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Use of Québec Administrative data

The chronic disease surveillance model

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Presentation plan

- Overview of Chronic Disease Surveillance in Quebec
- Data model – Linked administrative data
- Potential, challenges and limitations
- Examples
- Conclusion

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Overview

Chronic disease surveillance using linked administrative data

- Started in 1999 with diabetes
- No tradition for chronic diseases surveillance before except for cancer → based on single database analysis and measures
- Survey data could not cover all the surveillance objectives for diabetes

Overview

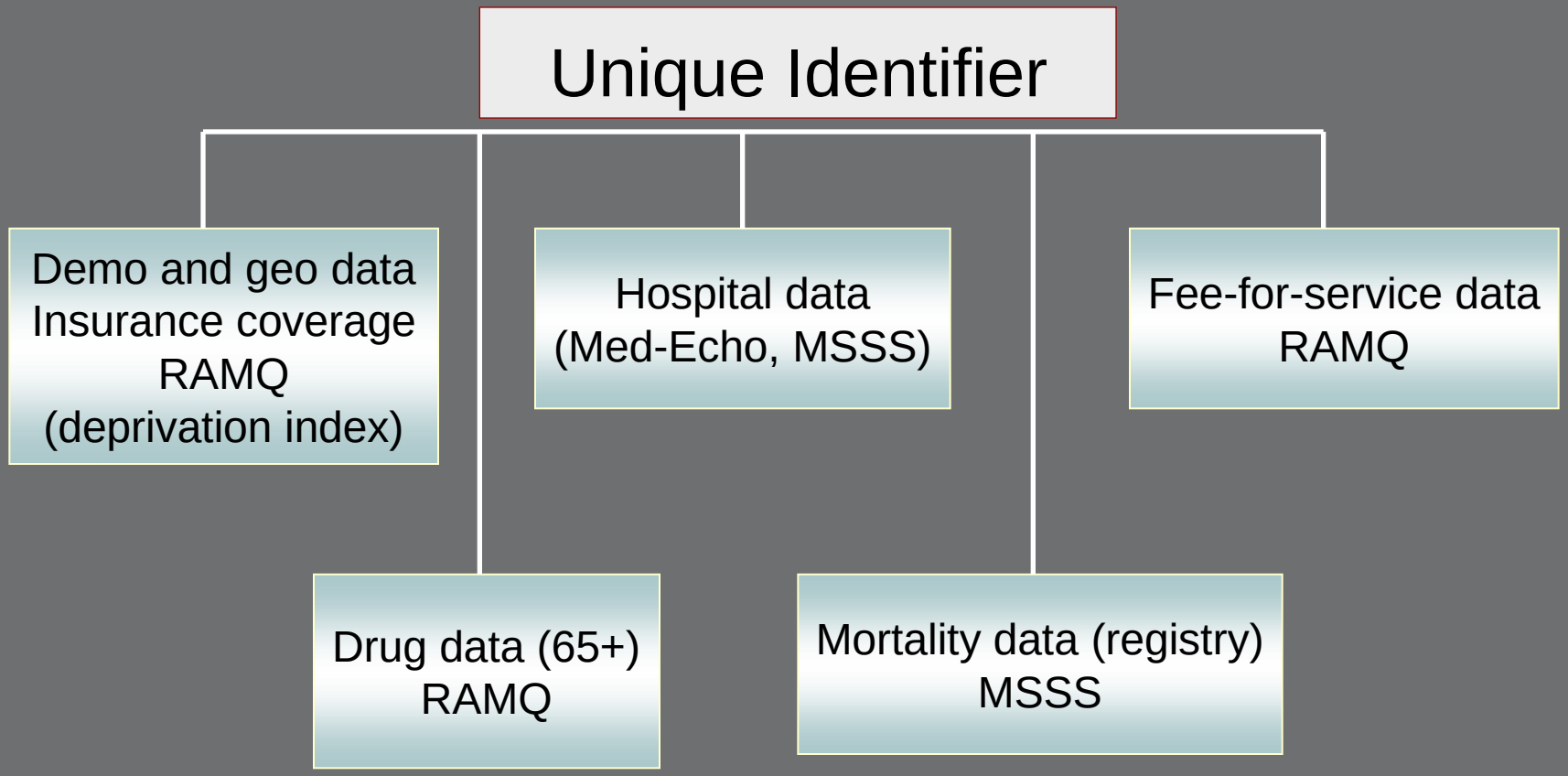
- Development across Canada through the National Diabetes Surveillance System (NDSS), now National Diabetes and Chronic Diseases Surveillance System (NDCSS)
- Started as a research project but now part of the « Plan ministériel de surveillance multithématique », MSSS

Chronic disease surveillance - objectives

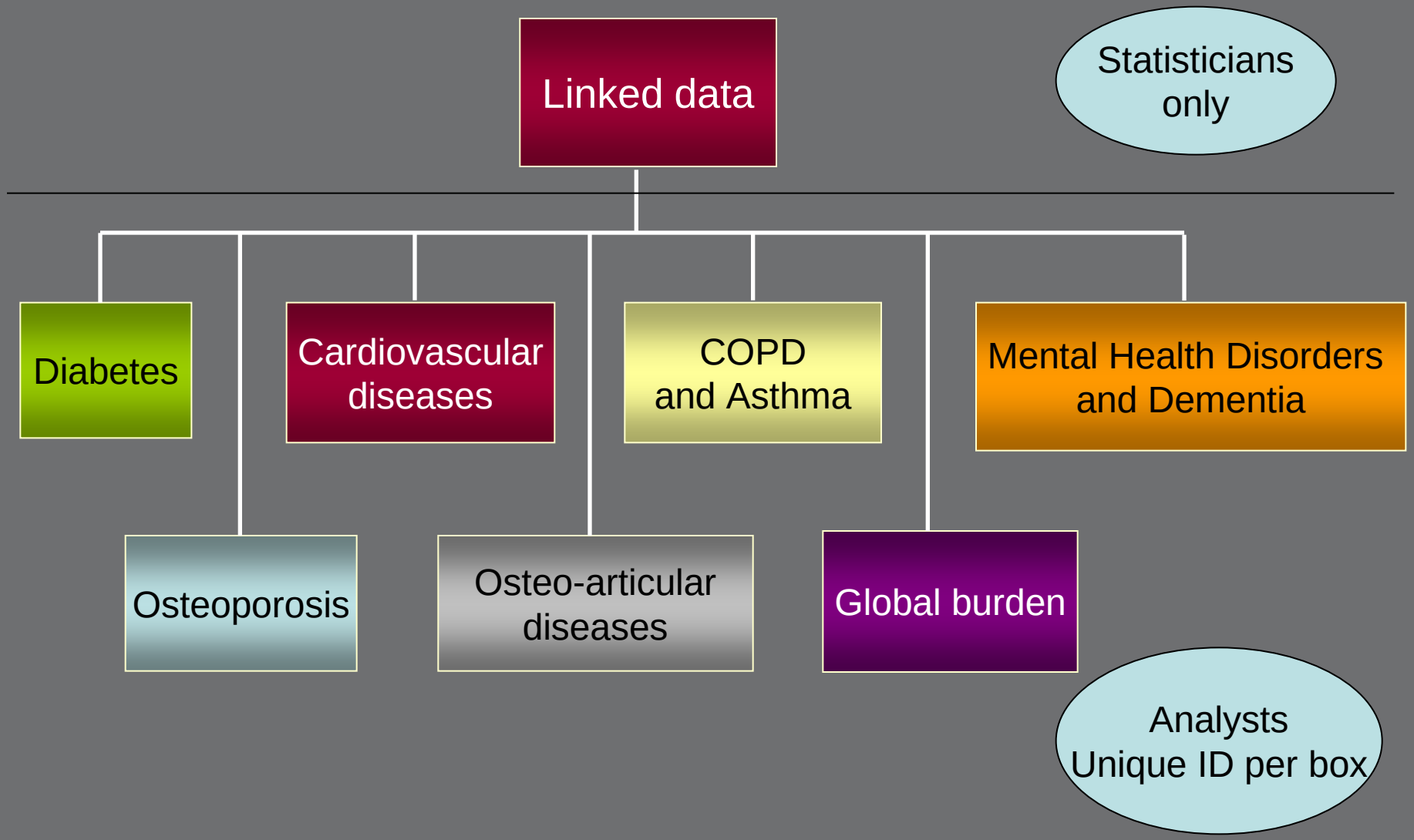
- Disease approach :
  - Importance of disease (incidence and prevalence)
  - Mortality and survival analysis
  - Use of health services (hospital and visits)
  - Use of medication (65+)
  - Subgroups at risk
- Integrated approach
  - Comorbidities
  - Multimorbidity
  - Polymedication

To better evaluate and give direction to promotion, prevention and health care programs

Data model (1) – Linked data



Data model (2) – Data files



Data model (3) – Analysis and outcomes

1. Outcome indicators : Public Health Infocentre

Aggregated data :

- Geography (health region, CSSS, municipality)
- Age
- Gender
- Deprivation

2. Analysis and publications : Short analysis series, reports, articles, etc.

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Potential (1)

- Innovative approach for chronic disease surveillance – reflective of chronic disease reality
- Integrated approach (Concepts, Methodology and Technology)
- New and improved indicators and analysis (usefull, adequate and appropiate measures)
- Population cohorts and trend analysis (time and space) → Reflective of changes and disease evolution
- Groups at risk (sociodemographic, geographic and economic) → Inequalities, deprivation index

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Potential (2)

- Population aging
  - Heterogeneity of older population
  - Opportunity to improve surveillance indicators
- Comorbidities, multimorbidity and polymedication
- Links between diseases and use of health care services

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Challenges and Issues

- Data access
  - Legal and administrative (INSPQ, MSSS, RAMQ)
  - Security, confidentiality and ethic
    - Public Health Ethical Committee (CESP)
    - Information access commission (CAIQ)
  - For surveillance only
  - Access on site by team membres -including students
- Scientific (Concepts, development of new surveillance measures)
- Methodological (Development and validation of algorythms)
- Technological (Linkage, High volume of data)

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Data Limitations

- Validity and precision of diagnostic or disease identification (validation studies for ppv, sensitivity and specificity → importance of gold standards)
- Limits of each database (eg : coverage of fee-for-service or drug data, no information on long-term care)
- No data on individual risks such as obesity
- For now, no linkage with survey data

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Examples

Diabetes case definition using multiple data sources

- One hospitalisation with a diagnostic of diabetes

or

- Two fee-for-service visits with a diagnostic of diabetes

Within 2 years

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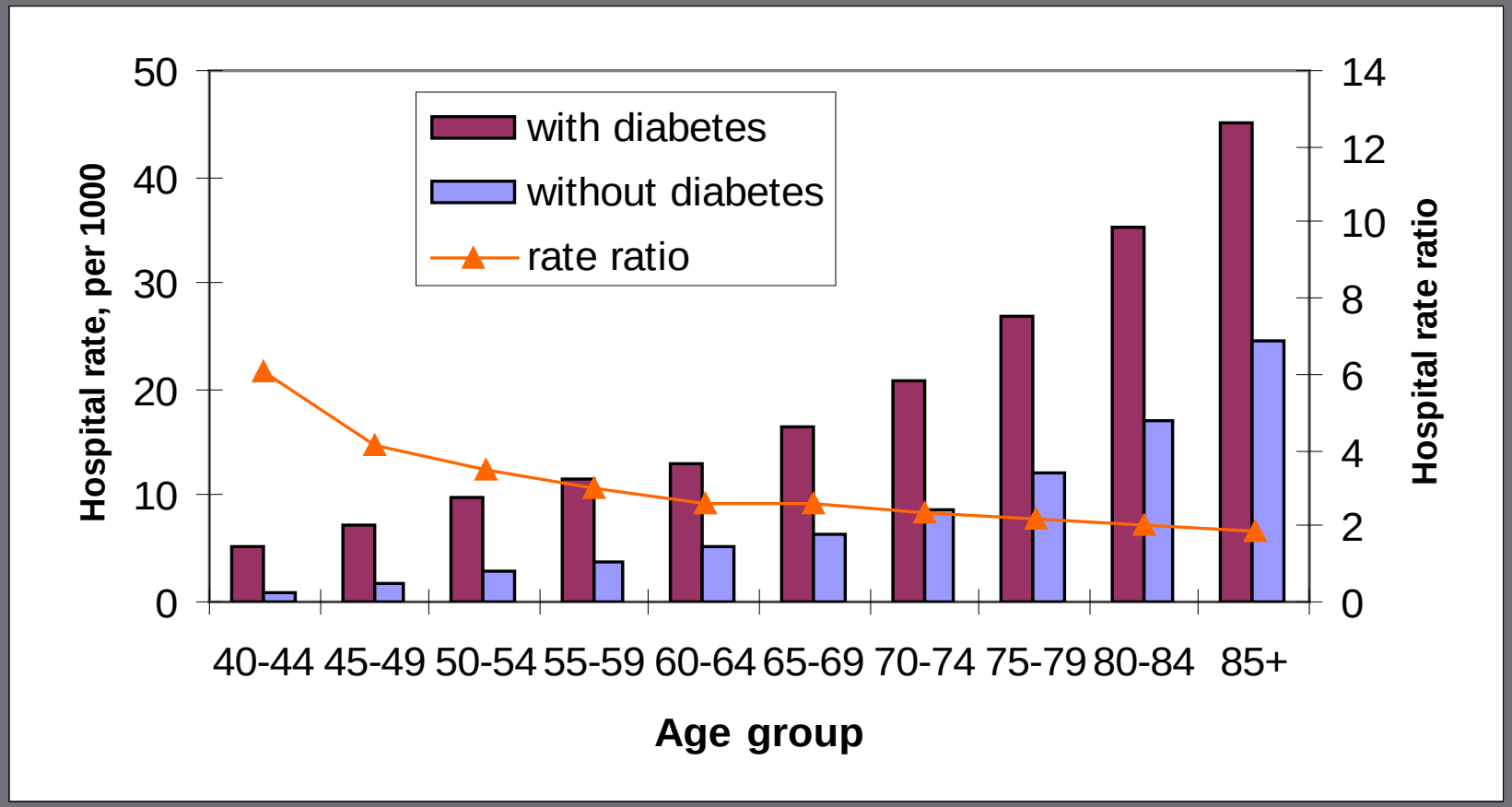
Hospital rate and ratio for AMI among *men* with and without diabetes, Canada, 2004-2005



Source : SNSD, www.phac-aspc.gc.ca/ccdpc-cpcmc/ndss-snsd/francais/facts_figures_f.html

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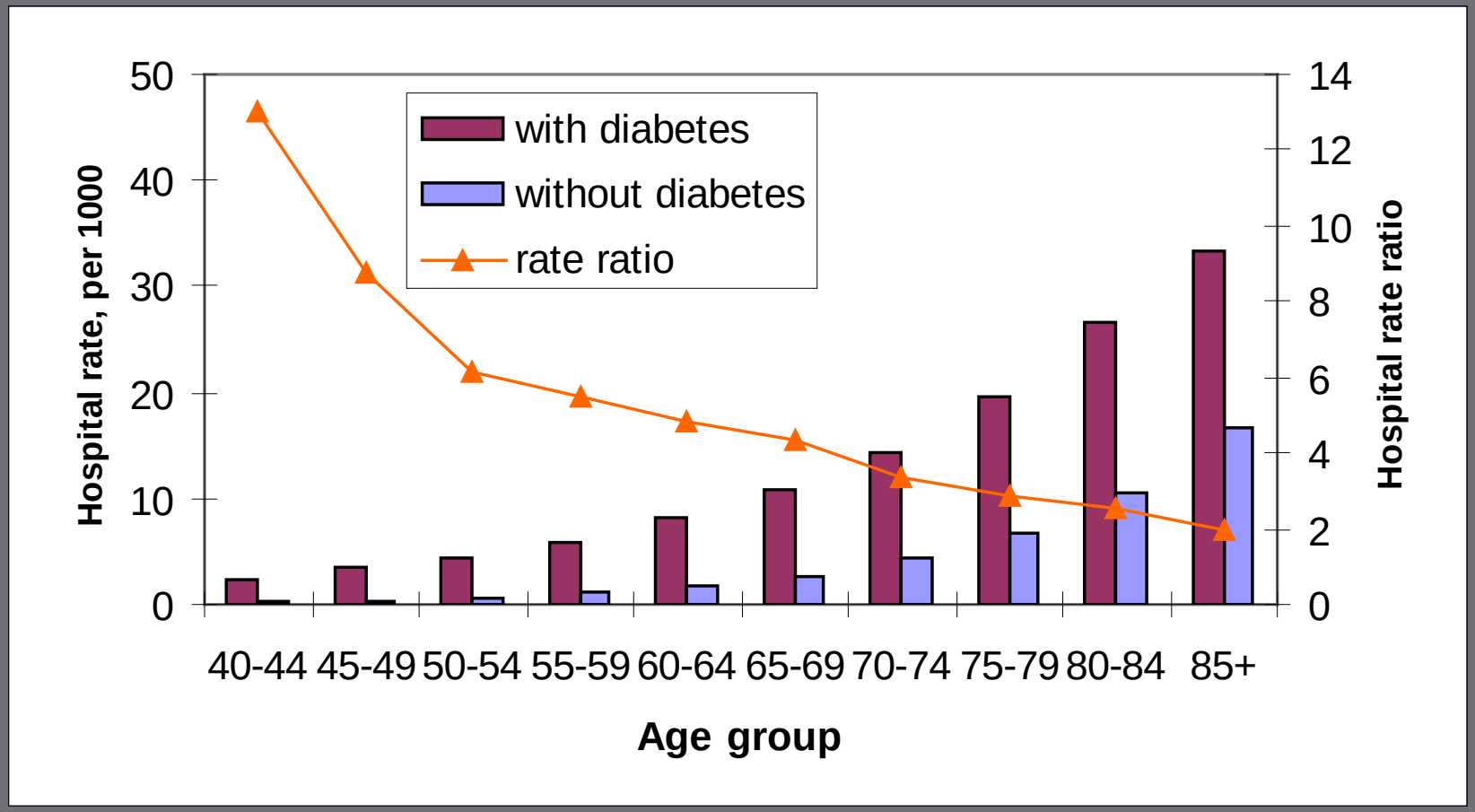
Hospital rate and ratio for AMI among women with and without diabetes, Canada, 2004-2005



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Conclusion

- Linked administrative data for chronic disease surveillance represent a very important potential for chronic disease surveillance

- The many challenges are worth the effort for a better and more usefull surveillance

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