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# Cancer-related health behaviours and health service use among Inuit and other residents of Canada's north☆

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ABSTRACT

This article identifies the extent to which demographic, socio-economic and geographic factors account for differences between Inuit and other Northern Canadian residents in health-related behaviours and health service use related to cancer incidence and diagnosis. The study population includes Inuit, Métis, First Nation and non-Aboriginal residents aged 21–65 who live in Nunavut, Northwest Territories, Labrador, Nunavik and Jamésie in northern Quebec, and the northern regions of Saskatchewan and Manitoba. Data are drawn from confidential versions of the 2000–2001 and 2004–2005 Canadian Community Health Surveys and the 2001 Aboriginal People's Survey produced by Statistics Canada. Multivariate Logistic regression analysis is applied to a set of health-related behaviours including cigarette smoking, binge drinking and obesity, and a set of basic health service use measures including consultation with a physician, consultation with a nurse, Pap smear testing and mammography.

We found that significantly higher smoking and binge drinking rates and lower rates of female cancer screening among Inuit are found not to be accounted for by differences in observable demographic and socio-economic characteristics, location of residence or distance from a hospital. As such we conclude that health-related behaviours leading to increased cancer risk and to a lower utilization of diagnostic cancer screening appear to be due to unobserved factors specific to Inuit and their unique social-cultural context. Policy interventions to address these problems may need to be targeted specifically to Inuit Canadians and should not be considered in isolation of their broader health, economic and social environment.



## Introduction

The health of the Inuit residents of Canada's northern regions has been the subject of extensive analysis by researchers and is of considerable interest and concern for policymakers and health practitioners (Bjerregaard, Young, Dewailly, & Ebbesson, 2004; Healey & Meadows, 2007; Wilson & Young, 2008; Young, 2003). It has been established that Inuit and other Aboriginal residents of Canada exhibit poorer health outcomes than non-Aboriginal residents across many measures of physical and mental health, and that Aboriginal health status falls far below national standards (Cass, 2004; Curtis, 2007; ITK, 2004, 2009; NDHSS, 2004).

The last few decades have seen a significant increase in the incidence of certain chronic and infectious diseases as well as social pathologies (Bjerregaard et al., 2004). Among chronic diseases, the incidence of cancer in particular has been increasing among both Inuit men and women across all circumpolar regions (Circumpolar Inuit Cancer Review Working Group, 2008). Further, there have been marked changes in the prevalent types of cancer among Inuit. The incidence of cancers of the nasopharynx, salivary glands and esophagus has historically been relatively high but has been declining. In contrast, the incidence of 'modern' cancers of the lung, breast, colon and cervix have been increasing (Friborg & Melbye, 2008; NDHSS, 2003; Nielsen, Storm, Gaudette, & Lanier, 1996). Data on cancer incidence from the Cancer registries of two of Canada's northern regions Northwest Territories (NWT) and Nunavut (NU) (see Fig. 1) indicate that while the incidence of invasive cancer among Inuit men in Nunavut is still lower than the national Canadian average, the rate is higher for Inuit women in Nunavut than for other Canadian women (NDHSS, 2004; NDHSS, 2003; NWT, 2003). The incidence of lung cancer is particularly high for both men and women living in Nunavut – male residents of Nunavut have lung cancer rates 3.2 times the national average for Canadian men, while female residents of Nunavut have lung cancer rates 5.3 times the national average for Canadian women.

Cancer is a disease of special concern in Canada's northern regions. Because most of the communities are small, isolated and close-knit (Inuit communities in Nunavut in particular) many residents have been at least indirectly affected by cancer (NDHSS,

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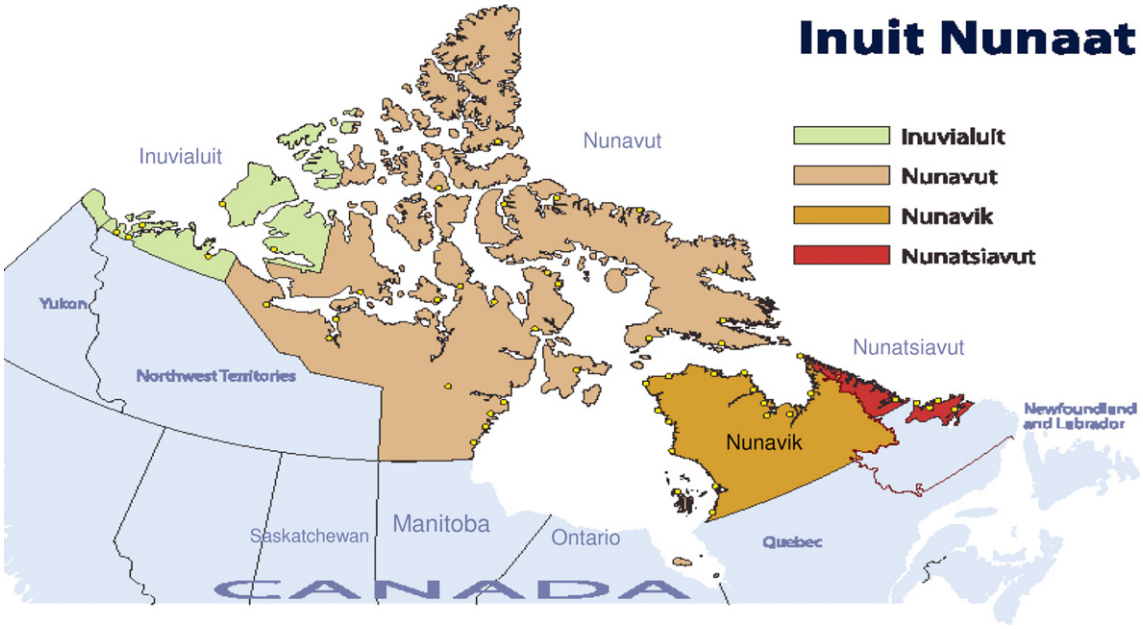


**Fig. 1.** Inuit regions of Northern Canada. Source: Adapted from 'Maps of Inuit Nunangat (Inuit Regions of Canada)', Inuit Tapiriit Kanatami. Downloaded July 20, 2009 from: http://www.itk.ca/publications/maps-inuit-nunangat-inuit-regions-canada.

2003). Further, treatment and diagnosis of many cancers are not generally undertaken in the regions or territories themselves so that cancer patients often must travel to cities like Edmonton or Ottawa that are far removed from their homes and communities. This presents significant challenges for Inuit because of the resulting separation from family and community social support networks (ITK, 2008).

Inuit communities have experienced a protracted period of social and cultural upheaval, especially over the past number of decades, which has led to major changes in lifestyle and living conditions (Bjerregaard et al., 2004; Friborg & Melbye, 2008; Shephard & Rode, 1996). Statistics on health-related behaviours indicate that smoking rates among people aged 12 or more in NWT are almost twice the national rate while NU has the highest proportion of smokers over the age of 12 in all of Canada (Healey & Meadows, 2007; NDHSS, 2003; NDHSS, 2004; NWT, 2003). Obesity/overweight rates are also higher in NWT than in the rest of Canada: 62% of NWT men and 52% of NWT women are overweight or obese, compared to 57% and 39% for other Canadian men and women respectively. The figures for NU are 56% for men and 51% for women. Obesity rates are markedly higher in NU, especially for women: 21% for men and 25% for women compared to 16% and 14% for the rest of Canada. NWT also has the highest proportion of heavy drinkers in Canada, while NU has the third highest (Healey & Meadows, 2007; NDHSS, 2003; NDHSS, 2004; NWT, 2003).

At the same time, there is evidence that access to and/or use of preventative and diagnostic health services is lower among Inuit and other Aboriginal groups than among non-Aboriginals. McDermott (2002) analyzes Pap smear test data collected from the main lab responsible for all Pap smear cytological analysis in the NWT since 1997. Over the period 1997–2000, the screening rate for eligible NWT women (defined as 15 years of age and older) was 82%. However, 72.8% of the target population of Aboriginal women in NWT obtained cervical cancer screening in the period, a figure significantly lower than the 89.8% of non-Aboriginal women who obtained such screening ($p < 0.0001$). Other figures confirm that rates of cervical cancer screening are lower in NU than in other Canadian provinces: 50% of Nunavut women had cervical cancer screening in the last year, compared with 67% of women in BC, 69% of women in Manitoba, and 74% of women in Nova Scotia (Health Canada, 1998). This is of concern since Pap smear testing is widely recognized as an inexpensive way to reduce the incidence and provide early detection of cervical cancer, and should be available on a regular basis to all women at risk (Gupta, Kumar, & Stewart, 2002).

In this context, Inuit Tapiriit Kanatami (ITK), the national organization representing Inuit in Canada, has identified the promotion of healthier lifestyles with regard to smoking, alcohol, diet and activity, and the prevention, screening, and early detection of cancer in their list of cancer priorities (ITK, 2008). Observed differences in the incidence of these intermediate outcomes can be due to a variety of factors such as demographic attributes, socio-economic characteristics, and geographic remoteness and isolation, as well as social and cultural dimensions that may be specific to Inuit individuals and communities. Geographic isolation in particular may be important in terms of limiting access to certain health care services (Newbold, 1998). It is notable that in statistical analyses of Aboriginal health *outcomes*, a common finding is that disparities between Aboriginal and non-Aboriginal populations, or within Aboriginal populations living in different areas, tend to disappear once demographic, socio-economic and health-related behaviour differences are accounted for (Cass, 2004; Curtis, 2007; Tjepkema, 2002; Wilson & Rosenberg, 2002). The question then arises as to the extent to which differences in health-related behaviours and service use are explained by demographic and socio-economic characteristics and geographic remoteness, or are due to other (unobserved) factors specific to Inuit individuals.

For the purposes of this study, we use regression analysis applied to two large population-level datasets to study the demographic, socio-economic and geographic determinants of a range of health-related behaviours (smoking, obesity, and alcohol consumption) and health services use (cervical cancer screening and mammography, contacts with physicians and nurses) related to cancer incidence and cancer diagnosis. We are particularly interested in Inuit living in Canada's northern regions compared to Métis, First Nations, and non-Aboriginal individuals living in the same regions. Inuit, Métis and First Nations peoples are the three groups of Aboriginal peoples recognized in the Canadian Constitution Act of 1982. The Inuit are one of the original groups of