Supplemental material

Supplemental Table S1. Description of Ontario health administrative databases included in this study.

Name	Description
Ontario Drug Benefits program (ODB) database	The ODB database contains prescription medication claims for those covered under the provincial drug program, mainly those aged 65 years and older. Each medication claim identifies the type and quantity of medication and duration of treatment. A special flag in the ODB database indicates whether the prescription was dispensed to a nursing home resident. An audit of 100 randomly selected prescriptions dispensed from 50 Ontario pharmacies determined that the ODB had an error rate of 0.7% and none of the pharmacy characteristics examined (locations, owner affiliation, productivity) were associated with coding errors (1).

Appendix 1 (as supplied by the authors). Appendix to: Shariff SZ, Paterson JM, Dixon SN, et al. Prevalence of winter migration to warmer destinations among Ontarians ("snowbirds") and patterns of their use of health care services: a population-based analysis. *CMAJ Open* 2021. DOI:10.9778/cmajo.20200270.

Name	Description
Ontario Health Insurance Plan (OHIP)	The OHIP claims database contains information on inpatient and outpatient services, including laboratory services, provided to Ontario residents eligible for the province's publicly funded health insurance system by fee-for-service health care practitioners (primarily physicians) and "shadow billings" for those paid through non-fee-for-service payment plans.

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Name	Description
OHIP Registered Persons Database	The OHIP RPDB provides basic demographic information (age, sex, location of residence, date of birth, and date of death for deceased individuals) for those issued an Ontario health insurance number. The RPDB also indicates the time periods for which an individual was eligible to receive publicly funded health insurance benefits and provides the best known postal code for each registrant on July 1st of each year.
Canadian Institute for Health Information Discharge Abstract Database (DAD)	The DAD contains clinical (diagnoses and procedures/interventions), demographic, and administrative information for all admissions to acute care hospitals in Ontario. In a hospital medical record reabstraction study of 14,500 hospital discharges from 18 hospital sites between April 2002 and March 2004, DAD records were demonstrated to have excellent agreement (over 99%) for nonmedical information such as demographic and administrative data. Regarding diagnoses, median agreement between the original DAD records and the reabstracted records for the 50 most common most responsible diagnoses was 81% (Sensitivity 82%; Specificity 82%).(2) The corresponding median agreement for the 50 most frequently performed surgical procedures was 92% (sensitivity 95%, positive predictive value 91%).
National Ambulatory Care Reporting System (NACRS)	The NACRS contains clinical (diagnoses and procedures), demographic, and administrative information for all patient visits made to hospital- and community-based ambulatory care centres (emergency departments, day surgery units, hemodialysis units, and cancer care clinics) in Ontario.

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Name	Description
Primary Care Population (PCPOP) Database	The PCPOP is an ICES-derived database captures all individuals in Ontario who are alive and eligible for OHIP coverage at two points within a calendar year, April 1st and October 1st. The database includes information on demographics, primary care rostering, new migrants to Ontario (OHIP eligibility in the previous 10 years), use of health services (emergency department, acute care hospitalizations, specialist care, primary care), chronic disease flags based on validated case definitions (diabetes mellitus (3), asthma (4), chronic obstructive pulmonary disease (5), myocardial infarction (6), congestive heart failure (7), hypertension (8) and mental health diagnoses(9)), and indicators of primary care such as diabetes care. This database is prepared to support the preparation of Primary Care Practice reports provided by Health Quality Ontario to enrolled primary care practices(10).
Postal Code Conversation File Plus (PCCF)	PCCF+ is prepared by Statistics Canada and links six-character postal codes to Statistics Canada's standard geographic areas for which census data and other statistics are produced, such as measures of rurality and neighbourhood income quintiles(11).

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Supplemental Table S2. Variable and concept definitions.

Variable / Concept	Timeframe	Data Source
Travel supply medications and associated characteristics	September to January from 2009/10 to 2018/19	ODB
Population of older adult Ontarians alive and eligible for provincial health coverage	October 1st of each year from 2009 to 2018	PCPOP
Age	At index prescription date	RPDB
Sex	At index prescription date	RPDB
Recent migrant to Ontario	10-year look-back from October 1st of the index prescription year	PCPOP
Urban/rural status	At index prescription date	PCCF+
Neighbourhood Income Quintile	At index prescription date	PCCF+
Deyo-Charlson Comorbidity Score	5-year look-back from index prescription date	DAD
Diagnosis of diabetes, asthma, chronic obstructive pulmonary disease, hypertension, congestive heart failure or mental health	Data inception (1991) to October 1st of the index prescription year	PCPOP
Emergency department visits	1-year look-back from October 1st of the index prescription year	PCPOP,
Primary care visits for core primary care services	2-year look-back from October 1st of the index prescription year	PCPOP

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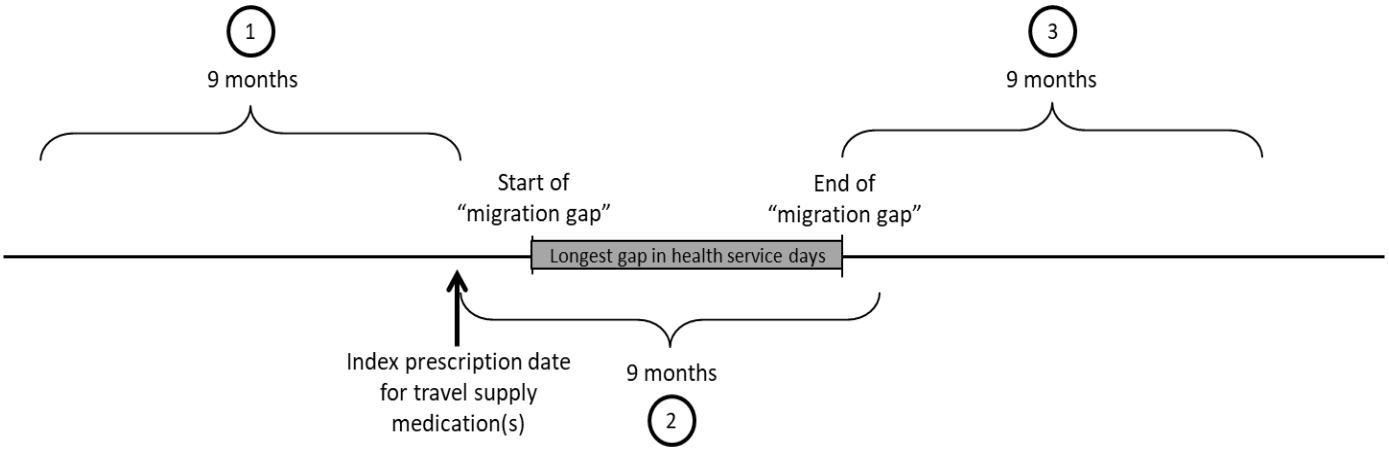
Variable / Concept	Timeframe	Data Source
Specialist care visits	1-year look-back from October 1st of the index prescription year	PCPOP
Health service days	(a) 9 months prior to index prescription date to a maximum of 18 months post-index date; (b) April 2018 to September 2019	OHIP, ODB



Supplemental Figure S1. Schematic of the three time-periods during which the patterns of health services use were summarized. 1 – *Baseline period*. Nine-month period prior to index prescription date for travel supply medications. 2 – *Migration period*. Nine-month period following index prescription date. 2- *Post-migration period*. Nine-month period following longest gap in days of consecutive health service use.

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Supplemental Table S3. Snowbirds from 2009/10 to 2017/18 identified in subsequent seasons.

	Season								
Travel supply filled in alternate season (N, %)	**2009/10** N=53,431	**2010/11** N=54,920	**2011/12** N=58,552	**2012/13** N=59,459	**2013/14** N=65,725	**2014/15** N=70,863	**2015/16** N=68,745	**2016/17** N=63,619	**2017/18** N=64,996
2010/11	29,402 (55.0)								
2011/12	26,981 (50.5)	30,592 (55.7)							
2012/13	23,692 (44.3)	27,242 (49.6)	31,859 (54.4)						
2013/14	21,713 (40.6)	24,894 (45.3)	29,343 (50.1)	33,465 (56.3)					
2014/15	19,619 (36.7)	22,571 (41.1)	26,710 (45.6)	30,882 (51.9)	36,480 (55.5)				
2015/16	16,643 (31.1)	19,181 (34.9)	22,989 (39.3)	26,283 (44.2)	31,802 (48.4)	37,242 (52.6)			
2016/17	13,539 (25.3)	15,691 (28.6)	18,675 (31.9)	21,643 (36.4)	25,975 (39.5)	30,993 (43.7)	34,031 (49.5)		
2017/18	11,647 (21.8)	13,654 (24.9)	16,428 (28.1)	19,070 (32.1)	23,028 (35.0)	27,381 (38.6)	30,771 (44.8)	32,577 (51.2)	
2018/19	10,007 (18.7)	11,752 (21.4)	14,323 (24.5)	16,588 (27.9)	20,296 (30.9)	24,152 (34.1)	26,847 (39.1)	29,090 (45.7)	32,667 (50.3)

Footnotes: Snowbirds refer to older adult Ontarians who temporary migrate to warmer locales during the winter season.

Supplemental Table S4. Health service days used by older adult snowbirds and age and sex-matched stayers in the 2018/19 season from April 2018 to September 2019.

	Snowbirds N=65,311		**Non-snowbirds** N=130,622	
	Mean (SD)	**Median (IQR)**	**Mean (SD)**	**Median (IQR)**
Apr-Jun, 2018	5.98 ± 4.70	5 (3-8)	6.38 ± 6.55	5 (2-9)
Jul-Sep, 2018	6.15 ± 4.72	5 (3-8)	6.25 ± 6.70	5 (2-8)
Oct-Dec, 2018	5.49 ± 4.25	5 (3-7)	6.90 ± 6.98	5 (2-9)
Jan-Mar, 2019	1.29 ± 3.29	0 (0-1)	6.31 ± 6.90	4 (2-8)
Apr-Jun, 2019	5.95 ± 5.20	5 (3-8)	6.73 ± 7.05	5 (2-9)
Jul-Sep, 2019	6.22 ± 5.45	5 (3-8)	6.56 ± 7.16	5 (2-9)

Footnotes: Snowbirds refer to older adult Ontarians who temporary migrate to warmer locales during the winter season.

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