



UNIVERSITY OF ALBERTA
SCHOOL OF PUBLIC HEALTH

The North is not all the same:

*Comparing health system performance in
18 regions in Canada*

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October, 2017

Presentation outline

- What is a health system?
- How is health system performance assessed?
- What is “North” in Canada?
- Comparing health system performance in 18 northern regions



But first, what do we mean by health system?

A health system “consists of all organizations, people and actions whose primary intent is to promote, restore or maintain health (WHO 2007)

The WHO Health System Framework

System Building Blocks



ACCESS
COVERAGE



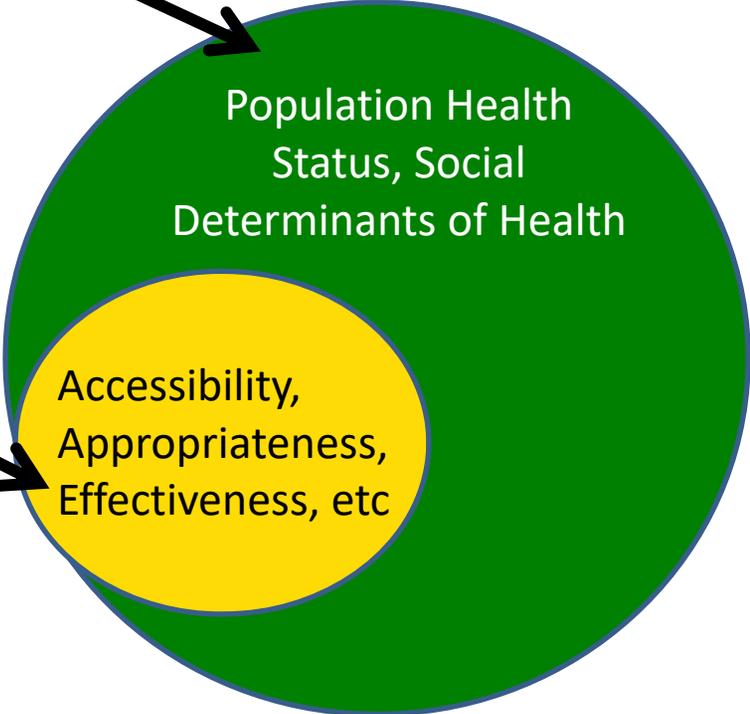
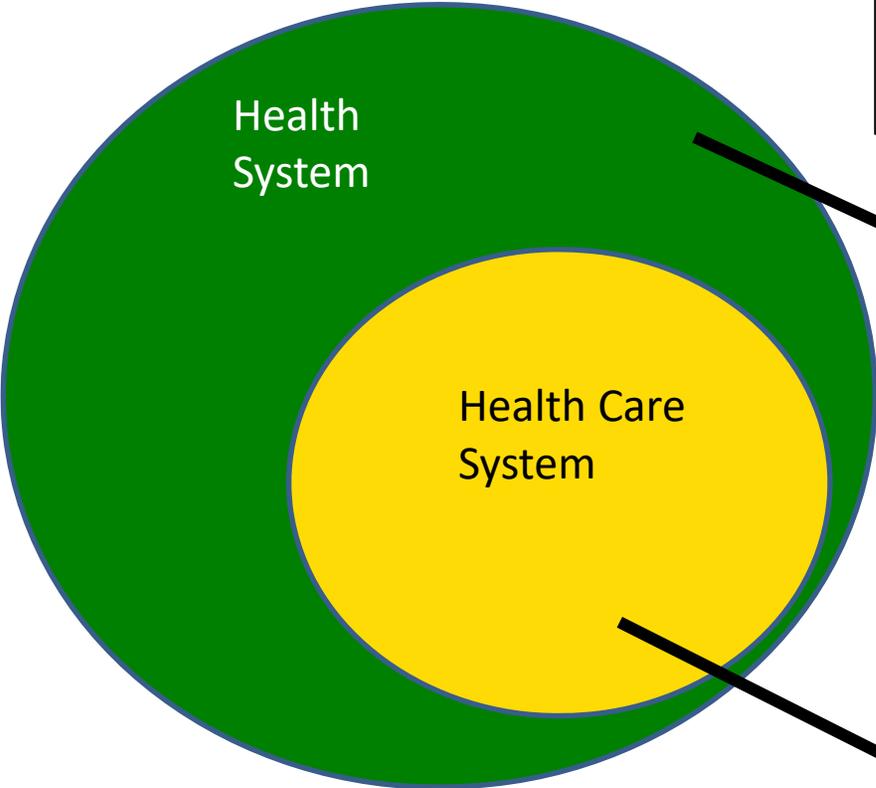
QUALITY
SAFETY

Overall Goals / Outcomes



Health System vs Health *Care* System

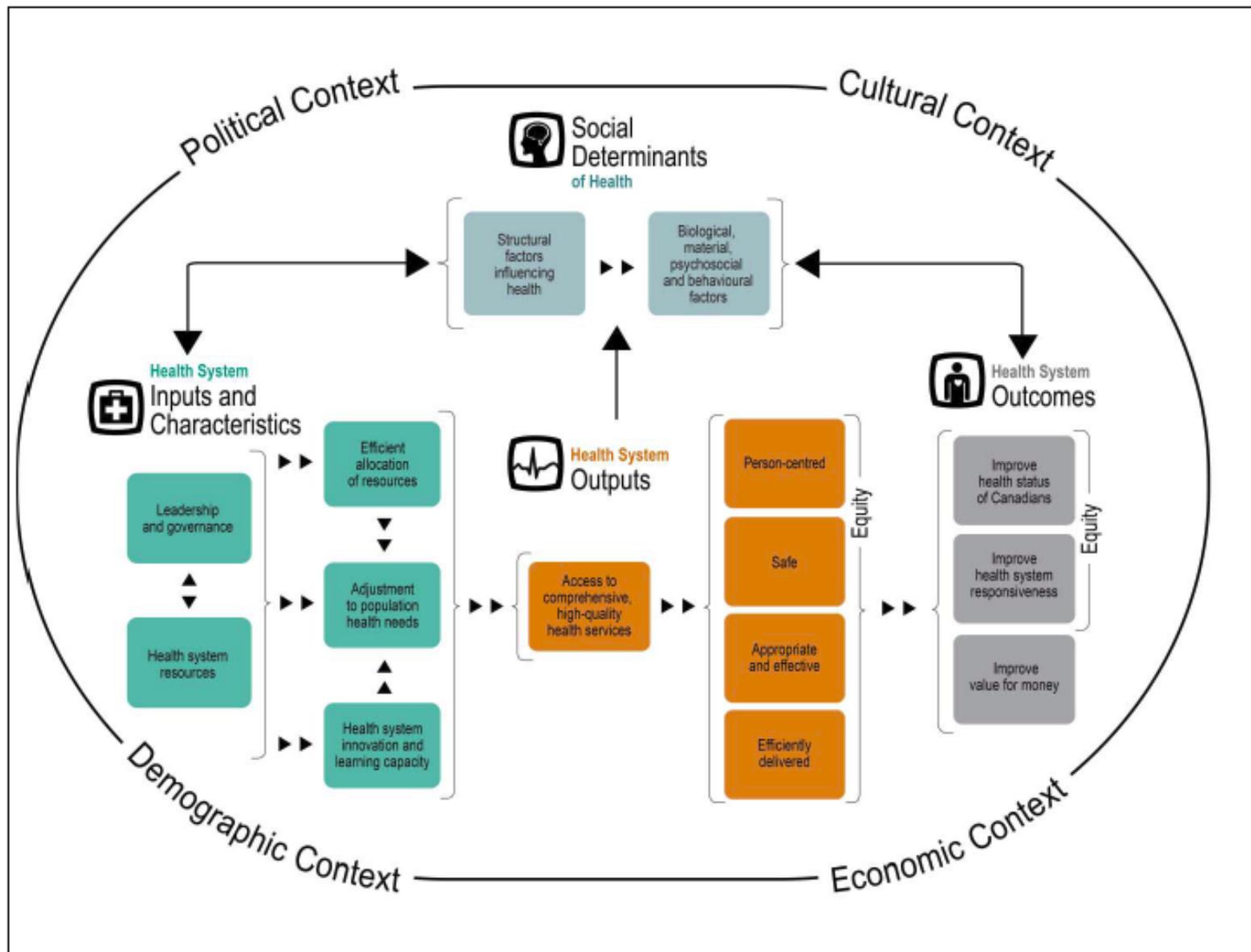
Narrow vs Broad view
of “health system”



Performance
Indicators

*Holding “health system”
accountable only for things for
which it can do something about.*

Health system performance framework



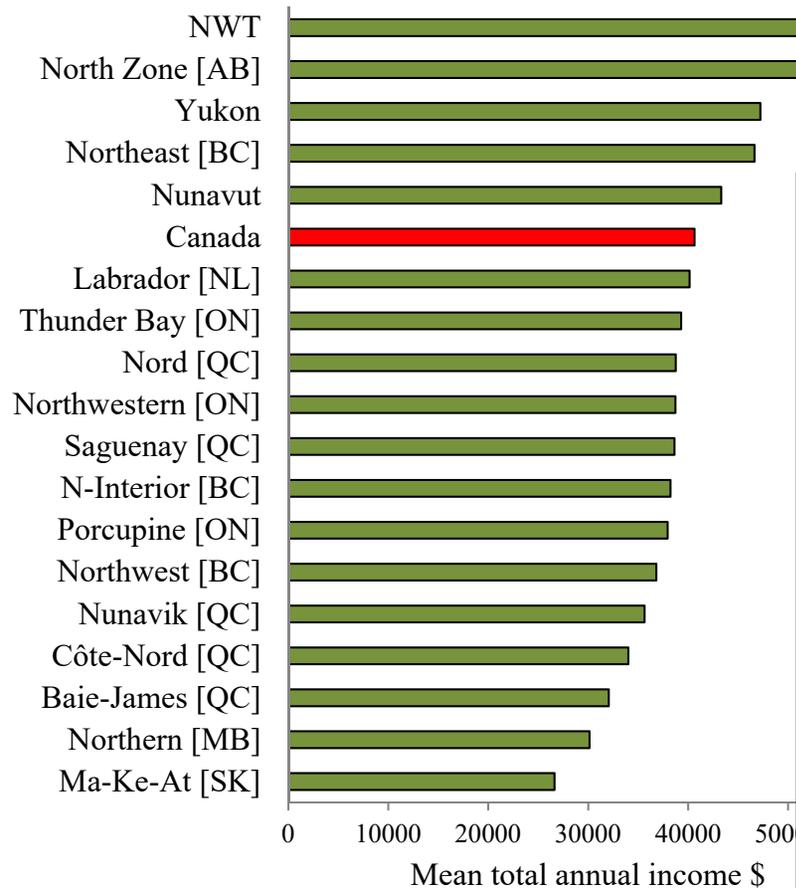
Canada's Northern Regions

Labrador [NL]
Saguenay [QC]
Côte-Nord [QC]
Nord [QC]
Nunavik [QC]
Baie-James [QC]
Northwestern [ON]
Porcupine [ON]
Thunder Bay [ON]
Northern [MB]
Ma-Ke-At [SK]
Mamawetan
Keewatin
Athabasca
North Zone [AB]
Northwest [BC]
N-Interior [BC]
Northeast [BC]
Yukon
NWT
Nunavut

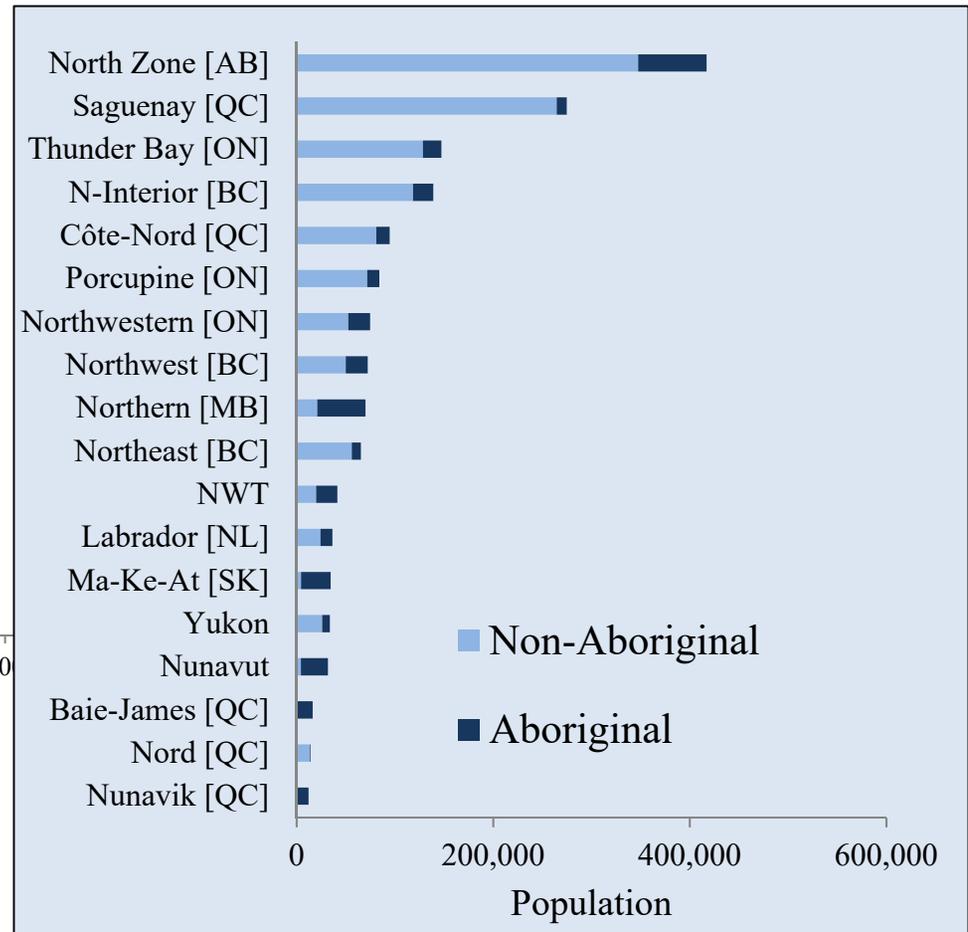


Statistics Canada's health regions

Context: Political, Demographic, Cultural, Economic



- Territory vs province
- Land claims status



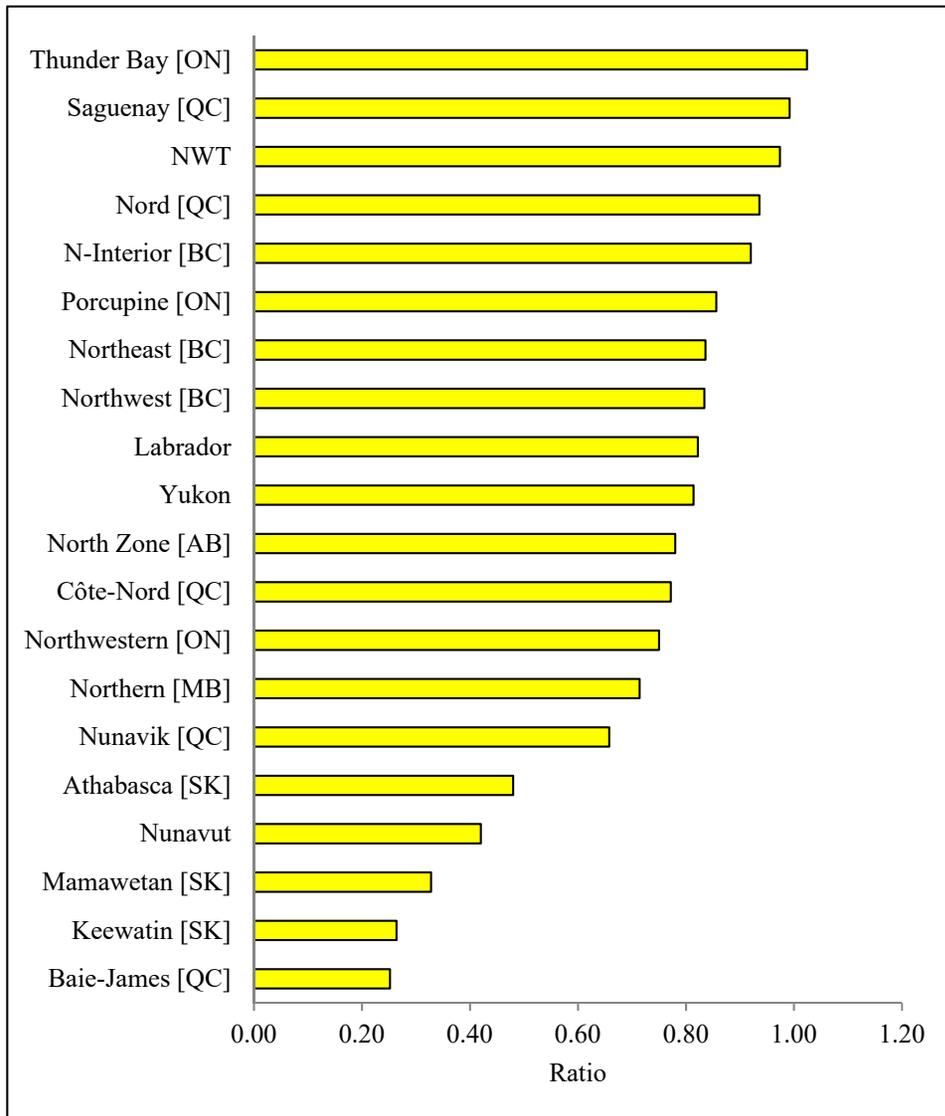
- Resource industry jobs
- Income distribution

Health system inputs and characteristics

- No readily available measures for things such as efficient resource allocation, adjustment to population needs, or leadership/governance
- For innovation and learning capacity – northern-based research and health professional training in some regions
- Even for resources – workforce, financing, facilities – not so simple for northern regions

Eg. headcounts do not reflect true human resources availability and reliance on short-term locums; total health expenditures only available for provinces/territories but not health regions; extensive use of out-of-region hospitals

Inflow/outflow ratio



Important characteristic of northern health regions:

* no. hosp separations within region (by residents + non-residents) ÷ seps by residents (within and outside region)

* Ratio < 1, the smaller it is, the larger the outflow; > 1 indicates an inflow effect

Health system outputs

- Include measures of effectiveness, safety, appropriateness, efficiency, accessibility, etc
- Admin data [service utilization] and survey – CCHS mainly; however, two northern, predominantly indigenous regions [James Bay and Nunavik] in Québec do not participate in CCHS
- Indicators derived from hospital use refer to experience of patients from a region treated at hospitals anywhere in Canada and do not reflect completely the performance of hospitals within the region [hence important to know inflow/outflow ratio]



Hospitalization for Ambulatory Care Sensitive Conditions

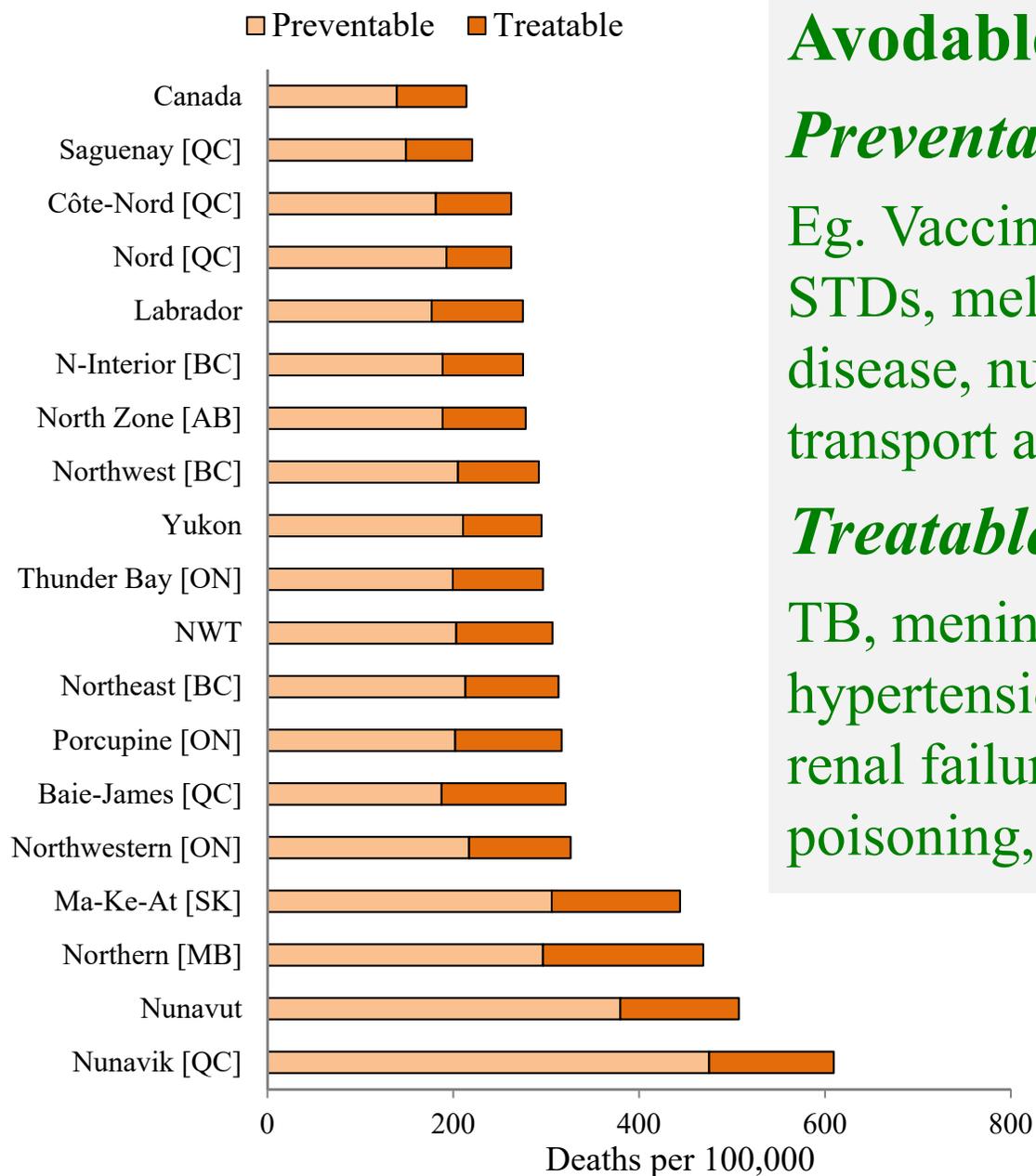


- ACSC are diagnoses that should not occur if there is access to appropriate primary care services in a region
- List of diagnoses determined by expert panels – may change over time or vary across studies
- Eg. uncontrolled seizures, diabetic coma/ketoacidosis, unstable angina, asthma, etc

Health system outcomes

- Cover health status improvement, health system responsiveness and value-for-money
- Many indicators for health status, few for other categories
- Concept of potentially avoidable mortality - untimely deaths that should not occur in the presence of timely and effective health care, either through prevention or treatment
- Usually has a 75 years upper age limit
- List of avoidable (from treatable causes) and avoidable (from preventable causes) determined by expert panels, and can change





Avodable mortality

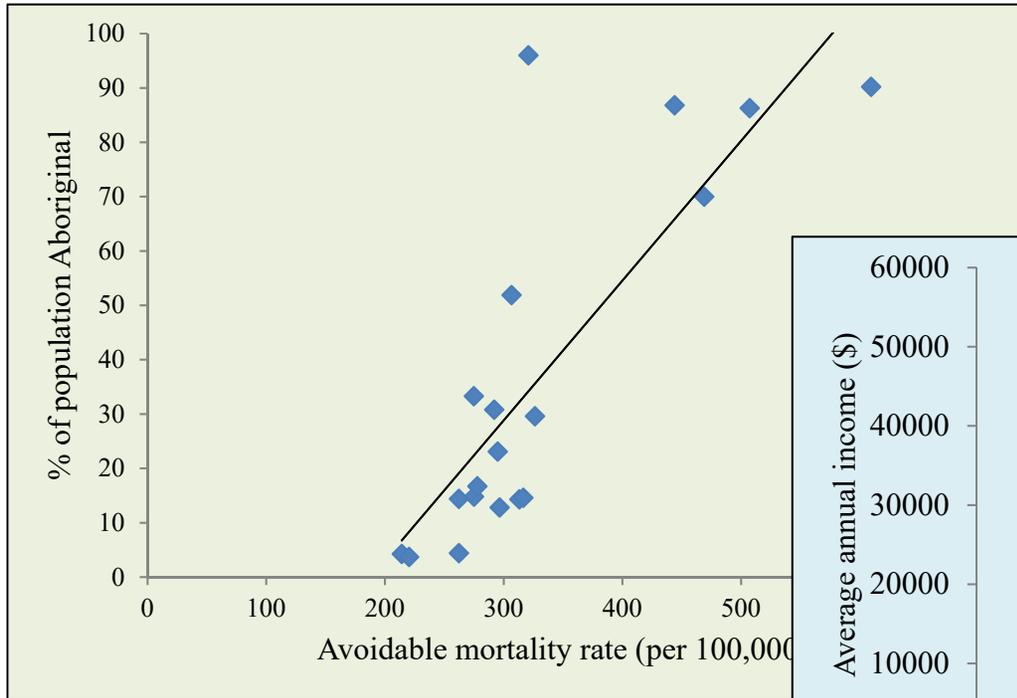
Preventable:

Eg. Vaccine-preventable diseases, STDs, melanoma, rheumatic heart disease, nutritional deficiencies, transport accidents, medical errors

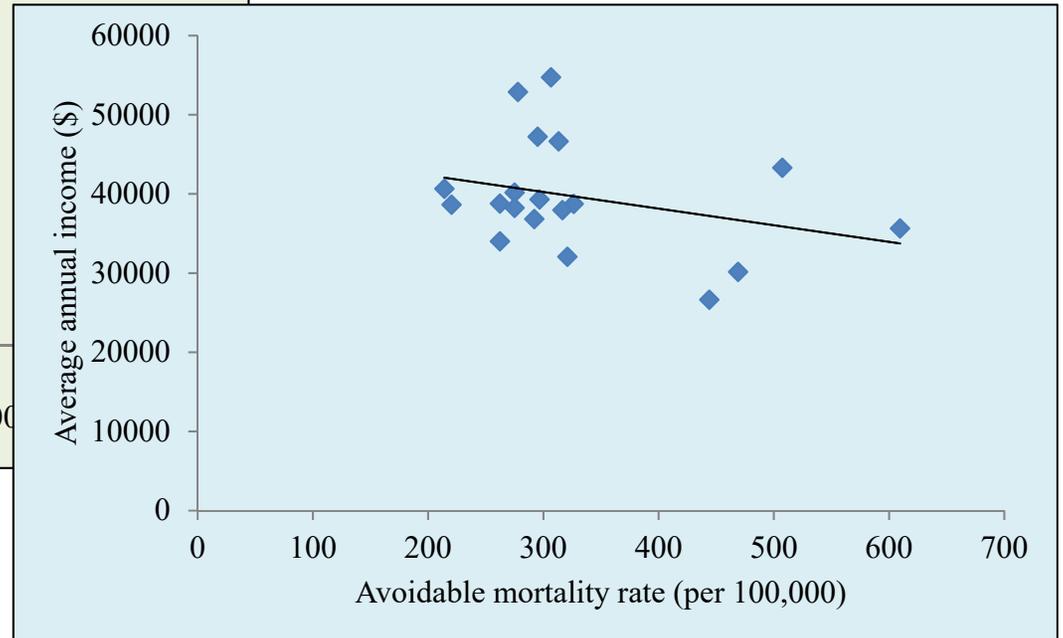
Treatable:

TB, meningitis, some cancers, hypertension, respiratory infections, renal failure, maternal death, poisoning, peptic ulcer, etc

Correlations



Avoidable mortality and ACSC are highly correlated ($R=0.84$)



Some observations

- Larger regions, especially highly urbanized ones, have better outcomes
- Regions with high proportion of population Aboriginal have poorer outcomes
- Regions with lower average income have poorer outcomes

Conclusions

- We identified 18 northern health regions consisting of the 3 territories and northernmost regions of 8 provinces – these range in population size from >400,000 to 12,000 and differ in terms of a variety of demographic, social, political and cultural characteristics
- We used the CIHI health system performance framework to compare these health regions, focusing on one “output” (ACSC hospitalizations) and one “outcome” (avoidable mortality) indicator
- All northern regions perform worse than Canada nationally in terms of these two indicators



- Certain regions tend to cluster together, reporting the worst performance – Nunavut, Nunavik, James Bay, northern Manitoba and northern Saskatchewan
- Size of population, socioeconomic status, degree of urbanization and proportion of Aboriginal people in the population are all associated with performance.
- CIHI framework cannot be fully used as many domains lack valid indicators and the data to derive them – what's available may not be the most appropriate
- Need for mixed methods approach
- There are substantial variation within some large regions – masking disparities.





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