

Examining Access to Health Care at the Neighbourhood Level

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Abstract

The objective of this research is to measure physical access to primary health care at the neighbourhood level in Mississauga, Ontario to determine if inequities in health care distribution and access exist. This study will meet its primary objective using geographic information systems (GIS) mapping techniques.

Background and Relevance

There is a well established link between health care access, health care use, and the overall health of populations (Health-Canada, 1999). Health care is recognized as one of the main determinants of health. According to the Canada Health Act (CHA), all Canadians are entitled to receive access to medically necessary services, regardless of their ability to pay (Library of Parliament, 2003). However, with decreased federal funding of health care in the last two decades and a decentralization of services, Canadians are experiencing greater waiting times for physicians, and more Canadians are expressing dissatisfaction with the health care system (Sanmartin et al, 2000). In addition, approximately 4.1 million Canadians do not have a regular family doctor (Nabalamba & Millar, 2007).

Access to health care can be described in several ways, but the most elementary definition is based on physical accessibility. Physical access is described by the distribution of health care services within a geographic area. The distribution of primary health care facilities in Canada has been of interest to health geographers for some time, and there is little disagreement among researchers that the geographic distribution of physicians is unequal relative to the distribution of the Canadian population, creating inequities in access to health (Health-Canada, 1999). However, the traditional focus of literature has been the unequal distribution of physicians between rural and urban settings (Health-Canada, 1999), with fewer studies focused on intra-urban variation.

Recent research within health geography has begun to focus on intra-urban variations in health with a particular focus on the study of neighbourhood effects on health. Current research indicates that neighbourhood social and physical contexts are important in shaping individual health outcomes (Law et al, 2005; Sampson, 2003). Yet, we know little about variations in access to health care at the neighbourhood level. The objective of this research is to measure physical access to primary health care at the neighbourhood level in Mississauga, Ontario to determine if inequities in health care distribution and access exist. This study will add needed information on the distribution of and physical access to primary health care at the neighbourhood level.

Methods and Data

This study will meet its primary objective using geographic information systems (GIS) mapping techniques. Street addresses for health services will be obtained from the College of Physicians and Surgeons of Ontario. In the research, primary health care services include family physicians/general practitioners, walk-in-clinics, after-hours clinics, and community health centres. Primary health care facilities will be categorized into an SPSS database and entered into the GIS through geocoding, which will provide them with a discreet point location on a Mississauga city map. The city will be divided into neighbourhood boundaries based on grouping and cutting 2006 Census Dissemination Areas (DAs) where necessary to approximate municipal neighbourhood boundaries. We will then assess the total number of primary care locations in addition to the total number of primary care physicians in each neighbourhood to develop an index of availability in each neighbourhood. In addition, the location of health care facilities will be analyzed for spatial distribution patterns within and between neighbourhoods, such as spatial clustering. Finally, social contexts of neighbourhoods will be considered using available 2006 Census data to determine whether the spatial distribution and abundance of health care services is related to contextual variables such as average household income and educational attainment.

Results

This research will take place between October 2008 and January 2009, and therefore, results are potential rather than actual. Based on previous literature, there are several trends in health care distribution and access that may be seen in this analysis. It has been found in previous studies that the location of health care providers does show uneven spatial distributions within some Canadian cities (Health-Canada, 1999). As a result, we might see spatial clusters of primary care within some neighbourhoods and a lack of primary care providers in other neighbourhoods. We may also see significant differences in the ratio of persons-per-physicians between neighbourhoods. Additionally, previous literature has found an abundance of primary care facilities in census tracts with higher educational attainment (Krishnan, 2007). Our study may also find clusters of primary care in neighbourhoods with higher socioeconomic status indicators such as income and education. Finally, we may also see differences in the abundance of different types of primary care facilities depending on neighbourhood contextual attributes. This may occur, for example, because the population to frequent walk-in clinics may be dissimilar to the population to have a dedicated general practitioner.

Conclusions

This research project of mapping access to primary health care at the neighbourhood level will contribute knowledge to the field of health geography by helping to explain how and why health care distribution differs at local scales in Canada. This study will create opportunities for future research to study how health care distribution affects health care utilization and overall health outcomes within neighbourhoods.

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