Evidence Into Action

A review of the report by Public Health England into disparities in risks and outcomes of COVID-19 between ethnic groups and by level of deprivation

New Policy Institute and the Race Equality Foundation

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A closer look at the data contained in the first PHE report paints a clearer picture of disproportionate impact and its drivers...

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Introduction

The Chief Medical Officer's announcement of a review of data on the disproportionate impact of COVID-19 on Black, Asian and minority ethnic (BAME) communities has resulted in two Public Health England (PHE) reports, consultations with 4,000 respondents, a massive political row, the announcement of a further Minister-led inquiry and now a statutory inquiry by the Equality and Human Rights Commission (EHRC). Whilst the mainly 'culture'-focussed recommendations of the second PHE report have led some to conclude that this is a call to action, it is difficult to see what are the concrete steps that will be taken, who will be held to account for these and whether they will have any impact on racial discrimination.

This briefing suggests that a closer look at the data contained in the first PHE report paints a clearer picture of disproportionate impact and its drivers and, as importantly, some of the actions we need to take now. The crucial thing that the report does is to split the chances of dying from COVID-19 into two parts, namely, the chances of dying if someone is infected and the chances of becoming infected in the first place. This split is important because whereas the first reflect risks faced by someone who is already a patient or a client of health or care services, the second are more to do with the social and economic conditions of someone's life. The line between the two is not clear-cut but the mix of factors is likely to be different.

What does PHE's data actually show?

In the furore surrounding the first PHE report – "Disparities in the risk and outcomes of COVID-19" (3rd June 2020) – attention has focused on omissions and a failure to identify any action to tackle the racial disproportionality identified. What has received less attention is the actual data and analysis in the report. In this briefing, we draw attention to some of these statistical findings. We set them alongside our own estimates of another element of the overall COVID-19 risk, namely, the risk of infection. Through this, we suggest that the data is clearer about why BAME communities have been hit so hard by COVID-19.

As Spiegelhalter (2020) has pointed out, estimates of the risk of dying from COVID-19 can easily be misunderstood if we do not distinguish between:

- the risks of dying from COVID-19 among people who have been confirmed as having it (known as the infection fatality rate or IFR); and

- the risk of dying from COVID-19 among people who do not currently have it (known as the population fatality rate or PFR).

Most estimates (for example, from the Office for National Statistics) of the risk of dying from COVID-19 have been for the PFR. PFRs combine the risk of catching COVID-19 with the risk of dying having caught it. Presenting risk in this way is less helpful for identifying actions that would help lower risk. Our analysis suggests that to identify actions that are going to be effective in addressing the impact of COVID-19 on BAME communities, we need to better understand the risk of being infected and the risk of dying as a result of infection, separately.

In PHE's report the estimates of the risk of dying from COVID-19 are not PFRs but IFRs, that is, the risk of dying once someone has caught the virus. The headline that has been most often quoted from the report is that "people of Bangladeshi ethnicity had around twice the risk of death than people of White British ethnicity. People of Chinese, Indian, Pakistani, Other Asian, Caribbean and Other Black ethnicity had between 10 and 50% higher risk of death when compared to White British". These estimates suggest a lower IFR risk for BAME groups than has been identified by others (e.g. Aldridge et al, 2020). What is crucial to remember, though, is that these risks are calculated after accounting for the effect of deprivation. We show PHE's estimates of these risks separately.

Using data provided in the PHE report, we have calculated different ethnic groups' risks of catching the virus: the infection risk. Combining these with the report's IFRs allows us to calculate PFRs for different ethnic groups. Throughout this briefing, the risks shown are relative risks. For BAME groups, these risks are relative to the risk for the White British ethnic group.

In presenting this analysis we are hampered by the limits of the data itself – for instance, the failure to record minority groups such as Gypsy, Roma or Traveller communities. Nevertheless, the analysis presented does add to our understanding of the impact of COVID-19 and, as importantly, highlights some of the actions that should be taken.

PHE's estimates of the risk of dying given a positive test result

The relative risks faced by BAME communities compared with the risks faced by the White British population appear in PHE's report in appendix tables A1, A2 and A3. Table A1 shows the results for the population analysed as a whole, while tables A2 and A3 show results for the working-age population (aged 20 to 64) and the pensioner-age population (aged 65 plus), analysed separately. Although the report's headline messages refer to the whole population, the more important findings emerge from tables A2 and A3 about working-age people and pensioners separately.

Figure 1 shows the risks for four groupings of ethnic minorities, relative to those for the White British ethnic group. The first three are: Bangladeshi and Pakistani; Black African, Black Caribbean and other Black; and Indian, Chinese and other Asian. The fourth group is for BAME groups as a whole, including the Mixed and Other ethnic minority groupings not shown separately here. Figure 1 also shows the risk for men of all ethnicities, relative to the risk for all women.

Figure 1 has several messages. All ethnic groupings have IFRs at or above 1 (higher than for the White British ethnic group). These don't differ much between working-age people and pensioners (the Indian, Chinese and other Asian grouping having the biggest difference). Between groups, the Bangladeshi and Pakistani group stands out for its high risks. For BAME groups as a whole, the working-age risk is 12% above the White British risk while the pensioner risk is 19% above.

These relative IFRs should not be dismissed as being small or of little consequence. Anyone who has tested positive is at least in contact with the system so these IFRs can be seen as a measure of the risk of dying among people who are already patients or clients of health or care services. Average risks that are higher by 12% and 19% for working-age people and pensioners respectively – and risks for particular ethnic minority groups that are higher by at least 50% – are big enough to suggest that what we may be seeing here are the outcomes of "practices … adopted by public bodies as well as private individuals which are unwittingly discriminatory against black people". As this quote, from Lord Scarman via the Macpherson Report, continues, "this is an allegation which deserves serious consideration, and, where proved, swift remedy".[1]

Figure 1 also shows how much higher the risk of dying is for men (of all ethnicities) after having tested positive, relative to that for women: almost double for working-age men and almost 50% higher for male pensioners.

The IFRs for all ethnic groups have been estimated after accounting for the effect of deprivation; this effect has been estimated separately. Figure 2 shows these IFRs according to the level of deprivation of the local area in which those who have tested positive live. Local areas are divided into five equal groups according to their deprivation level. Figure 2 shows the IFRs for each, for both working-age people and pensioners, relative to the IFR faced by someone in the least deprived fifth.

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[1] Sir William Macpherson, The Stephen Lawrence Inquiry, 1999, para 6.7.

Figure 1: the relative chance of dying following a positive test (IFR) after accounting for deprivation, by ethnic minority group and sex[2]
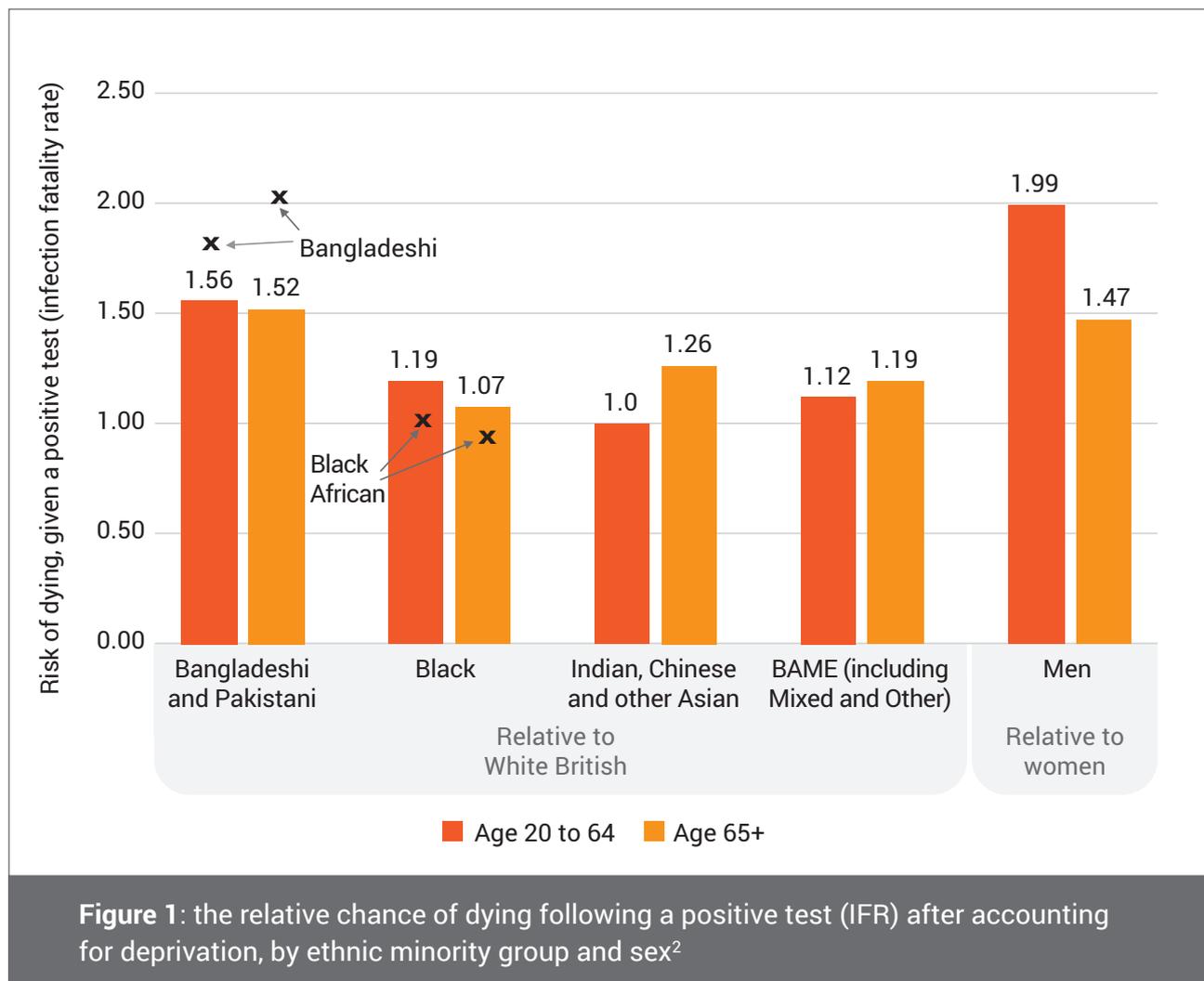
Figure 2 has two messages. First, where a working-age person lives makes a big difference to their IFR, with those in the most deprived fifth being 1.93 times – almost twice – as likely to die after having been diagnosed with COVID-19 as those in the least deprived fifth. Second, where a pensioner lives makes only a small difference to their chances of dying after having being diagnosed (the ratio for the most deprived fifth being just 1.09).
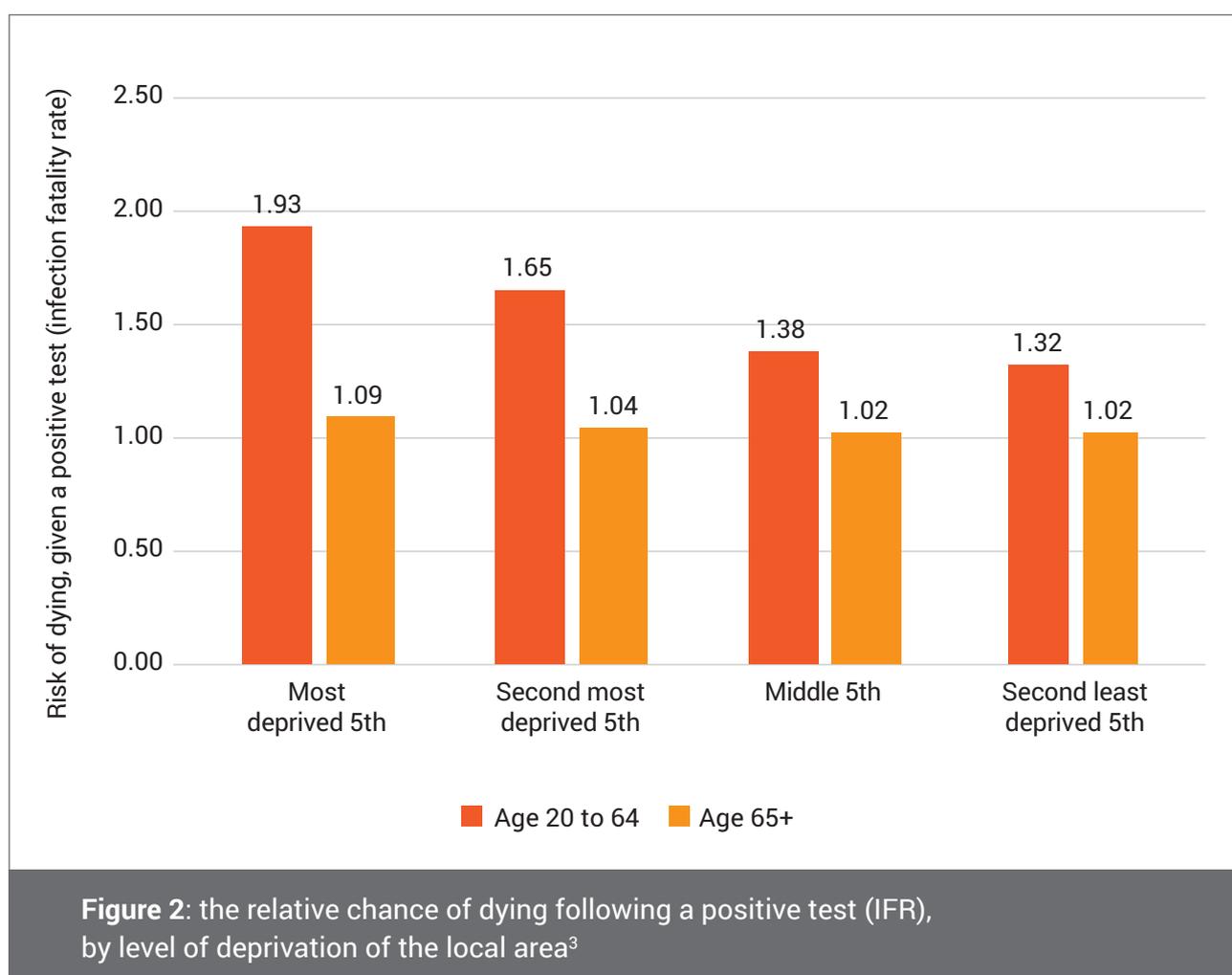
Again, there are practical implications. First, both the scale of the deprivation effect and the contrast between working-age people and pensioners mean working-age people and pensioners

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[2] Source: adjusted hazard ratios from tables A2 (working-age people) and A3 (pensioners) of the PHE report, with reported hazard ratios for 13 ethnic minority groups weighted by reported cases to produce the group average ratios shown here. The largest distortion created by this averaging is for the Bangladeshi group, whose own-group risks are shown on the graph (1.81 for working-age people and 2.02 for pensioners). The graph also shows the values for the Black African group (1.04 and 0.98), which are both slightly lower than the Black group average.

should be examined separately. Second, any attempt to invoke comorbidities – that is, the poorer health suffered on average by people living in deprived areas – has to explain how deprivation impacts working-age people but is so muted among pensioners. Even if comorbidities do play a role, other factors must be considered, including around access to testing (for example, who gets tested and how unwell they are when they do so) as well as treatment itself.

All of these points are also relevant to an understanding of the higher IFRs faced by ethnic minorities, even after accounting for the effects of deprivation.

Figure 2: the relative chance of dying following a positive test (IFR),
by level of deprivation of the local area[3]

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[3] Source: adjusted hazard ratios directly from tables A2 (working-age people) and A3 (pensioners) of the PHE report.

Our calculation of the risk of infection confirmed by a positive test

Estimates of infection risks can be gleaned from the body of the PHE report but the discussions there neither split the results by working-age people and pensioners nor take account of the regional mix of cases. Unless we take account of the regional mix, one factor behind ethnic minorities' higher risk of infection is simply that Londoners in general (more than 40% of whom are from ethnic minorities) face a higher risk.

Figure 3 shows our estimates of the relative risk of infection for the same four groupings of ethnic minorities as in figure 1, as well as men's risk relative to women's. Unlike the estimates in figures 1 and 2, which can be attributed to the PHE report, figure 3 is entirely a product of our calculations.

Figure 3: the relative chance of infection, by ethnic minority grouping and by sex[4]

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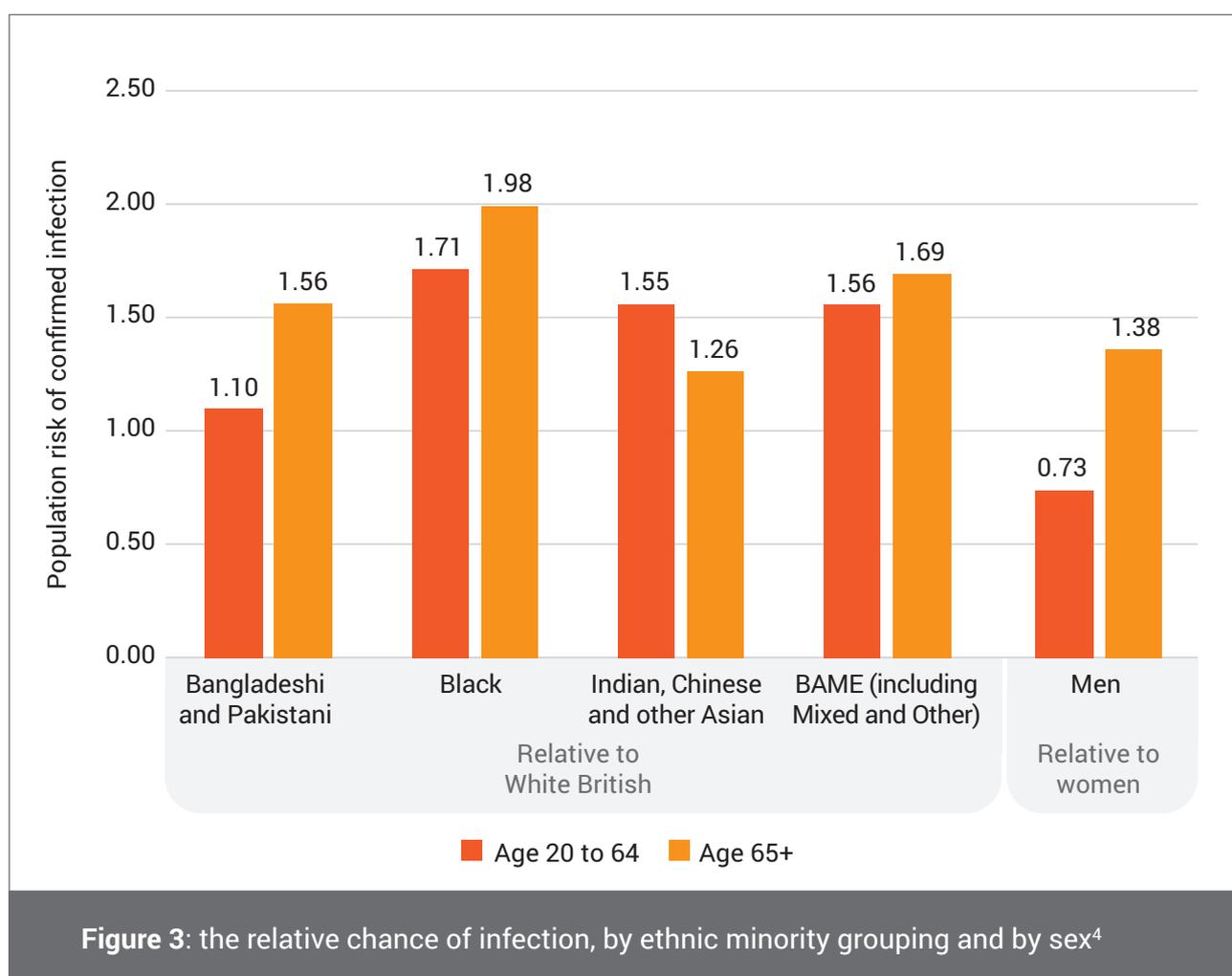
[4] These risks have been calculated by comparing the number of confirmed cases reported by PHE with a population reshaped so that its mix across the nine English regions matches the mix of cases exactly, while its mix by age profile (across four working-age and three pensioner-age sub-groups) matches the mix of cases approximately. The spreadsheet containing all these calculations is available from NPI on request.

Again, there are several messages. First, the ethnic minority risks of infection in this graph are bigger than the IFRs in figure 1. This is especially so for most pensioners (for all but one group the risk is higher and the average risk is higher by 69%) and also for Black working-age people. As the risks in figure 1 have been estimated after allowing for deprivation whereas the risks here have not, the two cannot fully be compared. But we are confident that they do show that both parts of the risk are significant. The reason for this is that the infection risk for the working-age Indian, Chinese and other Asian group is substantial (higher than for the White British group by 55%). As the least economically deprived of the BAME groups, we would not expect that this group's risks would be much reduced even if deprivation were taken into account.

The second message in figure 3 concerns the under-representation of all working-age men among those tested (27% below that for women). This raises the question of whether working-age men are accessing health services as much as they need to. Under-access for working-age men could impact figure 1 in two ways. First, if it is confined to those who have the infection more mildly and hence eventually recover, then this in itself – too few survivors are tested – is partly why the IFR (1.99) is so high. Second, if under-access is linked with late access – some men don't get tested until they are very ill, say – then better access to testing would reduce not just the rate of fatalities (the IFR) but also the absolute number of them too.

A similar point might apply to working-age Bangladeshis and Pakistanis who have a high IFR in figure 1 (1.56) and an infection risk that is very low compared with other BAME groups in figure 3. A high IFR and a relatively low infection risk is a combination to be suspicious of.

Figure 4 combines the relative risks in figures 1 and 3 to provide an estimate of the overall risk of dying from COVID-19 for anyone of working age or pensioner age – in effect, population fatality rates (PFRs). Figure 4 shows that when the two parts of the risk are combined, the groups hit hardest are Pakistani and Bangladeshi pensioners, Black pensioners and Black working-age people, all of whose PFRs are at least double those for the White British group. But even for those hit least hard – the Indian, Chinese and other Asian group – these PFRs are around 60% higher than for the White British population.
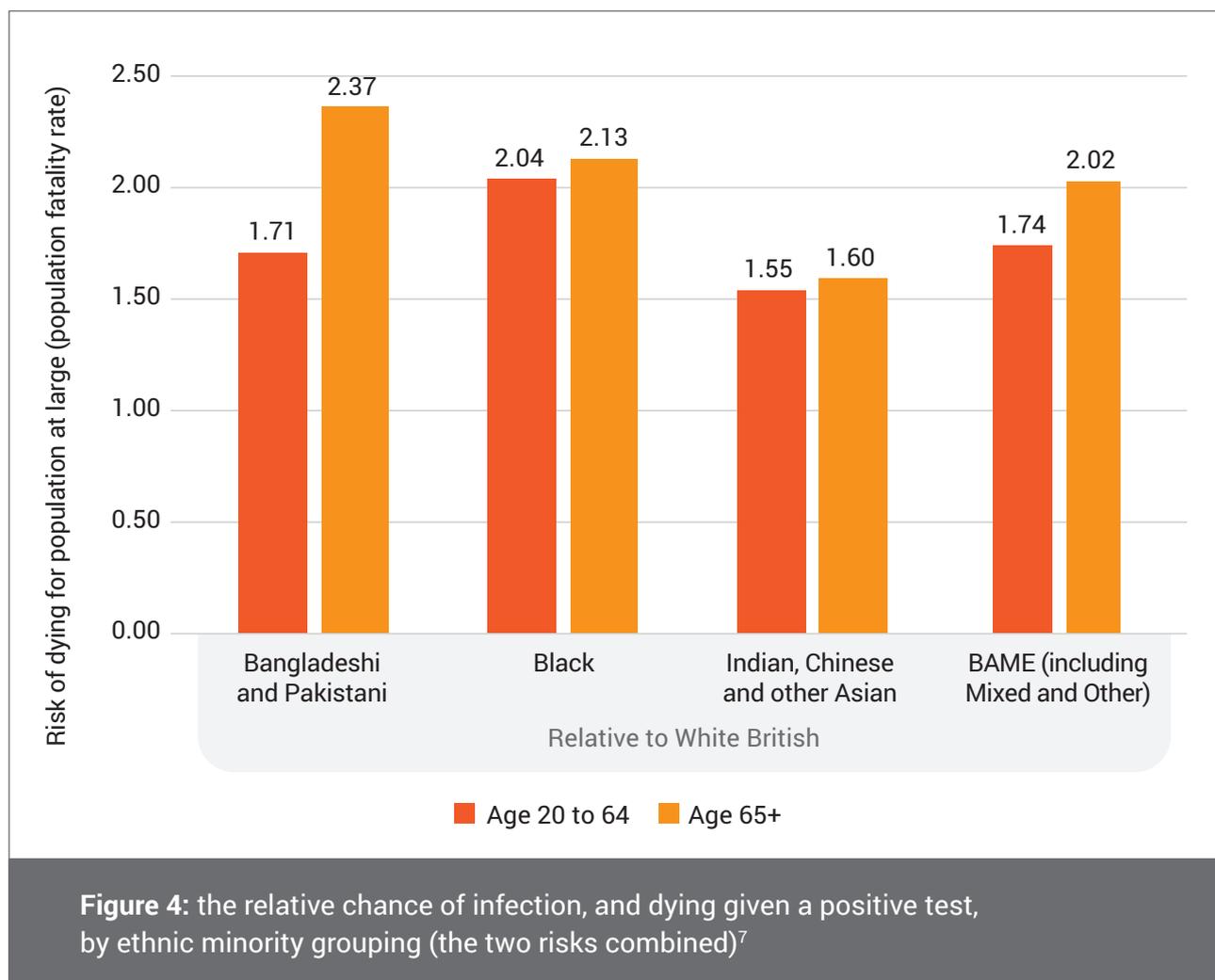
As we have discussed, it is not ideal to combine an IFR that has taken deprivation into account with an infection risk that has not. What might it show if we had been able to take deprivation into account in figure 3? One possibility is that the very high Bangladeshi, Pakistani and Black rates in figures 3 and 4 would shrink back towards those for the Indian, Chinese and other Asian group, who are the least affected by deprivation. Yet if we had done that, reducing PFRs for most ethnic minority groups to around (say) 50% above that for the White British population, the case for action would be no less strong. Meanwhile, such a reduction could only strengthen the case for action in parallel to address the elevated risks associated with deprivation in its own right.

The idea that deprivation is part and parcel of the higher risk faced by BAME groups as a whole is explicitly recognised in PHE's second report. Summarising what PHE had been told during the consultation, it reports expressions of concern about "the role of economic deprivation and the risk

of acquiring COVID-19 and having more severe disease" and that the "long-term impacts of COVID-19 … likely significantly affect BAME communities particularly those living in areas of high deprivation".[5]

The second report asserts that PHE's role had been "to capture the feedback received" but not confirm "the evidence base behind the points raised".[6] Besides being a curious way to look upon stakeholder feedback, what the remark misses is that confirmation for some stakeholder points can be found in PHE's own research contained in the first report.

Figure 4: the relative chance of infection, and dying given a positive test, by ethnic minority grouping (the two risks combined)[7]

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[5] PHE, "Beyond the data: Understanding the impact of COVID-19 on BAME groups" (16th June 2020), pp 29 and 30.

[6] *Ibid.*, p 5.

[7] Source: the product of the risks shown in figures 1 and 2.

Conclusion:
Recommendations for action

This briefing has highlighted two statistical findings found in the back of the first PHE report and added a third based on our analysis of other information also contained in that report. The two findings concern PHE's estimates of the infection fatality rates (IFRs), that is, the risk of dying from COVID-19 among people who have tested positive for the virus. Our analysis draws on summary information provided by PHE to calculate the infection risk, that is, the chance of catching the virus (confirmed by a test).

The purpose of this is not to add yet more estimates to the bewildering array that now exists but to show that both parts of the overall (population) risk – of infection, and of dying when infection has been confirmed – are higher for BAME groups than for the White British population. This helps focus attention on where action is needed.

- The IFRs estimated by PHE imply average risks for BAME groups that are 12% higher for working-age people and 19% higher for people aged 65 plus than for the White British population. These are after accounting for the effects of deprivation, which PHE finds to be large for those of working age.

- Using PHE data on positive COVID-19 cases, we calculate the average BAME risk of infection (confirmed by a test) to be 56% higher than the White British risk for working-age people and 69% higher for those aged 65 plus.

The analysis presented here using results from the first PHE report suggests some variation between ethnic groups as well as within ethnic groups when we account for age and gender in their risk of catching COVID-19 and the risk of dying once they have caught it. Nevertheless, the pattern of being at a higher risk when compared with their White British counterparts is clear in almost all of the data, including when deprivation is taken into account.

Both PHE reports suggest that these higher risks may be "greatly reduced" when comorbidity or obesity is taken into account. Leaving to one side the evidence that health conditions such as diabetes are "socially patterned",[8] the consistency of the picture drawn from the PHE data presented above leads one to ask that if these higher risks are not the result of the experience of racism, what is the explanation?

The launch of another inquiry is surely not the answer. There is sufficient data in the PHE report to suggest that action to address the higher risk faced by BAME communities is needed now.

This needs to be part of a wider policy response to support, protect and provide for those whose day-to-day lives simply leave them so much more exposed to infection in the first place. At the top of this list are those who have continued to go to work because, as key workers, they have

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[8] Bécares, L. and J. Nazroo, 2020, "Racism is the root cause of ethnic inequities in COVID19", Discover Society, 17 April.

been required to. Next come those who have continued to go to work because they have had to, for basic financial reasons and because they cannot work from home. The lack of personal protective equipment (PPE) for key workers in general, and BAME workers in particular, is one aspect of this.[9]

Alongside problems of work are problems of housing. These include worries about the rent or mortgage and the harm to wellbeing from the threat of losing one's home. They also include the adequacy of housing, especially where any physical distancing at home is simply impractical. This is not just about whether a household is officially overcrowded. Mum and dad, grandma and grandpa and two children under the age of 10 are not counted as "overcrowded" if they live together in a three-bedroom home with a single living room, kitchen and bathroom between them. If one parent works in social care and the other is a hospital porter, the daily risks facing the whole family bear no relation to those for people who can work at home with rooms to spare. Without concrete action to improve the real circumstances of people's lives, it is difficult to see how we are going to do any better in the next period of 'test and trace' than we have done so far.

We therefore recommend the following as urgent steps that need to be taken now.

1. The scale of the higher risk faced by men and the differences on show here, especially for the risk of infection, mean that both analysis and practical interventions should consider men and women separately. The different impact of deprivation on their infection fatality rates (IFRs) mean that working-age people and pensioners should also be considered separately.

2. PHE and NHS England should co-produce targeted information campaigns directed at BAME older people, at the same time as NHS England ends the haphazard provision of community language interpreting in primary care by properly funding interpreting provision.

3. The Department of Health and Social Care (DHSC) and the Department for Digital, Culture, Media and Sport (DCMS) should increase support now for those voluntary and community organisations currently working with BAME older people, particularly as evidence suggests many of these organisations are currently suffering a loss of income, staffing and volunteers, hampering their ability to provide the support that is often key. The lack of ring fencing of central funds, and the slow pace of release of these funds, compare poorly with the local (though smaller-scale) action taken in many urban areas.

4. Local authorities and their health and care partners should take action to address inadequate housing, as this is more likely to hamper the ability of BAME older people to self-isolate after a positive test, resulting in the higher rate of infection for these communities persisting, whilst it declines for others.

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[9] See, for example, a report from the Royal College of Nursing which found that BAME nurses were more likely to lack PPE than their White British colleagues.

Conclusion:
Recommendations for action

5. The belated publication of a risk assessment framework for health care workers and the greater attention to the suitability of PPE equipment as well as its availability are all welcome. But more needs to be done more quickly to better protect key workers in health care as well as taxi drivers, security guards and others. Risk assessment should also address whether BAME nurses and doctors are more often scheduled to work on COVID wards. Collective risk should therefore be analysed and published by hospital trusts on a monthly basis, including the steps that have been taken to mitigate risk. As the economy as a whole begins to open up, the Department for Business, Energy and Industrial Strategy (BEIS) should provide guidance to all employers on assessing risk faced by BAME employees and require them to identify mitigation.

6. The Test and Trace service in particular, but the testing infrastructure as a whole, needs to do better in encouraging BAME people to come forward for testing. We know from experience with screening for issues such as breast and prostate cancers, that 'screening' programmes have been less successful at securing the involvement of BAME communities, with the consequent later detection often resulting in poorer outcomes. Once again, working with trusted intermediaries as well as ensuring that the social and economic consequences of a positive test are addressed are key actions to be taken now by DHSC, the Treasury and DCMS.

7. Finally, the limitations of data currently recorded suggest that immediate action needs to be taken to improve the recording of ethnicity, so we are better able to understand the impact of pandemics, and access to and the impact of health care as a whole, on communities such as Gypsy, Roma and Travellers as well as other communities such as Somalis. DHSC should make decisions now to ensure that, across the health care system, data is collected that can be presented both in disaggregated fashion as well as aggregated to compare with data from the forthcoming Census in 2021. This should be accompanied by regulators such as the Care Quality Commission assessing how this data is being used to improve the quality of care for BAME communities.

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