

# Measuring Health Inequalities in Urban Canada

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## Background and Rational

- Canada is considered one of the healthiest countries in the world, but high levels of health are not enjoyed by all Canadians
- a health inequality is a difference in health between populations, such as wealthy and poor
- few studies have examined health inequalities at the city level or tracked inequalities over time

## Methods

### Data

- **13 self reported health outcomes** were collected from the Canadian Community Health Survey (2001- 2015)
- average **household level income** was determined from the Canadian Census of Population (2001, 2006, 2011)

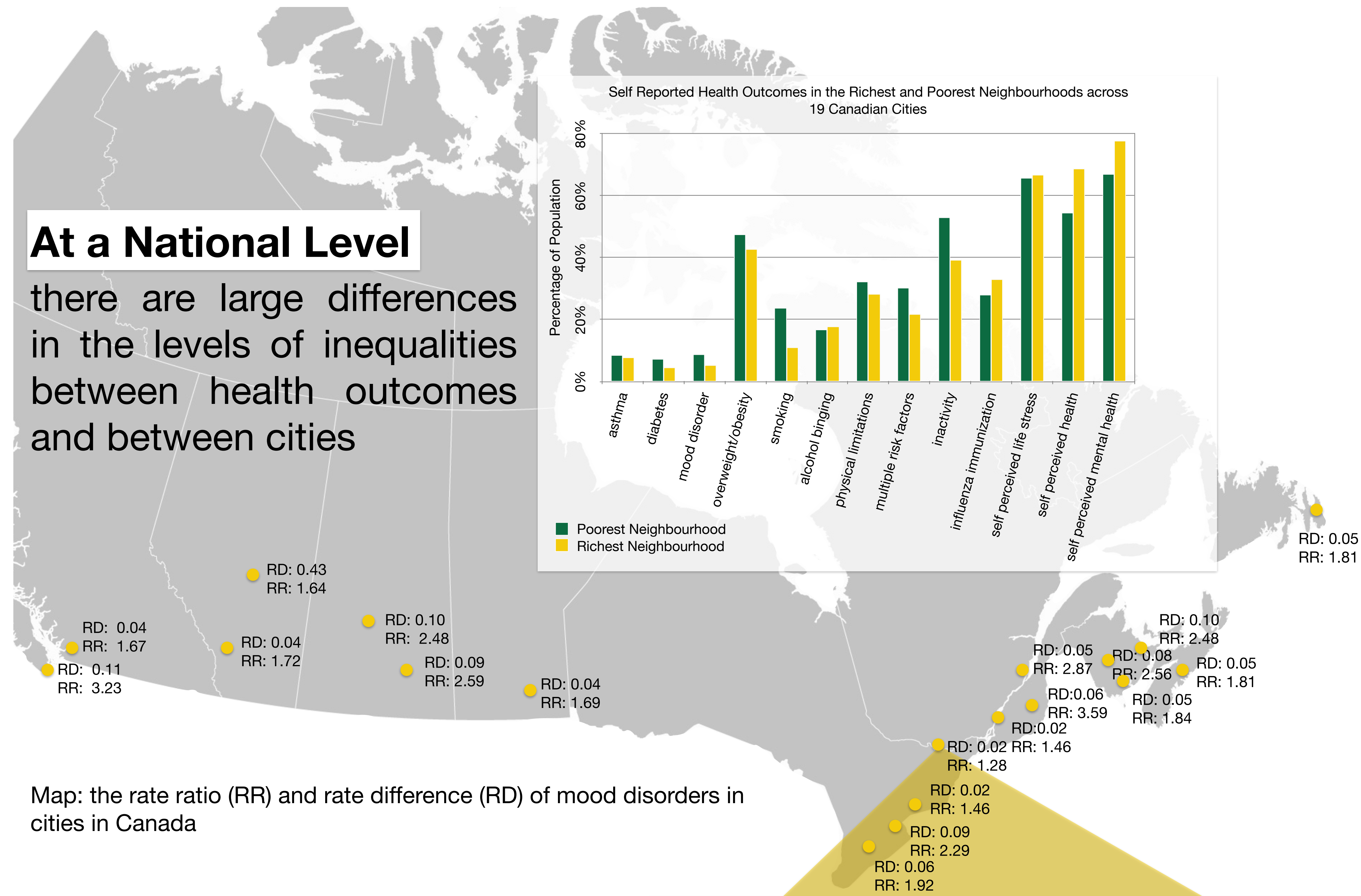
### Analysis

- data analysis took place in the Saskatchewan Research Data Center using STATA 15 software
- 19 of Canada's largest urban cities were selected for analysis
- income data were merged at the neighborhood level and **income quintiles** were calculated at the city level
- health outcomes were merged with the neighbourhood income quintiles and pooled to create three 5-year intervals
- the **prevalence** of the health outcomes was calculated for each quintile within each 5-year interval and confidence intervals were determined using Statistics Canada's Bootstrapping method
- health inequalities were calculated using the **rate ratio** and the **rate difference** measures
- the levels of inequality were examined over the three 5-year intervals to establish **trends in inequalities** over time

## Implications and Next Steps

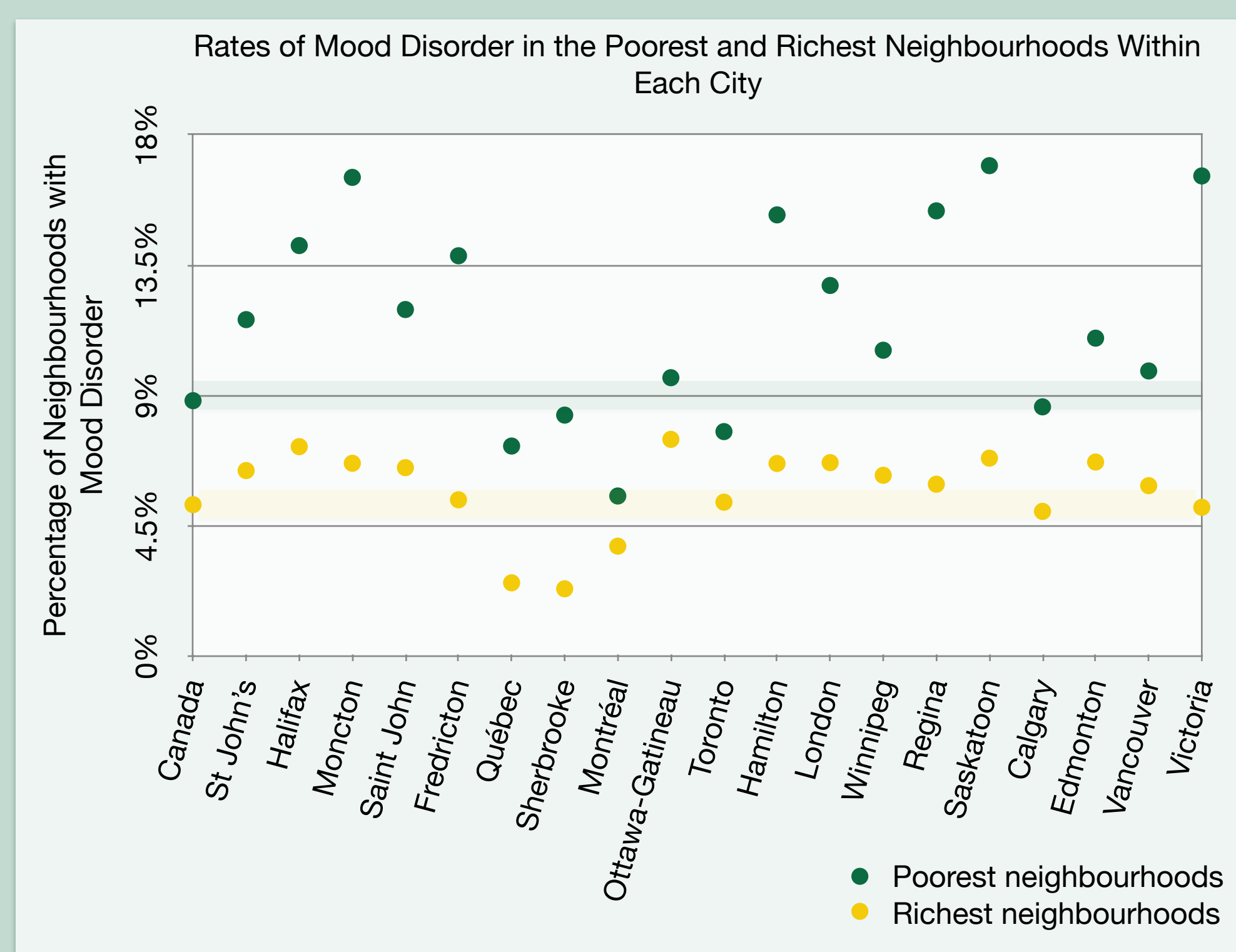
- there is a need for increased amount of city-level inequality studies and studies examining the causal factors of inequalities
- interventions that are city specific and target the populations living in the poorest neighbourhoods may be most effective in reducing health inequalities
- the UPHN in collaboration with Statistics Canada and CIHI will be releasing a report concerning the project "Measuring Trends in Health Inequalities in Cities"

## Results

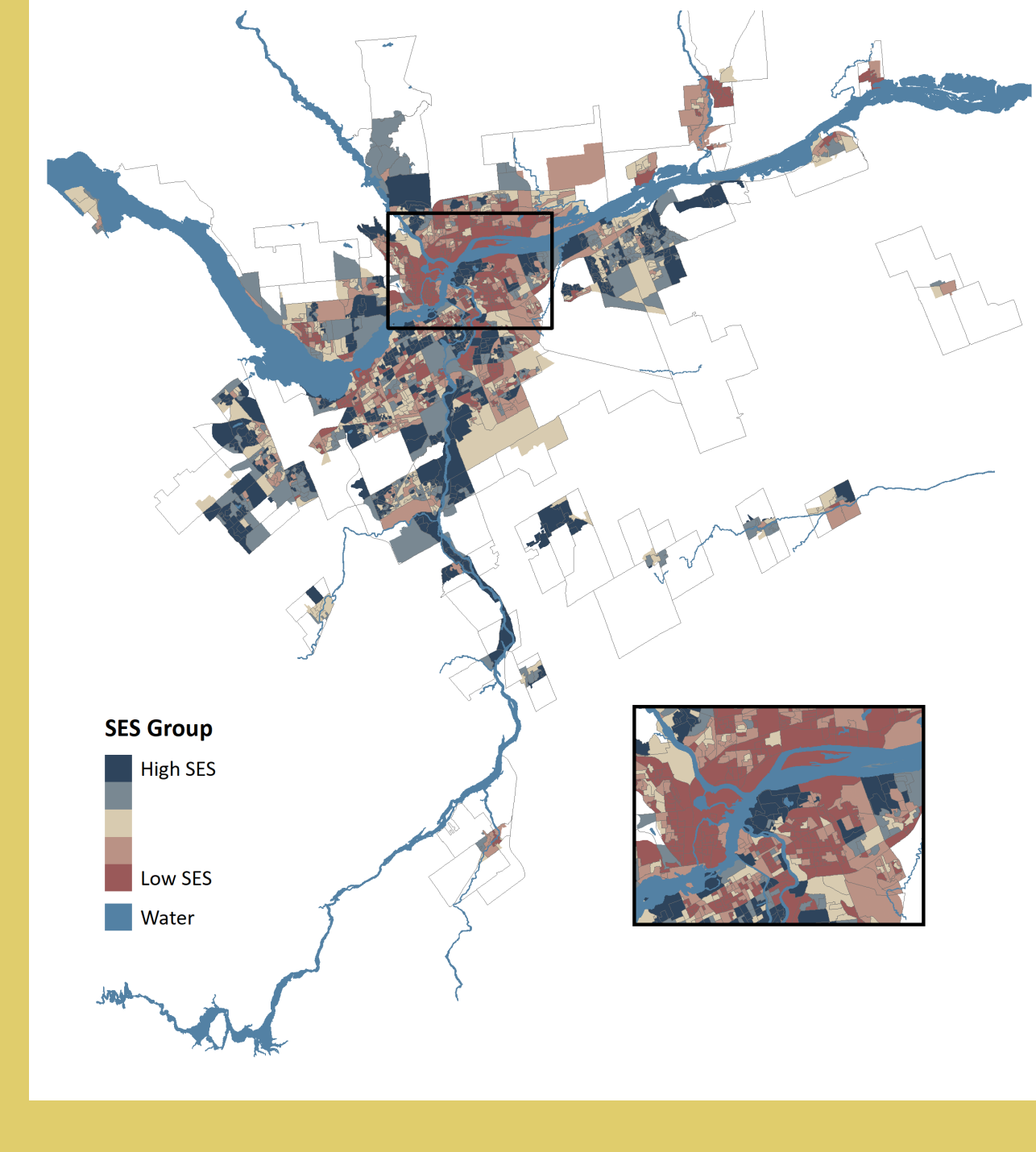


## Between Cities

inequalities are determined by the health status of the poorest neighbourhoods in cities



## Neighbourhood Income Quintiles of Ottawa-Gatineau



## Income Within Cities

income quintiles are dispersed among neighbourhoods within cities

## Over Time

inequalities are persisting or increasing over time

|                 | asthma | diabetes | mood disorder | over-weight/obesity | smoking | alcohol binging | physical limitations | multiple risk factors | inactivity | influenza immunization | self perceived life stress | self perceived health | self perceived mental health |
|-----------------|--------|----------|---------------|---------------------|---------|-----------------|----------------------|-----------------------|------------|------------------------|----------------------------|-----------------------|------------------------------|
| All Cities      |        | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| Victoria        |        | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| Vancouver       | ↘      | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| Calgary         | ↘      | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| Edmonton        |        | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| Saskatoon       |        | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| Regina          | ↘      | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| Winnipeg        |        | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| London          |        | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| Hamilton        |        | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| Toronto         |        | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| Ottawa-Gatineau |        | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| Montréal        |        | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| Sherbrooke      |        | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| Québec          |        | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| Fredericton     |        | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| Saint John      |        | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| Moncton         |        | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| Halifax         |        | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |
| St. John's      |        | ↗        | ↗             | ↘                   | ↘       | ↗               | ↗                    | ↗                     | ↘          | ↘                      | ↘                          | ↘                     | ↘                            |

Change in rate of self-reported health outcomes and difference in inequalities between cities and the national city average

