

COVID-19 in Black, Asian and Minority Ethnic populations: An evidence review and recommendations from the South Asian Health Foundation.



In collaboration with:



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Executive Summary

This review provides an overview of the current evidence on ethnic inequalities in the impact of COVID-19, and discusses potential explanatory factors for these observations. Critically, it makes much needed recommendations to protect Black, Asian and Minority Ethnic (BAME) individuals both in the general population and in key worker roles.

Current evidence suggests marked ethnic inequalities in the risk of hospitalisation and adverse outcome from COVID-19 infection. The available evidence also shows marked ethnic inequalities in the risk of death from COVID-19. Black and South Asian individuals appear at greatest risk, although most BAME groups have been shown to have increased risk when compared to White ethnic groups.

Factors that could explain the disproportionate impact of COVID-19 in BAME communities in terms of differential exposure and increased vulnerability can be categorised into structural, biological, and behavioural reasons. These explanations must be considered in the full context of the wider determinants of health including discrimination.

Immediate actions to prevent increased incidence of disease and further health inequality relate to:

- Culturally tailored public health messaging
- Tailored test, trace and isolate strategy
- Priority testing for BAME workers
- Mandatory occupational risk assessment for non-NHS staff and NHS staff
- Ensuring research quality and equality
- Protecting migrants
- Closing immediate educational gaps
- Strengthening science

Long-term actions to reduce structural inequality relate to:

- Reducing health inequality
- Addressing occupational inequality
- Strengthening social security
- Addressing housing inequality
- Addressing differential educational achievements
- Addressing discrimination in the NHS
- Improving health literacy and knowledge relating to lifestyle behaviours

Culturally specific recommendations relate to:

- Employers and retail
- Places of worship and community centres
- Religious festivals
- Religious schools
- Funerals and burials
- Weddings
- People providing personal health and hygiene services

In summary, it is clear that a comprehensive multi-sectoral approach – supported by strong policy action - is needed to tackle the multiple and complex structural, biological and behavioural reasons driving the disproportionate impact of COVID-19 on BAME communities. These recommendations are key to reducing health inequalities related to COVID-19.

Introduction

Early indications of a possible association between COVID-19 and ethnicity first came to attention when data from the Intensive Care National Audit and Research Centre, showed a third of COVID-19 patients admitted to critical care units were from Black, Asian and Minority Ethnic (BAME) groups (1). In addition, several commentary papers from frontline clinicians highlighted the disproportionate number of deaths in NHS healthcare staff of BAME backgrounds (2, 3).

As a direct consequence of the emerging inequality in COVID-19 risk and outcome by ethnic group, Public Health England (PHE) were tasked by the Department of Health to assess data on inequality in clinical outcomes, including differences between ethnic groups. As well as reviewing inequality data, the review aimed to make “recommendations for further action that should be taken to reduce disparities in risk and outcomes from COVID-19 on the population.”(4)

By the time the PHE report was published on 2 June 2020 (5), inequalities in hospital admission, infection risk and mortality by ethnicity were already described in the emerging evidence base. The resultant report descriptively compiled a selection of this evidence base, but did not address possible explanatory factors for the disparity in outcomes. The most notable omission was the absence of recommendations for further action, despite this being in the original terms of reference for the report (4). These were later published on 16 June 2020 (6) after much media and public outcry, but were limited in scope, lacked detail, and provided no time frame for delivery or methods of implementation (7).

This review will provide an overview of the current evidence on ethnic inequalities in the impact of COVID-19, and discuss known and postulated explanatory factors for these observations. A second aim for this review is to make recommendations on how best to reduce inequalities related to COVID-19, currently impacting BAME individuals both in the general population and in key worker roles.

Inequalities in COVID-19 Outcomes

COVID-19 has impacted all corners of society and there is growing evidence to suggest that the burden of the pandemic is not equal across population groups. Known risk factors for infection and adverse outcome are age, male sex, comorbidities, lifestyle factors, such as smoking, obesity, and ethnicity (See [Figure 1](#) for more information).

The largest inequalities reported in the current evidence base are age and sex. Broadly, COVID-19 mortality risk increases with age, and is markedly higher for the elderly. Strikingly, Public Health England (PHE) suggests that the risk of death is seventy times greater for those aged 80 years and above, compared to those below 40 years of age. Males are at nearly two times greater mortality risk than females (See [Table 1](#) for more details), rates of hospital admission with COVID-19 are higher in elderly males (8), and admissions to critical care are reported to be over 70% male (9).

Comorbidities, lifestyle behaviours, obesity and other factors have also been associated with COVID-19 outcomes (10, 11), but the most marked risks beyond age and sex appear to be living in a deprived area, and being of BAME ethnicity. Indeed people who live in deprived areas are more likely to be infected with and die from COVID-19 than those living in less deprived areas. Those living in the most deprived areas are at around double the risk of death compared to those from least deprived areas (See [Table 1](#)).

The Intensive Care National Audit and Research Centre (ICNARC) has reported that the number of COVID-19 admissions to critical care are greater in the most deprived areas, with 50% of admissions up to 12 June 2020 coming from the two most deprived quintiles (9). An observational cohort study of 2217 patients admitted to hospital with COVID-19 reported that 45% of patients were from the most deprived quintile of the population (12).

There are a number of very large population level studies which have examined the impact of deprivation on COVID-19 mortality risk (although most report on hospital deaths). NHS England and PHE examined data from over 61 million people in England and found risk of death in hospital increased with level of deprivation. Those individuals living in the most deprived areas were 1.9 times (i.e. 90%) more likely to die in hospital compared to the least deprived quintile of the population. These analyses were adjusted for age, sex, region, diabetes status, and ethnicity (11).

A similarly large population study led by the OpenSAFELY collaboration (10) analysed data on 17 million people, and found that risk of death in hospital increased with level of deprivation. Those individuals living in the most deprived areas were 1.7 times more likely to die in hospital compared to the least deprived quintile of the population. These analyses were adjusted for age, sex, BMI, smoking, hypertension, comorbidities, region, and ethnicity.

Including deaths in hospital and in the community, the Office for National Statistics (ONS) found age-standardised COVID-19 mortality rate in the most deprived areas was 128.3 deaths per 100,000; more than double the mortality rate in the least deprived areas (58.8 deaths per 100,000) (13). Similarly PHE (5) report age-standardised death rates (per 100,000) as greatest in the most deprived quintile in both men and women. Men in the most deprived quintile have 2.3 times the risk of death from COVID-19 compared to those in the least deprived quintile, and women 2.4 times the risk. This analysis accounts for sex, region and ethnicity, but not comorbidities.

The increased vulnerability to COVID-19 as a consequence of socioeconomic deprivation also intersects with ethnicity, as ethnic minorities are posited to be more socioeconomically deprived and have poorly paid and insecure employment (14-16). However, when adjusting for deprivation, and other candidate explicators such as comorbidities, there is still increased risk of death and hospitalisation in Black and South Asian ethnicity groups (and in other ethnic minorities, but their risks appear lower) compared to White groups.

COVID-19 and Hospitalisation in BAME populations

A systematic review of published and grey literature (17) (i.e. non-peer reviewed reports) found BAME individuals are at increased risk of hospitalisation and admission to intensive care compared to White populations; although this finding is largely based on grey or preprint literature, as published data are still limited.

Two published studies (18, 19) identified in the review found no association between ethnicity and rates of hospitalisation or intubation, and one reported no association between ethnicity and intubation (20). Five of six preprint studies found Black patients (2 preprints referred to Asians) to be at greater risk of hospitalisation and intensive care admission compared to White patients (17).

The identified grey literature was from the Intensive Care National Audit and Research Centre (ICNARC). ICNARC figures up to 4 June 2020 show 9623 patients have been admitted to intensive care with COVID-19, of which 67% were White, 15% Asian, 9.7% Black and 6.5% from other ethnic groups (21). This is markedly different when compared to 2011 general population figures where 86% were White, 7.5% were Asian, 3.3% were Black and 3.3% were from other ethnic groups (22).

Beyond the data identified in the review of Pan and colleagues, a prospective cohort study of all 194 obstetric units in the UK reported pregnant BAME women are around 4.5 times more likely to be hospitalised with COVID-19 than other ethnicities, when accounting for age, BMI and comorbidities. These associations (although attenuated to 3.7 odds ratio) persist even when excluding women from the most affected regions in England (23).

A further prospective cohort study of over 340,000 adults, linked UK Biobank information and COVID-19 hospitalisation data. After controlling for a wide range of confounding variables, compared to White individuals, Black patients were 2.6 times more likely to be hospitalised, Asian patients 1.4 times more likely, and Other ethnic origin patients 1.4 times more likely (although not statistically significant for Asian and Other groups) (24).

In summary, available evidence show marked ethnic inequalities in the risk of hospitalisation for COVID-19. These data also suggest Black individuals may be most likely to be hospitalised, although further work is needed to confirm this.

COVID-19 Outcomes in BAME populations

There are now a number of grey literature, preprint, and peer-reviewed published analyses on COVID-19 mortality in BAME populations, both in the general population and in healthcare workers. The key studies are summarised in [Table 1](#) and described briefly below.

The UK Office for National Statistics (ONS) used individual level data linkage to examine deaths by ethnic group, where COVID-19 was mentioned on the death certificate (25). When adjusting for age alone, men and women from all BAME groups (except Chinese women) were identified to be at greater risk of dying from COVID-19 than White individuals. Strikingly, Black men are 4.2 times more likely to die from COVID-19 than White men, and Black women 4.3 times more likely than White women.

When adjusting for a much wider range of confounding variables (See [Table 1](#) for details), the ONS analysis showed some reduction in risk across all BAME groups. For example, in Black men and women, mortality risk lowered to 1.9 times more likely to die from COVID-19 than White individuals. Therefore differences in mortality by ethnicity were only partly explained by socioeconomic status and other explanatory variables such as geographic location etc. (25).

The scientific collaboration OpenSAFELY linked data from the COVID-19 Patient Notification System (CPND) and primary care electronic health records (10) in over 17 million individuals. They examined factors associated with COVID-19 hospital deaths and found all BAME groups had higher risk of death when compared to White ethnicity. This decreased a small amount when adjusting (beyond age and sex) for BMI, smoking, deprivation, hypertension, region and comorbidities such as diabetes and cardiovascular disease (Black 1.7 fold increased risk, Asian/British Asian 1.6 fold increased risk - See [Table 1](#) for details). This suggests that the higher risk in BAME groups is only partially explained by deprivation, comorbidity and other risk factors (10).

Sapey and colleagues analysed data from 2217 patients admitted to University Hospitals Birmingham with a proven diagnosis of COVID-19. After taking into account a range of confounders (See [Table 1](#).) South Asian patients displayed a 1.6 times greater mortality risk, but there was no increased risk for Black, Mixed or Other groups (12). In addition, South Asian patients were also more likely to present with severe disease, despite no delay in presentation since symptom onset.

A cross-sectional analysis from Public Health England (5) found Bangladeshi individuals had twice the risk of death compared to the White ethnic group, with greater risk observed across the Indian, Pakistani, Other Asian, Chinese, Caribbean and Other Black ethnic groups (between 10-50% increased risk). A major limitation of this work however is that while sex, age, deprivation and region were adjusted for, obesity and comorbidities were not.

An interesting addition to the PHE analyses was comparison of the direction of COVID-19 death rates with previous years' all-cause mortality. The greater COVID-19 deaths observed in BAME populations is the converse of previous all-cause mortality where rates have been lower in BAME groups compared to White ethnic groups (5).

Apea and colleagues examined data from 1737 patients admitted to five NHS hospitals in east London for COVID-19 (26). They found that Asian patients were 1.5 more likely to die than patients of White ethnicity, with Black patients 1.3 times more likely. There was increased risk for the Mixed and Other Ethnicity group. These data were adjusted for age and sex only.

The NHS and PHE led the linkage and analysis of medical records and death data in over 61 million people (almost the entire population of England), and found greater mortality risk for BAME groups with 1.7 times increased risk for Black, and 1.3 times greater risk for Asian groups (11). A prospective cohort study in 260 hospitals across the UK reported differently, with greater likelihood of COVID-19 death in South Asian individuals (hazard ratio of 1.2) compared to White ethnic groups, but no increased mortality risk for other BAME groups (27).

The systematic review of Pan and colleagues (17) concluded that preprint and grey literature support an increased risk of death from COVID-19 in BAME populations. Pan reported that four published studies and four preprint studies found no association between ethnicity and mortality, but six preprint studies reported Black patients (and three for Asian) to be at increased risk compared to White patients. From grey literature, five reports detailed greater risk in Black patients and three in Asian patients (17).

Furthermore, BAME populations in adult social care appear particularly vulnerable. The Care Quality Commission (28) examined death notifications in adult social care settings by ethnicity between April and May 2020. Deaths in all adult social care services due to confirmed or suspected COVID-19 were higher for Black (49%) and Asian (42%) compared to White (41%) or Mixed/multiple ethnic groups (41%). However, no inferential analyses were conducted on these data, and the numbers reported do not account for confounding factors.

In relation to mental health, there is very limited published data in BAME populations. In the USA, a survey of over 10,000 adults found Black, Native American, and Hispanic ethnic groups scored higher on a suicidal behaviour questionnaire compared to White individuals (even when accounting for gender, age, risks and social and psychological resources) in a survey administered in late March 2020 (29). Kooth, a provider of NHS-funded online mental health support, reported a 27% increase in suicidal thoughts among BAME children and young people, a 9% increase in depression, 30% increase in self-harm concerns and 11% increase in anxiety and stress compared to the same time period in 2019 (30). Smaller increases in depression, suicidal thoughts and anxiety and stress were reported for White youth.

In summary, the available evidence show marked ethnic inequalities in the risk of death from COVID-19. Black and South Asian groups appear at greatest risk, although most BAME groups have been shown to have increased risk, depending on the study. Odds or hazard ratios vary between studies due to the variables adjusted for.

Explanatory Factors

The causes of the disproportionate impact of COVID-19 in BAME populations are not yet clear. It is likely however that explanatory factors are multiple and strongly underpinned by wider determinants of health such as deprivation (31). There appear to be two main areas of concern currently posited in the research literature - increased exposure to COVID-19 and the impact of pre-existing health conditions on outcome from COVID-19 infection. The multifactorial risk of BAME populations can be broadly categorised into structural, biological, and behavioural factors.

Structural

We broadly refer to **structural inequality** as systematic disadvantage or discrimination inherent in social structures (e.g. housing, income, occupation, health care, education etc.).

COVID-19 cases have been more prevalent in densely populated urban areas such as London and Birmingham, where BAME communities reside in high numbers. In England and Wales, 60% of the Black population and 50% of the Bangladeshi population live in London (32), and therefore just by virtue of geographic location, BAME populations are likely to be more exposed to the virus. However, when accounting for the role of regional concentration of COVID-19 cases in statistical models, ethnic minority groups remain at increased risk of adverse outcomes, therefore suggesting further socioeconomic, biological and behavioural factors also contribute to increased exposure or vulnerability.

Existing socioeconomic inequality has left BAME communities at greater exposure to COVID-19 as they are more likely to be socioeconomically deprived, live in overcrowded and multigenerational housing, and hold key worker or high exposure occupations. Indeed 8% of Black Caribbean, 15% of Pakistani, 21% of Black African and 26% of Bangladeshi households are classified as overcrowded (where there are more people than bedrooms), compared to only 2% in White British households (33). Bangladeshi, Indian and Chinese households are particularly likely to have older people over 65 years living with children under 16 years (33).

In addition to housing-related viral exposure, BAME people are overrepresented in key worker and health and social care roles, and lower paid or less secure employment (such as zero hour contracts), where it will be difficult to work from home or socially distance. There is overrepresentation of BAME ethnic groups in social care workers, health care assistants, hospital cleaners, transport and delivery, taxi drivers, security guard, and nursing and medical jobs (34). These occupations will likely increase exposure to the virus, and most have been reported to increase COVID-19 mortality risk (34).

A greater proportion of BAME health and care workers have died from COVID-19 than would be expected, given the level of BAME representation in these roles (35). Within the NHS, BAME individuals represent around 21% of all staff, and approximately 20% of nursing and support staff and 44% of medical staff (i.e. doctors and dentists). Crude analyses of health and care worker mortality data suggest 63%, 64% and 95% of overall COVID-19 related deaths in the aforementioned staff groups were ethnic minority individuals (35). In other recent work, frontline healthcare staff are reported to have lower mortality rates than the general population, but 76% of healthcare staff deaths were in individuals of non-White ethnicity (36).

Survey evidence from the Royal College of Nursing shows 66% of White British nurses self-report receiving a sufficient level of eye and face protection equipment, but only 43% of BAME nurses report receiving such personal protective equipment (PPE) (37). Moreover 49% of BAME nurses have been asked to reuse single use PPE, compared with 37% of White British nursing staff, and there were clear inequalities in perceptions over the provision of PPE training between BAME and White British nurses (37). In addition to this, PHE's BAME COVID-19 review suggests that BAME healthcare workers may feel less able to speak out against lack of appropriate PPE or exposed working conditions (6).

As well as a barrier to speaking out against working conditions, the PHE BAME report suggests discrimination and distrust may hinder access to healthcare and negatively impact health seeking behaviours in BAME communities (6). In addition, new or undocumented migrants are at particular risk as they may lack trust in authorities and fear discrimination, may not speak English or have good health literacy, and will have minimal rights to access healthcare (38). There is unfortunately a lack of data on this issue at present.

These elements of social/structural discrimination have received widespread research and media attention, but there is currently limited primary data relating to the COVID-19 pandemic, and some of it presents a contradictory picture. For example, Harrison et al. report no difference between ethnic groups when examining time from first symptoms to hospital admission. Furthermore, there were no differences seen in illness severity upon admission (27).

However, where structural inequality is more substantiated, is in the systemic social and socioeconomic inequalities that contribute to health status. As noted above, BAME populations are at greater viral exposure and transmission risk due to occupational status, overcrowded and multigenerational living conditions, and residing in densely populated urban areas. When combined with inequalities in income, occupation and education, the ability to lead a healthy lifestyle (i.e. sufficient physical activity and sleep, healthy diet, not smoking etc.) may be compromised. (31) This is significant as lifestyle behaviours are key determinants of comorbidities that have been shown to increase risk of adverse COVID-19 outcomes.

Biological

Cardiovascular disease, obesity and diabetes are now frequently reported comorbidities associated with adverse COVID-19 outcomes (10, 11, 27, 39), and they are well known to be highly prevalent in some BAME populations. For example, diabetes is a comorbidity with high prevalence in South Asians in the UK (40). In a prospective cohort study of more than 35,000 COVID-19 patients, the higher mortality risk observed in the South Asian compared to White ethnic group was mediated by pre-existing diabetes (which explained 18% of the increased risk) (27).

Additional potential biological explanations include poorer lung function, genetic factors, and Vitamin D deficiency (41). Vitamin D deficiency has received significant media attention due to its role in immune response, association with reducing the incidence of acute respiratory tract infections (41) and deficiency in some BAME groups (42). However, a National Institute for Health and Care Excellence evidence review recently concluded there is no evidence to support the use of Vitamin D in the prevention or treatment of COVID-19 (43).

Inflammation may also have a role in adverse BAME outcomes. Major complications of COVID-19 are acute respiratory distress syndrome and pulmonary embolism, both of which are related to inflammation. Vepa and colleagues suggest that acute COVID-19 inflammation exacerbates chronic inflammation from existing health conditions (i.e. obesity, insulin resistance, cardiovascular disease etc.), which could contribute to the more severe COVID-19 outcomes in BAME (44).

It is important to note that in relation to pre-existing health status, lower socioeconomic position in BAME groups is suggested to be a primary reason for poorer health (45), and social disadvantage is associated with health inequalities such as reduced lifespan and disability-free life expectancy (31). BAME groups may also be disadvantaged when it comes to geographic location, access to health and care services, effects of migration, and health behaviours (45). It is also clear that inequity in housing and occupation are social disadvantages that can contribute to health status (31). National strategy is urgently needed to address these long-standing structural inequalities, which contribute to health status. Our recommendations below represent some suggestions for how to address these inequities.

Behavioural

Although there is no published supporting data, it is plausible that among some BAME communities there is poor understanding of the need for social distancing, low adherence to social distancing and a lack of understanding of the need for social isolation when an individual or family member is symptomatic. In addition, there may be issues related to congregation in community and religious centres, funeral services, and religious festivals. A lack of culturally appropriate and targeted public health messaging will have contributed to this, and the need for such messaging will be particularly important as religious and community centres open up in the coming weeks.

Additional plausible behavioural factors relate to lifestyle. People from Asian, Black, and Other ethnic groups are more likely to be physically inactive than those from White British, White other and Mixed ethnic groups (46). Dietary behaviours of some BAME individuals may also be sub-optimal, with national data showing Black, Asian, Chinese, and Mixed ethnic Adults are lower than the national average in fruit and vegetable consumption (47). These health behaviours, and the potentially fatalistic attitude to health in some BAME groups (48), will contribute to the pre-existing health conditions that leave many BAME individuals more vulnerable to adverse COVID-19 outcomes. However, it is important to note that the wider determinants of health, as described above, drive these lifestyle behaviours.

General Recommendations

To mitigate further disparity in COVID-19 outcomes for BAME groups now and in future outbreaks, and to close the gap on future health inequality there are a number of immediate and longer-term actions that must be taken. Whilst these recommendations are applicable to all BAME groups, we recognise that they should not be applied uniformly within and across ethnic groups. For example, culturally tailored public health messaging will be different for South Asian compared to Black African communities.

Immediate Priorities

Culturally tailored public health messaging

As COVID-19 prevention and control measures are rapidly changing as the UK begins to phase out of lockdown, it is especially important that members of all BAME communities are able to access public health messaging. There is a pressing need for refined and targeted public health messages from PHE, the NHS and all relevant public-sector organisations which are culturally adapted for BAME groups, and available and accessible in a wide range of spoken and written languages (49). BAME representation in COVID-19 communication should also be improved. Where possible, the dissemination of these will need to draw on networks and significant people within BAME communities, such as community groups, leaders, advocates, elders, and religious groups.

Tailored test, trace and isolate strategy (TTI)

Unless culturally adapted and targeted for BAME communities, TTI strategies may have limited efficacy. A number of issues will need to be factored in to testing and tracing for BAME groups:

- The diversity of BAME ethnic groups.
- Cultural competency (TTI must be embedded within local structures and networks).
- Raising awareness through volunteer groups, religious and community leaders, and businesses.
- Culturally sensitive.
- Translated and tailored information and resources that have been piloted with local volunteer groups.
- Accessible contact tracing (particularly for those without mobile phones or those unable to read or write English).
- Accommodation provision (i.e. temporary accommodation) to isolate at risk, key workers, or symptomatic individuals in multigenerational or overcrowded housing, as well as the homeless.

Priority testing for BAME workers

Given the potential for greater exposure to COVID-19 due to overrepresentation of BAME individuals in key worker and NHS roles, there is a need to include BAME staff and members of their households in priority testing lists. A number of NHS trusts have already implemented this process (50), but this should become standard practice across the NHS, and where possible in all private and public sector employment. To aid implementation, organisations will need to ensure that ethnicity and contact details in electronic staff records are accurate so that BAME staff can be readily identified. Where tests are conducted ethnicity data should also be recorded. In addition, we would advocate the priority testing of all at risk (e.g. elderly, male, living in deprived area, comorbidities etc.) asymptomatic individuals where possible.

Mandatory occupational risk assessment for non-NHS Staff

Employers should risk assess all staff, including BAME individuals, and implement measures to protect them. To safeguard employees identified as being at increased risk, employers could implement a variety of measures such as temporary furlough, guaranteeing sick leave will not affect employment, working from home, and modified working practices to reduce viral exposure (e.g. removal from public facing element of job role).

Mandatory occupational risk assessment for NHS staff

In April, NHS England wrote (51) to all staff suggesting “We recommend employers should risk-assess staff at potentially greater risk and make appropriate arrangements accordingly.” This should be implemented across all NHS and healthcare sites for all staff. For NHS staff there is a risk stratification tool to help managers to make an assessment of workplace and personnel factors (such as ethnicity) related to COVID-19 exposure and vulnerability (52). To ensure widespread support and implementation of occupational risk assessment, policy or ideally legislation, is clearly required.

Ensure research quality and equality

A first and vital step is to improve the collection and reporting of ethnicity data. While national surveillance from ONS and PHE report disaggregated ethnicity data on COVID-19 outcomes, Pareek and colleagues found only 7% of global published papers and surveillance reports present ethnicity-disaggregated data (3). Critically, they highlight that UK mortality reporting (i.e. death registration, medical death certificates) does not include ethnicity, which was highlighted in the recently updated Marmot health equity report (31).

Going forward, all new national minimum datasets should include ethnicity data, and all existing datasets should be revisited and amended where possible. All research studies (again, where possible) should collect and report disaggregated ethnicity data, and ethnicity should now be recorded in all mortality reporting procedures (i.e. death certificates) (3). To support this, all health systems, including the NHS, need to mandate ethnicity data collection in order to support research as well as service delivery (53).

Protect migrants

Action is needed to support uptake of COVID-19 prevention and control measures in migrants, and also improve their access to healthcare. This could be supported by increasing trust with authorities, and opening communication between migrants (who are a particularly vulnerable population) and public sector organisations (38). Undocumented migrants with COVID-19 symptoms should also be offered free testing and treatment in the NHS. Further steps should include withdrawing all NHS charging for migrants (in particular the National Health Service Overseas Visitor Charging Regulations 2015 and 2017 and the Immigration Health Surcharge), ending data sharing between the NHS/health services and the Home Office, and implementing an awareness raising campaign to ensure the public and NHS staff are aware of these changes and that it is safe for migrants to seek health care (54, 55).

Close immediate educational gaps

Disadvantaged children currently face school readiness and attainment inequalities, which will only increase with lockdown measures interrupting schooling. The Education Policy Institute suggest a number of measures to prevent inequalities increasing, such as increasing pupil premium funding, suspending national inspections, reviewing national examination plans etc. (56). These should be considered.

Strengthen the science

In 2009, we published research priorities to address long-standing health inequalities (57). These include recommendations on research participation, and a wide range of epidemiological, cultural and disease specific priorities. These recommendations require urgent re-examination and implementation by researchers, research funders, public health agencies and policy makers (57). In particular, as the underlying burden of chronic disease in BAME communities is an important contributor to the adverse effects of COVID-19, urgent research is needed in this area with more participation from ethnic minority communities. A study by Khunti et al. (58) showed the numbers of BAME communities in major cardiovascular and diabetes trials are very low. It should be legislatively mandated that any outcome trial should have BAME communities' participation that is representative of the population (59).

In late summer 2020, the UK's National Institute for Health Research 'Innovations in Clinical Trial Design and Delivery for underserved groups (INCLUDE)' project will release recommendations suggesting: researchers strongly consider who their results apply to, if there are cultural factors to be considered, whether the research focus might make it harder for some BAME groups to engage, and if the proposed design will make it harder for some BAME groups to participate (60). In addition there are existing toolkits to guide researchers in the engagement and recruitment of BAME participants in research studies, with suggestions relating to less reliance on written materials, utilising culturally/linguistically trained BAME researchers, and working with community organisations on recruitment strategies (61).

Long-term Priorities

Reduce health inequality

In February 2020, as the pandemic in the UK broke, Michael Marmot published an updated version (31) of the seminal Marmot report on health equity. Marmot stated outcomes are now “even worse for minority ethnic population groups.” This has proven true with the disproportionate impact of COVID-19 on BAME populations, which is in part related to the high prevalence of comorbidities (e.g. diabetes, cardiovascular disease) in ethnic minority groups (40). There is clearly a need to improve the prevention and treatment of long-term conditions in BAME populations.

In the short term, this could be supported by increasing uptake of existing self-management programmes that have been culturally adapted for BAME populations e.g. DESMOND programme (<http://www.desmond-project.org.uk>). However, given inequalities in long-term conditions are underpinned by social disparities (e.g. education, employment, housing), a long-term strategy is required.

Such strategy should focus on the development of a national, cross-government plan (using a whole systems approach), that targets social determinants of health, with a particular focus on inequality related to health and social care, housing and employment (31). This could include proportionate resource allocation to the most deprived areas; whole systems data monitoring and accountability on health inequality including increased coverage of health and social determinant data by ethnicity; and improving wider workforce knowledge and commitment to addressing social determinants of health (e.g. fire, police, welfare, housing, bar staff, cleaners, postal workers and hairdressers) (31).

In developing these long-term national strategies all involved parties will need to implement equality impact assessments (EIA) to ensure equity considerations for all disadvantaged populations are integral to the development process.

Address occupational inequality

BAME populations are overrepresented in key worker and health and social care roles, or lower paid employment with less security (e.g. zero hour contracts), (35, 62). Short-term actions to reduce risk in BAME populations are detailed in the priority testing and risk assessment sections above. In the longer term there should be policy level intervention to reduce the high level of precarious or lower quality employment in BAME communities (31).

BAME specific national strategy should be developed to identify and remove barriers that constrain entry to higher income occupations; address bias in the recruitment process, and in promotion and pay decisions; report on income and employment inequalities by ethnicity; and provide clear career pathways and development opportunities, particularly for those at the start of their working life (15, 63).

Strengthen social security

To protect the most vulnerable members of society, many of whom are BAME, the government should ensure Universal Credit, benefit systems and housing allowances adequately provide for the most vulnerable families and their needs.

Address housing inequality

BAME populations are more likely to live in overcrowded and multigenerational co-habitation. In the short term, temporary housing (e.g. community shelters, hotels etc.) is required to enable self-isolation of symptomatic individuals or their family members. In the long term for disadvantaged communities and BAME populations there is a need for increased investment in new and existing affordable housing and social housing. Remedial actions for housing providers to address overcrowding could include targeting and rehoming under-occupiers, tailored interventions on space management for overcrowded families, incentives for tenants to purchase property in the private sector to release larger accommodation, and prioritisation of appropriately sized housing for the most overcrowded households (64).

Address differential educational achievements

Schools and education, particularly in inner cities, have a strong impact on the life chances of BAME communities. Readiness for school at age five displays socioeconomic gradients, which persist throughout primary and secondary school. Inequality in educational attainment is related to socioeconomic disadvantage, which in turn impacts on inequalities in health and employment across the life course (31). Action should be taken to prioritise the reduction of attainment inequalities related to socioeconomic status (31).

Address discrimination in the NHS

The NHS may have been discriminatory toward BAME staff in mitigating risk of infection (i.e. inadequate PPE and risk assessment) (65). Kline suggests ten steps for Boards and Integrated Care System (ICS) leaders that could be implemented to address NHS discrimination, including: embedding accountability for actions, prioritising psychological safety, modeling inclusive behaviours, ensuring equality, diversity and inclusion is lead by senior staff, resourcing a national good practice repository on diversity and inclusion, national accountability etc. (66).

Improve health literacy and lifestyle behaviour education (e.g. physical activity and healthy eating)

Poor lifestyle behaviours have been associated with increased risk of COVID-19 hospitalisation (67), and some BAME groups are disadvantaged in terms of lifestyle behaviours. Ethnic minority groups have increased risk of developing chronic conditions (partly related to lifestyle behaviours), and they experience barriers in the healthcare-seeking process related to generational, geographical and gender differences (68, 69). In addition, language barriers, a lack of culturally sensitive information and limited knowledge of lifestyle behaviours are also contributing factors to increased risk (68, 69). Therefore, there is a distinct need for culturally appropriate health literacy education for BAME communities focused on key lifestyle behaviours that drive comorbidities associated with adverse COVID-19 outcomes.

Culturally Specific Recommendations

While we provide broad recommendations applicable to a wide range of BAME groups, we acknowledge that there are different culturally specific practices across ethnic groups. For specific recommendations please refer to faith organisations/interfaith groups etc. who are able to provide support and guidance such as [Muslim Council for Britain](#), [Hindu Forum of Britain](#), and [Churches Together in England](#).

However, given our organisation focuses on South Asian health, we provide an infographic (see [Figure 2](#)) on suggested measures to help protect South Asian communities.

Employers and retail

We advise that all recommendations from the Health and Safety executive are applied to all retailers and employers. There is significant concern that social distancing and adequate hygiene measures are not uniformly applied across BAME employers and retail outlets. A single set of standards for the UK applies to all employers and organisations, and we recommend diligent enforcement of custom and practice in line with government guidance.

In geographical areas with high levels of BAME retail outlets or BAME employers, we recommend that councils and public health officials provide focused review, assessment, and advice to these outlets and employers, to ensure equitable treatment of employees and customers regardless of ethnic origin or socioeconomic status.

Places of worship and community centres

Places of worship including temples, gurdwaras, mosques and churches will consider opening their doors from 4 July for congregational prayers and services, in accordance with public health guidance. It is important to remember that individuals in BAME communities, particularly those aged over 70 and those with underlying conditions such as diabetes, heart disease, kidney disease or obesity, remain at higher risk for severe COVID-19 related illness. Leaders of religious institutions will need to be mindful of this. At present, there is no specific guidance for the number of worshippers allowed at services. However, all places of worship must abide by following public health guidance for physical distancing and hygiene measures.

For any congregation, until further notice, we recommend the maintenance of a register of attendees and contact details in order to inform the test and trace service, should the need arise to contact individuals to recommend isolation in the event of a community member testing positive for COVID-19 at any stage. Likewise, should any community member test positive for COVID-19, contact should be made with the NHS test and trace service (via 119) to enable them to contact others who may be at risk.

Recommendations:

1. Places of worship should have guidelines set up locally detailing who should be allowed to enter, wearing of appropriate face coverings and safe social distancing within the place of worship or community centre. They should risk assess to define safe numbers of worshippers at any one time depending upon the space available.
2. Worshippers who are unwell, should not attend places of worship; especially if they have symptoms of COVID-19 such as fever, persistent cough and/or loss or change in sense of taste and smell.
3. When greeting each other, avoid shaking hands and hugging each other, especially with people from other households.
4. Everyone should wear face coverings.
5. Everyone should wash hands frequently with soap and water, and if needed perform religious ablutions at home. Alcohol gel is equally effective (if it can be used).
6. Worshippers should take their own religious items where appropriate such as prayer beads, cross, holy books, prayer mats etc.
7. All worshippers should adhere to 1-2 m social distancing even when praying.
8. Individual worshippers should decide independently whether it is safer for them to remain home to pray and attend an online service rather than being physically present at the place of worship.

Religious festivals

Several upcoming religious festivals will most likely be affected by the ongoing COVID-19 restrictions in the UK.

Recommendations:

1. When greeting each other for religious festivals, do not shake hands or make any physical contact like hugging, especially with people from other households.
2. When attending places of worship for religious festivals, please observe the measures outlined above.
3. People should avoid gatherings of more than two households and should continue to keep physical distancing, good hand hygiene, face coverings and avoid meeting others if they or someone in their household is unwell.
4. If unwell, social isolation measures should apply.
5. Worshippers should take their own religious items to these places of worship or social gatherings.
6. Worshippers should remember that virtual meets and religious sermons are available for those who cannot attend but also to allow for inclusiveness to these special occasions.

Religious schools

Faith-based supplementary schools (those out of school/ after school times) are still not permitted to open at present for physical learning. Remote learning is recommended. When faith-based supplementary schools are able to re-open, precautionary measures should be in line with public health and government guidelines.

In addition, **further considerations are:**

1. If children are unwell or have someone at home unwell, they should not attend and instead use remote learning.
2. Teachers and students who are living with someone who is shielding or vulnerable should avoid attending and be involved with remote learning.
3. Student class numbers should be reduced to ensure safe physical distancing.
4. Students and teachers should bring their own religious items and avoid sharing of equipment.
5. All learning and social spaces should be cleaned at the end of each day.

Funerals and burials

Bereaved families will understand why attending physically to lend support and to grieve in these difficult times during the UK lockdown/ongoing COVID-19 pandemic is not possible. It is possible to perform these religious and community rituals virtually with family and friends via online services.

Recommendations:

1. It is essential to observe strict personal hygiene when coming into contact with the body of a deceased individual and/or their bodily fluids. This means using appropriate personal protective equipment (PPE).
2. When preparing a body for the funeral this should be performed by those fully trained in putting on and removing PPE. This may exclude family or friends.
3. When paying last respects, viewing should be arranged in the mortuary parlour but may be difficult to perform and should be avoided if possible, especially for those who are in vulnerable and shielding groups.
4. Funeral prayers in the places of worship should follow public health guidance as detailed above.
5. Funeral meetings at home should be restricted to only two households, keeping personal hygiene and physical distancing.
6. Memorial prayers that are held for the departed should be restricted to two households.
7. A full service in memory of the departed could be held after restrictions are eased.

As noted above, we recognise there will be a wide range of practices regarding funerals, burials and wakes across ethnic minority groups. For example, people of Jamaican heritage and/or diaspora in the UK, commonly hold a nine night extended wake – alternatively called a ‘dead yard’ or ‘set up’. For nine nights following a person’s death, significant numbers of friends and family typically gather at the home of the deceased, sharing their condolences and memories, playing music and sometimes singing hymns, while consuming food and drink for the duration of this period. In accordance with national guidance these types of traditional practices are not advocated and it is therefore recommended that these ceremonies are delivered virtually and/or by telephone.

Weddings

From 4 July in England, weddings with a strict limit of 30 guests will be allowed. This may be challenging for BAME communities who traditionally host large wedding functions.

Recommendations:

1. Consider postponing the wedding.
2. Check alternative dates with your venue and suppliers as soon as possible. Many venues and suppliers will have lost significant sums of money and therefore will require finding a solution that works for everyone.
3. Consider a small wedding ceremony limited to 30 guests with appropriate social distancing and personal hygiene (including face coverings), and then celebrating with further friends and family in a larger function at a later date.

Those providing personal health and hygiene services

E.g. healthcare workers, beauty therapists and hairdressers.

Social distancing in these occupations will be almost impossible. It is therefore imperative to keep both employees and clients safe when work recommences.

Recommendations:

1. Complete risk assessment forms, discuss with Occupational Health and liaise with line manager/ employer to understand risk of severe illness with COVID-19 and whether other lines of work/ precautions need to be organised.
2. Wear PPE regardless of where working, and this also includes a face visor or goggles.
3. Practice good hand hygiene, regular hand washing with soap and water. Alcohol gel is equally effective if it can be used.
4. If an employee is contacted by the NHS test and trace service having been in contact with someone who has tested positive for COVID-19, they should be recommended to undergo self-isolation.

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Table 1. Key analyses examining COVID-19 mortality by population group

Variable	Author	Design	Population	Adjustments	Key Findings
Age	Barron et al.(11)	Cross-sectional	General population (England)	Sex, deprivation, ethnicity, diabetes status, and region.	Lower mortality risk for people below 60 compared to reference group (60-69 years), with people over 80 at 9x greater risk.
	OpenSafely Collaboration(10)	Cross-sectional	General population (England)	Sex, BMI, smoking, deprivation, hypertension, comorbidities, region and ethnicity.	Compared to 50-59 year olds, 70-79 year olds are 4.8x more likely to die in hospital, and those 80+ over 12x.
	Public Health England(5)	Cross-sectional	General population (England)	Sex, deprivation, region and ethnicity.	Mortality risk is 70x greater for those aged 80 and above, compared to 40 years and below.
Sex	Public Health England(5)	Cross-sectional	General population (England)	Age, deprivation, region and ethnicity.	Working age males 2x greater mortality risk than females, reducing to 1.5x in those aged 65+.
	Office for National Statistics(70)	Cross-sectional	General population (England and Wales)	Age-standardised.	Greater age-standardised mortality for men (781.9 deaths per 100,000 for males, 439.0 deaths per 100,000 for females) (England).
	Barron et al.(11)	Cross-sectional	General population (England)	Age, deprivation, ethnicity, diabetes status, and region.	Men are 1.9x more likely to die in hospital than women.
	OpenSafely Collaboration(10)	Cross-sectional	General population (England)	Age, BMI, smoking, deprivation, hypertension, comorbidities, region and ethnicity.	Men are 1.9x more likely to die in hospital than women.
Deprivation	Barron et al.(11)	Cross-sectional	General population (England)	Sex, age, ethnicity, diabetes status, and region.	Most deprived individuals (IMD quintile 1) are 1.9x more likely to die in hospital compared to least deprived (IMD quintile 5).
	Public Health England(5)	Cross-sectional	General population (England)	Age, sex, region and ethnicity.	Men in most deprived quintile have 2.3x greater mortality risk compared to least deprived quintile, and women 2.4x.
	OpenSafely Collaboration(10)	Cross-sectional	General population (England)	Age, sex, BMI, smoking, hypertension, comorbidities, region and ethnicity.	Most deprived individuals (IMD quintile 5) are 1.7x more likely to die in hospital compared to least deprived (IMD quintile 1).
	Office for National Statistics(13)	Cross-sectional	General population (England and Wales)	Age-standardised.	Mortality rate in most deprived areas (128.3 deaths per 100,000) is 2x that of least deprived areas (58.8 deaths per 100,000).
BAME	Office for National Statistics(25)	Cross-sectional	General population (England and Wales)	Region, rural and urban classification, area deprivation, household composition, socio-economic position, highest qualification held, household tenure, and health or disability in the 2011 Census.	Black males and females, 1.9x greater mortality risk, Bangladeshi and Pakistani men 1.8x, and 1.6x for Bangladeshi and Pakistani women.
	OpenSafely Collaboration(10)	Cross-sectional	General population (England)	Age, sex, BMI, smoking, hypertension, deprivation, comorbidities and region.	Black 1.7x greater mortality risk, Asian/Asian British 1.6x, Mixed 1.6, and Other 1.3x.

Variable	Author	Design	Population	Adjustments	Key Findings
BAME	Sapey et al.(12)	Retrospective Cohort	General population (Patients with confirmed COVID-19 requiring admission to University Hospital Birmingham)	Age, sex, comorbidity and deprivation.	South Asian 1.6x greater mortality risk, no increased risk for Black, Mixed or Other groups.
	Public Health England(5)	Cross-sectional	General population (England)	Sex, age, deprivation and region.	Bangladeshi 2x greater mortality risk. Between 10-50% greater risk for Indian, Pakistani, Other Asian, Chinese, Caribbean and Other Black ethnic groups.
	Apea et al.(26)	Observational cohort	General Population (Patients admitted to 5 east London hospitals for COVID-19)	Age and sex.	Asian 1.5x greater 30-day mortality risk, Black 1.3x. No increased risk in Mixed and Other Ethnicity group.
	Barron et al.(11)	Cross-sectional	General population (England)	Sex, age, deprivation, diabetes status, and region.	Greater mortality risk for BAME groups with 1.3x greater risk for Asian groups and 1.7x for Black groups.
	Harrison et al.(27)	Prospective observational cohort	General population (Patients admitted to 260 UK hospitals)	Age, sex, and location.	Greater mortality likelihood in South Asian (hazard ratio 1.2), but not East Asian, Black or Other Ethnic Minority, groups, compared to White.
	Cook et al.(35)	Cross-sectional	NHS workers	None reported.	Disproportionate BAME deaths of 63%, 64% and 95% of overall deaths in all NHS staff, NHS nursing and support staff, and NHS medical staff.

Figure 1. Factors associated with COVID-19 transmission and mortality

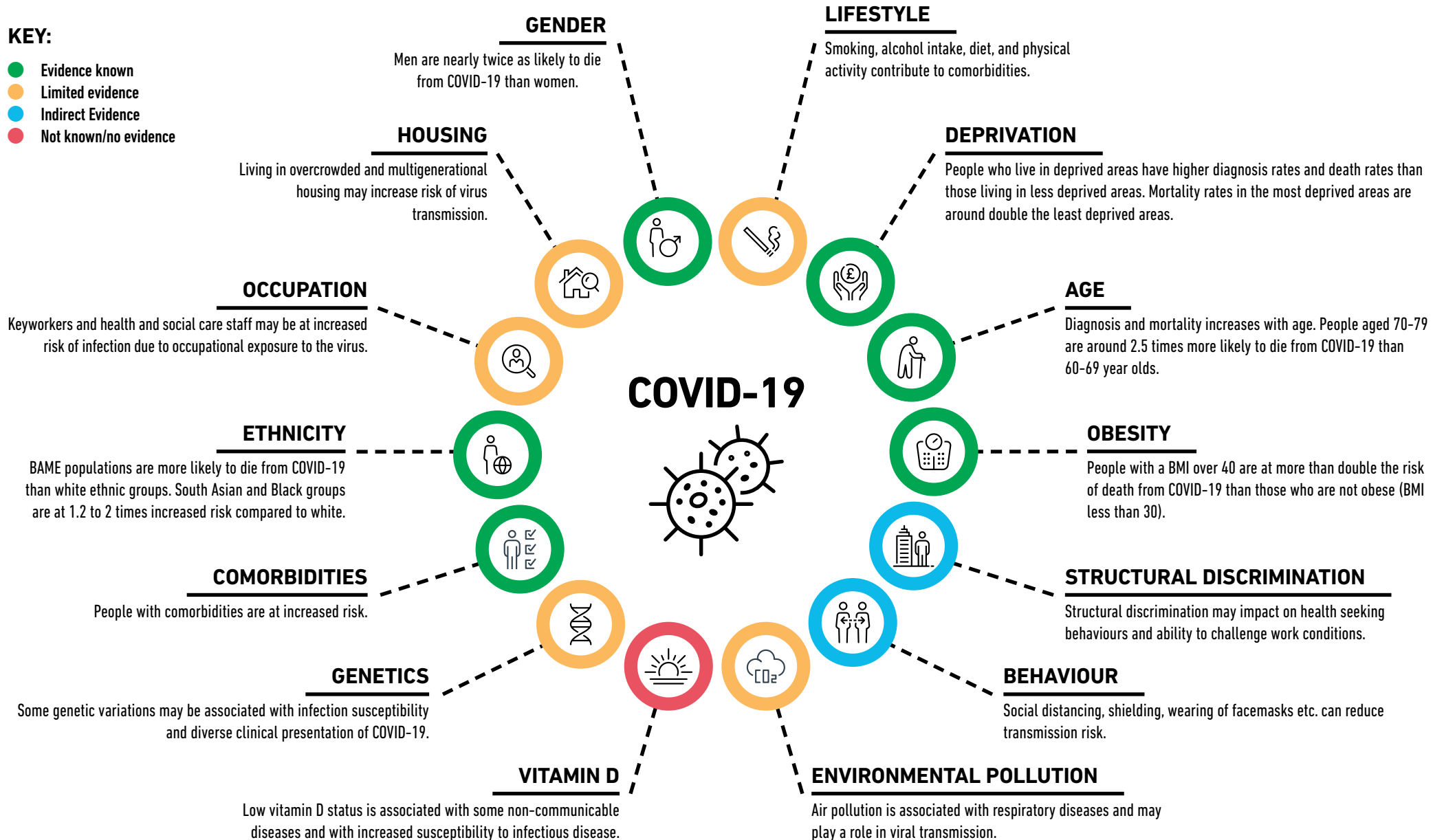


Figure 2. Prevention and protection of the South Asian communities from COVID-19



Stay at home and away from others if ill



Wash hands often with soap and water



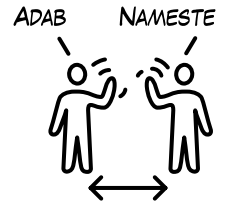
Those providing personal health and hygiene services will need to wear appropriate PPE (personal protective equipment)



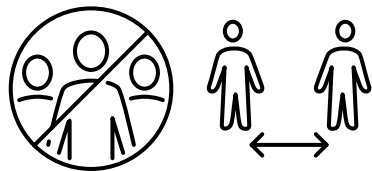
Clean and disinfect frequently used or touched surfaces/objects with bleach/antibacterial detergents or wipes



Wear face coverings when out with people of different households.



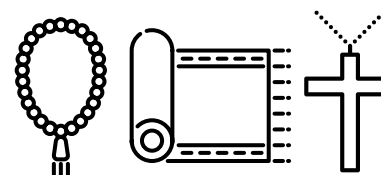
Use different ways of greeting to avoid touching and hugging. For example gestures such as 'Adab' or 'Nameste'



No more than 30 people for weddings/festivals/religious congregations and keep social distance



Keep 1 metre apart in distance in all directions even while praying



Take your own religious items with you to your place of worship



Faith-based supplementary after-school activities follow government and public health guidance. Should remain closed until go ahead given. Use remote learning where possible.

Authors and acknowledgements

Khunti K¹, Routen A¹, Patel K², Ali S³, Gill P⁴, Banerjee A⁵, Lad A⁶, Patel V⁷, Hanif W⁸

1. **Kamlesh Khunti** MD PhD FRCGP FRCP FMedSci, Professor of Primary Care Diabetes & Vascular Medicine, Diabetes Research Centre and The Centre for Black Minority Health, University of Leicester, Trustee, South Asian Health Foundation, UK
1. **Ash Routen** BSc MSc PhD, Research Associate, Diabetes Research Centre, University of Leicester, UK
2. **Kiran Patel**, MB B Chir (Cantab) BA (Cantab), MA (Cantab), PhD, FRCP (Lon), DSc (Hon), Chief Medical Officer and Consultant Cardiologist, University Hospitals Coventry & Warwickshire NHS Trust, Honorary Chair, Warwick Medical School, University of Warwick, Hon Chair, Coventry University, Chairman of Trustees, South Asian Health Foundation, UK
3. **Sarah Ali**, BM BCh (Oxon), BSc (Hons), MRCP, FRSA, Consultant in Diabetes and Endocrinology, Royal Free London NHS Foundation Trust, Diabetes Working Group Member, South Asian Health Foundation, UK
4. **Paramjit Gill**, DM FRCGP DCH, Professor of General Practice & GP, Warwick Medical School, University of Warwick, Trustee, South Asian Health Foundation, UK
5. **Amitava Banerjee**, MA MPH DPhil FHEA FAHA FESC FRCP FRCP (Ed) FFCI, Associate Professor in Clinical Data Science and Honorary Consultant Cardiologist, Institute of Health Informatics, University College London, Trustee, South Asian Health Foundation, UK
6. **Amal Lad**, MBBS BSc, General Practitioner, Trustee, South Asian Health Foundation
7. **Vinod Patel**, MD FRCP FHEA MRCGP DRCOG MB ChB BSc (Hons), Professorial Clinical Teaching Fellow: Diabetes and Clinical Skills, Warwick Medical School, University of Warwick, Trustee, South Asian Health Foundation, UK
8. **Wasim Hanif**, MD FRCP Professor Diabetes & Endocrinology, Consultant Physician, CSL Diabetes, University Hospitals of Birmingham, Trustee, South Asian Health Foundation, UK

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 info@sahf.org.uk

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