Major hospitals and their impact on surrounding neighbourhoods: an exploratory study of Montreal

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Research aims:
Do hospitals in Montreal influence the employment and residential characteristics of the neighbourhoods in which they are located, and to what degree? What type of industries cluster around existing Montreal hospitals? Our work can be placed within a larger urban development framework, as it offers insight into how public institutions influence the formation of their surrounding environments.

Research questions:
Is there any evidence that hospitals in Montreal shape the urban context within which they are located? Is the residential location of hospital workers affected by their workplace location? Is there evidence of particular types of economic activity clustering around hospitals?

Methodology:
We used 2006 census micro-data at the census tract level, only available recently to researchers and with many restrictions. Using this data we were able to identify individual hospital workers, their personal characteristics (such as age, income, family composition, etc), as well as where they live, and their mode of transportation to get to and from work. We also looked at people who work close to hospitals in order to determine what other types of occupations could be found nearby.

First, looking at residential locations of hospital workers, we compared hospital employees to non-hospital workers. A series of regression analyses were then performed in order to decipher which factors influence where hospital employees live, and whether or not their work location is a major consideration for their choice of residence.

Secondly, looking at the clustering of economic activities around Montreal hospitals, we used a location quotient for 28 aggregate economic sectors. A location quotient provides a unit of measure for the relative concentration of an economic sector in a given area, compared to a reference region, in this case the Montreal CMA. For each economic sector, the location quotient was calculated, within the census tract in which the hospital is located, and then within concentric circles around this tract, extending one kilometer at a time, up to five kilometers away from the hospital census tract.

Key Results:
The research has produced a number of key findings. From the analysis of Montreal’s hospital workers place of residence, we have found the following:

- Montreal hospital workers live substantially farther from their place of work compared to non-hospital workers.
- The mode of transportation to and from work differs widely between occupation, and is closely linked to professional status (i.e. doctors, nurses, and managers are more likely to drive than secretaries and assistants); and also varies between hospitals, depending on their levels of accessibility.
- Neighbourhood character (such as housing type and the socio-economic attributes of the neighbourhood) is the most important variable in explaining hospital employees’ choice of residence, and is the primary determinant in explaining hospital workers’ commute. The type of neighbourhood that hospital workers choose to live in is more important than other variables such as: age, income, occupation, and family composition.

According to our analysis of economic clustering surrounding Montreal hospitals, we have found hospitals generate spatially defined health clusters in their surrounding neighbourhoods, with:

- high concentrations of medical offices (including doctors, dentists and other health practitioners) and outpatient care centers, medical and diagnostic labs, and nursing and residential care facilities.
- high concentrations of other health related services, particularly within the social economy, such as: community services, and religious and charity organizations.
- however, few indicators suggest that hospitals generate economic activity outside of these health clusters, suggesting that hospitals are not strongly connected to the wider economy, and do little to generate more diverse economic activity in their surrounding neighbourhoods.