

Saskatchewan Equity Study Supplement 1



Table 1. Complete data source list, definition, inclusion/exclusion criteria, and limitations.

	Data Source	Definition	Inclusion/Exclusion	Limitations
Mortality data	Saskatchewan Ministry of Health's Vital Statistics Branch	Deaths are those that occur to SHR residents using data from 1991-2006 from Saskatchewan Vital Statistics, Alberta Vital Statistics, and CIHI hospital separations for deaths occurring in all other provinces. ICD-9 codes are used for all deaths before calendar year 2000 and after this date ICD-10 codes are used	Includes those persons with Saskatchewan recorded as their province of residence.	Conversion between ICD-9 and ICD-10 codes can be problematic for certain disease conditions because the codes are not comparable. Vital Statistics data is based on the underlying cause of death, which is limited to one diagnosis, unless there is an injury, then there is a separate code for the external cause. Readers should note that there may be more than one contributing cause of death, but that only the most responsible cause is used.
Birth data	Saskatchewan Ministry of Health's Vital Statistics Branch	Births occurring to SHR residents from 1991 to 2006 using data from Saskatchewan Vital Statistics, Alberta Vital Statistics, and CIHI hospital separations for births occurring in all other provinces.	Includes only those mothers who have put Saskatchewan as their province of residence	See Mortality data



Hospital Discharge (Hospitalization) data

Saskatchewan Ministry of Health's year-end hospital files.

Data include all acute care inpatient and psychiatric inpatient hospitalizations. This data is based on total number of hospital discharges, irrespective of how many times the same individual is discharged. For example, one person could present five times in a fiscal year for a mental disorder, and it would be counted as five discharges. As well, a resident may be admitted to one hospital, and be transferred to another hospital which would count as two discharges, even though the individual was hospitalized for the same event.

ICD-9 codes are used for all hospital separations prior to 2000/01 fiscal year, and ICD-10 are used after this date. Some 2001-02 data and 1997-98 to 2003-04 are based on converted codes (to ICD-9 to ICD-10-CA). Differences between data coded in ICD-10 and ICD-9 occur for several reasons. The conversion tables are not perfect due to differences in the structure of the two coding systems.

All acute care inpatient and psychiatric inpatient hospitalizations of SHR residents in Saskatchewan and out-of-province/country hospitals.

Physician Billing data

Saskatchewan Ministry of Health's Medical Services Branch.

Data include diagnosis codes that physicians use when patients come to see them. Diagnosis is in ICD-9 format for all years.

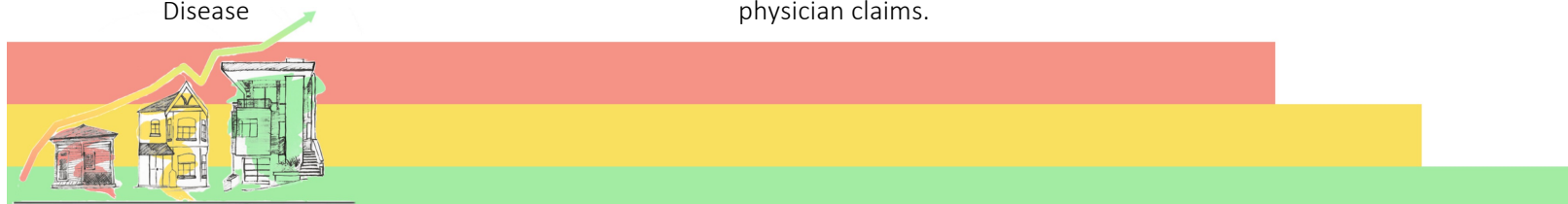
Only one diagnosis code is captured, and is of questionable data quality

Data is not captured for services by salaried physicians (approx. 30% of provincial physician supply).



Table 2. Health outcome indicators from Saskatchewan Health

Indicator	ICD-9	ICD-10	Definition details	Database	Years abstracted	Notes
All cause mortality	NA	NA	Deaths by all causes, all ages.	Death master file and person registry system	2001-2009	Undetermined problems with death file after 2009 made extraction of 2009-2012 death data impossible.
Asthma	493	J45, J46	One or more hospital discharge or two or more physician claims within two years.	Hospital & Physician	2001-2012	The Canadian Chronic Disease Surveillance System also uses ICD codes. Ambulatory Case Sensitive Condition (ACSC)**
Coronary Artery Disease (CAD)	410, 411, 412, 413, 414	I20, I21, I22, I23, I24, I25 CCP codes for PCI & CABG: 4802, 4803, 4809, 481 CCI codes for PCI & CABG: 1IJ50, 1IJ57GQ, 1IJ76	One or more hospital discharge or one and more hospital discharge with PCI or CABG intervention code in any field or two or more physician claims within one year. Exclusion: people under age 20.	Hospital & Physician	2001-2012	Based on HQC definition. Jack Tu, a clinical and research expert in CAD was consulted. See reference provided on researcher documentation. Ambulatory Case Sensitive Condition (ACSC)**
Congestive Heart Failure (CHF)	428	I500, I501, I509, I130, I132	One or more hospital discharge or one or more physician claims.	Hospital & Physician	2001-2012	Based on Health Quality Council definition. Ambulatory Case Sensitive Condition (ACSC)**
Chronic Obstructive Pulmonary Disease	491, 492, 496	J41, J42, J43, J44	One or more hospital discharge or one or more physician claims.	Hospital & Physician	2001-2012	The Canadian Chronic Disease Surveillance System also uses ICD codes – Ambulatory Case Sensitive Condition (ACSC)**



(COPD)			Exclusion: people under age 35.			
Diabetes	250 Gestational: 641-676, V27	E10, E11, E12, E14 Gestational: O1, O21-O95, O99, Z37	One or more hospital discharge or two or more physician claims with a diabetes diagnosis within two years. Exclusion: women aged 10 to 54 hospitalized for diabetes 120 days before or 180 days after a gestational event. Also, people under age 1.	Hospital & Physician	2001-2012	The Canadian Chronic Disease Surveillance System also uses ICD codes. Ambulatory Case Sensitive Condition (ACSC)**
Injury	E800–E807, E810–E838, E840–E848, E880–E888, E890–E902, E906–E910, E913–E928, E953–E958, E960–E961, E963–E968, E970–E976, E978, E983– E988, E990– E998	V01–V06, V09–V99; W00–W46, W49–W60, W64–W70, W73–W81, W83–W99; X00–X06, X08–X54, X57–59; Y85, Y86	Number of hospital admissions within one year resulting in a diagnosis of injury.	Hospitalization	2002-2012 with ~10,000 incident cases each year. 2001, due to ICD implementation changes, had significantly lower at ~6000.	Based on Canadian Institute for Health Information definition of unintentional injury. Does not include injury of undetermined intent or intentional injury.
Mood	296, 300, 311	F3, F40, F41, F42, F43, F44, F45, F46, F47,	One or more hospital discharge or one or more physician claims.	Hospital & Physician	2001-2012. Only incidence calculated	The Canadian Chronic Disease Surveillance System also uses ICD codes. Ambulatory Case Sensitive Condition (ACSC)**



Mental Disorders	<p>Depression: 296, 300.4, 309, 311</p> <p>Anxiety: 300.0, 300.2, 300.3</p> <p>Substance abuse: 291, 292, 303, 304, 305</p> <p>Personality Disorder: 301</p> <p>Schizophrenia: 295</p>	<p>F48, F68</p> <p>Depression: F31, F32, F33, F38.0, F38.1, F43.1, F43.2, F43.8, F53.0, F93.0, F34.1, F40, F41, F42, F44, F45.0, F451, F452, F48, F68.0, F99</p> <p>Anxiety: F40, F41.0, F41.1, F41.3, F41.8, F41.9, F42</p> <p>Substance Abuse: F10–F19, F55</p> <p>Personality Disorder: F20, F21, F23.2, F25</p>	Classified as Mental Disorder including depression, anxiety, substance abuse, personality disorders, or schizophrenia, Age at least 10 years	Hospital & Physician	2001-2013	Based on Health Quality Council definition.
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**Ambulatory care sensitive conditions (ACSC) are indicators of problems with access to primary care. These conditions show an association between risk of hospitalization and lack of ambulatory or primary care. (Statistics Canada. Hospitalizations for Ambulatory Care Sensitive Conditions (ACSC): The factors that matter. <http://www.statcan.gc.ca/pub/82-622-x/82-622-x2011007-eng.pdf>. Published 2011. Accessed February 22, 2016.)

