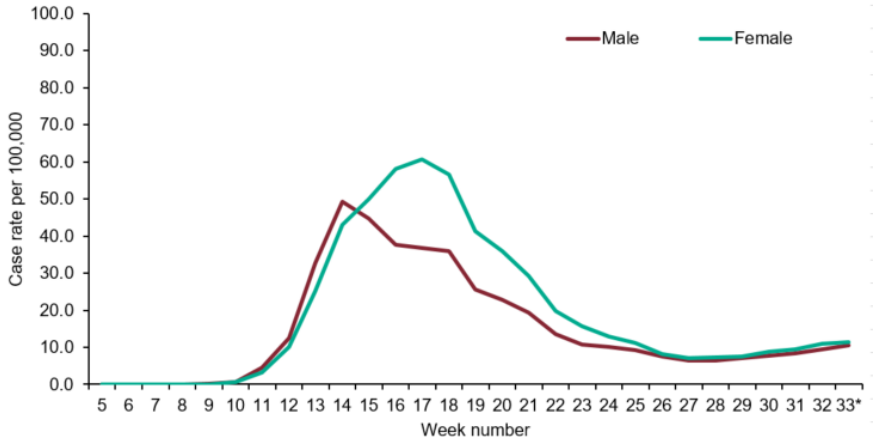


Figure 4: Weekly laboratory confirmed COVID-19 case rates per 100,000, tested under Pillar 1 and Pillar 2 , by age group

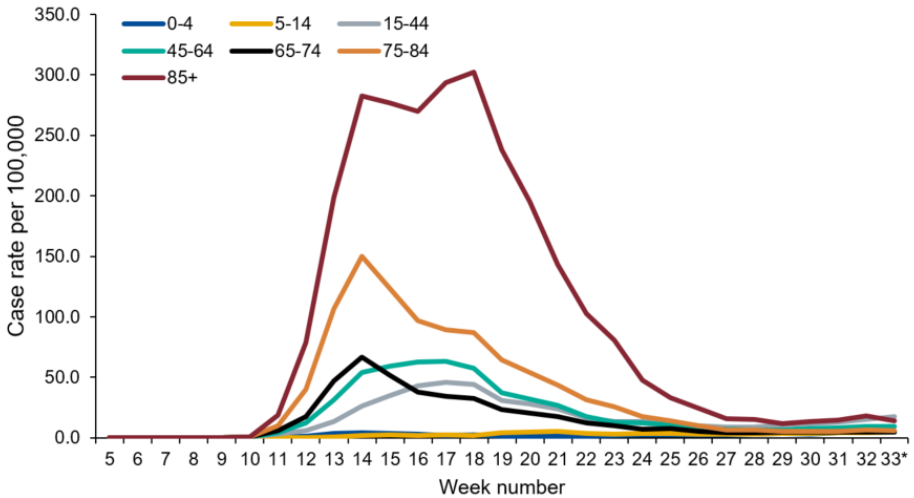
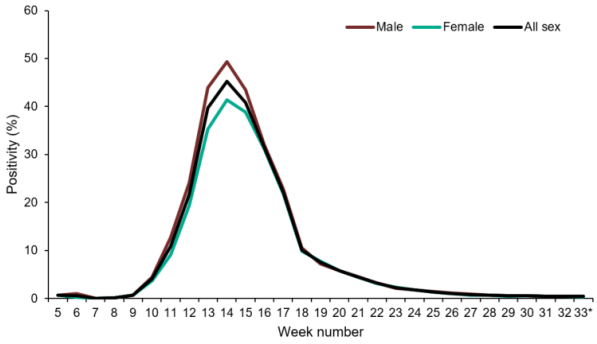


Figure 5: Weekly positivity (%) of laboratory confirmed COVID-19 cases tested overall and by sex under (a) Pillar 1 and (b) Pillar 2, (SGSS and Respiratory DataMart)

(a)



(b)

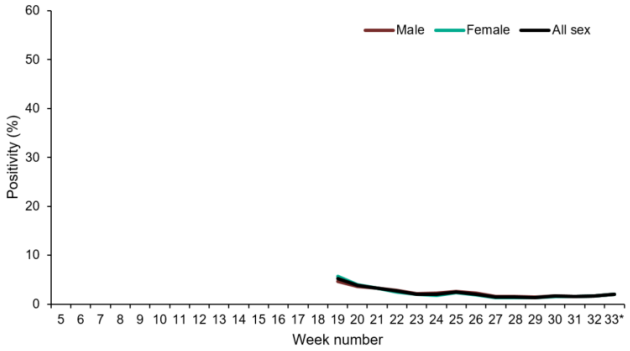
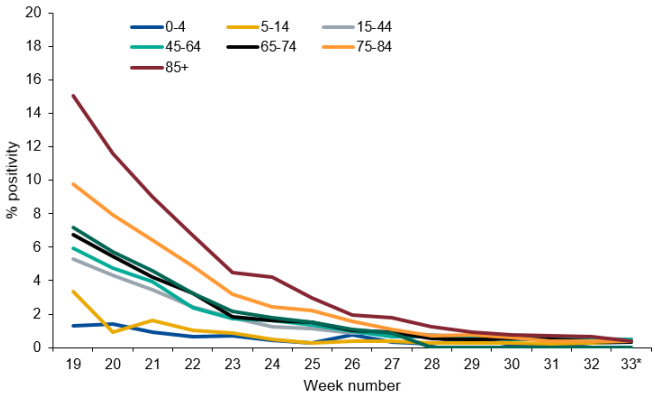
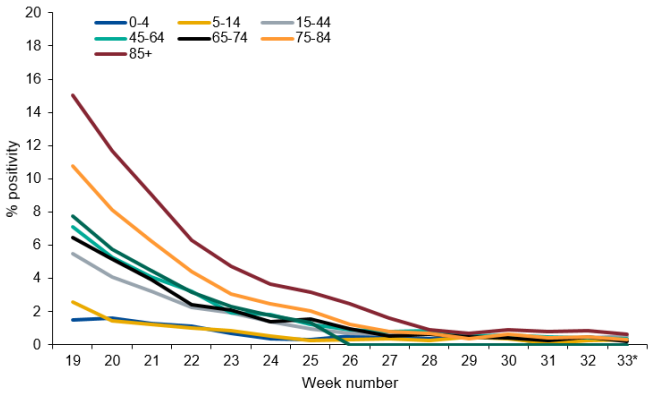


Figure 6: Weekly positivity (%) of laboratory confirmed COVID-19 cases tested under Pillar 1, (a) by male and age group and (b) by female and age group and; under Pillar 2, (c) by male and age group and (d) by female and age group, (SGSS and Respiratory DataMart)

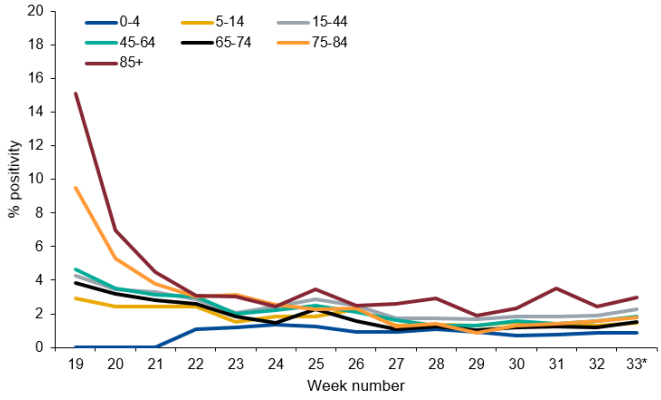
(a) Male (Pillar 1)



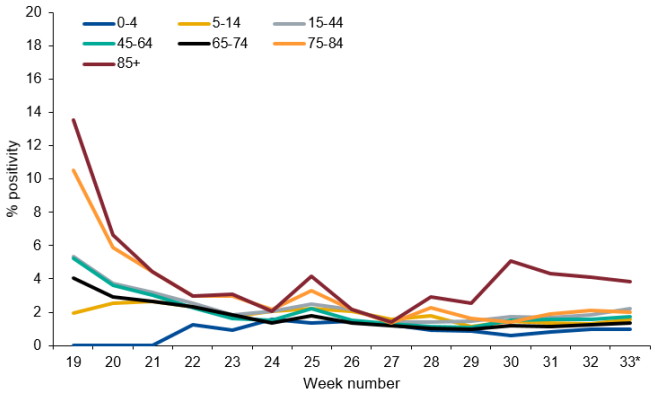
(b) Female (Pillar 1)



(c) Male (Pillar 2)



(d) Female (Pillar 2)



Geography

Table 2: Cumulative number of cases under Pillar 1 and 2 (n=268,176) and total number of people tested under Pillar 1 and 2 (n=5,667,105) by PHE Centres

PHE Centres	Pillar 1 + 2 cases	Total number of people tested (under Pillar 1 + 2)
North East	15,739	249,228
North West	50,280	833,275
Yorkshire & Humber	34,479	593,435
West Midlands	28,891	543,478
East Midlands	25,240	532,782
East of England	26,638	641,776
London	37,333	798,387
South East	35,607	917,054
South West	13,969	557,690

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

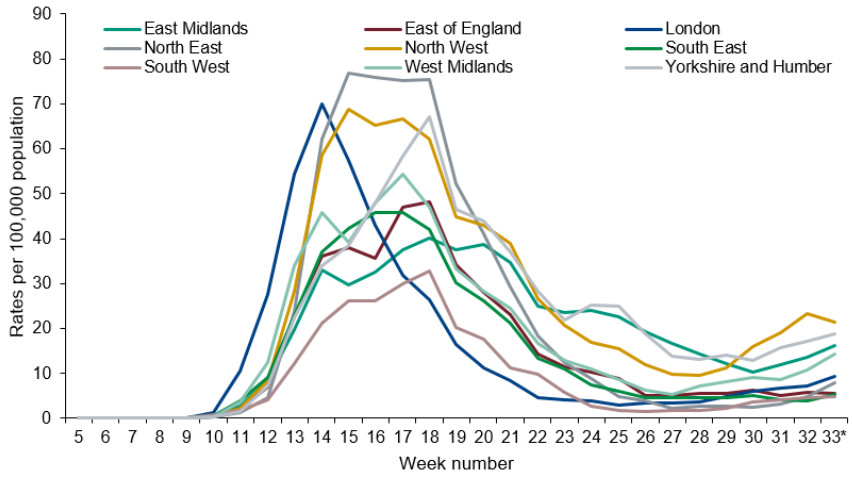
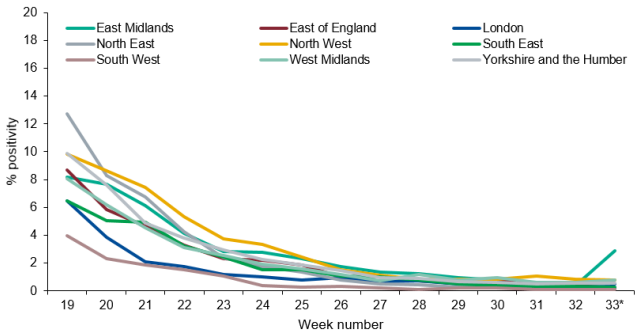


Figure 8: Weekly positivity of laboratory confirmed COVID-19 cases tested under (a) Pillar 1 (%) and (b) Pillar 2 (%), by PHE Centres and sample week, (SGSS and Respiratory DataMart)

(a)



(b)

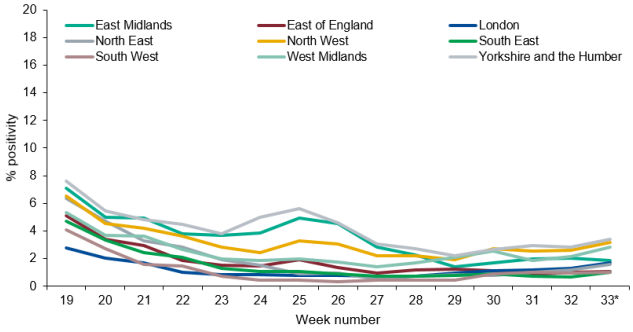


Figure 9: Cumulative rate of COVID-19 cases per 100,000 population tested under Pillar 1 and 2, by upper-tier local authority, England (box shows enlarged maps of London area)

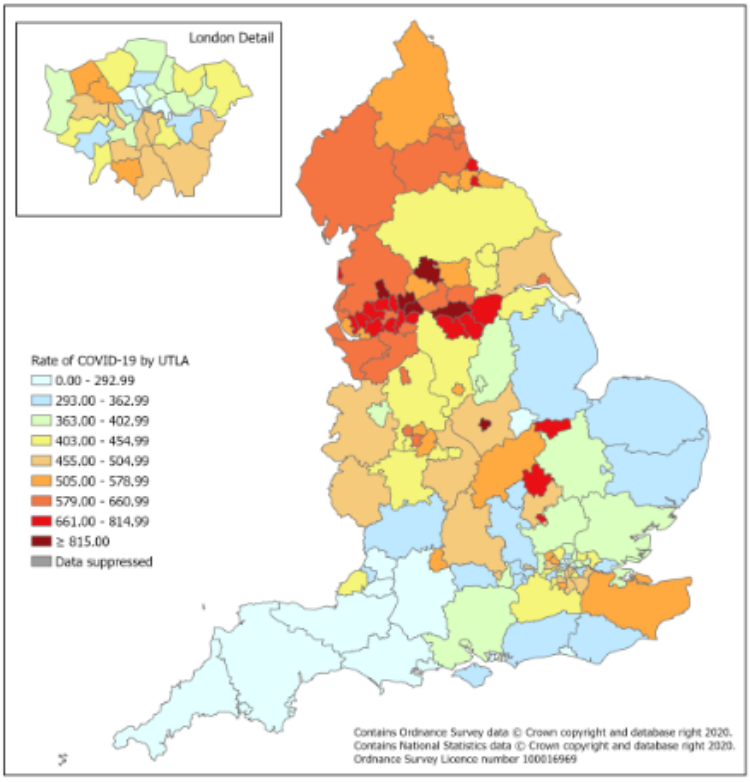


Figure 10: Weekly rate of COVID-19 cases per 100,000 population tested under Pillar 1 and 2, by upper-tier local authority, England (box shows enlarged maps of London area)

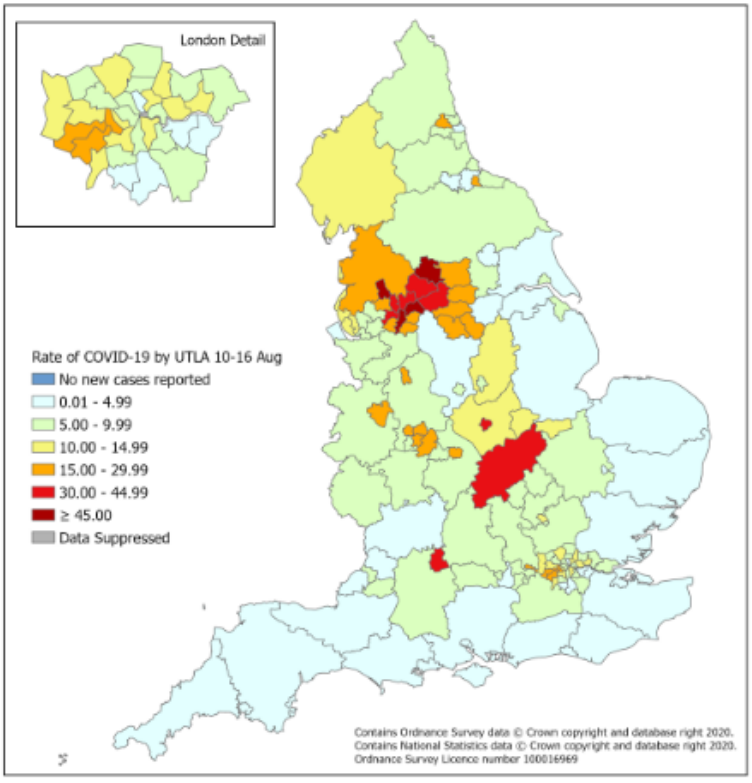
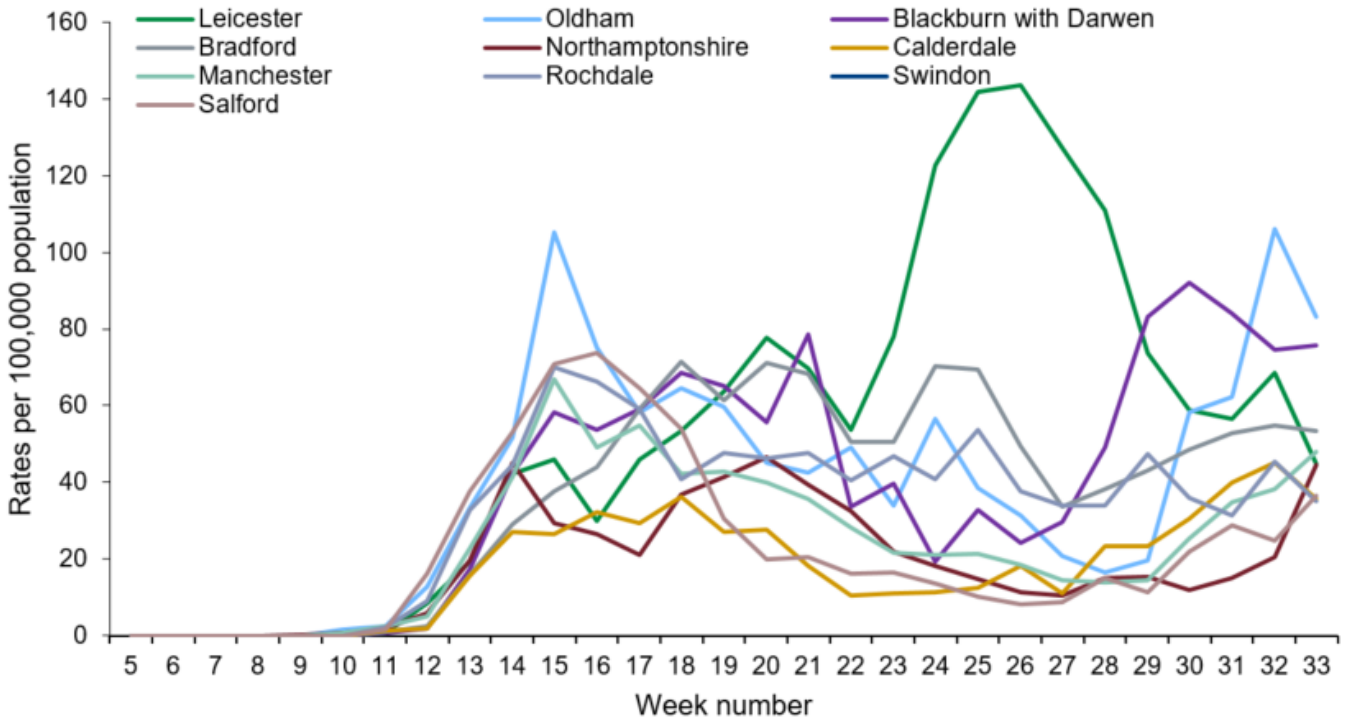


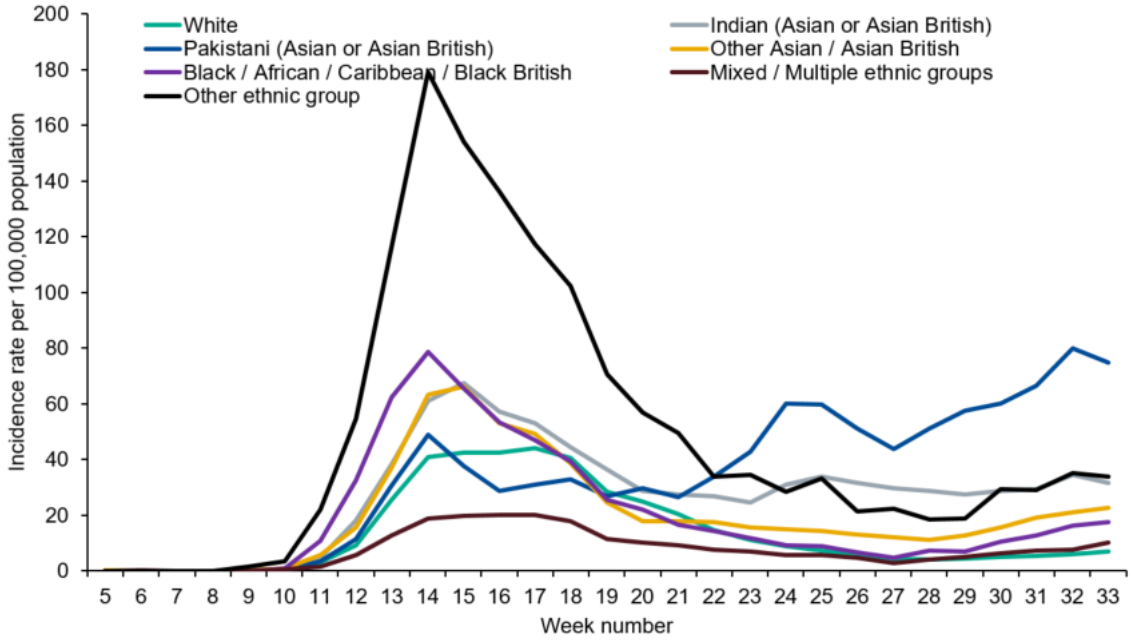
Figure 11: UTLA with the highest weekly rate of COVID-19 cases per 100,000 population tested under Pillar 1 and 2*



**The UTLA data presented in this figure, is based on data extracted on Tuesday 04 August, covering the period of 03 August to 09 August 2020 (week 32).*

Ethnicity

Figure 12: Weekly incidence per 100,000 population by ethnicity, England



This section summarises the monitoring of acute respiratory infection incidents and internet based surveillance systems for COVID-19.

Acute respiratory infection incidents, England

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 i.e. two or more laboratory confirmed cases (COVID-19, influenza or other respiratory pathogen) linked to a particular 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 COVID-19 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.

The number of incidents in each setting with at least one laboratory confirmed case of COVID-19 are reported below.
Over the course of the pandemic, some care homes have reported more than one acute respiratory infection incident several weeks apart therefore incidents are no longer deduplicated and all newly reported incidents are now included in these figures. This change has also been applied to retrospective weeks. In a small number of cases duplicate reports of the same incident may be included in the figures below.

218 new ARI incidents have been reported in week 32 (Figure 13):

- 106 incidents were from care homes where 67 had at least one linked case that tested positive for SARS-CoV-2
- 8 incidents were from hospitals where all had at least one linked case that tested positive for SARS-CoV-2
- 6 incidents were from educational settings where 2 had at least one linked case that tested positive for SARS-CoV-2
- 2 incidents were from prisons where both had at least one linked case that tested positive for SARS-CoV-2
- 43 incidents were from workplace settings where 31 had at least one linked case that tested positive for SARS-CoV-2
- 14 incidents were from food outlet/restaurant settings where 12 had at least one linked case that tested positive for SARS-CoV-2
- 39 incidents were from the other settings category where 26 had at least one linked case that tested positive for SARS-CoV-2

Acute respiratory infection incidents, England

Figure 13: Number of acute respiratory infection (ARI) incidents by institution, England

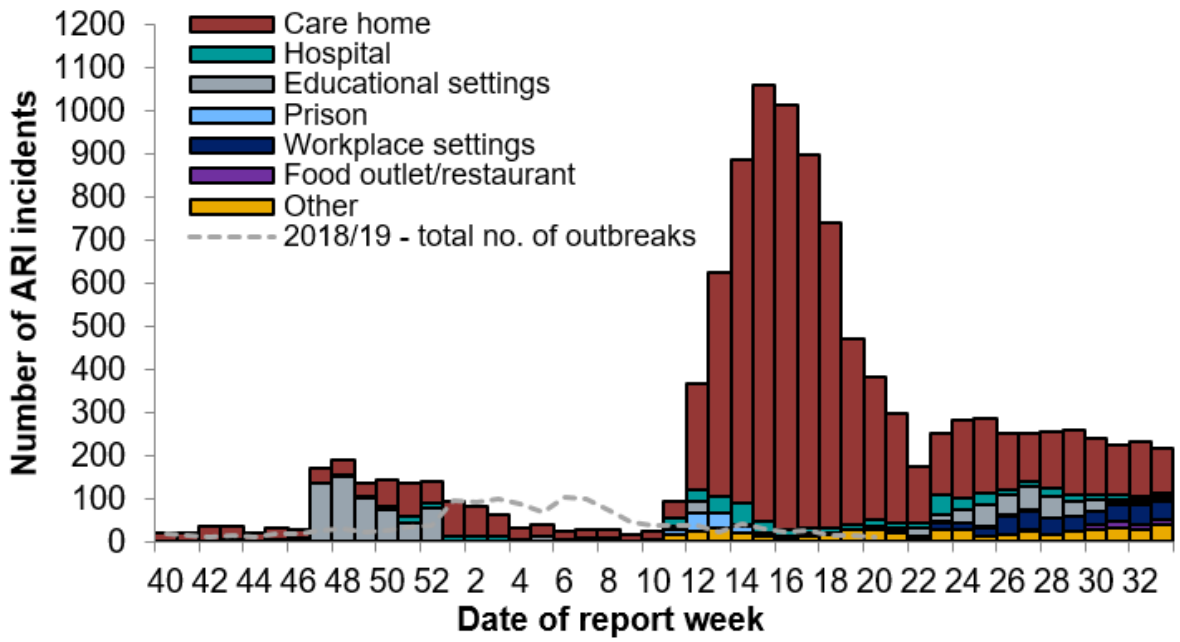


Table 3: Total number of situations/incidents by institution and PHE Centres over the past four weeks with the total number in the last week in brackets

PHE Centres	Cumulative total number of incidents by instituition over the past 4 weeks with total number in the last week in brackets							
	Care home	Hospital	Educational settings	Prisons	Workplace settings	Food outlet/restaurant settings	Other settings	Total
East of England	51(14)	3(0)	4(0)	2(1)	14(2)	1(0)	9(1)	84(18)
East Midlands	37(9)	2(0)	1(0)	1(0)	16(6)	4(1)	4(2)	65(18)
London	40(14)	3(1)	3(1)	0(0)	13(3)	1(1)	9(7)	69(27)
North East	30(3)	0(0)	0(0)	0(0)	3(3)	1(1)	9(5)	43(12)
North West	111(18)	11(3)	7(0)	2(0)	54(10)	34(9)	38(6)	257(46)
South East	92(14)	8(1)	10(0)	1(0)	4(1)	3(0)	11(5)	129(21)
South West	35(12)	3(0)	11(2)	0(0)	16(5)	2(0)	5(1)	72(20)
West Midlands	32(9)	4(1)	5(1)	0(0)	21(10)	3(0)	29(9)	94(30)
Yorkshire and Humber	46(13)	7(2)	5(2)	2(1)	21(3)	5(2)	13(3)	99(26)
Total	474(106)	41(8)	46(6)	8(2)	162(43)	54(14)	127(39)	912(218)

Contact tracing

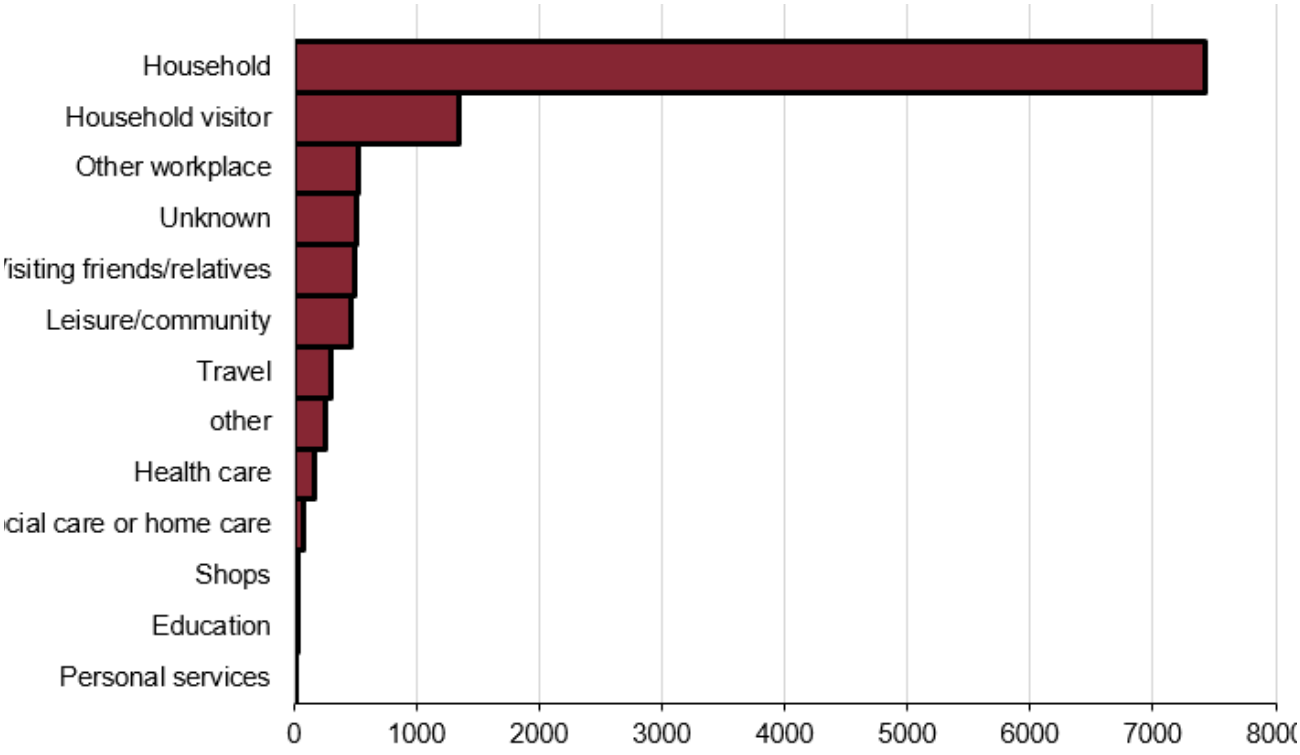
Once a person has a confirmed positive test result for coronavirus, this person is transferred to NHS Test and Trace and a case is opened for them. The NHS Test and Trace service will get in contact via a text, email alert or phone call. People are asked to share details of other people with whom they have had close, recent contact and places they have visited. They can respond online via a secure website or by telephone with a contract tracer. Once contacts have been identified, they will be contacted in turn by the NHS Test and Trace service and advised to self-isolate.

Contacts in Figure 14 are those named by people testing positive and contact traced by NHS Test and Trace. The setting is the potential exposure setting as reported by the person who tested positive, when they had close interaction with the named contact. The most common setting was the household, where 64% of all contacts were identified. The next most common setting was visitors to the household of the person who tested positive (18%).

The number of contacts excludes those identified as part of management of complex cases: such as those investigated as part of an outbreak, for example, if someone works in or has recently visited a health or care setting such as a hospital or care home, a prison or other secure setting, or a school for people with special needs. For complex cases, contacts are often managed at a situation rather than individual level, with advice being issued to the contact institution (for example in a care home or prison). Therefore information on individual contacts associated with these situations is not available.

Figure 14: Contacts by exposure/activity setting in week 33, England

(Data source: NHS Test and Trace)



Note: categories have been grouped as follows: leisure / community includes eating out, attending events and celebrations, exercising, worship, arts, entertainment or recreation, community activities and attending play groups or organised trips; other workplace includes: retail, manufacturing or construction, hospitality, transport, emergency services or border force, food production and agriculture, prison, financial services, civil service or local government, information and communication, military, critical national infrastructure.
Personal services includes hairdressers, barbers, tattooists and nail bars.

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.

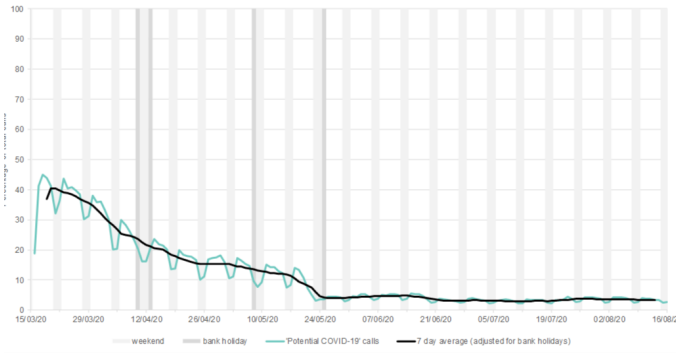
Up to 16 August 2020, the daily percentage of NHS 111 'potential COVID-19-like' calls (as a percentage of total NHS 111 calls) remained stable, however there was a decrease in cold/flu calls (Figure 15). The daily number of NHS 111 'potential COVID-19' and cold/flu completed online assessments remained stable (Figure 16).

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 15 (a-b): NHS 111 telephony indicators (and 7-day moving average), England

(a) Daily potential COVID-19 calls as a percentage of total calls, all ages



(b) Daily cold/flu calls as a percentage of total calls, all ages

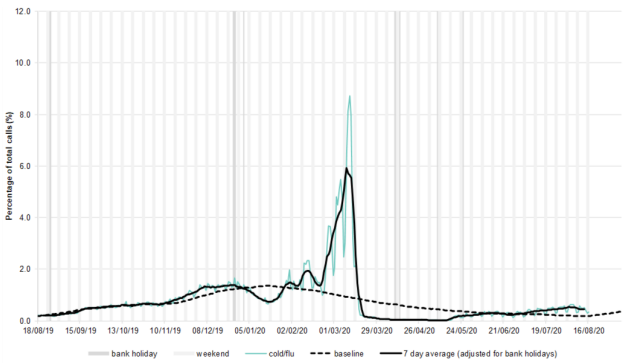
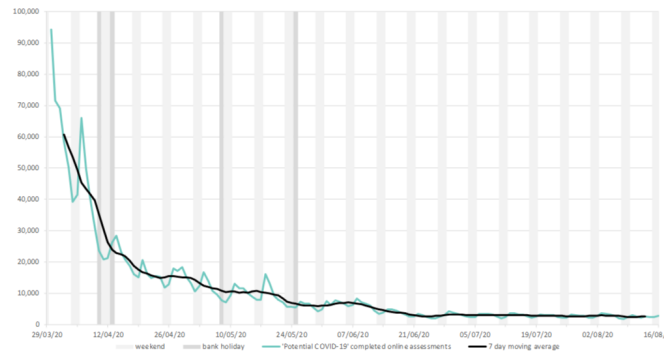
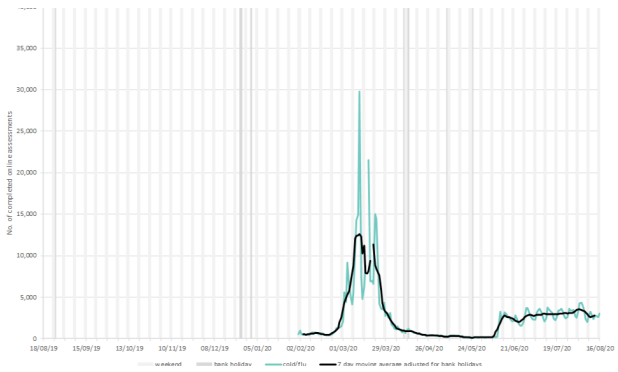


Figure 15 (a-b): NHS 111 completed online assessments (and 7-day moving average), England

(a) Daily 'potential COVID-19' online assessments as the number of completed online assessments, all ages



(b) Daily cold/flu online assessments as the number of completed online assessments, all ages



Internet based surveillance

PHE's internet based surveillance systems aim to monitor the volume of people searching for typical symptoms of COVID-19 on the internet as well as tracking self-reported respiratory symptoms and health seeking behaviour patterns related to COVID-19.

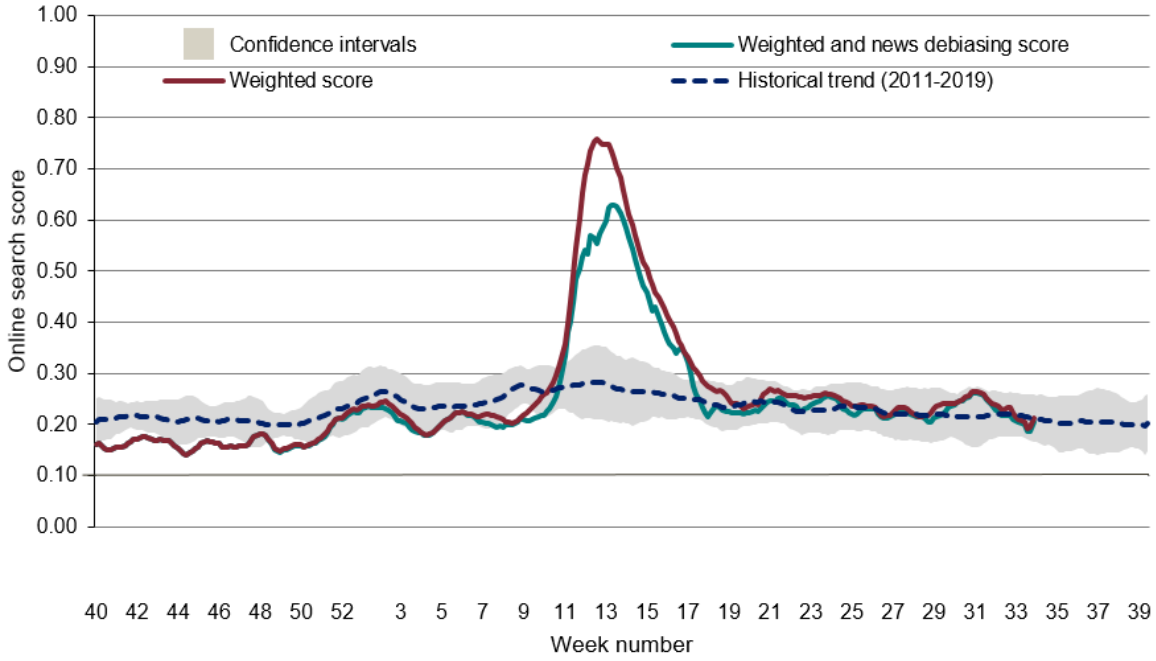
Google search queries

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.

The overall and media-debiasing weighted scores decreased during week 33 but increases were noted towards the end of the week (Figure 17).

[1] For more information about this model, please see https://arxiv.org/abs/2003.08086

Figure 17: Normalised Google search score for COVID-19 symptoms, with weighted score for media-debiasing and historical trend, England



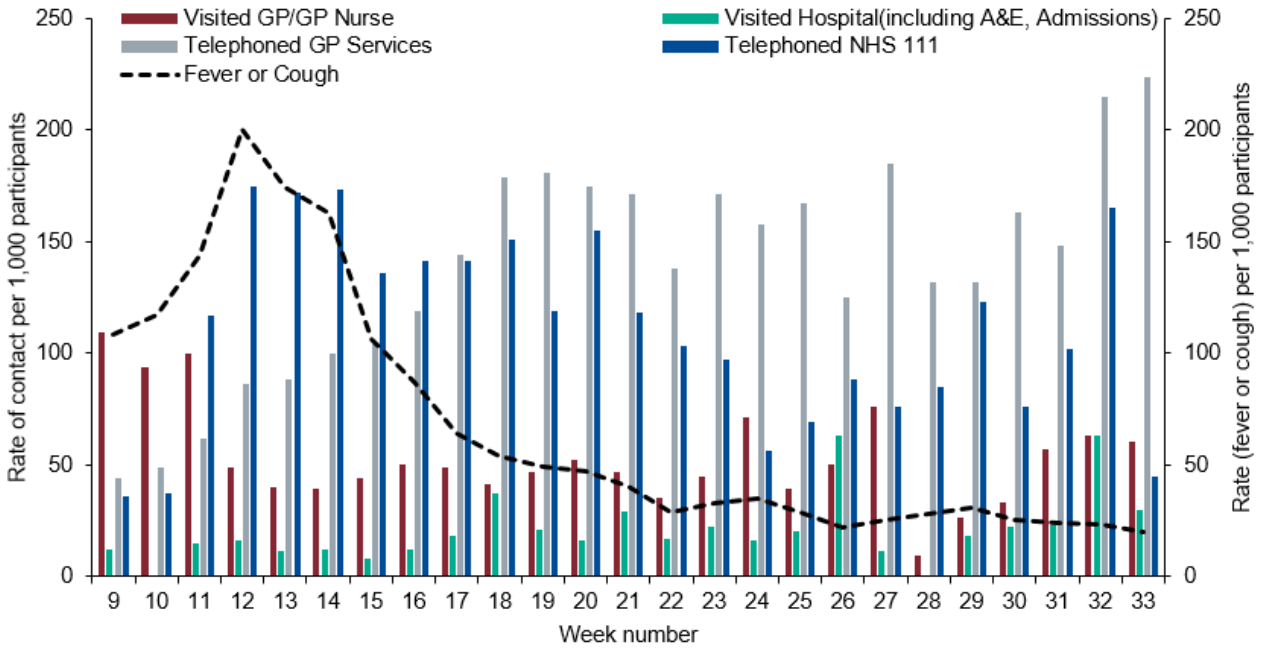
Internet based surveillance

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 3,424 participants completed the weekly COVID-19 surveillance survey in week 33, of which 67 (2.0%) reported fever or cough. The most commonly reported method of access to healthcare services continue to be through telephone services (Figure 18).

Figure 18: Rate of contact with different healthcare services among FluSurvey participants reporting fever or cough symptoms, week 09 to 33, England



GP In Hours (GPIH) and GP Out of Hours (GPOOH), Syndromic surveillance

The GP In Hours (GPIH) syndromic surveillance system monitors the number of GP visits during regular hours of known clinical indicators. 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 16 August 2020, GPIH consultations for potential COVID-19-like and ILI consultations remained stable (Figure 19). Please note that the GPIH COVID-19-like indicator presented in this report is derived from a reduced denominator population, compared to ILI.
Rates should therefore be treated with caution (baselines are also not available this week). Through GPOOH consultations (up to 16 August 2020), the daily percentage (as a percentage of total contacts with a Read code) for ILI and difficulty breathing/wheeze/asthma contacts remained stable (Figure 20).

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 19 (a-b): GPIH clinical indicators, England

(a) potential COVID-19 GP consultations, daily incidence rates per 100,000 population, all ages

(b) Influenza-like illness consultations, daily incidence rates per 100,000 population, all ages

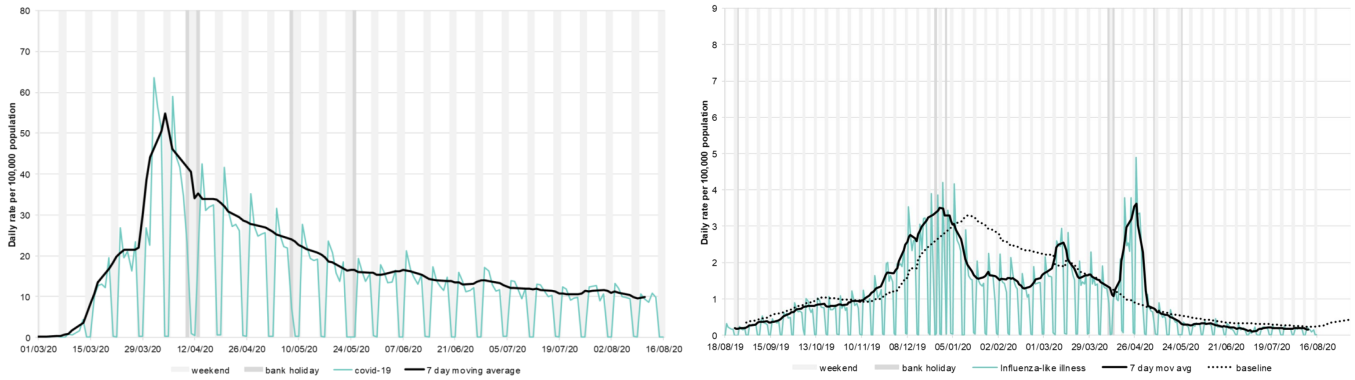
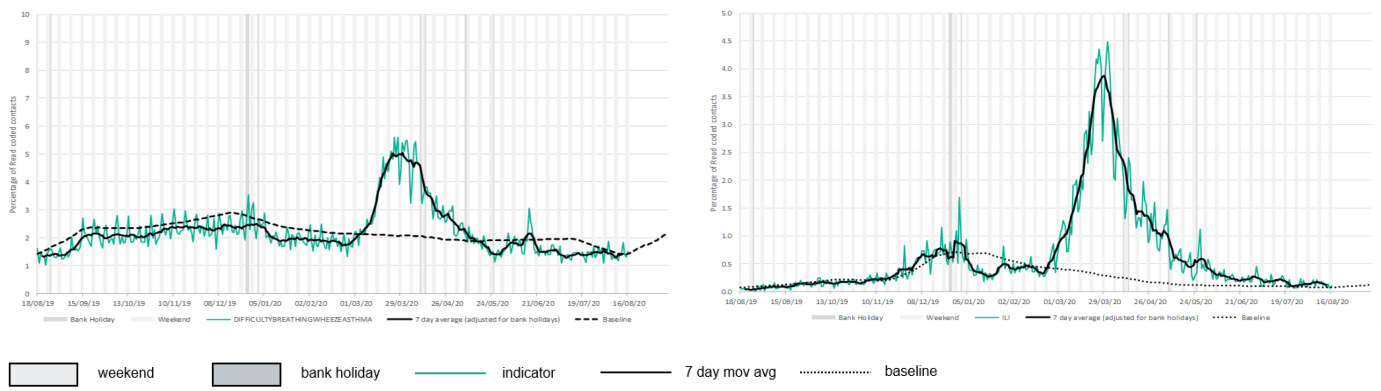


Figure 20 (a-b) : GPOOH contacts indicators, England

(a) Difficulty breathing/wheeze/asthma, daily contacts (%), all ages

(b) Influenza-like illness, daily contacts (%), all ages

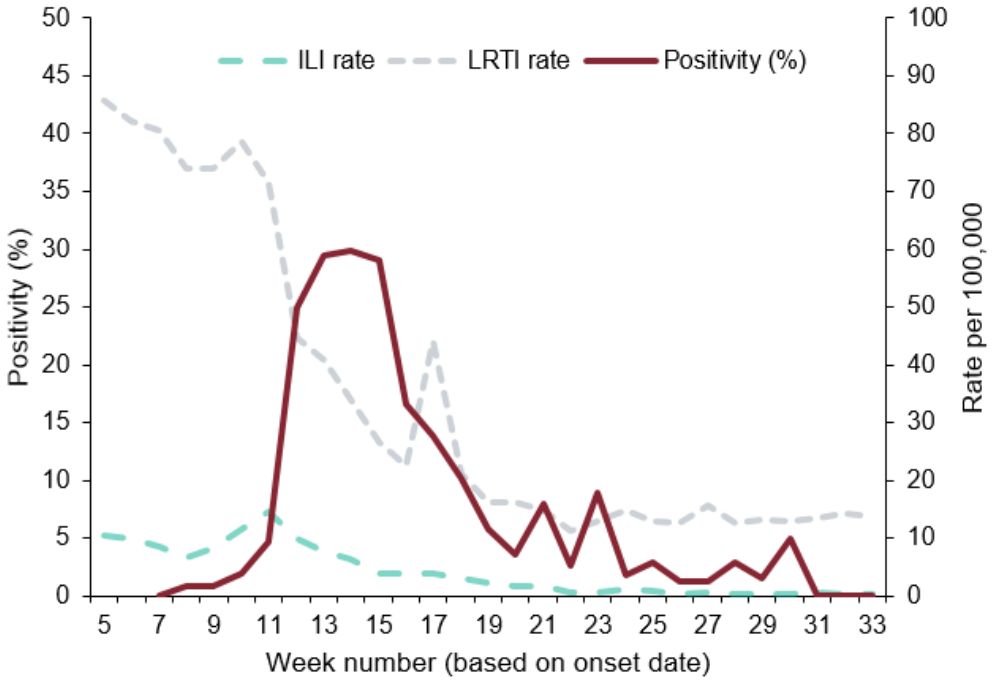


RCGP Swabbing Scheme

This is an extended primary care surveillance system through the RCGP sentinel integrated clinical and virological scheme. The extension of the scheme was initiated on 24 February 2020. A sample of patients presenting to around 300 GP practices with Influenza-like Illness (ILI) and Lower Respiratory Tract Infections (LRTI) (not suspected for COVID-19) will be tested. This enables the week on week monitoring of test "positivity rate" to observe the trend in the proportion of people with confirmed COVID-19.

Up to 18 August 2020, a total of 5,218 patients have been tested of which 614 have tested positive for SARS-CoV-2 through this scheme. The overall positivity was at 0.0% (0/14) in week 33 compared to the same in the previous week (Figure 21). This should be interpreted with caution as the overall denominator for patients tested through GPs has decreased due to an increase in patients being tested under Pillar 2. Consultations for ILI and LRTI remained stable (Figure 21).

Figure 21: Overall weekly positivity (%), ILI and LRTI consultations rates (per 100,000), RCGP, England



*For the most recent week, more samples are expected to be tested therefore the graph in Figures 17-19 should be interpreted with caution

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

RCGP Swabbing Scheme

Figure 22: Overall positivity (%) (weekly) by PHE Region, England (RCGP)

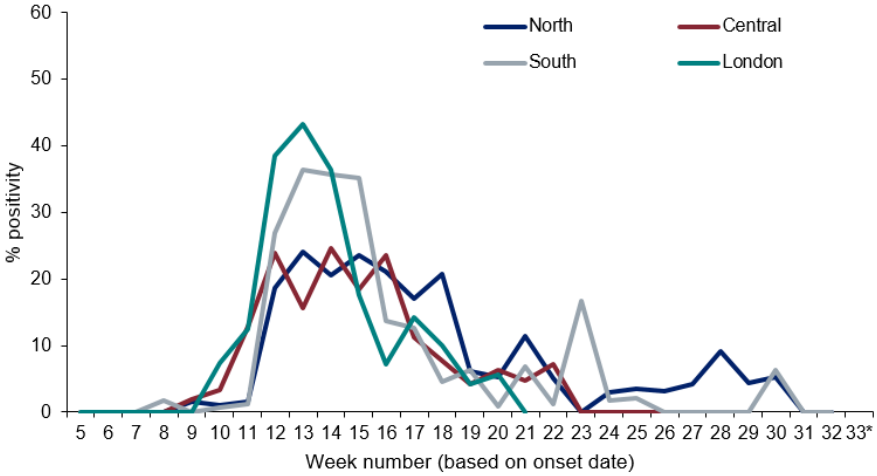
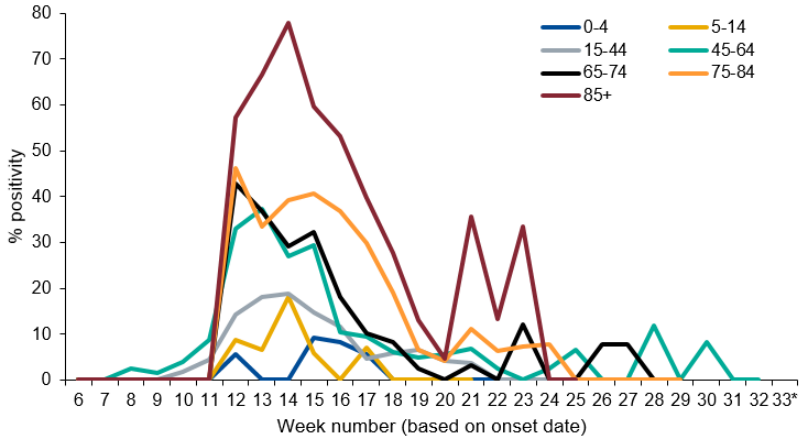
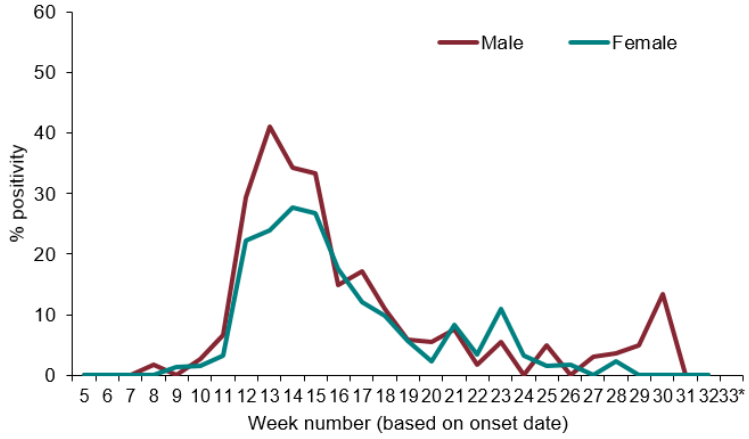


Figure 23: Positivity (%) (weekly) by (a) age group and (b) gender, England (RCGP)

(a)



(b)



*For the most recent week, more samples are expected to be tested therefore the graph in Figures 20-22 should be interpreted with caution

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

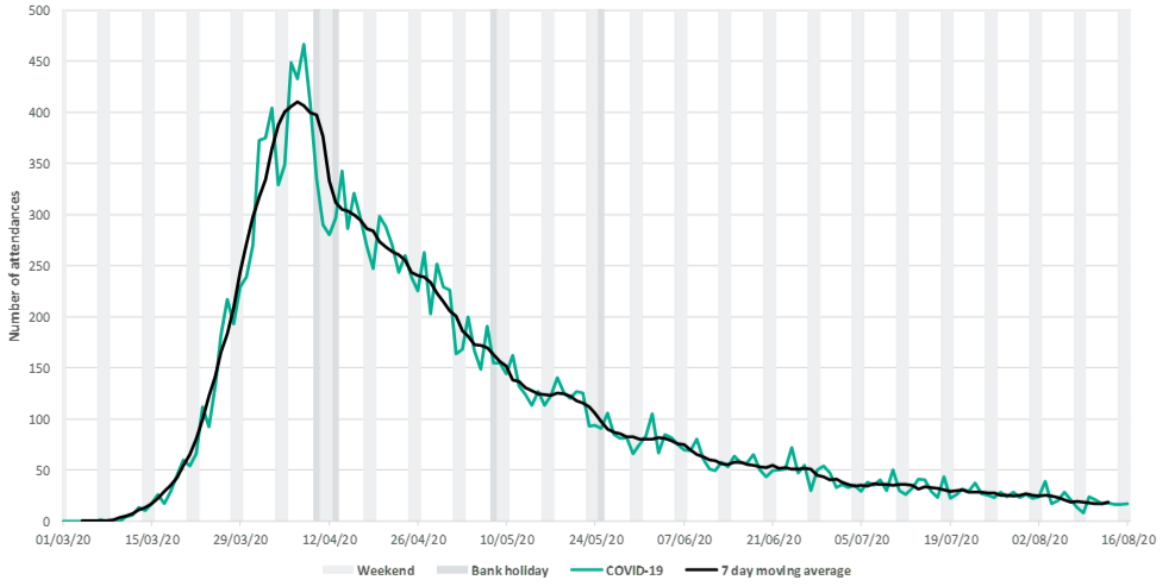
Emergency Department attendances, Syndromic surveillance

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

Up to 16 August 2020, the daily number of ED attendances for all ages as reported by 73 EDs in England during week 33, for COVID-19-like attendances have were stable (Figure 24).

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 24: COVID-19-like, daily ED attendances, all ages, England



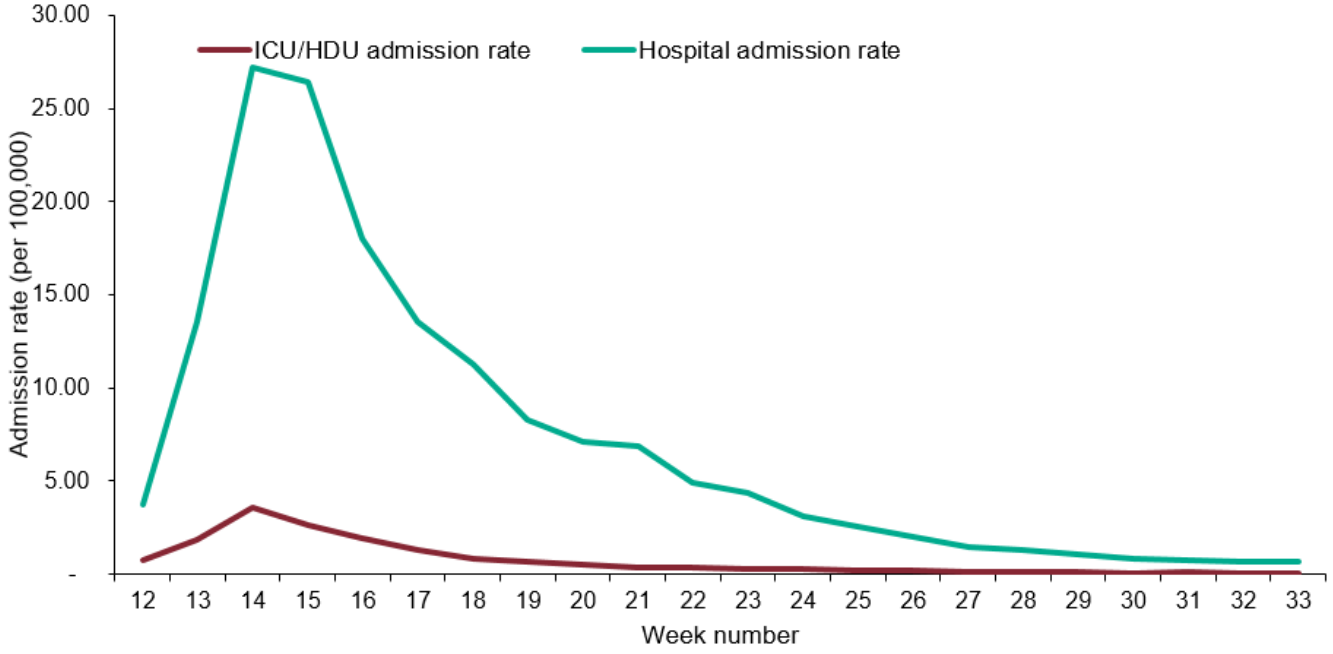
COVID-19 Hospitalisation in England Surveillance System (CHESS)

The CHESS surveillance system monitors daily new acute respiratory infections (ARI) and new laboratory confirmed COVID-19 admissions to hospital including critical care (ICU/HDU). Trends in hospital and critical care admission rates need to be interpreted in the context of testing recommendations.

A total of 134 NHS Trusts are now participating, although the number of Trusts reporting varies by day. The weekly rate of new admissions of COVID-19 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.

In week 33, the weekly admission rates for both hospitalisations and ICU/HDU COVID-19 admissions decreased slightly.
The hospitalisation rate was at 0.65 per 100,000 in week 33 compared to 0.67 per 100,000 in the previous week. The ICU/HDU rate was at 0.06 per 100,000 in week 33 compared to 0.04 per 100,000 in the previous week (Figure 25). By NHS regions, the highest hospitalisation and ICU/HDU rates continued to be observed in the North West (Figure 26). By age group, the highest hospitalisation rate was observed in the 85+ year olds and the highest ICU/HDU rate was observed in the 65-74 year olds (Figure 27).

Figure 25: Weekly overall hospital and ICU/HDU admission rates per 100,000 of new COVID-19 positive cases reported through CHESS, England



COVID-19 Hospitalisation in England Surveillance System (CHESS)

Figure 26: Weekly admission rate for (a) hospital admissions and (b) ICU/HDU admissions by NHS regions of new COVID-19 positive cases reported through CHESS

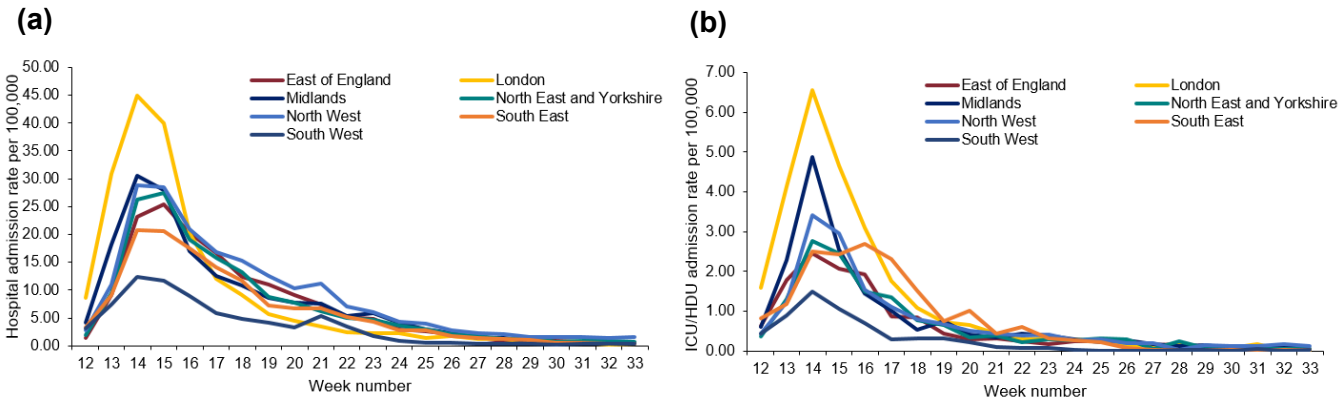
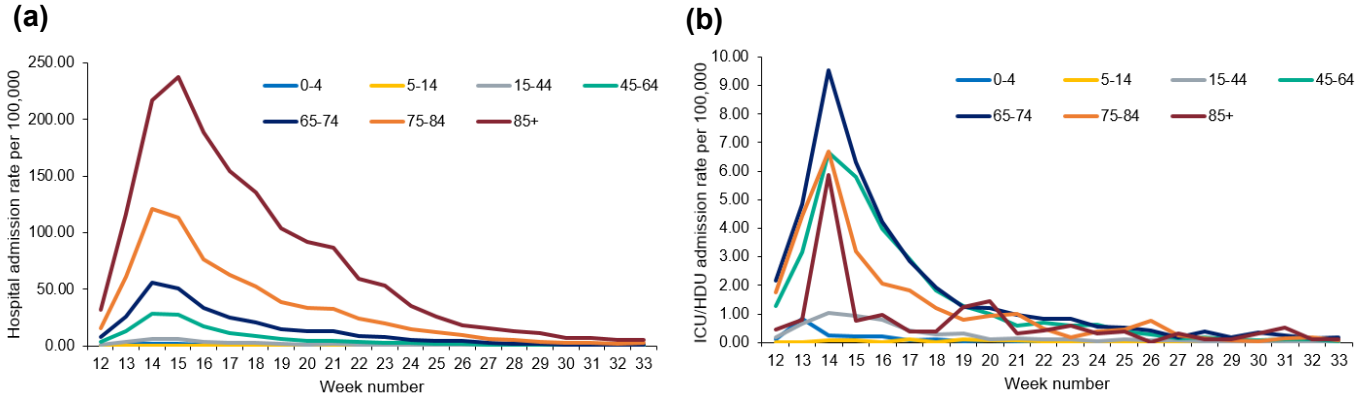


Figure 27: Weekly admission rate for (a) hospital admissions and (b) ICU/HDU admissions by age group of new COVID-19 positive cases reported through CHESS

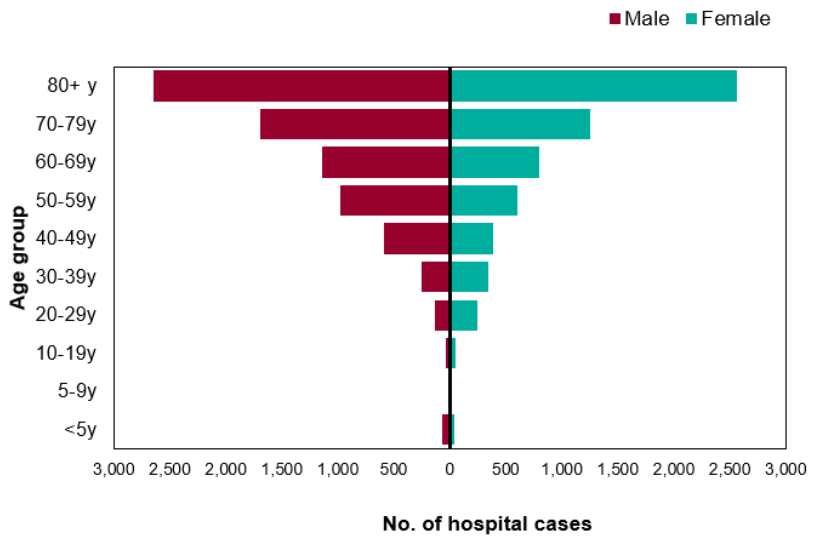


COVID-19 Hospitalisation in England Surveillance System (CHESS)

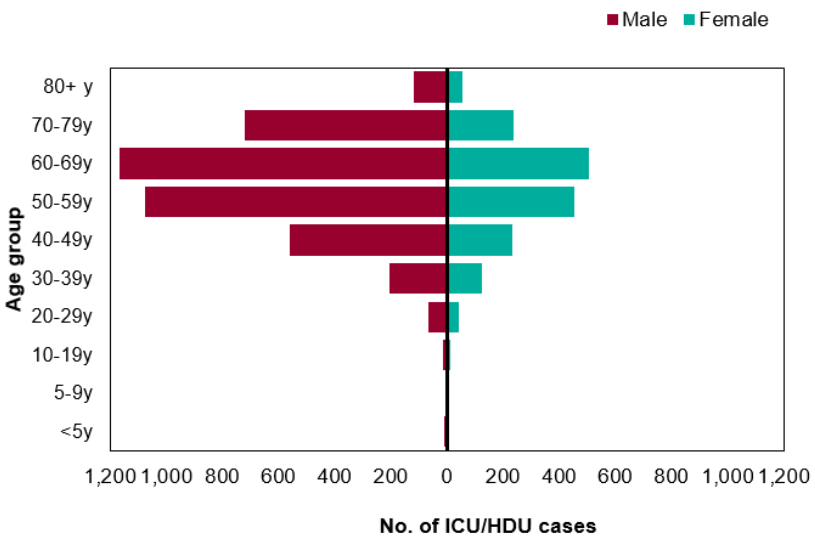
Figure 28 and 29 are based on individual patient level data which are provided to CHESS from a subset of NHS Acute Trusts, therefore the data should be interpreted with caution as the distribution of age, sex and ethnic group may not be representative of all hospitalised patients.

Figure 28: Age/sex pyramid of new (a) hospital (lower level of care) (n=13,826) and (b) ICU/ HDU (n=5,604) COVID-19 cases reported through CHESS, England

(a)

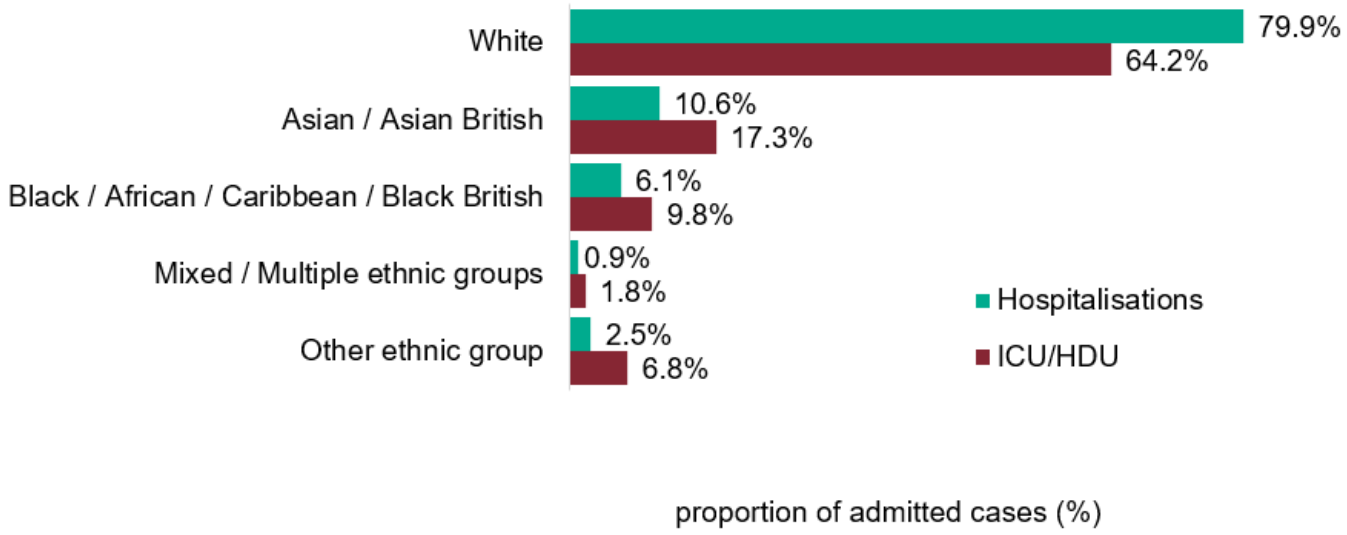


(b)



COVID-19 Hospitalisation in England Surveillance System (CHESS)

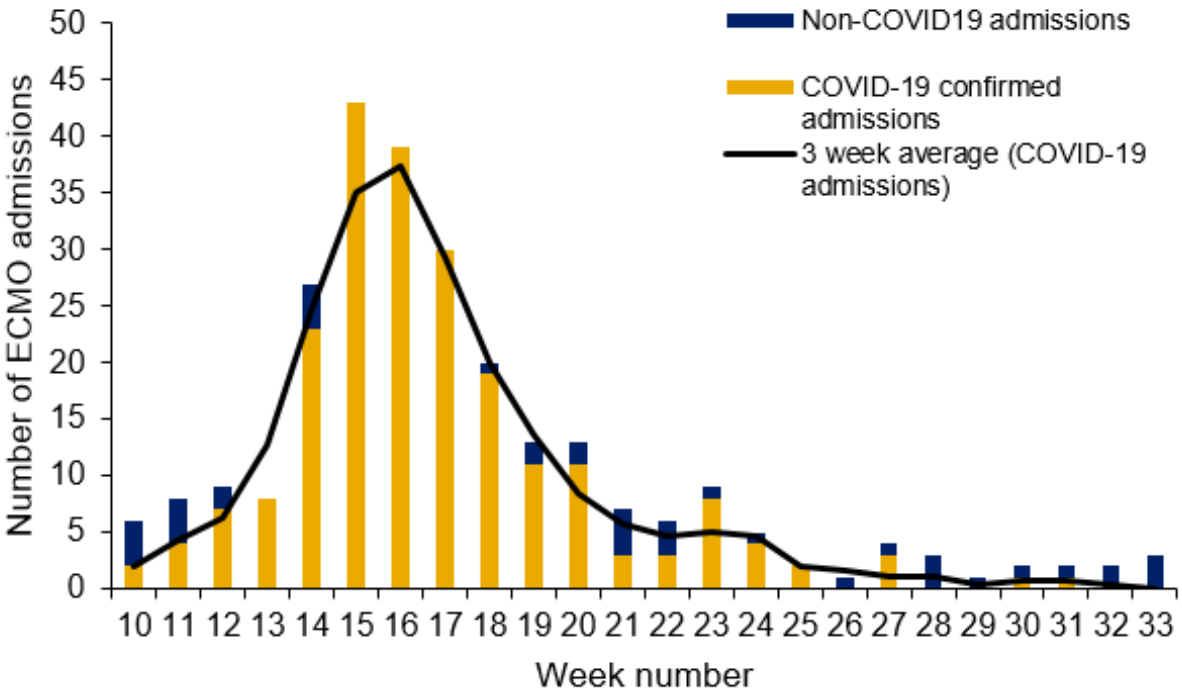
Figure 29: Ethnic group of new hospitalisations (lower level of care) (n=13,268) and ICU/ HDU (n=5,143) COVID-19 cases reported through CHESS, England



UK Severe Respiratory Failure (SRF) centres admissions

Between 03 March and 11 August 2020, a total of 222 laboratory confirmed COVID-19 admissions have been reported from the 5 SRFs in England. There was no new laboratory confirmed COVID-19 admission reported in week 33.

Figure 30: Laboratory confirmed ECMO admissions (COVID-19 and non-COVID-19 confirmed) to SRFs, England



Cumulative deaths

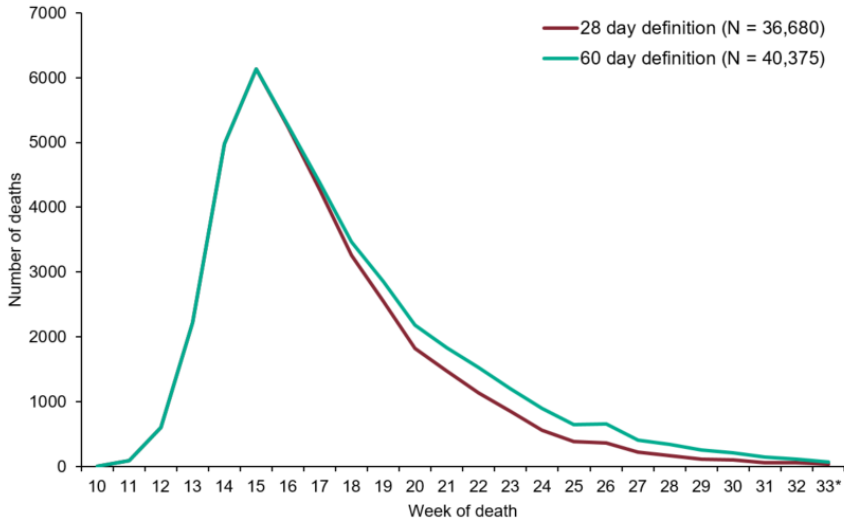
Changes to the definitions of COVID-19 related deaths in England are described in more detail in an accompanying PHE technical summary.

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 31 represents these differences by definition.

Figure 31: Cumulative number of deaths by week of death and time since laboratory confirmation of COVID-19, England



** For the most recent week, more deaths will be reported therefore the decrease seen in this graph should be interpreted with caution*

Figure 32: Age/sex pyramid of laboratory confirmed COVID-19 deaths

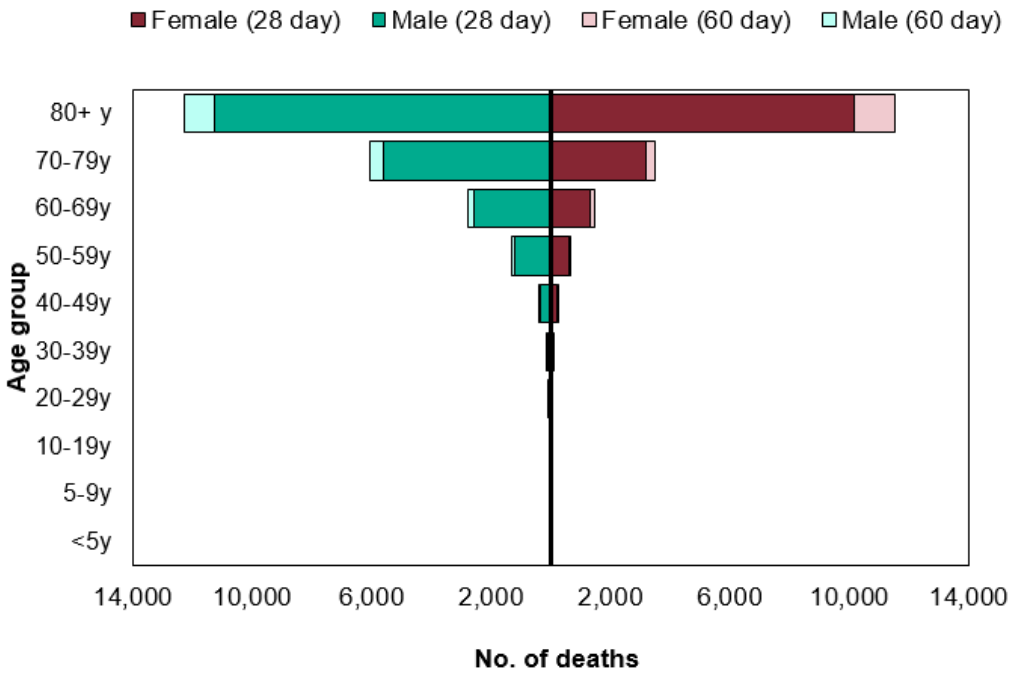


Table 4: Ethnic group (%) of COVID-19 deaths and time since laboratory confirmation of COVID-19, England

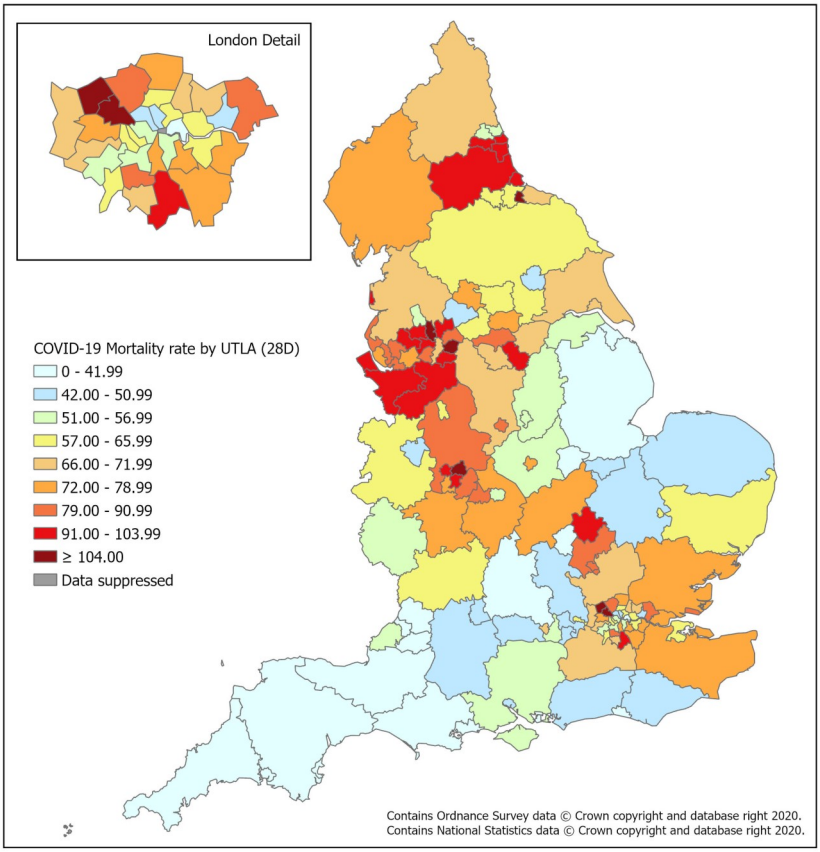
Ethnicity	28 day definition	60 day definition
White	86.6%	87.0%
Asian / Asian British	6.4%	6.1%
Black / African / Caribbean / Black British	4.3%	4.1%
Mixed / Multiple ethnic groups	0.6%	0.6%
Other ethnic group	2.2%	2.2%

Table 5: Cumulative number of COVID-19 deaths and time since laboratory confirmation of COVID-19 by PHE Centres

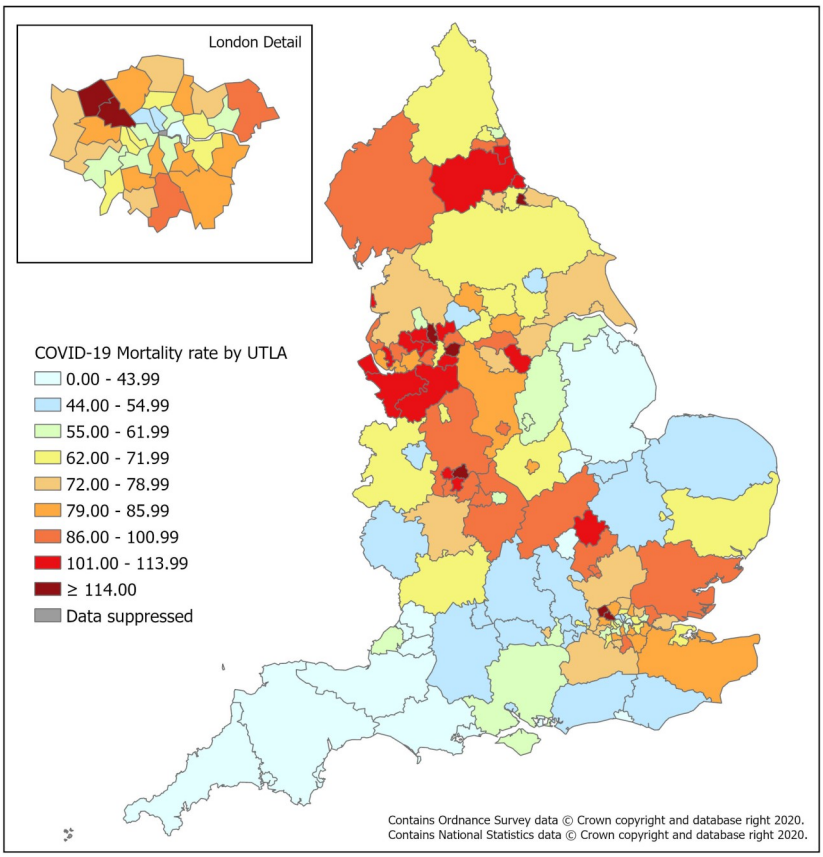
PHE Centres	Number of deaths by definition	
	28 day definition	60 day definition
North East	2,121	2,355
North West	6,116	6,774
Yorkshire & Humber	3,587	3,962
West Midlands	4,542	5,023
East Midlands	2,934	3,260
East of England	4,225	4,636
London	6,166	6,692
South East	4,860	5,419
South West	1,879	2,057

Figure 33: Cumulative mortality rate of COVID-19 cases per 100,000 population tested under Pillar 1 and 2 by (a) 28 day definition and (b) 60 day definition

(a)



(b)



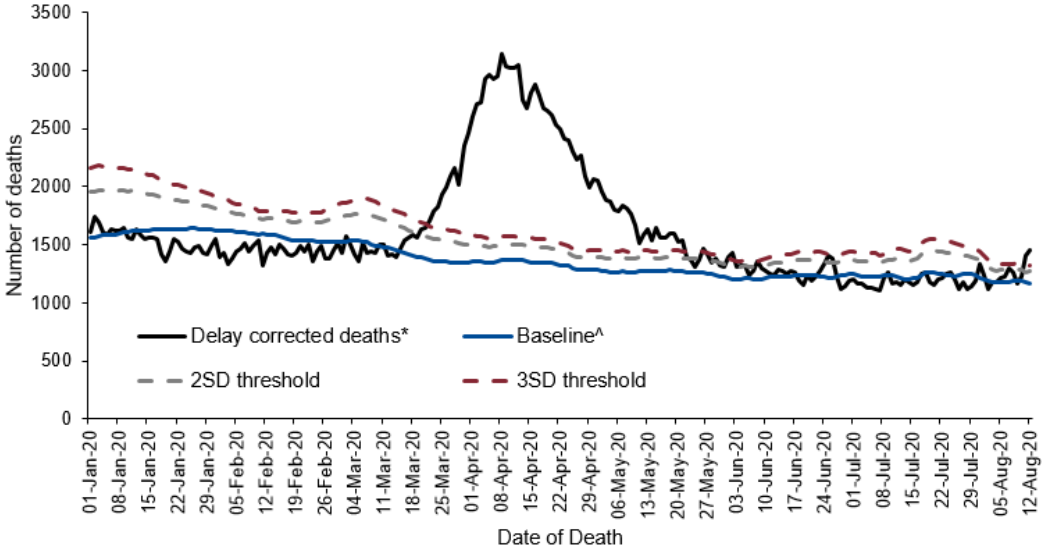
Daily excess all-cause mortality, UK

Deaths occurring from 01 January to 12 August 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 34).

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 35. 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 32 overall or subnationally, however excess was observed by age group in the 25 to 45 year olds (Figure 34, 35 and Table 6).

Figure 34: Daily excess all-cause deaths in all ages, England, 01 January 2020 to 12 August 2020



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

* corrected for delay to registration from death

Daily excess all-cause mortality, UK

Table 6: Excess all-cause deaths by (a) age group and (b) PHE centres , England

(a)

	Excess detected in week 32 2020?	Weeks in excess since week 10 2020
Age group		
All	x	13 to 21, 23
under25	x	None
25 to 44	✓	13 to 16, 32
45 to 64	x	12 to 19
65 to 74	x	12 to 19
75 to 84	x	13 to 21
85+	x	13 to 21

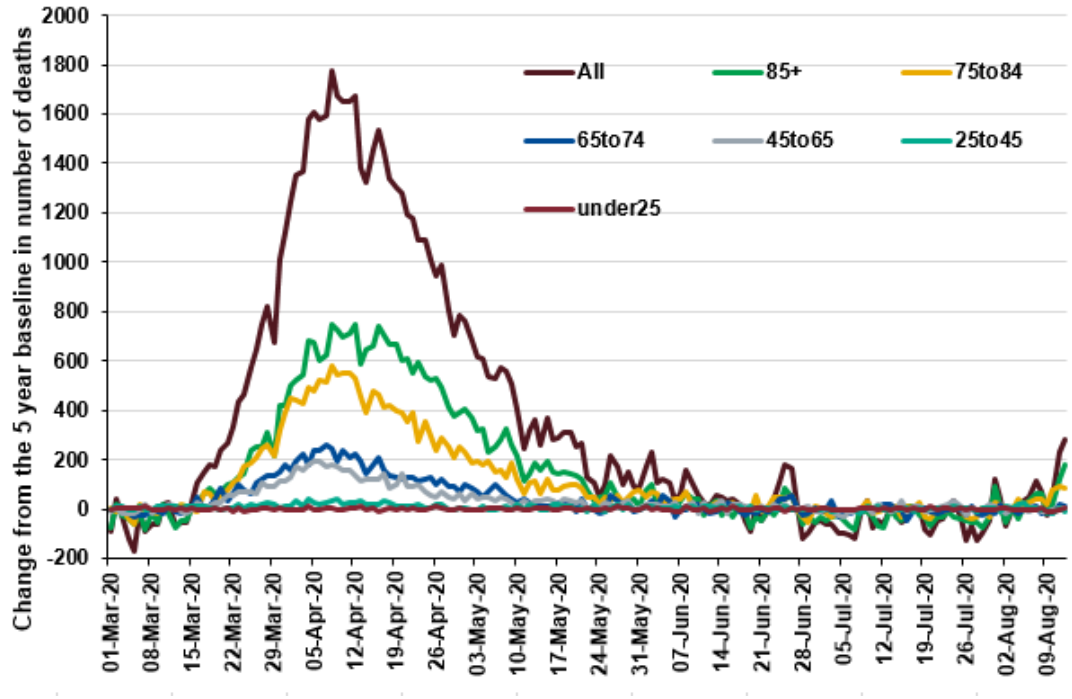
(b)

	Excess detected in week 32 2020?	Weeks in excess since week 10 2020
PHE centres		
East of England	x	14 to 19
East Midlands	x	13 to 19
London	x	12 to 19
North East	x	14 to 21
North West	x	13 to 20
South East	x	13 to 21
South West	x	14 to 19
West Midlands	x	13 to 20
Yorkshire and Humber	x	14 to 21, 23

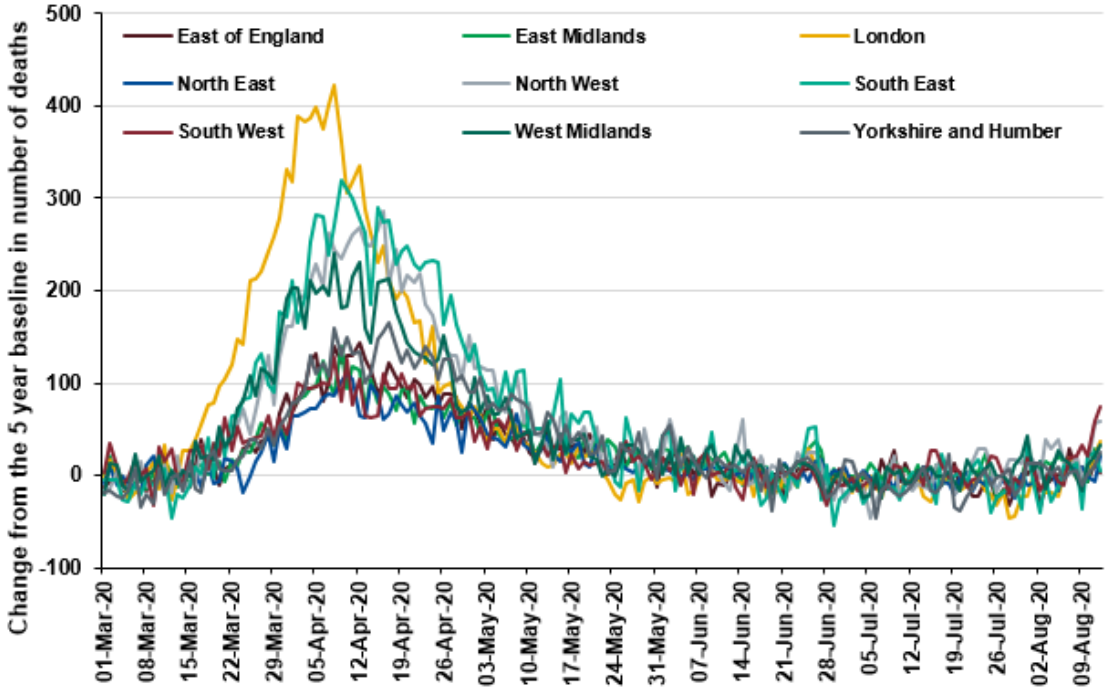
Daily excess all-cause mortality, UK

Figure 35: Daily excess all-cause deaths by (a) age group and (b) PHE centres , England, 01 March 2020 to 12 August 2020

(a)



(b)



Sero-prevalence epidemiology, England

Sero-epidemiological surveillance/studies enable the identification of the true number of infections within the general population and provides the ability to detect asymptomatic and mild infections. More information on this is available here.

In In this week's report the results from testing samples from the following sources are included:

1. Healthy adult blood donors aged 17 years and older, supplied by the NHS Blood and Transplant (NHS BT collection) between weeks 13 -32. Donor samples from two different geographic regions (approximately 1000 samples per region) in England are tested each week. From week 26, an exclusion of donors aged 70 years and older donating throughout lockdown was lifted, and therefore data from the most recent sampling periods include donors in this older age group.
2. Residual sera from children and young adults under 20 years from participating NHS and PHE laboratories across England (SEU and paediatric hospital collections) collected from February to early August.
3. Samples collected from healthy individuals under 20 years through a NIHR funded, University of Oxford sponsored, study, 'What's the STORY' from October 2019 to end July 2020.

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 13-32. This week's report includes the results of testing the 6th set of samples from the Midlands region (week 32) and the 5th set from the North East and Yorkshire NHS region (weeks 32).

National Prevalence

Overall population weighted prevalence among blood donors aged 17 years and older in England was 5.2% (95% CI 4.7% - 5.7%) (unadjusted) or 5.4% (95% CrI 4.8% - 6.0%) after adjustment for the accuracy of the Euroimmun assay (sensitivity 83.0% and specificity 99.3%) for the period 13th July – 7th August (weeks 29-32). Estimates are based on 8538 samples, of which 471 were positive. This compares with 7.8% (95% CI 7.2% - 8.6%) (unadjusted) or 8.3% (95% CrI 7.5% - 9.2%) (adjusted) for the period of 6th – 29th May (weeks 19-22). The latest data includes donors aged 70 years and older who were previously excluded from donating during lockdown.

Regional Prevalence over Time

Figure 36 shows the overall prevalence in each region over time which has been adjusted for the sensitivity and specificity of the Euroimmun assay. It is important to note that the sensitivity and specificity of assays are subject to change as further data becomes available. Sensitivity and for the Euroimmun assay is based on data from testing of convalescent sera taken 3 to 6 weeks after symptom onset.

Adjusted prevalence estimates vary across the country and over time. In London where prevalence estimates are highest, overall adjusted prevalence increased from 2.6% (week 13) to 15.7% (week 21). More recent data showed lower and eventual plateauing of adjusted prevalence in London with estimates at 8.9% (weeks 29-30) and 8.7% (week 31) respectively.

Prevalence estimates from other regions have been consistently lower than those from London; compatible with the lower incidence of COVID-19 observed in other surveillance systems.

In the most recent data (week 32) for donors in the North East and Yorkshire NHS region the adjusted prevalence was 5.0% (95% CrI 3.3%-6.9%) which is similar to 4.7% (95% CrI 3.1%-6.5%) in week 28 but lower than the prevalence of 7.1% (95% CrI 5.2%-9.3%) in week 20. The adjusted prevalence for donors in the Midlands was 4.6% (95% CrI 3.0% - 6.5%) in week 32 which is lower than that seen in the previous survey in week 28 when prevalence was 6.5% (95% CrI 4.7% - 8.6%).

For donors in the South West, adjusted prevalence decreased from 5% (week 17) to 1.9% in weeks 29 to 30. The adjusted prevalence amongst donors in the North West has plateaued, with an adjusted prevalence of 8.4% (95% CrI 6.3% and 10.6%) in week 27 and 7.0% (95% CrI 5.1% - 9.1%) in week 31. This is similar to trends seen in the South East where adjusted prevalence was 4.6 (95% CrI 3.0% - 6.4%) between weeks 26 and 27 and 3.6% (95% CrI 2.2% - 5.3%) in the most recent data (week 30).

In the East of England adjusted prevalence amongst donors fluctuated between 8.8 (95% CrI 6.7% - 11.2%) in week 19 to 5.0% (95% CrI 3.3% - 6.9%) in weeks 26-27 and 6.6% (95% CrI 4.8% - 8.6%) in the most recent data (weeks 30-31).

These stable or lower prevalence estimates in more recent sampling periods suggest that recent transmission levels are very low.

The change in prevalence seen in some regions is likely to be largely driven by changes in the precise locations of sample collection, for example in the most recent East of England collection, greater numbers of samples came from areas closer to London where prevalence appears to be higher. Declines in prevalence can be partially explained by demographic differences in the donor population as lockdown measures are relaxed, for example regular donors aged 70 years and above were not allowed to donate during lockdown, but this exclusion was lifted from week 26. Waning immunity may also be a contributing factor to the lower prevalence.

Prevalence by Age Group

Population weighted antibody prevalence (unadjusted) estimates in donors aged 70-84 years are included in the most recent data (weeks 29-32) as this age group, who were advised to shield during lockdown, have been able to return to donor clinics since week 26 (Figure 37). Prevalence is highest in the youngest age group (age 17-29) and lowest in the oldest age group (age 70-84).

Seroprevalence in children and young adults under 20 years of age

PHE is conducting a number of seroprevalence surveys in children and young adults. The PHE Seroepidemiology Unit (SEU) and paediatric hospital survey is a collection of residual serum samples from routine microbiological testing and “What’s the Story” is a representative household survey that collects sera from healthy children and adolescents under the age of 25 years in England. In this report only those aged under 20 are included from “What’s the Story”.

The results of testing these collections with samples collected in children and young adults are presented in Tables 7 and 8 below. Seroprevalence estimates from the Abbot assay were adjusted for sensitivity of 95.7% and specificity of 99.1% at a cut-off of 0.8 (the equivocal cut-off) (Table 7). Note that sensitivity is based on convalescent samples taken within 3-6 weeks of onset.

Both sample sets show an increase in prevalence amongst children and young adults between February/March and April, although prevalence is higher in the SEU/Paediatric data. Prevalence is broadly stable through May and June/July except for the lower estimate seen in the SEU/Paediatric collection in June/July. This may be partly explained by a large number of samples included from the South West at this time point (and not in other time points) with a low proportion positive (7/795 (0.9%)). If these samples are dropped then the proportion positive increases to 4.8% (3.7% - 6.2%) and adjusted prevalence to 3.9% (2.6% - 5.3%), which is close to the STORY estimate for the same time period. Overall these data indicate a prevalence of approximately 4% in the recent time period which is slightly lower than the estimate in adults from blood donors.

Figure 36: Overall SARS-CoV-2 antibody seroprevalence (%) in blood donors by PHE centres, using Euroimmun test adjusted for sensitivity (82.5%) and specificity (99.1%) and 95% confidence intervals (dashed lines)

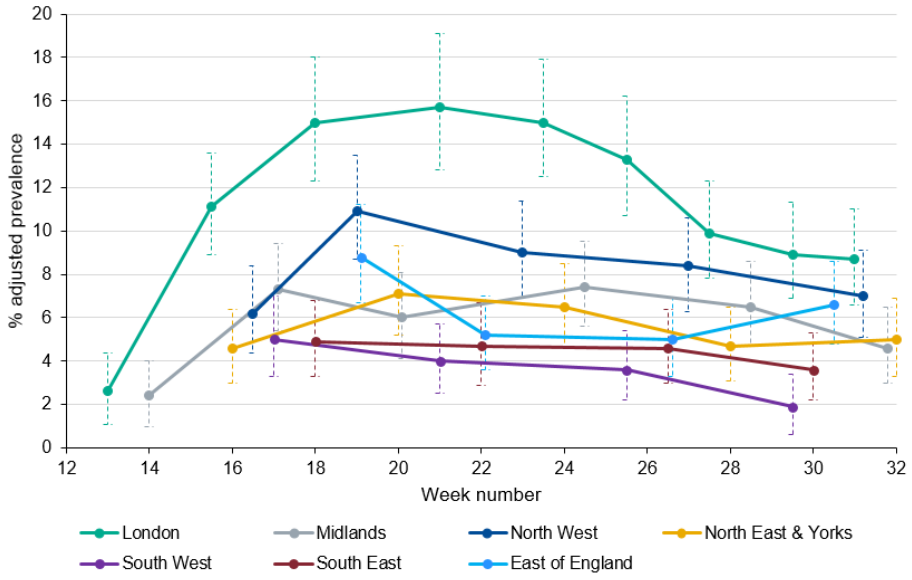


Figure 37: Population weighted SARS-CoV-2 antibody seroprevalence in blood donors by age group, using Euroimmun test; error bars show 95% confidence intervals

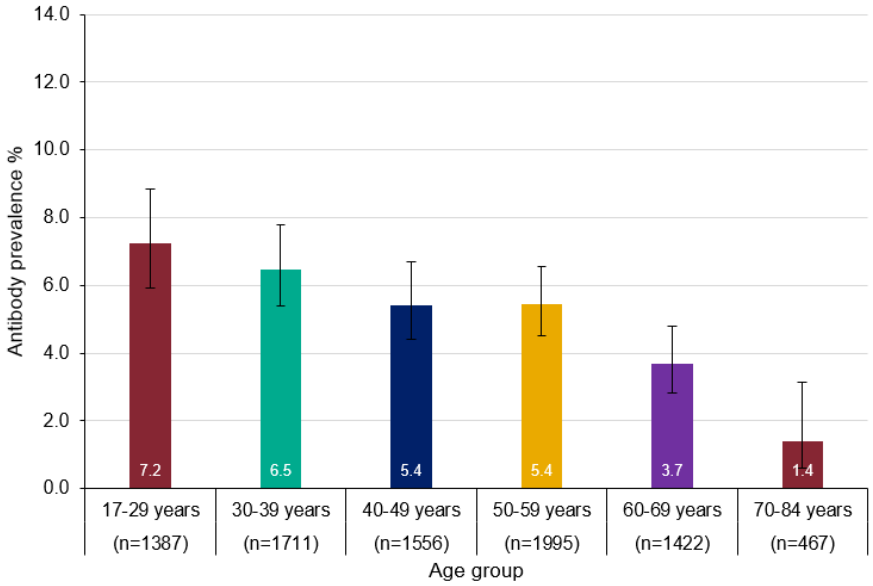


Table 7: Summary of SEU and Paediatric (unweighted) Prevalence Estimates (ages 1 – 19) by period of sampling, using the Abbott assay (neg<0.8 units, equiv 0.8-<1.4, pos>=1.4)

Date range	pos	equiv	neg	total	% pos (95% CI)	adjusted prevalence (95% CrI)
1 Feb - 31 Mar	2	6	435	443	1.8% (0.8% - 3.5%)	0.8% (0% - 2.5%)
1 - 30 Apr	39	4	604	647	6.6% (4.9% - 8.8%)	6.1% (4.1% - 8.4%)
1 - 31 May	72	11	978	1061	7.8% (6.3% - 9.6%)	7.3% (5.6% - 9.2%)
1 June - 2 Aug	55	10	1997	2062	3.2% (2.4% - 4.0%)	2.4% (1.3% - 3.4%)

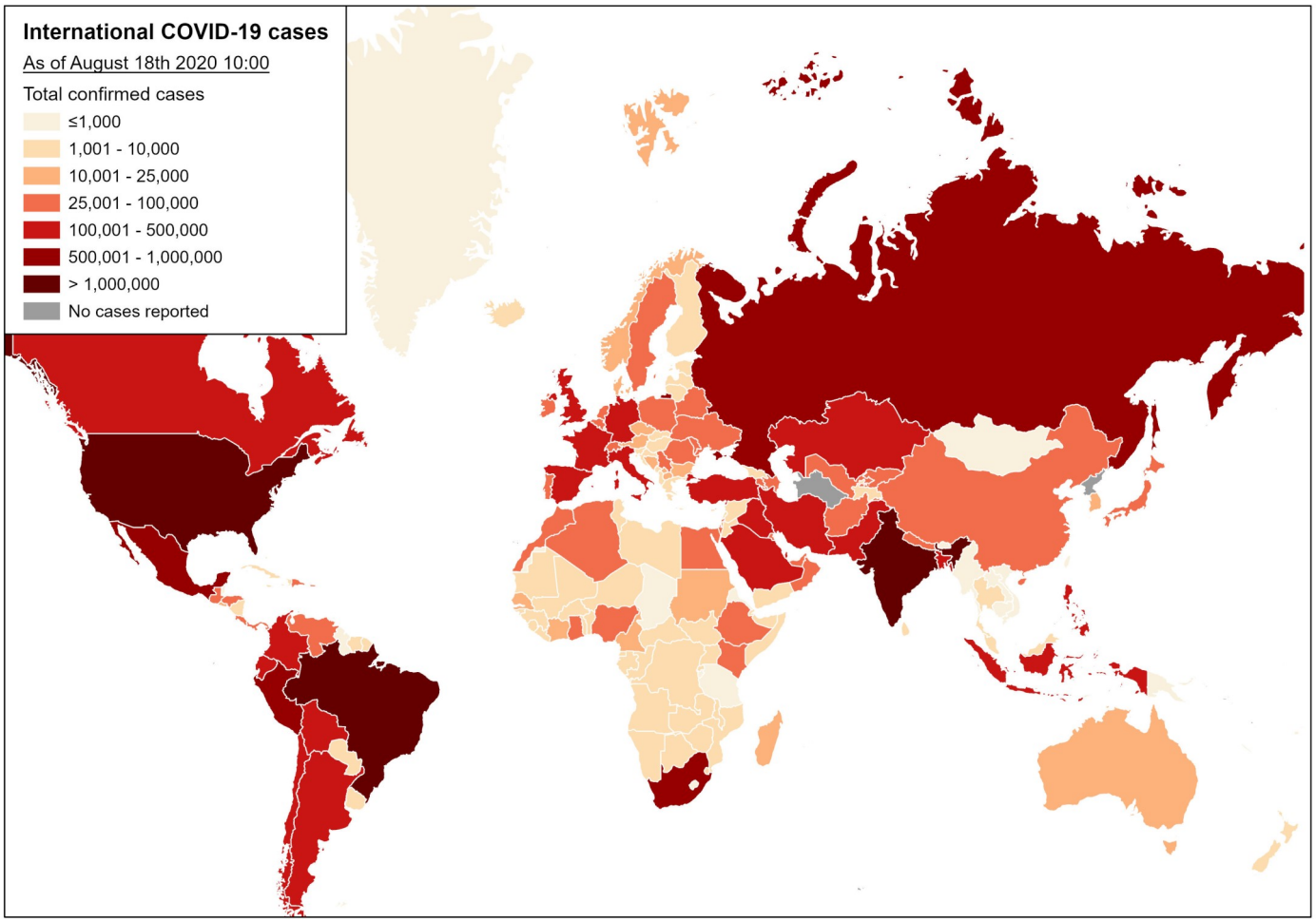
Table 8: Summary of What's the Story (unweighted) Prevalence Estimates (ages 1 – 19) by period of sampling, using the Abbott assay (neg<0.8 units, equiv 0.8-<1.4, pos>=1.4)

Date range	pos	equiv	neg	total	% pos (95% CI)	adjusted prevalence (95% CrI)
1 Feb - 31 Mar	0	1	105	106	1.4% (0.6% - 4.3%)	0.5% (0% - 3.6%)
1 - 30 Apr	7	2	192	201	4.5% (2.1% - 8%)	3.8% (1.2% - 7.5%)
1 - 31 May	4	0	139	143	2.7% (1% - 6.4%)	1.9% (0% - 5.8%)
1 June - 2 Aug	10	4	271	285	4.9% (2.8% - 7.8%)	4.2% (1.9% - 7.3%)

Global situation

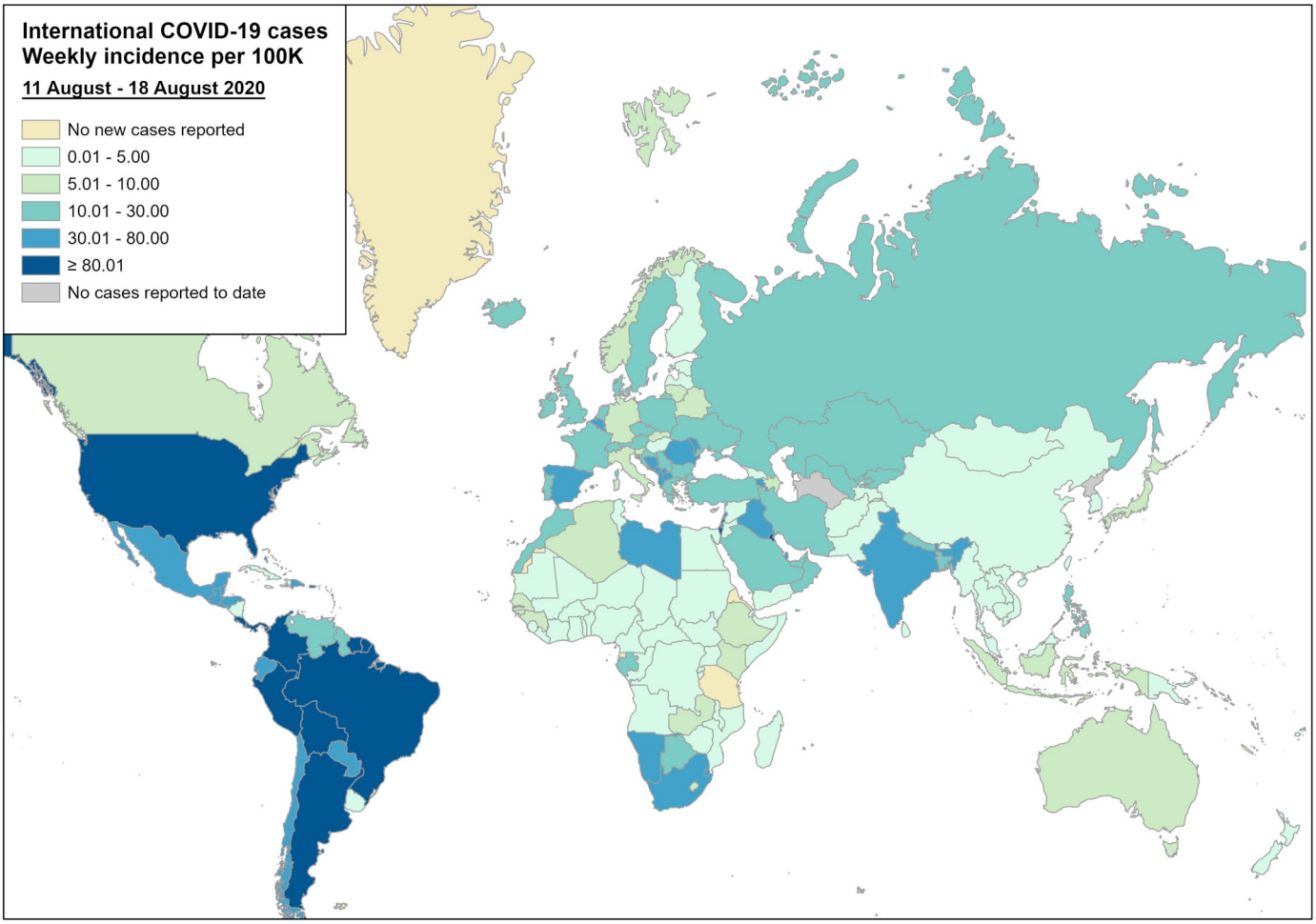
Globally, up to 18 August 2020, a total of 21,852,618 cases of COVID-19 infection have been reported worldwide, including 774,084 COVID-19 related deaths.

Figure 38: Global map of cumulative COVID-19 cases



Global situation

Figure 39: Global map of weekly COVID-19 case incidence rate per 100,000, week 33 2020



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.