



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 24 (data between 08 June and 14 June 2020) and where available daily data up to 17 June 2020. References to COVID-19 represent the disease name and SARS-CoV-2 represent the virus name.

Summary

Nationally, detections of COVID-19 cases declined or remained similar to the previous week, across all age groups and regions during week 24. Activity remains highest in the North and Midlands.

In week 24, hospitalisation and ICU/HDU admission rates continued to decline slowly. Similarly, there has been a steady decline in COVID-deaths and there has been no significant overall excess all-cause mortality in week 24.

While care home outbreaks have continued to decline, an increase in school and 'other settings' outbreaks have been noted over the past few weeks. Community and syndromic indicators decreased or remained similar to the previous week.

Additional seroprevalence data from healthy adult blood donors in London and the North West is included in this week's report. There has been a plateauing in the seroprevalence data since week 18 with a prevalence of 14.9% in London and 8.8% in the North West of England. Data is also presented from national paediatric residual serum collections and GP collections in over 65s for the first time and. A prevalence of 5.5% was observed in May in children and adolescents (aged under 20 years) and a prevalence of 3.2% was observed in adults aged 65 years and older.

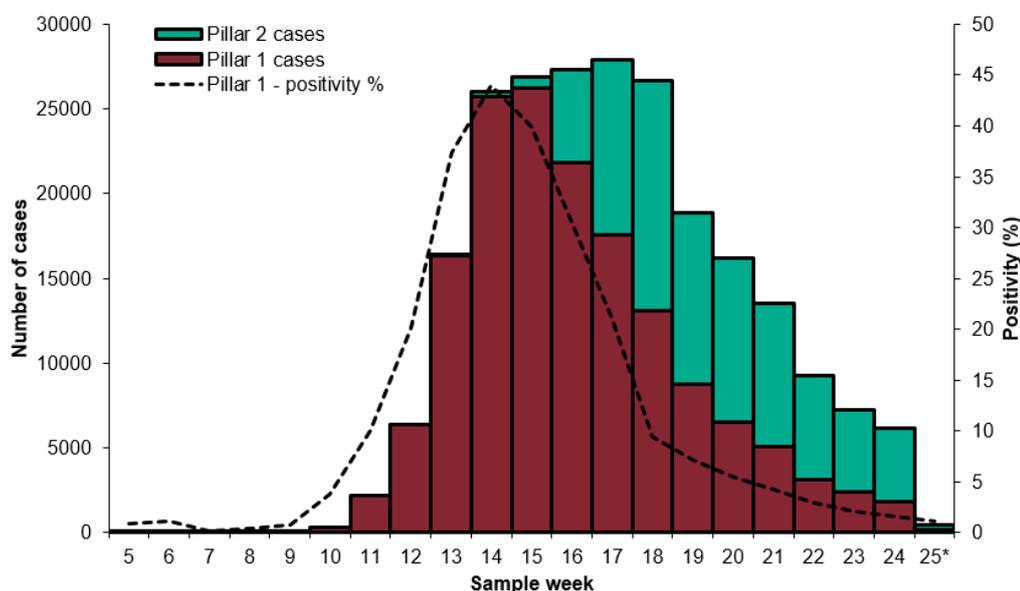
As of 09:00 on 17 June 2020, a total of 1,251,555 people have been tested under Pillar 1. A total of 231,889 have been confirmed positive for COVID-19 in England under Pillar 1 and 2.

Figures 1 to 4, 6 and 8 to 10 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 24. 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 of England.

Figure 1: Laboratory confirmed COVID-19 cases tested under Pillar 1 (n=157,797) and Pillar 2 (n=74,092), 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=155,510) and (b) Pillar 2 (n=73,232)

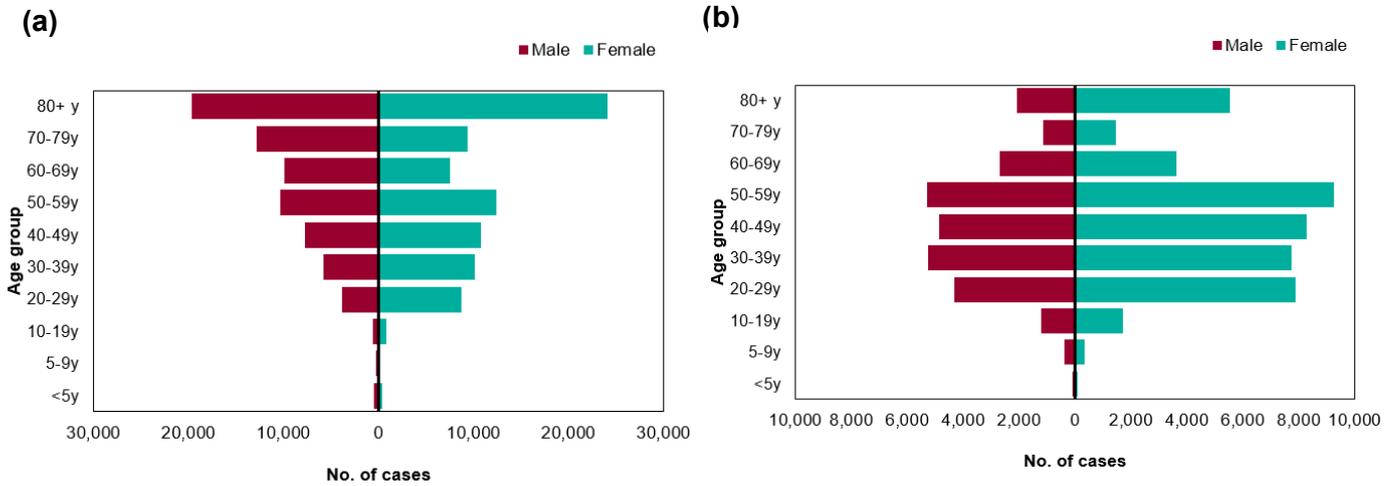


Figure 3: Weekly laboratory confirmed COVID-19 case rates per 100,000, tested under (a) Pillar 1 and (b) Pillar 2, by gender

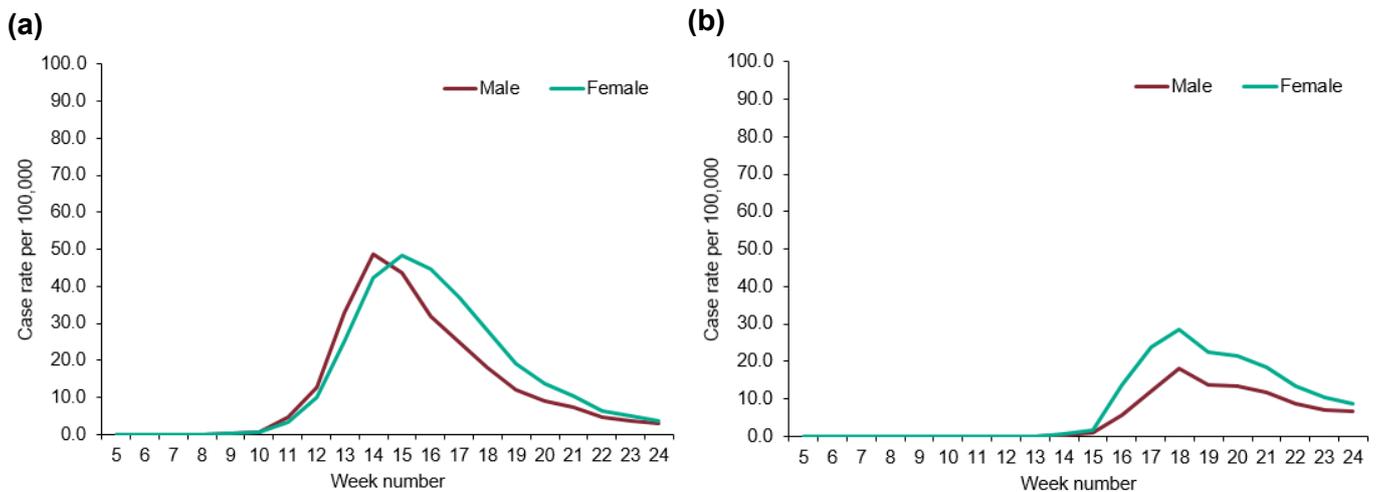


Figure 4: Weekly laboratory confirmed COVID-19 case rates per 100,000, tested under (a) Pillar 1 and (b) Pillar 2, by age group

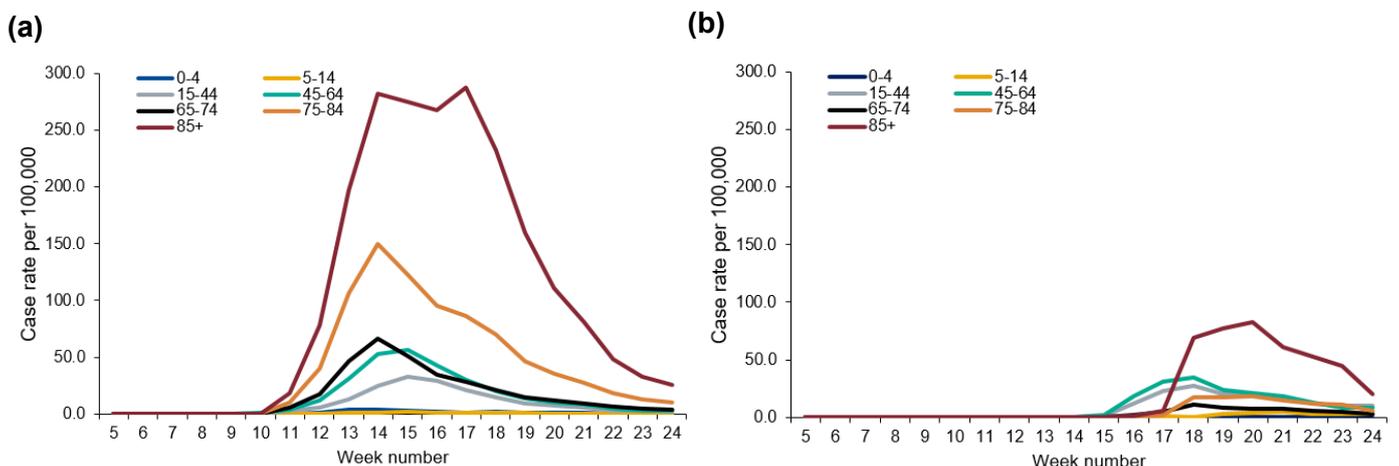
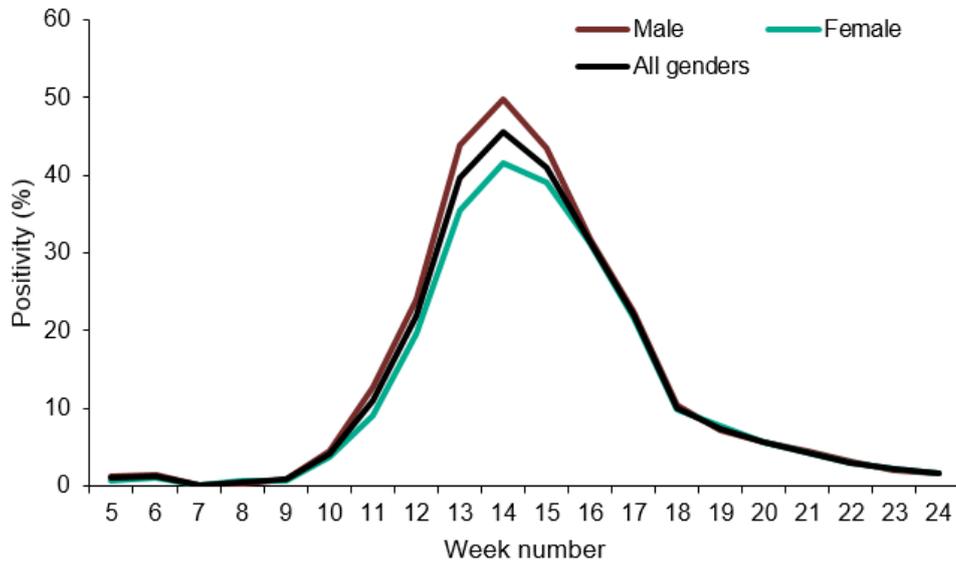
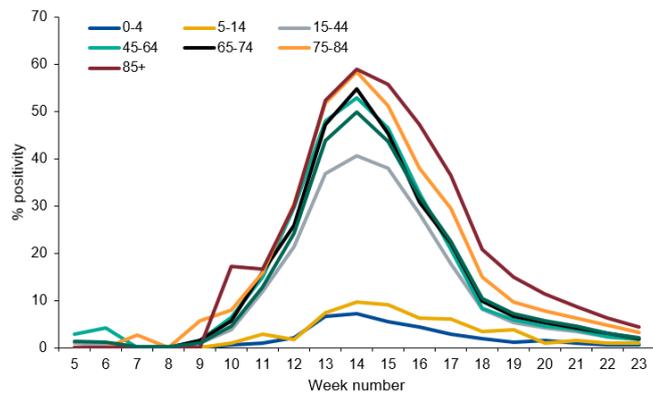


Figure 5: Weekly positivity (%) of laboratory confirmed COVID-19 cases tested under Pillar 1, (a) overall and by gender and (b) by male and age group (c) by female and age group (SGSS and Respiratory DataMart)

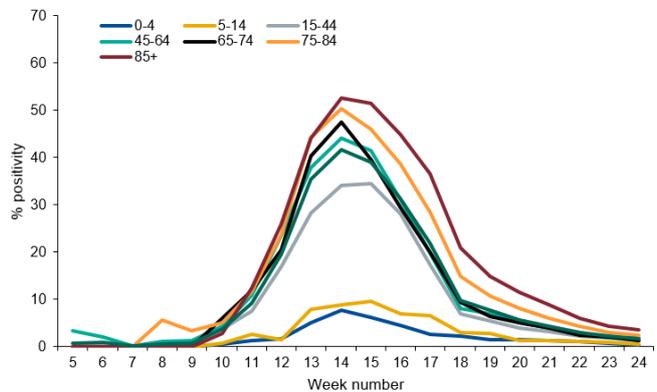
(a) Overall positivity % and by gender



(b) Male



(c) Female



PHE Centres and upper-tier local authority (UTLA)

Table 1: Cumulative number of cases under Pillar 1 (n=151,312) and Pillar 2 (n=72,570) and total number of people tested under Pillar 1 (n=1,148,776) by PHE Centres

PHE Centres	Pillar 1 cases	Pillar 2 cases	Total number of people tested (under Pillar 1 only)
North East	10,481	4,301	64,557
North West	26,859	13,290	160,510
Yorkshire & Humber	15,016	11,123	121,691
West Midlands	16,807	7,423	125,049
East Midlands	9,663	8,853	79,919
East of England	15,350	7,601	127,919
London	27,354	5,638	171,838
South East	21,890	9,786	178,406
South West	7,892	4,555	118,887

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

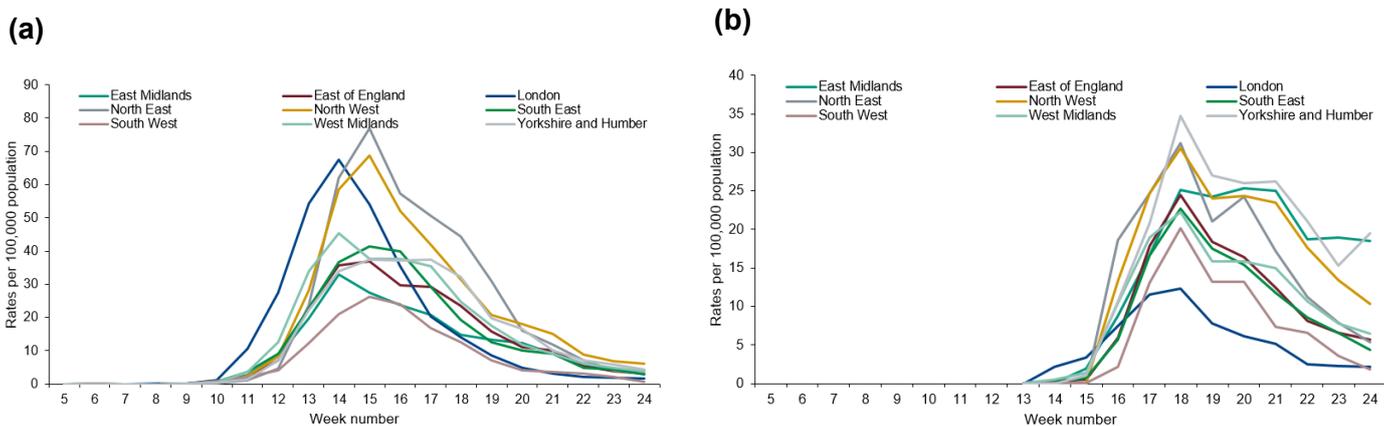


Figure 7: Weekly positivity of laboratory confirmed COVID-19 cases tested under Pillar 1 (%) by PHE Centres and sample week, (SGSS and Respiratory DataMart)

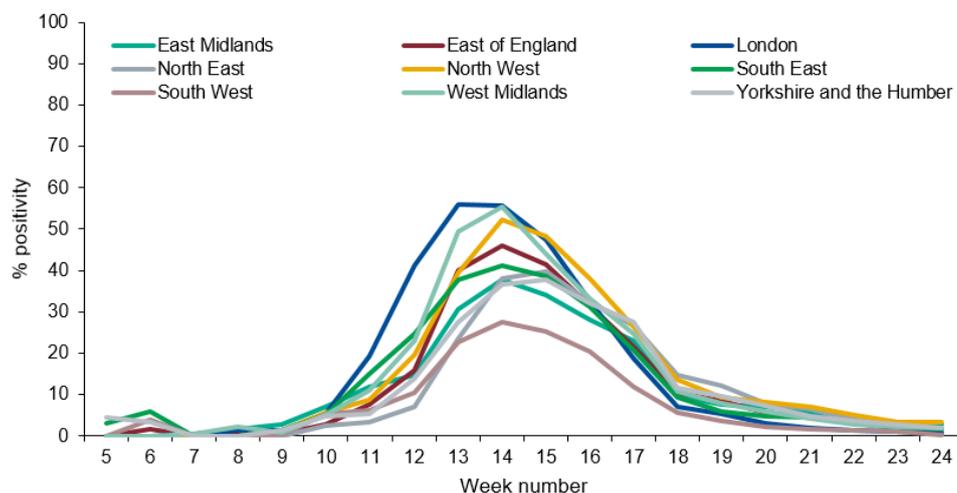


Figure 8: Cumulative rate of COVID-19 cases per 100,000 population tested under Pillar 1 and 2, by upper-tier local authority, England (box shows enlarged maps of London area)

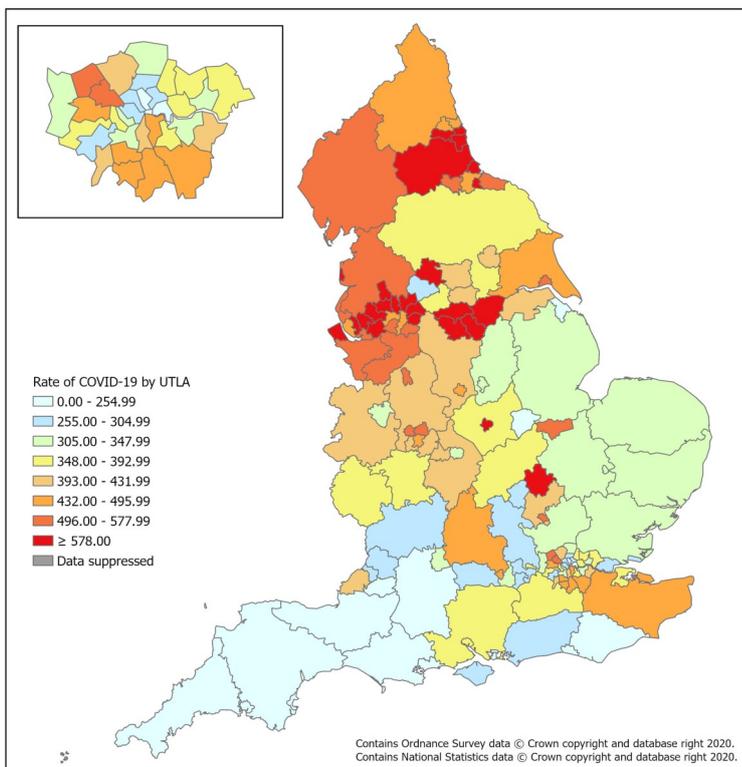
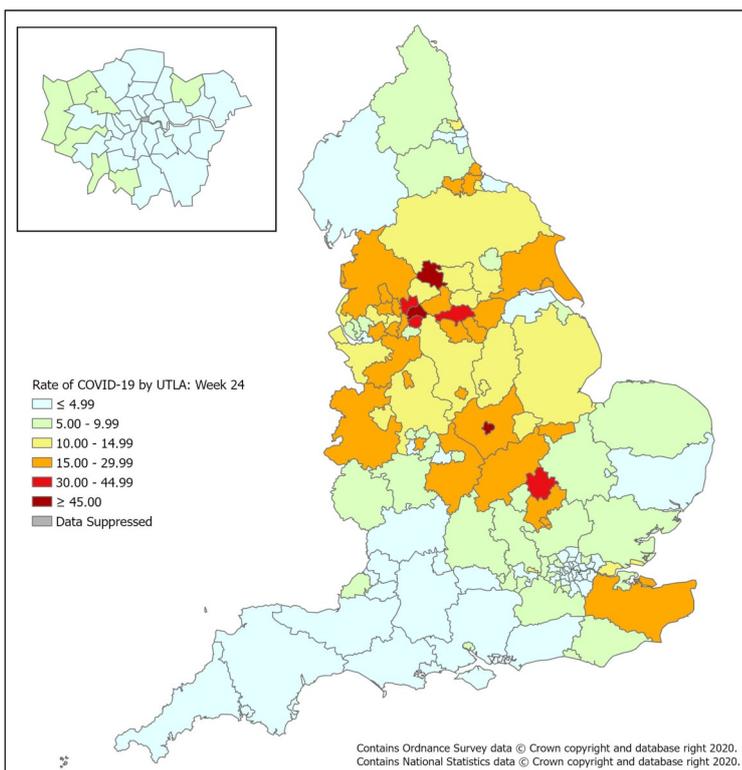


Figure 9: Weekly rate of COVID-19 cases per 100,000 population tested under Pillar 1 and 2, by upper-tier local authority, England (box shows enlarged maps of London area)



Ethnicity

Figure 10: Ethnic group of cumulative laboratory confirmed COVID-19 cases tested under Pillar 1 and 2 (n=194,281)

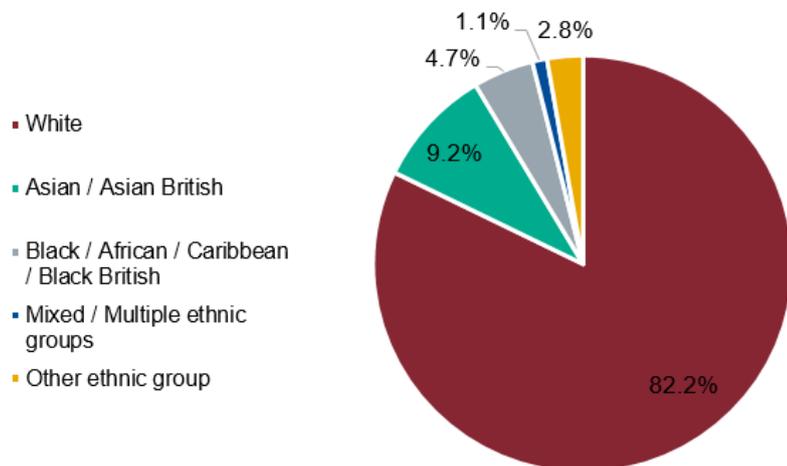


Table 2: Number of cases tested under Pillar 1 and 2, and percentage (%) by ethnic group and week

Ethnic group	Week - number (%)			
	21	22	23	24
White	8,504 (85.2)	5,630 (82.7)	4,099 (78.0)	3,131 (72.1)
Asian / Asian British	838 (2.9)	781 (2.7)	789 (3.0)	940 (2.6)
Black / African / Caribbean / Black British	292 (8.4)	183 (11.5)	156 (15.0)	112 (21.7)
Mixed / Multiple ethnic groups	114 (1.1)	78 (1.1)	80 (1.5)	48 (1.1)
Other ethnic group	236 (2.4)	135 (2.0)	131 (2.5)	110 (2.5)

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

Acute respiratory outbreaks, England

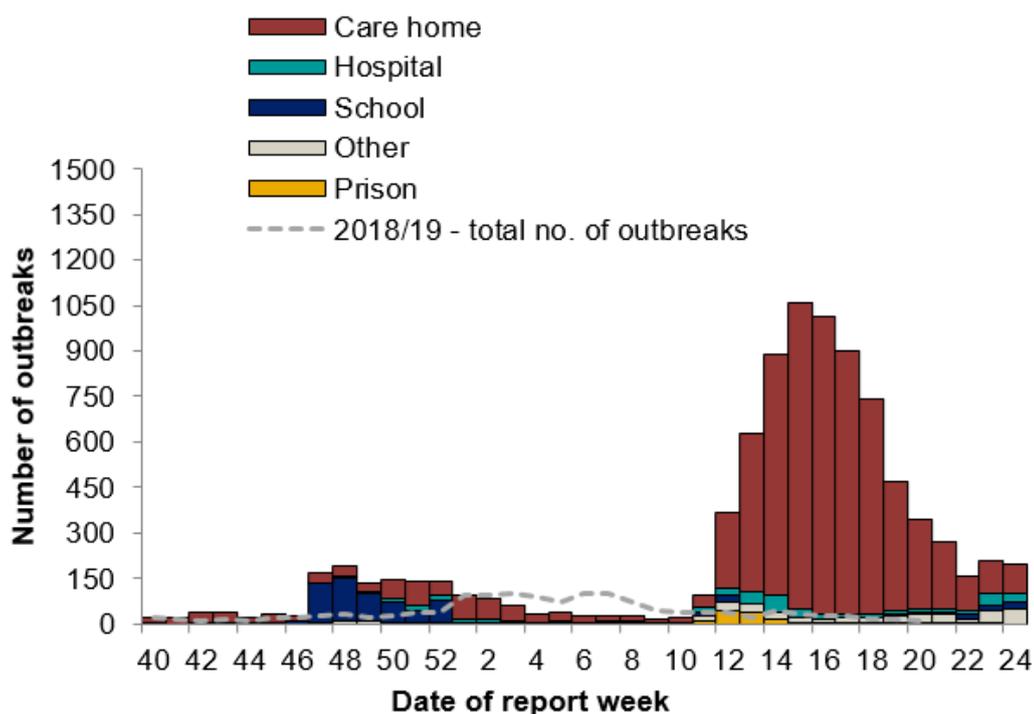
Information on acute respiratory outbreaks is collected by PHE's Health Protection Teams (HPTs).

An outbreak is defined as two or more people experiencing a similar illness, which appears to be linked to a particular setting.

199 new acute respiratory outbreaks have been reported in week 24 (Figure 11):

- 101 outbreaks were from care homes where 67 tested positive for SARS-CoV-2
- 24 outbreaks were from hospitals where 21 tested positive for SARS-CoV-2
- 24 outbreaks were from schools where 12 tested positive for SARS-CoV-2
- No outbreaks were from prisons this week
- 50 outbreaks were from the Other Settings category where 34 tested positive for SARS-CoV-2

Figure 11: Number of acute respiratory outbreaks by institution, England



NHS 111

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

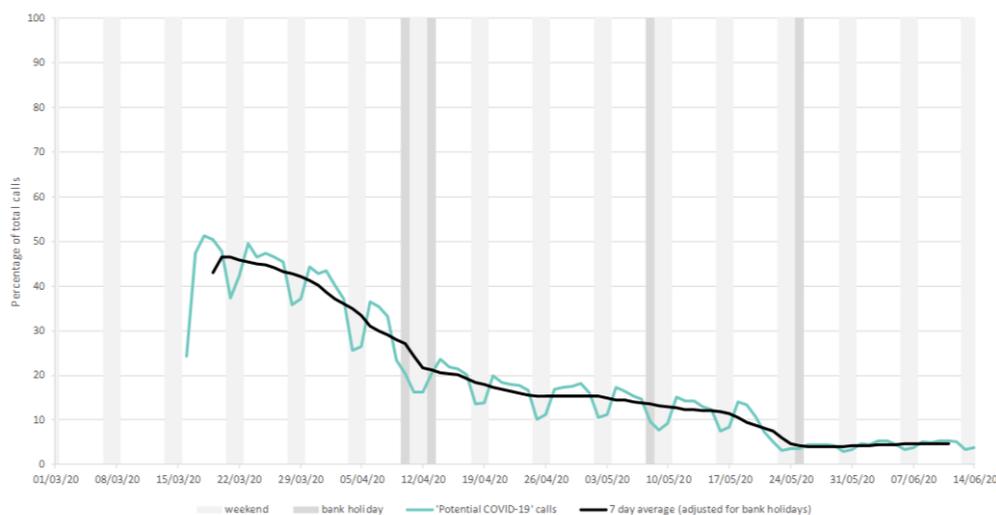
Up to 14 June 2020, the daily percentage of NHS 111 ‘potential COVID-19-like calls (as a percentage of total NHS 111 calls) and the daily number of NHS 111 ‘potential COVID-19’ completed online assessments remained stable (Figure 12).

All NHS 111 indicator trends should be interpreted with caution due to changes in triage pathways and national advice regarding access to health care services during the COVID-19 pandemic.

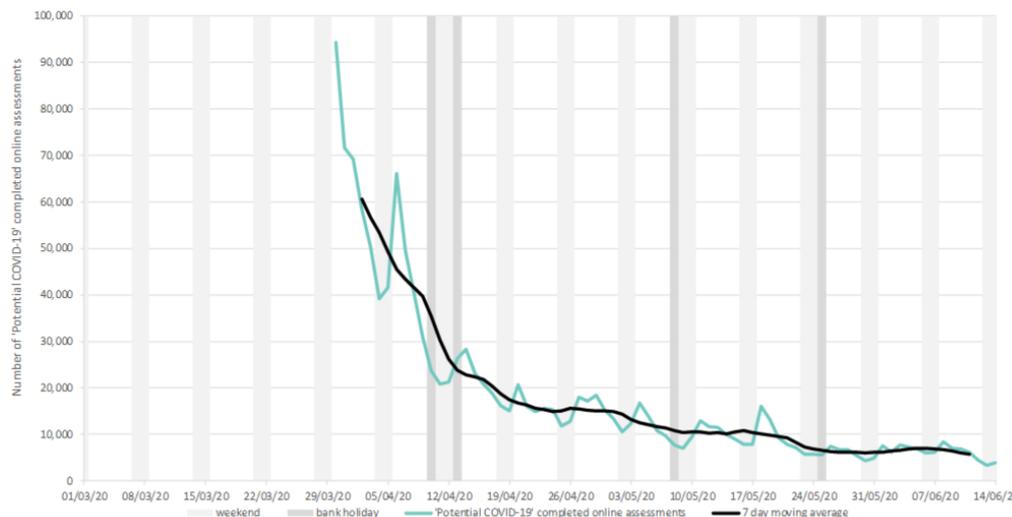
Further information about these caveats is available from the [PHE Remote Health Advice Syndromic Surveillance](#) bulletin.

Figure 12 (a-b): NHS 111 telephony and online potential COVID-19 indicators, England

(a) Daily ‘potential COVID-19’ calls received through the NHS 111 telephony service as a percentage of total calls (and moving 7-day average), England



(b) Daily ‘potential COVID-19’ NHS 111 online assessments as the number of completed online assessments (and 7-day moving average), England



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.

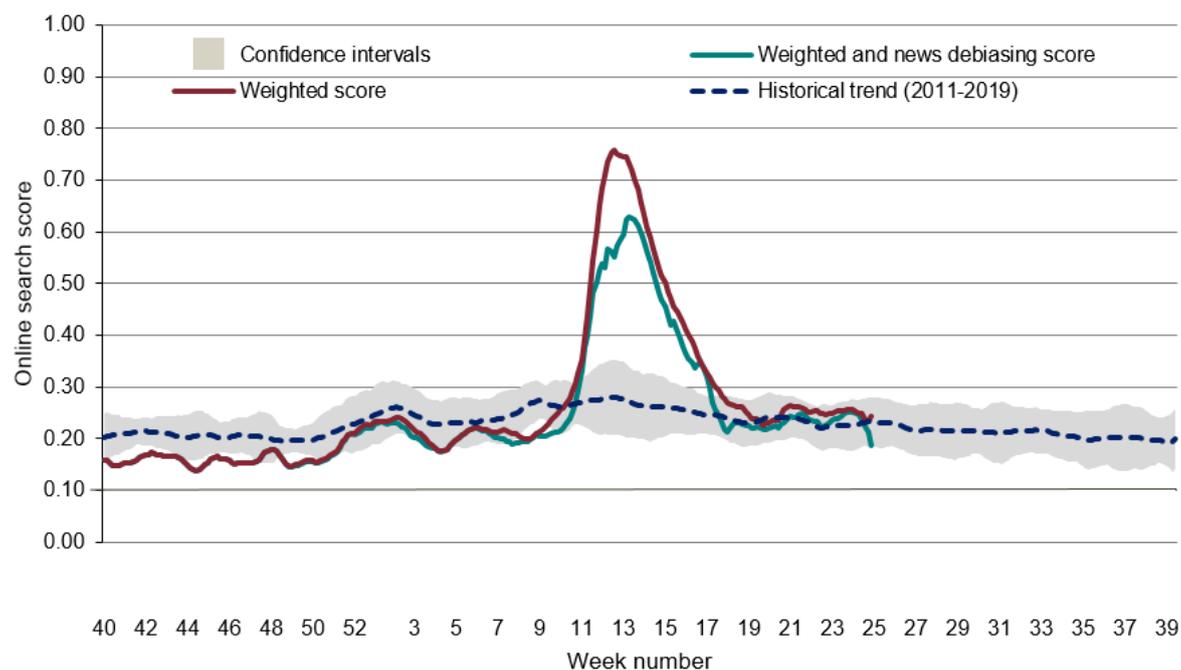
Google search queries

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 weighted score remained stable while the weighted media-debiasing score decreased throughout week 24 (Figure 13).

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

Figure 13: Normalised Google search score for COVID-19 symptoms, with weighted score for media-debiasing and historical trend, England



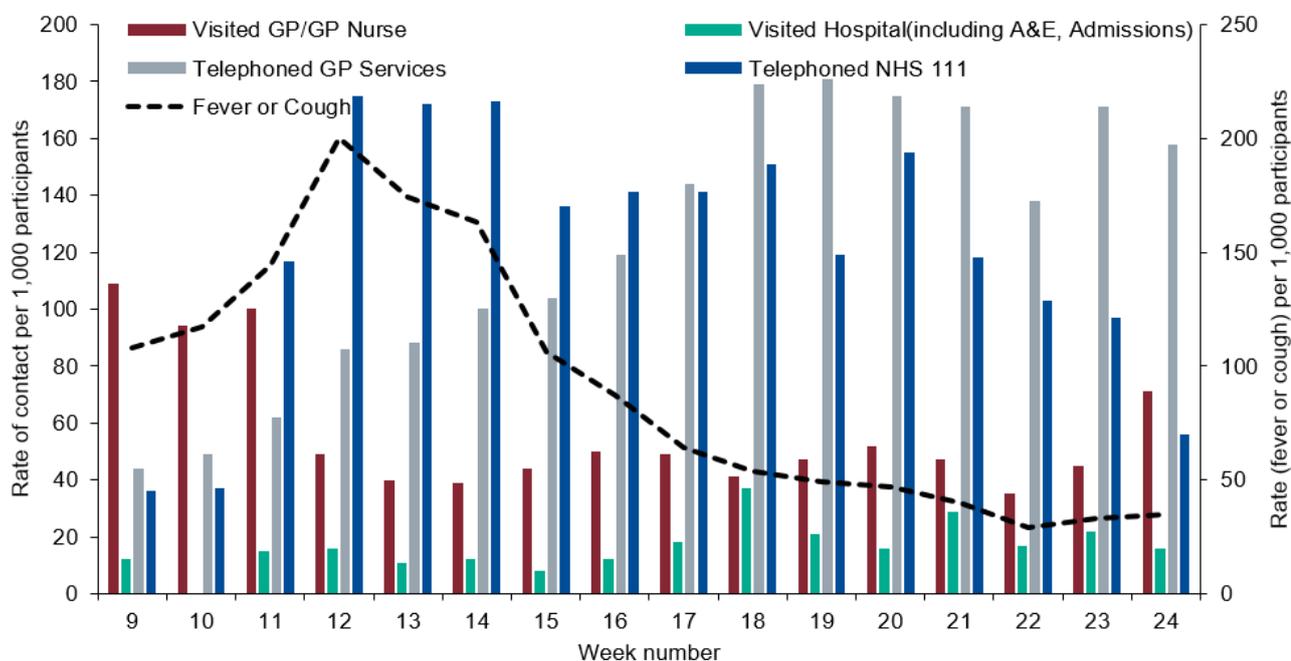
Internet based surveillance

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 3,651 participants completed the weekly COVID-19 surveillance survey in week 24, of which 126 (3.5%) reported fever or cough, similar to 3.3% reported in week 23. There has been an increase in the number of participants visiting their GP/GP nurse since week 21 however the most commonly reported method of access to healthcare services remains through telephone services (Figure 14).

Figure 14: Rate of contact with different healthcare services among FluSurvey participants reporting fever or cough symptoms, week 09 to 24, 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 14 June 2020, GPIH consultations for potential COVID-19-like and ILI consultations remained stable (Figure 15). Through GPOOH consultations (up to 14 June 2020), the daily percentage (as a percentage of total contacts with a Read code) for ILI and difficulty breathing/wheeze/asthma contacts decreased (Figure 16).

Please note GP data should be interpreted with caution due to changes in advice regarding accessing GP surgeries due to COVID-19. Influenza-like-illness (ILI) rates are now approaching baseline levels after a recent change in the use of a new COVID-19 Care Pathway template which had affected recording of influenza-like illness from mid-April (Figure 12(a)). Further information about these caveats is available from the [PHE GP In Hours Syndromic Surveillance](#) bulletin.

Figure 15 (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

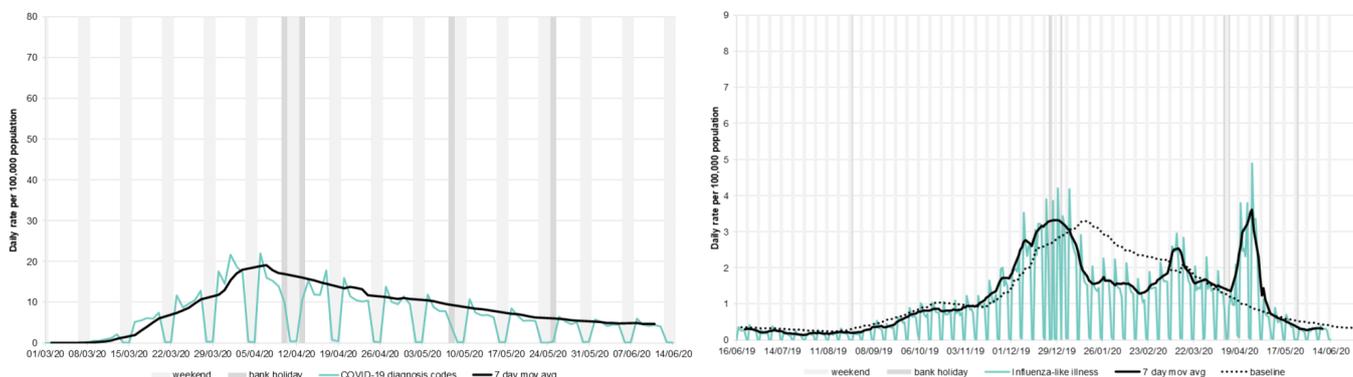
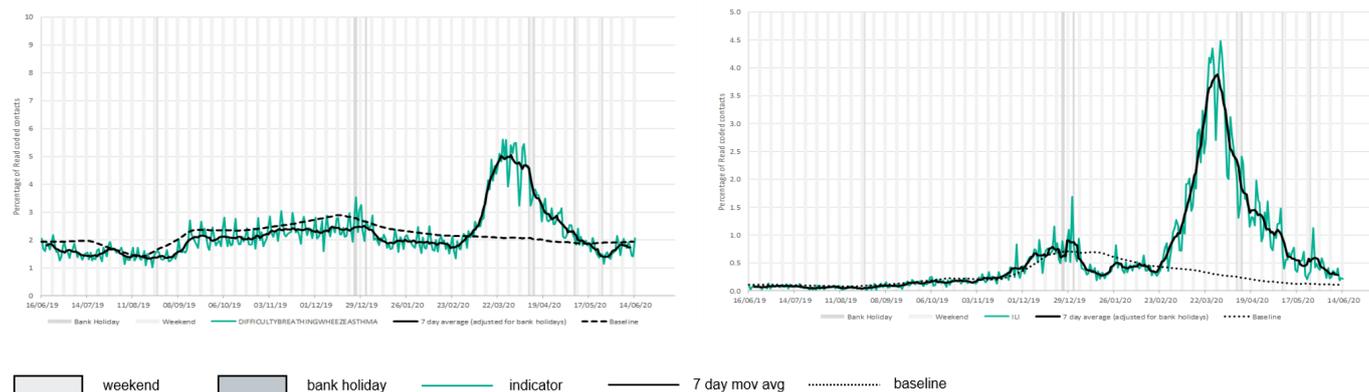


Figure 16 (a-b) : GPOOH contacts indicators, England

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

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



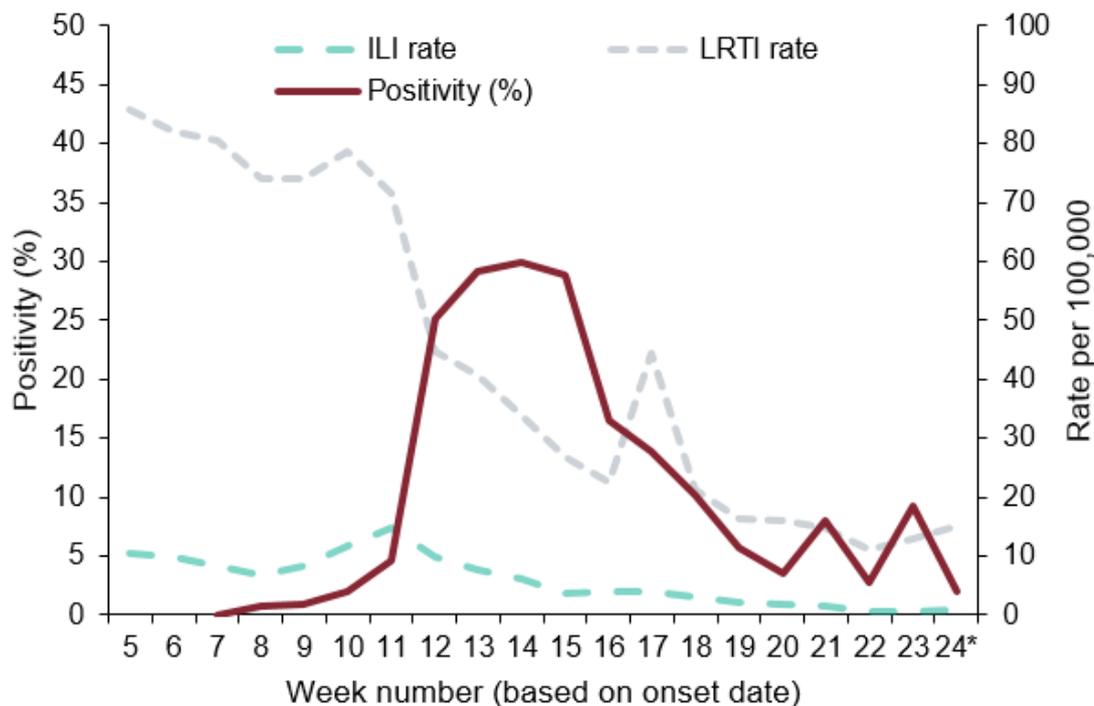
RCGP Swabbing Scheme

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 17 June 2020, a total of 4,607 patients have been tested of which 601 have tested positive for SARS-CoV-2 through this scheme. The overall positivity decreased at 1.9% (1/52) in week 24 compared to 9.2% (13/141) in the previous week (Figure 17). All of patients who tested positive in week 23 and 24 were residents from a single care home therefore the increase in positivity is not reflective of activity in the community. The overall denominator for patients tested through GPs has decreased due to an increase in patients being tested under Pillar 2.

Consultations for ILI and LRTI have increased slightly but remain stable (Figure 17). The highest positivity by region was observed in the South (Figure 18). Due to the total number of patients tested being less than 10, the positivity by age groups was not calculated. The highest positivity by gender was observed in females (Figure 19).

Figure 17: 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 18: Overall positivity (%) (weekly) by PHE Region, England (RCGP)

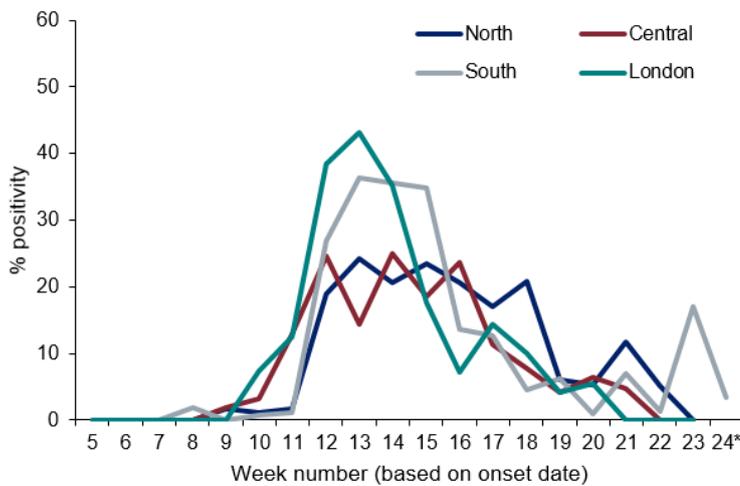
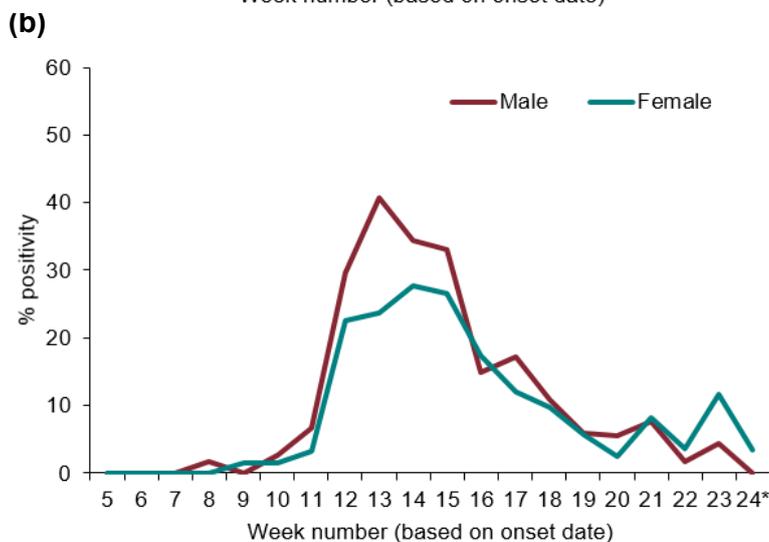
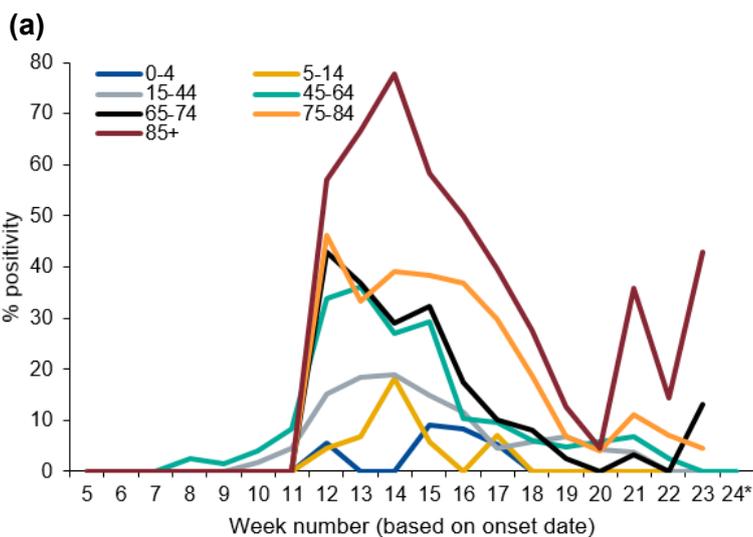


Figure 19: Positivity (%) (weekly) by (a) age group and (b) gender, England (RCGP)



*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

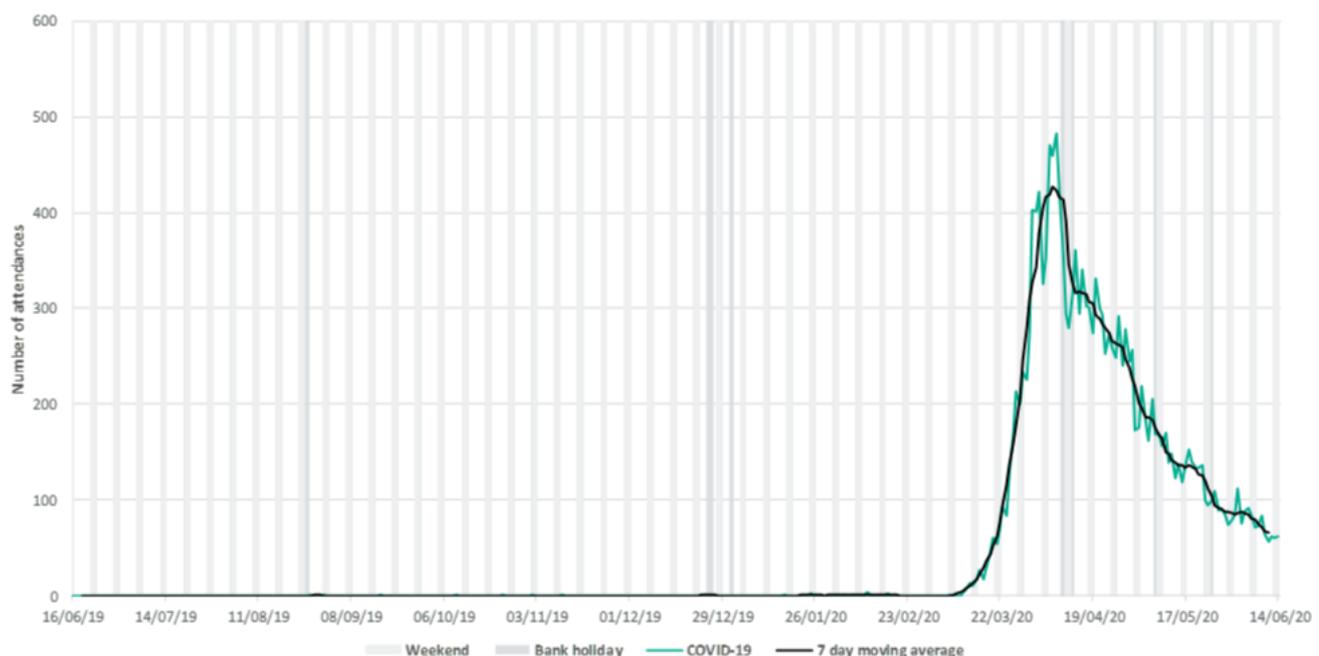
Emergency Department attendances, Syndromic surveillance

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

Up to 14 June 2020, the daily number of ED attendances for all ages as reported by 76 EDs in England during week 24, for COVID-19-like attendances decreased (Figure 20).

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



COVID-19 Hospitalisation in England Surveillance System (CHES)

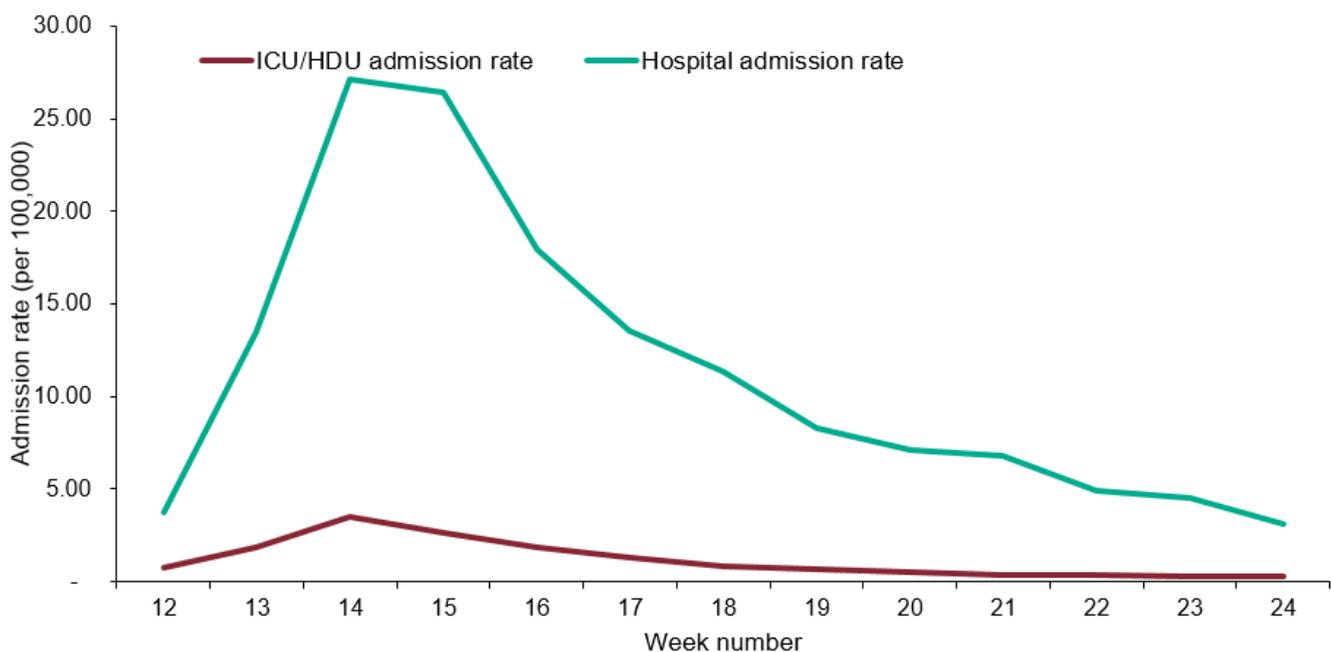
The CHES surveillance system monitors daily new acute respiratory infections (ARI) and new laboratory confirmed COVID-19 admissions to hospital including critical care (ICU/HDU). Trends in hospital and critical care admission rates need to be interpreted in the context of testing recommendations.

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 24, the weekly admission rates for both hospitalisations and ICU/HDU COVID-19 admissions decreased and remained stable.

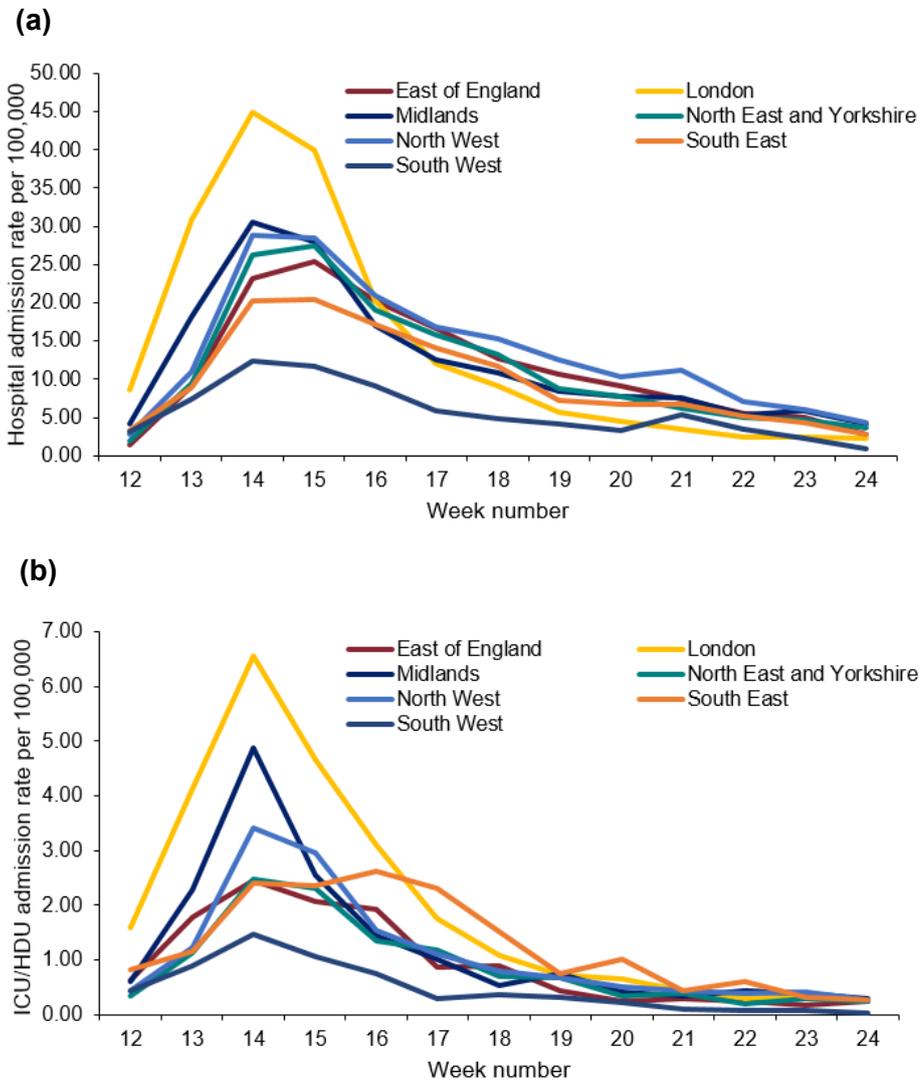
The hospitalisation rate was at 3.09 per 100,000 in week 24 compared to 4.52 per 100,000 in the previous week. The ICU/HDU rate was at 0.24 per 100,000 in week 24 compared to 0.30 per 100,000 in the previous week (Figure 21). By NHS regions, the highest hospitalisation rate was observed in the North West and the highest ICU/HDU rate was observed in the Midlands (Figure 22).

Figure 21: Weekly overall hospital and ICU/HDU admission rates per 100,000 of new COVID-19 positive cases reported through CHES, England



COVID-19 Hospitalisation in England Surveillance System (CHES)

Figure 22: Weekly admission rate for (a) hospital admissions and (b) ICU/HDU admissions by NHS regions of new COVID-19 positive cases reported through CHES

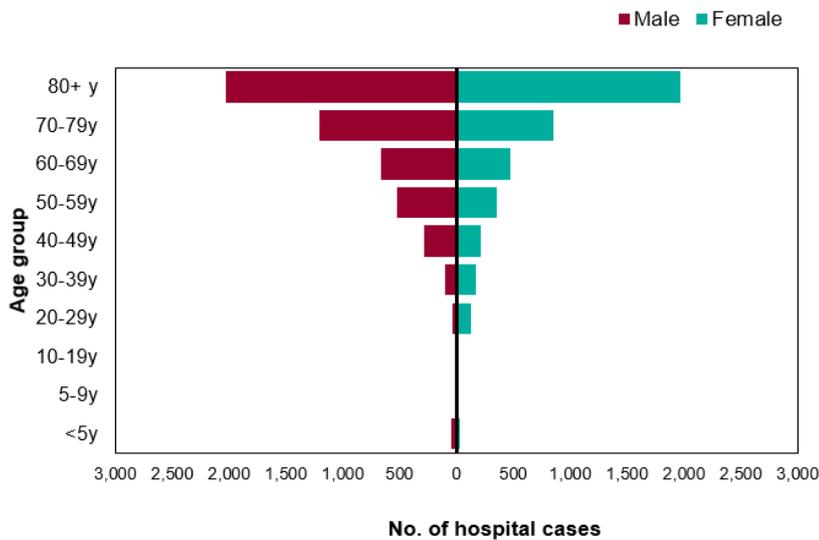


COVID-19 Hospitalisation in England Surveillance System (CHES)

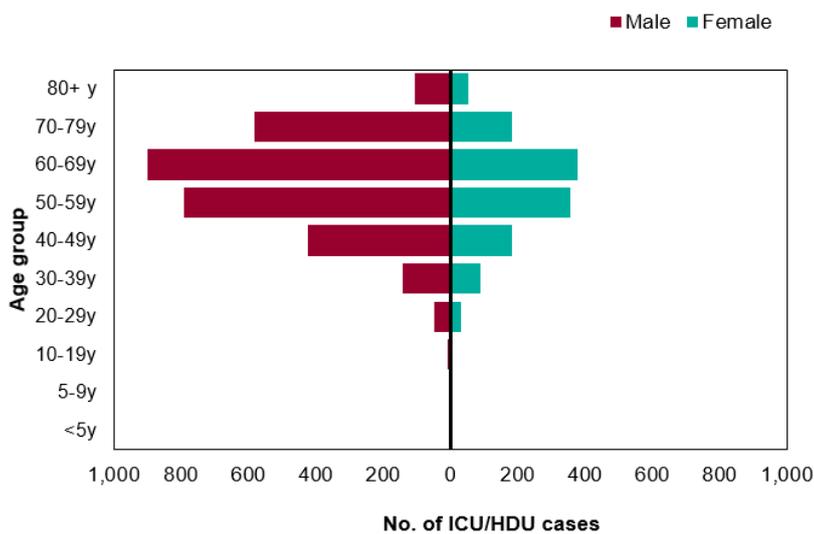
Figure 23 and 24 are based on individual patient level data which are provided to CHES from a subset of NHS Acute Trusts, therefore the data should be interpreted with caution as the distribution of age, sex and ethnic group may not be representative of all hospitalised patients.

Figure 23: Age/sex pyramid of new (a) hospital (lower level of care) (n=9,114) and (b) ICU/HDU (n=4,295) COVID-19 cases reported through CHES, England

(a)

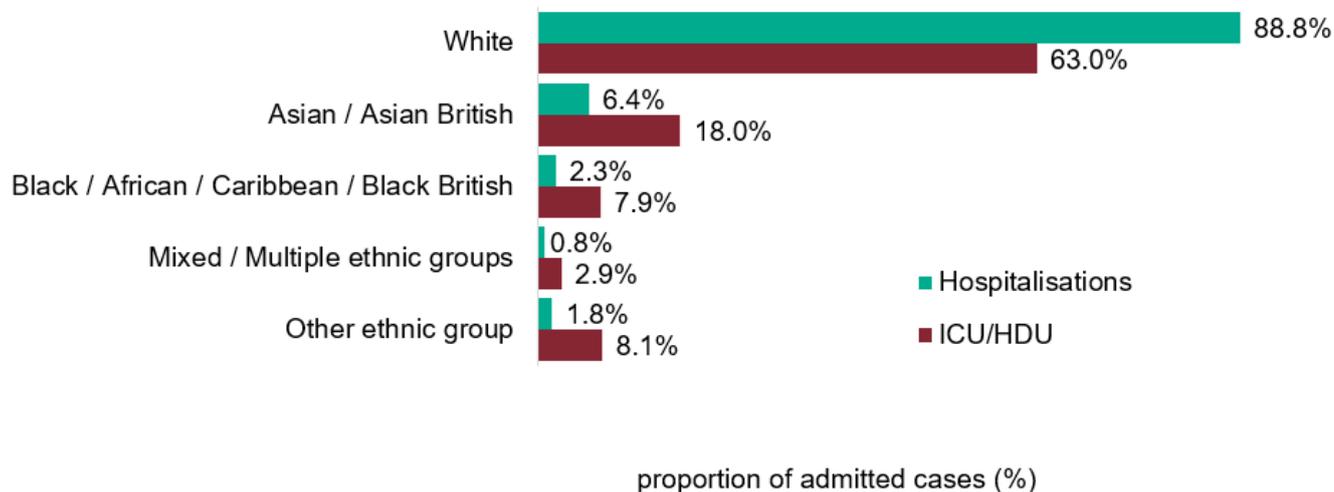


(b)



COVID-19 Hospitalisation in England Surveillance System (CHESS)

Figure 24: Ethnic group of new hospitalisations (lower level of care) (n=8,287) and ICU/ HDU (n=3,617) COVID-19 cases reported through CHESS, England



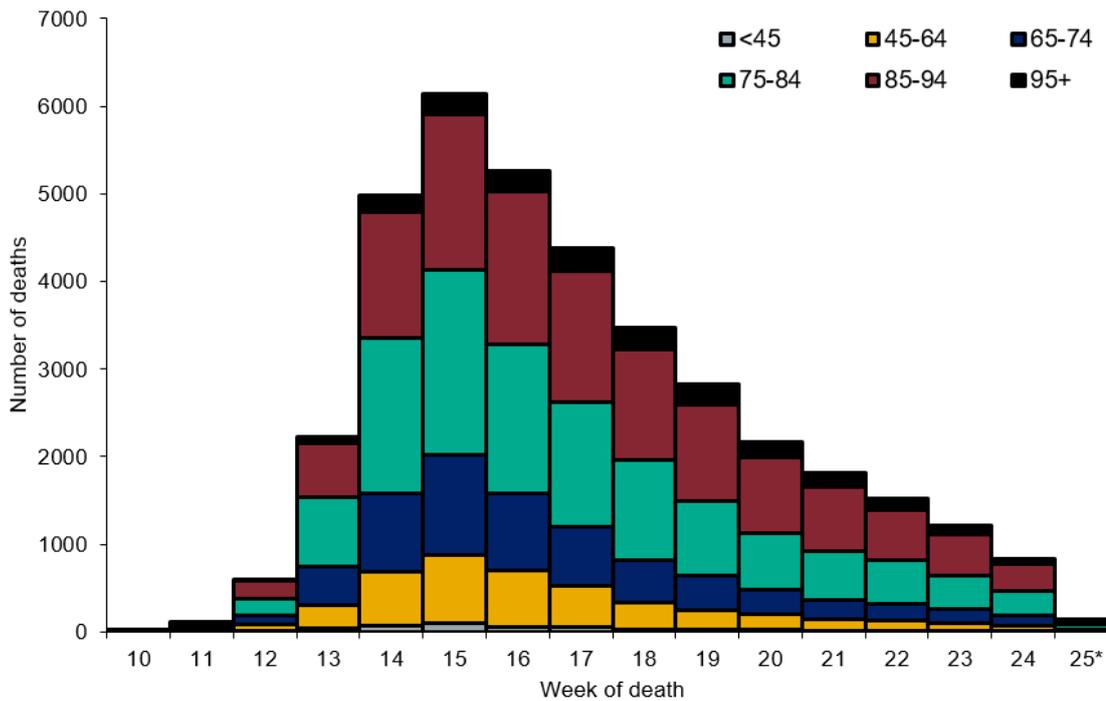
UK Severe Respiratory Failure (SRF) centres admissions

Up to 15 June 2020, a total of 178 laboratory confirmed COVID-19 admissions have been reported from the 5 SRFs in England. There was one laboratory confirmed COVID-19 admission reported in week 24 compared to 8 admissions in week 23.

Cumulative deaths

As of 5pm on 16 June 2020, a total of 37,692 cases under Pillar 1 and 2 with confirmed COVID-19 have died in England.

Figure 25: Cumulative number of deaths by week of death and age group, England (n=37,692)



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

Table 3: Cumulative number of deaths (Pillar 1 and 2) by PHE Centres (n=37,323)

PHE Centres	Number of deaths
North East	2,223
North West	6,150
Yorkshire & Humber	3,575
West Midlands	4,735
East Midlands	2,922
East of England	4,288
London	6,540
South East	4,924
South West	1,966

Cumulative deaths

Figure 26: Age/sex pyramid of laboratory confirmed COVID-19 (Pillar 1 and 2) deaths (n=37,692)

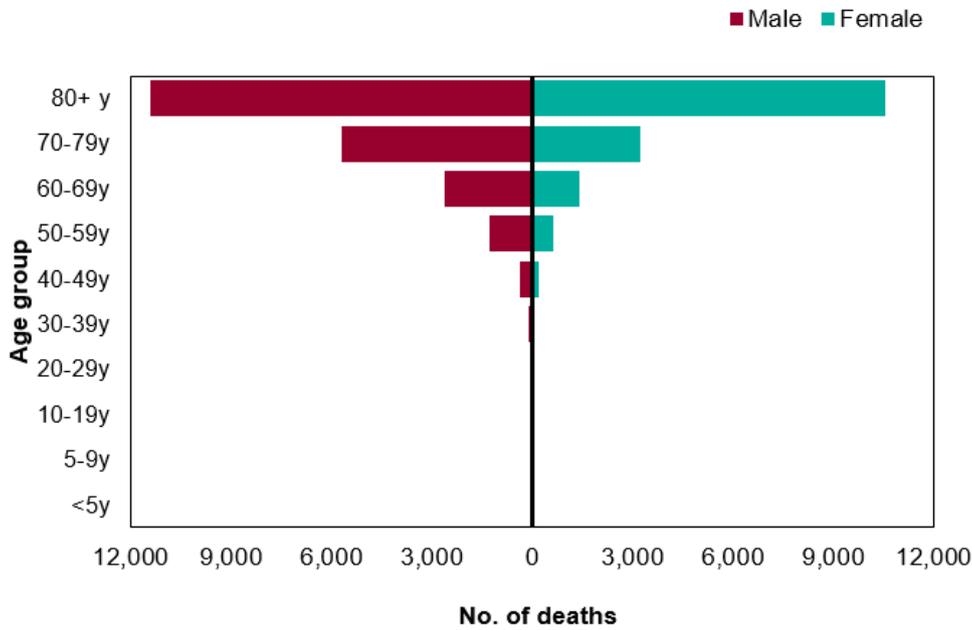
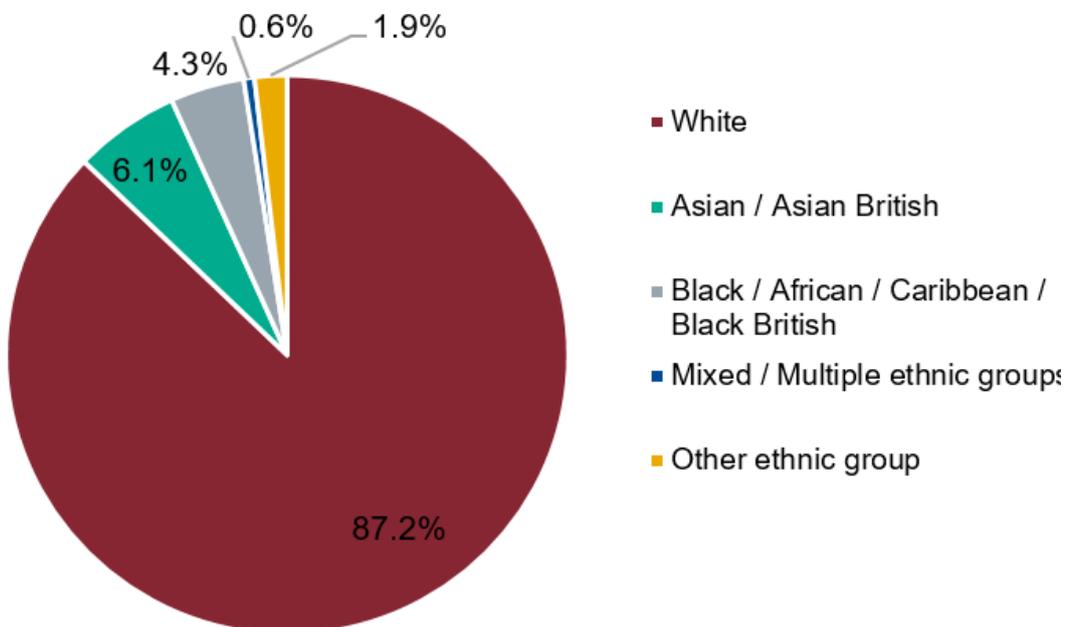


Figure 27: Ethnic group of confirmed COVID-19 (Pillar 1 and 2) deaths, England (n= 37,378)



Excess all-cause mortality, UK

In week 24 2020 in England, no statistically significant excess mortality by week of death above the upper 2 z-score threshold was seen overall, by age group or sub nationally (all ages), after correcting GRO disaggregate data for reporting delay with the standardised EuroMOMO algorithm (Figure 28 and Table 4).

This data is provisional due to the time delay in registration; numbers may vary from week to week.

Figure 28: Weekly observed and expected number of all-cause deaths in all ages, with the dominant circulating influenza type(s), England, 2015 to week 24 2020

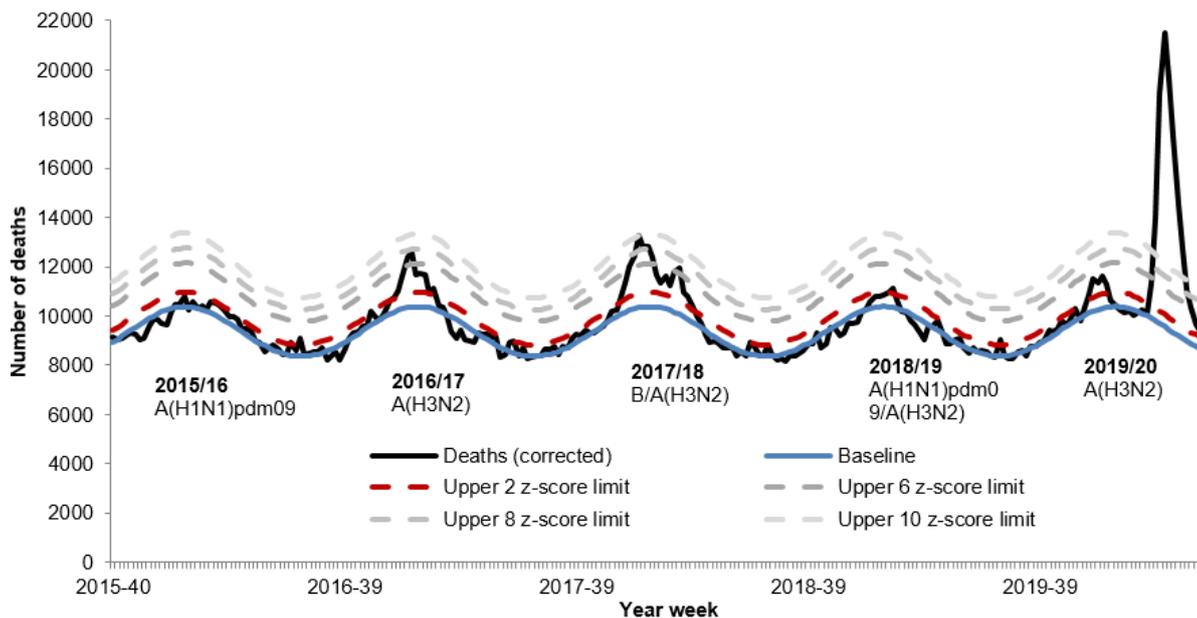


Table 4: Excess mortality by age group, England

Age group (years)	Excess detected in week 24 2020?	Weeks with excess in 2019/20
<5	x	48, 10
5-14	x	46
15-64	x	02; 11-23
65+	x	50-02;12-23

* Excess mortality is calculated as the observed minus the expected number of deaths in weeks above threshold

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, the results from samples tested from the following sources are included:

- 1) Residual sera from children and adolescents under 20 years from participating NHS and PHE laboratories across England (SEU and Paediatric collections) collected from early February to late May (weeks 05-22)
- 2) Individuals attending for routine blood tests in primary care through the Royal College of General Practitioner's Research and Surveillance Centre (RCGP collection) network aged 65 years and over during weeks 15-20
- 3) Healthy adult blood donors aged 17-69 years, supplied by the NHS Blood and Transplant (NHS BT collection) between weeks 13 -24. Donor samples from different geographic regions (approximately 1000 samples per region) in England are tested each week.

Samples from the SEU and Paediatric collections have been tested using the Abbott assay and the results presented are adjusted for its sensitivity (91.4%) and specificity (99.8%). Adjusted prevalence for individuals under 20 years based on testing samples from the SEU and Paediatric collections combined (n=1345) remained stable at 5.4% (95%CI: 3.6%-7.7%) in April (weeks 14-17) and 5.5% (95% CI: 3.7% -7.8%) in May (weeks 18-22). Prevalence has increased across all age groups with larger increases observed in older age groups. At weeks 18-22, adjusted prevalence is estimated at 2.6% (0.5% - 7.4%) for 1-4 year olds, 5.6% (2.6% - 10.3%) for 5-10 years and 6.0% (3.7% - 9.3%) for 11-19 year olds.

Samples from the RCGP collection have been tested using the Abbott assay. Low prevalence was found among adults aged 65 years and over. In mid-May (weeks 20-21) adjusted prevalence was 3.2% (2% - 4.8%) and there was no clear trend by age group or gender.

The results from testing adult blood donors aged 17-69 years presented here are based on testing using the Euroimmun assay for samples collected between weeks 13-24.

Figure 29 shows the overall prevalence in each region over time which has been adjusted for the accuracy of the Euroimmun assay (sensitivity and specificity). 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 fifth sampling in London and the third set of sampling from the North West regions are included in this week's report (collected in weeks 23/24).

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) and remains stable at 14.9% in the most recent data (weeks 23-24). 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 18-21 demonstrates the impact of lock down measures on new infections.

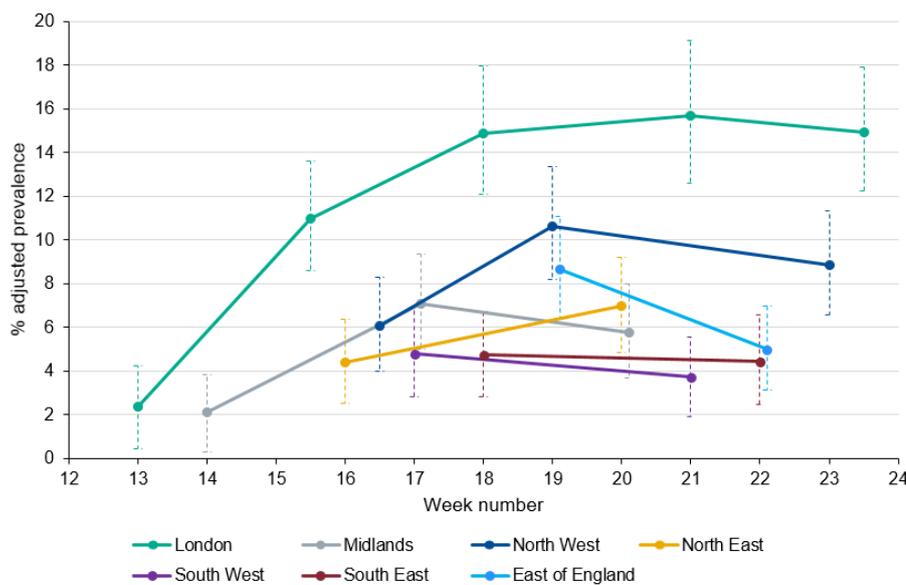
The lower prevalence in samples from other regions including the South East, South West and North East regions is consistent with data from other surveillance systems.

Sero-prevalence epidemiology, England

In some regions prevalence estimates are slightly lower in recent weeks. For example in the Midlands, the adjusted prevalence was 1.2% (week 14), 6.4% (week 17) and 5.0% (week 20). Adjusted prevalence in the North West of England is also slightly lower at 8.8% in week 23 compared with 10.6% in week 19. A more pronounced change has been noted in the East of England with a lower adjusted prevalence of 4.2% (week 22) compared with 8.1% (week 19). This is likely driven by some changes in the precise locations of sampling over time with the most recent set of samples from both regions containing significantly fewer samples from higher prevalence areas e.g. in the most recent set from East of England, there were significantly less samples from areas of higher prevalence with a trend of increased prevalence with proximity to London observed.

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. Over time however the increase was more marked amongst older adults suggesting this age group were being affected later. These patterns may reflect differences in behaviour and mixing patterns in the different age groups.

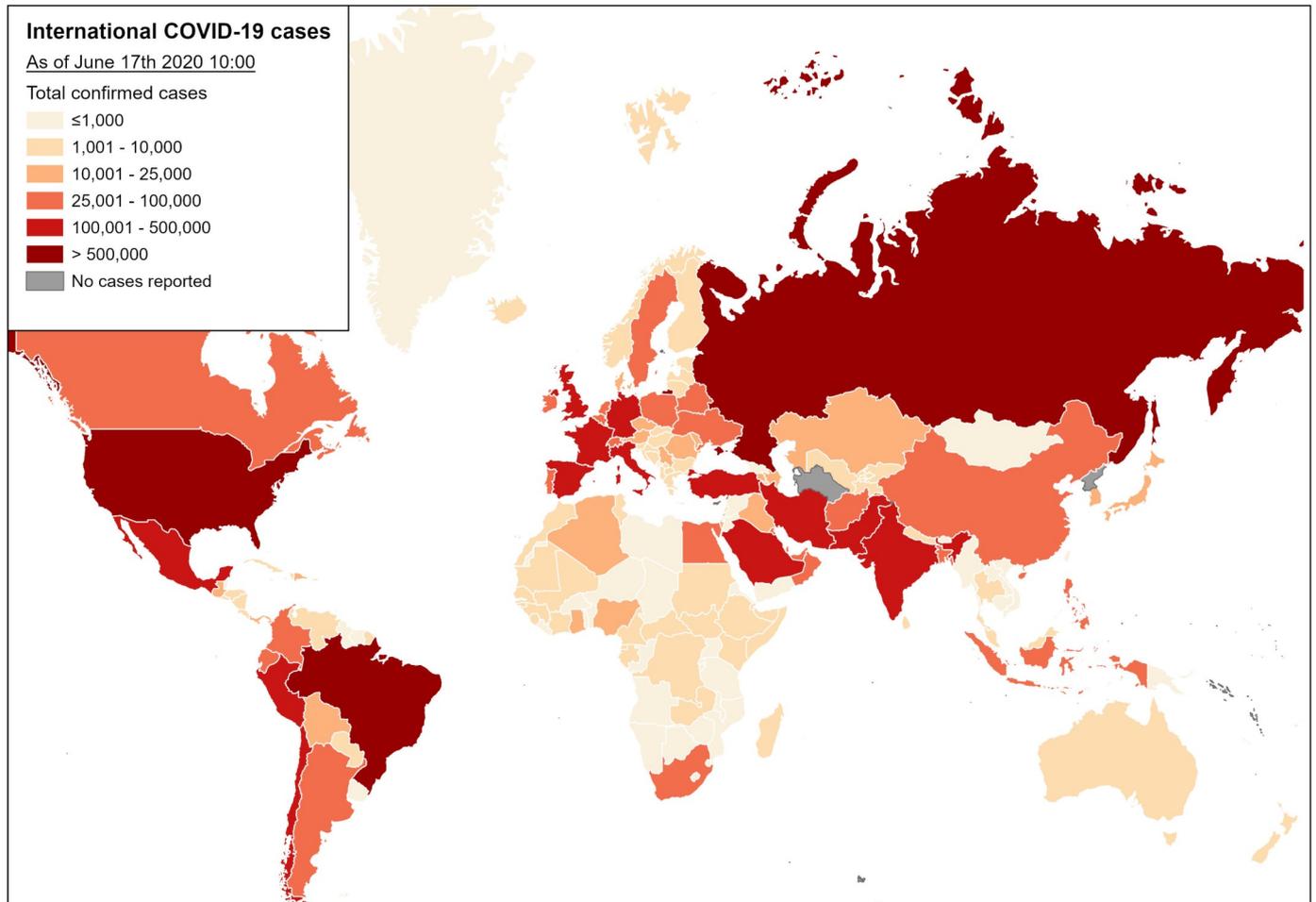
Figure 29: Overall SARS-CoV-2 antibody seroprevalence (%) in blood donors by PHE centres, using Euroimmun test adjusted for sensitivity (82.5%) and specificity (99.1%) and 95% confidence intervals (dashed lines)



Global situation

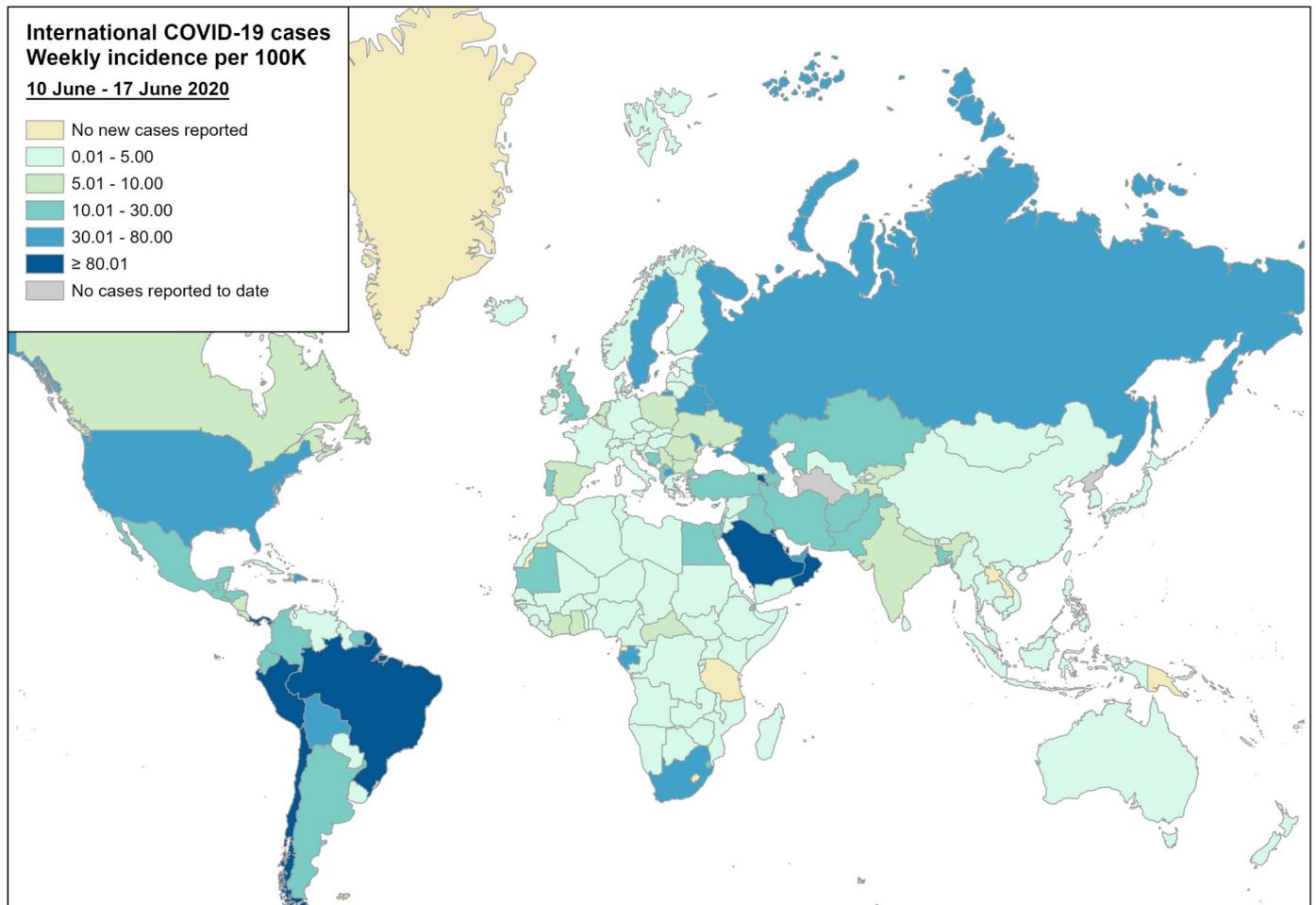
Globally, up to 17 June 2020, a total of 8,109,689 cases of COVID-19 infection have been reported worldwide, including 442,649 COVID-19 related deaths.

Figure 30: Global map of cumulative COVID-19 cases



Global situation

Figure 31: Global map of weekly COVID-19 case incidence rate per 100,000, week 24 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/ukxi/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.