Introduction

Introduction to special issue: Eleventh International Medical Geography Symposium

The eleventh International Medical Geography Symposium brought together, in Fort Worth, Texas, in early July, 2005, some 140 professionals who engage in, either directly, or indirectly, medical/health geography. I believe it is important to emphasize at the outset that medical/health geography is continuing to evolve in the direction of increased interdisciplinary hybridism. This is proving to be a good thing. The discipline is evolving in other ways as well, which I will allude to later. Interdisciplinary research more effectively addresses complex national and international social issues and critical social needs. It also fosters communication and collaboration across the social and health sciences and the private sector, enhances interdisciplinary networking and bolsters research consultation and support. The eleven papers in this special issue are evidence of successful interdisciplinary research and the evolution of methodology.

The 100+ conference papers, of which these 11 are representative, presented several challenges to health geographers and cognate disciplines:

- how to deal with social and political inequalities as they relate to health;
- further attempts to understand and mitigate various sources of morbidity and mortality;
- ageing, degenerative health, gender and reproductive health issues;
- paradigmatic approaches and critical geographies of public health;
- health risks, methods and models.

The first 7 papers relate to health issues: infant mortality, obesity, diabetes, respiratory disease and infectious disease. Their methodology is mainly quantitative (statistical). The last four papers demonstrate the influence of the cultural/humanistic paradigm that has been adopted throughout the discipline over the past decade and a half.

Communicable, chronic, and behavioral health problems

Aniruddha Banerjee presented the research that earned the 2005 Jacques May Thesis Prize, in which he investigated the geographical pattern of temporal changes in disease rates (Banerjee, 2007). He describes the well-known problem of dealing with both individual and group or community scales. Changing scales alters statistical outcomes resulting in epistemological skepticism about the use of geographic scale-based measures in the first place. To circumvent this problem, he employs a framework based on disease rates that does not measure ecological relationships. It is achieved by scale-independent mapping of disease rates after adjusting for individual level risk factors and avoiding ecological relationships between place-based risk factors and disease rates. Total variation in disease rates was shown to be the sum of individual level risk factors and place-based risk factors. After adjusting for known individual risk factors, the sums of both sets of risk factors were estimated over time and space.

The phenomenon of obesity has long been recognized as a contributing factor to numerous health problems. Despite its longevity, it has only recently attracted a high level of attention from the media, public health authorities, and academic researchers, chiefly because levels of obesity have been growing internationally. Graham Moon and his colleagues address this ‘obesity epidemic’ in England (Moon, 2007). They point out that some
two-thirds of the adult population in that country is now either overweight or obese. Focusing on the complexities inherent in its geography, the research team takes advantage of multilevel statistical analysis (MSA) (synthetic estimation technique) to construct their age–gender–ethnicity geographic structure. The beauty of MSA is its effective ability to generate small area estimates in the absence of robust routine survey data. In England, the geography of obesity differs from that of the overweight population; obesity appears higher in regions, and overweight is estimated to be more prevalent in others. The researchers believe that the geography of these maladies may be associated with differing forms of deprivation between, respectively, post-industrial and more rural areas. Their ultimate goal is to facilitate a more sensitive targeting of publicity and work programs to address these issues.

Obesity and excess weight unarguably are tied to culture wherever they are found. The epidemiology and nutrition literature alludes to the influence of ethnicity and tradition on food consumption patterns. Furthermore, food production industry advertising targets children and adolescents. Foods marketed to children are predominantly high in sugar and fat, and as such are inconsistent with national dietary recommendations. The logical result of ignoring these problems may lead to an increased prevalence of diseases like diabetes, which is the subject of the research of Matthew Cox and co-authors.

Studies involving type-2 (high blood sugar) diabetes in developed nations have demonstrated health inequalities based on economics—that is, low-income populations tend to have higher rates than high-income populations. At the heart of this debate is the interaction between the ‘true cause’ of the enhanced burden: is it that being socio-economically deprived directly makes one more exposed to environmental contaminants, or are there indirect factors that contribute to higher exposures? Or, is there an even more complex set of relationships? Typically, ecological studies are employed that assess the statistical relationship between environmental factors and health outcomes.

Clive Sabel and colleagues, in New Zealand, set out to determine and visually represent spatial trends in relative risks and clusters of hospital admissions for respiratory disease across the Christchurch urban area while controlling for an environmental determinant of disease (in this case, <10 μm diameter particulates) and an area measure of deprivation (Sabel, 2007). The research team tested for hospital admissions between 1999 and 2004, adjusting for particulates, then for a deprivation index, and finally for both variables. Spatial patterns of risk, disease clusters and cold and hot spots were generated using a spatial scan statistic and a Getis-Ord Gi* statistic. In all disease groups tested (except the control disease), adjustment for chronic particulate exposure and deprivation modified the position of clusters substantially, as well as notably shifting patterns and hot/cold spots of relative risk. Adjusting for particulates and/or for deprivation shifted clusters in a similar spatial fashion. In Christchurch, the resulting shift relocalized the cluster from a purely residential area to a mixed residential/industrial area, introducing new indications of possible environmental exposures. The spatial ‘relocation’ of risk in these analyses may provide important information on risk factors in environmental health studies, and should be well understood and integrated into the study design process. The intricacies of interaction between socio-environmental factors lie at the heart of the causative nature of exposure to risk among less privileged populations.

Studies of the ecology of emerging infectious diseases, particularly in sub-tropical regions, have increasingly appeared in the epidemiology literature over the past two decades. Much has been made of the putative association of disease diffusion and global warming. One such malady is Chagas Disease (a.k.a. American Trypanosomiasis), a
parasitic disease vectored by winged reduviid bugs. Chagas is endemic and is recognized as a major health problem in many Latin American countries. In the United States, the Centers for Disease Control and Prevention (CDC) regularly issues reports on the incidence and prevalence of a number of communicable vectored diseases (e.g., encephalitis, rabies, hantavirus). Despite the parallels between socio-economic and environmental conditions in the south-western state of Texas (USA) and much of Latin America, Chagas Disease is not one of CDC’s notifiable diseases.

Elaine Hanford and co-authors used an extensive literature review to highlight evidence that Chagas Disease is endemic to Texas (Zhan, 2007). Problematically, the epidemiological, parasitological, and entomological patterns of Chagas in Texas are both different from and parallel to other endemic regions. Over time, due to a growing immigrant human reservoir (from Latin America), there may be an increase in the incidence of the disease in Texas concomitant with a reduction in the epidemiological differences. Without proper actions, Chagas Disease will place increasing burdens on Texas’ health-care system. Current medical treatments consist of chemotherapies that carry the risk of serious side effects; curing the potentially fatal disease remains equivocal. Therefore, as in South America, prevention is imperative and can be successfully achieved through intervention and education. Eradication of Chagas Disease in Texas is not a realistic goal, since it is an endemic zoonosis, but minimization through interruption of the transmission of Chagas as a public health problem is a reasonable goal. Tracking of Chagas Disease and planning for appropriate health care services would also be aided by including Chagas Disease on the list of reportable diseases for humans.

Self-reported health data are an important research source for morbidity and mortality studies. But, Charis Keller-Lengen and colleagues ask, what does self-reported health represent? What latent structures lie behind individuals’ responses to health questions? The researchers set out to produce an inductive construct of self-reported symptoms from a 1997 Swiss health survey (n = 13,004) (Keller-Lengen, 2007). To the symptomatic data they added supplementary, passive variables (10 characteristics of medication, general health perception, and self-reported gender, age, income, and education). Sixteen active ordinally-scaled variables were entered into a categorical principal components analysis (PCA) along with the 10 items on medication as well as the health-related well-being question and the socio-demographic characteristics.

The data collapsed to five dimensions. The first factor differentiated among all symptoms, which were ordered according to general health (from very good to very poor). The second factor represented the distinction between mental and physical symptoms. Age is related to this dimension, reflecting the relationship of physical to mental symptoms. The remaining three factors distinguished among particular physical and mental symptoms. The socio-demographic characteristics appear to have had a limited influence on health perception. According to the authors, previous research has demonstrated that income in affluent nations is only weakly related to subjective well-being. Self-reported health effects could be explained by individual personality traits and/or individual outlook on life in general. Interpretation of PCA may sometimes be difficult because of ambiguity in component loadings and weak communalities—definitely the case in this analysis. Cultural patterns structure both thought and perception and a large component of culture is below the level of conscious awareness. Health must be observed in its broadest context to be able to interpret its cultural dimensions appropriately.

In a research project in Quebec City in Canada, Robert Pampalon and his colleagues were interested in whether or not people’s perceptions of problems and social cohesion in residential neighborhoods could be considered as contextual variables, and whether these perceptions are related to people’s health (Pampalon, 2007). They used results from a general health survey of 1634 subjects who inhabited 34 neighborhood units in downtown, suburban, and rural areas (localities). The survey included questions on perception of social, environmental problems, attraction to the neighborhood, neighboring and psychological sense of community, self-rated health, long-term disability and ‘self-mastery’ (perceived control over the important events in their lives). The team applied logistic multilevel modeling to their data. From this analysis, they discovered that declaration of a high level of all problems or a low level of social cohesion was more common among women and young people, those who are poorly educated, living alone, and with a low income or in a single-parent family. Two components of social cohesion—attraction to neighborhood and sense of community—displayed
significant variations between neighborhoods after accounting for individual attributes. Their results "clearly suggest that both levels, neighborhoods and localities, are relevant for perception of problems while mainly localities matter for social cohesion."

Cultural/humanistic approaches to interpreting health

For well over a decade, at this writing, there has been increasing interest, compelled by developments in social and cultural theory in the social and behavioral sciences, in the way cultural beliefs and practices structure the sites of health experience and health-care provision. In their seminal work, Culture/Place/Health, Gesler and Kearns argued that "medical issues are a necessary, but insufficient, focus in developing cultural geographies of health and healing. Putting gender, 'race', disability and sexual orientation onto the agenda will provide an opportunity to understand difference and resistance to medical models of health." (Gesler & Kearns, (2002). p. 7)

The remaining papers in this collection are in large part influenced by this 'cultural turn' in medical/health geography.

Much has been written about therapeutic landscapes since Gesler coined the term in the early 1990s. In this turn, Anne-Cecile Hoyez writes about the phenomenon of yoga using the concept of therapeutic landscape (Hoyez, 2007). She introduces the globalization construct in the paper through her analysis of the production and reproduction of yogic therapeutic landscapes in the world's space. Constituted of natural physical elements and built structures, these places are also strongly linked to emotional qualities and intimate feelings evoked by the place and related to health and well-being. Using questionnaires and interviews, Hoyez attempts to tease out respondent’s perceptions and practices associated with yoga. From this, she is able to describe the appeal of yoga and how that appeal is differentially perceived and represented in the world. She then uses Rishikesh, India, as a site for an expanded view of the practice and its representation as a therapeutic landscape. Finally, she uses three examples to illustrate how these ideas of therapeutic landscapes are manifested in other specific sites around the world and how they demonstrate globalization of the concept. The ways that these therapy- and identity-related socio-spatial environments have evolved from the original setting in which they were first developed are highly revealing of their meaning today.

Although social scientists have given the reconfiguring of health care within the health service sector considerable attention, the tertiary education sector’s response to new health philosophies and practices has gone largely unexamined. Robin Kearns opens this door with his study in the new School of Population Health (SoPH) at the University of Auckland, New Zealand in 2004 (Kearns, 2007). This is accomplished with a thematic analysis of narratives offered by 24 employees at this institution. His first finding suggests that this group of academics recruited from a range of health-related backgrounds is advancing interdisciplinary dialog even if the nature and purpose of population health remains unclear to some. Many of the respondents found the open architecture of the building fostered a collaborative atmosphere, including creative thinking about health, but also generated distraction. Thus, the central question addressed in this paper is: How do new arrangements for health education, and the buildings they occupy, reflect and influence the development of new ideas in the health sector? Specifically, Kearns is interested in the ways that ideas of population health are reflected in the ideology, architecture and choreography of everyday life in the SoPH; and how new ideas, design and routines are experienced by employees (e.g. are they leading to new interactions and ways of teaching and researching?)

By illuminating the ambiguities associated with the evolving construct of population health, Kearns is able to cast light on how routine practices potentially contribute to social change inside as well as beyond universities. Thus, the paper implicitly suggests a new avenue for the therapeutic landscapes literature by emphasizing the otherwise banal geographies of workplace relations. In Kearns’ words: “This case study has highlighted how health geographers can engage in a critical praxis that examines our own places and practices, and, in so doing, shed light on the ways ideologies can etch themselves into the institutional landscapes and emotional geographies of everyday life. Furthermore, the paper’s investigation of a researcher’s own institution suggests the possibility of not only considering landscapes ‘out there’ but also deepening our understanding of health-related sites within the ‘here’ of everyday geographies.”

The paper by Sarah Lovell and her colleagues in New Zealand taps into women’s experience with
cervical screening services by considering their attitudes towards and knowledge of this procedure (Lovell, 2007). It examines why under-screening persists within a nation that features high levels of publicity about cervical cancer and screening opportunities. To accomplish this, Lovell et al. investigated how cervical screening is constructed in the New Zealand media; how publicity influences women’s views of cervical screening; and what factors affect women’s decisions to defer screening.

In 2001–2002, the researchers conducted a series of interviews with 17 women in South Auckland who were under-screened (i.e., had not had a Pap smear in over 3 years), and nine providers of screening services. Narratives were recorded and transcribed, and subjected to a thematic analysis. An analysis of these narratives revealed that, consistent with socioeconomic limitations, concerns over exposing one’s body loomed large in women’s reasons for delaying being screened. In particular, feelings of shyness and embarrassment were encountered among Maori and Pacific women for whom exposing their bodies in the process of smear-taking compromises cultural beliefs about sacredness. For some women, ‘medicalization’ of the body has, paradoxically, assisted them in dealing with the intrusion of screening. For others, compliance with the exhortations to be screened brings a high emotional and cultural cost which should at least be considered in health policy debates.

In the final paper in this special issue, Gavin Andrews and his colleagues produce a comprehensive review of the progress in geographical gerontology over the past decade (1995–2006) that looks to the future (Andrews, 2007). Geographical gerontology dates back to the 1970s. The paper demonstrates how the discipline is currently constituted of multiple fields of empirical interest studied by multiple academic disciplines. Specifically, the paper considers the continuation and development of traditional perspectives on older population health—in terms of dynamics, distributions and movements—alongside emerging postmodern perspectives and qualitative approaches that sensitively examine the complex relationships between older people and the places within which they live and are cared for. In the current paper, these authors advocate that the 65+ age group be split into the ‘young-old’ and ‘old-old,’ as death rate geographies for these two populations are evolving differently. Also, investigators should adopt a lifecourse approach, considering those who ‘age in place’ and scrutinizing ‘attachment to place,’ the physical and emotional sense of self identity and meaning that is attached to the concept of home, which is understood both as a central base for care and as the center of one’s social network. We must investigate ways in which economic changes and restructuring of health services, which shift the location of service provision, have changed older people’s access to, experiences and use of health care services. Mirroring theoretical developments and diversity in the social sciences, future research challenges will involve the articulation of varied and often hidden cultural practices and social processes, and of hitherto taken-for granted—as well as new—social and spatial relations, between older people, health and place. For geographical gerontology to meet its challenges most effectively, there has to be greater collaboration and debate within and between its constituent disciplines and diverse empirical areas. This will help it become recognized to a greater degree as a distinct discipline.

Evolution of the discipline

I signed on as the Senior Editor of Medical Geography for Social Science & Medicine in 1986, at the conclusion of the second International Medical Geography Symposium at Rutgers University. At that time, symposium host Michael Greenberg (1988) noted that those conference papers essentially addressed five challenges:

- how to learn enough about communicable disease in less developed countries (LDC)s to intervene successfully;
- how to separate real and spurious risk factors for chronic disease in Western nations;
- how to provide services in increasingly cost-conscious Western political environments;
- how to use mathematical models as a means of understanding the geography of disease and improving health services; and
- how to establish paradigms for public health research.

The table of contents for the special issue from the third symposium at Queen’s University (Canada) scarcely differed from that of the second (Earickson, 1990). I believe it is fair to say that this is what medical geographers were doing in that era. The reader may now wish to revisit the top of this
An introduction to see what a sample of medical/health geographers were writing about this year. What has changed? Are we still dealing with the same basic issues of morbidity and mortality and political ecology that existed decades ago?

Some interesting developments spring to mind. In the 36-paper titles from these symposia in 1986 and 1988, the word “inequality” was not to be found. The odds now seem very low of extracting at random 36 titles from the vitae of health geographers today and finding no allusion to inequality. Consider also that in the same list of titles from the earlier epoch, the word “environment” was virtually absent. Today, environmental health is a hot topic in the discipline. Liz Twigg’s exploratory article on geographical information systems (GIS) in 1988 (an examination of the potential for health based GIS) was a harbinger of what we now observe on a daily basis in health geography (Twigg, 1990). Today, one can scarcely find an undergraduate in the USA going into health geography without at least one course in GIS on their transcript. In both of the earlier symposia, there may have been one or two papers in which qualitative analysis was undertaken; today this method is virtually as mainstream as introductory statistics. But, above all, the profusion of literature by health geographers on culture and critical assessment of resource distribution and environmental contamination, with a concomitant increase in qualitative analysis has redefined the field, at least for the present. The question that has loomed large over all our efforts is, how much of an impact has this research had on improving the lives and health of populations? I am reminded of John Eyles’ exhortation, that we limit our understanding of the nature of health-care systems if we focus narrowly on spatial forms and fail to appreciate the complex role of history and social, cultural and political variations that determine the health of populations on the global landscape (Eyles, 1990). Despite interference from myriad political sources and obfuscation from all quarters, there is sufficient evidence in the literature that our work makes a positive difference, because we have refined our tools and learned from the successes of public health and policy professions how to be more effective. It is also a testimonial to our effectiveness that we have continued to receive critical financial support from both public and private sources for our work.

References

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