

The association between patients' timely access to their usual primary care physician and use of walk-in clinics in Ontario, Canada: a cross-sectional study

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Abstract

Background: Challenges in timely access to one's usual primary care physician and the ongoing use of walk-in clinics have been major health policy issues in Ontario for over a decade. We sought to determine the association between patient-reported timely access to their usual primary care physician or clinic and their use of walk-in clinics.

Methods: We conducted a cross-sectional study of Ontario residents who had a primary care physician by linking population-based administrative data to Ontario's Health Care Experience Survey, collected between 2013 and 2020. We described sociodemographic characteristics and health care use for users of walk-in clinics and nonusers. We measured the adjusted association between self-reported same-day or next-day access and after-hours access to usual primary care physicians or clinics and the use of walk-in clinics in the previous 12 months.

Results: Of the 60 935 total responses from people who had a primary care physician, 16 166 (weighted 28.6%, unweighted 26.5%) reported visiting a walk-in clinic in the previous 12 months. Compared with nonusers, those who used walk-in clinics were predominantly younger, lived in large and medium-sized urban areas and reported a tight, very tight or poor financial situation. Respondents who reported poor same-day or next-day access to their primary care physician or clinic were more likely to report having attended a walk-in clinic in the previous 12 months than those with better access (adjusted odds ratio [OR] 1.23, 95% confidence interval [CI] 1.13–1.34). Those who reported being unaware that their primary care physician offered after-hours care had a higher likelihood of going to a walk-in clinic (adjusted OR 1.14, 95% CI 1.07–1.21).

Interpretation: In this population-based health survey, patient-reported use of walk-in clinics was associated with a reported lack of access to same-day or next-day care and unawareness of after-hours care by respondents' usual primary care physicians. These findings could inform policies to improve access to primary care, while preserving care continuity.

Walk-in clinics have been a part of Canada's health care systems for more than 4 decades, functioning on a fee-for-service basis and providing episodic care.^{1,2} These clinics provide services without an appointment to patients who are typically not known to the physician or clinic.³ Since 2003, a series of reforms to primary care funding were implemented to improve access, comprehensiveness, and continuity of primary care in Ontario, Canada's most populous province.^{4,5} However, walk-in clinics were left unchanged.⁶ It is estimated that 30% of Ontario residents visit a walk-in clinic every year, even though 94% of them have a primary care provider.⁷ In Ontario, walk-in clinic physicians most often work in a fee-for-service model, which incentivizes high-volume, episodic care.^{8,9} Walk-in clinics have been criticized for reducing continuity of care, which is associated with greater patient satisfaction and better clinical outcomes.^{9,10}

Research of patterns of walk-in clinic use in Ontario has been limited as walk-in clinic encounters are not uniquely identifiable in the health administrative billing system.^{11,12}

In 2012, Ontario launched the Health Care Experience Survey (HCES) to capture patients' experiences with different aspects of the health care system, including timely access to care, use of walk-in clinics, ability to get a referral to a specialist when needed and integration of care across the health care system.^{13,14} Since its launch, the survey has been widely used

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by Ontario's health care sector¹⁴ and has opened new research opportunities in primary care.^{15–18}

Previously reported factors that contribute to patients' use of walk-in clinics instead of their usual primary care physician include a lack of access to their enrolled physician, the convenience of walk-in clinics, the perceived urgency of health conditions and a desire to be assessed within the same day.^{19–25} However, earlier studies had limitations such as small or convenience sampling and exclusion of the patient's perspective, and most were conducted before Ontario's primary care reforms.

The lack of population-based research has left a substantial gap in understanding the function and impact of walk-in clinics in Ontario. We sought to determine whether an association exists between patient-reported measures of timely access to their primary care physician and their use of walk-in clinics in the previous 12 months. We hypothesized a priori that lack of same-day or next-day access and after-hours access to one's own primary care physician or clinic would be associated with a greater use of walk-in clinics.

Methods

Study design and setting

We conducted a cross-sectional study of Ontario residents who had a primary care physician by linking population-based administrative data to Ontario's HCES, collected between 2013 and 2020. These data sets were linked using unique encoded identifiers and analyzed at ICES.

Ontario had more than 14.5 million residents in 2019 and is the most populous province in Canada.²⁶ Primary care in Ontario is publicly funded and, in most cases, delivered by private physician practices through different payment models. Patients insured by the Ontario Health Insurance Plan (OHIP) are not charged for seeing a primary care physician or for using a walk-in clinic; these services are entirely publicly funded. More than 81% of the population is formally enrolled with a primary care physician practising in a primary care enrolment model.²⁷ The remaining population receives care from fee-for-service primary care physicians, salaried primary care physicians or nurse practitioner-led clinics, or are unattached.²⁷ Primary care enrolment models combine formal patient registration and blended funding that consists of a varying proportion of capitation payments and bonuses for meeting preventive care targets, as well as contractual obligations and financial incentives to provide after-hours coverage to enrolled patients.^{5,27} Physician practices with capitated payment models also receive an access bonus, which is reduced if patients visit a physician outside the enrolling group.^{5,16,27}

Data sources and study population

The HCES is a large cross-sectional population-based survey of Ontario residents created by the Ministries of Health and Long-Term Care.^{13,14} It was implemented by the Institute for Social Research at York University and has been active from 2012 to the present.^{13,14} The survey design, including questions and target population, was informed by an earlier

provincial survey called the Primary Care Access Survey (2006–2011), as well as the Commonwealth Fund's International Health Policy Survey of the General Population and the Canadian Community Health Survey, to ensure comparability.¹³ Before implementation, the HCES was piloted between October 2012 and December 2012, and expert panels were consulted throughout the implementation process.¹³

The HCES is voluntary and administered by telephone (cellphone or landline) in English or French to a target population aged 16 years and older living in private dwellings in Ontario.^{13,14} The survey's total sample size is 11 200 each year, selected from the Registered Persons Database (RPDB) by a multistage, stratified design of all current and previous health plan registrants in Ontario, and is collected in 3-month waves.¹³ The province is divided into 76 strata and households are randomly selected from each stratum; 1 respondent is randomly selected from each household. Once a household has been sampled, they are removed from the sampling frame for 2 years.¹³ People living in institutions and households without telephones are excluded from the survey.¹³ The overall response rate was 47.3% for our study period and ranged from 29% to 54% in each survey year.¹³

Our study population included all individuals surveyed from wave 2, January 2013 (the first complete survey wave after the pilot) to wave 29, February 2020 (the last survey wave before pausing because of COVID-19). We excluded those younger than 16 years, those who were uninsured by OHIP, those who reported not having a primary care provider and those who could not be linked to a primary care physician using health administrative data on Apr. 1 of the interview year.

We restricted the study population to those who responded either yes or no to the question, "Have you been to a walk-in clinic because you were sick or for a health-related problem in the last 12 months?" and excluded those who responded that they did not know or who refused to answer.

Outcome

Our primary outcome was a response of yes to the question, "Have you been to a walk-in clinic because you were sick or for a health-related problem in the last 12 months?". The survey clarified, "We do not mean a drop-in or walk-in clinic that is offered by your provider's practice. We are only asking about separate walk-in clinics that your provider is not affiliated with."¹³

Access measures

The key variables of interest were responses to the questions related to timely access, namely, "How many days did it take from when you first tried to see your provider to when you actually saw him/her or someone else in the office?" and "Not including hospital emergency departments, does your provider have an after-hours clinic where patients can be seen by or talk to a doctor or nurse when the practice is closed?" Given the survey design, a response to the question on same-day or next-day access question is conditional on a yes answer to the questions, "Not counting yearly check-ups or monitoring of an

ongoing health issue, in the last 12 months did you want to see a doctor because you were sick or were concerned that you had a health problem?” and “Did you actually see your provider?” We categorized respondents into groups as those who saw their physician or clinic in less than 2 days (had same-day or next-day access), those who saw their physician or clinic in 2 or more days (did not have same-day or next-day access), those who wanted medical care but did not see their own primary care provider and not applicable (those who did not seek any medical care). We treated responses of “refused” and “I don’t know” as missing values. For the variable on after-hours access, we coded responses of “don’t know” together with “no,” to indicate a lack of knowledge of after-hours options. We treated responses of “refused” as missing values.

Other variables

We reported respondents’ age, sex, self-reported level of education and self-reported financial situation. We determined rurality using the Rurality Index for Ontario (large urban = 0, medium urban = 1–9, small urban = 10–39 and rural \geq 40).¹⁶ We determined respondent’s multimorbidity (having \geq 3 chronic conditions) at the time of the interview using a standard ICES algorithm²⁸ (Appendix 1, Appendix A, available at www.cmajopen.ca/content/11/5/E847/suppl/DC1). We obtained respondents’ primary care model and usual primary care physician type — including formally enrolled and virtually rostered to the physician with the highest total value of fee-for-service billing claims for primary care services over the previous 2 years^{29,30} (Appendix 1, Appendix B) — from the ICES-derived Primary Care Population data set. We calculated the total number of visits to the usual primary care physician using physician billing data over the previous 2 years. We also included respondents’ self-reported attempts to call their primary care physician with a medical question or concern during the day on a Monday to Friday in the previous 12 months. For descriptive purposes only, we included the total number of visits to any primary care physician, the number of primary care visits to a physician outside the usual primary care physician, patient-reported quality of care received in walk-in clinics, whether their medical condition could have been managed by their primary care physician if they were available and respondents’ reported main reason for going to a walk-in clinic. The latter indicator was added to HCES in 2014 (present only for waves 6–29). The complete description of variables and data sources can be found in Appendix 1, Appendix C and Appendix D.

Statistical analysis

We compared demographic characteristics and primary care use of survey respondents who reported using walk-in clinics to those who did not use walk-in clinics within the previous 12 months using standardized mean differences (SMDs), with differences greater than 10% considered meaningful.³¹ For categorical variables, we reported raw counts and weighted proportions. We used a multivariable logistic regression model to test the association between patient-reported use of

walk-in clinics and measures of timely access to a patient’s own primary care physician or clinic (same-day or next-day and after-hours). We used generalized estimating equations with an exchangeable correlation structure to account for clustering at the level of the enrolling physician. We adjusted for age, sex, self-reported education, self-reported financial situation, rurality, multimorbidity, patients’ attempt to call their primary care physician or clinic during office hours (Monday to Friday), patients’ type of primary care model and the number of primary care visits to their usual primary care physician within the previous 2 years. We reported the results as adjusted odds ratios (ORs) with 95% confidence intervals (CIs).

We weighted all results using the sampling weight determined during the implementation of the survey. We considered a 2-tailed p value of less than 0.05 significant. We conducted all analysis using SAS Enterprise Guide software, version 7.1.

Subgroup analysis

Given that most walk-in clinics in Ontario are in urban areas,^{12,32} we analyzed the subgroup of respondents living in large and medium urban areas (Rurality Index for Ontario score 0–9). We then stratified results by respondents’ sex and type of primary care enrolment model to further evaluate whether this affected the relationship between access indicators and self-reported use of walk-in clinics. We conducted sensitivity analyses (best–worst method) to assess the impact of missing values for the variables of same-day or next-day care and after-hours care and whether the results from the waves with the lowest response rates (waves 28 and 29) were in concordance with our entire sample.

Ethics approval

The use of data in this study was authorized under section 45 of Ontario’s *Personal Health Information Protection Act, 2004* and did not require ethics review board approval.

Results

After exclusions (Figure 1), we included 60 935 responses (60 430 unique respondents and 505 respondents who were sampled twice) in this study. We treated the repeated responses as unique individuals within the cohort for analysis. In the cohort, 56.9% ($n = 35 633$) were female and the mean age was 53.9 (standard deviation 17.3) years; 40.2% ($n = 20 915$) of the respondents lived in large urban areas and 26.7% ($n = 15 906$) lived in medium urban areas (Table 1).

Overall, 28.6% ($n = 16 166$) of the cohort had visited a walk-in clinic within the previous 12 months, which gradually declined over the years (the highest being 31.3% in 2013 and the lowest being 24.7% in 2020) (Appendix 1, Appendix E). Compared with nonusers, walk-in users were more often young adults (38.9% v. 21.8% respondents aged 16–39 yr, SMD 0.37), lived in large (44.5% v. 38.5%, SMD 0.12) and medium urban areas (35.2% v. 23.2%, SMD 0.27) and reported tight, very tight or poor financial situations (22.7%

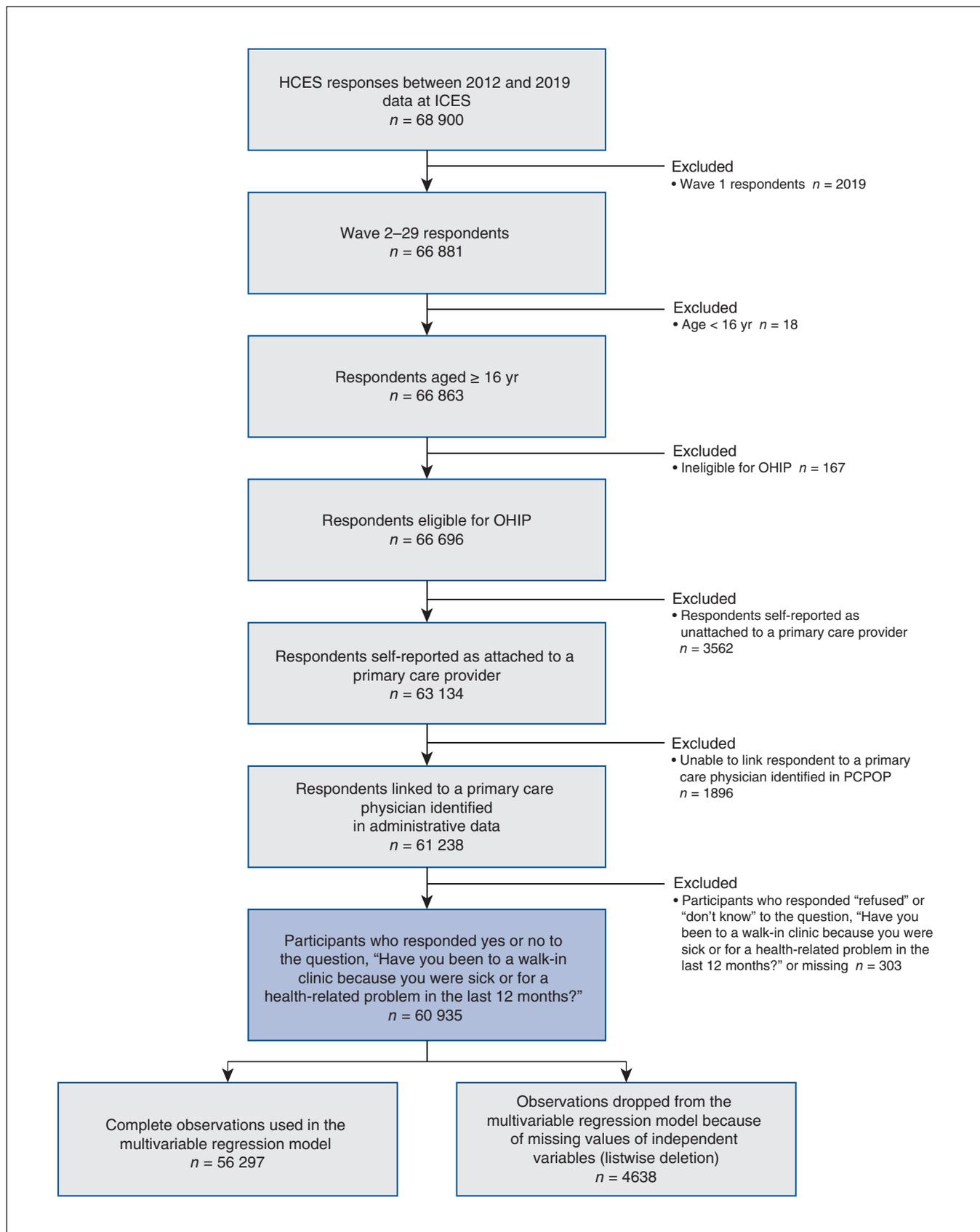


Figure 1: Inclusion and exclusion criteria for the study cohort. Note: HCES = Health Care Experience Survey, OHIP = Ontario Health Insurance Plan, PCPOP = Primary Care Population.

Table 1 (part 1 of 2): Cohort baseline characteristics

Characteristic	No. (%) of respondents* n = 60935
Sex	
Female	35 633 (56.9)
Male	25 302 (43.1)
Age, yr, mean ± SD	53.9 ± 17.3
Rurality	
Large urban (RIO score 0)	20 915 (40.2)
Medium urban (RIO score 1–9)	15 906 (26.7)
Small urban (RIO score 10–39)	16 008 (22.8)
Rural (RIO score ≥ 40)	8106 (10.3)
Self-reported level of education	
High school	18 979 (29.4)
College or bachelor's degree	34 465 (57.2)
Graduate or professional degree	6978 (12.6)
Missing	513 (0.8)
Self-reported financial situation	
Very comfortable	9691 (16.1)
Comfortable	36 980 (61.1)
Tight, very tight or poor	12 566 (19.9)
Do not know or refused	1698 (2.9)
Multimorbidity (having ≥ 3 chronic conditions)	
Yes	5839 (8.5)
No	55 096 (91.5)
Have called or tried to call primary care physician with a medical question or concern during the day on a Monday to Friday	
Yes	33 874 (54.8)
No	26 705 (44.6)
Missing	356 (0.6)
After-hours access to own primary care physician or clinic	
Yes	25 373 (41.1)
No	35 549 (58.9)
Missing	13 (0.02)
Saw own physician or clinic on same day or next day when sick	
Yes	11 978 (21.3)
No	18 715 (30.5)
Did not see their own physician or clinic	3925 (6.2)
Not applicable†	24 691 (39.5)
Missing	1626 (2.5)
Type of primary care model‡	
Virtually enrolled in a fee-for-service practice	2582 (4.7)
Enhanced fee-for-service practice	15 990 (29.7)
Non-team capitation practice	18 459 (32)
Team capitation practice	22 091 (32.5)
Other patient enrolment model	1814 (1.1)

Table 1 (part 2 of 2): Cohort baseline characteristics

Characteristic	No. (%) of respondents* n = 60935
Total visits to any primary care physician over 2 yr, median (IQR)	8 (4–13)
Total visits to any primary care physician over 2 yr, mean ± SD	10.7 ± 11.3
Total visits to the usual primary care physician over 2 yr, median (IQR)	5 (3–9)
Total visits to the usual primary care physician over 2 yr, mean ± SD	7.4 ± 8.4
Total visits to a primary care physician other than the usual physician over 2 yr, median (IQR)	2 (0–4)
Total visits to a primary care physician other than the usual physician over 2 yr, mean ± SD	3.3 ± 5.2
Self-reported reasons for using walk-in clinics§	
Provider was not available or could not get an appointment	6970 (50.8)
It was faster to go to the walk-in	3196 (23.1)
The walk-in was closer	2339 (18.3)
Provider advised or follow-up	357 (2.2)
Do not know or refused	125 (0.9)
Missing	711 (4.6)
Self-reported that the last walk-in visit was for a condition that could have been treated by their primary care provider, if he or she had been available¶	
Yes	14 511 (89.9)
No	1214 (7.5)
Do not know or refused	426 (2.5)
Missing	15 (0.1)
Self-reported quality of care received in walk-in a clinic when visited¶	
Excellent, very good or good	12 906 (79.2)
Fair	2119 (13.5)
Poor	1053 (6.9)
Do not know or refused	88 (0.4)

Note: IQR = interquartile range, RIO = Rurality Index for Ontario, SD = standard deviation.
 *Unless indicated otherwise. Results were weighted.
 †Included respondents who did not seek any medical care in the previous 12 months.
 ‡Patients virtually enrolled in a FFS practice were those not formally part of an enrolment model but who received care from a regular primary care physician. Enhanced fee-for-service practices include those using a comprehensive care model and family health groups. Non-team capitation practices include those using capitation models (i.e., family health organization and family health network) that are not signatory to a family health team, which are interdisciplinary models of care. Team capitation practices include those using capitation models (i.e., family health organization and family health network) that are part of a family health team. Other patient enrolment models include smaller, specialized patient enrolment models.
 §Added in wave 6 of the survey and calculated for those who reported visiting a walk-in clinic (n = 13 698).
 ¶Calculated for those who reported visiting a walk-in clinic (n = 16 166).

Table 2 (part 1 of 2): Descriptive comparison of those who did and did not report using a walk-in clinic in the previous 12 months

Characteristic	No. (%) of respondents*		Standardized mean difference
	Used walk-in clinics n = 16 166	Did not use walk-in clinics n = 44 769	
Sex			
Female	10 077 (59.7)	25 556 (55.8)	0.08
Male	6 089 (40.3)	19 213 (44.2)	
Age, yr, mean ± SD	45.1 ± 16.9	53.4 ± 16.8	-0.02
Age, yr			
16–39	5 666 (38.9)	8 278 (21.8)	0.37
40–64	7 568 (47.5)	21 080 (50.1)	-0.05
65–84	2 723 (12.7)	14 054 (26.1)	-0.34
≥ 85	209 (0.9)	1 357 (2.0)	-0.10
Rurality			
Large urban (RIO score 0)	6 394 (44.5)	14 521 (38.5)	0.12
Medium urban (RIO score 1–9)	5 723 (35.2)	10 183 (23.2)	0.27
Small urban (RIO score 10–39)	3 192 (16.5)	12 816 (25.4)	-0.22
Rural (RIO score ≥ 40)	857 (3.8)	7 249 (12.9)	-0.33
Self-reported level of education			
High school	4 071 (24.5)	14 908 (31.4)	-0.16
College or bachelor's degree	9 892 (60.7)	24 573 (55.7)	0.10
Graduate or professional degree	2 080 (14.1)	4 898 (12.0)	0.07
Missing	123 (0.7)	390 (0.9)	
Self-reported financial situation			
Very comfortable	2 278 (13.7)	7 413 (17.1)	-0.09
Comfortable	9 579 (60.8)	27 401 (61.2)	-0.01
Tight, very tight or poor	3 864 (22.7)	8 702 (18.8)	0.10
Do not know or refused	445 (2.8)	1 253 (2.9)	
Multimorbidity (having ≥ 3 chronic conditions)			
Yes	1 412 (7.7)	4 427 (8.9)	-0.04
No	14 754 (92.3)	40 342 (91.1)	
Have called or tried to call primary care physician with a medical question or concern during the day on a Monday to Friday			
Yes	9 560 (57.0)	24 314 (53.9)	0.07
No	6 524 (42.5)	20 181 (45.5)	
Missing	82 (0.5)	274 (0.6)	
After-hours access to own primary care physician or clinic			
Yes	6 500 (37.1)	18 873 (42.6)	-0.11
No	9 665 (62.9)	25 884 (57.3)	
Missing	1 (0)	12 (0.1)	
Saw own physician or clinic on same day or next day when sick†			
Yes	3 398 (36.9)	8 580 (40.3)	-0.08
No	6 030 (58.9)	12 685 (54.8)	
Missing	436 (4.2)	1 190 (4.9)	

Table 2 (part 2 of 2): Descriptive comparison of those who did and did not report using a walk-in clinic in the previous 12 months

Characteristic	No. (%) of respondents*		Standardized mean difference
	Used walk-in clinics <i>n</i> = 16 166	Did not use walk-in clinics <i>n</i> = 44 769	
Type of primary care models			
Virtually enrolled in a fee-for-service practice	920 (6.3)	1662 (4.0)	0.09
Enhanced fee-for-service practice	5829 (39.9)	19 161 (25.7)	0.31
Non-team capitation practice	5107 (31.4)	13 351 (32.2)	-0.01
Team capitation practice	4009 (21.5)	18 982 (37.0)	-0.34
Other patient enrolment models	301 (0.9)	1513 (1.1)	-0.02
Total visits to any primary care physician over 2 years, mean \pm SD	11.6 \pm 11.7	9.8 \pm 11.1	0.01
Total visits to any primary care physician over 2 years, median (IQR)	9 (5–15)	7 (4–13)	NA
Total visits to the usual primary care physician over 2 years, mean \pm SD	6.9 \pm 8.1	7.3 \pm 8.5	0
Total visits to the usual primary care physician over 2 years, median (IQR)	5 (3–9)	5 (3–9)	NA
Total visits to a primary care physician other than the usual physician over 2 years, mean \pm SD	4.7 \pm 6.0	2.5 \pm 4.7	0.01
Total visits to a primary care physician other than the usual physician over 2 years, median (IQR)	3 (1–6)	1 (0–3)	NA

Note: IQR = interquartile range, NA = not applicable, RIO = Rurality Index for Ontario, SD = standard deviation.
*Unless indicated otherwise. Results were weighted.
†Variable excluded those who did not seek any medical care and those who did not see their own primary care physician or clinic (*n* = 32 319).

v. 18.8%, SMD 0.1). A lower proportion of walk-in users reported same-day or next-day access to their primary care physician or clinic when sick (36.9% v. 40.3, SMD 0.08), compared with nonusers. More walk-in users reported that their primary care physician did not offer an after-hours clinic (62.9% v. 57.3%, SMD 0.11) (Table 2).

Among walk-in users, 50.8% (*n* = 6970) stated that their main reason for going to a walk-in clinic was that their primary care provider was unavailable or that they could not get an appointment with their provider. Another 23.1% (*n* = 3196) reported that it was faster to go to the walk-in clinic, and 18.3% (*n* = 2339) reported that the walk-in clinic was closer to them. Most walk-in users (*n* = 14 511, 89.9%), reported that their last walk-in visit was for a condition that could have been treated by their primary care provider, if they had been available. Only 6.9% (*n* = 1053) of walk-in clinic users reported that the care they received in a walk-in clinic was poor (Table 1).

Association of self-reported access and walk-in use

We found that respondents who wanted medical care but did not see their own physician or clinic had a much greater likelihood of going to a walk-in clinic than those with same-day or next-day access (adjusted OR 2.77, 95% CI 2.49–3.09). Respondents who reported that it took 2 days or more to access their primary care physician or clinic also had a higher likelihood of going to a walk-in clinic than those who had

same-day or next-day access (adjusted OR 1.23, 95% CI 1.13–1.34). Those who reported that their primary care physician or clinic did not offer an after-hours clinic were similarly more likely to report attending a walk-in clinic (adjusted OR 1.14, 95% CI 1.07–1.21).

Respondents with a tight, very tight or poor financial situation had a higher likelihood of going to a walk-in clinic than those who reported a very comfortable financial situation (adjusted OR 1.22, 95% CI 1.11–1.35). Those with a high school education had a lower likelihood of going to a walk-in clinic than those with graduate or professional degrees (adjusted OR 0.84, 95% CI 0.75–0.94).

Respondents enrolled in a team capitation model had the lowest likelihood of going to a walk-in clinic, compared with those in other patient enrolment models. Finally, respondents living in medium-sized urban areas had a higher likelihood of using a walk-in clinic than those living in larger urban, small urban and remote areas (Table 3).

Subgroup analysis: residents of large and medium urban areas

The subgroup that resided in large or medium urban areas included 36 821 participants (66.9% of the total sample). In this subgroup, respondents who did not see their primary care physician or clinic (adjusted OR 3.01, 95% CI 2.64–3.44) or who waited 2 or more days to see their primary care physician

Table 3: Unadjusted and adjusted measures of association between self-reported walk-in use and other variables (n = 56 297)*

Variable	OR (95% CI)	
	Unadjusted model*	Adjusted model†
Sex		
Female	1.18 (1.17–1.18)	1.11 (1.04–1.18)
Male	Ref.	Ref.
Age, yr (per 1-yr increase)	0.97 (0.97–0.97)	0.97 (0.97–0.97)
Rurality		
Large urban (RIO 0)	Ref.	Ref.
Medium urban (RIO 1–9)	1.31 (1.31–1.31)	1.32 (1.21–1.43)
Small urban (RIO 10–39)	0.56 (0.56–0.56)	0.73 (0.67–0.79)
Rural (RIO ≥ 40)	0.26 (0.26–0.26)	0.33 (0.30–0.38)
Self-reported level of education		
Graduate or professional degree	Ref.	Ref.
Finished high school	0.66 (0.66–0.67)	0.84 (0.75–0.94)
Finished college or university bachelor's degree	0.92 (0.92–0.92)	0.94 (0.85–1.05)
Self-reported financial situation		
Very comfortable	Ref.	Ref.
Comfortable	1.24 (1.24–1.24)	1.15 (1.07–1.24)
Tight, very tight or poor	1.51 (1.51–1.52)	1.22 (1.11–1.35)
Multimorbidity (had ≥ 3 chronic conditions)		
Yes	0.86 (0.85–0.86)	1.28 (1.15–1.43)
No	Ref.	Ref.
Tried to contact physician's office with a medical question or concern during the day on a Monday to Friday		
Yes	1.13 (1.13–1.13)	1.07 (1.00–1.14)
No	Ref.	Ref.
Reported that own primary care physician or clinic offers after-hours access		
Yes	Ref.	Ref.
No	1.26 (1.26–1.26)	1.14 (1.07–1.21)
Saw own physician or clinic on the same day or next day when sick		
Yes	Ref.	Ref.
No	1.17 (1.17–1.18)	1.23 (1.13–1.34)
Did not see their own physician or clinic	2.59 (2.58–2.60)	2.77 (2.49–3.09)
Not applicable*	0.53 (0.53–0.53)	0.62 (0.57–0.68)
Type of primary care model		
Team capitation practice	Ref.	Ref.
Virtually enrolled in a fee-for-service practice	1.67 (2.66–2.68)	2.02 (1.76–2.32)
Enhanced fee-for-service practice	2.67 (2.66–2.67)	1.94 (1.76–2.14)
Non-team capitation practice	1.68 (1.68–1.68)	1.39 (1.28–1.52)
Other patient enrolment model	1.35 (1.24–1.36)	2.02 (0.79–5.20)
No. of visits to the usual primary care physician (per 1-visit increase)	0.99 (0.99–0.99)	0.99 (0.99–1.00)

Note: CI = confidence interval, OR = odds ratio, Ref. = reference category.

*A different number of observations were used in unadjusted models because of missing values in the variable.

†Adjusted for sex, age, self-reported level of education, self-reported financial situation, rurality, multimorbidity (≥ 3 chronic conditions), access during office hours Monday to Friday, patient's type of primary care model and the number visits to the usual primary care physician over 2 years.

*Not applicable included those who did not seek any medical care in the last 12 months.

or clinic (adjusted OR 1.25, 95% CI 1.13–1.38) had a higher likelihood of going to a walk-in clinic than those who had same-day or next-day access. Those who reported that their primary care physician did not offer an after-hours clinic also had a higher likelihood of going to a walk-in clinic (adjusted OR 1.23, 95% CI 1.14–1.32) (Table 4). The association between access indicators and walk-in use was not statistically different for females and males (Appendix 1, Appendix F).

We found variability in self-reported measures of access across primary care model types, with the proportion that reported same-day or next-day access ranging from 38.4% in non-team capitation models to 46.6% in fee-for-service models; after-hours access ranged from 22.1% in fee-for-service models to 58.2% in team capitation models (Appendix 1, Appendix G). After stratifying by patient enrolment model, we found that in both capitation models (non-team and team), the likelihood of going to a walk-in clinic increased substantially for those who did not see their own physician or clinic or were unable to access their physician or clinic on the same day or next day, as well as for those who reported that their usual physician or clinic did not offer after-hours care. In contrast, there was no such relationship between same- or next-day access or after-hours care with walk-in use for respondents virtually enrolled to a fee-for-service model (Table 5). The results from the sensitivity analyses were also concordant with our main findings (Appendix 1, Appendix H and Appendix I).

Interpretation

We evaluated 2 patient-reported measures of timely access and the use of walk-in clinics among Ontario residents who had a primary care physician. We found that patients who had poor same-day or next-day access to their primary care physician or

clinic had a greater likelihood of having used a walk-in clinic in the previous 12 months. We also found that respondents who wanted medical care but did not see their own physician or clinic at all had a much greater likelihood of going to a walk-in clinic. This could reflect inability to reach clinic staff to make

Table 4: Association between measures of access and walk-in clinic use among residents of large and medium-sized urban areas (n = 34 110)*

Variables	OR (95% CI)	
	Unadjusted model	Adjusted model†
Reported that own primary care physician or clinic offers after-hours access		
Yes	Ref.	Ref.
No	1.50 (1.49–1.50)	1.23 (1.14–1.32)
Saw own physician or clinic on same day or next day when sick		
Yes	Ref.	Ref.
No	1.28 (1.28–1.29)	1.25 (1.13–1.38)
Did not see their own physician or clinic	3.23 (3.22–3.24)	3.01 (2.64–3.44)
Not applicable‡	0.60 (0.59–0.60)	0.63 (0.58–0.70)

Note: CI = confidence interval, OR = odds ratio, Ref. = reference category.
 *A different number of observations were used because of missing values in the variables.
 †Adjusted for sex, age, self-reported level of education, self-reported financial situation, rurality, multimorbidity (≥ 3 chronic conditions), access during office hours Monday to Friday, patient's type of primary care model and the number of visits to the usual primary care physician over 2 years.
 ‡Included those who did not seek any medical care in the previous 12 months.

Table 5: Association between measures of access and walk-in clinic use, stratified by respondent's primary care model, in large and medium-sized urban areas*

Variables	OR (95% CI)			
	Virtually enrolled to a FFS n = 1691	Enhanced FFS n = 11 873	Non-team capitation n = 11 923	Team capitation n = 8527
Reported that own primary care physician or clinic offers after-hours access				
Yes	Ref.	Ref.	Ref.	Ref.
No	0.89 (0.67–1.18)	1.14 (1.01–1.30)	1.18 (1.07–1.31)	1.46 (1.26–1.68)
Saw own physician or clinic on same day or next day when sick				
Yes	Ref.	Ref.	Ref.	Ref.
No	1.04 (0.75–1.45)	1.21 (1.01–1.44)	1.39 (1.22–1.60)	1.25 (1.05–1.49)
Did not see their own physician or clinic	2.59 (1.51–4.45)	2.58 (2.04–3.25)	3.48 (2.81–4.30)	3.40 (2.61–4.42)
Not applicable†	0.54 (0.39–0.75)	0.61 (0.51–0.71)	0.61 (0.53–0.71)	0.81 (0.67–0.99)

Note: CI = confidence interval, FFS = fee-for-service, OR = odds ratio, Ref. = reference category.
 *Results obtained from separate regression models, adjusted for sex, age, self-reported level of education, self-reported financial situation, multimorbidity (≥ 3 chronic conditions), rurality, access during office hours and the number of visits to the usual primary care physician over 2 years.
 †Included those who did not seek any medical care in the previous 12 months.

an appointment, excessive delay to an appointment or, if patients did not even attempt to connect with their usual primary care provider, choosing a walk-in clinic as their point of first contact. Most respondents reported that their physician did not offer after-hours care, and these people also had a higher likelihood of going to a walk-in clinic. In addition, we found that most walk-in clinic users were younger, lived in large- or medium-sized urban areas and reported a tight, very tight or poor financial situation.

Our findings are aligned with previous studies that reported that the perception of physician unavailability led to a patient's decision to go to a walk-in clinic or emergency department for services that could be managed by their primary care physician.^{1,2,21,22,25} Indeed, in our study, half of walk-in users cited an inability to see their primary care provider as the main reason they chose to visit a walk-in clinic. Despite more than 81% of Ontario residents being enrolled in primary care enrolment models that are required to offer after-hours clinics (i.e., non-team capitation, team capitation and enhanced fee-for-service),^{5,27,33} we found that most respondents were unaware of whether their primary care physician offered after-hours care. In 2014/15, the Auditor General of Ontario reported that 60% of primary care physicians in capitated models and 36% in enhanced fee-for-service models failed to meet their contractual obligations to deliver after-hours care, highlighting a gap in policy implementation.³⁴

We found that the relationship between timely access to primary care and walk-in clinic use differed according to the patient's primary care model. Others have reported on the link between primary care models, geography and access to primary care.³⁵⁻³⁷ Financial penalties are built into team capitation and non-team capitation models to encourage physicians to offer after-hours access.^{5,16,27,33} Patients enrolled in these models report higher levels of after-hours access, but lower levels of same- or next-day access than patients enrolled in enhanced fee-for-service models.¹⁶ We found that reduced access of either type (after-hours or same- or next-day access) was associated with walk-in clinic use.

Perceived lack of timely access to their usual primary care physician or clinic can contribute to a patient's decision to use a walk-in clinic. Primary care physicians should be supported with improved mechanisms to manage patients' access to their practice. This should be supplemented with improved monitoring and communication about after-hours clinic availability and patient education on which conditions require urgent assessment and which conditions can wait. Another policy suggestion is to connect walk-in clinics with patients' regular source of primary care. Since greater distance to one's primary care provider was the main reason for visiting a walk-in clinic for 18% of walk-in users in our study, primary care offices and partnering walk-in clinics would ideally be in close proximity, and responsible for the medical care of patients residing within the same neighbourhood. Tools such as integrated funding and information sharing between the patient's usual primary care physician and the walk-in clinic could reduce duplication of services and improve continuity and quality of care. Canadian studies comparing the costs of

health care delivery in walk-in versus other settings are lacking, and the results of an ongoing study will be informative in this regard.³⁸ There is also a need for a registration process for walk-in clinics, which would make them identifiable in health administrative data. This would assist in accurately capturing all the services provided by walk-in physicians and, thereby, enable further research on patients' continued use of walk-in clinics instead of their own primary care physicians.

Limitations

By using a population-based approach and multiyear patient-reported data, we have addressed many of the limitations of earlier studies. However, the survey design is limited to those households with a valid health insurance card, community dwellers and those with an active phone number. This could exclude refugees, people experiencing homelessness, those who are unable to speak English or French and some Indigenous peoples. Although survey results were weighted with the aim of representing the overall population, we cannot rule out the potential risk of non-response bias as the survey's overall response rate was below 50%. We included only data before the COVID-19 pandemic in this study. With the expanded use of virtual care, there has been a major shift in how primary care is delivered in Ontario³⁹⁻⁴¹ and more Ontario residents are reporting increasing difficulties accessing primary care.⁴² We suspect that this survey may underestimate the current use of walk-in (either in-person or virtual) clinics.⁴¹ As with all survey studies, our findings are subject to recall bias (e.g., as shaped by patients' previous health care experiences) and social desirability bias, with a resulting possible risk of misclassification. Further, perceived access to primary care is multifaceted and could be influenced by various factors, including patients' behaviour and expectations, the quality of patients' experiences with the broader health care system and geographic proximity of patients to a walk-in clinic or to their primary care physician, as well as other characteristics of the patient's primary care physician and clinic. Many of these factors were not measurable using the existing health administrative data sets or the HCES; thus, they could not be included in this study. Our findings are generalizable to Ontario, a setting with a high level of primary care enrolment.⁴³ However, they may not reflect other contexts where most of the population has no regular source of primary care or settings without public health insurance to cover the cost of walk-in clinic visits.

Conclusion

Patients who reported being unable to see their primary care physician or clinic on the same day or next day and those who were unaware that their physician or clinic offered after-hours clinics were more likely to have visited a walk-in clinic in the previous year. Improved availability of same-day or next-day appointments and after-hours services in primary care may reduce unnecessary use of walk-in clinics. Findings from this study could inform future policies to integrate walk-in clinics into Ontario's broader primary care system.

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Data sharing: The data set from this study is held securely in coded form at ICES. Although legal data sharing agreements between ICES and data providers (e.g., health care organizations and government) prohibit ICES from making the data set publicly available, access may be granted to those who meet pre-specified criteria for confidential access, available at www.ices.on.ca/DAS (email: das@ices.on.ca). The full data set creation plan, underlying analytic code, the complete questionnaire and technical guidelines are available from the authors upon request, understanding that the computer programs may rely upon coding templates or macros that are unique to ICES and are, therefore, either inaccessible or may require modification.

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