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 28 (data between 06 July and 12 July 2020) and where available daily data up to 14 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 28. Case detections are highest in the East and West Midlands and Yorkshire and Humber. There has been a small increase in detections in the West Midlands through both Pillar 1 and Pillar 2 testing. At a local authority level, activity remains highest in Leicester, though the weekly incidence of confirmed cases continues to decrease. There have been increases in Blackburn and Darwen, Bradford, Luton and Peterborough. Case detections are highest in adults aged 85 and over. There has been an increase in the proportion of cases from the Asian/Asian British ethnic group, this is likely to reflect larger populations from this ethnic group in areas that are currently seeing higher incidence.

A new section has been added to the report which highlights local authorities of greatest concern as determined following the weekly Local Action Committee meeting. This is based on a range of indicators and an assessment of local response and plans.

The overall number of acute respiratory infection incidents reported to PHE Health Protection Teams remained similar to the previous week. There have been small declines in the number of incidents in educational settings, workplace settings and other settings in comparison to the previous week. 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. Small increases have been noted through internet based surveillance systems whereas syndromic surveillance indicators have remained stable or declined during week 28.

Through the GP sentinel swabbing scheme, detections of cases continue to be low with an overall positivity of 0.0% in week 28 compared to 1.6% in the previous week. There has been a decline in testing through the GP sentinel scheme which is likely due to increased access to testing through other routes.

Emergency department attendances with a COVID-19-like diagnosis and 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.

Seroprevalence estimates based on samples from adult blood donors in a number of regions and nationally are lower in the most recent sampling period compared to previous weeks; this is likely to be largely driven by changes in the precise locations of sampling over time and potentially differences in the donor population as lockdown measures are relaxed. Adjusted population weighted prevalence for England is estimated at 6.7% for weeks 24-28. Seroprevalence remains highest in London, with an adjusted prevalence of around 10% based on samples from week 28. 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. The latest data from paediatric collections suggests that

Contain Framework Local Authority Watchlist

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

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

Whilst this list is determined at the granularity of lower tier local authority, the Contain Framework places responsibility for local action at the level of the upper tier local authority. Later in this report, we list the UTLA with the highest incidence rate in the country from a purely statistical viewpoint (Table 3 and Figure 10).

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

- Area(s) of concern—for areas with the highest prevalence, where the local area is taking targeted actions to reduce prevalence e.g. additional testing in care homes and increased community engagement with high risk groups

- Area(s) for enhanced support—for areas at medium/high risk of intervention where there is a more detailed plan, agreed with the national team and with additional resources being provided to support the local team (e.g. epidemiological expertise, additional mobile testing capacity)

- Area(s) of national intervention—where there is divergence from the measures in place in the rest of England because of the significance of the spread, with a detailed action plan in place, and local resources augmented with a national support

Table 1: Local Authority Watchlist areas

Area	Contain Framework Watchlist Status – week beginning 13 July	Change in Watchlist Status from previous week
Leicester	Area for national intervention	⇔
Oadby and Wigston (Leicestershire)	Area for national intervention	⇔
Blackburn & Darwen	Area of enhanced support	⬆
Pendle (Lancashire)	Area of enhanced support	⬆
Barnsley	Area of concern	⇔
Bradford	Area of concern	⬇
Kirklees	Area of concern	⇔
Oldham	Area of concern	⇔
Peterborough	Area of concern	⬆
Rochdale	Area of concern	⇔
Sheffield	Area of concern	⬇
Wakefield	Area of concern	⬆

As of 09:00 on 14 July 2020, a total of 1,719,493 people have been tested under Pillar 1. A total of 250,379 have been confirmed positive for COVID-19 in England under Pillar 1 and 2.
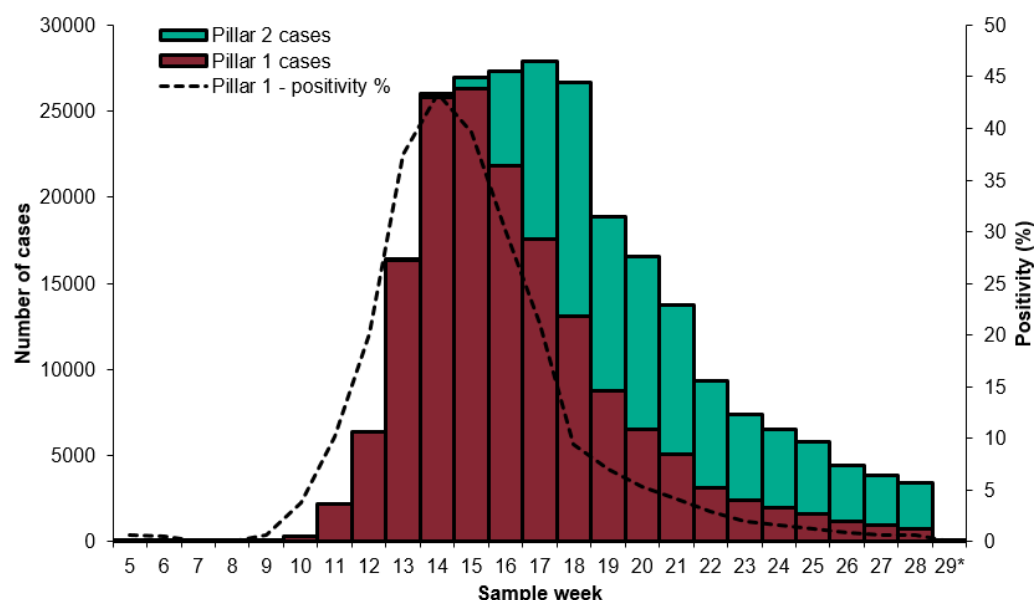
The total number of people tested under Pillar 1 has reduced by 41,303 in the previous week, due to adoption of PHE deduplication processes between Pillar 1 and Pillar 2 .

Figures 1 to 4, 6 and 8 to 11 and Tables 2, 3 and 4 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.
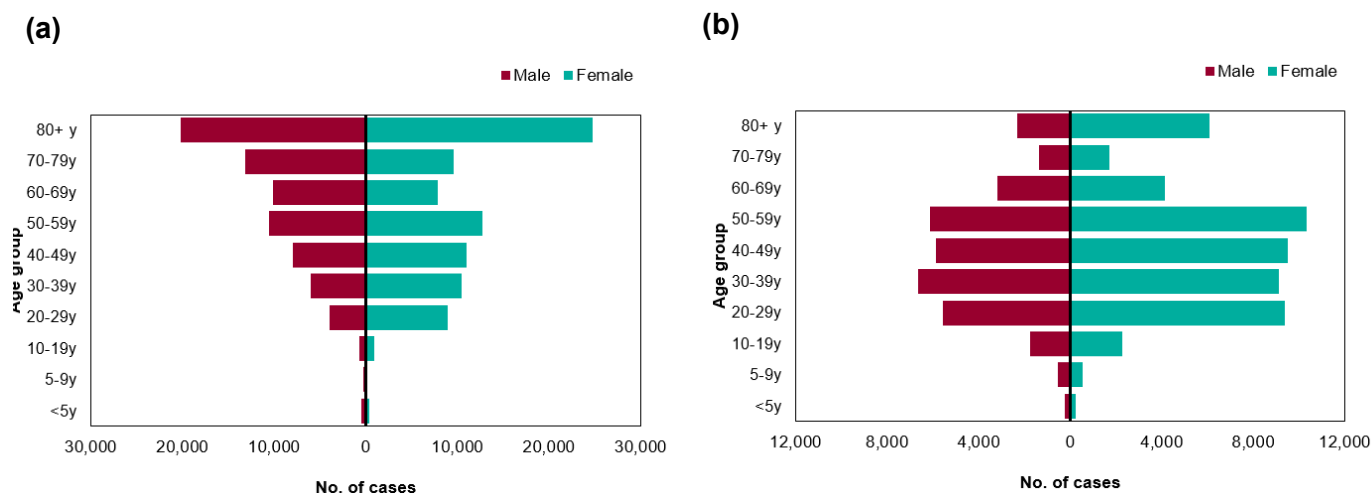
Figure 1: Laboratory confirmed COVID-19 cases tested under Pillar 1 (n=162,420) and Pillar 2 (n=87,959), based on sample week with overall positivity for Pillar 1 only (%)
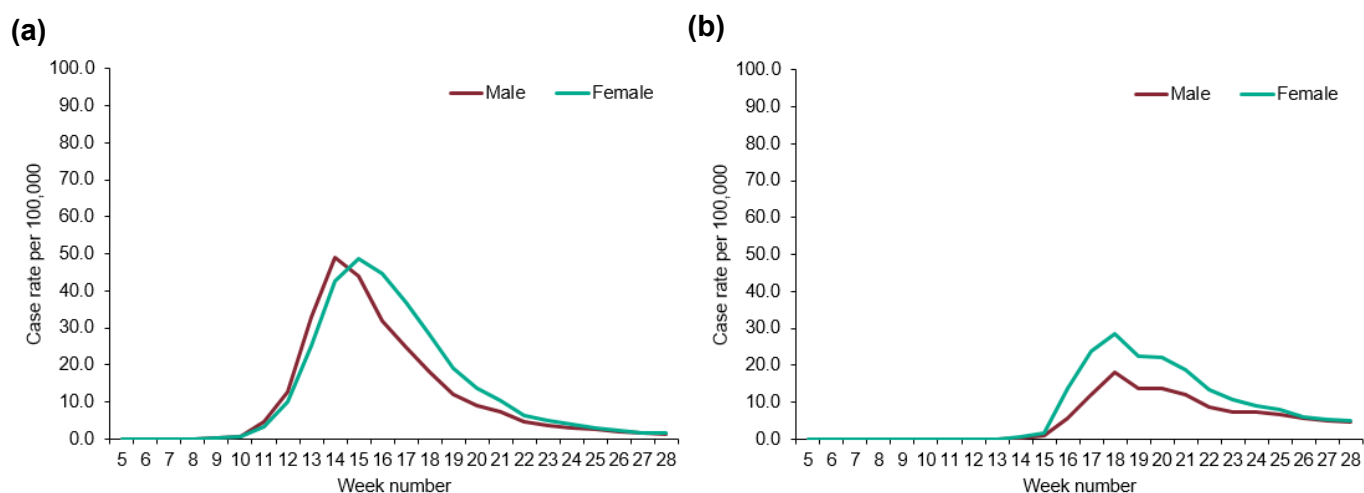

* For the most recent week, more samples are expected therefore the decrease seen in this graph should be interpreted with caution. The data are shown by the week the specimen was taken from the person being tested. This gives the most accurate analysis of this time progression, but it does mean that the latest days' figures may be incomplete.
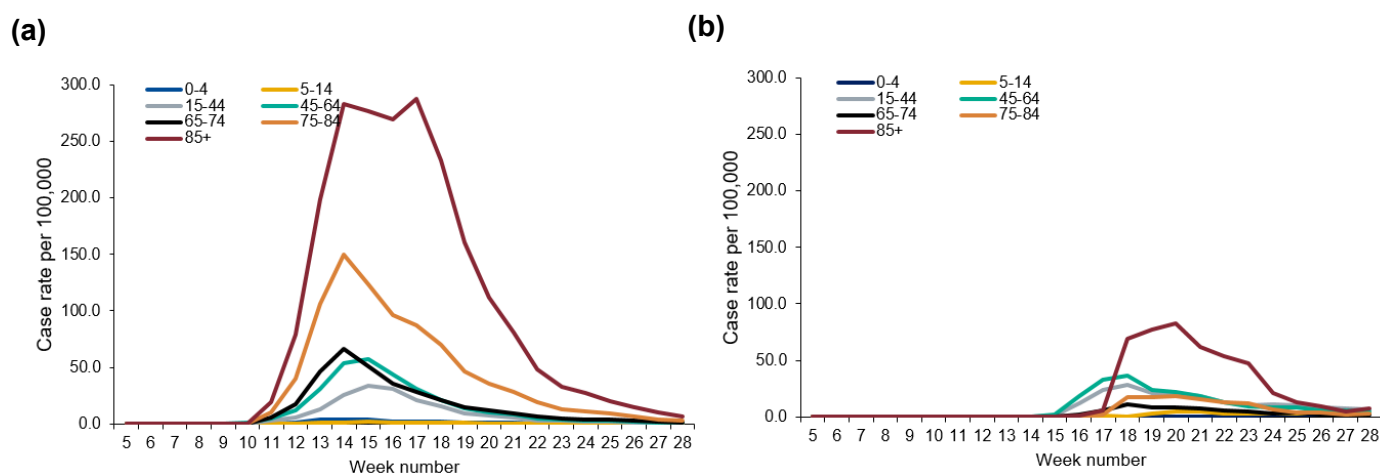
3

Age and gender

Figure 2: Age/sex pyramids for laboratory confirmed COVID-19 cases tested through (a) Pillar 1 (n=160,021) and (b) Pillar 2 (n=86,990)

(a)   **(b)**

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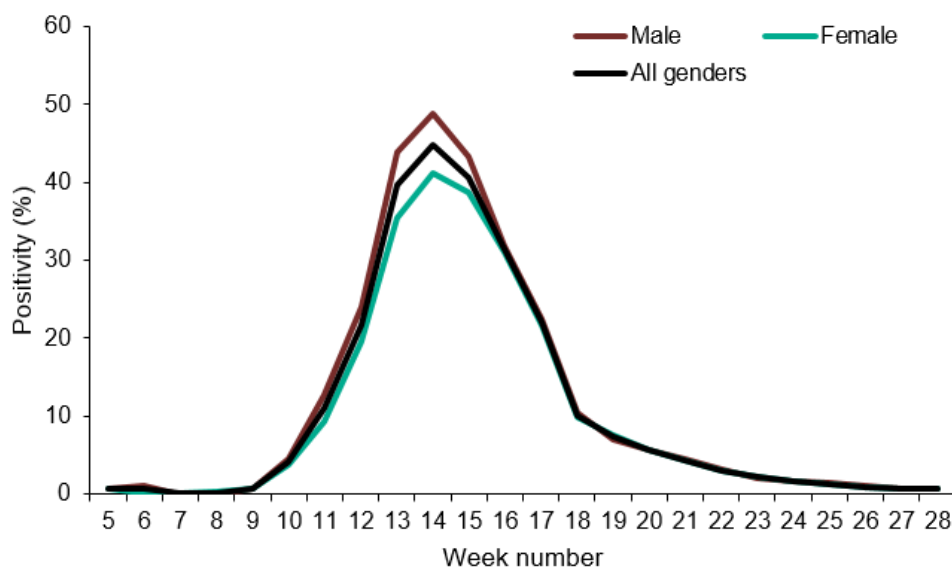
(a)   **(b)**

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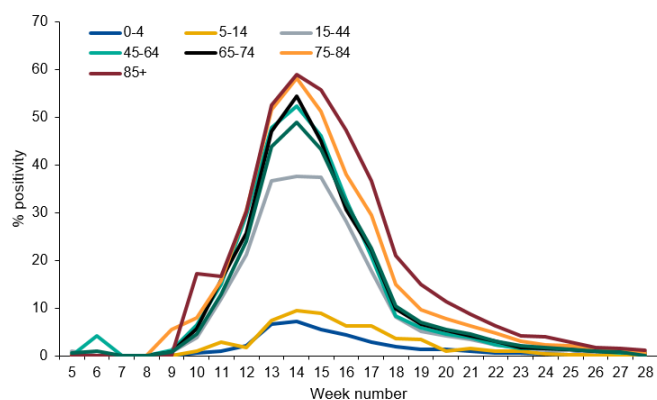
(a)   **(b)**

4

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)
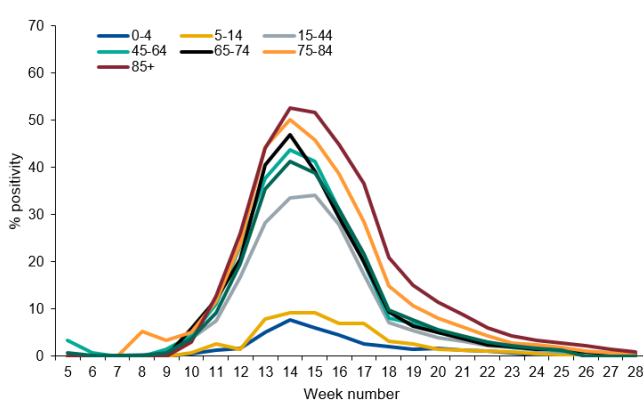
(a) Overall positivity % and by gender

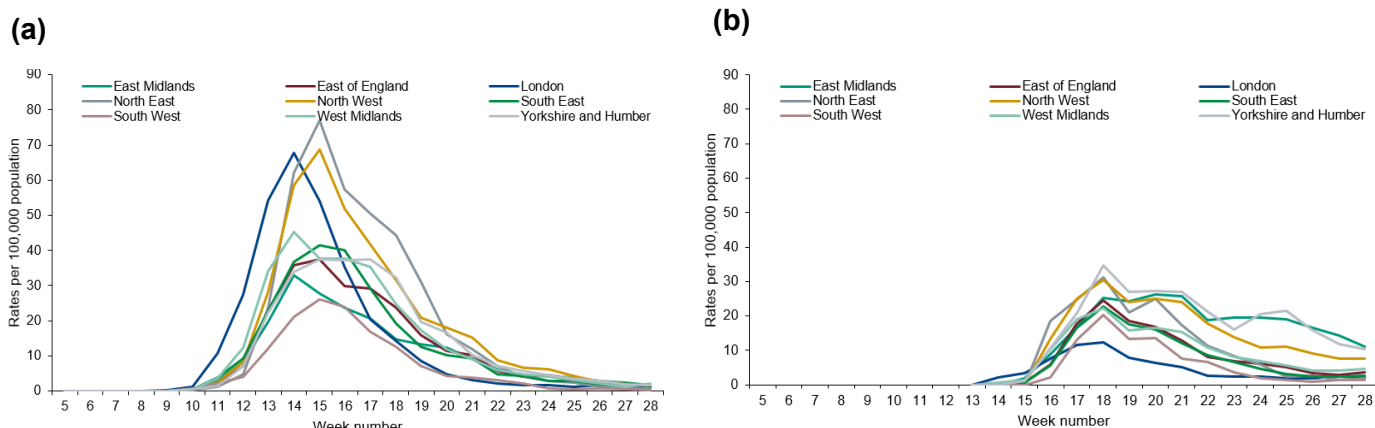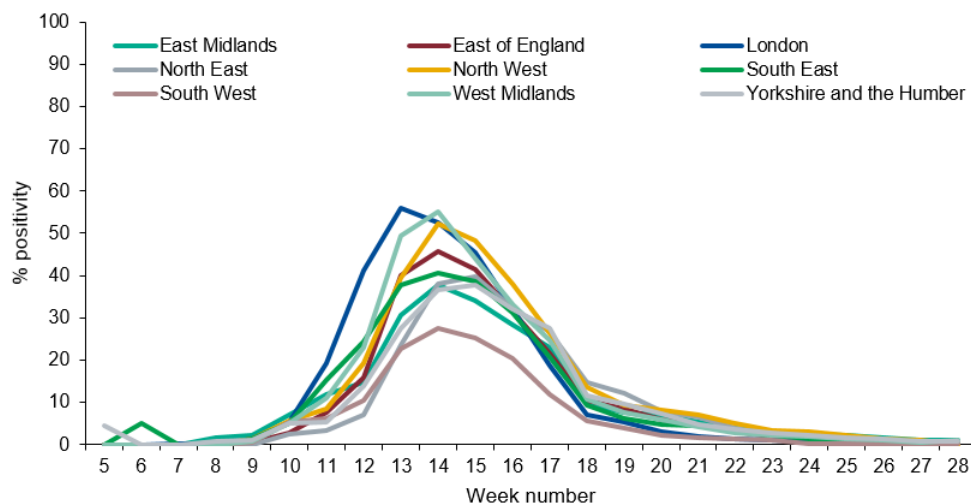**(b) Male**

(c) Female

5

Geography

Table 2: Cumulative number of cases under Pillar 1 (n=155,733) and Pillar 2 (n=86,369) and total number of people tested under Pillar 1 (n=1,605,244) by PHE Centres

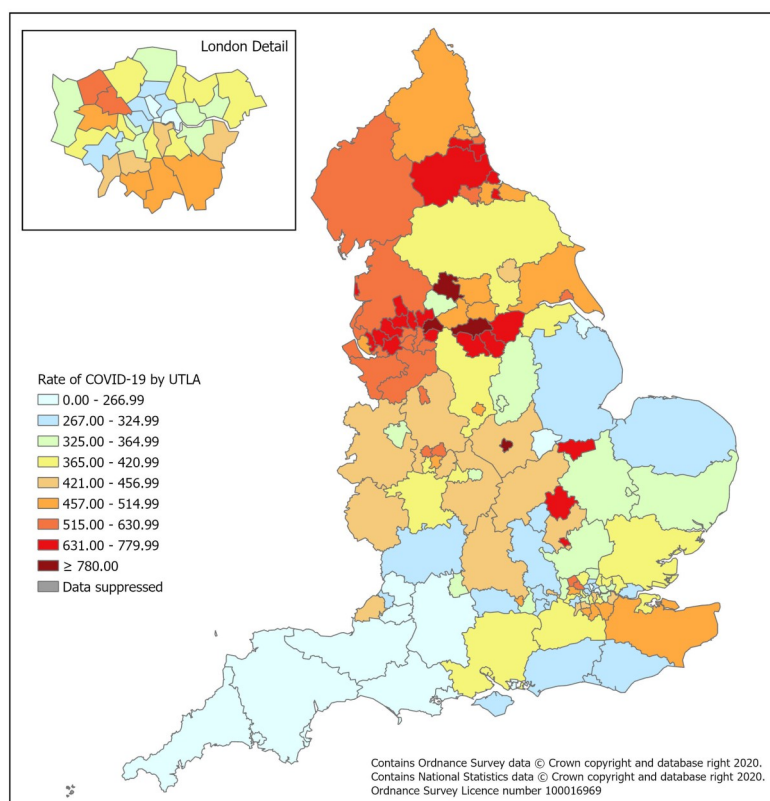| PHE Centres	Pillar 1 cases	Pillar 2 cases	Total number of people tested (under Pillar 1 only)
North East	10,606	4,561	84,504
North West	27,581	16,021	218,017
Yorkshire & Humber	15,554	14,565	166,327
West Midlands	17,268	8,584	173,599
East Midlands	10,155	11,916	115,044
East of England	16,071	8,632	181,957
London	27,836	6,387	242,301
South East	22,662	10,824	255,999
South West	8,000	4,879	167,496

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
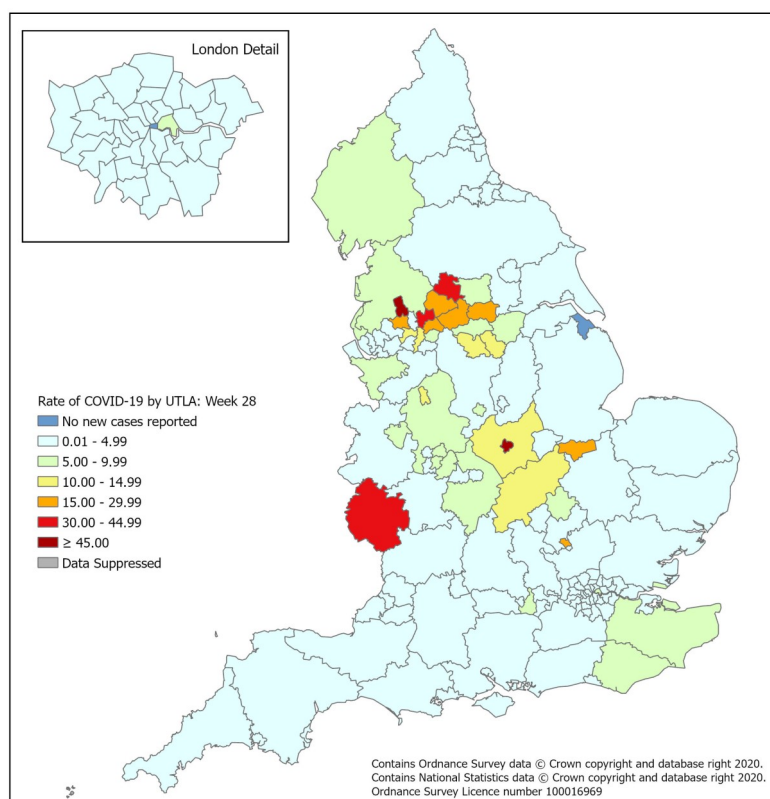

Figure 7: Weekly positivity of laboratory confirmed COVID-19 cases tested under Pillar 1 (%) by PHE Centres and sample week, (SGSS and Respiratory DataMart)

6

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 8 map with legend:

London Detail

Rate of COVID-19 by UTLA
- 0.00 - 266.99
- 267.00 - 324.99
- 325.00 - 364.99
- 365.00 - 420.99
- 421.00 - 456.99
- 457.00 - 514.99
- 515.00 - 630.99
- 631.00 - 779.99
- ≥ 780.00
- Data suppressed

Contains Ordnance Survey data © Crown copyright and database right 2020.
Contains National Statistics data © Crown copyright and database right 2020.
Ordnance Survey Licence number 100016969

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 9 map with legend:

London Detail

Rate of COVID-19 by UTLA: Week 28
- No new cases reported
- 0.01 - 4.99
- 5.00 - 9.99
- 10.00 - 14.99
- 15.00 - 29.99
- 30.00 - 44.99
- ≥ 45.00
- Data Suppressed

Contains Ordnance Survey data © Crown copyright and database right 2020.
Contains National Statistics data © Crown copyright and database right 2020.
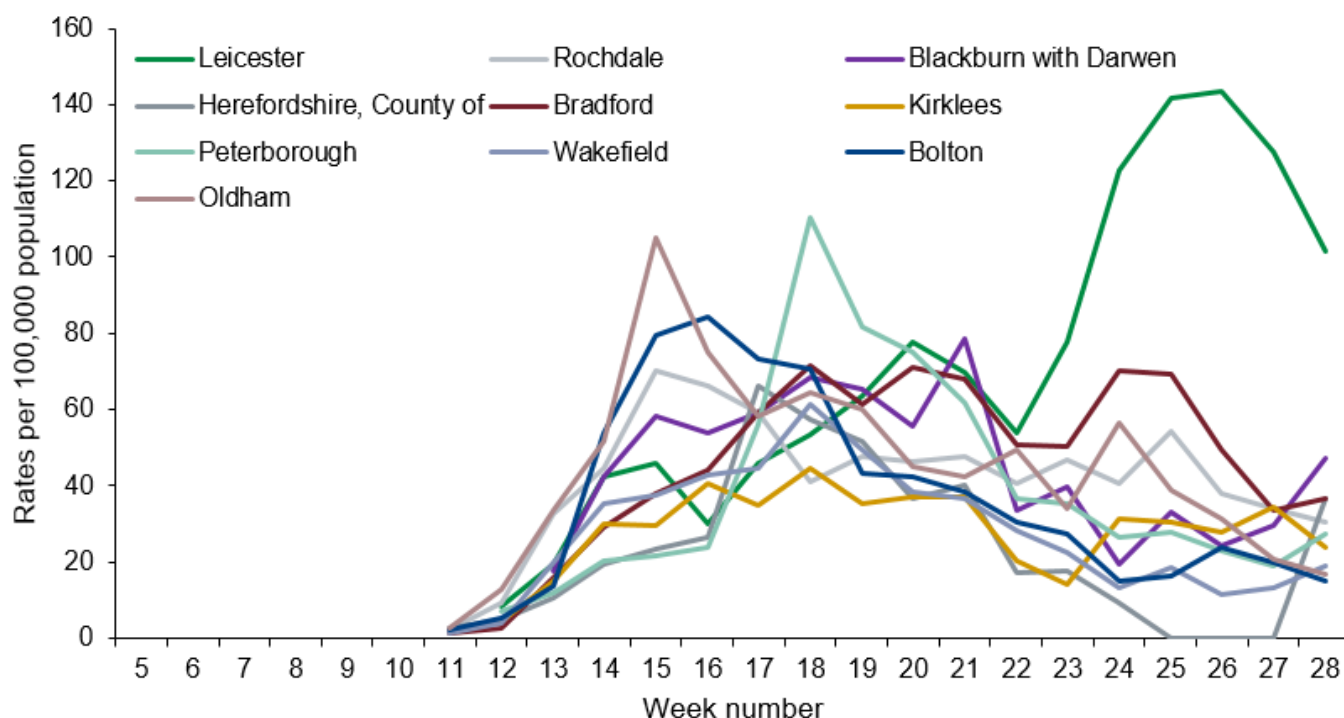Ordnance Survey Licence number 100016969

7

Table 3: Upper Tier Local Authorities (UTLA) with the highest weekly rate of COVID-19 cases per 100,000 population tested under Pillar 1 and 2, in weeks 27 and 28

UTLA	week 27	week 28	Difference in weekly incidence rate from previous week	
Leicester	127.53	101.35	-26.18	⬇
Rochdale	34.09	30.45	-3.64	⬇
Blackburn with Darwen	29.54	47.00	17.46	⬆
Herefordshire, County of	2.08	36.44	34.36	⬆
Bradford	33.69	36.49	2.8	⬆
Kirklees	34.42	23.7	-10.72	⬇
Peterborough	18.9	27.36	8.46	⬆
Wakefield	13.04	19.13	6.09	⬆
Bolton	19.97	15.07	-4.9	⬇
Oldham	20.8	16.55	-4.25	⬇

the UTLAs listed in this table are based on incidence rates alone and will differ from the lower tier local authorities listed in Table 1, which takes into account a range of indicators.

Figure 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=225,311)

Table 4: Number of cases tested under Pillar 1 and 2, and percentage (%) by ethnic group and week

Ethnic group	Week - number (%)			
	25	26	27	28
White	3,388 (62.5)	2,443 (58.6)	2,046 (57.5)	1,470 (51.1)
Asian / Asian British	1,555 (28.7)	1,386 (33.3)	1,238 (34.8)	1,154 (40.2)
Black / African / Caribbean / Black British	186 (3.4)	142 (3.4)	101 (2.8)	123 (4.3)
Mixed / Multiple ethnic groups	87 (1.6)	70 (1.7)	41 (1.2)	49 (1.7)
Other ethnic group	203 (3.7)	125 (3)	130 (3.7)	78 (2.7)

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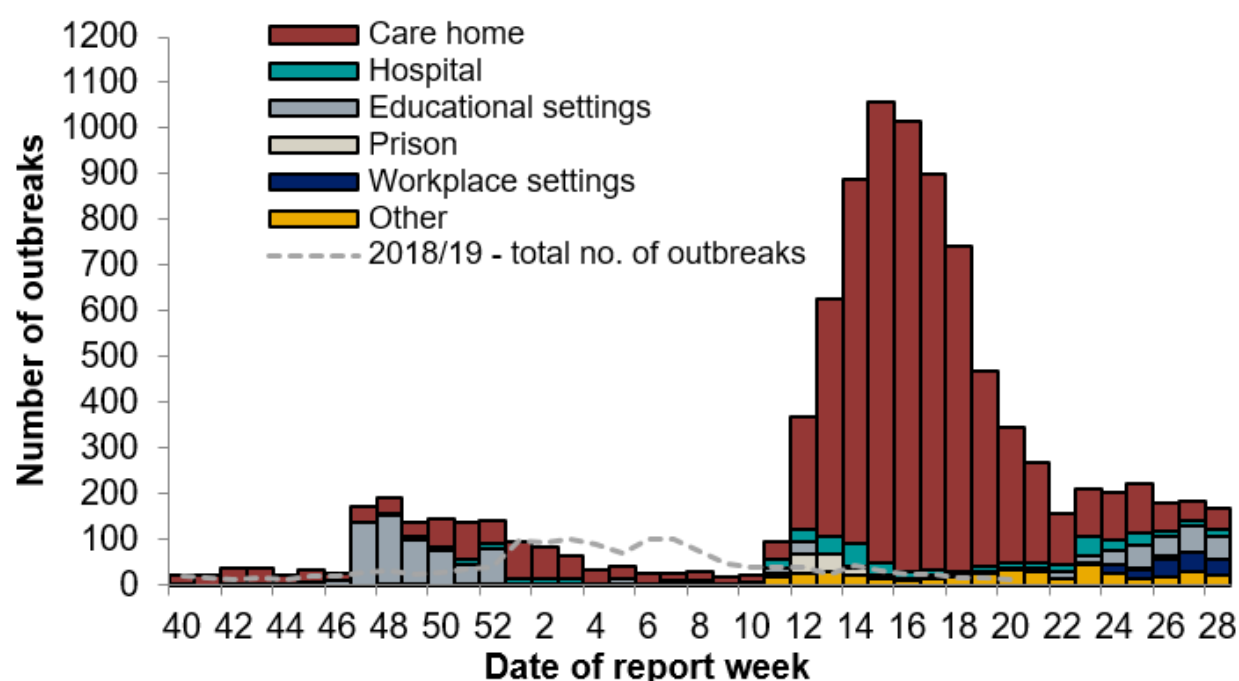
- confirmed outbreaks of acute respiratory infections i.e. two or more laboratory confirmed cases (COVID-19, influenza or other respiratory pathogen) linked to a particular setting
- situations where an outbreak is suspected. All suspected outbreaks are further investigated by the HPT in liaison with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

169 new ARI incidents have been reported in week 28 (Figure 12):

- 47 incidents were from care homes where 35 had at least one linked case that tested positive for SARS-CoV-2
- 15 incidents were from hospitals where 12 had at least one linked case that tested positive for SARS-CoV-2
- 49 incidents were from educational settings where 22 had at least one linked case that tested positive for SARS-CoV-2
- 1 incident was from a prison
- 37 incidents were from workplace settings where 28 had at least one linked case that tested positive for SARS-CoV-2
- 20 incidents were from the other settings category where 15 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 5 : 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	52(7)	9(2)	29(5)	0(0)	16(5)	5(1)	111(20)
East Midlands	6(3)	5(2)	1(0)	1(0)	37(11)	2(0)	52(16)
London	32(9)	6(3)	22(7)	0(0)	9(4)	11(2)	80(25)
North East	9(0)	4(0)	11(2)	0(0)	5(0)	5(0)	34(2)
North West	54(9)	17(1)	20(2)	1(0)	17(7)	26(7)	135(26)
South East	40(9)	15(7)	35(9)	5(1)	7(1)	13(6)	115(33)
South West	19(6)	2(0)	36(11)	0(0)	2(0)	4(0)	63(17)
West Midlands	19(2)	5(0)	24(8)	0(0)	17(3)	7(3)	72(16)
Yorkshire and Humber	30(2)	2(0)	19(5)	1(0)	31(6)	7(1)	90(14)
Total	261(47)	65(15)	197(49)	8(1)	141(37)	80(20)	752(169)

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.
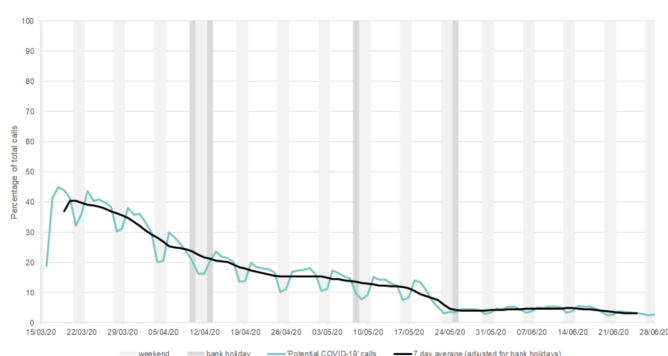
Up to 12 July 2020, the daily percentage of NHS 111 'potential COVID-19-like' calls (as a percentage of total NHS 111 calls) remained stable (Figure 13). The daily number of NHS 111 'potential COVID-19' completed online assessments remained stable (Figure 14).

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

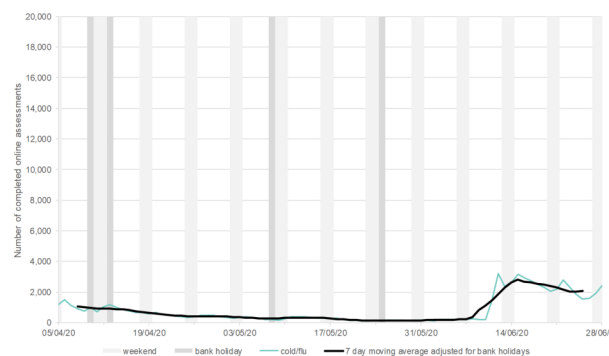(b) Daily cold/flu calls as a percentage of total calls, all ages

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.
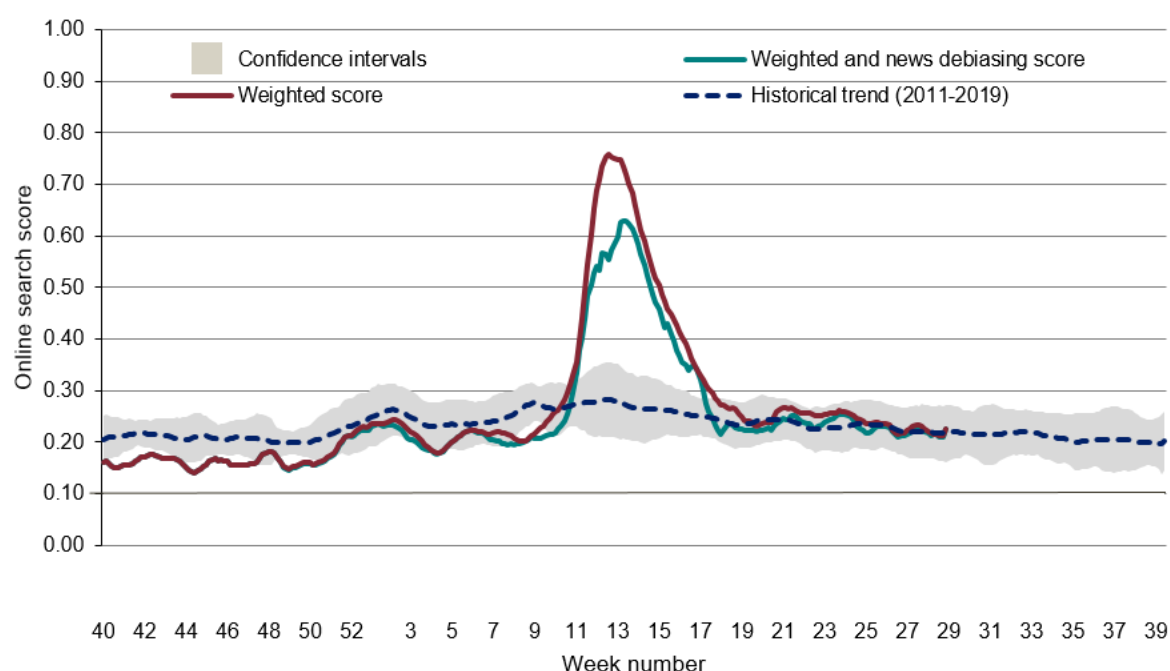
Google search queries

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 28 (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
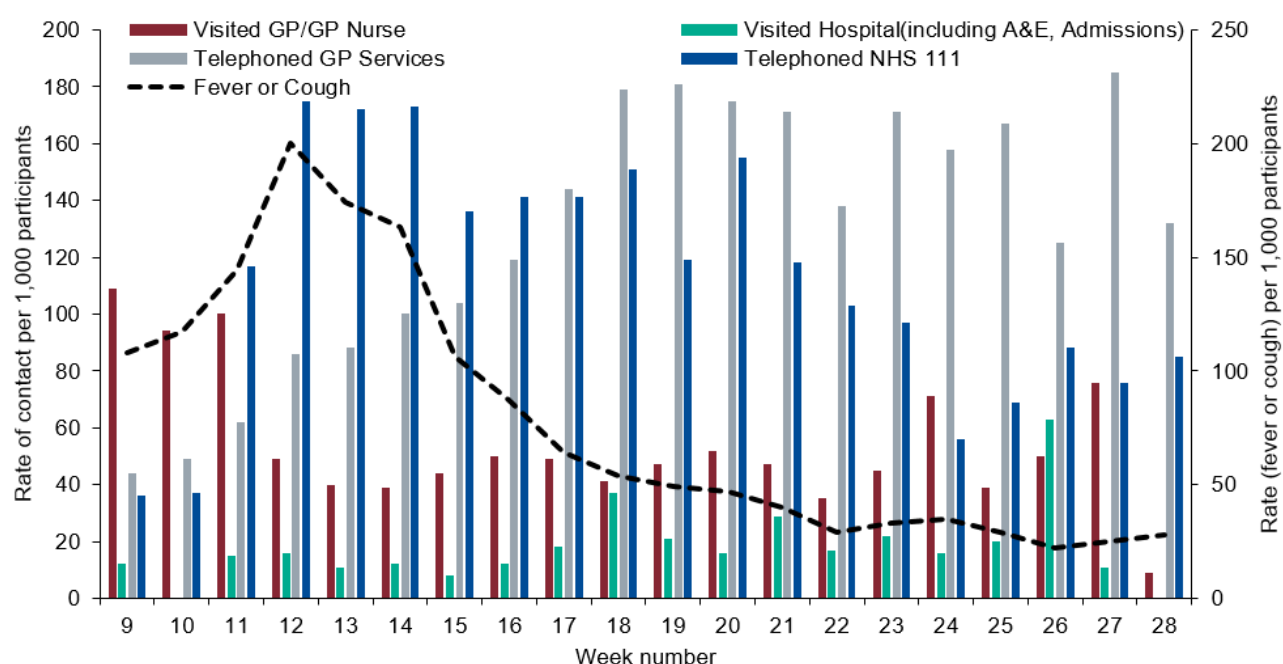

13

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 3,770 participants completed the weekly COVID-19 surveillance survey in week 28, of which 106 (2.8%) reported fever or cough, a slight increase to 2.5% reported in week 27. The most commonly reported method of access to healthcare services continue to be through telephone services (Figure 16).

Figure 16: Rate of contact with different healthcare services among FluSurvey participants reporting fever or cough symptoms, week 09 to 28, England

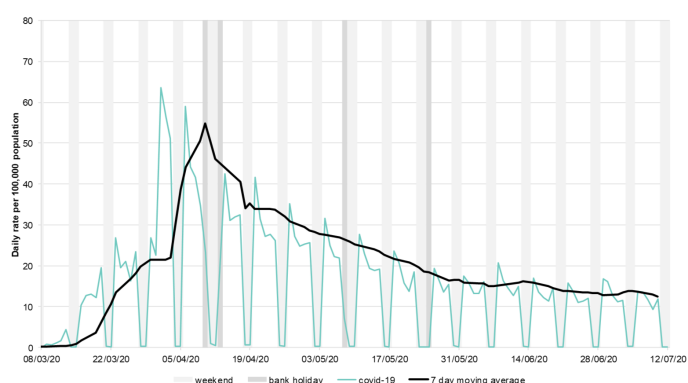## GP In Hours (GPIH) and GP Out of Hours (GPOOH), Syndromic surveillance

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 12 July 2020, GPIH consultations for potential COVID-19-like and ILI consultations remained stable (Figure 17). Please note that due to technical difficulties during week 28 there is a considerably reduced denominator population and number of GP practices available for inclusion in the report. Rates should therefore be treated with caution (baselines are also not available this week).   Through GPOOH consultations (up to 12 July 2020), the daily percentage (as a percentage of total contacts with a Read code) for ILI and difficulty breathing/wheeze/asthma contacts decreased (Figure 18).
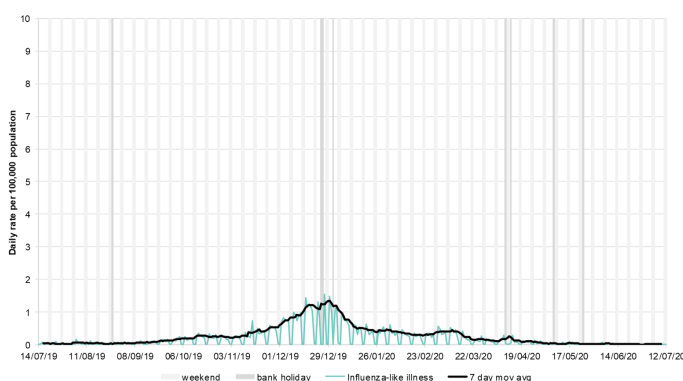
Please note GP data should be interpreted with caution due to changes in advice regarding accessing GP surgeries due to COVID-19. Further information about these caveats is available from the PHE GP In Hours Syndromic Surveillance bulletin.

Figure 17 (a-b): GPIH clinical indicators, England

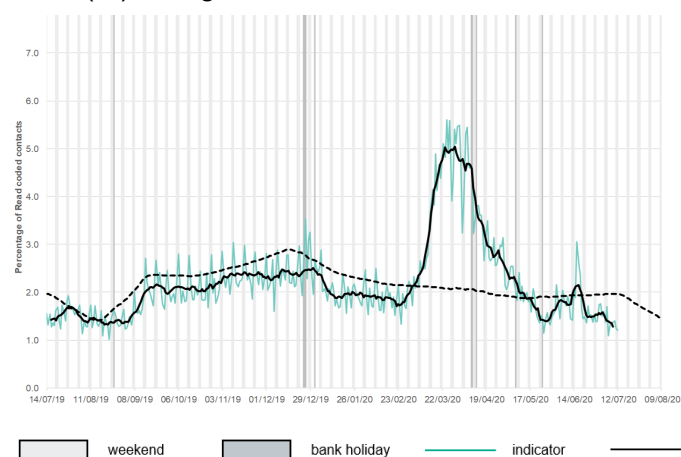(a) potential COVID-19 GP consultations, daily incidence rates per 100,000 population, all ages

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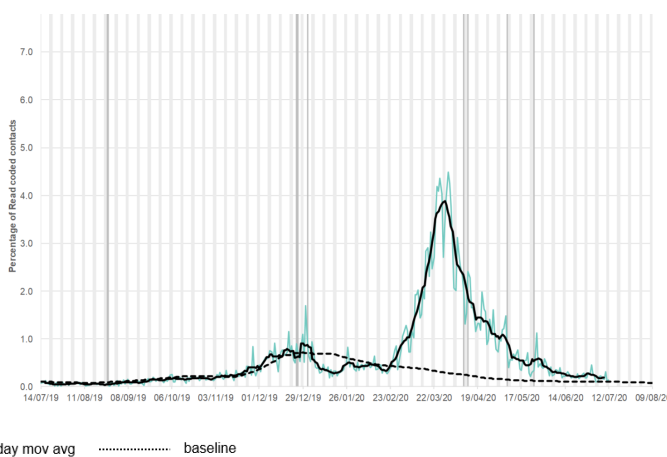

Figure 18 (a-b) : GPOOH contacts indicators, England

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

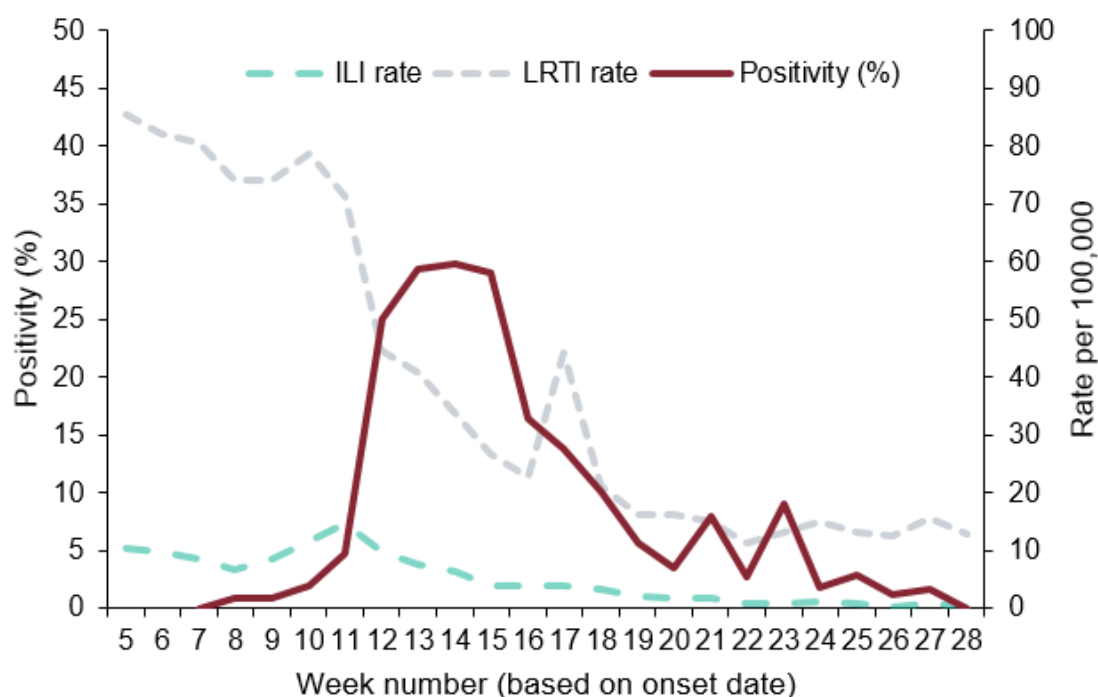(b) Influenza-like illness, daily contacts (%), all ages

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 14 July 2020, a total of 4,968 patients have been tested of which 609 have tested positive for SARS-CoV-2 through this scheme. The overall positivity was at 0.0% (0/23) in week 28 compared to 1.6% (1/62) in the previous week (Figure 19).Consultations for ILI and LRTI decreased (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

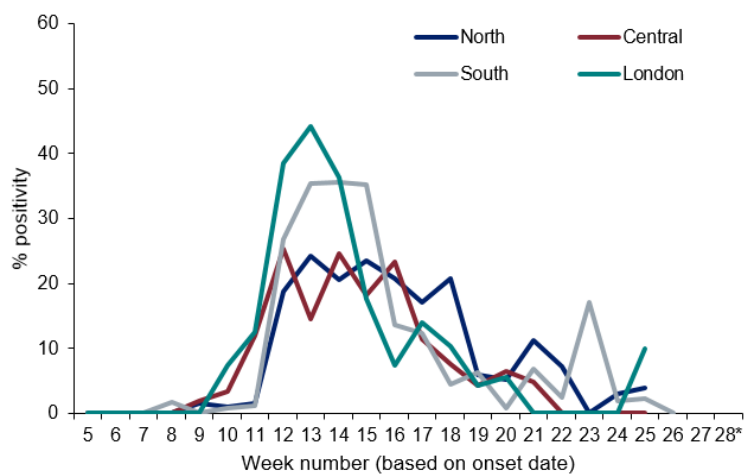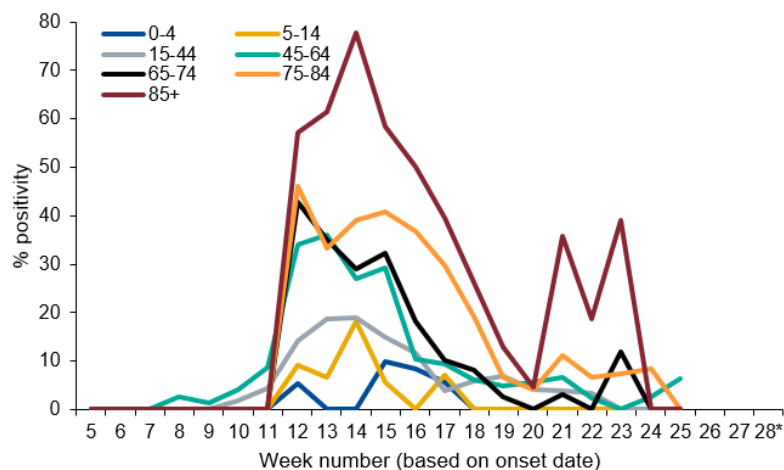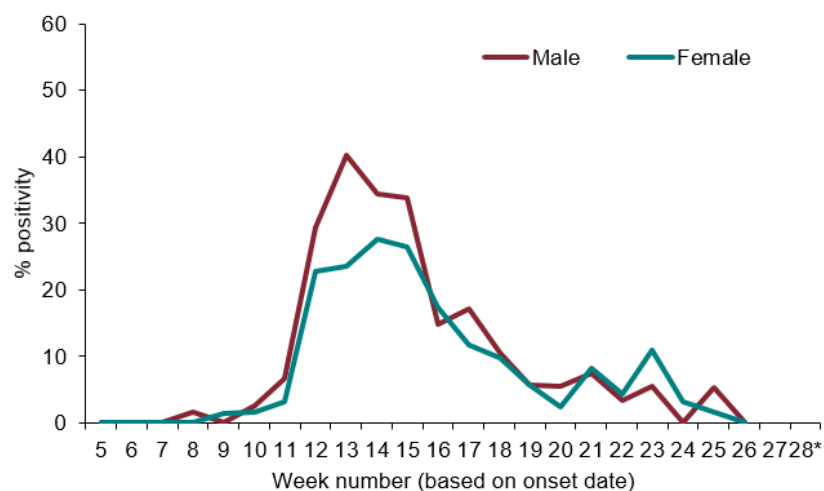**Figure 20: Overall positivity (%) (weekly) by PHE Region, England (RCGP)**

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

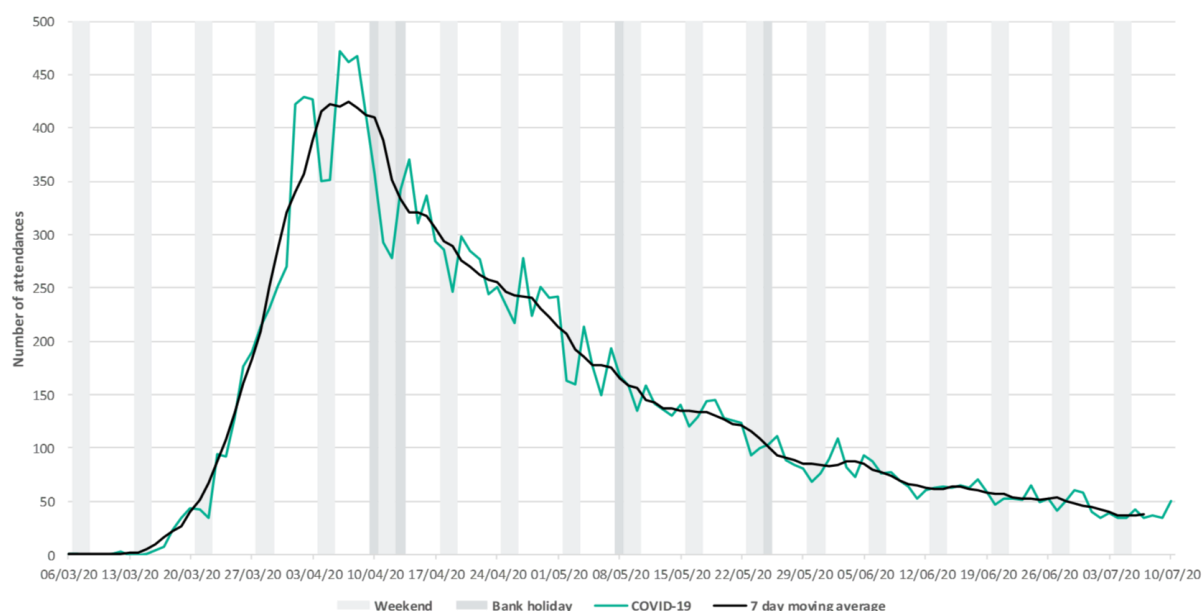*Positivity (%) is not calculated when the total number tested is less than 10

17

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 10 July 2020, the daily number of ED attendances for all ages as reported by 78 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

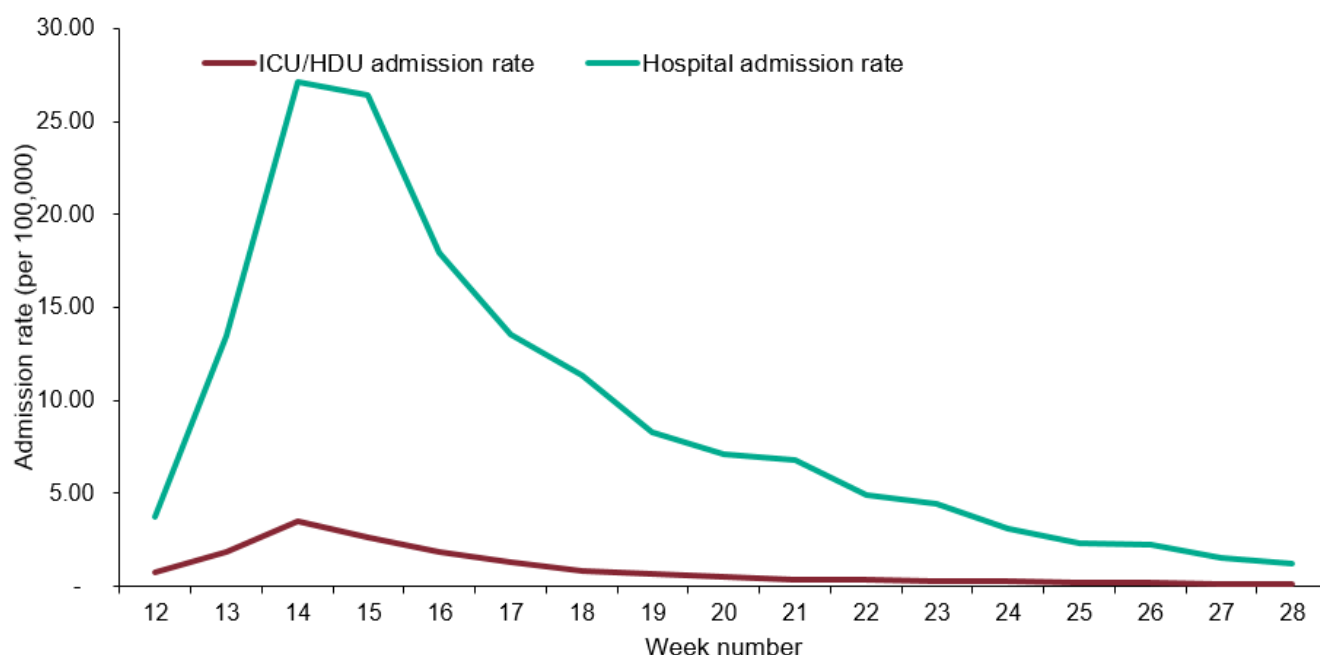### COVID-19 Hospitalisation in England Surveillance System (CHESS)

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 28, the weekly admission rates for both hospitalisations and ICU/HDU COVID-19 admissions remained stable.
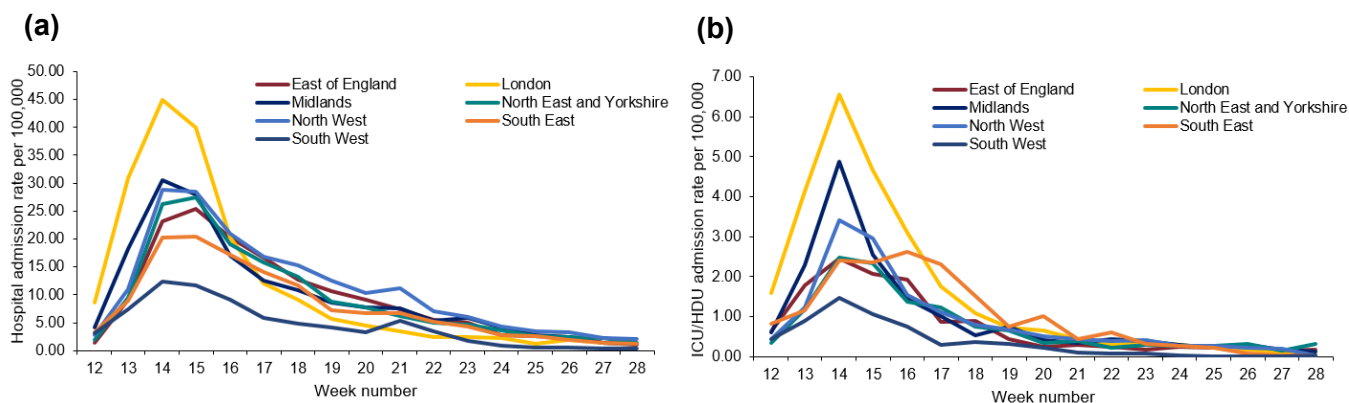The hospitalisation rate was at 1.24 per 100,000 in week 28 compared to 1.56 per 100,000 in the previous week. The ICU/HDU rate was at 0.13 per 100,000 in week 28 compared to 0.12 per 100,000 in the previous week (Figure 23). By NHS regions, the highest hospitalisation and ICU/HDU rates were observed in the North West and North East respectively (Figure 24). By age group, the highest hospitalisation rate was seen in the 85+ 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
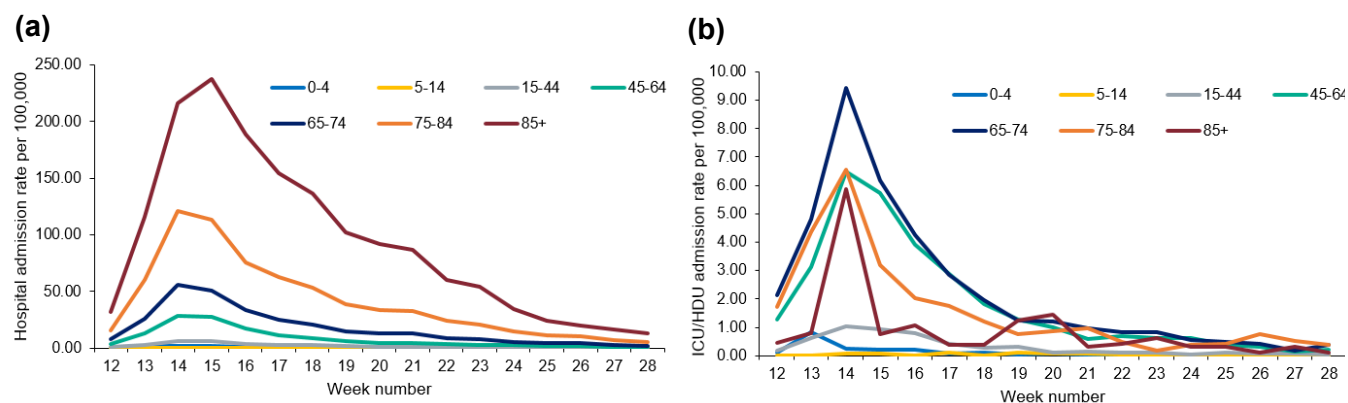
COVID-19 Hospitalisation in England Surveillance System (CHESS)

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

(a)

(b)

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
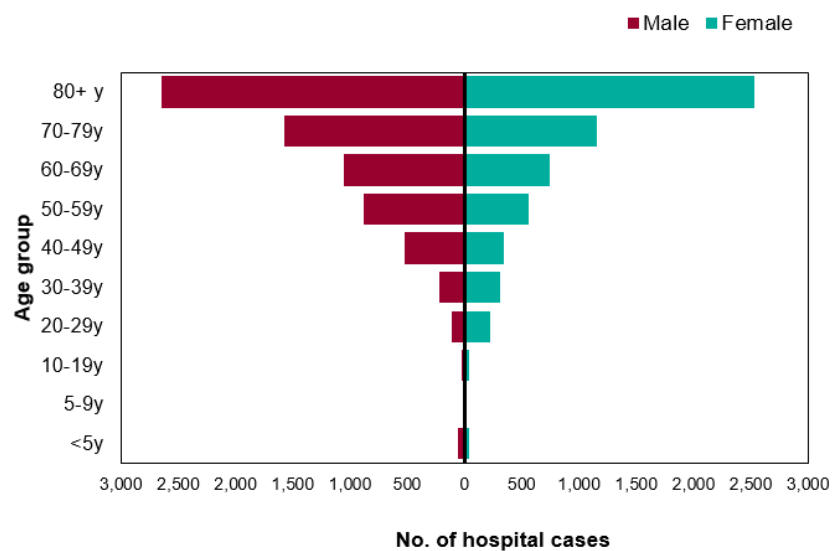
(a)

(b)

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=13,073) and (b) ICU/ HDU (n=4,894) COVID-19 cases reported through CHESS, England
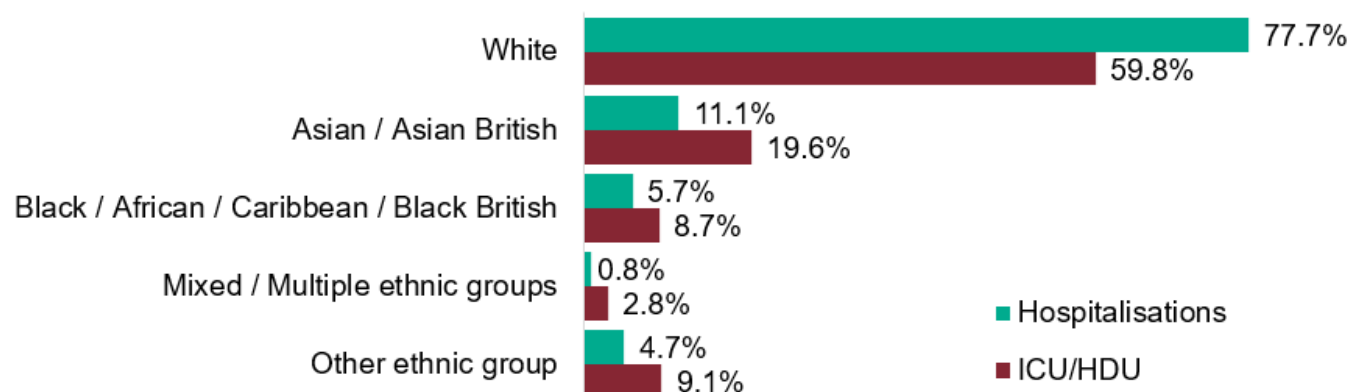
(a)

(b)

COVID-19 Hospitalisation in England Surveillance System (CHESS)

Figure 27: Ethnic group of new hospitalisations (lower level of care) (n=11,952) and ICU/ HDU (n=4,207) COVID-19 cases reported through CHESS, England

UK Severe Respiratory Failure (SRF) centres admissions

Between 03 March and 13 July 2020, a total of 219 laboratory confirmed COVID-19 admissions have been reported from the 5 SRFs in England. There were no new laboratory confirmed COVID-19 admissions reported in week 28 compared to 3 in week 27 (Figure 28).

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

22

Cumulative deaths

As of 5pm on 13 July 2020, a total of 40,379 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=40,379)

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

Table 6: Cumulative number of deaths (Pillar 1 and 2) by PHE Centres (n=40,046)

PHE Centres	Number of deaths
North East	2,370
North West	6,693
Yorkshire & Humber	3,898
West Midlands	5,057
East Midlands	3,223
East of England	4,611
London	6,763
South East	5,345
South West	2,086

Cumulative deaths

Figure 30: Age/sex pyramid of laboratory confirmed COVID-19 (Pillar 1 and 2) deaths (n=40,379)

Figure 31: Ethnic group of confirmed COVID-19 (Pillar 1 and 2) deaths, England (n= 39,989)

24

Daily excess all-cause mortality, UK

Deaths occurring from 01 January to 08 July 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 s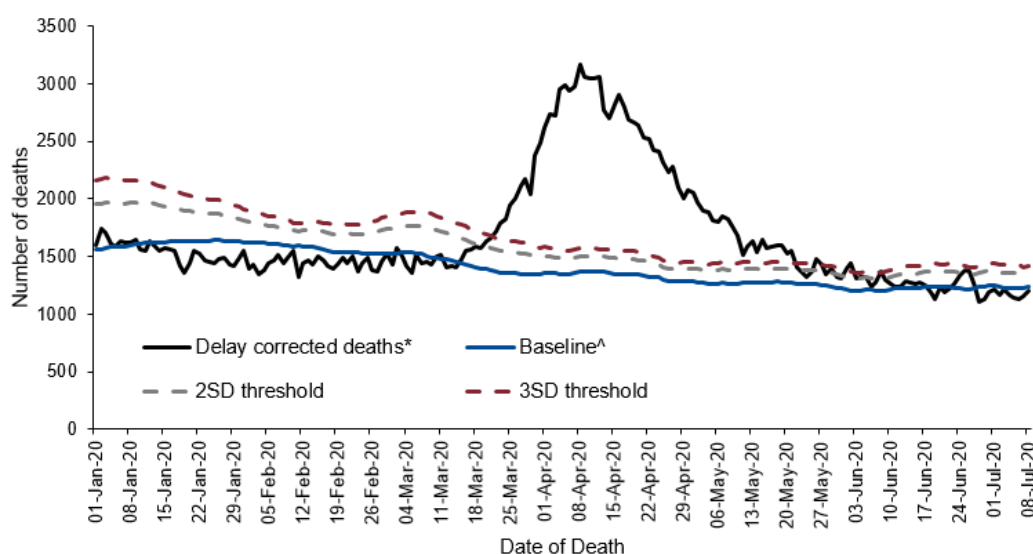ame day of the year in the previous 5 years +/- 7 days with an extrapolated time trend, and with 2 and 3 standard deviation (SD) limits shown (Figure 32).

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 33. 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 27 overall, by age group or sub-nationally (Figure 32, 33 and Table 7).

Weekly all-cause mortality surveillance is monitored and reports can be found <u>here</u>.

Figure 32: Daily excess all-cause deaths in all ages, England, 01 January 2020 to 08 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 7: Excess all-cause deaths by (a) age group and (b) PHE centres , England

(a)

	Excess detected in week 27 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 27 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

26

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 08 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 the results from testing samples from the following sources are included:
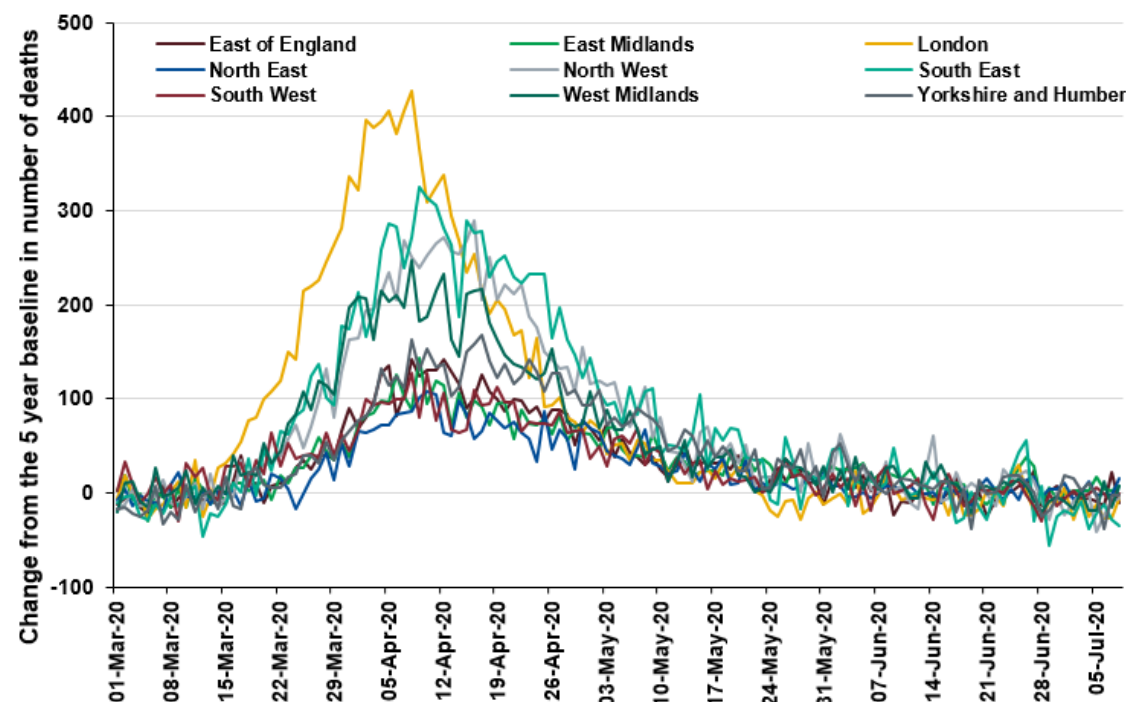
1) Healthy adult blood donors aged 17-69 years, supplied by the NHS Blood and Transplant (NHS BT collection) between weeks 13 -28. Donor samples from two different geographic regions (approximately 1000 samples per region) in England are tested each week.

2) Residual sera from children and young adults under 25 years from participating NHS and PHE laboratories across England (SEU and Paediatric collections) collected from early February to early June (weeks 5-24)

3) Samples collected from healthy individuals under 25 years through a NIHR funded study, 'What's the STORY'

Seroprevalence in Adults aged 17-69 years (Blood Donors)

The results presented here are based on testing using the Euroimmun assay for blood donor samples collected between weeks 13-28. This week's report includes the results of testing the 7th set of samples from London (weeks 27-28) and the 4th set of samples from the North West region (week 27).

National Prevalence

Overall population weighted prevalence among blood donors in England was 6.7% (95% CI 6.1% - 7.3%) (unadjusted) or 7.1% (95% CrI 6.5% - 7.8%) after adjustment for the accuracy of the Euroimmun assay (sensitivity 83.0% and specificity 99.3%) for the period 8th June – 6th July (weeks 24-28). This compares with 7.5% (95% CI 6.9% - 8.2%) (unadjusted) or 8.2% (95% CrI 7.4% - 9.0%) (adjusted) for the period of 13th May – 7th June (weeks 20-23).

Regional Prevalence over Time

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. Please note that the sensitivity and specificity values for the Euroimmun assay has been updated this week based on additional data from testing of convalescent sera taken 3 to 6 weeks after onset.

Adjusted prevalence estimates vary across the country and over time. In London where prevalence estimates are highest, overall adjusted prevalence increased from 2.6% (week 13) to 15.7% (week 21). In the most recent data lower prevalence estimates have been observed, 13.3% (weeks 25-26) and 9.9% (weeks 27-28). 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 since week 18 demonstrates the impact of lock down measures on new infections. In more recent sampling periods, prevalence estimates are lower and this is likely to be largely driven by changes in the precise locations of sampling over time and potential demographic differences in the donor population as lockdown measures are relaxed. Waning immunity may also be a contributory factor, although the consistently low numbers of samples with a result in the equivocal range suggests that this is likely to play small role in the overall trends observed to date.

Similar patterns have been observed in other regions as well. For example, the adjusted prevalence in the North West of England is slightly lower at 8.3% in week 27 compared with 10.8% in week 19.

Sero-prevalence epidemiology, England

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 recent data from weeks 26-27, adjusted prevalence amongst donors in the South East has plateaued, remaining stable at 4.6% (95% CrI 3.0% - 6.4%) between weeks 26 and 27. Similar trends have been observed in recent 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 5.2% (95% CrI 3.6% - 7.0%) in week 22 and 5.0% (95% CrI 3.3% - 6.9%) in week 27.

Age specific prevalence estimates have changed over time with prevalence notably higher in young adults when the increases were first observed in areas experiencing the outbreak earlier. Over time, prevalence estimates in individuals aged between 17 and 29 have decreased, a higher prevalence was observed in adults aged between 50 and 59 later in the epidemic. These patterns may reflect differences in behaviour and mixing patterns in the different age groups.

Seroprevalence in children and young adults under 25 years of age

PHE is conducting a number of seroprevalence surveys in children and young adults. The PHE Seroepidemiology Unit (SEU) and paediatric hospital survey is a collection of residual serum samples from routine microbiological testing and "What's the Story" is a representative household survey that collects sera from healthy children and adolescents under the age of 25 years in England.
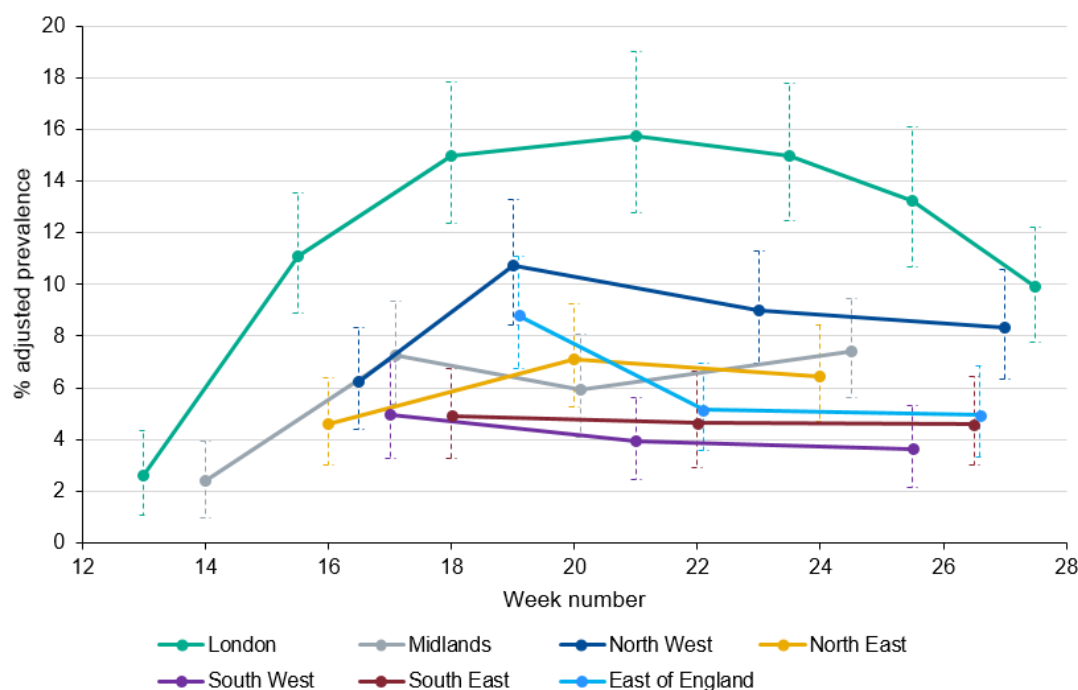
The results of testing these collections with samples collected in children and young adults are presented in Tables 8 and 9 below. Seroprevalence estimates from the Abbot assay were adjusted for sensitivity of 93.8% and specificity of 99.1% at a cut-off of 0.8 (the equivocal cut-off) (Table 8). Note that sensitivity is based on convalescent samples taken within 3-6 weeks of onset.

Both sample sets show a similar pattern of prevalence amongst children and young adults – an increase in prevalence between February and early April, followed by a plateau or slightly lower prevalence between April and late May. These findings suggest generally lower prevalence in those under 25 years of age compared with older adults. The differences in prevalence estimates between these two collections may also reflect some differences in the geographic distribution of samples that have been tested to date.

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)

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

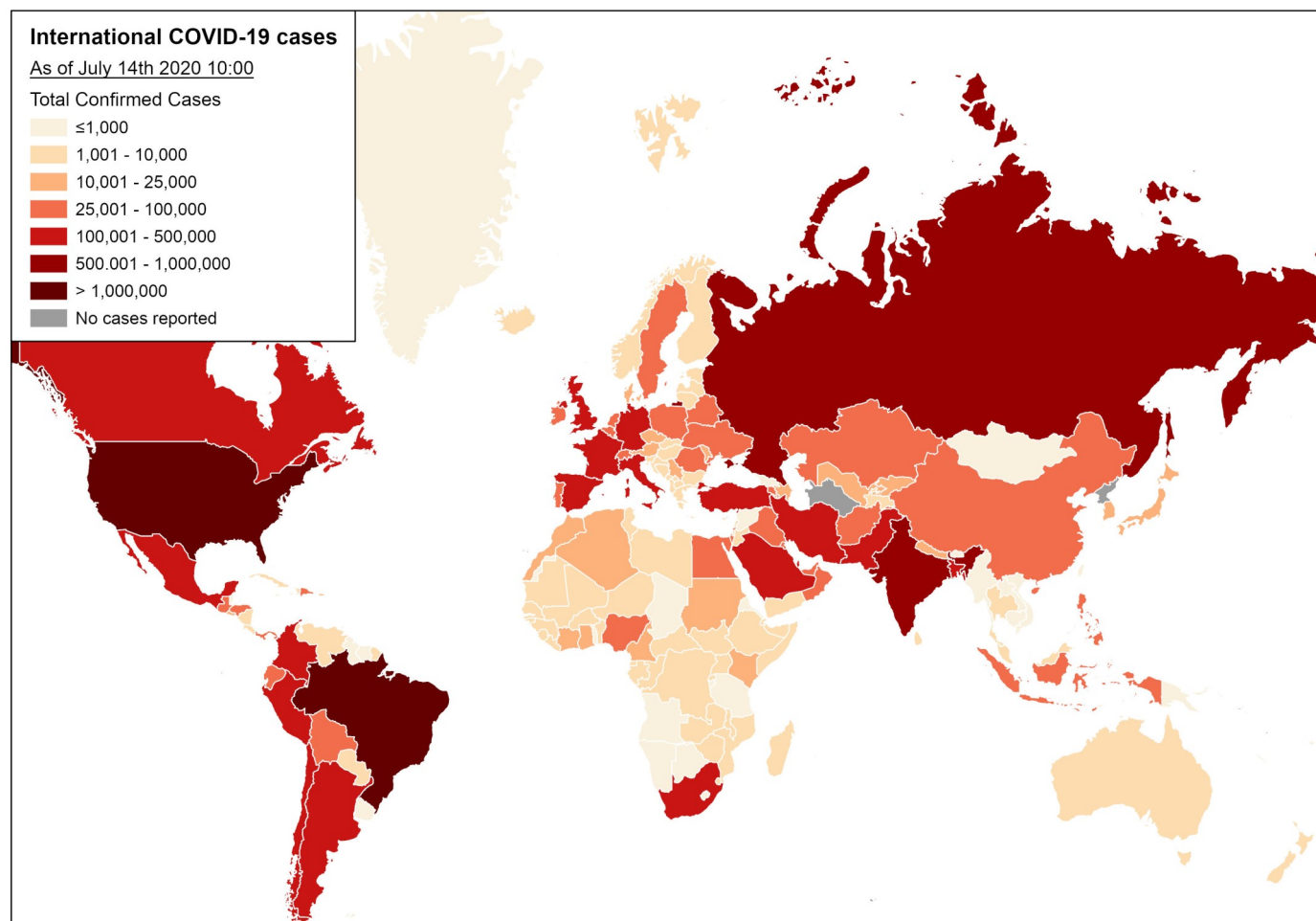| Date range	pos	equiv	neg	total	% pos (95% CI)	adjusted prevalence (95% CrI)
1 Feb - 31 Mar	2	6	435	443	0.5% (0.1% - 1.6%)	0.8% (0.0% - 2.6%)
1 - 30 Apr	39	4	604	647	6.0% (4.3% - 8.1%)	6.1% (4.1% - 8.4%)
1 May - 9 Jun	34	9	675	718	4.7% (3.3% - 6.6%)	5.4% (3.6% - 7.4%)

Table 9: Summary of What's the Story (unweighted) Prevalence Estimates (ages 1 – 24) by period of sampling, using the Abbott assay (neg<0.8 units, equiv 0.8-<1.4, pos>=1.4)

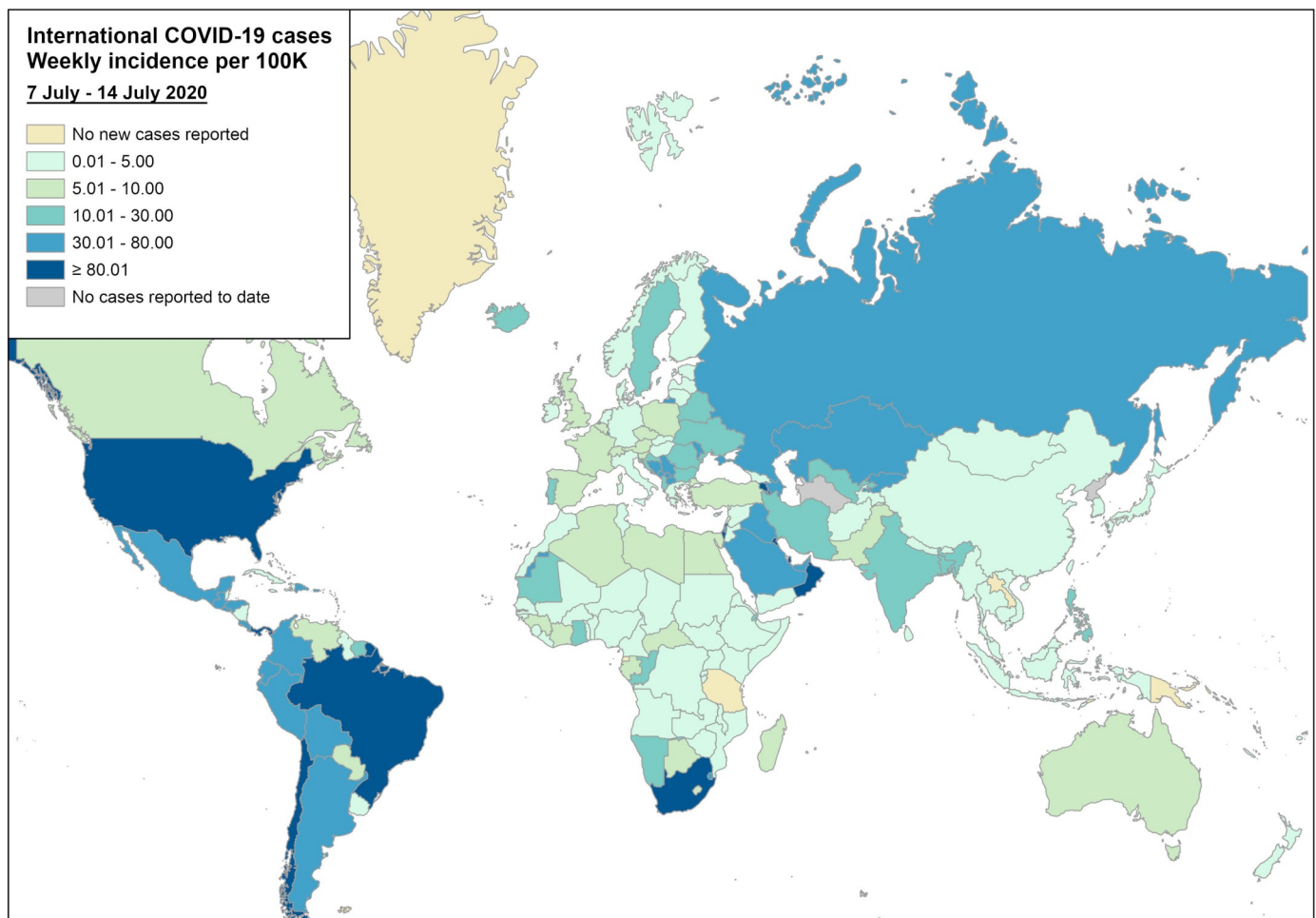| Date range	pos	equiv	neg	total	% pos (95% CI)	adjusted prevalence (95% CrI)
17 Feb - 31 Mar	0	1	107	108	0.0% (0.0% - 3.4%)	0.5% (0% - 3.5%)
1 - 30 Apr	9	2	201	212	4.2% (2.0% - 7.9%)	4.6% (1.8% - 8.4%)
1 - 29 May	5	0	119	124	4.0% (1.3% - 9.2%)	3.2% (0.3% - 8.0%)

Global situation

Globally, up to 14 July 2020, a total of 13,020,946 cases of COVID-19 infection have been reported worldwide, including 572,073 COVID-19 related deaths.

Figure 35: Global map of cumulative COVID-19 cases

International COVID-19 cases

As of July 14th 2020 10:00

Total Confirmed Cases

- ≤1,000
- 1,001 - 10,000
- 10,001 - 25,000
- 25,001 - 100,000
- 100,001 - 500,000
- 500.001 - 1,000,000
- > 1,000,000
- No cases reported

Global situation

Figure 36: Global map of weekly COVID-19 case incidence rate per 100,000, week 28 2020

International COVID-19 cases
Weekly incidence per 100K
7 July - 14 July 2020

- No new cases reported
- 0.01 - 5.00
- 5.01 - 10.00
- 10.01 - 30.00
- 30.01 - 80.00
- ≥ 80.01
- No cases reported to date

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.