Technical Definitions of Indicators and Drug Codes

Indicators Using Administrative Data

Premature Mortality
- **Overview:** The number of deaths per 1,000 residents (ages 0-74) per year. Average annual rates calculated for 2012-2016

- **Data Years:**
  - 2012-2016 Population Registry
  - 2016 First Nations Research File
  - 2012-2016 Deaths in Manitoba Heath Information Registry

- **Inclusion**: Manitoba Residents age 0-74

Ambulatory Specialist Visits
- **Overview:** The average number of visits to specialists (physicians only) per resident in a given year

- **Data Years:**
  - 2016 Population File
  - 2016 First Nations Research File
  - 2016/17 Medical Services Data

- **Inclusion Criteria:**
  - All Manitoba residents (all ages) as of December 31. 2016
  - Outpatient contacts with the following specialist physicians (based on MDBLOC values):
    - '12' = '12 Physical Medicine & Rehab'
    - '129' = '129 Physical Medicine - OOP'
    - '130' = '130 Internal Medicine - Career Medical Scientist'
    - '131' = '131 Internal Medicine - Endocrinology'
    - '132' = '132 Internal Medicine - Haematology'
    - '133' = '133 Internal Medicine - Infectious Disease'
    - '134' = '134 Internal Medicine - Respiratory'
    - '141' = '141 Surgery - Vascular'
    - '142' = '142 Surgery - Thoracic'
    - '143' = '143 Surgery - Paediatric General'

- '15' = '15 Oncology'
- '150' = '150 Oncology - Medical'
- '151' = '151 Oncology - Gynaecological'
- '152' = '152 Oncology - Urological'
- '153' = '153 Oncology - Paediatric'
- '154' = '154 Oncology - Community'
- '155' = '155 Oncology - ?'
- '156' = '156 Oncology - ?'
- '158' = '158 Oncology - Radiology'

- **Exclusion Criteria:**
  - Visits to primary care providers, pathologists and radiologists

Ambulatory Visits to Primary Care
- **Overview:** The average number of visits to primary care providers (family physicians, nurse practitioners) per resident in a given year

- **Data Years:**
  - 2016 Population File
  - 2016 First Nations Research File
  - 2016/17 Medical Services Data

- **Inclusion Criteria:**
  - All Manitoba residents (all ages) as of December 31. 2016
  - Visits to primary care providers (based on MDBLOC values):
    - '11' = '11 General Practice'
    - '111' = '111 General Practice - Metro Winnipeg/Brandon'
    - '112' = '112 General Practice - Rural'
    - '200' = '200 Primary Care Nurse'

Benzodiazepine Use by Community-Dwelling Seniors 75+
- **Overview:** Proportion of Community-Dwelling Seniors (75+) with Benzodiazepine Rx (2+ prescriptions for benzodiazepines or 1 prescription with >30 day supply in one year).

- **Data Years:**
  - 2015 and 2016 Population files
  - 2016 First Nations research file
  - 2015/16-2016/17 Drug Program Information Network Data
  - 2015/16-2016/2017 Long Term Care Data

- **Inclusion Criteria:**
  - All Manitoba residents 75+ in 2015/2016
  - Prescriptions for benzodiazepines are identified by ATC codes NO5BA, NO5CD, NO5CF, NO3AE01 (clonazepam).

- **Exclusion Criteria:**
  - PCH Residents at any time in 2015/16-2016/17
  - PCH with hospital based pharmacies

Breast Cancer Incidence

- **Overview:** Percentage of women aged 18+ with a new cancer diagnosis of invasive breast cancer in 2005-2015

- **Data Years:**
  - 2005-2015 Population files
  - 2016 First Nations Research File
  - 2005-2015 Manitoba Cancer Registry

- **Inclusions**: Manitoba women aged 18+
  - Cancer: Breast ICD-O-3 codes C500-C509

Breast Cancer Screening (Mammography)

- **Overview:** Percentage of women aged 50-74 who received at least one mammogram in a 2-year period in Manitoba.

- **Data Years:**
  - 2015 Population File
  - 2016 First Nations Research File
  - 2014-2015 Medical Services Data
  - 2014-2015 Breast Screening Program data
  - Manitoba Cancer Registry

- **Inclusion:**
  - Manitoba women aged 50-74 by end of 2014,2015
  - Provider Tariffs: 7098,7099,7104 (at least one in 2 years)
  - Program Screening data: at least one mammogram in 2 years

- **Exclusion**:
  - Women with a previous diagnosis of breast cancer

Cancer Incidence
- **Overview:** Percentage of Manitoba residents aged 18+ with any new invasive cancer diagnosis during 2005-2015

- **Data Years:**
    - 2005-2015 Population files
    - 2016 First Nations Research File
    - 2005-2015 Manitoba Cancer Registry

- **Inclusions**:
    - Manitoba Residents aged 18+
    - Invasive cancer only

Cancer Incidence by Site (Top 10 Cancers)
- **Overview:** Percent of incident invasive cancers by site for 2005-2015

- **Data Years:**
    - 2005-2015 Population files
    - 2016 First Nations Research File
    - 2005-2015 Manitoba Cancer Registry

- **Inclusions**:
    - Manitoba Residents aged 18+
    - Invasive cancer only

Cause of Death
- **Overview:** The most frequent causes of death for Manitoba residents from 2012-2016. Causes of death from Vital Statistics death records are grouped by ICD-10 chapter

- **Data Years:**
    - 2012-2016 Vital Statistics Mortality Table
    - 2016 First Nations Research File

- **Inclusion**:
    - Causes of death are reported for Premature Mortality and Total Mortality. Missing and suppressed CODs are included in 'All Others'
    - Manitoba Residents all ages

Cervical Cancer Incidence
- **Overview:** Percentage of women aged 18+ with a new invasive cervical cancer diagnosis during 2005-2015

- **Data Years:**
  - 2005-2015 Population files
  - 2016 First Nations Research File
  - 2005-2015 Manitoba Cancer Registry

- **Inclusions**: Manitoba women aged 18+
  - Cancer: Cervix Uteri ICD10 codes: C53

Cervical Cancer Screening (Pap)

- **Overview:** Percentage of women aged 21-69 who received at least one Pap test in a 3-year period in Manitoba.

- **Data Years:**
  - 2015 Population File
  - 2016 First Nations Research File
  - 2013-2015 Medical Services Data
  - 2013-2015 Cervical Screening Program data
  - Manitoba Cancer Registry

- **Inclusion:**
  - Manitoba women aged 21-69 by end of 2014,2015
  - Provider Tariffs: (at least one in 3 years)
  - 8470 - GP - Regional Gynecological Exam - Including Cytological Smear - Cervix
  - 8495 - OBS/GYN - Complete Physical and Gynecological Exam - Including Cytological Smear - Cervix
  - 8496 - OBS/GYN   Visit - Regional Gynecological Exam - Including Cytological Smear - Cervix
  - 8498 - GP - Complete Physical and Gynecological Exam - Including Cytological Smear - Cervix
  - 9470 - Cytological Examination - Vaginal Smear (lab tariff prefix=8)
  - 9795 - Cytological Smear of the Cervix for Cancer Screening

  Note that if a lab tariff and provider claim are within 54 days of each other, they are counted as one Pap test to reduce double counting over 3 year periods.

  Program Screening data: at least one pap test in 3 years

- **Exclusions:**
  - Women with a previous diagnosis of cervical cancer
  - Women who had a hysterectomy prior to the study period

Colorectal Cancer Incidence

- **Overview:** Percentage of Manitoba residents aged 18+ with a new invasive colorectal cancer diagnosis during 2005-2015

- **Data Years:**
  - 2005-2015 Population files
  - 2016 First Nations Research File
  - 2005-2015 Manitoba Cancer Registry

- **Inclusions**:
  - Manitoba Residents aged 18+
  - Cancer: Colon Excluding Rectum
    - Rectum and Rectosigmoid ICD-O-3 codes C180-C189, C199, C209, C260

Colorectal Cancer Screening (FOBT)

- **Overview:** Percentage of Manitoba Residents age 50-74 who had at least one FOBT in a 2 year period

- **Data Years:**
  - 2015 Population File
  - 2016 First Nations Research File
  - 2014-2015 Medical Services Data
  - 2014-2015 Colorectal Screening Program data
  - Manitoba Cancer Registry

- **Inclusion:**
  - Manitoba residents aged 50-74 by end of 2014,2015
  - Provider Tariffs: 9374
  - Program Screening data: at least one FOBT in 2 years

- **Exclusions**:
  - People with a history of colorectal cancer
  - FOBT done in hospital
  - GI complaints within past 6 months
  - Colonoscopy, barium enema or Flexible Sigmoidoscopy within past 6 months
  - Any combo of CS, BE or FS on same day as FOBT except FOBT+FS
  - Multiple FOBTs within the past year

Continuity of Care Index

- **Overview:** The Continuity of Care Index (COCI) is an indicator that weighs both the frequency of ambulatory visits to primary care provider (mdbloc=11, 200) and the dispersion of ambulatory visits between family physicians and nurse practitioners. The possible index values range from just greater than zero (where visits are made to different providers) to one (all visits made to the same provider)

- **Data Years:**
  - 2016 Population File
  - 2016 First Nations Research File
  - 2014/15-2016/17 Medical Services Data

- **Inclusions:** Manitoba Residents (all ages) who have had at least 3 visits in 3 years to a primary care provider (mdbloc = 11,200)

Early Detection for Breast Cancer

- **Overview:** Percentage of women aged 18+ with a new invasive breast cancer diagnosis during 2005-2015

- **Data Years:**
  - 2005-2015 Population files
  - 2016 First Nations Research File
  - 2005-2015 Cancer Care Manitoba Registry

- **Inclusions**: Manitoba women aged 18+
  - Cancer: Breast ICD-O-3 codes C500-C509
    - Early Stage: Stage 1[1]
    - Late Stage: Stages 2-4

Early Detection for Cervical Cancer

- **Overview:** Percentage of women aged 18+ with a new invasive cervical cancer diagnosis during 2005-2015

- **Data Years:**
  - 2005-2015 Population files
  - 2016 First Nations Research File
  - 2005-2015 Cancer Care Manitoba Registry

- **Inclusions**: Manitoba women aged 18+

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[1] Early stage can also be defined as including both stage 1 and stage 2 cancers, as is reported by CancerCare Manitoba. Additional results for early-stage cancer diagnosis that include stages 1-2 are available in the online supplement for Chapter 6: Cancer.

- o Cancer: Cervix Uteri ICD10 codes: C53
  - Early Stage: Stage 1[2]
  - Late Stage: Stages 2-4

Early Detection for Colorectal Cancer

- **Overview:** Percentage of Manitoba residents aged 18+ with a new invasive colorectal cancer diagnosis during 2005-2015

- **Data Years:**
  - o 2005-2015 Population files
  - o 2016 First Nations Research File
  - o 2005-2015 Cancer Care Manitoba Registry

- **Inclusions**:
  - o Manitoba residents 18+ diagnosed with colorectal cancer
  - o Cancer: Colon Excluding Rectum
    - Rectum and Rectosigmoid ICD-O-3 codes C180-C189, C199, C209, C260
    - Early Stage: Stage 1[2]
    - Late Stage: Stages 2-4

Hospital Days

- **Overview:** The number of inpatient hospital days per 1,000 residents per year (2016/17)

- **Data Years:**
  - o 2016 Population Registry
  - o 2016 First Nations Research File
  - o 2016/17 Hospital Abstracts

- **Inclusion**:
  - o Manitoba residents all ages
  - o Out-of-province hospitals included
  - o Only inpatient included (transact 1)

- **Exclusions**:
  - o Newborn separations
  - o Nursing Stations, Personal Care Homes and Long-term Care facilities are excluded.

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[2] Early stage can also be defined as including both stage 1 and stage 2 cancers, as is reported by CancerCare Manitoba. Additional results for early-stage cancer diagnosis that include stages 1-2 are available in the online supplement for Chapter 6: Cancer.

Hospital Days for Mental Health Conditions

- **Overview:** The number of inpatient hospital days for mental health conditions per 1,000 residents per year (2016/17)

- **Data Years:**
  - 2016 Population Registry
  - 2016 First Nations Research File
  - 2016/17 Hospital Abstracts

- **Inclusion**:
  - Manitoba residents all ages
  - Out-of-province hospitals included
  - Only inpatient included (transact 1)
  - Transfers within the same hospitalization are not counted as separate events
  - ICD10: F00-F99 - most responsible diagnosis used

- **Exclusions**:
  - Newborn separations
  - Nursing Stations, Personal Care Homes and Long-term Care facilities are excluded.

Hospital Episodes

- **Overview:** The number of inpatient hospital episodes per 1,000 residents per year (2016/17)

- **Data Years:**
  - 2016 Population Registry
  - 2016 First Nations Research File
  - 2016/17 Hospital Abstracts

- **Inclusion**:
  - Manitoba residents all ages
  - Out-of-province hospitals included
  - Only inpatient included (transact 1)
  - Transfers within the same hospitalization are not counted as separate events

- **Exclusions**:
  - Newborn separations
  - Nursing Stations, Personal Care Homes and Long-term Care facilities are excluded.

Hospital Location

- **Overview:** the percent of all hospitalizations of Manitoba residents that occurred in a hospital:
    - Within their home RHA
    - Another RHA
    - In Winnipeg
    - Out-of-province

    If a patient is transferred between hospitals, each stay is counted as a separate event and is attributed to appropriate location

- **Data Years:**
    - 2016 Population File
    - 20116 First Nations Research File
    - 2016/17 Hospital Abstracts

- **Inclusion**: Manitoba residents all ages
    - Out-of-province hospitals included
    - Only inpatient and day surgery are included (transact 1 and transact 3)

- **Exclusions**:
    - Newborn separations (abstract type = 4)
    - Nursing Stations, Personal Care Homes and Long-term Care facilities are excluded.
    - Public Trustees are excluded because their location residence is unknown

Hospital Location Days

- **Overview:** the percent of all hospital days of Manitoba residents that occurred in a hospital:
    - Within their home RHA
    - Another RHA
    - In Winnipeg
    - Out-of-province

    If a patient is transferred between hospitals, each stay is counted as a separate event and is attributed to appropriate location

- **Data Years:**
    - 2016 Population File
    - 20116 First Nations Research File
    - 2016/17 Hospital Abstracts

- **Inclusion**:

- o Manitoba residents all ages
- o Out-of-province hospitals included
- o Only inpatient and day surgery are included (transact 1 and transact 3)

- **Exclusions**:
  - o Newborn separations (abstract type = 4)
  - o Nursing Stations, Personal Care Homes and Long-term Care facilities are excluded.
  - o Public Trustees are excluded because their location residence is unknown

Hospital Readmission

- **Overview:**
  - o An unplanned, inpatient readmission to an acute care facility within 30 days of discharge from the index hospital episode
  - o Hospital episodes, rather than population, used as the denominator
  - o Urgent/Emergent Hospital Separations are the numerator
  - o Urgent/Emergent Hospital Separations per 1,000 hospital inpatient episodes
  - o Readmission within 24 hours of index episode discharge end considered part of index episode and not counted as a readmission

- **Data Years:**
  - o 2016 Population File
  - o 20116 First Nations Research File
  - o 2016/2017 Hospital Abstracts

- **Inclusion Criteria:**
  - o Any inpatient hospital episodes (transact = 1)
  - o Minimum Length of stay > 0 days
  - o All Manitoba hospitals were included
  - o Manitoba Residents all ages

- **Exclusion Criteria:**
  - o Out of province hospitalizations
  - o Nursing Stations, Personal Care Homes and Long-term Care facilities are excluded

Hospitalization for Ambulatory Care Sensitive (ACS) Conditions

- **Overview:**
  - o Rate per 1,000 residents (ages 0-75)
  - o Hospital separations are counted, not episodes

- **Data Years:**
  - 2016 Population File
  - 20116 First Nations Research File
  - 2016/17 Hospital Abstracts

- **Inclusion Criteria:**
  - All Manitoba hospitals included.
  - Transaction code = 1 (i.e. Minimum Length of stay > 0 days)
  - Newborn separations
  - ACS condition (defined below)

- **Exclusion Criteria:**
  - Deaths in hospital (separation codes '1' and '4')
  - Personal Care Homes and Long-term Care facilities
  - Out of province hospitalizations
  - Individuals age 75 and older

- **ACS Conditions:**
  - **Congenital Syphilis**: ICD–9–CM code 090, ICD–10–CA code A50 (newborns only)
  - **Immunization–related and Preventable Conditions**: ICD–9–CM codes 033, 037, 045, 390, 391; ICD–10–CA codes A35, A37, A80, I00, I01 (also including hemophilus meningitis for children aged 1 to 5 only: ICD–9–CM code 320.0; ICD–10–CA code G00.0)
  - **Epilepsy**: ICD–9–CM code 345, ICD–10–CA codes G40, G41
  - **Convulsions**: ICD–9–CM code 780.3, ICD–10–CA code R56
  - **Severe ENT Infections**: ICD–9–CM codes 382, 462, 463, 465, 472.1; ICD–10–CA codes H66, J02, J03, J06, J312 (cases of otitis media: ICD–9–CM code 382, ICD–10–CA code H66, with a procedure code for myringotomy with insertion of tube are excluded: ICD–9–CM procedure code 20.01, CCI code 1.DF.53.JA–TS)
  - **Pulmonary Tuberculosis:** ICD–9–CM code 011; ICD–10–CA codes A15.0, A15.1, A15.2, A15.3, A15.7, A15.9, A16.0, A16.1, A16.2, A16.7, A16.9
  - **Other Tuberculosis**: ICD–9–CM codes 012–018; ICD–10–CA codes A15.4, A15.5, A15.6, A15.8, A16.3, A16.4, A16.5, A16.8, A17, A18, A19
  - **Chronic Obstructive Pulmonary Disease (COPD):** ICD–9–CM codes 491, 492, 494, 496; ICD–10–CA codes J41, J42, J43, J44, J47 (also included in 2005/06 are patients with a primary diagnosis of acute lower respiratory infection: ICD–10–CA codes J10.0, J11.0, J12–J16, J18, J21, J22; and a secondary diagnosis of COPD with acute lower respiratory infection: ICD–10–CA code J44)
  - **Acute Bronchitis** (only included if a secondary diagnosis of COPD is also present, diagnosis codes as above): ICD–9–CM code 466.0, ICD–10–CA code J20

- **Bacterial Pneumonia**: ICD–9–CM codes 481, 482.2, 482.3, 482.9, 483, 485, 486; ICD–10–CA codes J13, J14, J15.3, J15.4, J15.7, J15.9, J16, J18 (patients with a secondary diagnosis of sickle–cell anaemia: ICD–9–CM code 282.6; ICD–10–CA codes D57.0, D57.1, D57.2, D57.8 and patients less than two months of age are excluded)
- **Asthma**: ICD–9–CM code 493, ICD–10–CA code J45
- **Congestive Heart Failure**: ICD–9–CM codes 402.01, 402.11, 402.91, 428, 518.4; ICD–10–CA codes I50, J81 (patients with certain cardiac procedures coded are excluded: ICD–9–CM procedure codes 36.01, 36.02, 36.05, 36.1, 37.5, 37.7; CCI codes 1.HB.53, 1.HB.54, 1.HB.55, 1.HD.53, 1.HD.54, 1.HD.55, 1.HZ.53, 1.HZ.55, 1.HZ.85, 1.IJ.50, 1.IJ.57.GQ, 1.IJ.76)
- **Hypertension:** ICD–9–CM codes 401.0, 401.9, 402.00, 402.10, 402.90; ICD–10–CA codes I10.0, I10.1, I11 (patients with certain cardiac procedures coded are excluded, procedure codes as in CHF)
- **Angina**: ICD–9–CM codes 411.1, 411.8, 413; ICD–10–CA codes I20, I23.82, I24.0, I24.8, I24.9 (patients with any surgical procedure coded are excluded)
- **Cellulitis**: ICD–9–CM codes 681, 682, 683, 686; ICD–10–CA codes L03, L04, L08, L44.4, L88, L92.2, L98.0, L98.3 (patients with any surgical procedure coded are excluded, except for incisions of skin and subcutaneous tissue: ICD–9–CM procedure code 86.0; CCI codes 1.AX.53.LA–QK, 1.IS.53.HN–LF, I.IS.53.LA–LF, 1.JU.53.GP–LG, 1.KR.53.LA–LF, 1.OA.53.LA–QK, 1.SY.53.LA–QK, 1.YA.35.HA–W1, 1.YA.35.HA–X4, 1.YA.52.HA, 1.YA.52.LA, 1.YA.55.DA–TP, 1.YA.55.LA–TP, 1.YA.56.LA, 1.YB.52.HA, 1.YB.52.LA, 1.YB.55.DA–TP, 1.YB.55.LA–TP, 1.YB.56.LA, 1.YF.35.HA–W1,1.YF.35.HA–X4, 1.YF.52.HA, 1.YF.55.DA–TP, 1.YF.55.LA–TP, 1.YF.56.LA, 1.YG.52.HA, 1.YG.52.LA, 1.YG.55.DA–TP, 1.YG.55.LA–TP, 1.YG.56.LA, 1.YR.52.HA, 1.YR.52.LA, 1.YR.56.LA, 1.YS.35.HA–W1, 1.YS.35.HA–X4, 1.YS.52.HA, 1.YS.52.LA, 1.YS.55.DA.TP, 1.YS.55.LA–TP, 1.YS.56.LA, 1.YT.35.HA–W1, 1.YT.35.HA–X4, 1.YT.52.HA, 1.YT.52.LA, 1.YT.55.DA–TP, 1.YT.55.LA–TP, 1.YT.56.LA, 1.YU.52.HA, 1.YU.52.LA, 1.YU.55.DA–TP, 1.YU.55.LA–TP, 1.YU.56.LA, 1.YV.35.HA-W1, 1.YV.35.HA–X4, 1.YV.52.HA, 1.YV.52.LA, 1.YV.55.DA–TP, 1.YV.55.LA–TP, 1.YV.56.LA, 1.YW.52.HA, 1.YW.52.LA, 1.YW.55.DA–TP, 1.YW.55.LA–TP, 1.YW.56.LA, 1.YX.52.HA, 1.YX.52.HA–AV, 1.YX.52.LA, 1.YX.56.LA, 1.YZ.35.HA–W1, 1.YZ.35.HA–X4, 1.YZ.52.HA, 1.YZ.52.LA, 1.YZ.55.DA–TP, 1.YZ.55.LA–TP, 1.YZ.56.LA)
- **Diabetes:** ICD–9–CM codes 250.0, 250.1, 250.2, 250.3, 250.8, 250.9; ICD–10–CA codes E10.1, E10.6, E10.7, E10.9,
    - E11.0, E11.1, E11.6, E11.7, E11.9, E13.0, E13.1, E13.6, E13.7, E13.9, E14.0, E14.1, E14.6, E14.7, E14.9
- **Hypoglycemia**: ICD–9–CM code 251.2; ICD–10–CA codes E16.0, E16.1, E16.2

- **Gastroenteritis**: ICD–9–CM code 558.9; ICD–10–CA codes K52.2, K52.8, K52.9
- **Kidney/Urinary Infections**: ICD–9–CM codes 590, 599.0, 599.9; ICD–10–CA codes N10, N11, n12, N13.6, N15.1, N15.8, N15.9, N16.0–N16.5, N28.83–N28.85, N36.9, N39.0, N39.9
- **Dehydration/Volume Depletion**: ICD–9–CM code 276.5, ICD–10–CA code E86
- **Iron Deficiency Anemia**: ICD–9–CM codes 280.1, 280.8, 280.9; ICD–10–CA codes D50.1, D50.8, D50.9 (patients aged 0 to 5 only)
- **Nutritional Deficiencies**: ICD–9–CM codes 260, 261, 262, 268.0, 268.1; ICD–10–CA codes E40–E43, E55.0, E64.3
- **Failure to Thrive**: ICD–9–CM code 783.4, ICD–10–CA code R62 (patients less than one year of age only)
- **Pelvic Inflammatory Disease:** ICD–9–CM code 614; ICD–10–CA codes N70, N73, N99.4 (female patients only, patients with a hysterectomy procedure coded are excluded: ICD–9–CM procedure codes 68.3–68.8; CCI codes 1.RM.87, 1.RM.89, 1.RM.91, 5.CA.89.CK, 5.CA.89.DA, 5.CA.89.GB, 5.CA.89.WJ, 5.CA.89.WK)
- **Dental Conditions:** ICD–9–CM codes 521, 522, 523, 525, 528; ICD–10–CA codes K02–K06, K08, K09.8, K09.9, K12, K13.

Hospitalizations for Mental Health Conditions

- **Overview:** The number of inpatient hospital episodes for mental health conditions per 1,000 residents per year (2016/17)

- **Data Years:**
  - 2016 Population Registry
  - 2016 First Nations Research File
  - 2016/17 Hospital Abstracts

- **Inclusion**:
  - Manitoba residents all ages
  - Out-of-province hospitals included
  - Only inpatient included (transact 1)
  - Most responsible diagnosis only
  - Transfers within the same hospitalization are not counted as separate events
  - ICD10: F00-F99 - most responsible diagnosis used

- **Exclusions**:
  - Newborn separations
  - Nursing Stations, Personal Care Homes and Long-term Care facilities are excluded.

Hospitalizations for Suicide Attempts

- **Overview**: Rate of hospitalizations per 100,000 for suicide attempts in a 5-year period for Manitoba residents ages 10+

- **Data Years:**
  - 2012-2016 population file
  - 2016 First Nations Research File
  - 2012/13-2016/17 hospital abstracts

- **Definition**:
  - One or more hospitalizations with a diagnosis for self–inflicted injury or poisoning:
    - ICD-9-CM codes E950-E959
    - ICD–10–CA codes X60–X84;

    OR
  - One or more hospitalizations with a diagnosis code for poisoning of undetermined intent,
  - injury of undetermined intent, or accidental poisoning, only if there is a mental illness code during the hospital stay:
    - ICD-9-CM codes E850-E854, E858, E862, E868
    - ICD10CA codes Y10–Y34, T39, T40, T42.3, T42.4, T42.7, T43, T50.9, T58, X44, X46, X47.

Injury Hospitalization and Death

- **Overview:**
  - Rate per 1,000 Manitoba residents all ages
  - Episodes, rather than separations, counted. Episodes take into account transfers between hospitals, counting them as a single hospitalization. Deaths due to injury are also counted.
  - If a hospital separation and death occurred within 1 week, they are counted as the same injury
  - if a hospital separation and death occurred within 1 month and both records have the same E–code, they were counted as the same injury

- **Data Years:**
  - 2016 Population Registry
  - 2016 First Nations Research File
  - 2016/17 Hospital Abstracts
  - 2016/17 Vital Statistics Mortality

- **Inclusion Criteria:**

- Any inpatient hospitalization with an external cause of injury diagnosis code (also known as an E-code) in any of the 16 or 25 diagnosis fields: ICD-9-CM codes E800-E999, ICD-10-CA codes V01-Y89.
- Transaction code = 1 (i.e. Minimum Length of stay > 0 days)
- Primary Cause of Death with External cause of injury diagnosis code
- Manitoba Residents all ages

- **Exclusion Criteria:**
  - Misadventures during surgical or medical care: ICD-9-CM codes E870-E876; ICD-10-CA codes Y60-Y69, Y88.1
  - Reactions or complications due to medical care: ICD-9-CM codes E878-E879; ICD-10-CA codes Y70-Y84, Y88.2, Y88.3
  - Adverse effects due to drugs: ICD-9-CM codes E930-E949; ICD-10-CA codes Y40-Y59, Y88.0
  - Newborn birth injuries or deaths, stillbirths, and brain deaths.
  - Out of province hospitalizations
  - Nursing Stations, Personal Care Homes and Long-term Care facilities are excluded.

Intentional Injury Hospitalization and Death
- **Overview**: Same as Injury Hospitalization and Death but for intentional injuries only.
  - Intentional Injuries defined as ICD-9-CA: E950-E9699; ICD10: X60-Y09, Y870,Y871

Life Expectancy
- **Overview:** The expected length of life in years of Manitoba residents at birth based on the patterns of mortality in the population for the preceding 5 years. Life expectancy was calculated directly from the mortality experience of local residents using the "life table" approach. Crude value are created for years 2012-2016.

- **Data Years:**
  - 2012-2016 Population Registry
  - 2016 First Nations Research File
  - 2012-2016 Deaths in Manitoba Heath Information Registry

- **Inclusion:** Manitoba residents all ages
  - Males and Females life expectancy calculated separately.

Mood and Anxiety Disorder
- **Overview:** Proportion of residents aged 10 and older with a mood and anxiety disorder in a 5-year period

- **Data Years:**
  - 2014 population file (mid-year used)
  - 2016 First Nations research file
  - 2012/13-2016/17 hospital abstracts
  - 2012/13-2016/17medical claims

- **Inclusion Criteria:**
  - Age 10+ as of December 31 of denominator year
  - Definition of Mood and Anxiety is:
    - 1+ Hospitalizations in 5 years (any dx code)
    - 2+ Provider visits in 5 years (prefix=7)

- Mood and Anxiety Diagnosis Codes:
  - One or more hospitalizations with a diagnosis for depressive disorder, affective psychoses, neurotic depression, adjustment reaction or bipolar disorder (looking at ICD-10 only) ICD-10-CA codes F30, F31, F32, F33, F34, F38, F41.2, F43, F53.0; OR
  - one or more hospitalizations with a diagnosis for an anxiety state, phobic disorders or obsessive-compulsive disorders:
  - ICD-10-CA codes F40, F41.0, F41.1, F41.3, F41.8, F41.9, F42

  - 2 or more provider visits with a diagnosis for depressive disorder or affective psychoses: ICD-9-CM codes 296, 311; OR
  - 2 or more provider visits with a diagnosis for adjustment reaction: ICD-9-CM code 309; OR
  - 2 or more provider visits with a diagnosis for anxiety disorders (including dissociative and somatoform disorders)*:ICD-9-CM code 300

Mortality
- **Overview:** The number of deaths per 1,000 residents (all ages) per year. Average annual rates calculated for 2012-2016

- **Data Years:**
  - 2012-2016 Population Registry
  - 2016 First Nations Research File
  - 2012-2016 Deaths in Manitoba Heath Information Registry

- **Inclusion**: Manitoba Residents all ages

Opioid Agonist Treatment (OAT)

- **Overview:** Rate per 1000 Manitoba Residents aged 10+ with 1+ prescription for opioid agonist in 2016/17.
- **Data Years:**
    - 2016 Population File
    - 2016 FN Research File
    - 2016/17 DPIN

- **Inclusion Criteria:**
    - 1+ Rx for OAT in 2016/17
    - ATC codes for OAT: N07BC51, N07BC02
    - DINs 02244290, 00907561, 00909100, 00909104, 00909102, 00909106, 00909190, 02394596, 02394618, 02468093, 02295695, 02295709, 02424851, 02424878, 02408090, 02408104, 02453908, 02453916
    - Age 10+ years

- **Exclusion Criteria:**
    - DINs: 02241377, 02247694, 02247698, 02247699, 02247700 02247701 (severe pain relief)

Opioid Prescriptions

- **Overview:** Proportion of Manitoba Residents aged 10+ with 1+ prescription for opioids in 2016/17.

- **Data Years:**
    - 2016 Population File
    - 2016 FN Research File
    - 2016/17 DPIN

- **Inclusion Criteria:**
    - 1+ Rx for Opioid in 2016/17
    - ATC codes for opioids: M03BA53, N02AA, R05DA03, R05DA04, N02AB02, N02AB03, N01AH01, N02AX02, N02AX52, N02AC04, N02AC54, N01AH03, N01AH06, N01AX03, N02AD01, N02AE01, N02AF01, N02AF02, N02AX06
    - Age 10+ years

- **Exclusion Criteria:**
    - DINs: 02241377, 02247694, 02247698, 02247699, 02247700 02247701

- Low dose codeine (dosage <= 10 Mg)

Percent of Individuals with 1+ Hospitalizations for Suicide Attempts

- **Overview**: Percent of Manitoba Residents (age 10+) with at least one hospitalization for a suicide attempt in a 5-year period.

- **Data Years:**
    - 2012-2016 population file
    - 2016 First Nations Research File
    - 2012/13-2016/17 hospital abstracts

- **Definition**:
    - An individual with one or more hospitalizations with a diagnosis for self–inflicted injury or poisoning:
    - ICD-9-CM codes E950-E959
    - ICD–10–CA codes X60–X84;

  OR

    - An individual with one or more hospitalizations with a diagnosis code for poisoning of undetermined intent,
    - injury of undetermined intent, or accidental poisoning, only if there is a mental illness code during the hospital stay:
    - ICD-9-CM codes E850-E854, E858, E862, E868
    - ICD10CA codes Y10–Y34, T39, T40, T42.3, T42.4, T42.7, T43, T50.9, T58, X44, X46, X47.

Pharmacy Location

- **Overview:** Location of drug dispensations (where RHA residents filled the drug prescriptions by:
    - Percentage of rx in district
    - Percentage of rx Elsewhere in RHA
    - Percentage of rx to Other RHA
    - Percentage of rx to Winnipeg

  For each month, every pharmacy in Manitoba gets assigned to the area in which the majority of the patients filled their drug prescriptions lived.

- **Data Years:**
    - 2016 Population File
    - 2016 FN Research File
    - 2016/17 DPIN

- **Inclusion Criteria:**
  - All Manitoba Residents (all ages) with 1+ prescription in 2016/17

Potential Years of Life Lost

- **Overview:** The number of potential years of life lost by Manitoba residents aged 1 to 74 per 1,000 residents. For each death, the PYLL value is calculated as the difference in years between age at death and 75 years of age. Average annual rates are calculated for 2012-2016

- **Data Years:**
  - 2012-2016 Population Registry
  - 2016 First Nations Research File
  - 2012-2016 Deaths in Manitoba Heath Information Registry

- **Inclusion**: Manitoba Residents age 1 to 74.

Primary Care Provider Location

- **Overview:** the percent of ambulatory visits made by Manitoba Residents of each area to primary care providers (mdbloc = 11, 200)
  - Within their home RHA
  - Another RHA
  - In Winnipeg
  - Out-of-province

- **Data Years:**
  - 2016 Population File
  - 2016 First Nations Research File
  - 2016/17 Medical Services Data

- **Inclusion:**
  - Manitoba residents who had at least one ambulatory visit to a primary care provider (mdbloc = 11,200)

- **Exclusion:**
  - Public Trustees are excluded because their location residence is unknown
  - Manitoba Residents all ages with 1+ ambulatory visits to primary care provider

Psychosis

- **Overview:** Proportion of residents aged 10 and older with a psychosis diagnosis in a 5-year period

- **Data Years:**
  - 2014 population file (mid-year used)
  - 2016 First Nations research file
  - 2012/13-2016/17 hospital abstracts
  - 2012/13-2016/17medical claims

- **Inclusion Criteria:**
  - Age 10+ as of December 31 of denominator year
  - Definition of Psychosis is:
    - 1+ Hospitalizations in 5 years (any dx code)
    - 1+ Provider visits in 5 years (prefix=7)
  - Psychosis Diagnosis Codes:
    - ICD-9-code –
      - 295 (schizophrenic disorders) or
      - 297 (delusional disorders) or
      - 298 (other nonorganic psychoses)
    - ICD-10 codes - F11.5, F12.5, F13.5, F14.5, F15.5, F16.5, F18.5, F19.5 (psychotic disorders due to opioids,
      - cannabinoids...etc. do not include F17.5 psychotic disorders due to tobacco),
      - F20 (schizophrenia),
      - F22 (delusional disorder),
      - F23 (acute and transient psychotic disorders),
      - F24 (induced delusional disorder),
      - F25 (schizoaffective disorders),
      - F28 (other nonorganic psychotic disorders),
      - F29 (unspecified nonorganic psychosis).

Repeat Opioid Prescriptions
- **Overview:** Proportion of Manitoba residents aged 10+ with 3+ prescriptions for opioids in 2016/17.

- **Data Years:**
  - 2016 Population File
  - 2016 FN Research File
  - 2016/17 DPIN

- **Inclusion Criteria:**
  - 3+ Rx for Opioid in 2016/17
  - ATC codes for opioids: M03BA53, N02AA, R05DA03, R05DA04, N02AB02, N02AB03, N01AH01, N02AX02, N02AX52, N02AC04, N02AC54, N01AH03, N01AH06, N01AX03, N02AD01, N02AE01, N02AF01, N02AF02, N02AX06

- Age 10+ years

- **Exclusion Criteria:**
  - Low dose codeine (dosage <= 10 Mg)

Suicide (Death by Suicide)

- **Overview**: Rate of death by suicide per 100,000 in a 5-year period for Manitoba Residents ages 10+

- **Data Years:**
  - 2012-2016 population file
  - 2016 First Nations Research File
  - 2012-2016 Vitals statistics

- **Definition**:
  - Death in Vital Statistics with a cause of death of suicide,
  - including self-inflicted injury (X60-X84), event of undetermined intent (Y10-Y34)
  - or late effects of self-inflicted injury (Y87.0) or late effects of other events of undetermined intent (Y87.2).
  - Suicide Diagnosis Codes:
    ICD-10-CA: X60-X84, Y10-Y34, Y87.0, Y87.2

Substance Use Disorder

- **Overview:** Proportion of residents aged 10 and older with substance abuse in a 5-year period

- **Data Years:**
  - 2014 population file (mid-year used)
  - 2016 First Nations research file
  - 2012/13-2016/17 hospital abstracts
  - 2012/13-2016/17medical claims

- **Inclusion Criteria:**
  - Age 10+ as of December 31 of denominator year
  - Definition of Substance Abuse is:
    - 1+ Hospitalizations in 5 years (any dx code)
    - 1+ Provider visits in 5 years (prefix=7)
  - Substance Abuse Diagnosis Codes:
    - ICD-9-CM: 291, 292, 303, 304, 305
    - ICD-10-CA: F10-F19, F55

Unintentional Injury Hospitalization and Death
- **Overview**: Same as Injury Hospitalization and Death but for unintentional injuries only.
  - Unintentional Injuries defined as ICD-9-CA: E800-E8699, E880-E9299, E970-E9789, E990-E999; ICD-10-CA: V01-X599, Y85,Y86

Indicators Using the Manitoba First Nations Regional Survey (2016)[3]

Body Mass Index (BMI) – Adult and Youth Survey

BMI = weight(KG)/(Height(m)*height(m))

- Actual BMI value created by the following variables:
  - H5A: How tall are you without your shoes on? Height (feet)
  - H5B: How tall are you without your shoes on? Height (inches)
  - H5C: How tall are you without your shoes on? Height (centimetres)
  - H6K: How much do you weigh (kg)
  - H6P: How much do you weigh (lbs)

BMI categories

bmi_group: BMI group Obesity classifications[4]

- BMI < 18.5: Underweight
- BMI 18.5-24.9: Normal Weight
- BMI 25.0-29.9: Overweight
- BMI > 30.0: Obese

Community Challenges: Alcohol and Substance Use - Adult and Youth Survey

- What are the main challenges your community is currently facing? Mark all that apply
  - CW3B: Community challenge (issues): Alcohol and drug abuse

Community Challenges: Suicides - Adult and Youth Survey

- What are the main challenges your community is currently facing? Mark all that apply
  - CW3Q: Community challenge (issues): Suicide

Community Progress: Alcohol and Substance Use - Adult and Youth Survey

- Has there been any change in these areas in the past 12 months?
  - CW4B: Community progress (changes): Alcohol and drug abuse

Community Progress: Suicides - Adult and Youth Survey

- Has there been any change in these areas in the past 12 months?
  - CW4Q: Community Progress (changes): Suicide

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[3] The First Nations RHS Phase 3 questionnaires and data dictionaries can be accessed through the First Nations Information Governance Centre's (FNIGC) website (https://fnigc.ca/first-nations-data-centre/questionnaires-and-data-dictionaries.html)

[4] BMI classifications from the World Health Organization's (WHO) website (http://www.euro.who.int/en/health-topics/disease-prevention/nutrition/a-healthy-lifestyle/body-mass-index-bmi)

Community Strength: Low Alcohol/Substance Use Rates - Adult and Youth Survey
- What are the main strengths of your community? Mark all that apply.
  - CW2K: Community Strength: Low rates of alcohol and drug abuse

Community Strength: Low Suicide Rates - Adult and Youth Survey
- What are the main strengths of your community? Mark all that apply.
  - CW2M: Community Strength: Low rates of Suicide

Difficulty Accessing Traditional Healing - – Adult Survey Only
- W2 (c,d,e,f,g,h,I,j,k,other,z):
  - Have you had any of the following difficulties when trying to access traditional medicine?
    - do not know where to get it,
    - restrictions/regulations,
    - can't afford it,
    - too far to travel,
    - concerned about effects,
    - do not know enough about it,
    - not available in health care setting,
    - not covered by NIHB,
    - child care,
    - other

- W4_e: Have you experienced any of the following barriers to receiving health care?
  - Difficulty in getting traditional care

Drinkable Water – Adult Survey Only
- G8: Do you consider the main water supply in your home safe to drink?
  - Yes

Food Security – Adult Survey Only
- Food Security index:
  - 1 = Food Secure vs not secure

Housing Conditions - – Adult Survey Only
- G5A: Is your dwelling in need of repairs?
  - Yes, major repairs; and
  - Yes, minor repairs

- G6A: In the past 12 months, has there been mold or mildew in your home?
  - Yes

Household Income – Adult Survey Only

- E10: For the year ending Dec 31, 2014, in what range was your total household income before deductions from all sources?

Mood and Anxiety – Adult, Youth and Child Survey

- HC27: Have you been told that you have: Mood disorder such as depression, bipolar disorder, mania or dysthymia?
  - Yes

- HC4: Have you been told that you have: Anxiety disorder such as phobia, obsessive-compulsive disorder or panic disorder?
  - Yes

People Per Room (Crowding Index) – Adult Survey only

- House Crowding Index for adult categorized
  - More than one person per room: crowded

Physical Activity - Adult, Youth and Child Survey

- R40: Thinking in a typical week, which best describes your amount of physical activity?
  - You spend at least 60 minutes on physical activity every day

Residential School - Adult, Youth and Child Survey

- Y1: Did you attend a residential school?
  - Yes

- Y6 (a,b,c,g): Were any of your family members ever a student at residential school?
  - Yes, mother or female guardian, father or male guardian, at least one grandparent, brother/sister, other family members

Second Hand Smoke – Adult and Youth Survey

- S10: Including both household members and regular visitors, does anyone smoke inside your home every day or almost every day?
  - Yes

- S11: In the past month, were you exposed to second-hand smoke, every day, almost every day, in a car or other private vehicle?
  - Yes

Smoking - Adult and Youth Survey

- S1: At the present time, do you smoke cigarettes?
  - Yes, daily; and
  - yes, occasionally

Substance Use - Adult and Youth Survey

Includes alcohol and substance use:

- T3: During the past 12 months, how often have you had 4+ (females) or 5+ (males) alcoholic drinks ion on one occasion?
  - More than once a week, every day

- T4: In the past 12 months, have you sought treatment for alcohol abuse/addiction?
  - Yes, and I completed treatment,
  - Yes, but I didn't complete treatment,
  - Yes, but no treatment available

- T11: In the past 12 months, have you sought treatment for substance abuse/addiction?
  - Yes, and I completed treatment
  - Yes, but I didn't complete treatment
  - Yes, but no treatment available

Suicide Attempts - Adult and Youth Survey

- ZS5: Have you ever attempted suicide?
  - Yes

Suicide Consideration - Adult and Youth Survey

- ZS2: Have you ever seriously considered suicide?
  - Yes

Traditional Medicine - Adult, Youth and Child Survey

- HCM1_f: Does the child take the following?
  - Traditional medicine

- HCM2_f: How often does the child take the following?
  - Traditional Medicine

- H5DE: What kind to treatment or measure are you using to manage you diabetes?

- - Traditional Medicine

- IJ9_l: Where did you get treatment for your injury?
  - Traditional Healer

- N1A: When did you last consult a traditional healer?
  - Within the past 12 months
  - 1-2 years ago
  - over 2 years ago

- Z4D: Who have you seen or talked on the phone about your emotional or mental health?
  - Traditional Healer

- S7_i: What methods did you use to quit smoking?
  - Traditional Methods