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Disparities in the risk and outcomes of COVID-19

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Introduction

- PHE report on Disparities in the risk and outcomes from COVID-19 published 2 June 2020.
- Findings are based on surveillance data available to PHE at the time of its publication, including through linkage to broader health data sets.
- Considers inequalities by age and sex, geography, deprivation, occupation, country of birth, and place of death, as well as by ethnicity.



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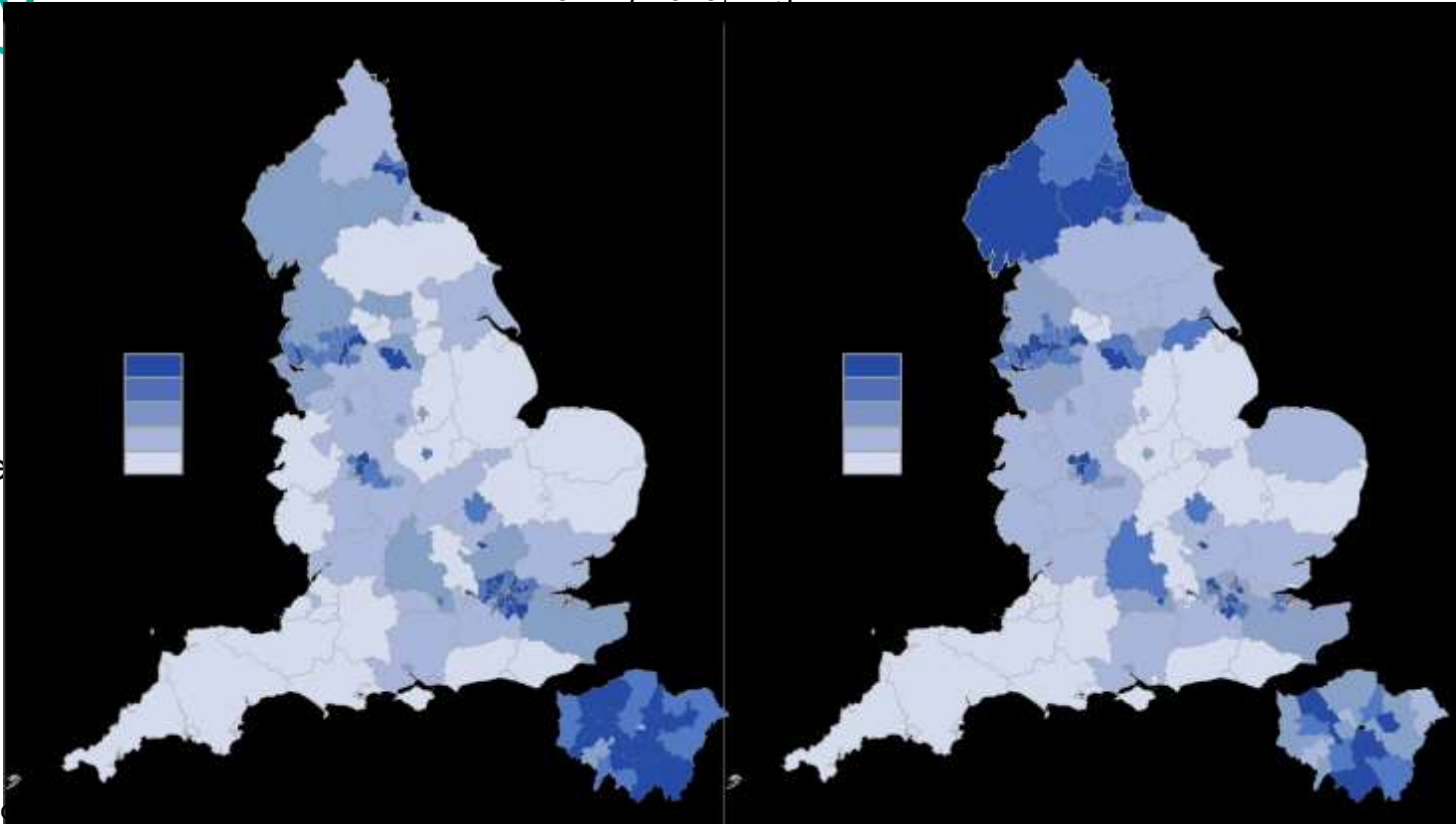
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Cases and deaths in confirmed cases

Cases - Geography

Maps 2.1A and 2.1B: Age standardised diagnosis rates by local authority and sex, as of 13 May 2020, England

Among males there was a 12-fold difference in age standardised diagnosis rates between local authorities and an 8-fold difference in the rates among females



Source: Public Health England Sec

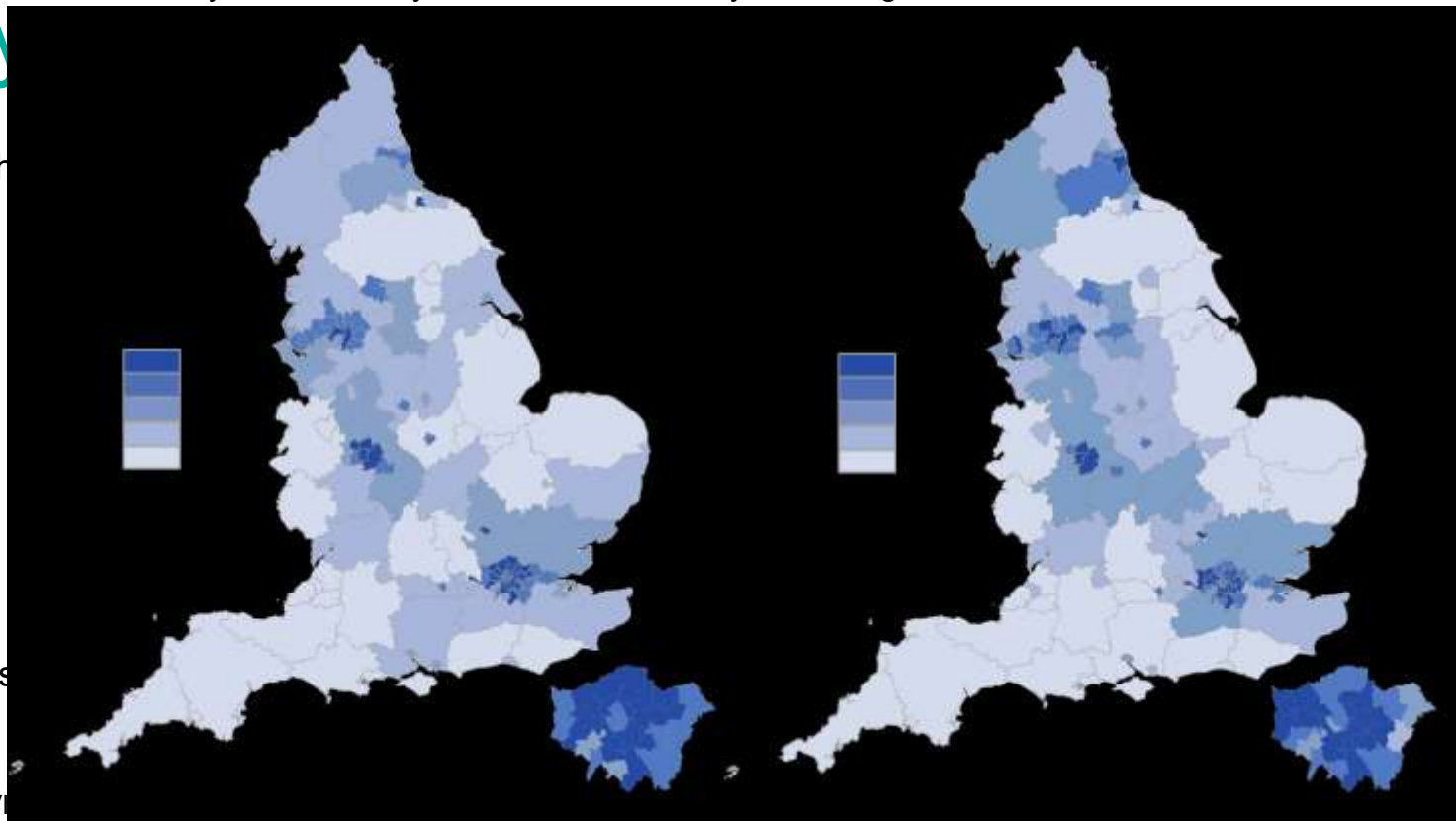
Deaths Geography

Maps 2.2A and 2.2B: Age standardised death rates in laboratory confirmed COVID-19 cases, by local authority and sex, as of 13 May 2020, England

Age standardised death rates for confirmed cases are highly clustered.

Highest rates have largely been in urban areas.

For males, the 8 authorities with the highest death rates among confirmed cases were in London

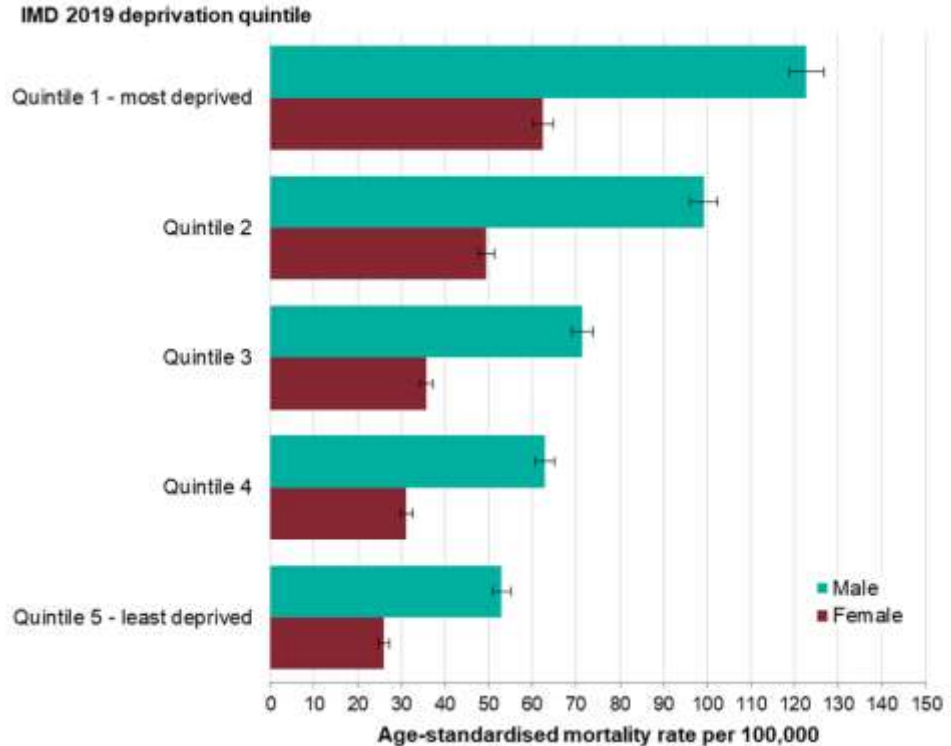


Source: Public Health England COVID-19

Deaths – Deprivation

The rate in the most deprived quintile was 2.3 times the rate in the least deprived for males, and 2.4 times the rate for females

Figure 3.4: Age standardised death rates in laboratory confirmed COVID-19 cases by deprivation quintile and sex, as of 13 May 2020, England

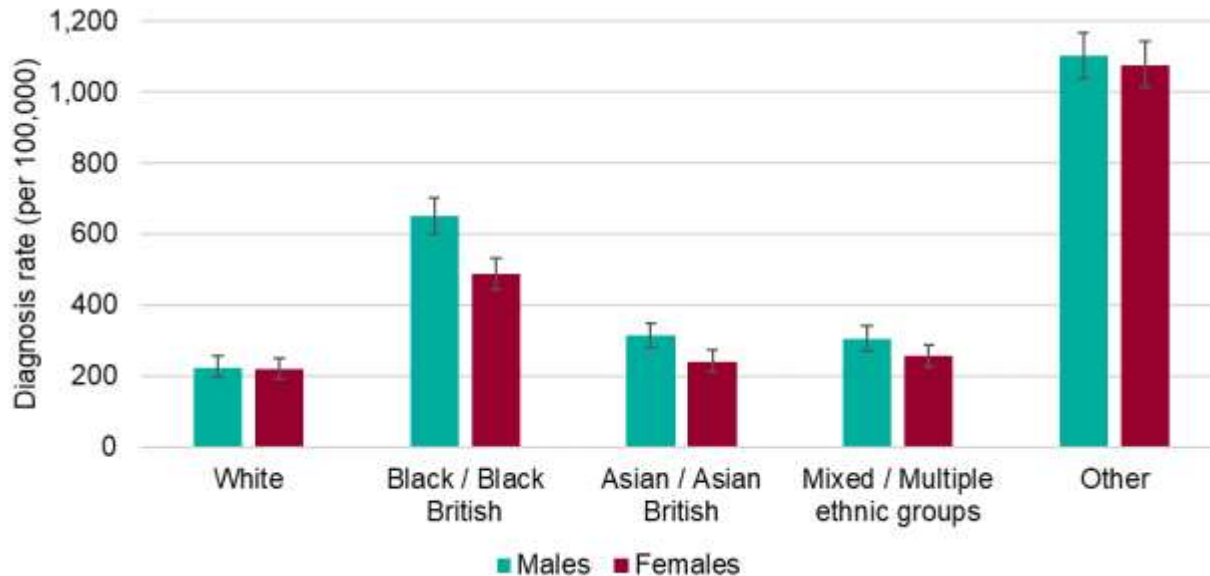


Source: Public Health England COVID-19 Specific Mortality Surveillance System

Cases - Ethnicity

The highest age standardised diagnosis rates of COVID-19 were in people in the Other and Black ethnic groups, and the lowest rates were in the White ethnic group

Figure 4.2: Age standardised diagnosis rates by ethnicity and sex, as of 13 May 2020, England



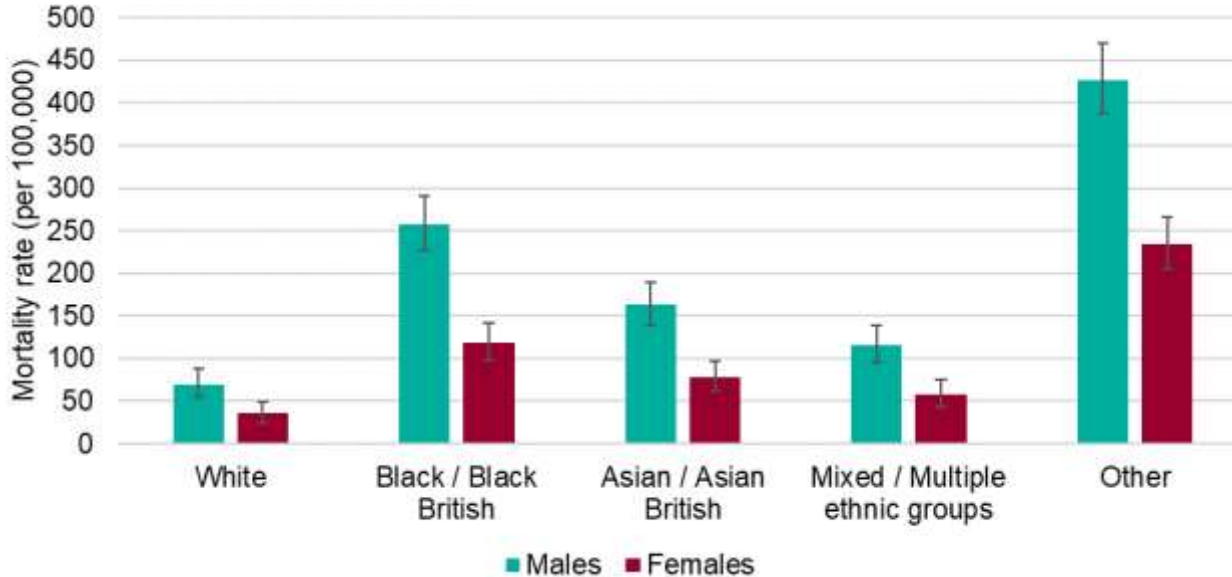
The rates in the Other ethnic group are likely to be an overestimate due to the difference in the method of allocating ethnicity codes to the cases data and the population data used to calculate the rates

Source: Public Health England Second Generation Surveillance System

Deaths - Ethnicity

The highest age standardised death rates in confirmed cases were in people in the Other and Black ethnic groups, and were lowest in the White ethnic group

Figure 4.5: Age standardised mortality rates in laboratory confirmed COVID-19 cases by ethnicity and sex, as of 13 May, England



The rates in the Other ethnic group are likely to be an overestimate due to the difference in the method of allocating ethnicity codes to the cases data and the population data used to calculate the rates

Source: Public Health England COVID-19 Specific Mortality Surveillance System



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Comparisons with earlier years and excess deaths

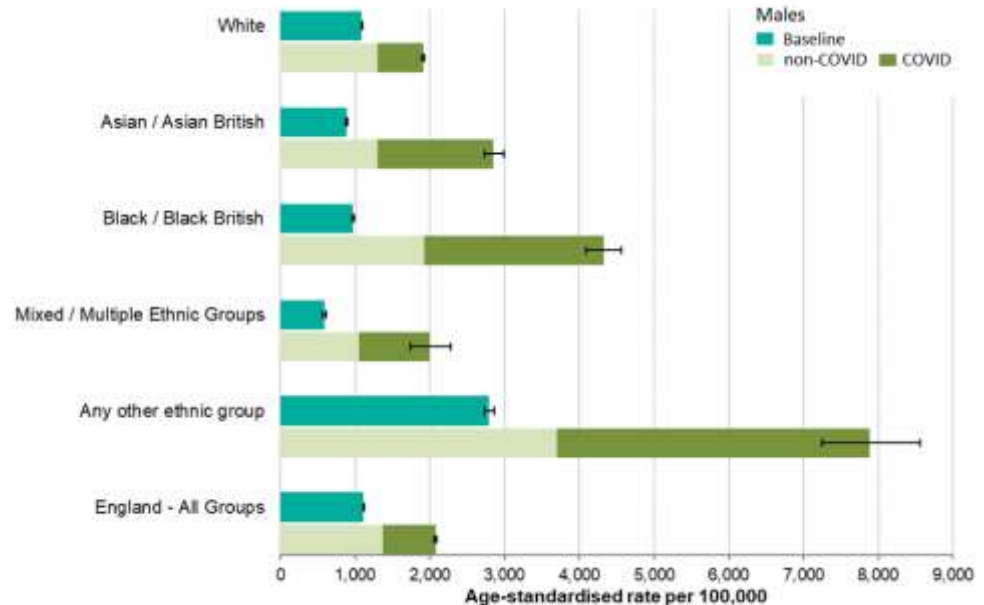
Comparisons with mortality in 2014-18

The Other and Black ethnic groups had the highest COVID-19 mortality rates and the highest all cause mortality rates in 2020.

In the baseline years the Other group had the highest rate, but the Black group had slightly lower mortality than All Groups.

The difference in COVID-19 mortality rates by ethnic group is greater than that seen in all cause deaths in baseline years.

Figure 4.6A: Age-standardised mortality rates for all cause deaths and deaths mentioning COVID-19, 21 March to 1 May 2020, compared with baseline mortality rates (2014 to 2018), by ethnicity and sex, England

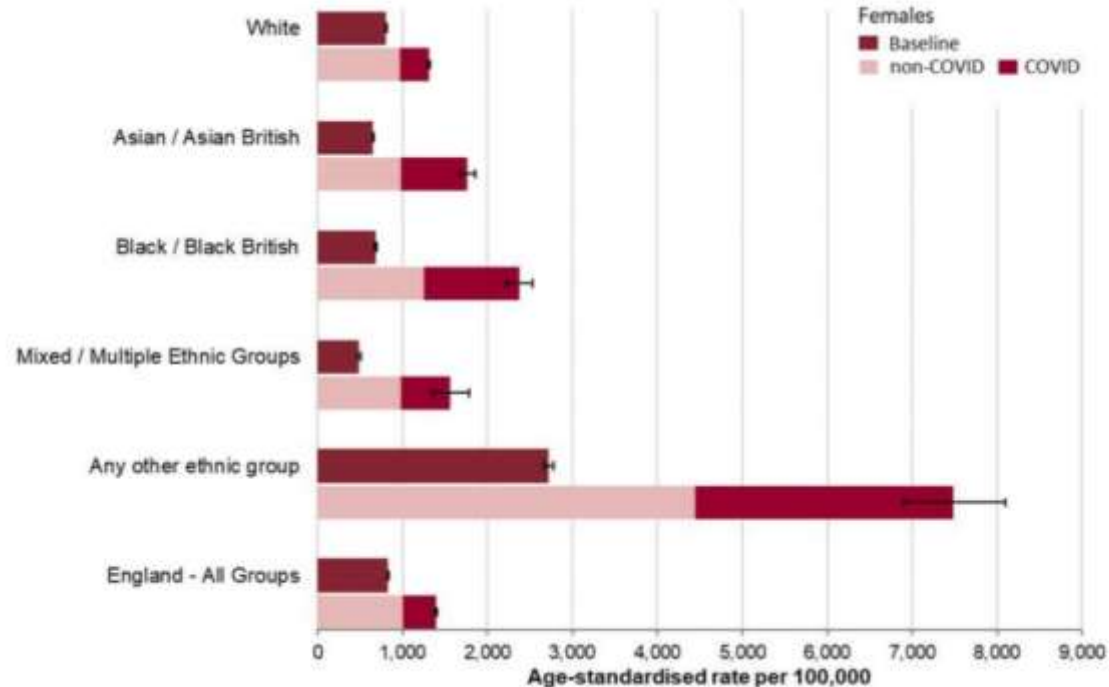


Source: Public Health England analysis of ONS death registration data

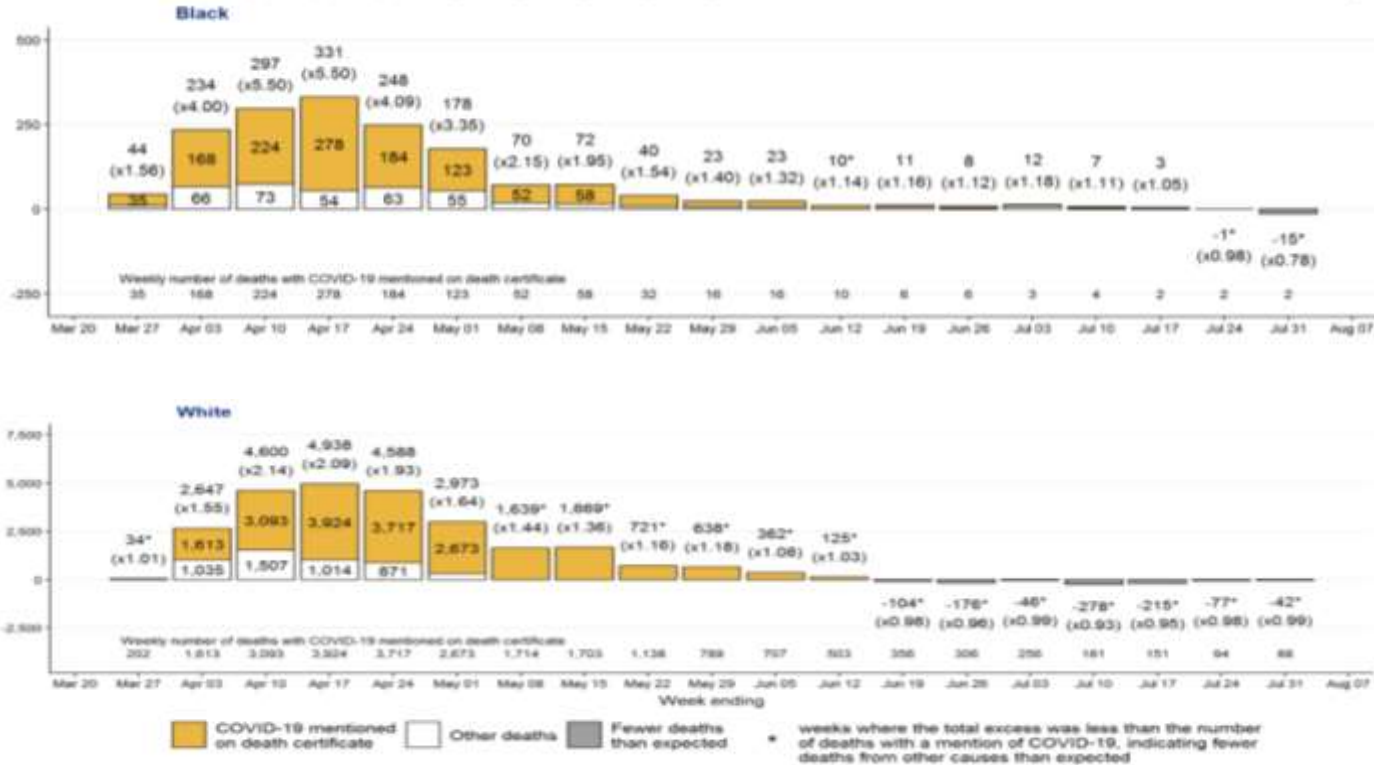
Comparisons with mortality in 2014-18

Females

Age-standardised mortality rates for all cause deaths and deaths mentioning COVID-19, 21 March to 1 May 2020, compared with baseline mortality rates (2014 to 2018), by ethnicity and sex, England



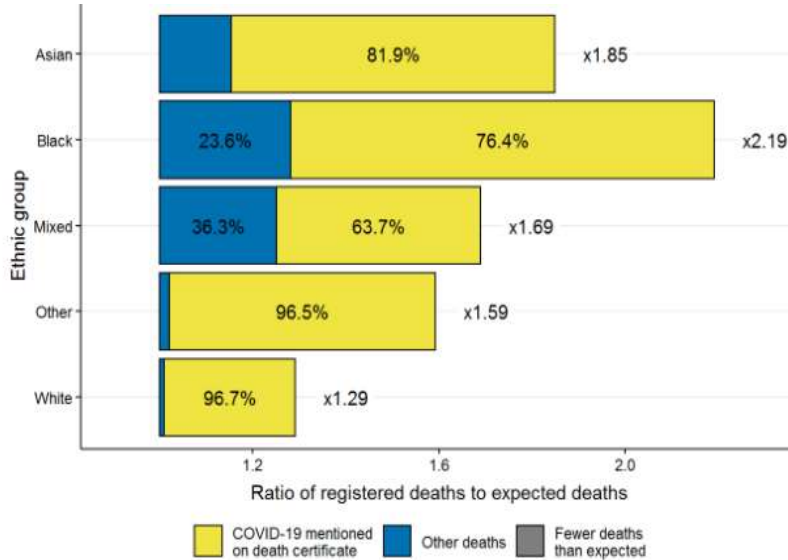
Excess Deaths - Males



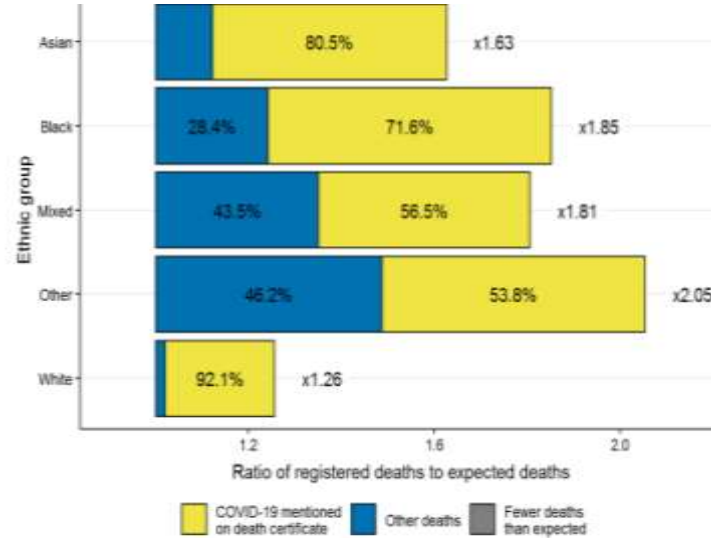
Source: Public Health England Weekly Excess Mortality in England reports

Excess deaths by ethnic group

Males



Females



Deaths registered in England between 20 March and 31 July 2020

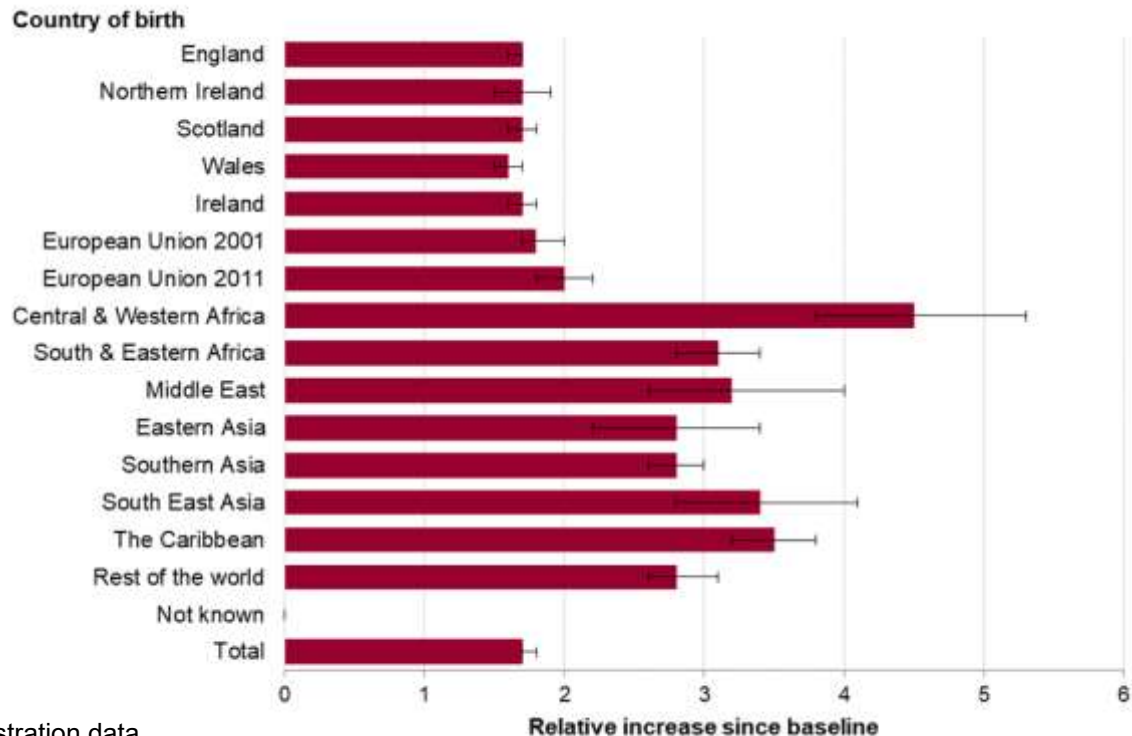
Source: Public Health England Weekly Excess Mortality in England reports

Country of birth

For people born in UK countries and Ireland, the relative increase was similar to the average of 1.7.

Biggest relative increases were for people born in Central and Western Africa, the Caribbean, South East Asia, the Middle East and South and Eastern Africa

Figure 6.1: Relative increase in total deaths registered in England in 2020 compared to the average for 2014 to 2018, 21 March to 8 May, by country of birth



Source: Public Health England analysis of ONS death registration data



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Survival

Survival summary

- Influenced by survival factors such as comorbidities, but may also be influenced by any variation in testing between areas
- Risk of dying following a positive test for COVID-19 (pillar 1):
 - 70 times higher in people 80 years or older than those under 40
 - Higher in males than females (2x in working ages)
 - Higher in those living in the more deprived areas vs those living in the least deprived areas (2x)
 - Higher in many Black, Asian and Minority Ethnic (BAME) groups than the White British ethnic group (up to 2x)
- Adjusted for age, sex, deprivation, region and ethnicity, but not the existence of comorbidities

Survival - Ethnicity

Risk of dying following a positive test (pillar 1), compared with the White British group:

- 2.0 times higher for the Bangladeshi group
- 1.4 times higher for the Pakistani group
- 1.3 times higher for the Chinese group
- 1.2 times higher for the Indian group
- 1.1 times higher for the Other Asian group
- 1.1 times higher for the Black Caribbean group
- 1.4 times higher for the Other Black group
- Other ethnic groups were not significantly different from the White British group



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Comorbidities

Comorbidities

All of the conditions examined in the review were more likely to be mentioned on a death certificate when COVID-19 was also mentioned, than they were for deaths overall. However, for cardiovascular disease, the difference was very small.

Table 8.1: Percentage of all deaths, and percentage of COVID-19 deaths where one of the conditions were mentioned, 21 March to 1 May 2020, England

Condition	Percentage of all deaths where condition is mentioned	Percentage of COVID-19 deaths where condition is mentioned
Cardiovascular disease	44.1	44.5
Diabetes	14.6	21.1
Hypertensive diseases	14.5	19.6
Chronic Kidney Disease	8.5	10.8
Chronic Obstructive Pulmonary Disease	10.6	11.5
Dementia	23.8	25.7

Source: Public Health England analysis of ONS death registration data

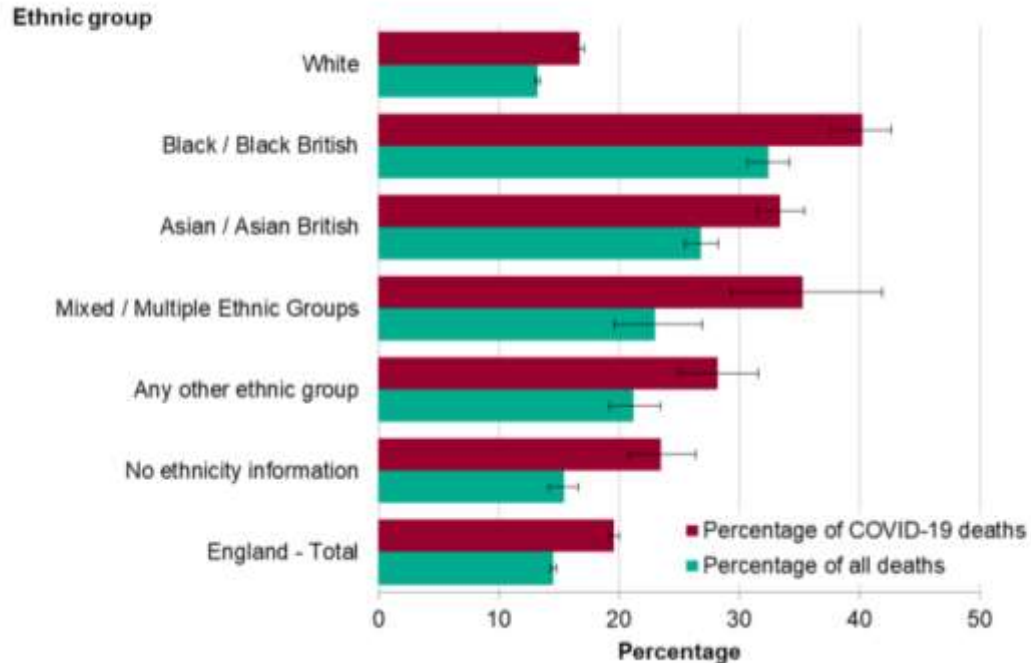
Hypertensive disease

The proportion of COVID-19 deaths where hypertensive disease was also mentioned ranged from 17% in the White ethnic group to 40% in the Black ethnic group

The proportion of COVID-19 deaths where diabetes was also mentioned ranged from 18% in the White ethnic group to 43% in the Asian group and 45% in the Black group

Source: Public Health England analysis of ONS death registration data

Percentage of COVID-19 deaths where hypertensive disease was also mentioned on the death certificate, by broad ethnic group, 21 March to 1 May 2020, England.





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Summary

Summary

- People in the Other and Black ethnic groups had the highest population based COVID-19 mortality rates.
- Once diagnosed, the risk of dying is highest in Bangladeshi, Pakistani and Other Black groups (adjusted for age, sex, region, deprivation).
- Conditions such as diabetes and hypertension were more common co-morbidities in deprived populations and Black and Asian ethnic groups.
- Ethnic inequalities in health and wellbeing in England existed before COVID-19 and the pandemic has made these disparities more apparent and exacerbated them.

Links

The disparities report and data packs can be found here:

<https://www.gov.uk/government/publications/covid-19-review-of-disparities-in-risks-and-outcomes>

Excess mortality reports – updated each week:

<https://www.gov.uk/government/publications/excess-mortality-in-england-weekly-reports>

Questions can be emailed to:

coviddisparitiesreview@phe.gov.uk