Statistics Canada's health data and how to make it work for you

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Statistics Canada

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Delivering insight through data for a better Canada

Statistics Canada / Statistique Canada

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AGENDA

01   **Who we are**
- About Statistics Canada

02   **What we do**
- Data and insights

03   **How we can support your work**
- Accessing and creating data

04   **How the data support current health issues**
- Spotlight examples

Statistics Canada and the Health Statistics Branch

About Statistics Canada

Our mandate

An **independent, arm's-length agency** with a national mandate to provide statistical information on every aspect of our country and its communities.

Statistics Canada provides insights through data for a better Canada.

The *Statistics Act* enables Statistics Canada to:

- **collect, compile, analyse, abstract and publish** statistical information

- **collaborate** with departments of government

- collect the **Census of population** and **Census of agriculture of Canada**

- promote the **avoidance of duplication** in the information collected by departments

- **promote and develop integrated social and economic statistics** pertaining to the whole of Canada

Health at Statistics Canada

VISION

To provide all types of decision-makers with the data and insights needed to make Canada the healthiest country in the world

Current priorities

01
Expand health data holdings and increase insights

02
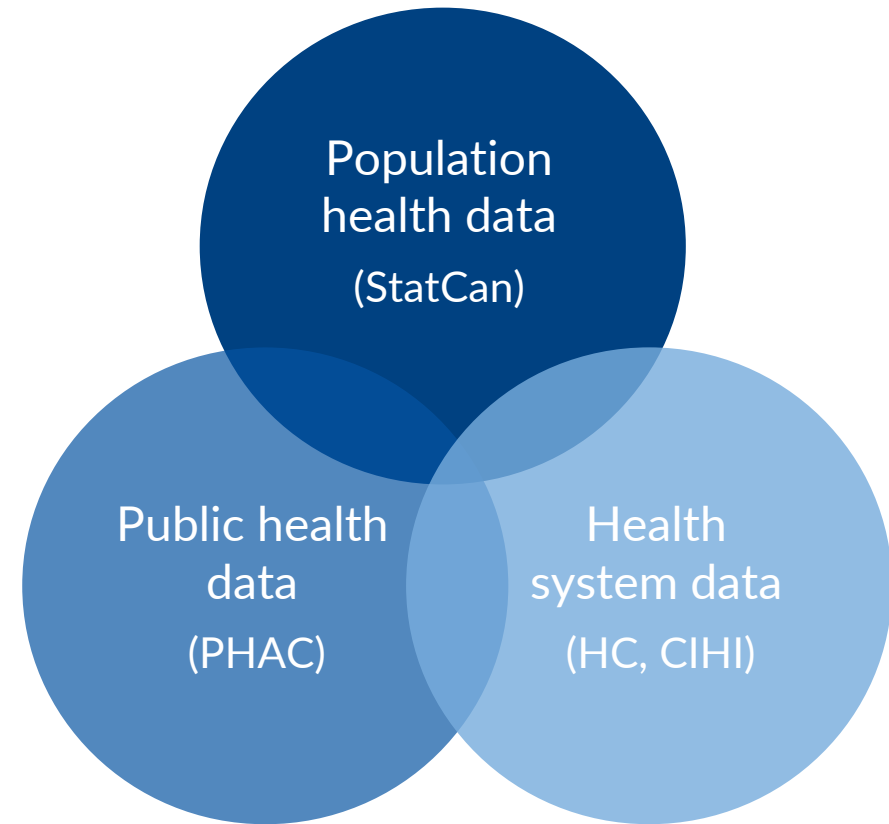Enhance external partnerships to improve population health reporting

03
Strengthen data disaggregation and deepen our understanding of health inequities

04
Participate in efforts to improve health data management across Canada

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Where we fit in

Population health data (StatCan)

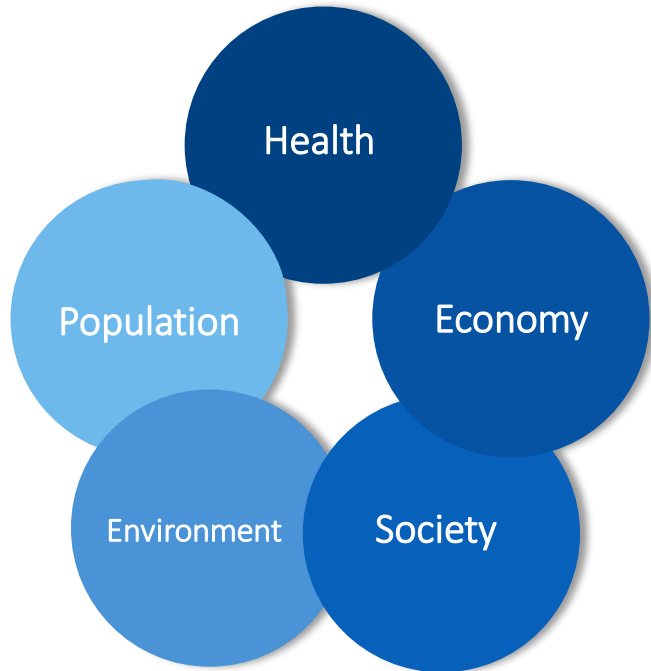Public health data (PHAC)

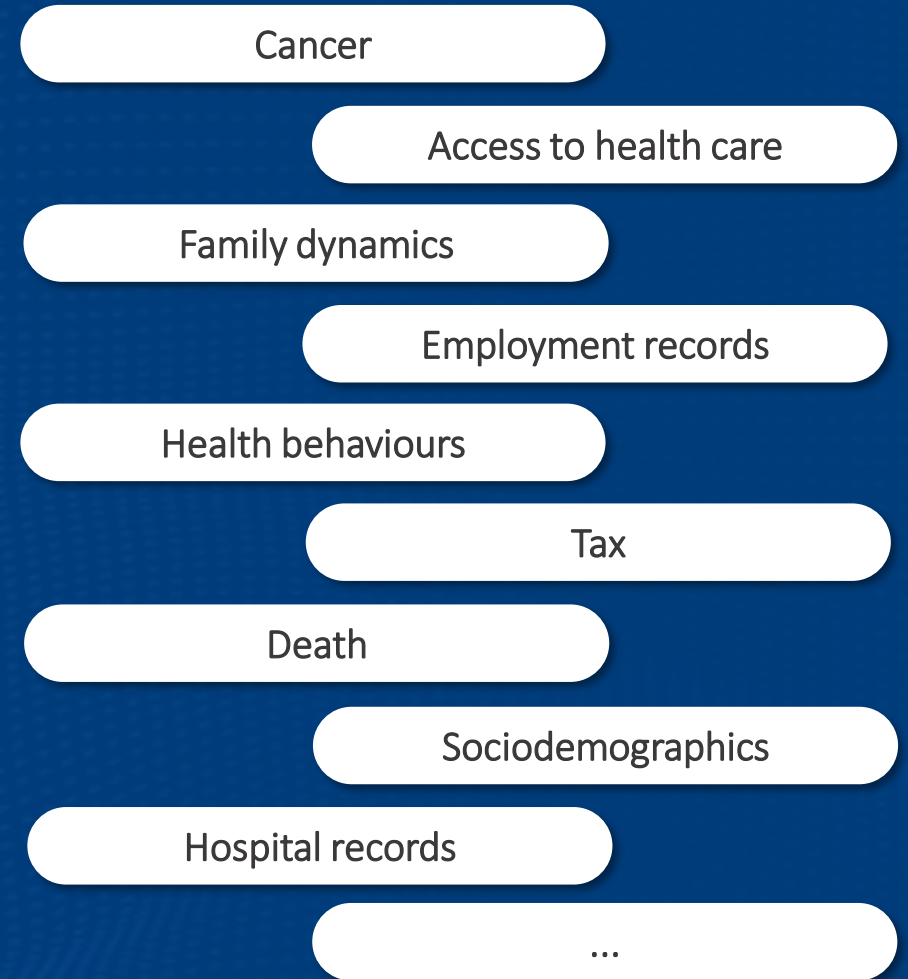Health system data (HC, CIHI)

02
WHAT WE DO

Our data and insights

StatCan has a wealth of data on different topics

➢ 400+ StatCan data sources
➢ 50+ health data sources

Health
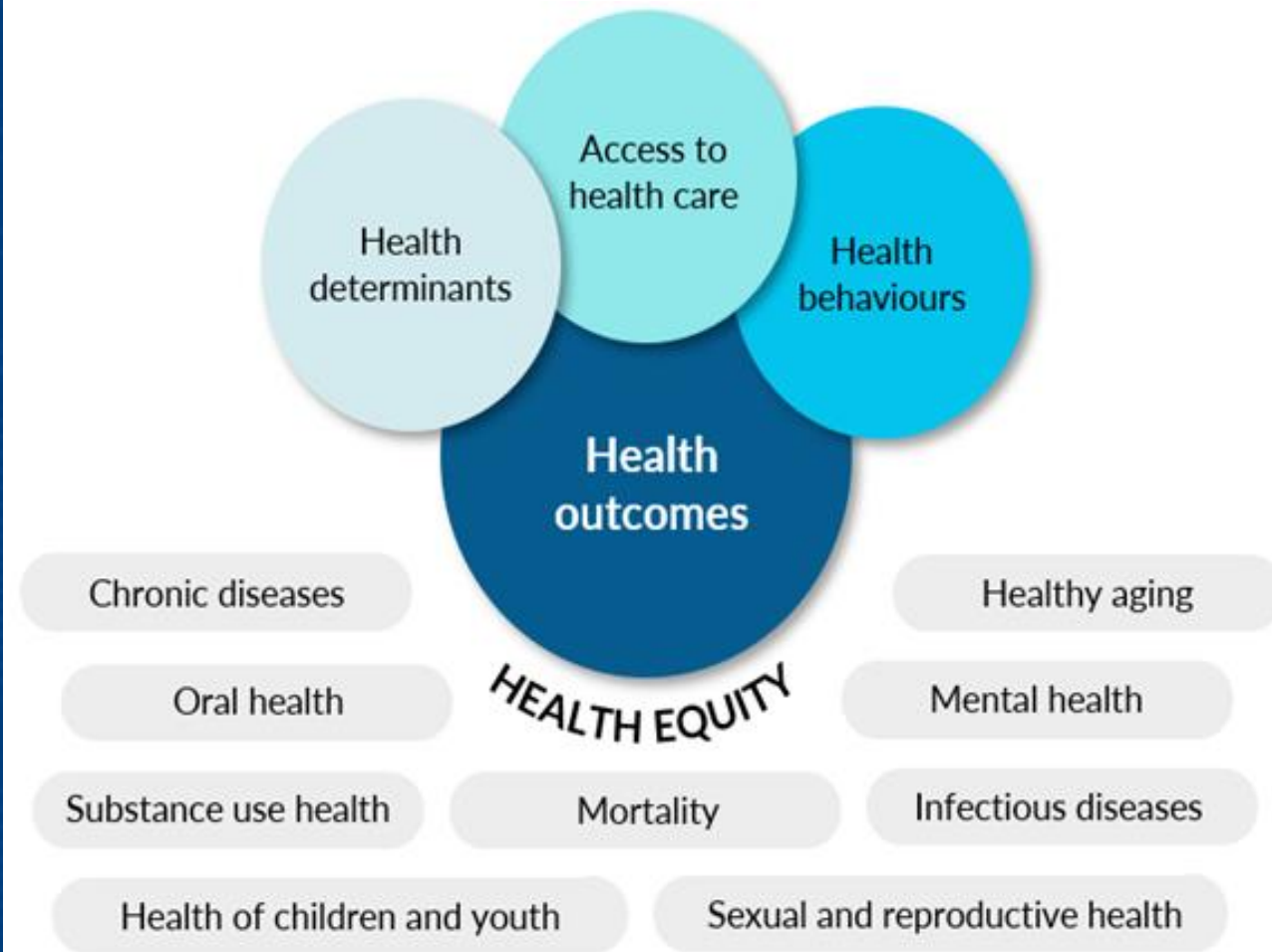
Population

Economy

Environment

Society

All in one environment

Cancer

Access to health care

Family dynamics

Employment records

Health behaviours

Tax

Death

Sociodemographics

Hospital records

…

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Our population health data framework

Health determinants · Access to health care · Health behaviours

Health outcomes

HEALTH EQUITY

Chronic diseases · Oral health · Substance use health · Health of children and youth · Mortality · Sexual and reproductive health · Healthy aging · Mental health · Infectious diseases

StatCan data holdings come in all different types

Survey

Administrative

Bio-physical

Integrated

SURVEY DATA
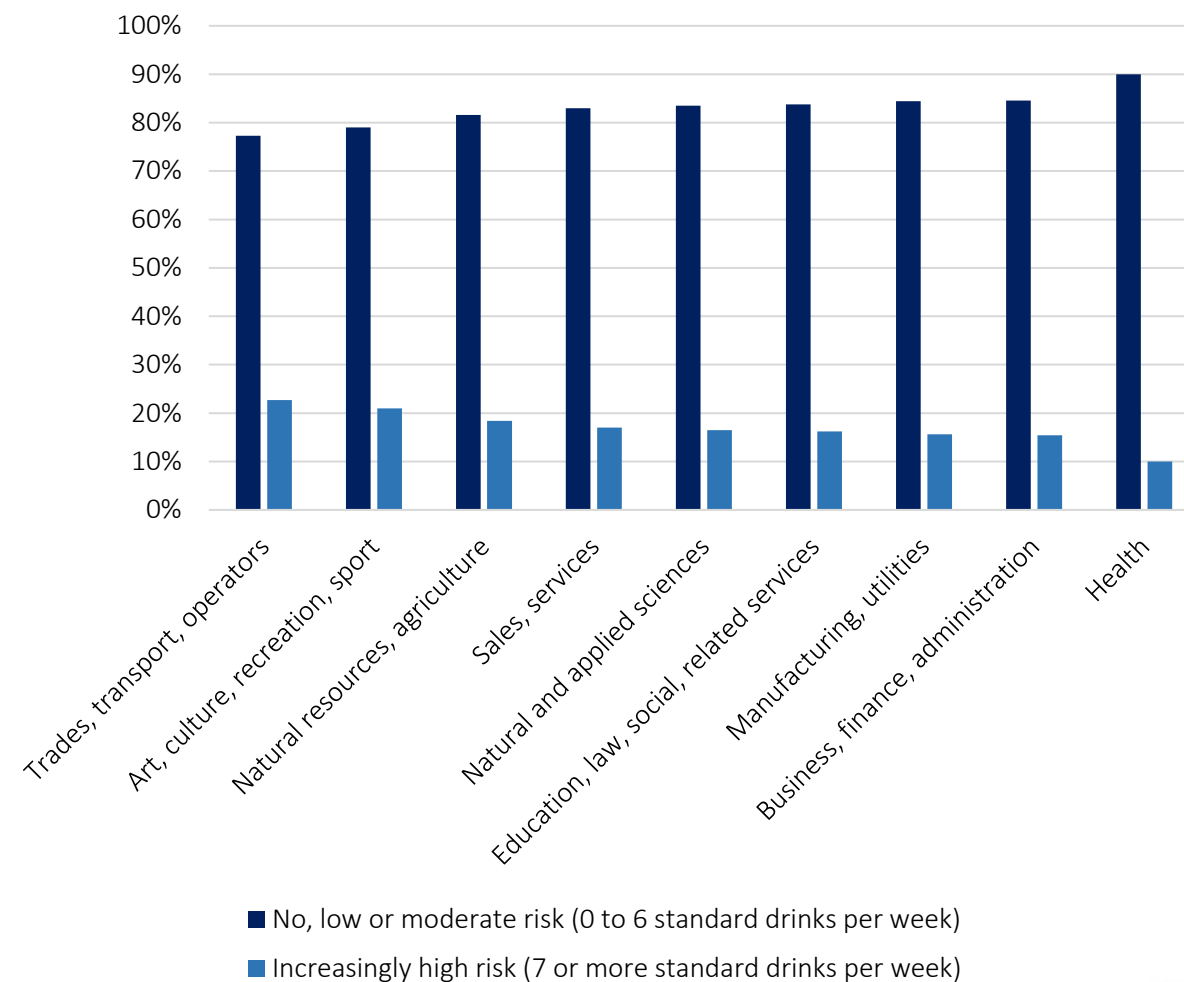
Adults: Canadian Community Health Survey (CCHS)

Children: Canadian Health Survey on Children and Youth (CHSCY)

Health care system: surveys on access, experiences, and related outcomes (AERO) in relation to care

Oral health self-reported and business surveys on oral health and the oral health care system

Other ongoing and ad-hoc surveys on mental health, COVID-19 and much more

Insights: Alcohol use

■ No, low or moderate risk (0 to 6 standard drinks per week)
■ Increasingly high risk (7 or more standard drinks per week)

Source: Canadian Community Health Survey, 2023

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ADMINISTRATIVE DATA
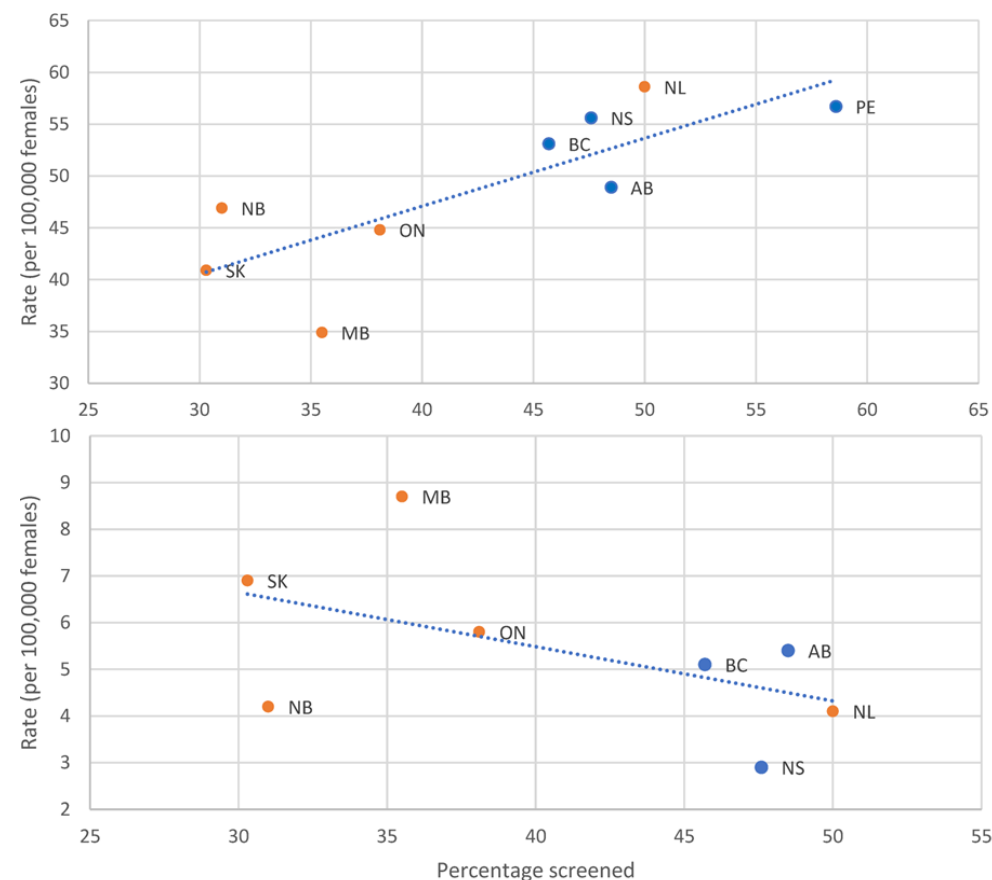
Vital Statistics (births, deaths, stillbirths)

Canadian Cancer Registry (CCR)

Canadian Coroners and Medical Examiners Database (CCMED)

Medical Assistance in Dying (MAiD)

Variety of databases from the Canadian Institute for Health Information (CIHI)

Incidence rate of stage I (top) and stage IV (bottom) female breast cancer, 2011-2013, by provincial screening participation rate in 2012, ages 40 to 49 years. QC excluded because no cases diagnosed from 2011 onward have been submitted to the Canadian Cancer Registry; territories (both graphs) and PIE (bottom graph) excluded due to small sample size.

Source: Canadian Cancer Registry

BIO-PHYSICAL DATA

- Canadian Health Measures Survey (CHMS)
- Canadian Wastewater Survey (CWS)
- Canadian COVID-19 Antibody and Health Survey (CCAHS)
- Biobank: storage of CHMS and CCAHS biospecimens (blood, urine, DNA) for use in research projects

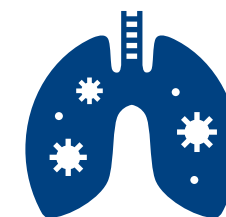## Insights: Undiagnosed disease

1 in 4
Canadians aged 20-79 had **hypertension**

15%
had **not been previously diagnosed** by a health care professional

12% of Canadian adults aged 35 to 79 had lung function consistent with **chronic obstructive pulmonary disease (COPD)**

9 in 10 of those **had not been previously diagnosed** by a health care professional

Source: Canadian Health Measures Survey

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INTEGRATED DATA

- Canadian Census Health and Environment Cohorts (CanCHECs)
- Linkages of administrative data to the long-form Census
- Mother-centric linkage for perinatal health surveillance
- Tools & data sources for area-level integration and analysis
- Any data integration inside and outside health is possible
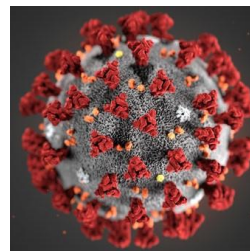
Insights: The potential of data integration

Immigrants' lower risk of suicide behaviour

Immigrants are less likely die by suicide than the Canadian-born population. However, death of immigrants by suicide was **2.1x higher** among those born in Western Europe than among the whole immigrant population.

COVID-19 mortality among racialized people

Black people had the **highest** age-standardized COVID-19 mortality rate. Moreover, the Black population living in low income was disproportionally at a higher risk of dying from COVID-19.

Suicide among First Nations, Métis, and Inuit

Geographic and socioeconomic factors, specifically household income, labour force status, highest level of education, marital status, and geographic location together **accounted for a notable proportion of the excess risk of death** by suicide among First Nations people (78%), Inuit (40%), and Métis (37%).

Source: Canadian Census Health and Environment Cohorts (CanCHECs)

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STATCAN HEALTH INDICATORS

HEALTH STATUS

Well–Being
- Perceived health
- Perceived mental health
- Perceived life stress

Health Conditions
- Adult body mass index
- Youth body mass index
- Arthritis
- Diabetes
- Asthma
- High blood pressure
- Chronic obstructive pulmonary disease (COPD)
- Pain or discomfort that prevents activities
- Pain or discomfort by severity
- Mood disorders
- Low birth weight
- High birth weight
- Small for gestational age
- Large for gestational age
- Pre-term births
- Injuries
- Cancer Incidence
- Injury hospitalization
- Hospitalized stroke event
- Hospitalized acute myocardial infarction (AMI) event
- Hospitalizations entirely caused by alcohol

Human Function
- Functional health
- Participation and activity limitation
- Disability-free life expectancy
- Disability-adjusted life expectancy
- Health-adjusted life expectancy

Deaths
- Age-standardized mortality rate
  - Total Mortality
  - All diseases of the circulatory system deaths
  - All malignant neoplasms (cancer) deaths
  - All diseases of the respiratory system deaths
  - Suicide
  - Unintentional injury deaths
  - AIDS deaths
- Premature mortality
- Potential years of life lost (PYLL)
  - for provincial/territorial level time–series
  - for total mortality
  - for all cancer deaths
  - for all circulatory disease deaths
  - for all respiratory disease deaths
  - for unintentional injuries
  - for Suicide
  - for AIDS deaths
- Infant Mortality
- Perinatal Mortality
- Life expectancy

NON–MEDICAL DETERMINANTS OF HEALTH

Health Behaviours
- Smoking
- Heavy drinking
- Physical activity during leisure time
- Self-reported physical activity, 150 minutes per week, adult (18 years and over)
- Self-reported physical activity, average 60 minutes per day, youth (12 to 17 years old)
- Breastfeeding practices
- Fruit and vegetable consumption
- Bicycle helmet use

Living and working conditions
- High school graduates
- Post-secondary graduates
- Unemployment rate
- Long-term unemployment rate
- Low-income rate
- Children in low-income families
- Average personal income
- Median share of income
- Government transfer income
- Housing affordability
- Crime Incidents
- Adults and Youth Charged
- Household food insecurity

Personal resources
- Sense of community belonging
- Life satisfaction

Environmental Factors
- Exposure to second-hand smoke at home
- Exposure to second-hand smoke in vehicles and public places
- Lead concentration
- Bisphenol A concentration
- Mercury concentration

HEALTH SYSTEM PERFORMANCE

Acceptability
- Patient satisfaction (and quality rating of services received)

Accessibility
- Influenza Immunization
- Mammography
- Pap (Papanicolaou) test
- Colorectal cancer screening
- Regular medical doctor
- Hip fracture surgery within 48 hours

Appropriateness
- Caesarean section
- Patients with repeat hospitalizations for mental illness

Continuity
- 30-day readmission for mental illness

Effectiveness
- Ambulatory care sensitive conditions
- 30-day acute myocardial infarction in-hospital mortality rate
- 30-day stroke in-hospital mortality rate
- 30-day acute myocardial infarction (AMI) readmission
- 30-day obstetric readmission
- 30-day pediatric readmission
- 30-day surgical readmission
- 30-day medical readmission
- Self-injury hospitalization
- Potentially avoidable mortality rate
  - Rate of avoidable mortality from preventable causes
  - Rate of avoidable mortality from treatable causes
  - Preventable and treatable mortality, by remoteness geography

Safety
- Hospitalized hip fracture event

COMMUNITY AND HEALTH SYSTEM CHARACTERISTICS

Community
- Population estimates
- Population distribution by size of population centre
- Population density
- Dependency ratio
- Aboriginal population
- Immigrant population
- Internal migrant mobility
- Metropolitan influenced zones (MIZ)
- Lone–parent families
- Visible minority population

Health system
- Inflow/outflow ratio
- Coronary artery bypass graft surgery rate
- Percutaneous coronary intervention rate
- Cardiac revascularization rate
- Hip replacement rate
- Knee replacement rate
- Hysterectomy rate
- Contact with alternative health care providers
- Contact with a medical doctor
- Contact with health professionals about mental health
- Contact with dental professionals
- Mental illness hospitalization rate
- Mental illness patient days rate

Resources
- Doctors rate

03
**HOW TO MAKE THESE DATA
WORK FOR YOU**

**Accessing and
creating data**

How we share our insights

StatCan's official release vehicles

- The Daily

StatCan journals

- Health Reports (indexed and peer-reviewed)
- Insights on Canadian Society

Other

- Health Fact Sheets
- StatsCAN Plus
- Infographics

Visit StatCan's
health statistics portal:

statcan.gc.ca/en/subjects-start/health

Annual **Health of Canadians** report

Ways of accessing data through StatCan

Publicly available	Published insights	Online data tables	Public use microdata files	You access on your own, online
Arms-length	Real-time remote access	Custom tabulations		RTRA: self-serve, you use your own SAS code Custom tabs: you specify your needs to us
Microdata	Research Data Centres (RDC)	Virtual RDC	Federal RDC	We approve your project and vet your outputs; you access the data and run the analysis
Bio-specimen	Biobank			You can have the samples analyzed in an approved lab and analyze the resulting data in an RDC

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Organized jointly by StatCan and PHAC

- Health stakeholders from across the country

- Presentations, discussions, and networking to explore innovative ways to address key health issues using StatCan and PHAC data

Areas of discussion

- Environment and health
- Population health and perspectives on data disaggregation
- Applying insights to reduce the burden of illness
- Data mobilization during times of emergencies

CUSTOM TABLES

Examples

When published data do not meet your needs, you can request customized tables of <u>descriptive</u> analyses

Our analysts will assess your specifications for feasibility, providing you with a time and cost estimate of the work.

Data	Request
CVSD-Births	Data on age of mother by year rather than 5-year interval in Ontario
CVSD-Deaths	Annual counts & rates of alcohol-induced deaths by age & sex in QC
CHMS	Diabetes prevalence and mean fasting plasma glucose by age and sex
CCHS, GSS	Compare key indicators between surveys for specific geographic region
CCR	Incidence of lung cancer for specific histologic types

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CUSTOM LINKAGES

Do you need data integrated to meet your health research needs?

Can involve custom linkage of our data holdings *or* acquiring your data and integrating it with ours.

Examples

Canadian Perinatal Health Surveillance for PHAC
- Linked Vital Statistics databases to create a cohort of mothers, then linked to tax, immigration, hospital, outpatient, census and death data.

Future to Discover cohort for ESDC
- Linked hospital, outpatient, mental health and criminal court data to follow outcomes of secondary students over 6 years.

Enhanced cancer data for CPAC
- Linked cancer, hospital, outpatient, death, tax, census and immigration data to better understand association between socio-economics and cancer outcomes.

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CREATING DATA

Examples

We can discuss

1. Adding content to existing collection

2. Creating a standalone survey

3. Oversampling a population group within a survey and more

1. Interest in gambling data from the University of Calgary led to extra questions on CCHS 2025

2. 2023 mental health surveys conducted for the Public Health Agency of Canada

3. Oversample for the Survey on Access to Health Care and Pharmaceuticals during the Pandemic enabled disaggregation for Indigenous groups

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GRANT APPLICATIONS

We are available to be an Applicant Partner

Examples of types of support:

- Statistical expertise
- Subject matter expertise
- Data linkage
- Data integration
- Custom tables
- Data access

Canadian Healthy Survey on Children and Youth, 2023
- Longitudinal component funded through CIHR grant at McMaster University

Impact of preterm birth on socioeconomic and educational outcomes of children and families
- Linkage of datasets to the Canadian Vital Statistics – Birth database for CIHR-funded project at SickKids

Canadian Health Measure Survey, Cycle 7
- Oral health component co-funded through a CIHR grant held by a consortium of Canada's 10 dental schools

04
HOW THE DATA SUPPORT
CURRENT HEALTH ISSUES

Spotlight examples

SPOTLIGHT: ORAL HEALTH

Direct measures: Canadian Health Measures Survey, Cycles 1 (2007-09) and 7 (2022-24)

Self-reported health and related habits: Canadian Oral Health Survey, 2023-24

Oral health care sector: Survey of Oral Health Care Providers, 2024

Other data from existing health, business, and other surveys

65.6% of Canadians aged 0 and older have dental insurance

80.8% of these visited an oral health professional in the previous 12 months

34.4% of Canadians aged 0 and older do **not** have dental insurance

56% of these visited an oral health professional in the previous 12 months

Source: Canadian Oral Health Survey, 2023-2024
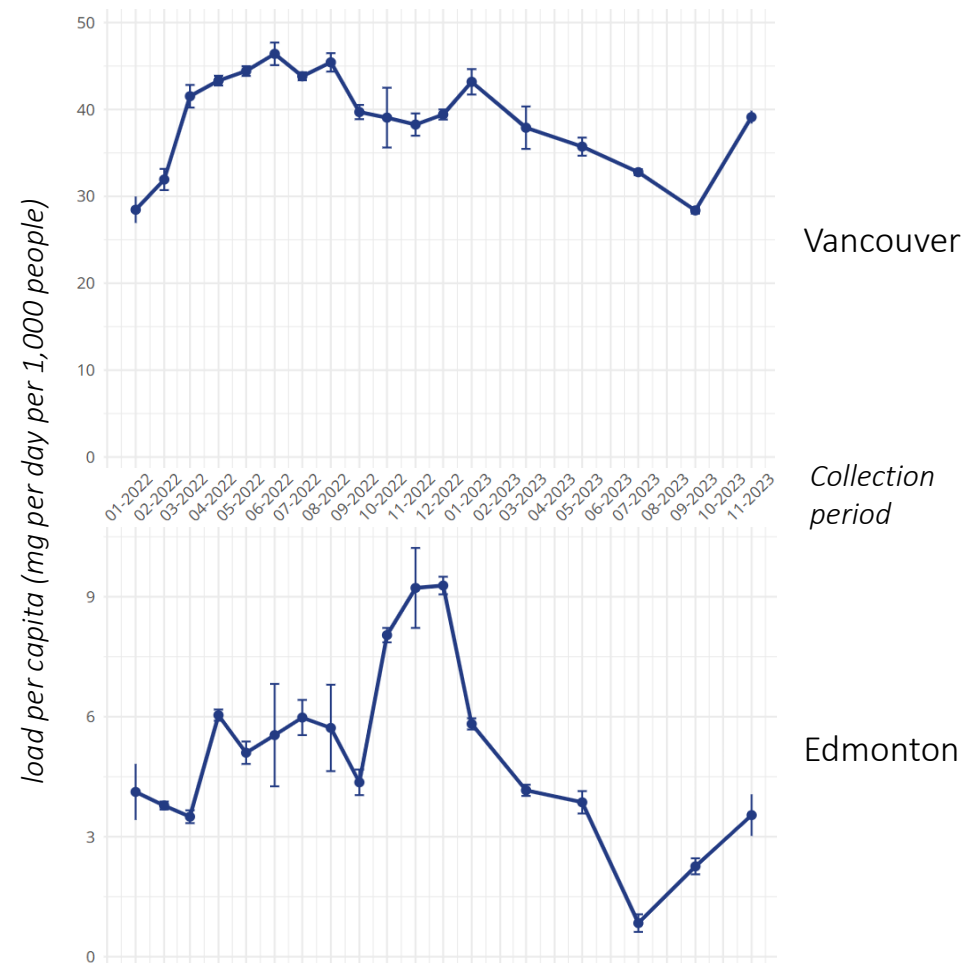
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SPOTLIGHT: OPIOID CRISIS

Wide-ranging information from along the full socio-economic and health pathways

Survey and admin data on hospitalizations, cause of death, policing, employment, income, tax, wastewater, substance use, mental health, etc.

Example: Canadian Wastewater Survey (CWS), covers 7 cities and 9 million Canadians

Data on stimulants and opioids since 2019

Insights: Fentanyl levels

Source: Canadian Wastewater Survey, 2022-2023

SPOTLIGHT: DATA DISAGGREGATION

Canadian Census Health and Environment Cohorts

Health data disaggregation tool with huge potential for studies and further linkages

Health data include Canadian Vital Statistics – Death Database, Canadian Cancer Registry, CIHI hospital data (NACRS, DAD, OMHRS)

Disaggregation enabled through long-form Census data (demographic, economic, household, employment, ethnicity, immigration status)

**Other data linked:** historical annual postal codes, environmental data

Age-standardized acute-care hospitalization rates per 100,000 population for leading causes, by population group and age group, Canada (excluding Quebec), 2011 cohort
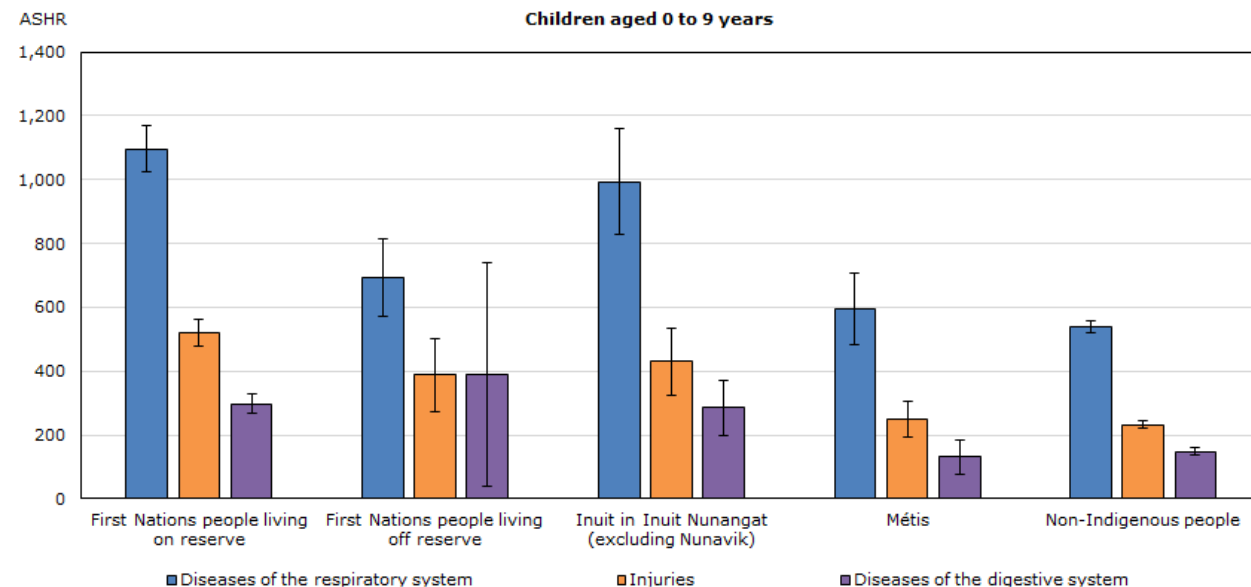
Note: ASHR = age-standardized hospitalization rate.
Source: Statistics Canada, 2011 Canadian Census Health and Environment Cohort.
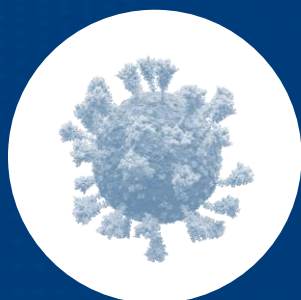
SPOTLIGHT: COVID-19

Data on the health, social, economic, and other impacts of the pandemic

Health: Canadian COVID-19 Antibody and Health Survey (CCAHS; two cycles)

CCAHS data: questionnaires, blood and saliva samples, follow-up questionnaire

Other health surveys cover COVID-19 in relation to mental health, children and youth, and more

Insights: Antibodies and symptoms

Between April and August 2022, nearly all Canadian adults (98.1%) had antibodies against SARS-CoV-2

These antibodies were acquired through either vaccination, a previous infection, or both

16% of Canadian adults who had or thought they had COVID-19 still experienced symptoms three or more months after infection

➤ This concerns 1.3 million Canadians or 4.1% of the adult population

An additional group of 394,000 Canadians who never tested positive or suspected an infection but had antibodies from a past infection indicated experiencing new unexplained symptoms

Source: Canadian COVID-19 Antibody and Health Survey, Cycle 2

SPOTLIGHT: CHILDREN AND YOUTH

Physical and mental health of children and youth

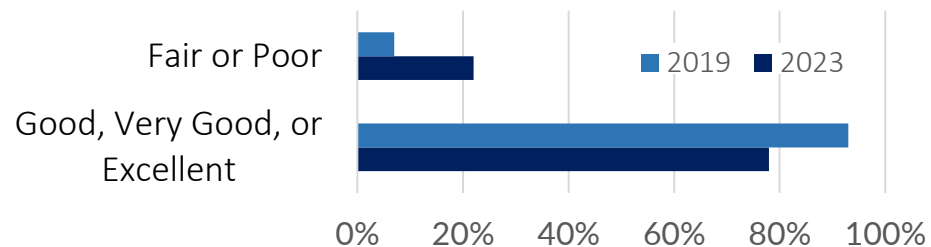Sample: ages 1-17, provinces and territories

Cycles: 2019 and annually from 2023

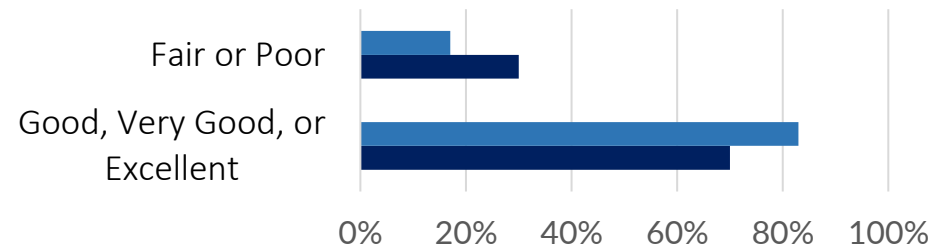2023 cycle included a regular survey (no territories sampled) and a longitudinal part

2023 longitudinal sample: follow-up to 2019 respondents, now aged 5-21

Insights: Youth-reported mental health

16 to 18 years old in 2023 (12-14 in 2019)

19 to 21 years old in 2023 (15-17 in 2019)

Source: Canadian Health Survey on Children and Youth, 2019 and 2023

Thank you!

For more information, visit
statcan.gc.ca/en/subjects-start/health

If you have any questions, contact
infostats@statcan.gc.ca