



The following information resources have been selected by the National Health Library and Knowledge Service Evidence Virtual Team in response to your question. The resources are listed in our estimated order of relevance to practicing healthcare professionals confronted with this scenario in an Irish context. In respect of the evolving global situation and rapidly changing evidence base, it is advised to use hyperlinked sources in this document to ensure that the information you are disseminating to the public or applying in clinical practice is the most current, valid and accurate. For further information on the methodology used in the compilation of this document—including a complete list of sources consulted—please see our [National Health Library and Knowledge Service Summary of Evidence Protocol](#).

YOUR QUESTION

What is the evidence of a relationship between socio-economic deprivation and the increased risk, if any, of infection with or death from COVID-19? Are there additional factors such as ethnicity, demography or population density which may amplify or modify the impact of deprivation on COVID-19 risk?

IN A NUTSHELL

The effects of COVID-19 on the health of racial and ethnic minority groups is still emerging. Most of the published, peer-reviewed research looks at UK South Asian and black and African American populations. Bhala et al⁷ support socio-economic and environmental rather than biological factors in explaining how COVID-19 disproportionately affects ethnical/racial minority groups. Routine, large-scale data on the risk factors and potential underlying causes of COVID-19 complications for ethnic/racial minorities are not yet available globally. Their opinion is supported by Khalatbari-Soltani et al¹⁵ in their brief review of research studies. Their review shows that important socio-economic characteristics are being overlooked when data are collected and the authors emphasise the importance of collecting and reporting data on socio-economic determinants, as well as race/ethnicity, in order to identify high-risk populations.

Based on their study undertaken on a cohort of hospitalised patients in the state of Georgia, Gold et al¹² advise that public health officials ensure that prevention activities prioritise communities and racial/ethnic groups most affected by COVID-19.

Khunti et al¹⁶ suggest that, in order to get a clearer picture of ethnic disparities in incidence and outcome in the UK, detailed national data reported by ethnic group are needed. They suggest this could be done through linking ethnicity data from Hospital Episode Statistics or Public

Health England to mortality data from the Office of National Statistics. The authors list the various potential reasons for higher incidence and severity in minority groups, including socio-economic, cultural, genetic and possible ethnic differences in the expression of angiotensin converting enzyme 2, the host receptor for SARS-CoV-2. In a second study¹⁷, the authors reviewed published papers and national surveillance reports on notifications and outcomes of COVID-19 in order to ascertain ethnicity data reporting patterns, associations and outcomes.

In emerging literature which is not yet peer-reviewed, two papers explore the risk of death in minority ethnic groups in England⁵ and the possible effect of lower irradiance on mortality in the United States⁶. Another ecological study⁸ suggests that deprivation and pollution are not directly linked with COVID-19 mortality and that multivariate analyses are important to understand the factors that increase vulnerability to COVID-19.

Buja et al⁹ looked at cases in Northern Italy and found a negative association between COVID-19 contagion rates and aging. The authors hypothesise that the reason could be that older people tend to move less outside their home and travel less far from where they live. In their analysis, higher levels of employment, public transportation usage, in-house density and population density correlated positively with the spread of infection. According to the authors, what these socio-economic factors have in common is the mobility of individuals and their exposure to close social contacts, both of which facilitate the propagation of COVID-19.

In the United States, Chin et al¹⁰ created bivariate county-level maps to summarise examples of key relationships across biological, demographic and socio-economic factors, grouping age and poverty; comorbidities and lack of health insurance; proximity, density and bed capacity; and race and ethnicity, and premature death. According to the authors, their data demonstrate significant inter-county variation in key epidemiological risk factors, with a clustering of cases in counties in certain states which will result in an increased demand on their public health system. Guha et al¹³ utilised zip-code level data from five major metropolitan areas to study the effect of multiple demographic and socio-economic factors including race, age, income, chronic disease comorbidity, population density and the number of people per household on the number of positive cases and ensuing death. In their study, Mukherji et al¹⁹ uncover the socio-economic



and health/lifestyle factors that can explain the differential impact of the coronavirus pandemic on different parts of the United States. Using a dynamic panel model with daily reported number of cases for US counties over a 20-day period, the study develops a Vulnerability Index for each county from an epidemiological model of disease spread. Still in the United States, Myers et al²⁰ review increased health risks and documented health disparities of racial and ethnic minorities and low socio-economic situation individuals in the US. Samuels-Staple²² from the Florida Health Justice Project, looks at how Florida, one of just 14 states that has not expanded Medicaid, and with its diverse population, is uniquely susceptible to health disparities amid the COVID-19 crisis. Stojkoski et al²⁴ investigate the potential of 35 determinants, leveraging Bayesian model averaging techniques and country level data, and describe a diverse set of socio-economic characteristics in explaining the coronavirus pandemic outcome.

IRISH AND INTERNATIONAL GUIDANCE

What does Public Health England say?

[Public Health England \(2020\) Disparities in the risk and outcomes of COVID-19¹](#)

This is a descriptive review of data on disparities in the risk and outcomes from COVID-19. This review presents findings based on surveillance data available to Public Health England (PHE) at the time of its publication, including through linkage to broader health data sets. It confirms that the impact of COVID-19 has replicated existing health inequalities and, in some cases, has increased them. These results improve our understanding of the pandemic and will help in formulating the future public health response to it. The largest disparity found was by age. Among people already diagnosed with COVID-19, people who were 80 or older were seventy times more likely to die than those under 40. Risk of dying among those diagnosed with COVID-19 was also higher in males than females; higher in those living in the more deprived areas than those living in the least deprived; and higher in those in Black, Asian and Minority Ethnic (BAME) groups than in White ethnic groups. These inequalities largely replicate existing inequalities in mortality



rates in previous years, except for BAME groups, as mortality was previously higher in White ethnic groups. These analyses take into account age, sex, deprivation, region and ethnicity, but they do not take into account the existence of comorbidities, which are strongly associated with the risk of death from COVID-19 and are likely to explain some of the differences.

What does the United Nations say?

[United Nations Department of Economic & Social Affairs \(2020\) The impact of COVID-19 on indigenous peoples²](#)

COVID-19 presents a new threat to the health and survival of indigenous peoples. Indigenous peoples in nearly all countries fall into the most vulnerable health category. They have significantly higher rates of communicable and non-communicable diseases than their non-indigenous counterparts, high mortality rates and lower life expectancies. Contributing factors that increase the potential for high mortality rates caused by COVID-19 in indigenous communities include mal- and under-nutrition, poor access to sanitation, lack of clean water, and inadequate medical services.

Additionally, indigenous peoples often experience widespread stigma and discrimination in healthcare settings such as stereotyping and a lack of quality in the care provided, thus compromising standards of care and discouraging them from accessing health care, if and when available.

The United Nations Declaration on the Rights of Indigenous Peoples sets out a framework for policy action on COVID-19 based on the rights of indigenous peoples to the highest attainable standard of physical and mental health, and their right to access, without any discrimination, to all social and health services. This falls within the larger framework of the Decade for Action and Delivery for sustainable development and the Secretary-General's recently issued "UN Framework for the Immediate Socio-Economic Response to COVID-19," which emphasises that the 2030 Agenda and the SDGs should be the building blocks for recovery.

What do the Centers for Disease Control and Prevention (United States) say?

[Centers for Diseases Control and Prevention \(2020\) COVID-19 in racial and ethnic minority groups³](#)

The effects of COVID-19 on the health of racial and ethnic minority groups is still emerging; however, current data suggest a disproportionate burden of illness and death among racial and ethnic minority groups. Studies are



underway to understand and potentially reduce the impact of COVID-19 on the health of racial and ethnic minorities.

POINT-OF-CARE TOOLS

What does UpToDate say?

[Coronavirus Disease 2019 \(COVID-19\): Epidemiology, virology, clinical features, diagnosis and prevention](#)⁴

In a number of states in the United States, black and Latino individuals appear to comprise a disproportionately high number of infections and deaths due to COVID-19, possibly related to underlying socio-economic disparities.

INTERNATIONAL LITERATURE

What does the international literature say?

[Aldridge et al \(2020\) \[Preprint Not Yet Peer Reviewed\] Black, Asian and minority ethnic groups in England are at increased risk of death from COVID-19: indirect standardisation of NHS mortality data \[version 1\]](#)⁵

Aldridge et al aimed to explore the risk of death in minority ethnic groups in England using data reported by NHS England. Their results and analysis add to the evidence that Black, Asian and Minority Ethnic (BAME) groups are at increased risk of death from COVID-19 even after adjusting for geographical region. The authors argue there is an urgent need to take action to reduce the risk of death for BAME groups and to have a better understanding as to why some ethnic groups experience greater risk. Actions that are likely to reduce these inequities include ensuring adequate income protection so that low paid and zero-hours contract workers can afford to follow social distancing recommendations, reducing occupational risks such as ensuring adequate personal protective equipment, reducing barriers in accessing healthcare and providing culturally and linguistically appropriate public health communications.

[Backer \(2020\) \[Preprint Not Yet Peer Reviewed\] Why COVID-19 may be disproportionately killing African Americans: black overrepresentation among COVID-19 mortality increases with lower irradiance, where ethnicity is more predictive of COVID-19 infection and mortality than median income⁶](#)

COVID-19 is killing African Americans at a rate 7% to 193% higher than the general population. Understanding why, as well as the reasons behind the wide variation, is paramount to saving lives. Here, two potential explanations for this effect are tested. African Americans might be dying more because they have a lower average income — ‘the Socio-Economic Hypothesis’; or, they might be dying more because their skin is more resistant to UV radiation, as previously showed that COVID-19 infections and deaths decrease with higher irradiance — ‘the Irradiance Hypothesis’. The two hypotheses are not mutually exclusive. Backer’s results suggest that a susceptibility linked to low irradiance may play a large role in African American vulnerability to COVID-19, and that black populations in locations with lower irradiance may benefit from sunlight exposure during the COVID-19 pandemic.

[Bhala et al \(2020\) \[Comment\] Sharpening the global focus on ethnicity and race in the time of COVID-19⁷](#)

Tackling injustices, including those that result from prejudice and racism globally, is essential in the response to the COVID-19 pandemic. Here, Bhala et al focus on UK South Asian and Black and African American populations, using internationally recognised terminology and definitions, and consider the UK and the USA as globally relevant examples. It is recognised other minorities also need consideration in the COVID-19 response; the authors hope their principles apply broadly. Given their settled status either after migration or by birth in the country, ethnic/racial minority populations should experience health-care outcomes equal to those of others. However, this appears untrue.

[Bray et al \(2020\) \[Preprint Not Yet Peer Reviewed\] COVID-19 mortality: a multivariate ecological analysis in relation to ethnicity, population density, obesity, deprivation and pollution⁸](#)

There is emerging evidence about characteristics that may increase the risk of COVID-19 mortality, but they are highly correlated. An ecological analysis was used to estimate associations between these variables and age-standardised COVID-19 mortality rates at Local Authority level. Results

indicated that ethnicity, population density and overweight/obesity were all found to have strong independent associations with COVID-19 mortality at Local Authority level. This analysis provides some preliminary evidence about which variables are independently associated with COVID-19 mortality and suggests that others [deprivation and pollution] are not directly linked; it highlights the importance of multivariate analyses to understand the factors that increase vulnerability to COVID-19.

[**Buja et al \(2020\) \[Preprint Not Yet Peer Reviewed\] Demographic and socio-economic factors, and healthcare resource indicators associated with the rapid spread of COVID-19 in Northern Italy: an ecological study⁹**](#)

In this ecological study, the authors aimed to identify potential province-level socio-economic determinants of the virus's dissemination and explain between-province differences in the speed of its spread, based on data from 36 provinces of Northern Italy. They included all confirmed cases of COVID-19 reported between February 24 and March 30, 2020. For each province, they calculated the trend of contagion as the relative increase in the number of individuals infected between two time endpoints, assuming an exponential growth. Pearson's test was used to correlate the trend of contagion with a set of healthcare-associated, economic, and demographic parameters by province. The virus's spread was input as a dependent variable in a stepwise OLS regression model to test the association between rate of spread and province-level indicators. Demographic and socio-economic factors together with healthcare organisation variables were found to be associated with a significant difference in the rate of COVID-19 spread in 36 provinces of Northern Italy. An aging population seemed to naturally contain social contacts. The availability of healthcare resources and their coordination could play an important part in spreading infection.

[**Chin et al \(2020\) \[Preprint Not Yet Peer Reviewed\] US county-level characteristics to inform equitable COVID-19 response¹⁰**](#)

Using publicly available county-specific data, Chin et al identified key biological, demographic, and socio-economic factors influencing susceptibility to COVID-19. They created bivariate county-level maps to summarise examples of key relationships across these categories, grouping age and poverty; comorbidities and lack of health insurance; proximity, density and bed capacity; and race and ethnicity, and premature death. Their data demonstrate significant inter-county variation in key epidemiological risk factors, with a clustering of counties in certain states, which will result



in an increased demand on their public health system. While the East and West coast cities are particularly vulnerable owing to their densities and travel routes, a large number of counties in the South-Eastern states have a high proportion of at-risk populations, with high levels of poverty, comorbidities and premature death at baseline, and low levels of health insurance coverage. The list of variables examined is not exhaustive and several of them are interrelated and magnify underlying vulnerabilities. COVID-19 responses and decision-making in the United States remain decentralised. Both the federal and state governments will benefit from recognising high intra-state, inter-county variation in population risks and response capacity. Strategies to protect those in the most vulnerable counties will require urgent measures to better support communities' attempts at social distancing and to accelerate cooperation across jurisdictions to supply personnel and equipment to counties that will experience high demand.

[**Garg et al \(2020\) Hospitalization rates and characteristics of patients hospitalized with laboratory-confirmed Coronavirus Disease 2019¹¹**](#)

In the COVID-NET catchment population, approximately 49% of residents are male and 51% of residents are female, whereas 54% of COVID-19-associated hospitalisations occurred in males and 46% occurred in females. These data suggest that males may be disproportionately affected by COVID-19 compared with females. Similarly, in the COVID-NET catchment population, approximately 59% of residents are white, 18% are black, and 14% are Hispanic; however, among 580 hospitalized COVID-19 patients with race/ethnicity data, approximately 45% were white, 33% were black, and 8% were Hispanic, suggesting that black populations might be disproportionately affected by COVID-19. These findings, including the potential impact of both sex and race on COVID-19-associated hospitalisation rates, need to be confirmed with additional data.

[**Gold et al \(2020\) Characteristics and clinical outcomes of adult patients hospitalized with COVID-19 - Georgia, March 2020¹²**](#)

For this report, the Centers for Disease Control and Prevention (CDC), the Georgia Department of Public Health and eight Georgia hospitals summarised medical record-abstracted data for hospitalised adult patients with laboratory-confirmed COVID-19 who were admitted during March 2020. Among 305 hospitalized patients with COVID-19, 61.6% were aged <65 years, 50.5% were female, and 83.2% with known race/ethnicity were non-



Hispanic black. Over a quarter of patients (26.2%) did not have conditions thought to put them at higher risk for severe disease, including being aged ≥ 65 years. The proportion of hospitalised patients who were black was higher than expected based on overall hospital admissions. In an adjusted time-to-event analysis, black patients were not more likely than were nonblack patients to receive invasive mechanical ventilation (IMV) or to die during hospitalisation. Given the overrepresentation of black patients within this hospitalised cohort, it is important for public health officials to ensure that prevention activities prioritise communities and racial/ethnic groups most affected by COVID-19. Clinicians and public officials should be aware that all adults, regardless of underlying conditions or age, are at risk of serious illness from COVID-19.

[Guha et al \(2020\) \[Preprint Not Yet Peer Reviewed\] Community and socioeconomic factors associated with COVID-19 in the United States: zip code level cross sectional analysis¹³](#)

In this study, zip-code level data from five major metropolitan areas, was utilised to study the effect of multiple demographic and socio-economic factors including race, age, income, chronic disease comorbidity, population density, number of people per household on number of positive cases and ensuing death. Overall, 442 zip codes reporting 93,170 positive COVID-19 cases and 138 zip codes reporting mortality ranging from 0 to 25 were included in this study. A multivariable linear regression model noted that 1% increase in the proportion of residents above the age of 65 years, proportion of African American residents, proportion of females, persons per household and population density of the zip code increased the proportion of positive cases by 0.77%, 0.23%, 1.64%, 1.83% and 0.46% respectively ($P < 0.01$) with only population density remaining significant in zip codes with greater than median number of cases. In zips with greater than median number of deaths, no community/socio-economic factor contributed significantly to death. This study gives early signals of gender, and racial inequalities while providing overwhelming evidence of how population density may contribute to an increase in the number of positive cases of COVID-19.

[Jaffe et al \(2020\) \[Preprint Not Yet Peer Reviewed\] Globalized low-income countries may experience higher COVID-19 mortality rates¹⁴](#)

Understanding the factors underpinning COVID-19 infection and mortality rates is essential in order to implement actions that help mitigate the

current pandemic. Jaffe et al evaluate how a group of 15 climatic and socio-economic variables influence COVID-19 exponential growth-phase infection and mortality rates across 36 countries. They found that imports of goods and services, international tourism and the number of published scientific papers are good predictors of COVID-19 infection rates, indicating that more globalised countries may have experienced multiple and recurrent introductions of the virus. However, high-income countries showed lower mortality rates, suggesting that the consequences of the current pandemic will be worse for globalised low-income countries. International aid agencies could use this information to help mitigate the consequences of the current pandemic in the most vulnerable countries.

[Khalatbari-Soltani et al \(2020\) Importance of collecting data on socioeconomic determinants from the early stage of the COVID-19 outbreak onwards¹⁵](#)

Individuals with a more disadvantaged socio-economic position (SEP) are more likely to be affected by most of the known risk factors of COVID-19. The authors hypothesise that SEP plays an important role in the COVID-19 pandemic either directly or indirectly via occupation, living conditions, health-related behaviours, presence of comorbidities and immune functioning. However, the influence of socio-economic factors on COVID-19 transmission, severity and outcomes is not yet known and is subject to scrutiny and investigation. Here, they briefly review the extent to which SEP has been considered as one of the potential risk factors of COVID-19. From 29 eligible studies that reported the characteristics of patients with COVID-19 and their potential risk factors, only one study reported the occupational position of patients with mild or severe disease. This brief overview of the literature highlights that important socio-economic characteristics are being overlooked when data are collected. As COVID-19 spreads worldwide, it is crucial to collect and report data on socio-economic determinants as well as race/ethnicity to identify high-risk populations. A systematic recording of socio-economic characteristics of patients with COVID-19 will be beneficial to identify most vulnerable groups, to identify how SEP relates to COVID-19 and to develop equitable public health prevention measures, guidelines, and interventions.



[**Khunti et al \(2020\) Is ethnicity linked to incidence or outcomes of COVID-19?**](#)¹⁶

Systematic reviews of ethnically homogenous cohorts from China suggest that the key risk factors for hospital admission include age, male sex, and comorbidities such as cardiovascular disease, hypertension and diabetes. The UK is the first country in the COVID-19 surge with an ethnically diverse population and can therefore contribute to our understanding of the disease's effects in different ethnic groups, particularly those of South Asian or African Caribbean heritage.

[**Khunti et al \(2020\) Ethnicity and COVID-19: an urgent public health research priority**](#)¹⁷

Ethnicity is a complex entity composed of genetic make-up, social constructs, cultural identity and behavioural patterns. Ethnic classification systems have limitations but have been used to explore genetic and other population differences. Individuals from different ethnic backgrounds vary in behaviours, comorbidities, immune profiles, and risk of infection, as exemplified by the increased morbidity and mortality in black and minority ethnic (BME) communities in previous pandemics. As COVID-19 spreads to areas with large cosmopolitan populations, understanding how ethnicity affects COVID-19 outcomes is essential. Khunti et al review published papers and national surveillance reports on notifications and outcomes of COVID-19 to ascertain ethnicity data reporting patterns, associations, and outcomes.

[**Mesa Vieira et al \(2020\) COVID-19: The forgotten priorities of the pandemic**](#)¹⁸

Preventive measures, such as social distancing are crucial, but can carry long-term consequences. Terms such as 'spatial distancing' help avoid the contradictory interpretation of social distancing in times when social support is crucial. Miscommunication, social isolation and poorer socio-economic status can impair the wellbeing of vulnerable groups. Vulnerable groups include indigenous, prison and homeless populations, migrants, the elderly, people with disabilities and healthcare workers.



[Mukherji \(2020\) \[Preprint Not Yet Peer Reviewed\] The social and economic factors underlying the impact of COVID-19 cases and deaths in US counties¹⁹](#)

The author investigates the socioeconomic and health/lifestyle factors that can explain the differential impact of the coronavirus pandemic on different parts of the United States. Using a dynamic panel model with daily reported number of cases for US counties over a 20-day period, the author develops a Vulnerability Index for each county from an epidemiological model of disease spread. County-level economic, demographic, and health factors are used to explain the differences in the values of this index and thereby the transmission and concentration of the disease across the country. These factors are also used in a zero-inflated negative binomial pooled model to examine the number of reported deaths. The study finds that counties with high per capita personal income have a high incidence of both reported cases and deaths. The unemployment rate is negative for deaths implying that places with low unemployment rates or higher economic activity have higher reported deaths. Counties with higher income inequality as measured by the Gini coefficient experienced more deaths and reported more cases. There is a remarkable similarity in the distribution of cases across the country and the distribution of distance-weighted international passengers served by the top international airports. Counties with high concentrations of non-Hispanic Blacks, Native Americans, and immigrant populations have a higher incidence of both cases and deaths. The distributions of health risk factors such as obesity, diabetes and smoking are found to be particularly significant factors in explaining the differences in mortality across counties. Counties with higher numbers of primary care physicians have lower deaths and so do places with lower hospital stays for preventable causes. The stay-at-home orders are found to be associated with places of higher cases and deaths implying that they were perhaps imposed far too late to have contained the virus in the places with high-risk populations. It is hoped that research such as these will help policymakers to develop risk factors for each region of the country to better contain the spread of infectious diseases in the future.

[Myers \(2020\) \[Preprint Not Yet Peer Reviewed\] Compounding health risks and increased vulnerability to SARS-CoV-2 for racial and ethnic minorities and low socioeconomic status individuals in the United States²⁰](#)

Recent clinical COVID-19 studies link diabetes, cardiovascular disease and hypertension to increased disease severity. In the US, racial and ethnic minorities and low socio-economic status (SES) individuals are more likely to have increased rates of these comorbidities, lower baseline health, limited access to care, increased perceived discrimination and limited resources, all of which increase their vulnerability to severe disease and poor health outcomes from COVID-19. Previous studies demonstrated the disproportionate impact of pandemic and seasonal influenza on these populations, due to these risk factors. This study reviews increased health risks and documented health disparities of racial and ethnic minorities and low SES individuals in the US. Pandemic response must prioritise these marginalised communities to minimise the negative, disproportionate impacts of COVID-19 on them and manage spread throughout the entire population. The author concludes with recommendations applicable to healthcare facilities and public officials at various government levels.

[Patel et al \(2020\) \[Preprint Not Yet Peer Reviewed\] Race, socioeconomic deprivation, and hospitalization for COVID-19 in English participants of a national biobank²¹](#)

In this study, Patel et al investigate the racial and socio-economic associations of COVID-19 hospitalisation among 418,794 participants of the UK Biobank, of whom 549 (0.13%) had been hospitalised. Both black participants and Asian participants were at substantially increased risk as compared to white participants. They further observed a striking gradient in COVID-19 hospitalisation rates according to the Townsend Deprivation Index \square a composite measure of socio-economic deprivation \square and household income. Adjusting for such factors led to only modest attenuation of the increased risk in black participants. These observations confirm and extend earlier preliminary and lay press reports of higher morbidity in non-white individuals in the context of a large population of participants in a national biobank. The extent to which this increased risk relates to variation in pre-existing comorbidities, differences in testing or hospitalisation patterns, or additional disparities in social determinants of health warrants further study.

[**Samuels-Staple \(2020\) \[Preprint Not Yet Peer Reviewed\] The state of COVID-19 in Florida and South Florida: an early look at disparities in outcomes²²**](#)

As COVID-19 continues to plague the USA, it has highlighted existing structural inequities. Over the past few weeks, several reports, both in mainstream media and among policy analysts, have documented evidence of the disproportionate negative impact of COVID-19 on low-income communities of colour. Florida, one of the nation's most diverse states, and one of just 14 states that have not expanded Medicaid, is uniquely susceptible to health disparities amid the COVID-19 crisis.

[**Santorelli et al \(2020\) \[Preprint Not Yet Peer Reviewed\] COVID-19 in-patient hospital mortality by ethnicity²³**](#)

There is debate about the extent to which COVID-19 affects ethnic groups differently. Santorelli et al explored if there was variation in hospital mortality in patients with COVID-19. Mortality rates in 1,276 inpatients in Bradford with test results for COVID-19 were analysed by ethnic group. The age-adjusted risk of dying from COVID-19 was slightly lower in South Asian compared to White British patients. (RR =0.87, 95% CI: 0.41 to 1.84).

[**Stojkoski et al \(2020\) \[Preprint Not Yet Peer Reviewed\] The socio-economic determinants of the Coronavirus Disease \(COVID-19\) pandemic²⁴**](#)

The magnitude of the COVID-19 pandemic has an enormous impact on the social life and the economic activities in almost every country in the world. Besides the biological and epidemiological factors, a multitude of social and economic criteria also govern the extent of the coronavirus disease spread in the population. Consequently, there is an active debate regarding the critical socio-economic determinants that contribute to the resulting pandemic. In this study, we contribute towards the resolution of the debate by leveraging Bayesian model averaging techniques and country level data to investigate the potential of 35 determinants, describing a diverse set of socio-economic characteristics in explaining the coronavirus pandemic outcome.

[**Thomas \(2020\) \[Comment\] Death in the time of coronavirus²⁵**](#)

The lockdown of the country, imposed by the government of India, has resulted in additional suffering for the poor without any tangible benefit. The germ theory of disease is an important contribution to human welfare.

However, disease has social determinants. Responses to infectious epidemics should be based on social conditions, not only from considerations of equity, but also because they are important for success. Advice from the World Health Organization has to be tailored to the social realities in India. Current response by the government of India has confined the poor to ghettos. They have lost the means of livelihood without a proper social security net. It is not possible for them to practise social distancing or proper hygiene. The lockdown has the effect of making conditions worse for the poor.

[Wadhera et al \(2020\) \[Research Letter\] Variation in COVID-19 hospitalizations and deaths across New York City boroughs²⁶](#)

This study describes demographic characteristics and hospital bed capacities of the five New York City boroughs and evaluates whether differences in testing for COVID-19, hospitalisations, and deaths have emerged as a signal of racial, ethnic, and financial disparities.

[Yancy \(2020\) COVID-19 and African Americans²⁷](#)

What is currently known about these differences in disease risk and fatality rates? In Chicago, more than 50% of COVID-19 cases and nearly 70% of COVID-19 deaths involve black individuals, although blacks make up only 30% of the population. Moreover, these deaths are concentrated mostly in just five neighbourhoods on the city's South Side. In Louisiana, 70.5% of deaths have occurred among black persons, who represent 32.2% of the state's population. In Michigan, 33% of COVID-19 cases and 40% of deaths have occurred among black individuals, who represent 14% of the population. If New York City has become the epicentre, this disproportionate burden is validated again in underrepresented minorities, especially blacks and now Hispanics, who have accounted for 28% and 34% of deaths, respectively [population representation: 22% and 29%, respectively].



Produced by the members of the National Health Library and Knowledge Service Evidence Team[†]. Current as at [2 August 2020]. This evidence summary collates the best available evidence at the time of writing and **does not replace clinical judgement or guidance**. Emerging literature or subsequent developments in respect of COVID-19 may require amendment to the information or sources listed in the document. Although all reasonable care has been taken in the compilation of content, the National Health Library and Knowledge Service Evidence Team makes no representations or warranties expressed or implied as to the accuracy or suitability of the information or sources listed in the document. This evidence summary is the property of the National Health Library and Knowledge Service and subsequent re-use or distribution in whole or in part should include acknowledgement of the service.

The following PICO(T) was used as a basis for the evidence summary:

	SOCIOECONOMICALLY DEPRIVED POPULATION
	COVID-19
	RISK OF INFECTION AND/OR MORTALITY

The following search strategy was used:

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'CORONAVIRIDAE'/EXP OR ('COVID-19':AB, TI OR CORONAVIRUS:AB, TI OR 'CORONA VIRUS':AB, TI OR '2019-NCOV':AB, TI OR '2019 NCOV':AB, TI OR 'SEVERE ACUTE RESPIRATORY SYNDROME CORONAVIRUS 2':AB, TI OR 'SARS-COV-2':AB, TI OR (WUHAN:AB, TI AND VIRUS:AB, TI) OR ('2019':AB, TI AND NEW:AB, TI AND CORONAVIRUS:AB, TI) OR ('2019':AB, TI AND NOVEL:AB, TI AND CORONAVIRUS:AB, TI))

AND

'INFECTION RISK'/EXP OR 'MORTALITY RATE'/EXP OR ((RISK NEAR/2 INFECTION):AB, TI) OR 'MORTALITY RATE':AB, TI OR 'FATAL OUTCOMES':AB, TI OR 'FATAL OUTCOME':AB, TI OR 'DEATH RATE':AB, TI OR 'FATALITY RATE':AB, TI

AND

ETHNICITY:AB, TI OR 'INDIGENOUS PEOPLES':AB, TI OR INDIGEN*:AB, TI OR LITERACY:AB, TI OR 'LOW INCOME':AB, TI OR 'LOWEST INCOME':AB, TI OR DEMOGRAPHICS:AB, TI OR DEMOGRAPHIC:AB, TI OR POOR:AB, TI OR POVERTY:AB, TI OR 'POPULATION DENSITY':AB, TI OR CROWDED:AB, TI OR ((ENVIRONMENTAL OR SOCIAL OR ECONOMIC OR SOCIOECONOMIC) NEAR/2 (FACTORS OR BACKGROUND OR CONDITIONS OR CONTEXT OR DETERMINANTS OR DIFFICULTIES OR DIFFERENCES OR STATUS)):AB, TI OR (ECONOMIC NEAR/2 (HARDSHIP OR SEGREGATION OR STATUS)):AB, TI OR ((ECONOMIC* OR SOCIAL* OR SOCIO OR ENVIRONMENT OR SOCIOECONOMIC OR AREA) NEAR/2 DEPRIV*):AB, TI OR 'SOCIOECONOMICS'/EXP OR 'ETHNICITY'/EXP OR 'MINORITY GROUP'/EXP OR 'POPULATION DENSITY'/EXP OR 'INDIGENOUS PEOPLE'/EXP
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- ¹ Public Health England (2020) Disparities in the risk and outcomes of COVID-19. <https://www.gov.uk/government/publications/COVID-19-review-of-disparities-in-risks-and-outcomes> [Accessed 3 June 2020].
- ² United Nations Department of Economic & Social, Affairs (2020). The impact of COVID-19 on indigenous peoples. <https://www.un.org/development/desa/dpad/publication/un-desa-policy-brief-70-the-impact-of-COVID-19-on-indigenous-peoples/>. [Accessed 22 May 2020].
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