

International Journal of Population Data Science

Journal Website: www.ijpds.org



Establishing the Occupational Disease Surveillance System (ODSS) for Ontario: a linkage of administrative data

MacLeod, J¹, Logar-Henderson, C¹, McLeod, C², Peter, A³, and Demers, PA¹

¹Occupational Cancer Research Centre, Cancer Care Ontario

²UBC School of Population and Public Health

³Population Health & Prevention, Cancer Care Ontario

Introduction

Workplace conditions and exposures are important determinants of health. However, identifying and monitoring population-level trends in work-related disease is challenged by existing data limitations. Administrative health databases capture timely and accurate information about disease diagnoses among the Ontario population, but these data do not include work history.

Objectives and Approach

The Occupational Disease Surveillance System (ODSS), launched in 2017, captures and reports trends in work-related disease in Ontario. A cohort of 2+ million workers was identified from compensation claims (1983-2014). Records were linked through probabilistic and deterministic methods to the Registered Persons Database (1990-2015), and administrative health databases including the Ontario Cancer Registry (1964-2016), hospitalization (2006-2016), ambulatory care (2006-2016) and provincial health insurance plan billing data (1999-2016). Preliminary applications of ODSS have examined risks of 28 cancer sites and 11 non-cancer health conditions. Risks are estimated with Cox proportional hazards models for thousands of industry and occupation groups.

Results

Linkage of existing administrative databases is an efficient approach for examining risk factors for work-related disease at the population level. ODSS can identify groups of workers by industry or occupation that are at increased risk of disease due to known or suspected workplace conditions and risk factors. For example, ODSS detected elevated risk of lung cancer among known at-risk workers employed in mining and quarrying (HR 1.47, 95% CI 1.33-1.61), transport equipment operating (HR 1.39, 95% CI 1.34-1.44), and construction (HR 1.09, 95% CI 1.06-1.13). Exploratory analyses can also detect previously unknown associations between work-related risk factors and disease. For example, although dermatitis and asthma are

common occupational diseases, many causative exposures remain unclear. ODSS is currently being used to further explore potential risk factors.

Conclusion/Implications

Timely information about work-related disease is crucial to support prevention initiatives to protect workers. This novel linkage identifies existing and emerging trends in occupational disease in Ontario. By capturing work-related risk factors, ODSS serves as a model for other provinces to overcome existing gaps in disease surveillance.

