Public Health England

Weekly Coronavirus Disease 2019 (COVID-19) surveillance report

Summary of COVID-19 surveillance systems

Year: 2020 Week: 37

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 data from week 36 (between 31 August and 6 September 2020) and for some indicators daily data up to 8 September 2020. References to COVID-19 represent the disease name and SARS-CoV-2 represent the virus name.

This is the first report which represents data from week 27 (week beginning 29 June 2020) onwards. For reports with data prior to week 27, consult previous reports here.

Summary

Several surveillance indicators suggest that there have been increases in COVID-19 activity at a national level during week 36.

Case detections in England increased from 7,955 in week 35 to 12,217 in week 36. Case rates were highest in North West and Yorkshire and Humber. At a local authority level, incidence was highest in Bolton. Case rates continued to be highest in the 20-29 year age group. Positivity rates have increased in all age groups and regions with a particularly steep increase in positivity seen in 85+ year olds tested through Pillar 2. Among young adults there has been a shift in the demographic of cases in recent weeks from the highest rates among those in the most deprived groups towards those in the least deprived groups.

The following local authorities have been included in the watchlist following the weekly Local Action Committee meeting as areas of intervention: Bolton, Bradford, Oldham, Salford, Blackburn with Darwen, Preston, Pendle, Rochdale, Tameside, Manchester, Birmingham, Bury, Leicester, Kirklees, Solihull, Calderdale, Trafford and Sandwell.

The overall number of acute respiratory infection incidents reported to PHE Health Protection Teams increased from the previous week. Increases were noted in the number of incidents in care homes, food outlet/restaurants and workplace settings in comparison to the previous week. Schools reopened in week 36 and there has been an increase in incidents in educational settings.

A number of syndromic indicators for acute respiratory infections increased during week 36. Increases in NHS 111 cold/flu calls continue to be noted and GP in hours consultations for COVID-19 like also increased.

There were small increases in emergency department attendances with a COVID-19-like diagnosis and increases in hospital admission rates for confirmed COVID-19 admissions increased at national level.ICU/HDU admission rates remained stable. There were notable increases in hospitalisations in the North West by region and in those aged over 85 by age group.

COVID-19 deaths continue to decline in week 36 and no excess mortality was observed overall in week 35.

New adjusted seroprevalence estimates based on samples from adult blood donors in London and the North West were 12.6% and 6.8% respectively. The adjusted prevalence for London is a notable increase. This could in part be due to increases in recent infection, though changes in the precise sampling within London and changes in the characteristics of the donor population are also likely to be contributory factors. 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 eg 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 (eg 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 7 September	Change in Watchlist Status from previous week	Area with household mixing prohibited?
Bolton *	168.0	↑	121.9	↑	Intervention	→	YES
Bradford *‡	127.0	↑	72.2	↑	Intervention	→	YES
Oldham *	161.1	↓	66.6	↑	Intervention	→	YES
Salford *	132.1	↑	62.9	↑	Intervention	→	YES
Blackburn with Darwen *‡	197.3	↑	61.8	↑	Intervention	→	YES
Preston	160.1	↓	59.9	↑	Intervention	→	YES
Pendle *	191.0	↓	58.0	↓	Intervention	→	YES
Rochdale *	165.0	↑	57.7	↑	Intervention	→	YES
Tameside *	154.5	↑	56.8	↑	Intervention	→	YES
Manchester *	133.1	↓	53.9	↑	Intervention	→	YES
Birmingham	114.1	↑	50.8	↑	Intervention	↑	YES
Bury *	137.2	↑	46.8	↑	Intervention	→	YES
Leicester	121.0	↓	43.1	↑	Intervention	→	YES
Kirklees *‡	101.0	↓	36.9	↑	Intervention	→	YES
Solihull	113.9	↑	34.9	↑	Intervention	↑	YES
Calderdale *‡	118.6	↓	34.3	↑	Intervention	→	YES
Trafford *	144.0	↓	31.3	↓	Intervention	→	YES
Sandwell	90.8	↓	22.6	↓	Intervention	↑	YES
Rossendale	222.5	↑	80.4	↑	Enhanced Support	→	NO
Burnley *	187.8	↓	57.6	↑	Enhanced Support	↑	NO
South Tyneside	170.5	↑	50.6	↑	Enhanced Support	↑	NO
Leeds	136.8	↑	47.3	↑	Enhanced Support	↑	NO
Hyndburn *	203.1	↓	42.1	↑	Enhanced Support	↑	NO
Gateshead	123.3	↑	40.5	↑	Enhanced Support	↑	NO
Sunderland	120.3	↑	32.4	↑	Enhanced Support	↑	NO
Newcastle upon Tyne	116.3	↓	28.0	↑	Enhanced Support	↑	NO
Stockport *	120.8	↓	20.2	↑	Enhanced Support	↑	NO
Hertsmere	160.5	↑	53.7	↑	Concern	↑	NO
Wirral	141.4	↑	43.6	↑	Concern	↑	NO
Middlesbrough	144.6	↑	42.0	↑	Concern	↑	NO
Hartlepool	96.8	↑	38.6	↑	Concern	↑	NO
Corby	242.2	↓	35.3	↓	Concern	→	NO
Liverpool	109.5	↑	31.1	↑	Concern	↑	NO
Sefton	135.7	↑	30.9	↑	Concern	↑	NO
Knowsley	129.7	↑	30.1	↑	Concern	↑	NO
Sheffield	114.9	↑	28.5	↑	Concern	↑	NO
Peterborough	99.1	↓	27.9	↑	Concern	→	NO
Northampton [1]	161.8	↓	25.8	↑	Concern	↓	NO
Stoke-on-Trent	134.5	↑	25.0	↑	Concern	↑	NO
St. Helens	112.7	↓	23.3	↑	Concern	↑	NO
Great Yarmouth §	107.0	↑	23.1	↓	Concern	↓	NO
Norwich §	131.6	↑	20.5	↑	Concern	↓	NO
Swindon	102.9	↓	16.7	↓	Concern	↓	NO
Breckland §	118.8	↑	16.5	↓	Concern	↓	NO
South Norfolk §	109.8	↑	10.9	↑	Concern	↓	NO
King's Lynn and West Norfolk §	83.4	↓	4.0	→	Concern	↓	NO
Broadland §	99.8	↓	3.1	↑	Concern	↓	NO
North Norfolk §	89.8	↓	2.9	↑	Concern	↓	NO
ENGLAND	114.3	↑	19.7	↑			

Data for specimens taken between 28 August and 3 September as extracted on 8 September
Trend arrow indicates whether there has been an increase, decrease or no change between this week and last week (specimens taken between 21 August and 27 August)
*Local authority is part of an area in which overall infection rates are high, with household transmission a key infection pathway.
‡ Within these Local Authority the interventions have been restricted to some wards
[1]Northampton's increase in incidence is almost soley down relates to a workplace outbreak at the Green-core Factory
§ These Local Authorities are within Norfolk and relate almost solely to a workplace outbreak at Banham Poultry Farm.

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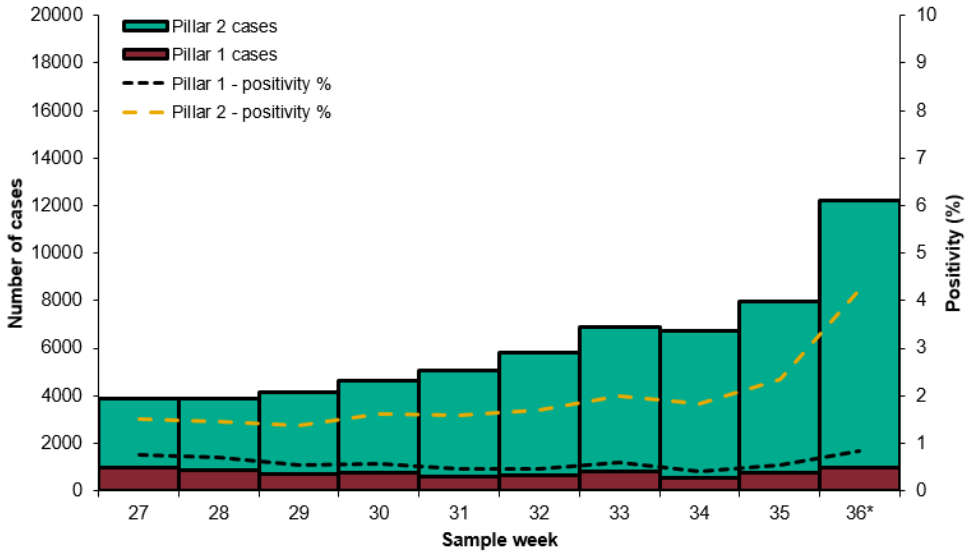
As of 09:00 on 8 September 2020, a total of 304,269 have been confirmed positive for COVID-19 in England under Pillar 1 and 2.

Overall case numbers and positivity increased in both Pillar 1 and 2, in week 36, with the majority of cases reported from Pillar 2. The highest case rates continued to be seen in the 15-44 year olds. Positivity was highest in 15-44 year olds in Pillar 1 and in 85+ year olds in Pillar 2. Cases rates and positivity continue to be highest in the North of England.

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

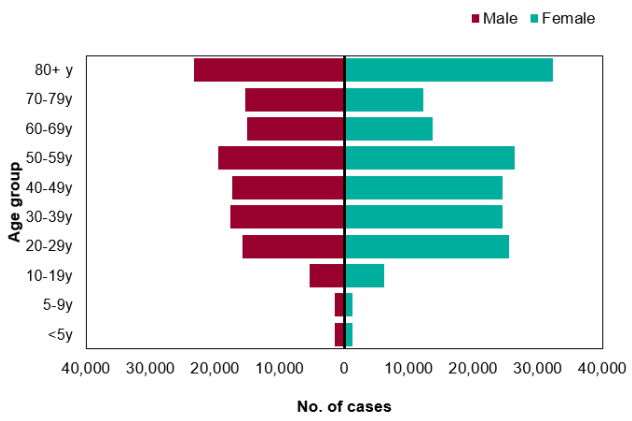


* For the most recent week, more samples are expected therefore the decrease seen in this graph should be interpreted with caution. The data are shown by the week the specimen was taken from the person being tested. This gives the most accurate analysis of this time progression, but it does mean that the latest days' figures may be incomplete.

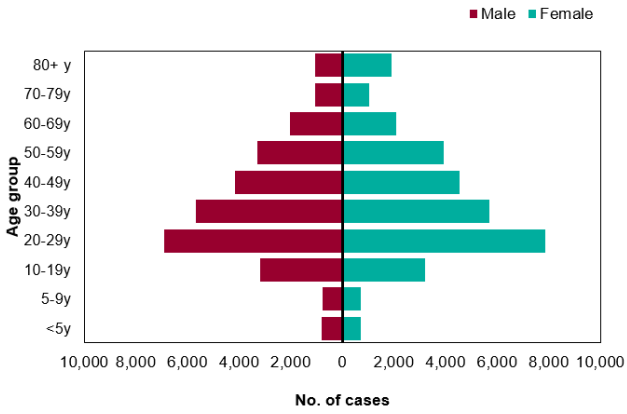
Age and sex

Figure 2: Age/sex pyramids for laboratory confirmed COVID-19 cases tested under Pillar 1 and 2 (a) cumulative number since week 05 (n=300,412), (b) cumulative number since week 27 (n=60,673), and (c) in weeks 35 and 36 (n=20,104)

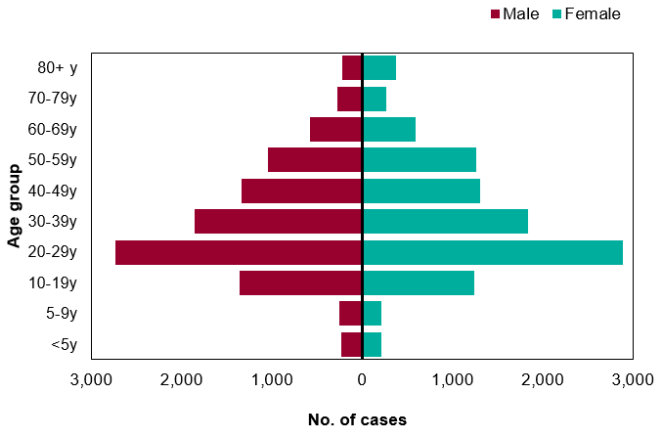
(a)



(b)



(c)



Age and sex

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

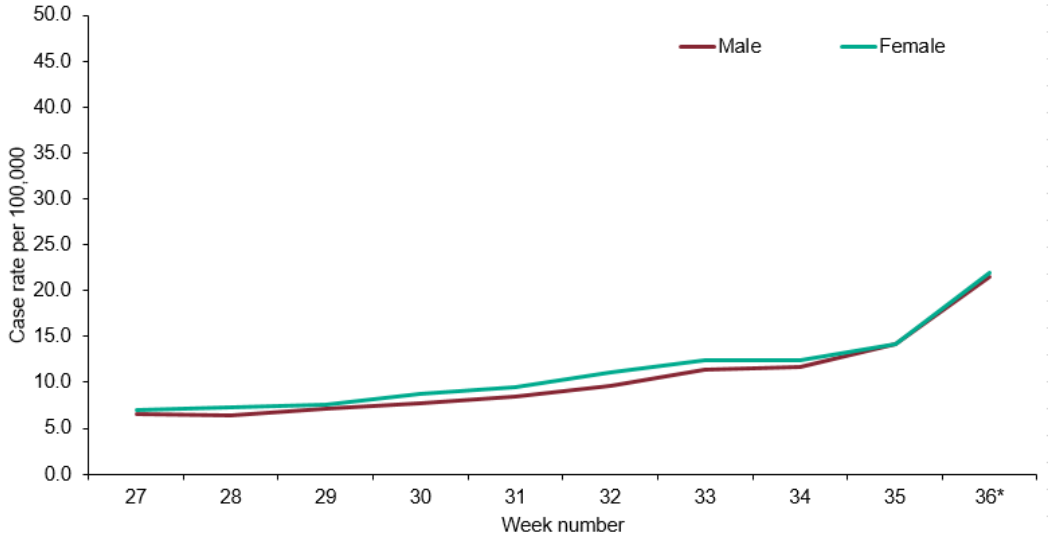


Figure 4: Weekly laboratory confirmed COVID-19 case rates per 100,000, tested under Pillar 1 and Pillar 2 , by age group

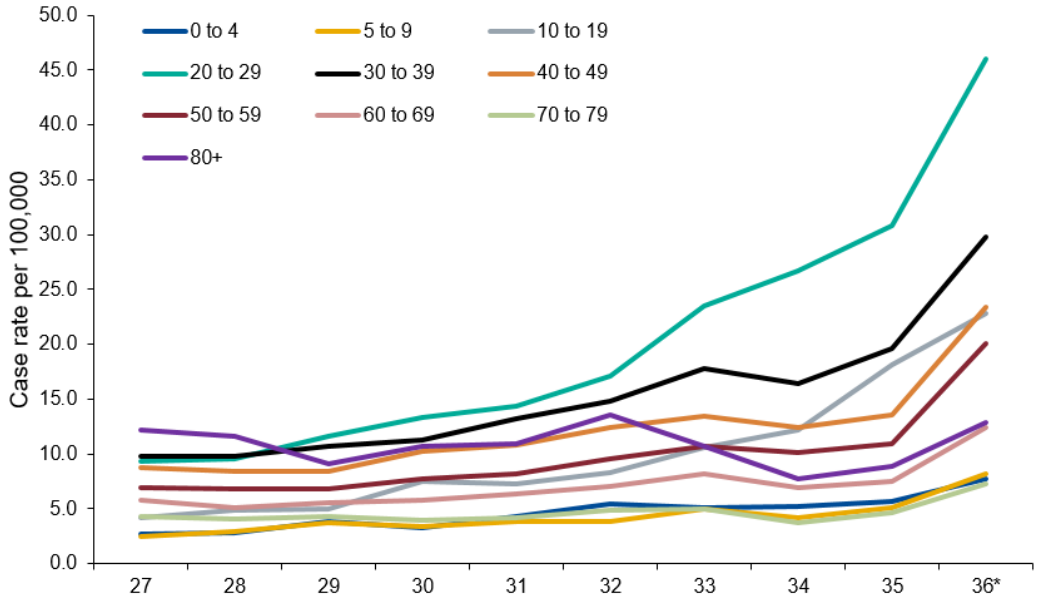
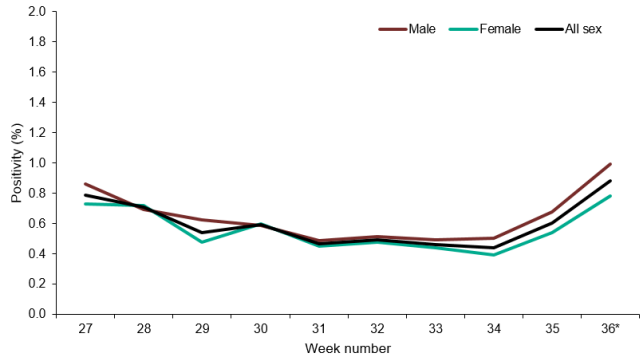


Figure 5: Weekly positivity (%) of laboratory confirmed COVID-19 cases tested overall and by sex under (a) Pillar 1 and (b) Pillar 2, (SGSS and Respiratory DataMart)

(a)



(b)

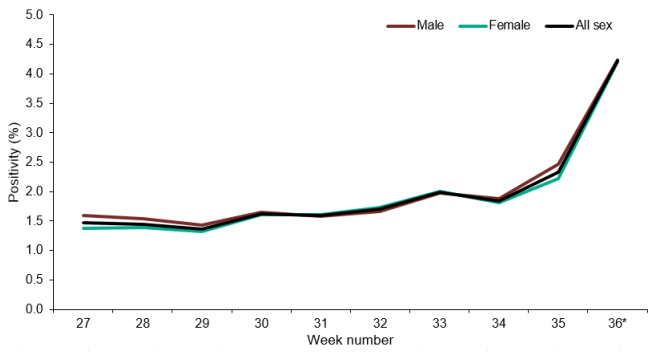
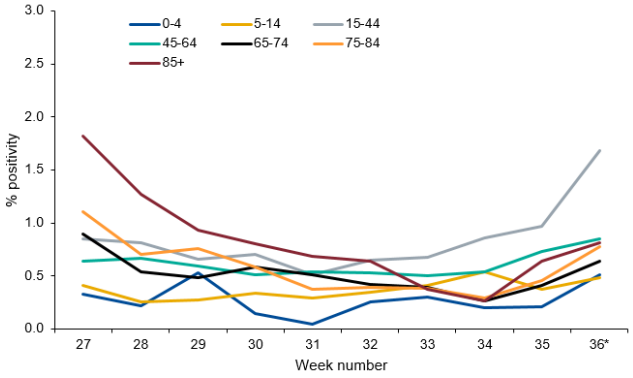
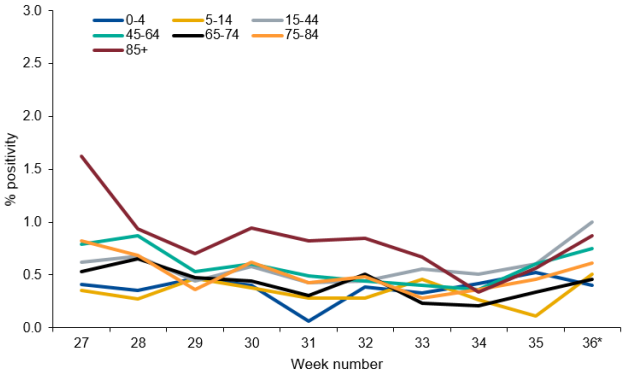


Figure 6: Weekly positivity (%) of laboratory confirmed COVID-19 cases tested under Pillar 1, (a) by male and age group and (b) by female and age group and; under Pillar 2, (c) by male and age group and (d) by female and age group, (SGSS and Respiratory DataMart)

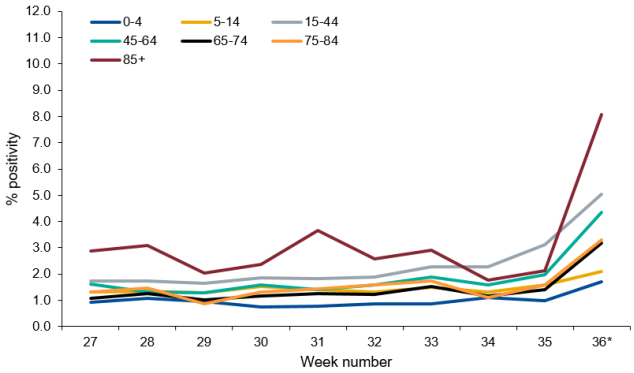
(a) Male (Pillar 1)



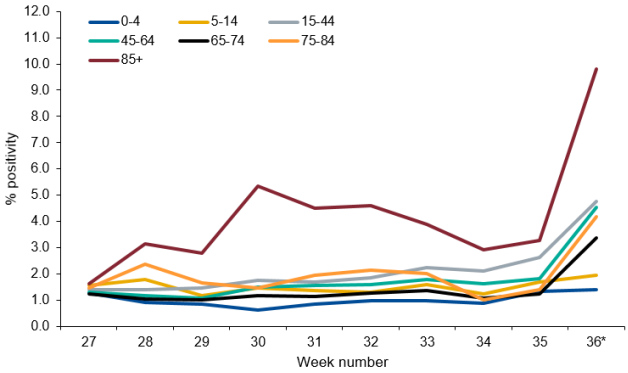
(b) Female (Pillar 1)



(c) Male (Pillar 2)



(d) Female (Pillar 2)



Geography

Table 2: Cumulative number of cases under Pillar 1 and 2 (n=295,228) and cumulative number of cases since week 27 under Pillar 1 and 2 (n=60, 296) and total number of people tested under Pillar 1 and 2 (n= 6,881,052) by PHE Centres

PHE Centres	Cumulative Pillar 1 + 2 cases	Cumulative since week 27, Pillar 1 + 2 cases	Total number of people tested (under Pillar 1 + 2)
North East	17,335	2,291	292,602
North West	56,743	14,525	1,021,652
Yorkshire & Humber	38,148	9,453	710,712
West Midlands	32,356	7,220	664,040
East Midlands	27,415	6,767	643,620
East of England	28,522	4,402	780,473
London	41,450	7,790	997,953
South East	37,951	5,213	1,096,827
South West	15,308	2,635	673,173

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

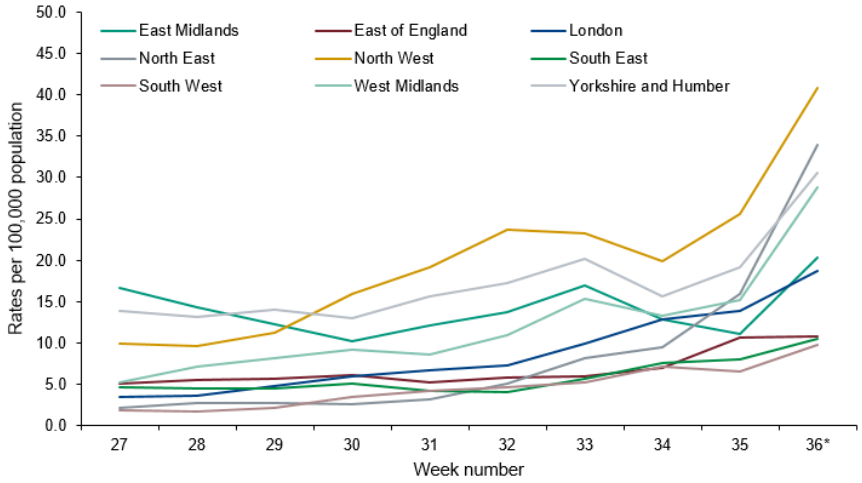
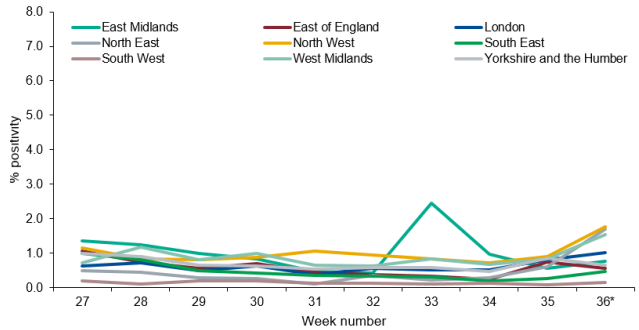


Figure 8: Weekly positivity of laboratory confirmed COVID-19 cases tested under (a) Pillar 1 (%) and (b) Pillar 2 (%), by PHE Centres and sample week, (SGSS and Respiratory DataMart)

(a)



(b)

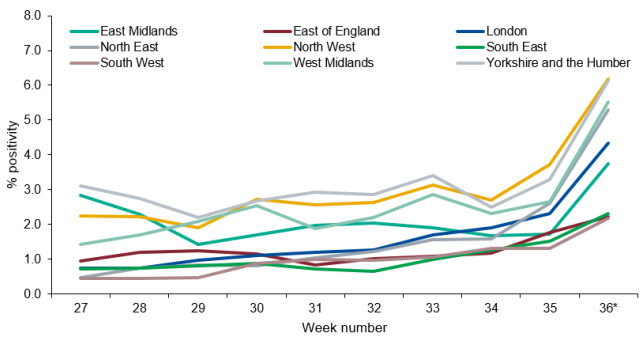


Figure 9: Cumulative rate of COVID-19 cases per 100,000 population tested under Pillar 1 and 2, by upper-tier local authority, England (box shows enlarged map of London area)

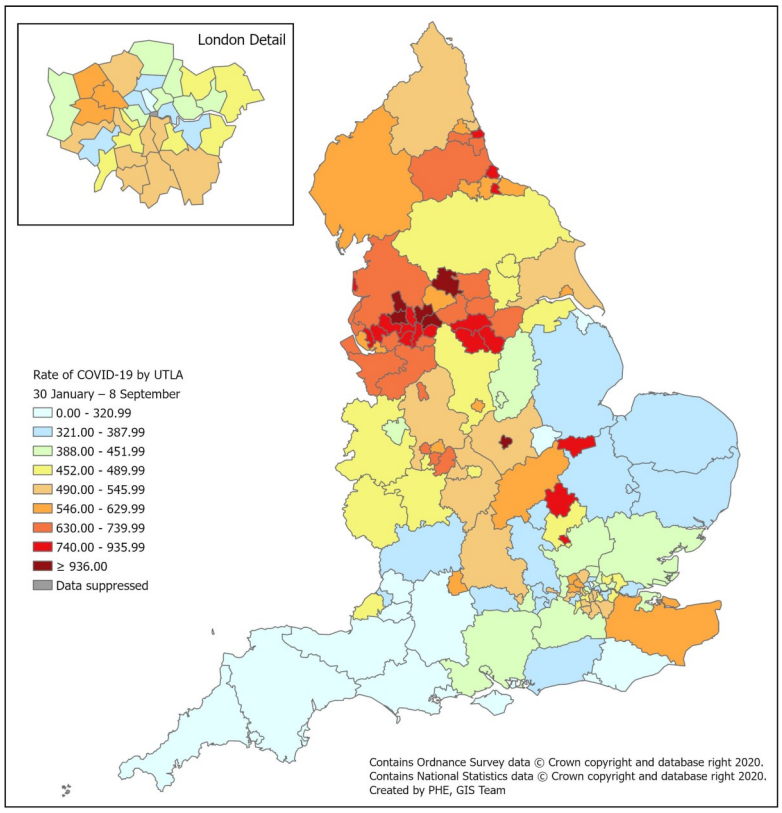


Figure 10: Cumulative rate (from week 27) of COVID-19 cases per 100,000 population tested under Pillar 1 and 2, by upper-tier local authority, England (box shows enlarged map of London area)

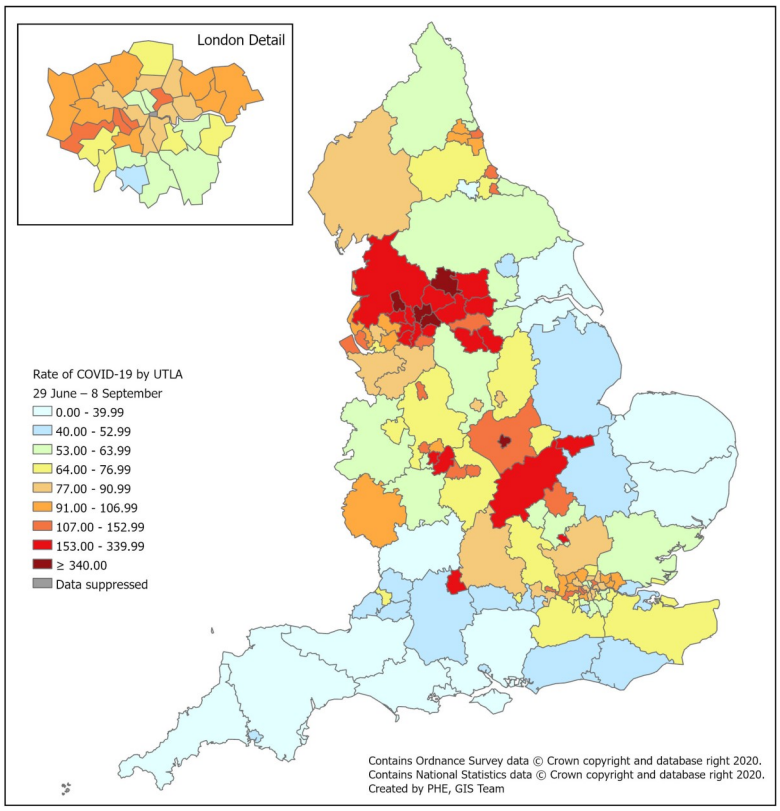


Figure 11: Weekly rate of COVID-19 cases per 100,000 population tested under Pillar 1 and 2, by upper-tier local authority, England (box shows enlarged map of London area)

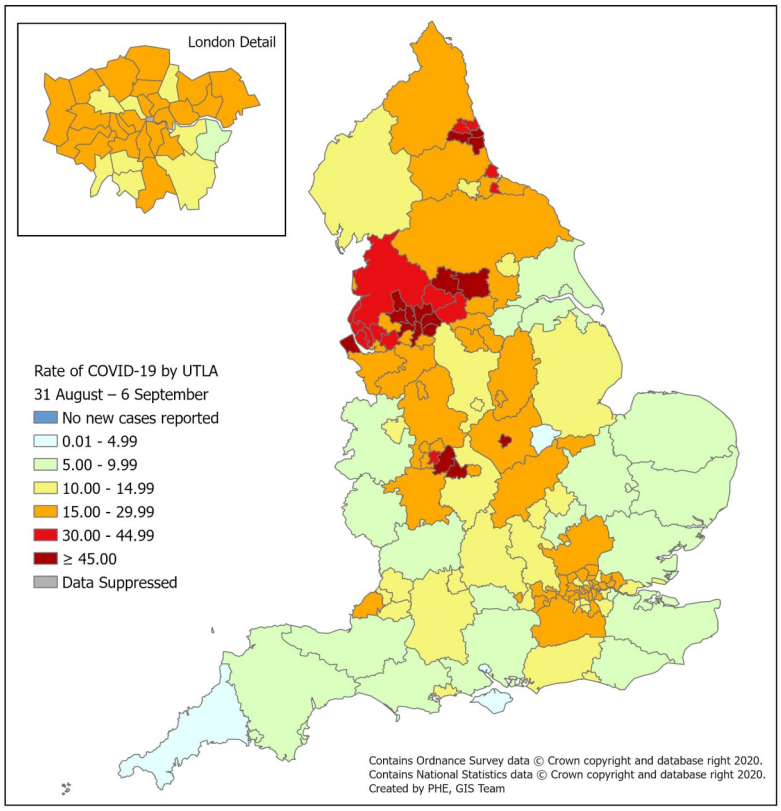
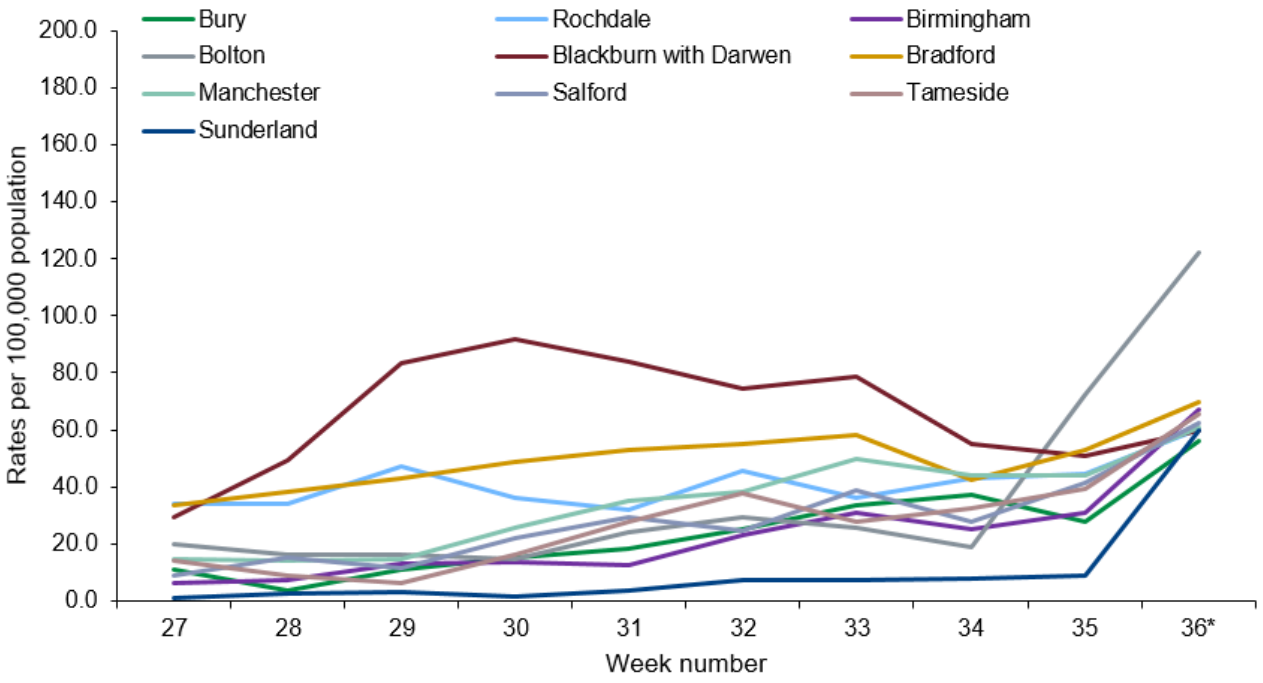


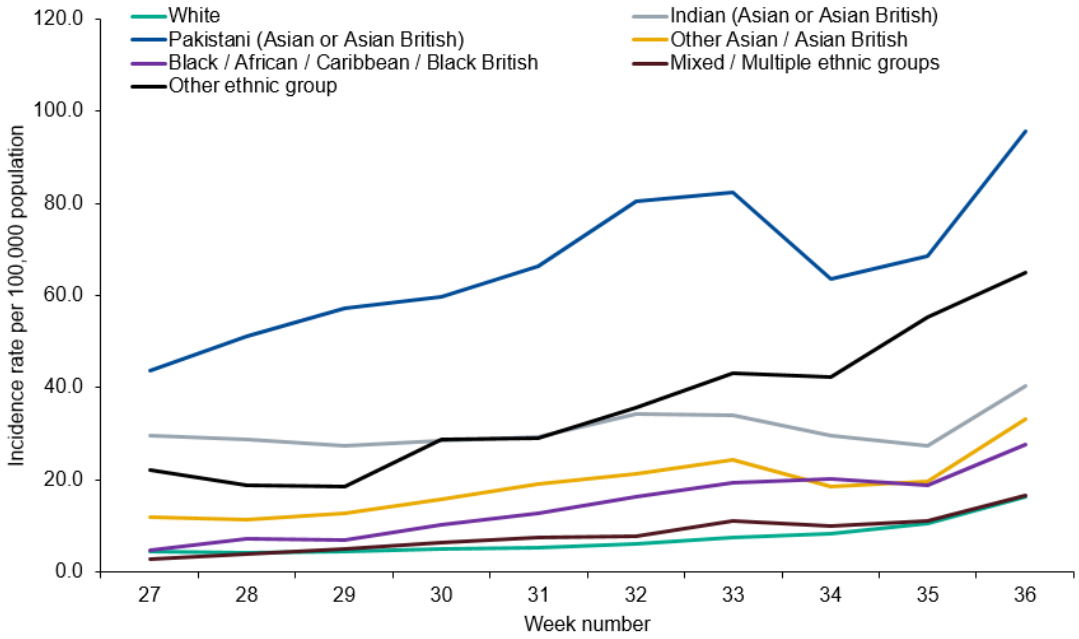
Figure 12: UTLA with the highest weekly rate of COVID-19 cases per 100,000 population tested under Pillar 1 and 2*



*The UTLA data presented in this figure, is based on data extracted on Tuesday 8 September, covering the period of 31 August to 6 September 2020 (week 36).

Ethnicity

Figure 13: Weekly incidence per 100,000 population by ethnicity, England



Incidence rates by region

In the regions with the highest overall rates and with most local authorities on the watchlist, the age groups most affected appears to be young working age adults (20-29 years). This is consistent with mixing patterns in this age group who may be more likely to be working away from home, including in public facing roles. In those regions, highest rates are also observed in Asian communities of either Other ethnic background or Pakistani origin, most likely reflecting the ethnic mix in the most affected local areas. In some regions the daily numbers of cases in each ethnic group can be small, so minor variations in rates should be interpreted with caution.

Figure 14: Weekly incidence per 100,000 population by age group and region, weeks 31-36

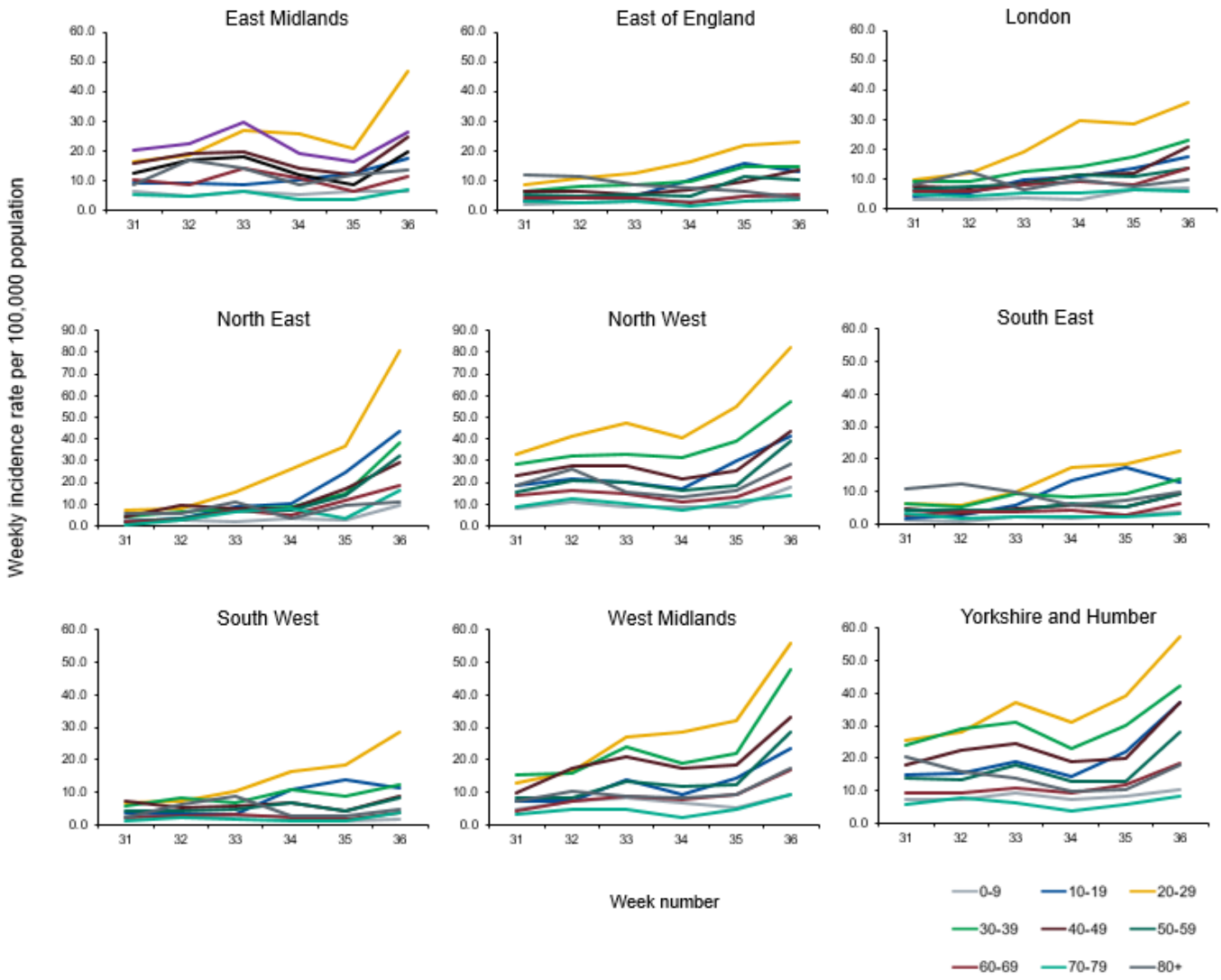
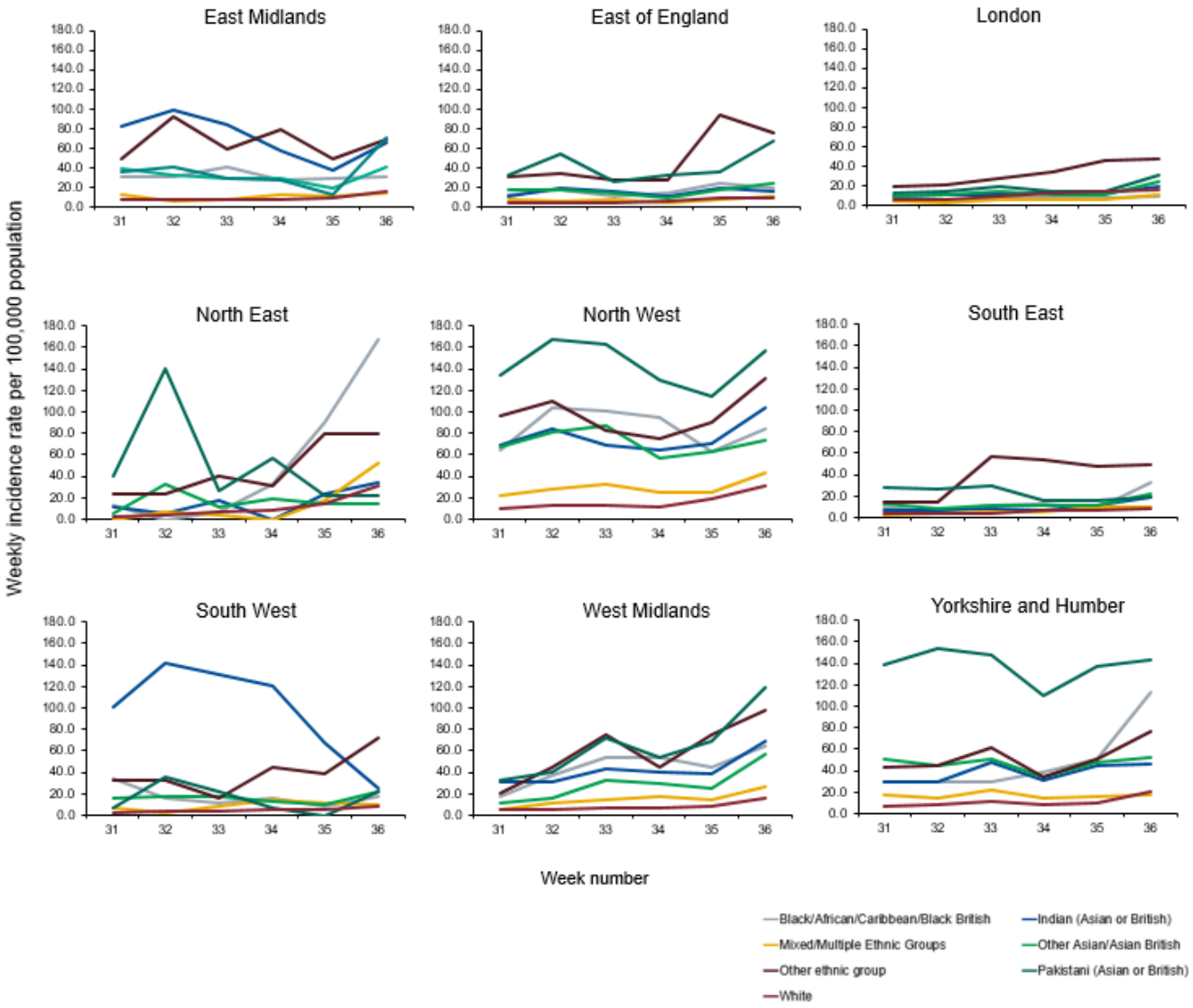


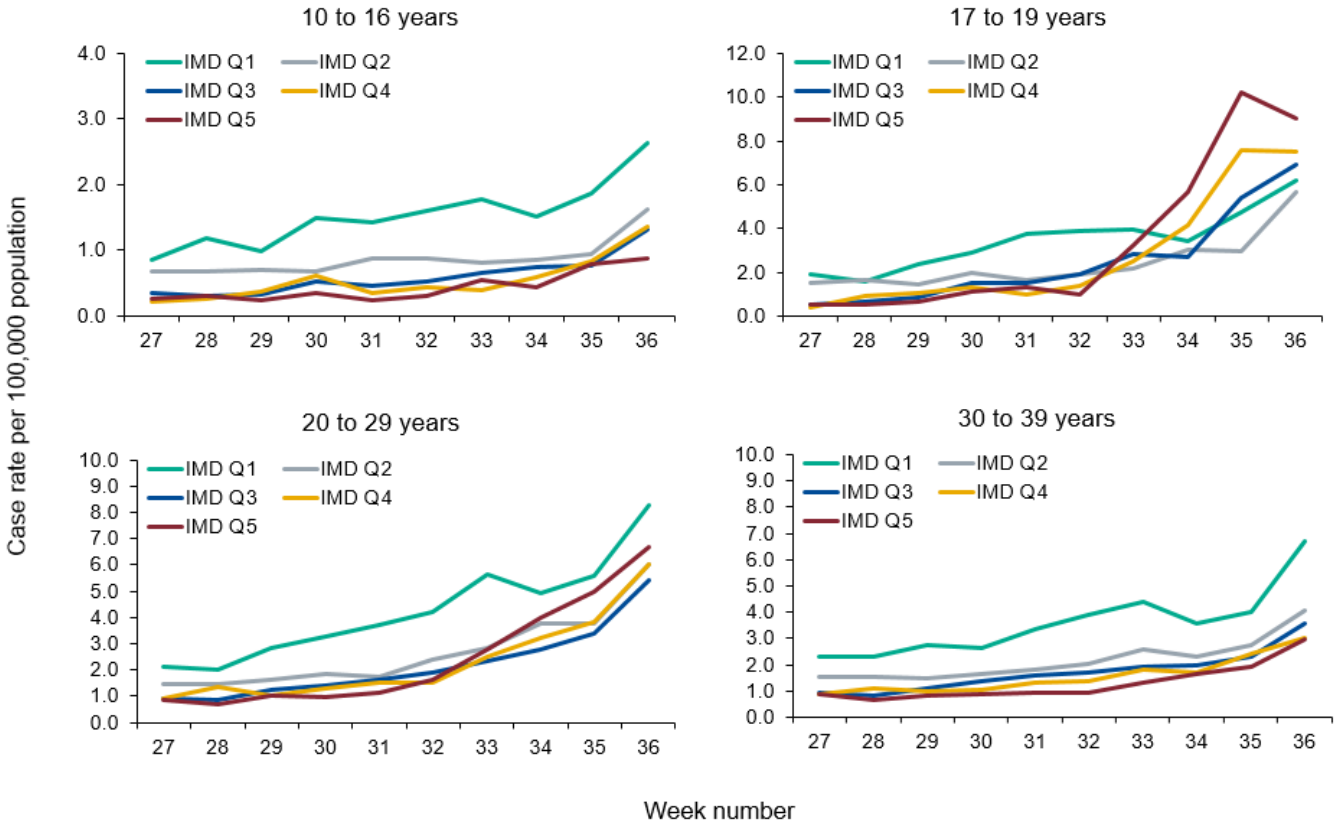
Figure 15: Weekly incidence per 100,000 population by ethnicity and region, weeks 31-36



*Data presented in Figures 14 & 15 are calculated using Government Office Region denominators

Case rates by Index of Multiple Deprivation (IMD)

Figure 16: Weekly case rate per 100,000 population by IMD quintile (1 being the most deprived and 5 being the least deprived, weeks 27-36



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 ie 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.

Processes for reporting ARI incidents vary between PHE Centres.

The number of incidents in each setting with at least one laboratory confirmed case of COVID-19 are reported below.

246 new ARI incidents have been reported in week 36 (Figure 15):

- 69 incidents were from care homes where 35 had at least one linked case that tested positive for SARS-CoV-2
- 8 incidents were from hospitals where 6 had at least one linked case that tested positive for SARS-CoV-2
- 23 incidents were from educational settings where 16 had at least one linked case that tested positive for SARS-CoV-2
- 1 incident was from prison
- 65 incidents were from workplace settings where 49 had at least one linked case that tested positive for SARS-CoV-2
- 38 incidents were from food outlet/restaurant settings where 34 had at least one linked case that tested positive for SARS-CoV-2
- 42 incidents were from the other settings category where 31 had at least one linked case that tested positive for SARS-CoV-2

Acute respiratory infection incidents, England

Figure 17: Number of acute respiratory infection (ARI) incidents by institution, England

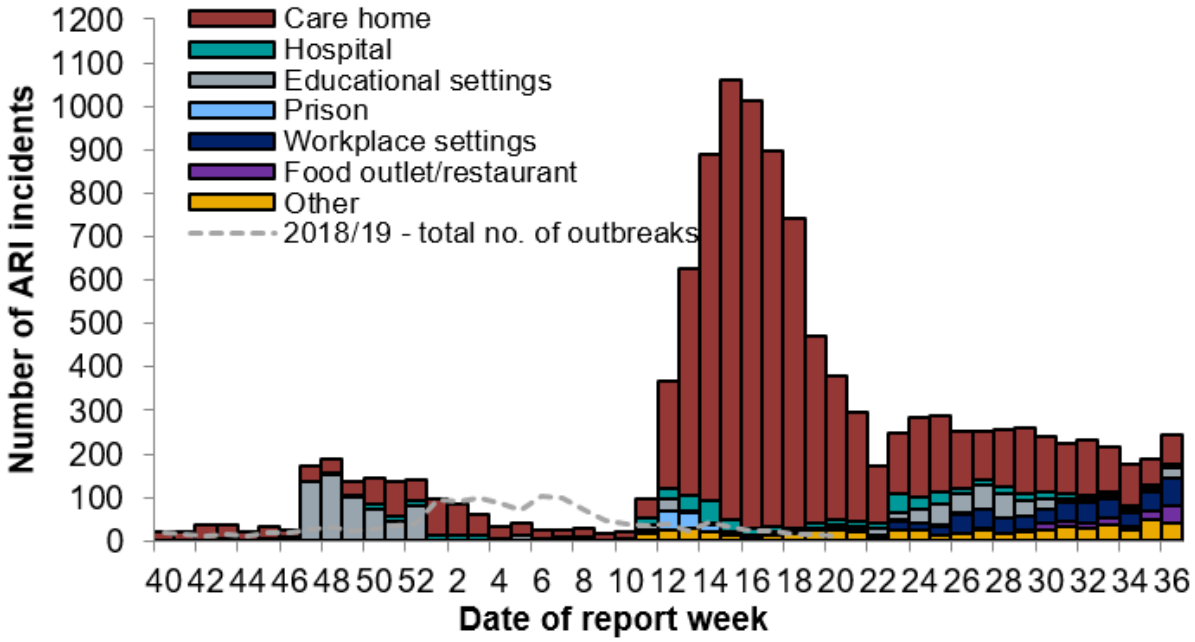


Table 3: Total number of situations/incidents by institution and PHE Centres over the past four weeks with the total number in the last week in brackets

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	35(6)	1(1)	2(2)	1(0)	7(3)	1(0)	10(4)	57(16)
East Midlands	26(8)	1(0)	2(2)	0(0)	22(6)	5(3)	6(1)	62(20)
London	34(5)	4(0)	3(1)	1(1)	19(9)	8(3)	19(3)	88(22)
North East	11(1)	3(1)	1(1)	1(0)	11(5)	12(5)	16(4)	55(17)
North West	63(10)	8(2)	11(7)	0(0)	44(13)	39(18)	35(12)	200(62)
South East	36(3)	2(1)	6(3)	0(0)	6(3)	7(3)	11(4)	68(22)
South West	37(1)	0(0)	7(1)	0(0)	17(4)	1(0)	14(2)	76(18)
West Midlands	38(10)	8(3)	4(2)	1(0)	29(9)	5(3)	24(8)	109(35)
Yorkshire and Humber	47(10)	2(0)	7(4)	1(0)	30(13)	6(3)	18(4)	111(34)
Total	327(69)	29(8)	43(23)	5(1)	185(65)	84(38)	153(42)	826(246)

Cases by type of residence

Table 4 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 36 there were small increases in the percentage of cases in care homes or nursing homes.

Table 4: Type of residence of confirmed COVID-19 cases by percentage of total weekly cases

Type of residence	week 27	week 28	week 29	week 30	week 31	week 32	week 33	week 34	week 35	week 36	week 37
Residential dwelling (including houses, flats, sheltered accommodation)	75.3	72.6	74.3	73.7	73.8	73.1	71.1	74.0	75.7	78.8	76.2
Undetermined	18.5	20.3	20.5	21.0	20.5	21.3	23.7	21.7	20.3	17.5	17.8
Care/Nursing home	4.7	5.1	3.9	3.2	4.4	4.3	3.7	2.4	1.8	2.0	4.2
Other property classifications	0.2	0.2	0.1	0.2	0.2	0.4	0.4	0.3	0.5	0.5	0.5
Residential institution (including residential education)	0.2	0.3	0.1	0.3	0.2	0.1	0.2	0.4	0.4	0.5	0.7
House in multiple occupancy (HMO)	0.3	0.3	0.2	0.6	0.4	0.4	0.4	0.6	0.7	0.4	0.4
Medical facilities (including hospitals and hospices, and mental health)	0.5	1.2	0.9	0.9	0.3	0.2	0.5	0.5	0.4	0.3	0.2
Prisons, detention centres, secure units	0.2	0.1	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0
Overseas address	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
No fixed abode	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

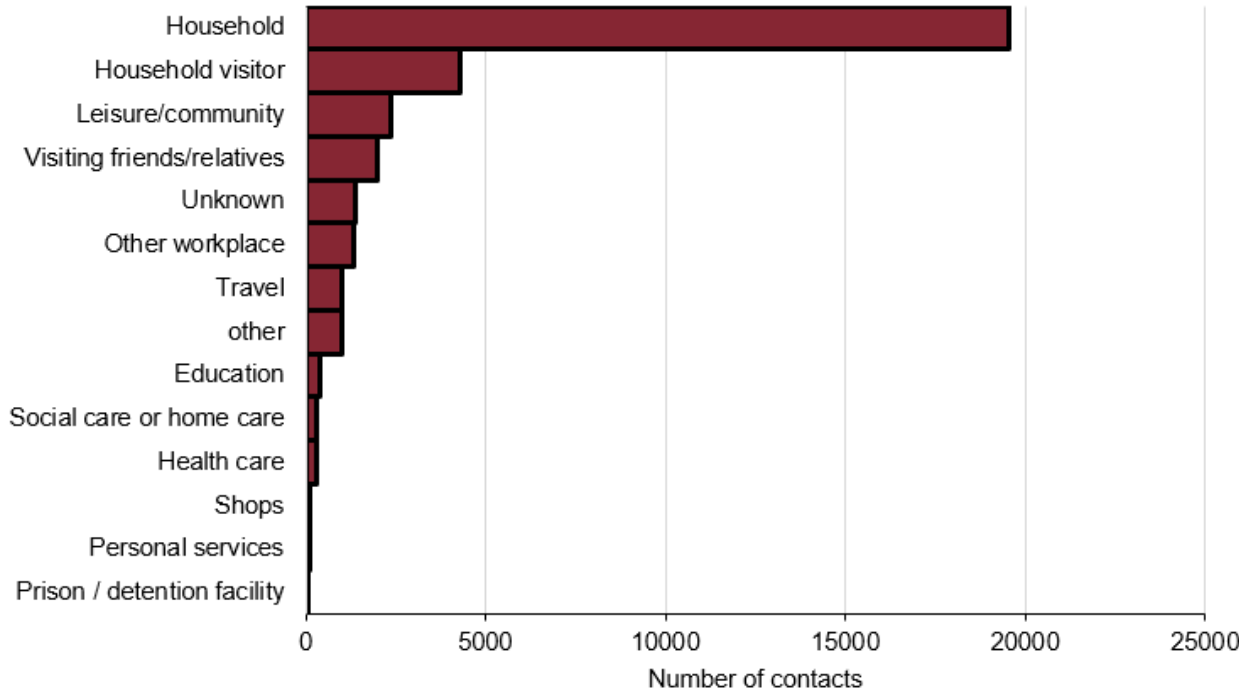
Contact tracing

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 16 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 57.3% of all contacts were identified. The next most common setting was visitors to the household of the person who tested positive (12.6%).

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 18: Contacts by exposure/activity setting in week 36, 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.

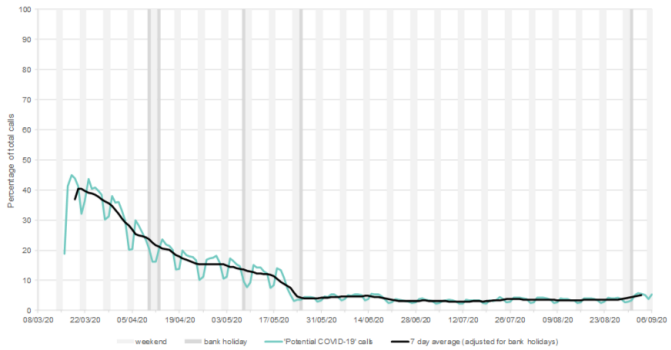
Up to 6 September 2020, the daily percentage of NHS 111 'potential COVID-19-like' calls (as a percentage of total NHS 111 calls) and number of online assessments increased. The daily percentage of cold/flu calls (as a percentage of total NHS 111 calls) also increased, particularly in the 5-14 year olds, as did cold/flu completed online assessments (Figure 17 and 18).

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 eg 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 19 (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

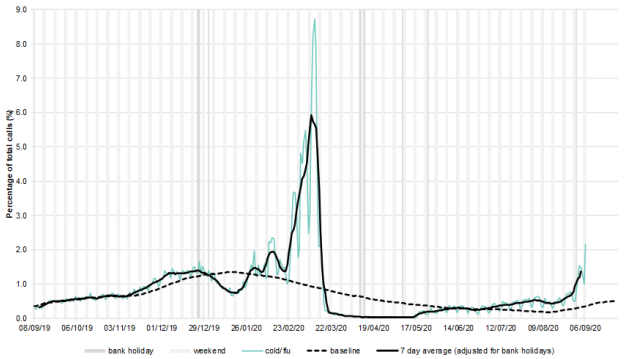
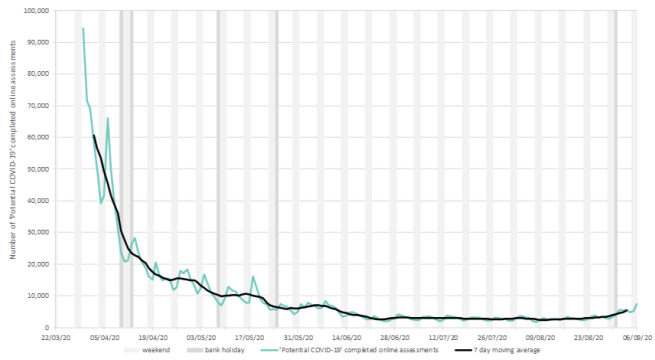
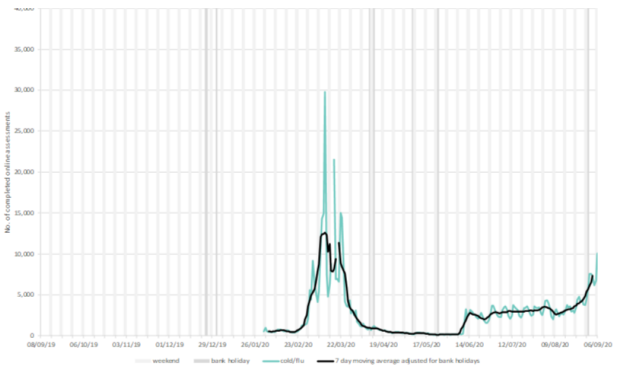


Figure 20 (a-b): NHS 111 completed online assessments (and 7-day moving average), England

(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.

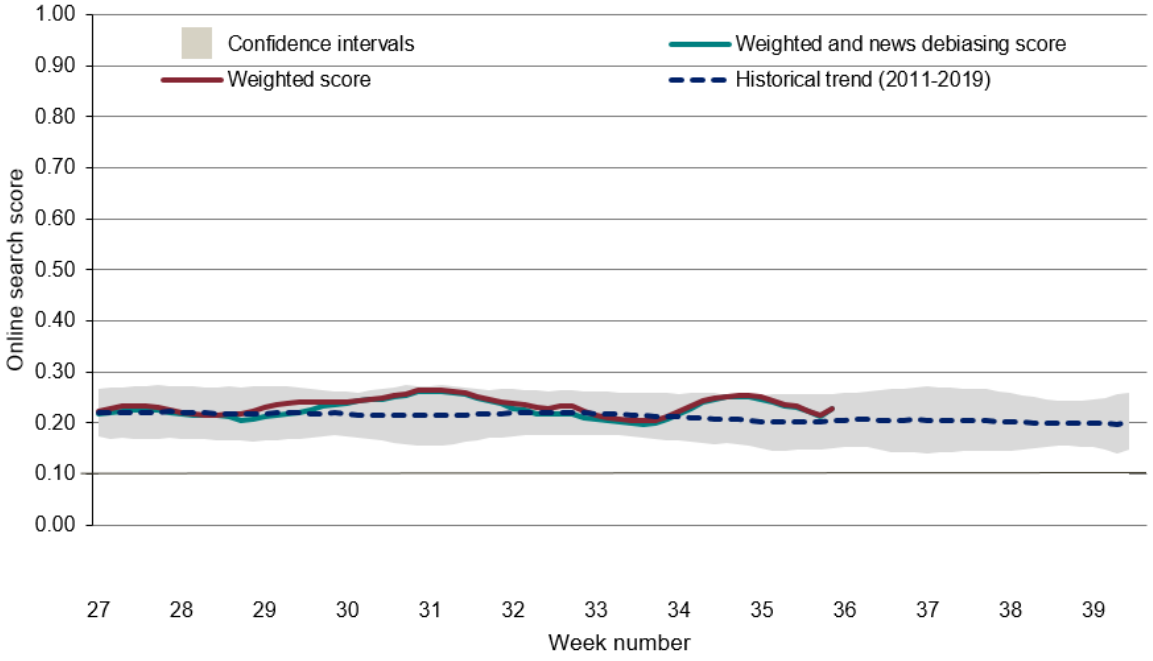
Google search queries

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" (eg "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 remained stable with a slight increase towards the end of the week during week 36 (Figure 19).

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

Figure 21: Normalised Google search score for COVID-19 symptoms, with weighted score for media-debiasing and historical trend, England



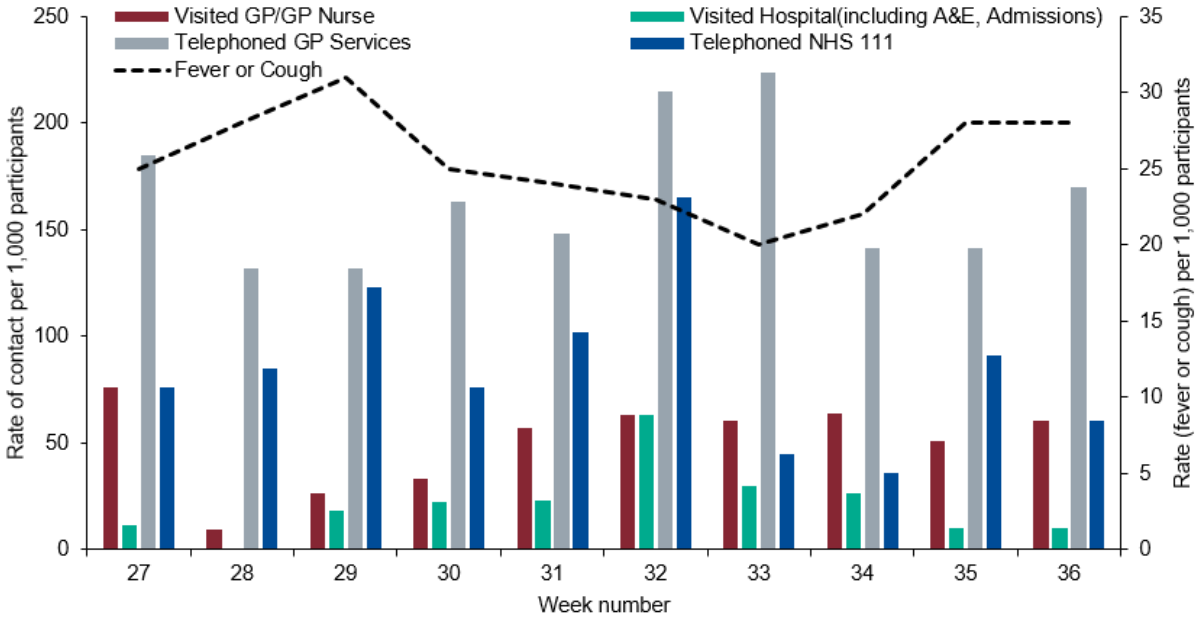
Internet based surveillance

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 3,480 participants completed the weekly COVID-19 surveillance survey in week 36, of which 100 (2.8%) reported fever or cough, a slight increase from the previous week. The most commonly reported method of access to healthcare services continue to be through telephoning a GP practice in week 36 (Figure 20).

Figure 22: Rate of contact with different healthcare services among FluSurvey participants reporting fever or cough symptoms, week 27 to 36, England



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

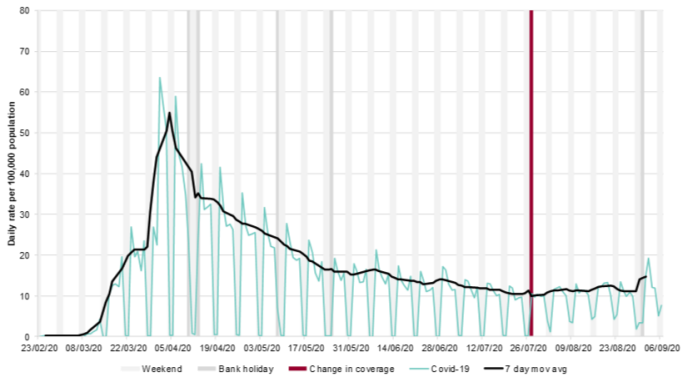
The GP In Hours (GPIH) syndromic surveillance system monitors the number of GP visits during regular hours of known clinical indicators. The GP Out of Hours (GPOOH) syndromic surveillance system monitors the numbers of daily unscheduled visits and calls to GPs during evenings, overnight, on weekends and on public holidays. Both systems cover around 55% of England's population.

Up to 6 September 2020, GPIH consultations for potential COVID-19-like increased whereas ILI consultations remained stable (Figure 23). Please note that the GPIH COVID-19-like indicator presented in this report is derived from a reduced denominator population, compared to ILI. Please also note, week 36 contains a bank holiday and there were also days with a reduced denominator and therefore these recent rates should be interpreted with some caution. Rates should therefore be treated with caution (baselines are also not available this week). Through GPOOH consultations (up to 6 September 2020), the daily percentage (as a percentage of total contacts with a Read code) for ILI and difficulty breathing/wheeze/asthma contacts have increased (Figure 224.

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 23 (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

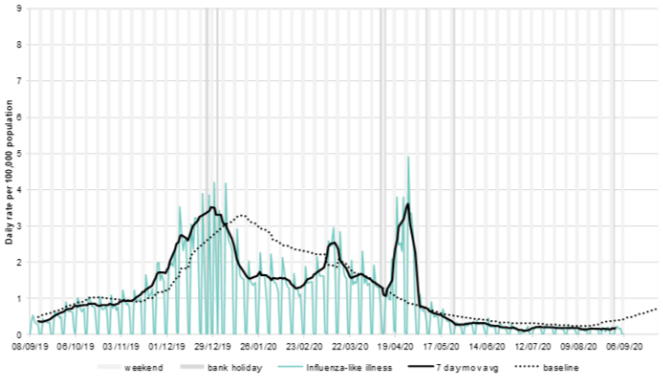
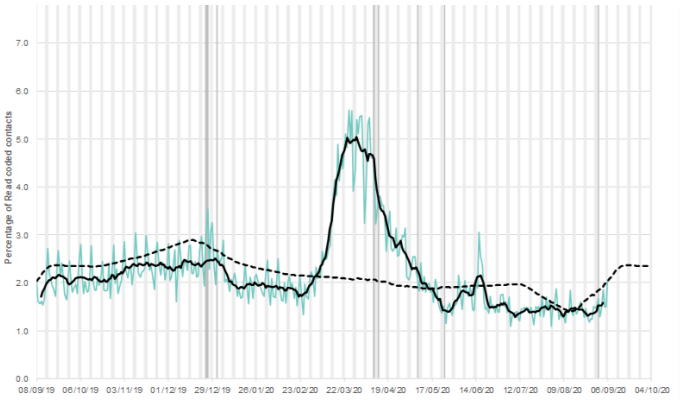
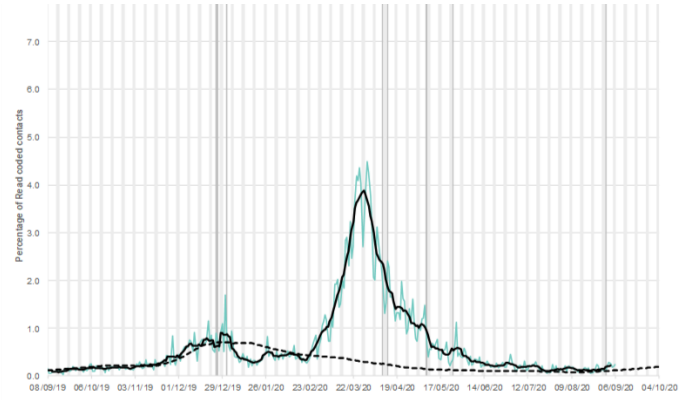


Figure 24 (a-b) : GPOOH contacts indicators, England

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



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

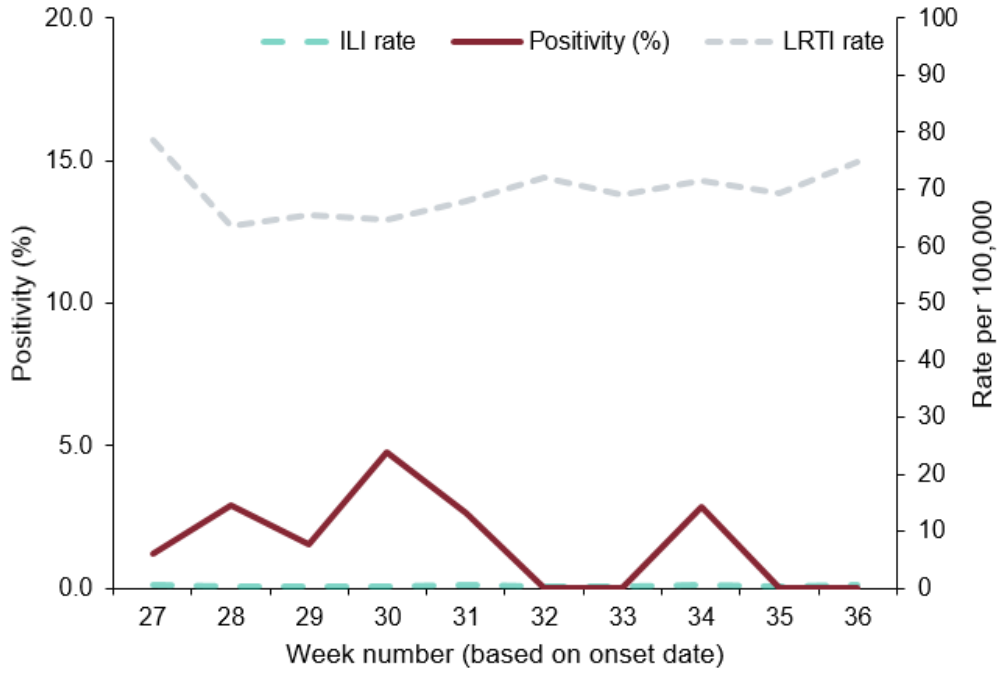


RCGP swabbing scheme

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 8 September 2020, a total of 5,335 patients have been tested of which 616 have tested positive for SARS-CoV-2 through this scheme. The overall positivity was at 0.0% (0/24) in week 36 compared to the same in the previous week (Figure 25). 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 LRTI increased slightly whereas those for ILI remained stable in week 36 (Figure 25).

Figure 25: 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 23-25 should be interpreted with caution

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

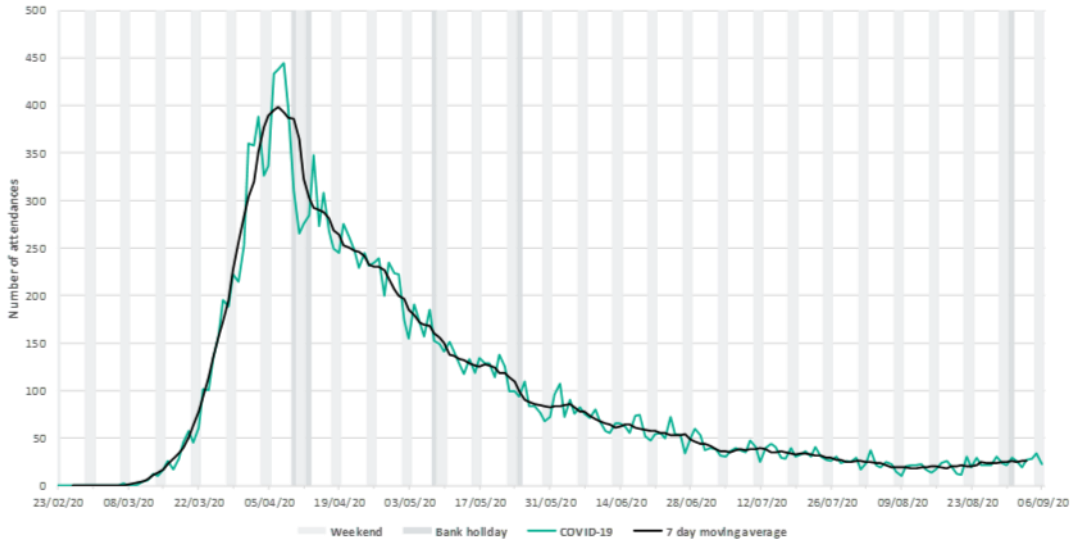
Emergency Department attendances, Syndromic surveillance

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

Up to 6 September 2020, the daily number of ED attendances for all ages as reported by 73 EDs in England during week 36, for COVID-19-like attendances were stable (Figure 26). Increases were noted in acute respiratory infection attendances.

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 Sur-

Figure 26: COVID-19-like, daily ED attendances, all ages, England



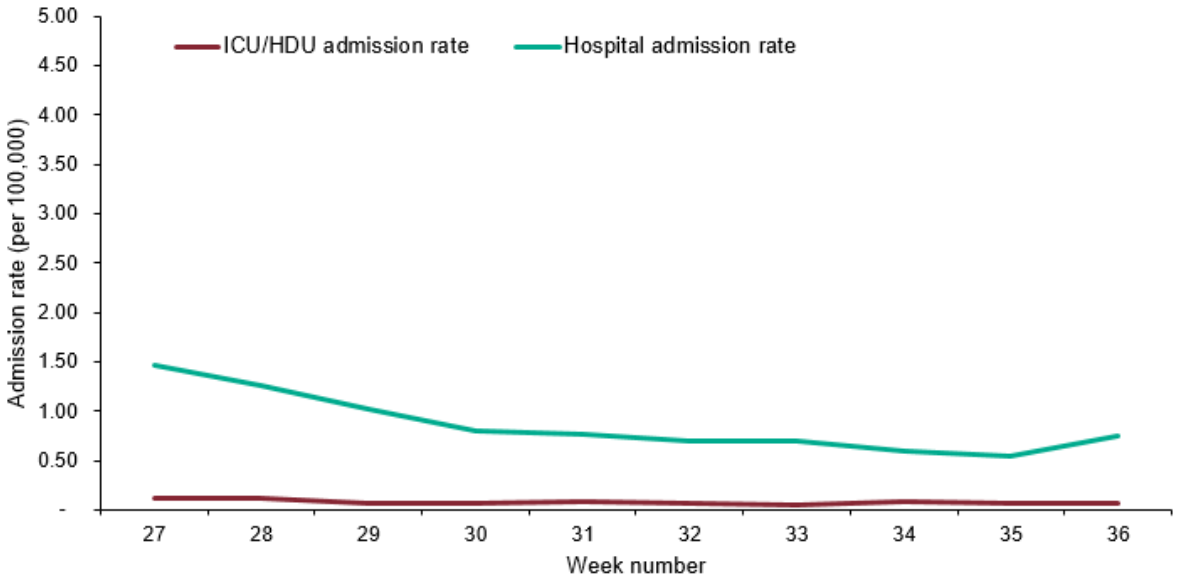
COVID-19 Hospitalisation in England Surveillance System (CHESS)

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 36, the weekly admission rate for ICU/HDU admissions remained stable whereas the admission rate for hospitalisations increased slightly.
The hospitalisation rate was at 0.75 per 100,000 in week 36 compared to 0.54 per 100,000 in the previous week. The ICU/HDU rate was at 0.07 per 100,000 in week 36 compared to the same rate in the previous week (Figure 27). By NHS regions, the highest hospitalisation and ICU/HDU rates continued to be observed in the North West (Figure 28). By age group, the highest hospitalisation rate was observed in the 85+ year olds and the highest ICU/HDU rate was observed in the 75-84 year olds (Figure 29).

Figure 27: 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 28: Weekly admission rate for (a) hospital admissions and (b) ICU/HDU admissions by NHS regions of new COVID-19 positive cases reported through CHESS

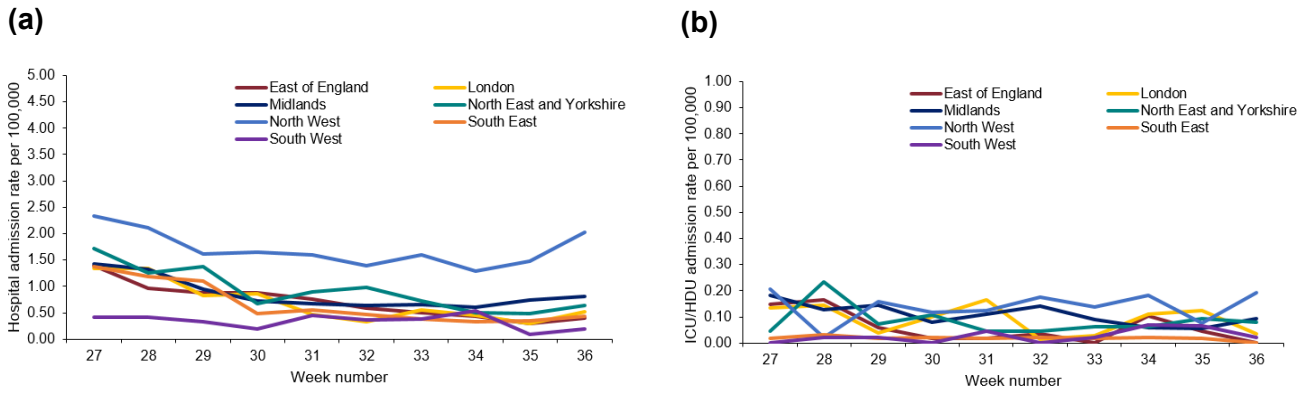


Figure 29: Weekly admission rate for (a) hospital admissions and (b) ICU/HDU admissions by age group of new COVID-19 positive cases reported through CHESS

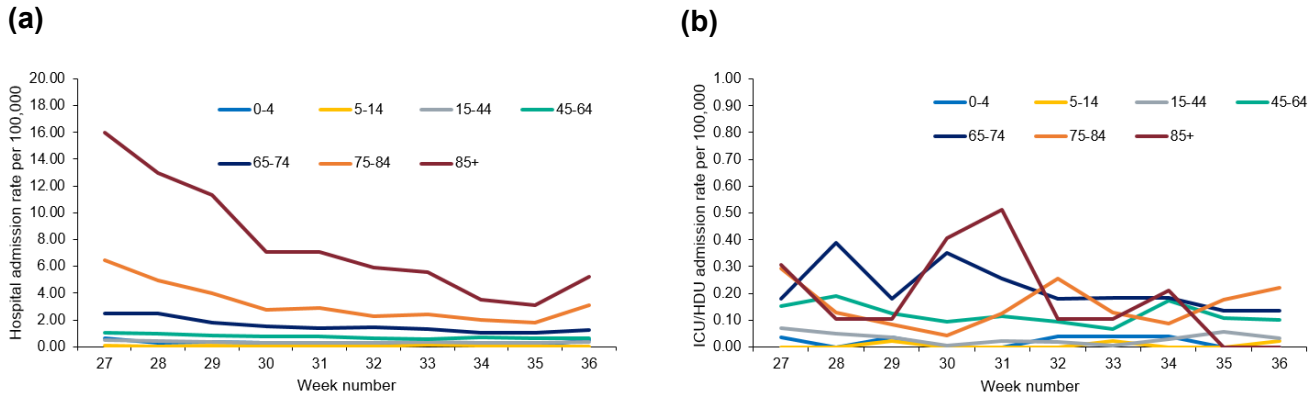
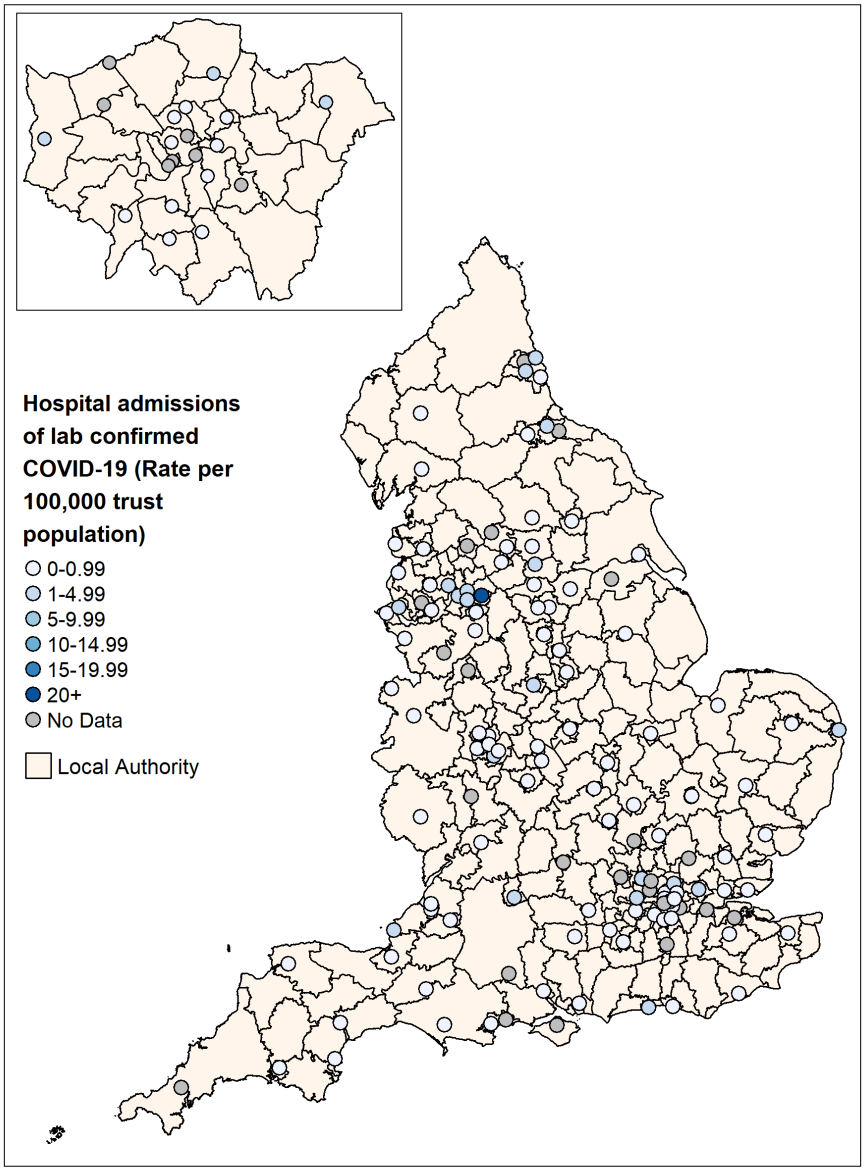


Figure 30: Weekly admission rates for hospitalised laboratory confirmed COVID-19 cases reported through CHESS, week 36

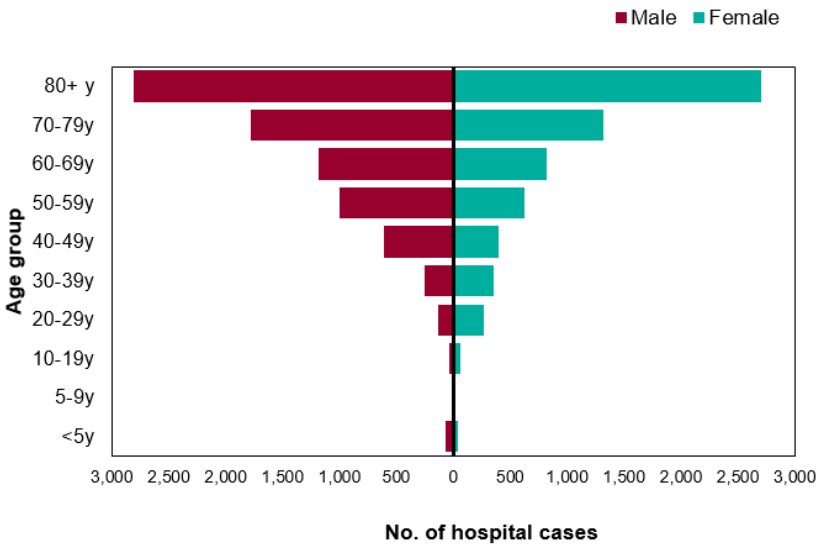


COVID-19 Hospitalisation in England Surveillance System (CHESS)

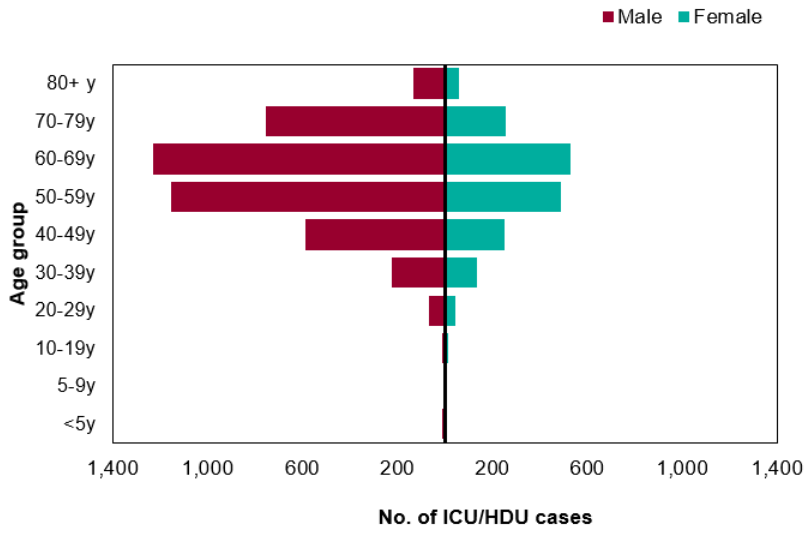
Figure 31 and 32 are based on individual patient level data which are provided to CHESS from a subset of NHS Acute Trusts, therefore the data should be interpreted with caution as the distribution of age, sex and ethnic group may not be representative of all hospitalised patients.

Figure 31: Age/sex pyramid of new (a) hospital (lower level of care) (n=14,474) and (b) ICU/ HDU (n=5,962) COVID-19 cases reported through CHESS, England

(a)

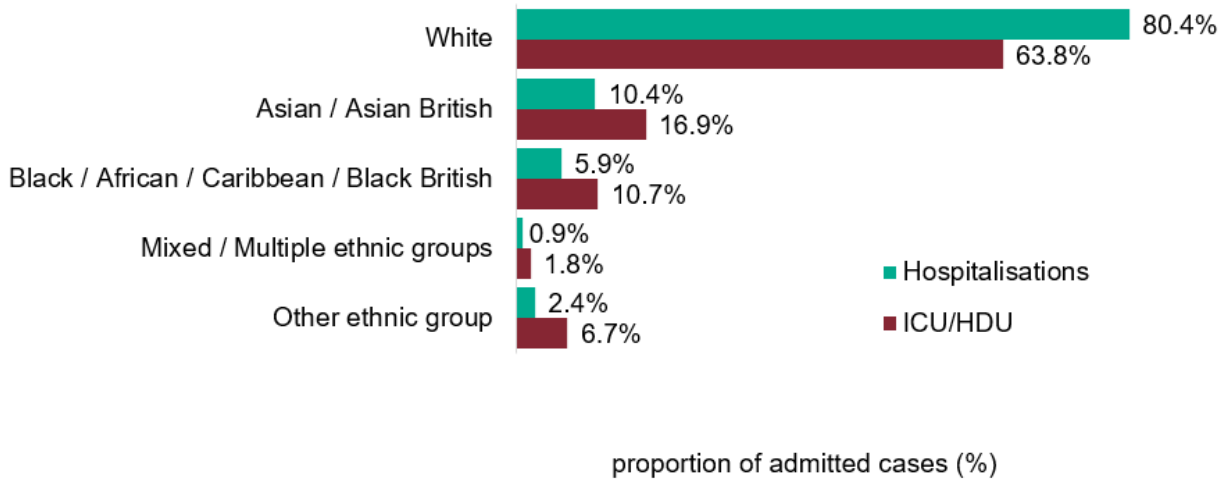


(b)



COVID-19 Hospitalisation in England Surveillance System (CHESS)

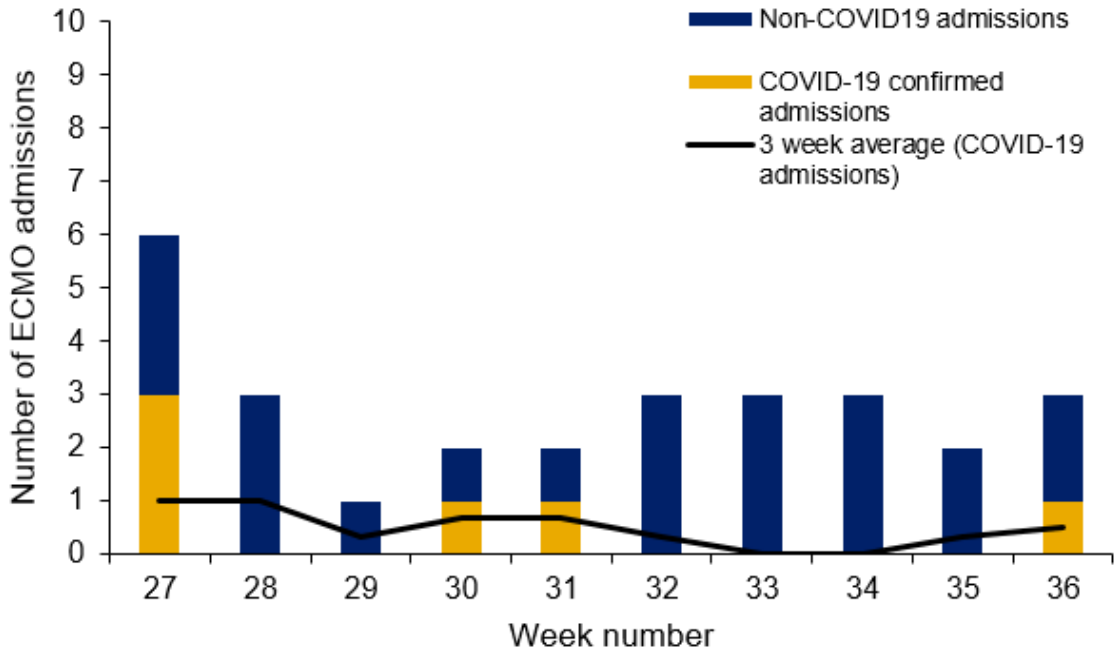
Figure 32: Ethnic group of new hospitalisations (lower level of care) (n=13,913) and ICU/ HDU (n=5,478) COVID-19 cases reported through CHESS, England



UK Severe Respiratory Failure (SRF) centres admissions

Between 3 March and 8 September 2020, a total of 223 laboratory confirmed COVID-19 admissions have been reported from the 5 SRFs in England. There was one new laboratory confirmed COVID-19 admission reported in week 36.

Figure 33: Laboratory confirmed ECMO admissions (COVID-19 and non-COVID-19 confirmed) to SRFs, England



Cumulative deaths

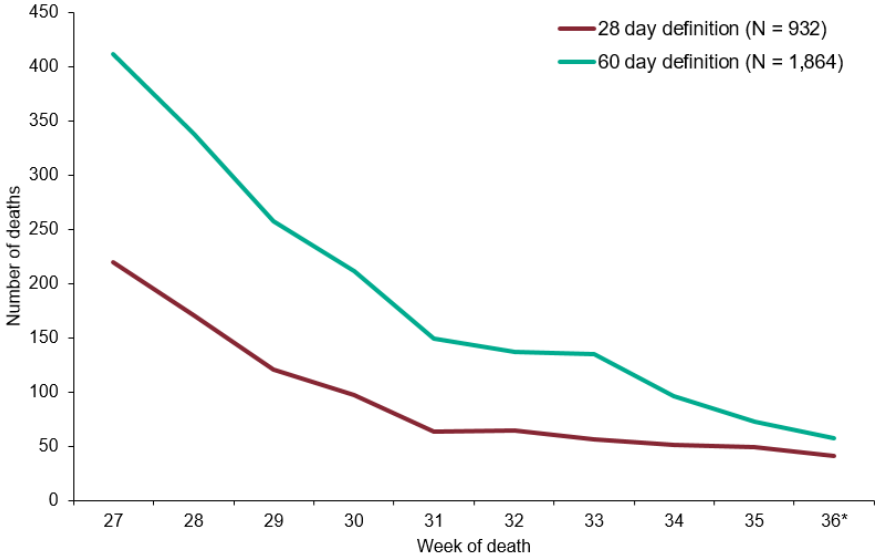
Changes to the definitions of COVID-19 related deaths in England are described in more detail in an accompanying PHE technical summary.

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 34 represents these differences by definition.

Figure 34: Cumulative number of deaths since week 27 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 35: Age/sex pyramid of laboratory confirmed COVID-19 deaths

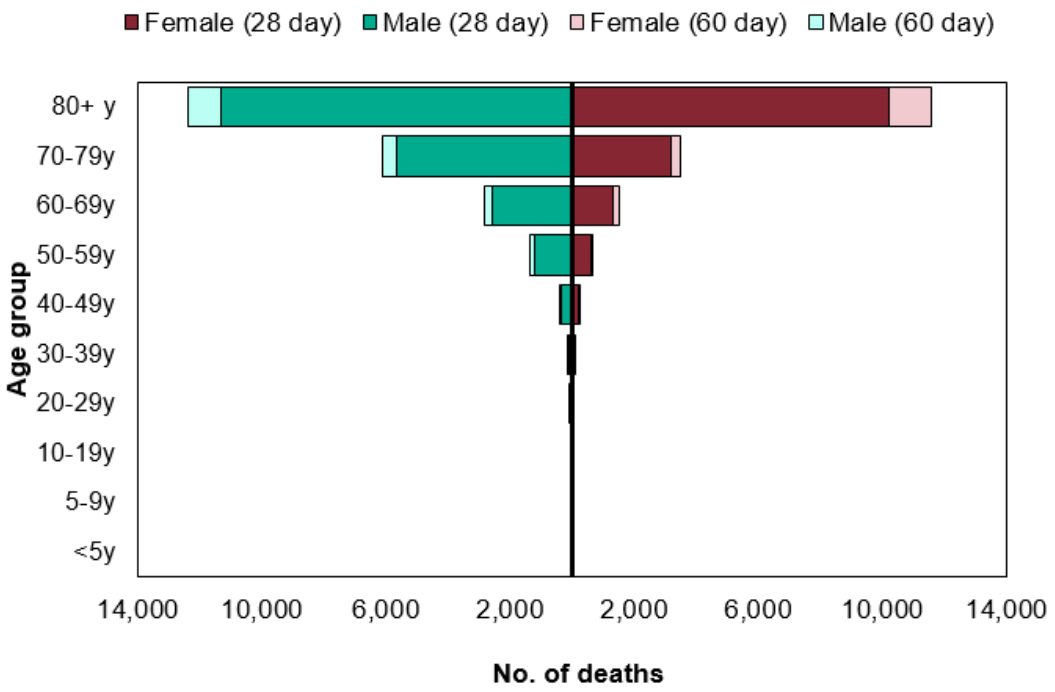


Table 5: Ethnic group (%) of COVID-19 deaths and time since laboratory confirmation of

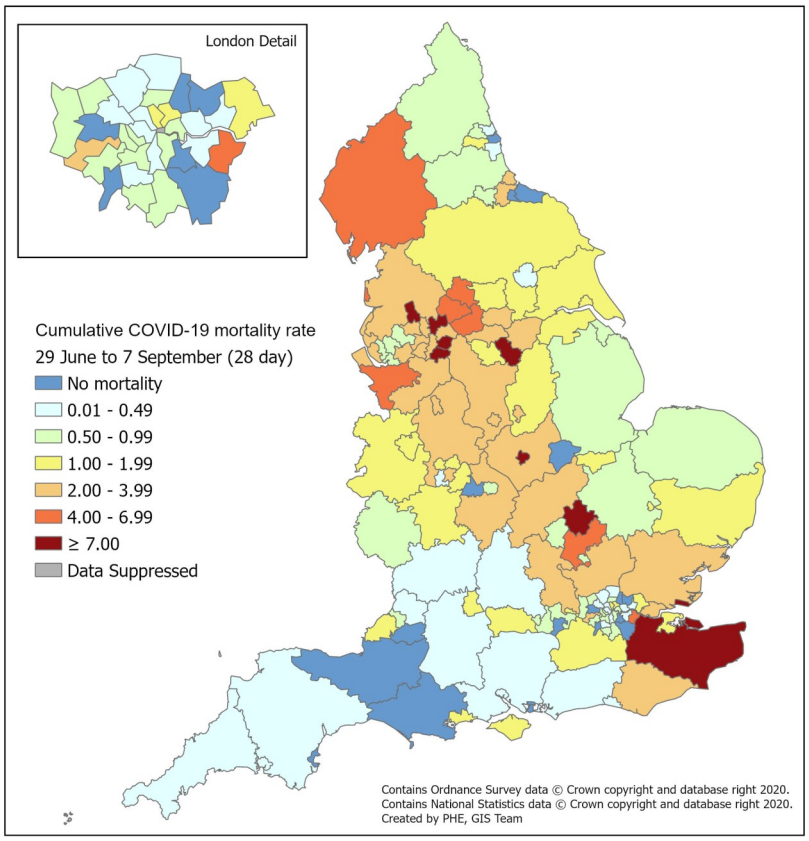
Ethnicity	28 day definition	60 day definition
White	84.8%	89.7%
Asian / Asian British	11.1%	6.7%
Black / African / Caribbean / Black British	1.8%	1.6%
Mixed / Multiple ethnic groups	0.4%	0.4%
Other ethnic group	1.9%	1.5%

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

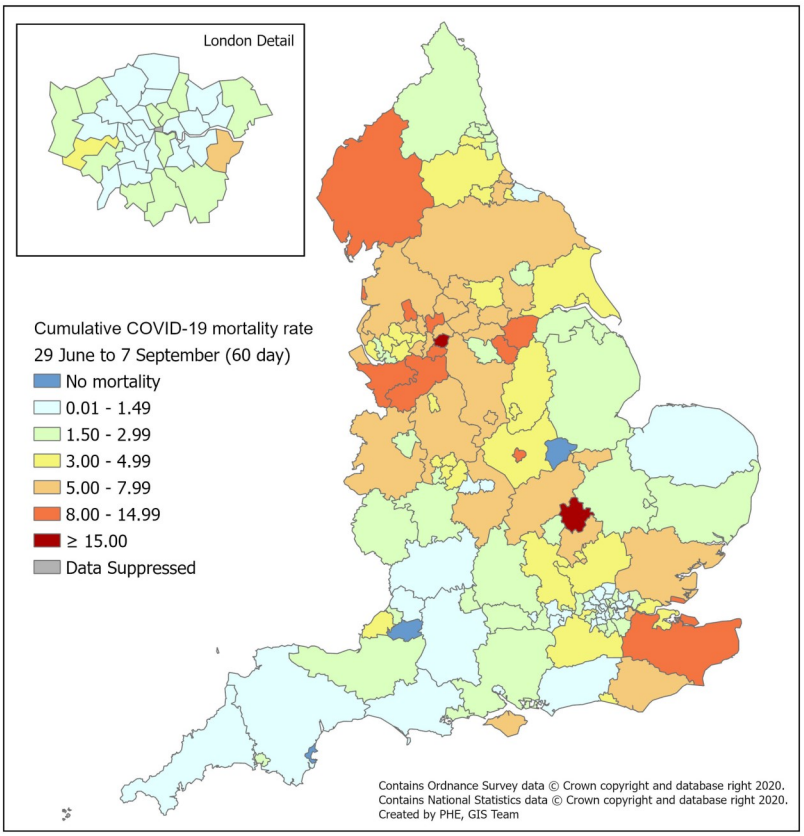
PHE Centres	Number of deaths by definition	
	28 day definition	60 day definition
North East	24	82
North West	278	497
Yorkshire & Humber	145	287
West Midlands	94	219
East Midlands	126	240
East of England	147	291
London	62	145
South East	212	412
South West	27	75

Figure 36: Cumulative mortality rate of COVID-19 cases per 100,000 population tested under Pillar 1 and 2 since week 27 by (a) 28 day definition and (b) 60 day definition

(a)



(b)



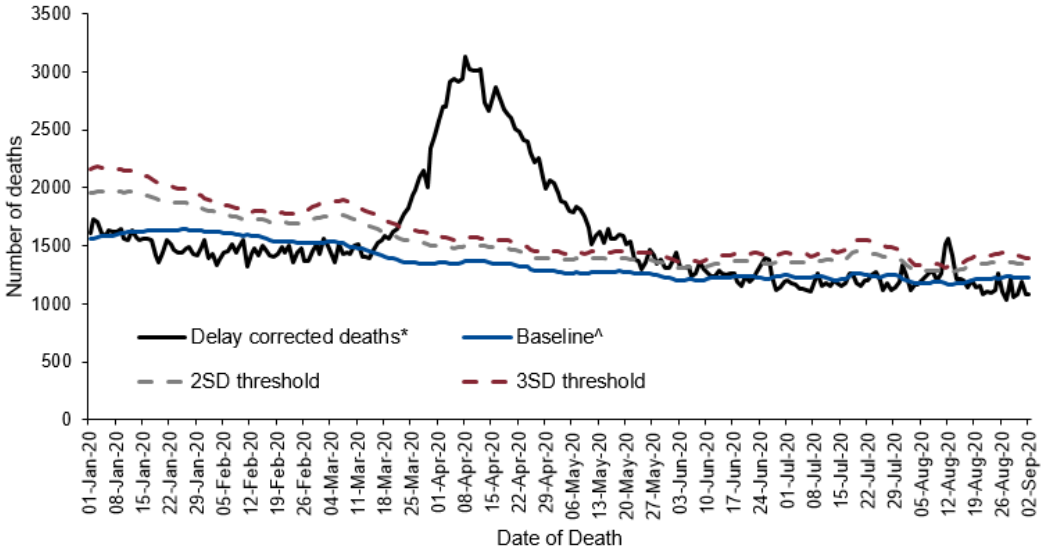
Daily excess all-cause mortality, UK

Deaths occurring from 1 January to 2 September 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 36).

Weeks in which at least 2 days exceeded the 3SD threshold are shown in Table 6 and the daily difference from the baseline by age and region is given in Figure 37. 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 35 overall, by age group or subnationally. The excess noted in the previous week coincides with a heat wave occurring in week 35 (Figure 37, 38 and Table 7).

Figure 37: Daily excess all-cause deaths in all ages, England, 1 January 2020 to 2 September 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 7: Excess all-cause deaths by (a) age group and (b) PHE centres , England

(a)

	Excess detected in week 35 2020?	Weeks in excess since week 10 2020
Age group		
All	x	13 to 21, 23, 33
under25	x	None
25 to 44	x	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, 33
85+	x	13 to 21, 33

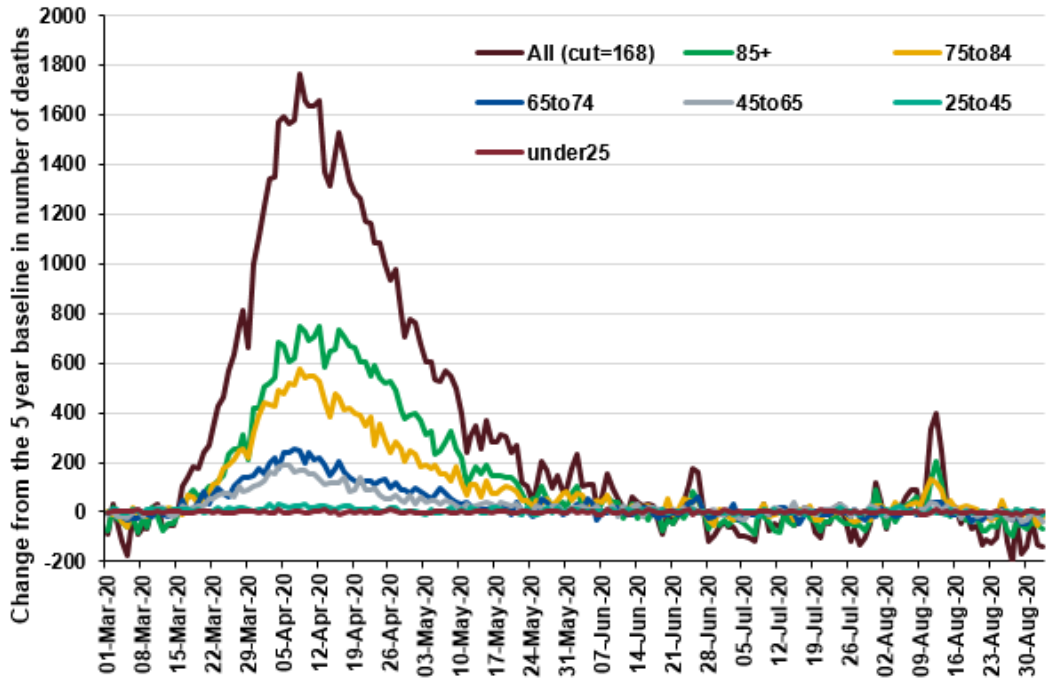
(b)

	Excess detected in week 35 2020?	Weeks in excess since week 10 2020
PHE centres		
East of England	x	14 to 19, 21
East Midlands	x	13 to 19
London	x	12 to 19,33
North East	x	14 to 21
North West	x	13 to 20, 33
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

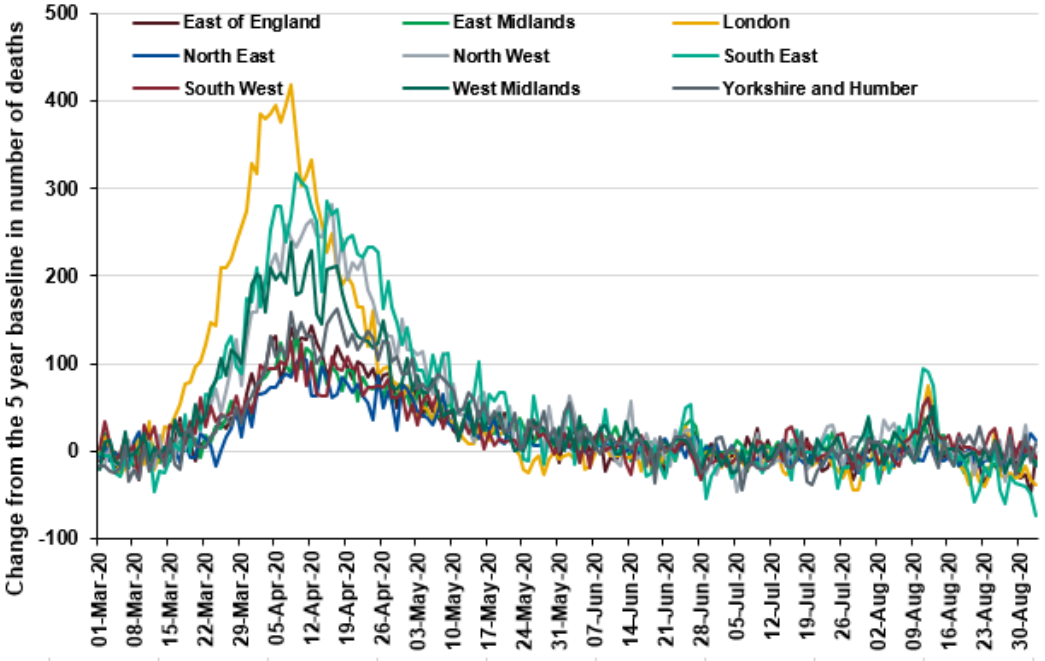
Daily excess all-cause mortality, UK

Figure 38: Daily excess all-cause deaths by (a) age group and (b) PHE centres , England, 1 March 2020 to 2 September 2020

(a)



(b)



Sero-prevalence epidemiology, England

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

- Healthy adult blood donors aged 17 years and older, supplied by the NHS Blood and Transplant (NHS BT collection) between weeks 13 -35. 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.
- Residual sera from children and young adults under 30 years from participating NHS and PHE laboratories across England (SEU and paediatric hospital collections) collected from February to early August.
- Samples collected from healthy individuals under 25 years through a NIHR funded study, University of Oxford sponsored, 'What's the STORY' from October 2019 to Early August 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 13-35. This week's report includes the results of testing the 11th sets of samples from London (week 35) and the 6th set of samples from the North West region (week 35).

National prevalence:

Overall population weighted prevalence among blood donors aged 17 years and older in England was 5.5% (95% CI 4.9% - 6.1%) (unadjusted) or 5.7% (95% CrI 5.0% - 6.3%) after adjustment for the accuracy of the Euroimmun assay (sensitivity 83.0% and specificity 99.3%) for the period 5th Aug – 28th August (weeks 32-35). Estimates are based on 7857 samples, of which 446 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). Declines in prevalence can partially be explained by demographic differences in the donor population, such as later data including donors aged 70 years and older who were previously excluded from donating during lockdown. Waning immunity may also be a contributing factor to the lower prevalence.

Regional prevalence over Time:

Figure 39 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 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). From week 24 adjusted prevalence was lower and eventually plateaued with estimates at 8.7% in week 31 and 8.2% in week 33. Most recent London data however, show an increase in adjusted prevalence to 12.6% (95% CrI 10.2% - 15.3%). This increase could in part be due to increases in recent infection, although variability in the precise locations of sampling within London and potential changes in the characteristics of the donor population over time are also likely to be contributory factors. Given the current guidance on donation those donating when prevalence was highest in weeks 18-22 are likely to be returning now to donate again.

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.

Recent data from the North West show the adjusted prevalence was 7.2% (95% CrI 5.4% - 9.4%) in week 31 and more recently at 6.8% in week 35 (95% CrI 4.7-9.2%) showing a continued plateauing.

In the East of England adjusted prevalence amongst donors was 4.4% (95% CrI 2.8% - 6.3%) in the most recent data (weeks 34-35) lower than the prevalence of 6.6% (95% CrI 4.8% - 8.6%) in weeks 30-31.

In the North East and Yorkshire NHS region the adjusted prevalence was 5.0% (95% CrI 3.3%-6.9%) in week 32 which is similar to 4.7% (95% CrI 3.1%-6.6%) in week 28 but lower than the prevalence of 7.1% (95% CrI 5.3%-9.3%) in week 20. Similar plateauing has been seen across other regions. Adjusted prevalence in the South East region was 3.7% (95% CrI 2.2% - 5.4%) in the latest data (week 34) similar to 3.6% (95% CrI 2.2% - 5.3%) observed in the previous survey in week 30.

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%).

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. 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 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 31-35) as this age group, who were advised to shield during lockdown, have been able to return to donor clinics since week 26 (Figure 40). Prevalence is highest in the youngest age group (age 17-29) and lowest in the oldest age group (age 70-84).

Figure 39: Overall SARS-CoV-2 antibody seroprevalence (%) in blood donors by PHE centres, using Euroimmun test adjusted for sensitivity (83.0%) and specificity (99.3%) and 95% confidence intervals (dashed lines)

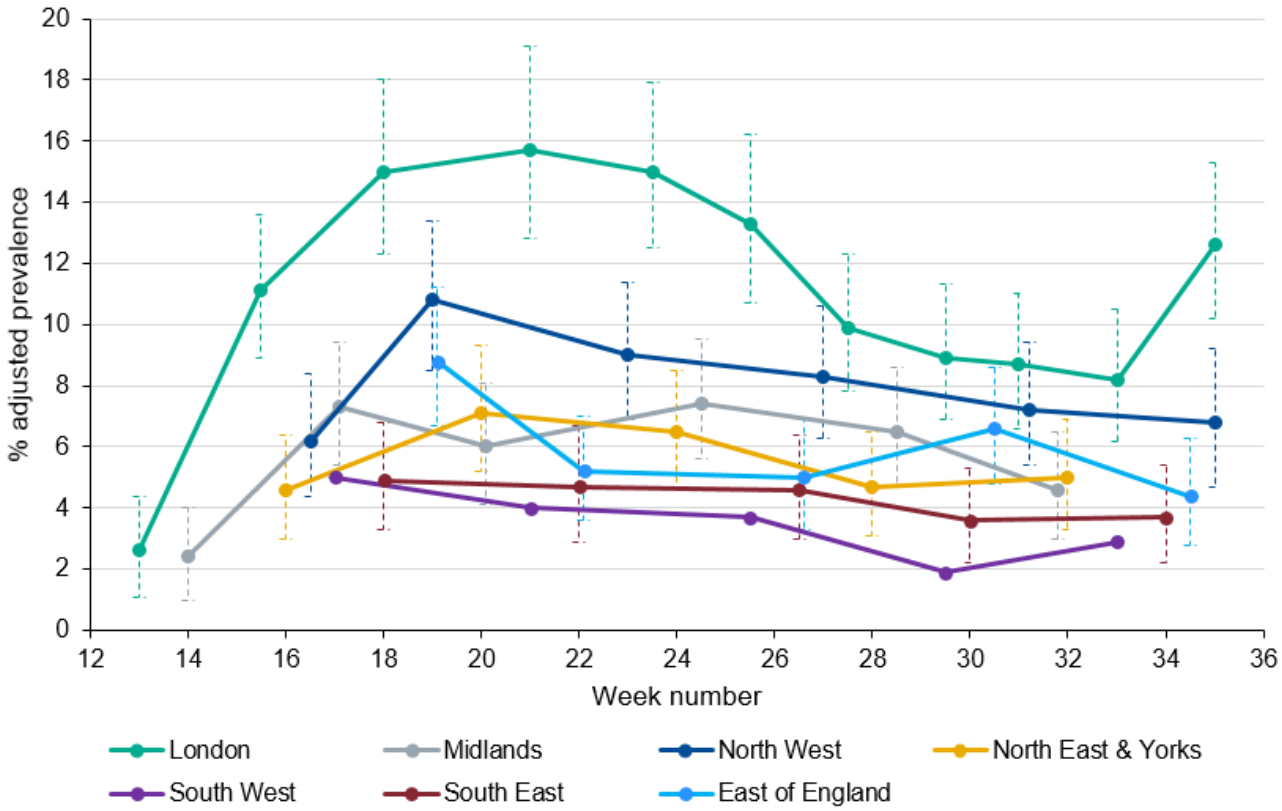
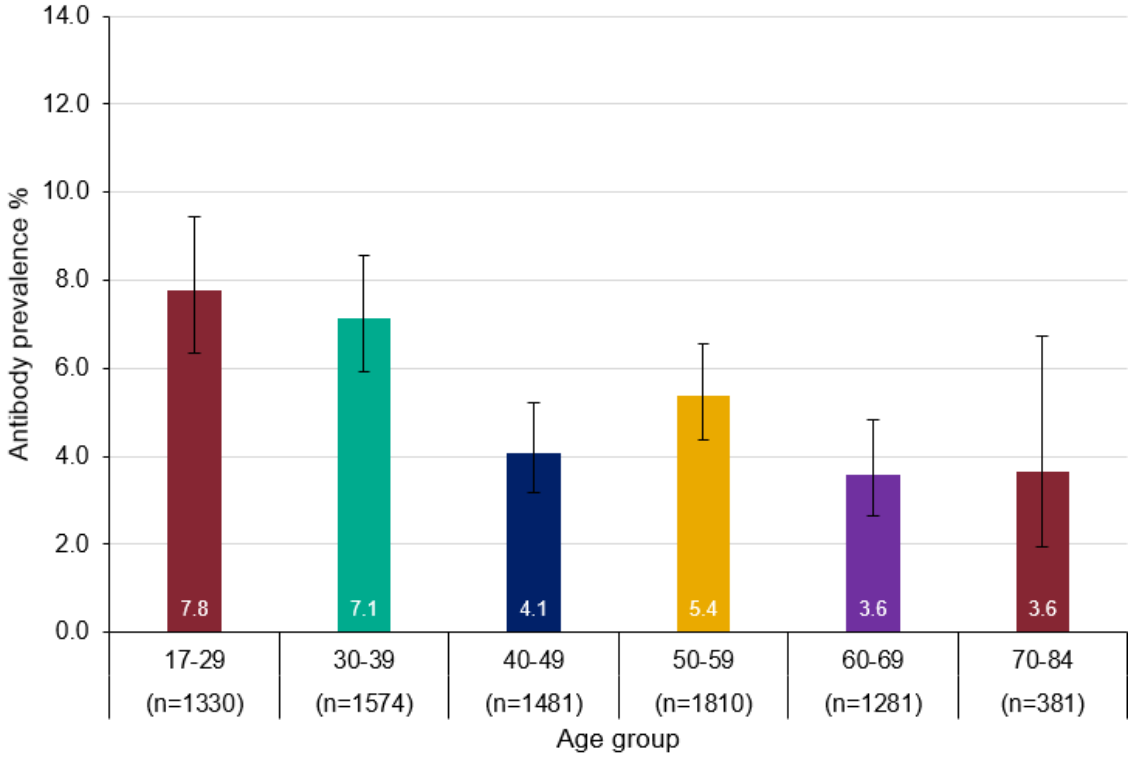


Figure 40: Population weighted SARS-CoV-2 antibody seroprevalence in blood donors by age group, weeks 32-35, using Euroimmun test; error bars show 95% confidence intervals



Seroprevalence in children and young adults under 30 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 in all ages, and data is presented here for individuals up to 29 years of age. "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 a community based sampling strategy.

The results of 3335 residual sera from the SEU and paediatric hospital collections and 568 What's the Story samples collected from 1st May to 2nd August are presented. 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 8). Note that sensitivity is based on convalescent samples taken within 3-6 weeks of onset.

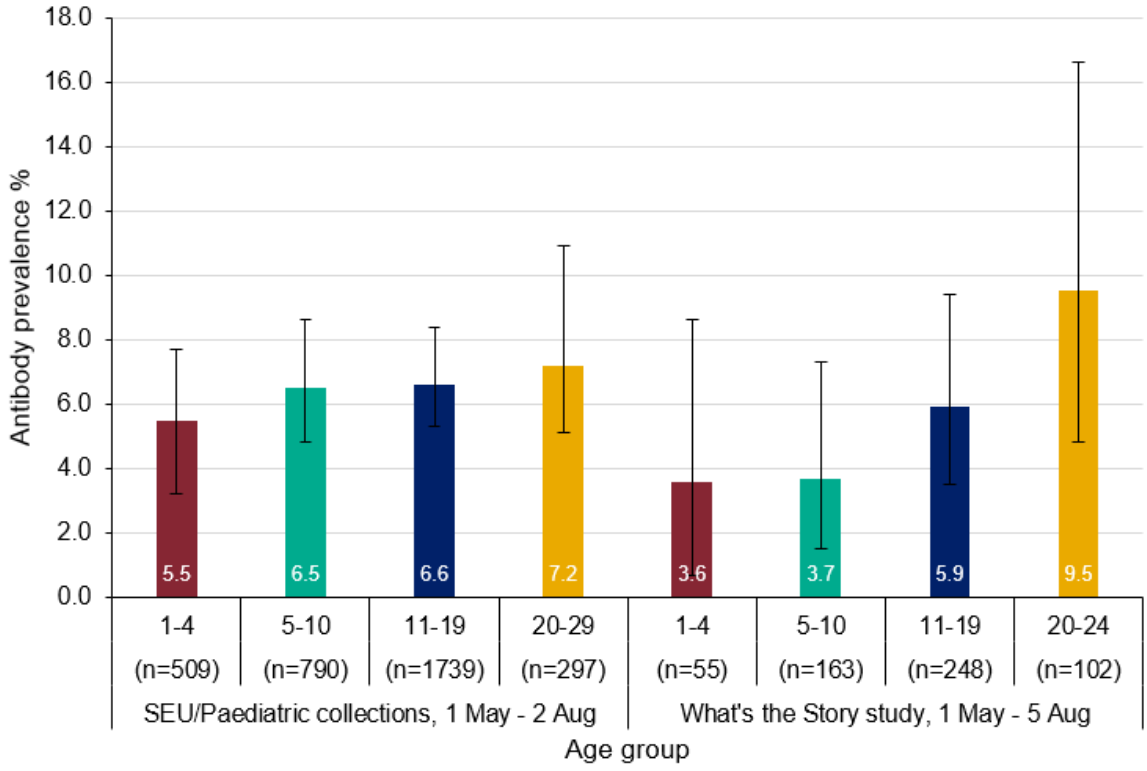
Population weighted adjust prevalence for ages 1-24 years old in England was estimated at 5.2% (95% CrI 3.2%-7.8%), using the What's the STORY representative sample of healthy individuals between 1 May – 5 August and 6.0% (95% CrI 4.6%-7.8%) using the residual sample collections for 1-29 year olds. This was similar to the national prevalence estimate of 5.5% for all ages during the most recent 4 weekly period. The larger sample size in the SEU/paediatric residual collection allowed a comparison by time period, with an adjusted prevalence estimate of 7.8% (95% CrI 5.8% - 10.2%) in May compared to 5.8% (3.7%-8.5%) in June/July.

Data from the What's the Story study showed an increasing prevalence with age, being lowest in the under 5 year olds and highest in young adults. Prevalence was higher in the 11-19 age group compared to younger children, although confidence limits were wide and overlapping (Figure 3). In comparison with What's the Story, estimates based on testing samples from the SEU/paediatric were slightly higher in younger children and although there was a slight trend of increasing prevalence with age, it was less pronounced.

Table 8 : Population weighted paediatric and SEU collections (ages 1-29), and What's the Story study (ages 1-24) all England prevalence estimates using the Abbott assay, weighted by age and NHS region.

Date range (weeks)	Positive	Ind	Negative	Total	Population weighted % pos/ind (95% CrI)	Population weighted adjusted prevalence (95% CrI)
What's the STORY study						
1 May - 5 Aug (18-32)	25	8	535	568	5.9% (4% - 8.3%)	5.2% (3.2% - 7.8%)
SEU/Paediatric collections						
1 May - 2 Aug (18-31)	141	24	3170	3335	6.7% (5.4% - 8.4%)	6.0% (4.6% - 7.8%)
SEU/Paediatric collections, by period						
1 May - 31 May (18-22)	82	11	1084	1177	8.3% (6.5% - 10.6%)	7.8% (5.8% - 10.2%)
1 Jun - 2 Aug (23-31)	59	13	2086	2158	6.5% (4.5% - 9.0%)	5.8% (3.7% - 8.5%)

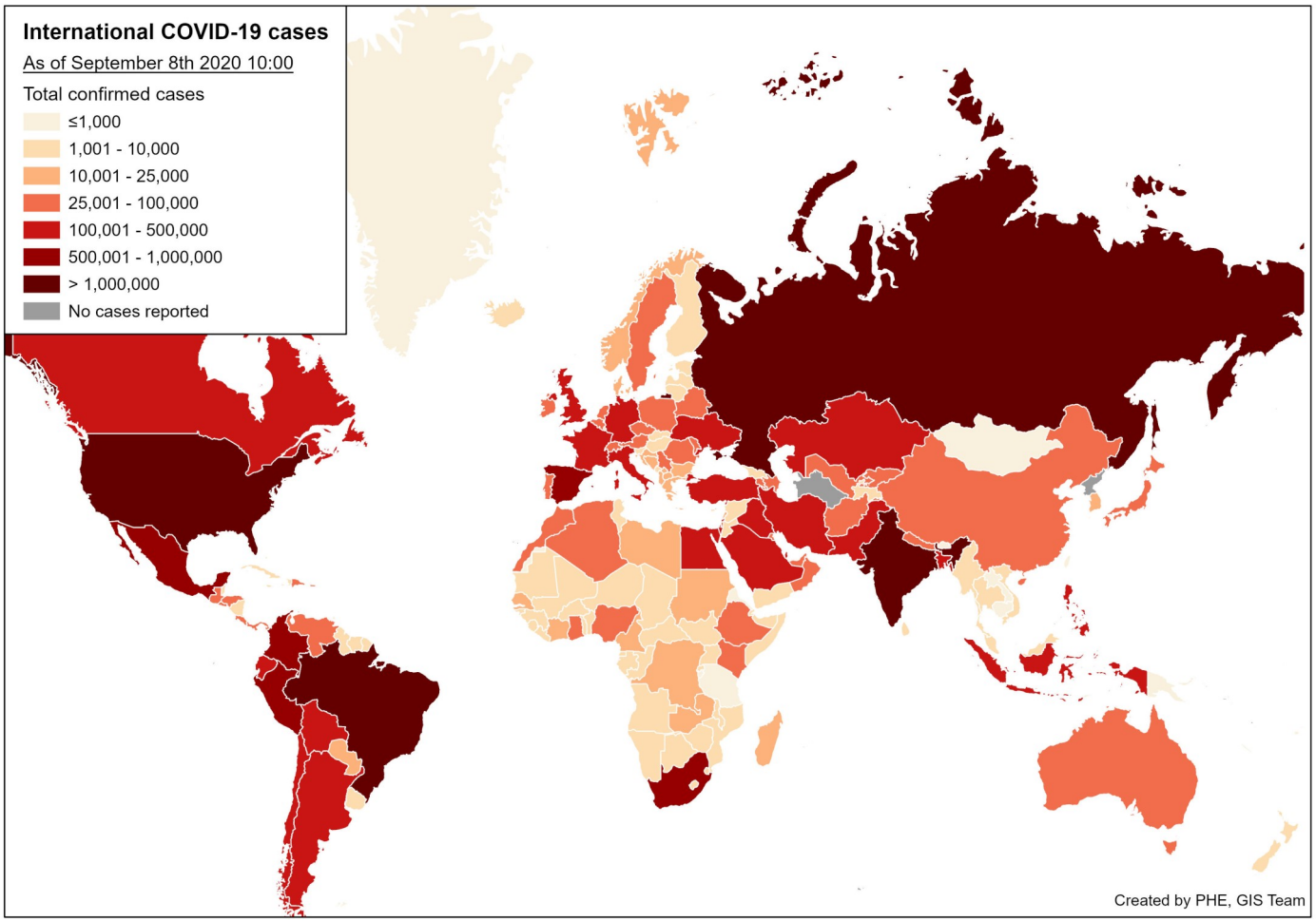
Figure 41: Population weighted modelled % positive or equivocal using the Abbott assay by age group in the SEU and Paediatric collections, 1 May - 2 Aug, ages 1-29 and What's the Story study, 1 May - 5 Aug, ages 1-24



Global situation

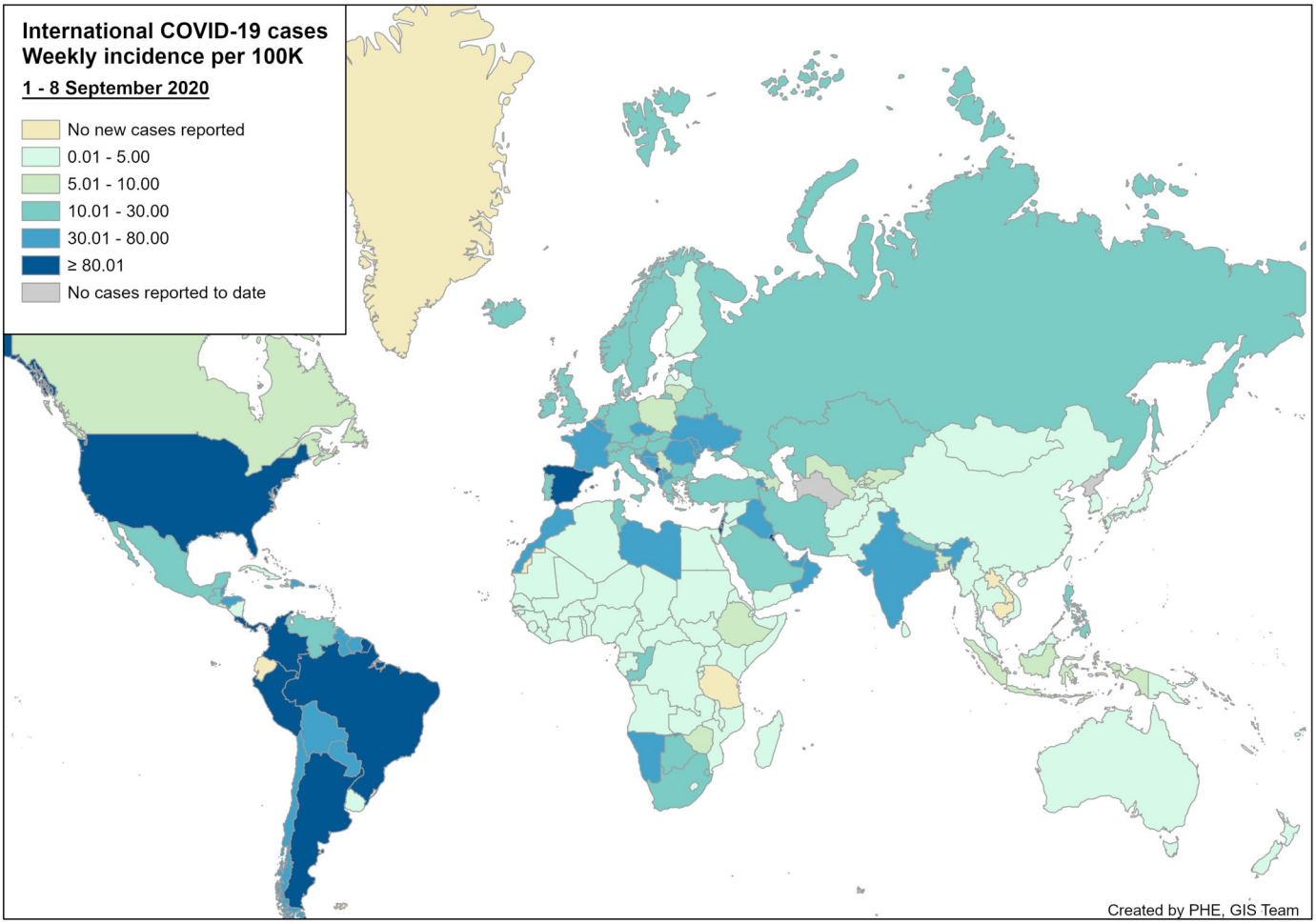
Globally, up to 8 September 2020, a total of 27,196,075 cases of COVID-19 infection have been reported worldwide, including 890,192 COVID-19 related deaths.

Figure 42: Global map of cumulative COVID-19 cases



Global situation

Figure 43: Global map of weekly COVID-19 case incidence rate per 100,000, week 36 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.