

Smoking inequality in Quebec, 2003 to 2013-2014 : different measures tell different stories

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The Quebec Health Inequalities Surveillance System (SSISSQ)

Objective : systematically monitor temporal and spatial trends in health inequalities in Quebec

Development of the health inequalities surveillance strategy in Quebec



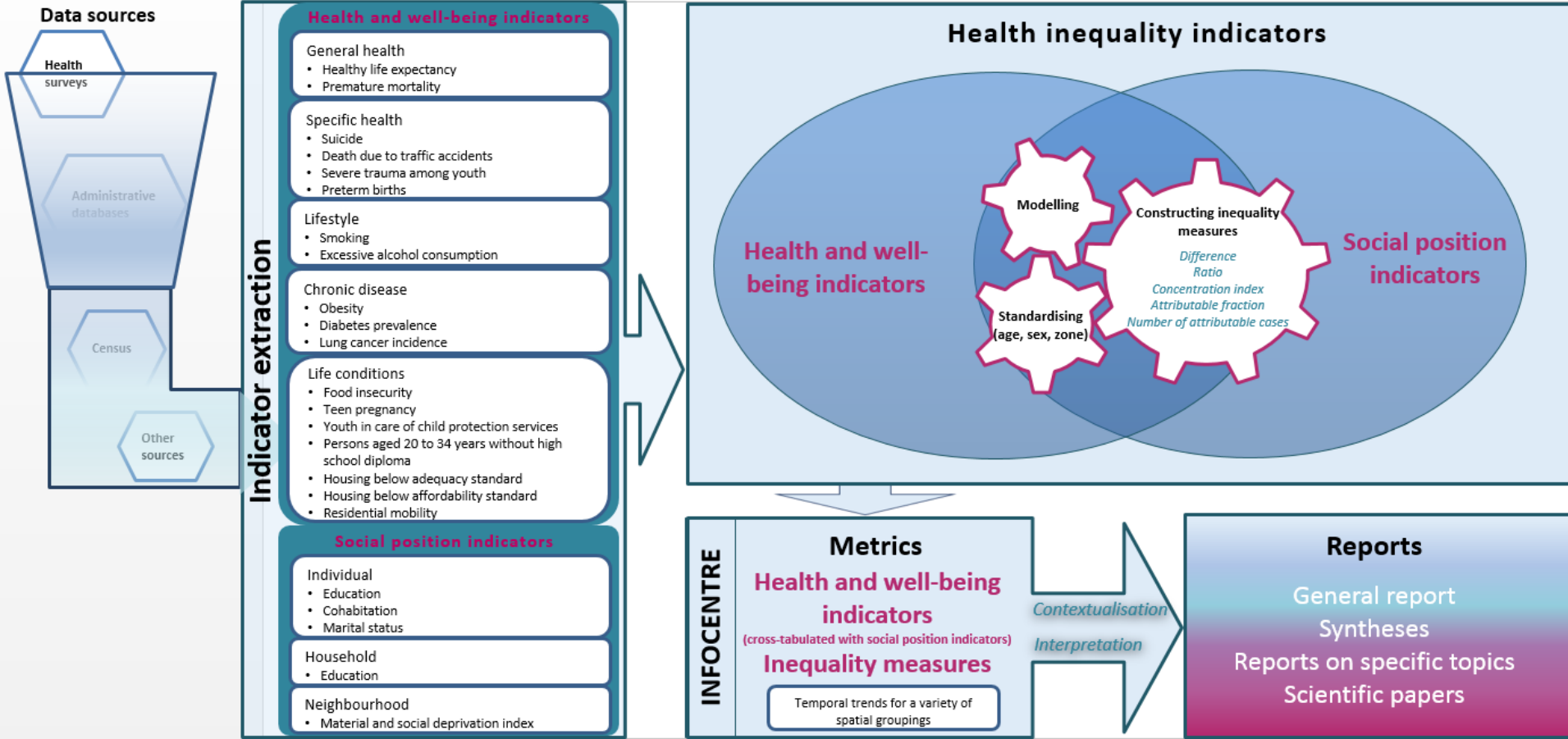
Une stratégie et des indicateurs pour la surveillance des inégalités sociales de santé au Québec

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The Quebec Health Inequalities Surveillance System (SSISSQ)



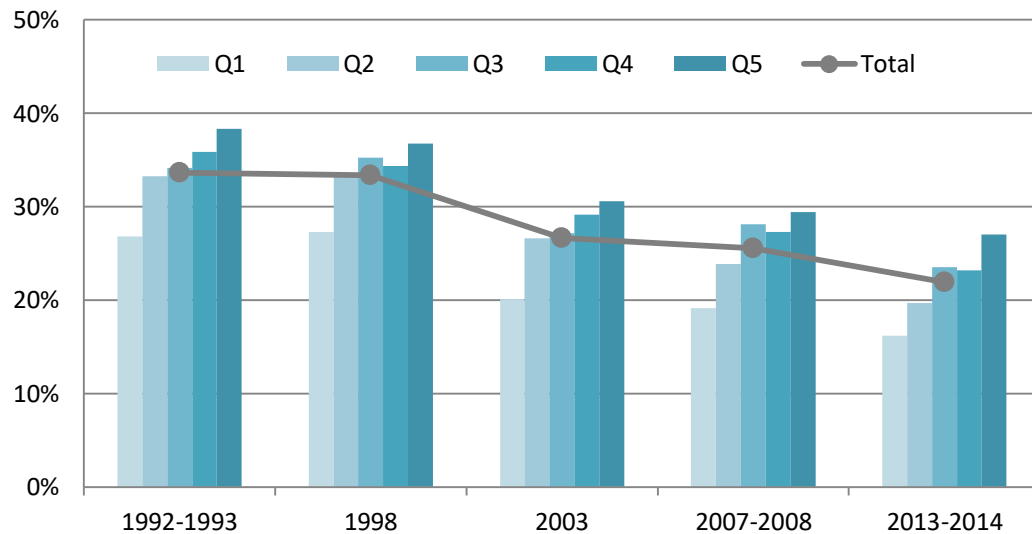
Methodology



- Statistical modelling
- Standardisation (by age, sex, zone)
- Temporal and spatial comparisons
 - Qualitative
 - Quantitative

Temporal trend of smoking in Quebec since 1992-1993

Proportion of current smokers,
Quebec, 1992-1993 (ESS) to 2013-2014 (ESCC)



Material deprivation index

- Employment
- Education
- Income

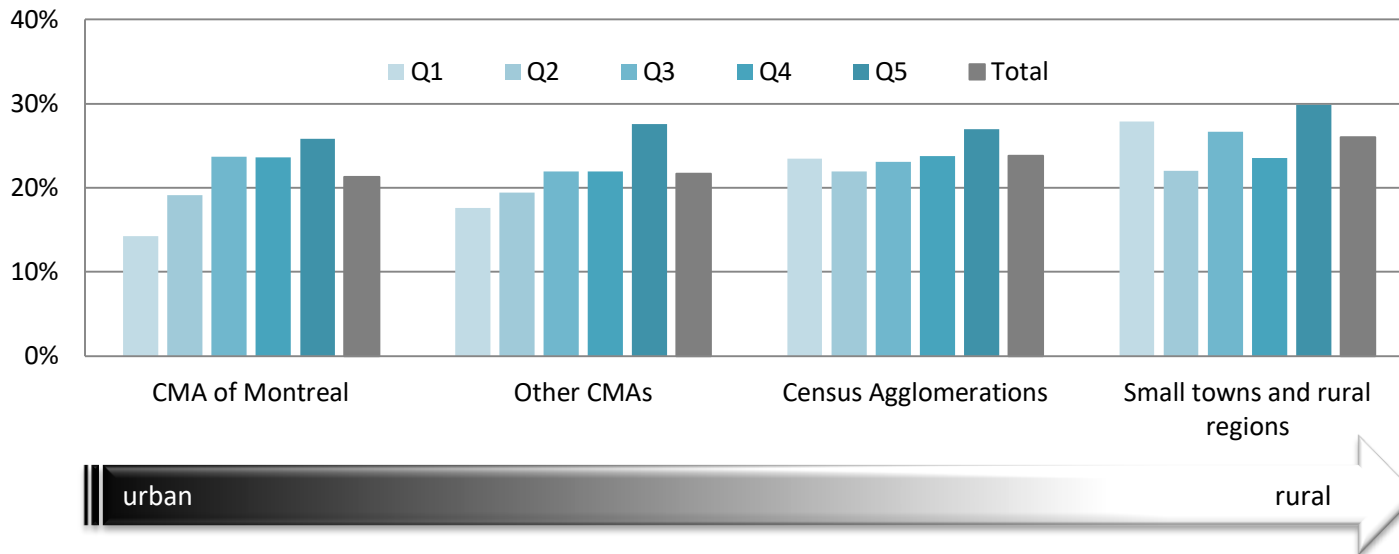
Years

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Spatial distribution of smoking in Quebec in 2013-2014

Proportion of current smokers by quintiles of material deprivation, geographical zones in Quebec, 2013-2014 (ESCC)



Social inequalities in smoking prevalence are manifest.

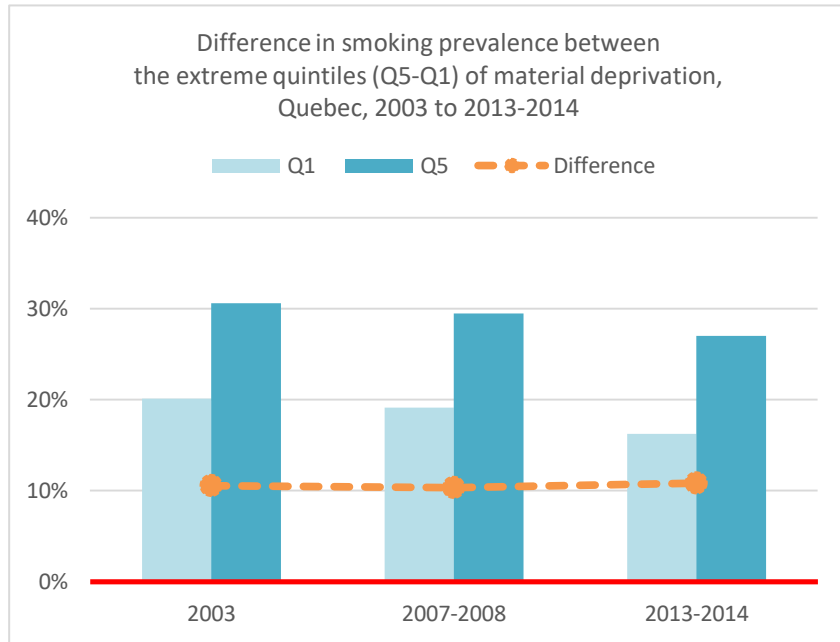
How have they evolved over time and space?

Complementary inequality measures provide a nuanced and more complete portrait of health inequalities

| | Absolute inequalities | Relative inequalities |
|---|--|---|
| Inequalities between two groups | <input type="checkbox"/> Difference | <input type="checkbox"/> Ratio |
| Inequalities between all groups in the population | <input type="checkbox"/> Number of avoidable cases (NAC) | <input type="checkbox"/> Concentration index <input type="checkbox"/> Population attributable fraction (PAF) |

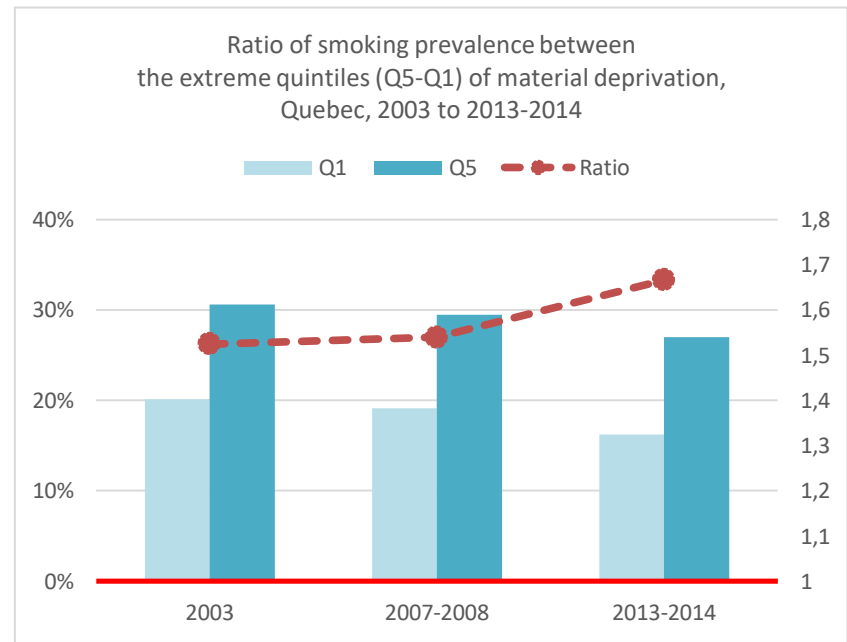
Measuring inequality between two groups : difference and ratio

Absolute measure



In 2013-2014, for every 100 smokers, there are 10 more smokers in the most deprived group compared to the least deprived group.

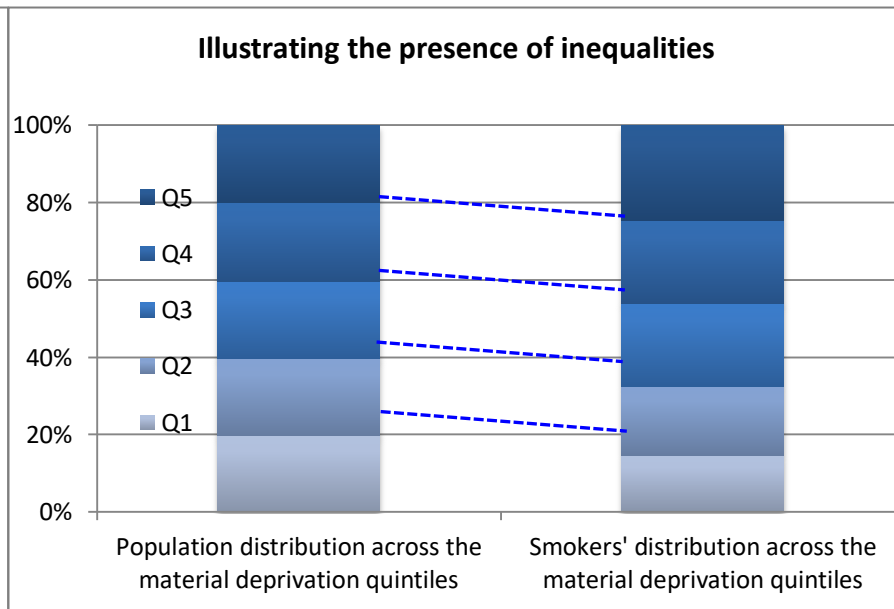
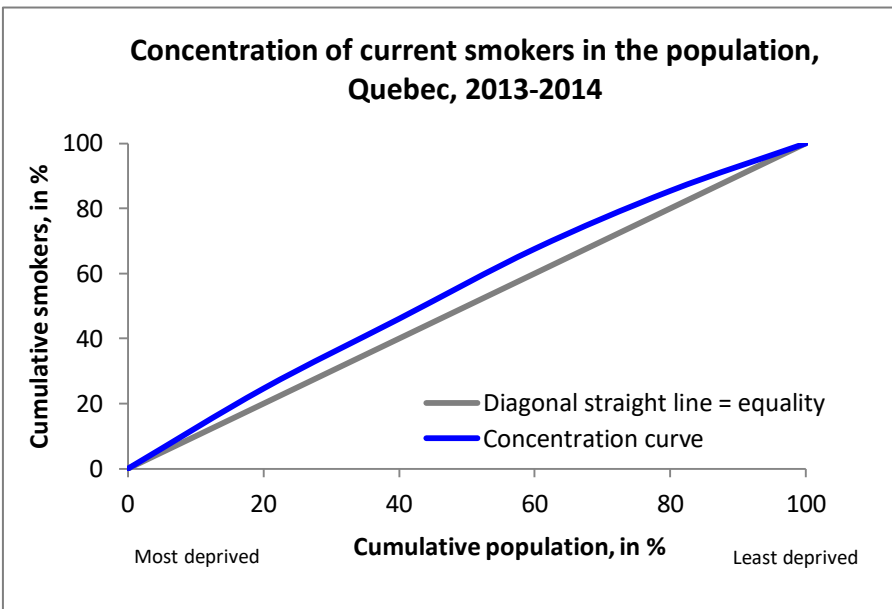
Relative measure



In 2013-2014, the proportion of smokers in the most deprived group is 1,7 times that of the least deprived group.

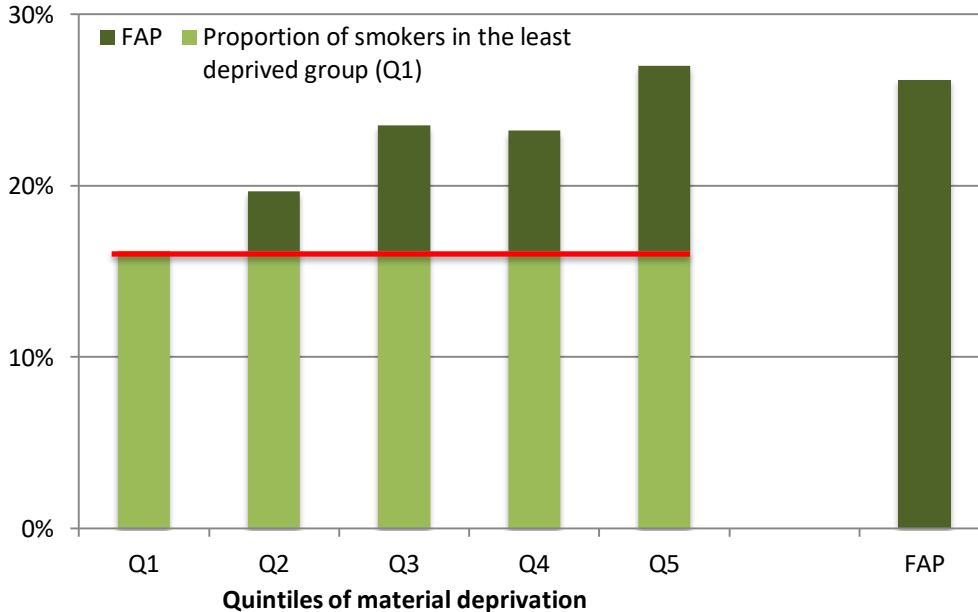


The concentration index : measures inequality between all groups from a « redistribution perspective »



The population attributable fraction : measures inequality between all groups from a « levelling up » perspective

Fraction of current smokers attributable to material deprivation, Quebec, 2013-2014



The population attributable fraction (PAF) measures inequality in relative terms.

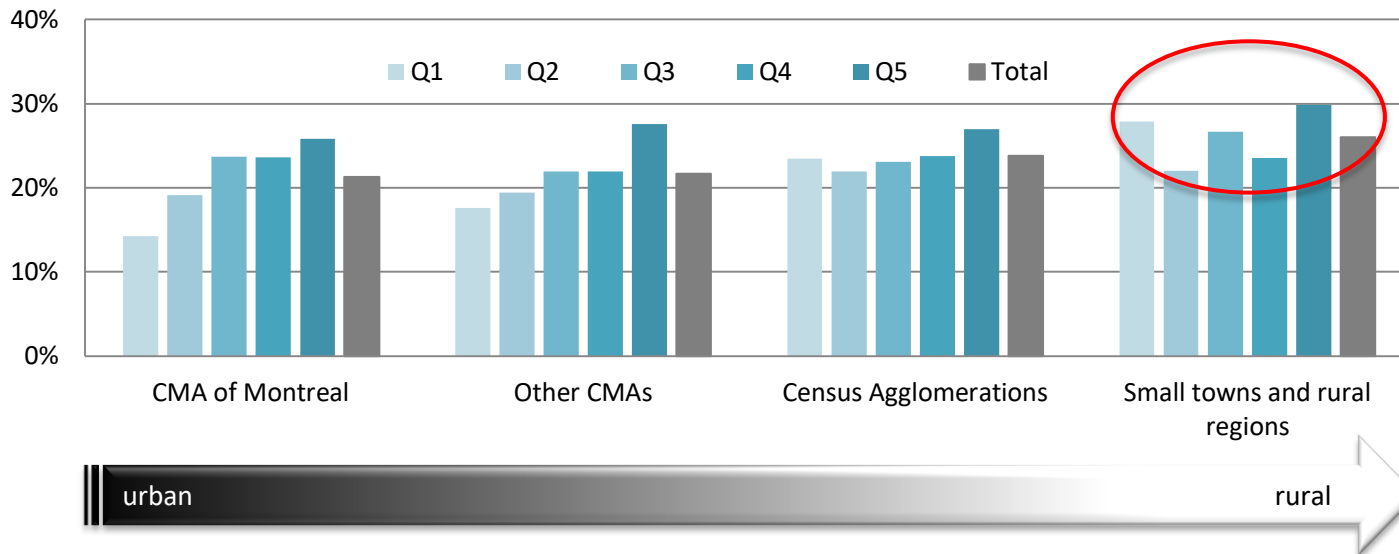
The number of avoidable cases (NAC) measures inequality in absolute terms.

There would be 26 % less smokers if the smoking prevalence of the entire population were equal to that of the least deprived group.

In absolute terms, the number of smokers could be reduced by more than 350,000.

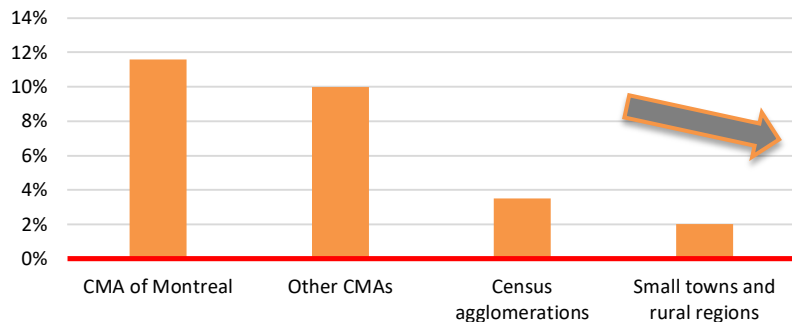
Why measure inequality between all groups in the population?

Proportion of current smokers by quintiles of material deprivation, geographical zones in Quebec, 2013-2014

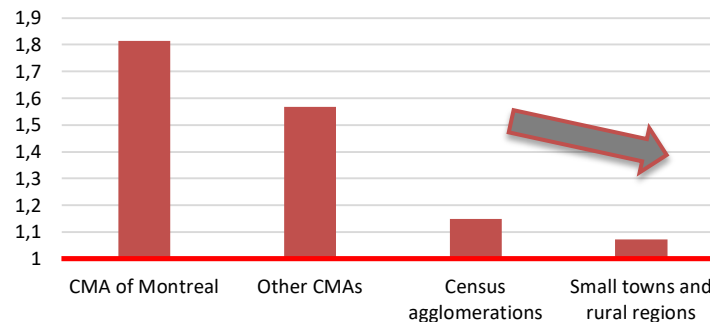


Spatial inequality trends vary according to the measure used

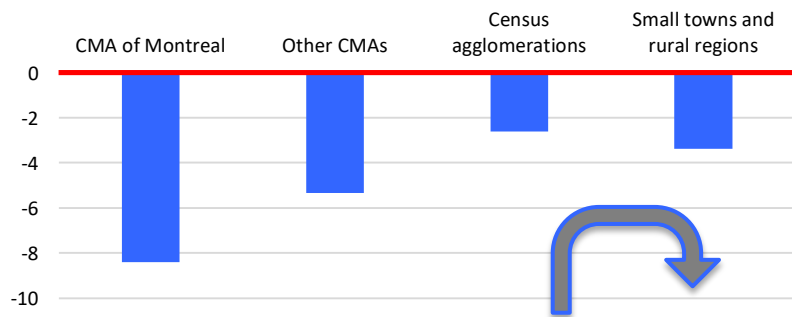
Difference



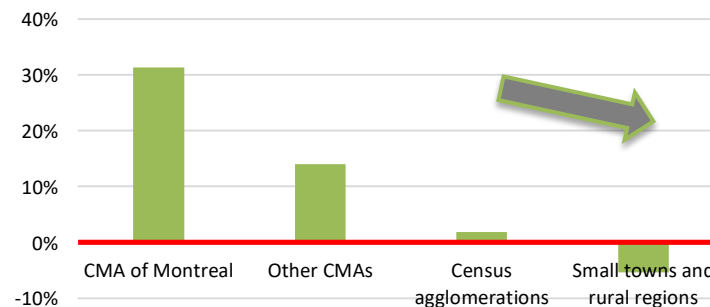
Ratio



Concentration index (% to be redistributed)



Population attributable fraction



In conclusion, what do we know now about smoking inequality in Quebec ? (1/2)

- **The prevalence of current smoking has decreased** notably over the last past years [**global trend**].
- This decrease was similar across all social groups. Thus, the **positive gradient between deprivation and smoking has persisted** [**difference**]. However, **the proportion of the most deprived group has increased** [**ratio**].
- However, the overall decrease in smoking prevalence tends to reach a « **floor** » **below which it is difficult to fall** [**global trend**].

In conclusion, what do we know now about smoking inequality in Quebec ? (2/2)

- The increased smoking prevalence in the most deprived groups compared to the least deprived group shows the potential for a decrease of **26% [PAF]** or **350 000 [NAC] smokers in the population.**
- **Thus, further reduction of smoking prevalence may still be possible.** If smoking decreased in the most deprived groups, the proportion of current smokers in the population would fall from 22% to 16%. **This is equivalent to lowering the « floor » by 6 percentage points.**

Conclusion



- Different measures of inequality drawn from the Quebec Health Inequalities Surveillance System were used to draw a more complete and nuanced picture of smoking inequality over time and across geographical zones.
- Results indicate that smoking inequalities have not decreased over time and the presence of urban-rural gradient.
- Results suggest that intervention strategies could potentially reduce overall smoking prevalence, by reducing smoking in the most deprived groups.

Thank you !

Contact : carolyne.alix@inspq.qc.ca

Report : https://www.inspq.qc.ca/pdf/publications/1698_StratIndicSurvISSQc.pdf

Dedicated page on Santéscope website coming soon : <https://www.inspq.qc.ca/santescope>

The importance of taking into account all inequality measures for a more complete picture

| | 2003 | 2013-2014 | Trend |
|--------------------------------------|---------|-----------|-------------------|
| Difference (per 100 smokers) | 10,5 | 10,8 | ~ Stability |
| Ratio | 1,52 | 1,67 | ~ Increase |
| Concentration index | -0,0743 | -0,0912 | ~ Increase |
| Population attributable fraction (%) | 24,7 | 26,2 | ~ Slight increase |
| Number of avoidable cases (smokers) | 369 690 | 351 059 | ~ Slight decrease |
| Global trend (% of smokers) | 27 | 22 | ~ Decrease |