

## Supplementary material

**Data sources and description of data elements**

<b>Data source</b>	<b>Data steward</b>	<b>Description</b>	<b>Data elements provided for this study</b>
Medical Services Plan	British Columbia Ministry of Health	For individuals covered by the provincial universal health insurance plan- Medically necessary services provided by fee-for-service physicians and other healthcare providers, laboratory services, diagnostic procedures, dental/oral surgery	ICD-9 and ICD-10 codes
Consolidation file	British Columbia Ministry of Health	Demographic data on individuals receiving or registered to receive care in BC, pooled from multiple PopData sources	Sociodemographics
Discharge Abstract Database	British Columbia Ministry of Health	Demographic, administrative and clinical data for inpatient hospital discharges and day surgeries	ICD-9 and ICD-10 codes
Vital statistics deaths	British Columbia Vital Statistics Agency	Records of all registered deaths in BC	Death data
Pharmacare	British Columbia Ministry of Health	Data related to prescription drugs dispensed under the BC public drug insurance program.	Prescription drug name/identifier
Pharmanet	British Columbia Ministry of Health Data Stewardship Committee	Data related to prescription drugs dispensed by community and outpatient pharmacies	Prescription drug name/identifier

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Drug Treatment Program and laboratory	British Columbia Centre for Excellence in HIV/AIDS	Antiretroviral therapy use history, laboratory testing, immunological and virologic testing, and demographic data on PLWH who have accessed antiretrovirals in BC	Providers-reported transgender status, laboratory confirmed HIV serostatus
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**Prescription drugs with drug identification numbers (DIN)s**

	Generic Name	DIN
<b>Transfeminine</b>		
<b>Androgen Blockers</b>		
<b>Spironolactone</b>		
	SPIRONOLACTONE	28606
	SPIRONOLACTONE	613215
	SPIRONOLACTONE	285455
	SPIRONOLACTONE	613223
	SPIRONOLACT/HYDROCHLOROTHIAZID	180408
	SPIRONOLACT/HYDROCHLOROTHIAZID	613231
	SPIRONOLACT/HYDROCHLOROTHIAZID	594377
	SPIRONOLACT/HYDROCHLOROTHIAZID	657182
<b>Cyproterone</b>		
	ETHINYL ESTRADIOL/CYPROTERONE	2233542
	NO GENERIC FORMULARY	634514
	CYPROTERONE ACETATE	704431
	CYPROTERONE ACETATE	2229449
	CYPROTERONE ACETATE	2229723
	CYPROTERONE ACETATE	2232872
	CYPROTERONE ACETATE	2245898
	CYPROTERONE ACETATE	704423
<b>Finasteride</b>		
	FINASTERIDE	2010909
	FINASTERIDE	2238213
<b>Dutasteride</b>		
	DUTASTERIDE	2247813
<b>Estrogens</b>		
<b>Estrogen</b>		
	ESTROGENS,CONJUGATED	830240
	ESTROGENS,CONJUGATED	831395

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ETHYNODIOL D-ETHINYL ESTRADIOL	28630
ETHYNODIOL D-ETHINYL ESTRADIOL	469327
NORETHINDRONE-MESTRANOL	22608
NORETHINDRONE-MESTRANOL	22659
NORETHINDRONE A-E ESTRADIOL	297143
NORETHINDRONE A-E ESTRADIOL	315966
NORETHINDRONE-ETHINYL ESTRAD	317047
NORETHINDRONE-ETHINYL ESTRAD	372846
NORETHINDRONE-ETHINYL ESTRAD	373265
NORETHINDRONE-ETHINYL ESTRAD	531006
NORETHINDRONE-ETHINYL ESTRAD	538590
NORETHINDRONE-ETHINYL ESTRAD	602957
NORETHINDRONE-ETHINYL ESTRAD	620947
NORETHINDRONE-ETHINYL ESTRAD	2187086
NORETHINDRONE-ETHINYL ESTRAD	2187108
NORETHINDRONE-ETHINYL ESTRAD	2189054
NORGESTREL-ETHINYL ESTRADIOL	34207
NORGESTREL-ETHINYL ESTRADIOL	300640
LEVONORGESTREL-ETH ESTRA	579386
LEVONORGESTREL-ETH ESTRA	707600
LEVONORGESTREL-ETH ESTRA	782416
LEVONORGESTREL-ETH ESTRA	782432
LEVONORGESTREL-ETH ESTRA	2042320
NORGESTREL-ETHINYL ESTRADIOL	2043033
LEVONORGESTREL-ETH ESTRA	2043726
NORGESTIMATE-ETHINYL ESTRADIOL	2258560
NORETHINDRONE-MESTRANOL	30333
NORETHINDRONE-MESTRANOL	30341
LEVONORGESTREL-ETH ESTRA	2236974
ETHYNODIOL D-ETHINYL ESTRADIOL	471526
NORETHINDRONE-ETHINYL ESTRAD	340731
NORETHINDRONE-MESTRANOL	340758
NORETHINDRONE A-E ESTRADIOL	343838
NORETHINDRONE A-E ESTRADIOL	353027
NORETHINDRONE-ETHINYL ESTRAD	372838
NORETHINDRONE-ETHINYL ESTRAD	373273
NORETHINDRONE-ETHINYL ESTRAD	531014
NORETHINDRONE-ETHINYL ESTRAD	602965
NORETHINDRONE-ETHINYL ESTRAD	695734
NORETHINDRONE-ETHINYL ESTRAD	2187094

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NORETHINDRONE-ETHINYL ESTRAD	2187116
NORETHINDRONE-ETHINYL ESTRAD	2189062
ETHINYL ESTRADIOL/NORETH AC	2242531
NORGESTREL-ETHINYL ESTRADIOL	340766
NORGESTREL-ETHINYL ESTRADIOL	342815
LEVONORGESTREL-ETH ESTRA	586609
LEVONORGESTREL-ETH ESTRA	707503
LEVONORGESTREL-ETH ESTRA	782424
LEVONORGESTREL-ETH ESTRA	782440
LEVONORGESTREL-ETH ESTRA	2042339
NORGESTREL-ETHINYL ESTRADIOL	2043041
LEVONORGESTREL-ETH ESTRA	2043734
NORGESTIMATE-ETHINYL ESTRADIOL	2258587
LEVONORGESTREL-ETH ESTRA	2236975
NORGESTIMATE-ETHINYL ESTRADIOL	1968440
NORGESTIMATE-ETHINYL ESTRADIOL	2028700
NORGESTIMATE-ETHINYL ESTRADIOL	1992872
NORGESTIMATE-ETHINYL ESTRADIOL	2029421
DESOGESTREL-ETHINYL ESTRADIOL	2042487
DESOGESTREL-ETHINYL ESTRADIOL	2042541
DESOGESTREL-ETHINYL ESTRADIOL	2042479
DESOGESTREL-ETHINYL ESTRADIOL	2042533
ESTRADIOL/NORETH AC	2241835
ESTRADIOL/NORETH AC	2241837
LEVONORGESTREL	2241674
ESTROGEN,CON/M-PROGEST ACET	2242878
ESTROGEN,CON/M-PROGEST ACET	2242879
ESTRADIOL/NORETH AC	2243529
ESTRADIOL/NORETH AC	2243530
ETHINYL ESTRADIOL/DROSPIRENONE	2261723
ETHINYL ESTRADIOL/DROSPIRENONE	2261731
ETONOGESTREL/ETHINYL ESTRADIOL	2253186
ETHINYL ESTRADIOL/NORELGEST	2248297
DIENESTROL	441295
DIETHYLSTILBESTROL	3360
DIETHYLSTILBESTROL	2091461
DIETHYLSTILBESTROL	2091488
ESTRADIOL	464791
ESTRADIOL	2148587
ESTRADIOL	464805

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ESTRADIOL	2148595
ESTRADIOL VALERATE	29238
ESTRADIOL	756849
ESTRADIOL	2237807
ESTRADIOL	2243722
ESTRADIOL	2245676
ESTRADIOL	756857
ESTRADIOL	2204428
ESTRADIOL	2231509
ESTRADIOL	2237808
ESTRADIOL	2243724
ESTRADIOL	2244000
ESTRADIOL	2246967
ESTRADIOL	756792
ESTRADIOL	2204444
ESTRADIOL	2231510
ESTRADIOL	2244002
ESTRADIOL	2246969
ESTRADIOL	2168898
ESTRADIOL	2204436
ESTRADIOL	2244001
ESTRADIOL	2246968
ESTRADIOL	2225190
ESTRADIOL	2204401
ESTRADIOL	2238704
ESTRADIOL	2243999
ESTRADIOL	2241332
ESTRADIOL	2247499
ESTRADIOL	2247500
ESTROGENS,CONJUGATED	2569
ESTROGENS,CONJUGATED	2043394
ESTROGENS,CONJUGATED	2230891
ESTROGENS,CONJUGATED	2239654
ESTROGENS,CONJUGATED	2577
ESTROGENS,CONJUGATED	265470
ESTROGENS,CONJUGATED	587281
ESTROGENS,CONJUGATED	2043408
ESTROGENS,CONJUGATED	2089
ESTROGENS,CONJUGATED	2043440
ESTROGENS,CONJUGATED	403466

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ESTROGENS,CONJUGATED	2043416
ESTROGENS,CONJUGATED	2230892
ESTROGENS,CONJUGATED	2239655
ESTROGENS,CONJUGATED	2585
ESTROGENS,CONJUGATED	265489
ESTROGENS,CONJUGATED	587303
ESTROGENS,CONJUGATED	2043424
ESTROGENS,CONJUGATED	2043432
ESTROGENS,CONJUGATED	2043386
ME-TESTOSTERONE/ESTROGEN,CON	53538
ESTROPIPATE	282685
ESTROPIPATE	2089769
ESTROPIPATE	282677
ESTROPIPATE	2089777
ESTROPIPATE	2089793
ESTRADIOL/NORETH AC	2108186
NORGESTIMATE-ETHINYL ESTRADIOL	2229064
NORGESTIMATE-ETHINYL ESTRADIOL	2229218
NORGESTIMATE-ETHINYL ESTRADIOL	2229226
ETHINYL ESTRADIOL/CYPROTERONE	2233542
ETHINYL ESTRADIOL/NORELGEST	2246340
NO GENERIC FORMULARY	66124057
NO GENERIC FORMULARY	66124058
NO GENERIC FORMULARY	66124060
NO GENERIC FORMULARY	66124061
NO GENERIC FORMULARY	66124062
NO GENERIC FORMULARY	66124063
NO GENERIC FORMULARY	66124064
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<b>Progestogens</b>	
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<b>Progesterone</b>	
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PROGESTERONE,MICRONIZED	2241013
MEDROXYPROGESTERONE ACET	30848
MEDROXYPROGESTERONE ACET	30856
MEDROXYPROGESTERONE ACET	585092
NO GENERIC FORMULARY	66123240
MEDROXYPROGESTERONE ACET	708917
MEDROXYPROGESTERONE ACET	2148552
MEDROXYPROGESTERONE ACET	2221284
MEDROXYPROGESTERONE ACET	2229838
MEDROXYPROGESTERONE ACET	2244726

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MEDROXYPROGESTERONE ACET	2246627
MEDROXYPROGESTERONE ACET	30937
MEDROXYPROGESTERONE ACET	2010739
MEDROXYPROGESTERONE ACET	2148560
MEDROXYPROGESTERONE ACET	2221292
MEDROXYPROGESTERONE ACET	2229839
MEDROXYPROGESTERONE ACET	2244727
MEDROXYPROGESTERONE ACET	2246628
MEDROXYPROGESTERONE ACET	729973
MEDROXYPROGESTERONE ACET	2010933
MEDROXYPROGESTERONE ACET	2148579
MEDROXYPROGESTERONE ACET	2221306
MEDROXYPROGESTERONE ACET	2229840
MEDROXYPROGESTERONE ACET	2246629
MEDROXYPROGESTERONE ACET	30945
MEDROXYPROGESTERONE ACET	2267640
NORETHINDRONE	37605
PROGESTERONE,MICRONIZED	2166704
PROGESTERONE	739952
PROGESTERONE	1977652
PROGESTERONE	2128470
LEVONORGESTREL	2243005
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<b>Transmasculine</b>	
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<b>Testosterone</b>	
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TESTOSTERONE	2249499
TESTOSTERONE CYPIONATE	30783
TESTOSTERONE PROPIONATE	1977571
TESTOSTERONE CYPIONATE	1977601
TESTOSTERONE CYPIONATE	2220318
TESTOSTERONE CYPIONATE	2246063
TESTOSTERONE ENANTHATE	29246
TESTOSTERONE ENANTHATE	716936
TESTOSTERONE ENANTHATE	739944
TESTOSTERONE UNDECANOATE	782327
TESTOSTERONE ENANTHATE/ESTRAD	108278
TESTOSTERONE ENANTHATE/ESTRAD	2061031
TESTOSTERONE	2239653
TESTOSTERONE	2245346
TESTOSTERONE	2245345
TESTOSTERONE	2245972

## Supplementary material

**Chronic condition case definitions**

<b>Chronic condition</b>		<b>Case definition</b>	<b>Codes</b>
Cardiovascular disease*	Acute myocardial infarction	1 or more hospitalizations with relevant ICD codes	ICD-10: I21 Acute myocardial infarction I22 Subsequent myocardial infarction  ICD-9: 410 Acute myocardial infarction
	Ischemic heart disease	At least one of the following:  2 medical visits with Angina ICD-9 code 413 plus 1 heart disease prescription in 365 days; or 1 specialist visit with Angina ICD-9 code 413 plus 1 prescription in 365 days; or 2 medical visits with two ICD9 codes 410, 411, 412, 413, 414 in 365 days; or 1 CCI/CCP CABG,PCI/PCTA procedure code; or 1 hospitalization with relevant ICD code.	ICD-10: I20 Angina pectoris I21 Acute myocardial infarction I I22 Subsequent myocardial infarction I23 Certain current complications following acute myocardial infarction I24 Other acute ischaemic heart diseases I25 Chronic ischaemic heart disease  ICD-9: 410 Acute myocardial infarction 411 Other acute and subacute forms of ischaemic heart disease 412 Old myocardial infarction 413 Angina pectoris 414 Other forms of chronic ischaemic heart disease
	Chronic heart failure	1 or more hospitalizations or 2 or more medical visits in 365 days with relevant ICD codes	ICD-10: I50 Heart failure  ICD-9: 428 Heart failure
	Stroke- hospital	1 or more hospitalizations with relevant ICD codes	ICD-10: H34.1 Central retinal artery occlusion I60 Subarachnoid hemorrhage I61 Intracerebral haemorrhage I63 Cerebral infarction (exclude I63.6 Cerebral infarction due to



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			<p>cerebral venous thrombosis, nonpyogenic)  I64 Stroke, not specified as haemorrhage or infarction  362.3 Retinal vascular occlusion  430 Subarachnoid hemorrhage  431 Intracerebral hemorrhage  433.x1 Occlusion and stenosis of precerebral arteries  434.x Occlusion cerebral arteries  436 Acute but ill-defined cerebrovascular disease</p> <p><i>Excludes any traumatic brain injury</i></p> <p>ICD-10:  H34.0 Transient retinal artery occlusion  G45.0 Vertebro-basilar artery syndrome  G45.1 Carotid artery syndrome (hemispheric)  G45.2 Multiple and bilateral precerebral artery syndromes  G45.3 Amaurosis fugax  G45.8 Other transient cerebral ischemic attacks and related syndromes  G45.9 Transient cerebral ischemic attack, unspecified</p> <p>ICD-9:  435 Transient cerebral ischemia</p> <p><i>Excludes any traumatic brain injury</i></p>
Transient ischemic attack	1 or more hospitalizations with relevant ICD codes		<p>ICD-10:  N01 Rapidly progressive nephritic syndrome  N03 Chronic nephritic syndrome  N04 Nephrotic syndrome  N05 Unspecified nephritic syndrome  N06 Isolated proteinuria with specified morphological lesion  N07 Hereditary nephropathy, not elsewhere classified</p>
Chronic kidney disease*	1 or more hospitalizations or 2 or more medical visits in 365 days with relevant ICD codes		

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		N18 Chronic kidney disease N19 Unspecified kidney failure N26 Unspecified contracted kidney N27 Small kidney of unknown cause
		ICD-9: 581 Nephrotic syndrome 582 Chronic glomerulonephritis 583 Nephritis and nephropathy, not specified as acute or chronic 585 Chronic renal failure 586 Renal failure, unspecified 587 Renal sclerosis, unspecified 589 Small kidney of unknown cause
Chronic liver disease	1 or more hospitalization or medical visit with relevant diagnosis within 365 days	ICD-9: 571.0 Alcoholic fatty liver 571.2 Alcoholic cirrhosis of liver 571.3 Alcoholic liver damage, unspecified 571.4 Chronic hepatitis 571.5 Cirrhosis of liver without mention of alcohol 571.6 Billiary cirrhosis 571.8 Other chronic nonalcoholic liver disease 571.9 Unspecified chronic liver disease without mention of alcohol 070.3 Viral hepatitis B without mention of hepatic coma 070.30 Viral hepatitis B without mention of hepatic coma, acute or unspecified, without mention of hepatitis delta 070.31 Viral hepatitis B without mention of hepatic coma, acute or unspecified, with hepatitis delta 070.32 Viral hepatitis B without mention of hepatic coma, chronic, without mention of hepatitis delta 070.33 Viral hepatitis B without mention of hepatic coma, chronic, with hepatitis delta

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Chronic Obstructive Pulmonary Disease*	1 or more hospitalization or 2 or more medical visits within 365 days	<p>070.52 Hepatitis delta without mention of active Hepatitis B disease or hepatic coma  V02.61 Hepatitis B carrier  070.42 Hepatitis delta without mention of active Hepatitis B disease with hepatic coma  070.54 Chronic hepatitis C without mention of hepatic coma  V02.62 Hepatitis C carrier</p> <p>ICD-10:  J41 Simple and mucopurulent chronic bronchitis  J42 Unspecified chronic bronchitis  J43 Emphysema  J44 Other chronic obstructive pulmonary disease</p>
Diabetes Mellitus*	<p>At least 1 of the following:</p> <p>1 hospitalization or 2 medical visits in 365 days with relevant ICD codes; or 2 or more insulin prescriptions in 365 days; or 2 or more oral antihyperglycemic (not including metformin) prescriptions in 365 days; or 1 insulin and 1 oral antihyperglycemic (including metformin) in 365 days; or 2 metformin prescriptions and 1 medical visit in one year with relevant ICD codes.</p>	<p>ICD-9:  491 Chronic bronchitis  492 Emphysema  496 Chronic airways obstruction, not elsewhere classified</p> <p>ICD-10:  E10 Type 1 diabetes mellitus  E11 Type 2 diabetes mellitus  E13 Other specified diabetes mellitus  E14 Unspecified diabetes mellitus</p> <p>ICD-9:  250 Diabetes mellitus</p>

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Hypertension*	<i>Excludes gestational diabetes.</i>	ICD-10: I10 Essential (primary) hypertension I11 Hypertensive heart disease I12 Hypertensive renal disease I13 Hypertensive heart and renal disease I15 Secondary hypertension
	1 or more hospitalizations or 2 or more medical visits within 2 years with relevant ICD codes.	
	<i>Excludes gestational hypertension.</i>	ICD-9: 401 Essential hypertension 402 Hypertensive heart disease 403 Hypertensive renal disease 404 Hypertensive heart and renal disease 405 Secondary hypertension
Mood and anxiety disorders*	1 or more hospitalizations with a relevant ICD code or 2 or more medical visits with a relevant code within 2 years	ICD-10: F30 Manic episode F31 Bipolar affective disorder F32 Depressive episode F33 Recurrent depressive disorder F34 Persistent mood [affective] disorders F38 Other mood [affective] disorders F39 Unspecified mood [affective] disorder F40 Phobic anxiety disorders F41 Other anxiety disorders F42 Obsessive-compulsive disorder F43 Reaction to severe stress, and adjustment disorders F44 Dissociative (conversion) disorders F45 Somatoform disorders F48 Other neurotic disorders F68 Other disorders of adult personality & behavior
		ICD-9:

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			296 Affective psychoses 300 Neurotic disorders 311 Depressive disorder, not elsewhere classified
Non-AIDS defining cancer†	All prevalent cancer cases were included, with the exception of AIDS defining malignancies (Kaposi's sarcoma, non-Hodgkin's lymphoma, invasive cervical cancer)		MSP DX Code: 50B Anxiety/Depression <i>Cancer case definition details available from the British Columbia Cancer Agency: <a href="http://www.bccancer.bc.ca/health-info/types-of-cancer">http://www.bccancer.bc.ca/health-info/types-of-cancer</a></i>
Organic mental disorders		1 or more medical visits or hospitalizations with relevant diagnoses within 365 days	ICD-9: 290.x Dementias 294.x Other organic psychotic conditions 331.x Alzheimer's  ICD-10: F00.x Dementia in Alzheimer's disease F01.x Vascular Dementia F02.x Dementia in other disease classified elsewhere F03.x Unspecified dementia F04 Amnestic disorder due to physiological condition F06 Other mental disorders due to known physiological condition F09 Unspecified mental disorder due to known physiological condition G30 Alzheimer's disease with early onset
Osteoarthritis*		1 or more hospitalization or 2 or more medical visits in 365 days with a relevant ICD code	ICD-10: M15 Polyarthrosis M16 Coxarthrosis [arthrosis of hip] M17 Gonarthrosis [arthrosis of knee] M18 Arthrosis of first carpometacarpal joint M19 Other arthrosis

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Personality disorder	1 or more hospitalizations or medical visits with a relevant diagnosis within 365 days	ICD-9: 715 Osteoarthritis and allied disorders ICD-9: 301.x Personality disorders ICD-10: F60.x Specified personality disorders F62 Enduring personality changes, not attributable to brain damage and disease F68.1 Intentional production or feigning of symptoms or disabilities, either physical or psychological F68.8 Other specified disorders or adult personality and behaviour F69 Unspecified disorder or adult personality and behaviour
Schizophrenia related disorder	1 or more medical visit or hospitalizations with relevant diagnoses within 365 days	ICD-9: 295.x Schizophrenic disorders 297.0 Paranoid state, simple 297.1 Delusional disorder 297.2 Paraphrenia 297.3 Shared psychotic disorder ICD-10: F20.x Paranoid schizophrenia F21.x Schizotypal disorder F23.2 Acute schizophrenia-like psychotic disorder F25.x Schizoaffective disorders

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\* Case definition adapted from British Columbia Ministry of Health version 2017, April 4 2019 update

† Case-definition adapted from British Columbia Cancer Agency