Expert Report for the UK Covid-19 Public Inquiry

Module 1: Health Inequalities

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Author statement

I confirm that this is my own work and that the facts stated in the report are within my own knowledge.

I understand my duty to provide independent evidence and have complied with that duty.

I confirm that I have made clear which facts and matters referred to in this report are within my own knowledge and which are not. Those that are within my own knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.

Professor Clare Bambra
5th May 2023

Professor Sir Michael Marmot
5th May 2023

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Topic 1: The extent to which health inequalities existed during the relevant period. If so: what they were; the extent to which they changed over the relevant period, and how; and a summary of the underlying causes of the health inequalities.

1. In this section, we define health inequalities; provide our assessment of the extent to which health inequalities existed during the relevant period, describe what they were and their underlying causes; the extent to which they changed over the relevant period and why this might have happened.

HEALTH INEQUALITIES

2. Health inequalities are the systematic, avoidable differences in health which exist between different social groups (Whitehead, 2007). Health inequalities exist between different socio-economic groups (measured using indicators of socio-economic status including income, education, occupation or area-level deprivation), by ethnicity, and are also experienced by other social minorities (such as 'inclusion health groups' or members of the LGBTQ+ community, or people with disabilities). The term health inequalities includes both (a) inequalities in health outcomes (e.g. mortality rates, life expectancy etc) as well as (b) inequalities in access to health care and inequalities in the outcomes of health care.

3. Inequalities in health by socio-economic status are not restricted to differences between the most privileged groups and the most disadvantaged: health inequalities exist across the entire social gradient (Marmot, 2006). Consistently, the finding has been that the lower the socio-economic position the worse the health, the higher the age-specific mortality rates and the shorter the life expectancy (Marmot, 2010; 2020). The social gradient in health runs from the top to the bottom of society and *"even comfortably off people somewhere in the middle tend to have poorer health than those above them"* (Marmot, 2006). We first demonstrated the social gradient in health in the Whitehall Studies of British Civil Servants: the higher the grade of employment the longer the life expectancy (Marmot 2004). By way of further example, on average, people in the highest occupational groups (e.g. barristers) have better health outcomes than those in mid-ranking occupations (such as teachers), who in turn have better health outcomes than those in the lowest occupational groups (e.g. factory or shop workers). Similarly, people with a higher income or university-level education - on average - have better health outcomes than those with a lower income or no educational qualifications (Bambra, 2016).

4. There are also socio-economic geographical inequalities in health in the UK. The most deprived areas (as measured using the Index of Multiple Deprivation which ranks places based on relative local scores for: income, employment, health, education, crime, access to services and living environment, DCLG, 2019) have worse health outcomes across a range of indicators (e.g. mortality, life expectancy, infant mortality, cardiovascular disease, liver disease diabetes, obesity) than the least deprived areas. Again, there is a gradient – with the 20% most deprived areas (e.g local authorities such as County Durham or Tower Hamlets) experiencing worse health outcomes than the next 20% most deprived and so on up the scale - with the least deprived areas (such as Rutland or Kensington and Chelsea) having the best average health outcomes. There are related health inequalities between the nations and regions of the UK with, for example, life expectancy lower in Scotland, Wales and Northern Ireland than in England, and lower in the three northern regions (North

East, North West, Yorkshire and Humber) than the rest of England (Bambra et al, 2018; 2023). Within the devolved nations, and within regions, there are also social gradients in health between the most and least deprived neighbourhoods (Marmot, 2010; 2020).

5. There are also health inequalities between other social groups. Most notably, there is increasing recognition that membership of a minority ethnic group may also be associated with a health disadvantage. Similarly, there is also growing evidence of the health inequalities experienced by other social minorities (such as "Inclusion Health Groups", LGBTQ+ groups, and people with disabilities).

6. These different social inequalities in health are experienced intersectionally. People simultaneously belong to multiple social groups (e.g. they experience their socio-economic status, ethnicity, locality, gender and sexuality simultaneously, Bambra 2022a). This leads to complex experiences of social inequalities, which influence health in different ways. People thereby experience different amounts of disadvantage and privilege associated with their different characteristics. Individuals might experience the health benefits related to one aspect of social stratification (e.g. the advantage of whiteness in terms of ethnicity), whilst simultaneously engendering the health disadvantage of another (e.g. low income in terms of socio-economic status) (Bambra 2022a).

7. In the following sections, we examine these different aspects of health inequalities (socio-economic status, ethnicity, inclusion health groups and other social minorities) across the different countries of the UK and examine trends in them in the relevant period (2009 to 20th January 2020). We also summarise the current scientific understanding of their main causes.

EXTENT AND CAUSES OF HEALTH INEQUALITIES IN THE UK

Socio-economic inequalities in health

8. Area-level deprivation (as measured by nation-specific indices of multiple deprivation such as the Index of Multiple Deprivation in England or the Welsh Index of Multiple Deprivation in Wales) is the most used measure of socio-economic inequalities in each of the four UK nations. Whilst not perfect (e.g. as not all lower socio-economic status people live in deprived areas) these indices provide the best available and regularly collected overview of inequalities in health in each of the different nations of the UK.

9. There is a clear socio-spatial gradient in health – the more deprived local authorities in the UK have worse health than the less deprived. For example, data from the Office for National Statistics (2020) shows that for 2017-19, both male and female life expectancy was highest in the London borough of Westminster (84.88 years for men, 87.22 years for women), and lowest in Glasgow City (73.60, 78.50). This is a difference in life expectancy of 11.3 years. Westminster is the least deprived local authority in England, whilst Glasgow is the most deprived area in Scotland (and there are very large inequalities in life expectancy between the least and most deprived areas of Glasgow: 11.6 years for women and 15.4 years for men, Glasgow Centre for Population Health, 2021).

10. In England, there was a 10.5-year gap in male life expectancy at birth between the local authority with the highest, Westminster (84.9 years), and the area with the lowest, Blackpool (74.4 years). In Scotland, this gap was 6.9 years between East Dunbartonshire (80.5 years) and Glasgow City (73.6 years). In Northern Ireland, the

gap was 4.1 years between Lisburn and Castlereagh (80.1 years) and Belfast (76.1 years). In Wales, the gap was 4.9 years between Monmouthshire (81.5 years) and Blaenau Gwent (76.5 years) (Office for National Statistics, 2020). For women, the local authority gap in life expectancy at birth in England was 7.7 years between Westminster (87.2 years) and Blackpool (79.5 years). In Scotland, the gap was 5.5 years between East Renfrewshire (84.0 years) and Glasgow City (78.5 years). In Northern Ireland, the gap was 2.5 years between Lisburn and Castlereagh (83.5 years) and Belfast (81.0 years). In Wales, the gap was 4.0 years between Monmouthshire (84.4 years) and Blaenau Gwent (80.4 years) (Office for National Statistics, 2020).

11. These health inequalities are also evident at a smaller, neighbourhood scale (statistically measured as Census Lower Super Output Areas - which are made up of around 400-1200 households, Office for National Statistics, 2011).

    11.1. In 2017 to 2019, men in the most deprived 10% of neighbourhoods in England had a life expectancy of 74.1 years, compared with 83.5 years in the tenth least deprived areas. A gap of almost a decade (9.4 years). For women, life expectancy in the most deprived areas was 78.7 years, compared with 86.4 years in the least deprived areas, a gap of almost 8 years (7.6 years) (Office for National Statistics, 2021a). The life expectancy gap between the bottom 20% of areas (male 75.2 years, female 79.7 years) and the top 20% (male 83.0 years, female 86.0 years) in England was 7.8 years for men and 6.3 years for women.

    11.2. In Scotland in 2017-19, the gap in life expectancy between the 10% most and least deprived areas was 13.3 years for men (69.5 years compared to 82.8 years) and 10.0 years for women (75.6 years compared to 85.6 years) (National Records of Scotland, 2020). The life expectancy gap between the bottom 20% of Scottish areas (male 70.1 years, female 76.5 years) and the top 20% (male 82.3 years, female 85.2 years) was 12.2 years for men and 8.7 years for women.

    11.3. In Wales in 2017-19, life expectancy at birth for men in the most deprived 10% of areas was 73.3 years, compared with 82.3 years in the least deprived areas, a difference of 9 years (Office for National Statistics, 2021b). For women, life expectancy in the most deprived areas was 78.2 years, compared with 85.7 years in the least deprived areas, a gap of 7.5 years. The life expectancy gap between the bottom 20% of Welsh areas (male 74.3 years, female 79.0 years) and the top 20% (male 81.8 years, female 85.1 years) was 7.5 years for men and 5.3 years for women.

    11.4. In Northern Ireland, in 2017-19, life expectancy at birth for men in the 20% most deprived areas was 74.7 years, compared with 81.6 years in the 20% least deprived areas, a difference of 7 years (Northern Ireland Department of Health, 2021). For women, life expectancy in the 20% most deprived areas of Northern Ireland was 79.6 years, compared with 84.5 years in the least deprived areas, a gap of 4.8 years.

12. In all four UK nations, the association between area-level deprivation and healthy life expectancy (Healthy Life Expectancy is the average number of years that a person can expect to live in full health, not impeded by disabling illnesses or injuries or poor

health. It is a self-reported measure so may include mental health) is even stronger than that for life expectancy.

12.1. In England, healthy life expectancy at birth amongst men living in the 10% most deprived areas was 52.3 years in 2017-2019, compared with 70.7 years among those living in the 10% least deprived areas. Women in the most deprived areas could expect to live 51.4 years in "Good" health compared with 71.2 years in the least deprived areas (Office for National Statistics, 2021a).

12.2. In Scotland, healthy life expectancy at birth amongst men living in the 10% most deprived areas was 47.0 years in 2017-2019, compared with 72.1 years among those living in the 10% least deprived areas. Women in the most deprived areas could expect to live 50.1 years in "Good" health compared with 71.6 years in the least deprived areas (National Records of Scotland, 2021).

12.3. In Wales, healthy life expectancy at birth in 2017-19 for men was lowest in the 10% most deprived areas at 51.8 years and highest in the least deprived 10% of areas at 68.6 years, a difference of 16.9 years. Similarly, healthy life expectancy at birth for women in the most deprived areas was 50.2 years compared to 68.4 years in the least deprived areas (Office for National Statistics, 2021b).

12.4. In Northern Ireland, the healthy life expectancy inequality gap between the 20% most and least deprived areas was 13.5 years for men and 15.4 years for women in 2017-19 (Northern Ireland Department of Health, 2021). The data presented here for Northern Ireland is by quintile (20% bands) whereas it is by decile (10% bands) for the other three countries. This reflects cross-national differences in how the data is published.

13. Compared to people living in less deprived areas, those in more deprived areas have shorter lives and live more years in ill-health.

14. The causes of such socio-economic inequalities in health are multifaceted. The scientific consensus is that they are a result of inequalities in the social determinants of health: the conditions in which we are born, grow, live, work and age (WHO, 2008).

15. In 2005, the World Health Organisation (WHO) set up the *WHO Global Commission on the Social Determinants of Health* to examine the social factors leading to ill health and health inequities. The Commission was set up by former World Health Organization Director-General JW Lee. It is important to note that the WHO Commission has the same status in the public health community, as a representation of the global scientific consensus, as the Intergovernmental Panel on Climate Change (IPPC) does with regards to environmental science.

16. The Commission was tasked to collect, collate, and synthesise global evidence on the social determinants of health and their impact on health inequalities, and to make recommendations for action to address them. The WHO Commission was led by Professor Sir Michael Marmot. The commission involved experts from over 20 WHO countries. The Commission systematically evaluated the evidence on the extent and causes of socio-economic inequalities in health internationally.

17. Based on the extensive international evidence reviewed, the WHO Commission concluded in its 2008 report that health inequalities are driven by socio-economic inequalities in *"growing, living and working conditions; the social and economic*

policies that shape growing, living, and working; the relative roles of state and market in providing for good and equitable health; and the wide international and global conditions that can help or hinder national and local action for health equity" (WHO, 2008: vii). These conditions are "the causes of the causes" and are collectively referred to as the social determinants of health (WHO, 2008).

18. The social determinants of health are the conditions in which we grow, live, work and age (WHO, 2008). They are the everyday conditions which influence our access to health-enhancing goods and which limit our exposure to health-damaging risk factors. They include economic resources (i.e. income), as they can determine our ability to afford, or access, good quality services (e.g. hospitals, schools, transport infrastructure, and social care) but also allow us to avoid harmful circumstances (e.g. poor housing, inadequate diet, physical hazards at work, environmental exposures such as air pollution). The social determinants of health also include working conditions, housing and neighbourhood factors, labour market activity including unemployment and welfare receipt, and access to goods and services including health and social care. The social determinants of health are themselves shaped by local, national and international government policies (such as economic, social or health care policies) (WHO, 2008).

19. Different socio-economic groups are unequally exposed to these health-damaging or health-enhancing factors - resulting in health inequalities. To put it another way, people are not poor because they make poor choices, and the poor health of the poor does not result from poor choices (Marmot, 2020). Rather, it is poverty that leads to unhealthy choices and the poor health of those lower down the social hierarchy results from the restricted range of options available to those on low incomes, as well as the direct health impacts associated with the stresses and poor conditions which result from poverty. As an illustration, the poor diet of people in poverty is, very largely, the result of poverty, not poor choices (Marmot, 2020). So, tackling health inequalities involves tackling social inequalities (Marmot, 2010).

20. In 2008, the UK Government commissioned Professor Sir Michael Marmot to conduct a review to consider how the findings and recommendations of the 2008 WHO Global Commission applied to England. The result was the *Marmot Review: Fair Society Healthy Lives,* published in 2010.

21. Based on the evidence from nine scientific working groups, comprising over 80 health inequalities experts from across the UK (including MM and CB), it summarised the evidence on the causes of health inequalities – and how to reduce them – in terms of six key social determinants of health:

    21.1. *Early child development*: The foundations for virtually every aspect of human development – physical, intellectual and emotional – are laid in early childhood. What happens during these early years (starting in the womb) has lifelong effects on many aspects of health and well-being– from obesity, heart disease and mental health, to educational achievement and economic status. There are stark socio-economic inequalities in childhood with children from lower socio-economic backgrounds having worse early experiences (such as poverty, domestic violence and abuse, and poor mental health, see Rod et al, 2020; Adjei, et al 2022) and educational outcomes (Pickett, Taylor-Robinson et al, 2020). Adverse childhood experiences have a lifelong effect on health and wellbeing – regardless of later socio-economic position (Rod et al, 2020; Adjei, et al 2022).

    21.2. *Education and lifelong learning*: Inequalities in educational outcomes affect physical and mental health, as well as income, employment and quality of life.

There is a strong association between socio-economic status and educational outcomes (with children from deprived areas fairing less well than those in less deprived areas) which has important implications for subsequent employment, income, living standards, behaviours, and mental and physical health.

21.3. *Employment and working conditions*: Being in good employment is protective of health. Good work is *"free of the core features of precariousness, such as lack of stability and high risk of job loss, lack of safety measures (exposure to toxic substances, elevated risk of accidents) and the absence of minimal standards of employment protection"* (Marmot, 2010: C.2.2). Conversely, poor working conditions are characterised by low-pay, insecurity, few opportunities for advancement, and working in conditions that are harmful to health (Marmot, 2010: 2.6.3). Unemployment contributes to poor health. Patterns of employment both reflect and reinforce the social gradient and there are serious inequalities of access to labour market opportunities. Rates of unemployment are highest among those with no or few qualifications. Unemployment is associated with higher mortality rates. Insecure and poor-quality employment is also associated with increased risks of poor physical and mental health.

21.4. *Income and cost of living*: Having insufficient money to lead a healthy life is a highly significant cause of health inequalities. Many households in the UK are below the minimum income (as represented, for example, by the *Real Living Wage*, Living Wage Foundation, 2023) needed for adequate nutrition, physical activity, housing, social interactions, transport, medical care and hygiene. In England there are large gaps between what is needed to afford healthy living and the level of state benefit and work-income that many groups receive (Marmot, 2010; 2020).

21.5. *Healthy and sustainable places in which to live and work:* Communities are important for physical and mental health and well-being. The physical, economic and social characteristics of communities, and the degree to which they enable and promote healthy behaviours, all make a contribution to social inequalities in health (Bambra, 2016). However, there is a clear social gradient in 'healthy' community characteristics with more deprived areas fairing worse (e.g. higher rates of air pollution, or lower levels of social cohesion) (Bambra, 2016).

21.6. *The social determinants and prevention*: Many of the key health behaviours significant to the development of chronic disease follow the social gradient: smoking, obesity, lack of physical activity, and unhealthy nutrition, are all higher in more deprived areas. These health behaviours are influenced by the social determinants of health (e.g. smoking is a social practice which reflects gender roles, social class structures, cultures and income inequalities). For example, the accumulation of experiences a child receives shapes the outcomes and choices they will make when they become adults (Marmot, 2010).

22. We are confident that the 2008 *WHO Global Commission on the Social Determinants of Health* and the 2010 *Marmot Review: Fair Society Healthy Lives,* identified the causes of health inequalities (as summarised in paragraphs 17-21 above) and represent the scientific consensus.

Ethnic inequalities in health

23. There has historically been a lack of routine data linking ethnicity to mortality records and hence an absence of official, regular information on life expectancies for different ethnic groups (Marmot, 2020). Calculating life expectancies for different minority groups is challenging because there can be an under-estimation of deaths in minority ethnic groups (due to emigration and resulting population changes) as well as a lack of reliable data on the size of minority ethnic populations (e.g. the ONS estimated that the 2011 Census undercounted the Bangladeshi population by 6% more than the White population, and the Black African population by 47% more than the White population). Both need to be accurately captured to produce reliable life expectancy estimates. The multiple issues pertaining to the data challenges are presented in more detail by Nazroo (2022: Appendix 3).

24. Studies of ethnic differences in life expectancy must therefore be understood within this data context and there are conflicting results depending on the exact methods of estimation used. Recently, the Office for National Statistics (ONS) produced some experimental estimates of life expectancy by ethnicity in England and Wales for 2011 to 2014 based on the linkage of Census 2011 to Patient Register records and subsequent deaths (ONS, 2021c). This data suggests that minority ethnic groups had higher life expectancy and lower mortality than White and Mixed ethnic groups. The ONS (2021c) analysis also found that mortality from cancers was higher for both men and women in the White ethnic group, whilst mortality from circulatory (heart and related) diseases were higher for men in the Indian, Bangladeshi, and Mixed ethnic groups, and amongst Pakistani, Indian and Mixed women. These experimental ONS estimates for England and Wales are in keeping with some other research into ethnic inequalities in mortality in Scotland (Gruer et al 2016; Bhopal et al 2018). The Scottish studies found that men and women from most minority groups had lower mortality rates than the White Scottish group. Mortality was more than 10% lower in the following ethnic groups: Other White British, Other White, Indian, Pakistani, Bangladeshi (males), Caribbean (females), and Chinese (Bhopal et al 2018). However, some other studies of England and Wales have suggested that life expectancies for Bangladeshi and Pakistani ethnic groups is lower than for White ethnic groups (Rees et al, 2009). So, there is currently scientific uncertainty about this matter. One of the reasons suggested in the ONS report (2021c) for the potentially higher life expectancy found in minority ethnic groups are that they contain a higher proportion of more recent migrants born outside the UK than other ethnic groups (people who migrate tend to be healthier than others and have higher levels of education).This would be supported by a Scottish study (Bhopal et al, 2018) which found a mortality advantage for all minority groups for those born abroad but *much less so for those born in the UK* (emphasis added). Further research is also needed to examine whether the area deprivation mortality pattern varies across ethnic groups (ONS, 2021c).

25. There is some evidence that ethnic minority people may have much poorer health (morbidity) than White people (Nazroo, 2022). For England, the 2018 report published by Public Health England on *Local action on health inequalities: Understanding and reducing ethnic inequalities in health* (cited here as Toleikyte and Salway, 2018: p13) noted the following aspects of ethnic inequalities in health in England:

    25.1. inconsistent categories and small sample sizes compromise our understanding of ethnic differences in health.

    25.2. very little information is available at local and regional levels

25.3. there is a complex picture of ethnic differences in health across different health indicators and different ethnic groups

25.4. some groups, notably individuals identifying as Gypsy or Irish Traveller, and to a lesser extent those identifying as Bangladeshi, Pakistani or Irish, stand out as having poor health across a range of indicators

25.5. evidence on ethnic differences in common mental disorders is patchy and inconsistent, though those identifying as Gypsy or Irish Traveller appear to have much higher rates of anxiety and depression than other groups and black men have higher reported rates of psychotic disorder than men in other ethnic groups

25.6. available data suggest lower levels of reported 'wellbeing' among most minority ethnic groups compared to the White population

25.7. cancer burden by site of the cancer varies between ethnic groups (e.g. prostate cancer makes up over 40% of Black men's cancer compared with around 15% among Chinese men and 25% among all men)

25.8. there are large differences in infant mortality by ethnicity. Rates are highest among Pakistani, Black Caribbean and Black African groups

25.9. the National Child Measurement Programme indicates that among children most minority ethnic groups have higher levels of overweight or obesity at age 10-11 than the White ethnic group. Those in Black groups have the highest levels.

25.10. Amongst people aged 60 years and over, even after accounting for social and economic disadvantage, minority ethnic groups are more likely than white people to report poor health (Evandrou at al, 2016).

26. Whilst most research on this topic is conducted in England, the patterns are similar in Scotland and Wales (as noted by a 2015 Scottish Government report which states that *"the picture for women in Scotland was similar across ethnic groups to that of England and Wales",* The Scottish Government, 2015) but may differ in Northern Ireland *("The composition of the minority ethnic community in NI still remains different to the composition of these communities in England and Wales and Scotland",* Public Health Agency, 2014: 1):

26.1. A 2015 report into the health of minority ethnic groups in Wales conducted by Public Health Wales (2015) used data from the 2011 Census (the most recent pre-pandemic Census) and found that:

26.1.1. The Mixed multiple ethnic group reported the highest levels of limiting illness (26%) followed by White/White British (23.6%), Other ethnic groups (22.5%), Black/African/Caribbean/Black British (21.5%%), and Asian/Asian British (18.6%) (Public Health Wales, 2015: 27).

26.1.2. For self-rated health, the Mixed multiple ethnic group reported the highest levels of bad or very bad general health (10.5%), followed by Other ethnic groups (9.6%), Black/African/Caribbean/Black British (8.3%), White/White British (7.9%) and Asian/Asian British (7.2%) (Public Health Wales, 2015: 29).

26.2. Public Health Scotland states that Scottish data suggests that *"minority ethnic groups, with some exceptions such as Gypsy/Travellers, have better general health than the majority of the white population*" (Public Health Scotland, 2019). However, they also note that *"obesity prevalence varies substantially between ethnic groups; there is greater prevalence of sickle cell disease in African origin groups; the minority ethnic population shows lower age adjusted all-cause mortality and hospitalisation rates, there is a greater prevalence of cardiovascular conditions and diabetes in South Asian origin populations, and that mortality in Scotland is higher in the majority ethnic (white) population than in the black and minority ethnic population".*

26.3. The health of minority ethnic groups in Northern Ireland is less well monitored and researched. Indeed, this issue is noted in a House of Commons Northern Ireland Affairs Committee report of 2022: *"Minority ethnic communities may be largely invisible to policy makers … [due to] … the lack of ethnic monitoring and data on the population"* (House of Commons, 2022: 7). However, analysis of the 2011 Northern Ireland Census (the last Census conducted before the pandemic) found that 12% of people in the White ethnic group reported that they had a "long-term limiting illness or health condition that limited their daily activities a lot" compared to 3% of people in the Asian ethnic group, 3% of people in the Black ethnic group, 4% of people in the Mixed ethnic group, and 7% of people in the Other ethnic group (Public Health Agency, 2014). These differences are largely because the White ethnic population in Northern Ireland is a lot older than other minority ethnic groups (Public Health Agency, 2014).

26.4. Research conducted across England, Scotland and Wales, has identified more specific differences in health by ethnic group. In comparison to White British groups: *"higher, but variable, rates of diabetes across all non-White groups; higher rates of heart disease among 'South Asian' people, but particularly among Bangladeshi and Pakistani people; higher rates of hypertension and stroke among Caribbean and African people; higher rates of admission to psychiatric hospitals with a diagnosis of psychotic illness for Black Caribbean and Black African people; higher rates of suicide among young women born in South Asia or, more particularly, born in India; lower rates of cancer diagnosis and cancer-related mortality among all non-White ethnic minority groups"* (detailed further in Nazroo, 2022: 4).

27. Other evidence points to high rates of maternal mortality among minority ethnic groups in the UK and worse access to and outcomes from some NHS services (NHS Race and Health Observatory, 2021). For example, the 2020 Maternal, Newborn and Infant Clinical Outcome review programme for the UK and Ireland found that in 2016 to 2018, the risk of dying in pregnancy was 15 per 100,000 for Asian women, 25 per 100,000 for Mixed-ethnicity women, and 34 per 100,000 for Black women. It was 8 per 100,000 for White women.

28. Minority ethnic groups in England, Scotland and Wales experience substantial inequalities in the social determinants of health (Marmot, 2020; Public Health Wales, 2015; Toleikyte and Salway, 2018; Public Health Scotland, 2019; Welsh Government, 2022):

28.1. Educational attainment at GCSE and degree levels is highest for the Chinese and Indian ethnic groups. Gypsy and Irish Travellers have the lowest level of qualifications at both levels (Toleikyte and Salway, 2018: p22)

28.2. White and Indian minority ethnic groups are more likely to be in employment, with unemployment highest among Black and Bangladeshi/Pakistani populations (Toleikyte and Salway, 2018: p22).

28.3. The Marmot Review (2010: 2.6.3) noted that, when in work, people from ethnic minority groups are "*more likely to be in low-paid, poor quality jobs, with few opportunities for advancement, often working in conditions that are harmful to health. Many are trapped in a cycle of low-paid, poor-quality work and unemployment*".

28.4. *"Workers from minority ethnic groups are more likely to be on zero- hours contracts than White workers: 1 in 24 minority ethnic workers is on a zero hours contract compared with one in 42 White workers, and minority ethnic workers are more likely than White workers to be on agency contracts*" (Marmot, 2020: 65-66).

28.5. Bangladeshi, Pakistani, Chinese and Black groups are about twice as likely to be living on a low income, and experiencing child poverty, as the White population (Toleikyte and Salway, 2018: p22). In Wales, for example, there is a 29% likelihood of people whose head of household came from a non-white ethnic group living in relative income poverty compared to a 24% likelihood for those whose head of household came from a white ethnic group (Welsh Government, 2022).

28.6. Eligibility for free school meals is also higher in some minority ethnic groups and particularly high for Traveller young people of Irish heritage (McKeown, 2023).

28.7. Ethnic minority groups are more likely to live in private rented accommodation and overcrowded households than the White British population

28.8. Bangladeshi, Pakistani and Black groups are the most likely to be living in deprived neighbourhoods

28.9. The poor housing and neighbourhood conditions for Gypsy and Traveller groups are particularly high

28.10. Some minority ethnic groups are represented disproportionately in the prison population: on average there are around 16 prisoners for every 10,000 people in England and Wales, but this rises to 47 and 58 prisoners per 10,000 for Mixed and Black minority ethnic groups respectively (Ministry of Justice, 2017).

29. Whilst the situation is slightly different in Northern Ireland (due to the composition of the minority ethnic community), analysis by the Public Health Agency found that women of Pakistani and Bangladeshi background had particularly poor economic circumstances (Public Health Agency, 2014: 1).

30. Whilst the majority of health inequalities experienced by minority ethnic groups are a result of inequalities in socio-economic factors (Nazroo, 2022: 5), the health of minority ethnic groups may also be adversely impacted by racism. Racism takes various forms – interpersonal racism, discrimination and harassment (including hate crime of which there are over 150,000 reported incidents each year in England and Wales; Toleikyte and Salway, 2018: p29); institutional racism (exclusionary processes, attitudes and behaviour *"which amount to discrimination through unwitting prejudice, ignorance, thoughtlessness and racist stereotyping which disadvantage minority ethnic people"* operating within key organisations such as the NHS, the

education system or employment and housing markets, Macpherson Report, 1999); and structural racism (produced and reproduced by laws, rules, and practices, sanctioned and even implemented by various levels of government, and embedded in the economic system as well as in cultural and societal norms; Bonilla-Silva, 1997; Bailey et al, 2017; Hooijer and King, 2022). These different types of racism are closely related and mutually reinforcing (Nazroo, 2022: 7).

31. Research explicitly examining the effect of racism on health demonstrates clear negative impacts. For example, a systematic review of 293 studies (from high income countries including the USA, UK, Australia and Canada), on self-reported racism (largely interpersonal) and health found strong evidence of detrimental impacts across mental, physical and general health outcomes (Paradies et al., 2015). Similarly, a systematic review of over 120 research studies (from the USA, UK, Europe, Australia/New Zealand, South America, Canada, Israel) on racism (largely interpersonal) and mental health amongst children and young people found strong evidence of negative effects, particularly relating to anxiety, depression, and negative self-esteem (Priest et al, 2013). A recent UK report into the health inequalities experienced by young people from ethnic minority backgrounds conducted by Association for Young People's Health (McKeown, 2023), found that they are more likely to be detained under the Mental Health Act (i.e. "sectioned"); and they are more likely to be admitted to hospital. Longitudinal research has also found that racism has long term impacts on health across the life course (Stopforth et al, 2021). There is very little research conducted in the UK or internationally examining the health impacts of structural racism (Bailey et al, 2017). However, structural racism may well account for why some minority ethnic groups across the UK are more likely to be over-represented in the most deprived communities – despite often having higher levels of education (Nazroo, 2022). For example, in England, over 50% of people from Pakistani and Bangladeshi minority ethnic backgrounds and over 40% of Black African, Black Caribbean and Black Other minority ethnic backgrounds, live in the 20% most deprived areas compared to 17% of White British people (Commission on Race and Ethnic Disparities, 2021).

Other social inequalities in health

32. Other minority and marginalised groups also experience poorer health outcomes than the rest of UK society. These groups include "Inclusion Health Groups", LGBTQ+ groups, and people with disabilities (including learning disabilities) or long-term health conditions. As with ethnicity, there is a paucity of regularly reported data (for example on life expectancies) for these groups.

33. According to NHS England (2022a), inclusion health groups are people who are socially excluded, *"who typically experience multiple overlapping risk factors for poor health, such as poverty, violence and complex trauma"*. Inclusion health groups include *"people who experience homelessness, drug and alcohol dependence, vulnerable migrants, Gypsy, Roma and Traveller communities, sex workers, people in contact with the justice system and victims of modern slavery"*. People belonging to inclusion groups tend to have poor health outcomes, negative experiences of health care and a lower average age of death (NHS England, 2022a). For example, a systematic review of over 300 scientific studies conducted in high-income countries (including the USA, Australia, Sweden, Canada and the UK) which was published in *The Lancet* found that mortality rates were significantly higher amongst people with a history of homelessness, imprisonment, sex work, or substance use disorder than amongst the general population, particularly for deaths due to injury, poisoning, and other external causes (Aldridge et al, 2018). Research suggests that the adverse health experiences of inclusion health groups result from stigma, trauma, social exclusion, discrimination and victimisation (Aldridge et al, 2018).

34. LGBTQ+ groups (lesbian, gay, bisexual, transgender, and queer or questioning), also experience health inequalities. Whilst data is lacking in terms of mortality, life expectancy or physical health, there is strong evidence of higher prevalence of mental health issues amongst LGBTQ+ people (Hudson-Sharp and Metcalf, 2016). For example, a review of UK studies found higher rates of mental health problems amongst LGBTQ+ people including attempted suicide, self-harm, anxiety and depression (Hudson-Sharp and Metcalf, 2016: 32). This review also found evidence of higher substance (alcohol and tobacco) abuse amongst LGBTQ+ people. Mental health services were perceived to be discriminatory by LGBTQ+ people. Researchers have suggested that this increased morbidity is potentially a result of stigma, social exclusion, discrimination and victimisation (Wilson and Cariola, 2020).

35. Disability rates vary across the four countries of the UK. Evidence from the 2011 national Censuses (the most recent conducted pre-pandemic) found that 12% of people in Northern Ireland and Wales, 10% of people in Scotland and 8% of people in England reported that they had a "long-term limiting illness or health condition that limited their daily activities a lot" (Office for National Statistics, 2013; National Records of Scotland, 2014; Public Health Agency, 2014). These cross-national differences may be accounted for by older populations in Northern Ireland and Wales. People with disabilities (including learning disabilities) or long-term health conditions also experience social exclusion with, for example, significantly lower rates of employment amongst people with a disability and higher rates of poverty (DWP, 2021). In Wales, for example, 38% of children who lived in a family where there was someone with a disability experienced relative poverty compared with 26% of those in families where no-one was disabled (Welsh Government, 2022). The Marmot Review (2010: 2.6.3) noted that *"people with disabilities and mental ill health … are when in work … more likely to be in low-paid, poor quality jobs, with few opportunities for advancement, often working in conditions that are harmful to health. Many are trapped in a cycle of low-paid, poor-quality work and unemployment".* In terms of health inequalities, the 2013 *Confidential Inquiry into premature deaths of people with learning disabilities* (published as Heslop et al, 2014 in *The Lancet*) reported that men with learning disabilities die 13 years sooner than men without a learning disability, and that women with learning disabilities tend to die 20 years sooner than those without. People with learning disabilities are significantly more likely to die before the age of 50 with respiratory and heart diseases the leading causes of death. They are also more likely to have diabetes, sensory impairments, mental health problems or epilepsy. The Confidential Inquiry also concluded that *"avoidable deaths from causes amenable to change by good quality health care were more common in people with intellectual disabilities"* (Heslop et al, 2014: 889).

TRENDS IN HEALTH AND HEALTH INEQUALITIES SINCE 2010

Slowdown in health improvement

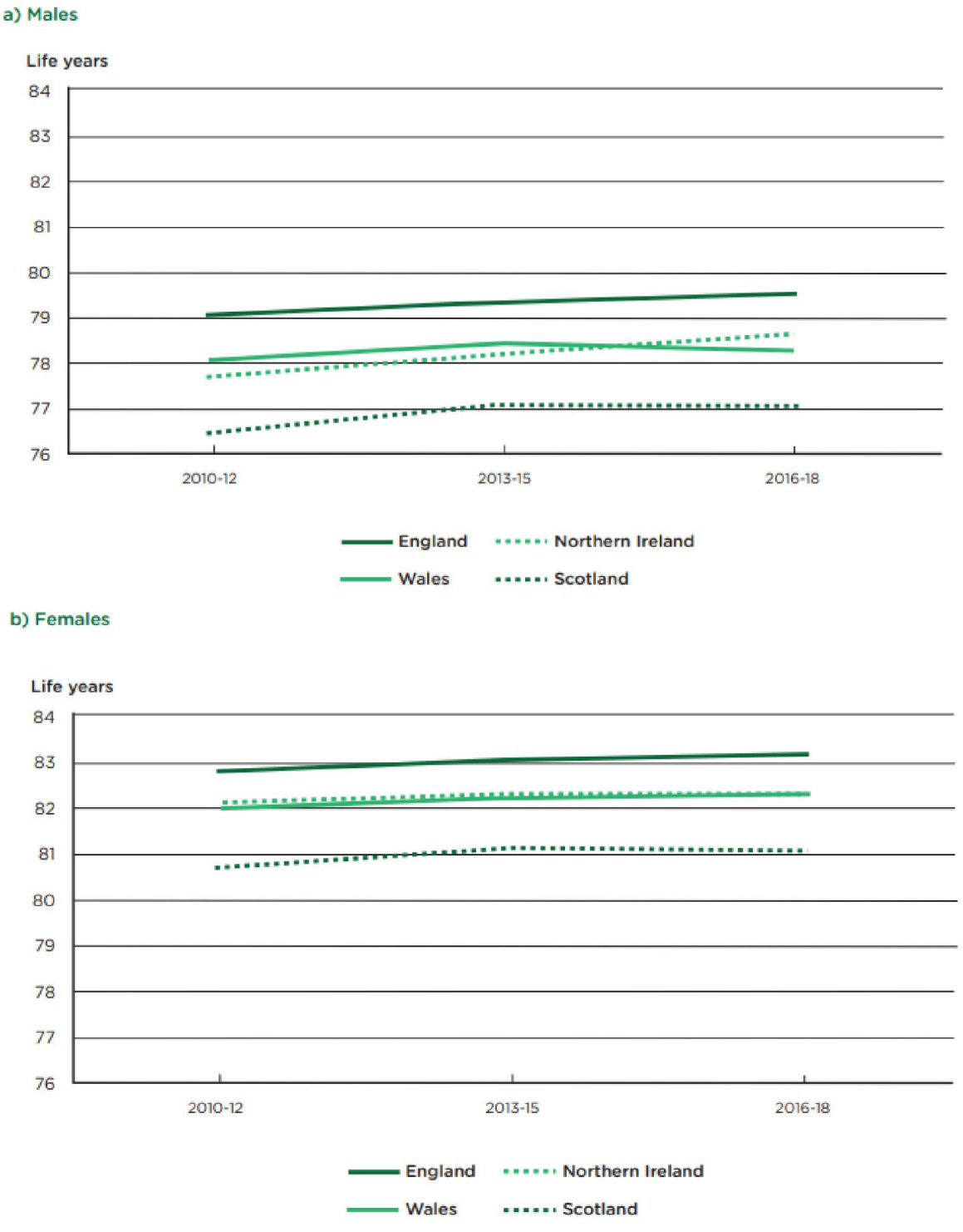
36. Until 2010, life expectancy in the UK had been increasing at about one year every four years. This trend had continued for all of the 20th century, with small deviations. In 2010/11, there was a break in the curve. The rate of improvement slowed dramatically and then stopped improving. One question this raises is whether we have simply reached peak life expectancy; the rate of improvement has to slow some time. However, comparisons with other countries answer this question. The slowdown in life expectancy growth during the decade after 2010 was more marked in the UK than in any other rich country, except Iceland and the USA (Marmot, 2020).

37. Trends in life expectancy at birth for men and women across the four nations of the UK is shown in Figure 1 (from *Marmot Review 10 Years On*, 2020). In all four countries, women have higher life expectancy than men – a pattern common to all

high-income countries (Mateos et al 2020). England has the highest male and female life expectancies, whilst Scotland has the lowest. Figure 1 also shows the slow-down and flattening out of life expectancy gains across all four countries since 2010. UK life expectancy now lags behind comparator G7 countries (the G7 is an intergovernmental political forum of the world's largest liberal democratic economies): life expectancy in France, Japan, Germany and Italy was higher than life expectancy in the UK in the relevant period (Hiam et al, 2023). The only G7 country with lower life expectancy going into the pandemic than the UK was the USA. The UK fell from being ranked 26th globally in terms of life expectancy in 2010 to 36th globally by 2020 (Hiam et al, 2023). Life expectancy growth started to stall across the UK in 2011 (Leon et al, 2019; Welsh et al, 2021).

38. Something had changed in the UK in 2010/11. It coincided with a new government, whose stated ambition was austerity, cutting public expenditure in response to the 2007/8 Global Financial Crisis. We consider below the extent to which this change in policy could have played a role in the changing health picture.

Figure 1: Life expectancy at birth by sex, four countries of the UK, 2010-12 to 2016-18



Increase in health inequalities

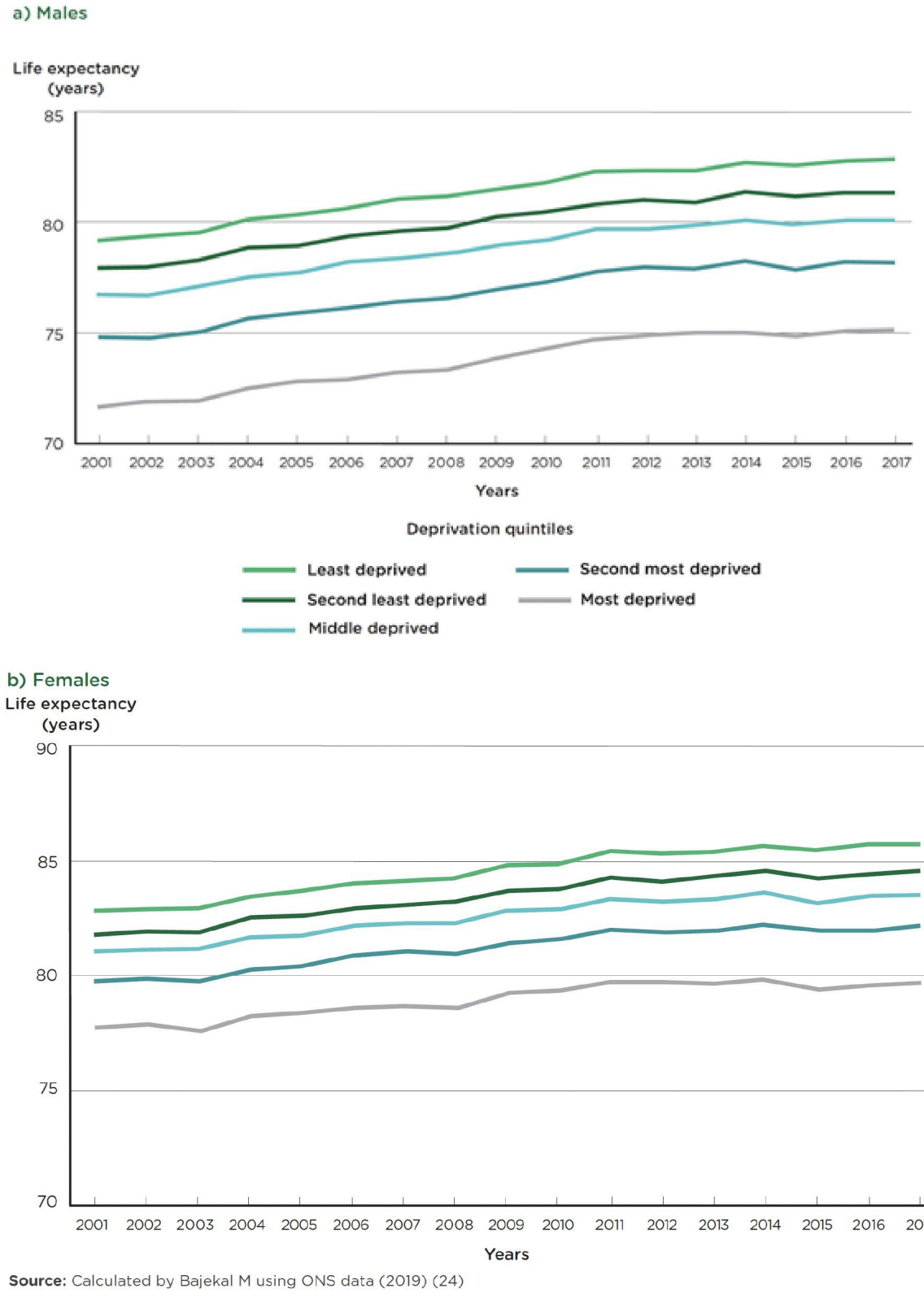
39. As noted earlier (in paragraphs 8-13), life expectancy follows a social gradient. When people are classified by where they live in terms of the Indices of Multiple Deprivation, we observe a stepwise association: the greater the deprivation the shorter the life expectancy. We explained the current scientific understanding of why this is the case previously (in paragraphs 17-21). Over the decade since 2010, the gradient became steeper, the inequalities greater. These trends are shown for England in Figure 2 (reproduced from *The Marmot Review 10 Years On*, 2020) and in Figures 3-5 for Scotland, Wales and Northern Ireland.

40. Figure 2 shows that inequalities in life expectancy at birth in England are smaller for women than for men, but that for both men and women, the gap in life expectancy between the least (green lines in Figure 2) and most deprived (grey lines in Figure 2) quintiles (20% of areas) of deprivation increased since 2010. Further, life expectancy for both men and women living in the most deprived quintiles flattened out and stopped improving (as represented by the flat grey line in Figure 2).

41. These changes in health inequalities are also evident in the other nations of the UK. Figure 3 (data from The Scottish Government, 2022a) shows that in Scotland, inequalities in life expectancy were also widening in the years before the pandemic. Between 2013–15 and 2018-20 the gap in life expectancy at birth between people living in the least and most deprived 10% of local areas widened by 1 year to a 14-year gap for men, and by 2 years to an 8-year gap for women.

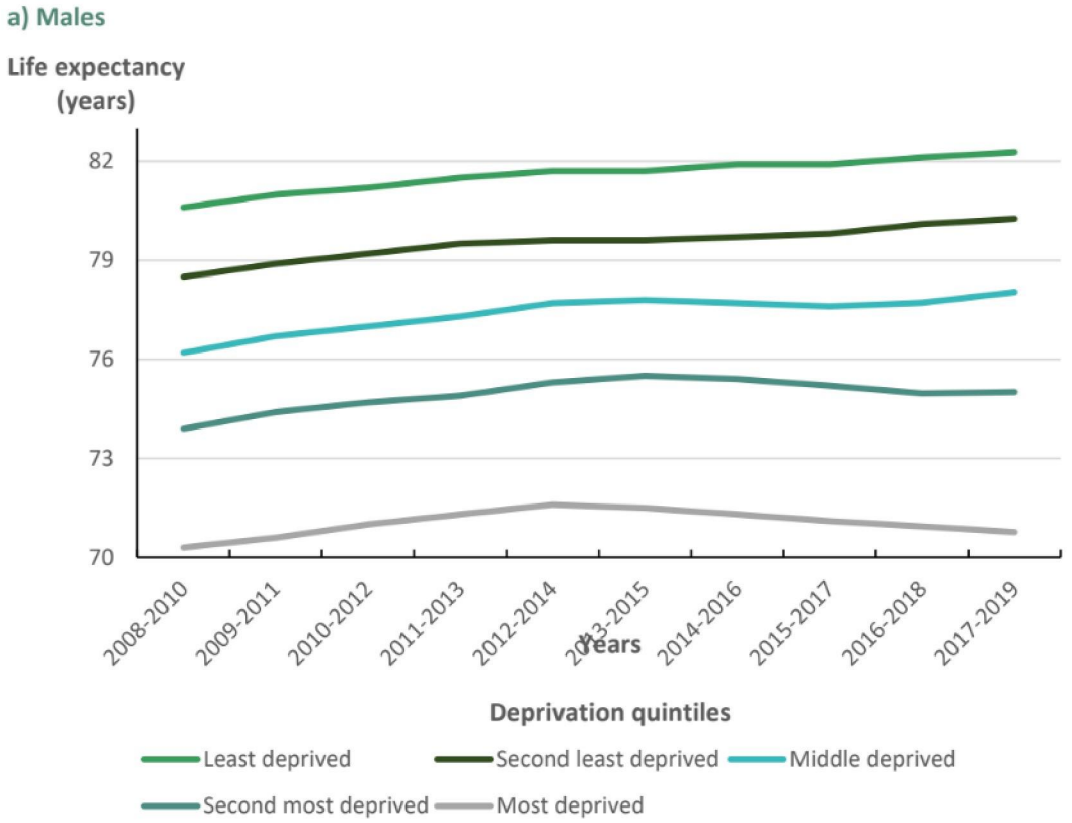
42. Similarly, Figure 4 (data from Office for National Statistics, 2021b) shows trends in life expectancy by deprivation in Wales where the gap in life expectancy at birth between people living in the least and most deprived 20% of local areas widened by 1 year to a 7-year gap for men and was static with a 6-year gap for women over the period 2011-13 and 2017-19. Figure 5 (data from Department of Health Northern Ireland, 2023) shows trends for Northern Ireland between 2015-17 and 2019-21 where the deprivation gap in life expectancy at birth between women living in the least and most deprived 20% of local areas widened by 1 year to 5 years for women and remained static at 7 years for men.

Figure 2: Life expectancy at birth by area-level deprivation quintiles and sex, England, 2001-2017



Source: Calculated by Bajekal M using ONS data (2019) (24)

Figure 3: Life expectancy at birth by area-level deprivation deciles and sex, Scotland, 2008-10 and 2017-19



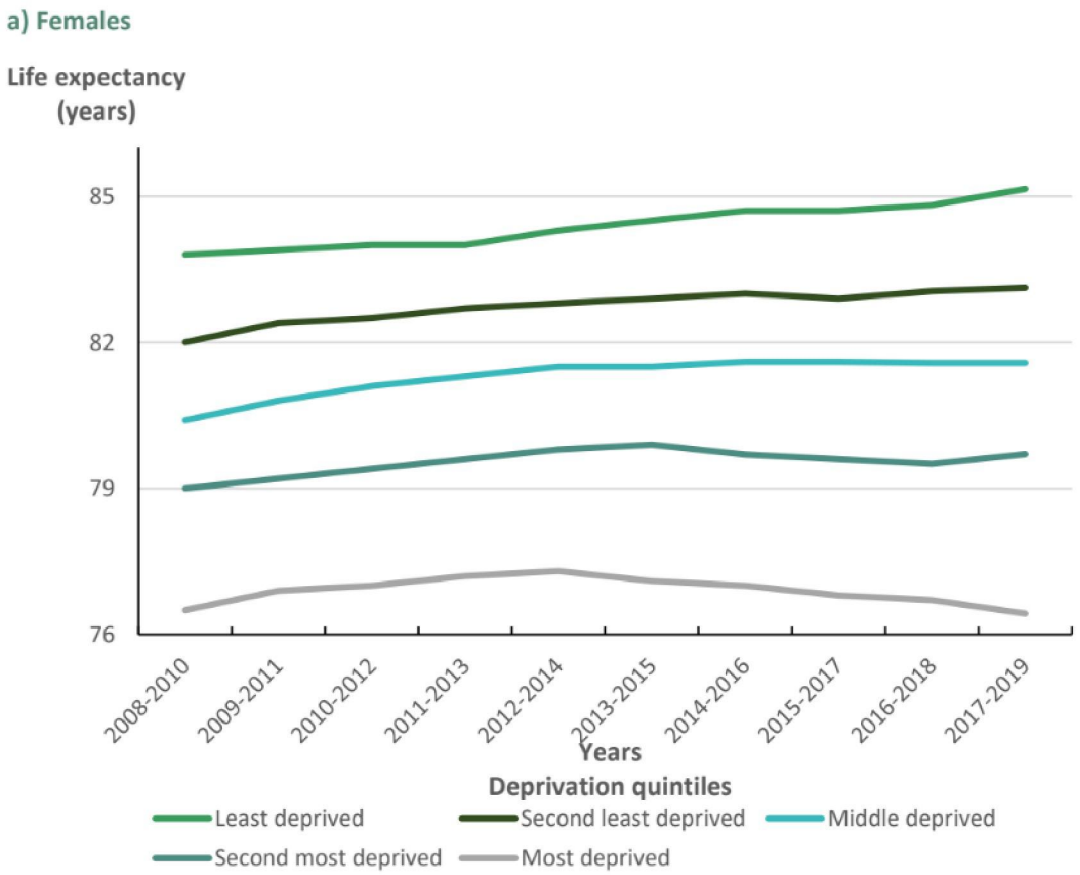
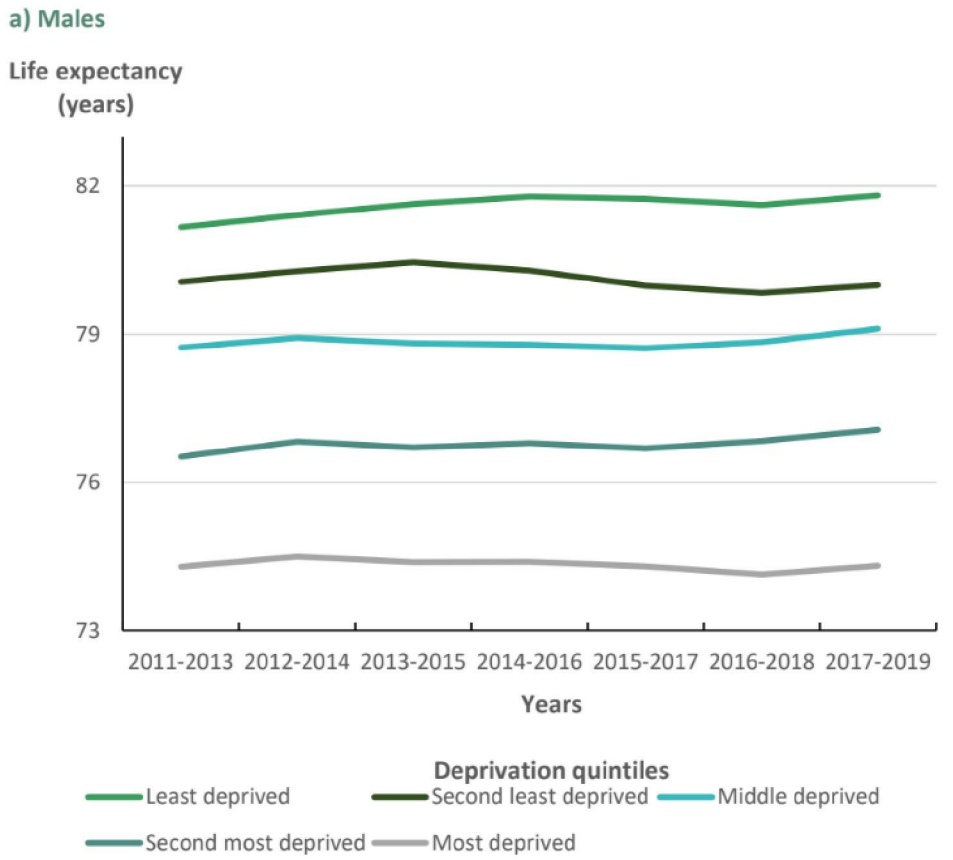


Figure 4: Life expectancy at birth by area-level deprivation quintiles and sex, Wales, 2011-13 and 2017-19



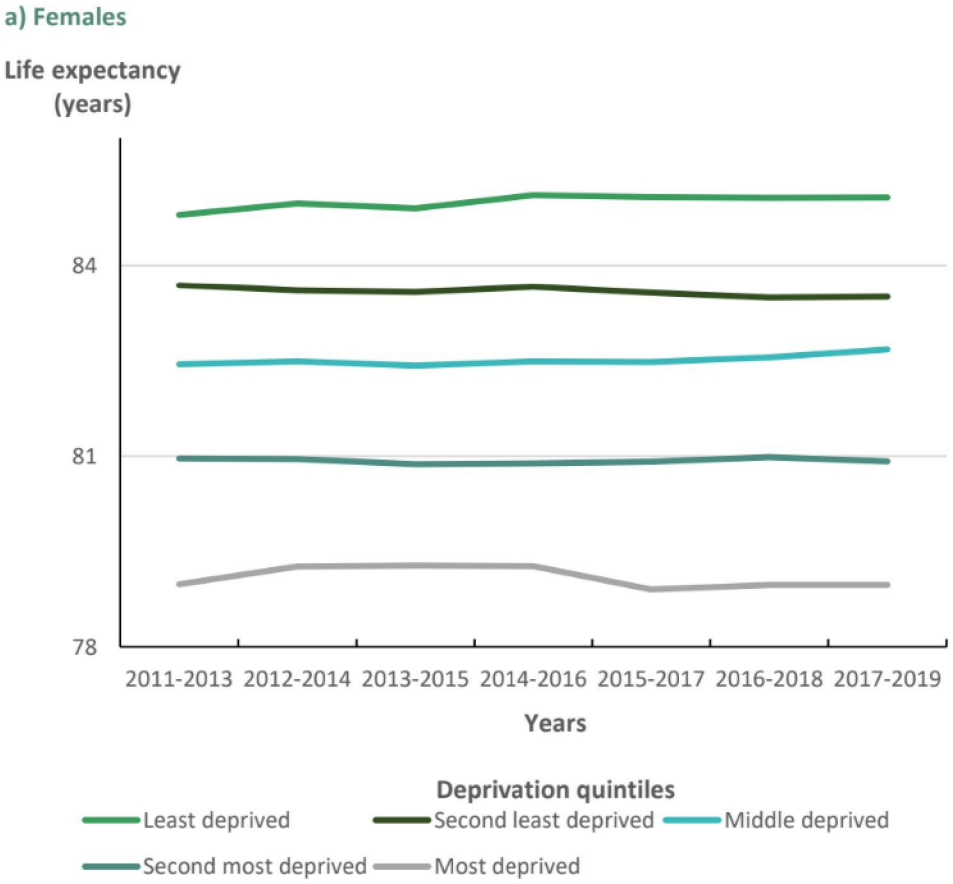
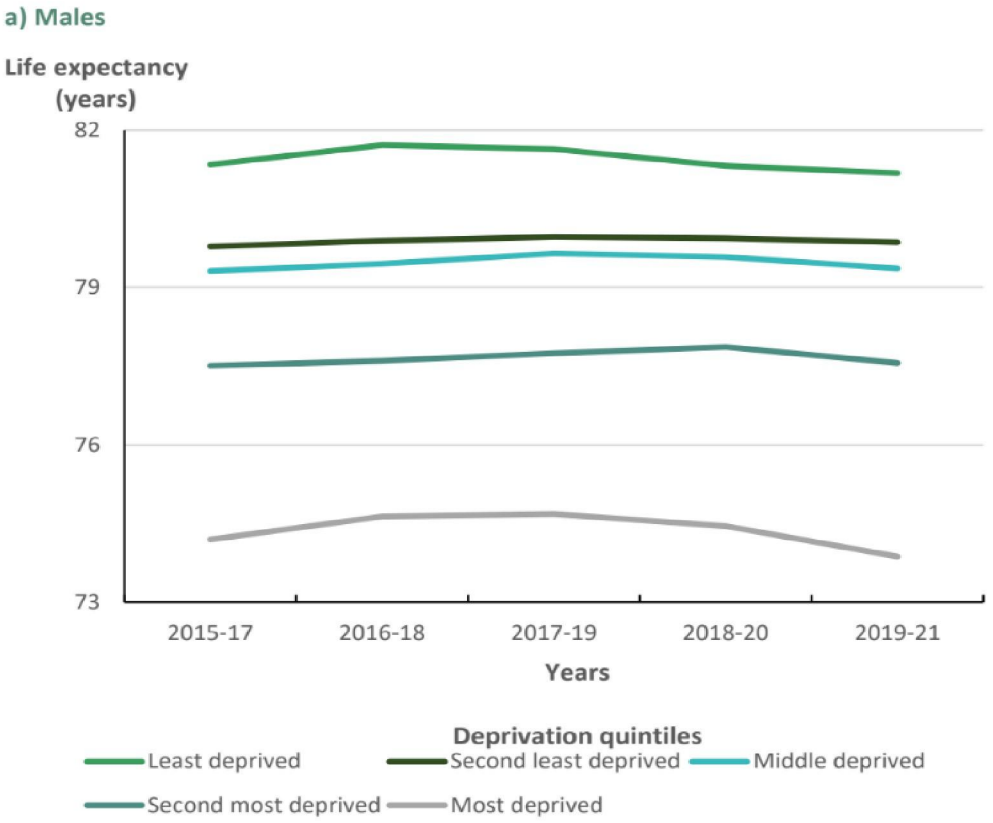
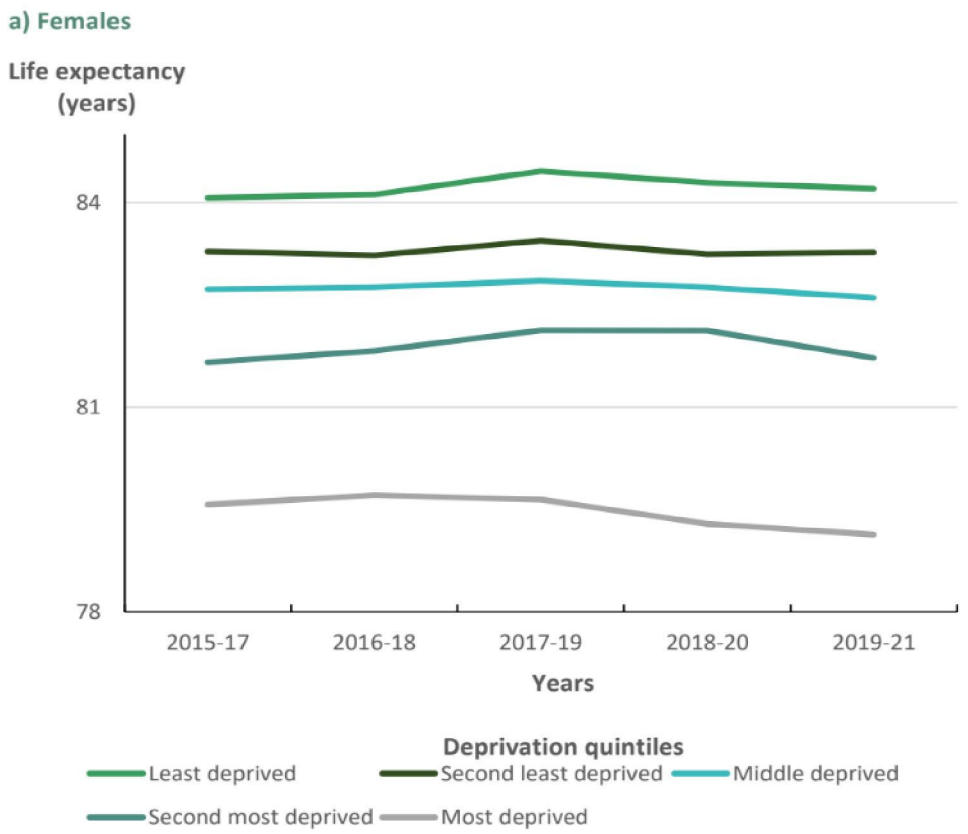


Figure 5: Life expectancy at birth by area-level deprivation quintiles and sex, Northern Ireland, 2015-17 and 2019-21





43. Regional inequalities in health in England also increased in this period. This is shown in Figure 6 (reproduced from the *Marmot Review 10 Years On*, 2020*)* which compares trends in life expectancy for men and women for the least and most deprived deciles in each region of England for 2010-2 and 2016-8. For both men and women living in the least deprived decile (10%) the regional differences are small. For men and women living in the most deprived decile, the regional differences are much bigger. Throughout the period, life expectancy is highest for men and women in the least deprived areas in London (small grey dotted line) and lowest for those living in the most deprived areas of the North East of England (solid dark grey line). Over the decade, life expectancy for both men and women rose in London but fell in most regions outside London.

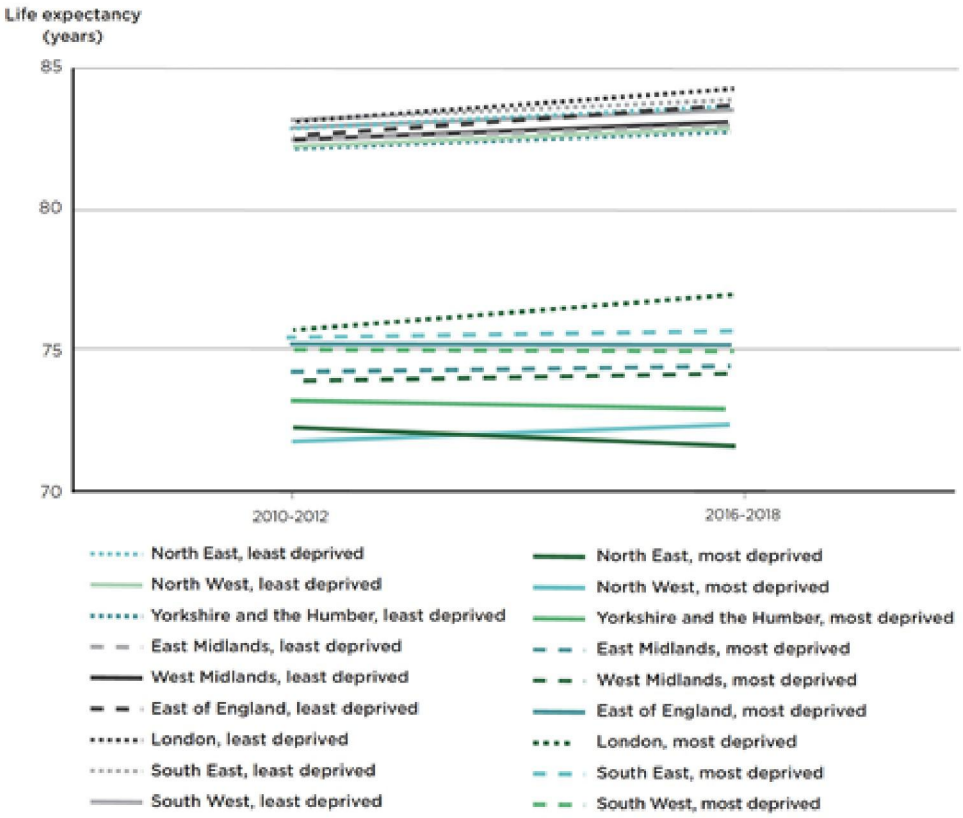
44. Figure 7 (from *The Marmot Review 10 Years On*, 2020*)* explores the contrasting trends in life expectancy between London and the North East of England in more detail. It shows the intersection between regional differences and deprivation. The differences in life expectancy for men and women living in the North East region and in London are very small for those in the least deprived decile 10, but the regional gap in life expectancy is larger for both men and women living in the most deprived deciles 1 and 2. Men and women living in the most deprived areas in the North East have a much lower life expectancy than people living in the most deprived areas of London. Or, to put it another way, the health disadvantage of living in the North East increases with greater deprivation. Indeed, the health effects associated with deprivation appear to be amplified in the North East (Bambra et al, 2023).

45. The time trends in Figure 7 also show that regional health inequalities have increased since 2010. In London, life expectancy increased for both men and women across the whole gradient: male and female life expectancy increased in every decile. In contrast, in the North East, life expectancy did not increase for men in the lowest deciles and it actually fell for women in the most deprived 10%. There was no improvement in life expectancy over the period from 2010 for women in deciles 1-6, and no improvement for men in deciles 1-3. For those deciles in the North East where life expectancy did increase, it was a smaller increase than in London. This is concerning because it is a reasonable epidemiological expectation that life expectancy should continue to improve. But, in the decade after 2010, life expectancy fell for the poorest 10% of people outside London.

46. The health picture, then, coming into the pandemic was stalling life expectancy, increased regional and deprivation-based health inequalities, and worsening health for the poorest in society.

Figure 6: Life expectancy at birth by sex for the least and most deprived deciles in each region, England, 2010-2 and 2016-8

a) Males



b) Females

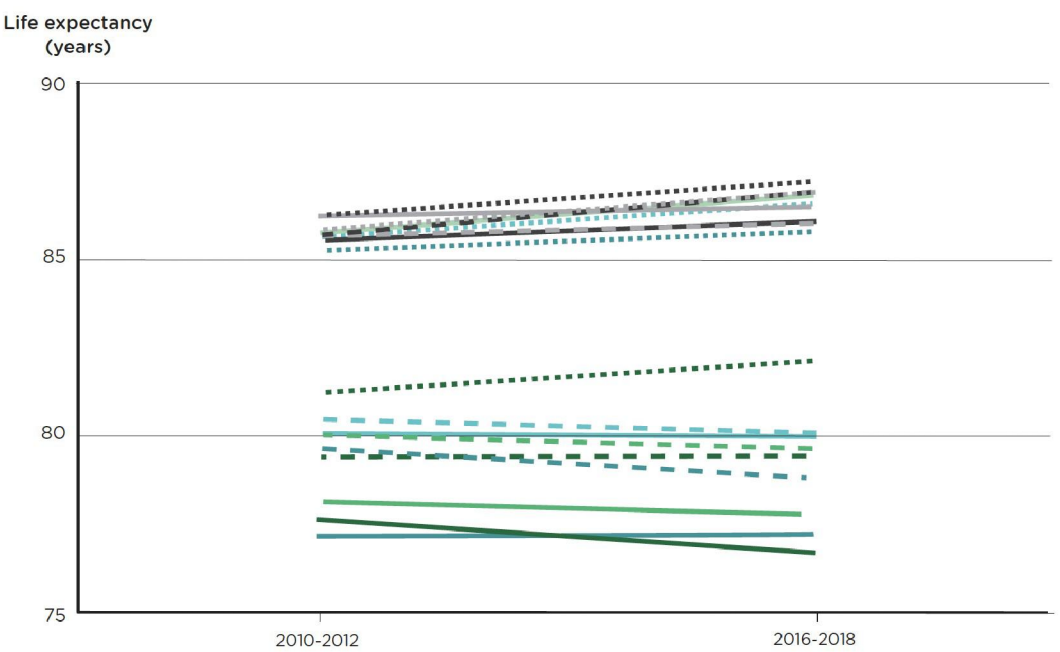
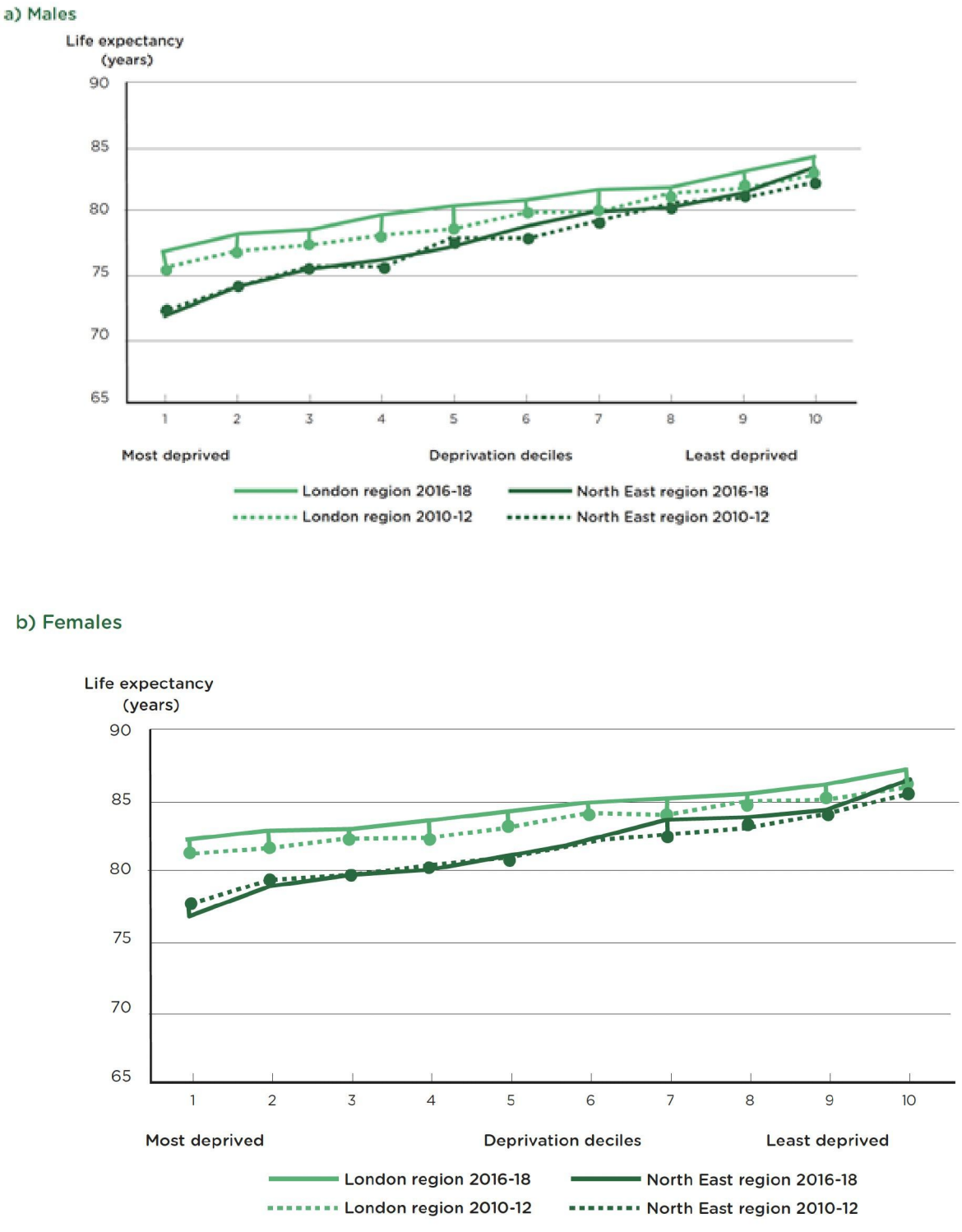


Figure 7: Life expectancy at birth by sex and deprivation deciles in London and the North East regions, 2010-12 and 2016-18



Causes of the trends in health and health inequalities

47. *Health Equity in England: The Marmot Review 10 Years On*, published in February 2020, looked back on health and health inequalities in the decade after 2010. This report (led by Professor Sir Michael Marmot), concluded that changes in the social determinants of health (as defined in paragraphs 14-21 above) associated with UK-wide austerity policies since 2010, were likely to be the causes of the adverse changes in health and health inequalities across the countries of the UK. That said, changes in health over time, in no way resemble a controlled experiment. It is always challenging to demonstrate causation in these circumstances. We do though have a clear causal model of the social determinants of health (see paragraphs 14-21 above), and extensive international evidence supporting each piece of the model (synthesised in WHO, 2008; Marmot, 2010; 2020). That austerity likely contributed to driving health changes is the majority view amongst health inequalities researchers (as examined in detail by Case and Kraftman, 2022 and McCartney et al, 2022a). However, a couple of European studies have suggested that declines in life expectancy in some age groups may have pre-dated 2010 whilst others have noted the potential contributory role of the accumulation of economic and social disadvantage arising from the rapid deindustrialisation of the UK in the 1980s and 1990s (examined further in Case and Kraftman, 2022).

48. Since 2010, public health budgets and local authority budgets across all four UK countries have been substantially reduced, the NHS in all four countries was awarded below historical average budget increases. For example, the NHS in England, received around 1.4% real terms increases per annum between 2009-2019 compared to a historical average rise of 3.7% since it was established in 1948 (The Kings Fund, 2022). When adjusting for demographic change (i. e. a larger proportion of older people) and inflation, then the NHS budget in England grew at 2% per capita per year from 1979 to 1997; at 5.7% a year from 1997 to 2010; but shrunk by 0.07% from 2010 to 2015; and fell by 0.03% from 2015 to 2021 (Appleby and Gainsbury, 2022). Government commitments for 2021-2024 will see an increase of 2.05% per capita per year. Public expenditure on social care was also reduced between 2010 and 2019, particularly in England, as part of the local government budget reductions. The impact on social care is noted in a recent Nuffield Trust report into social care during COVID-19: *"A decade of sustained cuts to local authority budgets had put downward pressure on the fees paid to providers, which meant many were already struggling, and had low reserves, as they went into the Covid-19 crisis"* (Nuffield Trust, 2023, p21). These disproportionately impacted on the most deprived local authorities in the four countries of the UK and resulted in substantial service reductions.

49. The National Audit Office has noted that in England *"funding to local authorities has fallen substantially since 2010-11, to help meet the government's objective to reduce the public deficit"* (National Audit Office, 2018). Across England, local authority spending power fell by 28.6% in real terms from 2010-11 to 2017-18 (National Audit Office, 2018). However, there were inequalities in these spending reductions across the country. For example, in England, the most deprived 20% of local authorities (including places such as Middlesbrough) had to make cuts to adult social care of 17% per person compared to only 3% per person for councils in the least deprived fifth of areas (such as Hart in Hampshire) (Institute for Fiscal Studies, 2018). These inequalities in local government funding also led to other differential reductions in the wide range of services that local government provides (including housing, highways and transport, environment and regulatory and planning and development services) (Alexandros et al, 2021; Jenkins et al, 2022). Local authority budgets were also reduced in Scotland during this period: real terms change figures show that between

2013-14 and 2018-19, the local government revenue settlement decreased by 7.5% (£810 million). In the same period, the Scottish Government revenue budget fell by 2.8% (£870.4 million) (The Scottish Parliament, 2020). In Glasgow City, the most deprived area of Scotland with the lowest life expectancy, local government funding was reduced by £270 per head (The Scottish Parliament, 2020).

50. Additionally, the local government public health grant for English local authorities was reduced by 24% in real terms per capita since 2015/16 (equivalent to a reduction of £1bn) (The Health Foundation, 2021). The reductions fell more heavily on those living in the most deprived areas. For example, in England, in Blackpool, ranked as the most deprived upper tier local authority in England, the per capita cut to the grant has been one of the largest – at £43 per person per year and in Middlesbrough, the per capita cut to funding was £39 per person per year. This compares to a reduction of just over £9 per head in Surrey - one of the most affluent areas in the country (The Health Foundation, 2021). Local authority budgets were simultaneously challenged by growth in demand (e.g. for social care as a result of our ageing population) (National Audit Office, 2018).

51. Austerity across the UK was also characterised by significant changes in welfare services and benefits. The 2012 Welfare Reform Act (HM Government, 2012) which led to the introduction of Universal Credit (which combined six working-age benefits and tax credits [legacy benefits] into a single monthly payment, a 'digital by default' claims process, job-seeking conditions applied to eligibility and a waiting-period before the first payment); the introduction of the household benefit cap; the under-occupancy penalty (colloquially referred to as the bedroom tax); a reduction in tax credits; and freezing child benefit rates (as well as abolishing it for higher rate tax payers). The subsequent Welfare Reform and Work Act (HM Government, 2016) included a further reduction in the household benefit cap; freezing all working-age social security benefits for four years; introducing a two-child limit for Child Tax Credit and Universal Credit; and further reductions in tax credits. These UK wide welfare changes impacted on people across England, Wales, Scotland and Northern Ireland (although there were some mitigations of welfare reform in the devolved nations, see paragraphs 76-80).

52. These changes to the welfare system reduced the local income of deprived areas. Research based on Treasury data has suggested that the financial impacts of welfare reforms varied greatly across the country (Beatty and Fothergill, 2016). The older industrial areas (including parts of North West and North East England such as Blackpool and Middlesbrough, South Wales such as Blaenau Gwent and Neath Port Talbot; Derry, Strabane and Belfast in Northern Ireland and the Greater Glasgow area in Scotland) as well as less prosperous coastal areas (e.g. Blackpool and Great Yarmouth) experienced the largest reductions. In contrast, the most prosperous areas across the UK experienced the smallest reductions (e.g. Guildford, Richmond upon Thames in the South East of England or Aberdeenshire in the North East of Scotland).

53. Table 1 provides a summary of the estimated financial losses arising from welfare reform across the nine English regions, Scotland, Wales and Northern Ireland (Table 1 data is taken from Beatty and Fothergill, 2013 and Beatty and Fothergill based their calculations on official statistics from HM Treasury estimates of the financial savings, the UK government's Impact Assessments, and benefit claimant data). Table 1 shows that the financial losses arising from welfare reform (up to 2014/5) were largest in Northern Ireland (£650 per working age adult, per year), the North East and North West regions of England (£560 per working age adult, per year) and Wales (£550 per working age adult, per year). In Scotland the losses were £480 per working age adult, per year. The lowest losses were in the South East region of England at £370

per working age adult, per year. Later analysis by Beatty and Fothergill (2015) found that these losses had increased. They would also have been higher in Scotland, Wales and Norther Ireland if not for the mitigation strategies which the devolved administrations implemented (key aspects of which are summarised in Topic 3, paragraphs 76-83). The higher receipt of benefits and tax credits amongst people living in more deprived areas across the UK is why the reforms had a greater financial impact in more deprived parts of the UK.

Table 1: Estimated financial loss by 2014/15 arising from UK welfare reforms, by Devolved Administration and English region

		Estimated loss £m p.a.	Loss per working age adult £ p.a.
English Regions			
	North West	2560	560
	North East	940	560
	West Midlands	1740	490
	Yorkshire & Humber	1690	500
	London	2910	520
	East Midlands	1310	450
	South West	1440	430
	East	1490	400
	South East	2060	370
Scotland		1660	480
Wales		1070	550
Northern Ireland		750	650

54. The welfare changes also disproportionately impacted low-income households of working-age and those with children (Beatty and Fothergill, 2016). Post-2010, child poverty rates increased substantially - particularly in the most affected parts of the country. Using the relative measure of living in a household at less than 60% of the national median income (calculated for each devolved country respectively), in England, child poverty after housing costs was 28% in 2014/15. It rose to 30% by 2019/20 (Stone, 2022). However, in the North East region of England it increased from 26% to 37%, in the West Midlands it rose from 30% to 35% and in Yorkshire and Humber it rose from 28% to 335 (Stone, 2022). In Scotland it rose from 22% to 24% and in Wales it rose from 29% to 31% whilst in Northern Ireland it fell slightly from 25% to 24% (Stone, 2022).

55. Whilst the UK employment rate increased since 2010, *"work quality has not seen such improvements. In reality there have been several new types of poor-quality work emerging, putting health equity at risk"* (Marmot, 2020: p61). From a health

inequalities perspective (as noted previously in paragraph 29), low paid, insecure and health-damaging work is not a desirable option (Marmot 2010).

56. It is plausible that the overall cuts in public spending and the regressive nature of the cuts in local government expenditure did contribute to the increase in health inequalities that we have described. Indeed, there is evidence for a correlation at local level in England – the greater the cuts in local government expenditure the greater the adverse effect on life expectancy (Alexandros et al, 2021).

57. The overall impression that UK government austerity policies post-2010 had an adverse effect on health inequalities is also supported by analyses of England showing that health inequalities narrowed in the period of higher public expenditure from around 2000 to 2010, and began to widen again post 2010 (as outlined above). Scientific research has found that between 2000 and 2010, geographical inequalities in life expectancy, infant mortality rates and mortality amenable to health care were reduced in England (Barr et al, 2014; Robinson et al, 2019; Holdroyd et al, 2022). In contrast, these inequalities have increased since 2010 (Taylor-Robinson et al, 2019; Marmot 2020)

EXPERT OPINION TOPIC 1

58. Substantial systematic health inequalities by socio-economic status, ethnicity, area-level deprivation, region, socially excluded minority groups and inclusion health groups existed during the relevant period. There is evidence that such health inequalities increased during the relevant period. The majority scientific view is that the underlying causes of health inequalities are the social determinants of health: the conditions in which people are born, grow, live, work, and age. It is plausible that adverse trends in these social determinants of health since 2010 led to the worsening health picture in the decade before the onset of the pandemic. In short, the UK entered the pandemic with its public services depleted, health improvement stalled, health inequalities increased and health among the poorest people in a state of decline.

Topic 2: How the consideration of health inequalities (both perceived and actual) feature within the public health structures in the UK government, the devolved administrations and local government and the extent to which that has changed over the relevant period

Topic 3: Whether, and the extent to which, there is a variation in the level of consideration of health inequalities generally between the UK government and the devolved administrations

59. This section addresses topics 2 and 3 together as it provides a brief overview of national and local public health structures and health inequalities policy in England, Scotland, Wales and Northern Ireland and the extent to which that has changed over the relevant period (2009 to 20th January 2020) as well as a summary of the current structures post-2020.

UK WIDE CONTEXT

60. The UK wide policy trends since 2010 (as outlined in Topic 1, paragraphs 47-57) are also relevant in terms of understanding the consideration of health inequalities and the public health structures within the UK government, the devolved administrations and local government agencies – most notably the reductions in public sector budgets since 2010 and the devolution of health policy.

61. The wider UK context also impacted on services in the devolved administrations of the UK. This is because the devolved administration's budgets are set by the UK government. So, Scotland, Wales and Northern Ireland also experienced reductions in public spending. The Barnett formula is used by the UK Treasury to calculate the annual block grants for the Scottish government, Welsh government and the Northern Ireland executive. It therefore determines the overall funding available for devolved public services such as healthcare and education. The Barnett formula calculates devolved budgets by using the previous year's budget as a starting point, and then adjusting it based on increases or decreases in similar spending per person in England. So, increases (or decreases) in public spending in England are reflected in the overall amount of money allocated to devolved budgets (Institute for Government, 2022). However, it is still up to the devolved administrations to determine where across their devolved policy areas, their funds are allocated.

62. Health care and public health are devolved responsibilities so there is within UK variation in terms of public health structures and approaches to health inequalities policy. The key differences are summarised in the following sections.

ENGLAND

63. The public health and health inequalities policy landscape in England has experienced many changes from 2009 to 2020. In this section, we describe them chronologically.

1999-2010: National Health Inequalities Strategy

64. Government health inequalities policy in the 2000-2010 period was shaped by the Acheson Inquiry (1998) which led to the implementation of a national health inequalities strategy in England. This multifaceted strategy included a wide range of nationally (e.g. an increase in NHS budgets – particularly in more deprived areas; establishment of Sure Start Children's Centres; implementation of New Deal for Communities) and locally (including Health Improvement Programmes, Health Action Zones, Healthy Living Centres) delivered activities. This was accompanied by an increase in social security (particularly for the poorest families e.g. the Child Tax Credit). Responsibility for health inequalities lay within the NHS both locally and nationally. The government also set national public service agreement targets for tackling health inequalities: to reduce the life expectancy and infant mortality gaps between the 20% most deprived and the English average by 10%. Scientific research has found that inequalities in life expectancy, infant mortality rates and mortality amenable to health care were reduced by 2010 (Barr et al, 2014; Robinson et al, 2019; Holdroyd et al, 2022).

2010-2020: Locally Addressing Health Inequalities

65. Health inequalities policy in the 2010-2020 period was shaped by a new public health system as outlined in the Health and Social Care Act 2012. This included the transfer of public health responsibilities from the NHS to local authorities as well as the establishment of Health and Wellbeing Boards (joint agencies between local authorities and local NHS Clinical Commissioning Groups). NHS England and Clinical Commissioning Groups were also given a legal duty to reduce inequalities in access to and outcomes from NHS care. Public Health England (PHE) was also created in 2013 (as an executive agency of the Department of Health and Social Care, and a distinct organisation with operational autonomy). It provided government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific expertise and support – including guidance on reducing health inequalities at the national level and between local communities. As noted in our response to Topic 1, health inequalities in England increased between 2010 and 2020.

2020-2023: Levelling Up Health Inequalities

66. Public policy responsibility for addressing health inequalities is currently shared across local authorities, Integrated Care Systems (which replaced Clinical Commissioning Groups following the 2022 Health and Care Act and with responsibility for tackling inequalities in outcomes, experience and access in health and care), NHS England, and since 2021, two new national bodies which replaced PHE: the Office for Health Improvement and Disparities (with a remit for *"improving the nation's health so that everyone can expect to live more of life in good health, and on levelling up health disparities to break the link between background and prospects for a healthy life"*) (Office for Health Improvement and Disparities, 2021) and the UK Health Security Agency (with a focus on pandemic preparedness and infectious disease surveillance). The UK government has made a commitment to *"protect the public's health, improve population health resilience and level up unacceptable variations in health"*. These were also accompanied by the announcement of a Health Promotion Taskforce, a Cabinet committee to help provide a cross-government vehicle for promoting public health and reducing health inequalities. A £50 million budget for health inequalities research in local government through the National Institute for Health and Care Research (NIHR) was also implemented in 2022-2023 (Department of Health and Social Care, 2022). Further, as a result of the 2019 NHS Long Term Plan, in January 2021, the National

Healthcare Inequalities Improvement Programme was established within NHS England. It works with other programmes and policy areas across NHS England, as well as with partners in the wider system, patients and communities, to increase equity within access, experience and outcomes of NHS services (NHS England, 2022b).

67. The Levelling Up strategy set out in the Levelling Up White Paper published in February 2022 (Department for Levelling Up, Housing and Communities, 2022) includes a commitment to narrow the gap between areas with highest and lowest life expectancy by 2030 and increase healthy life expectancy overall by five years by 2035. However, they did not specify by how much the gap should reduce (Ralston et al, 2022).To achieve its aims, the strategy sets out that it will boost economic growth by expanding the private sector, and improve public services, restore community pride and empower leaders and communities to act locally. The strategy encompasses a series of new funding streams (e.g regional investment funds, the Levelling Up Fund, Towns Fund, Community Renewal Fund and Shared Prosperity Fund) alongside changes to existing funding to focus resources on areas outside London and the Southeast. Further action includes changes to planning and tax regulations to promote regeneration and growth, along with housing, education, youth service and employment programmes. The levelling-up budget in the 2022 White Paper was £4.8billion over four years (Department for Levelling Up, Housing and Communities, 2022). The governance framework for delivery of the strategy additionally extends existing devolution policy in England with an emphasis on regional mayors (Ralston et al, 2022).

SCOTLAND

68. Health in Scotland has always been independent of and separately administered (e.g. the National Health Service in Scotland was created under its own Act of Parliament [National Health Service Scotland Act 1947]), and the Secretary of State for Scotland was responsible for the NHS in Scotland from the outset. Since devolution, health care and public health have been devolved responsibilities of the Scottish Parliament and the Scottish Government. The main organisational responsibility for public health sits within the NHS health boards (e.g. Directors of Public Health are employed by Scottish Health Boards, whereas since 2012 in England, Local Authorities have employed them). However, health boards work closely with local authorities via local health partnerships and community planning partnerships. There is a national performance framework for cross-government working in Scotland. This is intended to get different directorates to work more closely together on a variety of national outcomes – this includes a focus on health inequalities. There is also a national health inequalities team within the Scottish government – which sits within the Directorate of Population Health.

69. Since devolution, several health policy plans and strategies in Scotland have included a focus on tackling health inequalities (detailed in Finch et al, 2023), most notably:

    69.1. *Towards a Healthier Scotland* (1999) was released in the same year as the English White Paper, *Saving Lives* (1999). It also draws directly on the UK-government commissioned 1998 Acheson Independent Inquiry into Inequalities in Health – with a focus on the social determinants of health.

    69.2. *Improving Health in Scotland: The Challenge* (2003) – this built on the 1999 document and also covered obesity, tobacco and alcohol policy. In 2003, the Scottish Executive also created NHS Health Scotland, a special health board with responsibility for health improvement and tackling health inequalities, and

the Glasgow Centre for Population Health in 2004, which was explicitly developed *"to generate insights and evidence, support new approaches, and inform and influence action to improve health and tackle inequality".*

69.3. *Closing the opportunity gap* (2004) was a cross-policy strategy aimed at reducing poverty and social exclusion including a health dimension. It places a strong emphasis on the importance of early years, social determinants and closing the 'opportunity gap' between more and less deprived areas. States that 'tackling health inequalities is the 'overarching aim' of the health improvement agenda' (Smith and Hellowell, 2012).

69.4. *Equally Well* (2008), was led by a Ministerial Task Force. It set out a policy programme covering early years, cardiovascular disease and cancer, drug and alcohol problems, violence, and mental health and wellbeing. The Ministerial Task Force also led to the establishment of annual monitoring of health inequalities in Scotland and any progress in reducing them (The Scottish Government Population Health Directorate, 2020).

69.5. In 2015, there was a review of Public Health in Scotland which had a specific remit to examine public health systems and functions and their contribution to improving population health and reducing (health) inequalities. This was published in in 2016 (Scottish Government, 2016) and led to the establishment of the *Public Health Priorities for Scotland* (2018) and *Public Health Scotland* (2019).

69.6. *Public Health Priorities for Scotland* (2018), this set out national and local government priorities for health over the next decade. These were underpinned by a focus on *"reducing the health inequalities which exist in Scotland"* and had tackling health inequalities as *"the primary objective of our collaborative action and runs through all of our public health priorities"* (The Scottish Government Population Health Directorate, 2018).

69.7. A new national body - *Public Health Scotland* – was established in 2020 as a national Special Health Board within NHS Scotland. It amalgamated three bodies that already existed: NHS Health Scotland, Health Protection Scotland and the NHS Information and Services Division. It has responsibility for providing evidence, analysis and intelligence to support public health and health inequalities policy development nationally and to support local activity.

69.8. The Scottish parliament's *Health and Sport Committee* covers health inequalities. In 2022, they held an official consultation and inquiry, which sought extensive evidence on health inequalities, and which resulted in a series of recommendations around improving the social determinants of health in Scotland to reduce health inequalities.

70. Whilst Scotland has had powers to vary income tax rates since devolution, the Scotland Act of 2016 provided for more control of rates and bands of income tax as well as giving some powers over certain elements of social security including disability and carer benefits and the ability to top up existing benefits. This resulted in some Scottish changes to UK social security reforms in the period – most notably covering in full the reductions in Housing Benefit from the under-occupancy penalty (so-called 'bedroom tax') through Discretionary Housing Payments in 2013 and absorbing the costs of the cuts in Council Tax Benefit for welfare recipients (The Scottish Government, 2013). More recently, as part of its child poverty strategy, the Scottish Government has established the Scottish Child Payment (an additional £25 per week for parents of children under the age of 16 who are in receipt of

income-related benefits such as Universal Credit) (The Scottish Government, 2022b). Further, the Scottish Government has taken over responsibility for disability-related benefits from the UK government in 2022. Other areas of policy difference between Scotland and England that have potential relevance for health inequalities include free prescriptions from NHS Scotland (since 2011), free personal care for adults aged 65 or over (since 2002), universal free school meals for all primary school children in Scotland (from 2022), a minimum unit price for alcohol (Act passed in 2012, policy implemented in 2018), and no tuition fees for higher education (since 2000).

WALES

71. The Welsh Parliament (Senedd Cymru) and Welsh (Assembly) Government were established in 1999. Since 2006, Wales has had primary legislative powers. Health care and public health is a devolved responsibility of the Welsh Government. In 2004, the Health and Social Care Department was created as part of the Welsh Assembly Government. There was a major restructuring of health and the NHS in Wales in 2009 and since then, health care and public health structures in Wales have been stable with none of the reorganisations experienced in England. As such, throughout the whole period (2009-2020), responsibilities for health inequalities have consistently sat with Public Health Wales (Welsh: Iechyd Cyhoeddus Cymru) and the seven NHS Local Health Boards and the two other Welsh NHS trusts (NHS Wales, 2023). Public Health Wales is the unified national NHS Trust with national responsibility for protecting and improving health and wellbeing and reducing health inequalities in Wales (Public Health Wales, 2023). Public Health Wales works closely with Directors of Public Health and public health professionals within each Health Board (Mortimer, 2023: 5). Welsh NHS Local Health Boards and the Welsh Ambulance Services Trust for emergency services, and Velindre NHS Trust (offering specialist services in cancer care and a range of national support services) also have responsibility for reducing health inequalities across their population (Welsh Government, 2023a). Welsh NHS organisations work closely with their Local Authority partners, and wider public sector and third sector partners, through Regional Partnership Boards (RPBs) and Public Service Boards (Mortimer, 2023: 5). RPBs bring together health boards, local authorities and the third sector to meet the care and support needs of people in their area. Public Services Boards improve joint working across all public services in each local authority area in Wales (Mortimer, 2023: 5). Additionally, there are also Community Health Councils in Wales – which are statutory lay bodies that represent the interests of the public in the health service in their district, their views of their local NHS and the services it provides. Local Health Boards and Local Authorities also have a joint statutory duty to develop a local Health, Social Care and Well Being Strategy. This must identify how they intend to improve the health and wellbeing of residents in their localities and include a focus on improving health and wellbeing and reducing inequities (Welsh Government 2023b).

72. Key policy differences with England of potential relevance for health inequalities include free NHS Wales prescriptions (since 2007) and a 12-month pilot scheme providing a guaranteed income for 2 years for a cohort of care leavers (since 2022). In 2015, the *Well-being of Future Generations (Wales) Act* was passed. It focuses on *"improving the social, economic, environmental and cultural well-being of Wales"* and includes goals such as *"A healthier Wales"* and *"A more equal Wales"*. This puts a *"well-being duty on public bodies"* (2015, sections 1 and 2), which means that public bodies covered by the act must *"work to improve the economic, social, environmental and cultural well-being of Wales"*. To do this they must set and publish well-being objectives and take action to make sure they meet the objectives they set (The Welsh Government, 2015). Additionally, Health Impact Assessments, have been a key

public health tool promoted by policymakers in Wales (Green et al, 2022). The Public Health (Wales) Act (2017) placed a duty on public bodies to carry out Health Impact Assessments (including consideration of health inequalities impacts) in specified circumstances (policies, plans and programmes which have outcomes of national or major significance, or which have a significant effect at the local level on public health). The Public Health (Minimum Price for Alcohol) (Wales) Act of 2018 introduced a minimum unit alcohol price (of at least 50p per unit) in Wales in March 2020 (Welsh Government, 2018). In 2010, the Welsh Government introduced the Children and Families (Wales) Measure 2010, it placed a duty on Welsh Ministers to set child poverty objectives and to report every 3 years on progress towards achieving those objectives (Welsh Government, 2022). From September 2023, there will also be a national default 20mph speed limit on restricted roads across Wales (Welsh Government, 2021). Like Scotland, the Welsh Government also covered in full the reductions in Housing Benefit from the under-occupancy penalty (so-called 'bedroom tax') through the Welsh Government top-up to Discretionary Housing Payments. They also maintained entitlement to council tax relief (Welsh Government, 2015).

NORTHERN IRELAND

73. Devolution was established as part of the Belfast Agreement in 1998. In 1999, the Department of Health (Northern Ireland) was established, and it has overall responsibility for health and social care services. The Department of Health oversees the Public Health Agency and several other Health and Social Care bodies including five NHS trusts. All these bodies are accountable to the Department which in turn is accountable, through the Minister, to the Northern Ireland Assembly (or the UK government in periods when devolution is suspended) (Northern Health and Social Care Trust, 2023). The Public Health Agency was established in 2009 under a major reform of health structures in Northern Ireland (Public Health Agency, 2023a). Amongst other things (including health and social wellbeing improvement; health protection; public health support to commissioning and policy development; research and development), the Public Health Agency is required to *"create better inter-sectoral working, including enhanced partnership arrangements with local government, to tackle the underlying causes of poor health and reduce health inequalities"* (Public Health Agency, 2023b). Additionally, the five NHS trusts are tasked with improving population health and addressing health and social care inequalities. Additionally, the Institute of Public Health, which is a whole of Ireland body, was established in 1998 (Institute of Public Health, 2022). It is funded by the Departments of Health in the Republic of Ireland and Northern Ireland and it is accountable to both Chief Medical Officers. It describes its work as focusing *"on promoting health and wellbeing, improving health equity, and reducing health inequalities throughout the life course"*.

74. Health and social care and public health structures in Northern Ireland have been stable throughout the whole period (2009-2020), with none of the reorganisations experienced in England. However, much of the post-devolution period has been marked by suspensions of the Northern Ireland Assembly (11 February to 30 May 2000, 14 October 2002 to 7 May 2007, 9 January 2017 to 1 January 2020) as well as recent difficulties with appointing a new executive (since May 2022). These suspensions impeded any new health policy development and implementation because the UK government had to take over in a caretaker role with no remit to develop new policies.

75. Key policy differences with England of potential relevance for health inequalities include free NHS prescriptions (since 2010). Like Scotland and Wales, the Northern

Ireland Executive also mitigated against reductions in Housing Benefit from the under-occupancy penalty (so-called 'bedroom tax') via the payment of a Welfare Supplementary Payment (Northern Ireland Housing Executive, 2019). They also did not pass on to claimants, the costs of the cuts in Council Tax Benefit. The Northern Ireland government also consulted on the introduction of a minimum unit alcohol price in 2022 (Department of Health, 2022).

IMPACT OF DEVOLVED POLICIES ON HEALTH INEQUALITIES

Scotland Specific Policies

76. We could not find any studies which examined the health inequalities impacts of no tuition fees for higher education (since 2000) or free personal care for adults aged 65 or over (since 2003). It is too soon for evaluations to have been conducted for the more recent Scottish policy differences (the Scottish Child Payment [2022], changes to disability-related benefits [2022], universal free primary school meals [2022]).

Wales Specific Policies

77. We did not find any evaluations of the health inequalities impacts of the Children and Families (Wales) Measure 2010 or the Well-being of Future Generations (Wales) Act 2015. Nor did we find any studies of the health inequalities impacts of The Public Health (Wales) Act (2017) which placed a duty on public bodies to carry out Health Impact Assessments. It is too soon for evaluations to have been completed for the more recent Welsh policy differences (the guaranteed income scheme pilot for people leaving the state care system [since 2022] or the national 20mph speed limit [from Sept 2023]). However, international studies of the latter suggest that such measures can reduce accidents, injuries and deaths (Cairns et al, 2015).

Free prescriptions policy in Wales, Northern Ireland and Scotland

78. We found one relevant study from Scotland, one from Wales and three evaluations of similar policies from Canada, the USA and New Zealand. One large study from Scotland which assessed the impact of abolishing prescription fees on hospital admissions for asthma and COPD (Chronic obstructive pulmonary disease) reported mixed evidence (Williams et al., 2018). On the one hand, there was some decrease in admissions for asthma and COPD amongst people receiving free prescriptions and some signs of a reduction in socio-economic inequalities in admissions. However, the authors concluded that they *"did not find sufficient evidence that universal free prescriptions was a demonstrably effective or ineffective policy, in terms of reducing hospital admissions or reducing socio-economic inequality in hospital admissions"* because there was *"considerable variation"* across the study period Williams et al, 2018, p.1). We found one small study from Wales which assessed the impact of the abolition of prescription fees on the use of medicines (Groves et al, 2010). It reported a rise in the number of items prescribed but found little difference in the effects by socio-economic status. Studies of similar policies in other countries have also assessed the impact of free prescriptions on health inequalities. One study by Booth and colleagues (2012) from Canada demonstrated that socio-economic inequalities in cardio-vascular disease burden reduced significantly in those aged over 65 who were eligible for universal access to prescription drugs. A study from the USA (Choudhry et al., 2014) found that removing fees for the medications required after a myocardial infarction resulted in a reduction in first readmission for major vascular event or coronary revascularization among 'non-white' patients. Finally, a recent study from New Zealand (Norris et al., 2023) of a population sample exclusively from areas of high socio-economic deprivation taking medications for diabetes, COPD or severe psychological illness, demonstrated a 30% reduction in the odds of those

receiving free prescriptions being admitted to hospital compared to the group required to pay the standard prescription co-payment.

Minimum unit price for alcohol policy in Scotland and Wales

79. We found several studies assessing the health inequalities impacts of the minimum unit price for alcohol. One study of Scotland found a 3.0% to 3.5% decline in the overall volume of pure alcohol sold in Scotland with a greater effect amongst heavier drinkers (Holmes et al, 2023). Similarly, O'Donnell and colleagues (2019) found a reduction in weekly purchases of alcohol per household and that this reduction was greatest in households purchasing the most alcohol. More explicitly on inequalities, Wyper and colleagues (2023) demonstrated a reduction in deaths and hospital admissions attributable to alcohol, with the greatest reductions in the 40% most deprived areas in Scotland. An international evidence review (Maharaj et al, 2023) of 22 studies (from Australia, Canada, England, Ireland, Scotland, South Africa and Wales) concluded that minimum unit price for alcohol policies could reduce both acute and chronic alcohol-related admissions (by 3%–10% annually), as well as reduce inequalities by targeting the heaviest consumers from the most deprived groups.

Welfare reform policies in Wales, Northern Ireland and Scotland

80. We could not find any evaluations of the health effects of absorbing the costs of the cuts in Council Tax Benefit for welfare recipients. Nor could we find any studies evaluating the impact of not implementing the Under-Occupancy Charge on health or health inequalities. However, some insights can perhaps be gained by looking at the impact of the Under-Occupancy Charge (colloquially called the 'Bedroom Tax') in England. We found three studies which did this. Two studies used data for England and Wales from the 'Understanding Society' household survey. One of the studies reported a substantial fall in income for those experiencing reductions in housing benefit as a result of the Under-Occupancy Charge (Gibbons et al, 2020). This was accompanied by a slight decline in health satisfaction. The second study reported a 'moderate' increase in psychological distress for social renters living in properties eligible for the under-occupancy charge (Kim et al, 2022). The third study, which conducted interviews with people in the North East of England who experienced reductions in housing benefit due to the Under-Occupancy Charge, found that their income was reduced, leading to a decline in healthy lifestyles and detrimental effects on mental health (Moffat et al, 2016).

EXPERT OPINION TOPICS 2 AND 3

81. There is evidence that health inequalities were considered within all public health structures in the UK government, the devolved administrations and local government. The nature of how health inequalities were considered over the period were largely consistent within the devolved administrations over the period. However, the way in which health inequalities were considered by the UK government (and the policies enacted as a result) changed over the period. This is also reflected in terms of public health structures, where there was stability in the devolved administrations but substantial organisational changes in England over the relevant period. Scotland particularly enacted more actual policy changes with potential relevance to tackling health inequalities in the period. Across the UK, the period was also characterised by substantial reductions in public health budgets, local authority budgets, and the NHS was awarded below historical average budget increases (as described in Topic 1, paragraphs 48-54).

Topic 4: Whether, and the extent to which, health inequalities were addressed in the UK government and the devolved administration's planning for a pandemic

82. In this section, we provide our assessment of the extent to which health inequalities were considered in the various UK pandemic plans and planning exercises for pandemic influenza, swine flu, Ebola, MERS, Lassa fever, avian influenza, and novel coronavirus. Specifically, we evaluated documentation related to: Exercise Winter Willow (2007); Exercise Taliesin (2009); Hine review (2010); UK Influenza Pandemic Preparedness Strategy (2011) and its Equality Impact Analysis (2011); Northern Ireland pandemic flu planning (2013); Exercise Valverde (2015); Ebola Preparedness Surge Capacity Exercise (2015); Silver Swan (2016); Exercise Alice (2016); Exercise Northern Light (2016); Exercise Cygnus (2016); Silver Swan (2016); National Risk Register (2017), Exercise Typhon (2017); Exercise Broad St (2018); Exercise Cerberus (2018); Exercise Pica (2018); Pandemic Influenza Bill Equalities Assessment (2019). and the first three Scientific Advisory Group for Emergencies (SAGE) planning minutes (2020). We also examined more general emergency planning documentation related to The Civil Contingencies Act: The Civil Contingencies Act guidance (2008, 2011, 2012, 2013, and 2016); Identifying People Who Are Vulnerable in a Crisis Guidance (2008); Emergency Response and Recovery Non statutory guidance (2013); and Human Aspects in Emergency Management Guidance (2016). Additionally, we were given access to the Module 1 Corporate Witness Statements (those available up to May 2nd 2023). It should be noted that most civil contingency, emergency and pandemic planning arrangements are developed and implemented on a UK-wide basis, but we have also reviewed any available supplementary documentation specifically related to the devolved administrations.

83. These plans and exercises varied considerably in size, scale and scope – ranging from very specific, small exercises (such as Exercise Northern Light of 2016 which examined the challenges likely to be faced by the Newcastle upon Tyne Hospitals NHS Foundation Trust when the Royal Victoria Infirmary became the UK's main High Level Isolation Unity facility for July and August 2016) to large, national and encompassing documents (e.g. the 2011 UK Influenza Preparedness Strategy which provided the UK's main strategic approach to planning for and responding to the demands of an influenza pandemic). Some of these documents were in the public domain already, others have subsequently been made publicly available through successful Freedom of Information requests by the Cygnus Reports group (Cygnus Reports, 2022), whilst others have been obtained by the UK Public Inquiry into COVID-19.

84. In the following sections, we assess whether - and the extent to which - these different plans and exercises considered health inequalities of any kind (as defined in Topic 1, paragraphs 2-6). We examine the documents chronologically below.

CIVIL CONTINGENCIES ACT (2004, 2008, 2010-2013, 2015-2017)

85. Two guidance documents from 2011 and 2012 related to the 2004 Civil Contingencies Act were reviewed for relevance to health inequalities. We also reviewed three related guidance documents on Identifying People Who Are Vulnerable in a Crisis Guidance (2008), Emergency Response and Recovery Non statutory guidance (2013), and Human Aspects in Emergency Management Guidance (2016). We also examined the subsequent National Risk Register of Civil Emergencies (2010, 2012, 2013, 2017).

86. The Civil Contingency Act 2004 set out the relative roles and responsibilities of the UK and devolved government departments in terms of dealing with civil protection in times of emergency such as a nuclear incident or a public health emergency. The principal aim of the Act is to bring into a single statutory framework those organisations which are most likely to be involved in most emergencies as well as sectors not covered by the act such as the voluntary or business sectors. It aims to ensure that such bodies can deliver and respond in an emergency. The 2011 and 2012 volumes of enhanced guidance set out *"the generic framework for civil protection. As such, it deals with pre-emergency elements of integrated emergency management - anticipation, assessment, prevention and preparation"* (2012 Chapter 1, section, p2). Whilst most of these two extensive documents relate to organisational matters (roles and responsibilities of various organisations), there are some sections with potential relevance to health inequalities which we note below. Additionally we examine the related generic guidance document on Emergency Response and Recovery Non statutory guidance (2013), as well as two more specific and relevant documents: Identifying People Who Are Vulnerable in a Crisis Guidance (2008) and Human Aspects in Emergency Management Guidance (2016).

Civil Contingencies Act Enhancement Programme (2011 Revision)

87. In Chapter 5 it states that each Category 1 responder body should maintain *"plans for reducing, controlling or mitigating its [the emergency] effects"* (2011, Chapter 5, section 5.2, p4). Further, it states that *"preventative actions may be identified from dynamic risk assessments"* (2011, Chapter 5, section 5.4, p4).

88. In chapter 5 it is noted that vulnerable people *"must be given special consideration in plans"* (2011, Chapter 5, section 5.99, p39). It also states that *"special provision also needs to be made in plans for people with disabilities"* (2011, Chapter 5, section 5.102, p40). The report also states that *"It is not easy to define in advance and for planning purposes who are the vulnerable people to whom special consideration should be given in plans. Those who are vulnerable will vary depending on the nature of the emergency…For planning purposes there are broadly three categories which should be considered: those who, for whatever reason, have mobility difficulties, including people with physical disabilities or a medical condition and even pregnant women; those with mental health difficulties; and others who are dependent, such as children"* (2011, Chapter 5, section 5.103, p40).

89. A *"second group of people to be given a place in plans are survivors and others affected by an emergency. These include not only those directly affected by the emergency, but also those who, as family and friends, suffer bereavement or the anxiety of not knowing what has happened"* (2011, Chapter 5, section 5.104, p41). Further, *"plans should contain commitments to respond sensitively to the needs of survivor groups"* (2011, Chapter 5, section 5.105, p41) and *"Category 1 responders should consider developing a specific multi-agency plan for offering social and psychological support to survivors, the bereaved and the wider community following an emergency"* (2011, Chapter 5, section 5.106, p41).

90. In the section on preparing plans, it states that *"it is important to imagine and select from the risk profile all the possible circumstances"* including *"what is most likely to happen? who might be affected by the impact of the emergency?"* (2011, Chapter 5, section 5.113, p44).

91. In the section on the Health and Safety at Work Act 1974, it states that *"employers have a duty to manage the risks to their employees that arise from their work. This includes those employees whose work includes responding to emergencies"* (2011, Chapter 19, section 19.48, p22).

92. Further, in the section on communicating with the public (2011, Chapter 19, section 19.31, p17), it is stated that: *"Under the CCA [Civil Contingencies Act], Category 1 responders listed in the schedule to the Act are required to: arrange for publication of all or part of the risk assessments and plans they have made" and "the wider risk to the whole community should be considered as well as the individual risk".*

93. Similarly, under the section on generic risks, duties under the Human Rights Act 1998 are noted including: *"where responders are public authorities, they need to have regard to their general duties under the Human Rights Act and ensure that their actions are compatible with individuals' rights under the Act"* (2011, Chapter 19, section 19.41, p20). Further, it states that *"responders may find it helpful to consider the following areas when fulfilling their duties under the CCA (Civil Contingencies Act Enhancement Programme) and any duties under the Human Rights Act: Emergency Planning: Vulnerable people, people affected by the emergency, survivors, family and friends; Communicating with the Public (Warning and Informing): Vulnerable people and those who have difficulty understanding the message"* (2011, Chapter 19, section 19.43, p21).

94. It is noted in Chapter 5, that the specific needs for planning to take into account vulnerable people are described in detail in Chapter 7, the 2012 version of which, is dealt with in the next section.

Civil Contingencies Act Enhancement Programme (2012 Revision)

95. In Chapter 4 (Local responder risk assessment duty) it is stated that step 1 of the planning process should: *"describe the characteristics of the local area that will influence the likelihood and impact of an emergency in the community. This is to understand the context better, as well as to establish the vulnerability and resilience of the area to emergencies. To do this, Category 1 responders should reflect on a number of aspects of their area*", including under social: *"What is the demographic, ethnic and socio-economic composition of the community? Are there any particularly vulnerable groups in the community? How are the various communities geographically distributed within the local area? How prepared and experienced is the community at coping with different types of emergencies?".* And under environment, *"are there any particular local vulnerabilities (e.g. poor coastal defences against flooding)? Is the area urbanised, rural or mixed?"* (Cabinet Office 2012a, Chapter 4, section 4.36, p19).

96. Chapter 7 on communicating with the public notes that the planning process should use the Community Risk Register to identify vulnerable groups (2012a, Chapter 7, Annex 7D, step 5, p13). It also notes that communications should *"reach community groups and vulnerable people"* (2012a, Chapter 7, section 7.42, p16). It contains various suggestions on how to communicate with different vulnerable groups (including elderly people, hard of hearing people, people who speak a minority ethnic language) (2012a, Chapter 7, sections 7.71 to 7.76, p35).

97. In the report glossary, vulnerability is defined as *"the susceptibility of individuals or a community, services or infrastructure to damage or harm arising from an emergency or other incident"* (2012, Glossary Chapter, 2012a, p29).

98. Overall, special emergency planning responsibilities regarding vulnerable groups (mainly defined as older people, people with disabilities or existing medical conditions) are noted in the two Civil Contingencies Act Enhancement Programme Revisions 2011 and 2012. There is also some consideration in the 2012 revision that the socio-economic or ethnic composition of the population might be important in the context of emergency planning.

Identifying People Who Are Vulnerable in a Crisis Guidance (2008)

99. This 31-page report (Cabinet Office, 2008) sets out four key stages of establishing an emergency plan for identifying people who are vulnerable in a crisis: building networks; creating lists of lists; agreeing data sharing protocols and activation triggers; and determining the scale and requirements. The guidance is intended to be UK-wide and *"for the development of local action plans for identifying groups of people who may be vulnerable in an emergency"* (Cabinet Office, 2008, p4). The document defines vulnerable people as those *"that are less able to help themselves in the circumstances of an emergency"* (Cabinet Office, 2008, p4). It builds on the statutory guidance in the Civil Contingencies Act 2004 (revised in 2011 and 2012 – see paragraphs 87-98) which sets out the responsibilities to plan for and meet the needs of those who may be vulnerable in emergencies. It notes that the 2004 Act sets out that:

99.1. *"the needs of vulnerable persons, including those who may have difficulty understanding warning and informing messages, need to be taken into consideration"* by responders (Cabinet Office, 2008, p6).

99.2. The light-touch' duty for local authorities to provide advice and assistance in relation to business continuity management in an emergency (Cabinet Office, 2008, p6). This *"may include advice on the identification of persons who may be vulnerable in an emergency"* so that responders can focus their resources on the most vulnerable (Cabinet Office, 2008, p7).

99.3. That the *"emphasis falls significantly upon local authority departments … and their partner health authorities to meet the planning and response need of this statutory responsibility"* (Cabinet Office, 2008, p7).

99.4. The report notes the intersection with the Disability Discrimination Act but that *"these responsibilities are most likely to apply to information dissemination or warning and informing campaigns"* (e.g. ensuring methods meet the needs of sensually impaired people, ensuring adequate wheelchair access) (Cabinet Office, 2008, p7).

99.5. The report notes that *"these responsibilities are likely to be defined as what is 'reasonable' to expect in the circumstances of an emergency"* (Cabinet Office, 2008, p7).

99.6. It notes that: Local Resilience Forums *"should agree an overall lead agency for vulnerable people in emergencies"* (with the expectation that Adult Social Care departments will generally be given the lead) (Cabinet Office, 2008, p8). Local Authorities, Emergency Planning Units, Adult and Children's Social Care, Police and voluntary sector - *"all of these service providers may have a role to play in identifying vulnerable people and providing for their needs in emergencies"* (Cabinet Office, 2008, p10).

99.7. It notes the need to create and maintain: a list of organisations who hold and maintain the key vulnerable people data; a list of the types of vulnerability and specific needs within a local area; and a list of vulnerable establishments (Cabinet Office, 2008, p11). A list of types of vulnerable people is provided: *"children, older people; mobility, mental/cognitive, sensory function impaired; individuals supported by health or local authorities; temporarily or permanently ill; individuals cared for by relatives; homeless; pregnant women; minority language speakers; tourists; travelling community"* (Cabinet Office, 2008, p14).

100. The rest of the report notes the practicalities of these measures in light of data sharing protocols and activation triggers and which tools can help in determining the scale and requirements of a response. It also suggests various ways of supporting more vulnerable groups in a generic emergency (Cabinet Office, 2008, Annex 1).

Emergency Response and Recovery Non statutory guidance (2013)

101. This extensive 233-page report describes multiple aspects of emergency response and recovery and sets out the multi-agency framework for responding to and recovering from civil emergencies in the UK (HM Government, 2013). It provides further non-statutory guidance on the 2004 Civil Emergencies Act and its 2011 and 2012 enhancements (described above in paragraphs 87-98).

102. In section 7 on 'meeting the needs of those affected by an emergency', it provides some short guidance on 'meeting the needs of specific groups' with a focus on children and young people; faith, religious or cultural groups; elderly people and people with disabilities *"which can make challenging demands on responding agencies"* (HM Government, 2013: p123, 7.7.1).

103. Under the section on 'faith, religious, cultural and minority ethnic communities' (HM Government, 2013: p130, 7.7.6) it notes that *"any emergency occurring in the UK is likely to involve members of different faith, religious, cultural and ethnic minority communities"* and that emergency services, local authorities and other responding agencies "*should bear their needs in mind".* This includes that *"some people may have language difficulties: help from translators and interpreters may therefore be needed"* and that there should be sensitivity to different faith needs (e.g. prayer spaces) (HM Government, 2013: p130, 7.7.7).

104. Under the section on 'elderly people and people with disabilities' (HM Government, 2013: p131, 7.7.9). It notes that disabilities are wide ranging and may include: *"physical or sensory impairment (e.g. hearing or sight); learning difficulties; and mental health problems"* and that *"it is important to make provision to meet any special needs and to provide additional sensitivity, care or support that may be required. These needs may relate to: information; communication and understanding; mobility; medication; and reassurance".*

105. In addition, in section 4.4.53 it notes that *"there are also difficulties in evacuating people who are frail or vulnerable. Those responsible for the care of vulnerable people in an emergency should develop a local action plan to identify people who are vulnerable in a crisis"* (HM Government, 2013: p77).

106. On page 77 and page 123, it also cross-refers to Cabinet Office (2008) guidance on identifying people who are vulnerable in a crisis (reviewed in paragraphs 103-104 above).

Human Aspects in Emergency Management Guidance (2016)

107. This 66-page report by the Cabinet Office (2016) examines the 'human aspects' during and following any type of emergency – including disease outbreaks. Human aspects are defined in the report as a broad range of activities, including: *"emotional support, first aid, shelter, food, clothing, information updates about the incident and individuals directly involved, advice and support on financial, legal and insurance issues, support to restore social networks, opportunities for remembrance/memorialisation, input into any evaluation process following the emergency (for example a public inquiry"* (Cabinet Office, 2016, p2). It provides guidance on how to identify, plan and deliver activities to address these issues. It

also supplements the 2004 Civil Emergencies Act and its 2011 and 2012 enhancements (described in paragraphs 87-98).

108. In terms of matters with relevance to pre-existing health inequalities, the report has a specific section on vulnerable groups (specified as: *"older people and their carers, those with disabilities and their carers, children and their carers, pregnant women, those with serious or chronic illnesses, those whose first language is not English)"* (Cabinet Office, 2016, p4). The report notes that these *"vulnerable individuals are likely to be disproportionately affected"* and that *"it is therefore very important to consider and plan for the specific needs of vulnerable individuals during and after an emergency"* (Cabinet Office, 2016, p4).

109. Under children and young people, it notes that they have *"distinct vulnerabilities in emergency and disaster situations …. These will vary depending on a number of factors including age, gender, culture, disability and socio-economic status"* (Cabinet Office, 2016, p4).

110. There is also a short section on 'diverse communities' which notes that *"an emergency occurring in the UK may involve diverse communities with different and specific needs. Local responders and planners should identify the specific needs of communities who may be affected by an emergency in their area, taking into account factors such as culture, language and faith to ensure that services provided are suitable for all"* (Cabinet Office, 2016, p4).

111. The rest of the report provides advice and practical case studies on how to deal with different types of emergencies (e.g. flooding, rail accidents). At various points, it notes specific issues for vulnerable groups:

    111.1. under planning for an emergency that: *"it will be particularly important to consult with vulnerable groups (or their representatives) who may have needs that will require specific planning"* (Cabinet Office, 2016, p8).

    111.2. in the delivery section on the need for criminal record checks for volunteer supporters in emergency centres (Cabinet Office, 2016, p23) and that *"some vulnerable groups in particular may be prevented from using web-based support"* (Cabinet Office, 2016, p26)

    111.3. regarding the role of social care providers in an emergency in which it is stated that they should *"pay particular attention to/assess vulnerable groups. Identify new service users as well as monitor existing ones"* (Cabinet Office, 2016, p44)

    111.4. regarding the role of local authorities and the Department of Communities and Local Government in an incident overseas where DCLG may need to *"give support to those returnees identified as vulnerable"* (Cabinet Office, 2016, p49) and where local authorities *"may provide advice and guidance to assist LAs [local authorities] to support vulnerable returnees"* (Cabinet Office, 2016, p9).

National Risk Register of Civil Emergencies (2010, 2012, 2013, 2015, 2017)

112. The National Risk Register of Civil Emergencies is a classified assessment of risks that could happen in the UK over the following five years. It is intended to help the Government and local authorities to inform, plan and prepare. It covers various risks from transport, industrial action, extreme weather and diseases. We reviewed the pre-pandemic Registers from 2010, 2012, 2013, 2015, and 2017. We note below any relevant comments in the Registers related to health inequalities:

112.1. The 2010 Register encourages individuals and organisations to *"identify neighbours who may be particularly vulnerable and what you could do it help them"* (INQ000012665, Cabinet Office, 2010, p52).

112.2. The 2012 Register and the 2013 Register note that with regards to the UK Influenza Pandemic Preparedness Strategy 2011, there should be greater account taken of *"age specific and other differences in the rate and pattern of spread of the disease across the UK and internationally"* (INQ000013406, Cabinet Office, 2012b, p12; INQ000013617 Cabinet Office, 2013, p14).

112.3. The 2015 Register notes that in meeting our European obligations for standards of air quality, advice for the public should especially advise vulnerable groups on appropriate action to take (INQ000040833, Cabinet Office, 2015, p21)

112.4. The 2017 Register is the last of the pre-2020 and pre-COVID-19 pandemic civil emergency risk registers provided to us under confidential disclosure (Cabinet Office, 2017). In the sections on human and animal diseases there is no mention of inequalities in the potential health risks or consideration of the needs of vulnerable groups in a pandemic (Cabinet Office, 2017: 34-38).

EXERCISE WINTER WILLOW (2007)

113. Exercise Winter Willow was conducted in January and February 2007 (Department of Health, 2007). It involved over 5,000 people from various UK organisations representing government, industry and the voluntary sector. The aim of the exercise was to *"check our preparation for the major disruptive challenges that an influenza pandemic may bring"* (Department of Health, 2007, p.3). This is a medium size report (22 pages). In the section on public information and communication, the report notes that *"the Exercise also highlighted the need for better engagement with the public and communities"* (Department of Health, 2007, p.5) and the need to communicate *"community responsibility for vulnerable people"* (Department of Health, 2007, p.13). In the section on business continuity, the report mentions that *"local teams should ensure that the voluntary sector is involved early in planning to explore community engagement and support of vulnerable groups"* (Department of Health, 2007, p.19). Vulnerable people are not defined in the document, nor does it mention health inequalities of any kind or other potentially related factors such as age or clinical risks.

REVIEWS OF THE UK'S H1N1 RESPONSE (2010)

114. The Independent Hine Review into H1N1 reported in July 2010. It is an extensive document (183 pages) and it covers all aspects of the UK's 2009 H1N1 pandemic response (from preparations to communications and vaccinations). Annex F of the report outlines the 2009 Scientific Advisory Group for Emergencies (SAGE) definition of an at-risk group: *"Members of an at-risk group are defined as those who are at higher risk of serious illness or death should they develop influenza"* (Hine, 2010: 170). The list of at-risk groups (who should receive antiviral treatment for clinically diagnosed swine flu) were:

114.1. people aged 6 months or over with chronic respiratory disease (including asthma that requires continuous or repeated use of inhaled or systemic steroids or with previous exacerbations requiring hospitalisation); chronic heart disease; chronic renal disease; chronic liver disease; chronic neurological disease; immunosuppression; diabetes mellitus;

114.2. people who have received any medical treatment for asthma in the last three years (in addition to those included above);

114.3. pregnant women;

114.4. children under the age of 5 years;

114.5. people over the age of 65 years.

114.6. So, this will have inadvertently addressed some issues of pre-existing health inequalities (as these co-morbidities have a higher prevalence in more deprived communities/groups). However, despite the socio-spatial clustering of risk, there was no consideration in the report of potential different vulnerabilities to influenza in respect to pre-existing health inequalities beyond age and co-morbidities. Inequalities in health by protected characteristics (such as ethnicity or gender), or other axes of inequality such as income, area-level deprivation, or region were not explicitly considered. Further, the report's recommendations did not include any mention of these health inequalities.

115. Northern Ireland also had a report into the 2009 H1N1 pandemic (Department of Health, Social Services and Public Safety, 2010). This 65-page document mentions how at-risk groups were particularly vulnerable to H1N1 and also that there were local variations in hospital pressures (2010: 51). However, there is no mention of other inequalities in the pandemic and the only relevant 'lesson learned' relates to the *"Need for flexibility of the local response in the context of Northern Ireland, rather than responding to worst case scenarios"* (Department of Health, Social Services and Public Safety, 2010: 11). It does not mention pre-existing health inequalities.

116. Exercise Taliesin was a one-day workshop held at the Emergency Co-ordination Centre (Wales) on 18 November 2009 to de-brief Exercise Taliesin, a pandemic flu exercise which was held on 23rd April 2009; and to de-brief the response in Wales to the actual 2009 H1N1 swine flu pandemic (Wales Resilience, 2009, INQ000128976). Exercise Taliesin aimed to test the Pan-Wales Response Plan and influenza pandemic plans by live exercise across Wales. This was part of a UK-wide exercise coordinated by the Cabinet Office. It was run simultaneously across all four Welsh Local Resilience Forum areas. The medium -size, 41-page report discusses the various lessons learned from Exercise Taliesin planning exercise as well as from the actual response to the H1N1 swine flu pandemic in Wales. It covers strategic matters and coordination, flu plans at both the Pan-Wales and Local Resilience Forum levels, the Pan Wales Response Plan and the Pan-Wales Response Plan activation procedures. There is some attention given to excess death planning, but no coverage of other aspects of the epidemiology or likely population impacts of a pandemic. Health inequalities and at-risk populations were not considered either.

UK INFLUENZA PANDEMIC PREPAREDNESS STRATEGY (2011)

117. The UK's 2007 pandemic plans were updated in 2011, following the H1N1 (2009) influenza pandemic and the recommendations of the Independent Hine Review (2010). The resulting 70-page, UK Influenza Pandemic Preparedness Strategy (Department of Health, 2011a) provided a UK-wide strategic approach to planning for and responding to the demands of an influenza pandemic. This UK Strategy was agreed by the health ministers of all four UK nations. It updated the previous 2007 framework and covered: surveillance and modelling; reducing the risk of transmission; minimising serious illness and deaths; reducing pressure on health care services; advanced purchase agreements; vaccination planning; and surge

plans. The strategy was split into five phases: detection; assessment; treatment; escalation; recovery. This document only notes age and clinical risk factors – not other aspects of inequalities. However, an equity analysis report was produced which we examine in detail below (paragraph 121).

NATIONAL RISK ASSESSMENTS

118. Additionally, we were given access to ten short National Risk Assessments (the shortest was 2-pages long and the longest was 13-pages). These provided summary assessments of the health, social and economic risks associated with epidemics and pandemics (document references: INQ000056243; INQ000056247- INQ000056253; INQ000056255; INQ000056256). The corporate authorship of these documents was not entirely clear in the information shared with us (there are some indications that it is the UK Department of Health). Further, many of the documents were not dated (the earliest date is from 2005) and so it is unclear when they were drawn up. However, many of them reference the 2011 UK Influenza Pandemic Preparedness Strategy and appear to be updated risk assessments for this strategy.

119. These documents discuss the potential health risks of different types of epidemic and pandemics including different strains of influenza and SARS. They discuss possible mortality impacts and the costs to the economy. The documents note potential inequalities in the impacts in terms of age and existing clinical conditions only. For example, document reference INQ000056243 notes that *"there are likely to be a considerable number of additional deaths over the period of the outbreak. Impacts on those with existing (e.g. respiratory) illness and on vulnerable groups (elderly, very young) could be considerable (depending on strain of flu)"* (2005, p57). Similarly, INQ000056247 mentions: *"impacts on those with existing (e.g. respiratory) illness and on vulnerable groups (elderly, very young) could be considerable (depending on strain of flu)"* (2006, p2). The latter comment is repeated in INQ000056248 (unknown year, H22, p1; H23, p4).

120. So, the main 2011 strategy document and the National Risk Assessments only briefly noted age and clinical risk factors in their consideration of inequalities. This is the same as the 2007 influenza strategy which also does not consider wider health inequalities (Rutter et al, 2011).

The UK Pandemic Preparedness Strategy: Analysis of Impact on Equality (2011)

121. An extensive supplementary equity analysis report for the UK Pandemic Preparedness Strategy 2011 was produced and made available via confidential disclosure (*The UK Pandemic Preparedness Strategy 2011: Analysis of Impact on Equality*, Department of Health, 2011b). This 26-page document is intended to fulfil the duty of public bodies under the Equality Act 2010 which mandates a duty within the public sector to: eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under the Act; advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it; and foster good relations between persons who share a relevant protected characteristic and those who do not share it.

    121.1. It therefore considers the potential impact of the UK Pandemic Preparedness Strategy *"on different groups and take steps to mitigate any potential negative or adverse impacts"* (Department of Health, 2011b: p1).

122. The protected characteristics covered by the Equality Act 2010 are Age, Disability, Gender Reassignment, Marriage and Civil Partnership, Pregnancy and Maternity, Race, Religion or belief, Sex, Sexual Orientation. It also considers other groups that

may experience disadvantages and barriers to accessing services as well as poorer experience and outcomes – most notably socio-economic disadvantage and carers.

123. The Analysis of Impact on Equality was developed by the UK Department of Health and other Government Departments, drawing on experience from the 2009 H1N1 pandemic (Department of Health, 2011b: p1).

124. The Analysis of Impact on Equality states that the UK Pandemic Preparedness Strategy 2011 *"has embedded in its principles that access to care and treatment will be fair for people from any background"* and that, the strategy is based on *"the ethical framework for policy and planning, developed by the Committee on Ethical Aspects of Pandemic Influenza*" (Department of Health, 2011b: p3). These principles state that: *"everyone matters; everyone matters equally; the interests of each person are the concern of all of us, and of society; and the harm that might be experienced by each person matters, and so minimising the harm that disasters and major incidents cause is of central concern"* (Department of Health, 2011b: p3).

125. The report covers three main areas: access to information (about symptoms, services and treatment); access to treatment (where required); and the impact of wider strategic pandemic planning. It reviews activity in these areas during the 2009 H1N1 Swine flu pandemic and identifies key planning issues for protected characteristic groups. We summarise each of these three areas in turn:

Access to information

126. In the access to information section (Department of Health, 2011b: p6-8), it states that during the H1N1 swine flu pandemic of 2009: *"We did not target organisations to reach specific groups based on ethnic minority at the planning stage as there was no reason to suspect that this group would be at any greater degree of vulnerability than the rest of the population. However, at a later stage when it became apparent from the tracker that BME groups were showing more concern about swine flu, the Department commissioned research to determine the reason for this. By the time the results were known, it was deemed disproportionate to the size of the risk to take further action as the worst part of the pandemic was over"* (Department of Health, 2011b: p6).

127. It also states that *"the Department [of Health] contacted a range of faith groups to see if they had adequate information and this was confirmed"* (Department of Health, 2011b: p6). Specific messages were targeted to the *"Muslim community regarding the Hajj",* led by the Foreign and Commonwealth Office with Department [of Health] input (Department of Health, 2011b: p6). The Department [of Health] also met with Third Sector organisations and issued regular email bulletins to Third Sector contacts. Whilst the Department of Health targeted the general public as a whole, it was recognised that certain groups may find it more difficult than others to access treatment routes (non-English speakers, refugees, asylum seekers, homeless, those with cognitive disorders or sensory impairment; those with existing health conditions, or who were pregnant; homeless, refugees, travellers; and a need to address accessibility issues [e.g. languages, easy read, braille, tape, British Sign Language]).

128. In terms of identifying key groups that may need targeted messaging, the report notes (Department of Health, 2011b: p7-8):

    128.1. Age: *"Over-65s can be at greater risk of life-threatening complications from flu. The strategy would recognise this with targeted advertising and communications in appropriate media".*

128.2. Disability: *"Those with certain conditions such as diabetes or asthma or people undergoing cancer treatment can be at greater risk of life-threatening complications from flu. The strategy would recognise this with targeted advertising and communications in appropriate media".*

128.3. Ethnicity: During the H1N1 pandemic it became *"clear that ethnic minority individuals were notably more concerned than the general population about the pandemic".*

128.3.1. However, *"the Communications leads decided not to try to develop segmented materials for BME communities at that stage, without sufficient knowledge on which to base their development (although advertising material was placed in a range of minority ethnic press publications)".*

128.3.2. Research was commissioned *"to inform segmented communication in any future pandemic".* The research revealed different attitudes and awareness by ethnic background, intersecting with age and gender with *"distinctly different attitudes to health issues, government information, and treatment / vaccinations and had different levels of awareness of swine flu information".*

128.3.3. Subsequent analysis of their information needs *"suggested a range of measures that could be implemented during a future pandemic to provide greater reassurance and, where appropriate, behaviour change"* for each group.

128.3.4. The impact of the mainstream campaign on BMEs was also analysed. This found *"that BMEs had the lowest awareness of advertising or media coverage during most of the pandemic and that the overall reach of materials was lowest among this group. In terms of behaviour, they were less likely than other groups to wash hands and use anti-bacterial gels".*

128.3.5. The ethnicity section concludes that *"a future strategy would seek to address issues arising from this by considering targeted advertising in ethnic media or via stakeholder communications from trusted community voices where this was indicated. It is our standard policy to produce material in a range of different languages, which are chosen under advice from the Central Office of Information".*

128.4. Gender reassignment (including transgender): the report states that *"the communications element of the strategy will not impact differently on the basis of gender reassignment".*

128.5. Marriage and civil partnership: the report states that *"the communications element of the strategy will not impact differently on the basis of gender".*

128.6. Pregnancy and maternity: the report states that *"pregnant women can be at greater risk of life-threatening complications from flu. The strategy would recognise this with targeted advertising and communications in appropriate media".*

128.7. Religion or belief: the report states that *"the communications element of the strategy will not impact differently on the basis of religion. However, there may be some cross-over with the policy of targeting specific ethnic groups where appropriate".*

128.8. *Gender:* the report states that *"the communications element of the strategy will not impact differently on the basis of gender".*

128.9. Sexual orientation: the report states that *"the communications element of the strategy will not impact differently on the basis of sexual orientation".*

128.10. Socio-economic disadvantage: the report states that *"the communications element of the strategy will not impact differently solely on the basis of socio-economic disadvantage".*

128.11. Carers: the report states that *"the communications element of the strategy will not impact differently on the basis of caring responsibilities".*

Access to treatment

129. In the access to treatment section (Department of Health, 2011b: p10-15), it states that:

129.1. Antiviral medicines and consumables will be distributed to primary care providers according to need – *"as it utilises existing patient treatment pathways, this phase of the strategy has no equality impact in respect of access to treatment".*

129.2. National Pandemic Flu Service (NPFS):

129.2.1. The report notes that the NPFS *"may impact differently on older people due to the likelihood of this group to use the channels of access available"* as *"there is a reluctance amongst older people to access healthcare through telephone services"* or via the internet. As antiviral medicines will be distributed primarily by the telephone and internet based NPFS, "older people may be less likely to use it". It concludes that *"appropriately targeted national and local communications, informing the public how to access the NPFS and trusted individuals allocated to act as Flu Friends by the local primary care consortium will help mitigate these factors".*

129.2.2. Disability: it notes that *"some disabled groups may have difficulty accessing the service via the channels available"* as "*accessing services by telephone can pose problems for disabled people".* Accessibility changes were made to the service regarding visual impairments or hearing difficulties. The report also states that *"the design of NPFS … will continuously include due consideration of accessibility to groups with wider communication difficulties".*

129.2.3. Ethnicity: the report states that *"the NPFS will not impact differently on members of black and minority ethnic (BME) groups compared to the general population".* It does acknowledge potential negative impacts for non-English speakers and that a NPFS translation service was developed (for: Welsh, Polish, Turkish, Russian and Portuguese only). It also acknowledges that *"for groups who have limited, or no written and spoken English language skills … access to NPFS will be restrictive".* Suggested mitigation includes: *"Local GP consortia will be required to ensure that non-English speakers have access to antiviral medicines if required. This may be by engaging with local community groups"* and that *"Flu Friends can assist non-English speakers by accessing the service on their behalf".* It concludes that *"these*

measures will ensure that non-English speakers will have sufficient access to assessment and authorisation in the event of a pandemic".

129.2.4. Socio-economic groups: the report states that *"the NPFS will not have a negative impact on the basis of socio-economic group"* as *"the free to call telephone number will ensure that members of the public are not deterred from using the NPFS service because of financial reasons".*

129.2.5. Gender reassignment (including transgendered people): the report states that *"the NPFS will not impact differently on these groups".*

129.2.6. Religion or belief: the report states that *"the NPFS will not impact differently on the basis of religion or belief".*

129.2.7. Marriage and civil partnership: the report states that *"the NPFS will not impact differently on the basis of marital/civil partnership status".*

129.2.8. Carers: the report states that *"the NPFS will not impact differently on carers".*

129.2.9. Pregnancy and maternity: the report states that *"the NPFS will not impact differently on the basis of pregnancy or maternity".*

129.2.10. Gender: the report states that *"the NPFS will not impact differently on the basis of gender"*

129.2.11. Sexual orientation: the report states that *"the NPFS will not impact differently on the basis of sexual orientation".*

129.3. The use of antiviral medicines for prophylaxis: the report states that: *"As antiviral medicines for prophylaxis would be issued to groups assessed as being particularly at risk, this policy could impact differently on different groups; in particular on the grounds of age (children and older people), disability (people with underlying health conditions) and gender (pregnant women). However, this would be on the basis of clinical need and there is no evidence from the 2009 H1N1 pandemic to suggest that at risk individuals were not offered appropriate antiviral medicines".*

129.4. Immunisation: the report states that *"prioritisation of vaccine will depend on the emerging profile of at-risk groups for the virus, with priority given to clinical risk groups and health and front-line social care workers".* There are *"no plans to prioritise vaccines for any other specific groups".* As vaccination *"would be targeted at groups assessed as being particularly at risk, this policy could impact differently on different groups (age, disability, pregnancy, carers)".*

129.5. Antibiotics: these *"would be prescribed on the basis of clinical need and this policy would not impact differently on different groups".*

Impact of wider strategic pandemic planning

130. The report also examines other issues in terms of the potential equality impacts of the strategy (Department of Health, 2011b: p15-22):

130.1. NHS services: *"groups particularly reliant on healthcare services may be impacted by policy measures taken to mediate a pandemic"* and *"the policy could therefore potentially impact differently on the basis of age and disability".* To mitigate, *"local NHS services should use their knowledge of*

local needs to plan to mitigate any impact by ensuring that essential services are protected".

130.2. Social Care: *"those groups particularly reliant on social care services may be impacted by policy measures taken to mediate a pandemic".* Specifically, *"the policy could therefore impact differently on the basis of age, disability and socio-economic group (which, in some areas, could include BME groups)*". To mitigate, *"local authorities should use their knowledge of local needs to plan to mitigate any impact by ensuring that essential services are protected".*

130.3. Antiviral distribution policy: "*will not directly impact differently on the grounds of age, disability, ethnicity, gender, pregnancy and maternity, religion or belief, sexual orientation or socio-economic group".*

130.4. Clinical countermeasures policy: *"clinical countermeasures policy does not impact differently on different groups".*

130.5. Infection control (including respiratory and hand hygiene): "*The Department of Health's policy on healthcare workers who are at high risk for complications of pandemic influenza (e.g. pregnant women, immunocompromised workers) is that they should be considered for an alternative work assignment, away from direct patient care for the duration of the pandemic or until vaccinated".* As such, *"infection control policy would not generally impact differently on different groups".* Alternative respirators which can be *"used safely by men with facial hair (this could also affect certain BME and faith groups)"* should be made available.

130.6. Science policy within the strategy: *"will not directly impact differently on the grounds of age, disability, ethnicity, gender, marriage and civil partnership, pregnancy and maternity, religion or belief, sexual orientation, socio-economic group".* It may "*highlight differences between different groups and this could inform future policy decisions to target services accordingly".*

130.7. Pandemic influenza surveillance: This will be built on existing central data collection mechanisms, which include all protected groups, so it will *"not impact differently on the grounds of age, disability, ethnicity, gender, gender reassignment, marriage and civil partnership, pregnancy and maternity, religion or belief, sexual orientation or socio-economic group".* The data will also highlight differential impacts across the population.

130.8. Utilities, services and infrastructure: Failures in certain services *"could impact disproportionately heavily on certain groups (e.g. older people, certain socio-economic groups)".* The strategy identifies measures to mitigate such impact.

130.9. Public gatherings, travel and schools: The report states that *"there is limited evidence that restrictions on mass gatherings or travel will have any significant effect on influenza virus transmission"* and that *"the working presumption will be that Government will not impose any such restrictions".* In terms of equality issues, the report notes that *"school closures would impact differently on parents and, potentially, on grounds of gender if the burden of caring for the children outside of school falls primarily on women".*

Equality analysis summary

131. The report concludes that *"the UK Pandemic Preparedness Strategy should not impact differently on protected groups in any significant way"* (Department of Health, 2011b: p24). The only equality issue noted in the conclusion section is the potential differential impact on communications and so it will be made available in a range of languages and formats. In terms of the duty under the Equality Act 2010 to 'eliminate discrimination, harassment and victimisation', it concludes that the UK Pandemic Preparedness Strategy *"does not have a role in eliminating discrimination, harassment and victimisation"*. Similarly, it concludes that the strategy *"does not have a role in advancing equality of opportunity"* and it *"does not have a role in promoting good relations between different [social] groups"*.

NORTHERN IRELAND PANDEMIC INFLUENZA PLANNING (2013)

132. Similarly, Northern Ireland's additional 65-page guidance on pandemic influenza planning (2013) mentions the need to take into account the needs of at risk groups (defined as "*Groups of people who, through their immune disposition or long-term illness (e.g. diabetes, chronic heart or respiratory disease) are deemed to be especially threatened by infection"*, Department of Health, Social Services and Public Safety, 2013: 61). It does not mention other social or health inequalities of any kind.

EXERCISE VALVERDE (2015)

133. Exercise Valverde was delivered on 21 May 2015, supported by member countries and organisations of the Global Health Security Initiative (Public Health England, 2015a). This exercise was commissioned by the Global Health Security Initiative's Sample Sharing Task Group (formed by representatives from Canada, the European Commission, France, Germany, Italy, Japan, Mexico, the United Kingdom and the United States) to test the current draft arrangements of member countries for the rapid sharing of laboratory samples of non-influenza pathogens and related specimens during a public health emergency. The 38-page report focuses largely on lab-based exercises and learning points, discussing data sharing and policy, regulatory and legal issues internationally. It does not cover the epidemiology or likely population impacts of a pandemic and health inequalities are subsequently not examined either.

EBOLA PREPAREDNESS SURGE CAPACITY EXERCISE (2015)

134. In March 2015, the UK Department of Health, NHS England, Public Health England and the National Ambulance Resilience Unit carried out an Ebola Preparedness Surge Capacity Exercise (Public Health England, 2015b). The exercise was intended to *"confirm a shared understanding of National Health Service and Public Health England capabilities and resources to manage multiple confirmed Ebola cases within England"* (Public Health England, 2015b, p.2). It focused on the capabilities of the four designated National Health Service surge centres in England (the Royal Free Hospital London NHS Foundation Trust; the Newcastle upon Tyne Hospitals NHS Foundation Trust; the Royal Liverpool and Broadgreen University Hospitals NHS Trust; and the Sheffield Teaching Hospitals NHS Foundation Trust). The short 10-page report focuses on clinical surge capacity. It makes no mention of health inequalities or other linked factors such as clinical vulnerabilities that might impact on surges and have implications for surge capacity planning.

EXERCISE ALICE (2016)

135. Exercise Alice was conducted in February 2016 by the UK Department of Health, NHS England, and Public Health England. It was intended to examine the UK's policies, response and issues associated with an outbreak of Middle East Respiratory Syndrome (MERS-CoV). It was a short exercise with a limited remit and the report is 23-pages in length (Public Health England, 2016a). It does not cover the epidemiology or likely population impacts of a pandemic and health inequalities are subsequently not examined either.

EXERCISE NORTHERN LIGHT (2016)

136. Exercise Northern Light was conducted by NHS England to investigate the challenges likely to be faced by the Newcastle upon Tyne Hospitals NHS Foundation Trust when the Royal Victoria Infirmary became the UK's main High Level Isolation Unit facility for July and August 2016 (Public Health England, 2016b). The exercise used a simulated Ebola outbreak to explore the roles and responsibilities of the NHS Trust in supporting the hospital and the wider health community. It was a very specific exercise focusing on the simulation of the admission of one patient (Public Health England, 2016b, p3). The short, 10-page report focuses mainly on staffing requirements/issues and communications. Health inequalities were not considered – but arguably they were not within remit of this specific exercise as other aspects of the epidemiology or likely population impacts of a pandemic were not examined either.

EXERCISE CYGNUS (2016)

137. The UK government's 2011 Influenza Preparedness Strategy was further updated after the 2016 cross-government exercise to test the UK's response to a serious influenza pandemic: Exercise Cygnus (Public Health England, 2017a). Immediately prior to Exercise Cygnus, a one-day discussion-based exercise (Exercise Cygnet) was conducted (held on 2 August 2016). It identified issues for further development before Exercise Cygnus took place. Exercise Cygnus itself involved almost 1000 participants from the Devolved Administrations, the UK Department of Health, and twelve other government departments, NHS Wales, NHS England, Public Health England, eight Local Resilience Forums and six prisons. The aim of Exercise Cygnus was to test the strategy and identify strengths and weaknesses across the health and care and civil emergency response systems. Following Exercise Cygnus, a draft Pandemic Influenza Bill was drafted (reviewed in paragraph 143). This draft legislation formed the basis of the Coronavirus Act 2020. The 57-page Exercise Cygnus report mentions planning for local surges – but the potential role of area-level deprivation or other community characteristics (e.g. the ethnic composition of the population) in leading to local surges is not discussed. In a later internal document updating on the lessons learned from Exercise Cygnus (Department of Health and Social Care, 2017), potential limitations in NHS capacity in the case of severe local surges was noted (Department of Health and Social Care, 2017, KL4) as was the 'moral and ethical implications' of any resulting patient triage in such situations (Department of Health and Social Care, 2017, LI15 and LI16). This supplementary document also notes the following with regards to social care capacity: *"it is likely there will be vulnerable people who are reliant on private support which might not be available at the time of a pandemic"* and *"there might be 100s of vulnerable people who won't get the help that they want or need and won't be identified"* (Department of Health and Social Care, 2017, A.5). It also notes that: *"a Local Government Forum sub-group should be formed to share information about vulnerable persons between local government, health, and voluntary, and utilities sectors to ensure collaborative*

effort on provision of support" (Department of Health and Social Care, 2017, A.6) and that there is a need to include faith leaders in excess deaths planning (Department of Health and Social Care, 2017, A.7). It does not mention anything related to other aspects of health inequalities.

EXERCISE SILVER SWAN (2016)

138. Exercise Silver Swan was conducted by the Scottish Government in 2016. The overall aim of Exercise Silver Swan was to assess the preparedness and response of Scotland's local and national arrangements for an influenza pandemic over a prolonged period. It covered multiple aspects of pandemic planning including health and social care systems, excess deaths, business continuity and response coordination (Scottish Government, 2016b). The 27-page Exercise Silver Swan report makes no mention of anything specifically related to health inequalities. It does mention planning for local surges – but the potential role of area-level deprivation or other community characteristics (e.g. the ethnic composition of the population) in local surges is not discussed.

EXERCISE TYPHON (2017)

139. Exercise Typhon was conducted by Public Health England in February 2017. It reviewed the effectiveness of Public Health England's National Incident & Emergency Response Plan, exploring the roles and responsibilities of Public Health England in response to two concurrent fictional scenarios - a major chemical incident and a confirmed positive case of a Viral Haemorrhagic Fever (such as Lassa Fever) (Public Health England, 2017b). This is a very short, 11-page document which focuses on internal matters regarding communications and organisation. It does not cover the epidemiology or likely population impacts of a pandemic and health inequalities are subsequently not examined either.

EXERCISE BROAD STREET (2018)

140. Exercise Broad Street was conducted in January 2018 to examine the UK's resilience to High Consequence Infectious Disease such as Lassa Viral Haemorrhagic Fever, Ebola or H7N9 Pandemic Influenza. It considered the challenges that a High Consequence Infectious Disease incident could present to professional partners. Participants in the exercise came from Public Health England and NHS England and an observer attended from the Department of Health and Social Care (Public Health England, 2018a). The 27-page report focused on first contact and case identification, notification and escalation, diagnostics and identification, treatment pathways and communication. Potential health inequalities in these matters are not mentioned.

EXERCISE CERBERUS (2018)

141. Exercise Cerberus was conducted in February 2018. It assessed Public Health England's organisational preparedness and response to public health emergencies. This was an internal Public Health England exercise with participants from their regional centres and national level organisations and centres. The short, 9-page report provides little detail on the matters discussed (Public Health England, 2018b). The exercise was not intended to examine epidemiology or likely population impacts of a pandemic and so correspondingly, health inequalities are not examined either.

EXERCISE PICA (2018)

142. Exercise Pica was conducted in September 2018. It examined NHS primary care preparedness and response to pandemic influenza (Public Health England, 2018c). A wide range of NHS and health professional organisations participated in the exercise (including: British Medical Association, Care Quality Commission, General Dental Council, General Medical Council, General Pharmaceutical Council, NHS England, etc). Specifically, the exercise set out to explore the challenges faced by the NHS primary care organisations during an influenza pandemic. Pre-existing health inequalities are not mentioned in the 27-page report – which mainly focuses on service delivery However, the report does discuss the public messaging needed to ensure comprehensive vaccine uptake (Public Health England, 2018c, p15) but the potential inequalities in vaccine uptake are not discussed.

DRAFT PANDEMIC INFLUENZA BILL (2019) (EQUALITIES ASSESSMENT)

143. In line with the Public Sector Equalities Duty, an Equalities Assessment was conducted for the 2019 Pandemic Influenza Bill (UK Government, 2019 [INQ000097684]). The Bill ultimately had three broad aims, to streamline processes that will be burdened by a severe pandemic, increase capacity in the health care system and to help mitigate the spread of the pandemic influenza. This draft legislation formed the basis of the Coronavirus Act 2020. For most clauses of the Bill considered by the short, four-page Equalities Assessment, the conclusion was that: *"There are no equalities considerations associated with this measure"* (2019, Annex A). However, the following four exceptions were noted:

143.1. Section 5 (Changes to the Mental Health Act, Clause [j700], DH08/11) it is noted that the provisions could have an impact on those with a disability and a disproportionate impact on Black or Black British people. Some mitigations are noted including *"this is one reason why we have proposed that the regulations include a clear entitlement for a person to request a review of their detention after the emergency period"* (2019, Annex 3, points 8/9)

143.2. Sections 3 and 4 (Easing Hospital Discharge, Clauses [jnhscare] and [jsupport], DH09A and B) noted that: "*These easements would be likely to affect older people and those with a disability as they will form the greatest proportion of hospital discharges, including those involving more complex discharge where CHC may need to be considered. However, we would consider that the objective of supporting the delivery of public services within a finite resource in responding to a pandemic would make it a proportionate means of achieving a legitimate aim"* (2019, Annex 3, point 12). Some mitigations are suggested including: *"the NHS and LAs should continue to work together to ensure that individuals are cared for and their needs are met in the pandemic situation, and that involvement of the adult, their carer and/or any other person whom the carer asks the authority to involve in the care and support plan should happen as soon as is reasonably practicable following an emergency situation"* (2019, Annex 3, point 12).

143.3. Section 9 (Ability to Close Education Establishments, Clause [j609], DfE) it is noted that *"the most disadvantaged children get the greatest benefit from early education, and so the effect of temporary closures might be felt disproportionately by this group"* (2019, Annex 3, point 13). The mitigation is that *"the department has decided to not claw back early education entitlement place funding that local authorities receive. This means that local authorities would retain their central capacity which is drawn from this funding"* (2019, Annex 3, point 13).

143.4. Section 10 Early Release Powers (Clause [jCJA2003], HMPPS): This provision enables the early release of prisoners, to serve the remainder of their sentence on licence. Given the higher rates of imprisonment amongst Mixed and Black population groups, it is noted that *"we would expect the early release of prisoners to benefit these groups disproportionately and therefore have a positive impact on equalities"* (2019, Annex 3, point 14).

SAGE SCIENTIFIC ADVISORY GROUP FOR EMERGENCIES (2020)

144. We also examined the minutes of the meetings of the first three Scientific Advisory Group for Emergencies (SAGE) meetings on the Coronavirus (COVID-19) response: 22nd January 2020, 28th January 2020; 3rd February 2020 (SAGE 2020a; SAGE 2020b; SAGE 2020c). We examined these early meetings as they occurred before the first UK COVID case and can therefore be considered as planning and preparedness meetings. The issue of health inequalities and the potential unequal impact of the pandemic was not mentioned in the first two meetings. However, in the third meeting (on 3rd February, 2020), under the situation update section (SAGE 2020c, point 15), the following is noted with regards to age and comorbidities: *"To better understand the epidemic, it is important to have access to case numbers reported by onset date, data on numbers of people being tested, age distribution of cases and co-morbidity information – updated daily"*. There is no mention in the minutes of these early planning meetings of any other aspects of inequalities such as protected characteristics (such as ethnicity or gender), or other axes of inequality such as income, area-level deprivation, or region.

CORPORATE WITNESS STATEMENTS

145. Additionally we were given access to the Module 1 Corporate Witness Statements (those available to the Inquiry up to the 2nd of May 2023). Few of the statements addressed the issue of whether existing health inequalities were considered in pandemic planning and preparation. Here we summarise the relevant comments from those that did:

145.1. COBR (Civil Contingencies Committee, Cabinet Office) (Hargreaves, 2023, INQ000145912) notes:

145.1.1. The key mechanisms for engagement with expert partners in the context of pandemic influenza planning included *"MEAG (The Moral and Ethical Advisory Group) which had representatives from UK faith and secular communities; Health and Social Care experts, legal experts, media and communications experts, and members of the public"* (Hargreaves, 2023, p56). MEAG was established in 2019 and *"advice from the MEAG would likely be sought in two main scenarios: in an emergency to support incident response (response mode), or as part of general emergencies preparedness planning (planning mode)"* (Hargreaves, 2023, p56).

145.1.2. That the 2011 Preparedness Strategy *"ultimately provided a basis for the government in the early stages of the response to COVID-19, including: surge planning to prepare the NHS and adult social care to deal with extra demand; … surveillance and modelling to detect and assess the impact of COVID-19 and identify and quantify the groups most at risk of severe illness, hospitalisation and death … stockpiled Personal Protective Equipment (PPE) and clinical consumables were deployed in the response and the COVID-19 vaccination programme; … and the Moral and Ethical Advisory Group ("MEAG"), set up to*

provide independent advice to the government on moral, ethical and faith considerations in advance of, and during, a pandemic" (Hargreaves, 2023, p76).

145.1.3. Under the National Resilience Standards, Local Resilience Forums should: include *"arrangements to identify and assist existing vulnerable groups and can also identify people who may become vulnerable in a flu pandemic, which should be agreed with partners and tested"* (Hargreaves, 2023, p80) and have a pandemic influenza plan which should *"regularly conduct an estimate of the number and type and location potentially vulnerable people and their need the out of area, recognising some of these only become vulnerable and a pandemic of their formal or informal pairing arrangements change"* (Hargreaves, 2023, p82).

145.1.4. With regards to the H1N1 pandemic: *"Most cases in the UK were relatively mild, although more serious cases occurred amongst younger adults and children, particularly those with underlying health problems, and pregnant women"* (Hargreaves, 2023, p85).

145.1.5. Notes the Public Sector Equality Duty and the incorporation into the Emergency Preparedness Guidance so that *"local responders should make special provisions in their plans for vulnerable people"* ; the role of the people who are vulnerable in a crisis guidance; and the Human Aspects Guidance

145.1.6. (Hargreaves, 2023, p69). These are reviewed earlier in this Topic (paragraphs 85-111).

145.1.7. *"As the Lead Government Department for pandemic influenza, the Department of Health and Social Care held responsibility for identification of all those likely to be affected, including those who may be particularly vulnerable"* (Hargreaves, 2023, p70).

145.1.8. *"In 2009, in response to the Swine Flu pandemic, the Department of Health published 'Pandemic Influenza: Guidance on meeting the needs of those who are or may become vulnerable during the pandemic'. This guidance moved the focus away from vulnerable groups to the needs to vulnerable individuals, to reflect the fact that there will be people who may become vulnerable due to a pandemic, who were not already in contact with Health or Social Care services"* (Hargreaves, 2023, p70).

145.1.9. *"We cannot preempt who will be most affected, but the reasons are multifactorial and cross public health, environmental, societal and economic boundaries. An element of pandemic planning is not to pre-empt who will be most affected. However, all departments and sectors were expected to consider how to support key services which would have included maintaining caring services, for example"* (Hargreaves, 2023, p70).

145.1.10. Following Exercise Cygnus (2016), *"equalities in the event of a severe pandemic influenza were considered as part of the work of the PFR Board, in line with the Public Sector Equalities Duty. This included an Impact Assessment and Equalities Assessment being carried out in 2019 for the Draft Pandemic Influenza Bill"* (Hargreaves, 2023, p70).

145.2. The Department of Health and Social Care (Wormald, 2023, INQ000061508) notes:

145.2.1. In relation to non-pharmaceutical countermeasures *"have to be based on the route of transmission, mortality rate, and the age structure of disease, among other factors"* (Wormald, 2023, p6).

145.2.2. In relation to influenza pandemics (1918-19 'Spanish flu'; 1957 'Asian flu' and 1968; and 'Hong Kong flu'): *"Mortality rates often vary by age. Age-specific mortality curves for 1957-58 and 1968-69 show a U-shaped pattern with increased case fatality ratio in the very young and then increasing case fatality ratio with increasing age. The 1918 pandemic also affected the very young and elderly, but additionally had relatively high mortality rates in young adults"* (Wormald, 2023, p7).

145.2.3. *"NHS providers (hospital, mental health, community and ambulance services) are responsible for … Maintaining lists of vulnerable patients"* (Wormald, 2023, p24).

145.2.4. In relation to surveillance, *"early comprehensive assessment of the epidemiological and clinical characteristics of a novel virus is essential to enable the implementation of a proportionate response to a new pandemic"* and that the key objectives of surveillance include: *"identify key clinical, epidemiological and virological features"*; *"count severe cases and identify risk groups affected"*; *"describe the evolving pandemic, including how the virus spreads over time and regionally, and its impact at the population level (e.g., by age-group) particularly in relation to hospitalisations and mortality"* (Wormald, 2023, p49).

145.2.5. In relation to the Hine Review of H1N1: *"The review made several recommendations for the UK and Devolved Governments to improve the 2007 Pandemic Flu Framework"* which included: *"considering differences of clinical impact on different age groups, and adopting behavioural science advice to assess the impact of how people may feel, think, and behave during a pandemic"* (Wormald, 2023, p69).

145.3. The Welsh Government (Goodall, 2023, INQ000130469) notes that:

145.3.1. *"Impact Assessments are an important part of policy making, and the Welsh Government has either statutory obligations or has made commitments for the consideration of a number of areas of impact when developing policy. These include equality, the Welsh Language, biodiversity, children's rights, rural-proofing, data protection, justice, health, privacy and a range of environmental impacts. For decisions of a strategic nature, there is also a statutory duty to consider their socio-economic impact"* (Goodall, 2023, p14).

145.3.2. Lessons learnt from exercises held prior to Swine Flu highlighted the need for the *"involvement of faith communities and the voluntary sector at all levels"* and *"the identification and treatment of the vulnerable"* (Goodall, 2023, p66).

145.3.3. In response to the lessons identified from the 2009 H1N1 pandemic, the Wales Pandemic Flu Task and Finish Group, the Welsh Government, the four Local Resilience Forums and the Wales Fatalities Group were tasked with taking forward a number of

recommendations including: *"updating guidance for schools, social services to address the issue of vulnerable people, development of community resilience in each LRF area, the drafting of a core script on public messages, and working with the UK Government to address the excess deaths issue"* (Goodall, 2023, p66).

145.4. The Convention of Scottish Local Authorities (COSLA) (Dickie, 2023, INQ000147705) notes:

145.4.1. In 2023, COSLA undertook a retrospective survey of the 32 Local Authorities asking *"to what extent emergency plans and risk assessments in place at January 2020 considered the risk factors and potential impacts on the groups of people with listed characteristics, in the event of a pandemic emergency occurring"* and that *"the majority of councils answered yes to age, disability, clinically vulnerable, people living in residential care and nursing homes, homeless and vulnerably housed, those with mental health difficulties and [other] groups … pregnancy and maternity and those experiencing socio-economic disadvantage"* (Dickie, 2023, p21, p25).

145.5. Northern Ireland Covid Bereaved Families for Justice (Doherty, 2023, INQ000148480) notes:

145.5.1. *"that our members frequently identified an apparent institutional pessimism/resignation/fatalism on the part of health professionals in relation to those in their care, an issue that is frequently linked to the feeling that medical professionals had 'given up' on their loved ones due to their age and/or vulnerability"*;

145.5.2. that *"such an attitude is of course not consistent with the implementation of a response that included as its aims protecting the lives of the most vulnerable"*;

145.5.3. and that *"communication, at the outset of the pandemic, necessarily suggests a failure of planning or implementation. It is not consistent with an effective strategy of resilience"* (p11, 38-40).

145.6. The National Council for Voluntary Organisations (Vibert, 2023, INQ000147709) notes that:

145.6.1. *"BAME-led charities have unequal access to funding including lack of long-term grant funding, regional inequalities for emergency grants, and funding for working on anti-racism and structural inequalities"* (Vibert, 2023, p4).

145.6.2. *"There are proportionately more voluntary organisations in the south of England"* (Vibert, 2023, p4).

145.6.3. *"There are proportionally less volunteers among younger people and people from more deprived neighbourhoods"* (Vibert, 2023, p4).

145.6.4. *"Most plans didn't define groups of vulnerable people, and those that did took a narrow definition, ignoring wider factors like poverty that create vulnerability. The British Red Cross recommended that Local Resilience Forums use their checklist to ensure plans catered for various needs, and asked for this checklist to be endorsed by the Cabinet Office"* (Vibert, 2023, p10).

145.6.5. *"At a local level, the voluntary sector could have been better engaged in planning … we think there could have been improvement to the capacity building and engagement of smaller specialist organisations and organisations led by marginalised groups"* (Vibert, 2023, p15).

145.6.6. *"At a national level, we don't think there was enough consideration of how to ensure equality and prevent inequality through the government's response"* (Vibert, 2023, p16).

145.6.7. *"Inconsistent and confusing public health guidance [in England] for frontline organisations put a strain on those managing and coordinating volunteers and was deemed to have caused further delays in implementing this guidance locally"* (Vibert, 2023, p16).

145.6.8. *"Inequalities between and within communities' abilities to respond to emergencies"* need to be addressed (Vibert, 2023, p17).

145.6.9. *"The government should have provided comprehensive, inclusive and accessible communication and guidance. This needed to be accessible for people who don't have English as a first language and disabled people who needed alternative formats. Guidance was needed about the impact on certain groups, such as pregnant women"* (Vibert, 2023, p18).

145.6.10. "*We think voluntary organisations were forced to generate guidance for the public where it was not available from government, and create accessible communications products where government failed to do so. Better planning and coordination might have avoided these gaps. Where voluntary sector expertise is needed, we think there should be funding to feed their expertise into government plans and activities"* (Vibert, 2023, p18).

145.6.11. *"Working in partnership with equality organisations at a local and national level, ensuring any response furthers equality, and producing transparent impact assessments"* (Vibert, 2023, p20).

145.7. NHS Confederation (Mortimer, 2023, INQ000147815) notes that:

145.7.1. *"During the early phase of the pandemic [including January 2020] our members told us that information and advice directed at the public was not specific enough and not always disseminated in formats and languages that were accessible to all groups e.g. ethnic minorities and disabled people"* (Mortimer, 2023, p12)

145.7.2. *"There was a particular concern about the disproportionately high exposure to COVID-19 for NHS staff, along with individuals working in other people-facing occupations such as the care sector, retail, hospitality, transport and security that had not been fully planned for, particularly in terms of preparedness to protect these people who often did not have access to adequate, well-fitting PPE. And there was further concern that in addition to being disproportionately exposed to the virus, NHS and social care staff were being exposed to psychological distress and extreme, sustained pressure in their working conditions. There was deep concern that BAME people were disproportionately affected and more likely to have adverse outcomes, exacerbating existing inequalities"* (Mortimer, 2023, p17).

145.7.3. *"Given the predictability that pandemics may disproportionately impact members of the population who are already subject to health inequalities, recognition of this risk and developing bespoke arrangements for these cohorts could be better prepared"* (Mortimer, 2023, p21).

EXPERT OPINION TOPIC 4

146. Pre-existing health inequalities were only considered in a minimal way in the UK's and devolved administrations' pandemic planning and then largely in relation only to age and clinical risk factors. Wider issues of vulnerability (such as socio-economic status or ethnicity) were seldom considered in the UK and devolved administrations planning documents that we reviewed. There are some exceptions:

146.1. The series of guidance related to the Civil Contingencies Act (Cabinet Office, 2008; 2011; 2012; HM Government 2013) note:

146.1.1. the need for special emergency planning responsibilities regarding vulnerable groups (mainly defined as older people, people with disabilities or existing medical conditions) and provide some consideration (2012 revision) that the socio-economic or ethnic composition of the population might be important in the context of emergency planning.

146.1.2. the supplementary guidance for the Act also includes a section on some of the additional needs that may face 'faith, religious, cultural and minority ethnic communities' (HM Government, 2013: p130, 7.7.6).

146.1.3. there is also a whole document on the needs of vulnerable persons (defined as people *"that are less able to help themselves in the circumstances of an emergency"*, Cabinet Office, 2008, p4). However, these groups were seldom defined and, as the Corporate Witness Statement from the National Council for Voluntary Organisations (Vibert, 2023, INQ000147709) notes, *"Most plans didn't define groups of vulnerable people, and those that did took a narrow definition, ignoring wider factors like poverty that create vulnerability"* (Vibert, 2023, p10). A more inclusive definition had been suggested by The British Red Cross who "*recommended that Local Resilience Forums use their checklist to ensure plans catered for various needs, and asked for this checklist to be endorsed by the Cabinet Office"* (Vibert, 2023, p10).

146.1.4. however, it is of note that these documents all place considerable responsibility and emphasis on local authorities and health care providers for identifying and supporting vulnerable people (e.g. *"emphasis falls significantly upon local authority departments … and their partner health authorities to meet the planning and response need of this statutory responsibility"*, Cabinet Office, 2008, p7). The delivery of these responsibilities needs to be considered in light of the reductions in local authority and health service budgets since 2010 (as described under Topic 1, paragraphs 48-50). Indeed, it was noted in the Wales Resilience review of H1N1 (2009) that *"it was evident from both Exercise Taliesin and the response to swine flu that the requirements from Government for information to be provided from organisations are excessive and unrealistic"* [INQ000128976].

Further, the emphasis on the role of the voluntary sector in emergencies at national and local levels, may in itself led to inequalities in our response given, as Corporate Witness Statement from the National Council for Voluntary Organisations (Vibert, 2023, INQ000147709) notes, *"BAME-led charities have unequal access to funding including lack of long-term grant funding, regional inequalities for emergency grants", "There are proportionately more voluntary organisations in the south of England"*; and *"There are proportionally less volunteers among younger people and people from more deprived neighbourhoods"* (Vibert, 2023, p4).

146.2. Of all the documents reviewed in this section, the Analysis of Impact on Equality supplemental report for the UK Pandemic Preparedness Strategy (Department of Health 2011b) provides the most thorough consideration of equality issues:

146.2.1. It looks across all protected characteristics as well as socio-economic deprivation and care-giving.

146.2.2. However, unfortunately, the analysis undertaken is fairly limited in terms of identifying the multiple issues faced by different social groups and in many places, it merely states that the strategy *"will not directly impact differently on the grounds of age, disability, ethnicity, gender, marriage and civil partnership, pregnancy and maternity, religion or belief, sexual orientation, socio-economic group"*. This means that there is little provided on what actions should be undertaken to mitigate any differential impacts.

146.2.3. Often, no evidence is given to support these conclusions. Key equality issues have therefore potentially been missed in the analysis. For example, in terms of communications, it rightly sets out issues to do with language and how this could have an unequal impact by ethnicity. However, it does not assess issues of literacy that might impact people with lower education levels (a socio-economic inequality). Indeed, the report states that *"the communications element of the strategy will not impact differently solely on the basis of socio-economic disadvantage"*.

146.2.4. Further, again on communications, it identifies potential access issues for older people and people with disabilities with regards to online/telephone services but does not consider potential issues for people from lower income groups (e.g. costs of access to the internet such as a computer or internet provider costs).

146.2.5. In terms of vaccination rollout, it does not consider whether there are any equality issues in terms of promoting uptake or that some groups (e.g. minority ethnic groups) might collectively have a higher clinical need for early vaccination.

146.2.6. Perhaps even more significantly, the analysis does not discuss potential inequalities in mortality and morbidity from a pandemic at all.

146.2.7. Indeed, the equality assessment concludes that there is only one significant area of concern – and that is regarding communications for non-English speakers.

146.2.8. There is also only limited detail on mitigation strategies and often these place the emphasis on other agencies (e.g. General Practices, local authorities, the NHS) rather than on central government departments. The ability of these agencies to deliver needs to be considered in light of the reductions in local authority and health service budgets since 2010 (as described under Topic 1, paragraphs 48-50). Indeed, it was noted in the Wales Resilience review of H1N1 (2009) that *"it was evident from both Exercise Taliesin and the response to swine flu that the requirements from Government for information to be provided from organisations are excessive and unrealistic"* [INQ000128976]. Further, the emphasis on the role of the voluntary sector in emergencies at national and local levels, may in itself led to inequalities in our response given, as Corporate Witness Statement from the National Council for Voluntary Organisations (Vibert, 2023, INQ000147709) notes, *"BAME-led charities have unequal access to funding including lack of long-term grant funding, regional inequalities for emergency grants", "There are proportionately more voluntary organisations in the south of England"*; and *"There are proportionally less volunteers among younger people and people from more deprived neighbourhoods"* (Vibert, 2023, p4).

146.2.9. Further, whilst the *UK Pandemic Preparedness Strategy 2011: Analysis of Impact on Equality* (Department of Health, 2011b: 15-22) noted that *"school closures would impact differently on parents and, potentially, on grounds of gender if the burden of caring for the children outside of school falls primarily on women"*, generally, the planning documents reviewed here did not consider the economic, social and health inequalities that might ensue as a result of any non-pharmaceutical interventions enacted in response to a pandemic (e.g. social distancing, restrictions on public gatherings, stay at home orders, restrictions on business activities, school closures, health care activities etc).

146.3. The Equalities Assessment conducted for the Pandemic Influenza Bill (2019) noted several potential equalities issues and in some cases set out the mitigations to be made. However, the assessment did not consider inequalities resulting from the pandemic itself (i.e. in terms of mortality, morbidity and hospitalisations), rather, it focused on the potential equalities impacts of the likely government(s) response.

146.4. It is also noted that the Corporate Witness Statement from The Convention of Scottish Local Authorities (COSLA) (Dickie, 2023, INQ000147705) states that: COSLA undertook a retrospective survey in 2023 of the 32 Local Authorities asking *"to what extent emergency plans and risk assessments in place at January 2020 considered the risk factors and potential impacts on the groups of people with listed characteristics, in the event of a pandemic emergency occurring"* and that *"the majority of councils answered yes to age, disability, clinically vulnerable, people living in residential care and nursing homes, homeless and vulnerably housed, those with mental health difficulties and [other] groups … pregnancy and maternity and those experiencing socio-economic disadvantage"* (Dickie, 2023, p21, p25).

147. We were additionally asked by the Inquiry team to address: 'Did the specialist structures concerned with risk management and civil emergency planning allow for proper consideration of structural racism and its impact?' There was no mention of structural racism or its potential impacts in any of the planning documents reviewed

in this topic. The closest mention is in *The UK Pandemic Preparedness Strategy: Analysis of Impact on Equality* (2011) report which concludes that the UK Pandemic Preparedness Strategy *"does not have a role in eliminating discrimination, harassment and victimisation"* (Department of Health, 2011b: p24). Nor were there considerations of other causes of health inequalities in the documents - such as the social determinants of health or austerity (see Topic 1, paragraphs 18-21 and 48-54). Further, the Corporate Witness Statement from COBR states that: *"We cannot pre-empt who will be most affected, but the reasons are multifactorial and cross public health, environmental, societal and economic boundaries. An element of pandemic planning is not to pre-empt who will be most affected"* (Hargreaves, 2023, p70). This is disappointing, as, in our view, pandemic plans are about how to best mitigate the adverse impacts (particularly in terms of hospitalisations, deaths and morbidity) of infectious disease outbreaks across the *whole* population. To do this effectively, they should, in our view, also anticipate and develop ways to address *who* is most likely to be impacted and to address potential inequalities. Future pandemic plans and planning processes would therefore benefit from a wider understanding of the causes of health inequalities – including structural racism. This would be beneficial in terms of thinking through the likely unequal impacts of pandemics, the pathways underpinning them and what strategies could therefore work to mitigate them.

148. This failure to properly address health inequalities as part of pandemic planning is difficult to explain. Certainly, one issue that will have contributed, is that the organisations responsible for pandemic planning did not obtain specialist advice on health inequalities and their implications for pandemic planning, impacts and mitigation strategies. This is noted in the Corporate Witness Statement from the NHS Confederation (Mortimer, 2023, INQ000147815): *"Given the predictability that pandemics may disproportionately impact members of the population who are already subject to health inequalities, recognition of this risk and developing bespoke arrangements for these cohorts could be better prepared"* (Mortimer, 2023, p21). It is also noted in the Corporate Witness Statement from the National Council for Voluntary Organisations (Vibert, 2023, INQ000147709): *"The government should have provided comprehensive, inclusive and accessible communication and guidance. This needed to be accessible for people who don't have English as a first language and disabled people who needed alternative formats. Guidance was needed about the impact on certain groups, such as pregnant women"* (Vibert, 2023, p18).

149. So, overall, we conclude that, with some exceptions, the specialist structures concerned with risk management and civil emergency planning did not properly consider societal, economic and health impacts in light of pre-existing inequalities. The UK Government and the devolved administrations and relevant public health bodies did not *systematically* or *comprehensively* assess pre-existing social and economic inequalities and the vulnerabilities of different groups during a pandemic in their planning or risk assessment processes.

Topic 5: Whether, and the extent to which, a whole system catastrophic shock, such as the Covid-19 pandemic, expose and/or amplify pre-existing health inequalities

150. In this section we outline how whole system catastrophic shocks expose and amplify pre-existing health inequalities. Whilst system shocks impact the whole of society, there is well-known evidence from multiple different situations that disasters, from the sinking of the Titanic to the Chicago heat-wave to Hurricane Katrina and the global financial crisis, show inequalities in their health impacts (Rutter et al, 2011). We provide in-depth case studies of the impacts of three different types of whole system catastrophic shocks: economic (example: the Global Financial Crisis); extreme weather (examples: Hurricane Katrina and Hurricane Maria); and pandemics (examples: 1918 Spanish flu pandemic, 2009 H1N1 pandemic, 2016 Zika and 2015-16 and 2018-20 Ebola pandemics).

ECONOMIC WHOLE SYSTEM CATASTROPHIC SHOCKS

151. National economic wealth (i.e. Gross Domestic Product [GDP]) has long been considered as the major global determinant of population health, with the vast differences in mortality between high- (e.g. UK, USA, Europe) and low- and middle-income countries (e.g India, Ethiopia, Ecuador) accounted for in terms of differences in economic growth (Freeman et al, 2020). Changes in the economy therefore potentially have important implications for population health and inequalities in health. Recessions are globally defined as two successive quarters of negative growth in GDP (Gamble, 2009). They are characterised by instability (in terms of inflation and interest rates) and sudden reductions in production and consumption with corresponding increases in business closures and unemployment.

152. During recessions, deaths from suicides and rates of mental ill health increase (Bambra, 2011). For instance, a study found that the mental health of men in England deteriorated over the two years following the Global Financial Crisis of 2007/8 (Katikireddi et al, 2012). Mental health problems such as stress and depression were also found to increase during periods of recession in studies in Spain, Greece and Ireland (Economou et al, 2011; Houdmont et al, 2012; Gili et al, 2013; Corcoran et al, 2015). There is also evidence of increases in poor mental health and wellbeing after the Global Financial Crisis including self-harm and psychiatric morbidity (Vizard and Obolenskaya, 2015; Barnes et al, 2017). In a number of studies this was found to lead to an increase in mortality rates from suicide during periods of recession (e.g. Barr et al, 2012). For example, following the 2007/8 crisis, worldwide an excess of 4884 suicides were observed in 2009 and over the next 3 years (2008-2010): an excess of 4750 suicides occurred in the USA, 1000 suicides in England, and 680 suicides in Spain (Stuckler and Basu, 2013).

153. One of the main pathways whereby recessions adversely impact on health is through increased rates of unemployment. Unemployment is associated with worse mental health, including suicide (Montgomery et al, 1999). Higher local unemployment rates, are associated with poorer neighbourhood health outcomes, and at the country-level, increases in the unemployment rate have been associated with increased mortality (Brenner, 1995). Studies from various countries have identified income as an important intermediary factor in the relationship between unemployment and health (Bartley et al, 2006). Indeed, the health gap between employed and unemployed people is lower in countries with more generous social security support (Bambra and Eikemo, 2009).

154. Some studies of previous economic downturns - including those in the 1970s, 1980s and 1990s as well as the Global Financial Crisis of 2007/8 - suggest that the unemployment – and therefore health - effects of economic downturns can be unequally distributed - thereby exacerbating health inequalities (Bambra et al, 2016). For example, after the Global Financial Crisis, areas of the UK with higher unemployment rates had greater increases in suicide rates, exacerbating health inequalities (Hawton et al, 2016).

155. However, research has also found that recessions do not increase health inequalities in *all* countries. For example, a Finnish study found that the economic downturn of the 1990s slowed down the trend towards increased socio-economic inequalities in mortality (Valkonen et al, 2000). Similarly, studies of morbidity conducted in Finland, Norway, Sweden and Denmark found that socio-economic inequalities in general health remained stable in these countries during the 1980s and 1990s – a period marked by economic volatility and recession (Dahl and Elstad 2000; Lahlema et al, 2002; Lundberg et al, 2001; Manderbacka et al, 2001). A comparative study of trends in general health from 1991-2010 found that there was a more negative impact on the health of those in the lowest educational groups in England – particularly low educated women - than in Sweden during the recessions of the 1990s and the Global Financial Crisis (Copeland et al, 2013). These findings are also supported by a study of inequalities in preterm births in the Scandinavian countries - which remained broadly stable from 1981 to 2000 despite periods of economic downturn (Petersen et al, 2009).

156. The health inequalities effects of recessions may well therefore be experienced quite differently due to national policy variations with more generous public expenditure protecting the health of the population and especially the most vulnerable (Burstrom and Whitehead 2010). Analysis also suggests that the Nordic countries (Denmark, Finland, Norway, Sweden) have been particularly good at preventing the deterioration of health of the most vulnerable groups during economic downturns (Copeland et al, 2013). This may be because the comparatively strong social safety nets they provide buffer against widening income and related health inequalities (Lahlema et al, 2002). The nature of how governments respond – economically and in terms of social and health policy - to economic shocks is potentially very important in terms of the effects on health inequalities.

157. The importance of public policy for public health and health inequalities in times of economic crisis and high unemployment is exemplified when looking at the impacts of the Global Financial Crisis and the austerity policy response (as detailed in paragraphs 48-54, Topic 1). The Global Financial Crisis of 2007/8 was a result of a downturn in the USA housing market (largely driven by sub-prime investments), which led to a massive collapse in financial markets across the world. Banks increasingly required state bailouts (e.g. in the UK the retail bank Northern Rock was nationalised whilst in the USA Lehmann Brothers investment bank filed for bankruptcy and the mortgage companies Freddie Mac and Fannie Mae were given major government bailouts). Stock markets posted massive falls which continued as the effects in the 'real' economy began to be felt with peak unemployment rates of over 8% in the UK, and over 10% in the USA and the Euro-zone. In 2009, the International Monetary Fund (IMF) announced that the global economy was experiencing its worst period for 60 years (Gamble, 2009). The global economic recession continued throughout 2009 and 2010 (leading to the moniker the 'Global Financial Crisis').

158. The Global Financial Crisis was accompanied in many European countries (including the UK, but most notably in Greece, Portugal and Spain) by escalating public expenditure cuts: austerity (Akhter et al, 2018). Austerity - reducing budget deficits in

economic downturns by decreasing public expenditure and/or increasing taxes – in the UK was characterised by local authority, NHS and welfare expenditure reductions (as detailed under Topic 1, paragraphs 48-54).

159. A large body of international public health research has found that the austerity period was accompanied by adverse health changes. For example, international analysis found that those countries (such as Iceland) who responded to the financial crisis of 2007/8 with an economic stimulus, fared much better in health terms (particularly in terms of mental health and suicides) than those countries (e.g. Greece, Portugal, Spain, UK) who responded with austerity (Stuckler and Basu, 2013). A study of mortality trends in 37 high-income countries between 2000 and 2019 found that there were slower improvements, or deteriorations, in life expectancy and mortality trends in most countries after the financial crisis of 2007/8, with the worst trends in England and Wales, Estonia, Iceland, Scotland, Slovenia, and the USA (McCartney et al, 2022b). Trends were generally worse for women than men. The study also found that these adverse effects were associated with their measures of austerity (which included public social spending as a % of GDP). The study authors concluded that *"austerity is likely to be a cause of stalled mortality trends"*. Similarly, weak social protection systems increased the health and social crisis in Europe (Karanikolos, 2013) whilst those countries that had greater spending on social welfare minimised their suicide rates during the recession (Stuckler, 2009). In the UK, it was estimated that the additional pressures placed on key social and health care services during austerity was associated with up to 10,000 additional deaths in 2018 compared to previous years (Dorling, 2018).

160. There is also some evidence that health inequalities in the UK increased during the austerity period (as noted in our response to Topic 1 in this report and further detailed in Marmot et al, 2020). For example, the gap in mental health and wellbeing between deprived and affluent areas in England in this period increased as people living in more deprived areas (which disproportionately include people from minority ethnic groups, Topic 1, paragraph 31) bore the brunt of rising rates of mental ill health (Bar et al, 2015). Regional inequalities in England also increased with, for example, greater rates of increases in suicide in the North than the South: by 2012 they were 12.4 per 100,000 in the North West compared to 8.7 per 100,000 in London. Mortality rates amongst women in the most deprived areas of the UK increased between 2010/2012 and 2017/2019 (Walsh et al, 2022) and life expectancy also declined in some areas (e.g. male life expectancy in County Durham fell by 6 months between 2015-17 and 2018-20; and female life expectancy in Darlington fell by over a year in the same period) (Office for National Statistics, 2021d). Similarly, a study of the impacts of the 2007/8 financial crisis and austerity on inequalities in antidepressant use in Scotland (Cherrie et al, 2021) found that people living in the local authority areas of Scotland most adversely economically impacted by the financial crisis (e.g. Dundee City, Glasgow, Stirling) had the highest risk of beginning a new course of antidepressants. People living in areas least impacted had the lowest risk (e.g. Aberdeenshire, Edinburgh City, West Lothian). The study estimated that around 50% of this association was explained by the impact of welfare benefit reforms on average incomes in the impacted areas.

161. Analysis of survey data from England, Wales and Scotland has also found an adverse impact on the mental health of unemployed people who were transitioned onto Universal Credit from 2013 to 2018 compared to those on other (legacy) benefits (Wickham et al, 2020). This is in keeping with a larger body of international research which has found that increased social security benefit eligibility/generosity is associated with improvements in mental health, whilst changes that reduce eligibility/generosity are related to worse mental health (Simpson et al, 2021).

Socio-economically and spatially concentrated increases in unemployment since 2007/8 were also associated with an increase in inequalities in both morbidity and mortality (Moeller, 2013). As child poverty rates increased in England from 2010 to 2020, inequalities in infant mortality rates also increased (Robinson et al, 2019; Taylor-Robinson et al, 2019). Similarly, international research has found that reductions in public spending in this period adversely affected the mental health of disadvantaged social groups (Niedzweidz et al, 2016).

ENVIRONMENTAL WHOLE SYSTEM CATASTROPHIC SHOCKS

162. Environmental disasters such as hurricanes and floods or extreme heat waves are also whole system shocks. They occur frequently globally and they may increase in regularity in the UK because of climate change. In this section, we summarise the impacts on health inequalities of such events in general terms and in more detail through two key examples: Hurricane Maria (2017) and Hurricane Katrina (2005).

163. Floods are the most common type of disaster globally and often accompany hurricanes. An international systematic review of 35 epidemiological studies of the health effects of flooding found an increased risk of disease outbreaks such as hepatitis E or gastrointestinal disease, particularly in low-income countries (Alderman et al, 2012). Psychological distress also increased in impacted areas. In terms of health inequalities, in low-income countries those at higher risk of flood-related death tended to be from ethnic minorities who are poor, live on floodplains and in unstable dwellings, females and the very young and elderly. For example, a study of the 1993 flash flood in Nepal found that the mortality risk was higher amongst low socio-economic status populations (Pradhan et al., 2007). This social patterning was also evident in Bangladesh following the 1970 cyclone. In medium- and high-income countries, studies show that the elderly, males, poor communities, and minority ethnic groups experience more flood-related casualties compared with other communities (Brunkard et al., 2008, Yeo and Blong, 2010, Zahran et al., 2008). For example, analysis of flood-related casualties in East Texas revealed that the risk for death or injury was higher in communities with more socially vulnerable populations (Zahran et al., 2008).

164. Heatwaves (such as those experienced in Europe in 2003 and globally in 2022) have significant health impacts. An international systematic review of 32 epidemiological studies of the health effects of extreme temperature and heat waves in different countries found that mortality and morbidity rates increased substantially (Arsad et al, 2022). For example, an Australian study of heatwaves between 1988 and 2011 in Adelaide, Brisbane, Melbourne, Perth and Sydney, found that the mortality rate increased by 28% in the short term (Cheng et al, 2019). Similarly, Korean and Iranian studies have found that the overall mortality risk increased by over 11% during heatwaves (Ahmadnezhad et al, 2013; Kang et al, 2020). Other studies, such as those conducted in Finland and China, have found significant effects of heatwaves on cardiovascular mortality (Yin et al, 2018; Kollanus et al, 2021). The international systematic review (Arsad et al, 2022) also found significant inequalities in these health effects with older people and people from lower socio-economic groups or with prior health conditions (e.g. cardiopulmonary diseases, renal disease, diabetes) particularly negatively affected. Low socio-economic status was also significantly associated with heatwave-related morbidity and increased emergency department visits in Australia (Toloo et al, 2014).

Hurricane Katrina (2005)

165. Hurricane Katrina was a devastating Category 5 Atlantic hurricane in late August 2005, particularly affecting the city of New Orleans and its surrounding areas. It is

estimated that between 1,300 and 1,800 fatalities resulted. The damage caused was estimated to cost between $97 and $160 billion. The majority of deaths from Hurricane Katrina were due to flooding around the city of New Orleans with 80% of the city flooded for weeks. The flooding destroyed most of New Orleans's infrastructure, negatively impacting on people's access to food, shelter, and other necessities. There was a 47% increase in deaths in the first year following Hurricane Katrina (Stephens et al., 2007). Black Americans were overrepresented among fatalities above the age of 18, with a mortality rate up to four times higher than that of White Americans (Brunkard et al., 2008). The elderly were also significantly overrepresented among fatalities (Brunkard et al., 2008; Jonkman and Kelman, 2005). Research has also found that there were substantial inequalities in cardiovascular disease hospitalisations during the hurricane and the subsequent floods: a week after the hurricane, hospitalisation rates increased to 26.3 and 16.6 cases/day per 10,000 people for black and white patients, respectively (Becquart et al, 2018). Other key findings in terms of health inequalities are that: Black hurricane survivors more frequently reported hurricane-related problems with health, emotional well-being, and finances (Toldson et al, 2011); displaced persons were more likely to be female, black, low-income, without health insurance and suffering from chronic disease (Greenough et al, 2008); and that people who experienced socio-economic decline (such as unemployment or poverty) post-hurricane were more likely to experience adverse health outcomes (including elevated risk of a cardiometabolic event and chronic pain) (Joseph et al, 2014).

Hurricane Maria (2017)

166. Hurricane Maria was a deadly Category 5 hurricane that devastated the northeastern Caribbean in September 2017, particularly Dominica, Saint Croix, and Puerto Rico. It is regarded as the worst natural disaster in recorded history to affect those islands. Maria brought catastrophic devastation to the impacted areas, destroying housing stock and infrastructure beyond repair. Total monetary losses are estimated at upwards of $90 billion, mostly in Puerto Rico. Maria's total death toll is 3,059: an estimated 2,975 in Puerto Rico. In order to accurately estimate the excess number of deaths due to Hurricane María, the Governor of Puerto Rico sought an independent assessment of mortality and commissioned The George Washington University Milken Institute School of Public Health (2018) to complete the assessment. Excess deaths are deaths that exceed the regular death rate predicted for a given population had there not been a natural disaster or other unexpected or calamitous event. Using established methods of counterfactual estimations (and accounting for age and sex distribution, seasonality and migration), the George Washington University research team estimated that mortality in Puerto Rico increased markedly in the period after September 2017 and that excess mortality due to Hurricane María is estimated at 2,975 excess deaths (2018: p9). Every social stratum and age group was affected by excess mortality, however, the impact differed: risk of death was higher and persistent for populations living in low socio-economic development municipalities (around 45% higher than the most developed) (2018: piii) and older males (65+) experienced an elevated risk of death (2018: p9).

PANDEMIC WHOLE SYSTEM CATASTROPHIC SHOCKS

167. Previous pandemics can also be considered as whole system shocks. In this section, we provide an overview of inequalities in the health impacts of the 1918 Spanish flu pandemic, the 2009 H1N1 pandemic, and the 2016 Zika and 2015-16 and 2018-20 Ebola pandemics.

1918 Spanish Flu Pandemic

168. In 1918, the world experienced a global pandemic comparable in scale to COVID-19. The so-called Spanish flu pandemic swept across the globe in three waves, infecting 500 million people - a third of the world's population - leading to an estimated 50-100 million deaths with rates particularly high in war-ravaged Europe (Johnson and Mueller, 2002). Death was particularly high in young children, those aged between 20-40 years of age (a unique feature of this pandemic), as well as older people (Center for Disease Control and Prevention, 2019).

169. Recent historical research has also demonstrated that there were clear socio-economic and geographical inequalities in the impact of the Spanish flu pandemic (Mamelund et al, 2021). Infection and death rates were substantially higher in less affluent neighbourhoods; amongst the working classes and lower paid workers; and in urban areas. In Norway death rates were highest in the working-class districts of Oslo (Mamelund, 2006); in the USA they were highest amongst the unemployed and the urban poor (Grantz et al, 2016); in Australia death rates were lower among professional and commercial groups and higher in lower status occupations, such as 'labourer' (McCracken and Curson, 2003); in Spain they were highest amongst low income groups (Basco et al, 2021); and in Sweden and The Netherlands, deaths were higher in the lowest occupational classes (Bengtsson et al, 2018; Rijpma et al, 2022). These social inequalities were particularly large amongst men (Bengtsson et al, 2018). However, this was not the case everywhere – countries, with smaller pre-existing social and economic inequalities, such as New Zealand, did not experience any socio-economic inequalities in mortality during the 1918 pandemic (Rice and Bryder, 2005; Summers et al, 2014).

170. Norwegian research also found higher mortality rates amongst institutionalised populations (people with severe disabilities) (Dimka and Mamelund, 2020). There were also urban–rural differences noted, whereby, for example, in England and Wales, mortality was 30–40% higher in urban areas (Chowell et al, 2008). There is also some evidence from the USA that the pandemic had long term impacts on inequalities in child health and development (Almond, 2006).

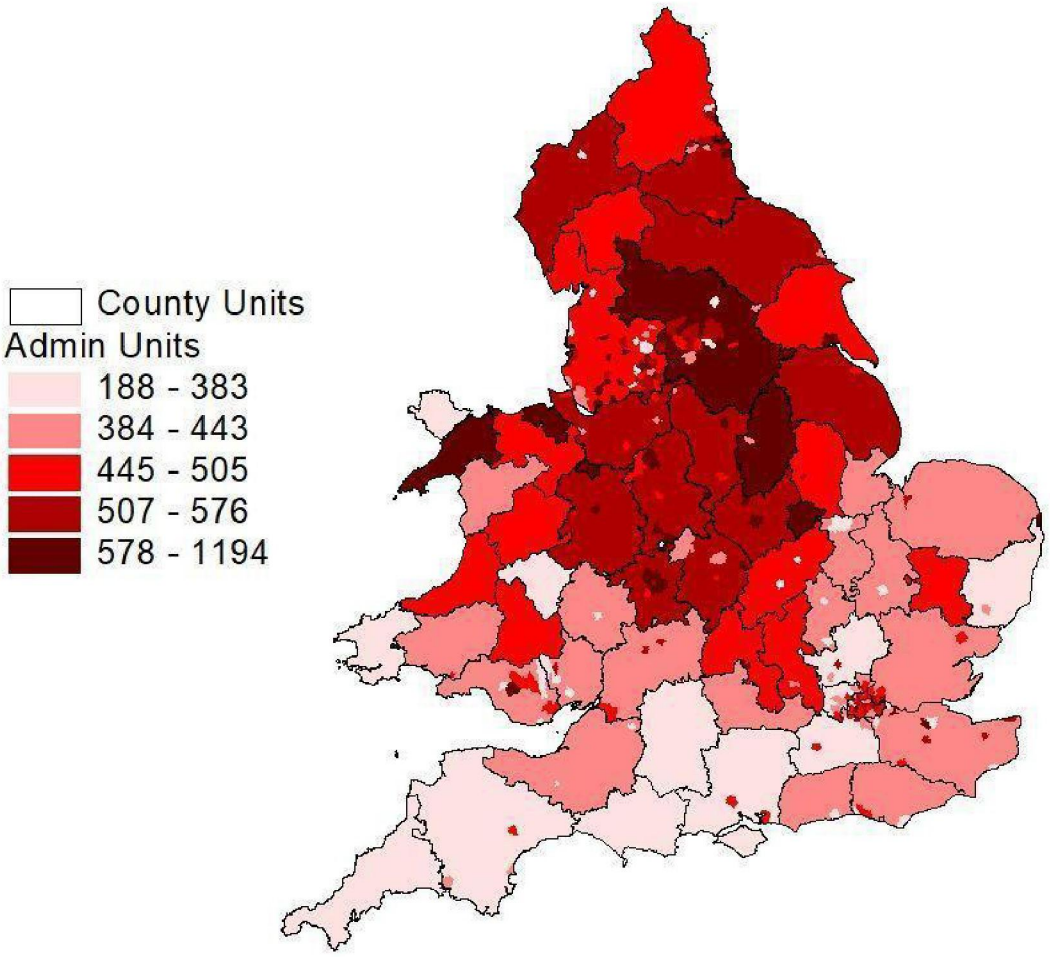
171. Research into ethnic inequalities in the 1918 pandemic in the USA has found that Black Americans had lower morbidity and lower mortality than White Americans - but a higher case fatality rate (Okland and Mamelund, 2019). The reasons for lower morbidity but higher fatality among the black population in the USA in 1918 remain unclear. Historians have noted that *"it may be because black people had a lower risk of developing the disease given exposure, but when they did get sick, they had a higher risk of dying"* (Okland and Mamelund, 2019: 14).

172. England and Wales provide an interesting and well documented case study of inequalities in the Spanish flu as the Registrar General Sir Bernard Mallet (the top government official for medical statistics) published a large report in 1920 providing crude death rates by locality across England and Wales alongside some analysis of regional and social inequalities (Registrar-General, 1920). Figure 8 (from Bambra et al, 2021b) maps the final crude death rates from all three waves of the Spanish flu pandemic in England and Wales. It shows strong geographical inequalities across England and Wales with the northern districts and counties of England having a much higher total death rate than the southern ones and Wales also strongly impacted. Indeed, the places with the highest death rates were all located in the North of England or the Midlands and Wales - whilst the areas with the lowest death rates were all located in the south of England – particularly the South West. At the extremes, the geographical inequalities were such that the death rate recorded in Hebburn near Newcastle in the North East of England (1194 per 100,000) was six

times that of the lowest in Sutton in Surrey in the South East of England (188 per 100,000). These regional inequalities were noted at the time, with the Registrar General concluding that the north and the midlands experienced a higher level of death. He commented that while *"the northern parts of the country suffered decidedly more, on the whole, than the southern"* (Registrar-General 1920, 24). Indeed, data from the Registrar General's 1920 report shows that the north (540 per 100,000 people) and the midlands (490 per 100,000 people) suffered the highest death rates and the south (440 per 100,000 people) the least. London was the same as the national average at 490 per 100,000 people. Recent analysis has also found that northern cities had higher rates of death in all three waves of the Spanish flu pandemic (Johnson, 2006). Together, this suggests that urban areas, coastal areas and areas well-served by mass communication and transport links – particularly in the North - suffered higher infection and death rates than rural, inland and isolated areas (Mamelund, 1998).

173. When examining data from across the different boroughs of London, there is also a clear association between influenza mortality and household wealth (percentage of houses with domestic servants) and pre-existing health indicators (infant mortality rates) (Johnson, 2006). The most affluent London borough, Kensington, had the lowest death rate from the Spanish flu (340 per100,000 people) whilst St Pancras, the poorest borough, had the highest (620 per 100,000 people) (Johnson, 2006). Further analysis for the whole of England and Wales also found that influenza deaths were associated with pre-pandemic mortality rates (which are themselves closely correlated with poverty and deprivation) in waves 1 and 3 in the 1918-19 pandemic (Pearce et al, 2011). We could not find any studies of inequalities in Spanish flu for Scotland or Northern Ireland (Mamelund, 2021).

Figure 8: Map of local area crude mortality rates from 1918 Spanish Flu pandemic per 100,000 population (categorised into quintiles), England and Wales.



2009 H1N1 Swine Flu Pandemic

174. In the spring of 2009, a novel influenza A (H1N1) virus emerged. It was first detected first in the United States and then spread quickly across the world including the UK. This new H1N1 virus contained a unique combination of influenza genes not previously identified in animals or people. This virus was designated as influenza A (H1N1)pdm09 virus (CDC, 2019). Inequalities were also evident in this pandemic: The mortality rate in the most deprived 20% of England's neighbourhoods was three-times higher than in the least deprived 20% (Rutter et al, 2012). This is shown in Table 2 (from (Rutter et al, 2012). It was also higher in urban areas compared to rural areas (Rutter et al, 2012). Similarly, in Canada, hospitalisation rates for H1N1 were associated with lower educational attainment and living in a high deprivation neighbourhood (Lowcock et al, 2012). In the USA, people with financial problems (e.g. financial barriers to healthcare access) were more likely to report H1N1 symptoms (Biggerstaff et al, 2014). We could not find any studies of inequalities in H1N1 for Scotland, Wales or Northern Ireland.

Table 2: Death rates due to pandemic (H1N1) 2009 influenza in England (1 June 2009–18 April 2010) by quintile of neighbourhood deprivation

Quintile of Deprivation		Population (thousands)	Deaths	Death Rate (per million people)
Least Deprived	5	10,289	42	3.9
	4	10,289	56	5.3
	3	10,289	53	5.1
	2	10,289	80	7.8
Most Deprived	1	10,289	118	12.0

175. Further, a study of ethnic inequalities in mortality from H1N1 in England (we could not find any studies of ethnic inequalities in H1N1 for Scotland, Wales or Northern Ireland) found that people from some minority ethnic groups experienced an increased mortality risk compared to the White population during the 2009/2010 pandemic - with the highest risk of death in those of Pakistani ethnicity and the lowest in the Black minority ethnic group (Center for Disease Control, 2009; La Ruche et al, 2009; Sachedina and Donaldson, 2010; Zhao et al, 2015). This is shown for England in Table 3 (Zhao et al, 2015). The reasons for the higher mortality rates in some minority ethnic groups is unclear – it could be due to either increased rates of infection (from higher exposure) and/or higher infection-fatality rates compared to the White population (Zhao et al, 2015).

176. It should also be noted that every year, there are socio-economic inequalities amongst both adults and children in the impacts of seasonal winter flu with mortality, morbidity and symptom severity higher in lower socio-economic groups (Tam et al, 2014; Crighton et al, 2007). Annual mortality from lower respiratory tract infections (influenza and pneumonia) are also higher in British Pakistani and British Bangladeshi groups (Commission on Race and Ethnic Disparities, 2021). It is unclear why this is the case and possible reasons include vaccine uptake, smoking

prevalence, or underlying chronic respiratory conditions (such as asthma and immunosuppression) (Simpson et al, 2015).

Table 3: Death rates due to pandemic (H1N1) 2009 influenza in England (1 June 2009–18 April 2010) by ethnic group

Ethnic Group	Population (thousands)	Deaths	Deaths/million	Age, sex & region adjusted incident rate ratio
White	45,304	270	6.0	1.0 (ref)
Bangladeshi	372	5	13.4	2.1
Black	1475	4	2.7	0.4
Indian	1408	17	12.1	1.9
Pakistani	983	20	20.4	3.4
Other	2114	21	9.9	1.6

Zika and Ebola Pandemics (2016-2020)

177. The Ebola (2015-16, 2018-20), and Zika (2016) pandemics had diverse reservoir hosts and vectors (bats, mosquitos), various primary modes of transmission (blood, contact) and impacted on a different range of regions/countries (West Africa, Americas). However, the scientific evidence suggests they have all resulted in socio-economic inequalities in terms of morbidity and mortality (Bambra, 2022b). Ebola Virus Disease (EVD), a filoviridae virus, was first identified in 1976 in Zaire (Democratic Republic of Congo). In the 2015-16 outbreak in Guinea, Liberia and Sierra Leone, there were over 28,000 suspected cases and 11,000 deaths. Fruit bats (*Family Pteropodidae*) are considered to be the primary reservoir hosts. Community spread is via blood, bodily fluids and contact. Research has found that transmission was 50% higher in the most impoverished communities and that most of the spread originated in lower socio-economic status areas (Fallah et al, 2015). In 2014, the World Health Organisation's (WHO) Director General stated that *"poverty is the mother of the current Ebola epidemic"* (Chan, 2014).

178. The Zika virus is primarily transmitted by bites from infected mosquitos (*Aedes aegypti* which also carries dengue, chikungunya and yellow fever) as well as from mother to fetus, sexual contact and blood transfusions. It is associated with microcephaly (Congenital Zika Syndrome [CZS]) and Guillain-Barré Syndrome. It was identified in 1947 and the first major outbreak was in French Polynesia in 2013. In 2015-16 it resulted in a pandemic in Brazil and the Americas in which there were over 200,000 suspected cases. Research into microcephaly in Brazil has found strong associations with living conditions: populations with the worst living conditions had a prevalence ratio for microcephaly more than 5 times higher than those living in areas with the best living conditions (Souza, 2018).

EXPERT OPINION TOPIC 5

179. Across these different types of whole system catastrophic shocks, health inequalities are exposed and amplified with evidence that people in lower socio-economic groups, people with disabilities and people from minority ethnic backgrounds are more adversely affected.

Topic 6: Why does it matter that pre-pandemic government policies failed to have adequate regard to pre-existing health inequalities

180. As demonstrated in Topic 1, there were substantial systematic health inequalities by socio-economic status, area-level deprivation, region, and ethnicity, and amongst socially excluded and inclusion health groups in the lead up to the pandemic. There is also evidence that such health inequalities increased since 2010. The UK entered the pandemic with increasing health inequalities and health among the poorest people in a state of decline. We also knew from previous studies of past pandemics (such as the 1918 Spanish Flu pandemic; the 2009 H1N1 pandemic) and other whole system catastrophic shocks as well as from our regular surveillance of seasonal influenza mortality and morbidity, that people from lower socio-economic backgrounds, people living in areas or regions with higher rates of deprivation, and people from minority ethnic groups and people with disabilities, are much more likely to be severely impacted by an infectious disease pandemic (see Topic 5).

181. The COVID-19 pandemic has been called a 'syndemic' because of the synergistic way in which the novel infectious disease interacted with and exacerbated existing social, economic and health inequalities (Bambra et al, 2020). Health inequalities researchers have suggested that there are five key pathways through which existing inequalities in the social determinants of health result in higher mortality and morbidity from an infectious respiratory virus: unequal exposure, transmission, vulnerability, susceptibility, and treatment (e.g. Bambra et al 2020; 2021; 2023; Bambra, 2022b; Marmot, 2020; Albani et al, 2022; and Katikireddi et al, 2021):

181.1. *Pathway 1: Unequal Exposure*

As a result of inequalities in living and working conditions, people from lower socio-economic backgrounds and minority ethnic groups are more likely to be exposed to infection (unequal external proximity or contact with a source of a disease agent). For example, lower paid workers and minority ethnic groups were disproportionately exposed to COVID-19 (e.g. by having to continue going into work and use public transport even during lockdowns).

181.2. *Pathway 2: Unequal Transmission*

Community transmission (inequality in the passing of a pathogen between community members) is also impacted by the social determinants of health. For example, transmission of COVID-19 was higher in deprived neighbourhoods which had more houses of multiple occupation, smaller house sizes, more urbanity and higher population densities. Some minority ethnic groups are more likely to live in deprived areas (see Topic 1, paragraph 31).

181.3. *Pathway 3: Unequal Vulnerability*.

Pre-existing health conditions (e.g. diabetes, heart disease, obesity, COPD and other respiratory conditions) can result in increased vulnerability to respiratory viruses and can result in more severe symptoms and higher mortality rates post-infection. These comorbidities are unequally distributed with higher prevalence in more socio-economically deprived populations and some minority ethnic groups (see Topic 1, paragraphs 24-27).

181.4. *Pathway 4: Unequal Susceptibility*

The social determinants of health also work to make people from these communities more vulnerable to infection – even when they have no underlying health conditions: living in adverse material (e.g. poor nutrition) and psychosocial circumstances (resulting in chronic stress responses) can exacerbate the onset, course and outcome of infectious diseases (Biondi et al, 1997).

181.5. *Pathway 5: Unequal Treatment*

A fundamental factor in inequalities in infectious diseases is access to health care treatment and preventative services. For example, unequal access to- and uptake of- vaccines as well as inequality in access to personal protective equipment (PPE) and inequality in disease testing.

182. So, the minimal consideration of these health inequalities, their social determinants and the pathways to inequalities noted above in pre-pandemic planning is therefore a cause for concern with a number of implications for what happened in the pandemic. Whilst it is difficult to be definitive, it may have mattered that pre-pandemic government policies failed to have adequate regard to pre-existing health inequalities in the following ways:

183. Firstly, integrating an understanding of health inequalities into our pandemic plans may have impacted on the timing and delivery of our non-pharmaceutical interventions (such as social distancing, stay at home orders or behavioural messaging). For example, an understanding of geographical health inequalities may have led to certain areas being put into pre-emptive social distancing restrictions earlier (e.g. it may have changed the decision to allow the Liverpool FC v Athletico Madrid football match in Liverpool on 11th March 2020 when Liverpool has some of the highest rates of deprivation, morbidity and lowest life expectancies in the country). Similarly, if it had been acknowledged in the plans that some communities were more likely to be adversely impacted by a pandemic respiratory virus, then pandemic messaging could have highlighted this to the concerned communities – potentially changing community behaviours earlier and thereby reducing transmission. This is noted in the Corporate Witness Statement from the NHS Confederation (Mortimer, 2023, INQ000147815): *"During the early phase of the pandemic [including January 2020] our members told us that information and advice directed at the public was not specific enough and not always disseminated in formats and languages that were accessible to all groups e.g. ethnic minorities and disabled people"* (Mortimer, 2023, p12).

184. Secondly, if pre-existing health inequalities and their social determinants had been considered in pre-pandemic planning, it may have influenced our plans for surge control and may have helped to predict which NHS Hospital Trusts and General Practices may have experienced the highest demand. For example, an awareness of how health inequalities and their social determinants make some communities and groups more vulnerable to the adverse impacts of a pandemic respiratory virus (i.e. higher likelihood of hospitalisation and ventilation requirement) may have then been used to guide hospital planning (regarding, for example, where hospital bed availability may have come under pressure and where additional secondary care support [such as the Nightingale Hospitals or ventilators] may have been most needed).

185. Thirdly, an awareness of the additional vulnerabilities faced by some communities may have expanded the make-up of the (clinically extremely vulnerable) Shielded Patient List. Our pandemic plans tended to only note certain clinical conditions (e.g. the Hine review into H1N1 noted chronic respiratory disease; chronic heart disease;

chronic renal disease; chronic liver disease; chronic neurological disease; immunosuppression; diabetes mellitus; asthma; pregnant women; children under the age of 5 years) alongside age (e.g. the Hine review into H1N1 noted additional risks for people over the age of 65 years). If social vulnerabilities had also been considered in our pandemic planning, then the composition of the Shielded Patient List and related advice may have changed. Further, many of these health conditions cluster in our more vulnerable communities, so awareness of higher risks in certain communities more generally may have influenced public behaviour as well as the support available to these communities from the government, their employers, the NHS etc. For example, additional measures could have been taken to protect these communities such as making PPE (personal protective equipment) available and mandatory in more exposed professions and for more vulnerable population groups (Hooijer and King, 2022).

186. Fourthly, awareness and consideration of health inequalities and their social determinants in the pandemic planning may have influenced occupational health and the decisions made by employers. For example, it may have influenced which categories of clinical staff were deployed by NHS employers to the COVID-19 front line in ICU (Intensive Care Units). If planning had taken into account that minority ethnic groups were likely to be more vulnerable to COVID-19, then NHS employers might not have deployed doctors and nurses from minority ethnic groups to clinical situations where they were more likely to be exposed to COVID-19. Employers in other key industries (such as the food supply chain, personal care, transport or education – where there are disproportionately more workers from minority and low paid groups [Occupational Information Network, 2021]) could then have taken such concerns into account in their workforce planning during the pandemic. For example, employers could have taken additional measures to protect these occupational groups such as making PPE (personal protective equipment) available and mandatory in more exposed professions and for more vulnerable groups (Hooijer and King, 2022). This is noted in the Corporate Witness Statement from the NHS Confederation (Mortimer, 2023, INQ000147815): *"There was a particular concern about the disproportionately high exposure to COVID-19 for NHS staff, along with individuals working in other people-facing occupations such as the care sector, retail, hospitality, transport and security that had not been fully planned for, particularly in terms of preparedness to protect these people who often did not have access to adequate, well-fitting PPE … There was deep concern that BAME people were disproportionately affected and more likely to have adverse outcomes, exacerbating existing inequalities"* (Mortimer, 2023, p17).

187. Fifthly, an awareness in our planning of the additional vulnerabilities faced by certain communities may have influenced testing for COVID-19 and how the COVID-19 vaccine was rolled out. Community testing could have been enhanced in those areas and communities most likely to be impacted (as was done from autumn 2020 by some local authorities). If socio-economic status, area-level deprivation, region and ethnicity and disability had been taken into account in a similar way to age and clinical vulnerability, then the national vaccine roll out would have reflected the additional need of these groups/areas and may have given them earlier access to the vaccine.

188. Sixthly, ultimately, if the potential impact of pre-existing health inequalities on the outcomes of a novel respiratory virus with pandemic potential had been taken into account, then it is plausible to suggest that the mortality and morbidity resulting from COVID-19 in the UK may have been lower, especially in the most impacted communities (e.g. the most deprived localities and regions, minority ethnic communities and inclusion health groups). Lack of acknowledgement of pre-existing

social and ethnic inequalities in health in our pandemic plans may have meant that our responses were unable to mitigate the disproportionate impact experienced by minority ethnic, low socio-economic status and other socially excluded communities.

EXPERT OPINION TOPIC 6

189. The UK entered the pandemic with increasing health inequalities and health among the poorest people in a state of decline. We knew from previous pandemics and research into lower respiratory tract infections that people from lower socio-economic backgrounds, people living in areas or regions with higher rates of deprivation, and people from minority ethnic groups and people with disabilities, are much more likely to be severely impacted by a respiratory pandemic. Lack of consideration of pre-existing social and ethnic inequalities in health in our pandemic plans may have meant that our responses were unable to mitigate the disproportionate impact experienced by minority ethnic, low socio-economic status and other socially excluded communities. Whilst it is difficult to be definitive, it may have mattered that pre-pandemic government policies failed to have adequate regard to pre-existing health inequalities in terms of: the timing and delivery of our non-pharmaceutical interventions; our plans for surge control and NHS demand; the make-up of the Shielded Patient List; occupational health guidance and workforce deployment; how the COVID-19 testing and vaccine was rolled out; and potentially the mortality and morbidity resulting from COVID-19 in the UK.

Topic 7: Whether any of the matters addressed above were impacted by the UK's departure from the European Union?

190. In a referendum held on 23 June 2016, the majority of those who voted chose to leave the European Union. On 29 March 2017, the UK government formally triggered Article 50 and began the two-year countdown to the UK formally leaving the EU (commonly known as 'Brexit'). Article 50 was later extended on several occasions until 31 January 2020. At 11pm on 31 January 2020, the UK left the EU and entered a transition period. This transition period ended at 11pm on 31 December 2020, and the UK left the EU single market and customs union (Walker, 2018). So, for almost all of the period covered by this report (2009 to 20th January 2020), the UK remained within the EU, the single market and customs union and complied with European Union rules and regulations.

191. This means that it is very difficult to express a clear expert opinion on the topic – because the exit was at the very end of the period covered by Module 1. There is also very limited analysis available in the public domain of the impact on health of our (impending/actual) exit from the European Union. However, in this section, we do consider three main areas through which the UK's *impending* departure from the European Union ('Brexit') may have impacted on the other health inequalities and public health topics considered in this report: (i) the impact of 'Brexit' on health policy and planning; (ii) the impact of 'Brexit' on the recruitment and retention of the health and social care workforce; and (iii) the impact of 'Brexit' on Gross Domestic Product (GDP), economic growth and inequalities.

POTENTIAL IMPACT ON HEALTH POLICY AND PLANNING

192. The period after the 'Brexit vote' of June 2016 has been characterised by considerable political instability within the UK government. For example, between June 2016 and January 2020 there were two Secretaries of State for Health and Social Care (Hunt, Hancock), three Chancellors of the Exchequer (Osborne, Hammond, Javid) and three different Prime Ministers (Cameron, May, Johnson), and we had two general elections within just three years (2017 and 2019). This volatility in government has continued since January 2020 with four other Secretaries of State for Health and Social Care (Javid, Barclay, Coffey, Barclay) in 3 years, four Chancellors of the Exchequer (Sunak, Zahawi, Kwarteng, Hunt) and two further Prime Ministers (Truss, Sunak). This political instability – and the policy focus in Westminster given to 'Brexit' - may have impeded the development of medium to long term health and social care planning, especially in England, including on addressing inequalities in health and care. For example, reform of social care in England had been a feature in both the 2017 and 2019 party election manifestos but no policies were enacted until after the COVID-19 pandemic.

POTENTIAL IMPACT ON HEALTH AND SOCIAL CARE WORKFORCE

193. A further relevant issue for consideration is how the UK's *impending* departure from the European Union may have impacted on immigration into the UK of health and social care workers. Data compiled by the House of Commons Library (Baker, 2022) demonstrates that between 2016 and 2020, the proportion of NHS staff in England (with known nationality recorded – there were over 89,000 staff with no nationality recorded in the data set in 2016 and over 32,000 in 2022) from the EU remained stable, at about 5.5% of all staff. This has declined slightly since 2020 to 5.3% in 2022. The proportion of EU nurses and health visitors employed in NHS trusts in England, have declined more noticeably from 7.4% of staff in 2016 to 5.8% in 2020 and 5.1% in 2022. Likewise, for hospital doctors there has been a slight decline from

9.7% in 2016 to 8.9% in 2020 to 8.1% in 2022. The proportion of NHS staff recruited from the rest of the world has increased since 2016 (for example, 4.1% of staff were of Asian nationalities in 2016, rising to 7.2% in 2022). The proportion of all NHS joiners reporting an EU/EEA nationality has fallen since 2016, from 10.9% to 6.2% in 2022. Further analysis published in the British Medical Journal has found that *"some regions face particular staffing challenges—such as Northern Ireland, which draws on the same labour market for health workers as the Republic of Ireland, with considerable cross-border working"* (van Schalkwyk, 2020: 371).

BREXIT, ECONOMIC GROWTH AND INEQUALITIES

194. The third issue of relevance is how the UK's *impending* departure from the European Union affected the UK's GDP, economic growth and inequalities within these. GDP is used to measure how an economy is performing. GDP aims to measure all the economic activity of businesses, governments and individuals. In a growing economy, quarterly GDP will be higher than the previous quarter. If quarterly GDP falls, then the economy is getting smaller. Two successive quarters of negative GDP growth is classified as a recession.

195. Since 2016, the government's Office for Budget Responsibility (OBR) has been regularly analysing the potential effects of Brexit on the economy and public finances. In their March 2020 report, they estimated that in the long term "*the additional trade barriers associated with leaving the EU would reduce the long run [15 years] productivity of the UK by around 4 per cent*" in comparison to what would have happened if we had not left the EU. They estimated that between 1.0 and 1.4 percent of this reduction in productivity (as measured by GDP) had already occurred between 2016 and 2020 (Office for Budget Responsibility, 2020). The OBR suggested that this was due to weaker business investment due to uncertainty and a diversion of resources away from productive activities to prepare for Brexit. They also estimated that both exports and imports will be around 15 per cent lower in the long run (15 years) than if the UK had remained in the EU (Office for Budget Responsibility, 2020).

196. These actual and anticipated declines in the UK economy (as measured by GDP) may have been unequally experienced. Analysis conducted in 2019 by economists from the CAGE Research Centre, University of Warwick found that *"the economic costs of the Brexit-vote are both sizable and far from evenly distributed"* with 168 of 382 districts, having lost, on average 8.5 percentage points of output in 2018 compared to what would otherwise might have happened (Fetzer and Wang, 2020). 78 of 382 districts saw an increase in estimated average output of 6.5 percent. The reductions in output were highest in areas of the country that had a larger manufacturing sector and had a large number of low skilled workers in the labour force. Their regional analysis suggested that between 2016 and 2018, productivity had decreased the most in the North East of England, London, Scotland and the South East. They conclude that Brexit had already increased regional economic inequalities but that the exact shape and size of these would depend on the nature of our future relationship with the EU. The results of the CAGE analysis is in keeping with various other studies of the regional and cross-UK nation economic impact of Brexit including a 2018 government report which modelled the different potential economic impacts across the regions and countries of the UK of different EU agreement scenarios (HM Government, 2018: 63). This Treasury report acknowledges that *"the UK's exit from the EU will affect the regions and nations of the UK differently"* (HM Government, 2018: 26). The Corporate Witness Statement for the Department for Business, Energy and Industrial Strategy (Munby, 2023, INQ000147706) notes that bespoke packages designed to support businesses through the 'National Brexit Transition Fund – Regional and Local Delivery

Programme' were developed. These were designed to support investment and prevent disinvestment in the most affected and deprived regions (Munby 2023, INQ000147706, p41, 4.26)

197. Some – but not all - of the areas and regions of the country estimated to be most negatively economically impacted by Brexit, already had some of the worst health outcomes in the country (e.g. the North East of England has the lowest life expectancy of all English regions and Scotland has the lowest life expectancy of the four UK nations), so it is possible that Brexit *may* exacerbate health inequalities by increasing economic inequalities. However, it is not possible to assess at this early stage of our exit from the EU as no evaluation studies of the *actual* health impacts have yet been conducted. The health and health inequalities impacts will depend on multiple policy actions (across for example trade policy, immigration policy, training, recruitment and investment policies of individual businesses, workplace regulations, public sector investment, health care activities etc), many of which have not yet occurred. Depending on what actions are taken post-Brexit by multiple public and private sector actors, it is possible that health inequalities could increase or decrease (Public Health Wales, 2019; McNamarra et al, 2023).

EXPERT OPINION TOPIC 7

198. The UK's impending departure from the European Union may have adversely impacted on health inequalities as: Brexit related political instability in the UK *may* have reduced longer term planning in health and social care policy (particularly in England); the EU workforce in the English NHS declined (although recruitment from non-EU countries has increased); it is estimated by some economists and the OBR that UK GDP *might* have been adversely impacted by Brexit with potentially some regional inequalities. These issues *may* have impacted on health inequalities in the period covered (2009 to January 20th 2020) and *could* adversely impact them further in the future. However, with the limited data available it is not possible to be definitive at this stage about the impact of the UK's departure from the European Union on health inequalities in the period covered or in the future.

Recommendations

199. Based on the research and analysis conducted within this report, we make the following recommendations:

199.1. Reduce health inequalities so that the health of all communities across the UK is better placed to withstand future pandemics. This requires different actions in each of the four UK nations but in each case, it should be based on key learning from the Marmot Reviews of 2010 and 2020 which set out the following six evidence-based areas for policy action:

199.1.1. Give every child the best start in life

199.1.2. Enable all children young people and adults to maximise their capabilities and have control over their lives

199.1.3. Create fair employment and good work for all

199.1.4. Ensure healthy standard of living for all

199.1.5. Create and develop healthy and sustainable places and communities

199.1.6. Strengthen the role and impact of ill health prevention

199.1.7. Further details on each of these and specific policies that should be implemented by central and local governments, the NHS, the third and private sectors and community groups are available within the Marmot Reviews of 2010 and 2020. Suggestions for action by the private sector are given in *The Business of Health Equity: The Marmot Review for Industry* (Marmot, 2022).

199.2. Commission and fund research to examine the drivers of pandemic inequalities and how to reduce them. This should examine the role of environmental, biological, social (including structural racism) and economic factors in shaping health inequalities in general and specifically inequalities in the COVID-19 pandemic. Further research should start by examining whether the higher mortality rate in certain communities was due to a higher incidence of disease, a higher infection-fatality rate, or a combination of the two. This will then have implications for the roll out and targeting of future preventative actions.

199.3. Pandemic planning and preparation should integrate a health equity lens across all aspects of the process. It should consider if, in future pandemics, additional social groups should be added to those based on age or clinical risk. This could lead to prioritising access to testing, PPE, vaccines, and antiviral medications. Public communication messages about risk and mitigating actions should be both universal for the whole population and targeted to specific at-risk communities. Suitable PPE equipment should be stockpiled in advance and distributed according to relative occupational risk. Enhanced testing should be conducted within at risk communities. Inequalities between and within communities (e.g. Local Authorities, voluntary sector and NHS capacity) in terms of the ability and capacity to respond to pandemics needs to be addressed. A 'universal proportionalism' strategy should be applied in future pandemic planning so that mitigations are delivered for the whole population (universalism) but enhanced for those most in need (proportionalism).

199.4. Scientific, practitioner (e.g. local authority Directors of Public Health, regional officers from the Office for Health Improvement and Disparities) and voluntary sector expertise on health inequalities should be integrated into *all* planning and preparation processes. For example, a sub-group of SAGE on inequalities (to complement - or expand - the ethnicity sub-group which was first established in autumn 2020) should be set up to ensure that ethnic, social, economic, and geographical inequalities in health are considered systematically in advance of - and during - any future pandemics.

199.5. Health Equity Impact Assessments should be routinely applied to pandemic planning to ensure that the full range of differential social, economic and health risks - and how to mitigate them - are systematically identified, understood, and acted upon. This should also apply to the implementation of pandemic management strategies such as social distancing and lockdowns.

199.6. To aid policymaking in general and preparedness for a pandemic in particular, better data surveillance and monitoring of health inequalities needs to be undertaken across all of the UK countries. We need to have a better understanding and more regular surveillance of health inequalities – and their causes - by ethnicity, individual-level socio-economic status (e.g. income, occupation, education), for 'Inclusion Health Groups', LGBTQ+ groups, and people with disabilities (including learning disabilities and other groups supported by the social care system) or long-term health conditions. Further, in a future pandemic, health inequalities should be closely monitored so that any mitigating actions can be taken with speed. This monitoring should also continue into the endemic phase.

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APPENDIX 1: Letter of Instruction

Health Inequalities

Please provide your views on, and an explanation of:

1. the extent to which health inequalities existed during the relevant period. If so:

    - *what they were*
    - *the extent to which they changed over the relevant period, and how; and*
    - *a summary of the underlying causes of the health inequalities.*

2. how the consideration of health inequalities (both perceived and actual) feature within the public health structures in the UK government, the devolved administrations and local government and the extent to which that has changed over the relevant period

3. whether, and the extent to which, there is a variation in the level of consideration of health inequalities generally between the UK government and the devolved administrations

4. whether, and the extent to which, health inequalities were addressed in the UK government and the devolved administration's planning for a pandemic

    - *did the specialist structures concerned with risk management and civil emergency planning allow for proper consideration of structural racism and its impact?*

5. whether, and the extent to which, a whole system catastrophic shock, such as the Covid-19 pandemic, expose and/or amplify pre-existing health inequalities

6. why does it matter that pre-pandemic government policies failed to have adequate regard to pre-existing health inequalities?

7. whether any of the matters addressed above were impacted by the UK's departure from the European Union?