



Occupational  
Cancer  
Research  
Centre

# Asbestos and Cancer in Ontario and The Occupational Cancer Research Centre

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A Presentation to the Asbestos Surveillance &  
Disease Compensation Think Tank, Toronto

**Dr. Loraine Marrett**

Associate Director, OCRC

Sr Scientist, Cancer Care Ontario

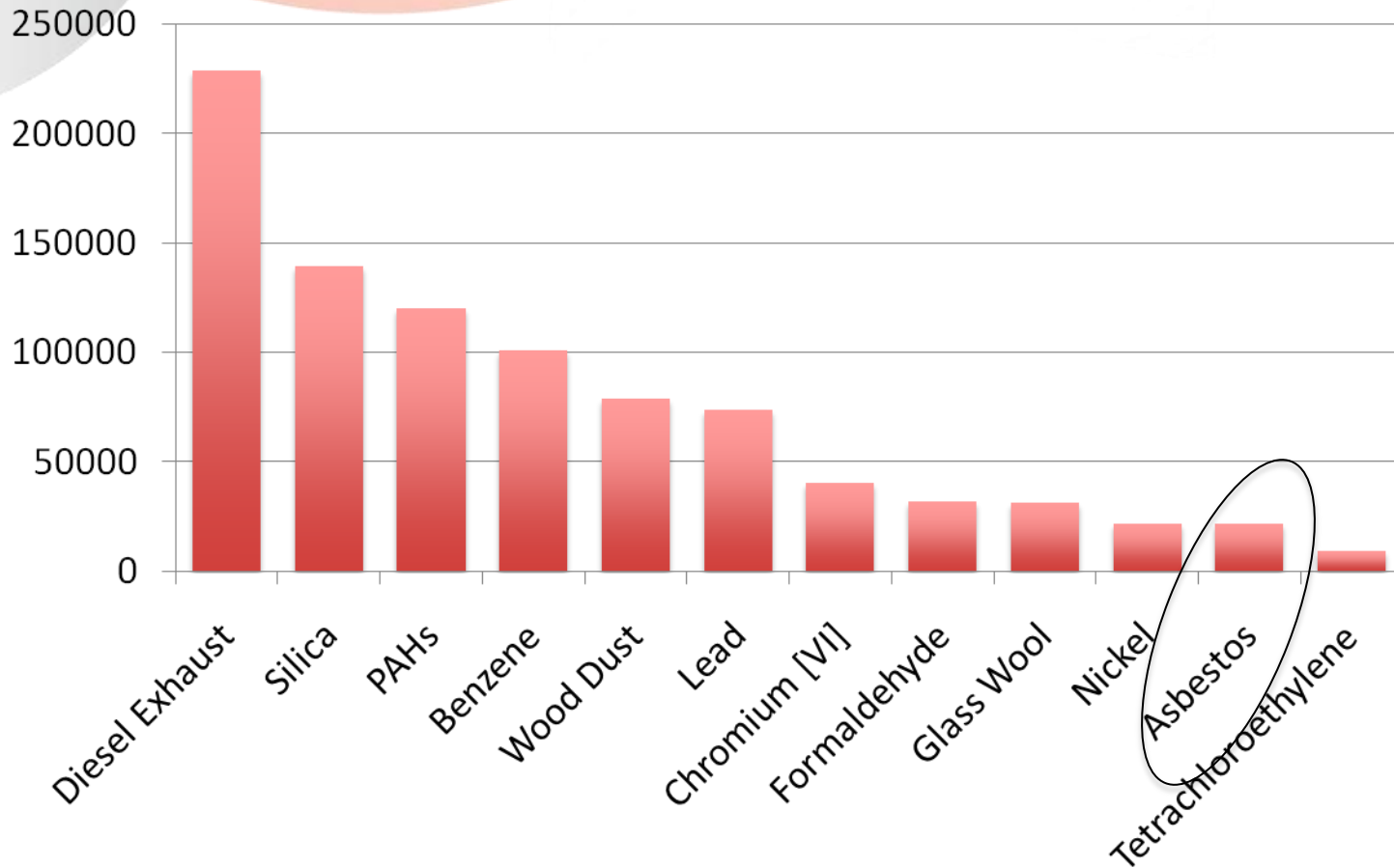
# Outline



- Mesothelioma & asbestos in Ontario
- Workers' compensation & asbestos in Ontario
- Ontario's new Occupational Cancer Research Centre (OCRC)
- OCRC's current and future work re asbestos-related cancers

# Mesothelioma & asbestos in Ontario

# Crude estimates of Ontario workers exposed to occupational carcinogens



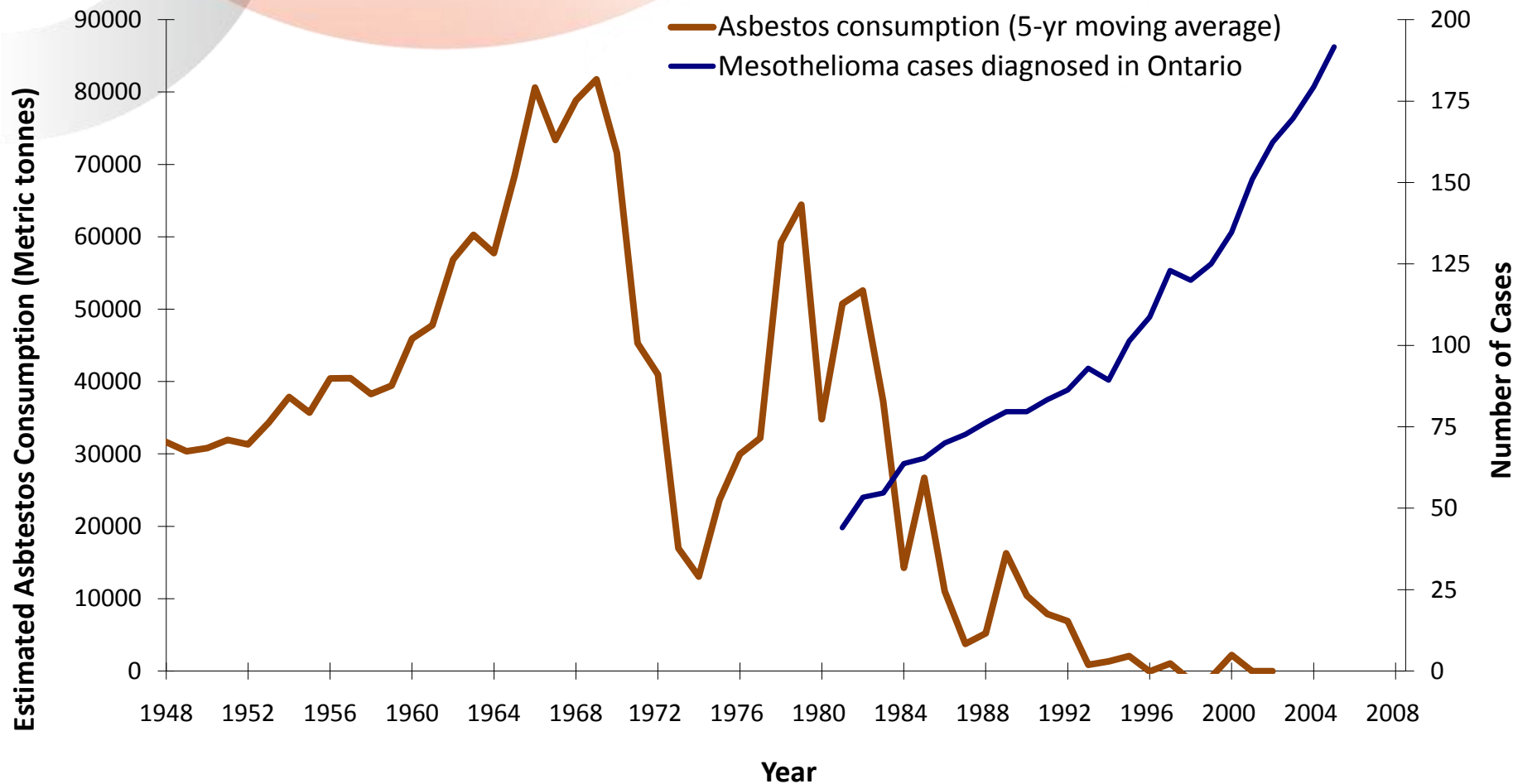
Source: CAREX Canada, 2008.

# Mesothelioma in the Ontario Cancer Registry (OCR)



- Still a relatively difficult disease to diagnose accurately
- Effective surveillance requires accurate data
- CCO has applied enhanced logic to best available data to ensure capture of *all* mesothelioma cases (resulted in increased counts for recent years)

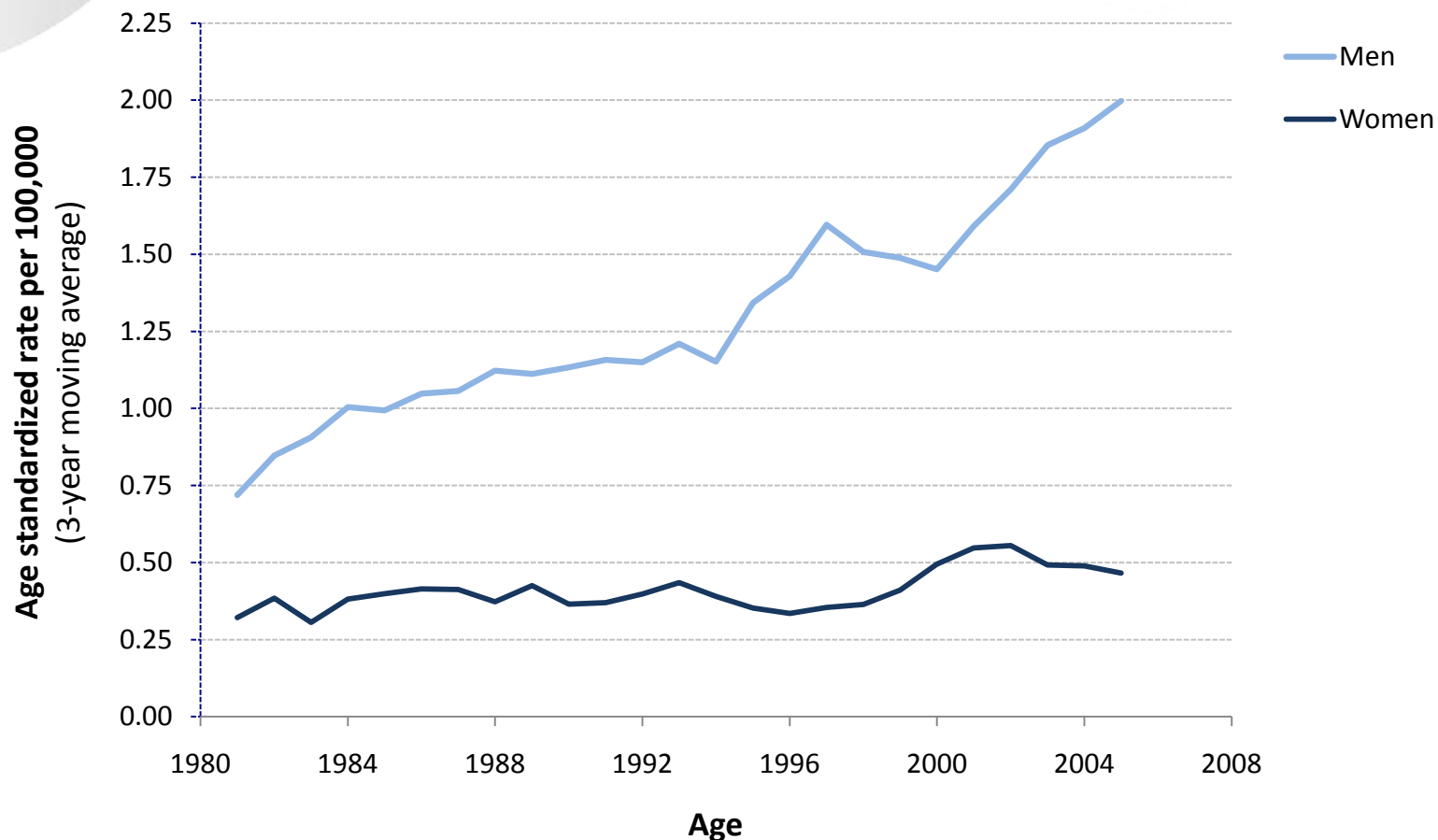
# Asbestos use in Canada and Mesothelioma in Ontario



Sources: Natural Resources Canada, Canadian Minerals Yearbook 1944-2002; Ontario Cancer Registry (2009)

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# Rates of Mesothelioma in Ontario, 1980 - 2006



Source: Ontario Cancer Registry (2009)

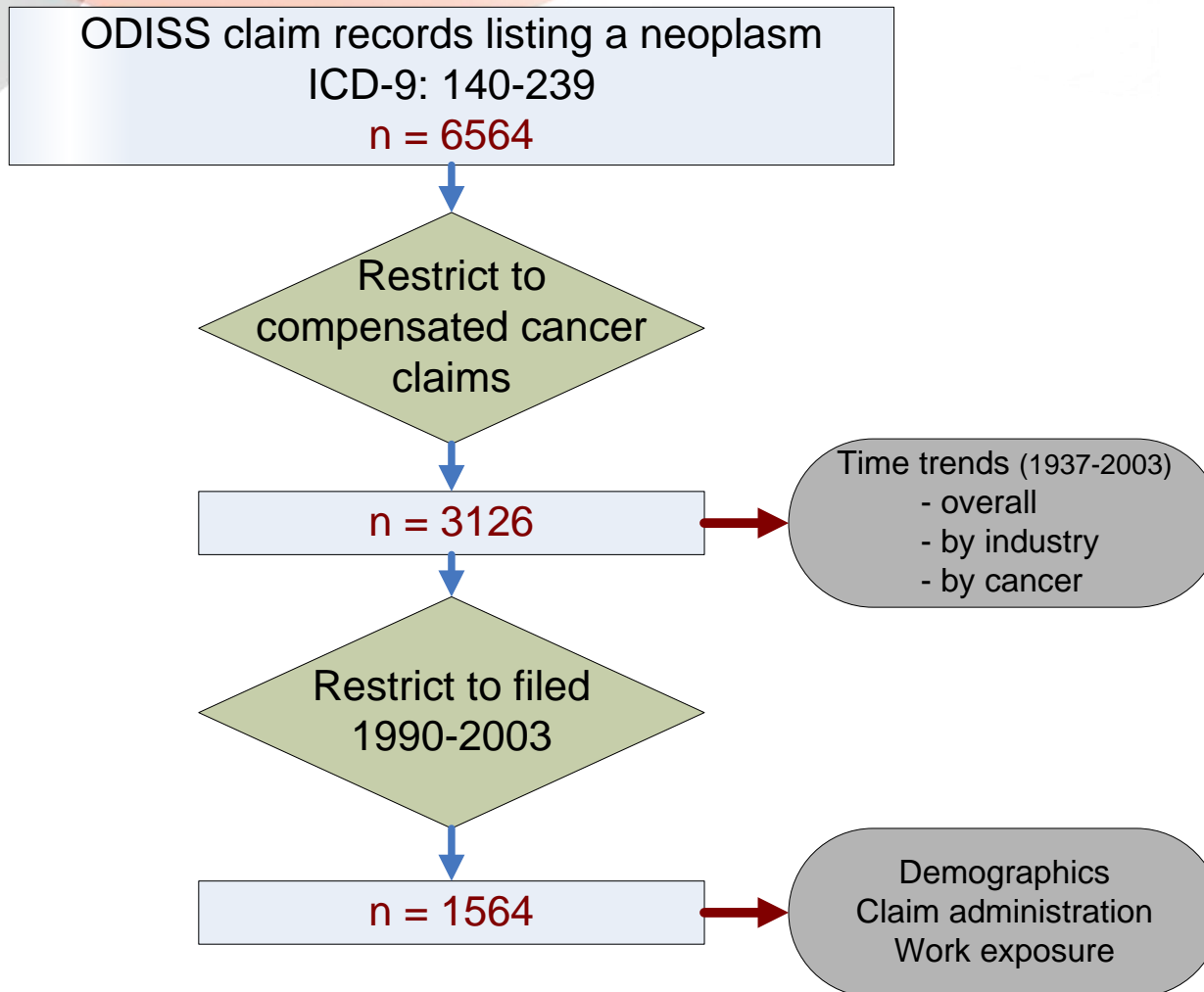
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# **Compensation and asbestos, Ontario:**

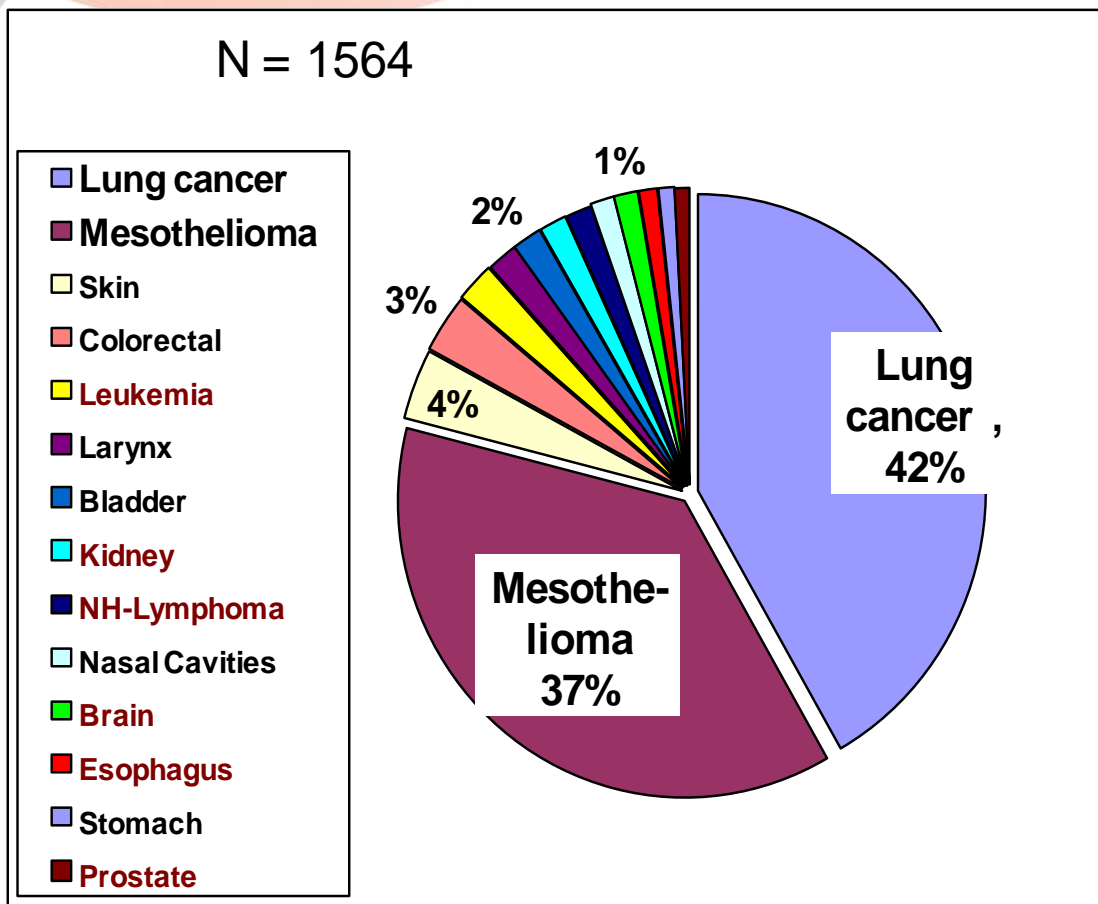
## **Analysis of Occupational Disease Database (ODISS), WSIB**



# 1. Descriptive Study of Cancer Compensation Claims using WSIB's ODISS



# Cancer distribution, allowed claims, Ontario, 1990-2003 (N=1564)

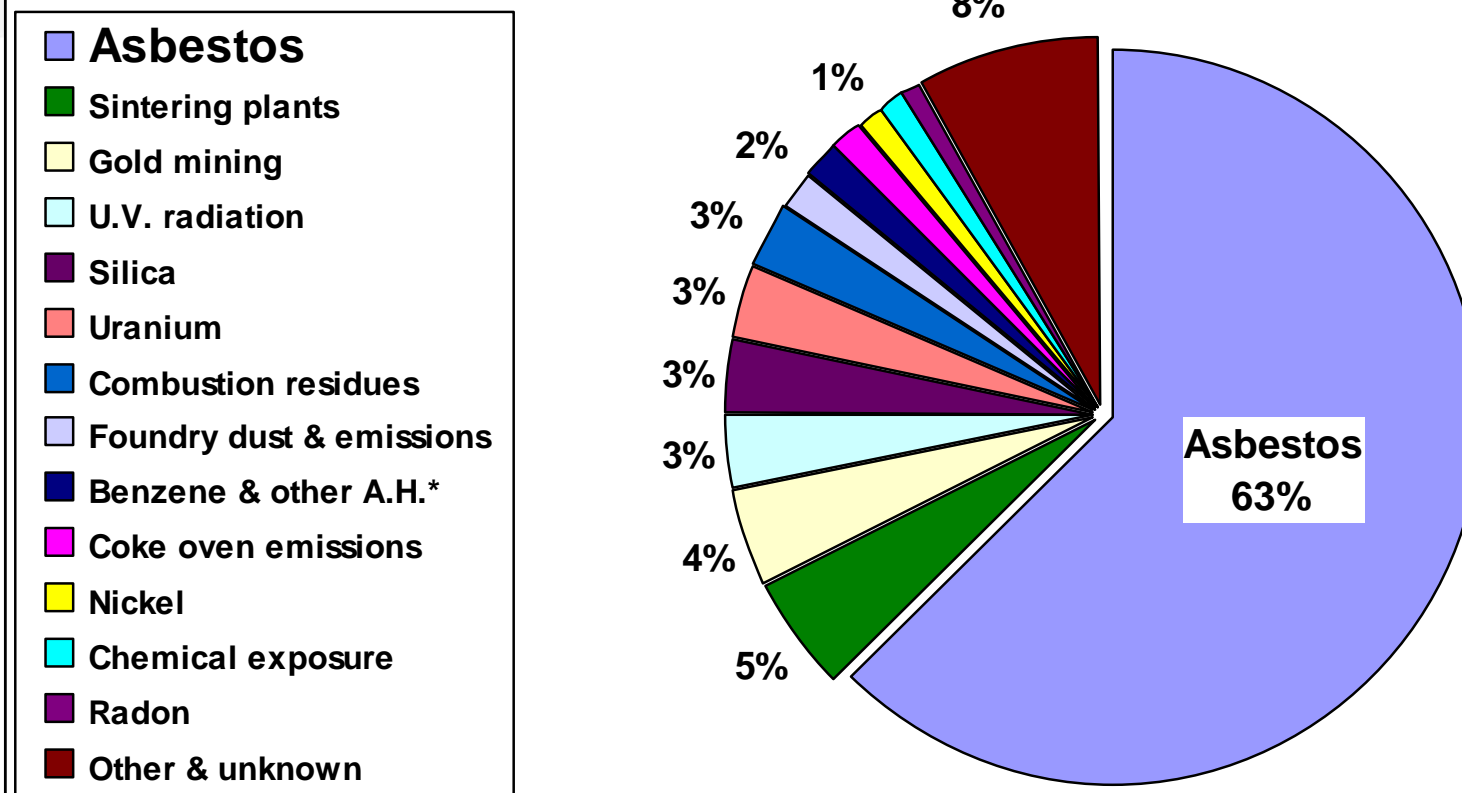


Source: ODISS, WSIB. Pichora E, Payne JI. Am J Ind Med 2007; 50: 980-91.

# Occupational exposure, allowed claims, all cancers, Ontario, 1990-2003 (N=1564)



## Primary Causal Agent

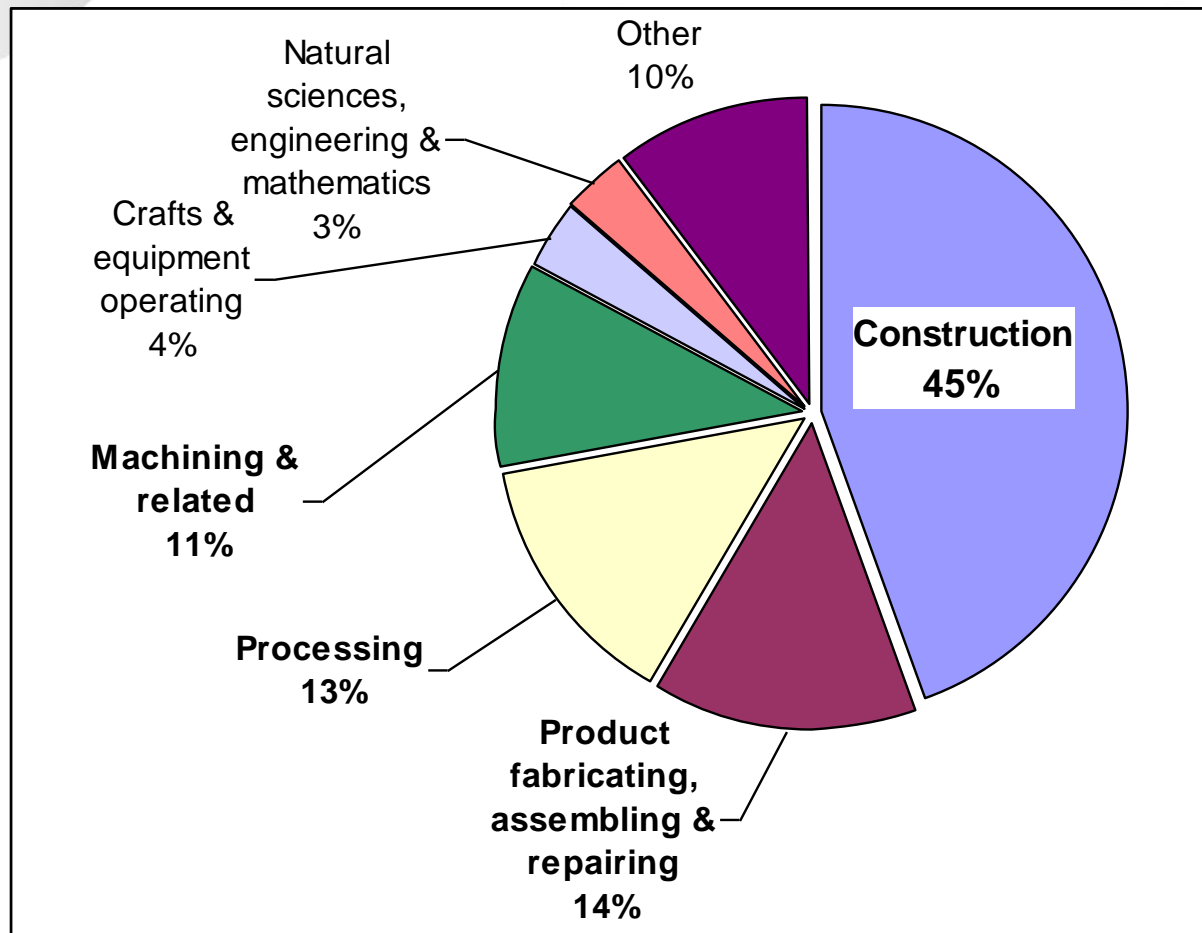


\* Aromatic Hydrocarbons

# Occupational exposures, allowed claims, mesothelioma, Ontario, 1990-2003 (N = 582)



## Occupations with $n \geq 10$



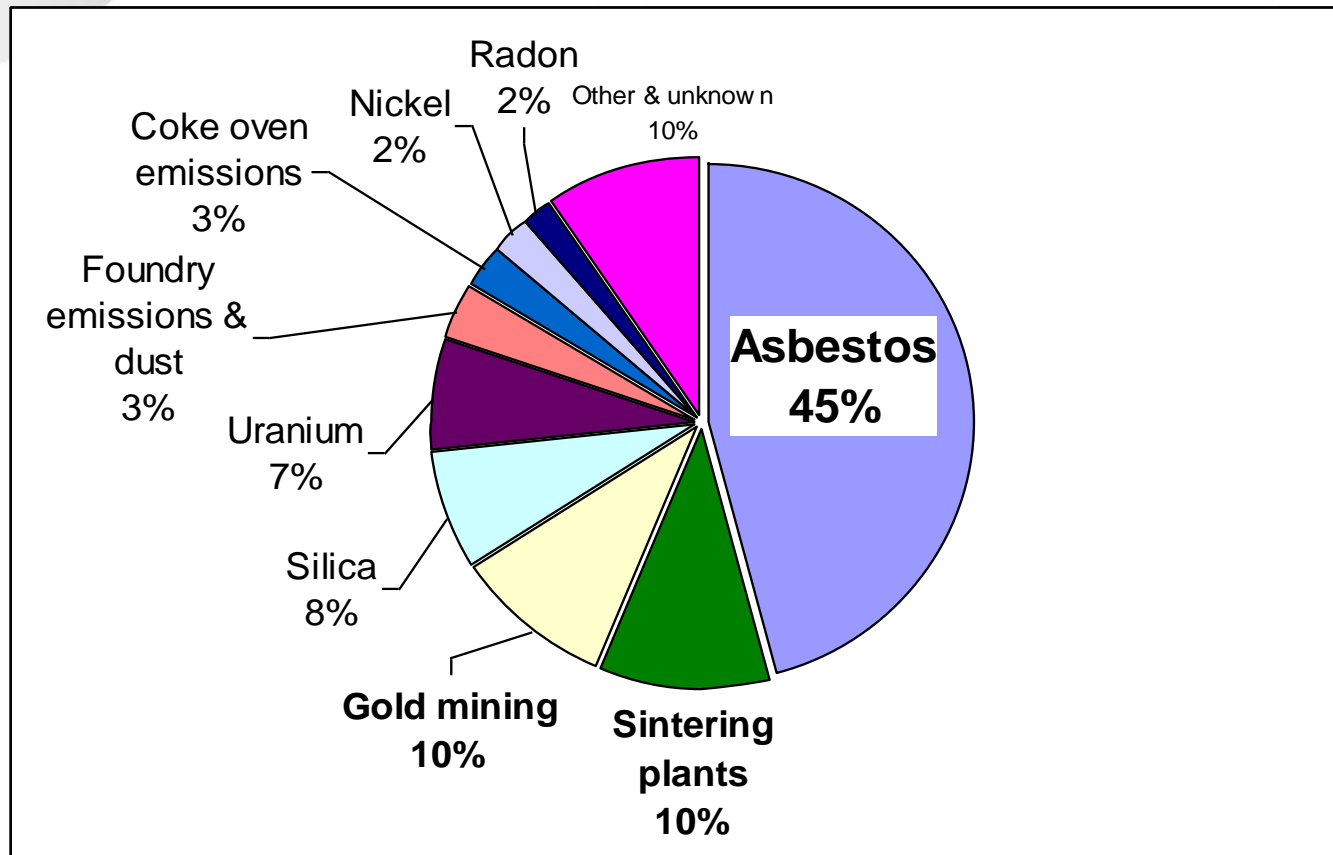
Causal agent

~ 100% = asbestos

# Occupational exposures, allowed claims, lung cancer, Ontario, 1990-2003 (N = 652)



Occupations with  $n \geq 10$



# Filing rates for lung cancer & asbestos



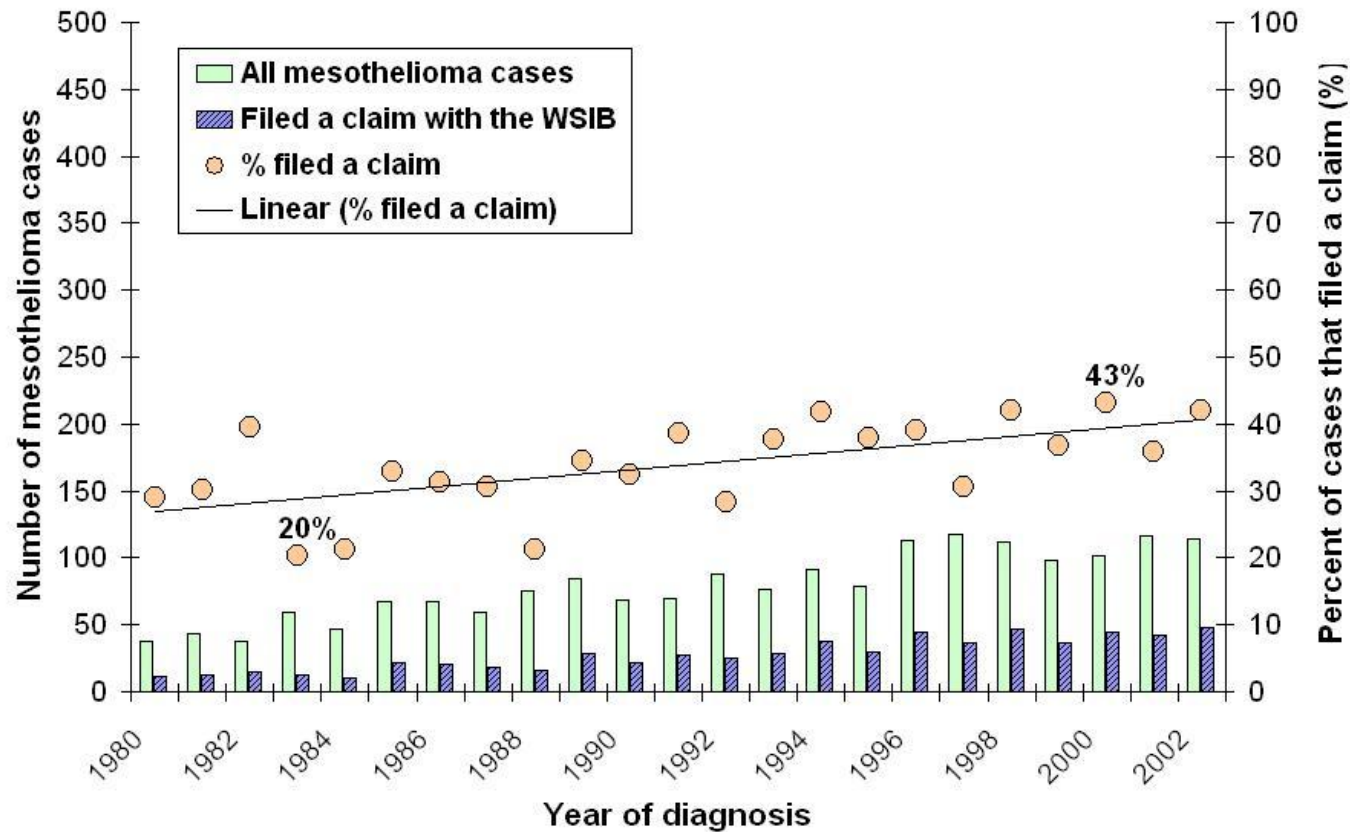
- Ratio of lung cancer to mesothelioma compensated claims where causal agent is asbestos is 298:582 ~ 1:2
- Cohort studies of workers exposed to asbestos report a 2:1 ratio for lung cancer to mesothelioma cases
- Suggests that number of claims for lung cancer attributable to asbestos should be four times what it currently is

## 2. ODISS-Ontario Cancer Registry Linkage



- Probabilistic linkage:
  - personal identifiers: first and last name, date of birth, sex
  - claims filed 1964-2003 (ODISS)
  - cancers diagnosed 1964-2002 (OCR)
- 6564 WSIB-ODISS claim records listing a neoplasm were linked to the Ontario Cancer Registry
- Analyses restricted to cancers diagnosed in 1980-2002
  - due to OCR data quality (e.g., pathology completeness)

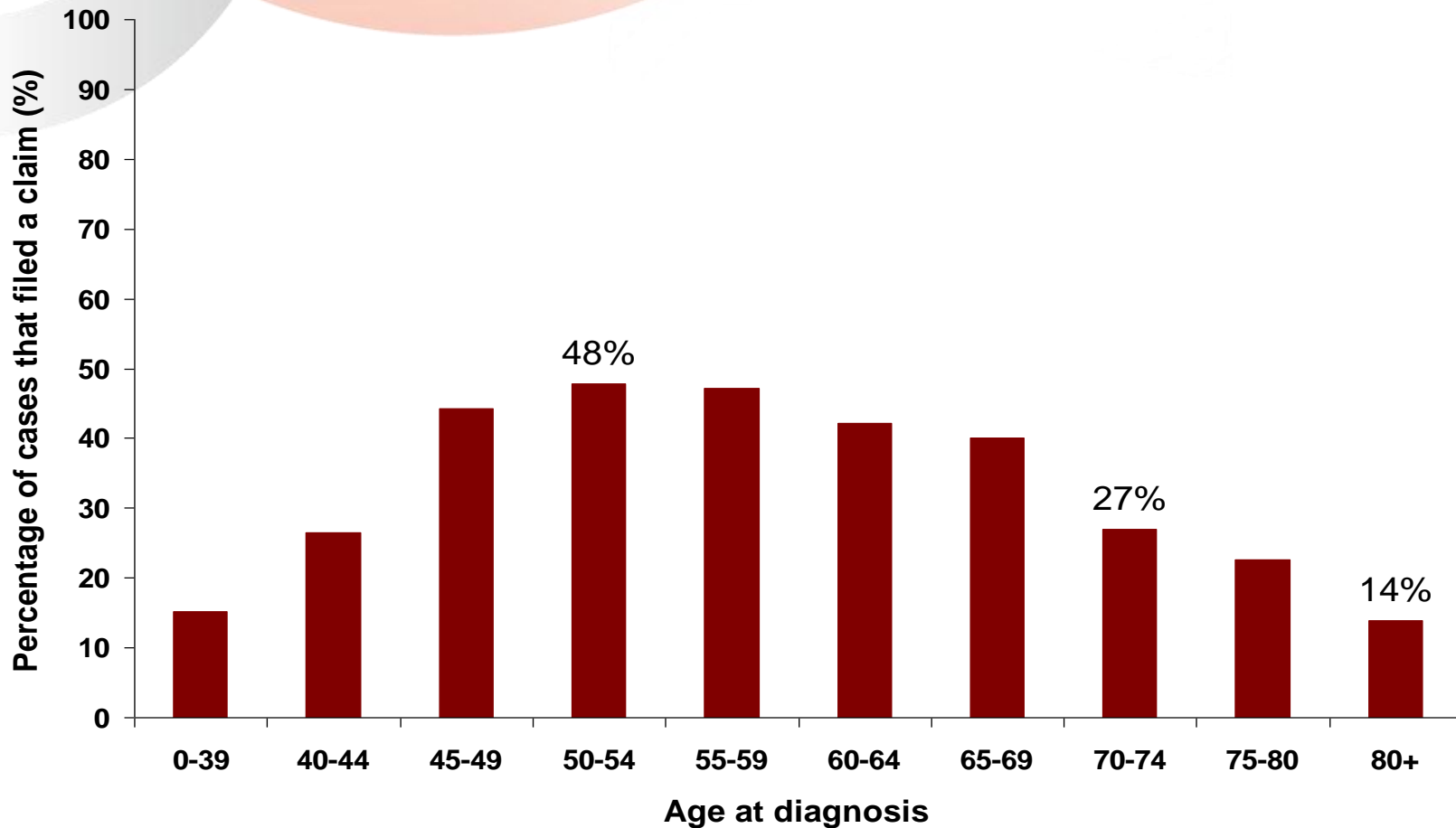
# Filing for workers' compensation, Ontario mesothelioma\* cases, 1980-2002



\* WSIB schedule 4 disease as of May 1992



# % Filing by Age at Diagnosis, Mesothelioma, Ontario, 1980-2002



Source: Payne J, Pichora E. Filing for workers' compensation among Ontario cases of mesothelioma. Cdn Respiratory J 2009; 16:148-52.



# Ontario's new Occupational Cancer Research Centre (OCRC)

# OCRC Partners



- Workplace Safety & Insurance Board (WSIB) – funder
- Canadian Cancer Society, Ontario Division (CCS) - funder
- Cancer Care Ontario (CCO) – funder/home
- United Steelworkers - partner



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The prevention of occupational cancer through the identification and elimination of exposures to carcinogens in the workplace.

# OCRC Research Foci



- Surveillance of occupational cancers and workplace exposures
- Research into the causes of cancer in the workplace
- Intervention research to reduce exposures and prevent cancer
- Capacity-building for occupational cancer research
- Knowledge transfer and exchange to ensure relevance of research and effective use of research findings

# OCRC's current & future work in asbestos-related cancers

# Surveillance: Projected mesothelioma burden



- What is the future burden of mesothelioma in Ontario?
  - When will the annual # of mesothelioma cases begin to decline?
  - Mark Clements (Australian National University) has projected # of new cases to 2060 for Australia
  - Dr. Clements has mesothelioma data (Ontario and Canada) and asbestos data (Canada) and will use to project meso cases through 2060
- Important for forecasting compensation
- Useful as a marker of asbestos exposure for predicting other asbestos-related diseases

# Surveillance: Refinement of CAREX for Ontario



- Estimate numbers of workers who continue to be exposed to asbestos by industry
- Validate estimates
- Ultimately, reduce exposures



# Research: Increasing physician awareness of asbestos-related cancers



- Pilot project submitted to WSIB with Centre for Research Expertise in Occupational Disease (CREOD) (Linn Holness)
  - Physicians in one Ontario lung cancer clinic will distribute exposure questionnaire (asbestos only) to lung/mesothelioma patients
  - Physicians of mesothelioma patients elsewhere will distribute same questionnaire to their mesothelioma patients
  - Patients who indicate asbestos exposure will be offered assistance in reviewing exposure as regards filing a claim
  - OHCOW clinic cooperating
- Ultimate purposes:
  - To increase physician awareness of asbestos as a workplace carcinogen for lung cancer and mesothelioma
  - To increase filing for compensation where appropriate

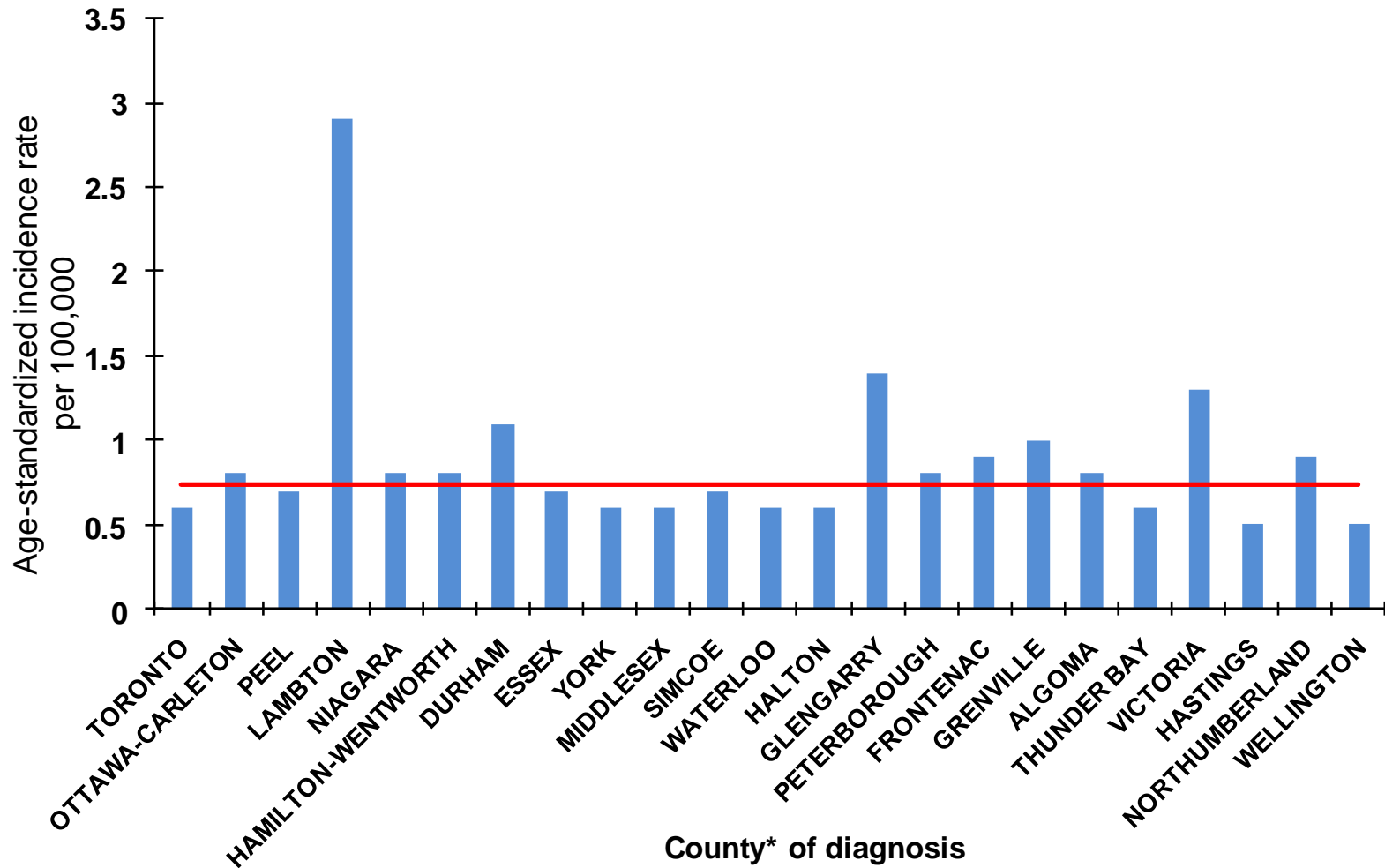


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**Thank you!**

**Questions?**

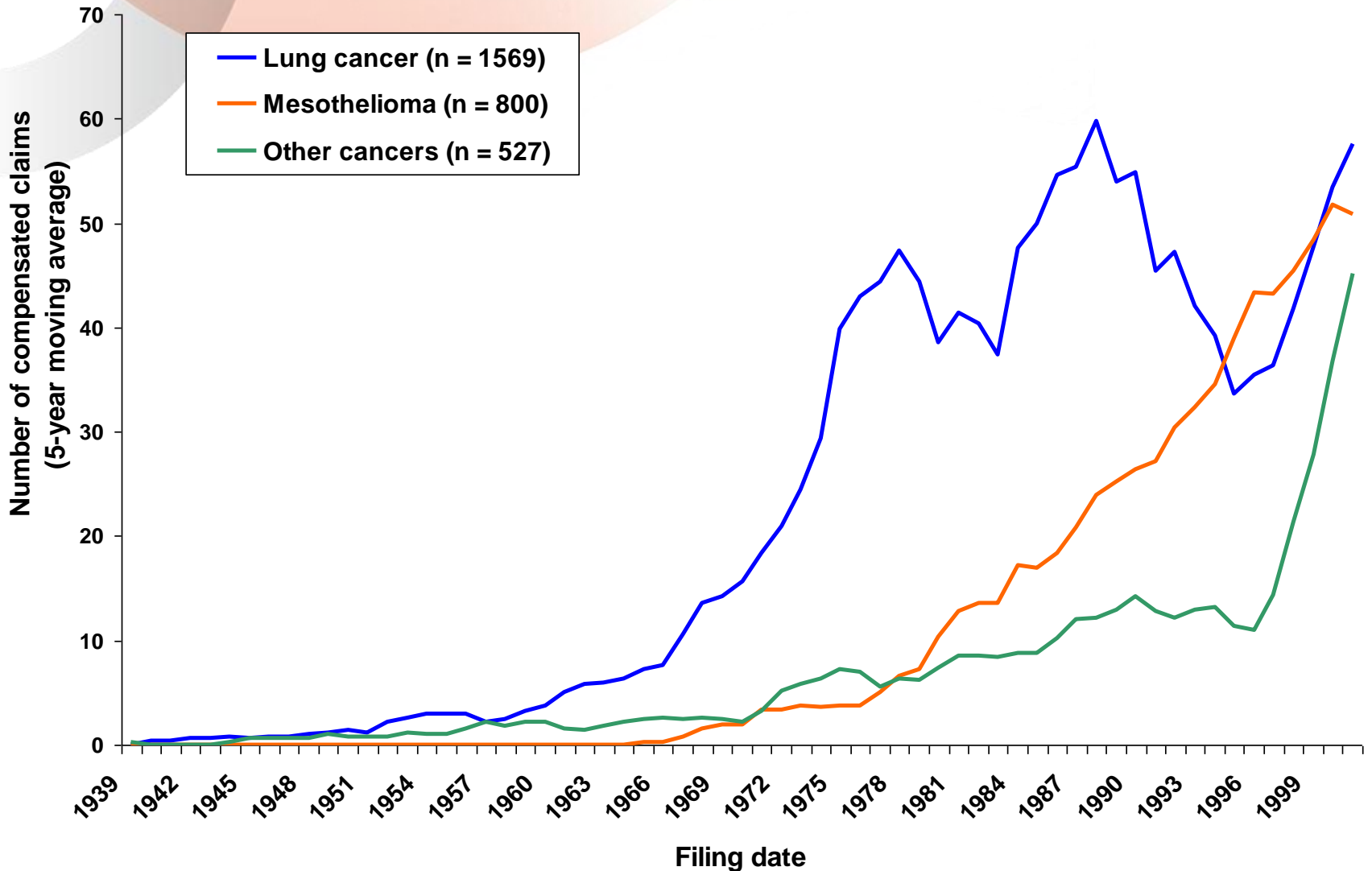
# Ontario Mesothelioma Incidence Rate by County of diagnosis, 1980-2002



Source: Ontario Cancer Registry, 1980-2002 (SEER, 2004)

\*Counties where N<20 not shown  
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# Compensated Cancer Claims by Cancer, 1937-2003



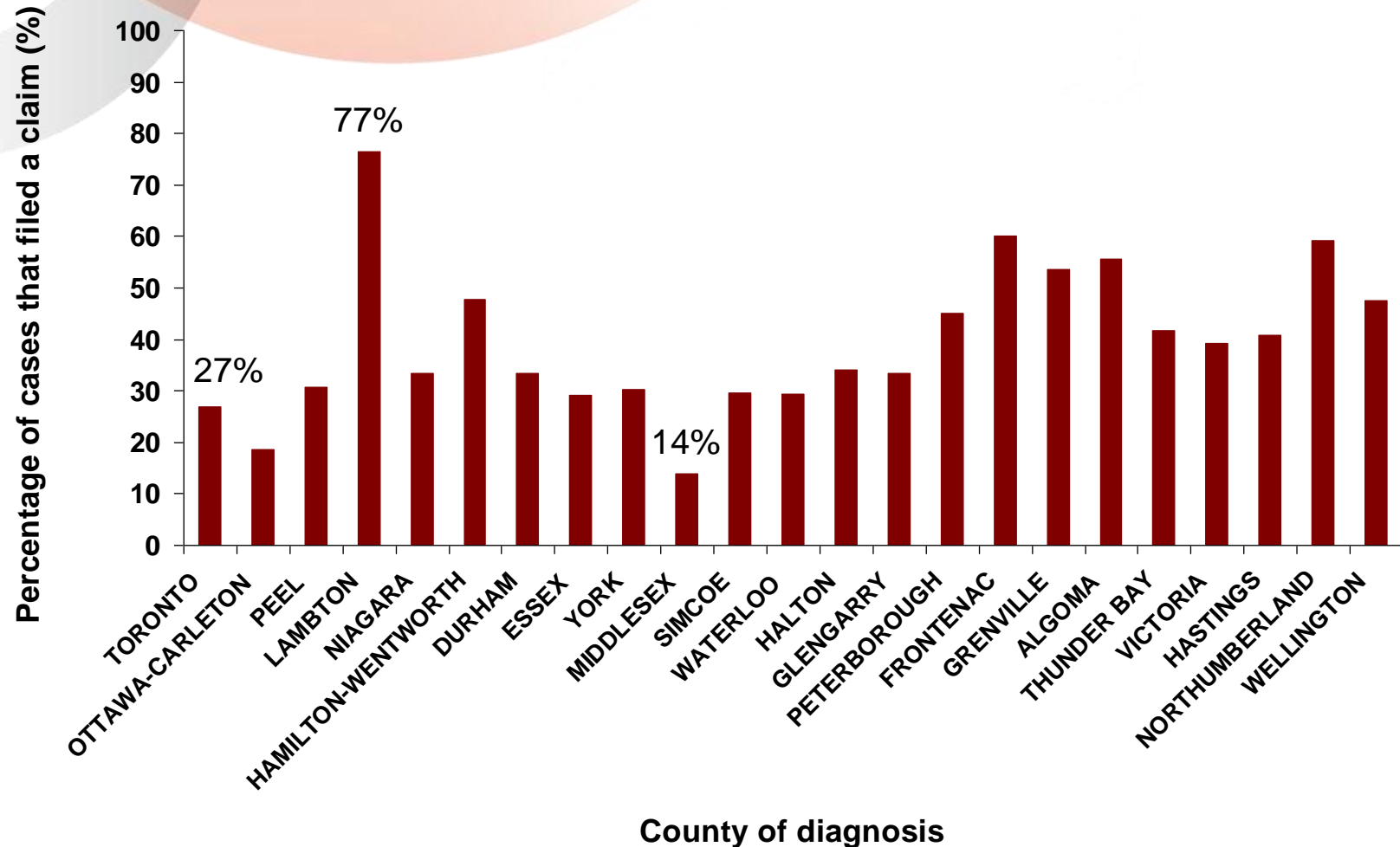
# Mesothelioma Claim Characteristics, 1980-2002



Of the 643 claims filed for mesothelioma cases diagnosed 1980-2002:

- 15% filed by dependants after worker's death no time limit for filing an occupational disease claim in Ontario
- 87% of claims filed were compensated
- Reasons for not compensating:
  - Ontario worker is not WSIB-insured (self-employed, etc)
  - asbestos exposure occurred while working out of province
  - asbestos exposure not occupational
  - claim was abandoned by the worker or by his/her dependants

# % Filing by County of Diagnosis, Mesothelioma, Ontario, 1980-2002



Source: Payne J, Pichora E. Filing for workers' compensation among Ontario cases of mesothelioma. Cdn Respiratory J 2009; 16:148-52.

# OCRC Guiding Principles



- Produce and transfer new knowledge to support community action, public education, prevention, legislation, and policy development.
- Conduct research that adheres to the highest standards – research integrity.
- Involve the partners and key stakeholders in its research agenda.
- Guided by the precautionary principle.
- The Centre will operate independently of its funders' constraints.

# OCRC Mandate & Scope



## Mandate

- Conduct research on occupational cancer and carcinogens
- Bridge occupational, environmental, and public health
- Build research capacity

## Scope

- Ontario-wide focus
- Nationally/internationally networked
- Multi-disciplinary approach
- Applied research