COMMENTARY: NORTH-SOUTH DISPARITIES IN ENGLISH MORTALITY

"When you go to the industrial North you are conscious, quite apart from the unfamiliar scenery, of entering a strange country."

George Orwell, The Road to Wigan Pier

Origins of the North-South divide

In England, 'north' and 'south' are not just geographical terms; the idea of a social and cultural divide has engaged the collective imagination and claimed loyalties for generations. But the divide is not entirely fanciful: England currently has the highest level of regional inequality in Europe, and there are major structural disparities in power and resources between north and south that date back to the middle ages. England's first tax survey – the Domesday Book of 1086 – found that northern estates, contending with a less favourable climate and other disadvantages, were already poorer than their southern counterparts when William the Conqueror brought his army over from Normandy. But it was politics, rather than geography, that created an enduring divide. William descended on rebellious Northern lords in what he described as "a mad fury"; a campaign of destruction that stripped northern counties of over half their wealth.

In the Victorian era, these ancient scars were compounded by rapid industrialisation, cementing many of the patterns of inequality still found in England today. Squalid conditions in large industrial towns like Liverpool, Manchester, Leeds, Hull and Newcastle created disease black spots, where life expectancy could be as low as 30 years. In the modern era life expectancy has risen dramatically, following years of political reform and improvements in standards of living and public health. However, wide gaps in health outcomes between social groups and regions remain, and the north still suffers in comparison to the south; over 85% of local authorities in the North of England today have lower life expectancy than the national average, and overall – as is shown in the map – life expectancy in the north is around two years lower than in the south. Successive governments over the last 50 years have commissioned reports on health inequalities and implemented policies to tackle them, but socio-economic and geographical divides persist, in part because many of the underlying mechanisms remain poorly understood.

Study findings

In this study we attempted to address this lack of understanding by examining trends in 'premature' mortality (death before age 75) in England from 1965 onwards, comparing mortality rates (the number of deaths per 10,000 people) in the five northern regions with mortality in the southern regions. This approach divides the population roughly in half and is many respects a convenient and arbitrary categorisation, but we used administrative boundaries that follow ancient borders marked by the Avon and Nene rivers, dividing north from south. We also examined the underlying causes of excess mortality in the north, and the contribution of socioeconomic deprivation to those excesses.

Looking at the whole population under 75, we found declining mortality rates in all regions over most of the period, reflecting general improvements in population health, but there was a persistent gap between north and south. Between 1965 and 1995 this gap narrowed, with health in the north slowly catching up with health in the south, but this convergence stopped in the late 1990s. Over the entire 50 year study period, mortality rates in the north have always been at least 15% higher than in the south – equivalent to an average of 38,000 excess deaths in the north every year. Because most of these deaths occur in older age groups, it can be difficult to spot patterns of inequality emerging in younger people, which might have severe consequences for population health in the future. We therefore looked in detail at the younger age groups. For ages 25 to 34 – shown in the graph – mortality rates fell between 1965 and 1985 but then remained static for a decade. Up to this point, mortality rates were similar in the north and the south, but in the mid-1990s a clear gap emerged, with mortality falling in the south

and rising in the north. Although mortality began to fall again in the north in the 2000s, the gap that opened up in the 1990s has persisted. There were similar patterns in the 35-44 age group.

Explanations for the divide

Looking at causes of death, the reasons for this separation between north and south in young adults become clear: for both sexes excess deaths in the north are mainly due to cardiovascular disease and alcohol-related causes. For women, cancer is also a key contributor, whereas for men, drug-related and accidental deaths are disproportionately high in the north. However, these causes of death have been following very different trajectories. Whilst cardiovascular disease remains one of the leading causes of death, and is more prevalent in the north, mortality rates have fallen markedly over the last 50 years – this a great public health success that has benefited all sections of society and all parts of the country. In contrast, alcohol, drug-related and accidental deaths have increased, and at a much faster rate in the north, and it is these causes that explain the appearance of the mortality gap between north and south in the mid-1990s.

Although this analysis tells us what the causes of death are, it doesn't provide the underlying explanations – the causes of the causes. Why is it that young adults in the north have become more likely to develop fatal alcohol or drug-related conditions? When considering differences in outcomes between localities, it is useful to think about *contextual* characteristics of the locations (for example: climate, rurality, infrastructure, economy) and *compositional* factors (characteristics of the local populations, such as social class and ethnicity). A compositional explanation for the North-South divide is that income and social status is, on average, lower in the north, and this translates into worse health. When we adjusted mortality rates for the levels of socioeconomic deprivation in the neighbourhoods where people live, we found that the gap between north and south fell from 15% to 5%. This suggests that compositional explanations are important: poorer people in all parts of England have worse health outcomes than wealthier people, and the North-South divide arises because there are relatively more poor people in the north. In this respect, the divide between north and south serves to illustrate profound inequalities in health that exist between social groups in all parts of the country.

However, whilst relative deprivation explains much of the North-South divide, it doesn't explain all of it; even after adjusting mortality rates for deprivation, a substantial divide remains. In previous studies where we compared the health of people of similar social status in different parts of the country, we found that health tends to be worse the further north people live. For example, people in professions such as medicine and law report slightly worse health in the North East than the South East, and people in routine occupations such as labouring and cleaning report much worse health in the North West than in the South West. This means that the effects of the North-South divide can't be entirely escaped by climbing the social ladder; context matters. To explain the widening of the North-South divide for young adults in the 1990s we therefore need to consider factors that would have led to increased abuse of alcohol and drugs in the preceding years, and which would have affected deprived groups more than affluent groups, particularly ones based in the north. A frequently cited explanation is the industrial and economic policies pursued in the 1980s, which reduced taxes, lowered welfare spending, weakened trade unions, and increased privatisation and the free movement of capital. The aim of these policies was to stimulate growth and investment and thereby make the country more prosperous, but the price for this was sharp rises in unemployment, job insecurity and income inequality. This is turn was associated with a range of adverse health effects – particularly mental health outcomes – which disproportionately affected more deprived groups and communities that relied on traditional industries such as coal mining. So, whilst the economic shocks of the 1980s affected the whole country, the north was hit hardest and recovered slowest.

Beyond north and south (and us and them)

We decided to compare 'north' and 'south' because this reflects long-established geographical and administrative boundaries and because these definitions have some cultural relevance. The perception of the north being qualitatively distinct from the south has a long history and is still widely understood. This holds even though it can be difficult to articulate what the differences between north and south are (contenders include: weather, landscape, industries, wealth, transport links, accents, frothiness of beer, friendliness of strangers, sporting prowess, quality

of theatres and distance from Westminster). People also disagree on where the south ends and the north begins, and if you live in the Midlands you might quite rightly resent being classified as either a northerner or a southerner. Extending the analysis to the rest of Britain or the UK – which we have not done here – adds another set of complications. Our approach of aggregating administrative regions into two groups based on latitude was therefore partly pragmatic, reflecting the levels at which routine administrative data is collected, and partly intended to reflect some of these complex cultural and political considerations.

The biggest threat to the validity of our approach is London, a perennial nuisance for social epidemiologists because it is so radically different – socially, economically and culturally – to the rest of the country. It can be argued that comparing two halves of most countries would show that the half containing the capital has better health and social outcomes. This 'capital effect' is exaggerated in England because our political, economic and cultural resources are so heavily concentrated in one place. For all the recent talk of devolution and localism, most of the key decisions affecting localities in England (and to a lesser extent, the rest of the UK) are still made in and around Westminster. To address this problem, we conducted another set of analyses, breaking north and south up into their constituent administrative regions and comparing these regions to London and to each other. In some respects, this analysis provided more confirmation of a North-South effect: the highest mortality rates were found in the most northerly regions. However, the differences in mortality rates *between* regions were much smaller than the difference in mortality rates between London and the rest of the country: even the East of England, the 'healthiest' region outside of London, had mortality rates 14% higher than the capital. This suggests that for young adults the real divide in England is not between north and south, but between London and the rest of the country.

However, despite the oppositional tone of this debate, it is important to remember that this is not simply a case of 'us' versus 'them'. Southerners do not generally conspire against the welfare of northerners, and (most) Londoners do not harbour malicious intent towards people living outside the M25. Neither is this a zero-sum game. Improving health outcomes in the north need not adversely affect health in the south, and flattening the social gradient in health need not involve 'levelling-down' – dragging the health of the better off down to the level of the worst off. International comparisons show that greater inequality – with all its attendant stress and insecurity – adversely affects everyone in society, including those at the top. This suggests that achieving greater equality could deliver widespread social and health benefits.

What can be done?

There are two main arguments for doing little or nothing about the problem. The first is that it is partly attributable to geology and climate and has been a fixture in English life for at least a thousand years. This argument asserts that the north is more a victim of geography than political neglect, and modern policy solutions are unlikely to make much of a dent in permanent, physical sources of disadvantage. Support for this position is provided by the persistence of the divide through multiple political cycles; Victorian reforms couldn't fix the problem and governments that have expressed concern with social and regional inequality have been no more effective in closing the gap than indifferent ones. However, the rapid change in mortality trends outlined in our paper suggest that the size of the divide is not fixed and its existence is not inevitable. The geographical argument can be further unpicked by considering examples where climate is largely irrelevant or should have favoured the north, but political and economic decisions nevertheless resulted in disadvantage. For example, for two centuries the cotton industry relied on mills dotted across Lancashire, where coal for generating power was buried nearby and the damp climate created ideal spinning conditions. Cotton mills produced enormous wealth for Britain but the mill towns themselves didn't prosper in the long term; the wealth gravitated southwards whilst the industrial disease and pollution remained local. When the cotton industry finally died, whole communities – no longer economically useful - were abandoned. Arguments can be made for who has responsibility when an industry fails and whether investing into affected communities is ultimately beneficial or futile, but when elements of the London-based financial industry failed in 2008 there was little hesitation in providing generous government support. Not only was the government response to that crisis directly beneficial to the south, it was indirectly damaging to the north. Years of austerity followed, resulting in cuts to public spending on which the north was more reliant, both for employment and services. Infrastructure spending was reined-in everywhere except London, for which billions of pounds could still be found to cover the Crossrail, Thameslink and Olympic Park projects.

These decisions on where to allocate national resources are generally justified by the national interest, but they repeatedly favour the south in general and London – where these decisions are taken – in particular.

A second argument for non-intervention is that northerners' wounds are largely self-inflicted. Whereas responsibility for curbing the infectious diseases that killed most Victorians lay with the state and its power to undertake great public works of sanitation, responsibility for the non-communicable causes of most of today's premature deaths lies with the individual. This is particularly the case for young adults: excess deaths in the north are mainly attributable to accidents, alcohol and drugs, and so the North-South divide could be closed if northerners would just adopt more temperate lifestyles. Following this argument, the only role for the government in an era of universally available healthcare is to educate and encourage northerners along the road to wellness – a role that entails minimal political commitment and accountability. However, whilst individuals certainly bear responsibility for their own health, they are rarely entirely to blame when that health fails. A single drug-related death could be attributed to misfortune or irresponsibility, but multiple deaths following strong and consistent social and geographical patterns reveal deeper structural causes. Epidemics of anxiety, depression and self-destructive behaviour have broken out across the UK, US and other countries in recent years, in some cases leading to a reversal of decades-long trends of rising life expectancy. These reversals have been concentrated in communities that have also seen reversals in economic fortune and an apparent loss of hope in the future, leading economists to coin the term "deaths of despair" to describe the phenomenon. Explaining these deaths by concentrating solely on the final link in the causal chain – the self-destructive act – places most of the responsibility on the individual, but examining the wider social determinants reveals structural societal defects that lie beyond individual control. In this context, educational messages targeting individuals will simply widen existing inequalities; it is far harder to choose life when life is hopeless or intolerable. More comprehensive solutions are required – collective failure demands a collective response.

What next?

Undoing 1,000 years of disadvantage will involve a much stronger policy response than has been attempted to date, including social and economic changes to rebalance the economy between north and south. Given the importance of deprivation as an underlying driver of the divide, a successful strategy would need to tackle the impact of existing social disadvantage and poverty in the short term, and aim to prevent it in the long term. The recent Due North report sets out a possible template for doing this, including: investments in education, skills and economic development; welfare support to tackle child poverty; devolution of powers away from Westminster; more equitable allocation of NHS funding and other public resources; and more balanced investment in essential infrastructure. Although recent governments have expressed interest some of these ideas – for example, through the Northern Powerhouse initiative – the continuing debacle of Brexit has disrupted all plans, and the North-South divide continues to claim lives on an industrial scale.

However, it is difficult to know whether the Due North prescriptions or other alternative interventions would work to bridge the divide. Studies such as ours describe trends in health and social inequalities in great detail but provide little or no information on how to change them. This is frustrating for policy makers; even when they are minded to tackle health inequalities, they find that they lack the necessary evidence to do so. This can lead to the adoption of 'faith-based' interventions based on ideology or best guesses, which though well-intentioned, are often ineffective or even damaging, because they have greater benefits for more advantaged groups. Providing evidence to policy makers on what works to tackle these kinds of problems is the whole purpose of the EQUIPOL project.