Public Health England

Weekly Coronavirus Disease 2019 (COVID-19) Surveillance Report

Summary of COVID-19 surveillance systems

Year: 2020 Week: 28

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 27 (data between 29 June and 05 July 2020) and where available daily data up to 07 July 2020. References to COVID-19 represent the disease name and SARS-CoV-2 represent the virus name.

Summary

COVID-19 activity continued to decline or remain stable in England across the majority of surveillance indicators during week 27. There were just over 3,300 cases detected compared to just over 4,400 in week 26. Around 75% of cases were detected through Pillar 2 (out of hospital testing). Case detections, as per the previous week, are highest in the East Midlands and Yorkshire and Humber. At a local authority level, activity remains highest in Leicester, though the weekly incidence of confirmed cases has declined. Case detections are highest in adults aged 85 and over.

The overall number of acute respiratory infection incidents reported to PHE Health Protection Teams remained similar to the previous week. There have been declines in the number of care home and hospital incidents, the number of incidents in workplace settings remains relatively stable. The number of incidents in educational settings has increased from 43 in week 26 to 55 in week 27. Since Pillar 2 testing became open to everyone during week 21 more outbreaks of mild disease have been detected in settings with healthy younger populations.

Community and syndromic surveillance indicators, while not specific for COVID-19, tend to be early indicators of changes in respiratory viral activity. There has been a slight increase in GP in hours consultations for patients diagnosed using a COVID-19 clinical code, this is likely due to a change in clinical coding included in the COVID-19-like indicator and a decrease in the population denominator during week 27.

Through the GP sentinel swabbing scheme, there have been no detections in cases with onset during week 27 or 26, though the number tested is low. 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 hospitalisations and critical care admissions for confirmed COVID-19 remained stable.

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 in any age group or region.

Data based on samples from blood donors suggests that seroprevalence is plateauing. Adjusted population weighted prevalence for England is estimated at 7.6% for weeks 23-27. Seroprevalence remains highest in London, with an adjusted prevalence of around 13% based on samples from week 26. New data from the South East and East of England suggests that seroprevalence has plateaued at 4-5%. Seroprevalence remains highest in younger adults though in recent weeks the differences across age groups have become less marked. These patterns may reflect differences in behaviour and mixing patterns in the different age groups.

As of 09:00 on 07 July 2020, a total of 1,588,810 people have been tested under Pillar 1. A total of 246,386 have been confirmed positive for COVID-19 in England under Pillar 1 and 2.

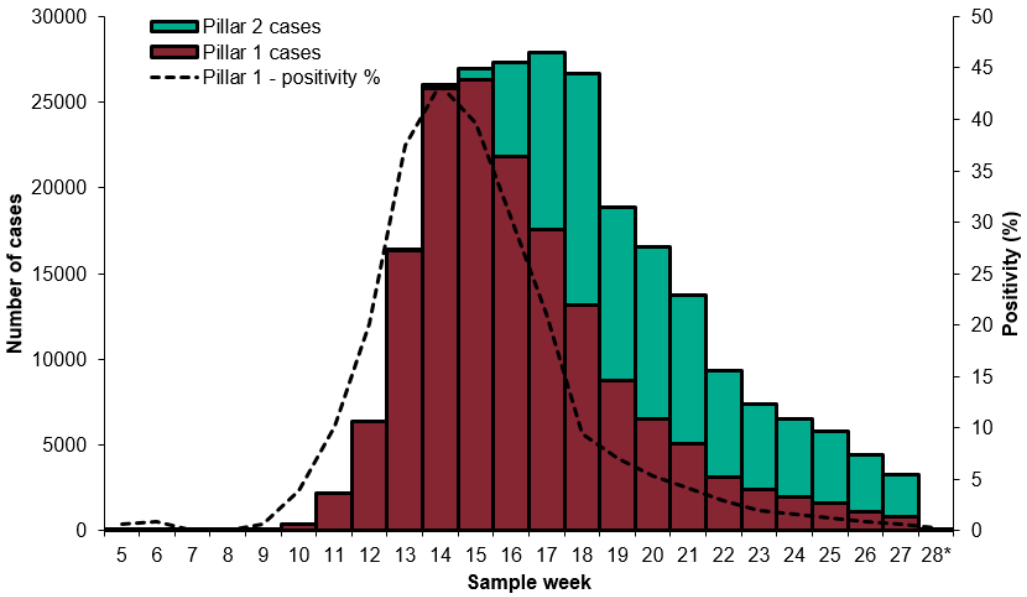
The total number of people tested under Pillar 1 has reduced by 41,303 due to adoption of PHE deduplication processes between Pillar 1 and Pillar 2 .

Figures 1 to 4, 6 and 8 to 11 and Tables 1 and 2 reflect cases tested under Pillar 1 (primarily in hospital testing of patients and some healthcare workers) and Pillar 2 (out of hospital testing).

Figures 5 and 7 reflect cases tested under Pillar 1 only.

Overall case numbers and positivity continue to decrease in week 28. The highest number of cases continued to be seen in the older age groups, in particular in the 85+ age group. Rates and positivity of cases continue to be highest in the North and Central regions of England.

Figure 1: Laboratory confirmed COVID-19 cases tested under Pillar 1 (n=161,514) and Pillar 2 (n=84,872), based on sample week with overall positivity for Pillar 1 only (%)



* 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 through (a) Pillar 1 (n=159,134) and (b) Pillar 2 (n=83,930)

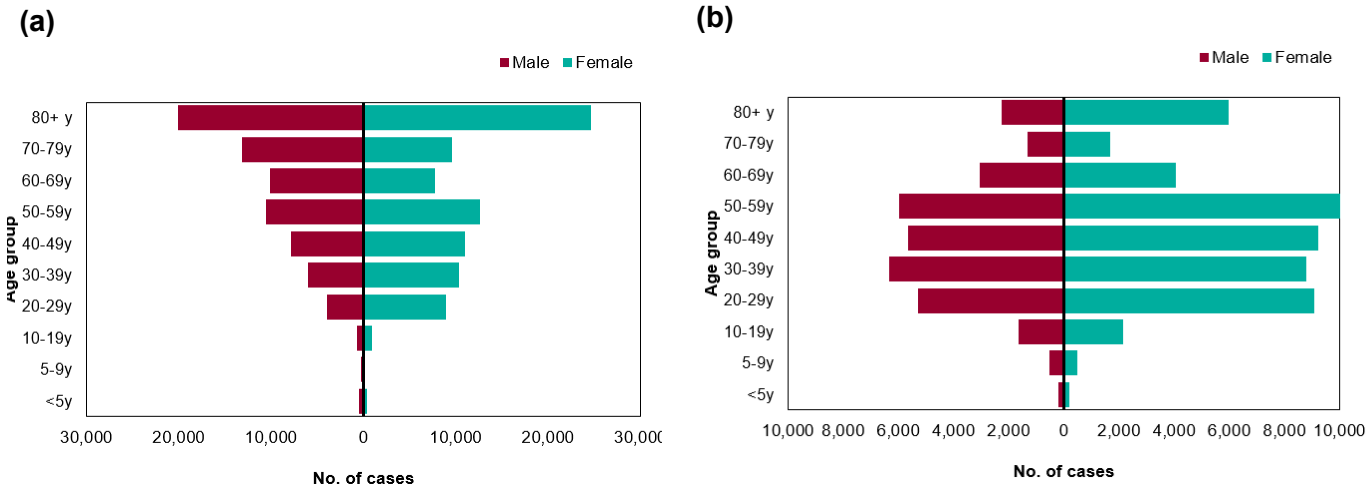


Figure 3: Weekly laboratory confirmed COVID-19 case rates per 100,000, tested under (a) Pillar 1 and (b) Pillar 2, by gender

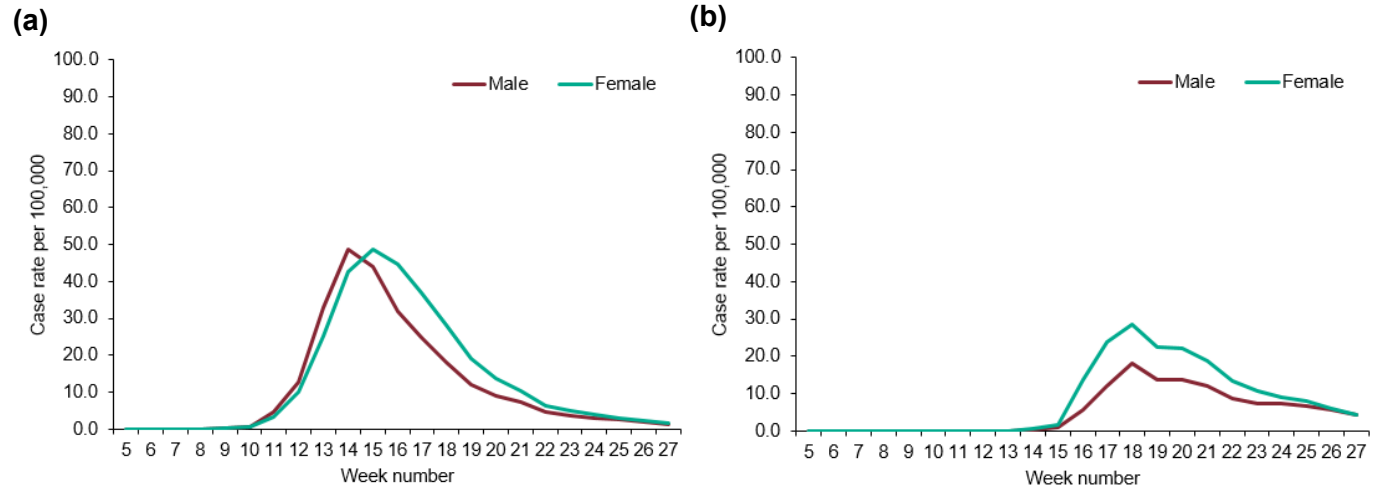


Figure 4: Weekly laboratory confirmed COVID-19 case rates per 100,000, tested under (a) Pillar 1 and (b) Pillar 2 , by age group

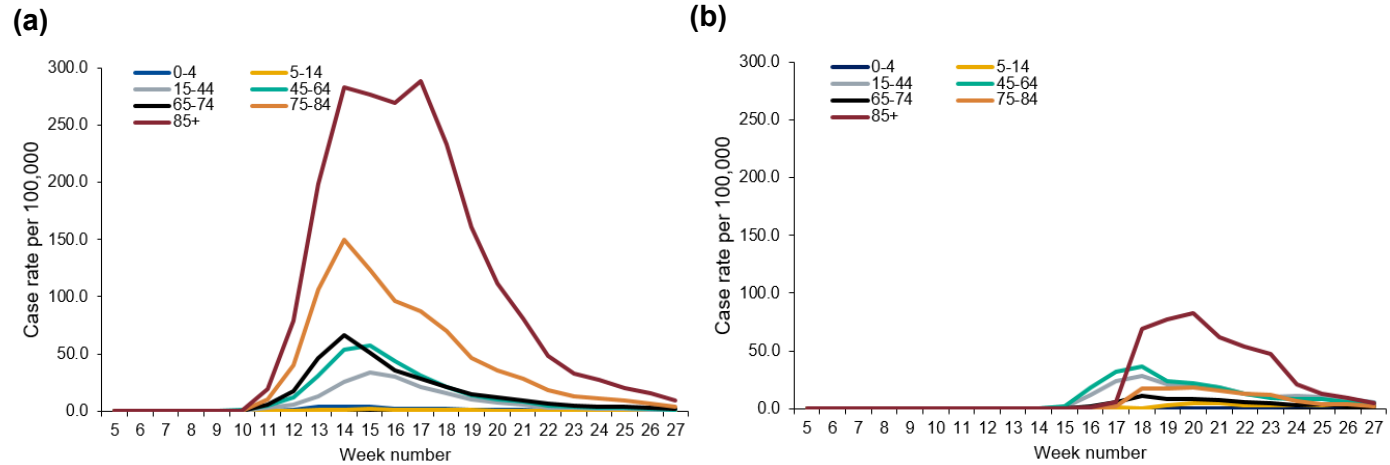
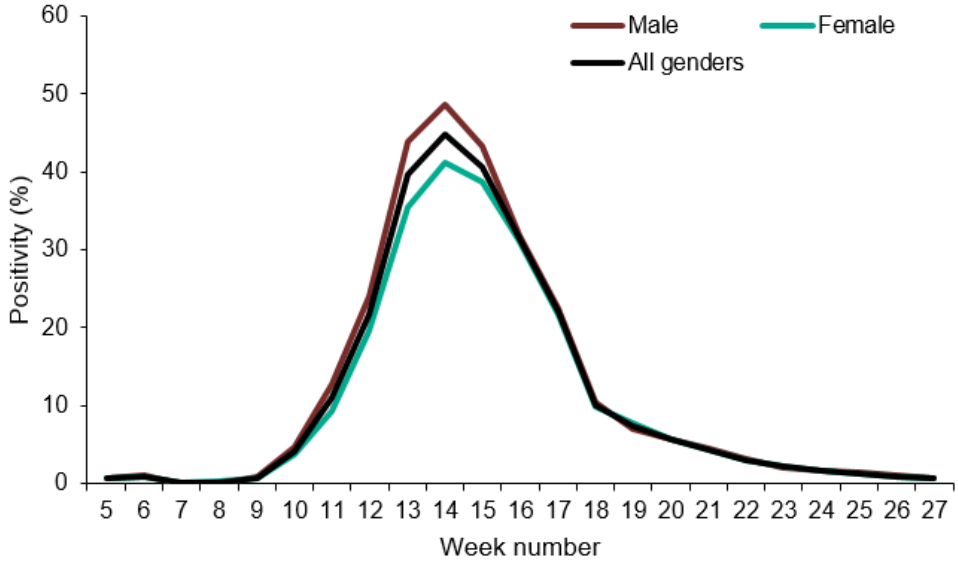
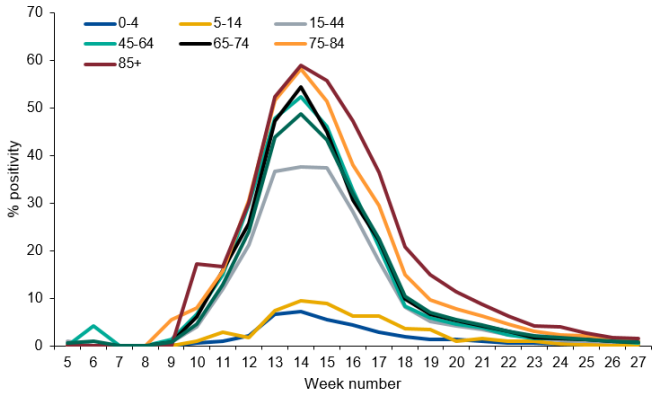


Figure 5: Weekly positivity (%) of laboratory confirmed COVID-19 cases tested under Pillar 1, (a) overall and by gender and (b) by male and age group (c) by female and age group (SGSS and Respiratory DataMart)

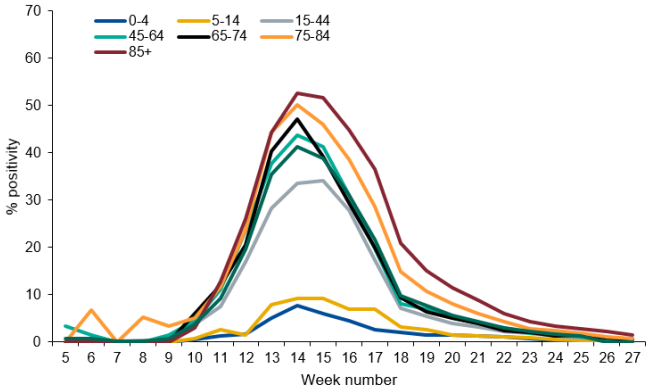
(a) Overall positivity % and by gender



(b) Male



(c) Female



PHE Centres and upper-tier local authority (UTLA)

Table 1: Cumulative number of cases under Pillar 1 (n=154,887) and Pillar 2 (n=83,293) and total number of people tested under Pillar 1 (n=1,480,128) by PHE Centres

PHE Centres	Pillar 1 cases	Pillar 2 cases	Total number of people tested (under Pillar 1 only)
North East	10,586	4,509	78,694
North West	27,467	15,404	202,547
Yorkshire & Humber	15,451	13,937	154,288
West Midlands	17,142	8,285	160,497
East Midlands	10,061	11,321	105,532
East of England	15,949	8,365	165,290
London	27,728	6,145	223,505
South East	22,517	10,547	234,921
South West	7,986	4,780	154,854

Figure 6: Weekly laboratory confirmed COVID-19 case rates per 100,000 population tested under (a) Pillar 1 and (b) Pillar 2, by PHE Centres and sample week

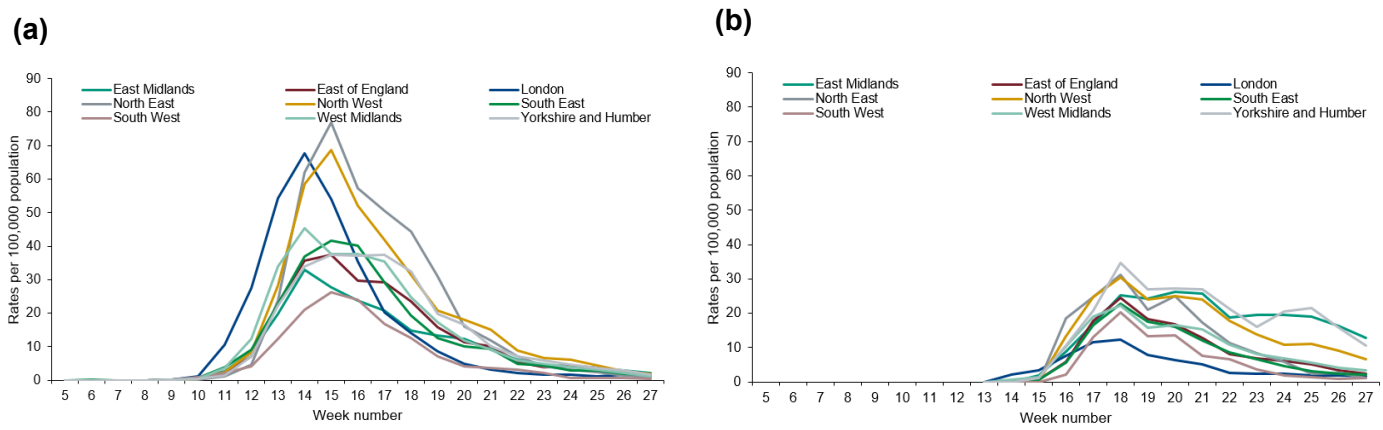


Figure 7: Weekly positivity of laboratory confirmed COVID-19 cases tested under Pillar 1 (%) by PHE Centres and sample week, (SGSS and Respiratory DataMart)

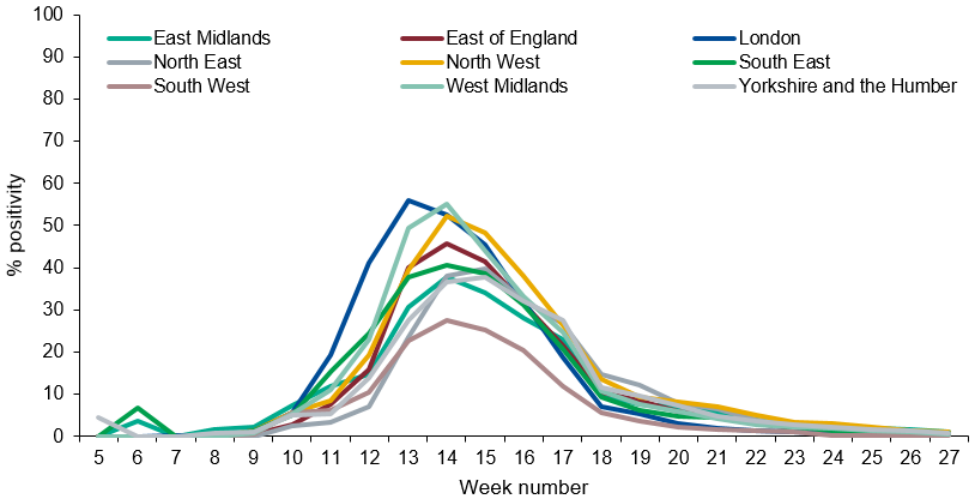


Figure 8: Cumulative rate of COVID-19 cases per 100,000 population tested under Pillar 1 and 2, by upper-tier local authority, England (box shows enlarged maps of London area)

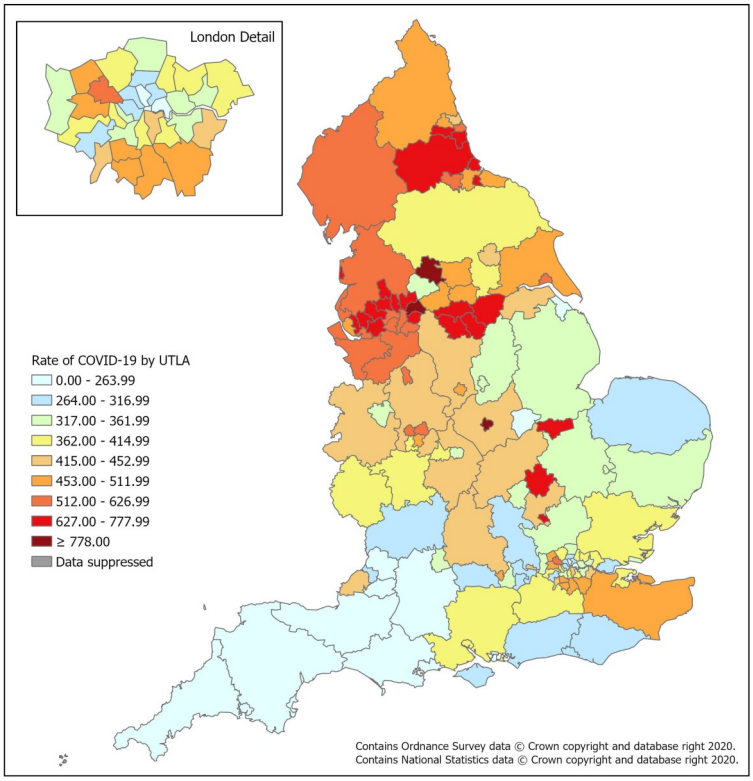


Figure 9: Weekly rate of COVID-19 cases per 100,000 population tested under Pillar 1 and 2, by upper-tier local authority, England (box shows enlarged maps of London area)

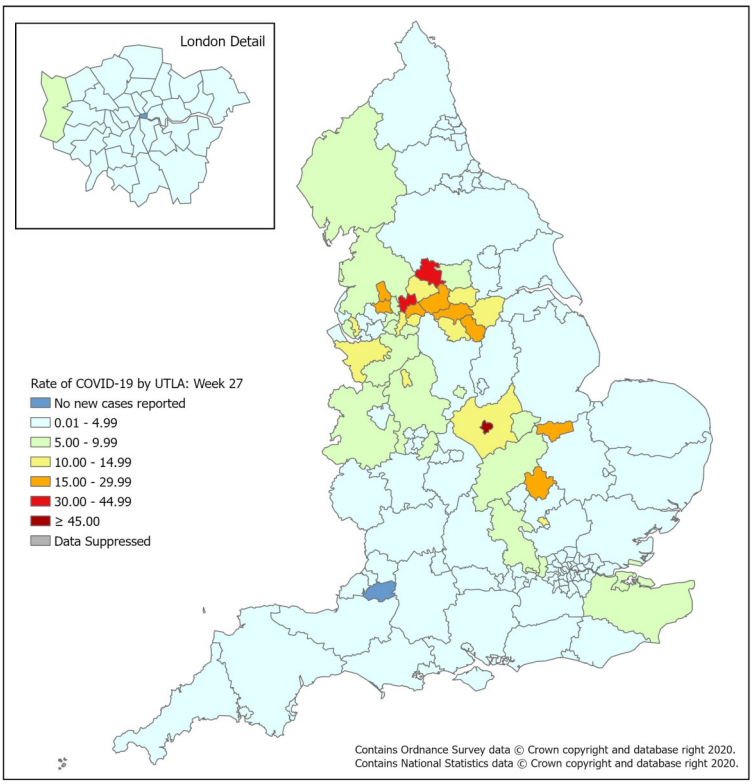
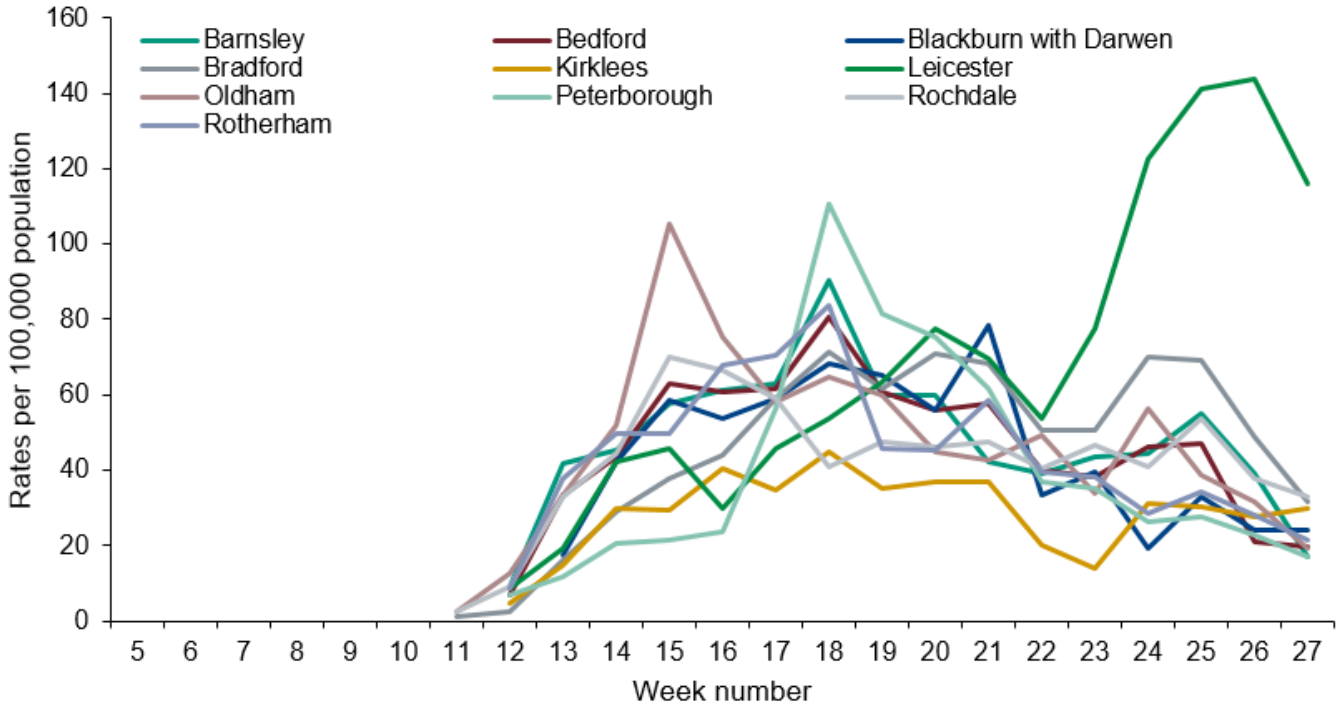


Figure 10: Top 10 UTLA with the highest weekly rate of COVID-19 cases per 100,000 population tested under Pillar 1 and 2



Ethnicity

Figure 11: Ethnic group of cumulative laboratory confirmed COVID-19 cases tested under Pillar 1 and 2 (n=203,701)

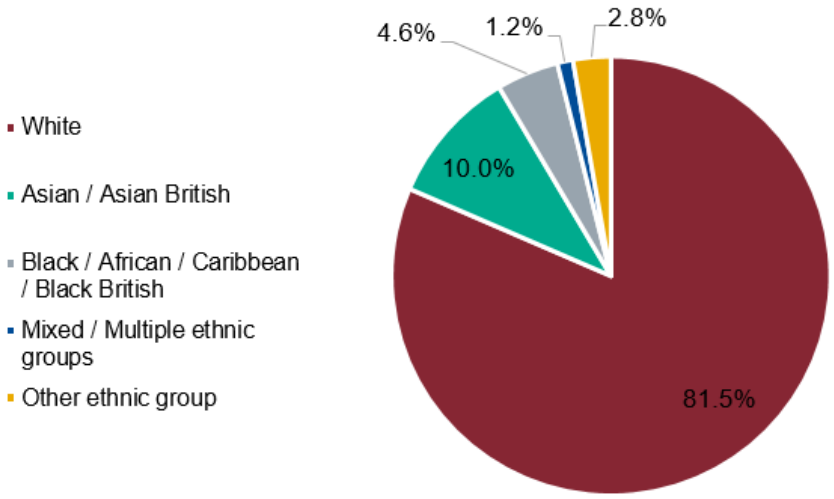


Table 2: Number of cases tested under Pillar 1 and 2, and percentage (%) by ethnic group and week

Ethnic group	Week - number (%)			
	24	25	26	27
White	3,319 (72)	2,696 (67.1)	1,895 (64.3)	1,171 (63.9)
Asian / Asian British	996 (21.6)	998 (24.8)	833 (28.3)	544 (29.7)
Black / African / Caribbean / Black British	124 (2.7)	120 (3.0)	84 (2.9)	35 (1.9)
Mixed / Multiple ethnic groups	52 (1.1)	68 (1.7)	46 (1.6)	23 (1.3)
Other ethnic group	117 (2.5)	136 (3.4)	89 (3.0)	60 (3.3)

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:

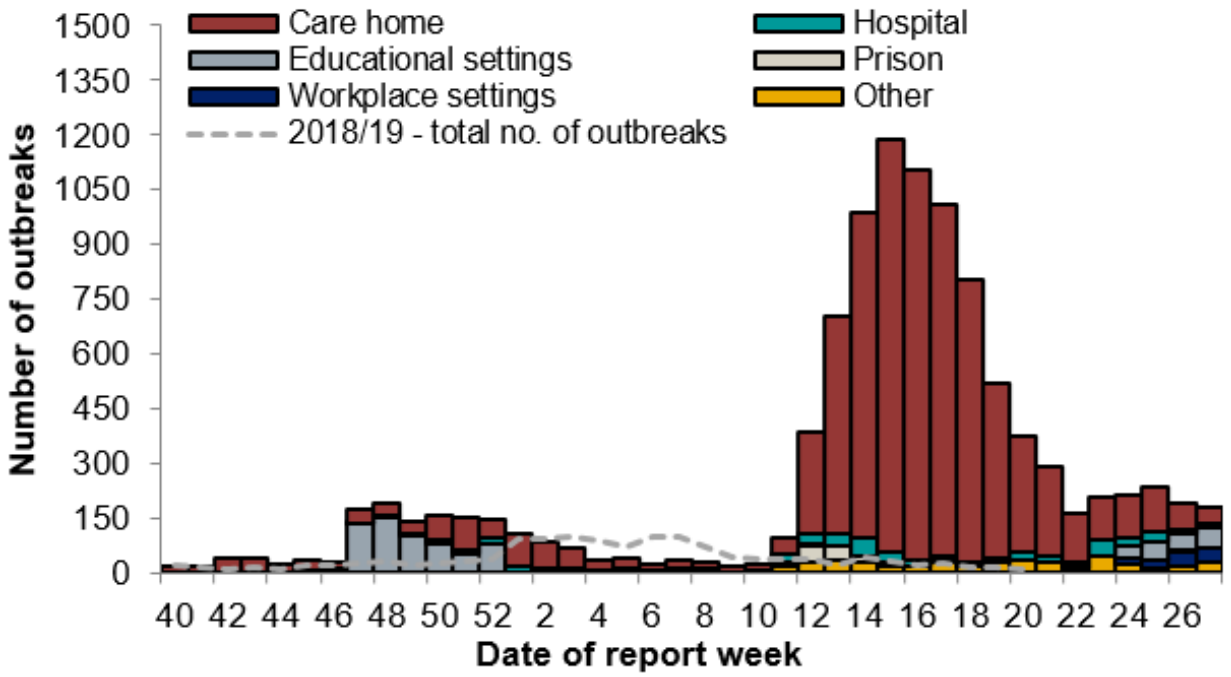
- confirmed outbreaks of acute respiratory infections i.e. two or more laboratory confirmed cases (COVID-19, influenza or other respiratory pathogen) linked to a particular setting
- situations where an outbreak is suspected. All suspected outbreaks are further investigated by the HPT in liaison with 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.

177 new ARI incidents have been reported in week 27 (Figure 12):

- 48 incidents were from care homes where 30 had at least one linked case that tested positive for SARS-CoV-2
- 9 incidents were from hospitals where 8 had at least one linked case that tested positive for SARS-CoV-2
- 55 incidents were from educational settings where 27 had at least one linked case that tested positive for SARS-CoV-2
- 1 incident was from a prison
- 41 incidents were from workplace settings where 35 had at least one linked case that tested positive for SARS-CoV-2
- 28 incidents were from the other settings category where 17 had at least one linked case that tested positive for SARS-CoV-2

Figure 12: Number of acute respiratory infection incidents by institution, England



Acute respiratory infection incidents, 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	Other settings	Total
East of England	61(8)	8(1)	27(10)	0(0)	15(4)	6(2)	117(25)
East Midlands	13(0)	5(0)	4(0)	1(0)	32(10)	5(1)	60(11)
London	38(6)	4(1)	19(6)	0(0)	5(2)	15(4)	81(19)
North East	15(1)	6(1)	10(5)	0(0)	5(1)	5(3)	41(11)
North West	56(7)	20(3)	19(8)	1(0)	11(5)	22(11)	129(34)
South East	51(6)	12(1)	34(6)	4(1)	7(2)	12(2)	120(18)
South West	18(3)	4(1)	34(10)	0(0)	2(0)	6(2)	64(16)
West Midlands	20(6)	9(1)	18(8)	0(0)	16(7)	5(2)	68(24)
Yorkshire and Humber	43(6)	4(0)	14(2)	1(0)	25(10)	10(1)	97(19)
Total	315(43)	72(9)	179(55)	7(1)	118(41)	86(28)	777(177)

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.

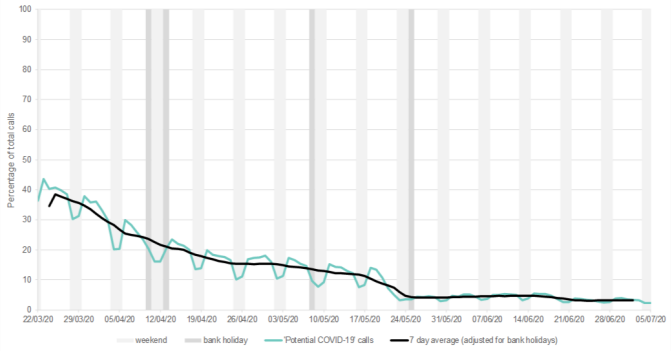
Up to 05 July 2020, the daily percentage of NHS 111 'potential COVID-19-like' calls (as a percentage of total NHS 111 calls) remained stable (Figure 13). The daily number of NHS 111 'potential COVID-19' completed online assessments remained stable (Figure 14).

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 13 (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

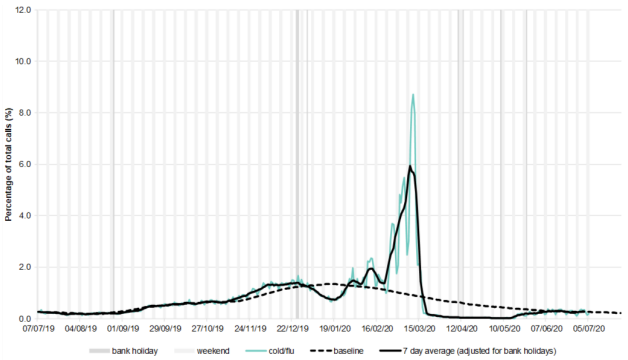
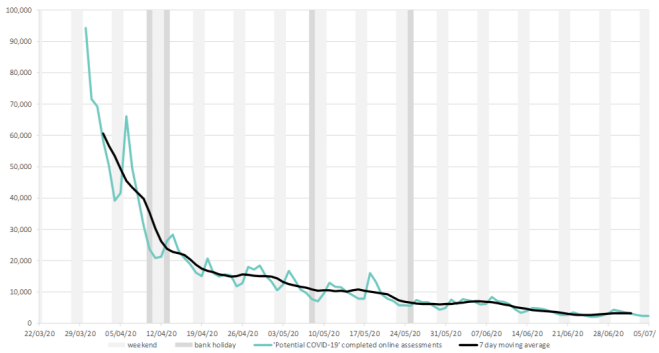
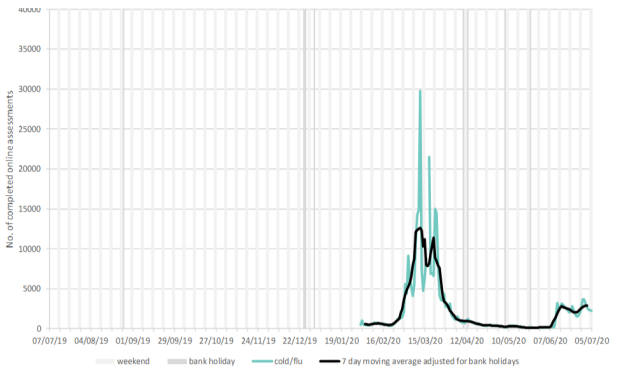


Figure 14 (a-b): NHS 111 completed online assessments (and 7-day moving average), England

(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.

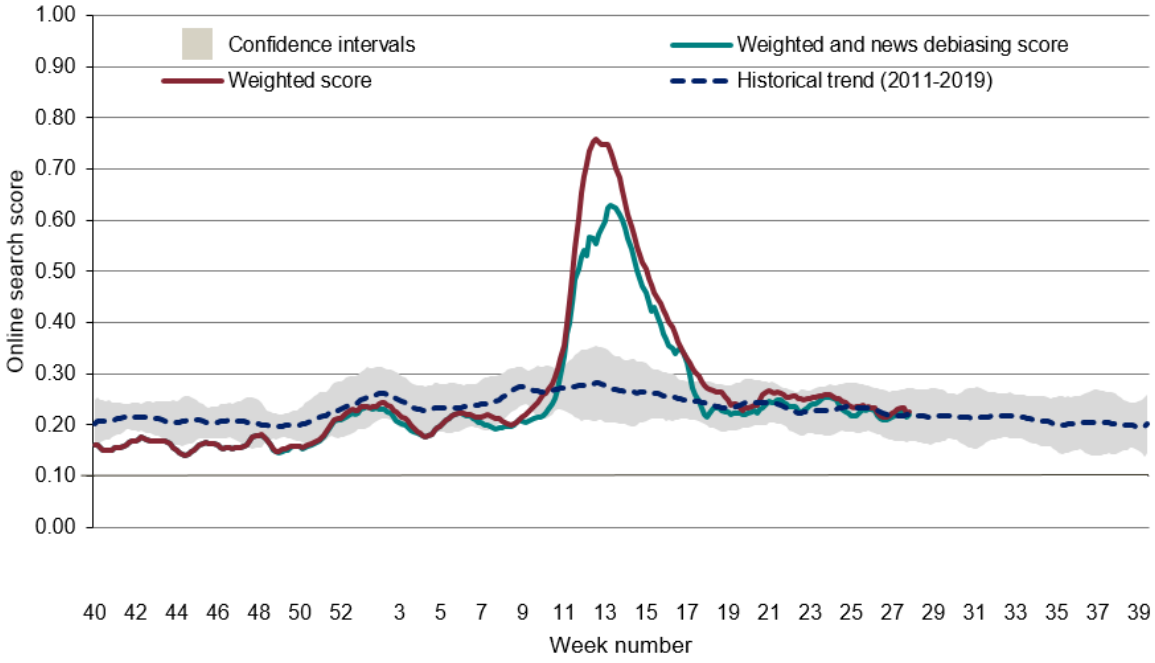
Google search queries

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 remained stable during week 27 (Figure 15).

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

Figure 15: Normalised Google search score for COVID-19 symptoms, with weighted score for media-debiasing and historical trend, England



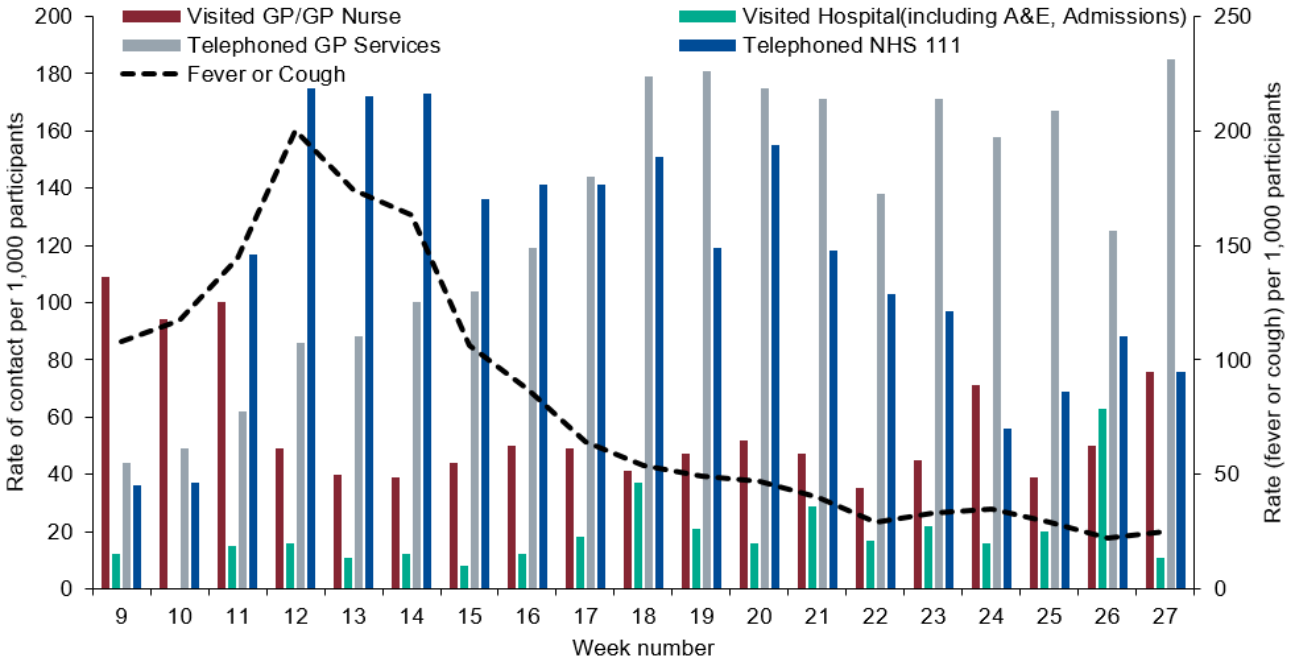
Internet based surveillance

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 3,646 participants completed the weekly COVID-19 surveillance survey in week 27, of which 92 (2.5%) reported fever or cough, a slight increase to 2.1% reported in week 26. Although the most commonly reported method of access to healthcare services remains through telephone services, there has been an increase in visits to GP/hospitals (Figure 16).

Figure 16: Rate of contact with different healthcare services among FluSurvey participants reporting fever or cough symptoms, week 09 to 27, England



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

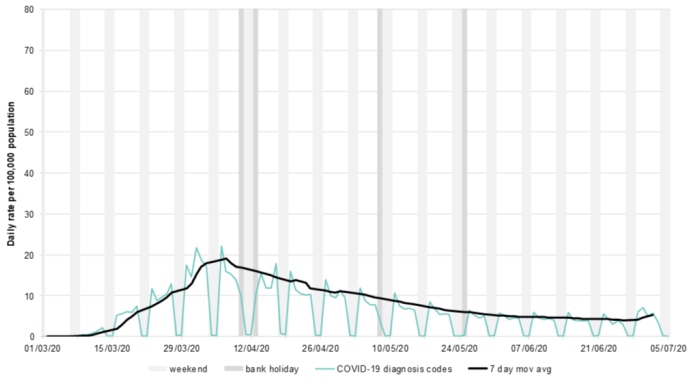
The GP In Hours (GPIH) syndromic surveillance system monitors the number of GP visits during regular hours of known clinical indicators. The GP Out of Hours (GPOOH) syndromic surveillance system monitors the numbers of daily unscheduled visits and calls to GPs during evenings, overnight, on weekends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

Up to 05 July 2020, GPIH consultations for potential COVID-19-like consultations increased slightly while ILI consultations remained stable (Figure 17). Please note that during week 27 a reduced number of GP practices were available for inclusion so rates should be treated with caution. Through GPOOH consultations (up to 05 July 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 18).

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 17 (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

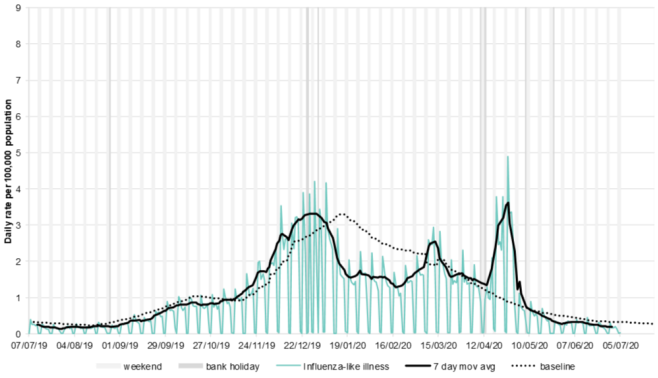
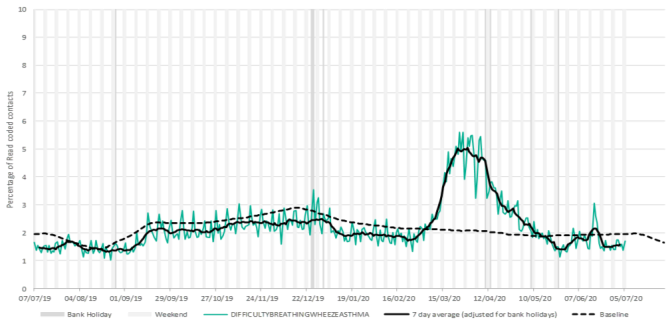
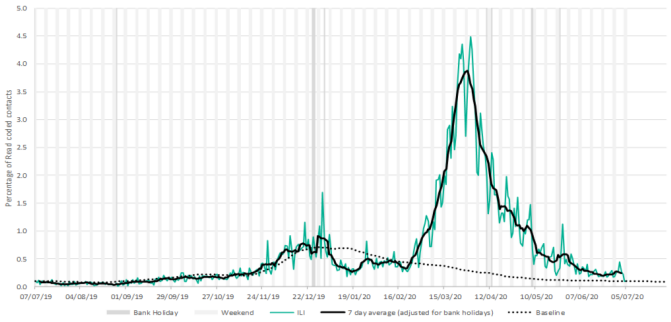


Figure 18 (a-b) : GPOOH contacts indicators, England

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



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

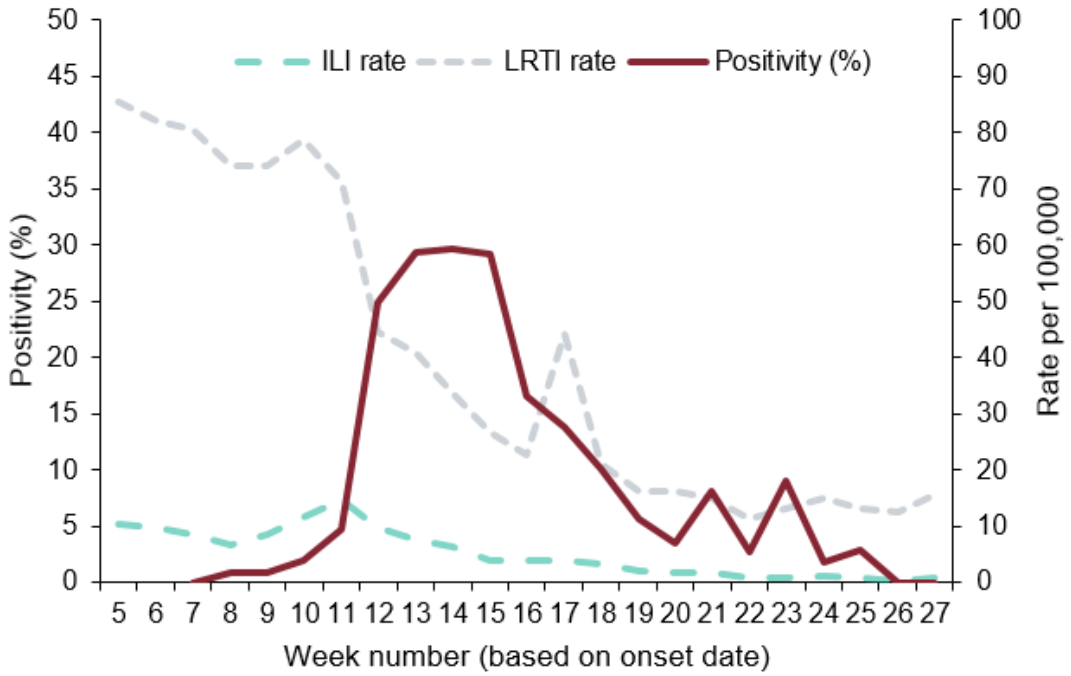


RCGP Swabbing Scheme

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 07 July 2020, a total of 4,600 patients have been tested of which 607 have tested positive for SARS-CoV-2 through this scheme. The overall positivity was at 0.0% (0/28) in week 27 compared to the same positivity (0/78) in the previous week (Figure 19).Consultations for ILI and LRTI increased slightly (Figure 19).

Figure 19: 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 20: Overall positivity (%) (weekly) by PHE Region, England (RCGP)

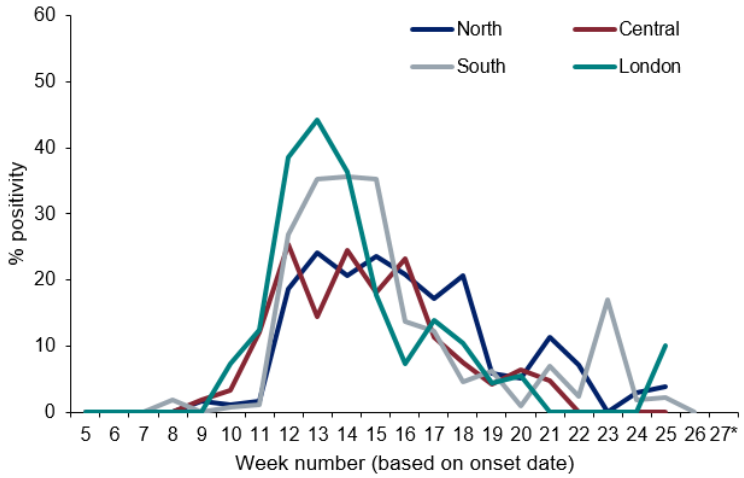
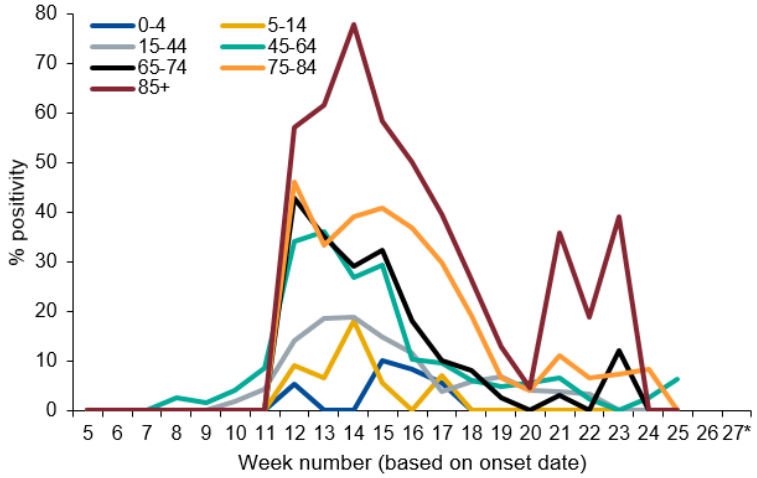
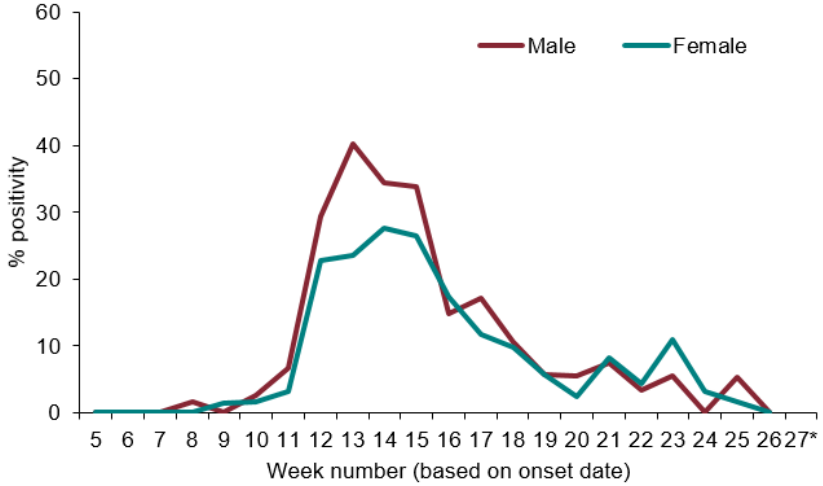


Figure 21: Positivity (%) (weekly) by (a) age group and (b) gender, England (RCGP)

(a)



(b)



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

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

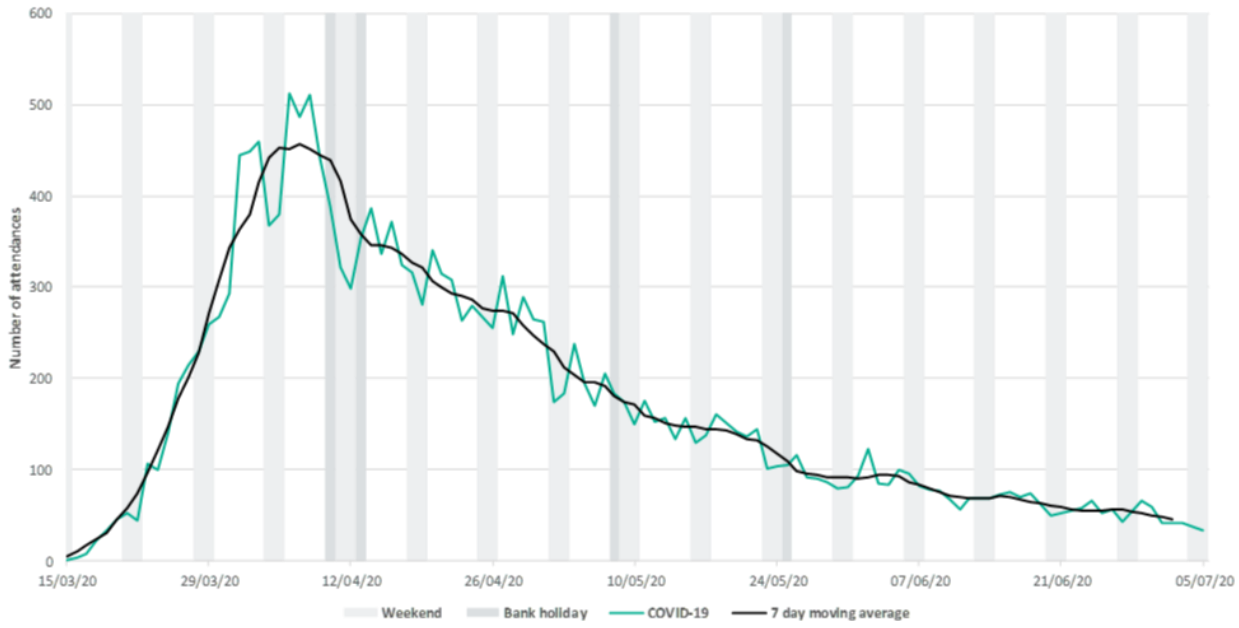
Emergency Department attendances, Syndromic surveillance

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

Up to 05 July 2020, the daily number of ED attendances for all ages as reported by 83 EDs in England during week 27, for COVID-19-like attendances remained stable (Figure 22).

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



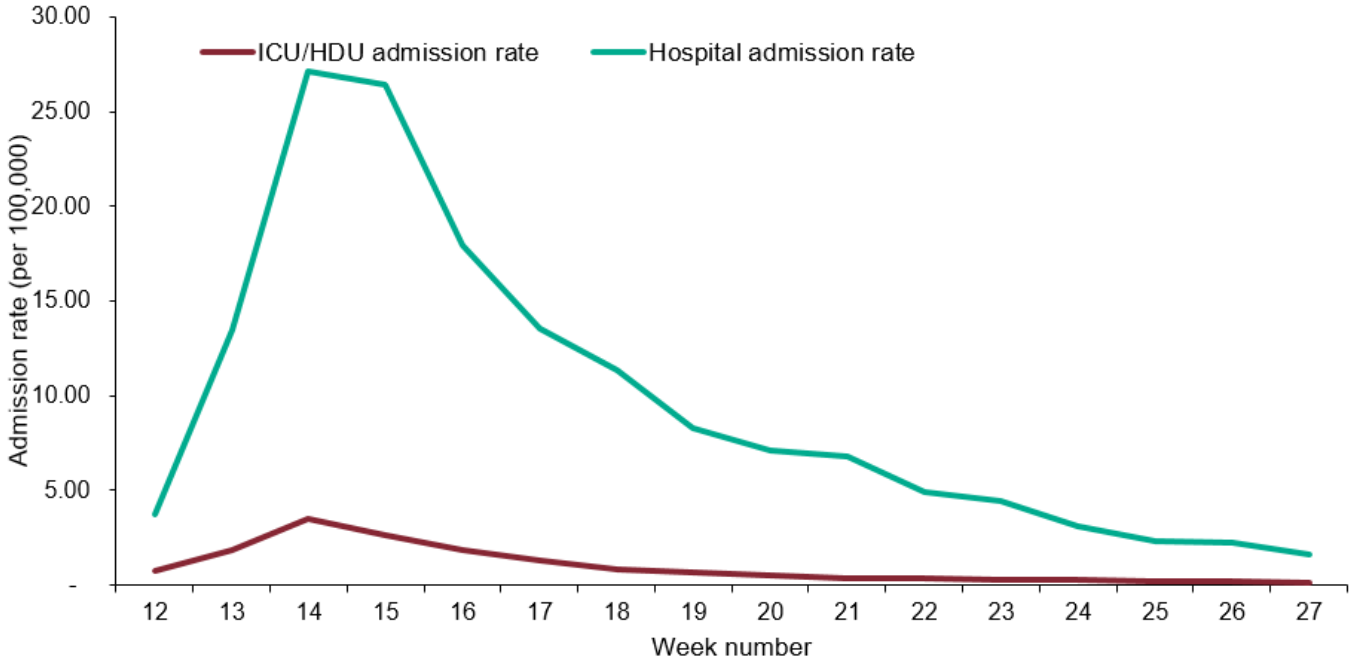
COVID-19 Hospitalisation in England Surveillance System (CHESS)

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 27, the weekly admission rates for both hospitalisations and ICU/HDU COVID-19 admissions remained stable.
The hospitalisation rate was at 1.59 per 100,000 in week 27 compared to 2.20 per 100,000 in the previous week. The ICU/HDU rate was at 0.13 per 100,000 in week 27 compared to 0.19 per 100,000 in the previous week (Figure 23). By NHS regions, the highest hospitalisation and ICU/HDU rates were observed in the North West (Figure 24). By age group, the highest hospitalisation rate was seen in the 65-74 year olds and the highest ICU/HDU rate was observed in the 75-84 year olds (Figure 25).

Figure 23: 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 24: Weekly admission rate for (a) hospital admissions and (b) ICU/HDU admissions by NHS regions of new COVID-19 positive cases reported through CHESS

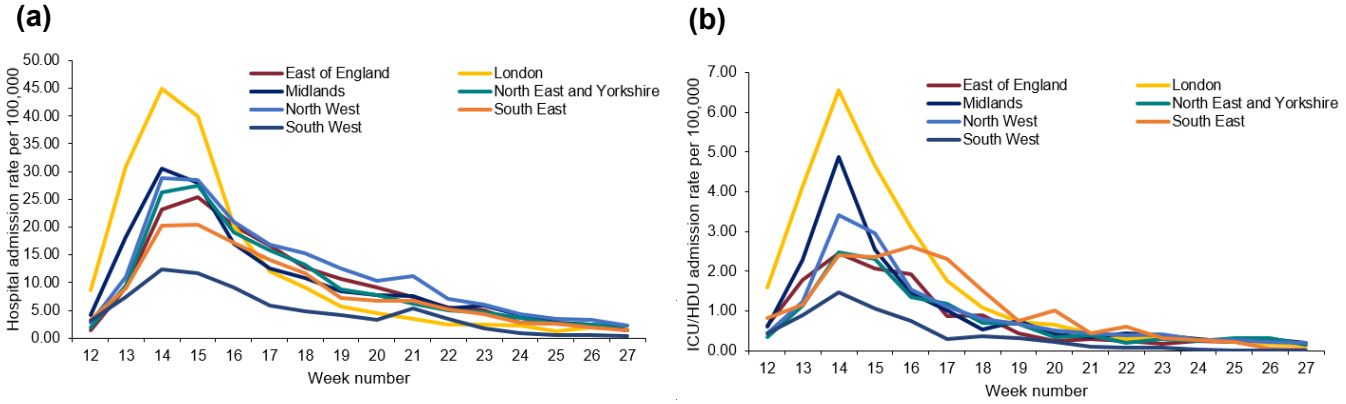
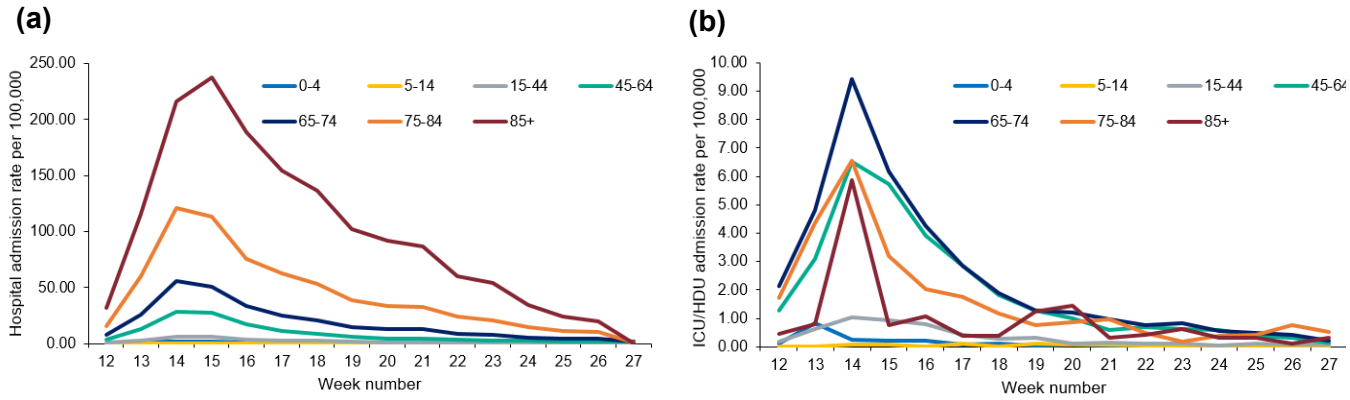


Figure 25: Weekly admission rate for (a) hospital admissions and (b) ICU/HDU admissions by NHS regions of new COVID-19 positive cases reported through CHESS

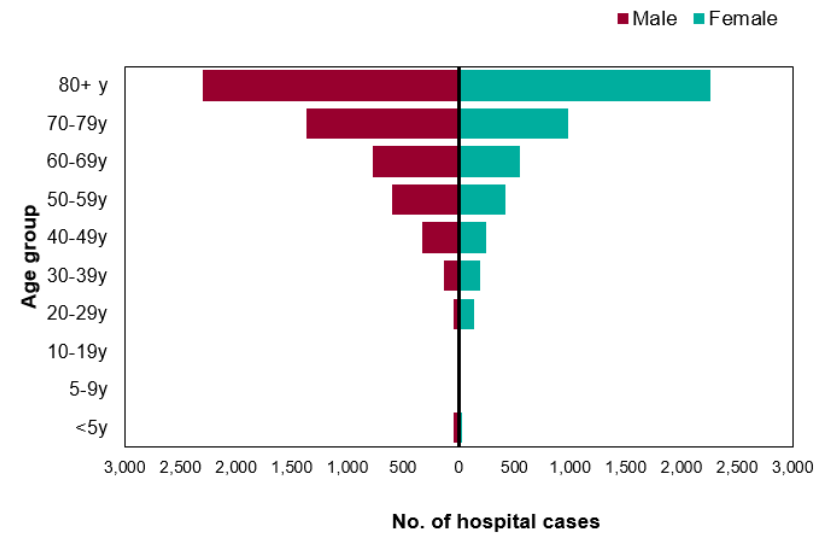


COVID-19 Hospitalisation in England Surveillance System (CHESS)

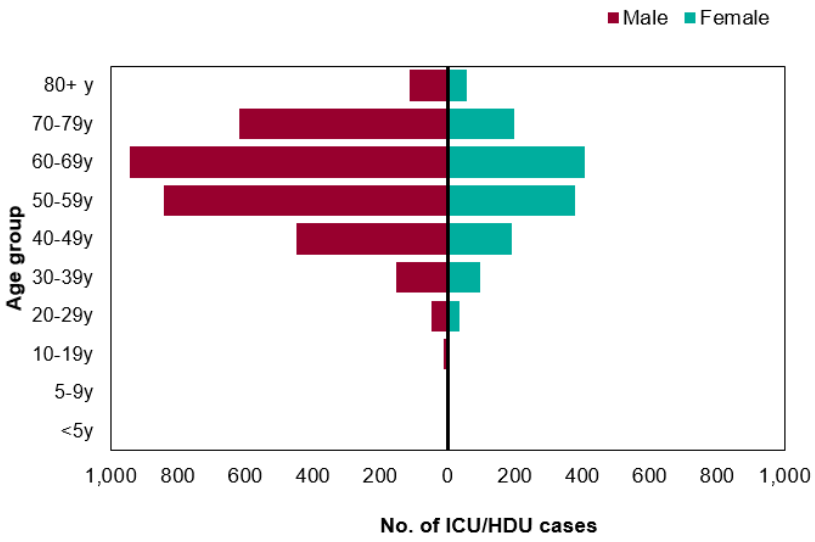
Figure 26 and 27 are based on individual patient level data which are provided to CHESS from a subset of NHS Acute Trusts, therefore the data should be interpreted with caution as the distribution of age, sex and ethnic group may not be representative of all hospitalised patients.

Figure 26: Age/sex pyramid of new (a) hospital (lower level of care) (n=10,472) and (b) ICU/ HDU (n=4,559) COVID-19 cases reported through CHESS, England

(a)

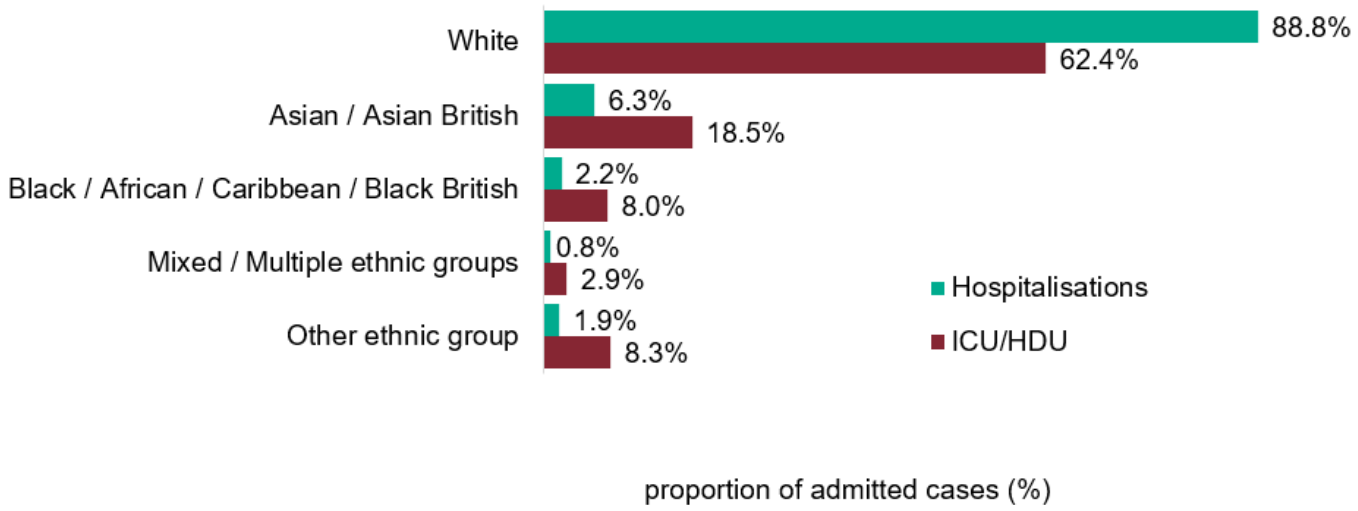


(b)



COVID-19 Hospitalisation in England Surveillance System (CHESS)

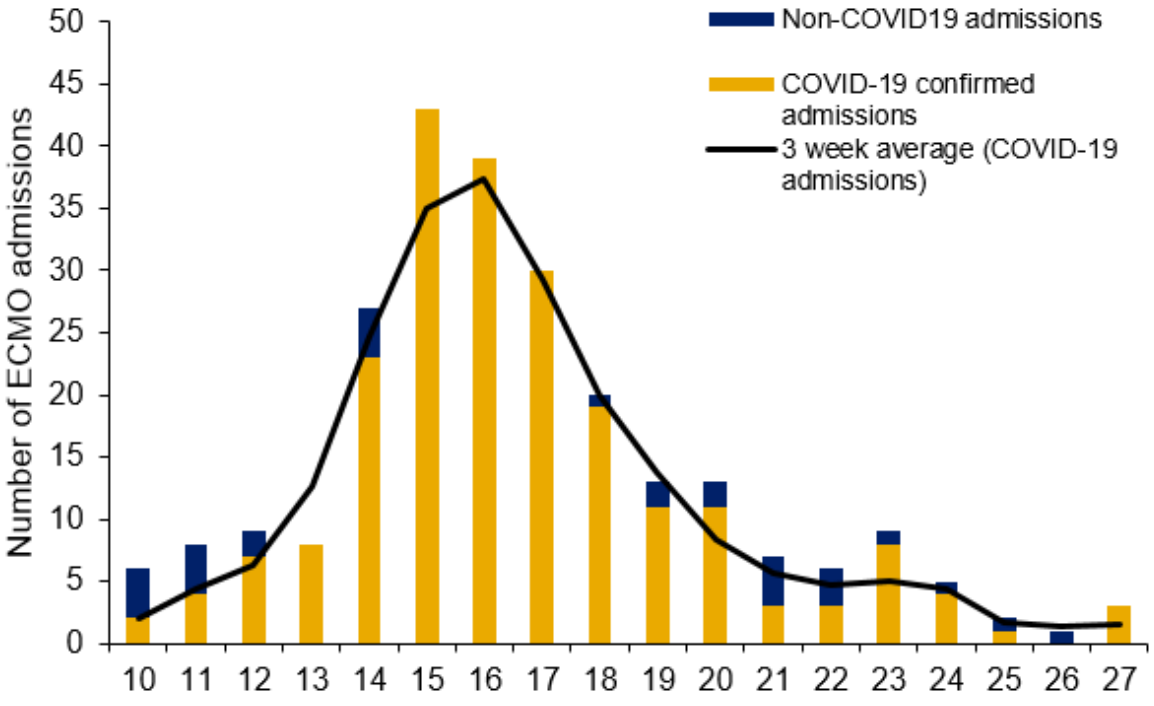
Figure 27: Ethnic group of new hospitalisations (lower level of care) (n=9,413) and ICU/ HDU (n=3,859) COVID-19 cases reported through CHESS, England



UK Severe Respiratory Failure (SRF) centres admissions

Between 03 March and 29 June 2020, a total of 219 laboratory confirmed COVID-19 admissions have been reported from the 5 SRFs in England. There were three new laboratory confirmed COVID-19 admissions reported in week 27 compared to none in week 26 (Figure 28).

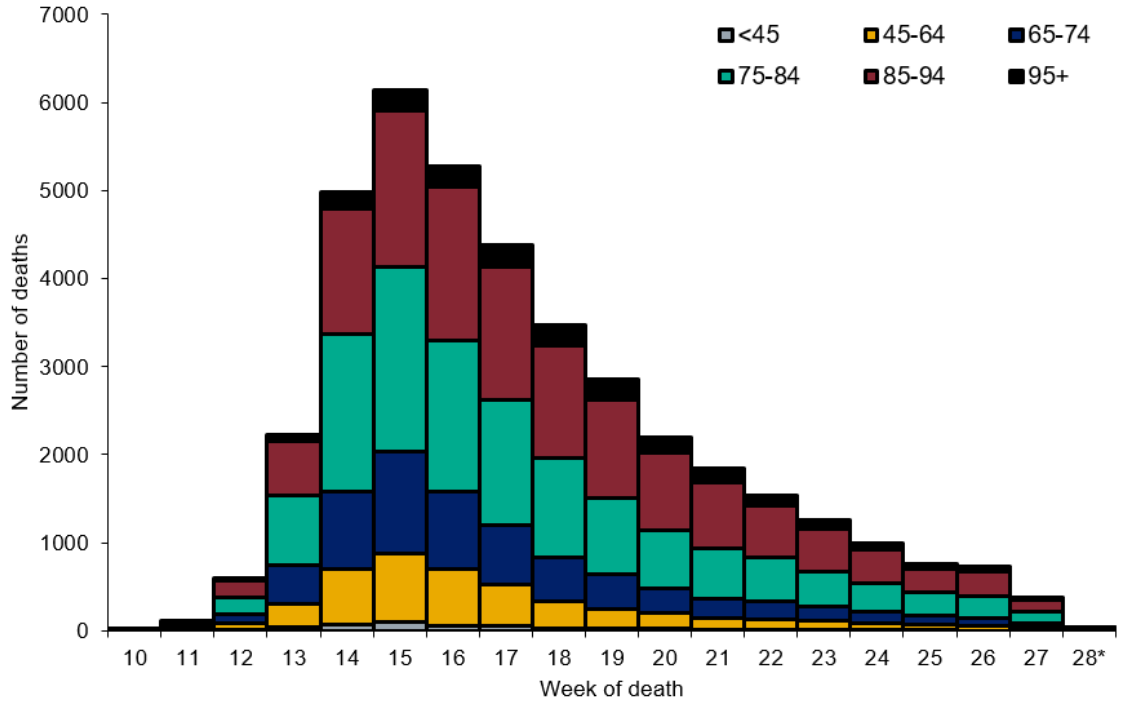
Figure 28: Laboratory confirmed ECMO admissions (COVID-19 and non-COVID-19 confirmed) to SRFs, England



Cumulative deaths

As of 5pm on 06 July 2020, a total of 39,815 cases under Pillar 1 and 2 with confirmed COVID-19 have died in England.

Figure 29: Cumulative number of deaths by week of death and age group, England (n=39,815)



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

Table 4: Cumulative number of deaths (Pillar 1 and 2) by PHE Centres (n=39,477)

PHE Centres	Number of deaths
North East	2,350
North West	6,589
Yorkshire & Humber	3,836
West Midlands	4,991
East Midlands	3,165
East of England	4,520
London	6,715
South East	5,247
South West	2,064

Cumulative deaths

Figure 30: Age/sex pyramid of laboratory confirmed COVID-19 (Pillar 1 and 2) deaths (n=39,815)

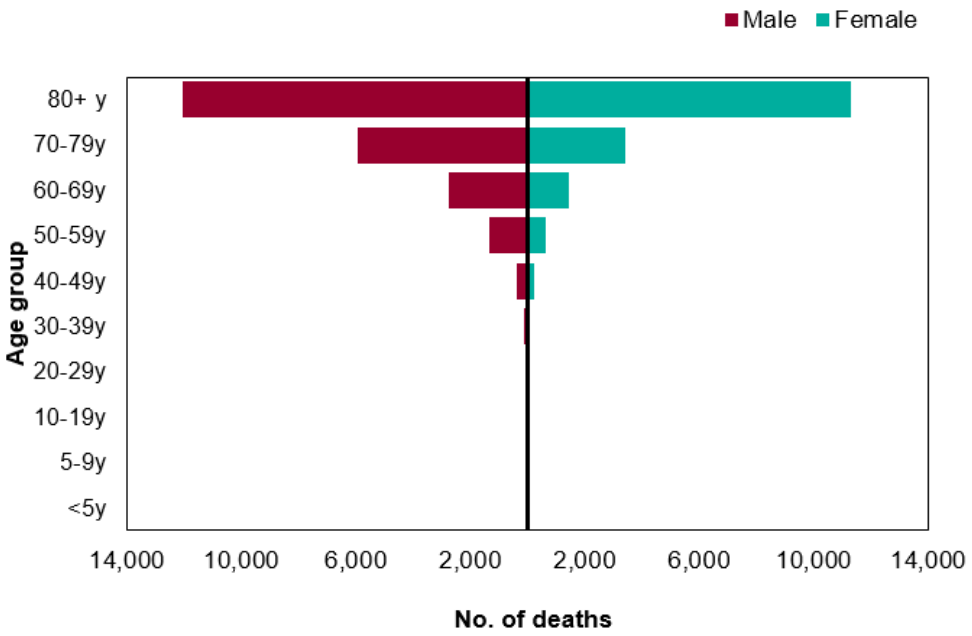
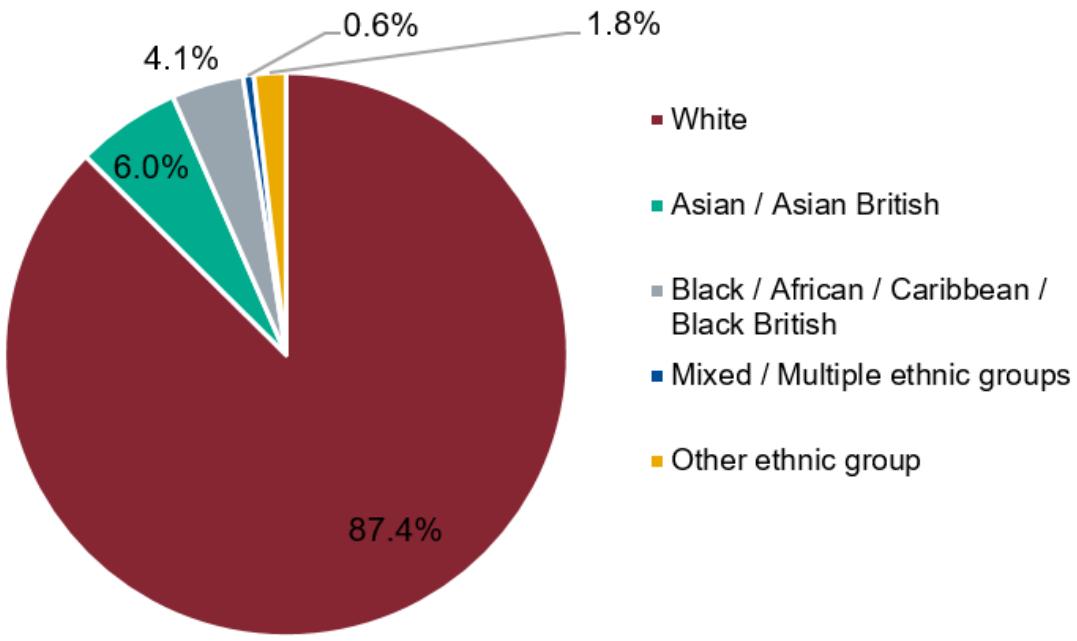


Figure 31: Ethnic group of confirmed COVID-19 (Pillar 1 and 2) deaths, England (n= 39,452)



Daily excess all-cause mortality, UK

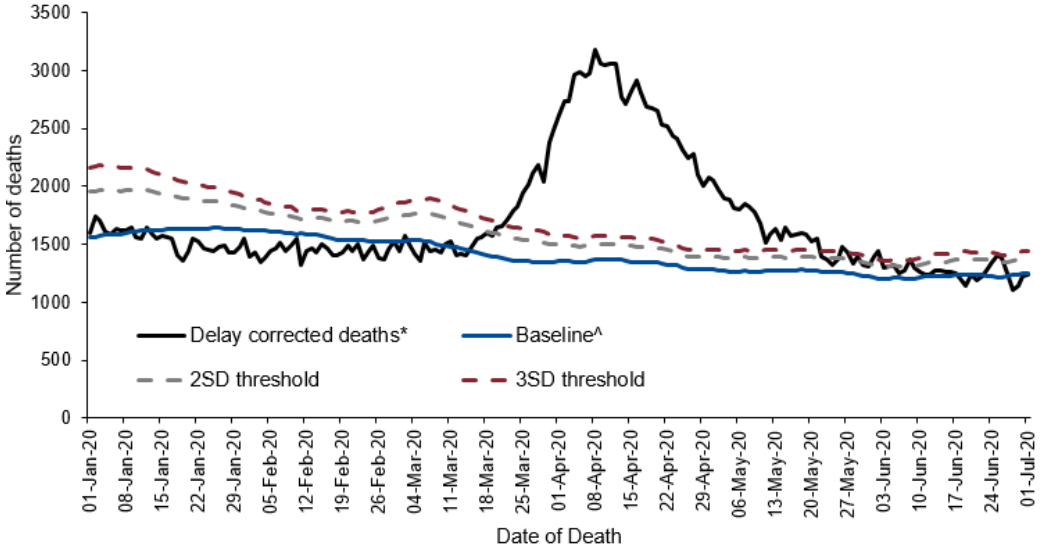
Deaths occurring from 01 January to 24 June 2020 were assessed to calculate the daily excess above a baseline using age-group and region specific all cause deaths as provided daily by the General Register Office (GRO). The deaths were corrected to allow for delay to registration based on past data on 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 32).

Weeks in which at least 2 days exceeded the 3SD threshold are shown in Table 4 and the daily difference from the baseline by age and region is given in Figure 31. 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 26 overall, by age group or subnationally (Figure 32, 33 and Table 5).

Weekly all-cause mortality surveillance is monitored and reports can be found here.

Figure 32: Daily excess all-cause deaths in all ages, England, 01 January 2020 to 01 July 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 5: Excess all-cause deaths by (a) age group and (b) PHE centres , England

(a)

	Excess detected in week 26 2020?	Weeks in excess since week 10 2020
Age group		
All	x	13 to 21,23
under25	x	None
25to45	x	13 to 17
45to65	x	12 to 19
65to74	x	12 to 19
75to84	x	13 to 22
85+	x	13 to 21

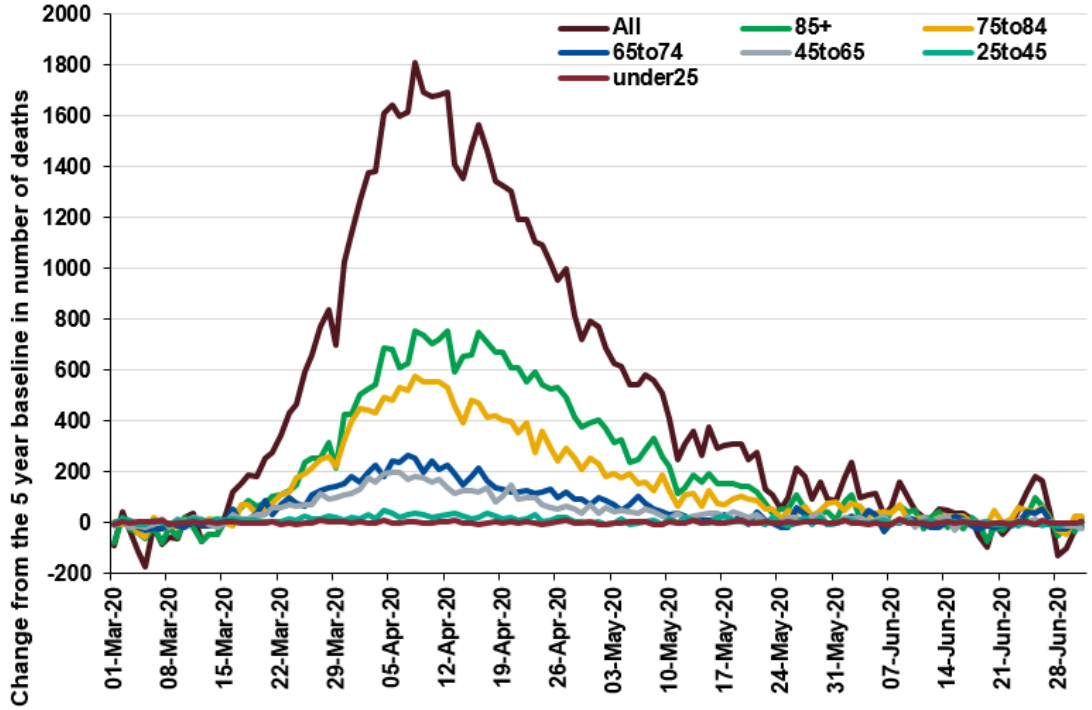
(b)

	Excess detected in week 26 2020?	Weeks in excess since week 10 2020
PHE centres		
East of England	x	14 to 19
East Midlands	x	13 to 19, 21
London	x	12 to 19
North East	x	14 to 21
North West	x	13 to 21
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

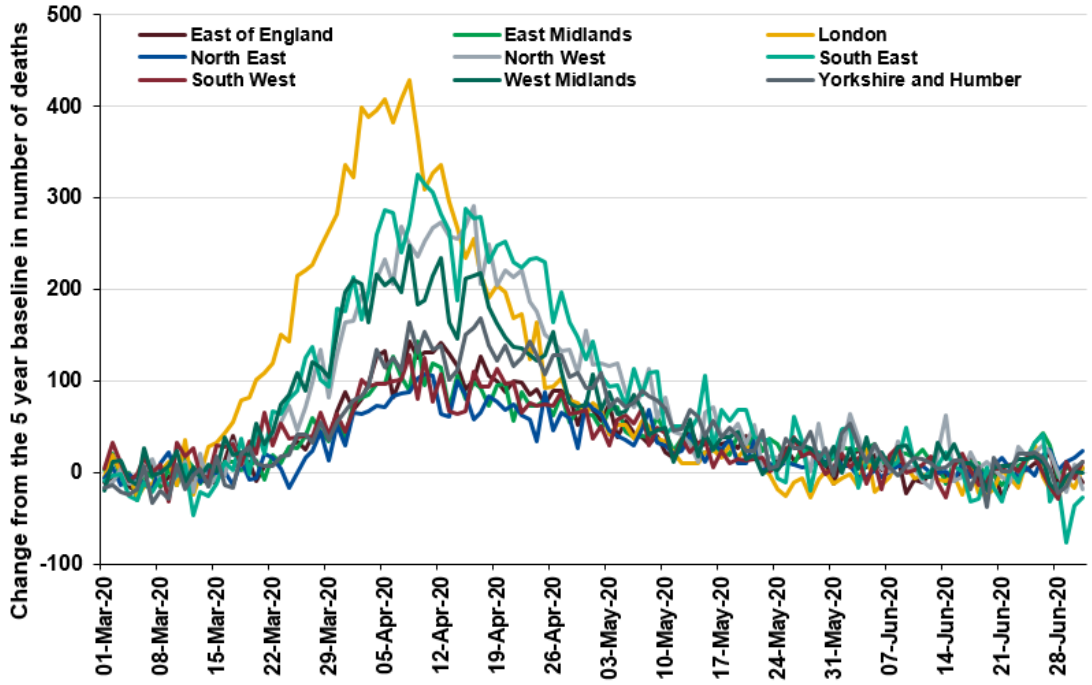
Daily excess all-cause mortality, UK

Figure 33: Daily excess all-cause deaths by (a) age group and (b) PHE centres , England, 01 March 2020 to 01 July 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 this week's report updated results from the testing of samples provided by health blood donors aged 17-69 years, supplied by the NHS Blood and Transplant (NHS BT collection) are summarised. Donor samples from different geographic regions (approximately 1000 samples per region) in England are tested each week. The results presented here are based on testing using the Euroimmun assay for samples collected between weeks 13-26.

Overall population weighted prevalence among blood donors in England was 7.2% (95% CI 6.6% - 7.8%) (unadjusted) or 7.6% (95% CrI 6.9% - 8.4%) after adjustment for the accuracy of the Euroimmun assay (sensitivity and specificity) for the period 4th – 29th June (weeks 23-27). 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).

Figure 34 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.

Additional data from the third sampling in both the South East and East of England regions are included in this week's report (collected in week 26-27).

Adjusted prevalence estimates vary across the country and over time. In London where prevalence estimates are highest, overall adjusted prevalence increased from 1.5% (week 13) to 10.5% (weeks 15-16) to 14.5% (week 18) to 15.4% (week 21) remaining stable more recently at 14.9% (week 24) and 13.2% in the most recent data (week 26). Given that antibody response takes at least two weeks to become detectable, those displaying a positive result in week 18 are likely to have become infected before mid-April. The plateauing observed between weeks since week 18 demonstrates the impact of lock down measures on new infections.

The lower prevalence in samples from other regions including the South West and North East regions is consistent with data from other surveillance systems. In the most recent data from weeks 26-27, adjusted prevalence amongst donors in the South East has plateaued, remaining at 4.4% (95% CrI 2.5% - 6.4%) between weeks 22 and 27. Similar trends have been observed in the most recent set of data from the East of England. Although a notably lower prevalence was observed between the first and second sets of sampling (in weeks 19 and week 22), adjusted prevalence has plateaued at 5.0% (95% CrI 3.1% - 6.9%) in week 22 and 4.8% (95% CrI 2.9% - 6.8%) in week 27.

In some regions prevalence estimates are slightly lower in recent weeks. For example, the adjusted prevalence in the North West of England is slightly lower at 8.8% in week 23 compared with 10.6% in week 19. This is likely driven by some changes in the precise locations of sampling over time.

Age specific prevalence estimates have changed over time with prevalence notably higher in the young adults when the increases were first observed in areas experiencing the outbreak earlier (Figure 35). Over time, although individuals aged 17- 29 years continue to display the highest prevalence, there has been some evidence that prevalence in older adults has increased later in the epidemic. These patterns may reflect differences in behaviour and mixing patterns in the different age groups.

Sero-prevalence epidemiology, England

Figure 34: 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)

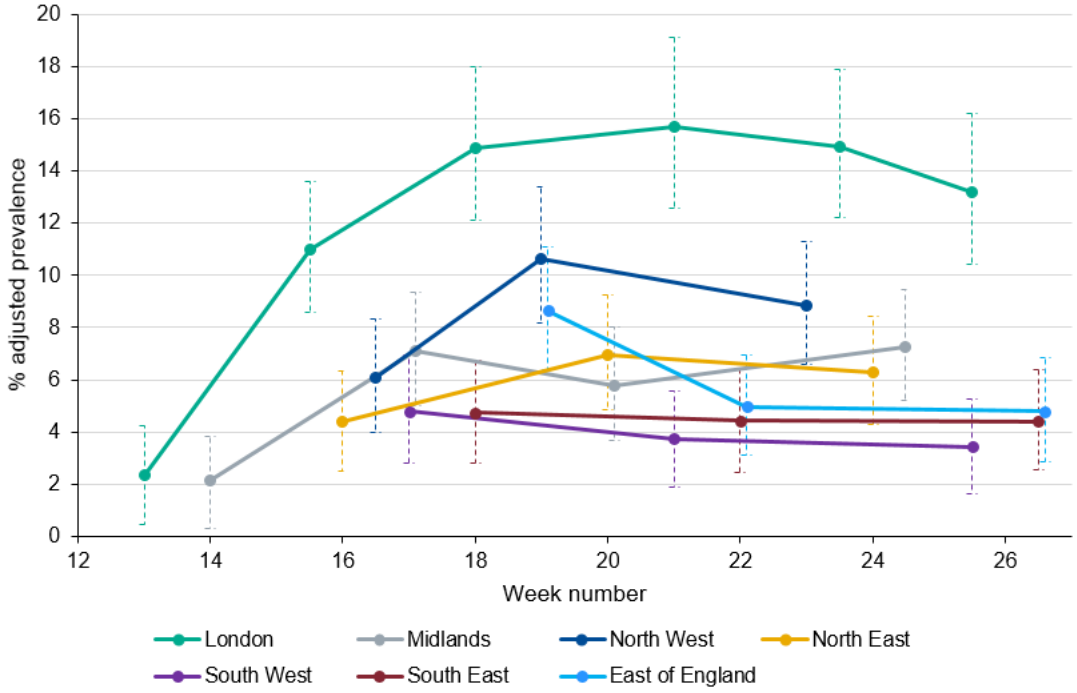
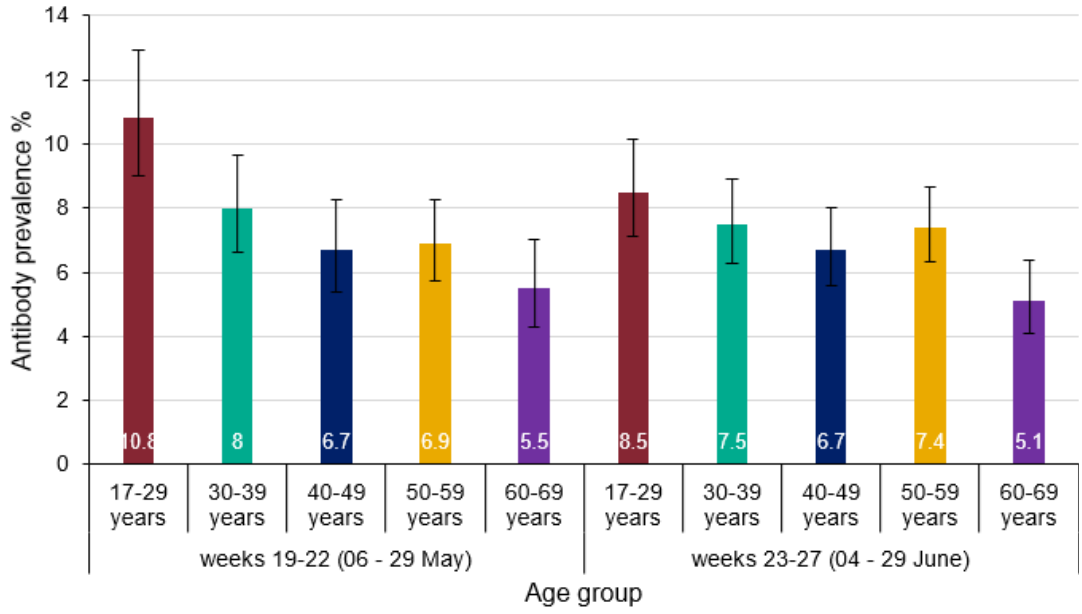


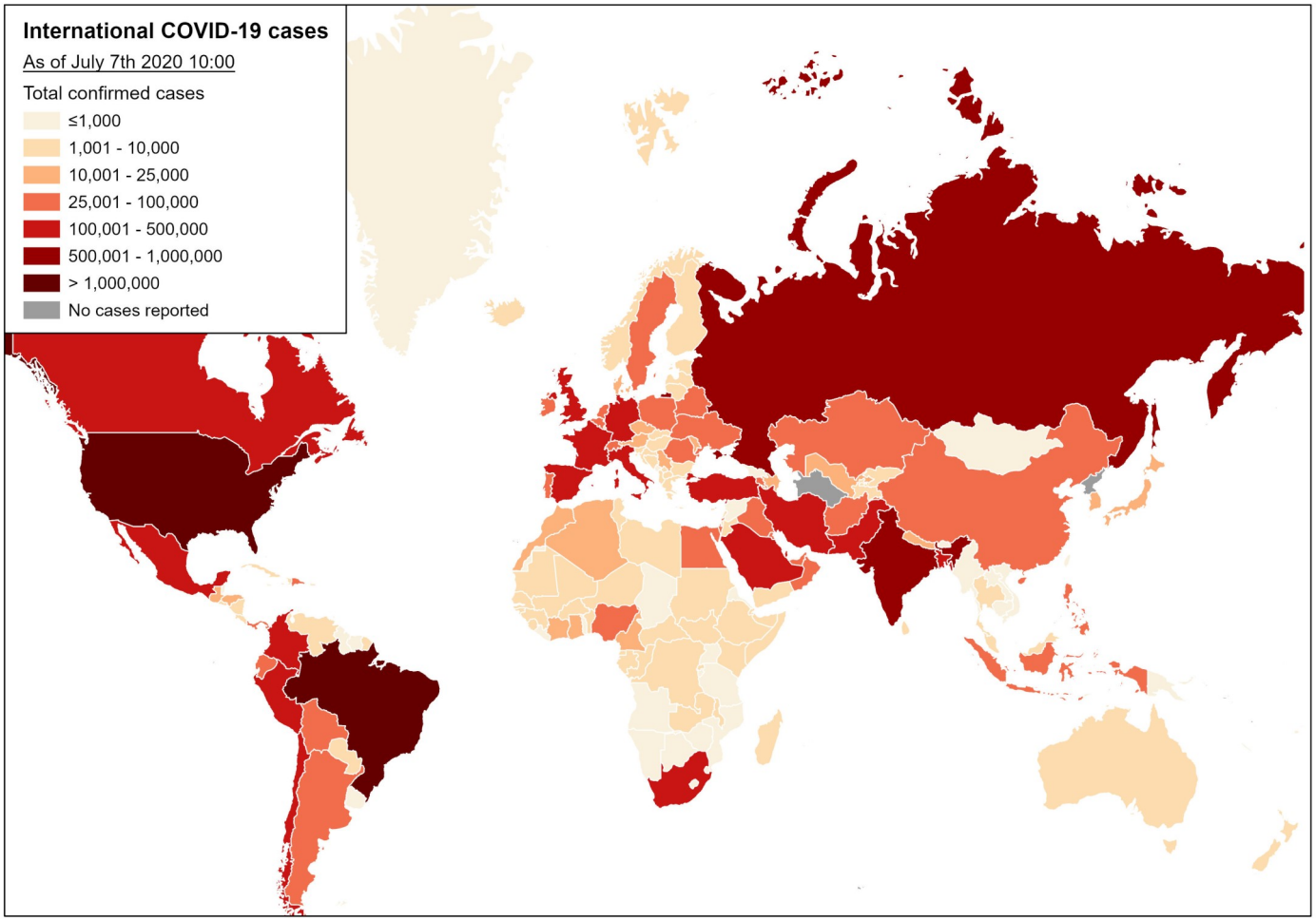
Figure 35: SARS-CoV-2 antibody seroprevalence in blood donors by age group, using Euroimmun test adjusted for sensitivity (82.5%) and specificity (99.1%); error bars show 95% confidence intervals



Global situation

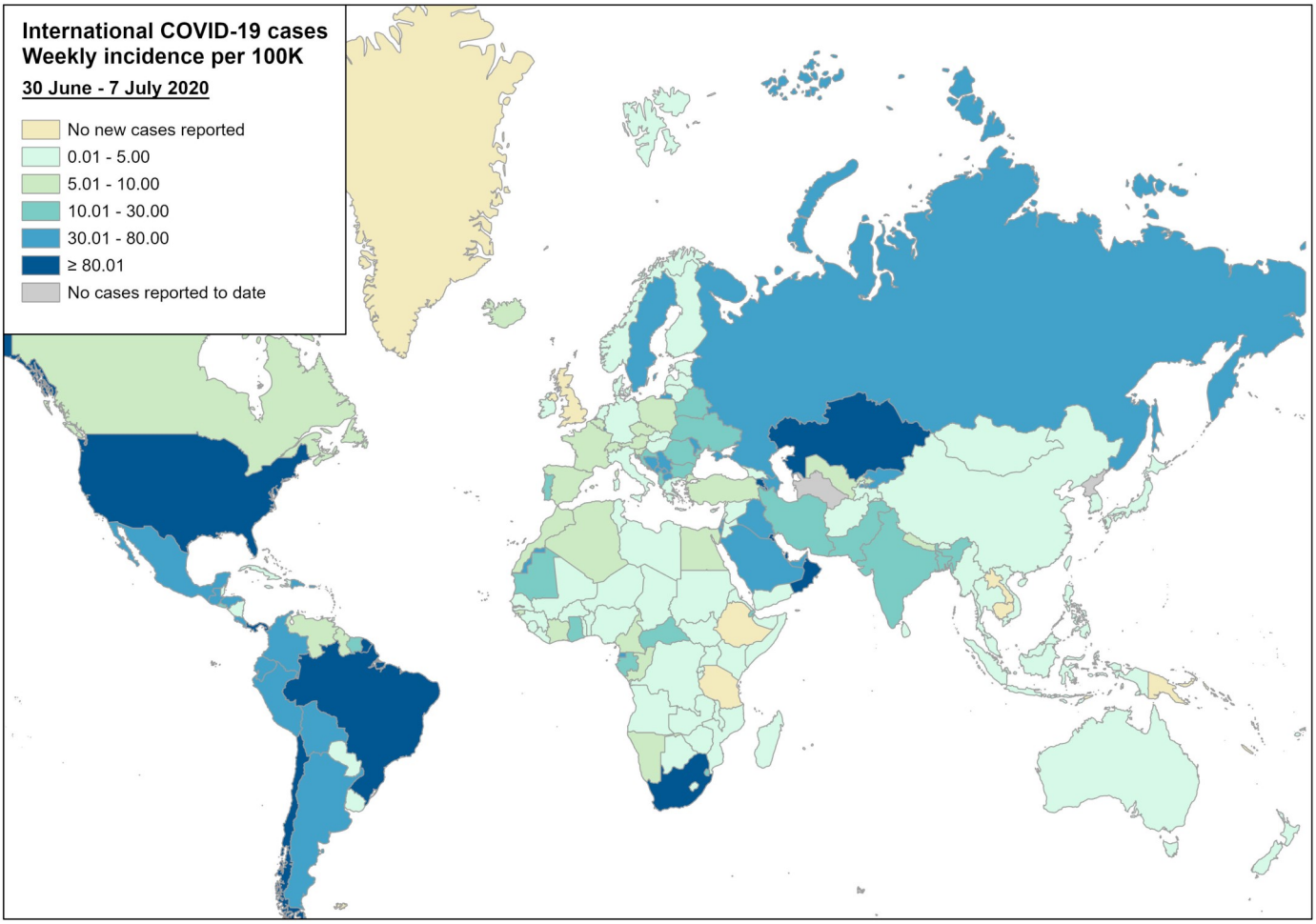
Globally, up to 7 July 2020, a total of 11,546,023 cases of COVID-19 infection have been reported worldwide, including 537,520 COVID-19 related deaths.

Figure 36: Global map of cumulative COVID-19 cases



Global situation

Figure 37: Global map of weekly COVID-19 case incidence rate per 100,000, week 27 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.