Commentary

Space, Place, and the Evidence Base: Part I—An Introduction to Health Geography

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BACKGROUND

As the prelude to a more substantive discussion forthcoming in *Worldviews on Evidence-Based Nursing,* this article introduces the sub-discipline of health geography to readers. It outlines how convincing arguments that health and health care are impacted heavily by space and place have given health geography increasing profile and legitimacy as well as relevancy as a source of evidence for practice. Building on this introduction, our later article will discuss how beyond the metaparadigm of environment in nursing research, geographical research might fully operationalize space and place, and a range of practice issues that this might usefully inform. The current article outlines key geographical concepts and approaches and introduces a range of geographical perspectives from quantitative research on the distributive features of disease and health care, to qualitative research focused on the dynamic relationship between health and place. The topic of severe acute respiratory syndrome (SARS) is then introduced to indicate how some of these ideas might be applied to an important issue that impacts upon nurses and their work.

INTRODUCTION

Evidence-based practice (EBP) has been defined and outlined in detail in the pages of many nursing and health professional journals. Most commentators agree that two important elements are a quest for appropriate high quality research evidence and a capacity to listen to "other" opinions and voices. To this end, and as a prelude to a more substantive and forthcoming discussion, this article introduces the sub-discipline of health geography, emphasizing its potential as an appropriate base for quality practice and a highly relevant "other voice" amongst the health-related social sciences.

Emerging from a limited starting point, geography—or at least a conceptual interest in space and place—is gradually increasing in profile in both nursing (Andrews in press) and broader health professional research (Poland et al. 2005). This article supports this interest by providing key concepts and references that might act as useful entry points to the sub-discipline (also see Andrews 2002; 2003a). Health geography, we argue, provides a dedicated perspective on "environment"—the many interlocking worlds of nursing practice. These worlds have multiple scales from continents to countries, regions, cities, and workplaces. Health geography can contribute a unique perspective to a global evidence base: a different world view that helps to address the divide that is acknowledged to exist between academic research and health professional practice.

PROGRESS AND CHANGE

The conceptual origins of health geography can be traced to ancient Greece and Hippocrates' *Airs, Waters and Places* (Barrett 2000). More recent antecedents are European exploration and colonisation with their related quests for knowledge of "exotic" health conditions. In the 20th century, studies of the geography of health and disease developed substantially. Initially, it remained a sub-field of medical and health services research, variously named geographic pathology, geomedicine, and geographical epidemiology. However, by the 1940s human geographers started to attend directly to disease and health, applying their own distinct disciplinary perspectives and developing "medical geography" as a recognisable sub-discipline of human geography.

Medical geographers traditionally undertook two strands of research that, at times, overlapped. The first was concerned with mapping and modeling the spatial determinants—distribution and diffusion of disease. The second related to the location, distribution, accessibility, and utilization of health services and emerged in the 1960s (Gatrell 2002; Kearns & Moon 2002). Motivating both strands was a concern for equity with respect to

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opportunities for good health. Such opportunities were understood by reference to place of residence—the types of places where sick people were to be found, or where better or worse health care was provided.

In the past 15 years, medical geographers have begun to focus not only on the distributive features of disease and disease services, but also on more complex notions of "place" (Kearns & Moon 2002). In this context, places are conceptualized not just as sites where "observations" are located, but as more complex cultural and symbolic phenomenon constructed through relationships between people and their settings. Geographers have become interested in how places impact on and construct experiences of medicine, and how medicine impacts upon experience of places. Places may vary in form and scale from hospitals to community settings. Alongside this change has come a greater engagement with critical social theory and the increased use of qualitative research methods, as well as a shift in naming from medical to health geography (Kearns & Moon 2002; Parr 2004).

The subject matter of current health geography is diverse. Subjects investigated include environmental impacts on population health (Eyles 1997; Gatrell 2002), the care of older people and women's health (Perkins et al. 1999; Mahon-Daly & Andrews 2002; Andrews & Phillips 2005), and the geography of health-related behaviour (Brown & Duncan 2000; Poland 2000; Andrews et al. 2005). Other work considers the spatial features of specific conditions, such as psychiatric illnesses (Philo 1997; Parr 2000), cardiovascular disease (Huff & Gray 2001), and long-term conditions: both chronic (Moss & Dyck 1996) and less severe (McNally et al. 2000). A "historical geography of health" has traced the spatial diffusion of great epidemics and the history of medicine in different times and places (Smallman-Raynor & Cliff 2001; Andrews & Kearns in press), while a geography of health services has considered the spatial features of distinct categories of health services such as primary care, screening and prevention services, public health initiatives, and hospital outpatient services (Brown & Duncan 2002; Moon et al. 2002). Research on the complex conceptualisation of place has led to work on the relationship among human bodies, caring, and place (Hall 2000; Parr 2002; 2003) and language, symbolism, and the production of place (Kearns 1997; Kearns & Barnett 1997; 1999a; 2000).

Major outlets for research are general health-related social science journals. *Social Science & Medicine,* for example, has a dedicated medical geography editor. In 1995, the journal *Health & Place* was launched, attracting a multidisciplinary audience of health geographers and public/population health specialists. Both *Social Science & Medicine* and *Health & Place* are good starting points for researching health geography. Notably, a number of studies may also be found in *Journal of Epidemiology and Community Health.* Outside health-focused journals, mainstream human geography journals such as *Progress in Human Geography*, *Transactions of the Institute of British Geographers*, *The Professional Geographer*, *Area,* and *Environment and Planning (A-D)* contain occasional articles on geography and health.

The above journals have hosted debates about subdisciplinary perspectives and directions (see Kearns 1993; Kearns & Joseph 1993; Dorn & Laws 1994; Kearns 1994a; 1994b; Mayer & Meade 1994; Paul 1994), method (Dyck & Kearns 1995; Litva & Eyles 1995; Parr 1998), and comments on specific empirical subjects and directions (Eyles 1997; Brown & Duncan 2000; 2002; Hall 2000; Parr 2002; Andrews 2004; Andrews et al. 2005; Andrews & Kearns in press), and have provided general progress reports (Jones and Moon 1991; 1992; 1993; Kearns 1995; 1996; 1997; Moon 1995; Mohan 1998; Rosenberg 1998; Asthana et al. 2002; Kearns & Moon 2002; Parr 2002; 2003; 2004).

In addition, providing general resources to professional academics and students alike, a range of books provide broad disciplinary overviews (see Eyles & Woods 1982; Pacione 1986; Meade & Earickson 2000; Gatrell 2002) and overviews of particular concepts, issues, or perspectives (see Joseph & Phillips 1984; Gesler 1991; Gould 1993; Gatrell & Löytönen 1998; Kearns & Gesler 1998; Butler & Parr 1999; Kenworthy-Teather 1999; Williams 1999; Dyck et al. 2001; Gesler & Kearns 2002; Shaw et al. 2002; Boyle et al. 2003; Gesler 2003; Cliff et al. 2004; Curtis 2004; Maheswaran & Craglia 2004; Smallman-Raynor 2004; Andrews & Phillips 2005).

Institutionally, the majority of health geographers are to be found working in university geography departments. However, because health geography is a relatively small sub-discipline, researchers tend to be concentrated in those geography departments that have an interest in health and health care. Health geographers are also to be found working in other health research and health professional disciplines (see Andrews 2002; in press for associated debate). The International Symposium in Medical Geography (occurring biennially) is a good opportunity to view a range of research in this area and meet the key researchers of the sub-discipline.

SELECTED CONCEPTS AND APPROACHES

a. Landscape Epidemiology

Based on the observation that diseases occur in and are transmitted through space, imparting spatial patterns, this approach provides a spatialised version of classical epidemiology (Meade & Earickson 2000). The assumption is

that if researchers can map and model the spatial patterning of diseases, they are more likely to be able to determine when (and where) diseases will occur and how they spread. Research in this area is theoretically grounded in the concept of the *disease ecology,* which concerns how human behaviour interacts with environmental conditions (both natural and built) to promote or prevent disease (May 1958).

As the scope of international nursing research expands to explore a wider range of issues that provide important contexts to nursing practice, attention to the spatial cause and spread of disease might help inform planning with respect to the type of patients in, and nurses and nursing required for, given locales, as well as informing associated training, management, and resources. Notably, this is an important body concept for research in field-based nursing, and in particular for nursing in developing world settings.

b. Place-Effects on Health and Health Care

In the context of spatial health inequalities, considerable debate focuses on whether health and illness are more greatly influenced by the characteristics of people who reside in particular locales (composition), or by factors reflecting the wider nature of the environments within which people live (context) (MacIntyre et al. 2002). Compositional factors include gender, socio-economic status, severity or types of conditions, family capacity for caregiving, personal economic resources, and debt load. Contextual effects on health include the quality of the built environment and collective relative or absolute income. Contextual factors highlight the significance of place in health disparities since place-based "opportunity structures" may promote or inhibit the health and health practices. This theme has traditionally involved a great deal of quantitative analysis including multilevel modeling, a development that was largely introduced to health research by geographers (Duncan et al. 1993; 1996; 1998). More recently, a largely qualitative emphasis on social capital has helped decipher more intangible local cultural contexts to health and health-care consumption, emphasizing locally shared norms, values, and group cohesions and identities that, through group action, work to either enhance or restrict access to health care, health, and health-seeking behaviours (Mohan & Mohan 2002; Mohan et al. 2005; Wakefield & Poland in press).

An emphasis on this theme would provide nurses with a greater appreciation of the populations that they serve (from both institutions and community-based settings) in terms of the local factors influencing people's health and, in particular, why local populations might use or not use nursing services and their expectations and support networks. A key theme is nurses understanding health by considering the interaction between people and the places they come from/live in/work in. Notably, this is rooted historically in Nightingale's idea of "nursing the room" and the need to know about not only the people who are nursed but also the various settings in which they lead their lives (Andrews 2003a; 2003b).

c. Therapeutic Landscapes

This is one of the few dedicated concepts and conceptual frameworks to be developed exclusively by qualitative geographers. First introduced in 1992, it refers to the positive psychological attachments that people have with places and how these attachments are produced by tradition, society, and even state and corporate interests and, crucially, act to sustain health (Gesler 1992). Therapeutic landscapes may vary in terms of scale and type from wildernesses (natural) to particular hospitals (built), and those places that might be formed in the imagination (Williams 1999; Andrews 2004; Gastaldo et al. 2004). The concept is particularly useful for exploring and framing people's complex health experiences and their construction.

In terms of nursing research, recent attention to the use of the therapeutic landscape concept in research on health-care practices has indicated potential application in a range of practices and practice settings in order to articulate, and potentially improve, the role of place in the production and consumption of care. In particular it reminds us, and potentially articulates that place matters when people are being cared for in terms of unique place elements and experiences, for example, of a home, ward, or hospice, or even a large hospital (Kearns & Barnett 1999b) (Figures 2 and 3).

THE GEOGRAPHICAL LENS

The issues pertaining to disease, health, and health care to which a geographical perspective can be applied are numerous. To illustrate the broad potential, some very general avenues of research inquiry that the advent of a potentially dangerous communicable disease, such as SARS (see Affonso et al. 2004), may demand are outlined below:

Quantitative Research

- *What are the distributive features of the disease in terms of:*
  1. diffusion patterns from points or nodes
  2. movement on international, national, and regional scales
  3. movement from hospitals to community (and vice versa)

  More generally, what are the reasons for these movements? (Concepts and approaches a and b above may be particularly helpful.)

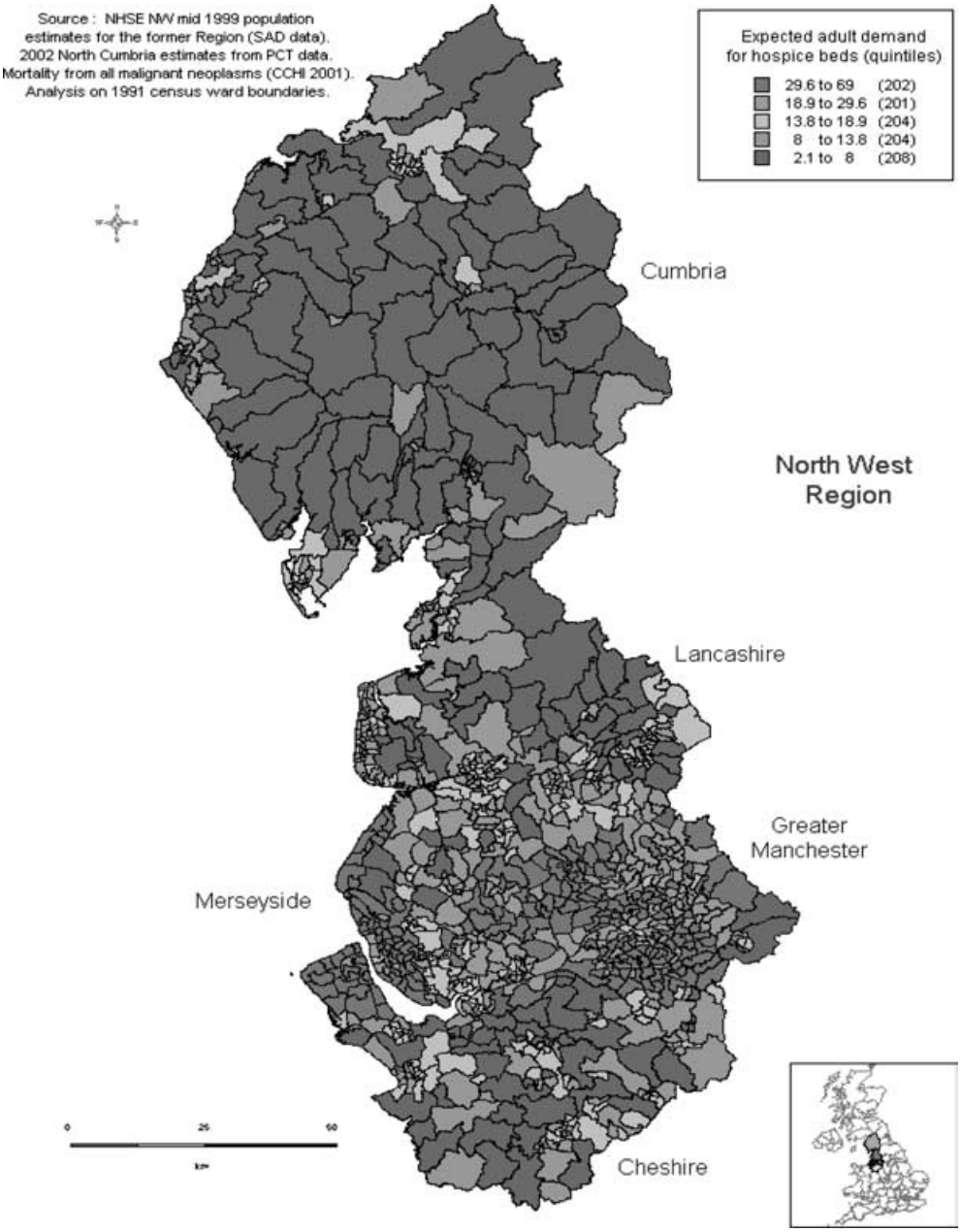

Figure 1. Expected adult demand for hospice inpatient beds in Northwest England. Geographical Information Science provides tools to analyse and represent the macro-scale spatial features of disease, health, facilities, and their use.

- *What are the relationships to other societal features that themselves have spatial forms, for example:*
  1. ethnicity
  2. affluence
  3. the location and availability of health-care facilities

  How can these be modeled and mapped as to inform disease management? (See b above.)

Qualitative Research

- *What are the micro-scale spatial features of the disease in terms of:*
  1. social interaction among patients
  2. social interaction between staff and patients

  If problematic, how can care be better managed?
- *What are the complex features of health settings that facilitate or contain the disease in terms of:*

Figure 2. Contemporary places of health care contain diverse mixtures of paradigms and cultures. A qualitative geographical perspective is particularly useful for investigating how health, medicine, and place are co-produced.

1. work cultures (norms, rituals)
2. organisational and management cultures (the exertion of and resistance to institutional power)

If problematic, how can these be transformed?

- *Under new circumstances, where new rules and regulations, codes of conduct, and spatial restrictions have been implemented in order to better manage infectious disease, what is the changing meaning of places (on different scales—from hospitals to communities) for:*
  1. patients
  2. medical staff
  3. the general public

  How does this affect the plausibility and possibility of general management and what quarantine measures are acceptable or unacceptable to these groups? (See b and c above.)

CONCLUSION

Both health and disease have geographical characteristics that are important in understanding their multifaceted nature. Furthermore, in terms of both its utilization and experience, health-care consumption is impacted by geographical factors such as location, distance, and social setting. These factors, and the increasing form and spatial diversity of health care in contemporary society, have led to the development of a small but dedicated sub-discipline researching such issues. Using both qualitative and quantitative research methods, health geographers have developed useful measures and concepts that may be useful to clinical and health services researchers.

Figure 3. The advent of a dangerous infectious disease, such as SARS, poses a range of geographical research questions regarding the movement of disease, staff, and urban and community health, on both micro- and macro-scales.

In part II of this series, we consider a geographical approach for EBP in greater detail. Building on this initial introduction through a case-study approach, our later article will discuss how space and place might be operationalized in research on clinical practice, and the range of practice issues and debates to which a geographical approach might usefully contribute.

Summary

One reason for a geographical approach in health research is that both health and health care are impacted heavily by space and place.

Another reason is that, often due to new technologies, health care is increasingly spatially diverse and caring relationships physically remote.

Quantitative health geography considers: (1) the geographical determinants and patterning of disease and health, and (2) the geographical patterning of health care and its consequences.

Qualitative health geography considers the interrelationship of health, health care, and place.

Geographers have helped develop unique concepts and approaches to research these issues including landscape epidemiology and therapeutic landscapes.

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Figure 1 was provided by Justin Wood and Professor Tony Gatrell, research associate and director (respectfully) of the Institute for Health Research, Lancaster University.

It is taken from their report: *Equity of geographical access to inpatient hospice care within North West England: A Geographical Information Systems (GIS) approach* (http://www.nwpho.org.uk/reports/inpatientgis.doc).

Figure 2 was provided by Robin Kearns, School of Geography and Environmental Science, The University of Auckland, Private Bag 92019, Auckland, New Zealand. Similar photographs and corresponding discussion are provided in his book *Culture/Place/Health* (Gesler & Kearns 2002).

Figure 3 was provided by Marlene De Chellis, executive assistant to Gillian Howard, vice president of public affairs and communications, University Health Network, Toronto.

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