Introduction to the Canadian Community Health Survey

With a focus of use at ICES to support studies examining equity issues

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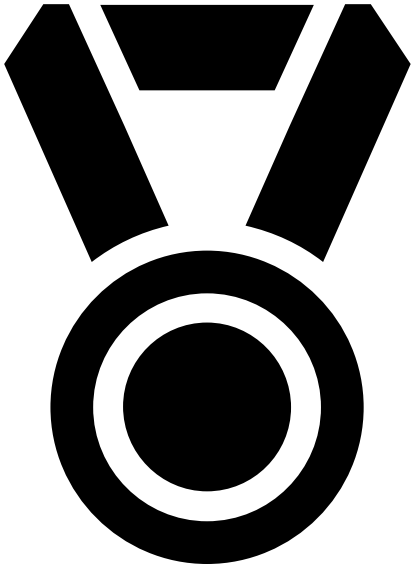
Agenda

- Overview of the survey
- Getting started using the survey in your studies
- Examples of studies

A notable population health survey



The largest ongoing population health survey worldwide.

Best-in-class design and implementation

National linkages to hospitalization and death, with improving linkages and analysis environment (RDC).

In ICES, more linkages to health data than any other survey worldwide

Public Use Microfile (PUMF) with Statscan Open License.

But with challenges

Complex survey design – stratified mult-stage design

Several major redevelopments over the past 2+ decades (in 2015 and 2023).

1000 variables that regularly change over time.

Successful approach

Follow establish approaches (previous studies).

Use collaboration resource (and contribute to them). Yeah, Open Science!

Be diligent with data cleaning and preparation.

Part 1
Target population, survey design, selection, sample size, response rate, content

Target population

- Household-dwelling Canadians.
- Biannual from 2001 to 2007, then annual.
- Population aged 12 years and older.
  - Starting 2020, age increased 18 years and older in 2023.
- 10 provinces and three territories.
  - Territories stopped/reduced collection in 2020 and 2021.

Exclusions - approximately 2–3% of the population

- People **living on reserves and other Aboriginal settlements** in the provinces.
- **Full-time members of the Canadian Forces.**
- **Institutionalized populations** (e.g., long-term care facilities, prisons).
- Some **remote areas** of the territories with very small populations or accessibility challenges.

CCHS 2009–2010 Sampling Design

- **Three-step sample allocation:**
  - Minimum 500 respondents per Health Region (HR)
  - Remainder allocated by provincial population
  - Provincial sample split across HRs by $\sqrt{}$(HR population)
- **Three sampling frames:**
  - **Area frame (49.5%)** – LFS-based, PPS, adjusted for yield
  - **List frame (49.5%)** – Canada Phone Directory
  - **RDD (1%)** – Elimination of Non-Working Banks method
- **One person per household**, with oversampling of youth (12–19) and young adults (20–29)
- **Sample deployed evenly** over 2 years, in 2-month waves, controlling for seasonality

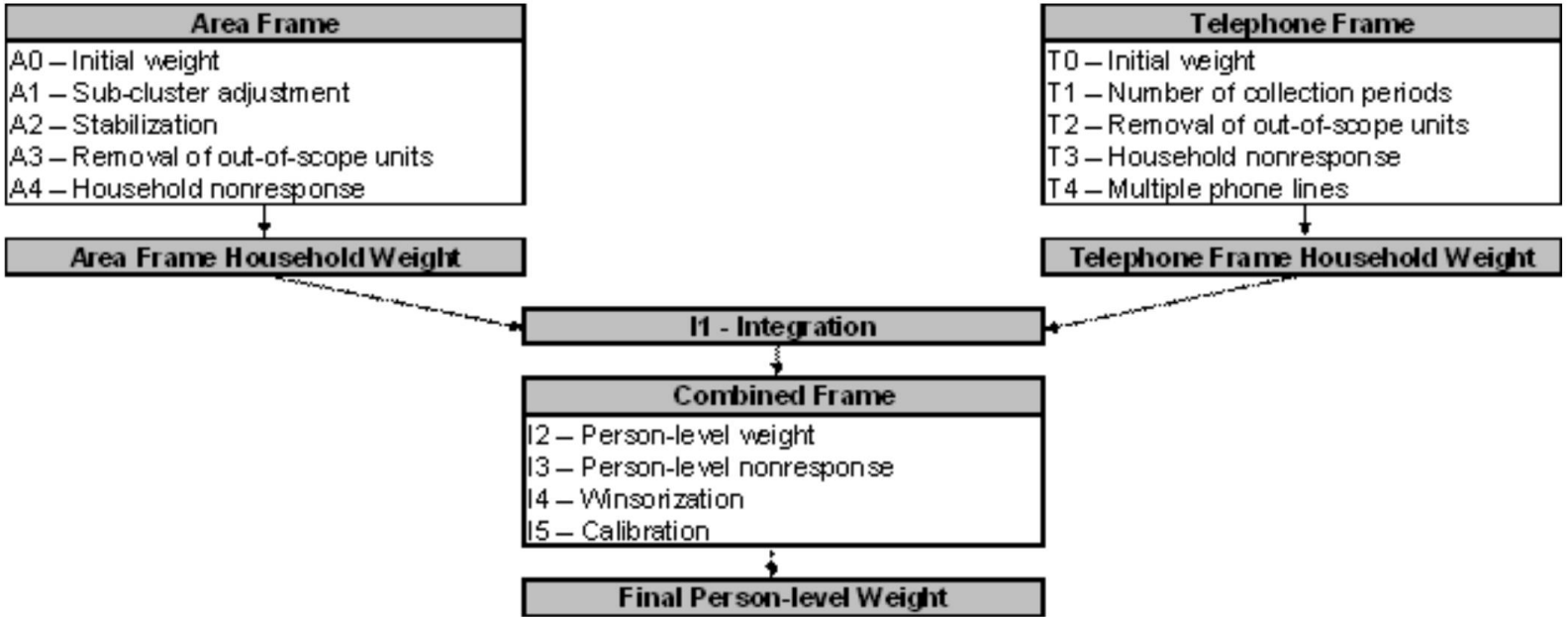
Number of region and target sample size by province and territory, 2009-10

Province	Number of HRs	Targeted sample size 2009–2010
Newfoundland and Labrador	4	4,010
Prince Edward Island	3	2,002
Nova Scotia	6	5,041
New Brunswick	7	5,150
Quebec	16	24,289
Ontario[1]	36	44,379
Manitoba	10	7,500
Saskatchewan	11	7,720
Alberta	9	12,200
British Columbia	16	16,095
Yukon	1	1,200
Northwest Territories	1	1,200
Nunavut	1	700
Canada	**121**	**131,486**

CCHS RESPONSE RATES

SURVEY	DATE RANGE	ONTARIO			SUBSET OF ONTARIO RESPONDENTS	RESPONSE RATE OF LINKED ONTARIO
		TARGET	RESPONSE	RESPONSE RATE	& AGREE TO SHARE/LINK	RESPONSE RATE
2000-2001	SEPT2000 TO NOV2001	47,900	39,278	82.0%	83.6%	68.6%
2003-2004	JAN2003 TO JAN2004	53,834	42,260	78.5%	79.7%	62.6%
2005-2006	JAN2005 TO JAN2006	54,883	42,260	77.0%	79.0%	60.9%
2007-2008	JAN2007 TO DEC2008	60,408	44,460	73.6%	77.9%	57.3%
2009-2010	JAN2009 TO DEC2010	64,598	44,379	68.7%	76.0%	52.2%
2011-2012	JAN2011 TO DEC2012	67,267	44,396	66.0%	73.5%	48.5%
2013-2014	JAN2013 TO DEC2014	70,756	44,576	63.0%	74.1%	46.7%

Weighting strategy



Pop quiz #1

- Which prevalence estimate is higher?
  - The weighted Canadian smoking prevalence.
  - The unweighted Canadian smoking prevalence.

Resources

- A good public collection of CCHS documentation is here. https://osf.io/hkuy3/

- Survey methods and analysis.

https://statmodeling.stat.columbia.edu/2025/06/01/survey-statistics-it-is-the-people/

Pop quiz #1

- Was the CCHS designed for data linkage studies?

Content (~ 1000 variables/cycle)

- Sociodemographic and economic
- Health status and chronic conditions
- Health behaviours
- Health care use
- Community & support
- Optional content (by region)

Sociodemographic

1. Education

- Highest level of education attained

2. Income and material deprivation

- Total household income (grouped ranges)
- Main source of income
- **Food security** (Household Food Security Survey Module)

3. Employment

- Labour force status (employed/unemployed/out of labour force)
- Main job type (e.g., class of worker, industry, occupation)
- Job stress (in optional content for some provinces)

4. Housing and household composition

- Number of people in household
- Relationship to household members
- Tenure (own vs. rent)
- Type of dwelling (e.g., detached, apartment)

5. Demographic context

- Age, sex, marital status
- Immigration status (whether immigrant, and years since immigration)

Community and support

1. Social support
- Perceived availability of support in times of need
- (e.g., having someone to confide in, count on for help)

2. Work-related stress
- Self-reported work stress (included in optional content for some regions)

3. Caregiving
- Provided unpaid help or personal care to family/friends due to long-term condition, disability, or aging

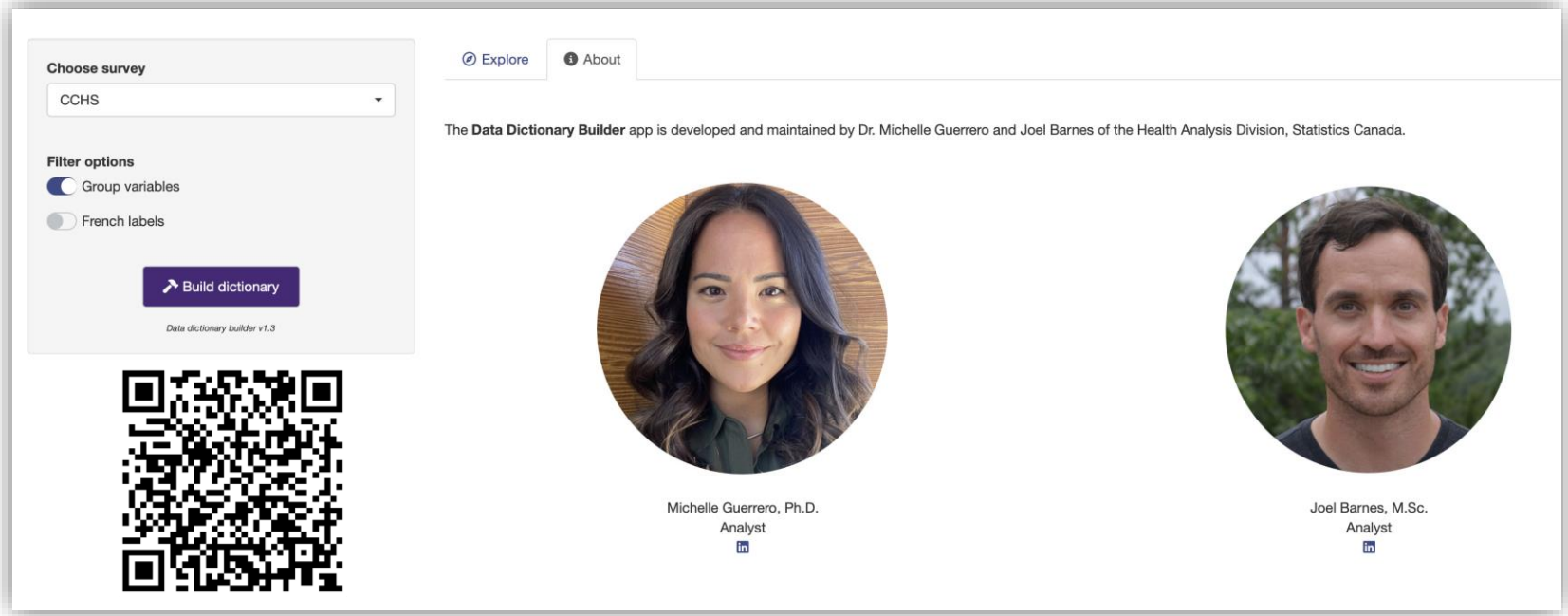
4. Life satisfaction and psychosocial well-being
- Overall life satisfaction
- Sense of control over decisions affecting life
- Personal impact of chronic illness

5. Community and neighbourhood
- Sense of belonging to local community
- Neighbourhood safety (perceived safety walking alone after dark)

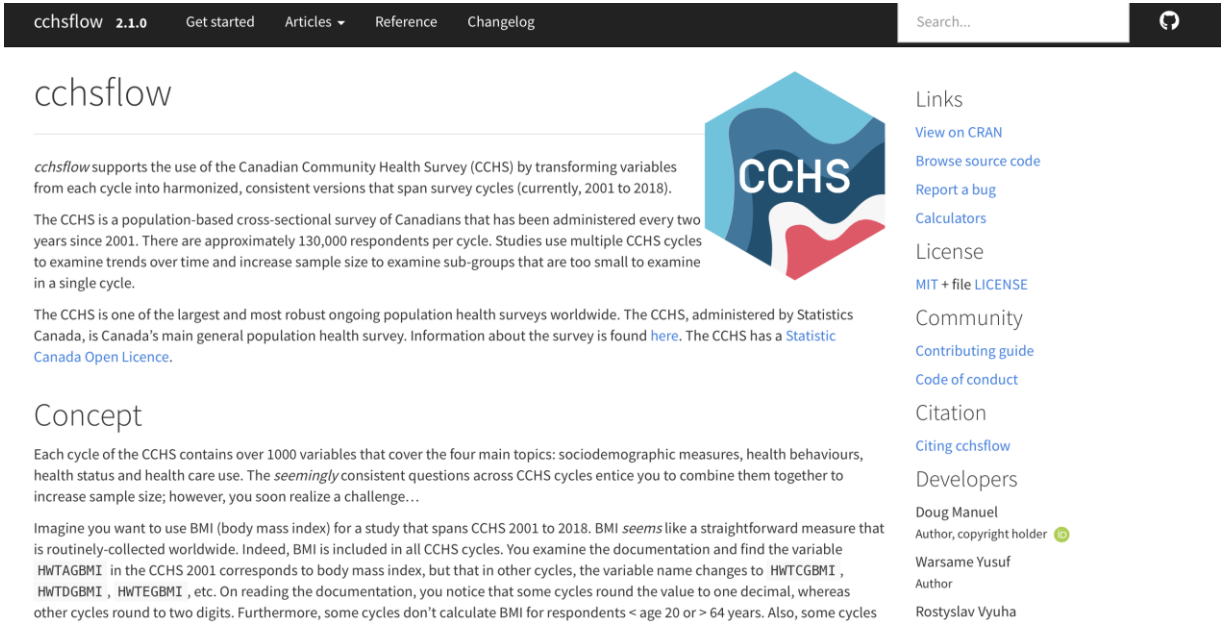
6. Access to care
- Unmet health needs and their reasons

Tools to help your analyses - part 2

https://613apps.ca/data-dictionary-builder/



https://big-life-lab.github.io/cchsflow/



Discourse: https://recode.discourse.group

Example
- part 3

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Cardiovascular Risk Factors

Original Article

Trends in Cardiovascular Risk Factors in Canada: Variation by Migration and Temporal Factors, 2001-2018

Kitty Y.A. Chen MPH [a b], Anan Bader Eddeen MSc [a c], Carol Bennett MSc [a], Warsame Yusuf MSc [d], Deirdre Hennessy PhD [e], Joel D. Barnes MSc [e], Douglas G. Manuel MD [a f]

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https://doi.org/10.1016/j.cjco.2024.04.006

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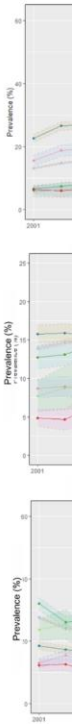
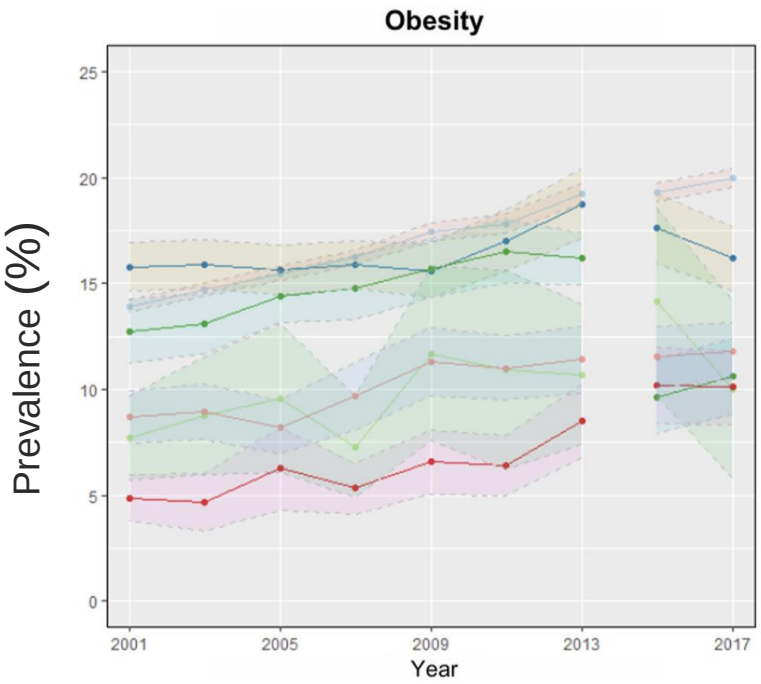
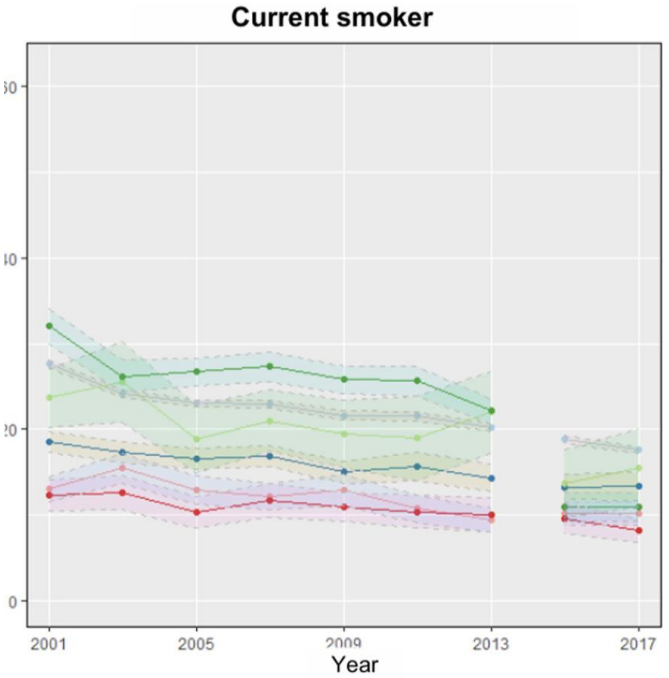
https://github.com/Big-Life-Lab/cvd-trends-Canada







- Non-racialized Canadian-born
- Racialized Canadian-born
- Non-racialized established immigrant
- Non-racialized recent immigrant
- Racialized recent immigrant

Thank you