

Chapter 1

Introduction to the volume

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This report, *Geographic variations in Health*, is the latest in a series of decennial supplements in which the Registrar General for England and Wales presents an in-depth review of the geography of health. Previous decennial supplements on geography were restricted to England and Wales and, for many years, largely concentrated on variations in mortality.^{1,2,3,4} This report is broader in its focus, covering geographic variations in mortality (including infant mortality and stillbirths), fertility-related topics (including conceptions, abortions, live births and congenital anomalies) and cancer incidence. In addition these geographic analyses are extended to cover the whole of the United Kingdom wherever possible.

1.1 Why analyse geographic variations in health?

There is a long history to the measurement of health inequalities in this country. This tradition has always recognised the contribution made by the social circumstances of individuals and the places in which they live. The Poor Law Commissioners, set up to review the workings of the New Poor Law Act 1834, presented evidence from inspectors⁵ and commented:

“Such is the filthy, close and crowded state of the houses, and the poisonous condition of the localities in which the greater part of the houses are situated from the total want of drainage, and the masses of putrefying matters of all sorts which are allowed to remain and accumulate indefinitely ... Yet in these pestilential places the industrious poor are obliged to take their abode.”

Analyses developed subsequently by the General Register Office, following its foundation in 1837, focused on representing inequalities in health in both geographic and occupational terms.⁶ Recent analyses have identified individual circumstances as having the greatest impact on area differences.^{7,8} Areas with poor levels of health are predominantly those with the largest proportion of poor people and area averages largely reflect this distribution. However, in many of these analyses the impact of area characteristics on the health of individuals in that area is also evident. Graham⁹ summarises these as follows:

“How can places damage health? Both material and psychosocial pathways have been suggested. For example, the areas populated by poorer people score higher on material hazards like environmental pollution... These areas are also less well resourced in terms of shops, recreational facilities, ...

With respect to psychosocial pathways, research has focused particularly on the ways in which communities operate to resource and support the well-being of residents.... The concept of social capital has gained particular currency in research concerned with these social dimensions of areas.”

Geographic inequalities in health - differences in the health experiences of the population according to the area in which they live - must therefore continue to be viewed as an important dimension of inequality.

Socio-economic differentials in health were the focus of the previous decennial supplement, *Health Inequalities*.¹⁰ This report confirmed that socio-economic differences in health persisted into the 1990s and had widened since previous analyses were undertaken. There is also evidence of a polarisation between areas, for example in levels of deprivation between local authorities in recent years¹¹ and between those authorities in the top and bottom deciles of mortality under age 65 since the 1970s.⁷

Concern that the quality of life in many poor neighbourhoods has become increasingly detached from the rest of society has prompted Government to launch a number of initiatives in deprived areas, as indicated in the Social Exclusion Unit Report, *A New Commitment to Neighbourhood Renewal*.¹² This strategy aims to ensure that *“within 10 to 20 years, no-one should be seriously disadvantaged by where they live.”* Narrowing the health gap, as well as the gap in some of the determinants of health, between the most deprived neighbourhoods and the rest of the country is a central part of this vision.

Each of the administrations in the United Kingdom has already developed strategies for health in which the reduction of inequalities is an integral part. Emphasis on deprived neighbourhoods is likely to form an increasingly important element in implementing these. In July 1999 the White Paper *Saving Lives: Our Healthier Nation*¹³ was published. It has a commitment to *“improve the health of everyone and the worst-off in particular.”* More recently, the *NHS Plan*¹⁴ for England aims to bring improvements in health across the board and to reduce health inequalities. The White Paper *Towards a Healthier Scotland*¹⁵ calls for a *“coherent attack on health inequalities with a special focus on improving the health of children and young people.”* The recent consultation paper produced by the Department of Health, Social Security and Public Safety in Northern Ireland, *Investing for Health*,¹⁶ and the Health Strategy for Wales, *Better Health Better Wales*,¹⁷ both have a commitment to targeting health inequalities.

The report of the *Independent Inquiry into Inequalities in Health*,¹⁸ commissioned by the Secretary of State for Health, identified several elements in achieving equity in health care that underlies the NHS:

“ensuring that health care services serving disadvantaged populations are not of poorer quality or less accessible; that the allocation and application of resources are in relation to need; and ensuring that positive efforts are made to achieve greater uptake and use of effective services by making extra efforts to reach those whose health is worse.”

All these policy aims require a clear understanding of health status in different areas and how this relates to disadvantage. In particular, there is considerable debate on the circumstances in which mainstream programmes that target deprived individuals are likely to be more effective than area-based targeting.¹⁹ Better understanding of spatial patterning and its causes will assist in ensuring that resources can be appropriately targeted and that appropriate baselines can be set to monitor the impact of policies and initiatives on outcomes.

The geography of health variations also has a place in epidemiological analysis, to suggest possible causal pathways. Early examples of this type include the well-known study by Snow in 1855,²⁰ demonstrating the transmission of cholera through water supplied from different sources. More recently, small area analyses have been used to look at, for example, health in the vicinity of nuclear installations,^{21,22} waste disposal facilities^{23,24} and electricity power lines.^{25,26}

1.2 The approach taken in this volume

This volume aims to describe the spatial pattern of health across the United Kingdom during the 1990s, both in terms of variations between areas over the whole of the period studied and in terms of trends. It also sets out to identify factors associated with these variations, which might suggest possible causal links or common explanations. This comprehensive picture of geographic inequalities in health in the United Kingdom during the 1990s and how they relate to the characteristics of areas should help to provide a baseline for any future monitoring of health inequalities.

The analyses in this volume are presented using a common set of administrative boundaries - those at 1999. This is intended to make the findings more relevant to current health policy and research and to facilitate comparisons now and in the future (for example, by providing the best available baseline for trend analysis). Data are presented in 11 main chapters. Chapters 2 to 4 are scene-setting analyses. Chapter 2 presents an overview of the main demographic features of the United Kingdom population at national, regional and local authority level. Chapter 3 looks at the socio-economic characteristics of the population, drawing extensively on data from the 1991 Census. Chapter 4 describes the classifications used in this volume to describe patterns in health, namely the ONS classification of local authorities²⁷ and the Carstairs and Morris index of deprivation.²⁸ This type of analysis is useful as it groups areas with similar characteristics together and thus helps to put forward potential explanations for the differences in health presented for administrative areas. As these classifications are Great Britain-based and no comparable data are available for Northern Ireland, analyses that use these classifications are necessarily restricted to Great Britain. In some analyses, for which individual level data were not available for all constituent countries of the United Kingdom, coverage is restricted to England and Wales.

Chapter 5 examines geographic variations in fertility, including conceptions, abortions and live births, focusing on two age groups of particular current interest in relation to one or more of these outcomes - teenagers and women in their late thirties. The relationship between conceptions, abortions and live births and deprivation is also examined. Data on live births are presented for the whole of the United Kingdom, but in the case of conceptions and abortions data are presented for Great Britain only. The analysis of conceptions and abortions by deprivation is restricted to England and Wales.

Geographic variations in stillbirth and infant mortality rates within the United Kingdom are examined in chapter 6, based on country, region, local authority, ONS classification and deprivation. Chapter 7 then looks in more detail at some of the factors that might contribute to mortality variation in infancy across England and Wales. For this latter analysis the ONS linked infant mortality file is used. This file links infant death records to their birth registration, thus enabling mortality rates to be analysed using factors collected at birth registration, for example, birthweight, Social Class, registration type, mother's country of birth and mother's age at birth. The linked file is also used to examine geographic variation in infant mortality by cause of death.

Two chapters look at aspects of geographic variations in morbidity. Geographic variation in the notification of congenital anomalies for England and Wales is examined in chapter 8, based primarily on data for the regions of England and for Wales. This chapter uses both the Carstairs and Morris index of deprivation and the ONS classification of local authorities, where relevant. Chapter 9 concerns geographic variation in cancer incidence. This chapter reviews the incidence of the top three cancers in men (lung, prostate and colorectal) and in women (breast, colorectal and lung). These account for over 50 per cent of all registrations for each sex. The incidence for each of these cancers is then examined, for individual local authorities in Great Britain, for regions within England and for groups of authorities based on the ONS classification. Incidence data are also examined using the Carstairs and Morris deprivation index.

Chapter 10 provides a descriptive analysis of geographic variation in mortality at all ages in the United Kingdom. Variations in all-cause mortality and also the main causes of death at all geographic levels are studied in detail. As in other chapters, the relationship with the ONS classification of local authorities is also examined. Chapter 11 examines variations in mortality by cause of death and deprivation. Chapter 12 looks at Social Class variations in mortality within the countries and regions of the United Kingdom for a large number of causes of death. It also uses data from the ONS Longitudinal Study to investigate the relationship between alternative social classifications (such as housing tenure and car access) and variations in mortality at country and regional level within England and Wales.

1.3 Administrative geography used in this volume

Traditionally the geography used for the analysis of variations in health has been constrained by the administrative geography in use at the time. Any results obtained will therefore be strongly influenced by the boundaries in use and trends over time cannot be examined. In addition, it is not unusual to find very different types of areas geographically adjacent to each other within the United Kingdom. The larger the administrative area, the greater the variation in the types of areas and the population within that area. Health does not necessarily follow administrative boundaries. In this volume we have presented all data for areas as at April 1999; in order to achieve this it was necessary to recast all data to the boundaries as at that date.

Where possible data are presented for the constituent parts of the United Kingdom (England, Wales, Scotland and Northern Ireland) and for all local authorities within these. Data are also presented for the nine Government Office Regions within England: North East, North West, Yorkshire and the Humber, East Midlands, West Midlands, East of England, London, South East and South West.

Throughout this volume, 'local authority' is used as a generic term to refer to all local authority districts, London boroughs and metropolitan districts in England, unitary authorities in England and Wales, local council areas in Scotland and district councils in Northern Ireland. Similarly, the term 'country' is used generically to describe each of the four main parts of the United Kingdom.

1.4 Availability of data electronically

The data behind all the maps at local authority level will be made available through our website at www.statistics.gov.uk.

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