



Aboriginal family near Prince Albert, SK, 1919 - McCord Museum



■ Merging data to inform health policy

NHS suppression, social epidemiology, and health policy planning

Saskatchewan Equity Study (SES)

- Purpose

- Investigate the breadth and depth of inequalities in health behaviours, services and outcomes in Saskatchewan, and within the regional health authority (RHA) and Regional Inter-sectoral Committees (RIC).
- Examine the relative impact of individual versus area level socio-economic factors on health inequalities.

Saskatchewan Equity Study (SES)

- Data sources
 - Index of Deprivation (2006 Census)
 - Merci Dr. Pampalon et Dr. Hamel!
 - Health services data (2002 – 2012)
 - Physician billing
 - Hospitalizations
 - Vital statistics
 - Sexually transmitted infections

Saskatchewan Equity Study (SES)

- Data sources
 - Canadian Community Health Survey
 - All cycles

Saskatchewan Equity Study (SES)

- Methods
 - Data linkage
- Analysis
 - Rate Ratios
 - Rate Differences
 - Lorenz Curves (Gini Coefficients)
 - Multilevel models

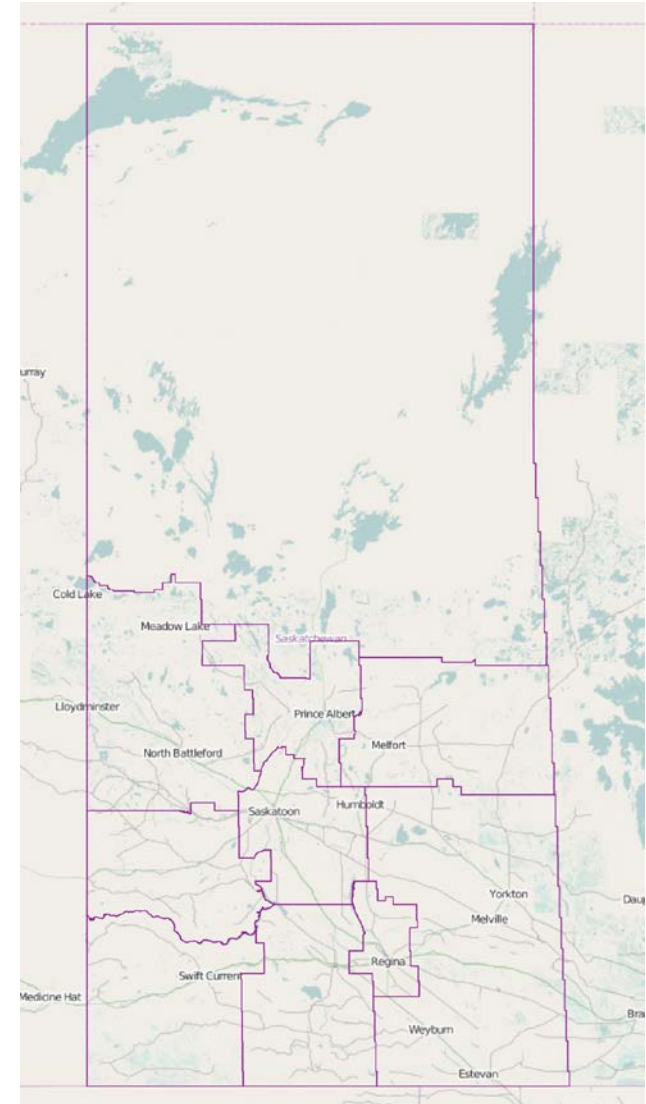
Saskatchewan Equity Study (SES)

- Health Policy Planning
 - Regional Intersectoral Committee (RIC)
 - Health, education, social services, and justice to develop shared priorities, evaluation plans and outcomes for action
 - Regional Health Authority (RHA)
 - Govern healthcare services the province

RIC

- N = 10
- City/Town dwellings
 - N= 306190
- Rural dwellings
 - N = 70215

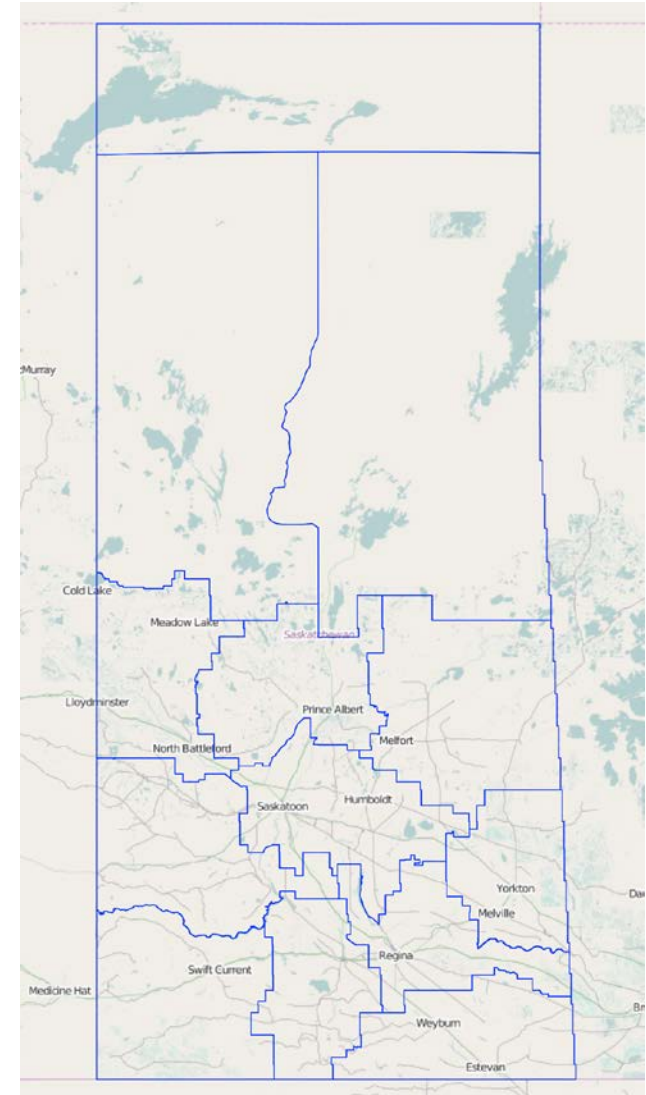
Dwelling data was used because population data was not available



RHA

- N = 13
- City/Town dwellings
 - N= 306190
- Rural dwellings
 - N = 70215

Dwelling data was used because population data was not available



Saskatchewan Equity Study (SES)

- Few of these groups have capacity for linkage and analysis
- Crucial for health policy planning
- We will report and give the RIC and RHA their data

Challenges with 2011 NHS

- Index of Deprivation 2006 and 2011
 - Could examine changes in area deprivation and health over time.
- Differential response rate by urban and rural population
- Differential response rate by deprived and non-deprived population

Some Data Analysis

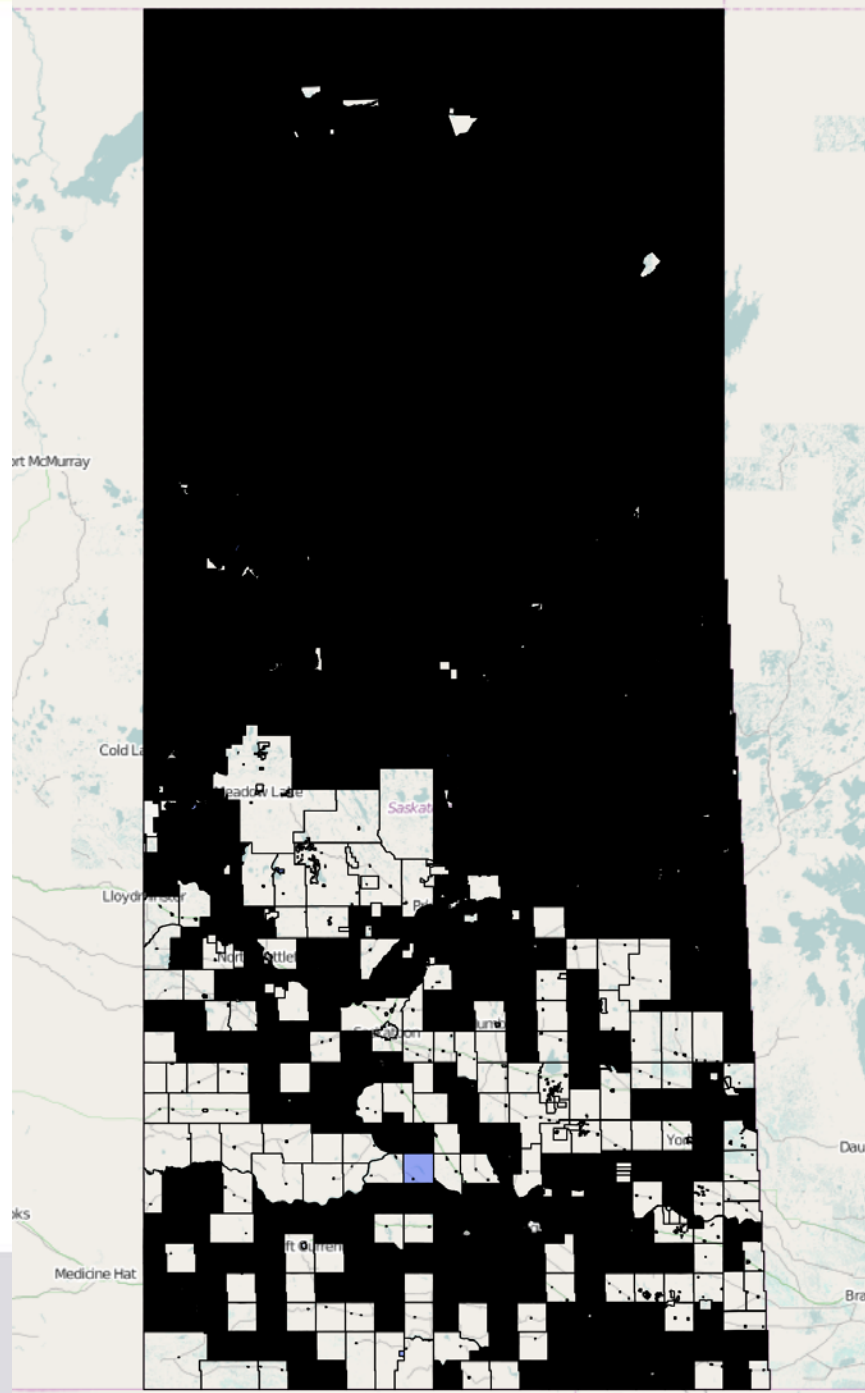
- Census subdivision data
 - Final response rates for census subdivisions (CSDs)
 - CSD Geographies not released
- RHA Maps
- RIC Maps
- Data and R code available at:
 - www.walkabilly.net/Presentations/Conferences.html

NHS - Suppression

- Data Quality:
 - Global non-response rate (GNR) $\geq 50\%$
- Confidentiality:
 - Population less than 40 persons
- Uninhabited:
 - Population count is equal to zero

Sask Suppression

- Census SubDivision
 - Data Quality Suppression



Urban/Rural Data Quality

CSD Type	Valid Dwellings	Suppressed Dwellings: Data Quality	Suppressed Dwellings: Confidentiality
Rural	38,299	31,390	526
City/Town	281,846	24,309	35

- Rural dwellings= 55% data quality suppression
- Urban dwellings= 8% data quality suppression

Implications for policy planning

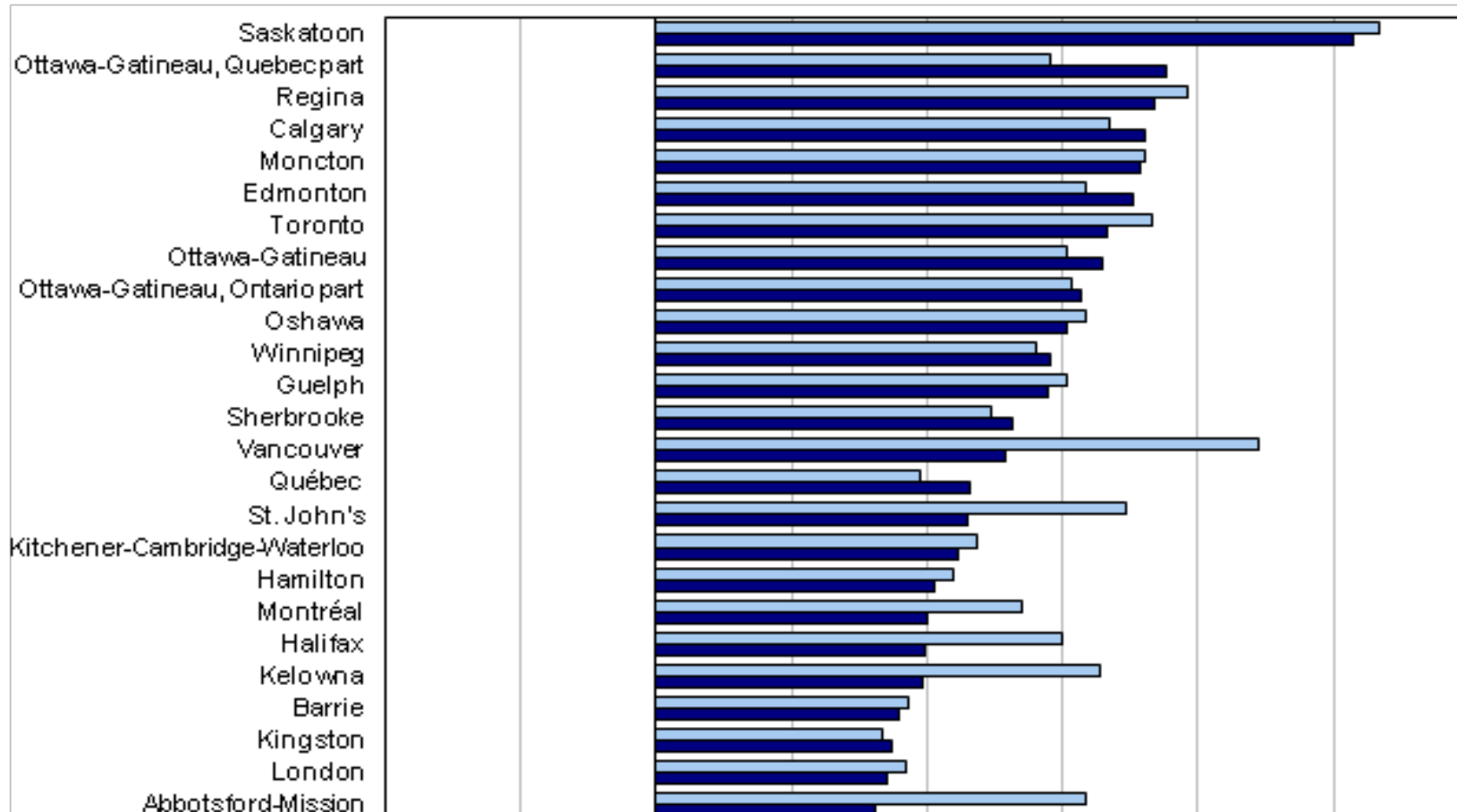
- Regional Intersectoral Committee
 - On average 22% (range = 7% to 35%) of dwellings per RIC are suppressed due to data quality issues
- Regional Health Authority
 - On average 25% (range = 10% to 38%) dwellings per RHA are suppressed due to data quality issues

Data Quality

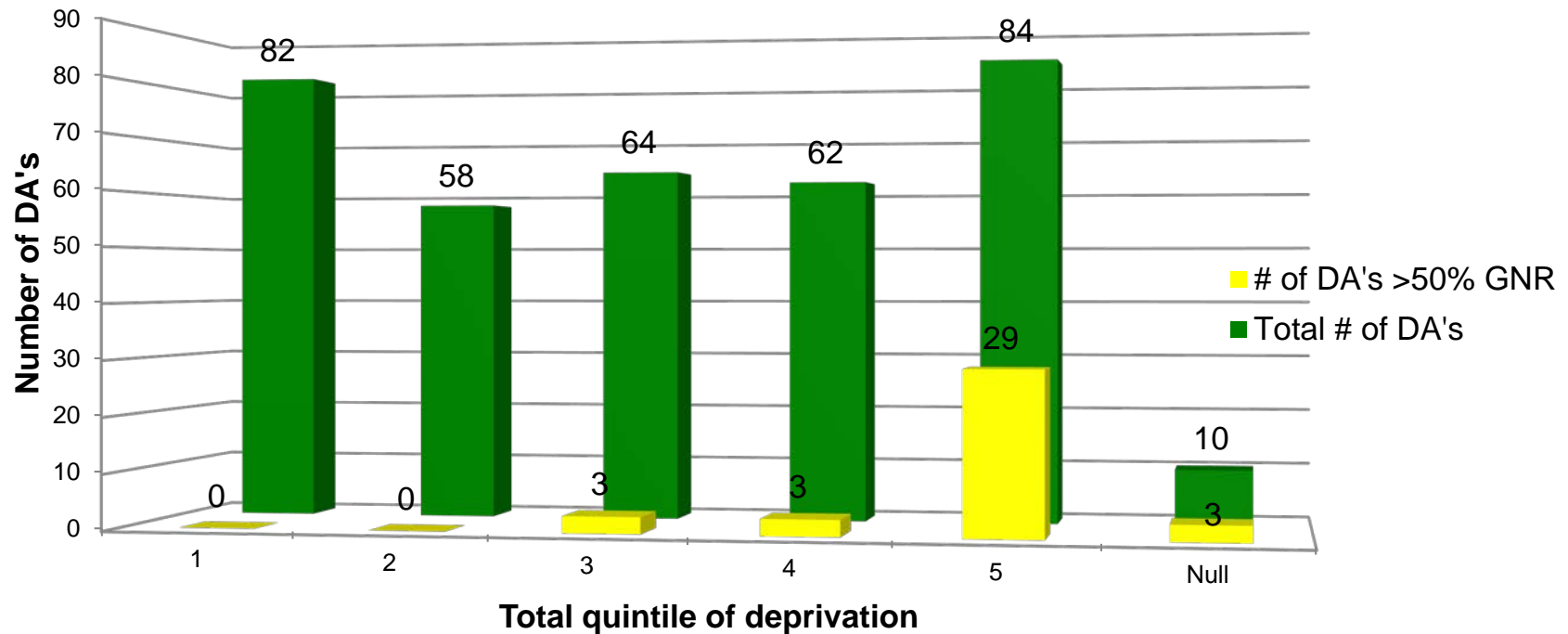
- Certain populations are systematically underrepresented
 - Assessing socioeconomic differences using census data is already challenging in rural areas
 - NHS rather than census aggravates this problem
- CSDs with low population count could be systematically underestimating socioeconomic differences

Pampalon, et al. 2009

Population growth rates



Global Non-Response Saskatoon



Implications for policy planning

- Planning decisions are hampered by data:
 - Data is not available
 - Data is not representative of the population
- Evidence based policy making requires strong assumptions
- If certain groups are systematically underrepresented policy may have unintended consequences

Thank you

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 - Website: www.walkabilly.net
 - Presentation, Data and R code available:
 - www.walkabilly.net/Presentations/Conferences.html
- Research Team Website
 - <http://healthinequalitiesinsaskatchewan.wordpress.com/>

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References

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- Statistics Canada. CSD Geographies not released. http://www12.statcan.gc.ca/nhs-enm/2011/ref/sup_CSD-SDR-eng.cfm
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