

Appendix F

Socio-economic deprivation

Steve Rowan, Mike Quinn

The level of an individual's socio-economic deprivation can be measured using only data for that individual, for example, social class, which is based on occupation.¹ Alternatively, all people living within a particular (usually small) area may be assigned a 'score' from an index such as that of Carstairs and Morris.² Such indices are based on data for individuals but usually aggregated to either enumeration districts or wards. The Carstairs index was developed to help explain geographical variations in health data.³

The Carstairs index has been calculated for all 1991 census enumeration districts and wards in England and Wales, and 1991 postcode sectors in Scotland, using the following four variables obtained from the census: overcrowding; male unemployment; low social class; and no access to a car.

The four variables are each standardised (by subtracting the average and dividing by the standard deviation of its distribution) and then combined, with each variable having equal weight.

To produce deprivation scores by local authority (LA) in England and Wales, and by health board in Scotland, the following method was used:

- each deprivation score by ward or postcode sector was multiplied by its corresponding population (persons) to give a weighted score;
- the weighted scores for each ward or postcode sector were summed to the appropriate LA or health board (boundaries as at 1991);
- similarly, the populations for each ward or postcode sector were summed to the appropriate LA or health board;
- the resulting weighted LA or health board scores were then divided by their corresponding LA or health board populations to give a deprivation score for each LA and health board.

LAs and health boards have been divided into five deprivation categories, that is, 20 per cent of areas in Great Britain have been classified to each category according to the level of

deprivation. Category 1 is the least deprived (white on the map) and category 5 is the most deprived (dark blue). Since the deprivation scores were normalised using the Great Britain average for each factor, comparisons of the deprivation levels can be made across the whole of Great Britain.

Map F1 shows the distribution of deprivation categories by LA in England and Wales, and by health board within Scotland. However, for consistency with other maps in this atlas, a grid (in red) has been superimposed to show the health authority and health board boundaries as at 2001. Corresponding information is not available for either Northern Ireland or Ireland.

Deprivation maps at ward level for every region of England, and for Wales, and at the postcode sector level for Scotland are given in *Geographic Variations in Health*.⁴

References

1. Rose D, O'Reilly K. *Constructing Classes - Towards a new social classification for the UK*. Swindon: ONS and ESRC, 1997.
2. Carstairs V, Morris R. Deprivation and mortality: an alternative to social class? *Community Medicine* 1989; 11: 213-219.
3. Carstairs V. Deprivation indices: their interpretation and use in relation to health. *Journal of Epidemiology and Community Health* 1995; 49 Suppl 2: S3-S8.
4. Griffiths C, Fitzpatrick J (eds). *Geographic Variations in Health*. Decennial Supplement No. 16. London: The Stationery Office, 2001.

Map F1

Deprivation by local authority (England and Wales) and health board (Scotland) in 1991 showing health authorities in 2001

