MCHP Analysis Plan EXAMPLE

Project Overview		
Project Title:	Diabetes in Manitoba	
Principle Investigator (PI):		
MCHP Project # and Short Name:	Not yet available	Not yet available
Project Objectives:	*List all Project Objectives as listed in the approved proposal:*	
	1. Compare rates of ambulatory visits and hospitalizations between adults with type 2 diabetes and a matched group without diabetes in 2019/20 fiscal year. 2. Does having a Majority of Care (MOC) Provider prevent hospitalizations for Ambulatory Care Sensitive (ACS) conditions?	
Study Design	*Check all that apply:*	
	☐ Case-control study ☐ Cohort study ☐ Cross-sectional study ☒ Matched cohort study ☐ Mother-Child/Family Relationships ☐ Other (specify):	
Date of creation/revision:	*This space may be used to track analysis plan modifications:*	
November 23, 2020	First Draft	

For each objective, complete the following tables: **Cohort, Outcomes & Covariates** and **Statistical Analysis**. If information is the same for more than one objective, refer to previous objective.
- For *Corresponding Codes*, appendix tables of codes may be attached, e.g., ICD-9-CM, ICD-10-CA, CCI, ATC, DINs, Physician Tariffs.
- For *Statistical Analysis*, blank tables to be completed may be attached, e.g., baseline characteristics/demographics, standardized differences, rates, relative risks, hazard ratios, odds ratios.

Cohort *(expand/modify as applicable per objective)*	
Objective 1	
Cohort Description: Adults with type two diabetes	
Measurement time frames – Identify the following as applicable:	
Start/End dates: diabetes identified in 2017/18-2018/19	
Index event: n/a	
Maximum follow-up date: March 31, 2020	
Wash-out (look back) period: 10 years, 2007/08-2016/17	
Other important dates: Age calculated April 1, 2019	
Inclusion/Exclusion Criteria (list all):	**Corresponding Codes (per each criteria):**
Age 20+ as of April 1, 2019	
Must be covered two year prior to study start, 2016/17-2018/19	
Exclude people with gestational diabetes diagnosis in study period or wash-out, 2007/08-2018/19	ICD-9-CM 648.8 ICD-10-CA O24
Comparison Group (if applicable):	
Describe Matching Method: Hard-matching to adults without any diabetes diagnosis, matched on year of birth, sex and region of residence as of April 1, 2019	
Inclusion/Exclusion Criteria (list all):	**Corresponding Codes (per each criteria):**

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Cohort *(expand/modify as applicable per objective)*	
Age 20+ as of April 1, 2019	
Must be covered two year prior to study start, 2016/17-2018/19	
Exclude people with gestational diabetes diagnosis in study period or wash-out, 2007/08-2018/19	ICD-9-CM 250, 648.8 (gestational) ICD-10-CA E10-E14, O24 (gestational)

Outcomes & Covariates *(expand/modify as applicable per objective)*	
Objective 1	
Outcome Description: Inpatient Hospitalizations	
Start/End dates: April 1, 2019-March 31, 2020	
Variable Definition/Algorithm:	**Corresponding Codes:**
Inpatient hospitalizations	
MB hospitals only	
Outcome Description: Ambulatory Visits	
Start/End dates: April 1, 2019-March 31, 2020	
Variable Definition/Algorithm:	**Corresponding Codes:**
Standard definition	
Outcome Description: Hospitalizations for Ambulatory Care Sensitive Conditions	
Start/End dates: April 1, 2019-March 31, 2020	
Variable Definition/Algorithm:	**Corresponding Codes:**
Concept Dictionary definition:	See attached table
http://mchp-appserv.cpe.umanitoba.ca/viewConcept.php?conceptID=1023	
Exposure Variable Description: Diabetes	
Start/End dates: 2017/18-2018/19	
Variable Definition/Algorithm:	**Corresponding Codes:**
1+ hospitalizations or 2+ physician visits or 1+Rx for diabetes related drugs	ICD-9-CM: 250
	ICD-10-CA: E10-E14
	ATC Code A10
Covariate Description: Majority of Care	
Start/End dates: 2017/18-2018/19	
Variable Definition/Algorithm:	**Corresponding Codes:**
More than 50% of visits to same MD in 2 years	
Include GPs and Nurse Practitioners	MD Bloc 11.x, 200
Demographic Variable Description: Income Quintile	
Start/End dates: As of April 1, 2019	
Variable Definition/Algorithm:	**Corresponding Codes:**
Standard definition – use MCHP macro	

Statistical Analysis *(expand/modify as applicable per objective)*
Objective 1
Presentation of Results: Please List Tables/Figures (if possible append blank tables)**, e.g.:**
Table 1. Baseline characteristics stratified by cohort, exposure or risk factor

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Statistical Analysis *(expand/modify as applicable per objective)*
Table 2. Crude and Adjusted Rates of Outcomes stratified by cohort, exposure or risk factor
Table 3. RRs/HRs/ORs and 95% CIs per outcome
Table 1: Demographics for diabetes cases and matches, include mean age & t-test to compare mean age, Chi-square p-value to compare sex, RHA, income quintile, MOC, between cases and matches
Table 2: Crude rates and 95% CIs of hospitalizations, ambulatory visits, ACS hospitalizations for cases & matches

Statistical Model(s)

Type of model:	Poisson regression
Outcome(s):	ACS hospitalizations
Exposure Variable(s)/Risk Factor(s):	Diabetes case/diabetes-free match
Covariates:	Age, sex, RHA, income quintile, majority of care

Notes:

Sensitivity Analyses

Type of model:	Repeat, stratified by sex
Outcome(s):	
Exposure Variable(s)/Risk Factor(s):	
Covariates:	

Notes: