British Columbia Data Sources

Table of Contents

Introduction **2**

Overview of BC data sources **3**

Health System Matrix *3*

BC Chronic Disease Registry *4*

Perinatal Services BC *4*

Population Grouper *5*

Miscellaneous Indicators *5*

Education *5*

Summary of BC Data Sources **5**

INTRODUCTION

This document describes health and education data sources for SGIGs in BC. The data sources were identified based on their applicability to early childhood development (ECD) as part of the Early Childhood Development Case Study; however, they contain data on a broad range of health and education areas.

The main sources of data examined in the Early Childhood Development Case Study that are common across Canadian jurisdictions include:

- ***First Nations surveys:*** Children are a focus in a number of Indigenous-led surveys, resulting in a broad range of indicators and available data across health and social domains. Initially, a combined First Nations and Inuit-controlled health survey was carried out across the provinces in 1997. Subsequently, the First Nations Regional Health Survey (RHS) was designed by the First Nations information Governance Centre (FNIGC), and to date has been implemented three times (Phases 1 through 3) at five-year intervals. The main themes are: language; culture; injury; health and health care access; immunization; dental care; breastfeeding; food and nutrition; physical activity; education; personal wellness; household and living environment; child care arrangements; and, residential schools.

  FNIGC has also designed and administered First Nations Regional Early Childhood, Education and Employment (FNREEES) and First Nations Labour and Economic Development (FNLED) surveys across the provinces, and have a selection of indicators and data which may be relevant to ECD. There is overlap with some of the survey questions between these surveys and RHS (for example, the FNREES includes indicators on cultural programs, Aboriginal Head Start, health conditions, and alcohol consumption during pregnancy). To date, these surveys have each had one cycle of data collection.

- ***Hospitalization data:*** In Canada, hospitalization data is sent by provincial and territorial governments to the Canadian Institute for Health Information (CIHI), and is returned to each in a standard format in a database referred to as the Discharge Abstract Database (DAD). Therefore, similar hospital indicators are achievable across all jurisdictions, whether or not they are consistently reported.

- ***Physician fee-for-service (FFS) data:*** FFS is the dominant method of reimbursing physicians in Canada. Physician fee codes are largely similar in the provinces and territories, meaning that the same indicators are possible across jurisdictions. Note: these physician databases do not include physician services that are provided through non-FFS mechanisms (salaries, contracts), unless the jurisdiction has a process of accepting physician 'shadow billing'. Shadow billing is when a physician sends in fee codes for their services even though they are being reimbursed through other non-FFS mechanisms.

- ***Specialty provincial and territorial databases:*** There are some health sectors, such as perinatal care, where data is pulled into a common dataset from diverse areas including hospital and physician services. Other customized aggregations are the Health System Matrix (HSM) in BC, a population-based compilation of health service utilization data, and a relatively new database, the Population Grouper (PG), which is a database tool available from CIHI and provided to all provinces and territories. It summarizes all health conditions identified from inpatient, day surgery, emergency

department, continuing care, home care and physician claim administrative data into individual patient clinical profiles, and is useful in providing a macro level view of population health trends.

- ***Non-Insured Health Benefits (NIHB):*** This federally funded and administered program covers pharmacy, dental, vision, mental health and transportation benefits which are provided to eligible First Nations and Inuit. The administration of these benefits has been devolved to the First Nations Health Authority (FNHA) in BC.
- ***Canadian Chronic Disease Surveillance System:*** Incidence rates, prevalence rates and all-cause mortality are monitored nationally for approximately 30 chronic health conditions, clinical events and interventions.
- ***Education:*** The attendance of First Nation children in kindergarten and/or Aboriginal Head Start may be reported in the First Nations surveys mentioned above. Other education data sources found in the ministries of education or affiliated organizations in BC include:
    - Foundational skill assessment: students in Grades 3 or 4: reading, writing, numeracy (evaluated as not meeting, meeting, exceeding).
    - Early Development Index (EDI): This evaluation of kindergarten students measures five core areas of early child development that are known to be good predictors of adult health, education, and social outcomes.

OVERVIEW OF BC DATA SOURCES

In BC, all provincial health administrative databases are available for data linkage with the First Nations Client File (FNCF), a database containing demographic information and personal health numbers of First Nations residents in the province. The data-linkage process uses a deterministic linkage of datasets with the FNCF to identify records of individuals who are First Nations with status (i.e., included in the Indian Register). It does not capture individuals who are non-status First Nations.

Although the First Nations Health Authority (FNHA) is a partner in all these data linkages, the row level data does not reside within the organization due to the limits of existing privacy legislation. FNHA is either a recipient of aggregate data from these data linkages or has negotiated secondment agreements with the government departments holding the data linkages so as to access data at the row level. This latter arrangement provides the most flexibility in analyzing and interpreting First Nations data.

The databases which have undergone data linkages and where data is accessible through the FNHA, and which are of the most interest from an early childhood development perspective are:

- Health System Matrix (HSM)
- Perinatal Services BC (PSBC)
- Discharge Abstract Database (DAD), selected indicators.

Health System Matrix

The HSM is a repository of basic health system utilization information on First Nations drawn from physician and hospital databases. It summarizes how people use provincial health services every year by major

theme/category. The HSM divides the BC population into population segments according to their utilization of available sources of health services. It includes approximately 70 per cent of all provincial health expenditures for individuals who have chosen/been able to access health services.

The HSM includes three main presentations of data: service lines, population segments, and chronic diseases which are detailed below.

Data variables include: users of health services, encounters (visits), attachment to primary care practitioners, expenditures, hospital cases, days of hospital care. These variables are presented through service lines by five-year age groups, geography, and fiscal year.

The HSM includes 14 population segments, extending from non-users of services to the highest severity of disease (end of life). This grouping is exclusive – an individual may be in only one population segment, which is the one which represents their highest acuity of disease during the year. The assignment into groups is primarily based on utilization of hospital and physician services.

Population segments which are most applicable to the child population include:

- Non-user
- Healthy
- Child and Youth Major Conditions
- Maternity and Healthy Newborns

BC Chronic Disease Registry

Chronic conditions in BC are monitored through the Chronic Disease Registry, which is a combination of 28 conditions, events, and interventions associated with chronic disease. This data is provided in association with the HSM and allows service utilization and costs to be analyzed for individual health conditions. Inclusion of an individual in the registry is based on a history of physician and/or hospital visits associated with a chronic condition, event or intervention. Data is available on both prevalence and incidence, noting that for incidence (i.e., the number of persons newly diagnosed each year), the numbers in the First Nations population are often too small for reporting. Small numbers typically exhibit a large amount of variability from year to year and may be considered less reliable.

Perinatal Services BC

PSBC collects and analyzes data on delivery, postpartum transfer/readmission, newborn, and newborn transfer/readmission records submitted to PSBC's British Columbia Perinatal Data Registry. The registry captures >99 per cent of deliveries and births that occur in the province. Records used to generate this report meet the following conditions:

- Mother delivery and baby newborn records are linked. Unlinked mother delivery or newborn records are excluded (<0.2 per cent of babies are not linked to a mother)
- Complete late terminations are excluded from all indicators except the crude stillbirth rate; pregnancies involving selective fetal reduction are retained.

Population Grouper

This database includes 227 clinical conditions which allow investigations into various conditions, groupings of conditions, as well as comparative burden of disease analyses across acute and chronic disease.

Miscellaneous Indicators

FNHA, in addition to the HSM, PSBC, and PG linkages, requests additional data linkages from the DAD for selected health indicators. Other data is intermittently analyzed by FNHA in association with the Office of the Provincial Health Officer. This source includes infant mortality and youth suicide.

Education

In BC, foundational assessment data on children in grades 3 and 4 and high school completion data for First Nations are available from the Ministry of Education. The Human Early Learning Partnership at the University of British Columbia provides EDI evaluation services, with Indigenous data available by school district.

SUMMARY OF BC DATA SOURCES

Table 1 provides a summary of the holdings discussed above, their strengths and limitations, as well as data stewardship and data access considerations.

TABLE 1: OVERVIEW OF BC DATABASES WITH FIRST NATIONS ECD HEALTH & EDUCATION DATA.

Data set	Method & Population	Strengths	Limitations	Data steward & data access considerations
Health System Matrix/Chronic Disease Registry and DAD Indicators	• Provides health service utilization and health status data • Data match with the FNCF	• High reliability • Provincial and sub-regional analysis • Allows gap assessment with other resident population	• Rates only provided • Cell suppression underlying rates is <10 • Community-specific data is not available as data is based on BC government health system boundaries • Data is often not timely	• FNHA is the data steward
Perinatal Services BC	• Data match with the FNCF	• High reliability • Provincial and sub-regional analysis • Allows gap assessment with other resident population	• Rates only provided • Cell suppression underlying rates is <10 • Community-specific data is not available as data is based on BC government health system boundaries • Data is often not timely	• FNHA is the data steward
Population Grouper	• Summarizes 227 health conditions identified from inpatient, day surgery, emergency department, continuing care, home • Data match with the FNCF	• High reliability • Provincial and sub-regional analysis • Allows gap assessment with other resident population	• Rates only provided • Cell suppression underlying rates is <10 • Community-specific data is not available as data is based on BC government health system boundaries • Data is often not timely	• FNHA is the data steward
Ministry of Education	• Foundational skills assessment within schools • Graduation rates (provincial graduation requirements/dogwood diploma)	• High reliability • Data available at SGIG level • First Nations students are identifiable in education data sets	• Cell size suppression at <10. Due to small numbers of students in SGIG schools, data is often masked	• No First Nations data steward • Data request goes through a government access to information request process

Early Development Index (EDI)	• Five domains for kindergarten assessment: physical health and wellbeing, language and cognitive development, social competence, communication skills and general knowledge, and emotional maturity	• First Nations data are available by SGIG • BC review of EDI showed no implementation bias of the EDI to either Indigenous or non-Indigenous results	• Cell size suppression • Data interpretation is complex, small numbers of vulnerable children are expected, leading to potential for variability in results from year to year; • Data privacy/security is paramount – cell size suppression policy • Training of teachers is recommended to counteract against potential biases in the assessment of children	• Aboriginal Steering Committee at Human Early Learning Partnership (HELP), UBC is the data steward of Indigenous data.
Health Benefits Program: dental care, pharmacy use, vision care and mental health	• Administrative data covering clients, claims and expenditures	• High reliability • Longitudinal data • Comprehensive, reliable • Timely analysis available • Can provide First Nations community specific analyses	• Excludes First Nations individuals not enrolled in the Program (e.g., choose third party health insurance from employers)	• FNHA is the data steward
RHS (Regional Health Survey) **FNREEES (First Nations Regional Early Childhood, Education, and Employment Survey)** **FNLED (First Nations Labour and Employment Development Survey)**	• Survey with randomly selected participants • Subset of First Nations with status living in community • On-reserve • Wide range of health, social determinants, traditional/cultural, economic, education and employment indicators	• Strengths-based focus • Community-specific information available for participating Nations • Some (quasi) longitudinal information available • Higher local / regional reliability from most recent round of RHS	• Survey based, therefore not complete coverage of population • Not all communities selected / opted to participate in surveys • Excludes First Nations living outside of communities • Low data reliability at more local levels, particularly for FNREEES and FNLED • Issues with access due to small cell size suppression for certain	• FNHA is the data steward

			data points and/or geographies of interest • Limited opportunities to compare to non-First Nations population • RHS only survey with longitudinal data: comparability issues (in different sampling approaches)	