OCCUPATIONAL DISEASE SURVEILLANCE PROGRAM

Reporting on progress up to 2022

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ABOUT THE OCCUPATIONAL DISEASE SURVEILLANCE PROGRAM (ODSP)

The ODSP is a program of research led by the Occupational Cancer Research Centre (OCRC) that aims to develop systems to monitor patterns and trends in occupational disease in Ontario. The ODSP was officially launched in 2018 with joint funding from the Ontario Ministries of Labour, Immigration, Training and Skills Development (MLITSD) and Health (MOH). However, surveillance work began at OCRC in 2012 with two grants from the Workplace Safety and Insurance Board (WSIB). The first grant developed a system to use the 1991 Long-form Census for occupational cancer surveillance. The second grant was a small pilot study to link a 20% sample of WSIB lost-time claims data to the Ontario Cancer Registry (OCR) in order to create a system capable of identifying work-related cancers.

The latter project was very promising and generated results particularly relevant for Ontario. With additional grant funding from the Ontario Ministry of Labour in 2014, the linkage was expanded to include all WSIB lost-time claims data, creating the Occupational Disease Surveillance System (ODSS). In 2016, further funding was obtained from the Public Health Agency of Canada to expand the ODSS to other potential occupational diseases. The ODSS is the flagship project of the ODSP.

ABOUT THIS REPORT

Since its launch in 2018, the ODSP received long-term funding to expand the scope of the program, explore new areas of occupational disease and exposure surveillance, make strides in knowledge translation and exchange, and continue to train graduate students. This report provides a brief overview of the program's progress, with a focus on recent developments.

EXPANDING THE OCCUPATIONAL DISEASE SURVEILLANCE SYSTEM (ODSS)

The ODSS is a unique surveillance system that remains the centerpiece of the ODSP and has been gradually expanding over the past few years. The ODSS began with cancer surveillance and now includes a broad range of diseases including those that are occupational by nature (e.g., asbestosis and silicosis), chronic diseases (e.g., chronic obstructive pulmonary disease (COPD), idiopathic pulmonary fibrosis (IPF), and ischemic heart disease), and other conditions (e.g., asthma, dermatitis, and Raynaud's syndrome). To achieve this, we expanded linkage of the WSIB data to hospital visits, emergency room visits, and physician/out-patient visits. The scope of OCRC's surveillance work now reaches well beyond cancer!

In 2020, in collaboration with the Institute for Work and Health (IWH), OCRC received additional funding from the Public Health Agency of Canada to use the ODSS to examine occupational patterns of opioid-related harms, including poisonings, use disorders, and death. In 2022, the Opioids and Work website was launched. Progress has been made in data analysis and interpretation, manuscript preparation, and the development of knowledge translation products.

In 2021, OCRC received funding from WSIB to use the ODSS to examine occupational patterns of COVID-19 infections and effects. The project evaluates rates and results of COVID-19 testing using the Ontario Laboratories Information System (OLIS), as well as rates of emergency room visits and hospitalizations to identify more severe cases. Currently, progress has been made in linking OLIS to the ODSS and initial data analysis. The first report on preliminary findings is in preparation and expected to be released in early 2023.

OTHER SURVEILLANCE PROJECTS IN THE ODSP

Alongside the ODSS, two other surveillance projects have been developed as part of the program to date. The Mesothelioma Surveillance Project tracks patterns and trends in the incidence of mesothelioma in Ontario by year, sex, age group, and geographic areas. In 2021 we completed a study of patterns and trends of mesothelioma in Ontario and British Columbia with funding from WorkSafeBC.

The ODSP also developed an exposure surveillance project to track the use of toxic chemicals in the province, using data from the Ontario Toxics Reduction Act (TRA). This allowed us to examine chemicals used and the number of workers employed in major industries in Ontario. This project is no longer active because the province repealed the TRA and no longer collects this data.

KNOWLEDGE TRANSLATION AND EXCHANGE

Initially, the ODSP produced reports and publications on specific topics, such as risk of lung cancer, breast cancer, and asthma by occupation. Stable funding allowed the development of the ODSP website in 2019, with detailed and accessible information on all its projects. We are continually adding to the resources available on the website, including bulletins and alerts that focus on high-risk occupational groups, specific exposures, or emerging issues, as well as a series of Construction Exposure Profiles in collaboration with the Ontario Building Trades Council.

In 2019, we held the National Occupational Disease and Exposure Surveillance workshop to engage a diverse audience from various Canadian jurisdictions and to improve inter-provincial collaboration. The workshop was successful in facilitating a national collaboration, and recommendations were put forth on how to make progress on occupational disease and exposure surveillance in Canada. These recommendations will be further explored to develop feasible next steps.

Based on feedback from Ontario stakeholders that providing surveillance results by exposure and sector would be more effective in driving prevention, we obtained a grant from the WSIB in 2019 to develop the Ontario Occupational Disease Statistics website in collaboration with the Canadian Centre for Occupational Health and Safety (CCOHS). This website, launched in 2020, allows users to explore the ODSS results using an interactive data tool to make the connection between workplace exposures and occupational disease.

In 2022, we produced the Chronic Respiratory Disease Report, highlighting results from the ODSS. The goal of the report was to identify groups of workers at increased risk of respiratory disease in order to promote recognition and prevention. The report focused on lung cancer, chronic obstructive pulmonary disease (COPD), asbestosis, mesothelioma, silicosis, and idiopathic pulmonary fibrosis.

BUILDING CAPACITY IN ONTARIO

The ODSP also contributes to OCRC's strategic objective to build occupational disease research capacity in Ontario. Over the course of the program, we have provided training opportunities to graduate students in the Master of Public Health (MPH) program at the Dalla Lana School of Public Health (DLSPH).

In 2022, six students used the ODSS to investigate a variety of occupational disease risks in Ontario.

Gabriella Christopher examined sex and gender differences in lung cancer risk by occupation and industry.

Rebecca Prowse examined occupational patterns in COVID-19 outcomes.

Suman Kanoatova examined the occupational patterns of both salivary gland cancer and sarcoidosis.

Rachel Ma worked on developing a knowledge dissemination plan for sharing ODSS results with the construction sector.

Gregory Feng, based at the Institute for Work and Health (IWH, our partner for opioids surveillance) compared the risk of opioid-related harms among workers in the ODSS to the general population of Ontario.

Fateme (Sepide) Kooshki, a DLSPH PhD student based at IWH, assisted with the opioid-related harms surveillance project.

EXPLORING OTHER OPTIONS FOR SURVEILLANCE

Through the ODSP, we continue to explore ways to improve on existing surveillance efforts and expand into other areas. In 2019, we released a report titled Options for Tracking Occupational Disease and Exposure in Ontario. We are also preparing a report on occupational disease surveillance options using Statistics Canada data for release by the end of 2022. The major challenge continues to be the development of systems for the surveillance of occupational exposure, due to a lack of broad, accessible exposure data in Ontario and Canada. Searching for ways to address the exposure surveillance gap is a priority for the program going forward.

RESOURCES

Websites

Occupational Cancer Research Centre: https://www.occupationalcancer.ca

Occupational Disease Surveillance Program: https://www.odsp-ocrc.ca

Ontario Occupational Disease Statistics: https://occdiseasestats.ca

Opioid-Related Harms among Ontario Workers: https://opioidsandwork.ca

Publications

1. Cancer risk among firefighters and police in the Ontario workforce. Sritharan J, Kirkham TL, MacLeod J, Marjerrison N, Lau A, Dakouo M, Logar-Henderson C, Norzin T, DeBono NL, Demers PA. Occup Environ Med. 2022;79:533-539.

2. Incidence of mesothelioma and asbestosis by occupation in a diverse workforce. DeBono NL, Warden H, Logar-Henderson C, Shakik S, Dakouo M, MacLeod J, Demers PA. Am J Ind Med. 2021;64(6):476-487.

3. Incidence of acute myocardial infarction in the workforce: Findings from the Occupational Disease Surveillance System. Troke N, Logar-Henderson C, DeBono, N, Dakouo M, Hussain S, MacLeod JS & Demers PA. Am J Ind Med. 2021; 64(5): 338-357.

4. Neurodegenerative diseases among miners in Ontario, Canada, using a linked cohort. Zeng X, DeBono NL, Harris AM, Arrandale VH, Demers PA. Occup Environ Med. 2021;78:385-392.

5. Cancer surveillance among workers in plastics and rubber manufacturing in Ontario, Canada. DeBono NL, Logar-Henderson C, Warden H, Shakik S, Dakouo M, MacLeod J, Demers PA. Occup Environ Med. 2020;77(12):847-856.

6. Dermatitis among workers in Ontario: results from the Occupational Disease Surveillance System. Shakik S, Arrandale V, Holness DL, MacLeod JS, McLeod CB, Peter A, Demers PA. Occup Environ Med. 2019;76(9):625-631.

7. Prostate cancer risk by occupation in the Occupational Disease Surveillance System (ODSS) in Ontario, Canada. Sritharan J, MacLeod JS, McLeod CB, Peter A, Demers PA. Health Promot Chronic Dis Prev Can. 2019;39(5):178-186.

8. Adult asthma among workers in Ontario: Results from the Occupational Disease Surveillance System. Logar-Henderson C, MacLeod JS, Arrandale VH, Holness DL, McLeod CB, Peter A, Demers PA. Ann Am Thorac Soc. 2019;16(5):563-571.

9. Breast cancer risk by occupation and industry in women and men: Results from the Occupational Disease Surveillance System (ODSS). Sritharan J, MacLeod JS, Dakouo M, Qadri M, McLeod CB, Peter A, Demers PA. Am J Ind Med. 2019;62(3):205-211.

10. Examining lung cancer risks across different industries and occupations in Ontario, Canada: the establishment of the Occupational Disease Surveillance System. Jung JKH, Feinstein SG, Palma Lazgare L, Macleod JS, Arrandale VH, McLeod CB, Peter A, Demers PA. Occup Environ Med. 2018;75:545-552.

RESOURCES CONTINUED

Reports

Chronic respiratory disease report: highlights from the occupational disease surveillance system (2022)

Mesothelioma Surveillance and Prognosis in Ontario: Research Brief (2020)

National Occupational Disease and Exposure Surveillance workshop summary and observations (2020)

Options for tracking occupational disease and exposure in Ontario (2019)

Exploring applications of the Ontario Toxic Reductions Act for exposure surveillance (2018)

ODSS Bulletins, Alerts and Profiles

Bulletins:

Acute Myocardial Infarction

Asbestos-related Disease

Chronic Obstructive Pulmonary Disease

Nursing Professionals

Alerts:

Asbestos Exposure in Education Workers

Exposure in Boilermakers

Male Breast Cancer

Construction Profiles:

Asbestos

Crystalline Silica

Diesel Engine Exhaust

Lead

Paints

Solar Radiation

Welding Fumes

Wood Dust