

Administrative claim records inform community health status assessments

Analyzing MSP, hospital separation, and Pharmacare files to investigate occurrences of inflammatory bowel disease in Trail

While the causes of inflammatory bowel disease (IBD) are unclear, evidence indicates that multiple biological and environmental factors are at play. Globally, the highest prevalence of IBD occurs in Europe and North America, with Canada having some of the highest rates of IBD reported.^{1,2} A north-south gradient has been identified in its occurrence, though this geospatial trend likely reflects differing levels of urbanization, industrialization and development, affluence, quality of and access to health care services, sanitation, and hygiene rather than factors related to latitude itself.^{1,3,4} There are few reported cluster investigations of IBD, and there is little research on the occurrence of

IBD related to industrial exposures. However, occupation has been found to be associated with IBD-related mortality; white-collar workers have higher rates of IBD-related mortality than do blue-collar workers.⁵

In 2012 an American study reported a cluster of IBD among residents of Northport, Washington.⁶ Based on their survey of residents and a review of respondents' medical records, researchers estimated the prevalence of IBD in Northport to be far above that of the US overall.⁶ Researchers surmised that IBD in Northport relates to pollution discharged into the Columbia River by a lead-zinc smelter roughly 16 km north, in Trail, British Columbia. Given this assertion, the Trail City Council, Interior Health Authority, Ministry of Health, and BC Centre for Disease Control (BCCDC) deemed it prudent to assess the occurrence of IBD in Trail.

Methods

To quickly estimate rates of occurrence of IBD in Trail relative to the rest of BC, Environmental Health Services at the BCCDC calculated rates of physician claims for IBD-related codes (Medical Services Plan payment information file), hospitalizations for IBD (discharge abstract database), and IBD-related medications dispensed (PharmaNet). Calculations were made for the population residing in Trail and for two comparison communities, Williams Lake and Nelson, for the years 2007 to 2011. Similar calculations were made for the population residing within the boundary of the Interior Health Authority and for all of BC.

Findings

Preliminary findings indicate that health services utilization for IBD has been higher than expected in Trail in

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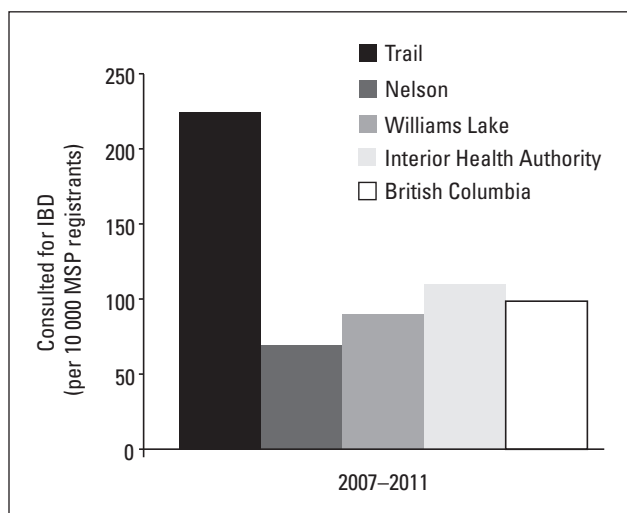


Figure 1. Five-year average of the number of people who consulted a physician with a claim coded for inflammatory bowel disease per 10 000 Medical Services Plan registrants, 2007–2011.

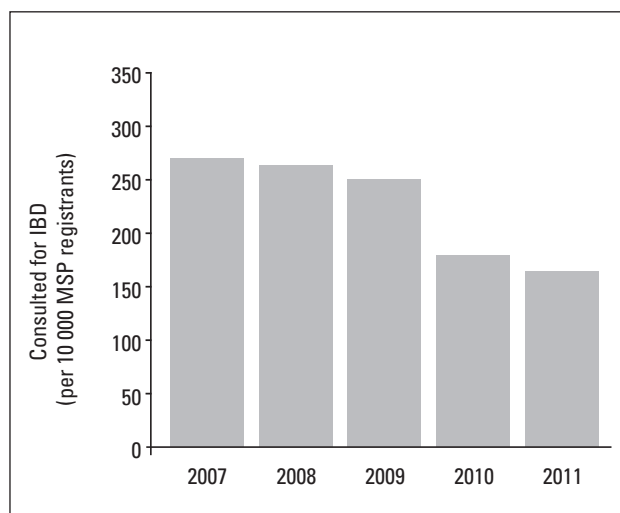


Figure 2. People who consulted a physician with a claim coded for inflammatory bowel disease per 10 000 Medical Services Plan registrants, per year, Trail, 2007–2011.

the recent past. However, for the last 2 years assessed, rates in Trail were similar to those in comparison communities, remaining only slightly elevated in Trail by 2011 (**Figure 1** and **Figure 2**).⁷ The consistency of these trends across all three sources of administrative data is noteworthy. However, actual cases of IBD are difficult to identify in these data without the application of an administrative case definition that takes into account all three data sources. In addition, calculations were not adjusted for the differing age structures of the communities, which is particularly significant given that the population in Trail is older relative to comparison areas. The BCCDC is continuing to assess these data to determine the impact of community age structure on health services utilization for IBD in Trail.

Significance

This assessment highlights several important factors related to community health investigations for environmental concerns. First, it demonstrates a need for accessible provincial chronic disease registries based on administrative data. Such registries are less invasive and disruptive than patient surveys or chart reviews given that physician billing, hospitalization, and, in BC, pharmaceutical dispensation data are automatically collected and available. Second, it highlights the role of local physicians, the BC Ministry of Health, health authorities, and the BCCDC in addressing community concerns. Third, by proactively assessing the occurrence of IBD in Trail, public health was able to report findings to the community in a timely fashion. This is particularly significant as an individual's level of satisfaction with current information influences risk perception during chronic disease cluster investigations.⁸

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Acknowledgments

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