Public Health England

Weekly Coronavirus Disease 2019 (COVID-19) Surveillance Report

Summary of COVID-19 surveillance systems

Year: 2020 Week: 21

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 20 (data between 11 May and 17 May 2020) and where available daily data up to 20 May 2020. References to COVID-19 represent the disease name and SARS-CoV-2 represent the virus name.

Summary

At a national level, all COVID-19 surveillance indicators have continued to decline, suggesting an ongoing impact of the social distancing measures that have been in place since March. Some community and syndromic indicators are now at or approaching baseline levels. The rate of decline in some indicators has slowed, including rates of influenza like illness, GP sentinel swab positivity, hospitalisation rates, and 'Pillar 1' laboratory positivity rates. We continue to see a large number of acute respiratory infection outbreaks in care homes although these have declined for the past 5 weeks. Deaths among COVID-19 confirmed cases continue to decline steadily but there is still significant excess mortality observed.

Activity is highest in the north of England, as evidenced by higher 'Pillar 1' laboratory positivity rates, higher rates of hospital admissions and higher positivity through GP sentinel swabbing. There was a small increase in hospitalisations in the North West, although other indicators remained stable or declined.

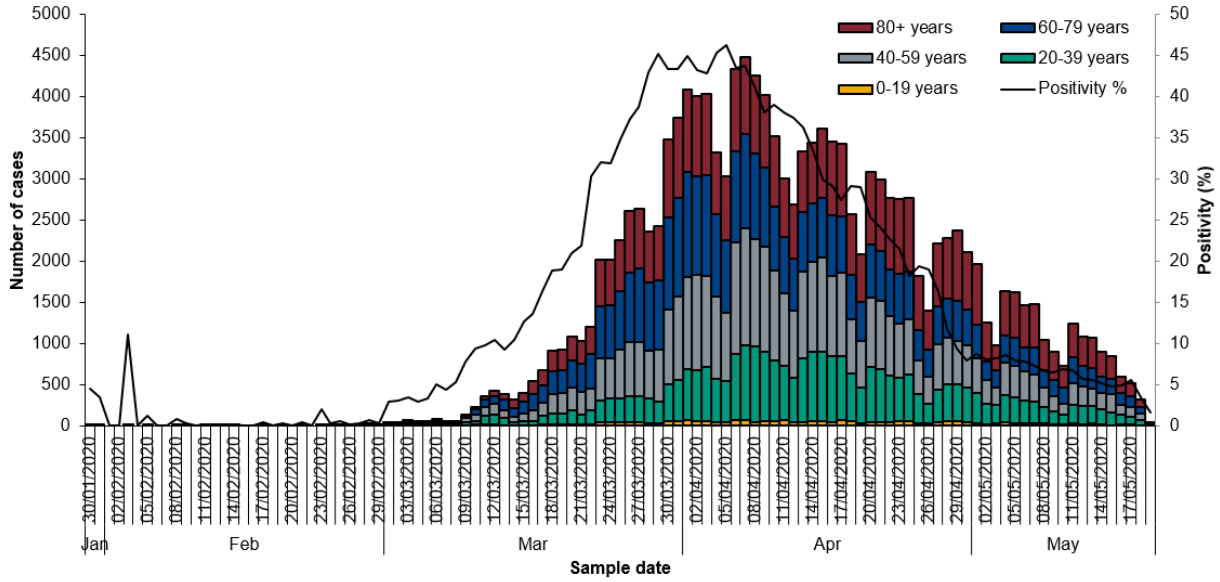
During week 20 the restriction on outdoor activities to once per day was lifted, guidance was issued to employers on creating safe working environments and people were encouraged to go back to work where they cannot work from home (https://www.gov.uk/guidance/working-safely-during-coronavirus-covid-19). It is too early to estimate whether these changes have been associated with a change in COVID-19 activity.

As of 09:00 on 20 May 2020, a total of 780,510 people have been tested, of which 145,808 have been confirmed positive for COVID-19 in England.

Figures 1 to 7 reflect cases tested under Pillar 1 (swab testing in PHE labs and NHS hospitals for those with a clinical need, and health and care workers).

Overall case numbers and positivity continues to decrease in week 20. The highest number of cases continued to be seen in the older age groups with a change in distribution by gender, where more cases are females, which is likely to be due to the change in testing patterns i.e. more females being tested in some groups as positivity rates are similar in both genders (Figure 6). Rates and positivity of cases continue to be highest in the North of England.

Figure 1: Laboratory confirmed COVID-19 cases by age group based on date of sample with overall positivity (%) (n=145,624)



* For the most recent dates, more samples are expected therefore the decrease seen in this graph should be interpreted with caution The data are shown by the date 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.

Figure 2: Laboratory confirmed COVID-19 cases (a) age/gender pyramid (n=143,726) and (b) rates by gender (n=143,467)

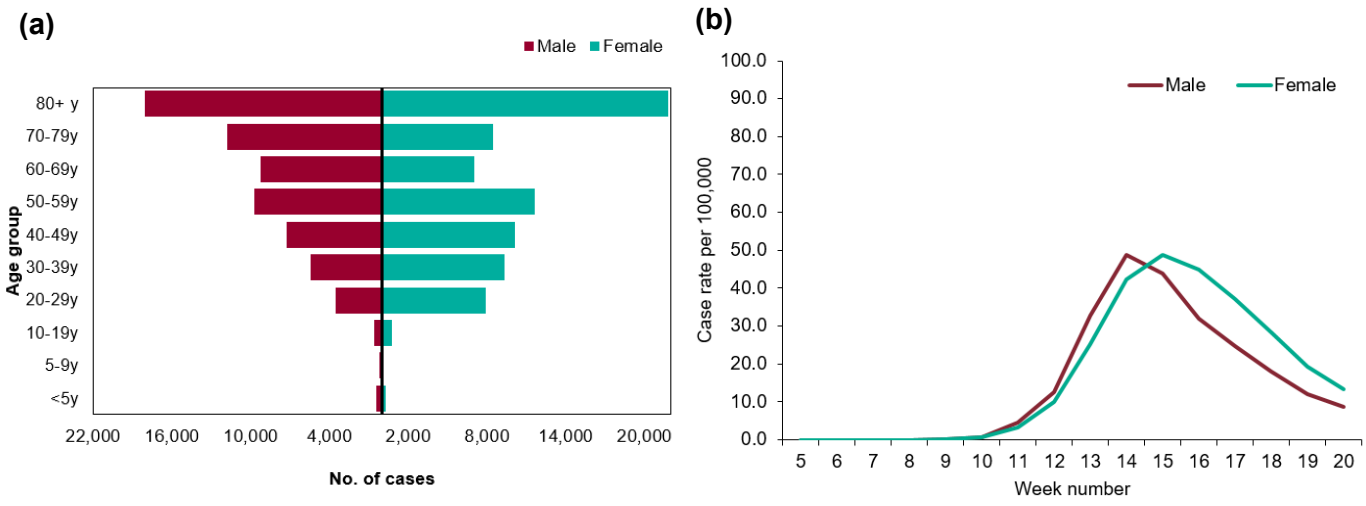


Figure 3: Ethnic group of laboratory confirmed COVID-19 cases (a) for cumulative cases (n=132,015) and (b) for cases in week 20 (n= 4,184)

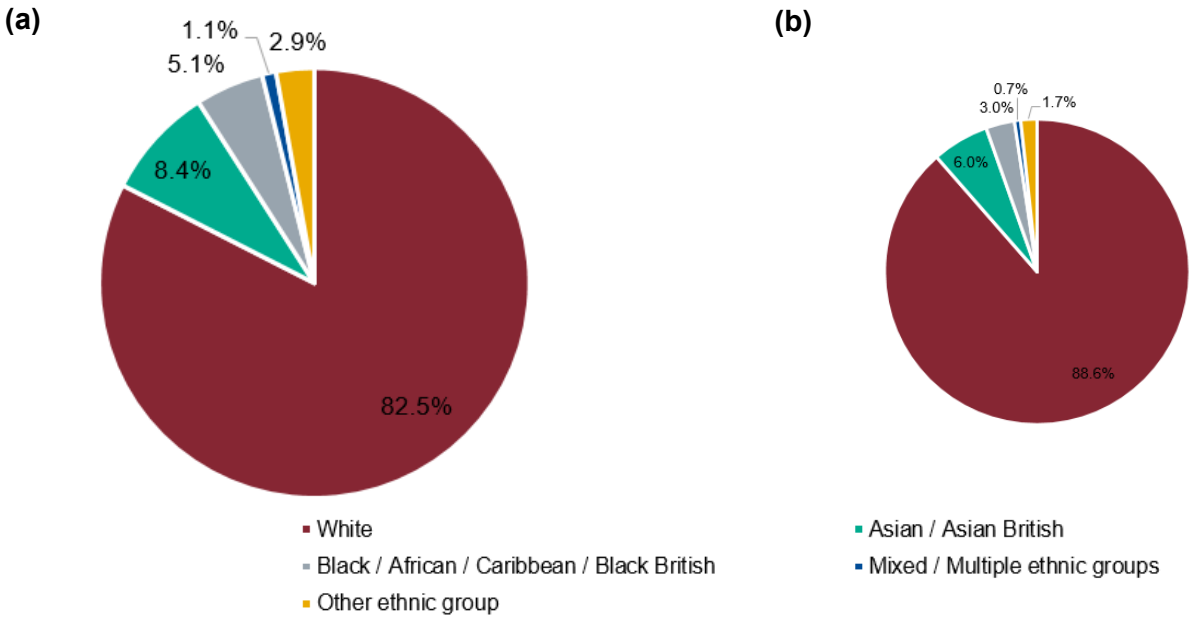


Table 1: Cumulative number of cases (n=139,722) and people tested by PHE Centres (n=706,285)

PHE Centres	Cases	Total number of people tested
North East	9,684	35,537
North West	24,132	101,821
Yorkshire & Humber	13,498	74,918
West Midlands	16,090	75,755
East Midlands	8,547	49,365
East of England	13,818	75,981
London	26,579	111,630
South East	20,003	111,699
South West	7,370	69,579

Figure 4: Rates of laboratory confirmed COVID-19 cases per 100,000 population, by PHE Centres and sample date week

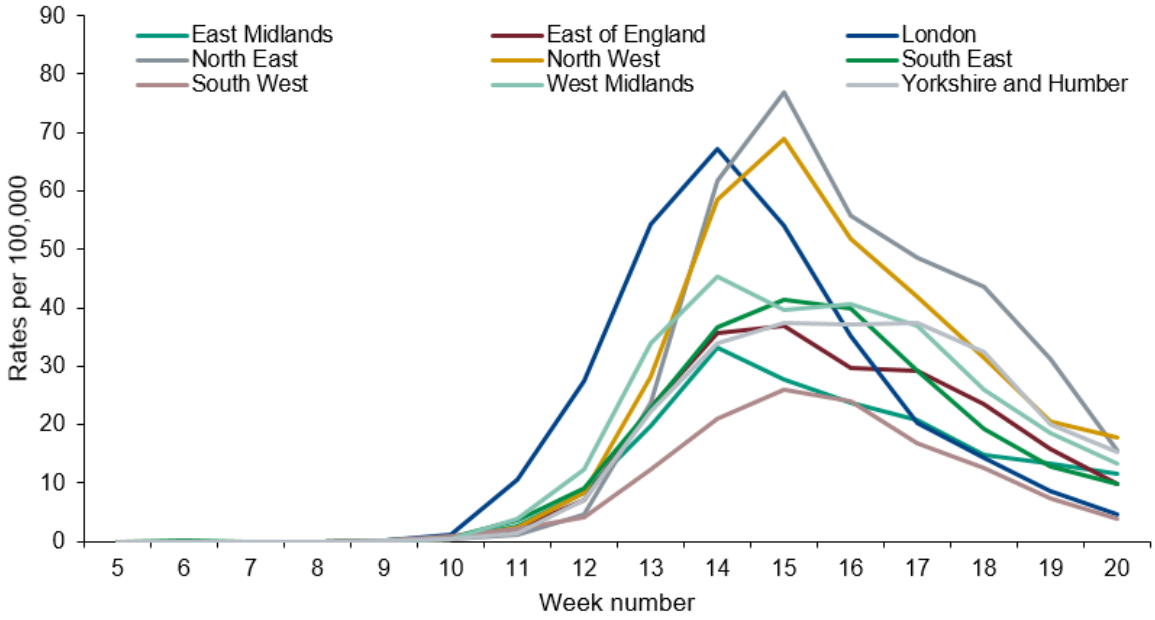


Figure 5: Cumulative rate of COVID-19 (cases per 100,000) by upper-tier local authority, England (box shows enlarged maps of London area) (n=145,808)

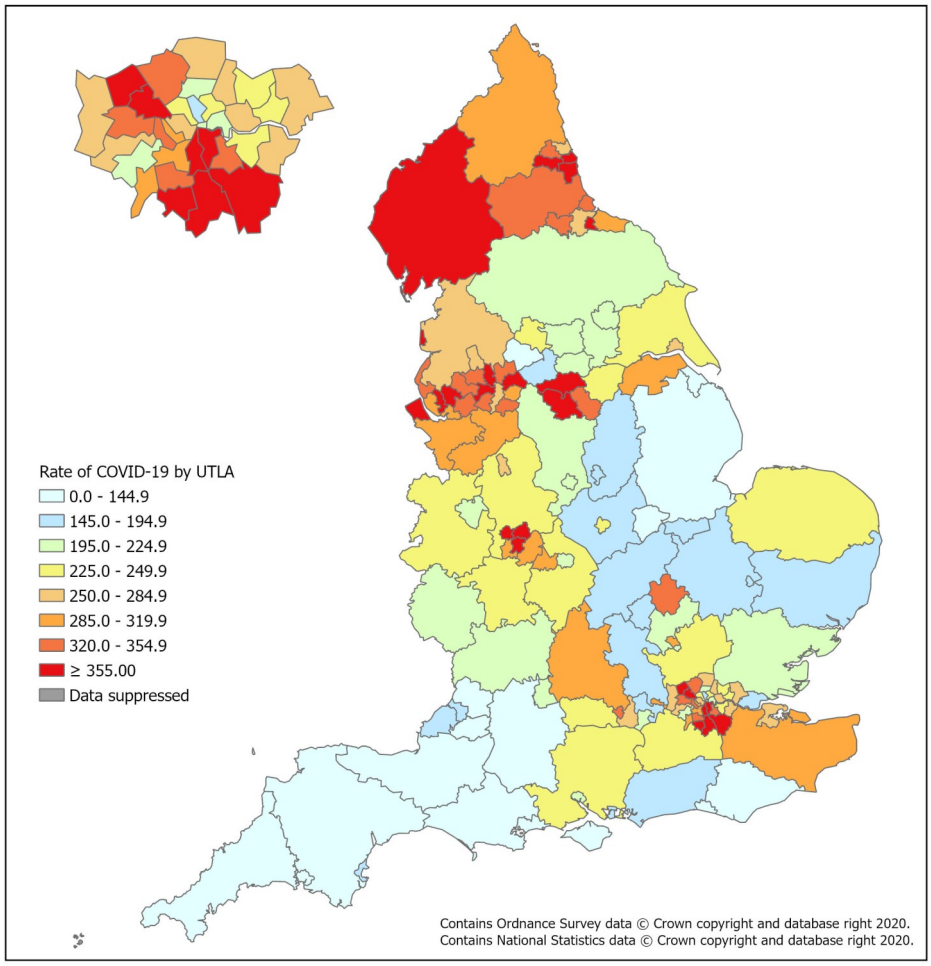


Figure 6: Positivity (%) (weekly) by age group (a) overall (n= 142,956), (b) males (n= 65,884) and (c) females (n=77,057) , England (SGSS and Respiratory DataMart)

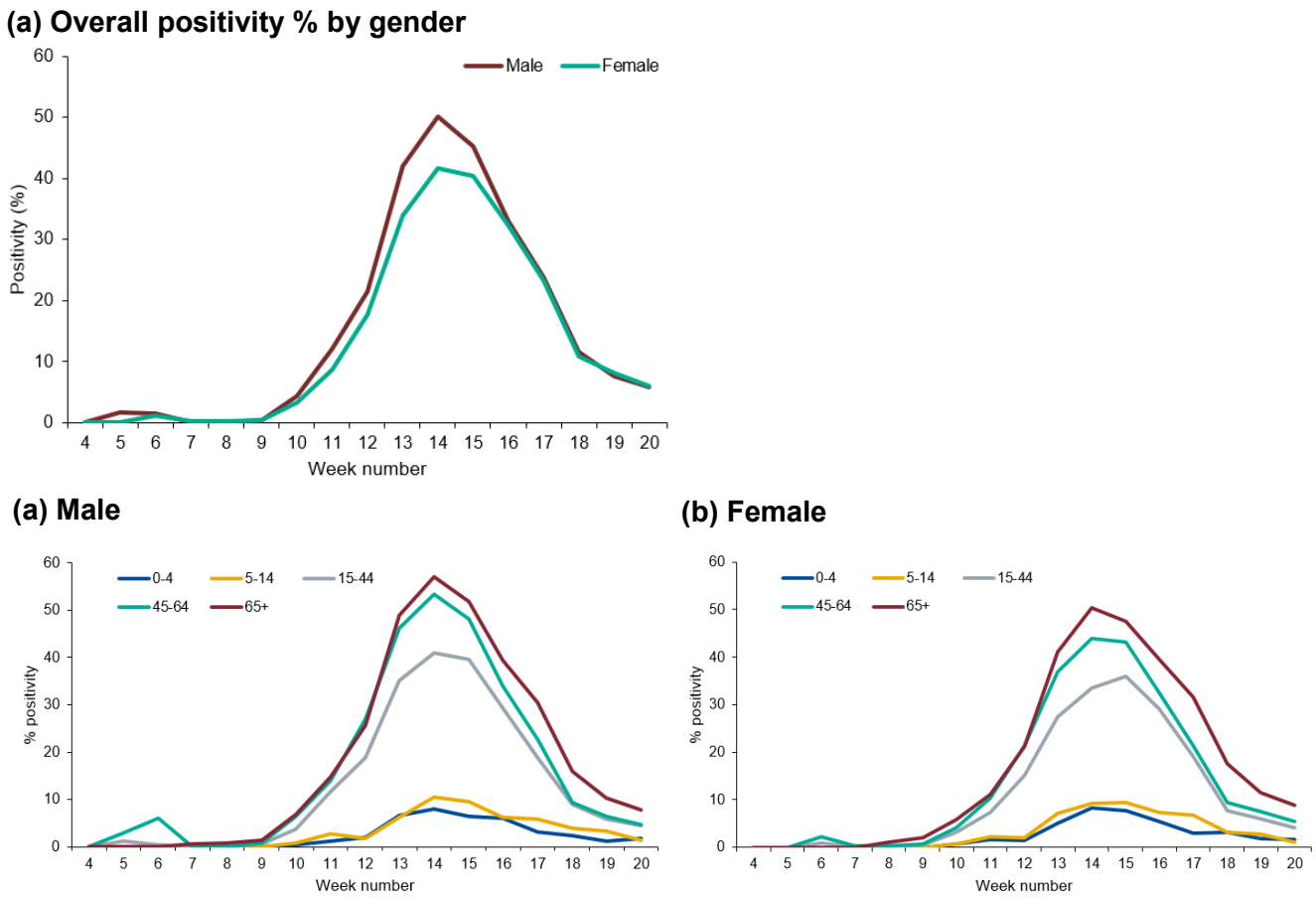
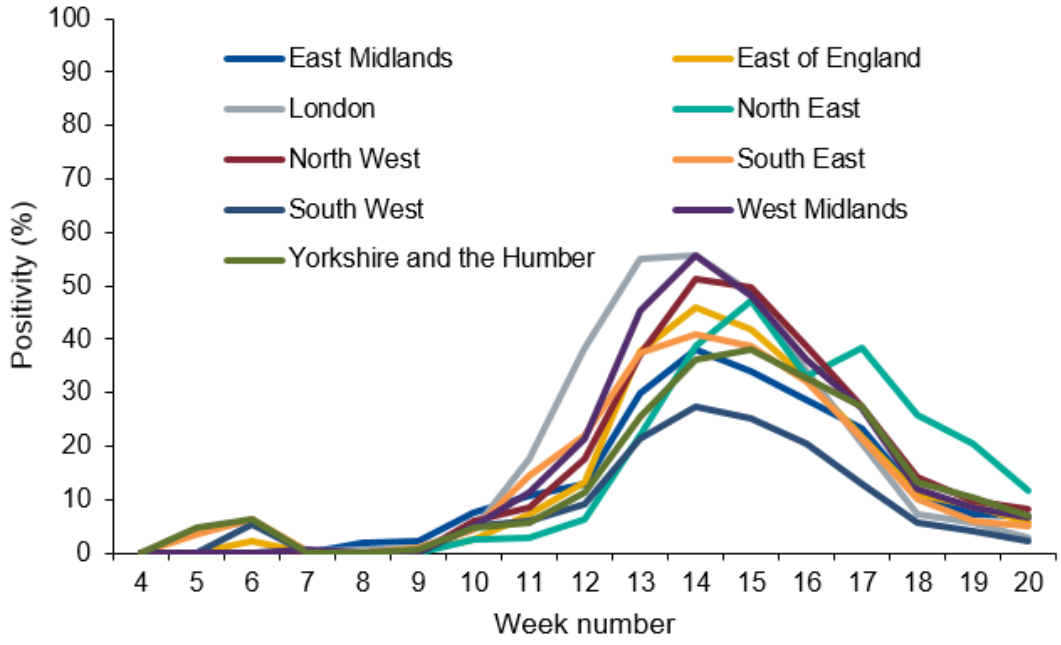


Figure 7: Positivity (%) (weekly) by PHE centre (n=138,747) , England (SGSS and Respiratory DataMart)



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

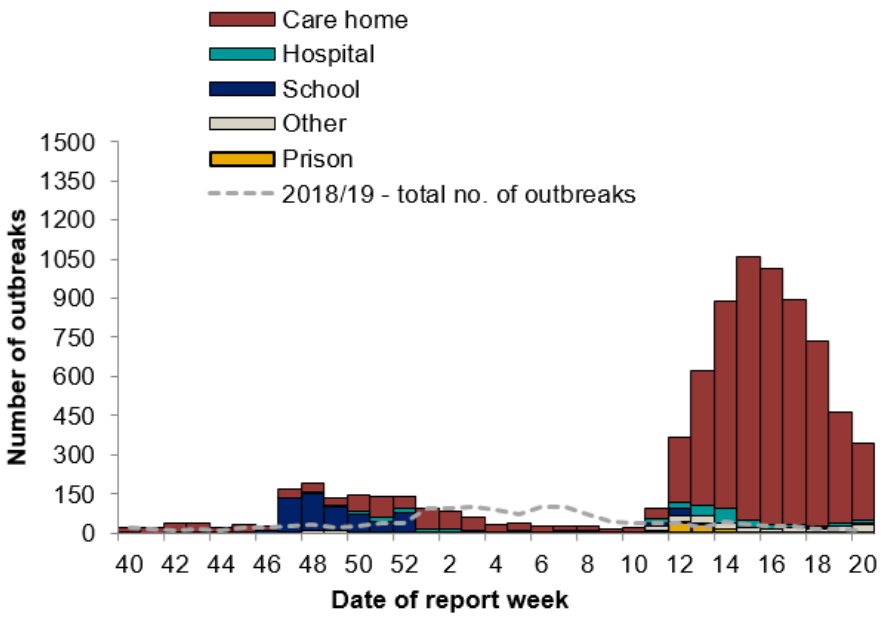
Acute respiratory outbreaks, England

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.

343 new acute respiratory outbreaks have been reported in week 20 (Figure 8):

- 295 outbreaks were from care homes where 112 tested positive for SARS-CoV-2
- 13 outbreaks were from hospitals where 7 tested positive for SARS-CoV-2
- 4 outbreak were reported from schools where 2 tested positive for SARS-CoV-2
- 1 outbreak was in a prison
- 30 outbreaks were from the Other Settings category where 9 tested positive for SARS-CoV-2

Figure 8: 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.

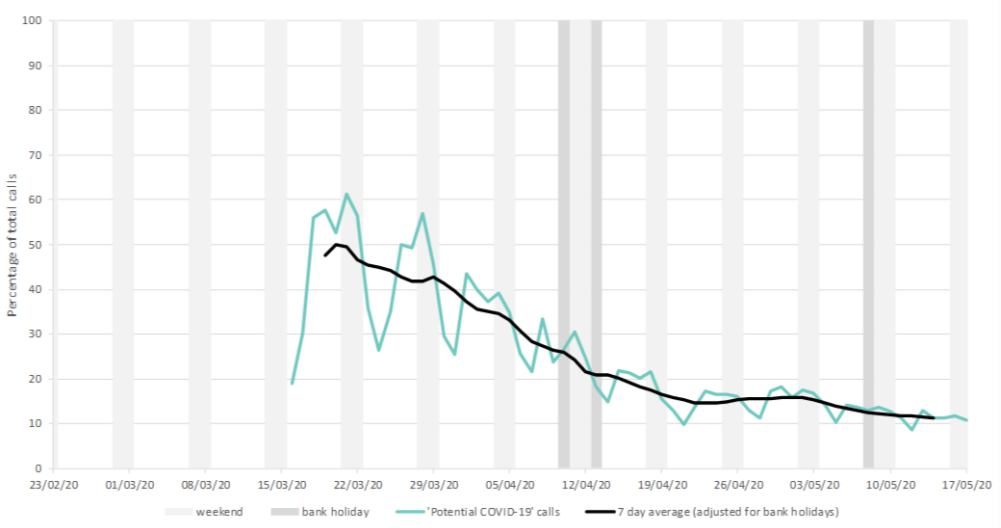
Up to 17 May 2020, the daily percentage of NHS 111 'potential COVID-19-like calls (as a percentage of total NHS 111 calls) and the daily number of NHS 111 'potential COVID-19' completed online assessments remained stable (Figure 9).

Please note that all NHS 111 'potential COVID-19' indicators may not include all NHS 111 integrated urgent care service calls and therefore should be used to monitor trends rather than numbers. All NHS 111 indicator trends should be interpreted with caution due to current national advice and guidance regarding access to health care services during the COVID-19 pandemic.

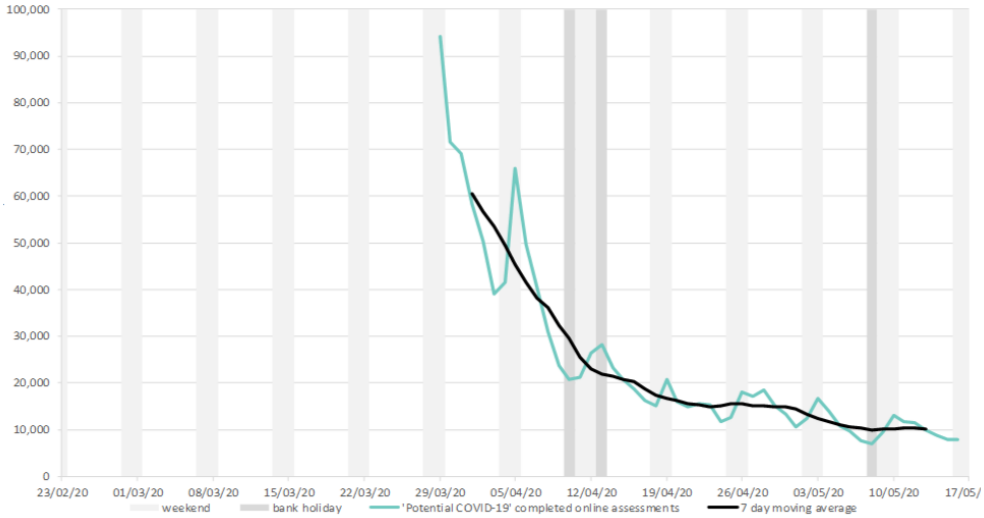
Further information about these caveats is available from the PHE Remote Health Advice Syndromic Surveillance bulletin.

Figure 9 (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.

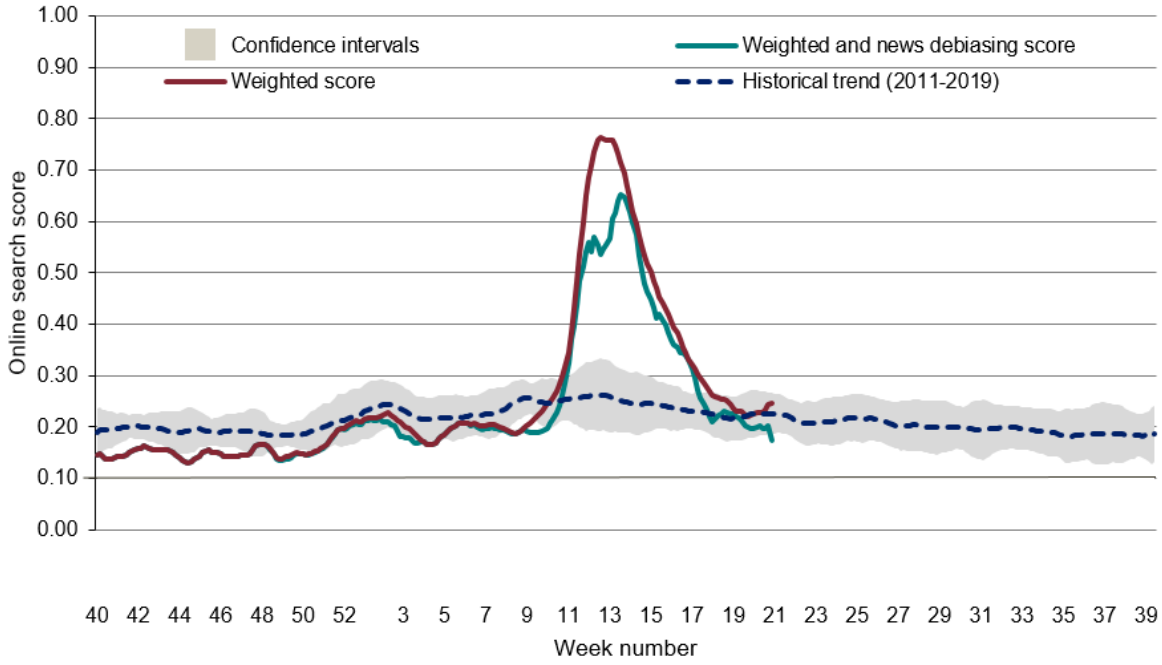
Google search queries

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 and media-debiaising weighted scores continued to decrease throughout week 20 (Figure 10).

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

Figure 10: Normalised Google search score for COVID-19 symptoms, with weighted score for media-debiasing and historical trend, England



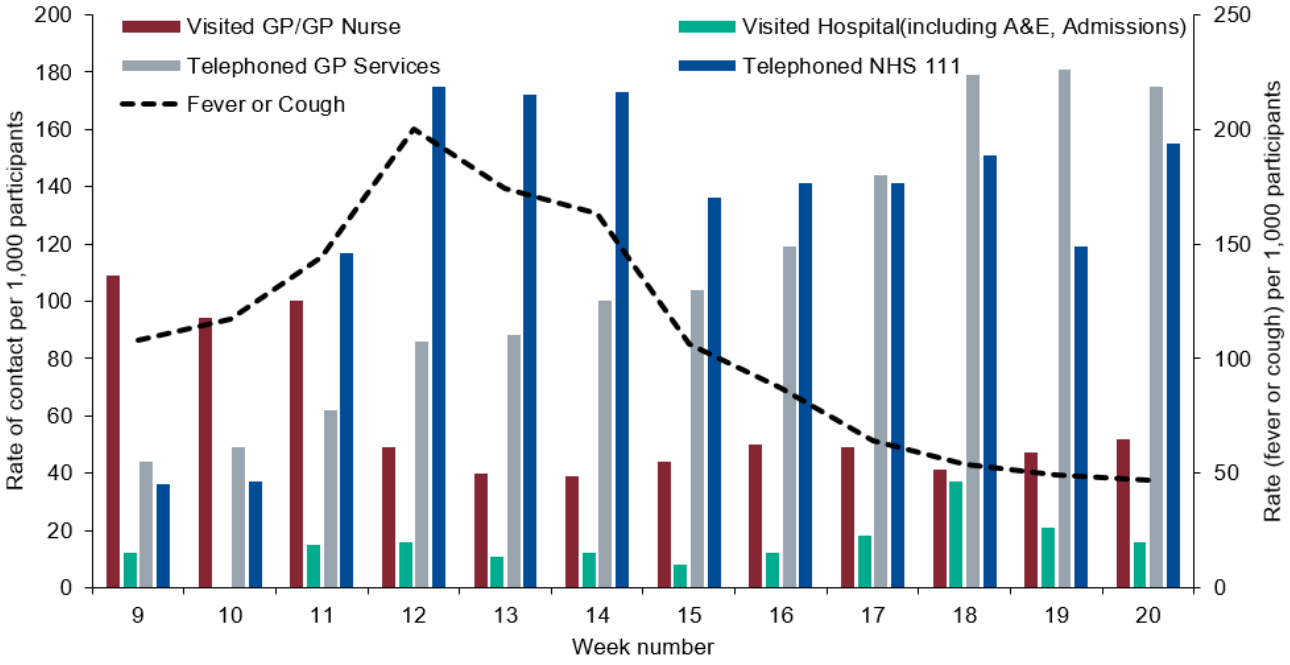
Internet based surveillance

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 4,212 participants completed the weekly COVID-19 surveillance survey in week 20, of which 194 (4.7%) reported fever or cough, a slight decline from 4.9% reported in week 19. The most commonly reported method of access to healthcare services was through telephone services (Figure 11), which is in line with current government recommendations.

Figure 11: Rate of contact with different healthcare services among FluSurvey participants reporting fever or cough symptoms, week 09 to 20, England



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

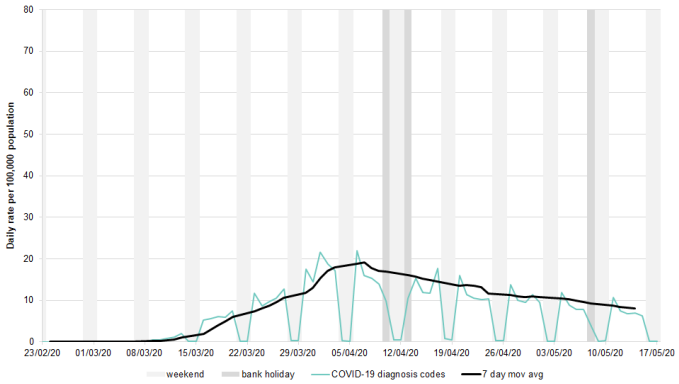
The GP In Hours (GPIH) syndromic surveillance system monitors the number of GP visits during regular hours of known clinical indicators. The GP Out of Hours (GPOOH) syndromic surveillance system monitors the numbers of daily unscheduled visits and calls to GPs during evenings, overnight, on weekends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

Up to 17 May 2020, GPIH consultations for potential COVID-19-like and ILI consultations decreased slightly (Figure 12). Through GPOOH consultations, the daily percentage (as a percentage of total contacts with a Read code) for difficulty breathing/wheeze/asthma and ILI also decreased in England (Figure 13).

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 12 (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

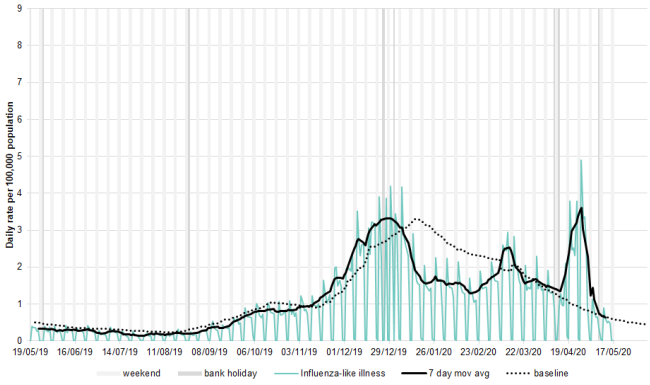
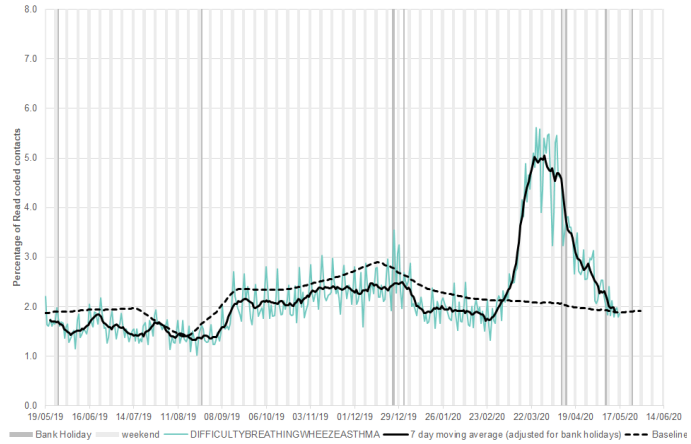
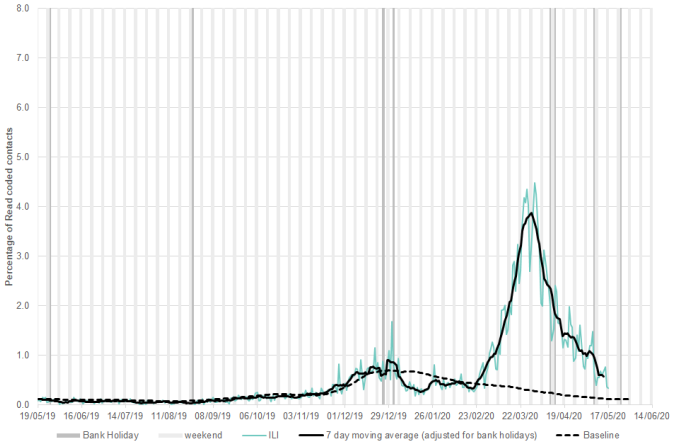


Figure 13 (a-b) : GPOOH contacts indicators, England

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



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

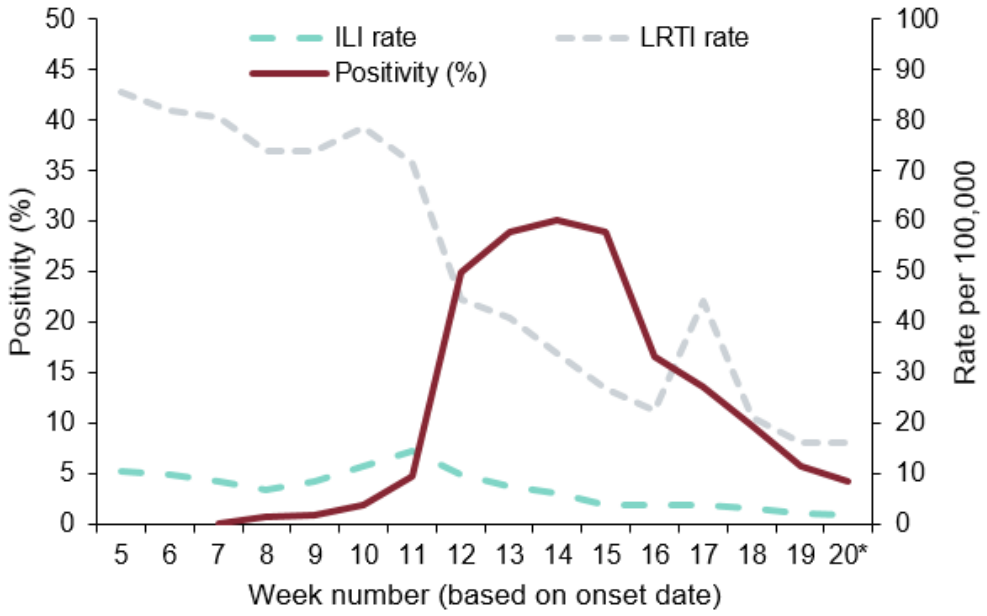


RCGP Swabbing Scheme

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 200 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 20 May 2020, a total of 3,911 patients have been tested of which 545 have tested positive for SARS-CoV-2 through this scheme. The overall positivity continued to decrease at 5.7% in week 19 compared to 9.8% in the previous week (Figure 14). Consultations for LRTI have also continued to decreased, while consultations for ILI remained stable (Figure 14). The highest positivity by PHE region was noted in the North region (Figure 15). The highest positivity by age group was observed in the 65+ year olds and by gender in males (Figure 16).

Figure 14: Overall weekly positivity (%), ILI and LRTI consultations rates (per 100,000), RCGP, England



RCGP Swabbing Scheme

Figure 15: Overall positivity (%) (weekly) by PHE Region, England (RCGP)

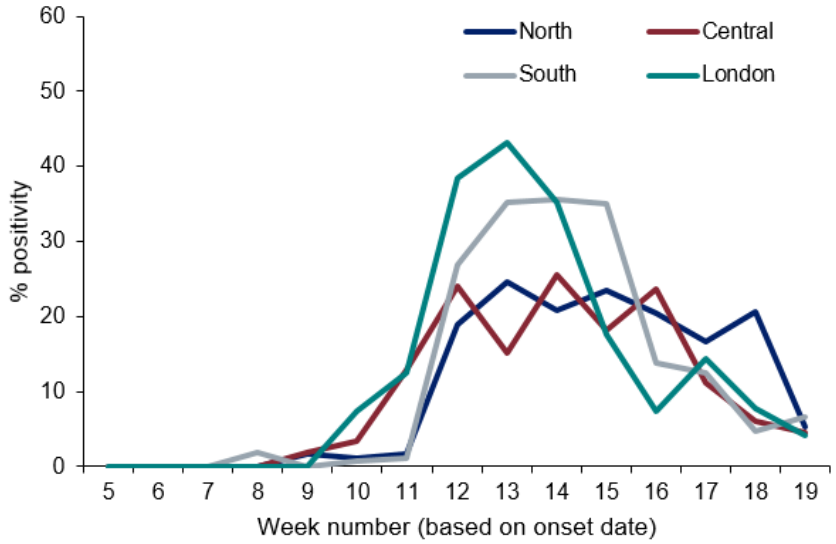
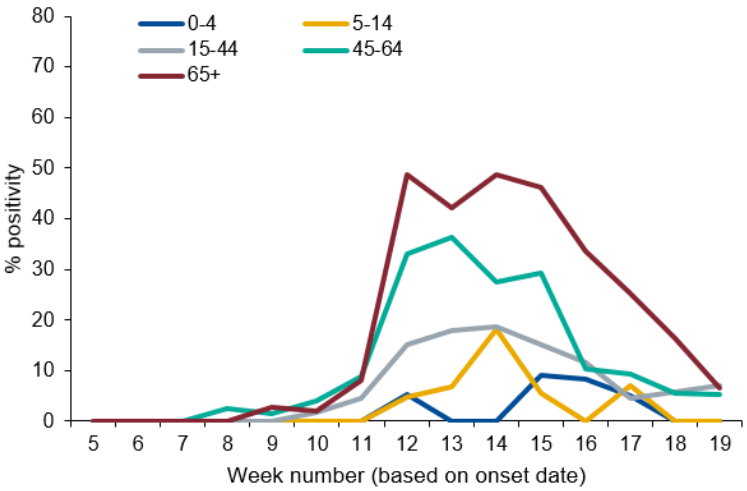
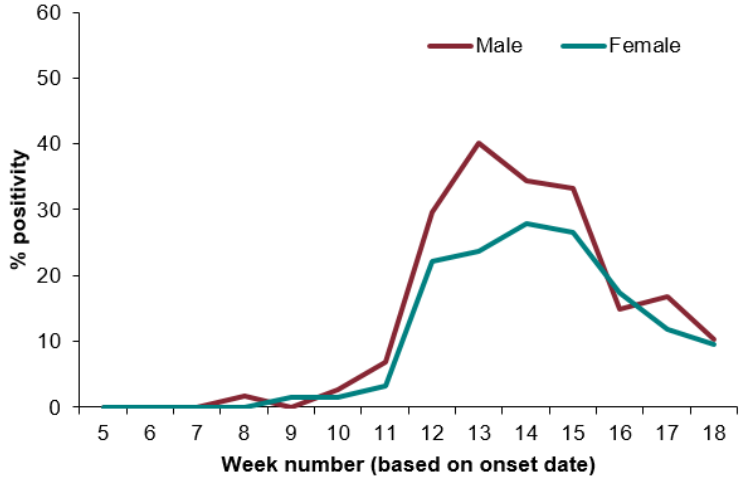


Figure 16: Positivity (%) (weekly) by (a) age group and (b) gender, England (RCGP)

(a)



(b)



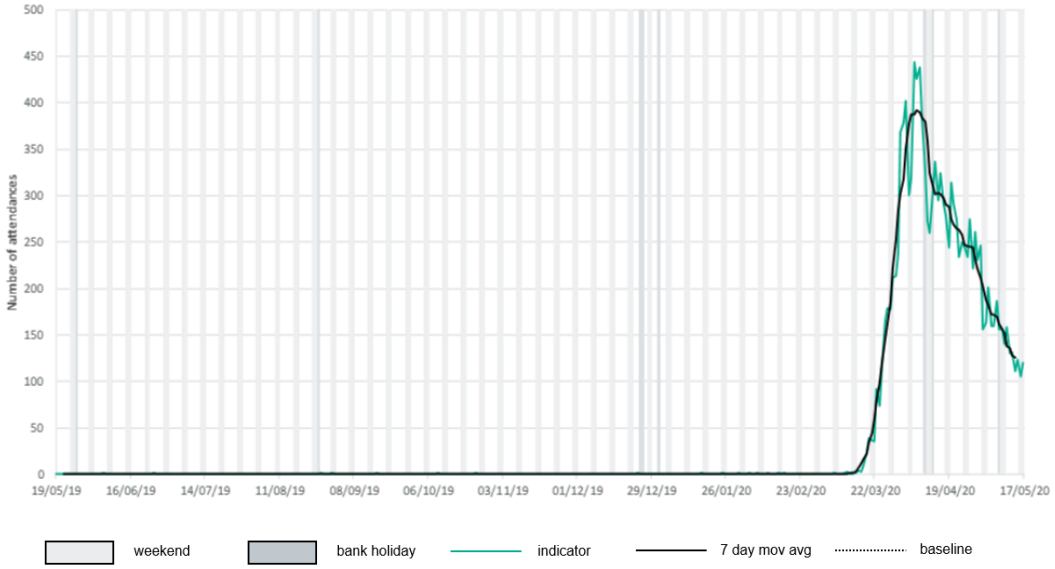
Emergency Department attendances, Syndromic surveillance

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

Up to 17 May 2020, the daily number of ED attendances for all ages as reported by 75 EDs in England for COVID-19-like attendances decreased (Figure 17).

Please note: the COVID-19-like ED indicator is an underestimation of 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 17: 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 daily rate of new admissions of COVID-19 cases is based on the trust catchment population of those NHS Trusts who made a new return each day. This may differ from other published figures such as the total number of people currently in hospital with COVID-19.

Up to 20 May 2020, the daily admission rates for both hospitalisations and ICU/HDU COVID-19 admissions have remained stable. By NHS regions, the highest hospitalisation rates were observed in the North of England.

Figure 18: Overall daily hospital and ICU/HDU admission rates per 100,000 of new COVID -19 positive cases reported through CHESS, England

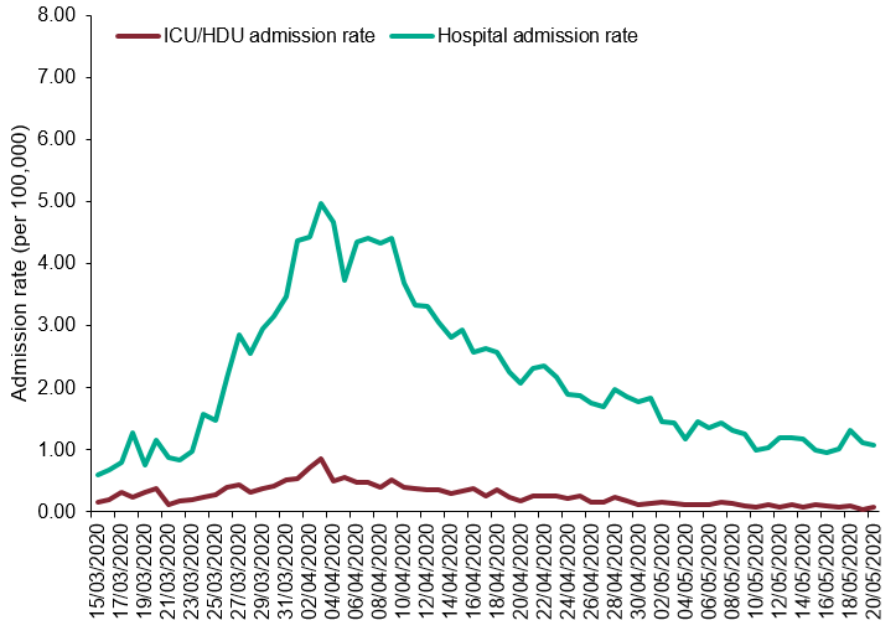
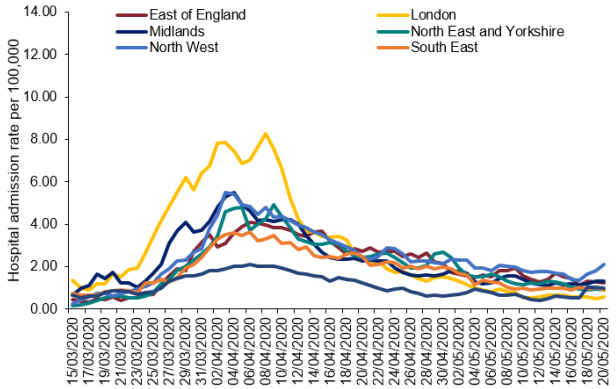
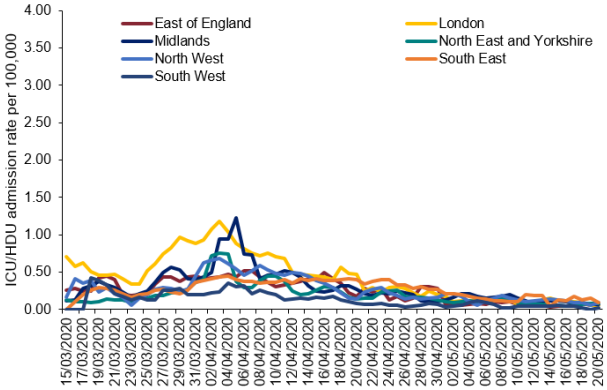


Figure 19: Daily admission rate for (a) hospital admissions and (b) ICU/HDU admissions by NHS regions (3 day moving average rate) of new COVID-19 positive cases reported through CHESS

(a)



(b)

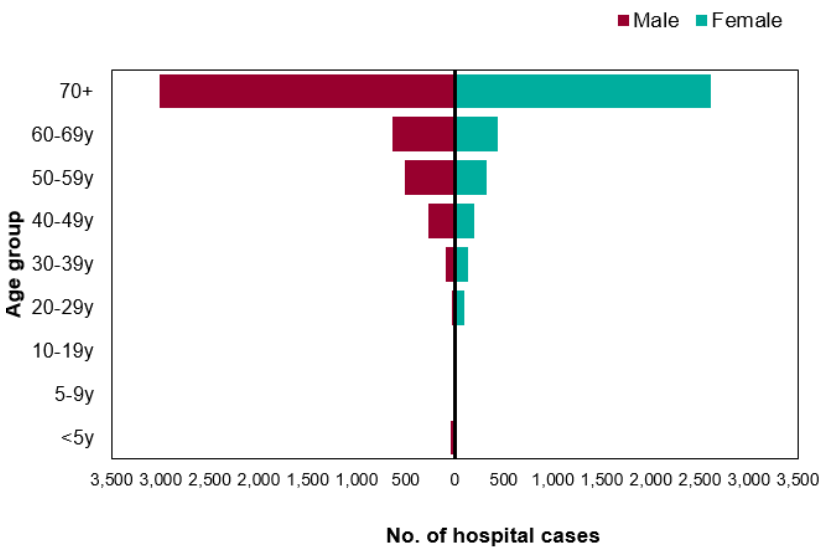


COVID-19 Hospitalisation in England Surveillance System (CHESS)

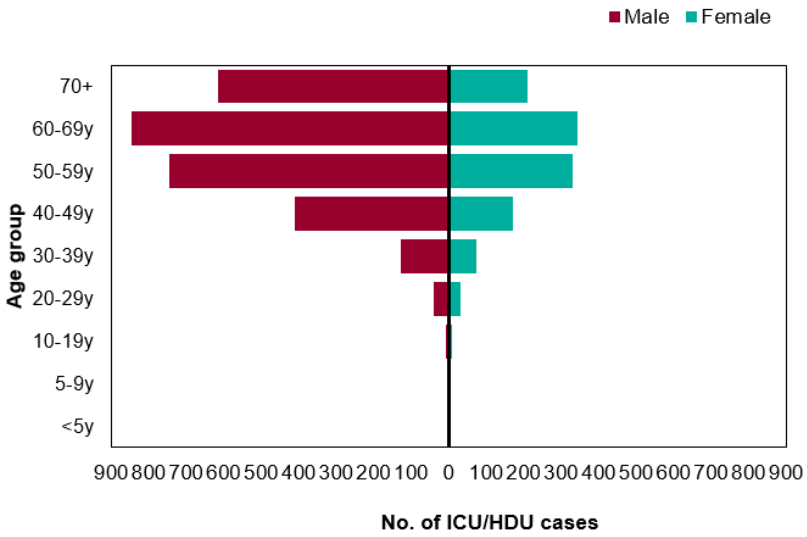
Figure 20 and 21 are based on individual patient level data which are provided to CHESS from a subset of NHS Acute Trusts, therefore the data should be interpreted with caution as the distribution of age, sex and ethnic group may not be representative of all hospitalised patients.

Figure 20: Age/sex pyramid of new (a) hospital (lower level of care) (n=8,457) and (b) ICU/ HDU (n=3,968) COVID-19 cases reported through CHESS, England

(a)

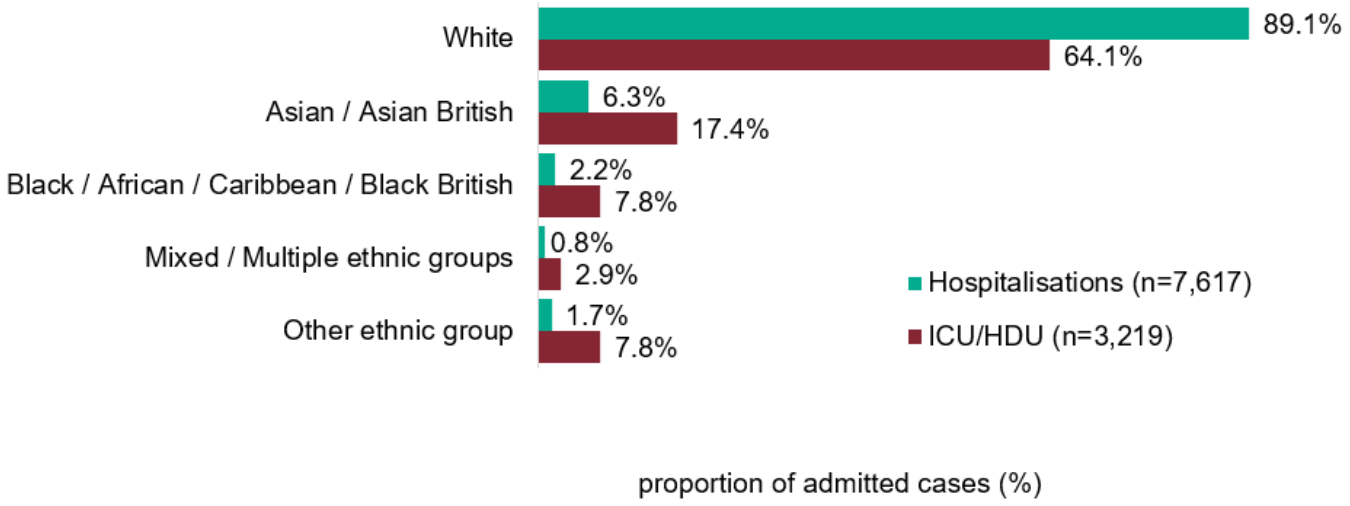


(b)



COVID-19 Hospitalisation in England Surveillance System (CHESS)

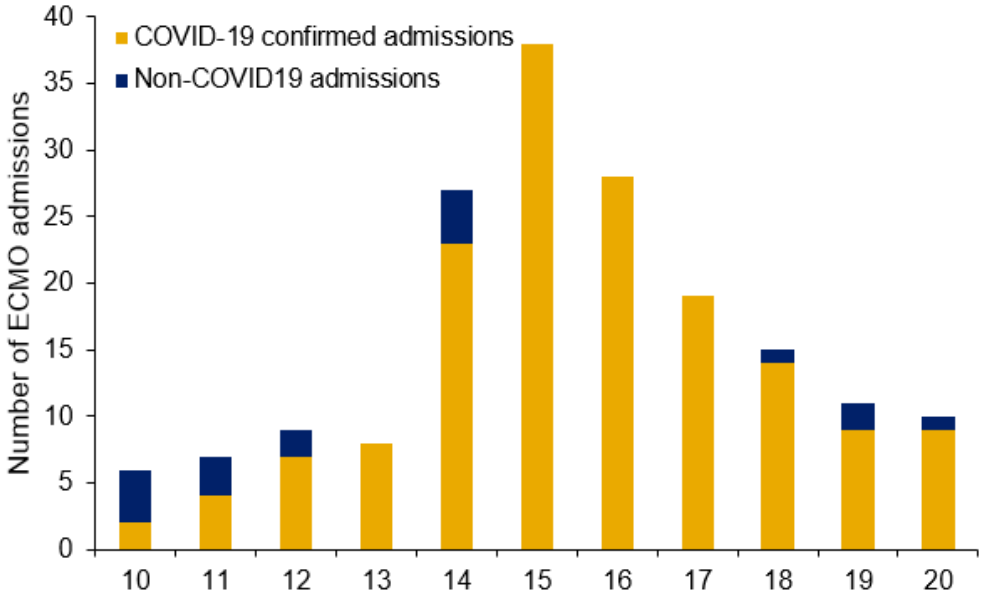
Figure 21: Ethnic group of new hospitalisations (lower level of care) (n=7,617) and ICU/ HDU (n=3,219) COVID-19 cases reported through CHESS, England



UK Severe Respiratory Failure (SRF) centres admissions

Up to 20 May 2020, a total of 162 laboratory confirmed COVID-19 admissions have been reported from the 5 SRFs in England (Figure 22).

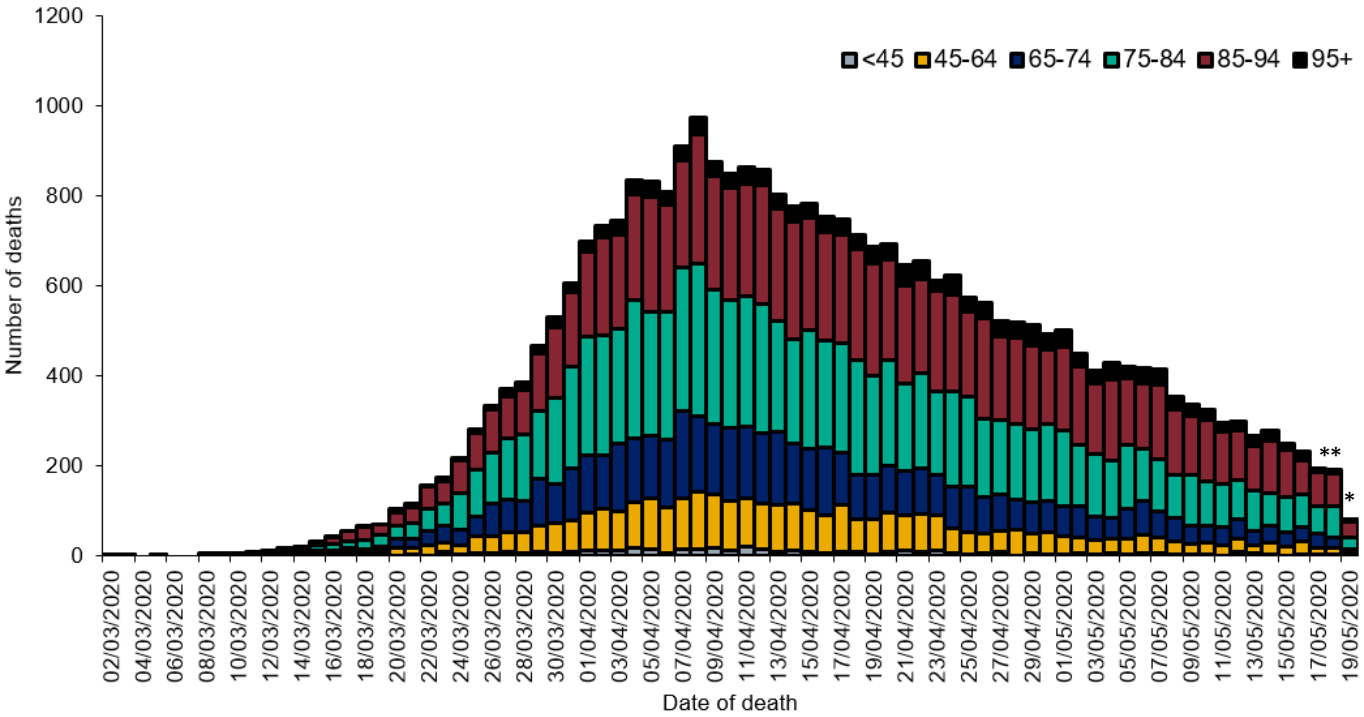
Figure 22: All COVID-19 and non-COVID-19 laboratory confirmed ECMO admissions to SRFs, UK



Cumulative deaths

As of 5pm on 19 May 2020, a total of 31,843 cases with confirmed COVID-19 have died in England.

Figure 23: Cumulative number of deaths by date of death and age group, England (n=31,843)



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

Table 2: Cumulative number of deaths by PHE Centres (n=31,459)

PHE Centres	Number of deaths
North East	1,800
North West	5,046
Yorkshire & Humber	2,840
West Midlands	4,086
East Midlands	2,294
East of England	3,589
London	6,106
South East	4,062
South West	1,636

Cumulative deaths

Figure 24: Age/sex pyramid of laboratory confirmed COVID-19 deaths (n=31,843)

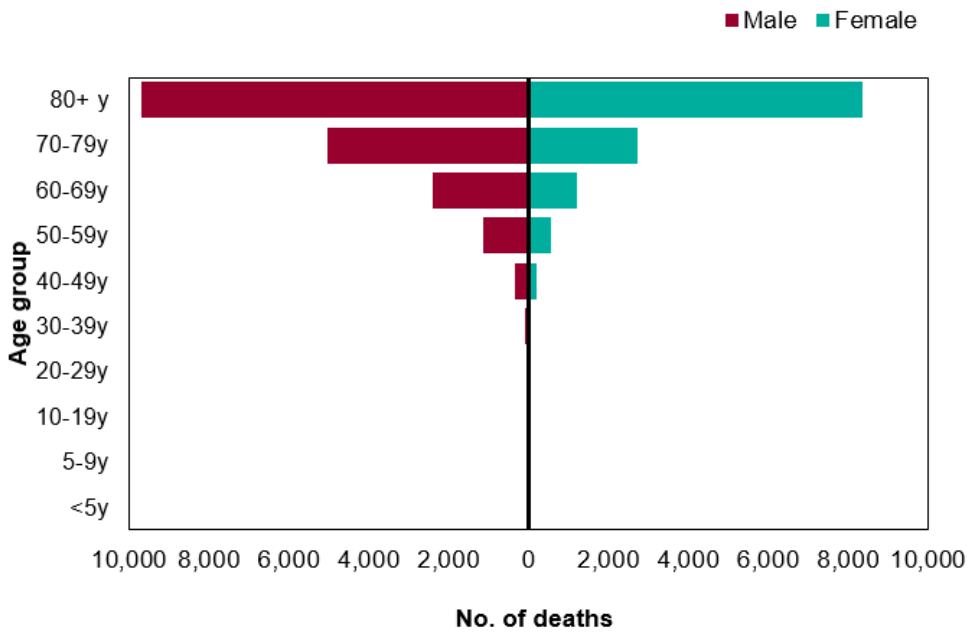
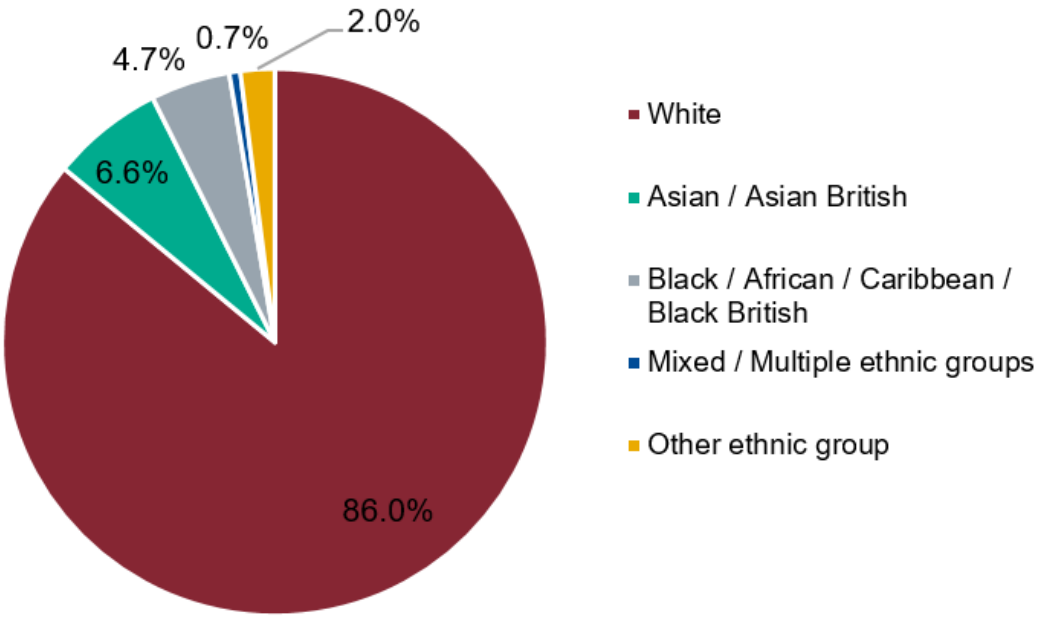


Figure 25: Ethnic group of confirmed COVID-19 deaths, England (n= 31,616)



Excess all-cause mortality, UK

In week 20 2020 in England, statistically significant excess mortality by week of death above the upper 10 z-score threshold was seen overall, by age group in the 15-64 and 65+ year olds and sub nationally (all ages) in all regions (North East, North West, Yorkshire & Humber, East & West Midlands, East of England, London and South East & West regions) after correcting GRO disaggregate data for reporting delay with the standardised EuroMOMO algorithm (Figure 26 and Table 3). This data is provisional due to the time delay in registration; numbers may vary from week to week.

Figure 26: Weekly observed and expected number of all-cause deaths in all ages, with the dominant circulating influenza type(s), England, 2015 to week 20 2020

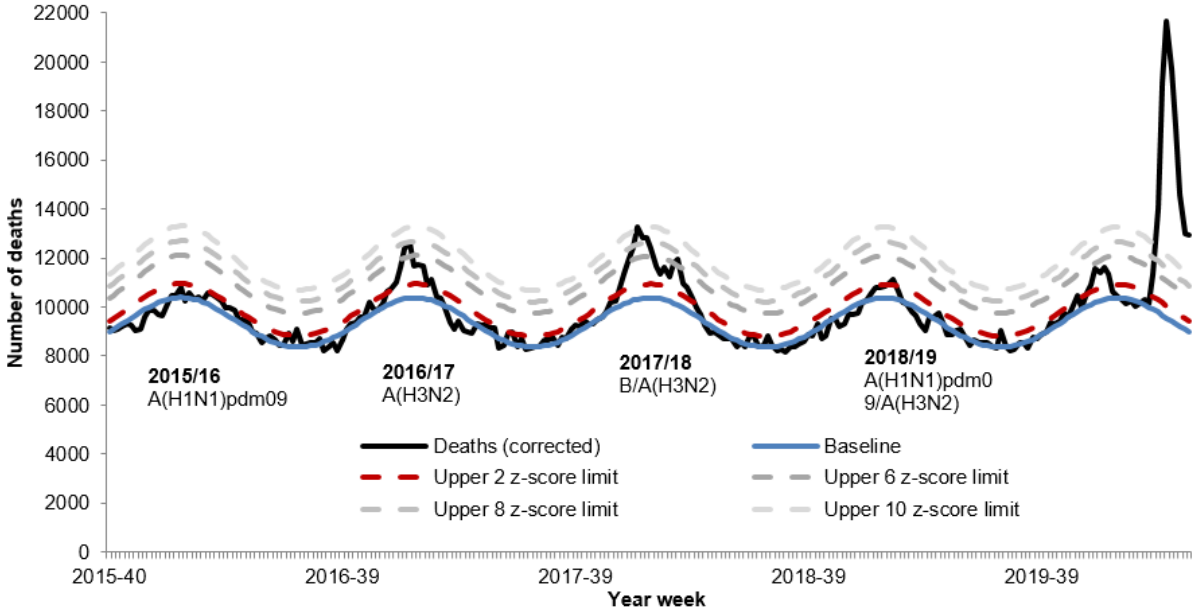


Table 3: Excess mortality by age group, England

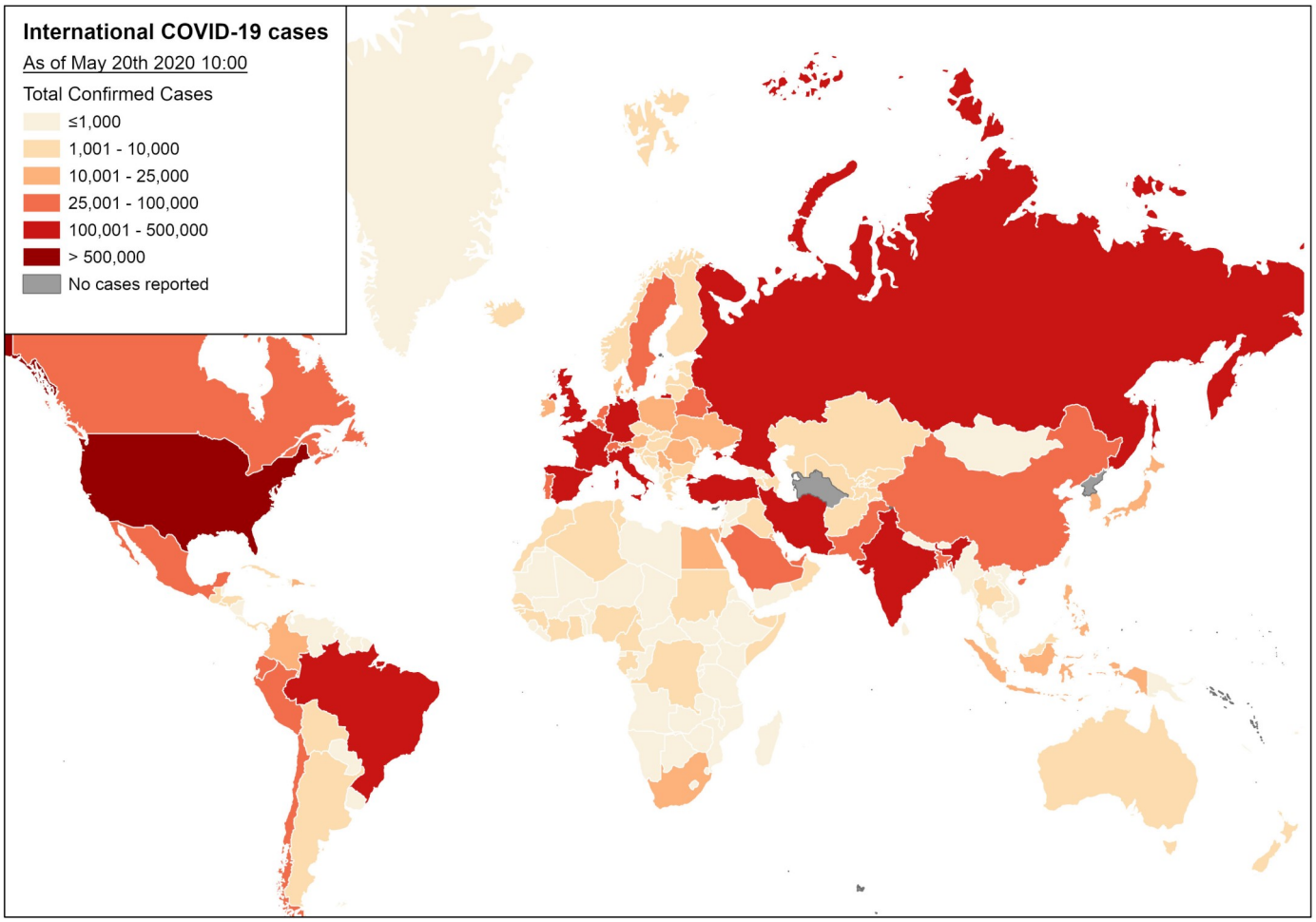
Age group (years)	Excess detected in week 20 2020?	Weeks with excess in 2019/20
<5	x	48
5-14	x	NA
15-64	✓	52-02; 12-20
65+	✓	47;50-02;12-20

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

Global situation

Globally, up to 20 May 2020, a total of 4,839,871 laboratory-confirmed cases of COVID-19 infection have been reported worldwide, including 321,773 COVID-19 related deaths.

Figure 27: Global map of COVID-19 cases by classification



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.