

Population based studies

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Discussion points

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1. Ascertainment of health outcomes

- Health outcome used may be very different to clinical Dx - validity
- May rely on data collected for other purposes
 - If not core data for collecting agency may be poor quality
 - Multiple coding schemes used
- Development of algorithms connecting linked data
 - Dx on physician billing + prescription
 - Dx twice in 12 month period

2. Exposure assessment

- Exposure assessment often relies on broad categories
 - Administrative data may include only very non specific detail of occupation and industry
 - Multiple non aligned coding systems
 - Use of JEM
 - Possibility for using biomarkers
- Need to find ways to improve accuracy

3. Privacy

- The problem
 - Inadvertent identification when linking databases
 - Data may be very rich – e.g. geolocation data from cell phone can help determine environmental exposures, but might also show people are not where they are supposed to be!
- Is it a real barrier to research?
- Is there a solution?
 - Don't allow linkage
 - Restrict minimum cell size made public
 - Often used with single databases (e.g. CHMS, NLSCY)
 - Re-anonymise after linkage – may not be practical as may be millions of data rows!
 - Vigilance when publishing

4. Unexpected groups at risk

- Why do some population based estimates of incidence highlight some occupations as having an excess risk of respiratory disease that don't seem to have exposure to known respiratory hazards?

(Note: see above – errors in assessing health outcomes and exposures)

Some occupations with excess risk of NOAA in AB and BC

Alberta		BC	
Occupation	RR (95%CI)	Occupation	OR (95%CI)
Social work/related fields	2.13 (1.54-2.94)	Firefighters	3.73 (1.94-7.19)
Launderers/dry cleaners	1.96 (1.28-2.98)	Aides/assistants in health	3.50 (1.81-6.75)
Wood processors except pulp	1.94 (1.08-3.46)	Stationary engineers/equipment operators	3.38 (1.52-7.51)
Electronic data processing equip operator	1.92 (1.22-3.02)	Sawmill machine operators	3.29 (2.04-5.30)
Protective services NEC	1.80 (1.29-2.53)	Gas fitters	3.24 (1.56-6.76)
Community welfare occupations	1.75 (1.35-2.26)	Bus drivers/transit operators	3.19 (1.85-5.50)
Teaching/related fields NEC	1.74 (1.23-2.46)	Clerical occupations	2.75 (1.38-5.48)
Motor transport operators	1.73 (1.01-2.96)	Other elemental service occupations	2.74 (1.54-4.88)
Construction insulators	1.71 (1.19-2.48)	Teachers and professors	2.17 (1.28-3.67)
Stationary engine/equipment operators	1.70 (1.06-2.72)	Community and social services	2.23 (1.04-4.96)