

Appendix 1: Dementia diagnosis identification

The definition of dementia used to develop the algorithm includes Alzheimer's disease, vascular dementia, dementia in other diseases classified elsewhere (frontotemporal dementia, idiopathic normal pressure hydrocephalus), and unspecified dementia (senile dementia, presenile dementia). The International Classification of Diseases (ICD)-9 and 10 codes used are: ICD-9 (46.1, 290.0, 290.1, 290.2, 290.3, 290.4, 294.x, 331.0, 331.1, 331.5, 331.82); ICD-10 (F00.x, F01.x, F02.x, F03.x, G30.x). The following characteristics were found in a validation study using as reference diagnoses recorded in electronic medical records: sensitivity 79.3% (confidence interval (CI) 72.9–85.8%), specificity 99.1% (CI 98.8–99.4%), positive predictive value 80.4% (CI 74.0–86.8%), and negative predictive value 99.0% (CI 98.7–99.4%)(1).

Persons were considered as diagnosed for dementia if they had at least 1 of the following conditions:

- One dementia diagnosis (primary or secondary) in the hospitalization dataset, since the age of 40;

OR

- At least 3 dementia diagnoses at least 30 days apart in a two-year period in the medical consultation dataset, since the age of 40;

OR

- One prescription of a dementia related drug in the prescription drug use dataset, since the age of 40 (drugs are recorded in the database as of 65 for every person, and for around a third of the population aged 40-64).

The index date of diagnosis was the date on which the first of the three criteria became positive. For persons whose algorithm became positive through medical claims, the first medical claim was considered as the date of diagnosis.

Appendix 2: Algorithm to identify community-dwelling persons and admission to long-term care

In Quebec, several types of collective dwelling are available for older persons:

- “*Centre d’hébergement et de soins de longue durée*” (“CHSLD”), or residential and long-term care centre, where persons require at least 3 hours of nursing care a day and 24/7 nursing care is offered;
- “*Ressources non institutionnelles*” (including: “*Ressources de type familiale*” and “*Ressource de type intermédiaire*”) where less than 3 hours of nursing care a day are offered;
- “*Résidences privées pour aînés*”, similar to private apartment, where persons might access home care services and support from the local community service centre (“*Centre local de services communautaires*” “CLSC”).

For the purpose of this study, we only considered “*Centre d’hébergement et de soins de longue durée*” (“CHSLD”) as long-term care. Thus, we excluded from the community-dwelling population the persons living in CHSLD, and considered a person admitted to LTC when admitted to CHSLD.

Algorithms identifying long-term care admission and community-dwelling populations.

Identification of long-term care admission	Identification of the community-dwelling population
Having at least one the following codes. The date of admission was the date of the first of the following criteria that became positive. For the: “Tab 14 MedEcho Séjour hospitalier criteria, the date of hospital discharge was considered”.	Never having any of the following code on the date of interest, i.e., 1st of April of each year.
• At least one: Tab 6 Admissibilité Assurance Médicament : Code Plan 64 ans et + : 97 “Personne hébergée”, since the age of 65 (this code does not exist in the 65- population) • At least one of the following: Tab 14 MedEcho Séjour hospitalier, since the year 2000-2001 ○ TYP_LIEU_SEJ_HOSP_PROVN 03 Centre d’hébergement et de soins de longue durée ○ TYP_LIEU_SEJ_HOSP_PROVN 10 Centre d’hébergement et de soins de longue durée, hors province	• Tab 6 Admissibilité Assurance Médicament: Code Plan 64 ans et + : 97 “Personne hébergée”, since the age of 65 (this code does not exist in the 65- population) • Tab 14 MedEcho Séjour hospitalier, since the year 2000-2001 ○ TYP_LIEU_SEJ_HOSP_PROVN 03 Centre d’hébergement et de soins de longue durée ○ TYP_LIEU_SEJ_HOSP_PROVN 10 Centre d’hébergement et de soins de longue durée, hors province

- o TYP_LIEU_SEJ_HOSP_DEST 03 Centre d'hébergement et de soins de longue durée - o TYP_LIEU_SEJ_HOSP_DEST 10 Centre d'hébergement et de soins de longue durée, hors province • At least one of the following: Tab 7 Service_Medical NO_ETAB_USUEL, since the year 2000-2001 - o NO_ETAB_USUEL 1X5 Centre d'accueil public : Hébergement public - o NO_ETAB_USUEL 2X5 Centre d'accueil privé : Hébergement privé pour personnes âgées	- o TYP_LIEU_SEJ_HOSP_DEST 03 Centre d'hébergement et de soins de longue durée - o TYP_LIEU_SEJ_HOSP_DEST 10 Centre d'hébergement et de soins de longue durée, hors province • Tab 7 Service_Medical NO_ETAB_USUEL, since the year 2000-2001 - o NO_ETAB_USUEL 1X5 Centre d'accueil public : Hébergement public - o NO_ETAB_USUEL 2X5 Centre d'accueil privé : Hébergement privé pour personnes âgées
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Appendix 3: Details on the attribution of SAC type by postal code

Definition of terms

A census metropolitan area or a census agglomeration is a statistical classification type formed by one or more adjacent area that is a municipality or deemed equivalent to a municipality for statistical reporting purposes (as defined by laws in effect in each province and territory in Canada). A census metropolitan area must have a total population of at least 100,000 of which 50,000 or more must live in the core. A census agglomeration must have a core population of at least 10,000. The census agglomeration classification can be further divided by Metropolitan Influence Zone, to account for the influence of a metropolitan area or a large city center near to a small census agglomeration. Areas outside of a census metropolitan area or census agglomeration are considered territories.

Matching of postal codes as municipality mergers occurred

Over the course of the study (2000-2020) municipalities and postal codes were created or deleted. As municipality mergers occurred, postal codes were incrementally assigned to a SAC type based on the closest census to the cohort year. For example, for the 2000-2001 cohort, we used first and foremost the 2001 census to assign SAC type to the postal code. For postal codes that did not exist in 2001 census, we used successively the 2006, 2011, and 2016 census whichever the sooner a match was found. This was done to match the procedures of Régie de l'assurance maladie du Québec (RAMQ), where the data is compiled. The impact of these mergers is more significant in the early 2000s, when significantly more mergers occurred in Quebec.

Appendix 4: Operational definition of indicators

Ambulatory care	
Rate of visits to a primary care physician	Numerator: Total number of visits to a primary care physician in the year following the index date of diagnosis Denominator: Total number of persons with a new diagnosis of dementia
Rate of persons with dementia with a diagnosis in primary care	Numerator: Total number of persons for whom: index date of diagnosis of dementia is equal to an ambulatory visit to a primary care physician OR index date of diagnosis of dementia is equal to a prescription for dementia by a primary care physician Denominator: Total number of persons with a new diagnosis of dementia
Continuity of ambulatory care	Overall Usual Provider Continuity index (all types of physicians) Number of visits with the physician with the highest number of visits during the period Total number of ambulatory visits during the year following the index date of diagnosis SUBSET: Persons with at least 2 ambulatory visits to any physician in the year following the index date of diagnosis
Rate of visits to cognition specialist	Numerator: Total number of visits to a cognition specialist (geriatricians, neurologists, or psychiatrists) in the year following the index date of diagnosis Denominator: Total number of persons with a new diagnosis of dementia
General acute care	
Rate of persons with dementia with at least one emergency department (ED) visit	Numerator: Total number of persons with at least one ED visit in the year following the index date of diagnosis Denominator: Total number of persons with a new diagnosis of dementia
Rate of ED visits	Numerator: Total number of ED visits in the year following the index date of diagnosis Denominator: Total number of persons with a new diagnosis of dementia
Rate of persons with dementia with at least one hospitalization	Numerator: Total number of persons with at least one hospitalization in the year following the index date of diagnosis Denominator: Total number of persons with a new diagnosis of dementia

Rate of days hospitalized	Numerator: Total number of days hospitalized in the year following the index date of diagnosis Denominator: Total number of persons with a new diagnosis of dementia SUBSET: Persons with at least 1 hospitalization
Potentially avoidable acute care	
Rate of persons with dementia hospitalized for an ambulatory care sensitive conditions (ACSC) relative to the Aging / Dementia Population (2)	Conditions (and ICD-9 codes): asthma, cardiac heart failure, COPD, diabetes, hypertension, hypotension, dehydration, pneumonia, UTI, constipation, skin ulcers, weight loss, nutritional deficiency, adult failure to thrive, seizures ICD codes defined in Supplementary file 5. Numerator: Total number of ACSC hospitalizations in the year following the index date of diagnosis Denominator: Total number of persons with a new diagnosis of dementia SUBSET: Persons with at least 1 hospitalization where admission date occurs in the year following index date of diagnosis
Rate of persons with dementia with at least one hospitalization with Alternate Level of Care (ALC)	Numerator: Total number of persons with at least one hospitalization with alternate level of care in the year following the index date of diagnosis Denominator: Total number of persons with a new diagnosis of dementia SUBSET: Persons with at least one hospitalization
Rate of months in ALC	Numerator: Total number of hospital days with alternate level of care in the year following the index date of diagnosis Denominator: Total number of persons with a new diagnosis of dementia SUBSET: Persons with at least one ALC hospitalization
Rate of persons with dementia with at least one readmission to the hospital with 30 days	Numerator: Total number of persons with at least one hospital readmission within 30 days of discharge Denominator: Total number of persons with a new diagnosis of dementia SUBSET: Persons with at least one hospital discharge date in the year following the index date of diagnosis
Dementia-specific pharmacological care	
Rate of persons with dementia with cholinesterase inhibitor prescriptions	Numerator: Total number of persons with a prescription for cholinesterase inhibitors in the year following the index date of diagnosis Denominator: Total number of persons with a new diagnosis of dementia
Rate of persons with dementia	Numerator: Total number of persons with a prescription of memantine in the year following the index date of diagnosis

with memantine prescriptions	Denominator: Total number of persons with a new diagnosis of dementia
Rate of persons with dementia with dementia medication prescribed in primary care	Numerator: Total number of persons with a prescription for cholinesterase inhibitor or memantine in the year following the index date of diagnosis prescribed by a primary care physician Denominator: Total number of persons with a new diagnosis of dementia
Potentially inappropriate pharmacological care	
Rate of persons with dementia with benzodiazepines	Numerator: Total number of persons with at least one prescription for benzodiazepines in the year following the index date of diagnosis Denominator: Total number of persons with a new diagnosis of dementia
Rate of persons with dementia with antidepressants	Numerator: Total number of persons with at least one prescription for antidepressants in the year following the index date of diagnosis Denominator: Total number of persons with a new diagnosis of dementia
Rate of persons with dementia with antipsychotics	Numerator: Total number of persons with at least one prescription for antipsychotics in the year following the index date of diagnosis Denominator: Total number of persons with a new diagnosis of dementia
Long-term care and mortality	
Rate of persons with dementia admitted to long-term care	Rate of admission in long-term care, as defined by long-term care admission algorithm (Supplemental file 4). Numerator: Total number of persons admitted to long-term care in the year following the index date of diagnosis Denominator: Total number of persons with a new diagnosis of dementia
Rate of mortality	Numerator: Total number of persons deceased in the year following the index date of diagnosis Denominator: Total number of persons with a new diagnosis of dementia

Appendix 5: International Classification of Diseases (ICD) codes for Ambulatory care sensitive conditions (ACSC) hospitalizations – Aging / Dementia Population

Hospitalizations with a most responsible diagnosis of	IC9-CM	IC10-CA
Asthma,	493 / 493.01 / 493.02 / 493.10 / 493.11 / 493.12 / 493.20 / 493.21 / 493.22 / 493.81 / 493.82 / 493.90 / 493.91 / 493.92	J45.20 / J45.22 / J45.21 / J44.9 / J44.0 / J44.1 / J45.990 / J45.991 / J45.909 / J45.998 / J45.902 / J45.901
Cardiac heart failure, Congestive heart failure (CHF)	428 / 518.4 398.91 / 402.11 / 402.91 / 404.11 / 404.13 / 404.91 / 404.93 / 428.0 / 428.1 / 428.20 / 428.21 / 428.22 / 428.23 / 428.30 / 428.31 / 428.32 / 428.33 / 428.40 / 428.41 / 428.42 / 428.43 / 428.9 / 518.4	I50.9 / I50.1 / I50.20 / I50.21 / I50.22 / I50.23 / I50.30 / I50.31 / I50.32 / I50.33 / I50.40 / I50.41 / I50.42 / I50.43 / J81.0 / I09.81 / I11.0 / I13.0 / I13.2
COPD, Chronic bronchitis	491 / 492 / 494 / 496 466.0 / 466.11 / 466.19 / 490. / 491.1 / 491.20 / 491.21 / 491.8 / 491.9 / 492.0 / 492.8 / 494.0 / 494.1 /	J41.0 / J41.1 / J44.9 / J44.1 / J41.8 / J42 / J43.9 / J47.9 / J47.1 / J20.9 / J21.0 / J21.8 / J40
Diabetes/Poor glycemic control/ hyper- and hypoglycemia: diabetes mellitus with ketoacidosis or hyperosmolar coma	250.0 / 250.1 / 250.2 / 250.8 / 250.02 / 250.03 / 250.10 / 250.11 / 250.12 / 250.13 / 250.20 / 250.21 / 250.22 / 250.23 / 250.30 / 250.31 / 250.32 / 250.33 / 251.0 / 251.2 / 790.29	E11.9 / E10.9 / E11.65 / E10.65 / E11.01 / E11.69 / E13.10 / E10.10 / E11.00 / E11.641 / E10.641 / E10.618 / E10.620 / E10.621 / E10.622 / E10.628 / E10.630 / E10.638 / E10.649 / E11.618 / E11.620 / E11.621 / E11.622 / E11.628 / E11.630 / E11.638 / E11.649 / E15 / E16.2 / R73.03 / R73.09 / E10.69 / E10.11
Hypertension,	401.0 / 401.9 / 402.0 / 402.1 / 402.9 / 403.10 / 403.90 / 404.10 / 404.90	I10 / I16.9 / I11.9 / I11.0 / I13.10 / I20.0 / I12.9
Angina,	411.1 / 411.8 / 413	I20.0 / I24.0 / I24.8 / I20.8 / I20.1 / I20.9

Seizures (Grand mal status and other epileptic convulsions)	345 / 345.01 / 345.10 / 345.11 / 345.2 / 345.3 / 345.40 / 345.41345.50 / 345.51 / 345.60 / 345.61 / 345.70 / 345.71 / 345.80 / 345.81 / 345.90 / 345.91436. / 780.31 / 780.39	G40.401 / G40.409 / G40.311 / G10.411 / G40.419 / G40.A01 / G40.A09 / G40.A11 / G40.A19 / G40.301 / G40.201 / G40.209 / G40.211 / G40.219 / G40.101 / G40.109 / G40.111 / G40.119 / G40.821 / G40.822 / G40.823 / G40.824 / G40.501 / G40.509 / G40.802 / G40.804 / G40.901 / G40.909 / G40.911 / G40.919 / I67.89 / R56.00 / R56.9
Hypotension,	458.0 / 458 / 458.8.1 / 458.21 / 458.29 / 458.9	I95.1 / I95.89 / I95.3 / I95.2 / I95.81 / I95.9
Dehydration, volume depletion acute renal failure hypokalemia hyponatremia	276.5 / 276.8 / 584.5 / 584.6 / 584.7 / 584.8 / 584.9 / 588.81 / 588.89 / 588.9 / 276.1 / 276.8	E87.1 / E86.9 / E86.0 / E86.1 / E87.6 / N17.0 / N17.1 / N17.2 / N17.8 / N17.9 / N25.81 / N25.89 / N25.9
Pneumonia (Lower respiratory: pneumonia & bronchitis)	480.0 / 480.1 / 480.2 / 480.3 / 480.8 / 480.9 / 481. / 482.0 / 482.1 / 482.2 / 482.30 / 482.31 / 482.32 / 482.39 / 482.40 / 482.41 / 482.49 / 482.81 / 482.82 / 482.83 / 482.84 / 482.89 / 482.9 / 483.0 / 483.1 / 483.8 / 485. / 486. / 507.0	J12.0 / J12.1 / J12.2 / J12.81 / J12.89 / J12.9 / J13 / J18.1 / J15.0 / J15.1 / J14 / J15.4 / J15.3 / J15.20 / J15.211 / J15.29 / J15.8 / J15.5 / J15.6 / A48.1 / J15.9 / J15.7 / J16.0 / J16.8 / J18.0 / J18.9 / J69.0
UTI,	590.10 / 590.11 / 590.80 / 590.81 / 590.9 / 595.0 / 595.1 / 595.2 / 595.4 / 595.89 / 595.9 / 597.0 / 598.00 / 598.01 / 599.0 / 601.0 / 601.1 / 601.2 / 601.3 / 601.4 / 601.8 / 601.9	N10 / N12 / N16 / N15.9 / N30.00 / N30.01 / N30.10 / N30.11 / N30.20 / N20.21 / N30.80 / N30.81 / N30.90 / N30.91 / N34.0 / N35.111 / N37 / N39.0 / N41.0 / N41.1 / N41.2 / N41.3 / N51 / N41.4 / N41.8 / N41.9
Constipation /fecal impaction/obstipation	560.39 / 564.00 / 564.01 / 564.09	K56.49 / K59.00 / K59.01 / K59.03 / K59.04 / K59.09
Skin ulcers,	707.00 / 707.01 / 707.02 / 707.03 / 707.04 / 707.05707.06 / 707.07 / 707.09 / 707.10 / 707.11 / 707.12 / 707.13 / 707.14 / / 707.9 / 707.15 / 707.19 / 707.8	L89.90 / L89.009 / L89.119 / L89.129 / L89.139 / L89.149 / L89.159 / L89.209 / L89.309 / L89.509 / L89.609 / L89.819 / L89.899 / L97.909 / L97.109 / L97.209 / L97.309 / L97.409 / L97.509 / L97.809 / L98.419 / L98.429 / L98.499

Weight loss adult failure to thrive,	783.21 / 783.22 / 783.3 / 783.7	R63.4 / R63.6 / R63.3 / R62.7
Nutritional deficiency,	260. / 261. / 262 / 263.0. / 263.1 / 263.2 / 263.8 / 263.9 / 268.0 / 268.1	E40 / E41 / E43 / E44.0 / E44.1 / E45 / E46 / E55.0 / E64.3

Appendix 6: Table of the differences between each group for all indicators across all cohort years

	Ambulatory care				General acute care				Potentially avoidable acute care				Dementia-specific pharmacological care			Potentially inappropriate pharmacological care				
	Number of visits to primary care physician	Number of visits to cognition specialists	Continuity of ambulatory care (Proportion of visits to the regular physicians out of all visits)	First diagnosis in primary care	At least one visit to ED	Number of visit per patient	At least one hospitalization	Number of days hospitalized	At least one hospitalization for an ambulatory care sensitive condition relative to the aging/dementia population	At least one readmission to the hospital within 30 days	At least one hospitalization with alternate level of care	Number of months in alternate level of care	Cholinesterase inhibitors	Memantine	Dementia medications prescribed in primary care	Benzodiazepines	Antipsychotics	Antidepressants	Mortality	Longterm care admission
max value when sactype 6-7 > sactype 1	0,2	NA	11,5	21,1	15,5	0,2	17,0	6,0	37,0	22,6	NA	9,3	12,6	1,2	-24,6	17,7	8,5	10,1	5,3	2,5
max value when sactype 1 > sactype 6-7	1,7	1,0	NA	3,2	0,0	0,0	3,2	24,0	10,8	0,5	22,4	2,3	6,5	4,5	NA	NA	7,4	5,2	4,4	6,5
number of years when sactype 6-7 > sactype 1	2	0	19	16,0	18	11	17	1	14	18	0	9	12	3	18	19	15	15	14	3
number of years when sactype 1 > sactype 6-7	17	18	0	2	0	0	2	18	5	1	19	10	7	16	0	0	4	4	4	15
number of years when sactype 1 = sactype 6-7	0	1	0	0	1	8	0	0	0	0	0	0	0	0	0	0	0	0	1	1
max value when sactype 6-7 > sactype 2-3	0,2	0,9	6,5	4,2	14,7	0,1	12,9	7,9	34,7	20,1	-5,4	9,0	5,0	3,3	-10,2	13,1	3,8	5,6	5,1	4,1
max value when sactype 2-3 > sactype 6-7	1,9	0,4	1,8	11,1	4,8	0,0	1,7	13,4	6,9	NA	19,7	2,9	9,9	3,8	12,1	5,4	13,0	6,4	3,9	5,1
number of years when sactype 6-7 > sactype 2-3	1	5	13	3	17	12	15	5	12	19	NA	8	6	5	9	13	3	10	17	7
number of years when sactype 2-3 > sactype 6-7	18	10	6	15	2	0	4	14	7	0	19	11	12	14	9	6	16	9	2	12
number of years when sactype 2-3 = sactype 6-7	0	4	0	0	0	7	0	0	0	0	0	0	1	0	0	0	0	0	0	0
max value when sactype 6-7 > sactype 4	0,3	0,9	9,8	11,1	19,4	0,2	13,1	10,0	29,5	25,7	NA	10,2	7,7	2,2	-12,2	17,2	7,1	10,1	5,8	5,7
max value when sactype 4 > sactype 6-7	2,8	0,7	4,0	11,6	2,6	0,0	5,3	24,8	33,8	2,6	21,2	7,0	8,1	8,7	8,5	NA	21,2	4,6	5,8	6,2
number of years when sactype 6-7 > sactype 4	2	6	14	9	18	15	17	3	14	16	0	7	9	4	14	19	10	11	9	9
number of years when sactype 4 > sactype 6-7	17	12	5	9	1	0	2	15	5	3	19	12	10	15	4	0	9	8	10	10
number of years when sactype 4 = sactype 6-7	0	1	0	0	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0
max value when sactype 6-7 > sactype 5	0,7	0,8	5,7	6,8	16,3	0,2	19,0	20,2	25,7	19,6	6,3	11,1	5,6	3,9	-11,1	11,9	7,0	7,7	4,6	5,8
max value when sactype 5 > sactype 6-7	2,2	0,4	4,5	12,3	2,4	0,0	0,6	14,0	12,6	8,9	9,7	6,9	12,2	5,1	11,3	6,4	10,9	5,2	3,5	7,0
number of years when sactype 6-7 > sactype 5	3	6	6	4	17	14	17	8	14	17	4	9	6	4	9	14	10	11	17	11
number of years when sactype 5 > sactype 6-7	15	9	11	14	2	0	2	10	5	2	15	10	12	14	9	5	9	8	2	8
number of years when sactype 5 = sactype 6-7	1	5	1	0	0	5	0	1	0	0	0	0	1	1	0	0	0	0	0	0
max value when sactype 2-3 > sactype 1	0,5	NA	7,0	21,7	6,9	0,1	8,7	NA	12,0	11,0	2,0	4,6	10,6	0,7	-22,3	16,5	10,6	8,8	2,9	2,3
max value when sactype 1 > sactype 2-3	0,2	0,9	NA	NA	6,2	0,1	3,9	13,5	8,6	3,6	9,7	1,6	3,3	3,1	NA	NA	NA	2,3	0,9	5,1
number of years when sactype 2-3 > sactype 1	13	0	19	18	11	5	13	0	12	13	2	8	16	4	18	19	19	15	9	2
number of years when sactype 1 > sactype 2-3	1	19	0	0	8	1	6	19	7	6	17	11	3	15	0	0	0	3	10	15
number of years when sactype 1 = sactype 2-3	5	0	0	0	0	13	0	0	0	0	1	0	0	0	0	0	0	1	0	2
max value when sactype 4 > sactype 1	1,3	NA	10,9	15,9	8,9	0,1	9,2	8,6	27,7	9,3	5,2	6,5	8,3	5,2	-16,2	5,9	13,8	6,8	10,2	1,2
max value when sactype 1 > sactype 4	0,2	0,9	NA	NA	8,9	0,1	7,8	13,7	8,6	12,7	11,5	1,9	9,0	2,3	NA	4,6	4,0	4,2	2,9	5,8
number of years when sactype 4 > sactype 1	11	0	19	18	5	1	7	4	15	13	6	13	11	8	18	12	14	9	10	2
number of years when sactype 1 > sactype 4	4	19	0	0	14	6	12	15	4	5	13	6	8	11	0	7	4	10	9	17
number of years when sactype 1 = sactype 4	4	0	0	0	0	12	0	0	0	1	0	0	0	0	0	0	1	0	0	0
max value when sactype 5 > sactype 1	0,9	NA	10,1	18,9	6,1	0,1	3,0	-3,3	27,9	13,2	NA	5,0	12,3	1,7	-22,7	11,3	4,7	7,5	1,7	1,6
max value when sactype 1 > sactype 5	0,5	0,9	NA	NA	4,8	0,0	6,6	21,1	5,6	5,3	18,6	2,4	3,3	2,9	NA	NA	2,3	5,4	1,5	5,7
number of years when sactype 5 > sactype 1	11	0	19	18	5	1	2	0	12	14	0	8	16	6	18	19	16	13	8	2
number of years when sactype 1 > sactype 5	5	19	0	0	14	0	17	19	7	5	19	11	3	13	0	0	2	5	11	17
number of years when sactype 1 = sactype 5	3	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	1	1	0	0
max value when sactype 4 > sactype 2-3	1,2	0,5	4,3	5,3	5,5	0,1	6,7	11,4	28,5	8,8	10,5	7,2	5,1	6,1	-5,3	-2,5	8,2	4,9	8,8	4,8
max value when sactype 2-3 > sactype 4	0,7	0,5	3,3	9,2	13,0	0,1	9,7	7,6	14,1	15,4	5,2	3,0	9,5	1,8	14,4	19,4	9,1	7,8	2,3	5,2
number of years when sactype 4 > sactype 2-3	10	13	5	4	4	1	3	10	10	12	12	13	4	14	3	0	4	5	10	8
number of years when sactype 2-3 > sactype 4	6	4	15	14	14	7	16	9	9	7	7	6	15	5	15	19	15	14	9	11
number of years when sactype 2-3 = sactype 4	3	2	0	0	1	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
max value when sactype 5 > sactype 2-3	0,8	0,2	3,7	5,2	3,4	0,0	2,5	4,0	16,7	15,9	NA	4,0	7,4	3,8	-6,5	6,2	1,5	4,1	1,5	3,5
max value when sactype 2-3 > sactype 5	0,6	0,2	NA	6,9	7,5	0,1	10,3	16,0	16,6	8,9	18,9	5,3	4,2	1,4	4,9	8,8	6,7	8,8	1,9	5,3
number of years when sactype 5 > sactype 2-3	9	8	19	8	7	0	2	4	12	10	0	9	9	9	9	6	2	6	8	6
number of years when sactype 2-3 > sactype 5	8	7	0	10	11	3	17	15	7	8	19	9	10	9	9	12	17	13	11	13
number of years when sactype 2-3 = sactype 5	2	2	0	0	0	17	0	0	0	0	0	1	0	1	0	1	0	0	0	0
number of years when max value when sactype 5 > sactype 4	0,8	0,3	6,3	9,4	8,8	0,1	5,3	3,8	14,3	18,1	NA	7,0	9,7	3,1	-15,1	14,2	7,3	10,3	2,2	2,8
number of years when max value when sactype 4 > sactype 5	0,9	0,7	2,8	3,5	11,9	0,1	13,7	26,5	26,2	11,2	19,8	5,9	4,7	5,9	2,8	0,5	10,3	5,8	9,5	5,6
number of years when sactype 5 > sactype 4	5	4	18	13	14	5	10	5	9	8	0	7	14	5	13	18	6	6	6	4
number of years when sactype 4 > sactype 5	12	11	1	5	5	1	9	14	10	11	19	12	5	13	5	1	12	13	13	14
number of years when sactype 4 = sactype 5	2	4	0	0	0	13	0	0	0	0	0	0	0	1	0	0	1	0	0	1

Appendix 7: Figures of age-standardized rates for other indicators of ambulatory care, acute care, potentially avoidable acute care, dementia-specific pharmacological care, potentially inappropriate pharmacological care, long-term care and mortality across the rural-urban continuum.

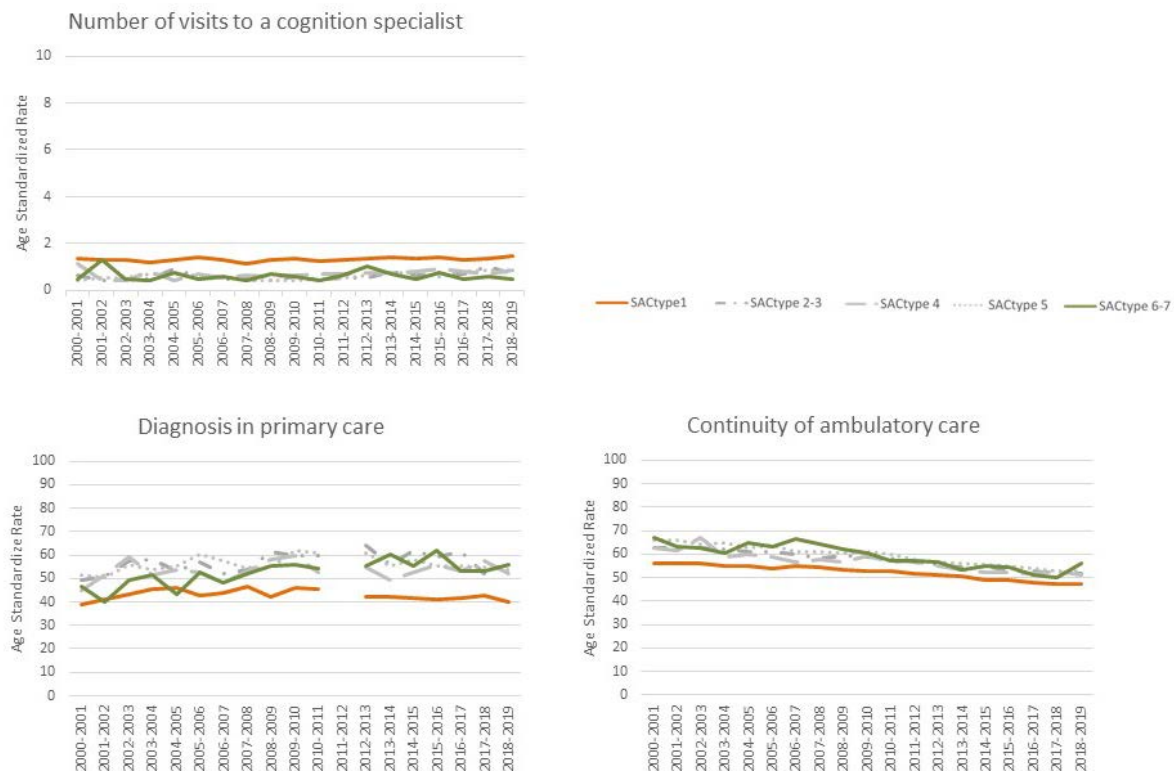


Figure a. Age-standardized rates of ambulatory care: number of visits to a cognition specialist, dementia diagnosis in primary care, and continuity of ambulatory care. All rates are per 100 person-years, except number of visits to cognition specialist, which is per person-year. Complete operational definitions are available in Appendix 3. SAC types stand for Statistical Area Classifications whereby SAC type 1 is the most urban group, which corresponds to census metropolitan areas; SAC type 2-3 correspond to census agglomerations; SAC type 4, to a census area with strong metropolitan influence; SAC type 5, to a census area with moderate metropolitan influence; and the most rural group, SAC type 6-7, which corresponds to a census area with weak or null metropolitan influence. Missing data for the indicator of dementia diagnosis in primary care in the year 2011-2012 are due to a technical issue in the prescription drugs database.

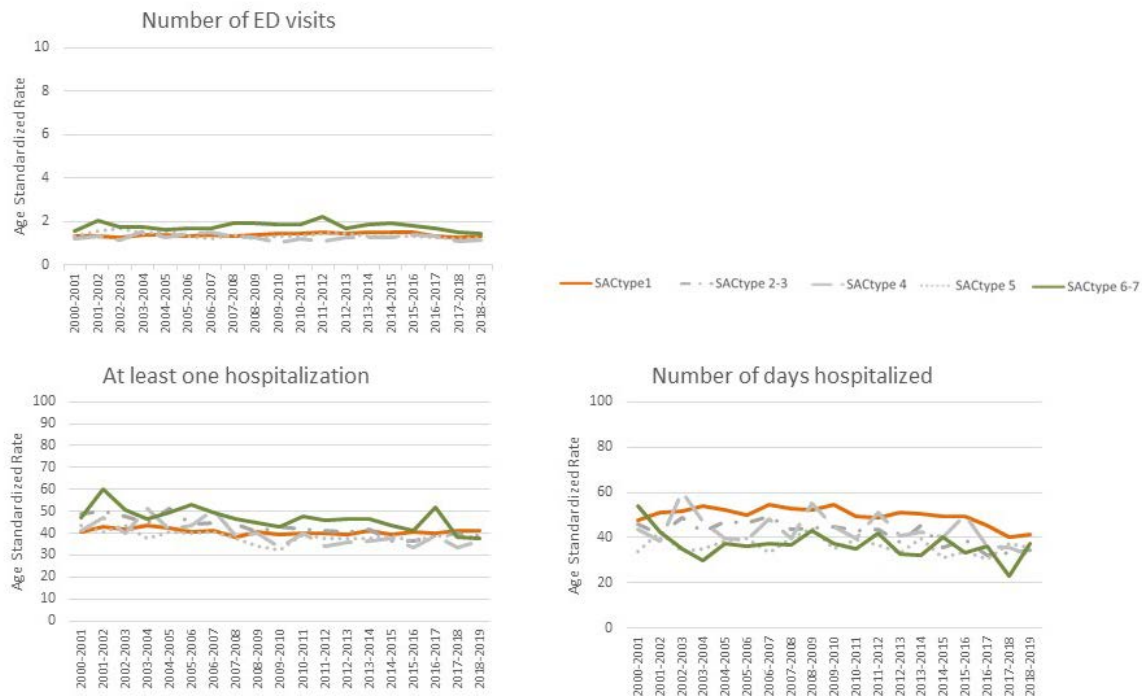


Figure b. Age-standardized rates of general acute care: number of emergency department (ED) visits, at least one hospitalization, and number of days hospitalized. All rates are per person-years except at least one hospitalization, which is per 100 person-year. Complete operational definitions are available in Appendix 3. SAC types stand for Statistical Area Classifications whereby SAC type 1 is the most urban group, which corresponds to census metropolitan areas; SAC type 2-3 correspond to census agglomerations; SAC type 4, to a census area with strong metropolitan influence; SAC type 5, to a census area with moderate metropolitan influence; and the most rural group, SAC type 6-7, which corresponds to a census area with weak or null metropolitan influence.

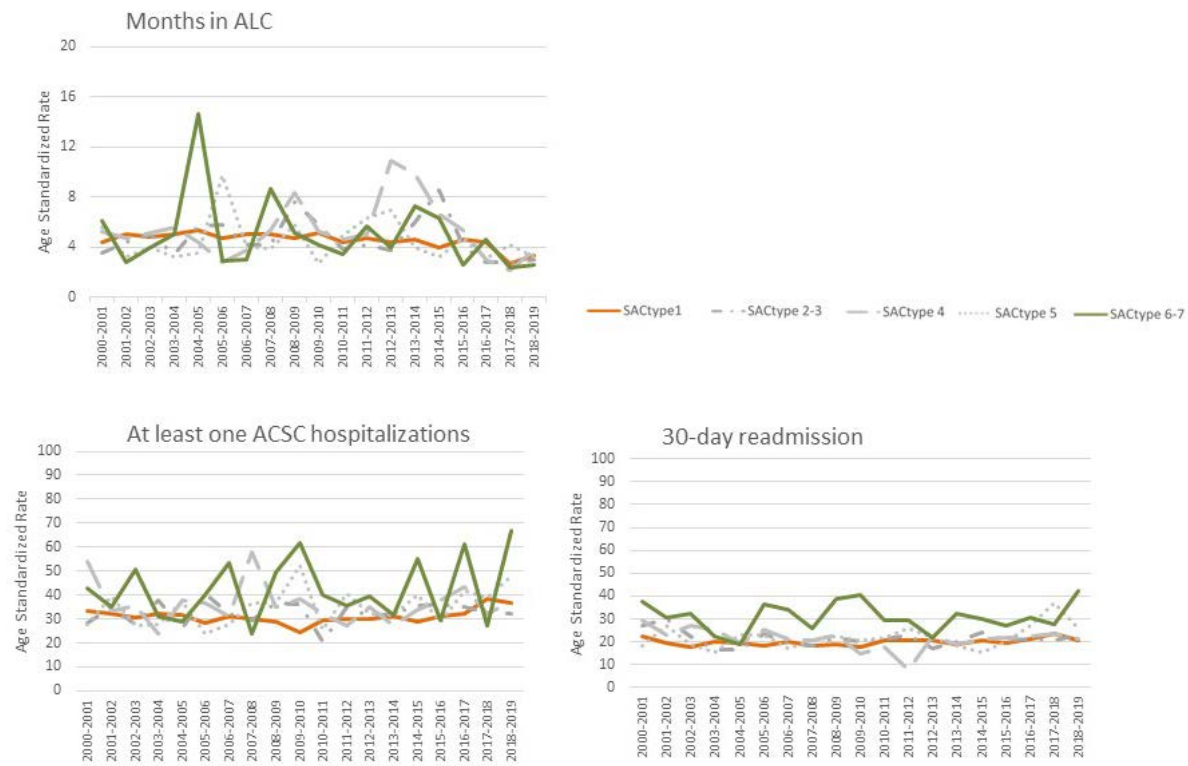


Figure c. Age-standardized rates of potentially avoidable acute care: months in Alternate Level of Care (ALC), at least one Ambulatory Care Sensitive Conditions (ACSC) hospitalization, and 30-day readmission. All rates are per 100 person-years except for months in ALC, which is in person-year. Complete operational definitions are available in Appendix 3. SAC types stand for Statistical Area Classifications whereby SAC type 1 is the most urban group, which corresponds to census metropolitan areas; SAC type 2-3 correspond to census agglomerations; SAC type 4, to a census area with strong metropolitan influence; SAC type 5, to a census area with moderate metropolitan influence; and the most rural group, SAC type 6-7, which corresponds to a census area with weak or null metropolitan influence.



Figure d. Age-standardized rates of dementia-specific pharmacological care: cholinesterase inhibitors and memantine. All rates are per 100 person-year. Operational definitions are in Appendix 3. SAC types stand for Statistical Area Classifications whereby SAC type 1 is the most urban group, which corresponds to census metropolitan areas; SAC type 2-3 correspond to census agglomerations; SAC type 4, to a census area with strong metropolitan influence; SAC type 5, to a census area with moderate metropolitan influence; and the most rural group, SAC type 6-7, which corresponds to a census area with weak or null metropolitan influence.

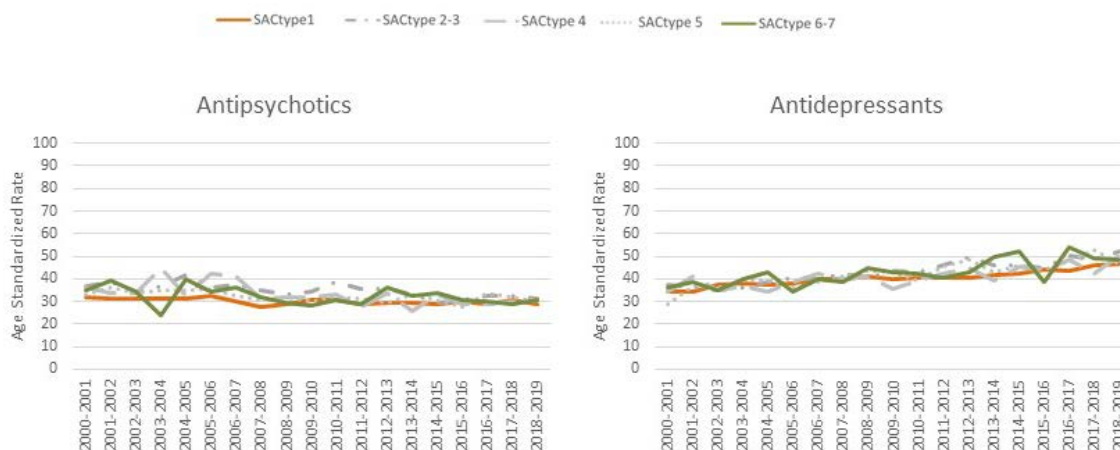


Figure e. Age-standardized rates of potentially inappropriate pharmacological care: antipsychotics and antidepressants. All rates are per 100 person-year. Complete operational definitions are in Appendix 3. SAC types stand for Statistical Area Classifications whereby SAC type 1 is the most urban group, which corresponds to census metropolitan areas; SAC type 2-3 correspond to census agglomerations; SAC type 4, to a census area with strong metropolitan influence; SAC type 5, to a census area with moderate metropolitan influence; and the most rural group, SAC type 6-7, which corresponds to a census area with weak or null metropolitan influence.

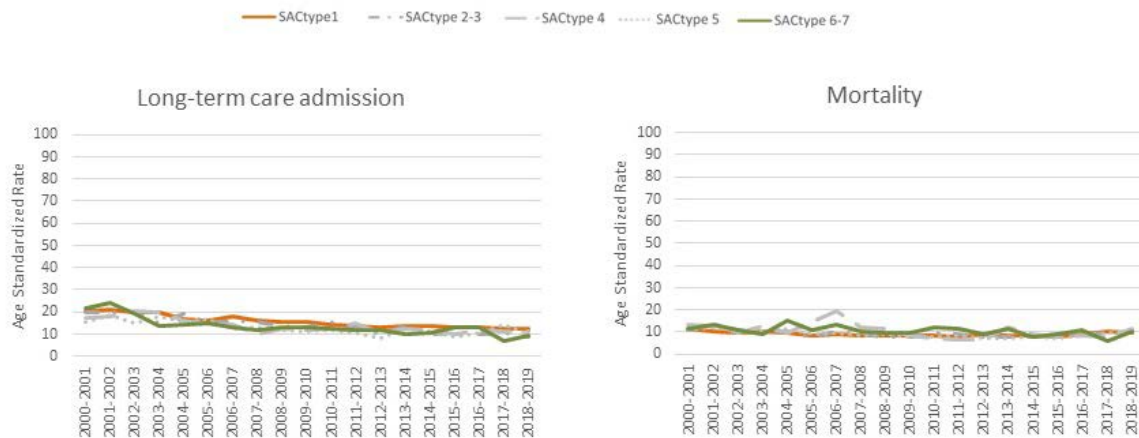


Figure f. Age-standardized rates of long-term care admissions and mortality. All rates are per 100 person-years. Complete operational definitions are available in Appendix 3. SAC types stand for Statistical Area Classifications whereby SAC type 1 is the most urban group, which corresponds to census metropolitan areas; SAC type 2-3 correspond to census agglomerations; SAC type 4, to a census area with strong metropolitan influence; SAC type 5, to a census area with moderate metropolitan influence; and the most rural group, SAC type 6-7, which corresponds to a census area with weak or null metropolitan influence.

References

1. Jaakkimainen RL, Bronskill SE, Tierney MC, Herrmann N, Green D, Young J, et al. Identification of Physician-Diagnosed Alzheimer's Disease and Related Dementias in Population-Based Administrative Data: A Validation Study Using Family Physicians' Electronic Medical Records. *J Alzheimers Dis.* 2016;54(1):337-49.
2. Feng Z, Coots LA, Kaganova Y, Wiener JM. Hospital and ED use among Medicare beneficiaries with dementia varies by setting and proximity to death. *Health Aff (Millwood).* 2014;33(4):683-90.