

## SHORT REPORT

# Health inequalities in Britain: continuing increases up to the end of the 20th century

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## BACKGROUND AND METHODS

Socioeconomic inequalities in premature mortality in Britain increased over the second half of the 20th century, particularly from the early 1970s onwards.<sup>1</sup> The magnitude of mortality differentials reflects the trend in income inequality, which has also undergone a dramatic increase over the past quarter century.<sup>1</sup> The present British government have emphasised their commitment to reducing health inequalities. For example the Minister of Health, Alan Milburn, has stated that “Our ambition is to do something that no government—Tory or Labour—has ever done. Not only to improve the health of the nation, but also to improve the health of the worst off at a faster rate”.<sup>2</sup> A set of targets for the reduction of health inequalities has been presented. To monitor progress in this regard we have produced updated analyses of premature mortality rates running through to the end of 1999. The mortality data are the Office for National Statistics digital records of all deaths in England and Wales, and equivalent records from the General Register Office (Scotland). The full postcode of the usual residence of the deceased was used to assign each death to the parliamentary constituency in which the deceased usually lived. The death data were provided for single years since 1990 and have been grouped into two year aggregates.

Poverty was indexed by a modified version of the Breadline Britain index, based on lack of basic amenities and car access, unskilled and semi-skilled manual occupations, unemployment, non-owner occupier households, and lone parent households. This is a validated indicator of deprivation.<sup>3</sup> Parliamentary constituencies were ranked according to the poverty measure and divided into equal population size deciles on the basis of this ranking. The same ranking deciles, based on 1991 census data, are used for each of the time periods. Standardised mortality ratios (SMRs) were calculated separately for men and women for these deciles, using their overall age specific mortality rates for England and Wales for the periods under consideration.

Population by age group and sex have to be estimated for parliamentary constituencies in the 1990s. The Office for National Statistics (ONS) and General Record Office (Scotland) produce mid-year population estimates for years up to 1999 at local authority district level. In order to maintain a geographical base consistent with previous studies of Britain's health gap, these district level estimates were extrapolated to electoral ward level, and then aggregated to parliamentary constituencies. The interpolation was based upon population estimates for 1996 that were available at electoral ward level, and was carried out such that  $W_{ij} = (P_{ij} \cdot C_{ij}) + Y_{ij}$ , where  $W_{ij}$  is the 1999 ward level population count for age group  $i$  and sex  $j$ ,  $P_{ij}$  is the proportion of the 1996 district level population count for age/sex group  $ij$  resident in ward  $W$ ,  $C_{ij}$  is the change in district level population count 1996–1999 for age / sex group  $ij$  from National Statistics and General Register Office (Scotland) mid-year estimates, and  $Y_{ij}$  is the 1996 ward level population count for age/sex group  $ij$ .

## RESULTS AND DISCUSSION

The age and sex standardised mortality ratios for premature mortality (death before 75) for the period 1990–1999 are presented in table 1, together with the relative index of inequality<sup>4</sup> (RII), which is the relative rate of mortality for the hypothetically poorest compared with the hypothetically richest person in the population, assuming an essentially linear association between poverty and mortality risk. As is apparent from table 1, the assumption of linearity in this relation is reasonable.

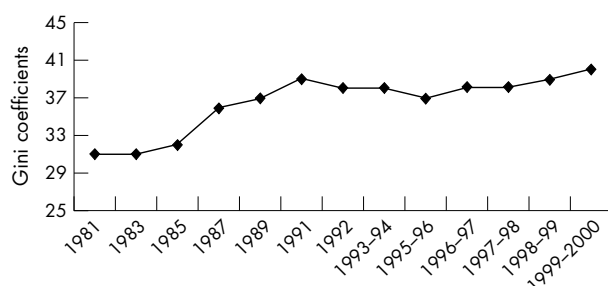
The relative index of inequality for mortality increased steadily across the decade. In table 2 the relative index of inequality is shown according to age/sex groups.<sup>5</sup> The relative indices of inequality are generally greater for men than women and the increase has been more consistent in the former. The inequalities are greatest for older adult men (45–64) but show the greatest increase in the younger male age

**Table 1** Age and sex standardised SMRs (0–74) according to decile of poverty, and the relative index of inequality

SMRO-74	1990–91	1992–93	1994–95	1996–97	1998–99
Decile 1	129	132	134	136	138
Decile 2	117	119	118	120	122
Decile 3	110	112	111	113	114
Decile 4	109	109	109	110	111
Decile 5	101	100	100	101	103
Decile 6	96	95	96	95	97
Decile 7	92	91	91	92	92
Decile 8	87	88	87	87	87
Decile 9	85	83	84	84	83
Decile 10	81	81	81	80	80
RII	1.68	1.74	1.75	1.80	1.85

**Table 2** Relative indices of inequality by age group and sex, 1998–1999 and Gini coefficient for income inequality

	1990–1	1992–3	1994–5	1996–7	1998–9
<i>Men</i>					
0–19	1.47	1.62	1.55	1.47	1.62
20–44	1.66	2.04	2.10	1.98	2.20
45–64	2.02	2.09	2.17	2.26	2.39
65–74	1.54	1.57	1.58	1.67	1.69
0–74	1.71	1.78	1.80	1.87	1.95
<i>Women</i>					
0–19	1.47	1.59	1.55	1.46	1.56
20–44	1.48	1.58	1.58	1.62	1.67
45–64	1.76	1.77	1.77	1.86	1.80
65–74	1.57	1.64	1.63	1.63	1.69
0–74	1.63	1.68	1.67	1.70	1.72

**Figure 1** Gini coefficients for the distribution of income, 1981 to 1999–2000. Note: From 1996–97 values are based on estimates for the sample grossed up to population totals. Source: Lakin C. The effects of taxes and benefits on household income, 1999–2000. *Economic Trends* 2001;569:35–74. Table 2, Appendix 2.

group (20–44). The inequalities are still evident in the age group 65–74, although diminished in magnitude. An increase in inequality over time is, however, seen in this older age group. Income inequality data<sup>5</sup> are presented in figure 1. Income inequality increased steadily from the mid-1970s to early-1990s, showed smaller reversals in the middle of the decade, but has shown steady increases from 1996 until the middle of 2000.

Inequalities in health according to area of residence increased from the 1970s after 20 years of little change,<sup>1</sup> in parallel to changes in income inequality in the population.<sup>1</sup> In this report we demonstrate that the increasing trend in mortality inequalities has accelerated from the mid-1990s. This parallels trends in income inequality, which was relatively stable from the early 1990s until 1997 and has now increased. The increase in income inequality since 1997 demonstrates that the underlying economic tendency to widening disparities in income—before tax, benefit, and goods in kind exchanges have occurred—has a greater influence than the minor attempts at re-distribution through fiscal policy that have been implemented.

The increases in inequalities in mortality have been particularly pronounced for young adults, dramatically so in the case of men. From a perspective that sees health (or

inequalities in health) as being determined across the lifecycle,<sup>1</sup> this suggests that continuing increases in mortality differentials at older ages are currently being set in train. This will undermine attempts to reduce inequalities in health and meet the targets that the government has set. Furthermore, income inequality increases have been concentrated on families with children,<sup>5</sup> which are generally the ones also containing younger adults. This will also feed into the reproduction across generations of inequalities in both material circumstances and health outcomes.

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