

The Location of Employment as a Determinant of Population Health

Research Concept (Draft)

1. Overview

There has been significant discussion concerning the impact of urban design on population health. Factors such as walkability, access to amenities and services, proximity and exposure to pollutants have been identified as impacting population health. Most of this discussion, however, has been focussed on the residential environment. While there has been considerable study of workplace health and wellness, there has been little discussion of the impact of the location of employment on population health. This is significant given that a large proportion of the population spends roughly one-quarter of their time in the work environment, and considerable additional time travelling to and from the place of work . This research is intended to explore the relationship between population health and the locational factors that form the context of the workplace.

2. Purpose and objectives

The purpose of this research is to improve understanding of the relationship between health and place of work to enhance public policy and planning and create an evidence-base to assist employers in considering the characteristics of the location of work in designing workplaces.

The objectives of the research are to:

- o Develop a theoretical understanding of the relationship between population health and the location of employment;
- o Establish a methodology for examining the empirical relationship between population health and the location of employment;
- o Identify and develop indicators and data sources to analyze the relationship between population health and the location of employment; and,

- o Develop recommendations for health supportive policies and practices in urban planning, health and social service delivery, and workplace design that address health impacts of employment location.

3. Literature Scan and Theoretical Framework

Research on the impact of employment on population has focussed either on occupational health and safety factors within the workplace, or on the nature of the work itself in terms of remuneration or sense of control. However, little attention has been paid to the spatial distribution of work and the location of the workplace and the ways in which these may impact population health. Although research in this area is scarce, a brief survey of literature has identified several ways that the location of employment may act as a determinant of health.

Job Sprawl

Evolution of planning practice in North America resulted in increasing land use segregation, with employment and residential land uses generally separated. As patterns of urbanization have evolved in North America, development has increasingly taken the form of low-density developments on the fringes of cities. This has been true of employment as well as residential development. Increasingly, this pattern of development is “edgeless” where employment / commercial enterprises spread in a linear pattern along commercial corridors, limiting the ability to effectively integrate jobs and residences in complete edge communities (Kneebone, 2009).

This pattern of development has potential health impacts. Low-density employment areas tend to be auto-centric, with poor transit service. Increasing auto-dependence is linked to reduced physical activity which can negatively impact health. At the same time, increasing commute times due to the ever-widening residential employment separation can be associated with increased stress and reduced time available for stress-relieving activities, or family. Lack of time is frequently cited as key barrier by individuals in engaging in physical activity. Finally, the

separation of land use on a macro urban scale can reduce access to health and social services in suburban employment centres.

Spatial mismatch

While the growing separation of residential and employment uses impacts the population generally, there is a substantial body of research that has highlighted how this pattern of development disproportionately impacts persons of lower socio-economic status. In many cities, employment opportunities increasingly moved away from the older neighbourhoods where lower-income workers lived. As employment and residence became increasingly separated, workers with lower SES have found increasing difficulty accessing employment opportunities due to distance. This may result in reduced employment, or increased cost and stress among already disadvantaged groups who spend significant amounts of time commuting. To the extent that socio-economic status also has an ethnic and gender dimension, this situation can be seen to have specific impacts on specific sub-populations. This can lead to differential access to different employment opportunities for different demographic groups, reinforcing other patterns of disadvantage (Kneebone, 2009; Fagan and Dowling, 2005, Williams)

While long commute times are associated increases in stress and reduced time available for stress-relieving activities among the population generally, this is accentuated for those who may rely on transit service which tends to be poor in suburban employment / industrial areas. This further reduces time for family activities among already vulnerable populations, with consequences for the social and emotional health of the family as a unit and its constituent members.

Access to Services

Reduced access to health and social services in suburban employment centres, while impacting the population generally, may disproportionately impact workers of lower SES. De-linking of

employment from other services (health and social services) reduces access to those services as it is less convenient for workers to obtain service during working hours. This may particularly disadvantage lower-income workers who may have increased difficulty taking time from work for appointments.

This pattern of development significantly disadvantages lower-income women who must often arrange for transportation of children to school or childcare, leading to even longer commutes, or to less than optimal childcare options. Some research also suggests that commuting may impact the ability of lower-income women to breast-feed. Reduced access to employment opportunities in low-income neighbourhoods has also been linked to women's decreased utilization of pre-natal care and increases in low birth-weight (McLafferty and Tempalski).

Research has also noted that the provision of on-site fitness facilities / activities is determined in part by the location of employment. Firms in more urbanized areas are more likely to have difficulty providing facilities and activities. Meanwhile, the lack of near-by off-site facilities is also a major barrier for workers. The lack of workplace-based programs and facilities for fitness / wellness disadvantages those who experience reduced personal time due to longer commutes, particularly those relying on transit.

Quality of the Surrounding Environment

The practice of planning has tended to separate residential and industrial uses in part for health reasons. Commercial and industrial uses are often located in areas of compromised environmental integrity. This can be due to contamination from the industrial uses itself or from other adjacent uses. Compromised environment can include reduced air quality, proximity to contaminants from landfills or other industrial uses, or noise pollution from adjacent uses, transportation corridors or airports. Although deemed unfit for residential use, or often even food preparation, people are exposed to these environments for prolonged periods of time during their work hours.

Distribution of the Type and Quality of Employment

Research has determined that employment quality is a significant factor impacting health. Less formal employment tends to be associated with lower income and increased stress. This is particularly true for part-time, casual and contract work which also typically lack employee health benefits. At the same time, larger firms and firms with more professional positions are more likely to report provision of on-site recreational activities or programs and are more likely to have longer lunch breaks during which time workers can access services or engage in wellness activities. What has not been examined in depth is the spatial distribution of employment in terms of its quality. If lower quality work is located primarily in areas that are less accessible, with less access to services and amenities, the negative health effects of such employment may be accentuated and compound the health impacts already associated with lower quality work.

The Intersection of Location and Employment Attributes

Of critical importance from a population health perspective is the way in which the attributes of employment and location intersect, particularly for vulnerable sub-populations. In this construct, the negative impacts of poor employment quality may be either accentuated or mitigated by the influences of employment location. Similarly, the negative impacts of poor locational attributes may be mitigated or accentuated by positive employment attributes.

		Locational Attributes	
Employment Attributes	<u>Employment</u>	<u>Employment</u>	<u>Employment</u>
	<ul style="list-style-type: none"> • High quality employment 	<ul style="list-style-type: none"> • High quality employment 	<ul style="list-style-type: none"> • High quality employment
	<u>Locational</u>	<u>Locational</u>	<u>Locational</u>
	<ul style="list-style-type: none"> • Poor access to amenities / services • Poor residential proximity • Poor environmental quality 	<ul style="list-style-type: none"> • Good access to amenities / services • Good residential proximity • Good environmental quality 	<ul style="list-style-type: none"> • Good access to amenities / services • Good residential proximity • Good environmental quality

	<p><u>Employment</u></p> <ul style="list-style-type: none"> • Poor quality employment <p><u>Locational</u></p> <ul style="list-style-type: none"> • Poor access to amenities / services • Poor residential proximity • Poor environmental quality 	<p><u>Employment</u></p> <ul style="list-style-type: none"> • Poor quality employment <p><u>Locational</u></p> <ul style="list-style-type: none"> • Good access to amenities / services • Good residential proximity • Good environmental quality
--	---	---

4. Relevance of Location of Employment for Planning and Policy

An understanding of the impacts of place of employment on population health has applicability to a variety of purposes and disciplines, including urban planning and design, health and social services planning, and business planning.

Urban Planning and Design

Typically, design standards for industrial / commercial uses in urban areas differ markedly from residential uses. Often transit service is provided at lower levels, and the requirements for open space and sidewalks are reduced. Similarly, zoning restrictions limit the range of services and amenities that are permitted with the zones. Planning also does not typically concern itself with the social dimensions of access by workers of differing socio-economic status or the on-site / proximate service and amenity needs of this workforce. Understanding the health impacts of employment location and urban design in employment centres will lead to enhanced urban design standards and an improved environment for workers. Further, striving for regional equity in the distribution of employment opportunities and considering this dimension in the development planning and approval process may have important population health impacts.

Health and Social Services Planning

Typically, health and social service need is determined by an understanding of population risk factors based on the location of residence. However, the distribution of the population across an urban area during the hours when services may typically be provided is markedly different. A spatial analysis of health and social service risk factors and needs may produce a very different pattern if mapped according to location of employment as opposed to residence. This may have important implications for the way in which services are provided, and the location of such services. Improving access to health and social services by ensuring that they are provided at locations that are most accessible to those in need of them may have important population health benefits.

Business Planning and Workplace Design

In promoting optimal employee health and wellness, businesses may need to consider a wider range of issues in workplace location and design. Factors typically driving business location decisions may currently include issues such as parking, zoning, land value and tax rates. Better understanding of the impact of the external physical environment and location within the urban area may expand the range of issues businesses may wish to consider when making decisions regarding location and site design. Attention to issues such as access to services and amenities, transit and open space may lead to benefits in employee wellness and retention that produce financial returns in reduced health claims, increased productivity and reduced turnover.

5. Research Plan

This project will involve 2 phases.

Phase 1:

- o Literature review
- o Development of methodology
- o Review of data sources
- o Identification of relevant indicators

Phase 2:

- o Research implementation
- o Possible case study(ies): Large, medium and small communities + possible northern resource community

6. Project Partners

- **Conference Board of Canada**

Roundtable on Socio-Economic Determinants of Health

The Roundtable on Socio-Economic Determinants of Health brings together thought leaders from business, government, academia and local communities, as well as from various sectors such as education, health, housing, transportation and urban development, to have an impact on health and wellness outcomes. It works to have this impact by leading the dialogue and illuminating policies and actions that bring the power of collaboration to address the socio-economic determinants of health and improve the lives of Canadians. Within the array of stakeholders in the determinants of health, the Roundtable has a strategic plan to engage employers in taking action.

- **Canadian Council on Social Development**

Community Social Data Strategy

The Community Social Data Strategy (CSDS) is a national consortium of local data user networks that provides a gateway through which municipalities and community-based organizations access social data from Statistics Canada and other sources. Under the leadership of the [Canadian Council on Social Development](#) (CCSD), the CSDS obtains and disseminates a wide variety of social data at a preferred rate, allowing CSDS partners to share the costs and benefits of this vital information. The consortium also works to enhance the capacity of local social/community organizations to access and use these data effectively. Better understanding of community social and economic trends serves to improve local policy and program development.

- **Federation of Canadian Municipalities** (Proposed)

Quality of Life Reporting System

Led by the Federation of Canadian Municipalities (FCM), the Quality of Life Reporting System (QOLRS) measures, monitors and reports on social, economic and environmental trends in Canada's largest cities and communities. The QOLRS is a member-based initiative. Starting with 16 municipalities in 1996, the QOLRS has grown to 24 communities in seven provinces. QOLRS reports and statistics correspond to the municipal boundaries of member communities.

7. References for Literature Scan

Blumenberg, E. (2004). **En-gendering Effective Planning: Spatial Mismatch, Low-Income Women, and Transportation Policy**, Evelyn Blumenberg [Journal of the American Planning Association](#), Volume **70**, Issue **3** September 2004 , pages 269 – 281. Available [online]: www.informaworld.com/smpp/content~content=a787384362&db=all

Canadian Fitness and Lifestyle Research Institute (2008). **Increasing Physical Activity in the Canadian Workplace**. [Working to Become Active Bulletin](#). No. 7, April 2008.

Fagan, B. and R. Dowling (2005). **Neoliberalism and Suburban Employment: Western Sydney in the 1990s**. [Geographical Research](#), March 2005, 43(1):71– 81. Available [online]: <http://www.crsi.mq.edu.au/people/staff/documents/fagan3.pdf>

Frankish, Jim; B. Kwan, and J. Flores (2002). **Assessing the Health of Communities: Indicator Projects and Their Impacts**. Vancouver: University of British Columbia, Institute of Health Promotion Research. Available [online]: http://www.hpclearinghouse.ca/downloads/Assessing_CommHealth_indicators.pdf

Kneebone, E. (2009). **Job Sprawl Revisited: The Changing Geography of Metropolitan Employment**. New York, NY: Brookings Institute. Available [online]: www.brookings.edu/~media/Files/rc/reports/2009/0406_job_sprawl_kneebone/20090406_jobsprawl_kneebone.pdf

Lang, J. (1992). **Women and Transport , Urban Policy and Research**, Volume **10**, Issue **4** December 1992 , pages 14 – 25. Available [online]: www.informaworld.com/smpp/content~content=a792929779&db=all

Maher, C.(1994). **Residential Mobility, Locational Disadvantage and Spatial Inequality In Australian Cities**, [Urban Policy and Research](#), Volume **12**, Issue **3** September 1994 , pages 185 – 191. Available [online]: <http://www.informaworld.com/smpp/content~content=a792929233&db=all>

Mclafferty, S. and B. Tempalski (____). **Restructuring and women's reproductive health: Implications for low birthweight in New York city**. New York, NY: Hunter College, CUNY, Department of Geology and Geography. Available [online]: http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6V68-3YF4DV2-J&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&_docanchor=&view=c&_searchStrId=1176991616&_rerunOrigin=scholar.google&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=7106a157b06c86e730c1fe4126a88cda

Partridge, M. and D. Rickman (2006). **The Geography of American Poverty: Is There a Need for Place-Based Policies?** Kalamazoo, MI: W.E. Upjohn Institute for Employment Research. Available [online]: www.upjohn.org/publications/ch1/gap.pdf

Ryan, A; W. Zhou and M. Arensberg (____). **The effect of employment status on breastfeeding in the United States**. [Women's Health Issues](#), Volume 16, Issue 5, Pages 243-251. Available [online]: <http://linkinghub.elsevier.com/retrieve/pii/S1049386706000880>

Schilling, Joseph and Leslie Linton (2005). **The Public Health Roots of Zoning: In Search of Active Living's Legal Genealogy**. [American Journal of Preventive Medicine](#) 2005;28(2S2). pp. 96-104.

Socioeconomic status, social mobility and cancer occurrence during working life: a case-control study among French electricity and gas workers. Cancer Causes and Control; Volume 10, Number 6 / December, 1999. Available [online]: www.springerlink.com/content/w7q32384527757h6/

Williams, David (____). **Race, Socioeconomic Status, and Health: The Added Effects of Racism and Discrimination.** Ann Arbor, MI: University of Michigan, Department of Sociology and Survey Research Center, Institute for Social Research. Available [online]: <http://www.echt.chm.msu.edu/blockiii/Docs/RecRead/RaceSocioeconomic.pdf>

Zeytinoglu, Isik; L. Waheeda, M. Seaton, J. Moruz (2004). **Part-Time and Casual Work in Retail Trade: Stress and other Factors Affecting the Workplace.** Industrial Relations. Volume 59, numéro 3, été / summer 2004, p. 516-544 Available [online]: <http://www.erudit.org/revue/RI/2004/v59/n3/010923ar.html>