



Research opportunities using administrative databases and existing surveys for new knowledge in occupational health and safety in Canada, Quebec, Ontario, and British Columbia

Key Messages

- Data routinely collected by administrative and government agencies can be used to conduct innovative and relevant occupational health and safety (OHS) research
- Survey data, administrative data, and linked data sources have all contributed to new understandings of OHS research questions by researchers across Canada
- By working to improve access to, linkage of, and ways of using these data, Canadian provinces can increase the potential of this data to answer important OHS questions
- Research generated through the study of administrative data can make important contributions to OHS policy and practice

The influence of work on health

The relationship between working conditions and health is an important public health issue. Every year, billions of dollars are spent by Canadian workers' compensation boards to care for and rehabilitate workers who are injured at work. Work conditions can also affect life outside of the workplace: research has shown that the work environment can affect chronic health conditions such as cardiovascular disease, mental health, and musculoskeletal health.

Clearly, occupational health and safety is an important research area. Using survey, administrative, and linked data resources that are available to Canadian researchers has shown to be an effective way to generate new knowledge with relevance to OHS policies and practices. This research summary presents a brief overview of the types of data available, and examples of their use for research in the provinces of Quebec, Ontario, and British Columbia.

Based on research presented in

Research opportunities using administrative databases and existing surveys for new knowledge in occupational health and safety in Canada, Quebec, Ontario and British Columbia. Smith PM, Stock SR, McLeod CB, Koehoorn MW, Marchand A, Mustard, CA. *Canadian Journal of Public Health*. March/April 2010; (101, supplement 1), S46-S53.

Survey data

Statistics Canada conducts numerous national surveys that can be used for OHS research. Three of the most widely-used surveys are the National Population Health Survey (NPHS), the Canadian Community Health Survey (CCHS), and the Survey of Labour and Income Dynamics (SLID). These datasets collect data on work injuries, health conditions, labour market factors, and demographics. As such, they allow researchers to examine factors not available from workers' compensation boards, such as psychosocial work conditions and shift work.

These national surveys have been used to examine a diverse range of research questions. For example, researchers have examined the contribution of psychosocial work conditions to risk of repetitive strain injury, and associations between occupation and work organization conditions with mental health. Survey data have also allowed researchers to examine factors related to work injuries among youth and recent immigrants.

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Administrative data

Unlike survey data, most administrative data available for OHS research exist at the provincial level through workers' compensation boards and health agencies. Agencies tasked with workers' compensation and prevention in Quebec, Ontario, and British Columbia all collect data on occupational injury and disease, and reports may also contain data on demographics, industry, and occupation. Coverage by workers' compensation varies by province (with 93% of the BC workforce being covered, compared to 85% in Quebec and 65% in Ontario), and the reporting and classification of these data can differ between provinces, making inter-provincial comparisons difficult. However, these administrative data sources have been used to study various types of injuries and fatalities, as well as identifying sub-groups of workers at higher risk for certain health outcomes, thus allowing for more targeted prevention efforts.

Linked data

Federal and provincial agencies, as well as research institutes in various provinces, have linked related datasets together, thereby expanding and deepening the scope of research questions that can be investigated using these data. For example, at the national level, CAREX Canada is linking exposure measurements taken by provincial and federal agencies with data from the Canadian Census and Census of Agriculture in order to estimate the number of workers exposed to known and suspected carcinogens based on their reported occupation and industry of employment.

At the provincial level, both Quebec and Ontario have had success linking OHS data with other datasets to identify groups at high risk of occupational disease, and to prospectively examine the impact of working conditions on chronic diseases. British Columbia leads Canada in the number and scope of currently linked data resources. Population Data BC administers a growing set of linkable data relevant to OHS research, and includes data on workers' compensation claims, provincial health insurance, medical services, vital statistics, and more. British Columbia is the only province in Canada to allow an ongoing linkage of compensation claim data with other data sources for research purposes. This extensive data resource has enabled a variety of novel research studies, and have also allowed researchers to conduct long-term studies that examine the relationship between working conditions and numerous health outcomes.

Implications

Research results from studies using survey, administrative, and linked data to investigate OHS questions have made positive contributions to OHS policies and practices. For example, work on job tenure and work injury has been incorporated into the Ontario Workplace Safety and Insurance Board's young worker safety awareness campaign. Work done in BC that showed a low rate of compensation for victims of mesothelioma, a serious lung disease linked to occupational exposures, has led to an effort to raise awareness among physicians and patients about the work-relatedness of the disease. In Quebec, research on compensation of musculoskeletal disorders has informed public health priorities for prevention.

These contributions demonstrate the value of data-driven OHS research, and justify further efforts by research funders and by the OHS research community to continue to support and develop the infrastructure, capacity, and methodologies to conduct this type of research. Doing so will add significant value to existing efforts to collect data in Canada, and will increase our understanding of the relationship between work and health.