The Widening Gap: the social and spatial accumulation of health inequalities

Introduction

It is now firmly established that there are social and spatial inequalities in health in Britain, and that these have been widening since the late 1970s/early 1980s. Since the publication of the hugely influential Black Report in 1980, a growing body of research has documented the growth of health inequalities in Britain and many researchers have debated their cause. Our research draws upon, and adds to, this now substantial body of research. The results presented here are derived from The Widening Gap (Shaw et al., 1999) as well as from other work by the authors. From this we present data on the extent of health inequalities in Britain in both social and spatial terms.

In the first section of this chapter we present evidence of the widening health gap over time in two ways. First of all we look at how the geography of health inequalities has changed from the early 1950s to the late 1990s. We then look at inequalities in health at different times of the life-course, from the cradle to the grave. In the second section of the chapter we consider the spatial and social accumulation of health inequalities. We consider, in particular, the role of migration in producing and exacerbating geographical inequalities in health, and how migration itself can be seen as a response to socio-economic conditions and circumstances. Finally, we end by considering the implications of our findings for policies to tackle health inequalities.

The geography of health in Britain from the 1950s to the late 1990s

In order to look at the geographical health gap over time, we employ data that uses ‘frozen’ boundaries from the 1950s (see Dorling, 1997 for more details). These geographical units are old county boroughs and for each time period for which data are available Britain is divided into ten equal-sized groups of areas in terms of population (deciles). The age-sex standardised mortality ratio (SMR) for deaths under 65 is then calculated for each decile. SMRs which are greater than 100 indicate higher chances of mortality, and those less than 100 indicate lower chances of mortality, all relative to the national average, which is set at 100. Table 1, overleaf, presents these SMRs for the 1950s through to the late 1990s.

The table shows that inequalities in health narrowed between the late 1950s/early 1960s and early 1970s, but that since the early 1980s they have been steadily widening. The gap between the highest and lowest mortality deciles is such that, in the period 1996-98, those living in the highest mortality areas are now over two times as likely to die before the age of 65. The relative mortality ratios have also risen for the second, third and fourth deciles which illustrates that the polarisation of life chances has not only affected the most extreme group. This is clear evidence of increasing health inequalities in Britain in geographical terms.
Table 1

Standardised mortality ratios for deaths under 65 in Britain by deciles of population (grouped by old County Borough and ordered by SMR), Britain 1950-1998

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>131</td>
<td>136</td>
<td>131</td>
<td>135</td>
<td>139</td>
<td>142</td>
<td>147</td>
<td>150</td>
</tr>
<tr>
<td>2</td>
<td>118</td>
<td>123</td>
<td>116</td>
<td>119</td>
<td>121</td>
<td>121</td>
<td>121</td>
<td>122</td>
</tr>
<tr>
<td>3</td>
<td>112</td>
<td>117</td>
<td>112</td>
<td>114</td>
<td>114</td>
<td>111</td>
<td>113</td>
<td>114</td>
</tr>
<tr>
<td>4</td>
<td>107</td>
<td>111</td>
<td>108</td>
<td>110</td>
<td>107</td>
<td>105</td>
<td>107</td>
<td>108</td>
</tr>
<tr>
<td>5</td>
<td>103</td>
<td>105</td>
<td>103</td>
<td>102</td>
<td>102</td>
<td>99</td>
<td>99</td>
<td>99</td>
</tr>
<tr>
<td>6</td>
<td>99</td>
<td>97</td>
<td>97</td>
<td>96</td>
<td>96</td>
<td>94</td>
<td>95</td>
<td>95</td>
</tr>
<tr>
<td>7</td>
<td>93</td>
<td>91</td>
<td>92</td>
<td>92</td>
<td>92</td>
<td>91</td>
<td>92</td>
<td>93</td>
</tr>
<tr>
<td>8</td>
<td>89</td>
<td>88</td>
<td>89</td>
<td>89</td>
<td>89</td>
<td>87</td>
<td>87</td>
<td>88</td>
</tr>
<tr>
<td>9</td>
<td>86</td>
<td>83</td>
<td>87</td>
<td>84</td>
<td>83</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>10</td>
<td>82</td>
<td>77</td>
<td>83</td>
<td>79</td>
<td>78</td>
<td>76</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>Ratio 10:1</td>
<td>1.60</td>
<td>1.75</td>
<td>1.58</td>
<td>1.70</td>
<td>1.78</td>
<td>1.87</td>
<td>1.98</td>
<td>2.01</td>
</tr>
</tbody>
</table>

Inequalities in health across the lifecourse

In order to look more closely at how these spatial differences in health relate to other factors we use an alternative geographical unit – that of parliamentary constituencies. These allow us to consider particular areas in a more meaningful way than we can with the old county boroughs, as their size in terms of population means that they tend to be of a similar size in terms of population, with an average of 75,000 people under the age of 65. As electoral units they are also areas with which people can identify, and which an individual Member of Parliament represents in Westminster.

For the period 1991-95 we compare the constituencies containing one million people with the ‘best’ and ‘worst’ health (using SMRs under 65). This is the time period for which data were available when writing The Widening Gap, and while they may be considered to be somewhat out-of-date, the data for the period 1996-98 shown above indicate that they may under- rather than over-estimate the current state of health inequalities. Figure 1 maps the constituencies that constitute the ‘best health’ and ‘worst health’ areas of Britain. The clustering of the ‘worst health’ areas of Britain in Glasgow, the northern conurbations and in the centre of London is made starkly clear. Even amongst these ‘worst health’ one million people, a north to south gradient in mortality ratios is apparent. In all these areas mortality ratios are very high, but they range from 2.3 times the average at their worst in Glasgow, to 1.6 times the average in Southwark and Bermondsey.

Conversely, there is much less variation between the millions of people with the ‘best health’ in Britain. The position of these better off constituencies across the south of England shows remarkable uniformity of rates, suggesting that there are no particularly ‘special’ factors causing mortality rates to be so low in these areas - other than general affluence. That pattern is broken only by Sheffield Hallam constituency - illustrating how low mortality ratios in the north could be. Having considered premature mortality in these areas we look at these ‘best health’ and ‘worst health’ places in terms of a number of health and socio-economic indicators at different stages of the lifecourse.
Figure 1
PREMATURE DEATHS
IN THE EXTREME AREAS OF BRITAIN, 1991 - 1995

WORST HEALTH MILLION

GREENOCK & INVERCLYDE
GLASGOW MARSHALL
GLASGOW ANNESLUND
GLASGOW KELVIN
GLASGOW SPRINGBURN
GLASGOW ALLIESTON
GLASGOW SHETLIESTON
GLASGOW POLLK
GLASGOW GOVAN
LIVERPOOL RIVERSIDE
SALFORD
MANCHESTER BLACKLEY
MANCHESTER CENTRAL
TYNE BRIDGE
SOUTHPORT IL BERMONDEY

SMR at ages under 65
England & Wales average = 100

BEST HEALTH MILLION

SHEFFIELD HALLAM
SOUTH NORFOLK
SOUTH CAMBSHIRE
SOUTH SUFFOLK
BUCKINGHAM
WEST CHESFORD
WITNEY
CHESHAM & AMERSHAM
NORTHAWON
Wokingham
WOODSPRING
ESHER & WALTON
ROMSEY

0 50 100 150 200 250

52
Infant and child mortality

We start our journey through the lifecourse by considering infant mortality in the ‘best’ and ‘worst health’ areas. For infant mortality - deaths under one year of age - there are clear differences in life chances. Comparing the extreme areas, in the ‘worst health’ areas infant mortality rates are 2.0 times higher than in the ‘best health’ areas. Comparing individual constituencies this ratio is as much as four times. We can also see this pattern for mortality later in childhood. For mortality among children aged between five and fourteen death rates are 1.8 times higher in the ‘worst health’ compared to the ‘best health’ areas. Even in the very early years of life, health inequalities are clearly apparent. If we look at these areas in terms of some socio-economic indicators the reasons for these health differences begin to emerge.

Households with children living in poverty

Using the Breadline Britain indicator of poverty we can consider these ‘best’ and ‘worst health’ areas in terms of this key socio-economic measure. This is a measure of ‘perceived poverty’, and involves asking people what they themselves consider to constitute the conditions of living in poverty (see Gordon and Pantazis, 1997). Using this measure, the national average for households with children is 27% living in poverty. For the ‘best health’ areas the rate is 13%, for the ‘worst health’ areas it is 53% - over 4 times higher. There is thus a clear geographical concentration of households with children living in poverty.

However, it is also worth bearing in mind that, even in the healthiest and the most affluent areas of Britain, there are still more than one in ten children living in households in poverty. These children - poor children in wealthy areas - will not benefit from area-based policies which seek only to assist those living in the most deprived areas. Universal policies, however, such as Child Benefit, will reach children wherever they live in Britain.

Education and qualifications

A crucial stage in the lifecourse, not least because of the opportunities it affords in later life, is educational achievement. We considered the ‘best health’ and ‘worst health’ areas in terms of their rates of GCSE ‘under achievement’ (defined as not achieving 5 GCSEs Grade A-C - basic requirements for entering many jobs later in life). In the ‘best health’ areas GCSE ‘under achievement’ rates are 44% compared to 66% in the ‘worst health’ areas (they are 57% nationally).

This education gap is not as wide as the health gap. This is partly because not all children are included in these statistics - we are not able to analyse the exam results of private schools and more children from the ‘best health’ areas will be attending such schools. But the fact that this gap is less extreme than the health gap can perhaps be interpreted as evidence of the (limited) levelling effect of the provision of universal services. Looking at qualifications gained a little later in the lifecourse, we again see differences between the ‘best’ and ‘worst health’ areas. More than twice as many adults living in the ‘best health’ areas have post-school qualifications (diplomas, degrees and higher degrees) compared to the ‘worst health’ areas.
Work and unemployment

Moving on through the lifecourse, the next step from education for many is into work. We can use the traditional socio-economic indicator based on occupational class, namely the Registrar General's classification scheme. We use this to compare the occupational composition of areas. Here we see some clear differences between the 'best' and 'worst' health areas, such that in the 'best health' areas 43% of people in employment over the age of 16 are in social classes I and II whereas in the 'worst health' areas only 27% of working people are employed in such occupations. The figure for Britain is 33%.

This analysis, however, is based on occupational data collected in the Census, and in this data set the majority of people do not have a social class assigned to them. If we consider the social class structure of British society more thoroughly – nobody lives outside of the class system – then we see even more marked differences between these high and low mortality areas. People not in work are crucial to shaping the socio-economic map of Britain.

For example, if we consider the number of people not working, which includes those who have not worked in the past 10 years, other unemployed people, students and the permanently sick, then a clear difference between the comparison areas is visible. That there are less people working, or able to work, either because of illness or because of the lack of availability of work, will have an effect on the living standards of families, and thus a knock-on effect on the living standards and life chances of children.

Inequalities in wealth – houses and cars

We spend a lot of time in social science considering poverty and deprivation - how to measure them and what their effects are. We pay less attention, perhaps due to the difficulties related to reliable data collection, looking at the other end of the socio-economic scale. In taking a lifecourse perspective it is important to consider wealth as this is accumulated over time. In the Census there are two indicators which can be taken as indicators of wealth (in the absence of more direct measures) and these relate to housing and cars. The number of cars per household indicates the differences in material resources of these areas. In the 'best health' areas there are 9.1 times as many households with 3 or more cars than in the 'worst health' areas and the total number of cars is almost 3 times higher. Because this just refers to the number of cars, not to their value, it is likely that the cars in the 'best health' areas are newer and
more expensive and thus the true extent of the difference between the areas is very likely to be understated.

The situation is similar for housing – the Census tells us about the number of rooms, but not their value, size, or whether they are damp or adequately heated. From this limited data, though, stark differences between areas are apparent. In the ‘best health’ areas there are 6.5 times as many households with 7 or more rooms, and 1.3 times as many rooms in total as in the ‘worst health’ areas.

Later life - Limiting long-term illness

As people get older they are more likely to suffer from wear-and-tear, and for illness to play an increasing prominent part of their lives. The most direct precursor to premature mortality is illness – and mapping the standardised rates of limiting long-term illness (LLTI) from the 1991 census allows us to see that these two measures have a very similar geography. For Britain as a whole, the rate of LLTI for the under-65s is 7.4%, but in our ‘worst health’ areas it is 12.3%, whereas in the ‘best health’ areas it is only 4.5%.

Illness is also important as it is not only an indicator of what life has thrown at someone, but can also be a factor in determining where people are socially and spatially – those who are ill will have more problems gaining work, and therefore getting mortgages, and homes in desirable areas near good schools for their children. People with long-term health problems are more likely to have enough points to qualify for social housing. The spatial process of migration acts as a filter by which healthier people come to be living in the best-off areas, and less healthy people are more likely to be living in the worst-off areas.

Widows in retirement

Lastly, we consider one form of inequality for those aged over 65, in the retirement years, as the health gap for those dying before the age of 65 also affects those above that age. In the ‘worst health’ areas there will be fewer married women simply because there will be more widows, as the men there die earlier. Another way to look at this is to consider that only half of those in the ‘worst health’ areas will live long enough to qualify for their free television licenses, compared to over two thirds of those in the ‘best health’ areas.

Health and the lifecourse

We have taken a lifecourse approach - considering health inequalities from the cradle to the grave - in order to emphasise that the accumulation of advantage or disadvantage is crucial to chances in life and our chances of death. Other recent research that has taken a lifecourse perspective shows that the social and biological beginnings of life are important for the child’s potential for adult health, and that health outcomes in later life are the product of the accumulation of advantage or disadvantage (see, for example, Kuh and Ben Shlomo, 1997). Data from the 1958 birth cohort, which allows researchers to assess the impact of socio-economic circumstances through early life (at birth, age 16, 23 and 33) shows how they affect health outcomes at age 33. For both men and women, there is a very strong relationship between cumulative socio-economic position (father’s or own social class) and poor health at age 33 (Poder et al., 1999). Analyses of these data show that social class in early life and in adulthood both make independent contributions to inequalities in poor health in later life.
Processes of social and spatial accumulation

Having considered how the material conditions of living throughout life are fundamental to health chances we now turn our attention to the spatial aspects of these patterns and processes. People do not react passively to the world in which they live, simply accepting the inequalities that they may face in life. Occasionally they rebel—they may vote in a radical government or even force a revolution. More often the aggregate actions of individuals and families serve to reinforce the status quo. The simplest way in which this can be demonstrated geographically is by looking at how the population who can move around the country has chosen to move around, in relation to inequalities in health.

Figure 2
Population change (aged under 65) between 1971 and 1991 and absolute change in SMR for deaths under 65 (1991-95 minus 1981-85) for British constituencies

Source: Davey Smith et al., 1998

Figure 2 shows the relationship between population change in Britain over the period 1971-1991 and mortality in the five years following this movement. Population change at that time in Britain between the parliamentary constituencies used here is mostly caused by migration. If more people leave an area than enter then the total population falls. People have, when they have had the chance, progressively chosen to leave areas that have been poorer and where mortality is high to begin with (Davey Smith et al., 1998). Similarly, people have moved into areas where mortality was low to being within — the classic slow but relentless north to south shift in the population. These movements reflect the aggregate life choices of millions of people who were able to “get on their bikes”. Recent research into lifetime migration and mortality using the British Household Panel Study (Brimblecombe et al., 1999; Brimblecombe et al., 2000) has found that not only do people choose to move in these directions, but that the people who have moved tended to exacerbate the inequalities in health found between areas through their migration. People moving to better-off areas tended to be
better-off themselves compared to those they left behind in terms of health, wealth and other life outcomes. People moving in the small migration stream from better-off areas to worse-off areas tended to fare very badly in life, to the detriment of the overall measure of health of the areas they arrived in.

It is perhaps easier to understand how this process operates if an even longer historical perspective is taken than the life-time migration patterns referred to above. Figure 3 shows three maps of the centre of London, using electoral wards. The first maps how rich or poor areas were around 1896 when Charles Booth surveyed the capital in detail. The second uses the same socio-economic indicator in 1991. Note how similar the distributions are, with the east and south doing badly at both times. The third map gives mortality ratios for these areas in the 1991-1995 period. Remarkably the mortality ratios in the 1990s are equally correlated with the 1896 survey as with the 1991 census (Dorling et al., forthcoming). This is partly because the two maps of socio-economic indicators are so similar, but also because where they are different, knowing that an area used to be poor is very valuable when trying to predict its currently mortality rates.

Figure 3  London poverty (1896 and 1991) and mortality (1990s)

For our argument here, the most important point we have to make is that the first two maps of London are so similar. This can only be the product of millions of migratory moves occurring in aggregate terms. Poorer people who lived in poorer housing had to be replaced by people like them when they moved or died, and likewise with more affluent people. Furthermore, poor housing had to be replaced with relatively poor housing for areas to keep their ranking in the social structure. Obviously this did not
happen everywhere at all times. Examples of gentrification and residualisation can be found. But these were not the norm. The norm is for people's migratory moves and their reproduction of housing to help reinforce, and often strengthen, inequalities in health in Britain. Maintaining a strict social class hierarchy takes a lot of effort – not least the migration necessary to maintain its geography.

Attempts are made to change the social geography of Britain. One recent and certainly notorious example is the Millennium Dome that has been built at Greenwich. Often these attempts don't work as they swim against the tide that helps to maintain the social system in which we live. Projects that tend to replicate what has gone before are often far more 'successful' although they change little. At a far lower cost than the Dome and to much critical acclaim a 'Millennium Wheel' was built on the north bank of the Thames at the same time as the Dome. It was, however, only 100 feet higher than its predecessor built on the South Bank just over a century before (see Fig X). What goes around comes around.

Figure 4  Big wheel at Earl's Court, 1896 (left); the London Eye, 2000 (right).

Conclusions

Socio-economic polarisation over the past two decades has led to growing inequalities in health in social terms, interconnected with a spatial polarisation whereby poor people, and poor areas, become poorer, whereas those with more advantage are able to accumulate even greater advantages. In this way socio-economic inequalities have reproduced themselves, and reinforced inequalities in health. But does this continuity of inequality over the last century mean that we cannot change things? As Table 1 shows, the extent of the gap can be altered – widening inequalities in health are not inevitable and the gap can be narrowed.

Although this has been a geographical analysis, the use of geographical policies to tackle inequalities in health should be treated with caution. Area-based policies will serve to change the relative ranking of only a handful of places. Universal policies, on the other hand, will reach the disadvantaged wherever they are located. However, given the way in which current inequalities tend to be reinforced by society, it is likely that the commitment to change these patterns will have to be far greater than it is at present.
References