CITY INTELLIGENCE

The demographic impact of Covid-19 in London

18 June 2020

Introduction

This briefing brings together a range of data published on the demographic impact of Covid19 to understand how the city has been affected. This briefing covers what is known about Covid-19 cases, before looking at mortality. It provides comparisons with other cities and some of the issues which affect the accuracy of such comparisons, it summarises the evidence of unequal impacts for different demographic groups, especially ethnicity, deprivation and workers in particular occupations and looks at the emerging data on current and past infections.

Key findings

- London emerged as an epicentre of the pandemic early in its spread across the UK, with a first positive test result on the 11th February 2020 and the first death reported in the first week of March
- Prior to lockdown on 23rd March, nearly 40% of England's confirmed cases were in London.
- London reached its daily peak of just over 1,000 tests with a positive result on 2nd April
- To date, there have been more than 27,300 confirmed cases in London – now representing less than 18% of all confirmed cases in England
- Croydon and Brent have the highest total number of confirmed cases by borough
- Up to 5th June, 8,271 London residents were registered as having died with Covid-19 mentioned on their death certificate, measured by ONS weekly deaths estimates
- In London, the peak week for Covid-19 related deaths occurred during the week ending 10th April, with 1,931 in a single week (a week later than the peak for cases)
- For each of the last two weeks for which data is available, deaths have reduced to below 100.
- Of the total Covid-19 related deaths recorded, 74 per cent of London deaths have occurred in hospitals, 16 per cent in care homes, with 8 per cent at home and two per cent in a hospice or elsewhere, which would include other communal establishments such as prisons
- Based on the fourteen weeks between 29th February and 5th June, Brent and Croydon recorded more Covid-19 related deaths than any other borough, at 478 and 479. This was just over half of all deaths in Brent and 40 per cent of deaths in Croydon over this period.
- Adjusting for the size and the age and sex of the population, nine of the ten local authorities with the highest mortality rates due to Covid-19 were in London.

MAYOR OF LONDON

- Excess deaths, comparing the average number of deaths in previous years with the total number of deaths from all causes for the same period this year, show a total of more than 58,000 excess deaths in England and nearly 9,000 in London between the beginning of March and 5th June.
- More of the excess deaths in hospitals occurred earlier in the pandemic in London, while the latest figures show there are still more deaths occurring at home than average.
- The Covid-19 outbreak in the UK has had unequal impacts on different groups of the population. It quickly became well-established that older people, men, and people who have underlying health conditions (particularly diabetes, obesity, heart disease and chronic lung conditions) were at disproportionate risk of developing a severe infection and dying.
- Public Health England found that diagnosis was much higher among the England's Black residents, with Black men three times as likely as White men to have a confirmed diagnosis
- Among those with confirmed cases, deaths were twice as high for the Bangladeshi community compared with the White British population, while most other BAME groups also had a higher than average rate of deaths.
- Occupations of workers make a difference to exposure to Covid-19 with nurses and care workers, security guards, taxi and bus drivers having much higher numbers of deaths relating to Covid-19.
- Mortality rates from Covid-19 are higher for residents in more deprived areas. Even after adjusting for age differences, people in the most deprived areas are twice as likely to die from Covid-19 as those in the least deprived areas.
- Infection rates are falling rapidly. 6 in 10,000 of the private household population of England had the Covid-19 infection at any given time between 31st May and 13th June, down from 24 in 10,000 between 11th and 24th May
- Infection rates are higher among healthcare and care workers and also a little higher for others working outside the home, and there is some evidence that the 20-49 age group has higher infection rates than the 50-69 age group.
- Around 18 per cent of London's adult population had symptoms of Covid-19 in April, but just two per cent were tested.
- Almost 15 per cent of London's population had antibodies for Covid-19 by early May.

Key changes in the last week

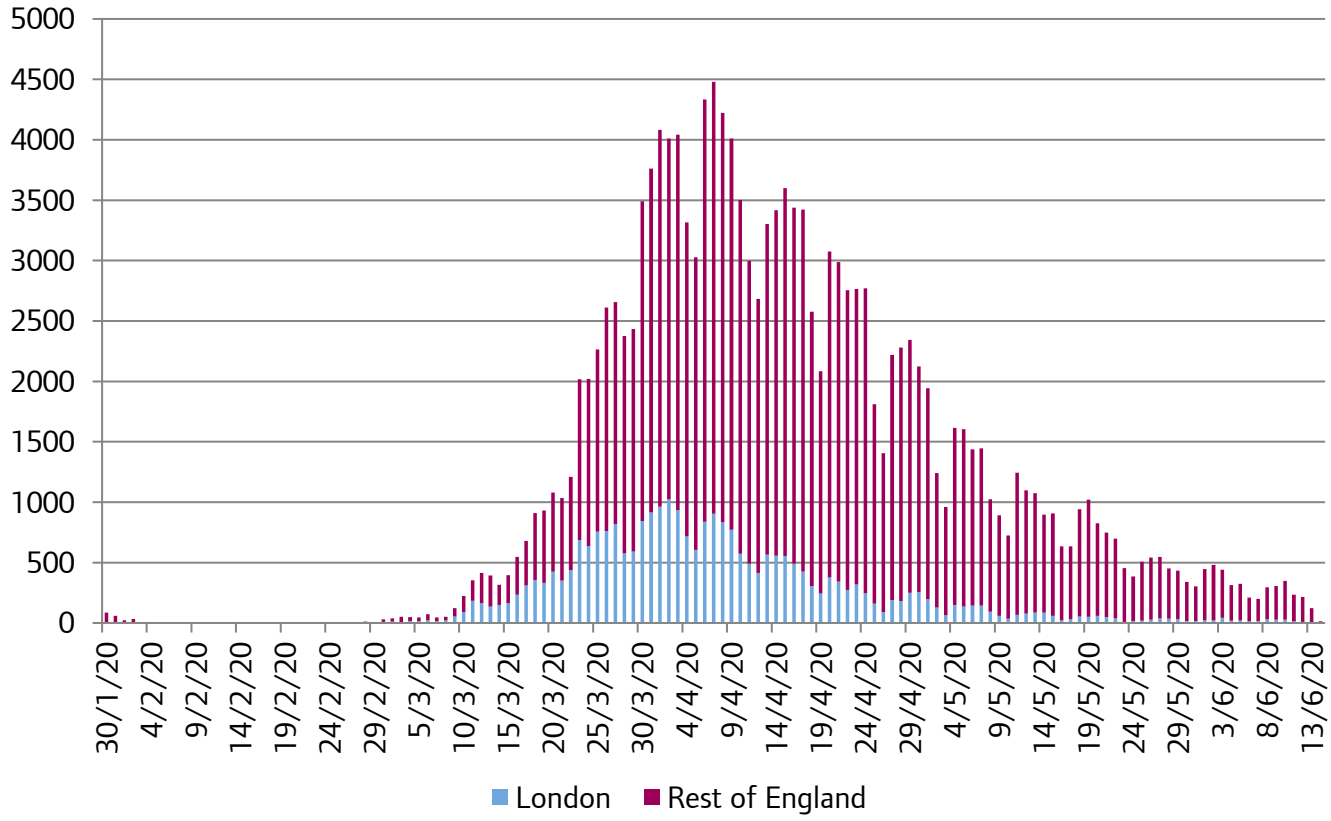
- The number of cases testing positive in London has fallen further, with the number of new daily cases below 50 each day.
- The weekly number of deaths in London with Covid-19 mentioned on the death certificate has fallen below 100 for each of the last two weeks.
- The weekly number of deaths from all causes has dropped below the average for the last five years.
- Racism and discrimination may have contributed towards BAME populations having higher risk of exposure to Covid-19 infection and a greater prevalence of underlying conditions which contribute to worse outcomes of infection.
- Death rates from Covid-19 in the most deprived areas are double those in the least deprived areas.
- Infections across England as a whole fell in early June to a quarter of the level in mid May.
- Young adults are more likely to have had Covid-19 infection and symptoms than those aged 50 or over.
- Around 6 per cent of Londoners were shielding.
- Half of those clinically extremely vulnerable had not left home at all since receiving a letter advising them to shield.

The spread of Covid-19 cases

Although the first confirmed cases of the Covid-19 pandemic in the UK were outside the capital, London emerged as an epicentre of the pandemic early in its spread across the UK. The first case in London tested with a positive result was on 11th February 2020. Prior to lockdown on 23rd March, there were 3,520 cases of Covid-19 in London which had tests with a positive result. At that point, 39% of England's confirmed cases were among people who lived in London. After this date, the cases with a positive test result in the rest of England grew more rapidly than in London. London reached its daily peak of 1,024 tests with a positive result on 2nd April, whereas for the rest of England, the peak was 3,575 cases testing positive on April 7th.

To date, there are 27,330 confirmed cases in London, which is less than 18% of all cases testing positive in England (as at 14th June), though the figures for the most recent dates may still change. London had an earlier peak of infections than in the rest of England, but as the testing capacity was very limited early on in the UK's Covid-19 experience this is likely to have been a factor in the number of confirmed cases leading to an underestimate that may have impacted even more on the figures for London than elsewhere. Many people with relatively mild symptoms or no symptoms were not tested at all. It is important to note that those with symptoms who were assumed to have Covid-19 but were not tested were not recorded and are not included in these figures. Estimates of these may never be known. Testing capacity increased over time, but the largest increases in testing capacity were seen after the infections appeared to be reducing. Data for the most recent dates shows that the number of new cases was decreasing rapidly, though this has decrease has now slowed as the numbers eligible for tests has increased and the numbers are now at much lower levels, at below 50 new cases per day in London for more than three weeks.

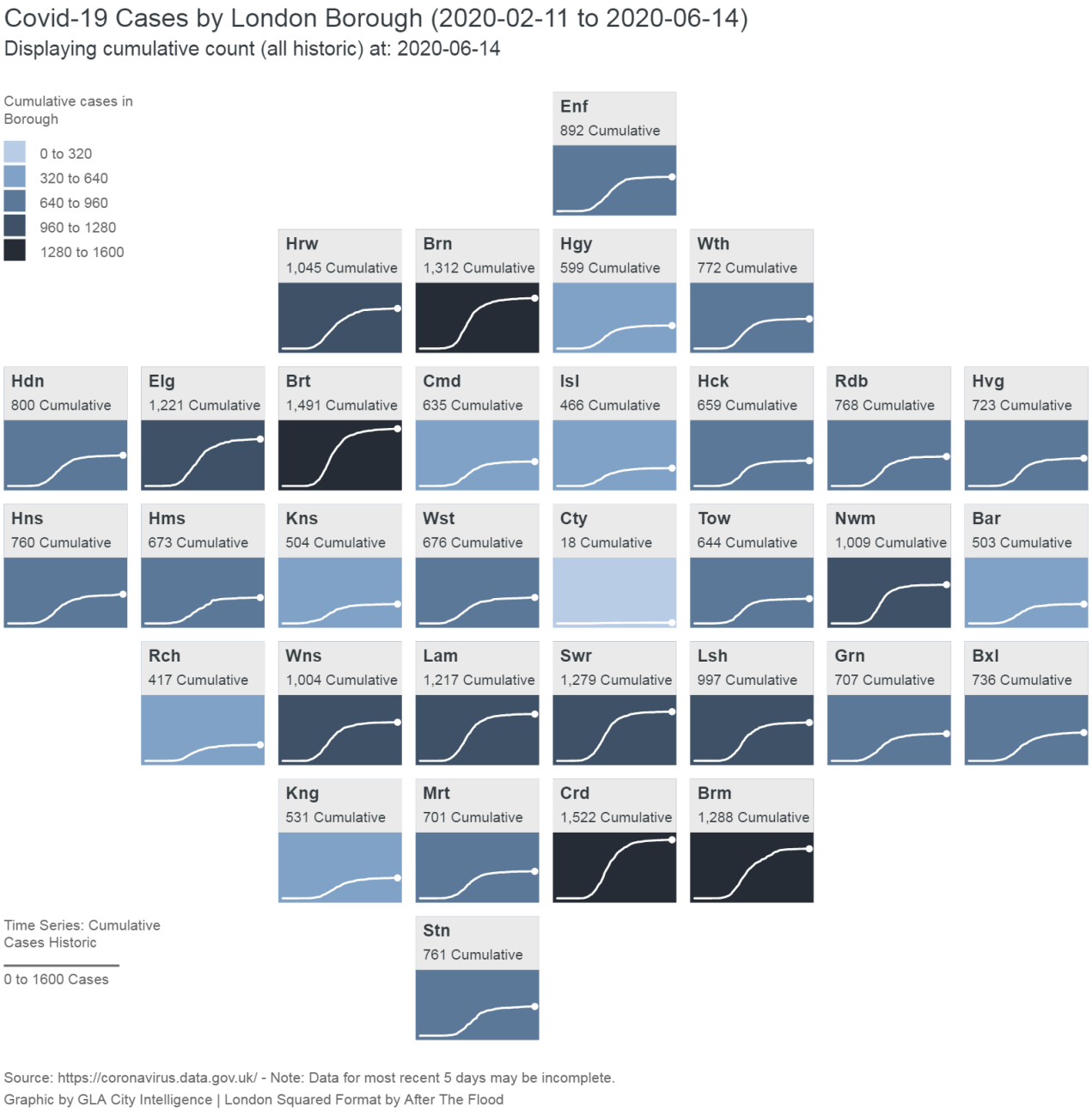
Figure 1 Confirmed cases of Covid-19 by date of swab, London and Rest of England



Source: PHE COVID-19 Dashboard (snapshot taken on 16th June – data to 14/6)

The number of confirmed cases varies widely by borough, as shown in Figure 2. Understanding the implications is far from straightforward, as again, many cases were not tested and therefore not confirmed. In addition, the total population of boroughs ranges from around 160,000 to 400,000. Croydon and Brent have the highest number of confirmed cases, though both also have large populations, they still have among the highest proportion of confirmed cases per capita, along with Harrow, Southwark and Bromley. Islington, Richmond, Tower Hamlets and Haringey are among those with relatively low numbers of cases with positive test results.

Figure 2



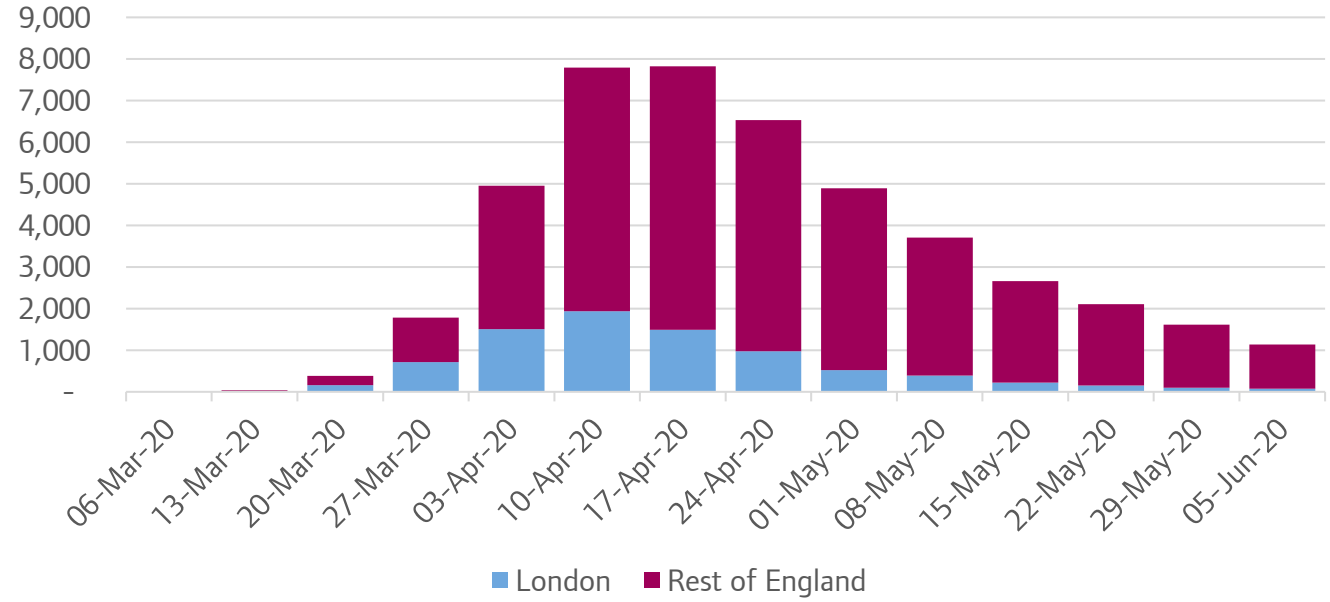
Outcomes of Covid-19 infections

The vast majority of those who contract the disease recover, particularly those who suffer with mild symptoms. There are, however, no numbers available for this in the UK. For some who are infected, the disease is more serious and can lead to admission to hospital. The numbers of hospital patients with confirmed Covid-19 is reported daily and in London is now below 500, much lower than the number reported in the first briefing for 19th March. In all other regions and parts of the UK, the number is still several times higher than for 19th March. Some people are affected so badly that Covid-19 leads to death either directly or through other infections, such as pneumonia or worsening of other conditions such as heart disease. Globally, estimates of the mortality rates have ranged from around one per cent to ten per cent of those infected. This uncertainty is due to the fact that not everyone with the disease is tested, particularly those who do not show any of the recognised symptoms and demonstrates the difficulties in measuring any aspect of Covid-19. The most widespread estimates seem to be a mortality rate of around three per cent or lower of people with the disease.

Mortality in numbers

In the UK, the numbers of deaths are reported in different ways and so the number of deaths due to Covid-19 is equally difficult to give precise figures for. The first deaths of Londoners recorded as having Covid-19 occurred in the first week of March, the same week that 4 other deaths in the UK occurred due to the disease. In London, the peak week for Covid-19 related deaths occurred during the week ending 10th April, with 1,941 in a single week in London. This is just one week after the peak number of tests carried out in London testing positive for Covid-19. For the latest available week, ending 5th June, the number of deaths from COVID-19 recorded in London so far was 77, which is the second week with fewer than 100 deaths recorded. In total, up to 5th June, 8,271 London residents were registered as having died with Covid-19 mentioned on their death certificate. This number is still subject to change as more deaths are registered. Not everyone with Covid-19 mentioned on their death certificate will have been tested, so in some cases it is suspected rather than confirmed, and in some cases Covid-19 may have been a supplementary or contributory infection, but not the direct cause of death. This figure represents around nine deaths for every ten thousand residents in London. It is also worth noting that guidance on completing death certificates and how the deaths were counted changed so for some of the deaths earlier in the pandemic, prior to 31st March, relating to Covid-19 will have been missed.

Figure 3 Deaths recorded in each week of 2020 by date of occurrence, London, Rest of England



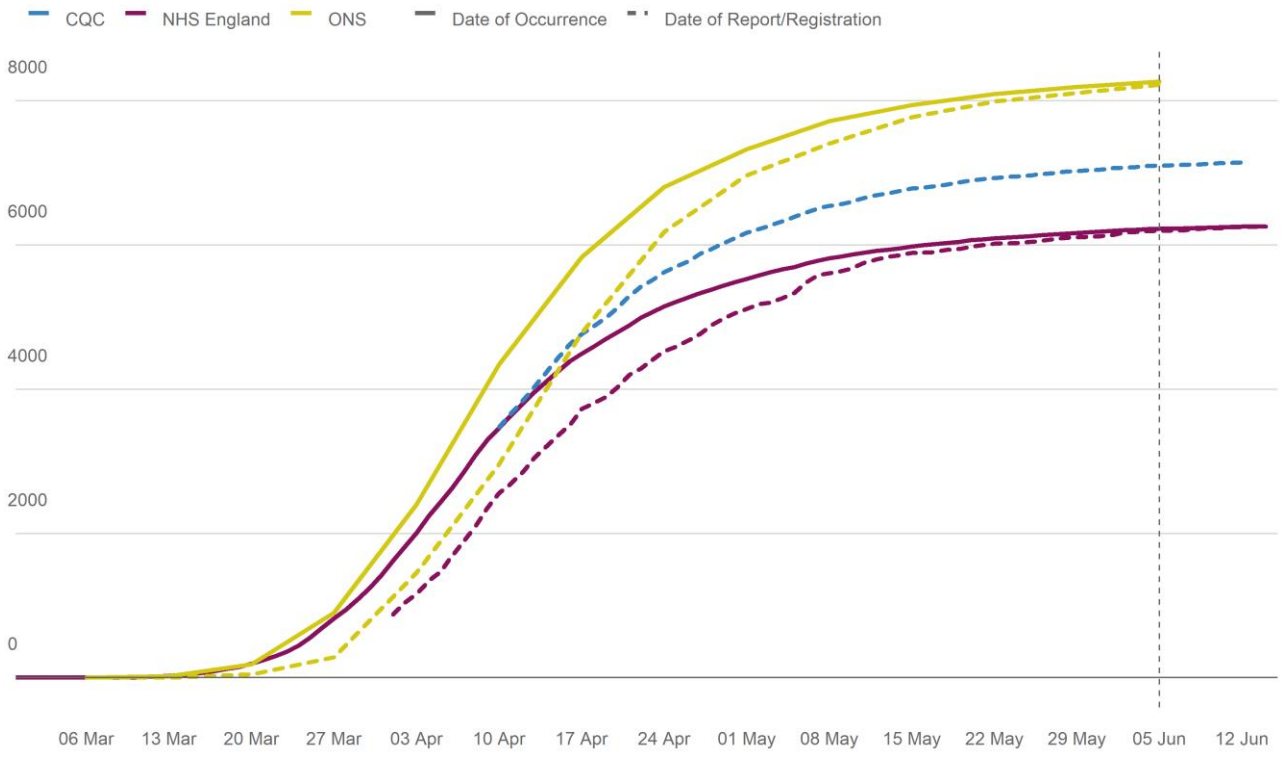
Source: ONS weekly deaths with Covid-19 mentioned on death registration

This number of deaths is higher than for any other region in the UK. The timeline of deaths occurring in the rest of England reflects that of the cases, with the peak number of deaths so far recorded occurring in the week after the peak number of deaths in London. The proportion of deaths registered as involving Covid-19 in England that were in London has followed a similar pattern to the cases, with 40 per cent in the first few weeks but only six per cent of all deaths mentioning covid-19 for the latest week being Londoners. The proportion of the total population that are registered as dying with Covid-19 mentioned on the death certificate is still nearly twice as high for London (9.23 per 10,000) as for the South West of England (4.93 per 10,000). The proportions for the North East and the North West are now higher than for London, – 9.95 and 9.70 people per 10,000 residents respectively having died due to Covid-19. The figure for the West Midlands (9.15) is also now close to that for London. These areas continue to report higher numbers of new cases and deaths than London.

While these figures provide a more complete picture of deaths where Covid-19 was a factor, there is a time lag due to delays in formally registering deaths and so these data are only available to 5th June and are subject to change as further death registrations are completed. Out of all the deaths recorded from Covid-19, 74 per cent of London deaths (6,130) have occurred in hospitals, 16 per cent in care homes, with 8 per cent at home and 2 per cent in a hospice or elsewhere, which would include other communal establishments such as prisons. For the latest week, up to 5th June, just over a quarter of deaths related to Covid-19 in London were in care homes, though the numbers in all setting had decreased on the previous week's figures. Across England as a whole, 64 per cent of Covid-19 related deaths have been in hospital and 29 per cent in care homes.

The number of deaths occurring in hospitals is also reported daily, and more recently, the number of deaths in care homes is also reported daily. The number of deaths reported in London's hospitals with a positive Covid-19 test result is 6,075 (as at 15th June), with a further 189 where Covid-19 was mentioned on the death certificate; this equates to 22 per cent of the total Covid-19 related hospital deaths in England.

Figure 4 Cumulative deaths from Covid-19 in London, showing different sources of data



Source: ONS weekly deaths, NHS England COVID-19 Daily Deaths and Care Home deaths reported to the CQC
NHS England data includes deaths with no postive test from 25 April
Graphic by GLA City Intelligence

A total of 891 (reported to12th June) deaths relating to Covid-19 have been reported to the Care Quality Commission as taking place in care homes across London. 15 of the deaths in care homes and 9 of the hospital deaths[1] have been reported since 5th June, though due to some administrative corrections, some of these relate to deaths occurring prior to that date. The number of deaths due to Covid-19 reported in all settings in London is decreasing rapidly.

Mortality by borough

Data for the number of deaths registered in each borough with Covid-19 mentioned on the certificate is also available covering the period 29th February to 5th June. Over this period, Brent and Croydon recorded more Covid-19 related deaths than any other borough. Of the total of 8,271 deaths in London, three boroughs had more than 400 each, with 478 in Brent, 479 in Croydon and 447 in Barnet. The lowest number of deaths recorded in this period in any London borough from the pandemic, apart from the City of London, was 122 deaths in Kensington & Chelsea.

The different population sizes and structures of London boroughs mean that figures for the numbers of deaths are difficult to interpret, so a simple method to compare areas is to compare deaths registered with Covid-19 mentioned on the death certificate with deaths in that area from all causes.

Brent is the only borough where more than half of all deaths from the beginning of the pandemic to the latest date available were mentioned Covid-19 on the death certificate. This proportion is starting to decrease as the number of deaths from Covid-19 is now small. The proportion was only a little lower for neighbouring Harrow (48 per cent). For the other two boroughs with high numbers of Covid-19 related deaths, this was lower as a proportion of all deaths at 41 per cent for Croydon and 39 per cent of all deaths in Barnet which were close to the proportion in Kensington & Chelsea (41 per cent). These are both still higher than the 38 per cent of all deaths in London occurring during the same fourteen-week period as a whole being registered as related to Covid-19. Table 1 gives the figures for all London boroughs.

It is well known that people in older age groups have higher mortality rates from Covid-19, so comparing the Covid-19 related deaths to deaths from all causes mitigate population differences to a large extent. However, using Age Standardised Mortality Rates (ASMRs) allows for comparisons which take into account the full differences in the age and sex across the populations of different areas. These are now available for March, April and May. Over the three months as a whole, there is a high correlation between the proportion method used above and the ASMRs from Covid-19 related deaths in the ordering of the London boroughs. The bulk of deaths occurred in April in all London boroughs, so the overall pattern mostly reflects that for April. The borough with the highest ASMR for March was Lambeth, closely followed by Southwark and Newham. Newham also had the second highest ASMR behind Brent for April, while Southwark was much lower. Harrow, Croydon and Waltham Forest had the highest ASMRs among the London boroughs during May. These reflect some differences in the overall timing of the pandemic with sharper rises and falls in some boroughs and longer tail-offs in other boroughs. Figure 5 shows the ASMRs relating to Covid-19 for the combined three month period for the London boroughs.

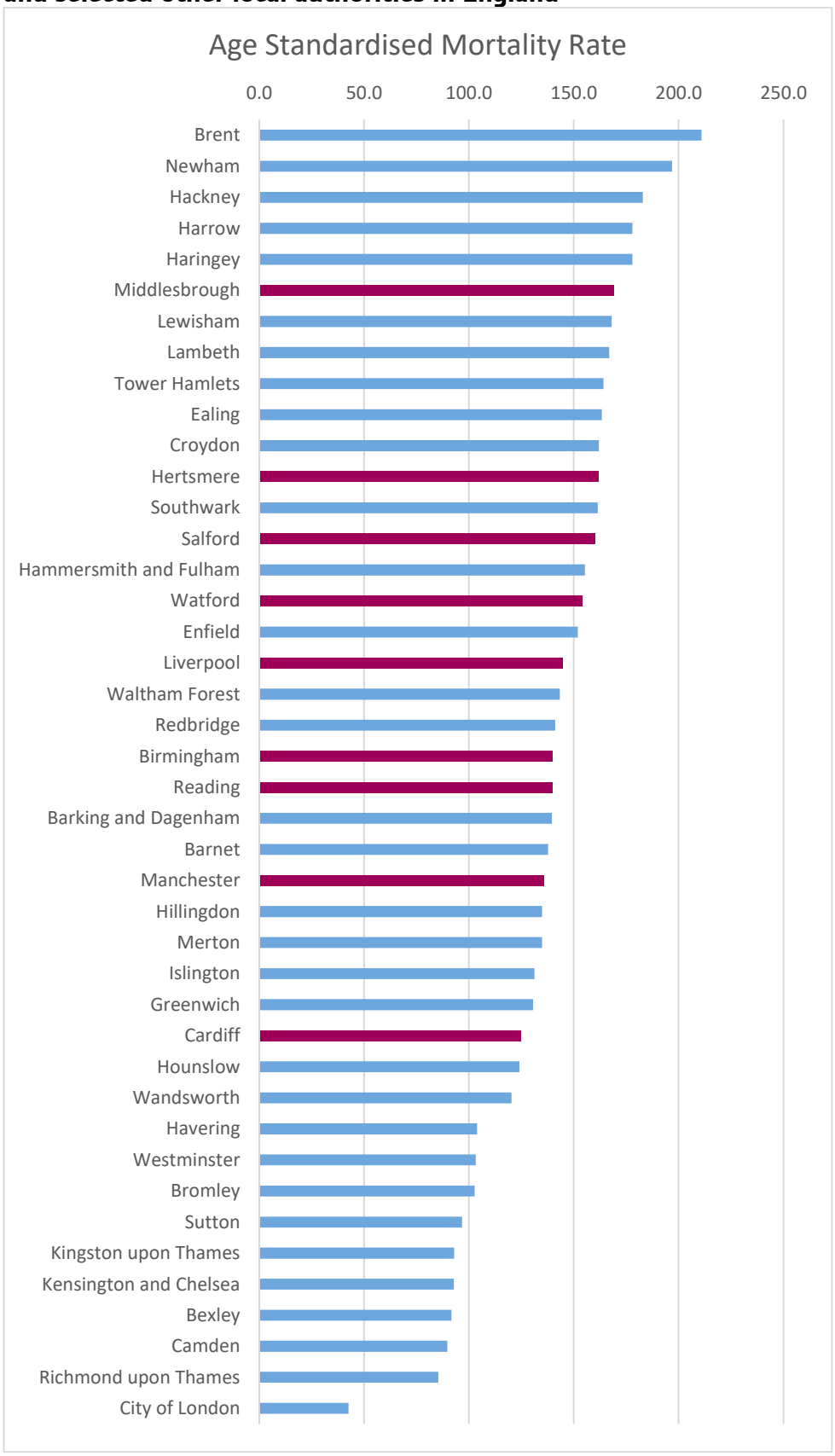
[1] These figures differ from the weekly figures in several ways. They are reports of deaths in hospitals in London, so do not include all Covid-19 related deaths occurring outside of hospital settings. They could include non-London residents being treated in hospitals within London and miss some London residents being treated outside the capital, but these numbers are likely to be small. Most deaths involving Covid-19 have occurred in hospitals, but while these appear to be past the peak, and reducing rapidly, Covid-19 related deaths in care homes have made up a much higher proportion of all Covid-19 deaths in London in the most recent figures available.

Table 1 Deaths between 29th February and 5th June in London Boroughs

	All causes	COVID 19	Percentage of all deaths that are related to Covid-19
Brent	950	478	50.3
Harrow	810	390	48.1
Newham	673	302	44.9
Haringey	596	264	44.3
Hackney	515	221	42.9
Southwark	576	244	42.4
Lewisham	673	285	42.3
Ealing	941	396	42.1
Hammersmith and Fulham	398	166	41.7
Lambeth	671	278	41.4
Croydon	1171	479	40.9
Kensington and Chelsea	300	122	40.7
Tower Hamlets	459	185	40.3
Barnet	1136	447	39.3
Waltham Forest	632	244	38.6
Westminster	474	182	38.4
Camden	422	159	37.7
Redbridge	822	309	37.6
Enfield	1022	381	37.3
Hounslow	606	221	36.5
Merton	544	196	36.0
Hillingdon	869	308	35.4
Wandsworth	606	210	34.7
Islington	436	148	33.9
Barking and Dagenham	489	161	32.9
Bromley	1014	330	32.5
Greenwich	687	223	32.5
Richmond upon Thames	457	146	31.9
Sutton	579	175	30.2
Bexley	753	218	29.0
Havering	944	271	28.7
Kingston upon Thames	466	128	27.5
City of London	16	4	25.0
London	**21707**	**8271**	**38.1**

Source: Death registrations and occurrences by local authority and health board, ONS (as published 16 June 2020)

Figure 5 Age Standardised Mortality Rates relating to Covid-19, March-May, London Boroughs and selected other local authorities in England



Source: ONS Deaths involving COVID-19 by local areas and deprivation, deaths occurring between March and May 2020, published 12 June

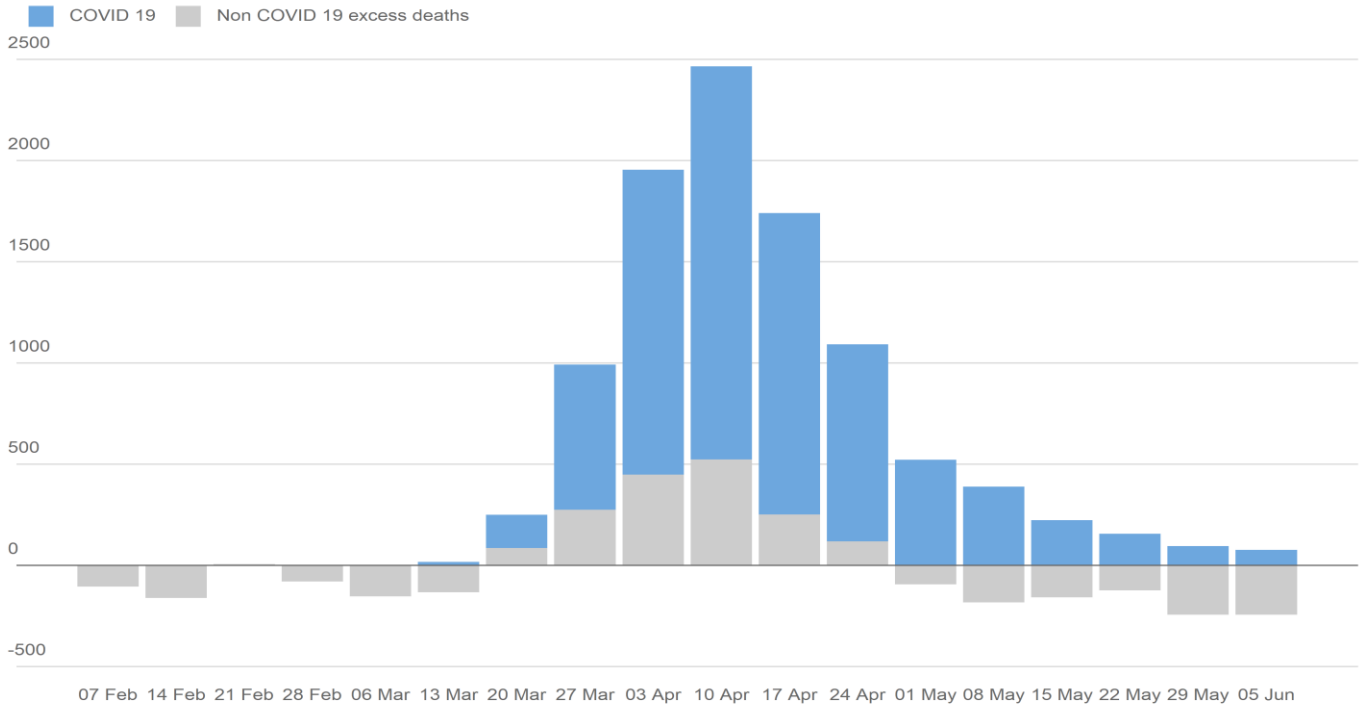
ONS Excess weekly deaths estimates

Another perspective on deaths due to Covid-19 is to look at the number of deaths taking place in each week compared with the "usual" number of deaths in the same week in other years. As the number does vary, looking at deaths in 2020 in relation to the previous five years' deaths shows that on average, there are around 1,000 deaths each week in London. The number tends to be a little lower in the summer and higher in the winter, with at least some of the variation due to flu during the winter months. The winter of 2017/18 saw a particularly high level of deaths due to flu in London, raising the average slightly. With total deaths reaching a peak of 3,275 in a single week, it is clear that not all the "excess" deaths are directly accounted for in those recorded as Covid-19 related cases. The number of deaths from all causes in London was a little below average during the first 11 weeks of the year. As Covid-19 related deaths started to impact, the underlying number of deaths also increased, as illustrated in figure 6 below.

In total, taking the deaths occurring during the weeks from 14th March (the first week with excess deaths) to 5th June(the latest available), around 58,250 "excess" deaths have occurred during the pandemic in England. Over the same period, there had been just over 8,900 excess deaths in London, though this has fallen from more than 9.200 as the number of non-Covid-19 related deaths has dropped below average.

This method of trying to understand the impacts of Covid-19 by comparing with previous years to give a measure of excess deaths is also not without its own difficulties[2]. Despite this, it does seem likely that some deaths attributable to Covid-19 have been missed from those recorded, particularly in the early weeks of the pandemic. The number of non Covid-19 deaths in London has been lower than average for each of the last six weeks, and the overall number of deaths is below average for the last two weeks reported.

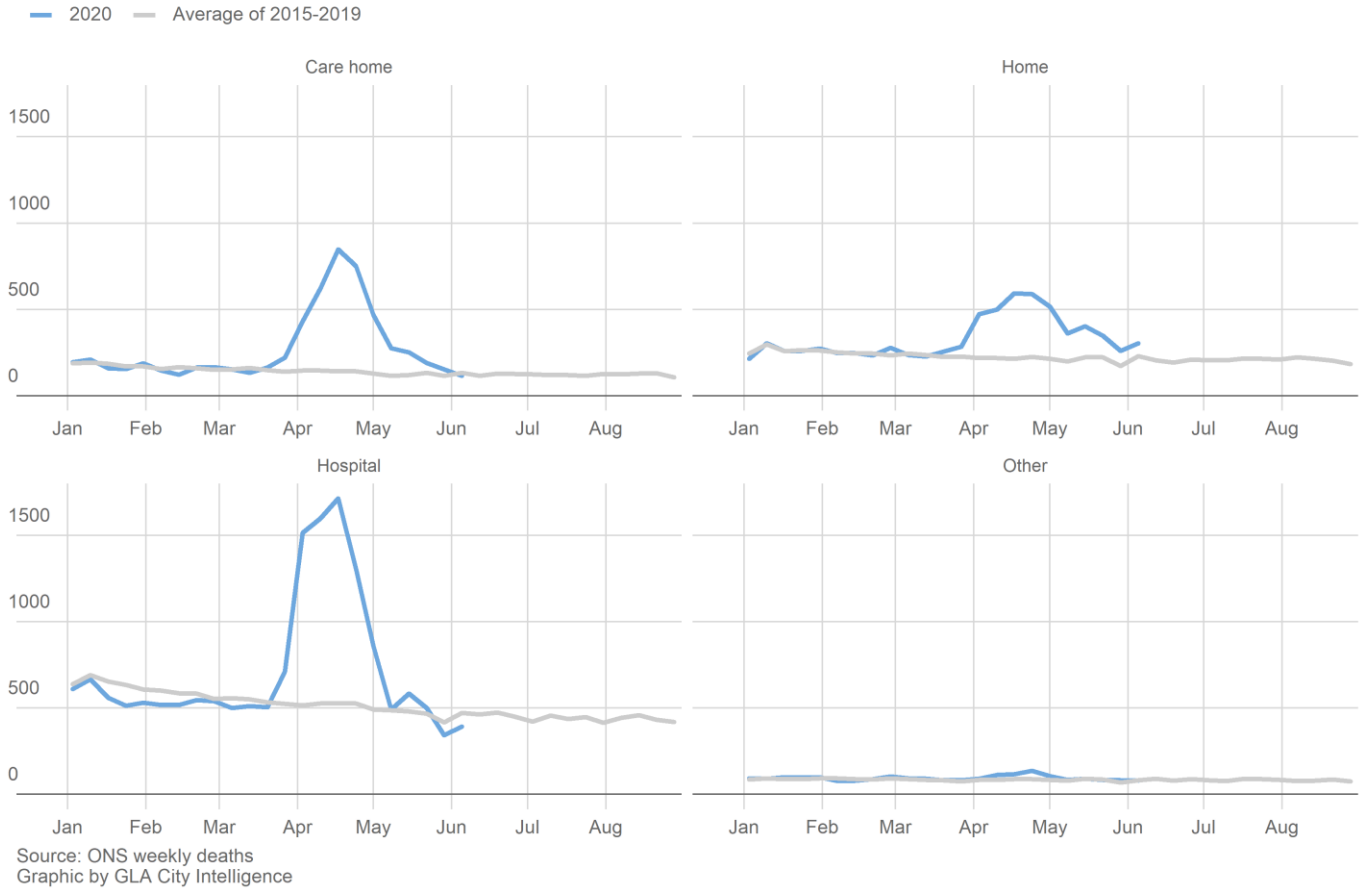
Figure 6 Weekly excess deaths in London, compared with average for 2015-2019



[2] See https://medium.com/wintoncentre/covid-and-excess-deaths-in-the-week-ending-april-10th-20ca7d355ec4 for an exploration of measuring excess deaths in relation to Covid-19
In addition, changes to London's underlying population, with an overall increase of around 80,000 people per year and an ageing population means that the expected number of deaths would naturally increase over time.

Further new data released from ONS also allows us to look at where excess deaths have occurred relative to other years[3]. The charts in figure 7 show that most of the excess deaths occurred in hospitals, particularly in the early part of April, with more in care homes in the second half of April. Both these continued to fall through May and are now close to or below average, while there are still more deaths occurring at home in London than in most years.

Deaths in London by location – all causes by date of registration



London's Covid-19 experience in context of other cities in the UK

Urban areas have been hit harder than rural areas both in the UK and globally. Analysis by the Centre for Cities[4] shows that Cardiff is the city within England and Wales with the highest rate of confirmed cases, with 588 per 100,000 residents., while Sunderland has the highest rate within England at 500 cases per 100,000 residents. Cases in Blackpool have increased in recent weeks and it now has 434 cases per 100,000 residents, followed by Sheffield and Oxford with 429 and 426. London overall has 304, and is below Birmingham, Liverpool, Manchester and Middlesbrough, though the differential testing regimes at different points in the spread of the virus across the UK mean that these figures do not tell the whole story.

The numbers of Covid-19 related deaths up to 5th June are higher in some of the very large local authorities, such as Birmingham, Leeds, County Durham, Liverpool and Sheffield, than in individual London boroughs. However, at 1,167 Covid-19 related deaths in Birmingham (population 1.2 million) is still just 14 per cent of the deaths seen in London overall (population 9 million). For Birmingham, this represents 32 per cent of

[3] These figures are for date of registration rather than date of occurrence, so are generally are a few days after death occurred, and in some cases, significantly after the death occurred. When bank holidays fall can have a particular effect on dates of registration.
[4] https://www.centreforcities.org/data/coronavirus-cases-uk-cities-large-towns/

total deaths from 29th February to 5th June, which covers the fourteen weeks from the start of the pandemic in the UK to the most recent data available. This is still much lower than the London proportion (38 per cent) and lower than the proportion in most London boroughs. Taking the same proportion over the same time period for all local authorities in England shows that there is no local authority outside London with a higher proportion of deaths being registered as related to Covid-19 than the London average. Hertsmere, which borders on to Harrow, Barnet and Enfield remains the only English local authority outside London in the top twenty, ranked by proportion of all deaths in this fourteen-week period that mention Covid-19. Salford, Watford, Reading and Middlesbrough are the only others outside London in the top thirty on this measure. City local authorities that rank in the top fifty include Cheltenham Derby and Birmingham.

Using the Age Standardised Mortality Rate (ASMR) data that covers March-May, as can be seen in figure 5, Middlesbrough ranks much higher, with just five London boroughs having ASMRs above that for Middlesbrough. Generally, those areas noted above with higher levels of deaths and cases have the higher ASMRs. Just seven local authorities outside London have higher ASMRs than the London average, while the ASMR for Manchester is only just below that for Lodnon as a whole. Oxford and Blackpool, however, have seen relatively few deaths and have lower ASMRs than all London boroughs except the City of London. While deaths were higher in London during March and April than in the rest of England, the data shows that for May, the age-adjusted rates have been lower in London than most other areas, and half those seen for the North East during May.

Regional analysis of data on various aspects, such as confirmed cases, hospital patients and deaths shows that while the number of cases peaked in the first few days of April in London and the North East, all other regions of England were still increasing cases at that time, reaching a peak in the following week. However, given the nature of the spread of the disease, the experience of individual local authorities, towns and cities and areas within those show different patterns and as seen above, numbers are still increasing rapidly in some areas, such as Blackpool. As London's timeline for the spread of Covid-19 was ahead of most of the rest of the country, the figures above are still likely to evolve as more data becomes available. Comparisons with Wales Scotland and Northern Ireland are also more complex because of different rules and data collection methods in those parts of the UK, but as the numbers of deaths are decreasing in all parts of the UK, it is clear that London still has a much higher proportion of excess deaths than any other region.

Comparing London with other international cities

Using a similar measure of excess deaths allows for comparisons between cities in different parts of the world, and the Financial Times has adopted this approach to compare various countries and some of the world's worst-hit areas.

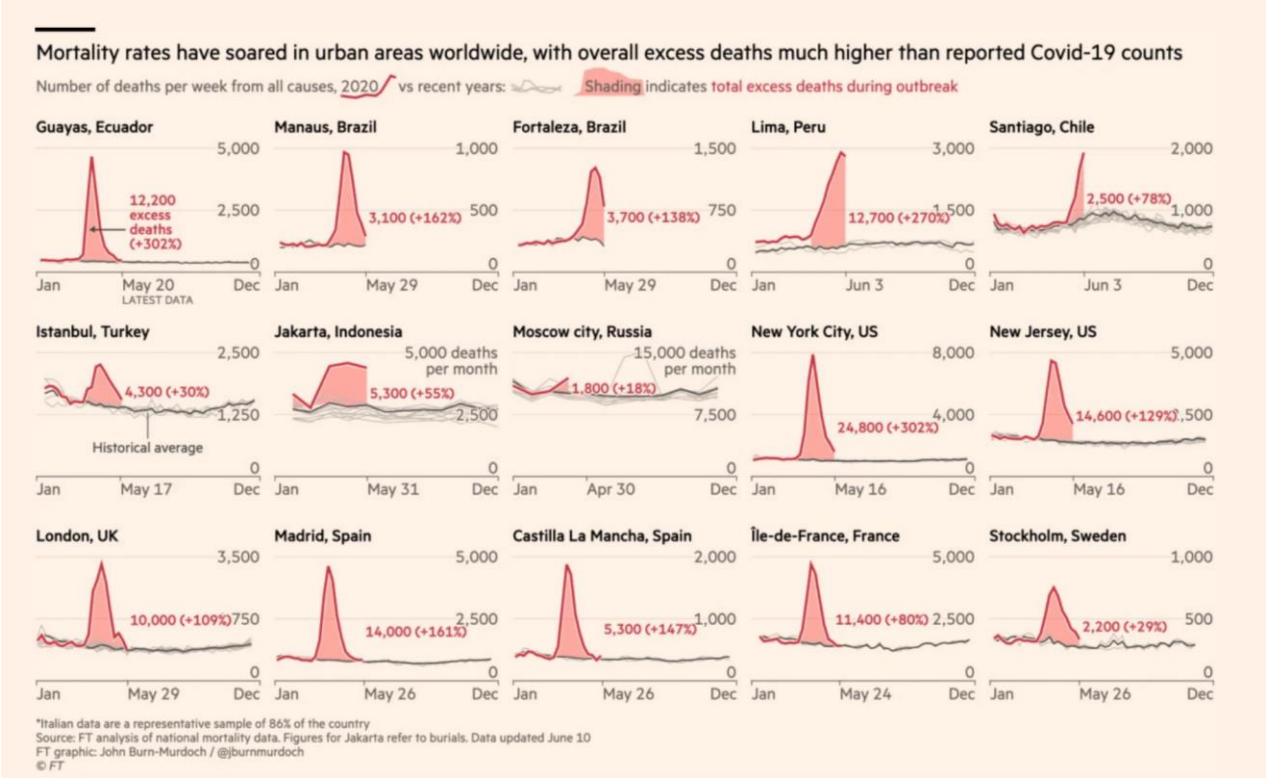
In its report (as at 10th June), the Financial Times shows that London, with a population around 9 million, has recorded 10,000 or 109 per cent excess deaths[5], compared with 80 per cent or 11,400 excess deaths for Ile de France, with a population of 12.2 million, incorporating Paris. Madrid (14,000 excess deaths, population 6.6 million) and bordering Castilla la Mancha (5,300 excess deaths) in Spain each have higher proportions of excess deaths than London, while Stockholm has so far recorded 2,200 excess deaths (29% above average). Meanwhile, New York City with a population similar to that of London is recorded in the FT report[6] as having 24,800 excess deaths, more than four times as many as normal. The New York metro area, has seen more than 40,000 excess deaths. Several regions and cities in South America have now recorded higher levels of excess deaths than London.

[5] The FT analysis for UK figures uses deaths by date of registration rather than date of occurrence. Using date of registration throws up particular issues around bank holidays.
[6] https://www.ft.com/content/a26fbf7e-48f8-11ea-aeb3-955839e06441

However, the charts appearing in the FT, as shown in figure 7, also reveal that these figures relate to different points in the timelines of the pandemic's progress in different cities, and this will impact on how these figures can be interpreted[7]. Paris, for example, is further past the peak than London, so the proportion of excess deaths has now decreased substantially. There are also other issues with conducting this approach, some of which are outlined above, such as using an average which may have other factors at play, including changing underlying population around the way data is recorded and reported for different countries. It is clear that until the pandemic is under control everywhere, and figures are finalised, making such comparisons, even on this basis, is subject to change.

A further consideration discussed in the FT is how much the pandemic was contained within each country. In the UK, while London has been the worst hit, the excess deaths measure shows that most other regions have also seen at least 50 per cent more deaths than usual. In France, the outbreak was relatively contained, with only one region outside Ile de France showing more than 50 per cent excess deaths. In Spain, again the capital was the worst hit, with around half of the other mainland regions experiencing 50 per cent excess deaths and in Italy, the outbreak was largely contained in the north of the country, although that area was very badly affected, with around 17,000 excess deaths in Lombardy region.

Figure 7



Covid-19 and Ethnicity

Much of the coverage of the Covid-19 outbreak in the UK has focused on the unequal impacts which it is having on people who belong to different groups within the population. It quickly became well-established that older people, men and people who have underlying health conditions (particularly diabetes, obesity,

[7] Excess deaths and the percentage above the "normal" depends on the period of accounting, so for a place whose data is reported for a timepoint just past the peak of daily deaths from the outbreak, the excess will appear higher in percentage terms than for somewhere that deaths are still increasing or that the number of deaths has returned close to the average measured over a longer time period.

heart disease and chronic lung conditions) were at disproportionate risk of developing a severe infection and dying.[1]

Another form of inequality which has become apparent is differences in the number of cases and deaths from Covid-19 by ethnicity. An increasing body of evidence has emerged to show how Black and Minority Ethnic (BAME) groups are over-represented both among the patients who are being hospitalised with serious cases of Covid-19 and also in relation to deaths. There is also media coverage of similar issues in other countries, such as the USA and countries in Europe.

Working out whether the numbers really are as skewed as they first appear, and attempting to explain why this might be happening, is not straightforward. This is because ethnicity is only one of many socio-economic factors which contribute to making an individual more vulnerable to Covid-19. Gaining a better understanding of why these ethnic differences in Covid-19 exist is important for developing a coherent policy response to addressing them. This briefing summarises the findings from research published in the UK, as well as identifying some of the remaining gaps in our knowledge and suggesting how they could be filled.

Following media reporting of the apparent early disproportion in BAME deaths among patients and healthcare staff, a report by the Intensive Care National Audit and Research Centre (ICNARC) which was published on 29th May revealed that BAME patients were over-represented among those being admitted to intensive care with severe symptoms of Covid-19. This study looked at 9,347 patients who had been admitted to intensive care units with coronavirus in the UK, and found that 67 per cent of those with ethnicity information were White, while the remaining 33 per cent were from a BAME group. Given that only 13 per cent of the UK population was estimated to be BAME following the 2011 census, this suggests that ethnic minorities are over-represented among those being hospitalized with Covid-19.

However, a simple comparison like this fails to control for several important factors, particularly the influence of geography. BAME groups disproportionately live in cities, which were also the places which, as noted above, have been hardest-hit during the Covid-19 outbreak in the UK, therefore you would expect a larger share of them to have contracted it severely; when the ICNARC researchers compared the ethnicity of these patients with the ethnic mix of the local authority wards they lived in, they found that 15 per cent of patients with an Asian ethnicity were being hospitalized compared with 12 per cent of the population in these areas, while ten per cent of the intensive care patients were Black, compared with roughly six per cent of the population living in these areas. This replicates similar studies undertaken earlier, which showed no difference for the Asian ethnic group, but a larger difference between the proportion of Black patients and residents.

Public Health England (PHE) have reported on the disparities in risk and outcomes of Covid-19[8], investigating a number of aspects, including age, sex, geographical differences, deprivation, ethnicity and occupation. This found that the rates of diagnosis among Black women were more than double among Black women compared to White women, and almost three times as high among Black men as among White men, after adjusting for age and sex differences in the population.

Taking into account differences in age, sex, deprivation and region, for the time frame of the analysis, the report finds that among confirmed cases, "people of Bangladeshi ethnicity had around twice the risk of death when compared to people of White British ethnicity." Almost all groups had a higher risk of death than the White British group, and for Chinese, Indian, Pakistani and the Black Other (not including Caribbean or African), the rates were between 20 per cent and 35 per cent higher.

[8] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/889195/disparities_review.pdf

Compared to previous years, the death rates from all causes for the same period was almost four times higher than usual among Black men, three times higher for Asian men and twice as high for White men. The ratios among women followed similar patterns, but were slightly lower. It is important to note that this analysis does not take into account differences in occupation, which are known to have differential risks (see below) or differences in underlying health conditions, though other evidence has shown that these factors also have disparities between ethnic groups which may account for at least some of the differences found in this analysis.

The PHE report also looks at various vulnerable groups, finding higher rates of diagnosis among homeless men and women than the general population and that among people born outside the UK and Europe deaths reported between 21st March and 8th May were more than 2.5 times a five year average, compared with 1.7 times the average for people born in the UK. Most notably, deaths among people born in Central and Western Africa were more than four times the average. A study looking further at these factors has reviewed a wider range of evidence and found that longstanding inequalities between different groups within the population have been exacerbated by Covid-19, with many people from BAME groups at higher risk of being exposed to Covid-19 infection through occupation, where they live, particularly population density, use of public transport, household composition and housing conditions. Racism and discrimination has led to these underlying factors and probably also to differences in underlying health conditions which impact on the severity and outcome of the infection.

Covid-19 and occupation

Exposure to Covid-19, and thus the risk of contracting the disease is not equal across the population. Beyond that, the severity of the infection varies, as is well-documented, with age, sex and underlying health conditions having a strong association with the risk of death. As discussed above, ethnicity also appears to be correlated with the risk of dying of Covid-19, and one of the suggested contributors to that has been the occupations of those groups. ONS have conducted some research to help consider the impact of occupation on the risk of exposure to Covid-19.

In general, factors influencing the risk of exposure to a disease might be the number of people that an individual in a particular occupation is likely to come into contact with, how close that contact is, for how long and under what conditions, and the chance that those individuals would have a disease. The ONS analysis is based on research into some of these factors and occupations originally carried out in the US.

Not surprisingly, healthcare workers such as nurses and care assistants have higher risks that the individuals they come into contact with are likely to have a disease, the contact is fairly frequent and close, whereas a pharmacist generally has less close contact but high exposure to disease, while a physiotherapist is less likely to have high exposure to disease, even though they may work closely with many people. Personal protective equipment is designed to mitigate some of these risks during the pandemic.

Some occupations involve interacting with large numbers of people, sometimes at close range, but in normal times, those people have low exposure to diseases. Examples of this type of occupation can be in elementary, service, retail and hospitality roles including, such as, hairdressers, shop workers, taxi drivers and bar staff. Many of these occupations are relatively poorly paid. While some of these workers have been furloughed, that is not true for all of this group, with some shop workers and taxi drivers particularly, left with relatively high risk of contact with the disease in an enclosed space.

Many of the individuals in some of the jobs with less exposure risk – because they don't come into close contact with many other people and those they do see are relatively unlikely to have diseases in normal times – are also often higher paid and this group are also more likely to be able to work from home.

The ONS research also sets out for the highest exposure risk occupations the proportion that are women, that are over 55 and that are from one of the BAME groups. Overall, women make up a very large proportion of people in these occupations, the over 55 group has a similar proportion as in the overall working population, and BAME groups are nearly twice as likely to be in one of these occupations. However, this analysis does not include shop workers and transport workers who may still be working with relatively high risk of exposure and without protective equipment, and which also account for a relatively high proportion of BAME workers in London.

A further piece of research from ONS, looking at deaths from Covid-19 by occupation found that nearly 2,500 of the deaths involving Covid-19 in England and Wales up to 20 April were in the working age population aged 20-64. Adjusting for age and sex differences, covid-19 related deaths were twice as high among men in the lowest-skilled occupations as among all working-age men, and more than twice as high again among men working as security guards.

Both men and women working in social care had significantly raised rates of deaths mentioning Covid-19, while healthcare workers, including doctors and nurses, did not have higher rates of death from Covid-19 than the general population, when adjusted for age and sex.

People working in some of the categories described above as bringing them into contact with a large number of people, though usually not with high levels of diseases, that have continued to work, notably taxi drivers, bus drivers, chefs and sales and retail assistants have higher rates of death involving Covid-19 than the general population.

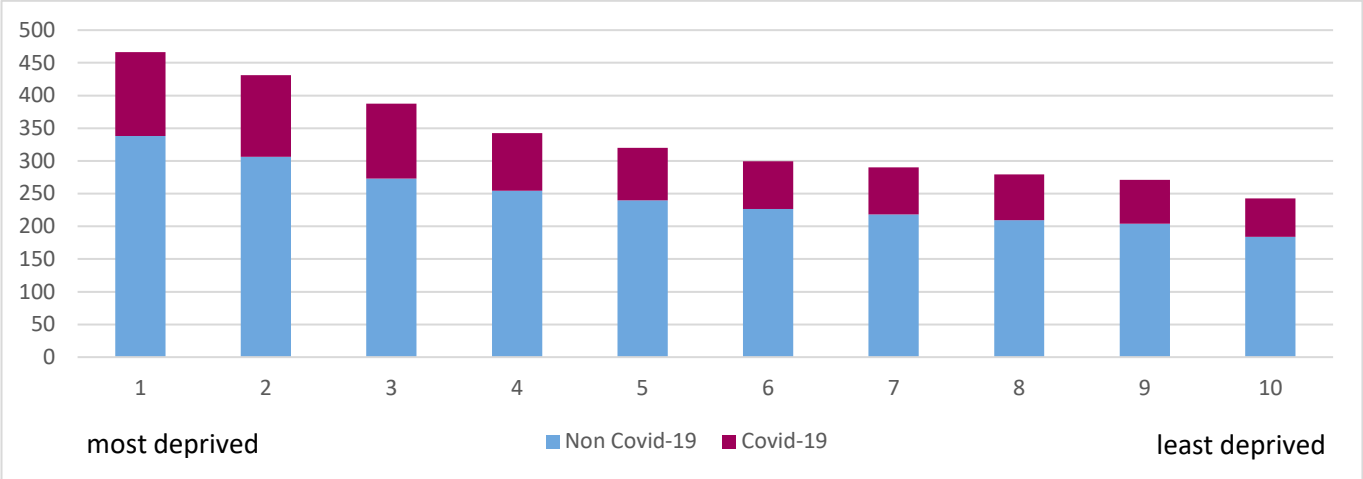
The PHE report on disparities (see above) also notes the ONS work on occupation and shows that while nearly two per cent of nurses, midwives and nursing associates[9] were infected with Covid-19. There were again ethnic disparities in these figures, with nearly four per cent of Asians in these occupations and three per cent from the Other ethnic groups infected, compared with 1.7 per cent among White and 1.5 per cent among Black and Mixed ethnic groups from these occupational groups.

Covid-19 and deprivation

As part of their analysis producing Age Standardised Mortality Rates (ASMRs), ONS have compared deaths from Covid-19 and other deaths across England by looking at the deprivation decile, taken from the English Index of Multiple Deprivation, in which the people lived. Overall, this analysis shows that there were more deaths during March-May from all causes in the more deprived areas, increasing across the deprivation deciles, after adjusting for the age profile of the residents. The ASMR from Covid-19 related deaths also increased across the deprivation deciles to an even greater extent, with the ASMR for deaths involving Covid-19, at 128.3 deaths per 100,000 population, more than double the ASMR in the least deprived areas (58.8), as illustrated in figure 8.

[9] As registered with the Nursing and Midwifery Council

Figure 8 Age Standardised Mortality Rates relating to Covid-19, March-May, by deprivation decile in England



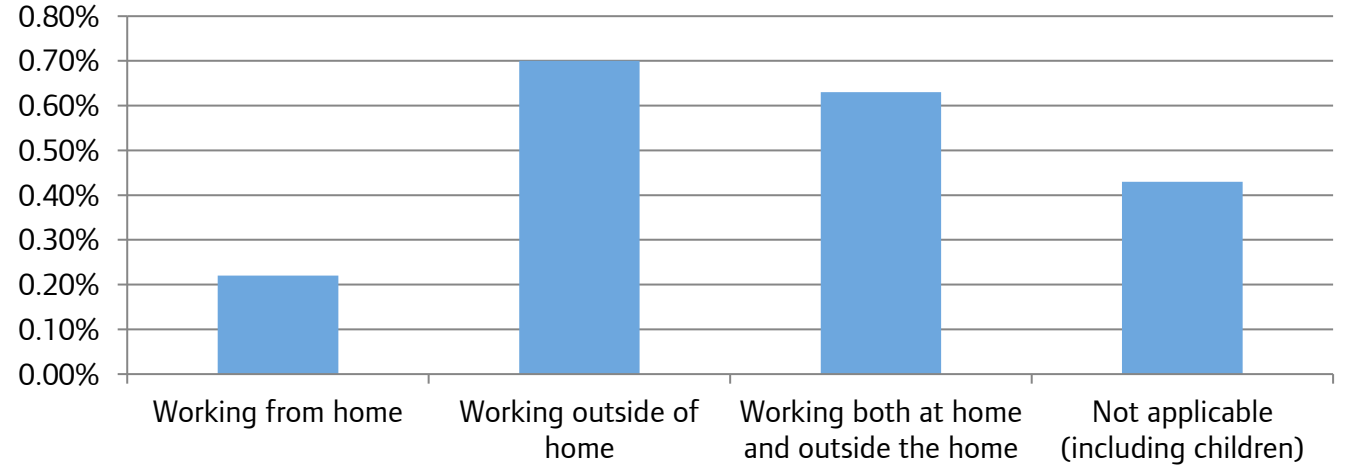
Source: ONS Deaths involving COVID-19 by local areas and deprivation, deaths occurring between March and May 2020, published 12 June

Infection rates in the UK

The latest infection survey carried out by ONS, published on 12th June, which was carried out across England as a whole to estimate the real number of infections shows that at any given time between 31st May and 13th June, an average of just under 6 in 10,000 of the community population, that is excluding people in hospitals, care homes and other institutional settings had Covid-19. This is significantly below the 24 in 10,000 found to be infected for the period between 11th May and 24th May. The figure is likely to be lower in London as the number of new cases being confirmed is lower than the rest of England, but regional figures from the infection study are not available.

Over the whole period of the survey, from 26th April to 7th June, the study did not find that there were statistically significant differences in the rate of infection between people belonging to different age groups or genders, but found that patient-facing healthcare workers and resident-facing social care workers show higher rates of positive tests than people not working in these roles (1.9 per cent, compared with 0.3 per cent). Over all workers who are working outside the home, the study found significantly higher rates of infection than among workers who were working only from home during the period in which these data were collected.

Figure 9 Estimated % testing positive for COVID-19 by working location, England (unweighted) between 26th April- 7th June 2020



Source: ONS Coronavirus (Covid-19) Infection Survey

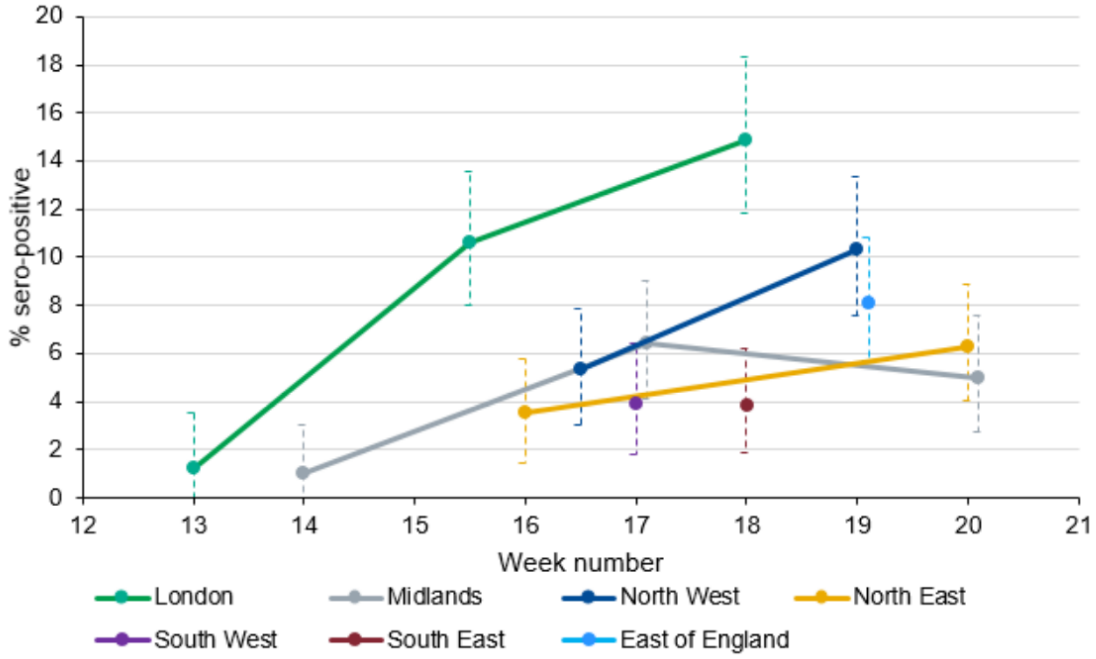
Another aspect of this study looks at antibodies, which found that between 26th April and 24th May, just under 7 per cent of the individuals in England from whom a blood sample was taken tested positive for antibodies to Covid-19. These can be detected from two-three weeks after infection, so these individuals would have been infected much earlier in the pandemic.

Sero-surveillance of COVID-19

Public Health England have also published estimates of the proportion of the English population which has tested positive for the presence of Covid-19 antibodies in their blood, but this uses a different type of testing. The results are broken down by English region, but no figure is given for England as a whole, and it is not comparable with the results of the ONS study above. Understanding the total level of infection in England (including asymptomatic and mild cases of Covid-19) is important to help achieve a number of different goals, such as estimating the true number of infections within the general population to understand transmission, to inform control measures such as social distancing and school closures and to provide a denominator for the estimation of severity measures such as infection fatality and infection hospitalisation ratios.

These data should be treated with caution, as they are based on blood samples taken from people who have voluntarily donated their blood to the NHS, so it is difficult to gauge how representative this sample is of the general population living in England. It is also important to stress that there remains considerable uncertainty regarding the degree of immunity from future re-infection which the presence of Covid-19 antibodies conveys on an affected individual.

Figure 10 Overall SARS-CoV-2 antibody Seroprevalence (%) in blood donors by PHE centres



Source: Public Health England sero surveillance study[10], updated 18th June
Dashed lines represent 95% confidence intervals

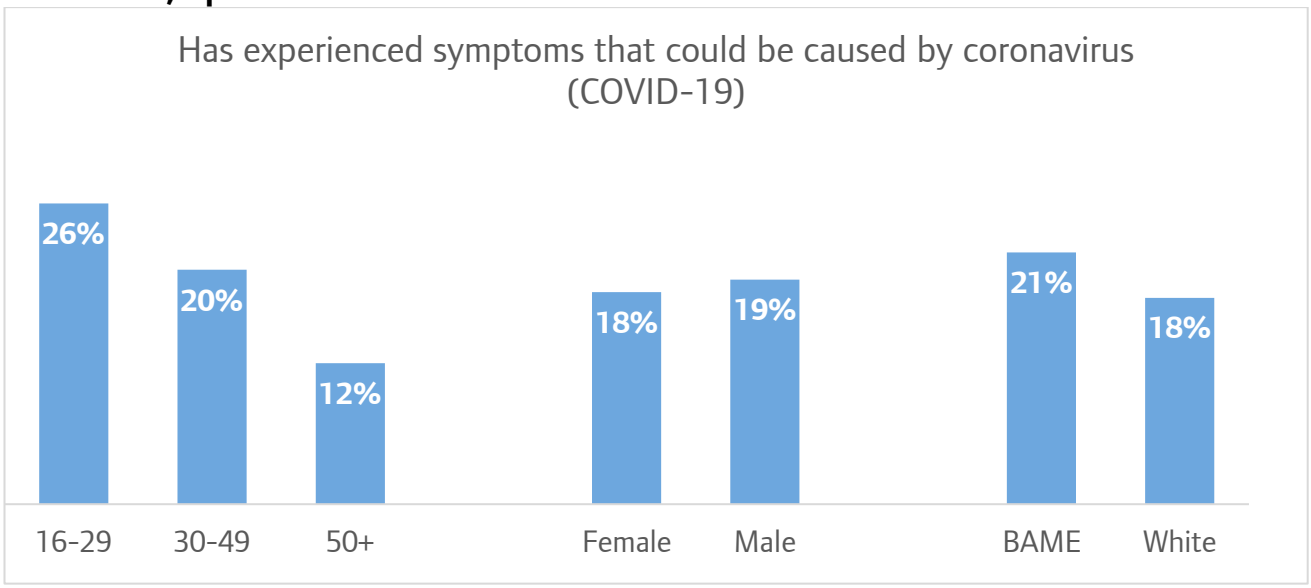
[10] The study uses Euroimmun test adjusted for sensitivity (79%) and specificity (99%) and to represent the age and sex distribution of the population

The most recent estimates derived from this data that cover London, which are based on blood samples collected during week 18 of 2020 (the week ending 3rd May), suggested that 14.8 per cent of London's population would test positive for the presence of Covid-19 antibodies in their blood. This represents an increase from 1.3 per cent in week 13 and 10.6 per cent in weeks 15-16, although the latter change is not statistically significant. Given that the 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 estimated prevalence rates for London appear much higher than for those for any other English region, though the most recent figure for the North West, a week later than the figure for London, shows overlapping confidence intervals, which means that we cannot be certain that the true level of antibodies in the population of London is higher than for the North West.

Covid-19 in Understanding Society

During April, as part of the Understanding Society project[11] a survey asked questions relating to many aspects of Covid-19, among them were questions around symptoms, testing and shielding behaviour. These found that 18 per cent of Londoners aged 16 or over said they had had symptoms of Covid-19, although just two per cent of the whole age group had been tested. This figure is close to the level who showed antibodies among blood donors, but we also know that the ONS infection survey showed that around 12 per cent of people with one of the three main symptoms tested positive for Covid-19 and less than five per cent of people with any symptoms tested positive, while there are many reports showing that a large proportion of people infected with the disease have no symptoms. The Understanding Society survey shows that among Londoners aged 16 and over, the proportion with symptoms reduced with age with half as many of the 50 and over age group saying they had experienced symptoms as among the 16-29 age group. There was little difference between men and women, but a slightly higher proportion of BAME Londoners had had some symptoms than of White Londoners.

Figure 11 Proportion of 16+ Londoners who have experienced symptoms that could be cause by coronavirus, April 2020



Source: University of Essex, Institute for Social and Economic Research. (2020). Understanding Society: COVID-19 Study, 2020

The study includes further information on giving and receiving support, loneliness, work, finances and food.

[11] Understanding Society is a long running panel study run by the Institute for Social and Economic Research at the University of Essex

Shielding and Covid-19

The Understanding Society survey also found that six per cent of Londoners had received a letter saying they were in the shielded group, while over the whole of the UK, around 3.3 per cent of the population were identified by the NHS as being clinically extremely vulnerable and advised to shield. As elsewhere, Understanding Society found that older Londoners are more likely to be shielded – the 50 and over age group are four times as likely to be shielded as the 16-29 age group, which is consistent with the higher rate of symptoms among younger age groups. Social renters are also more likely to be in the shielded group than private renters or owner occupiers. The ONS study looks at behaviours nationally among this group and found that among those surveyed between 28th May and 3rd June, half of this group have not left home at all since being advised to shield, while 90 per cent said they were completely or mostly following the shielding guidance. Around 13 per cent, however, had received a visitor other than nurse, support or care worker in the last seven days. This survey looks at reasons for leaving home, employment and physical and mental health.

CITY INTELLIGENCE

Greater London Authority
City Hall
The Queens Walk
London SE1 2AA

Tel 020 7983 4000
Minicom 020 7983 4000
Email Rachel.Leeser@london.gov.uk

MAYOR OF LONDON