

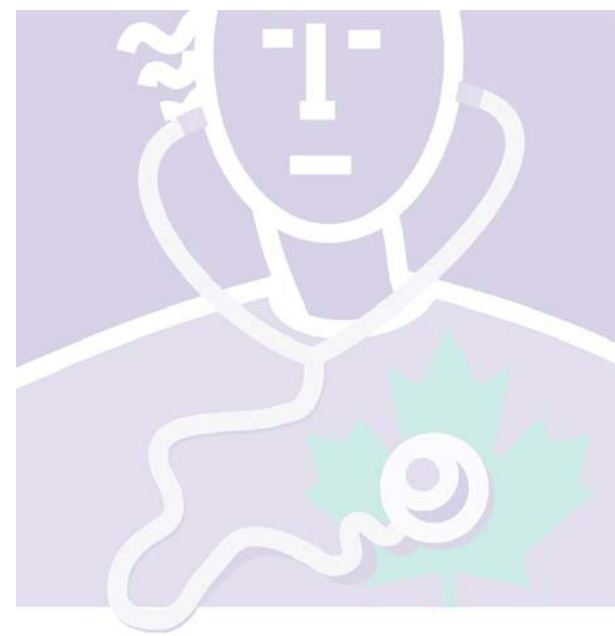


Health Indicators

Workshop prepared for the
2008 Health Data Users
Conference

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Statistics Canada
Statistique Canada



Canadian Institute
for Health Information
Institut canadien
d'information sur la santé

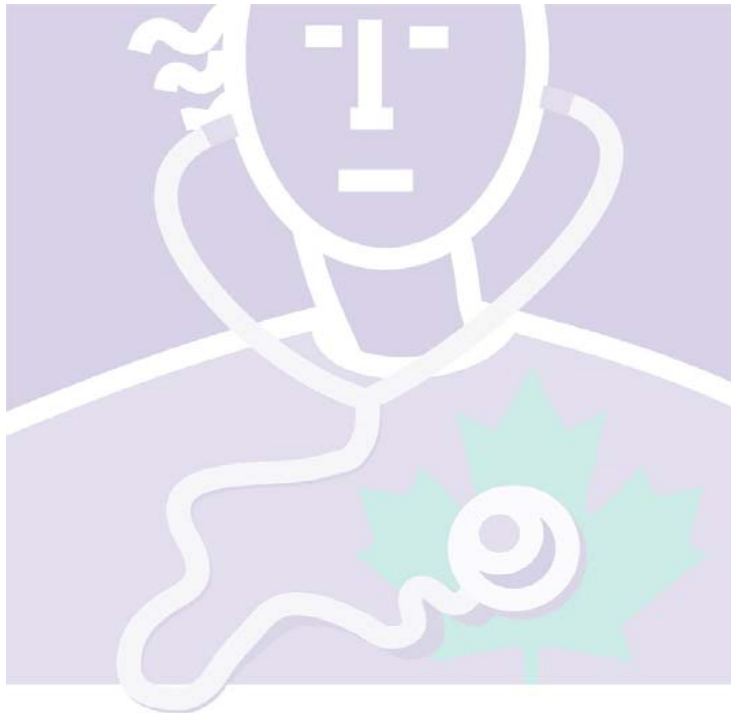
Canada

Workshop Outline

- Background - Indicator framework
- Data sources
- Geography
- Building indicators

- Quick tour of websites

- Workshop exercises



Background

Definition

- **Health indicators** are measures of health and of the factors which influence health
 - based on standard and comparable definitions and methods

Indicators can be used to:

- Track changes over time and space
- Help assess health conditions
- Provide evidence to support health programs and policies
- Identify levels of and gaps in health and well-being of a population or community

Indicators cannot be used:



- To explain disparities, variations or change
- In the absence of contextual data
- Without further drill-down or other investigation
- To provide answers: They only raise questions.

Who uses health indicator data?

- Patients
- Health care/professional organizations
- Community groups
- Hospitals/health care providers
- Researchers
- Provincial governments
- International organizations
- Others outside of health care
- Students
- Media

Health Indicators Project

- Part of the Health Information Roadmap
- Collaboration between Statistics Canada and the Canadian Institute for Health Information
- Goal: provide reliable measures on health status, determinants and health system, based on national data sources and make these readily accessible
- Target users: support health regions in monitoring the health of the population and the functioning of the health system

Providing the latest readings on the health of Canadians – region by region

Health Indicators development

- 1998 - extensive consultations to identify health information needs
- May 1999 – 1st consensus conference, framework established
- Dec. 2000- first 'e-pub' release
 - *to date, 16 releases reflect latest data available*
- March 2004 – 2nd consensus conference
- ongoing consultations
- next consensus conference planning in progress

Health Indicators Framework

Health Status			
Well-being	Health Conditions	Human Function	Deaths
Non-Medical Determinants of Health			
Health Behaviours	Living and Working Conditions	Personal Resources	Environmental Factors
Health System Performance			
Acceptability	Accessibility	Appropriateness	Competence
Continuity	Effectiveness	Efficiency	Safety
Community and Health System Characteristics			
Community	Health System	Resources	

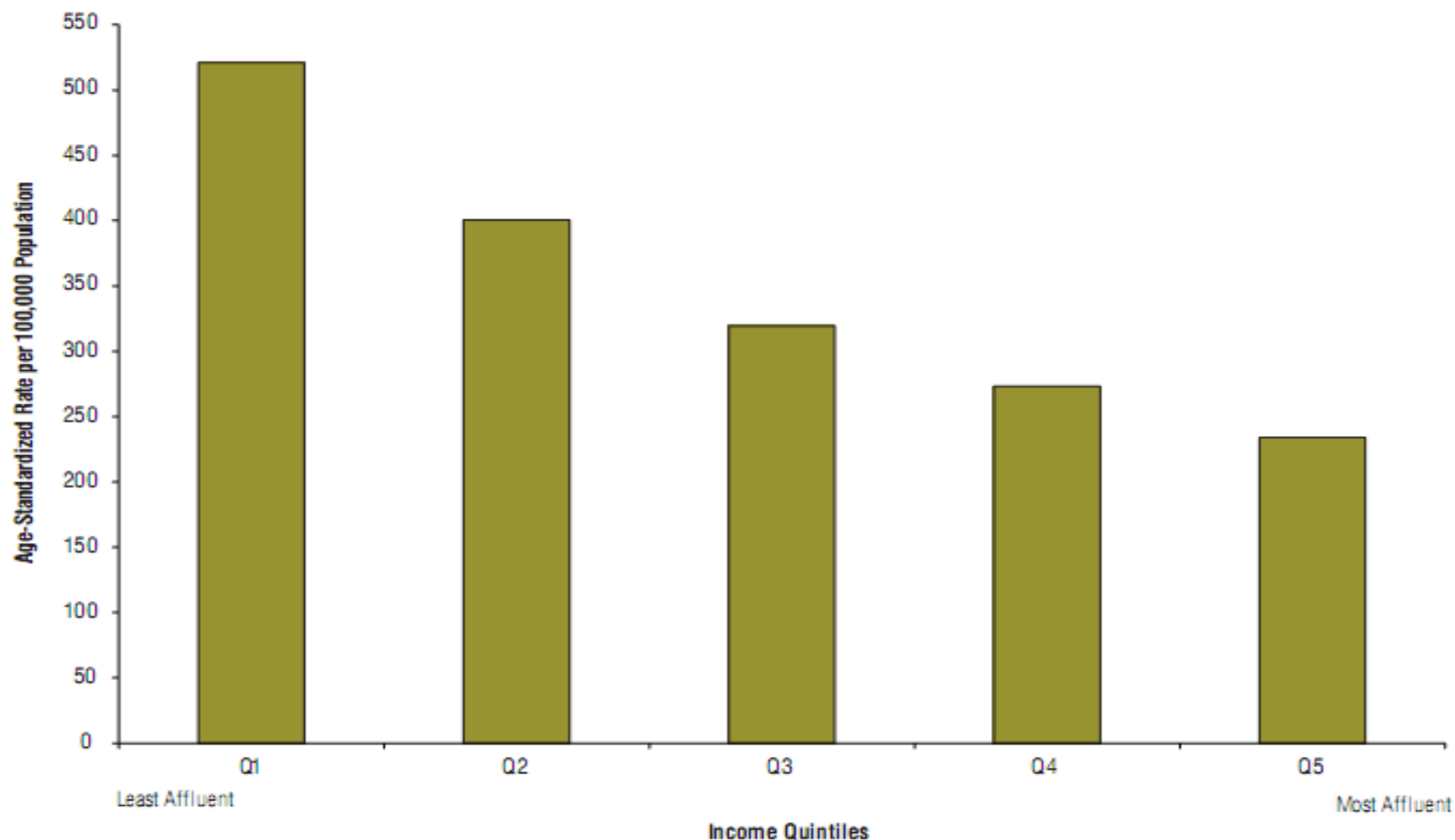
EQUITY

Equity dimension

- Drilling down can reveal inequities
- Various ways to view equity, including breakdowns by:
 - demographic status, e.g. gender, age, family composition, ethnicity
 - geographic areas, e.g. health regions, urban/rural
 - socioeconomic status, e.g. income, education

Figure 7 Overall ACSC Hospitalizations by Income Quintiles

This graph shows the age-standardized rates for overall ACSC hospitalizations by income quintile among Canadians younger than 75 years of age, outside Quebec, for 2006–2007. Hospitalization rates decreased across income quintiles.



Notes: Data from Quebec were not available for 2006–2007 at the time of publication. Q1 represents the lowest neighborhood income quintile and Q5 represents the highest. Population by income quintile for 2006 was projected from 2001 Canadian census definitions.

Source: Discharge Abstract Database, Canadian Institute for Health Information.

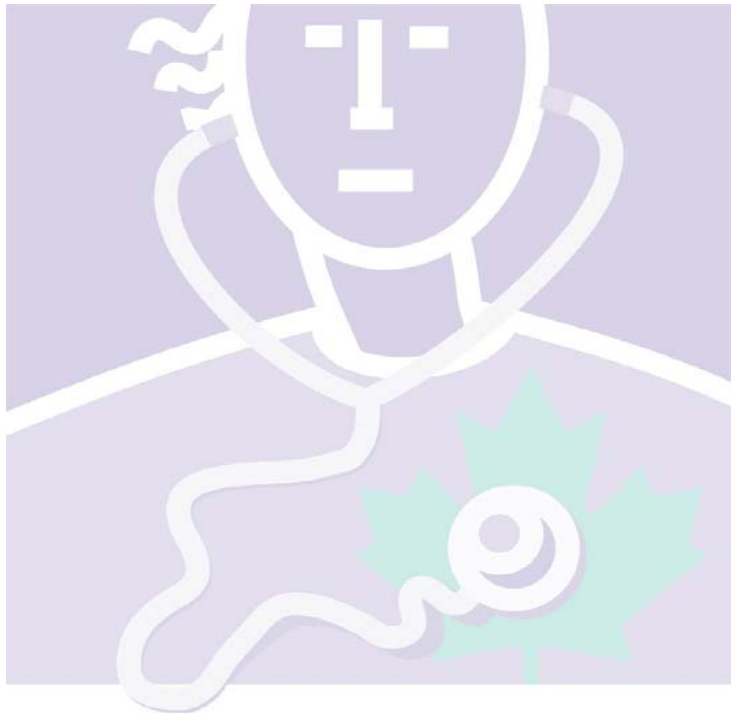
Data Sources

Statistics Canada

- Vital statistics and Cancer registry
- Canadian Community Health Survey, National Population Health Survey
- Census
- Demographic estimates
- Labour Force Survey
- Crime statistics

CIHI

- Hospital Morbidity Database
- Discharge Abstract Database
- National Ambulatory Care Reporting System
- Scotts Medical Database



Geography

What is a health region?

- The term “health region” applies to a variety of administrative areas across Canada that are defined by provincial ministries of health
- A four digit numeric code is used to uniquely identify health regions. The first two digits represent the province, and the second two digits represent the health region
- Peer group classification created

Geography

- Priority on health region level data
 - relevance to local authorities
 - reveals disparities across regions
- Geo-coding methods vary
 - postal codes are often the geo-reference
- Boundaries defined provincially
 - inconsistent in size and composition
 - boundaries change

Changes in geography

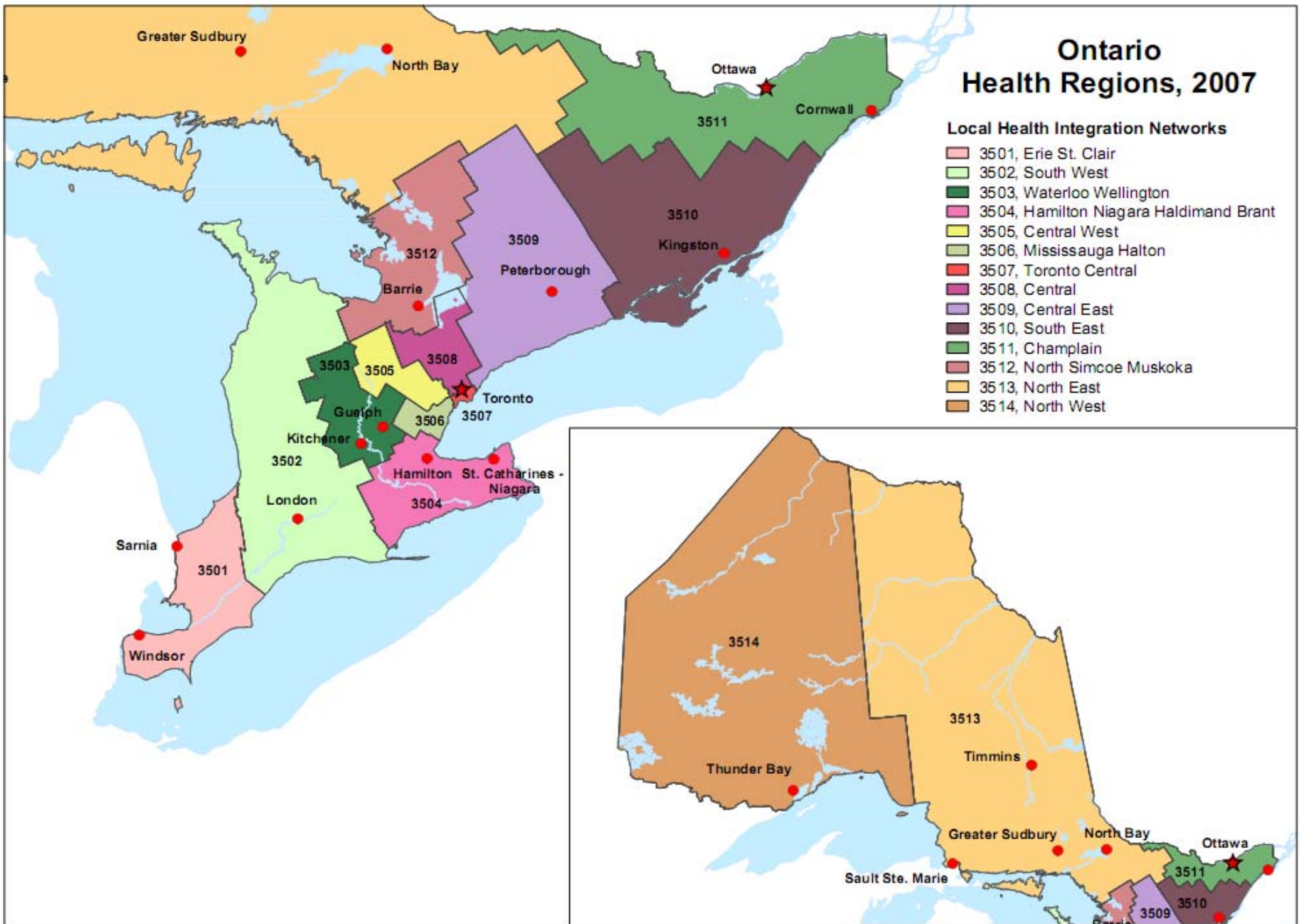
- Continual changes
 - simple limit or name change
 - regions may merge
 - complete restructuring
- You need to note reference year for health regions presented when you compare indicators year to year or do trends
- Documentation on these geo-changes is available

2007 Health Regions

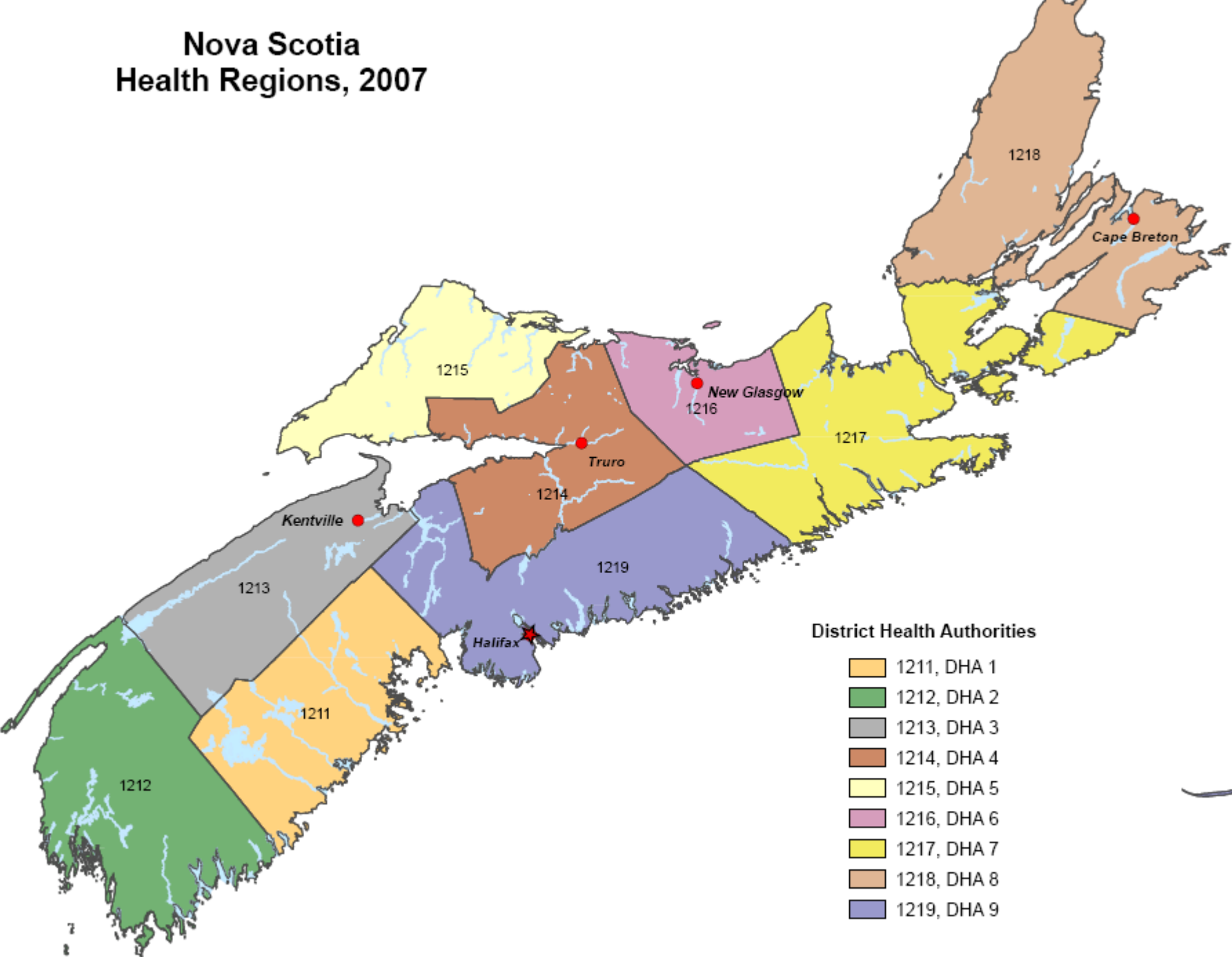
Province	Health regions	Units
Newfoundland and Labrador	Regional Integrated Health Authorities	4
Prince Edward Island	Not applicable	1
Nova Scotia	Zones*	6
	District Health Authorities (DHA)	9
New Brunswick	Health (Hospital) Regions	7
Quebec	Régions sociosanitaires (RSS)	18
Ontario	Health Units	36
	Local Health Integration Networks (LHIN)	14
Manitoba	Regional Health Authorities	11
Saskatchewan	Regional Health Authorities	13
Alberta	Regional Health Authorities	9
British Columbia	Health Service Delivery Areas	16

Ontario Health Regions, 2007

- Local Health Integration Networks**
- 3501, Erie St. Clair
 - 3502, South West
 - 3503, Waterloo Wellington
 - 3504, Hamilton Niagara Haldimand Brant
 - 3505, Central West
 - 3506, Mississauga Halton
 - 3507, Toronto Central
 - 3508, Central
 - 3509, Central East
 - 3510, South East
 - 3511, Champlain
 - 3512, North Simcoe Muskoka
 - 3513, North East
 - 3514, North West



Nova Scotia Health Regions, 2007



District Health Authorities

- 1211, DHA 1
- 1212, DHA 2
- 1213, DHA 3
- 1214, DHA 4
- 1215, DHA 5
- 1216, DHA 6
- 1217, DHA 7
- 1218, DHA 8
- 1219, DHA 9

Health Region - Peer Groups

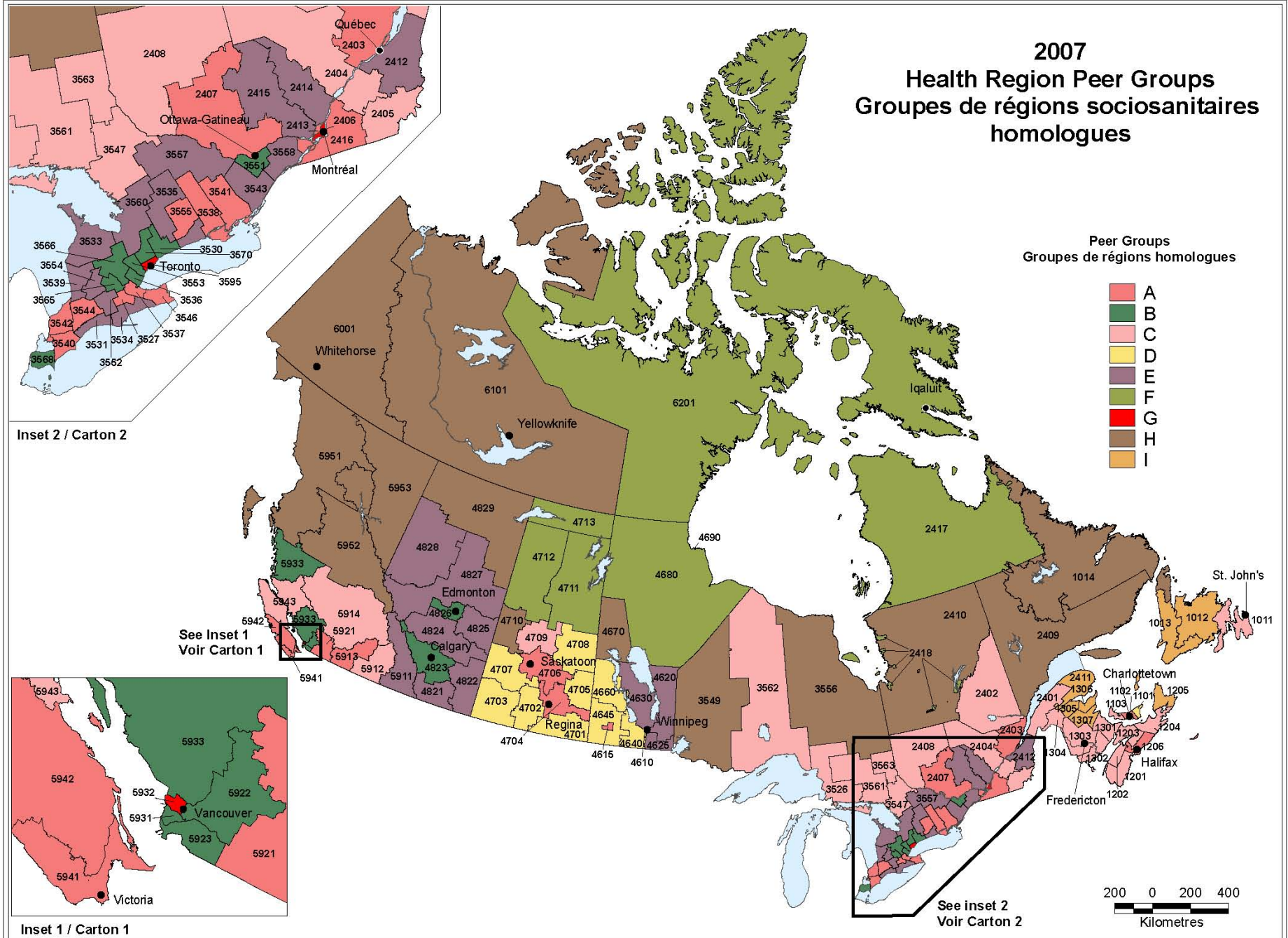
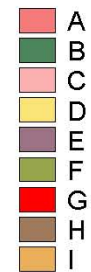
Peer Group	Number of HRs	% of pop.	Principal Characteristics
A	24	25.3%	<ul style="list-style-type: none"> • Urban-rural mix from coast to coast • Average percentage of Aboriginal population • Low male population • Slow population growth from 1996-2001
B	14	26.5%	<ul style="list-style-type: none"> • Mainly urban centres with moderately high population density • Low percentage of government transfer income • Rapid population growth from 1996 to 2001
C	23	11.4%	<ul style="list-style-type: none"> • Sparsely populated urban-rural mix from coast to coast • Average percentage of Aboriginal population • Negative population growth
D	10	1.7%	<ul style="list-style-type: none"> • Rural regions mainly in the central Prairies • Moderate Aboriginal population • Moderately high percentage of government transfer income • Almost equal numbers of men and women • Negative population growth
E	25	13.4%	<ul style="list-style-type: none"> • Mainly rural regions in Quebec, Ontario and the Prairies • High proportion of people recently moved to or within these regions since 1996 • Average percentage of Aboriginal population • Moderate population growth

Health Region - Peer Groups

Peer Group	Number of HRs	% of pop.	Principal Characteristics
F	5	0.4%	<ul style="list-style-type: none"> • Northern and remote regions • Very high Aboriginal population • Moderately high percentage of government transfer income • Slightly higher male population • Moderate population growth
G	3	16.2%	<ul style="list-style-type: none"> • Largest metro centres with an average pop. density of 3,934 people per km² • Low Aboriginal population • Moderate percentage of government transfer income • High female population
H	13	2.7%	<ul style="list-style-type: none"> • Rural northern regions • High Aboriginal population • High male population • Negative population growth
I	10	2.4%	<ul style="list-style-type: none"> • Mainly rural Eastern regions • Very high percentage of government transfer income • Negative population growth • Low percentage of people having moved to or within these regions since 1996

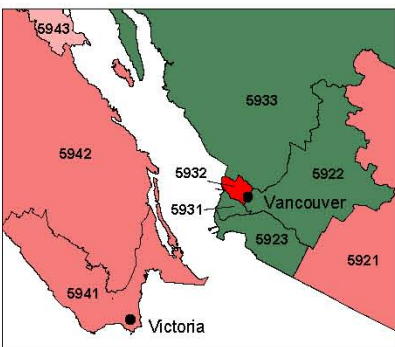
2007 Health Region Peer Groups Groupes de régions sociosanitaires homologues

Peer Groups
Groupes de régions homologues



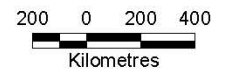
Inset 2 / Carton 2

See Inset 1
Voir Carton 1



Inset 1 / Carton 1

See inset 2
Voir Carton 2



Geo-coding methods

- administrative databases from STC and CIHI have postal codes to represent place of residence



- Canadian Communities Health Survey (CCHS) sample design is based on the health region boundaries
- other sources (LFS, Demography and Census) rely on correspondence to census units

Geo-coding tools available

Postal code conversion file (PCCF) and PCCF+

Health regions: Boundaries and correspondence with census geography (available free on the web)

- Concordance files between health regions and the census geographic units
 - Health region (HR)-to-dissemination area (DA) or HR-to-census block for both 2001 and 2006
- Digital boundary files (MapInfo and ArcGIS formats)

Small area data challenges

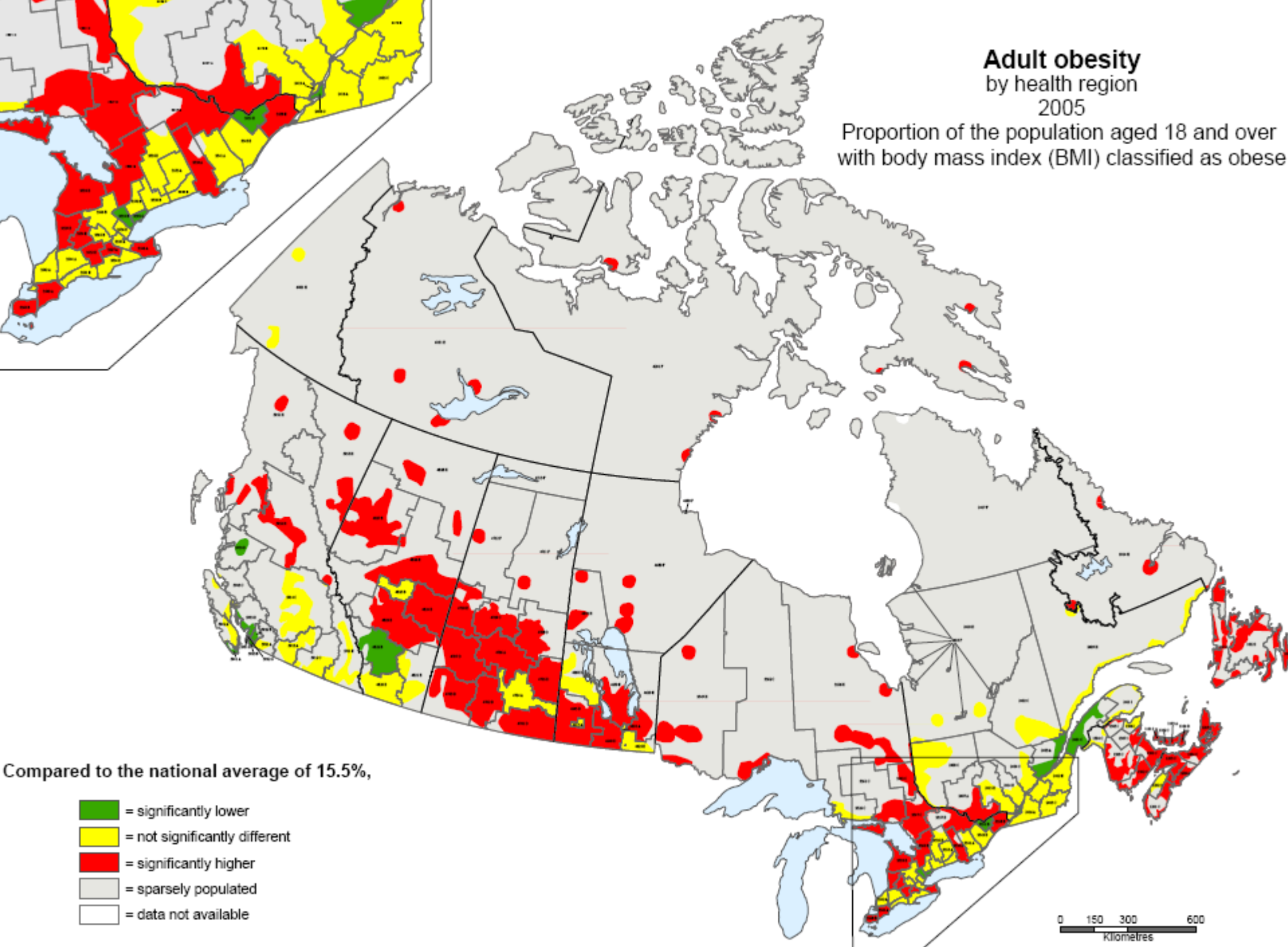
1. small numbers, sample size, high variability
2. comparability issues, precision of geo-coding techniques

Solutions:

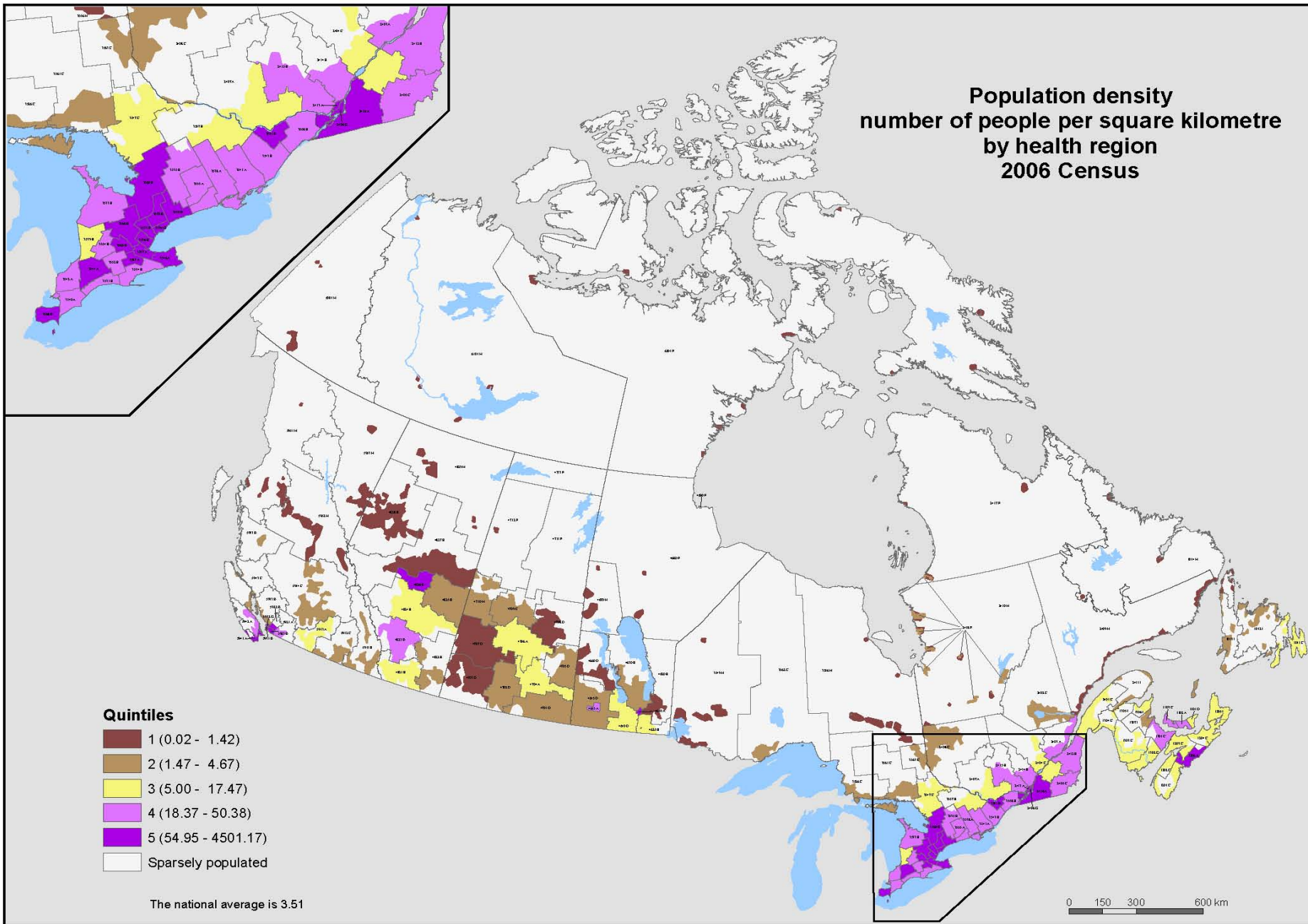
- multi-year averages (administrative data)
- pop. threshold (e.g., regions with 50,000 plus)
- regional verification step
- aggregate regions (peer groups)
- confidence intervals
- suppression

Adult obesity by health region 2005

Proportion of the population aged 18 and over
with body mass index (BMI) classified as obese



Population density number of people per square kilometre by health region 2006 Census



Quintiles

- 1 (0.02 - 1.42)
- 2 (1.47 - 4.67)
- 3 (5.00 - 17.47)
- 4 (18.37 - 50.38)
- 5 (54.95 - 4501.17)
- Sparsely populated

The national average is 3.51

0 150 300 600 km

How are indicators produced?

- What do we need to know?
 - Consider emerging issues and stakeholder priorities
- Which indicators best address the issue?
 - Review the literature and see what others are doing
- What will the indicator look like?
 - Select a specific indicator and develop a definition
- How will the indicator be calculated?
 - Develop technical specifications

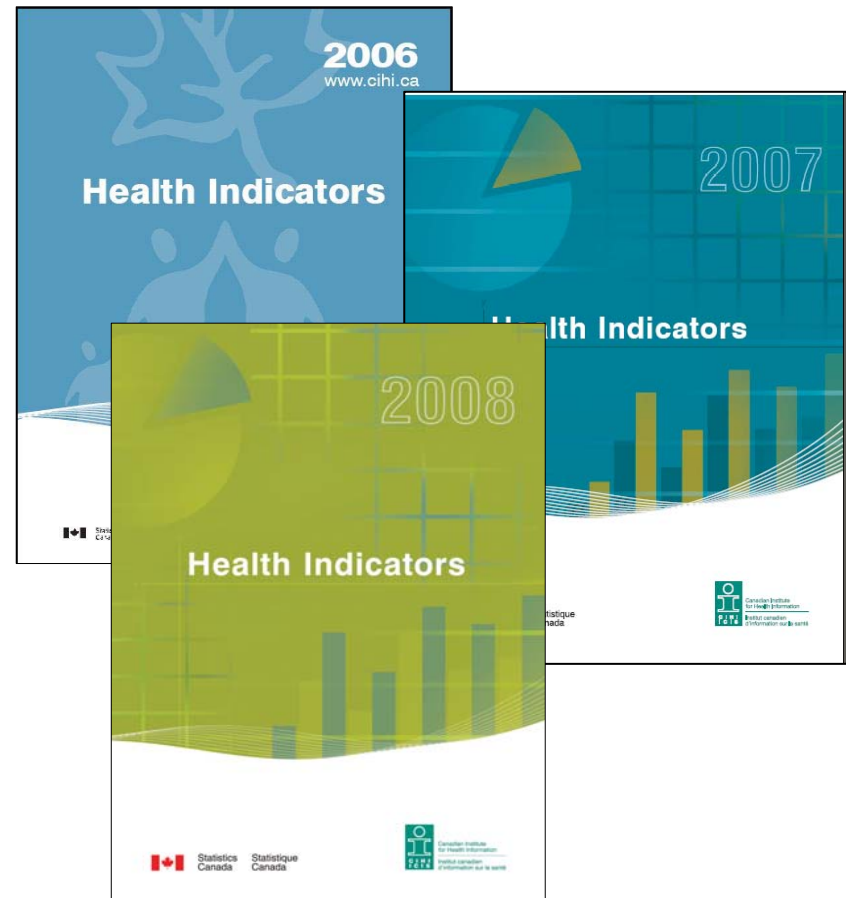
How are indicators produced?

- Do the data pass the quality test?
 - Perform rigorous data quality checks on the data
- Are the numbers correct?
 - Calculate the indicators and review the results
- What additional steps ensure that these data are correct?
 - Distribute indicators to health regions to verify

The indicator can now be used to make valid comparisons at the Health Region level across Canada.

Dissemination

- *Health Indicators* e-Publication
- *Health Indicators* print publication
 - Stand-alone publication with analytical focus as of 2007
 - A companion to the ***Health Care in Canada*** report in previous years



Questions



Important Links

- **Statistics Canada**

Homepage: www.statcan.ca

Health Indicators:

www.statcan.ca/bsolc/english/bsolc?catno=82-221-X

Client services: email hd-ds@statcan.ca

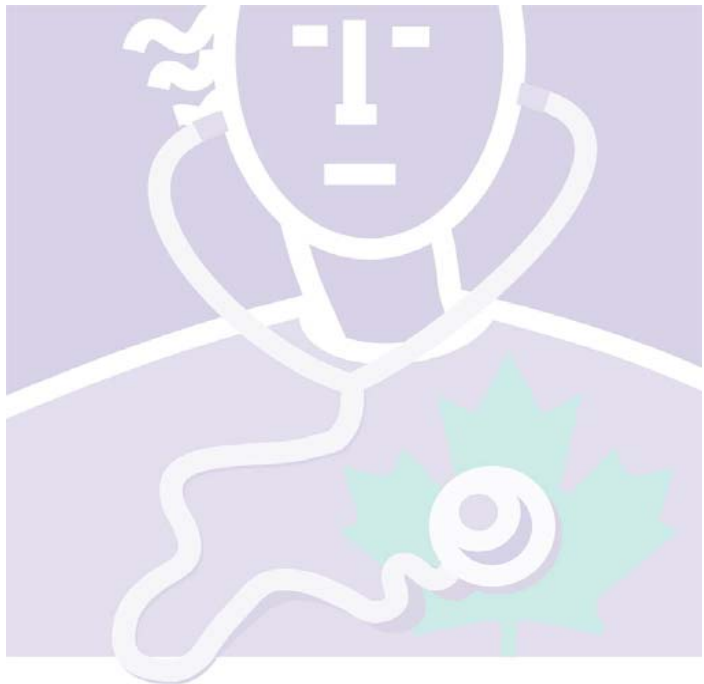
telephone: (613) 951-1746

- **Canadian Institute for Health Information**

Homepage: www.cihi.ca

Health Indicators: www.cihi.ca/indicators

Education: www.cihi.ca/education



Short demo and hands-on exercises

Hands-on objectives

- To show participants easiest ways to search and find data on STC and CIHI site
- Using examples of common queries, take participants through the steps of extracting data on STC and CIHI websites