Investigating inequalities by ethnic group during the coronavirus pandemic in England using linked administrative data

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ONS Public Health Data Asset

2011 Census* → NHS Patient Register (2011-2013) → 94.6% linkage rate → NHS number →

- Death registrations
- Hospital records (HES)
- GP records (GDPPR)
- Immunisation records (NIMS)
- Test & Trace data

*Self-reported ethnicity (and other demographic and socio-economic characteristics)

39 million people aged 10 and over living in England (78.4% of mid-year 2020 population estimate)
COVID-19 mortality

First wave


- Rate of death involving COVID-19 higher for most ethnic minority groups compared with White British ethnic group
- Black African ethnic group had highest rate of death
- Adjusting for geographical factors, socio-economic status, and pre-existing health conditions reduced the HRs substantially
- However, pattern changed in second wave...

Source: Updating ethnic contrasts in deaths involving the coronavirus (COVID-19), England: 24 January 2020 to 31 March 2021
COVID-19 mortality

First wave


Second wave

Hazard ratios of death involving COVID-19 by ethnic group and sex, England: 12 September 2020 to 31 March 2021

Source: Updating ethnic contrasts in deaths involving the coronavirus (COVID-19), England: 24 January 2020 to 31 March 2021
Coronavirus case rates

- During the second wave, age-standardised case rates were highest for people of South Asian ethnicity (notably the Bangladeshi ethnic group)
- However, at the start of the third wave, rates were highest among White British ethnic group

Source: Coronavirus (COVID-19) case rates by socio-demographic characteristics, England: 1 September 2020 to 25 July 2021
Differences in vaccination coverage by ethnic group were evident early on in the roll-out of the vaccination programme and widened over time.

By the end of August 2021, 90% of White British adults in England had received at least one dose, compared with only 57% of Black Caribbean adults.

Among those aged ≥ 50 years who had received two vaccinations by 12 September 2021, third and booster dose coverage was lowest for Pakistani (51%) and Bangladeshi ethnic groups (57%).

Source: ¹Monitoring sociodemographic inequality in COVID-19 vaccination coverage in England: a national linked data study
²Coronavirus and vaccination rates in people aged 50 years and over by socio-demographic characteristic, England: 8 December 2020 to 12 December 2021
Summary

• Using linked administrative data for England, have been able to shed light on the disproportionate impact of COVID-19 on certain ethnic groups and differences in vaccination uptake

• Surveillance of these inequalities is important for informing the pandemic response and for evaluating long-term impacts of the pandemic