**Surveillance Advances**
**Progrès dans le domaine de la surveillance**

# From Data to Action: Cancer Surveillance and Occupational Diseases

# Passer des données à l'action : Surveillance du cancer et maladies professionnelles

October 29, 2024 12:00 – 1:00pm CT / 1:00 – 2:00pm ET

## Speakers

| | |
|---|---|
| **Dr. Donna Turner** | Chief of Population Oncology at CancerCare Manitoba, and Associate Professor at University of Manitoba |
| **Dr. Jeavana Sritharan** | Scientist at the Occupational Cancer Research Centre (OCRC) based at Ontario Health, and Assistant Professor at University of Toronto |
| **Dr. Paul Demers** | Director of OCRC, Senior Scientist with Ontario Health, and Professor at University of Toronto |

National Collaborating Centre for Infectious Diseases
Centre de collaboration nationale des maladies infectieuses

Public Health Agency of Canada
Agence de la santé publique du Canada

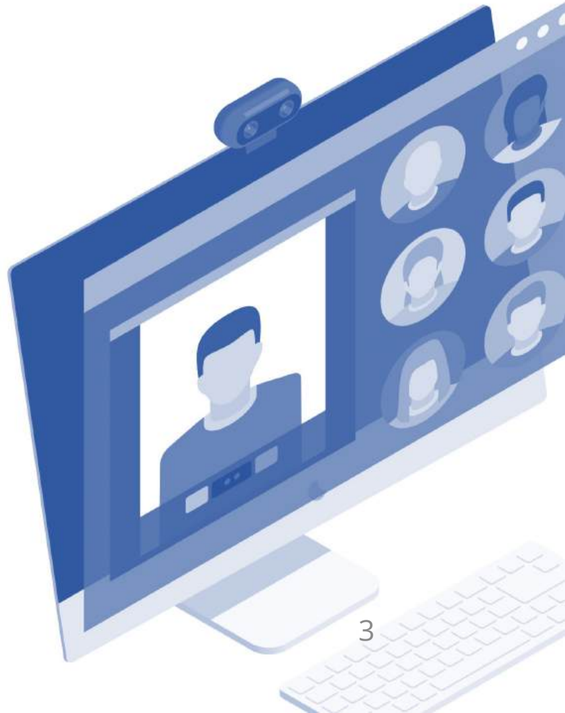
# Land Acknowledgment: NCCID

The National Collaborating Centre for Infectious Diseases is hosted by the University of Manitoba. Both the University of Manitoba and I are situated on Treaty 1 Territory, the original lands of the Anishinaabe, Cree, Oji-Cree, Dakota, and Dene peoples, and homeland of the Métis Nation. I am thankful for these lands that I live and work upon as a descendant of settlers with European ancestry and with inherited responsibilities for the lands' protection.

As an organization, NCCID recognizes the systemic inequities and treaties that have been implemented as part of the process of colonization intended to benefit some while harming others. We are committed to working with our partners towards reconciliation and we strive to honour the lands and their original caretakers in our work.

# Housekeeping

- Seminar recording and presentation slides will be available shortly after the seminar at the NCCID website: https://nccid.ca/
- If you have technical problems with Zoom, please email us at nccid@umanitoba.ca
- The chat box for participants has been disabled for this session. We will use the chat box to share additional information.
- Please use the Q&A tab to submit your questions for our speakers. You can “like” other people’s questions to push them up in priority



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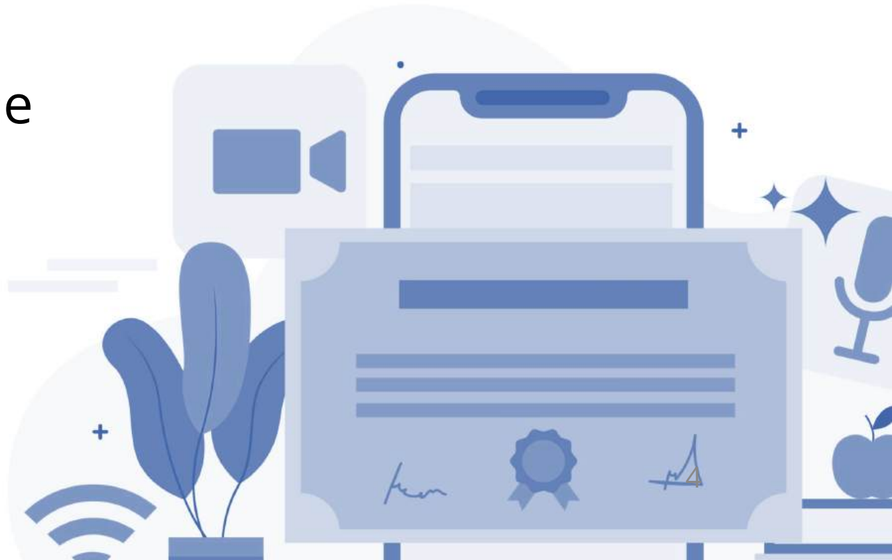
# Accreditation

Surveillance Advances is a self-approved group learning activity (Section 1) as defined by the Maintenance of Certification Program of the **Royal College of Physicians and Surgeons of Canada**.

The seminar series is also approved by the Council of Professional Experience for professional development hours for members of the **Canadian Institute of Public Health Inspectors**.

If you would like a letter of participation, please complete the survey which will be shared after the seminar.



# Land Acknowledgment: PHAC

I would like to take this time to acknowledge the land where I live and work. Situated upon the traditional territories of the Erie, Neutral, Huron-Wendat, Haudenosaunee and Mississauga Peoples, this land is covered by the Dish With One Spoon Wampum Belt Covenant, an agreement between the Haudenosaunee and Anishinaabek to share and care for the resources around the Great Lakes.

Today, Dundas and the City of Hamilton are home to many Indigenous people from across the Turtle Island. We honour the Indigenous peoples who have lived on and cared for these lands for generations, and I am grateful for the opportunity to share and call this place home.

# Today’s speakers

## Dr. Donna Turner

Chief of Population Oncology at CancerCare Manitoba, and Associate Professor at University of Manitoba

## Dr. Jeavana Sritharan

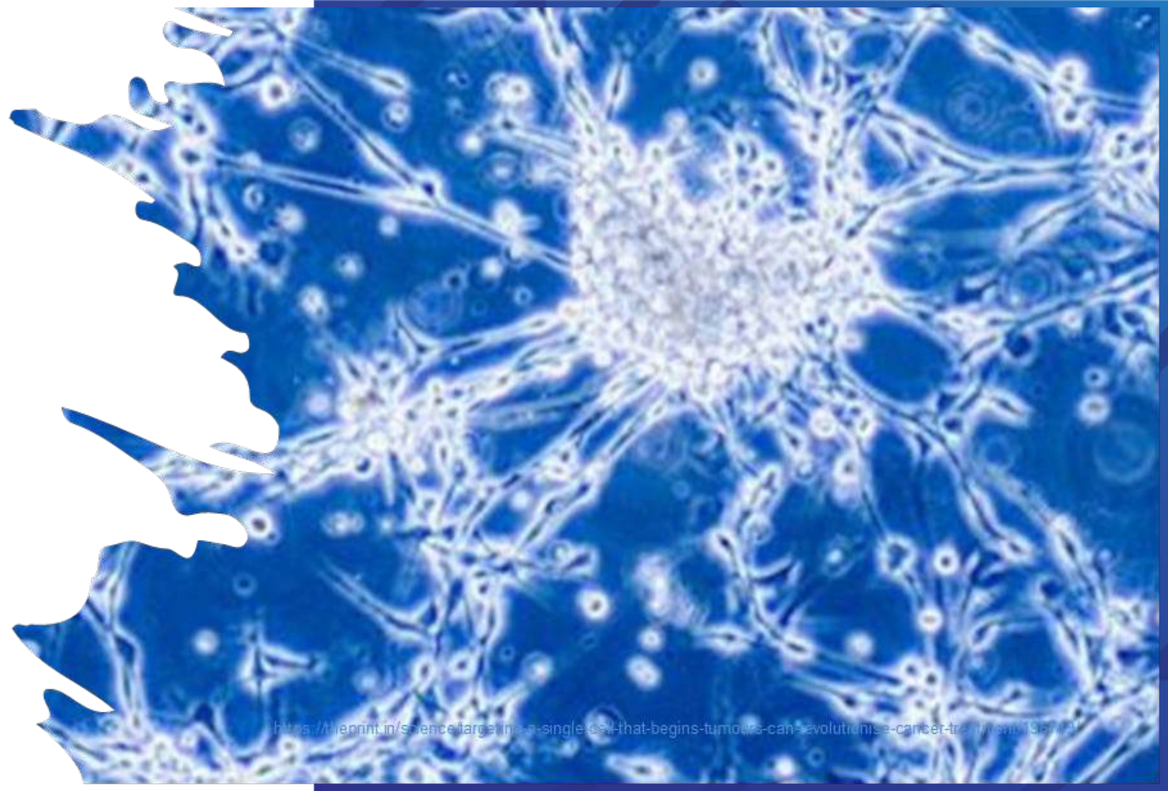
Scientist at the Occupational Cancer Research Centre (OCRC) based at Ontario Health, and Assistant Professor at University of Toronto

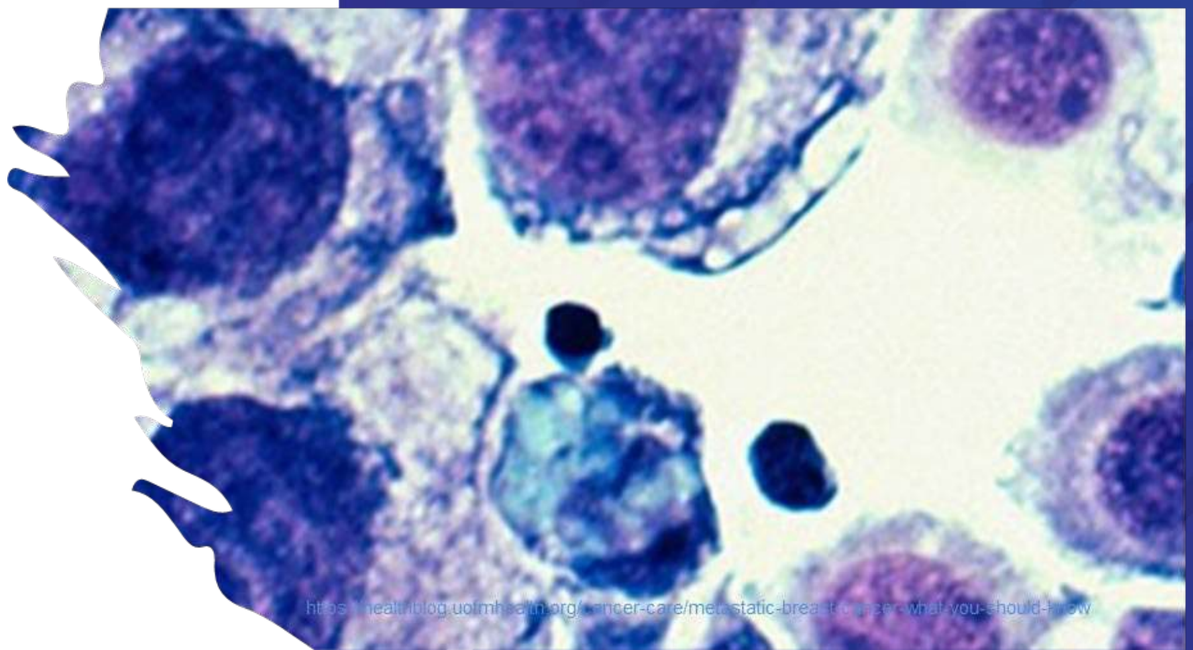
## Dr. Paul Demers

Director of OCRC, Senior Scientist with Ontario Health, and Professor at University of Toronto

# An Introduction to Cancer Surveillance

**Donna Turner, PhD**
**Chief of Population Oncology**
**CancerCare Manitoba**
**October 29, 2024**





# Conflicts of interest

**None.**

# Polling Question

**What risk factor is the 2nd most responsible for cancer?**

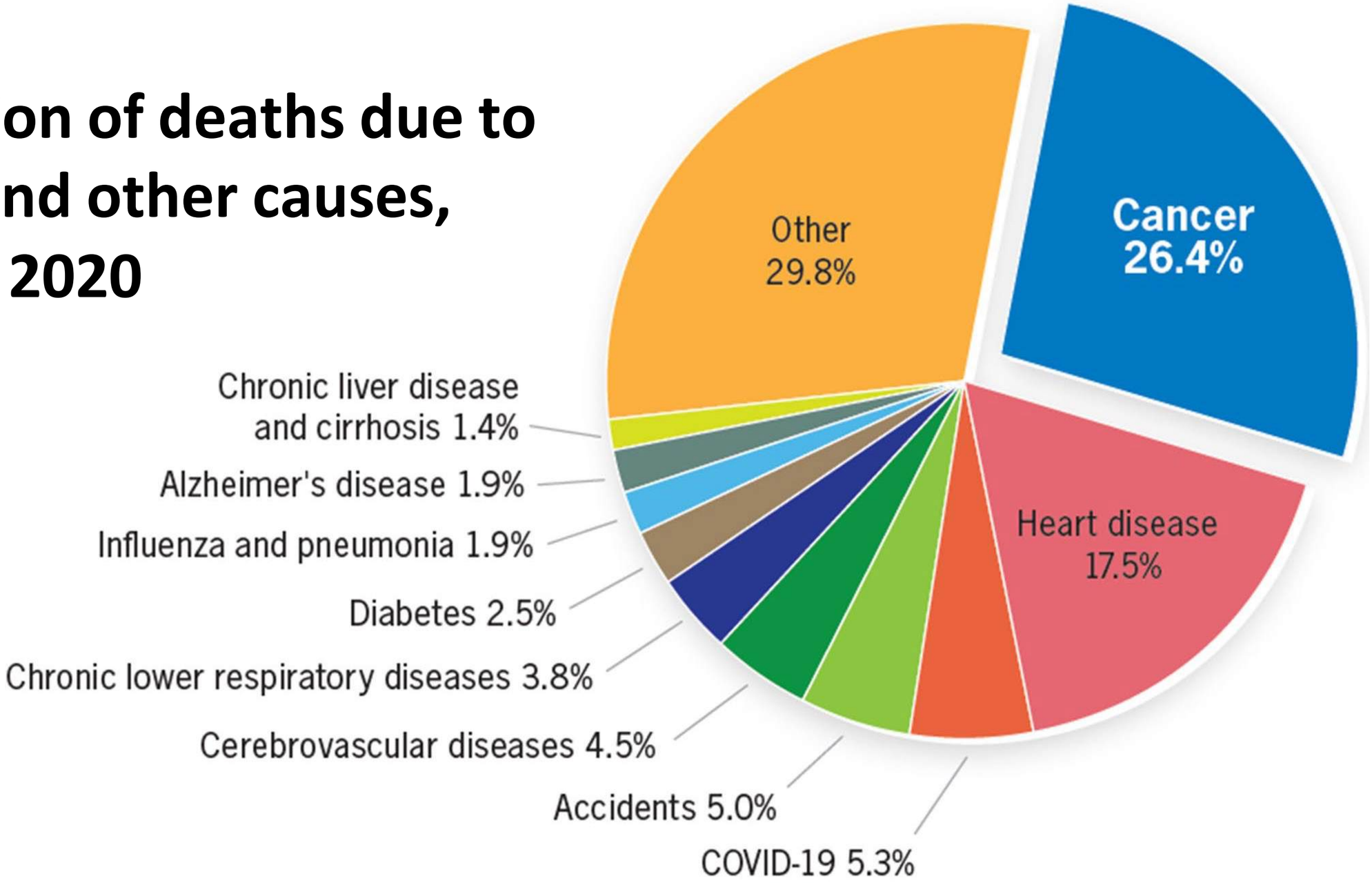
- smoking
- physical activity
- sun exposure
- alcohol
- air pollution

Image by freepik on Freepik

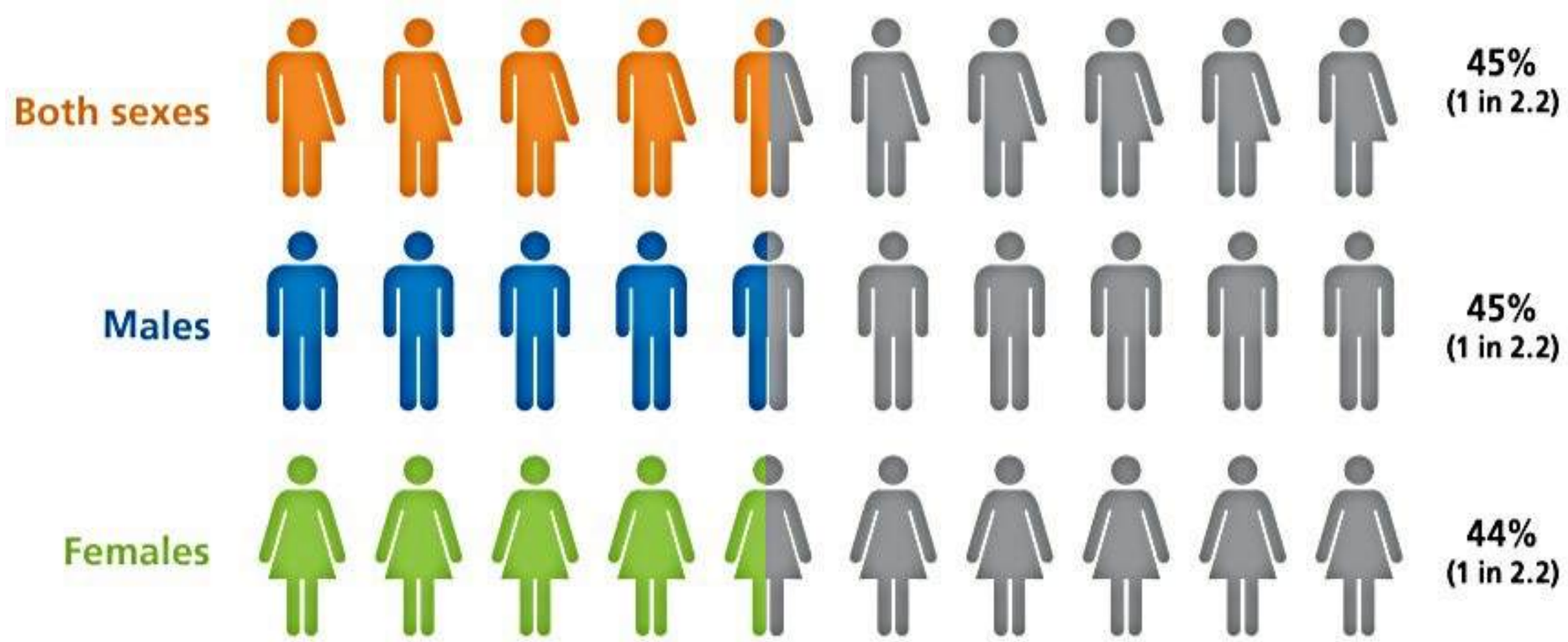
# Learning Objectives

- Where we get cancer data
- Patterns of cancer
  - incidence
  - mortality
  - survival
- Cancer risk factors

# Proportion of deaths due to cancer and other causes, Canada, 2020

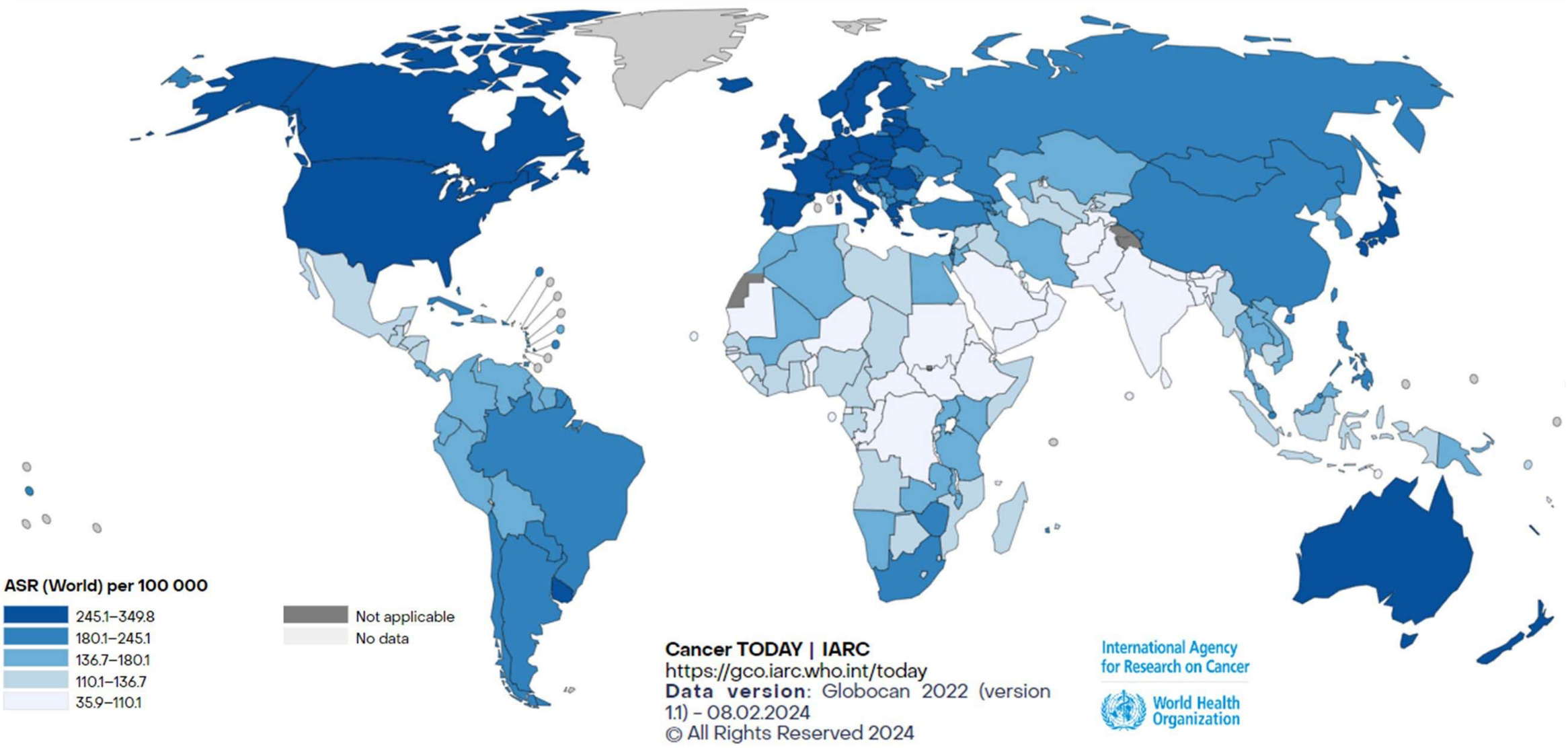


# Patterns of Cancer: Lifetime probability of developing cancer, Canada (excl. Quebec and Nova Scotia*), 2019



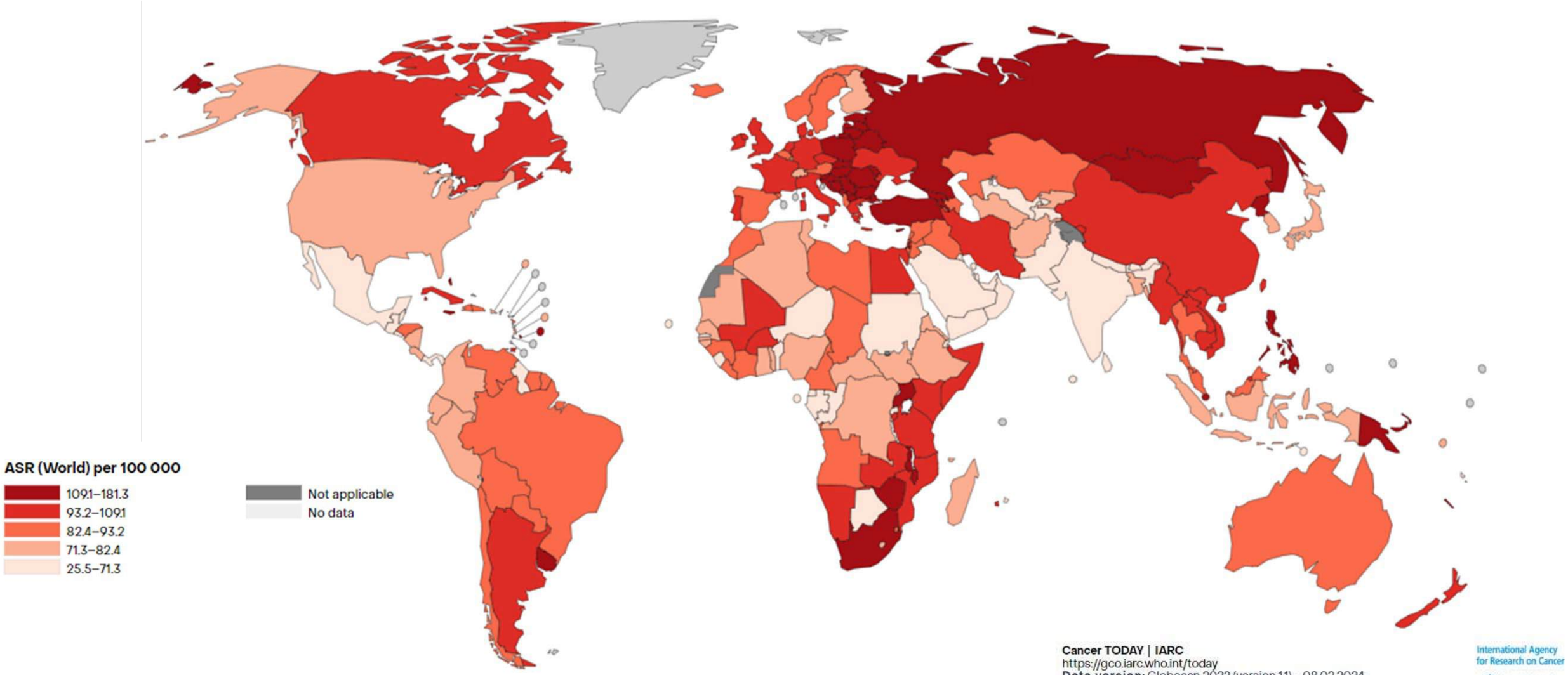

**Incidence Definition:** the new cases of cancer diagnosed each year.

# Age-standardized incidence rates (World), in 2022, all cancers (excl. non-melanoma skin cancer), both sexes, all ages




https://gco.iarc.fr/en

# Age-Standardized mortality rates (World) in 2022, all cancers (excl. non-melanoma skin cancer) both sexes, all ages




https://gco.iarc.fr/en

# Learning Objectives

- **Where we get cancer data**
- Patterns of cancer
  - incidence
  - mortality
  - survival
- Cancer risk factors

# Where we get cancer data

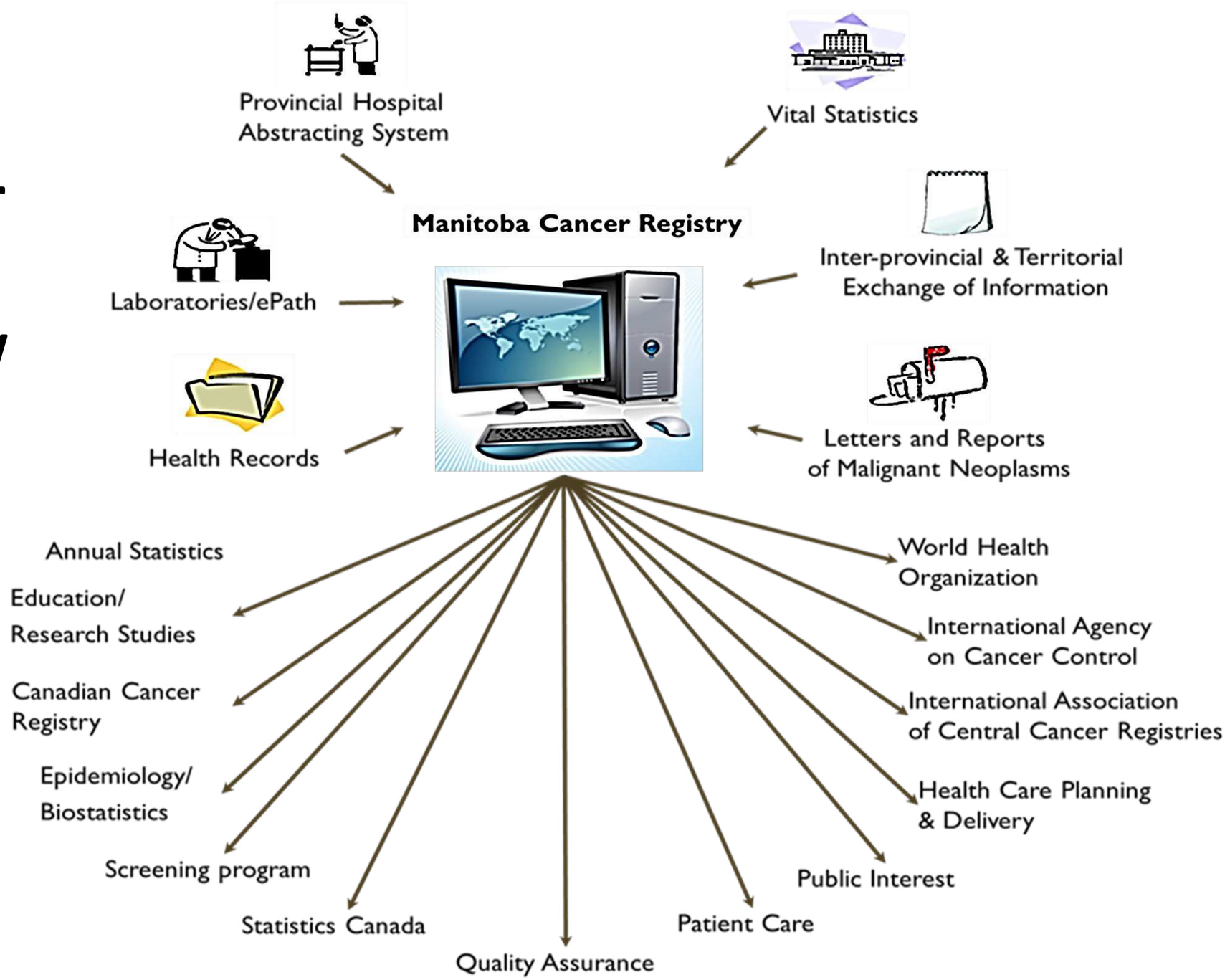
- Cancer registries are the main source of cancer data (population based)
- Strict international rules:
  - “ICD-O” for oncology, not ICD9, -10
- Demographics, tumour, outcome data (sometimes treatment)

# Where we get cancer data: the Manitoba Cancer Registry

# About the Manitoba Cancer Registry

- We are a Central Registry.
- We participate in the collection, abstraction, classification, utilization and analysis of complex medical data for inclusion in the MAXON Database.
- We are mandated by the Public Health Act to collect data on all cancer cases diagnosed in Manitoba.
- We have cases dating back to 1930 but became population based in 1956.

# Manitoba Cancer Registry: Information Flow

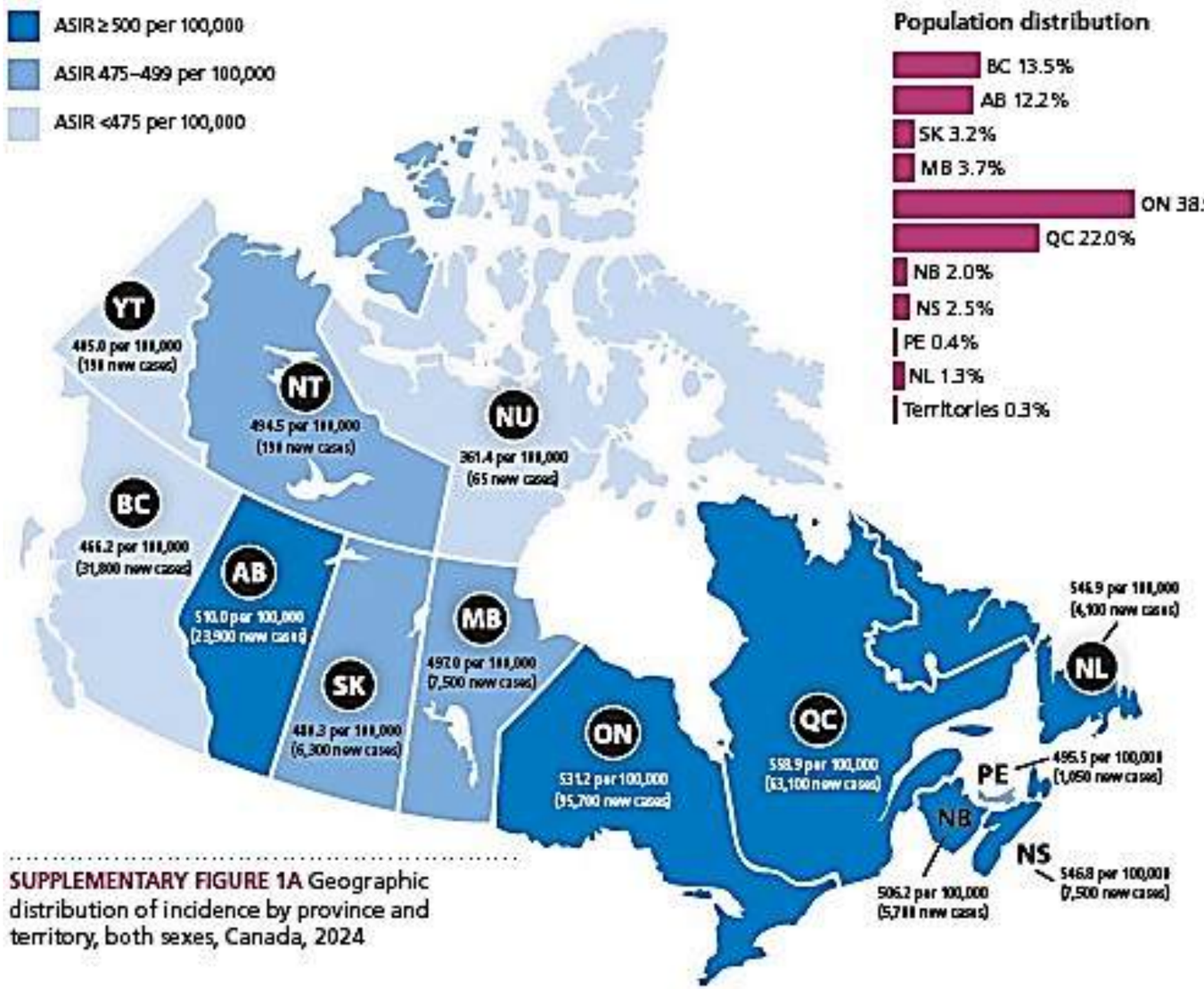


# Learning Objectives

- Where we get cancer data
- **Patterns of cancer**
  - **incidence**
  - mortality
  - survival
- Cancer risk factors

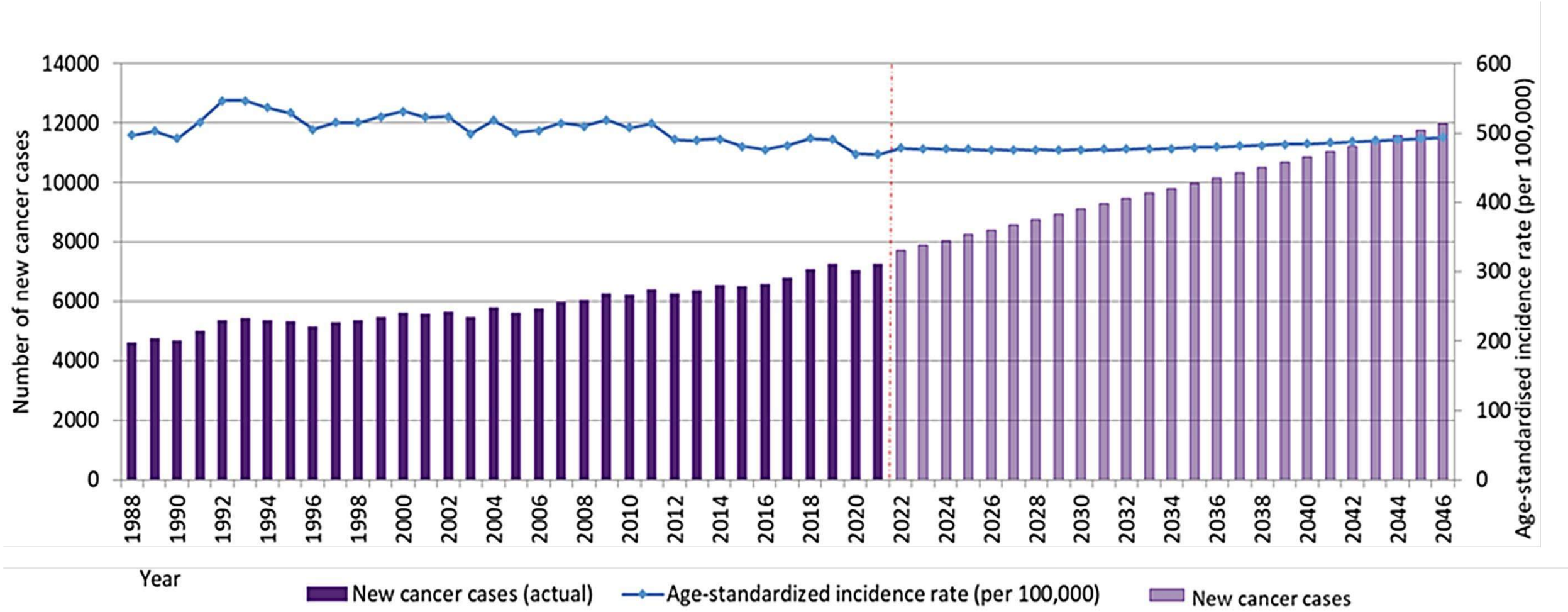
# Patterns of Cancer:

## Geographic distribution of cancer incidence (ASIR), by province and territory, both sexes, 2024




**SUPPLEMENTARY FIGURE 1A** Geographic distribution of incidence by province and territory, both sexes, Canada, 2024

# Patterns of Cancer: Actual and Projected Invasive, Cancer Cases, Manitoba, (excl. non-melanoma skin cancer) 1988-2046




Source: Manitoba Cancer Registry

# Patterns of Cancer: estimated new cases of cancer, 2024


**Manitoba … *(n=7,600)***

Lung - 970 (12.8%)

Breast - 900 (11.8%)

Prostate - 890 (11.7%)

CRC - 830 (10.9%)

**Canada … *(n= 247,100)***

Lung - 32,100 (13.0%)

Breast - 30,800 (12.5%)

Prostate - 27,900 (11.3%)

CRC - 25,200 (10.2%)

# Patterns of Cancer:

# Percent distribution of projected new cancer cases, by sex, Canada, 2023

**Males**
**124,200**
**new cases**

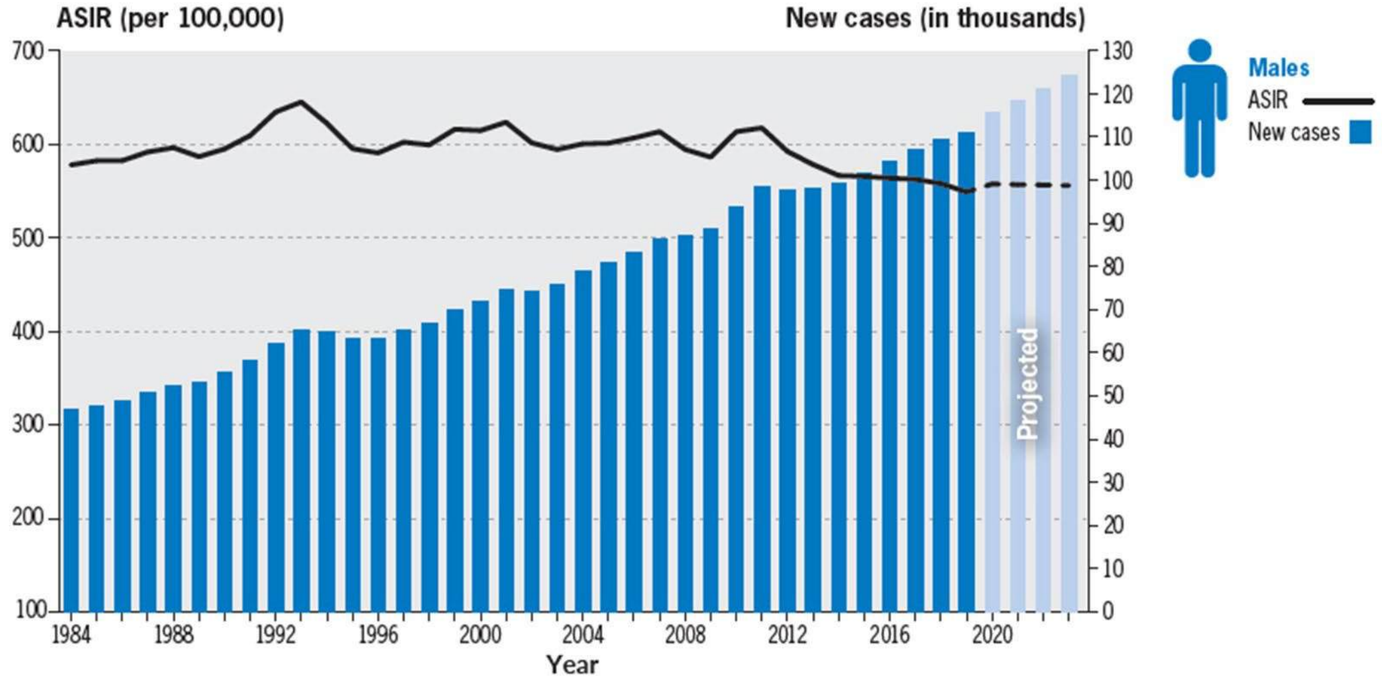
| | |
|---|---|
| Prostate | 20.8% |
| Lung and bronchus | 12.3% |
| Colorectal | 10.9% |
| Bladder | 8.2% |
| Non-Hodgkin lymphoma | 4.9% |
| Head and neck | 4.7% |
| Kidney and renal pelvis | 4.5% |
| Melanoma | 4.5% |
| Pancreas | 3.2% |
| Leukemia | 3.2% |
| Liver and intrahepatic bile duct | 2.6% |
| Stomach | 2.2% |
| Multiple myeloma | 1.9% |
| Esophagus | 1.6% |
| Thyroid | 1.5% |
| Brain/CNS | 1.5% |
| Testis | 1.0% |
| Soft tissue (including heart) | 0.8% |
| Hodgkin lymphoma | 0.5% |
| Breast | 0.2% |
| All other cancers | 9.1% |

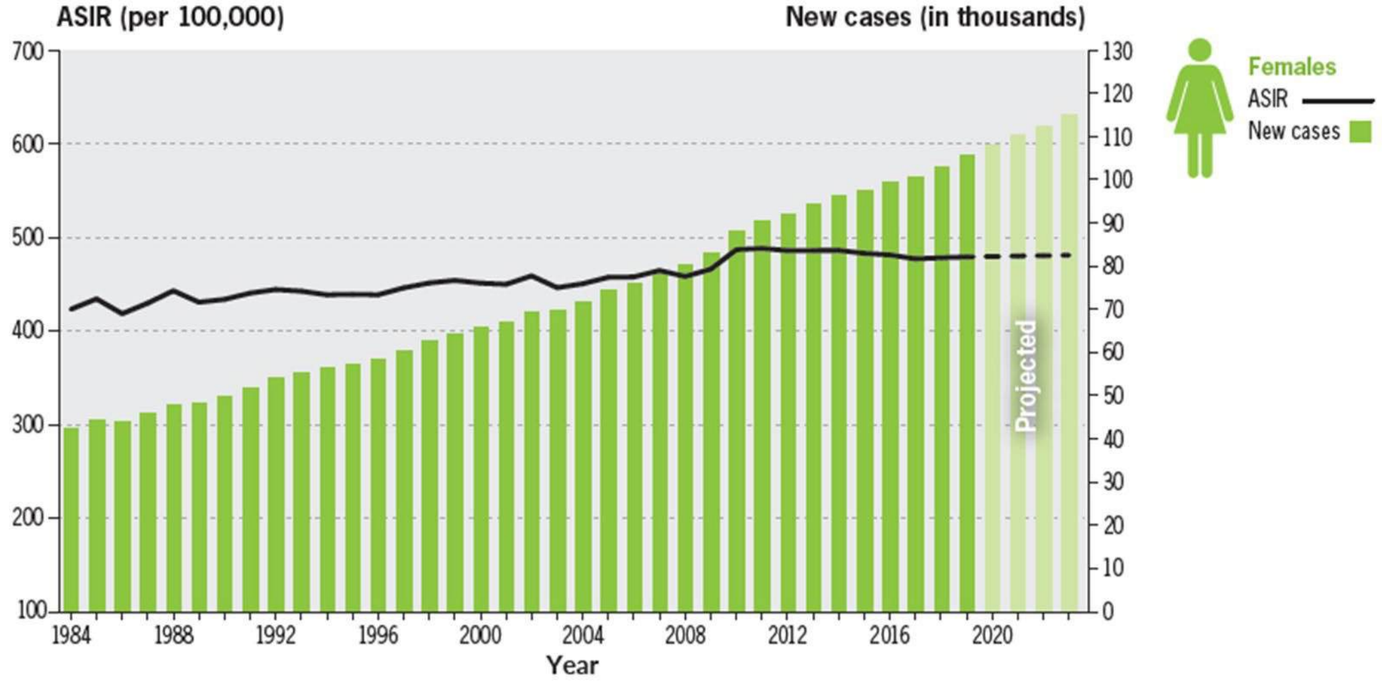
**Females**
**114,900**
**new cases**

| | |
|---|---|
| Breast | 25.6% |
| Lung and bronchus | 13.7% |
| Colorectal | 9.2% |
| Uterus (body, NOS) | 7.4% |
| Non-Hodgkin lymphoma | 4.1% |
| Thyroid | 3.8% |
| Melanoma | 3.6% |
| Pancreas | 2.8% |
| Bladder | 2.8% |
| Ovary | 2.7% |
| Kidney and renal pelvis | 2.6% |
| Leukemia | 2.1% |
| Head and neck | 1.8% |
| Multiple myeloma | 1.4% |
| Cervix | 1.4% |
| Liver and intrahepatic bile duct | 1.3% |
| Stomach | 1.3% |
| Brain/CNS | 1.2% |
| Soft tissue (including heart) | 0.6% |
| Esophagus | 0.5% |
| Hodgkin lymphoma | 0.4% |
| All other cancers | 9.9% |

# Patterns of Cancer:

# New cases and age-standardized incidence rates (ASIR) for all cancers, Canada, 1984–2023



# Is there more cancer now?

**Q -** *There seems to be more cancer now than there used to be, don't you think?*

**A - Yes** and **no**:

The numbers <u>are</u> going up (~2% per year).
But you'll hear that the <u>rates</u> are actually fairly stable (0.1% per year for men, 0.3% per year for women).

**?????**

**I need a crash course in cancer statistics!!**

# Incidence, Estimated New Cases, All Cancers, Canada, 2024

Number of new cases:

- **247,100** cases of cancer

Incidence rate:

- **247,100** cases out of **34,476,688** individuals
- **0.717% or 717 per 100,000** individuals

Age-standardized incidence rate:

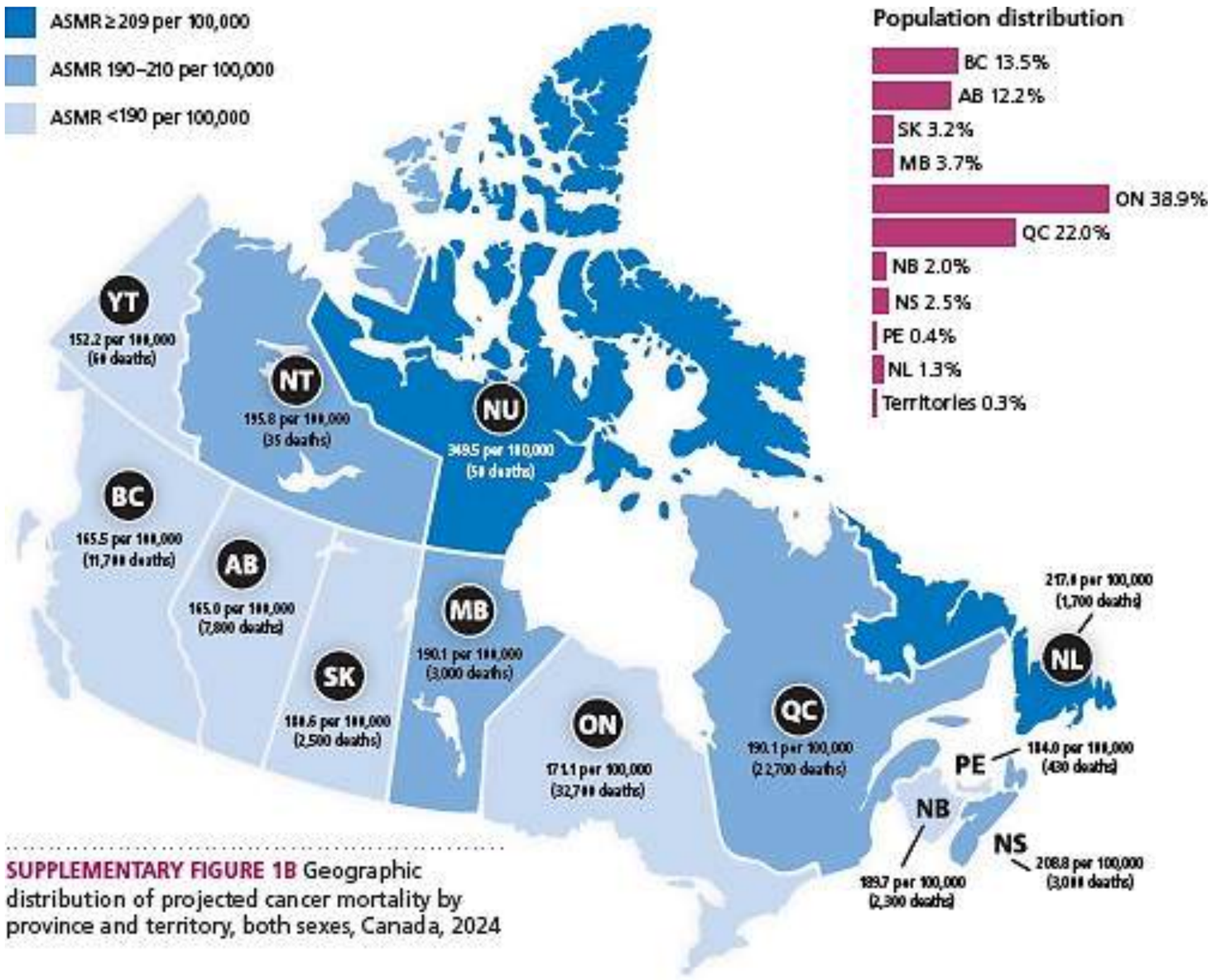
- adjusts for differences in how old populations are
- enables comparisons between areas
- **523.9 per 100,000**

# Learning Objectives

- Where we get cancer data
- **Patterns of cancer**
  - incidence
  - **mortality**
  - survival
- Cancer risk factors

# Patterns of Cancer:

## Geographic distribution of projected cancer **mortality** by province and territory, both sexes, 2024




**SUPPLEMENTARY FIGURE 1B** Geographic distribution of projected cancer mortality by province and territory, both sexes, Canada, 2024

# Patterns of Cancer: Projected deaths for selected cancers 2024


**Manitoba … *(n=3,050)***

Lung - 680 (22.3%)
CRC - 350 (11.5%)
Prostate - 200 (6.6%)
Breast - 180 (5.9%)

**Canada … *(n= 88,100)***

Lung - 20,700 (23.5%)
CRC - 9,400 (10.7%)
Breast -5,500 (6.2%)
Prostate - 5,000 (5.7%)

# Percent distribution of projected cancer deaths, by sex, Canada, 2023

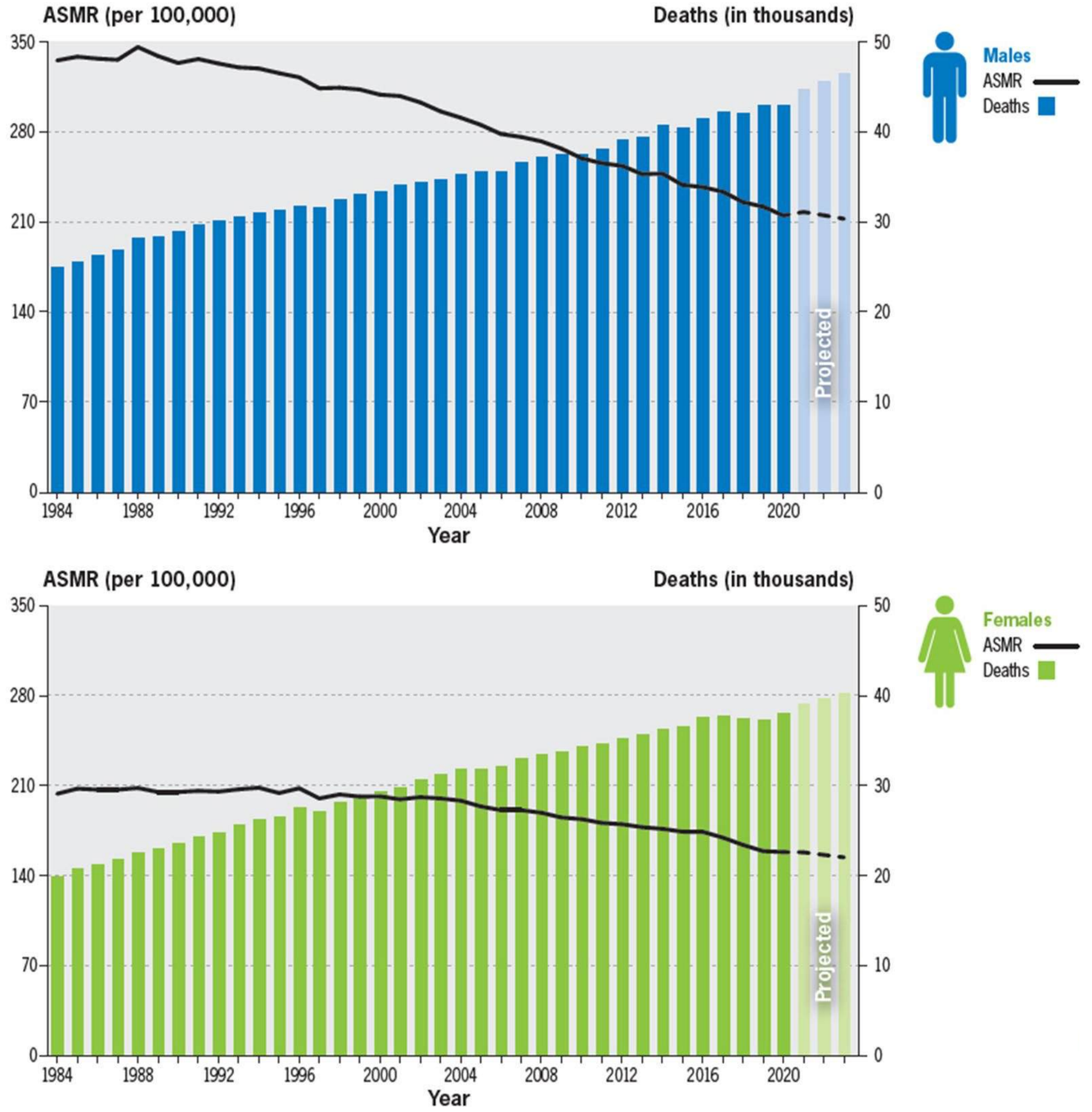
**Males**
**46,500**
**Deaths**

| | |
|---|---|
| Lung and bronchus | 23.2% |
| Colorectal | 11.2% |
| Prostate | 10.5% |
| Pancreas | 6.7% |
| Liver and intrahepatic bile duct* | 4.7% |
| Esophagus | 4.0% |
| Bladder | 4.0% |
| Leukemia | 3.9% |
| Non-Hodgkin lymphoma | 3.9% |
| Head and neck | 3.3% |
| Brain/CNS | 3.1% |
| Stomach | 2.7% |
| Kidney and renal pelvis | 2.7% |
| Multiple myeloma | 2.1% |
| Melanoma | 1.8% |
| Soft tissue (including heart) | 0.8% |
| Thyroid | 0.3% |
| Hodgkin lymphoma | 0.2% |
| Breast | 0.1% |
| Testis | 0.1% |
| All other cancers | 10.8% |

**Females**
**40,200**
**Deaths**

| | |
|---|---|
| Lung and bronchus | 24.4% |
| Breast | 13.4% |
| Colorectal | 10.2% |
| Pancreas | 7.0% |
| Ovary | 4.9% |
| Uterus (body, NOS) | 3.9% |
| Leukemia | 3.2% |
| Non-Hodgkin lymphoma | 3.2% |
| Liver and intrahepatic bile duct* | 3.2% |
| Brain/CNS | 2.6% |
| Stomach | 1.9% |
| Bladder | 1.8% |
| Multiple myeloma | 1.8% |
| Kidney and renal pelvis | 1.6% |
| Head and neck | 1.4% |
| Esophagus | 1.4% |
| Melanoma | 1.1% |
| Cervix | 1.0% |
| Soft tissue (including heart) | 0.7% |
| Thyroid | 0.4% |
| Hodgkin lymphoma | 0.1% |
| All other cancers | 10.7% |

# Deaths and age-standardized mortality rates (ASMR) for all cancers, Canada, 1984–2023



# Learning Objectives

- Where we get cancer data
- **Patterns of cancer**
  - incidence
  - mortality
  - **survival**
- Cancer risk factors

# Patterns of Cancer: Survival *(Commonly: Five-Year Survival)*

- Crude survival:
  - … how many individuals diagnosed with cancer are alive after five years?
  - … endpoint is death from any cause
- Disease-specific survival:
  - … how many individuals diagnosed with
    died specifically of cancer after five yea
  - … endpoint is death from cancer only
- Relative survival:
  - … compares the survival experience of individuals with cancer to individuals without cancer (of the same age)

***A way of comparing survival of people who have cancer with those who don't - it shows how much cancer shortens life.***

# Patterns of Cancer: Survival

Based on data from 2015 to 2017:

- Predicted five-year net survival for all cancers combined was 64%.
  - 55% in the early 1990s.
  - 25% in the 1940s.

**Predicted five-year age-standardized net survival for selected cancers by province, ages 15–99, Canada (excluding Quebec*), 2015–2017**

Net survival (%) (95% CI)

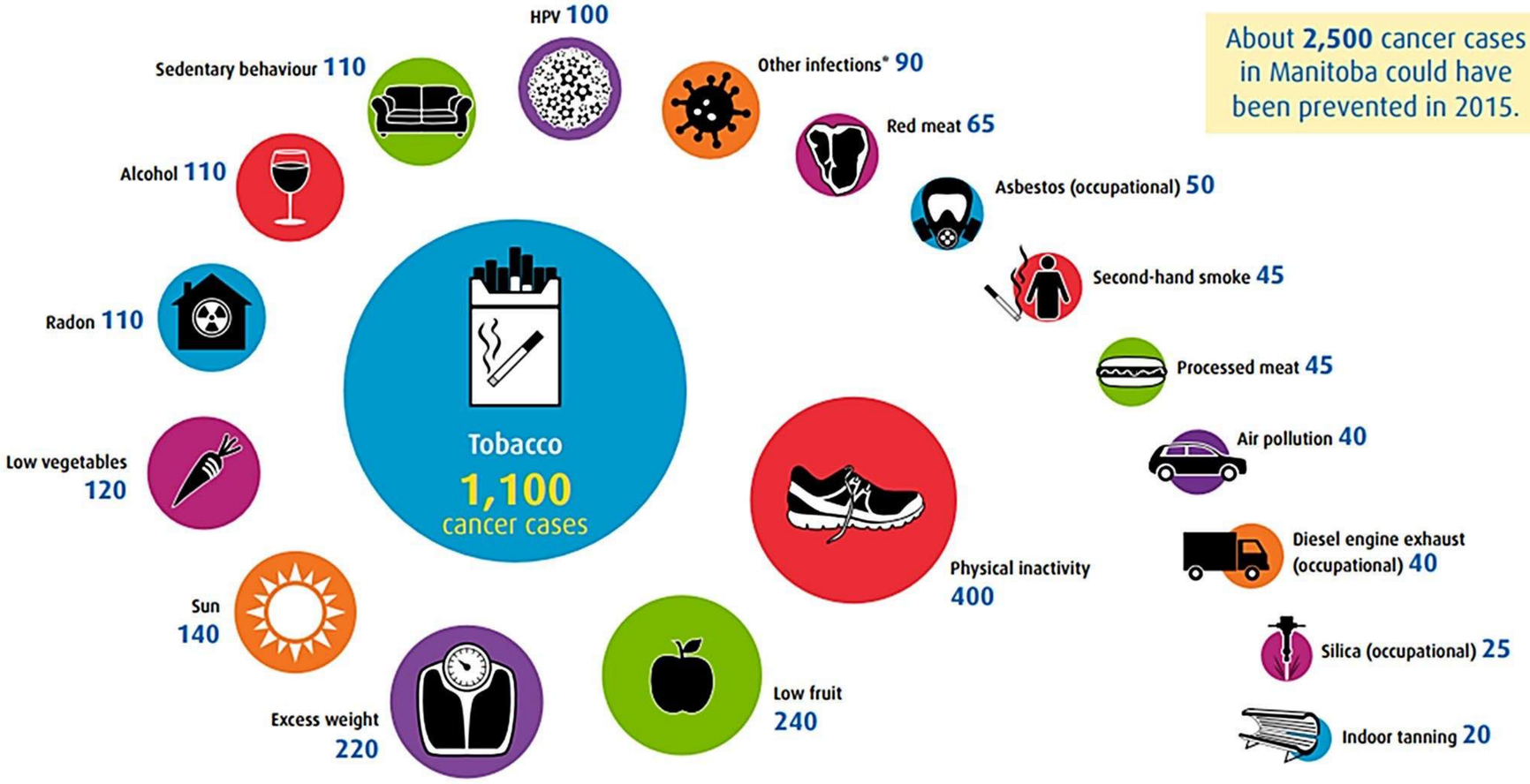
| Province | Prostate | Breast (female) | Colorectal | Lung and bronchus |
|---|---|---|---|---|
| **Canada*** | **91 (91–92)** | **89 (88–89)** | **66 (66–67)** | **22 (22–23)** |
| British Columbia (BC) | 91 (90–92) | 88 (87–89) | 67 (66–68) | 21 (20–21) |
| Alberta (AB) | 91 (90–92) | 89 (88–90) | 67 (65–68) | 22 (20–23) |
| Saskatchewan (SK) | 86 (84–88) | 88 (86–89) | 64 (62–67) | 18 (17–20) |
| Manitoba (MB) | 91 (89–93) | 88 (86–89) | 64 (61–67) | 22 (20–24) |
| Ontario (ON) | 92 (92–93) | 89 (88–89) | 67 (66–67) | 24 (23–24) |
| New Brunswick (NB) | 91 (88–93) | 88 (86–91) | 63 (60–65) | 21 (20–23) |
| Nova Scotia (NS) | 90 (88–92) | 89 (86–90) | 62 (60–64) | 20 (18–22) |
| Prince Edward Island (PE) | 88 (82–93) | 90 (84–94) | 67 (60–73) | .. |
| Newfoundland and Labrador (NL) | 91 (87–93) | 89 (85–91) | 68 (65–71) | 23 (20–26) |

# Learning Objectives

- Where we get cancer data
- Patterns of cancer
  - incidence
  - mortality
  - survival
- **Cancer risk factors**

# Number of cancer cases that could be prevented in Manitoba

**About 4 in 10 cancer cases can be prevented** through healthy living and policies that protect the health of Manitobans.



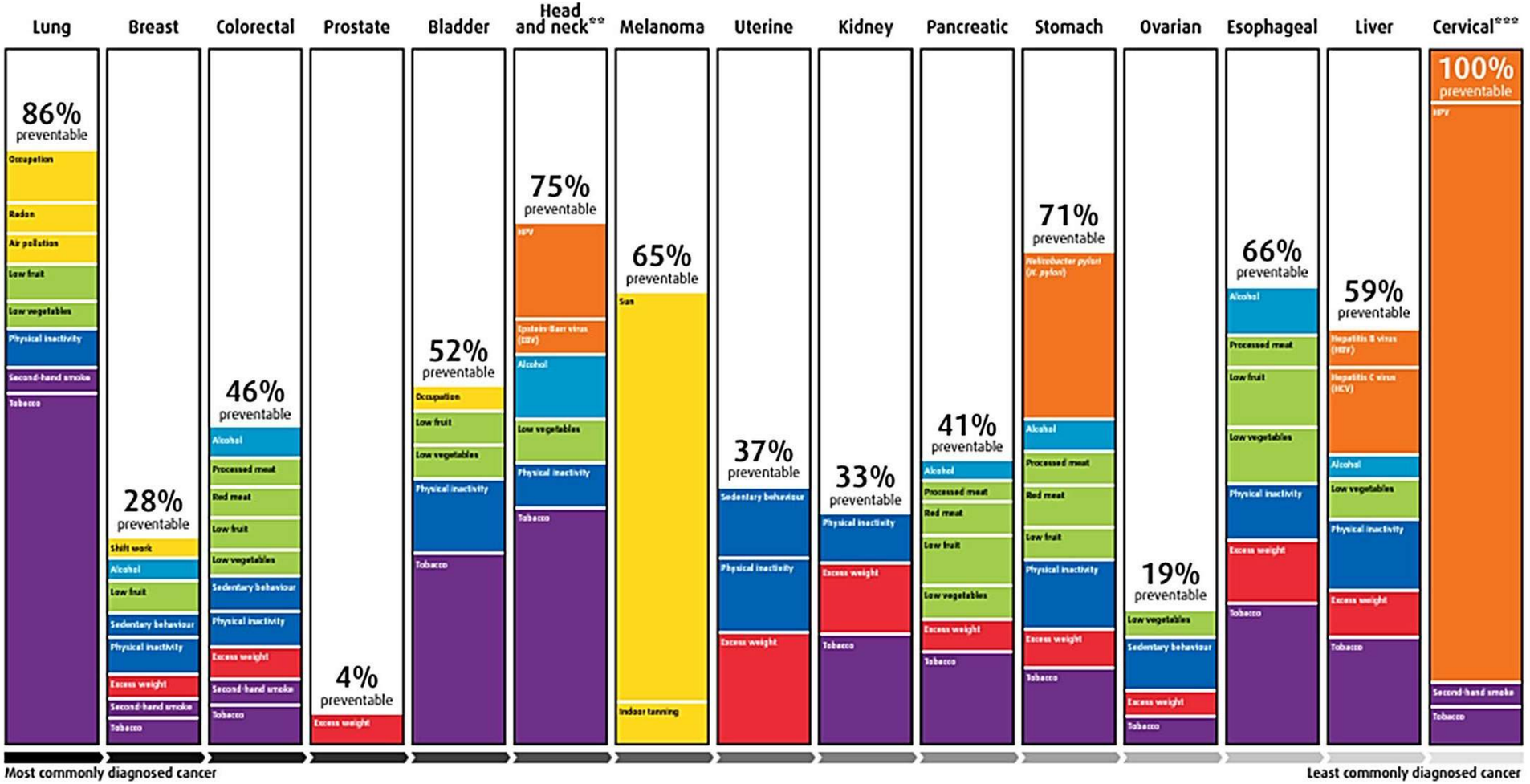

About **2,500** cancer cases in Manitoba could have been prevented in 2015.

Not all risk factors have the same impact on cancer risk.
**This image shows the number of cancer cases diagnosed in 2015 in Manitoba that are due to key modifiable risk factors.****

*Other infections category includes Epstein-Barr virus (EBV), hepatitis B virus (HBV), hepatitis C virus (HCV), *Helicobacter pylori* bacteria (*H. pylori*), human herpesvirus type 8 (HHV-8) and human T-cell leukemia/lymphoma virus type 1 (HTLV-1).
**Region-specific data were not available for all risk factors included in ComPARe study. See website for details on data and risk factor definitions.

# Percentage of cancers that are preventable in Canada

**About 4 in 10 cancer cases can be prevented** through healthy living and policies that protect the health of Canadians.*




Some types of cancers are more preventable than others. **This graph shows some of the key cancers in Canada that could be prevented broken down by risk factor.**

*See website for details on data and risk factor definitions.
**Includes oral, pharyngeal and laryngeal cancers.

***All cervical cancers are caused by HPV, but not all HPV infections will lead to cervical cancer. Other risk factors, like tobacco and birth control pills, increase the likelihood that an HPV infection will lead to cervical cancer.

prevent.cancer.ca



COMPARE

Canadian Cancer Society


https://blog.udemy.com/wp-content/uploads/2014/05/shutterstock_175331306.jpg

- **Cancer is on the rise, mostly because the population is aging.**
- **Risk factors are still quite high in Manitoba, the challenge is how to change them!**

# Learning Objectives

- Where we get cancer data
- Patterns of cancer
  - incidence
  - mortality
  - survival
- Cancer risk factors

*Thank you for your attention.*

Occupational Cancer Research Centre

# Ontario's Occupational Disease Surveillance System

**Drs. Paul Demers & Jeavana Sritharan**
Occupational Cancer Research Centre, Ontario Health
Dalla Lana School of Public Health, University of Toronto

**October 29, 2024**

Ontario

Ontario Health

# No Conflicts of Interests to Report

- Funding to develop the Occupational Disease Surveillance System was provided by the Ontario Workplace Safety and Insurance Board (WSIB), the Public Health Agency of Canada (PHAC), and the Ontario Ministry of Labour (MOL)
- Ongoing funding is provided by Ontario's Ministry of Labour, Immigration, Training and Skills Development (MLTSD) and Ministry of Health (MOH)

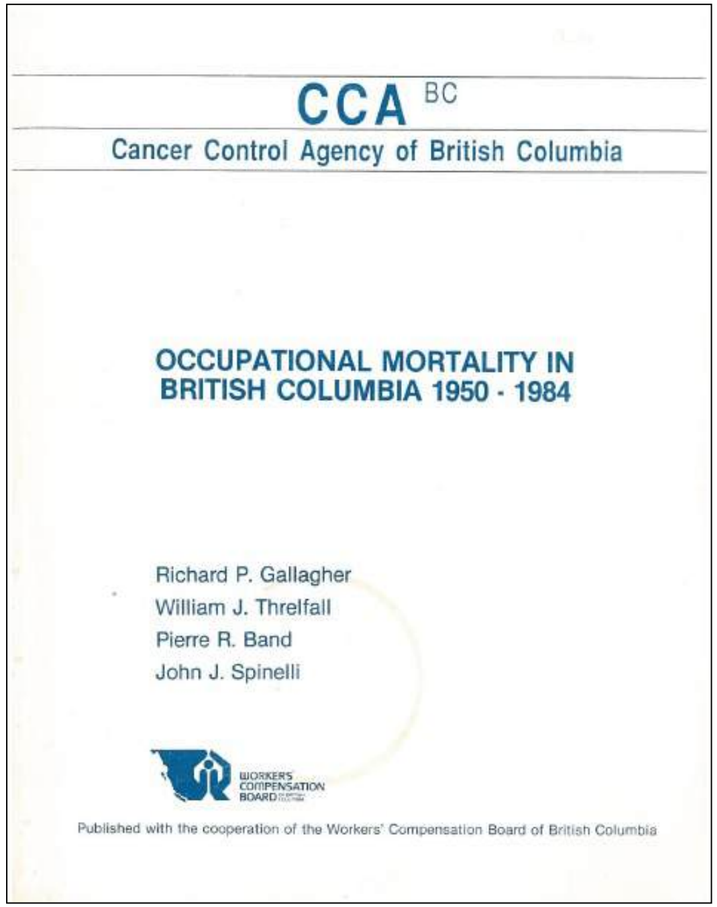
# Learning Objectives

1. Understand how to establish a surveillance program through the linkage of administrative data in Ontario
2. Explore how the surveillance of occupational diseases, including cancer and non-malignant diseases, contributes to the expansion of scientific capacity and evidence-based research
3. Recognize the significant impact of occupational disease surveillance on workers' compensation systems and key stakeholder groups

# Occupational Cancer Surveillance: Major Challenges

- Administrative health data in Canada do not include information on occupation and industry
  - Most clinicians do not collect an occupational history and are unaware of work-related causes of disease, with the possible exception of asbestos
- Workers' compensation records only capture a small fraction of occupational cancers and other chronic diseases
- Other sources of data lack the statistical power needed and/or have limited data on occupation and industry

# Previous Canadian Efforts using Death Certificates

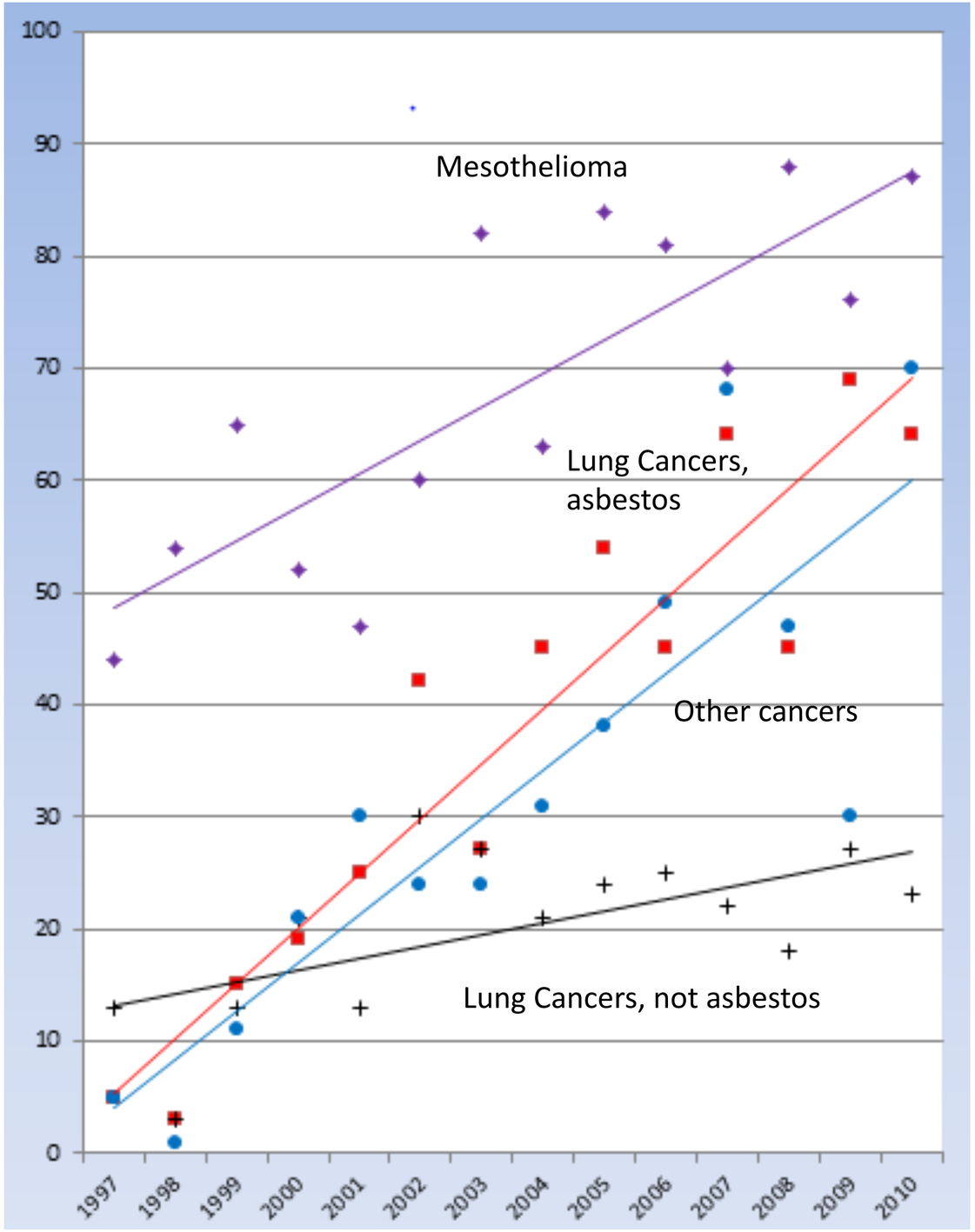



Gallagher RP, Threlfall WJ, Band PR, Spinelli JJ. Cancer mortality experience of woodworkers, loggers, fishermen, farmers, & miners in British Columbia. NCI Monograph 1985;69:163-7.

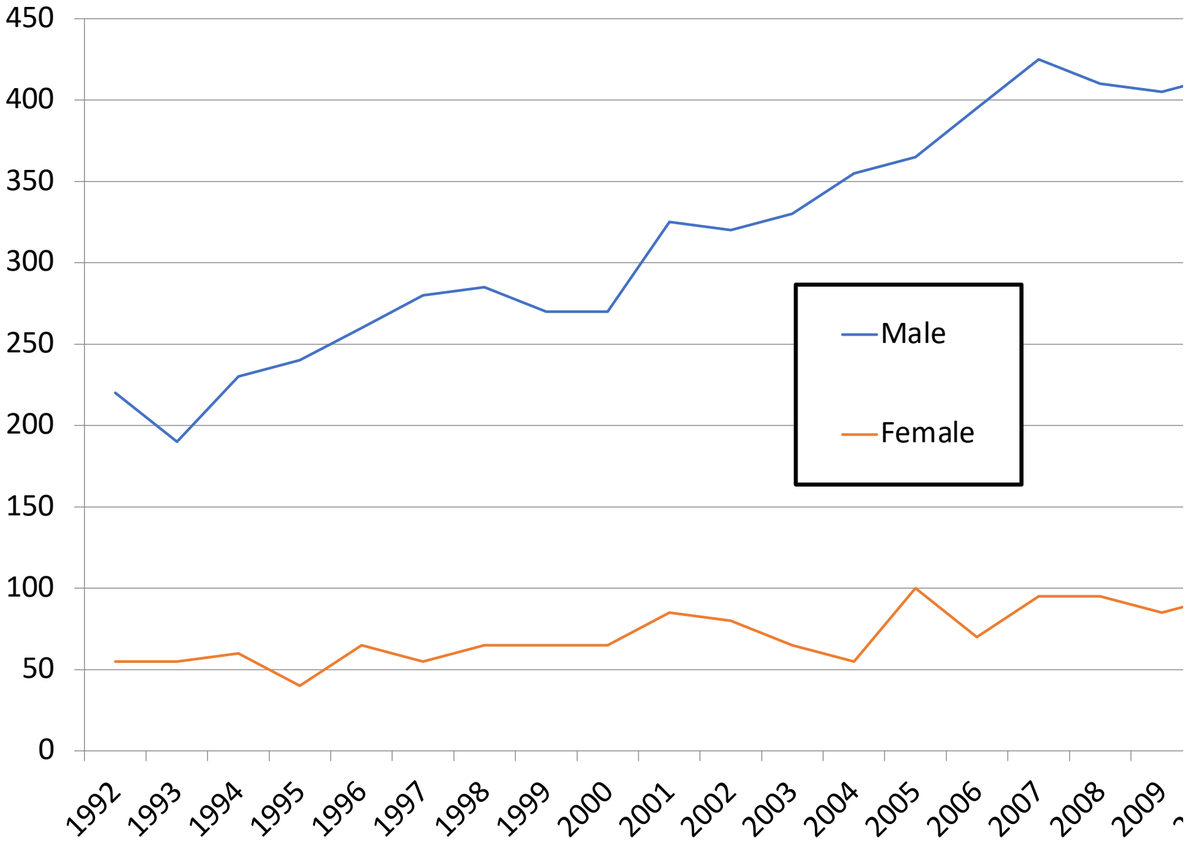

Howe GR, Lindsay JP. A follow-up study of a ten-percent sample of the Canadian labor force, 1965-73. JNCI 1983;70:37-44.

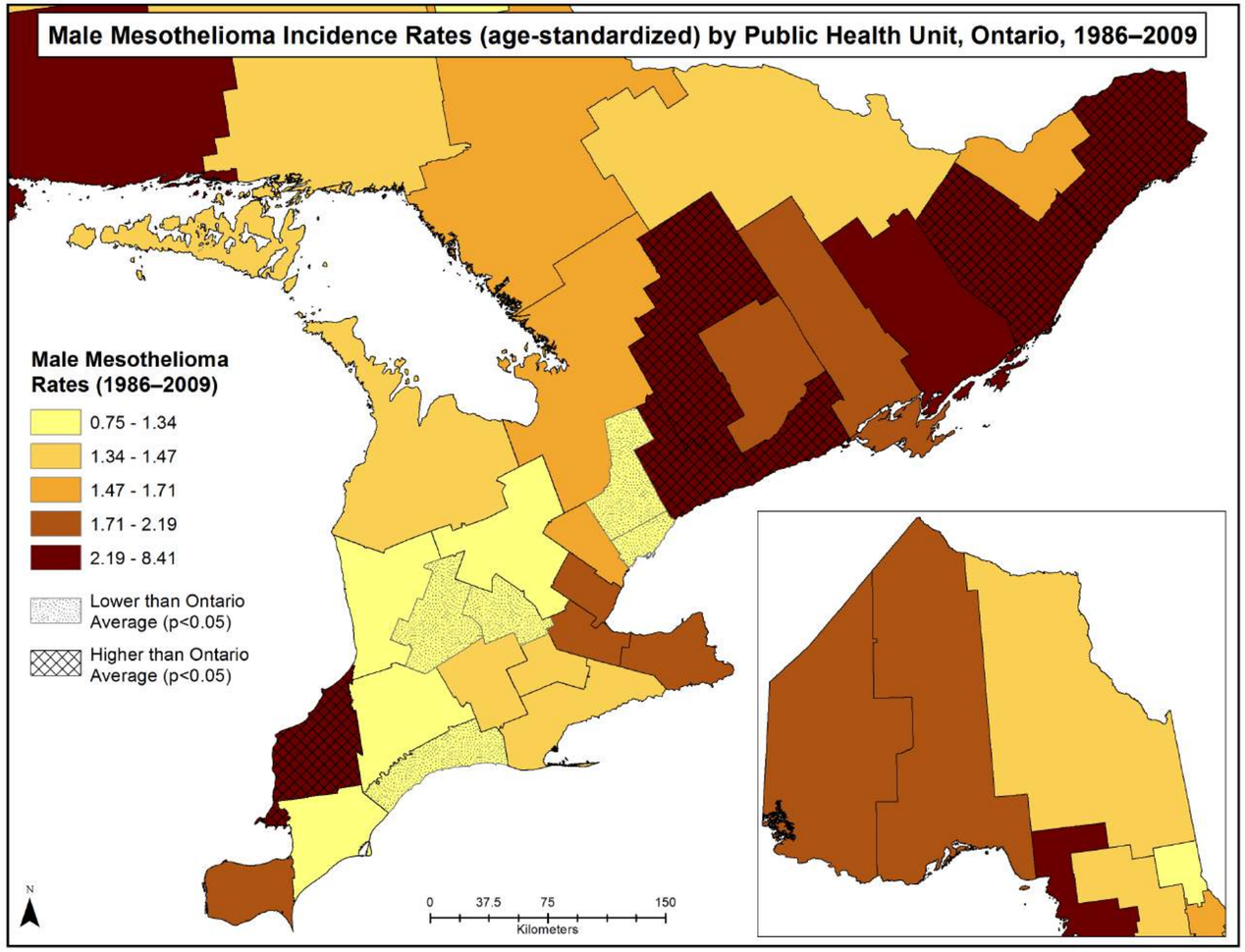
# Trends in Compensated Fatal Cancers in Ontario

- Del Bianco A, Demers PA. The Examination of Workplace Fatalities Within Ontario and Canada. Toronto: Occupational Cancer Research Centre, 2013.
- Data from AWCBC. National Work Injury Statistics Program, extracted March 12, 2012.



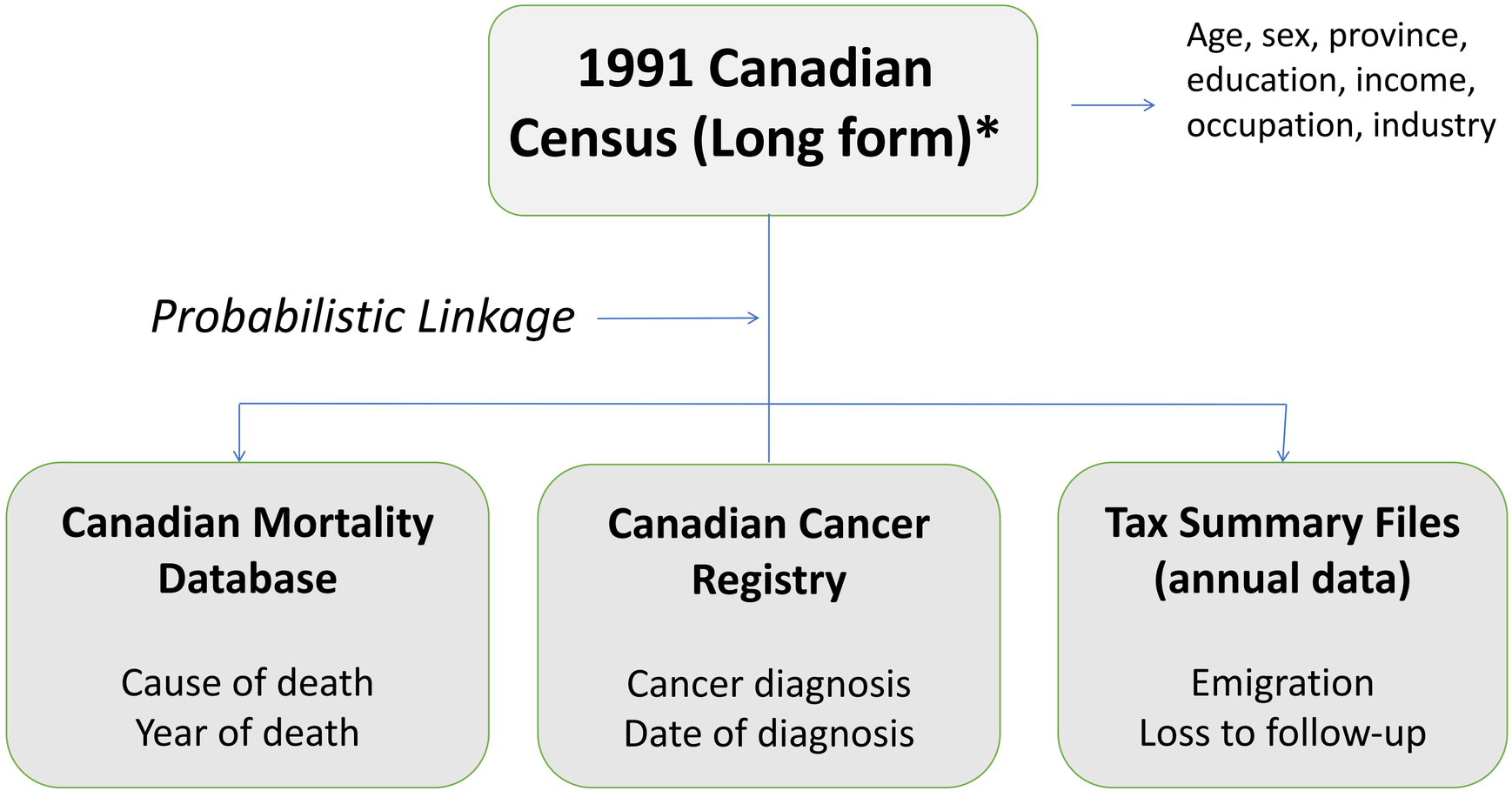
# Number of Incident Cases of Mesothelioma, 1992-2010, Canada




Statistics Canada. Table 103-0550 - New cases of primary cancer (based on the February 2014 CCR tabulation file), by cancer type, age group and sex, Canada, provinces and territories, annual, CANSIM (database). (accessed: 2014-07-29)

# Canadian Census Cohort Linkage




* 2,734,800 linked, 2,077,100 of which had occupational information

# Occupational Disease Surveillance Program (ODSP)

- Created through an agreement between the MLITSD and MOH to develop systems to monitor trends and patterns of occupational disease in Ontario
- Major Projects:
  - Occupational Disease Surveillance System (ODSS)
  - Mesothelioma Surveillance
  - Toxics Reduction Act

Ontario wsib ONTARIO Public Health Agency of Canada Agence de la santé publique du Canada

# OCCUPATIONAL DISEASE SURVEILLANCE SYSTEM

## 2+ MILLION ONTARIO WORKERS

## 300+ INDUSTRIES & 500+ OCCUPATIONS

Occupational Cancer Research Centre

## INFORMATION SOURCES

**Cancer Records**
Ontario Cancer Registry

**Hospital Records**
Discharge Abstract Database

**Emergency Department Visits**
National Ambulatory Care Reporting System

**Doctor Visits**
Ontario Health Insurance Plan

**Lab Test Results**
Ontario Laboratories Information System

# Examples of diseases monitored in the Occupational Disease Surveillance System (ODSS)

## Cancers:

Bladder
Breast
Colorectal
Kidney
Laryngeal
Leukemia
Liver
Lung
Mesothelioma
Non-Hodgkin Lymphoma
Prostate
Salivary Gland
Sinonasal
Stomach
Thyroid
Testicular

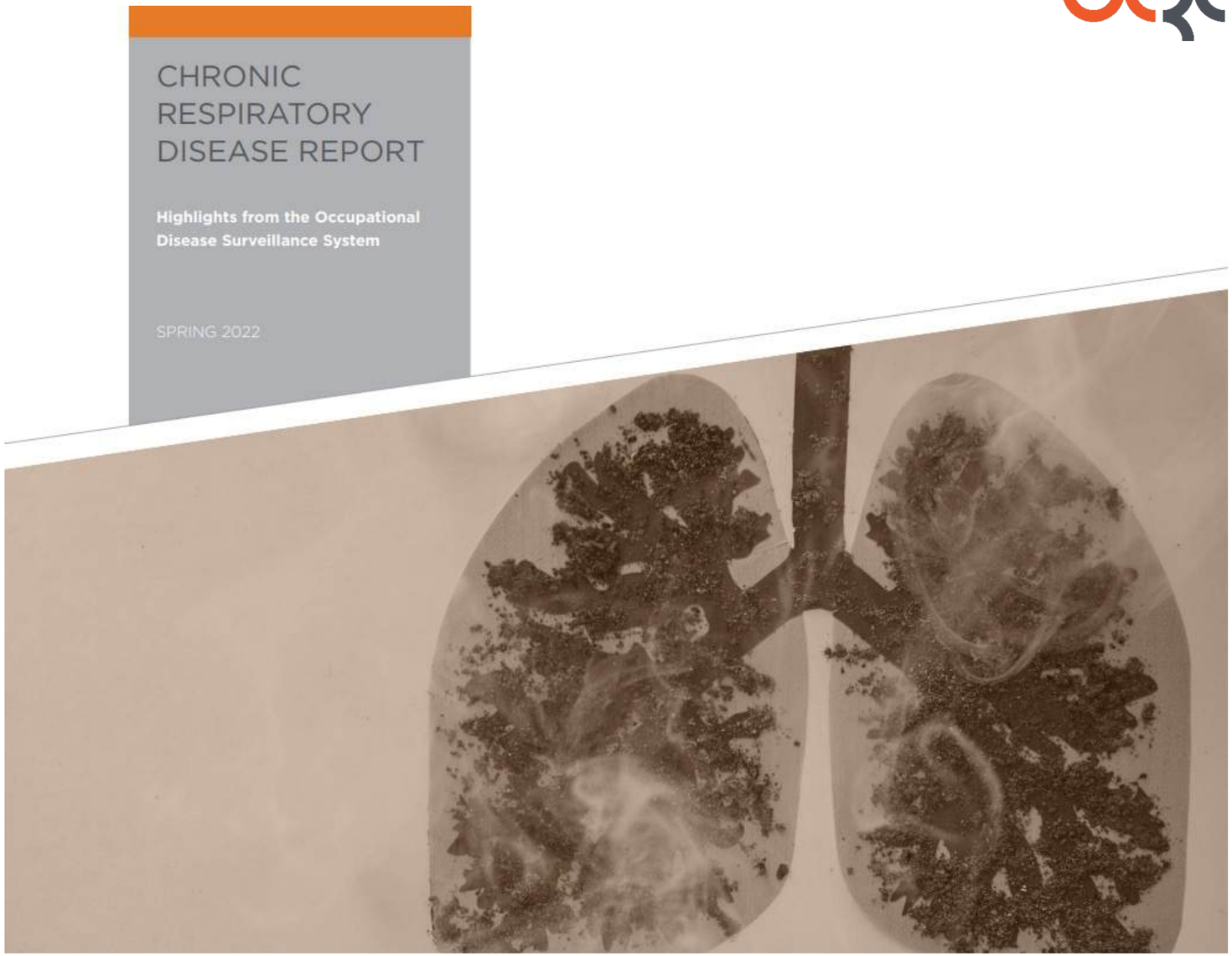
## Other Diseases:

Acute Myocardial Infarction
Asbestosis/Silicosis
Asthma
Chronic Obstructive Pulmonary Disease
Dermatitis
Carpal Tunnel Syndrome
Idiopathic Pulmonary Fibrosis
Opioid-related harms
COVID-19

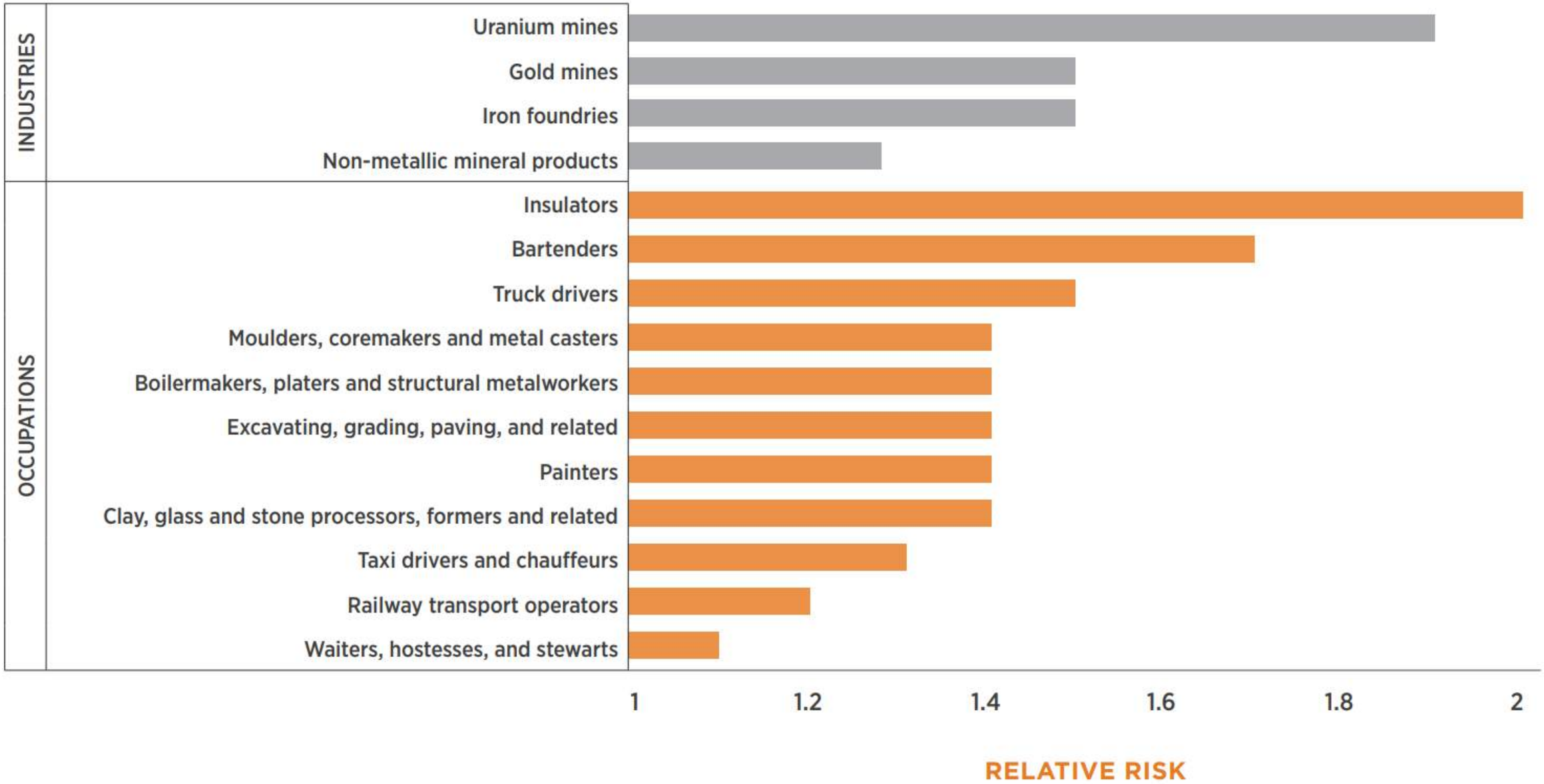
**https://www.odsp-ocrc.ca/**

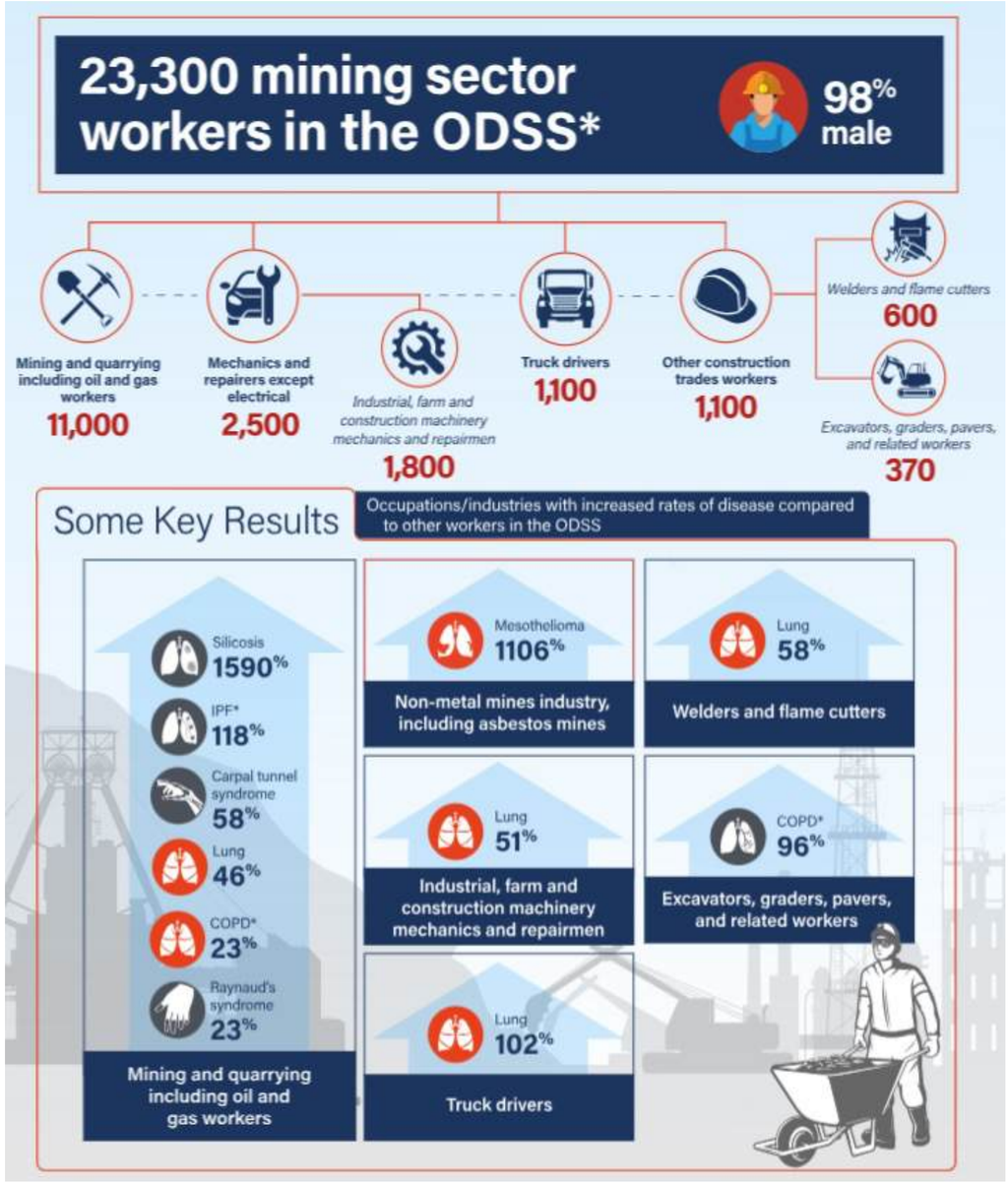
# Lung Cancer

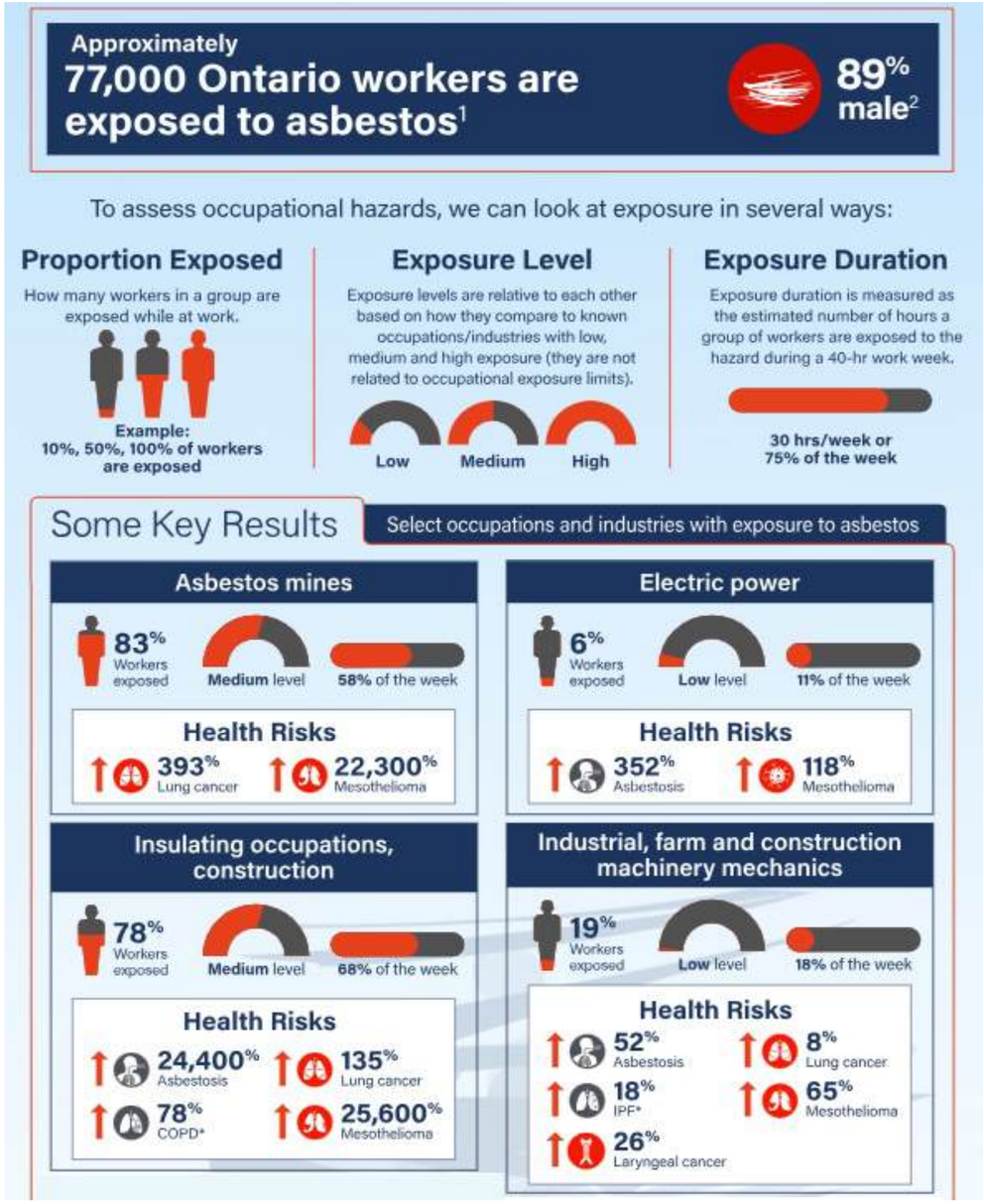
- An estimated 15% of all lung cancers are due to known, well-studied workplace exposures
- Exposures include asbestos, crystalline silica, diesel engine exhaust, and welding fumes
- Workers in various occupations and industries show increased risk of lung cancer



# Selected groups with increased risk of lung cancer in the ODSS





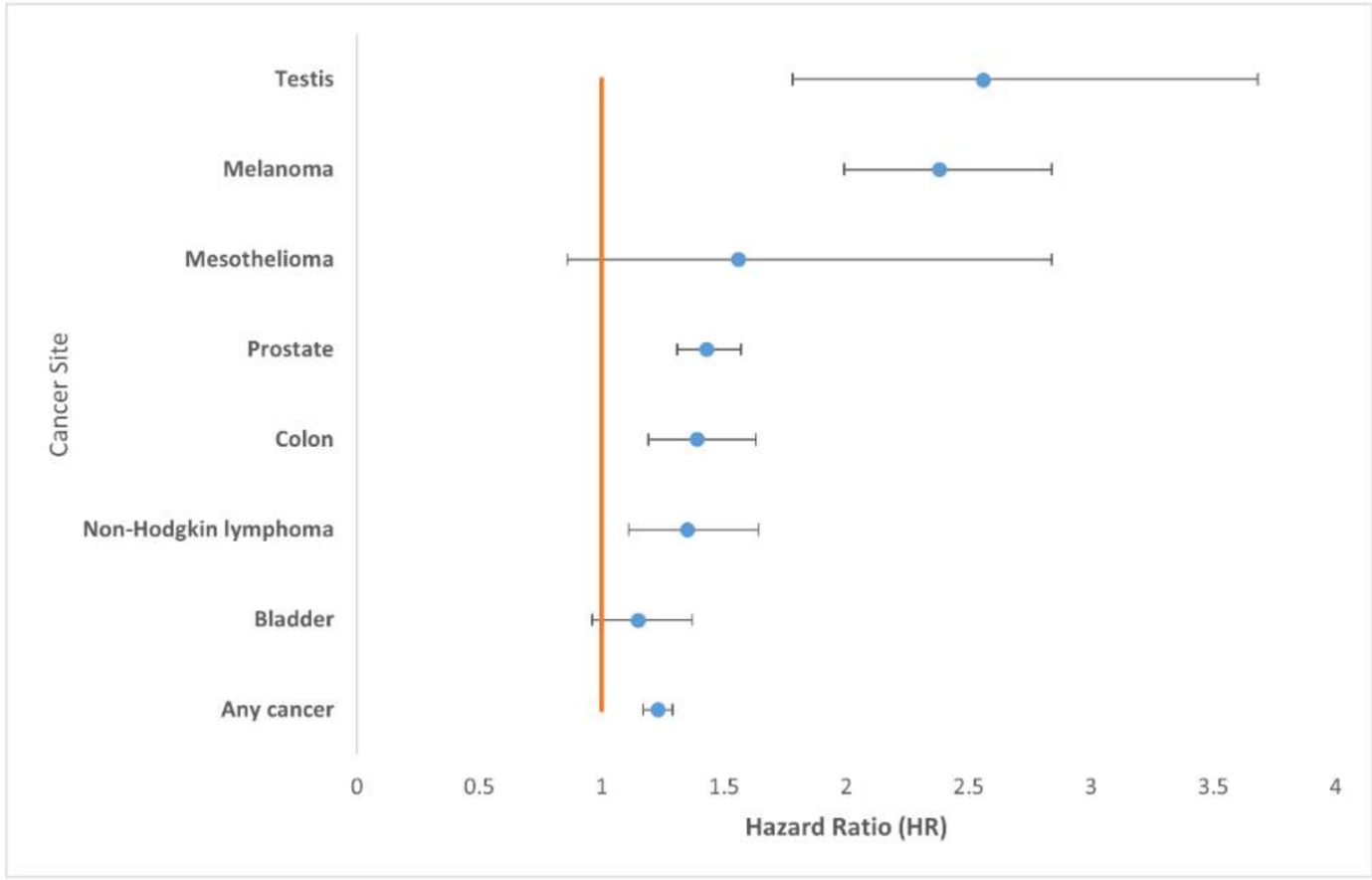

**https://occdiseasestats.ca**

CCOHS Canadian Centre for Occupational Health and Safety

OCRC Occupational Cancer Research Centre

# Cancer risks among firefighters in the ODSS

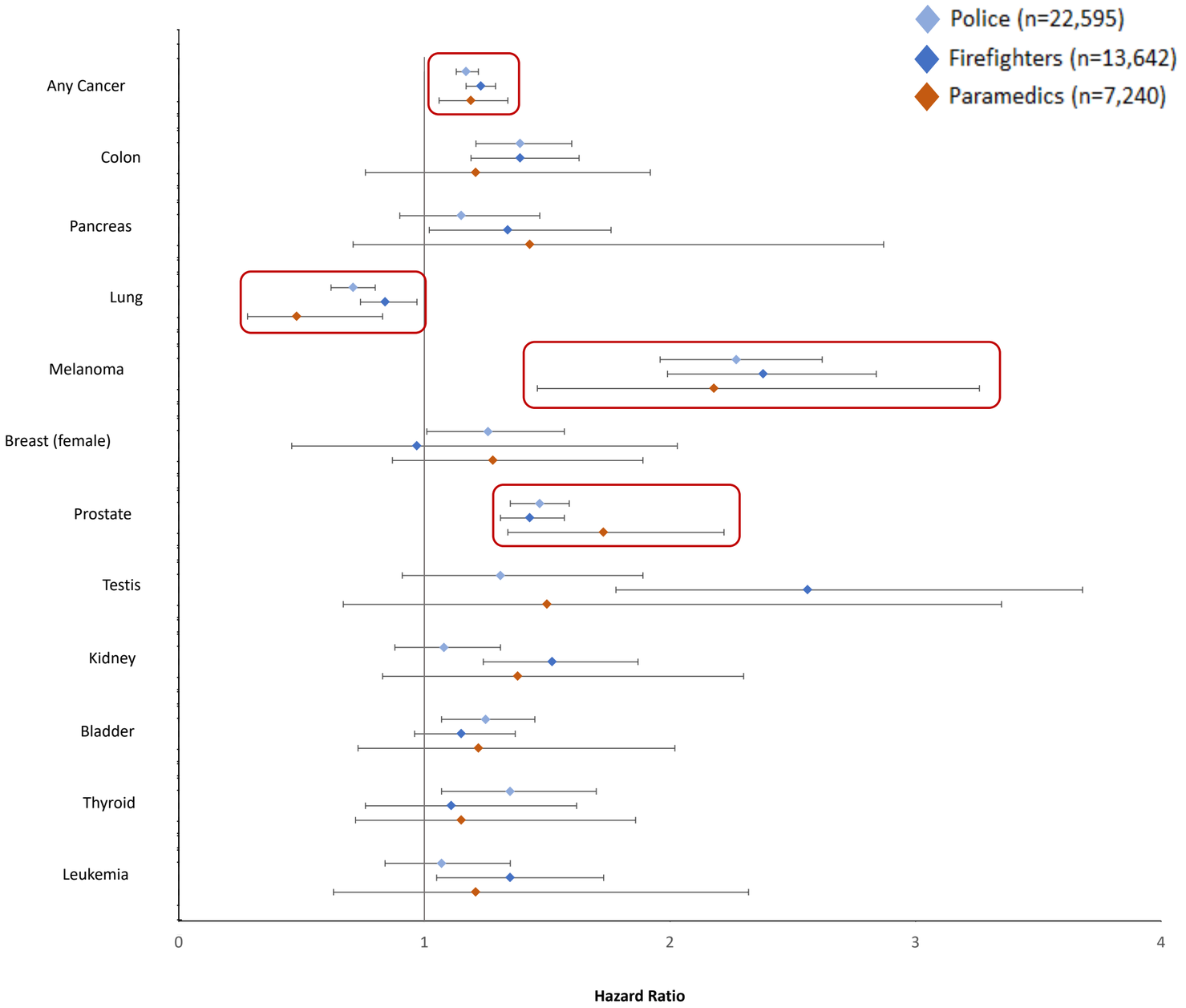
- Firefighters are exposed to many carcinogens
  - Smoke, diesel exhaust, etc.
- Study was included in recent IARC evaluation on firefighting and cancer
- IARC Working Group included OCRC team members
- Similar cancer risks among police and paramedics
  - Some similar exposures such as stress, shiftwork




**Note:** Estimates were adjusted for age at start of follow-up, birth year and sex. A hazard ratio (HR) above 1.00 indicates a greater risk of the cancer compared with the reference group (all other workers in the cohort).

Data from the Occupational Disease Surveillance System, 1983 to 2020, reported in **Sritharan et al, Occup Environ Med. 2022; 0:1-7**.

# Cancer risks among firefighters, police, and paramedics in the ODSS



# Cancer risks among firefighters, police, and paramedics

- The assumption has generally been that cancer excesses among firefighters are due to their unique exposures, such as fire smoke.
  - However, emergency service workers share some common carcinogenic exposures, including vehicle exhaust, intermittent solar radiation, and night shift work.

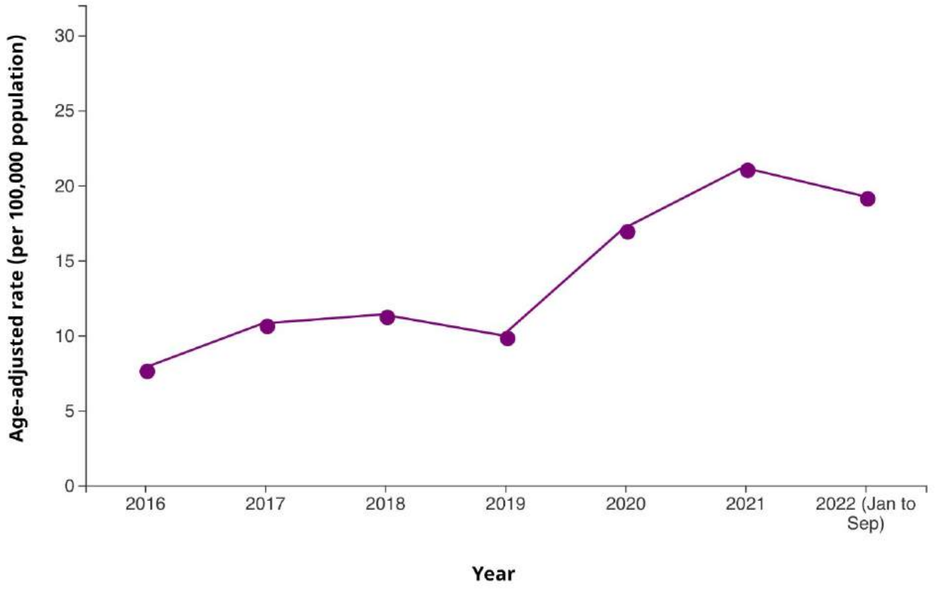
- Similarities between firefighters and police have been previously observed, but this is the first study to investigate cancer risks in paramedics.

- The lack of a full work and exposure history are the major limitations and further investigation of the excesses observed in our research are needed.

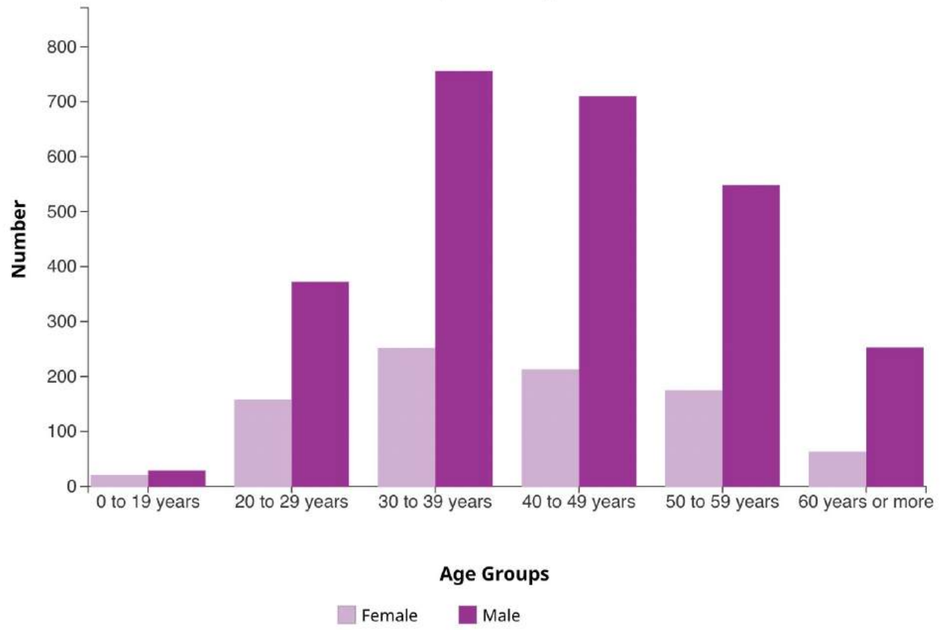
- Exploring similarities and differences may improve understanding of etiology and inform primary prevention and screening efforts.

# Opioid-related harms: recent trends in Canada

**Age-adjusted rate (per 100,000 population) of total apparent opioid toxicity deaths in Canada, 2016 to 2022 (Jan to Sep)**



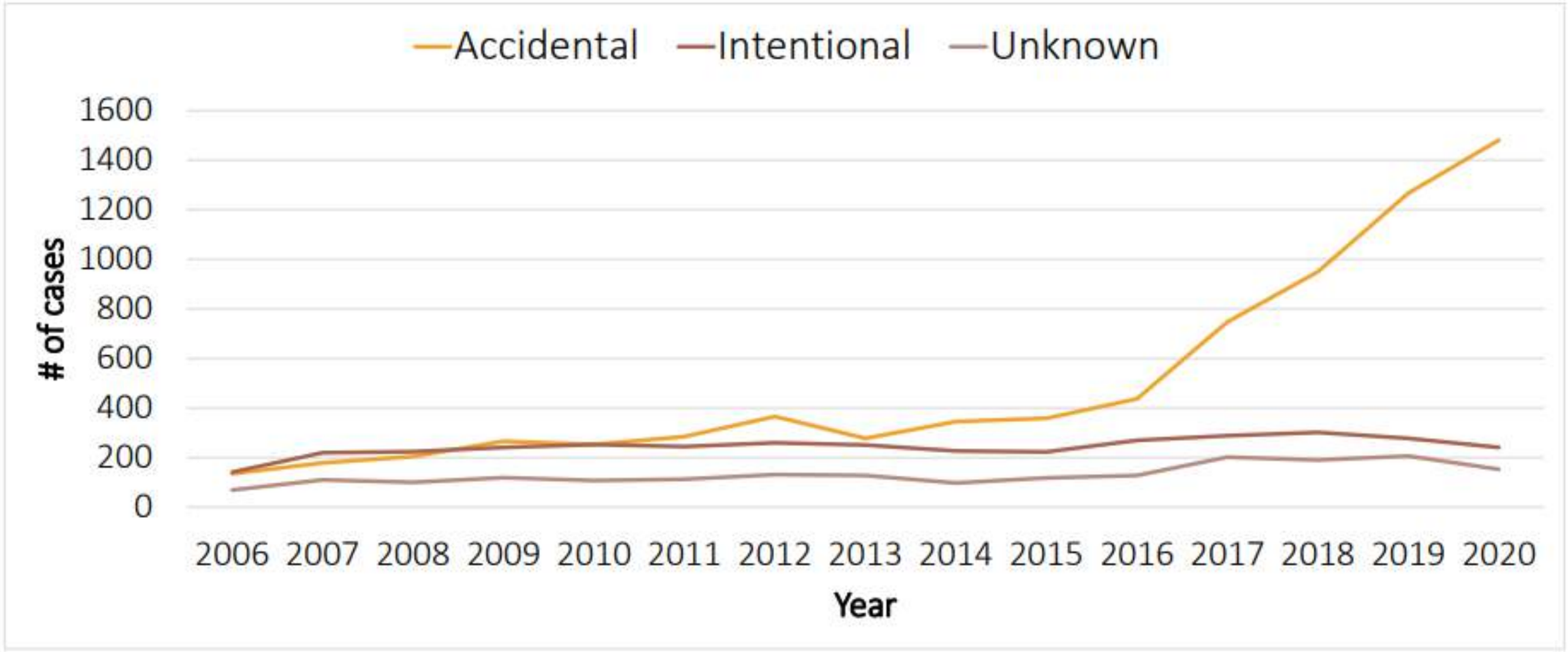

**Number of accidental apparent opioid toxicity deaths by sex and age group in Canada, 2022 (Jan to Sep)**




**Total of 34,455 apparent opioid toxicity deaths between January 2016 and September 2022**

*Source: Federal, provincial, and territorial Special Advisory Committee on the Epidemic of Opioid Overdoses. Opioid- and stimulant-related Harms in Canada. Ottawa: Public Health Agency of Canada; March 2023. https://health-infobase.canada.ca/substance-related-harms/opioids-stimulants*

# Opioid poisonings by intent in the ODSS



# Comparison of ODSS to general population for opioid-related poisonings and mental/behavourial disorders among occupation groups

*Workers in almost all occupations demonstrated elevated risks compared to the general population*

Some of the more consistently high SIRs were among workers in:

- **Construction and trades**
- **Materials handling**
- **Processing (mineral, metal chemical)**
- **Machining**
- **Transport**
- **Mining**
- **Medicine**
- **Service**

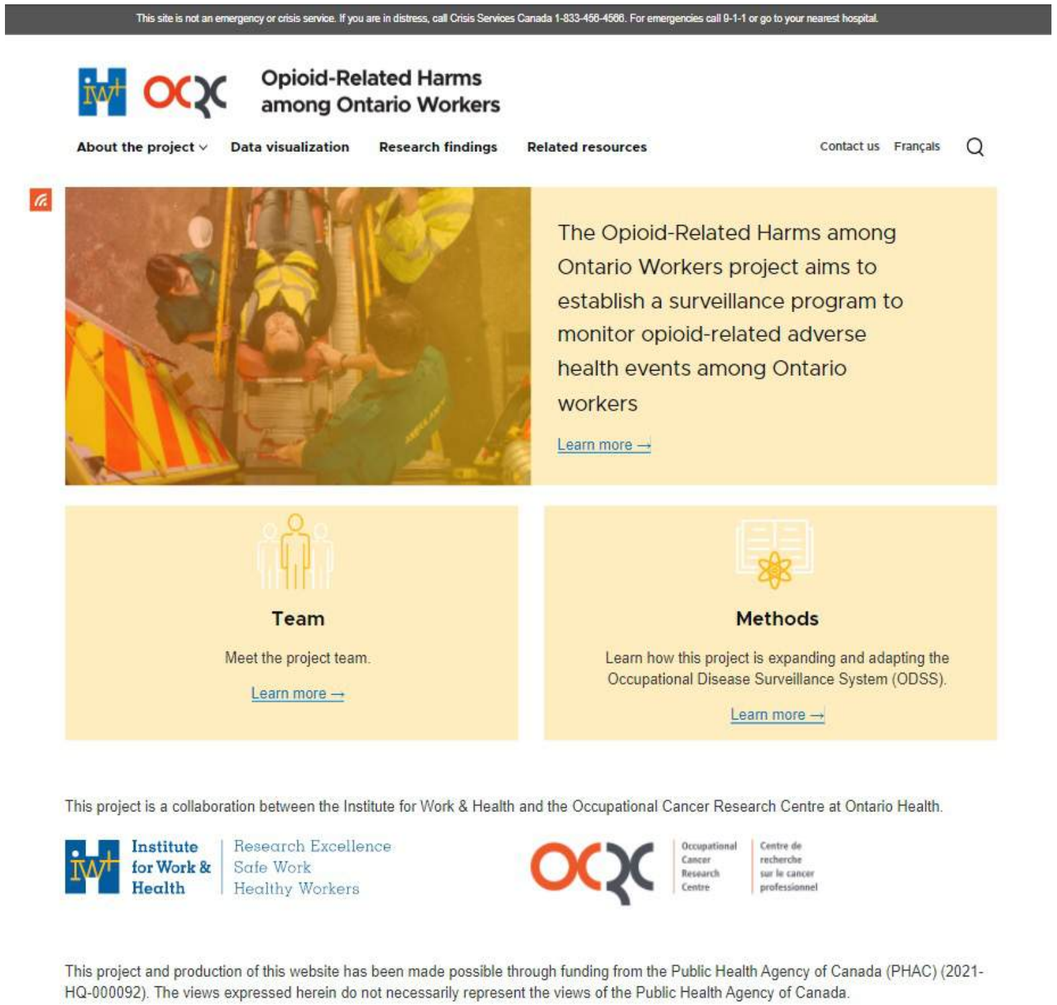
# Opioid-related harms: the role of workplace injuries and pain

Workplace injuries and pain

Many high-risk groups in physically demanding jobs with high rates of injury

- Pain
- Functional interference
- Poor mental health
- Return to work challenges
  - Pressure to return
  - Lack of appropriate workplace accommodations
  - Insufficient sick leave
  - Intermittent interruptions in employment

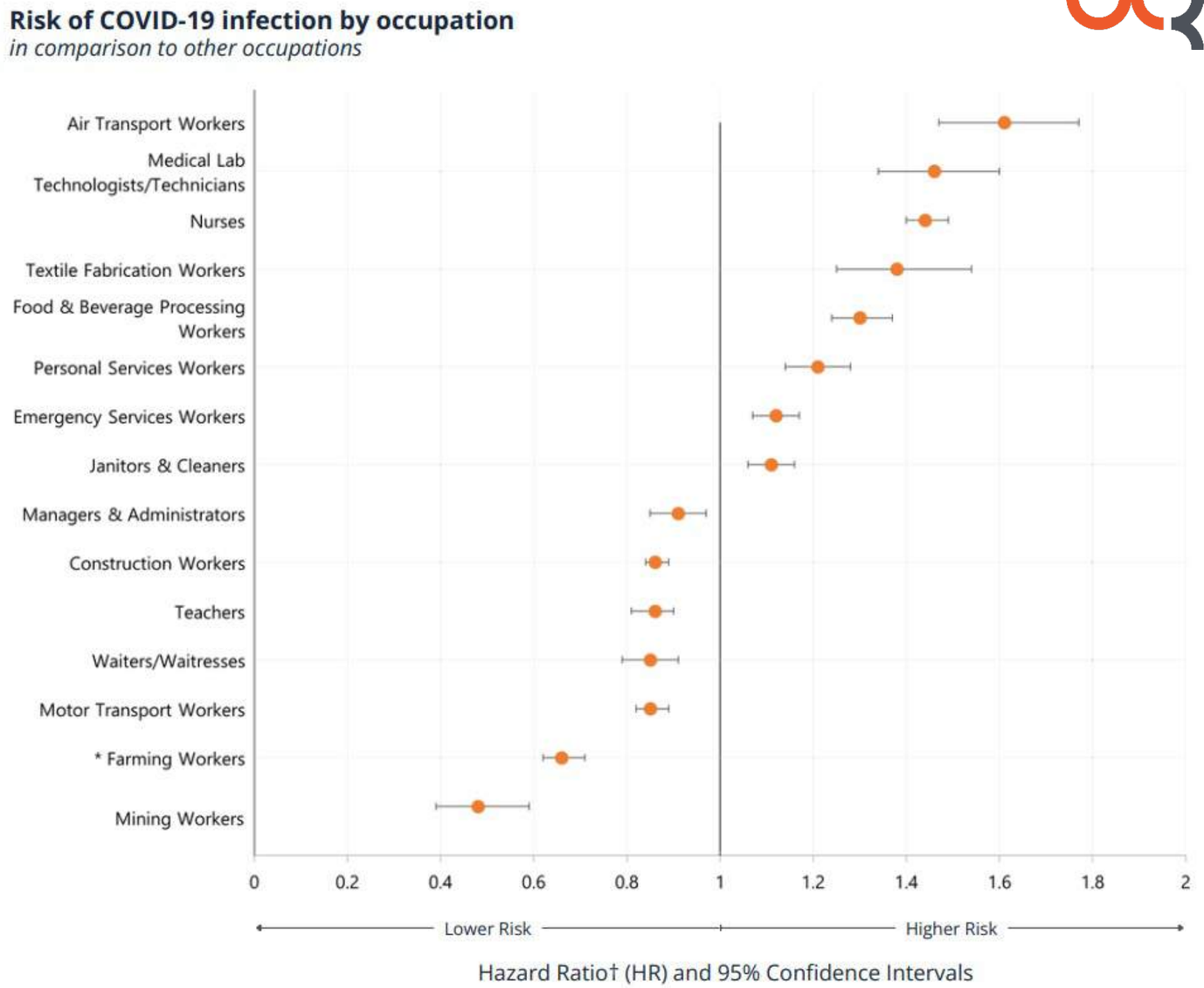
# Opioid-related harms: website and data visualization tool





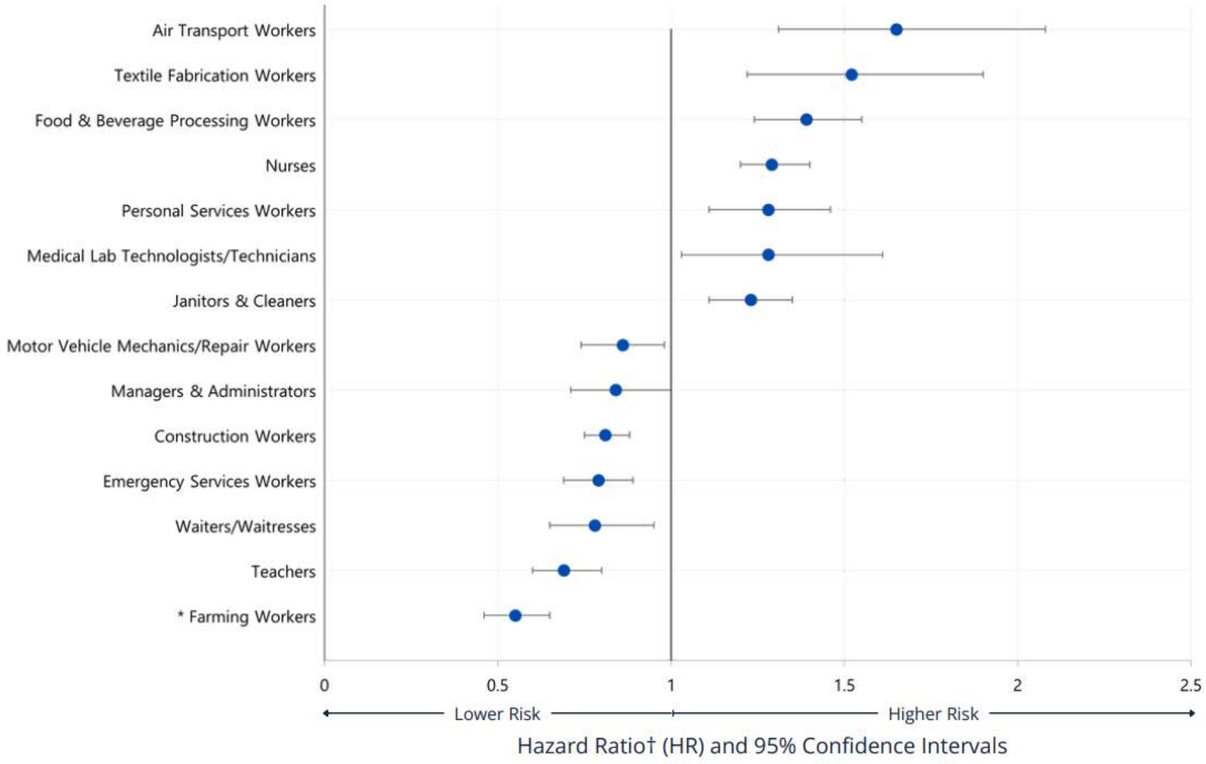
**https://opioidsandwork.ca**

# COVID-19 risk based on positive PCR tests among workers in the ODSS, 2020-2021



# Risk of severe COVID-19 among workers in the ODSS, 2020-2021

**Risk of severe COVID-19 infection by occupation**
*compared to other occupations*

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## SEVERE COVID-19 RISK AMONG ONTARIO WORKERS

BASED ON HOSPITAL RECORDS BETWEEN FEBRUARY 2020 AND DECEMBER 2021

**Key Insights**

- The risk of severe COVID-19 was identified through hospitalizations and emergency department visits among Ontario workers. Identifying workers with the highest risk of being hospitalized for COVID-19 can provide a better understanding of where prevention efforts are needed to reduce disease transmission.
- The risk of severe COVID-19 varies by region. Workers living in densely populated regions of Ontario had higher risk of severe COVID-19 infection, which may reflect background community risks.

This study identified **~10,300 COVID-19 infections** through hospital records

**Occupations with higher risk of severe COVID-19 infection**
*in comparison to other occupations*

**Higher risk** of COVID-19 infection may be due to indoor, in-person operations, with close physical proximity and frequent contact with others.

**Lower risk** of COVID-19 infection may be due to outdoor work, well-ventilated environments, use of respiratory protection, or minimal physical proximity and contact with others (e.g. remote work).


**Residential regions with higher risk of severe COVID-19 infection**
*in comparison to workers living in other regions*

Workers living in **Toronto:** **2 times the risk** of COVID-19 infection

Workers living in the **Central East Region (Durham, Peel, and York):** **1.9 times the risk** of COVID-19 infection

# Thank you!

paul.demers@ontariohealth.ca
jeavana.sritharan@ontariohealth.ca

https://www.occupationalcancer.ca
https://www.odsp-ocrc.ca
https://opioidsandwork.ca
https://occdiseasestats.ca

# Discussion Period

## Any questions?

Please use the **Q&A tab** to submit your questions for our speaker. You can “**like**” other people’s questions to push them up in priority.

# Closing Remarks

# Thank You!

The seminar recording and presentation slides will be posted on https://nccid.ca/ within a few weeks.

Join us on **Tuesday, November 26, 2024 (1:00-2:00pm ET)** for the next seminar on **Wastewater monitoring in northern and remote areas: the Eeyou Istchee experience**.

Visit https://nccid.ca/surveillance-advances-seminar-series/ for more information.

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WEDNESDAY, NOVEMBER 6 | 11:00am - 12:00pm PST

DR. KARINA TOP

DR. MATTHEW MULLER

DR. NAVEED JANJUA

DR. SARAH WILSON

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**Survey for today's seminar:**