CMAJ OPEN

Does pay-for-performance correlate with better access to primary care? A population-based cross-sectional study of the patient experience in urban Ontario

Journal:	*CMAJ Open*
Manuscript ID	CMAJOpen-2020-0235
Manuscript Type:	Cross-sectional
Date Submitted by the Author:	25-Sep-2020
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Keywords:	Family medicine, general practice, primary care, Health policy, Health services research
More Detailed Keywords:	Pay-for-performance, Financial incentives, Access, Evaluation, Patient experience, Physician payment
Abstract:	BACKGROUND Ontario's primary care pay-for-performance Access Bonus rewards those whose patients seek less external care (e.g., walk-in clinics). In theory, higher bonuses should mean better patient access. However, recent research suggests otherwise; rurality strongly correlates with higher bonuses despite higher emergency department use and fewer primary care services versus urban settings. In the urban context, lower bonuses may reflect the abundance of walk-in clinics. It is unclear if lower bonuses also reflect patients' experiences accessing their primary care. METHODS To examine the relationship between the Access Bonus and urban

patient-reported access in Ontario, we conducted a cross-sectional secondary data analysis of health administrative data linked to a patient experience survey conducted from 2013-17. We stratified the urban geography into Large, Medium, and Small Urban settings.

RESULTS

18,893 survey respondents were linked to 3,940 physicians in 414 bonus-eligible practices. Physicians in Small Urban settings had the highest Access Bonuses. Multi-level multivariate regressions found positive correlations between bonus achievement and patient-reported access in Large and Medium Urban settings, but not in the Small Urban setting. Certain patient demographics also correlated with better access, though these relationships were less consistent once the sample was geographically stratified.

INTERPRETATION

While the Access Bonus correlated with access in larger urban settings, it did not in smaller settings, aligning with previous research questioning its utility in smaller geographies. There is limited evidence supporting pay-for-performance in health care. The Access Bonus may benefit from a redesign that considers geography and the patient experience.

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STROBE Statement—Checklist of items that should be included in reports of *cross-sectional studies*

	Item No	Recommendation	Page No
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	3
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	5
Objectives	3	State specific objectives, including any prespecified hypotheses	6
Methods			
Study design	4	Present key elements of study design early in the paper	7
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	7
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	8
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	8
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	7
Bias	9	Describe any efforts to address potential sources of bias	10
Study size	10	Explain how the study size was arrived at	8
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	10
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	10
		(*b*) Describe any methods used to examine subgroups and interactions	10
		(*c*) Explain how missing data were addressed	8, Table 1
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	n/a
		(*e*) Describe any sensitivity analyses	n/a
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	Figure 1
		(b) Give reasons for non-participation at each stage	Figure 1
		(c) Consider use of a flow diagram	Figure 1
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	Tables 2-4

		(b) Indicate number of participants with missing data for each variable of interest	Tables 2-4
Outcome data	15*	Report numbers of outcome events or summary measures	Table 1
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	Figure 3a-d, Figure 4a-d, Tables 5a-d
		(*b*) Report category boundaries when continuous variables were categorized	Tables 3, 4
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	n/a
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	n/a
Discussion			
Key results	18	Summarise key results with reference to study objectives	12
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	14
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	14
Generalisability	21	Discuss the generalisability (external validity) of the study results	14
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	2

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

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Title: Does pay-for-performance correlate with better access to primary care? A population-based cross-sectional study of the patient experience in urban Ontario

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Word count: 2498

Number of Tables: 5

Number of Figures: 4

Author contributions

KP conceived the study. KP, ES, BR, RG, MG, WW, WH, TK contributed to the study design. ES conducted the analysis. All authors interpreted the data. KP drafted the manuscript and all authors critically reviewed it. All authors read and approved the final manuscript.

Data Sharing

The dataset from this study is held securely in coded form at ICES. While data sharing agreements prohibit ICES from making the dataset publicly available, access may be granted to those who meet pre-specified criteria for confidential access, available at www.ices.on.ca/DAS. The full dataset creation plan and underlying analytic code 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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ABSTRACT

BACKGROUND

Ontario's primary care pay-for-performance Access Bonus rewards those whose patients seek less external care (e.g., walk-in clinics). In theory, higher bonuses should mean better patient access. However, recent research suggests otherwise; rurality strongly correlates with higher bonuses despite higher emergency department use and fewer primary care services versus urban settings. In the urban context, lower bonuses may reflect the abundance of walk-in clinics. It is unclear if lower bonuses also reflect patients' experiences accessing their primary care.

METHODS

To examine the relationship between the Access Bonus and urban patient-reported access in Ontario, we conducted a cross-sectional secondary data analysis of health administrative data linked to a patient experience survey conducted from 2013-17. We stratified the urban geography into Large, Medium, and Small Urban settings.

RESULTS

18,893 survey respondents were linked to 3,940 physicians in 414 bonus-eligible practices. Physicians in Small Urban settings had the highest Access Bonuses. Multi-level multivariate regressions found positive correlations between bonus achievement and patient-reported access in Large and Medium Urban settings, but not in the Small Urban setting. Certain patient

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demographics also correlated with better access, though these relationships were less

consistent once the sample was geographically stratified.

INTERPRETATION

While the Access Bonus correlated with access in larger urban settings, it did not in smaller

settings, aligning with previous research questioning its utility in smaller geographies. There is

limited evidence supporting pay-for-performance in health care. The Access Bonus may benefit

from a redesign that considers geography and the patient experience.

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INTRODUCTION

In the early 2000s, one in five patients in Ontario could not find a family doctor.(1) Canadians were experiencing significant challenges accessing primary care for multiple reasons, including financial recessions that had negatively impacted healthcare funding,(2) provincial policies that reduced the net inflow of physicians,(3–5) and family medicine's declining appeal to graduating medical students.(6,7) To address the problem, Ontario was among a number of provinces that implemented aggressive and targeted primary care reforms aimed at improving patient access, quality and continuity, satisfaction, and cost-effectiveness.(8–10) To achieve these objectives, Ontario adopted several strategies including a shift from a strictly fee-for-service payment model to a blended capitation model; a shift from solo/small group practices to larger, shared-care team-based models; and funding to adopt electronic medical records.(9) Financial incentives, several of which targeted access, were also introduced, and included in 2004 a pay-for-performance (P4P) incentive called the Access Bonus.

Across Canada and globally, many health systems are adopting P4P models in an effort to shift from quantity-based funding to quality-based funding. The concept of P4P, however, is controversial for many reasons. The dimensions of healthcare quality can be difficult to disaggregate and measure.(11) Financial incentives may be unnecessary among health professionals, who already have high intrinsic motivation to provide high quality service.(12,13) There is concern about creating unintended, negative consequences,(14) such as decreased provider professionalism, reduced intrinsic motivation, increased health inequities, and excessive physician focus on incentivized conditions or behaviours. (15–17) Furthermore, many P4P initiatives have delivered underwhelming results. (18–25)

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The Ontario Access Bonus is structured with the intention that primary care practices earn bonuses when their patients do not seek external care ("outside use") for core primary care services; the more outside use, the lower the bonus.(26) However, a recent study examining healthcare utilization found instead that rurality is strongly associated with high bonus achievement despite higher ED use, higher per capita costs, and delivery of fewer primary care services when compared to urban settings.(27) In the urban context, lower Access Bonus achievement appeared to reflect patient choice and the abundance of external sources of care (e.g., walk-in clinics) rather than accessibility of primary care practices.

Studies about P4P have primarily used healthcare utilization data as a proxy measure for access. However, these data, which do not capture other aspects of access,(28,29) may not reflect the entire patient experience.(30) Given the importance of the patient experience in evaluating healthcare quality,(31) there is a need to examine access and the Access Bonus from the patient's perspective.

This study aimed to examine the relationship between Ontario patients' reported access to primary care and the Access Bonus received by their family physicians. We focused specifically on the urban context, where competition created by walk-in clinics may play a role in the incentive's effectiveness.(32) Primary care is recognized as the foundation of any high-performing healthcare system, and poor access results in poorer health outcomes and higher health system costs.(33) For policymakers looking to improve primary care access through P4P, Ontario's single-payer medicare system, which enables the centralized collection and analysis of extensive health administrative data, presents a unique opportunity to inform such efforts at a global level.

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METHODS

Setting and context:

The Access Bonus is available to Ontario family practices that operate within a blended

capitation model of care. Within this structure, patients are enrolled to a family physician and

most physician earnings come from an annual per-patient payment adjusted for patient age

and sex. These models can be team-based or non-team-based, with team-based models

receiving additional support from government-funded allied health professionals. The Access

Bonus can increase a physician's earnings by up to 18.59% of their capitation payments.

Design:

We undertook a cross-sectional secondary data analysis using data from a patient experience

survey linked with Ontario health administrative data.

Data sources and linkages:

We used data from the Health Care Experiences Survey (HCES), a telephone survey conducted

quarterly by York University and funded by the Ontario government.(34) The HCES asks patients

about their experiences with healthcare including primary care access; these questions were

used as the outcomes for our study.(34) We also used HCES patient-reported data about

education, primary language, immigration status, and health status in the analyses.

We obtained health administrative data from ICES, an independent, non-profit research

institute whose legal status under Ontario's health information privacy law allows it to collect

and analyze health care and demographic data, without consent, for health system evaluation

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and improvement. Patient-level health administrative data came from the Registered Persons

Database (age, gender) and census data holdings (income quintiles). Physician-level data came

from the ICES Physician Database (age, gender, Canadian graduate, number of years in

practice), the Primary Care Population database (geographic location, roster size (number of

enrolled patients)), and Architected Payment data (Access Bonus achievement). Practice-level

data came from the Primary Care Population database (practice model, group size) and Ontario

Health Insurance Program billings (after-hours services provided).

The HCES and ICES datasets were linked using unique encoded identifiers and analyzed at ICES.

Participants:

A random sample of over 2000 adults (age $\geq$16 years) are included in each quarterly wave of

the HCES.(35) Figure 1 reports the participant cohort. Our study population was derived from

HCES participants from 2013-2017. Of those interviewed more than once, we included only the

first interview in our sample. We restricted our sample to those who indicated they had a

regular primary care source and who consented to have their survey data linked to the

provincial health administrative data. These linkages allowed us to link participants to

physician- and practice-level data, including Access Bonus payments. We excluded patients

belonging to practices not in blended capitation models, and therefore ineligible for the Access

Bonus. We also excluded patients from practices that are exempted from providing a minimum

level of weekly after-hours availability. We excluded rural geographies using the Rurality Index

of Ontario (RIO), where rural areas are assigned a score of 40 and above.(36)

Variable definitions:

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Given the diversity of urban Ontario, including diversity in health services delivery, we stratified

our sample into three geographies we labelled as Large Urban (RIO 0), Medium Urban (RIO 1-9),

and Small Urban (RIO 10-39).(36)

Outcomes:

We measured patients' experiences of access using four access measures from the HCES:

Telephone Access, After-Hours Access, Wait Time for Care ("Wait Time"), and Timeliness of

Wait for Care ("Timeliness"). Table 1 describes the question stems, answer choices, and coding

schemes applied to each outcome variable.

Exposure:

Access Bonus achievement: We hypothesized that the Access Bonus would be associated with

patient-reported access as physicians and practices with higher bonus achievement may be

organizing their services to optimize access. The Access Bonus is deposited monthly into the

group's account for distribution and represents a sum of each group member's bonus

attribution. Each member receives a monthly report of their individual attribution and a list of

their patients who sought outside use. Conceptually, both group- and physician-level factors

can influence Access Bonus achievement. At the physician level, differences in individual roster

management may reflect individual responses to the incentive. To account for these within-

group variations, we therefore treated the bonus as a physician-level variable. Access Bonus

achievement was calculated as the proportion of the maximum potential bonus achieved by the

physician in the fiscal year closest to the HCES interview date.

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Access Bonus achievement was found to follow a non-linear pattern of distribution in our

dataset. We therefore classified the bonus into quintiles based on its distribution and

consistent with other literature.(27) Quintile 1 represented lowest Access Bonus achievement

and Quintile 5 represented highest achievement. Quintile 1 was the reference group in the

analyses.

Covariates:

Covariates were identified based on previous literature examining factors related to primary

care access.(28,29,37) Patient-level covariates were age, gender, education, primary language,

health status, income quintile, and immigration status. Physician-level covariates were age,

gender, Canadian medical graduate (yes/no), years in practice, and roster size. Practice-level

covariates were group size, practice model, and number of after-hours services provided

annually. Patient ED use, primary care service utilization, and walk-in clinic use were reported

as part of the descriptive analysis. Variables derived from health administrative data (for

example, physician- and practice-level variables), were determined using a lookback period of

12 months prior to the HCES interview date.

Statistical analysis:

We conducted a descriptive analysis of the total sample and the geographically stratified

sample.

To examine the relationship between Access Bonus achievement and the four patient-reported

access outcomes, we conducted univariate and multivariate logistic regression analyses for

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both the total sample and the geographically stratified sample. To account for clustering,

multilevel (patient-, physician-, and practice-level) modelling was used.

We used SAS Enterprise Guide version 7.1 (SAS Institute Inc.) for all analyses.

Ethics Approval

The use of data in this project was authorized under section 45 of Ontario's Personal Health

Information Protection Act, which does not require review by a Research Ethics Board.

RESULTS

We included 18,893 patients enrolled with 3,940 physicians in 414 practices. Tables 2-4 report

practice, physician, and patient characteristics. Most practices were not team-based models.

Most practices and physicians were in Large Urban settings. The mean physician age was 51.89

years (SD 11.66), and 47.51% of physicians were female. The mean patient age was 53.83 years

(SD 17.05), and 59.69% of patients were female. Most patients were well-educated, spoke

English as their primary language, were non-immigrants, and were in middle income quintiles.

Patients in smaller urban settings had a lower mean number of primary care visits and a higher

number of ED visits in the previous year than those in larger settings. The mean annual number

of after-hours services provided was highest in practices located in Medium Urban settings.

Table 2 includes the main exposure, Access Bonus, by geographic setting. The mean proportion

of maximum potential Access Bonus achieved by physicians in our sample was 40.26% (SD

30.67). This mean was highest in the Small Urban settings and lowest in the Large Urban

settings.

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Figures 2a-d describe the four patient-reported access outcomes by geography.

Our univariate regression analysis found positive relationships between Access Bonus achievement and each patient-reported access outcome ($p < 0.05$, 95% confidence intervals). When stratified by geography, this was most prominent in the largest urban settings. Figures 3a-d summarize these findings.

Our multivariate regression analysis also demonstrated positive relationships between Access Bonus achievement and patient-reported access ($p < 0.05$, 95% CI). These are indicated by dark blue bars in Figures 4a-d. The odds ratios (and 95% CI) for favourable access for the four outcomes across the total sample were: *Telephone Access* – Q2: 1.18 (0.98-1.42), Q3: 1.34 (1.10-1.63), Q4: 1.46 (1.19-1.79), and Q5: 1.87 (1.50-2.33); *After-Hours Access* – Q2: 1.26 (1.09-1.47), Q3: 1.46 (1.23-1.74), Q4: 1.77 (1.46-2.15), and Q5: 1.88 (1.52-2.32); *Wait Time for Care* – Q2: 1.01 (0.85-1.20), Q3: 1.17 (0.97-1.41), Q4: 1.27 (1.05-1.55), and Q5: 1.63 (1.32-2.00); and *Timeliness* – Q2: 1.29 (0.98-1.69), Q3: 1.29 (0.94-1.77), Q4: 1.58 (1.16-2.13), and Q5: 1.98 (1.38-2.82).

When stratified by geography, these relationships were again most prominent in the largest urban settings. A few positive relationships were found in the medium-sized settings, and no relationships were found in the smallest urban settings.

Tables 5a-d report the multivariate regression results for the main exposure along with the patient-, physician-, and practice-level covariates. ICCs confirm appropriateness of the three-level modeling for each outcome.

INTERPRETATION

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This study examines the pay-for-performance Access Bonus through the patient experience lens and with a deeper dive into the complex, competitive urban landscape. We looked at four patient-reported access measures from the large, multi-year Health Care Experiences Survey, and stratified urban Ontario into three distinct geographies. We found that the Access Bonus correlates with better patient-reported access in Large Urban settings and, to some extent, in Medium Urban settings. Our findings suggest that in the most competitive primary care markets, such as large cities with numerous walk-in clinics, the Access Bonus may motivate physicians and practices to organize and deliver services in ways that better meet patients' needs. As a cross-sectional study, it is also possible that better access was a pre-existing feature of large urban practices that opted to join the blended capitation model.(38) However, the dose response seen for three of the four outcomes (i.e., the higher the Access Bonus, the higher the odds ratio for favourable Telephone Access, After-Hours Access, and Wait Time) provides some support that the relationship may be causal.

These findings contrast with previous Ontario research that measured access using healthcare utilization and found no correlation between the bonus and patient access.(27) A key reason for the difference in findings may be the different outcomes used to define access, highlighting the multidimensional nature of access(28,29,39) and the need for policymakers to depend on more than one measure. As well, the current study explored the relationship between the Access Bonus and patient-reported access at different levels of urban geography, and used a different conceptual approach to calculating the physician bonus to capture within-group variations.

In Small Urban settings, we did not see correlations between the Access Bonus and any of the patient-reported access measures. This suggests that this incentive may not be effective in

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geographies where competition is minimal and in turn, patient choice limited. This does align with the conclusion from previous research questioning the utility of the Access Bonus particularly in smaller settings.(27) In this context, the Access Bonus does not appear to relate to the access provided to patients.

Our multilevel, multivariate regression analysis of the total sample found that certain patient demographics correlated with access. These included female gender, older age, higher education, non-immigrant status, and better self-reported health, where correlations with better access were seen across several measures. Although these relationships were less consistent when the sample was geographically stratified, they suggest alignment with previous research reporting that certain patients are more likely to enjoy better access.(28,37) This reiterates the importance of designing services to meet the needs of more vulnerable populations.

Limitations

As a cross-sectional analysis, these results cannot confirm causality. We did not include some forms of access such as email due to small sample size in the HCES for this question. Changes in practice necessitated by the COVID-19 pandemic may result in increased use of email and other forms of virtual care moving forward. Like many surveys, the HCES is susceptible to sampling bias and recall bias.(37) Finally, the non-linearity of certain covariates such as roster size and group size mean that regression results for these covariates should be interpreted with caution.

Conclusion

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This study adds to existing literature by examining the Access Bonus through a patient

experience lens and within the complex urban context. While the bonus did correlate with

access in larger urban settings, this was not the case in smaller urban settings, aligning with

previous research questioning its utility in smaller geographies. Longitudinal and qualitative

research would help better understand the nature and direction of causal relationships. There

is limited evidence supporting pay-for-performance models in health care. The Access Bonus

incentive may benefit from a redesign that considers geographic factors and the patient

experience.

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rendertype=abstract

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Figure 1. Cohort Flowchart
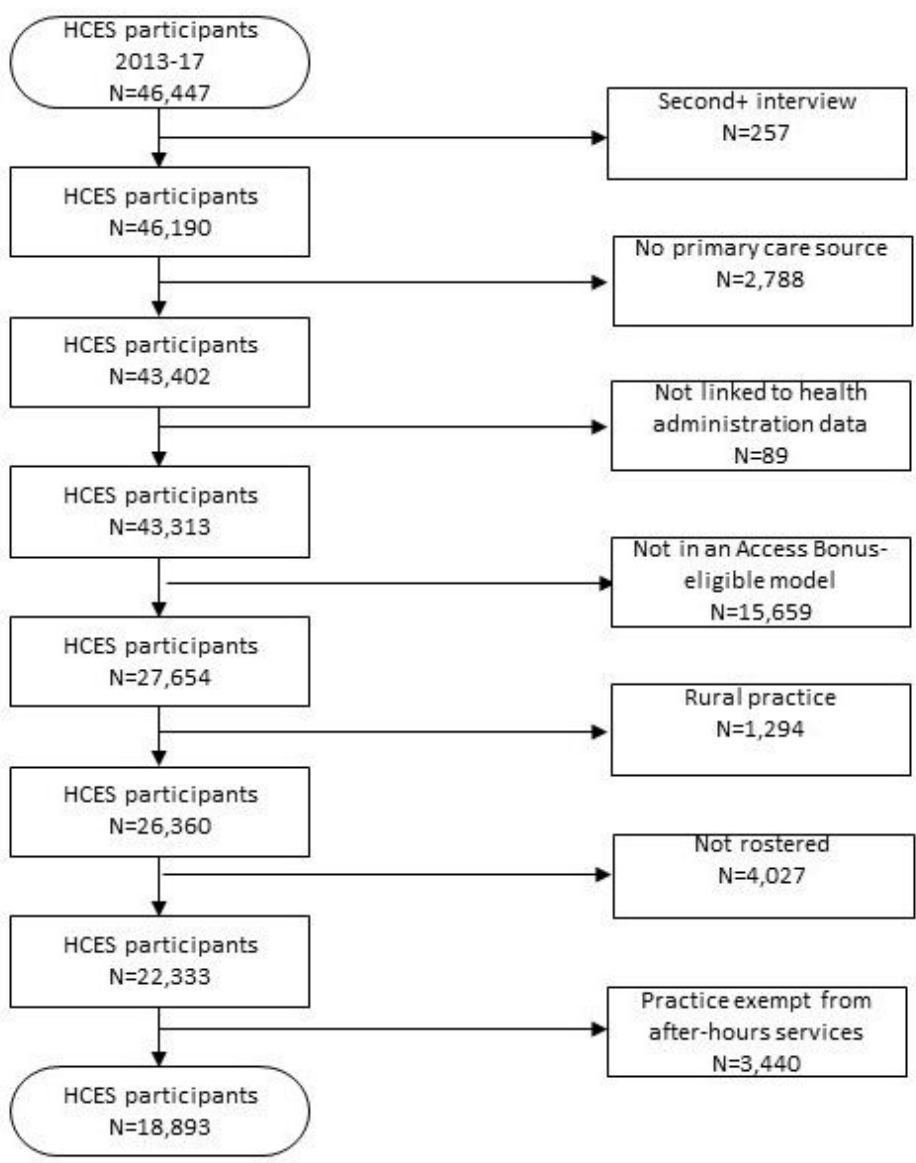
Figure 2. Descriptive Analysis: Patient-Reported Access

Figure 2a. Telephone Access
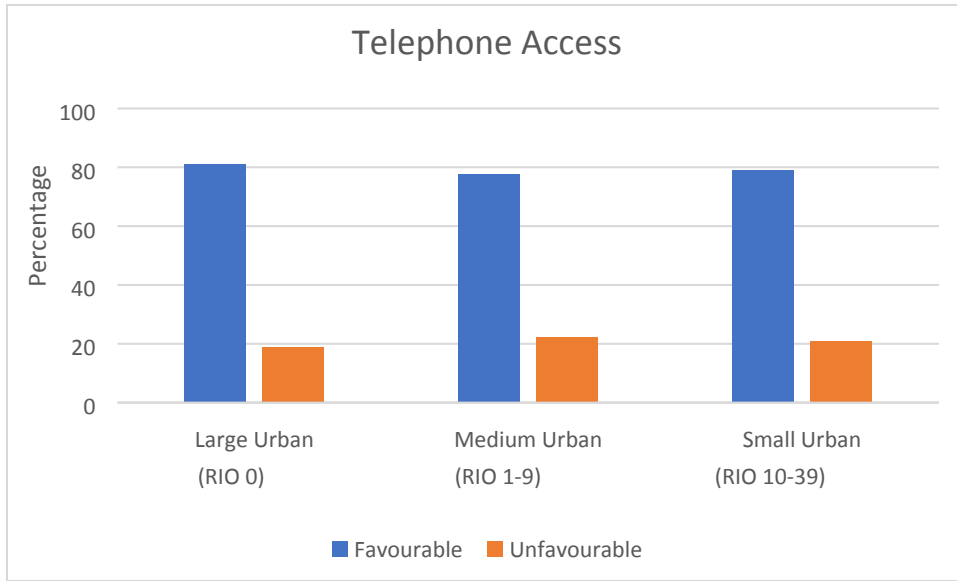
Figure 2b. After-Hours Access
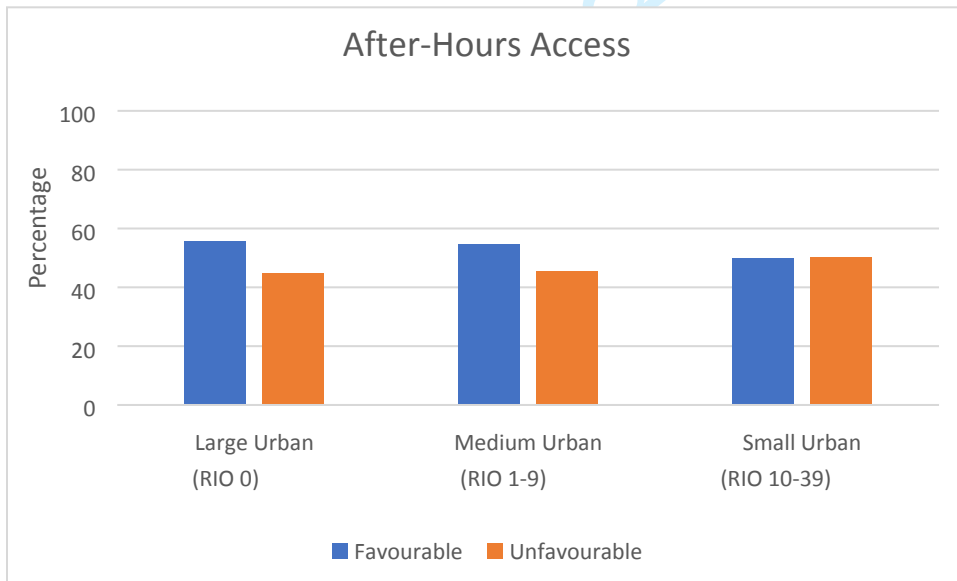
Figure 2c. Wait Time for Care
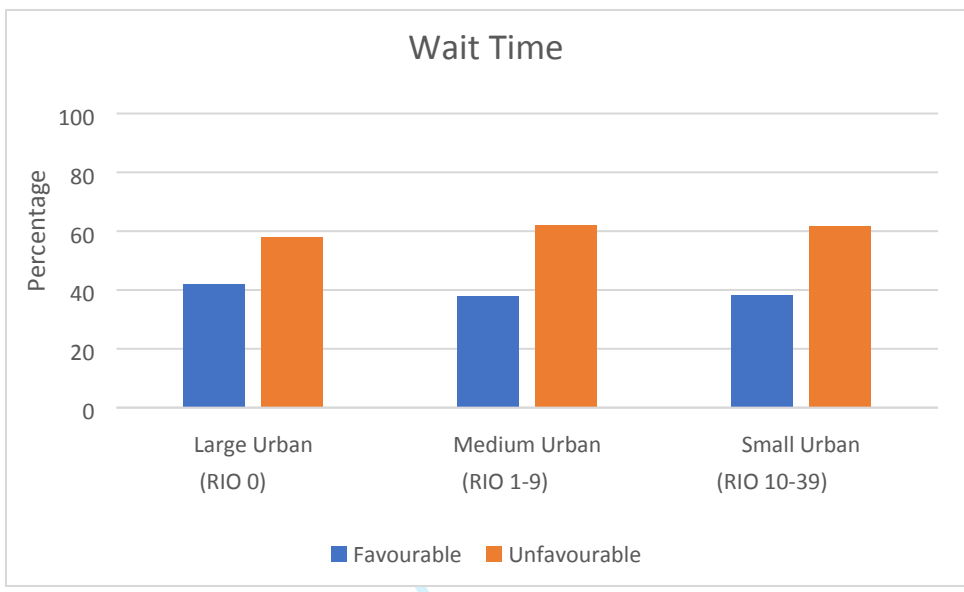
Figure 2d. Timeliness of Wait for Care
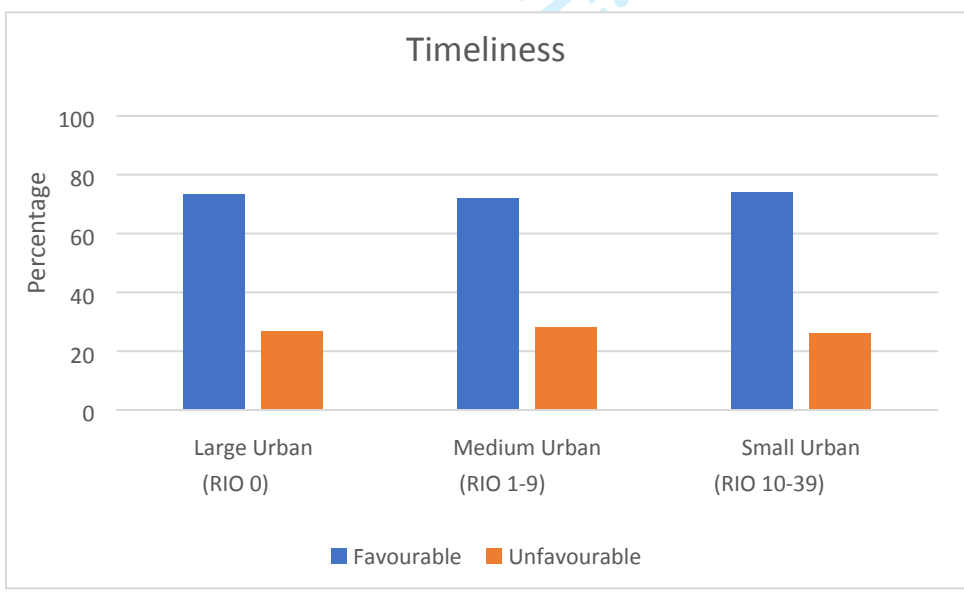
Figure 3. Multilevel Univariate Regression Analysis

Figure 3a. Telephone Access

$p < 0.05$, 95% CI   Q1 = reference
(lowest quintile)
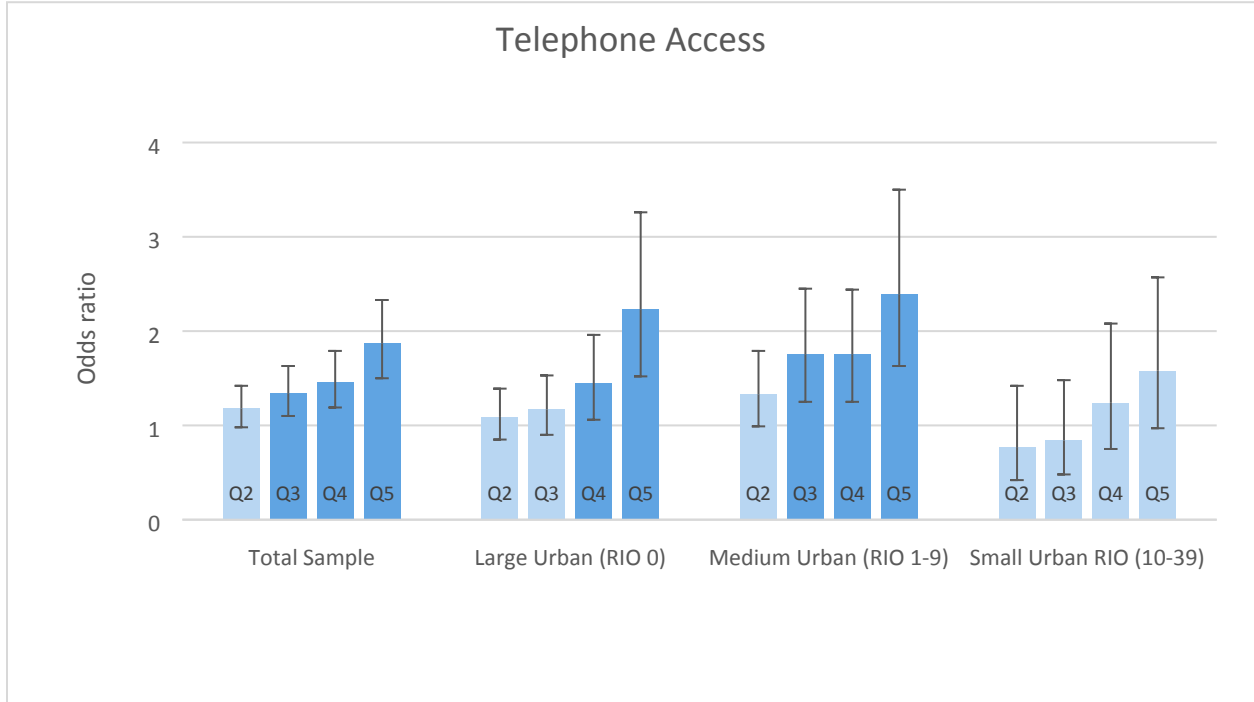
Figure 3b. After-Hours Access
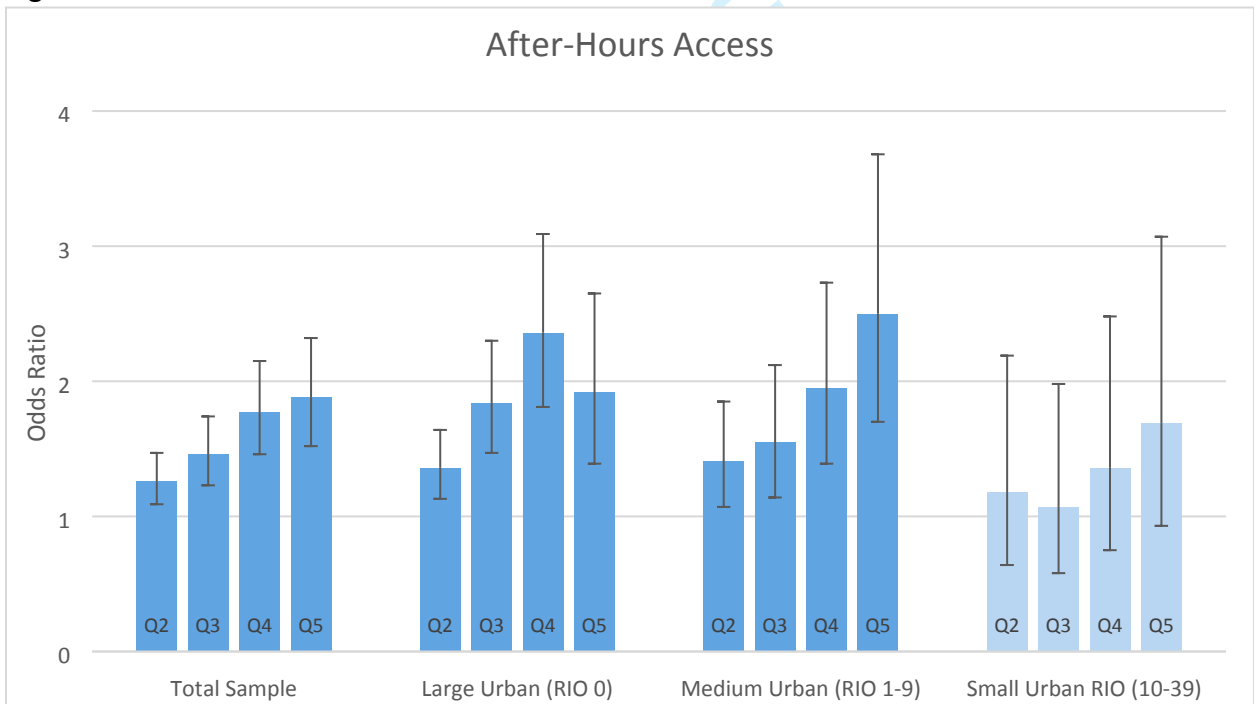
Figure 3c. Wait Time for Care
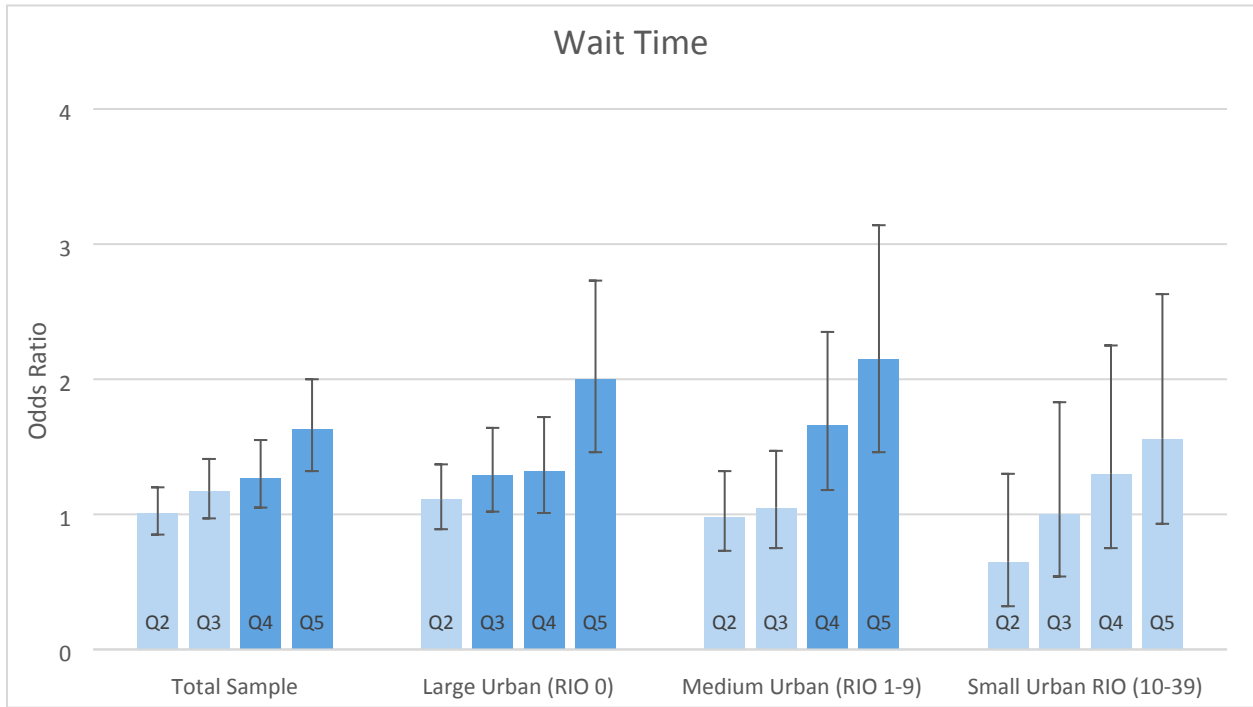
Figure 3d. Timeliness of Wait for Care
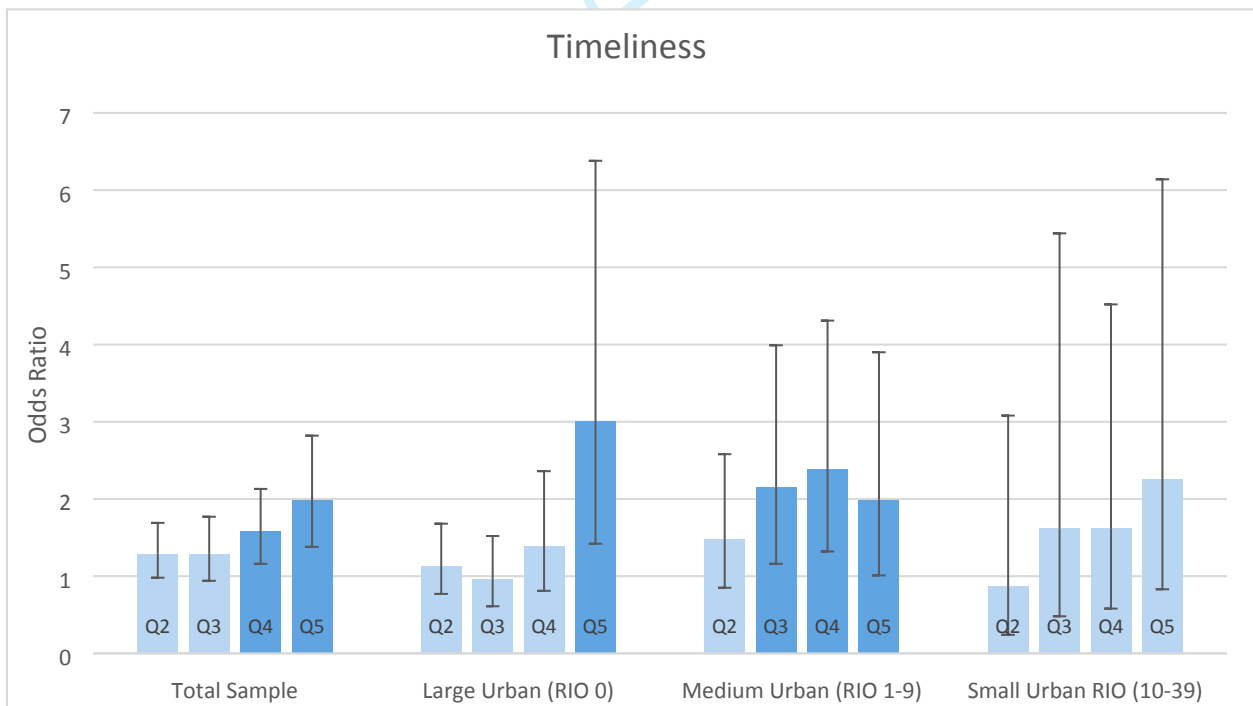
Figure 4. Multilevel Multivariate Logistic Regression Analysis

Figure 4a. Telephone Access

Figure 4b. After-Hours Access
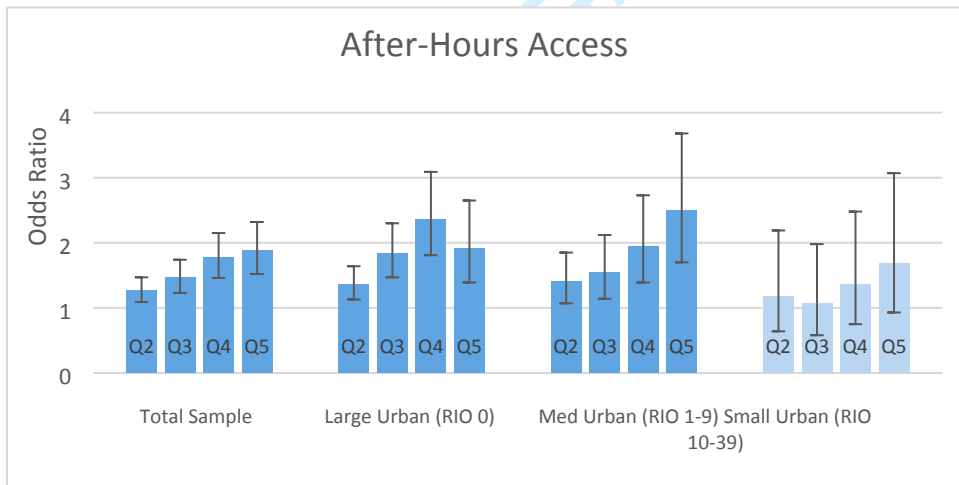
Figure 4c. Wait Time for Care
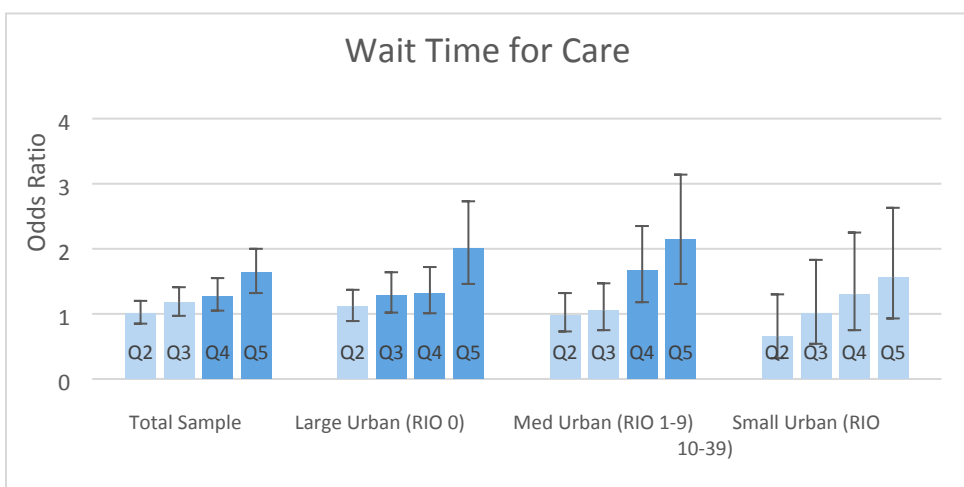
Wait Time for Care

Figure 4d. Timeliness of Wait for Care

Timeliness of Wait for Care
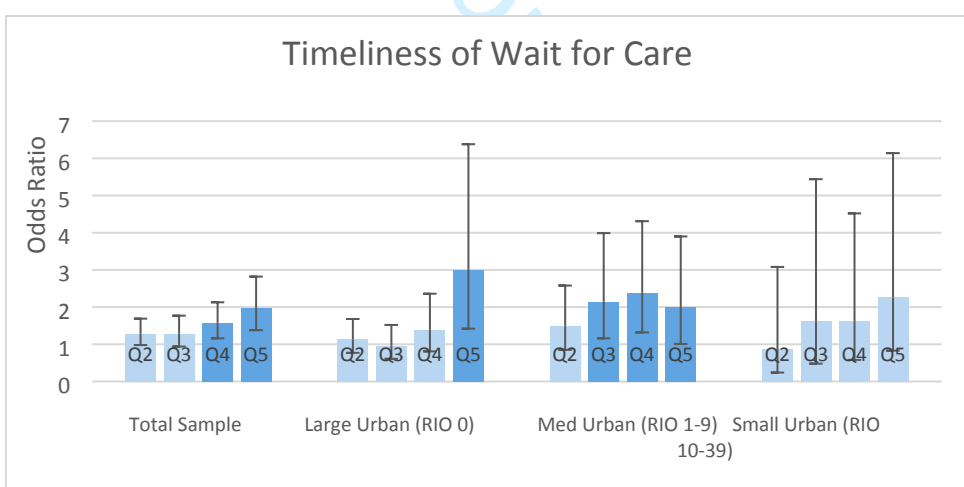
Table 1. Outcome Variables and Coding Schemes

Patient-Reported Access Variable	HCES Question Stem	Coding Scheme for Answer Choices
Telephone Access	How often did your provider or someone else in the office speak to you when you called or get back to you the same day?*	Favourable: Always, often Unfavourable: Sometimes, rarely, never, volunteers "it depends" Missing: Don't know, refused
After-Hours Access	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 provider's office is closed?	Favourable: Yes Unfavourable: No, Don't know Missing: Refused
Wait Time for Care	How many days did it take from when you first tried to see your provider to when you actually saw them or someone else in their office?**	Favourable: Same day, next day Unfavourable: 2 to 20+ days Missing: Don't know, refused
Timeliness of Wait for Care	Would you say the length of time it took between making the appointment and the actual visit was about right, somewhat too long, or much too long?**	Favourable: About right Unfavourable: Somewhat too long, much too long Missing: Other, don't know, refused

*Asked only of those answering "Yes" to the question, "Have you called or tried to call your provider's office with a medical question or concern during the day on a Monday to Friday in the last 12 months?"

**Asked only of those answering "Yes" to the question, "Not counting yearly check-ups or monitoring of an ongoing health issue, in the last 12 months did you want to see your provider because you were sick or had a health concern?"

Table 2. Practice Characteristics

	Total Sample (RIO 0-39) n = 414	Large Urban (RIO 0) n = 210	Medium Urban (RIO 1-9) n = 130	Small Urban (RIO 10-39) n = 74
Non-team	277 (66.91%)	142 (67.62%)	100 (76.92%)	35 (47.30%)
Team	137 (33.09%)	68 (32.38%)	30 (23.08%)	39 (52.70%)
Mean number of physicians per practice (SD) n = 414	10.45 (9.59)	10.61 (9.37)	9.35 (7.99)	11.96(12.29)
Mean number of after-hours services per year (SD) n = 400	3935.06 (4797.38)	3962.48 (4760.05)	3924.26 (3662.87)	3876 (6347.27)

Table 3. Physician Characteristics

	Total Sample (RIO 0-39) (n = 3940)	Large Urban (RIO 0) (n = 2026)	Medium Urban (RIO 1-9) (n = 1222)	Small Urban (RIO 10-39) (n = 692)
Age (years) (mean(SD)) n = 3940	51.89 (11.36)	51.59 (11.66)	51.77 (11.04)	52.97 (10.94)
Years in practice (mean(SD)) n = 3938	26.77 (3.17)	26.72 (2.96)	26.75 (3.21)	26.96 (3.64)
Roster size (mean(SD)) n = 3940	1521.77 (638.86)	1434.81 (658)	1638.26 (603.47)	1570.81 (604.6)
Gender (n=3940)				
Female (n(%))	1872 (47.51%)	1100 (54.29%)	535 (43.78%)	237 (34.25%)
Male (n(%))	2068 (52.49%)	926 (45.71%)	687 (56.22%)	455 (65.75%)
Canadian Graduate (n=3938)				
No	907 (23.03%)	416 (20.53%)	328 (26.84%)	163 (23.56%)
Yes	3031 (76.97%)	1608 (79.37%)	894 (73.16%)	529 (76.44%)
Proportion of maximum potential Access Bonus achieved	40.26% (30.67)	32.86% (28.39)	40.63% (30.30)	61.23% (27.87)

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| (mean (SD)) (n=3940)				
Access Bonus achievement by Quintile (%)				
1 (lowest)	877 (22.26%)	545 (26.90%)	269 (22.01%)	63 (9.10%)
2	865 (21.95%)	554 (27.34%)	260 (21.28%)	51 (7.37%)
3	818 (20.76%)	457 (22.56%)	253 (20.7%)	108 (15.61%)
4	726 (18.43%)	298 (14.71%)	253 (20.7%)	175 (25.29%)
5 (highest)	654 (16.60%)	172 (8.49%)	187 (15.3%)	295 (42.63%)

Confidential

Table 4. Patient Characteristics

	Total Sample (RIO 0-39) (n = 18893)	Large Urban (RIO 0) (n = 8325)	Medium Urban (RIO 1-9) (n = 6214)	Small Urban (RIO 10-39) (n =4354)
Gender (n = 18,893)				
Female	11278 (59.69%)	5066 (60.85%)	3664 (58.96%)	2548 (58.52%)
Male	7615 (40.31%)	3259 (39.15%)	2550 (41.04%)	1806 (41.48%)
Age Groups in years (n=18,893)				
< 18	374 (1.98%)	168 (2.02%)	118 (1.9%)	88 (2.02%)
19-34	2444 (12.94%)	1089 (13.08%)	871 (14.02%)	484 (11.12%)
35-49	4562 (24.15%)	2138 (25.68%)	1528 (24.59%)	896 (20.58%)
50-64	5859 (31.01%)	2500 (30.03%)	1925 (30.98%)	1434 (32.94%)
65-74	3436 (18.19%)	1469 (17.65%)	1079 (17.36%)	888 (20.4%)
75+	2218 (11.74%)	961 (11.54%)	693 (11.15%)	564 (12.95%)
Language (n = 18,815)				
English, English & French, English & other	17294 (91.92%)	7406 (89.46%)	5719 (92.36%)	4169 (95.97%)
French	436 (2.32%)	170 (2.05%)	160 (2.58%)	106 (2.44%)
Other	1085 (5.77%)	703 (8.49%)	313 (5.06%)	69 (1.59%)
Education (n = 18,749)				
Some high school or less	1998 (10.66%)	720 (8.72%)	662 (10.72%)	616 (14.26%)
High school	3760 (20.05%)	1431 (17.33%)	1266 (20.51%)	1063 (24.61%)
Some post-secondary	1652 (8.81%)	689 (8.34%)	569 (9.22%)	394 (9.12%)
College	4868 (25.96%)	1949 (23.60%)	1660 (26.89%)	1259 (29.15%)
University	4304 (22.96%)	2185 (26.46%)	1410 (22.84%)	709 (16.42%)
Post-graduate	2167 (11.56%)	1283 (15.54%)	606 (9.82%)	278 (6.44%)

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Income Quintile (n = 18,836)				
1 (lowest)	2854 (15.15%)	1349 (16.27%)	865 (13.95%)	640 (14.74%)
2	3327 (17.66%)	1519 (18.32%)	986 (15.90%)	822 (18.94%)
3	3795 (20.15%)	1659 (20.01%)	1207 (19.46%)	929 (21.40%)
4	4257 (22.60%)	1765 (21.29%)	1467 (23.65%)	1025 (23.61%)
5 (highest)	4603 (24.44%)	2000 (24.12%)	1678 (27.05%)	925 (21.31%)
Immigrant* (n = 18,822)				
Yes	4096 (21.76%)	2312 (27.93%)	1266 (20.42%)	518 (11.92%)
No	14726 (78.24%)	5965 (72.07%)	4933 (79.58%)	3828 (88.08%)
Self-Reported General Health (n = 18,818)				
Poor	781 (4.15%)	307 (3.70%)	259 (4.18%)	215 (4.96%)
Fair	2087 (11.09%)	904 (10.91%)	682 (11.01%)	501 (11.55%)
Good	5290 (28.11%)	2258 (27.24%)	1808 (29.19%)	1224 (28.22%)
Very good	7129 (37.88%)	3164 (38.18%)	2353 (11.01%)	1622 (37.40%)
Excellent	3531 (18.76%)	1655 (19.97%)	1101 (4.18%)	775 (17.87%)

*Mean years since immigration (SD)

Large Urban = 34.29 (18.54)

Medium Urban = 37.95 (19.15)

Small Urban = 44.58 (17.42)

Table 5a. Multivariate analysis - Telephone Access

Bold = statistically significant, p<0.05, 95% CI

	Total (RIO 0-39) (patient n = 10,778)	RIO 0 (patient n = 4,642)	RIO 1-9 (patient n = 3,542)	RIO 10-39 (patient n = 2,594)
	OR (CI)	OR (CI)	OR (CI)	OR (CI)
MAIN EXPOSURE				
Access Bonus Quintile				
1 (lowest)	ref	ref	ref	ref
2	1.18 (0.98, 1.42)	1.09 (0.85, 1.39)	1.33 (0.99, 1.79)	0.77 (0.42, 1.42)
3	**1.34 (1.1, 1.63)**	1.17 (0.9, 1.53)	**1.75 (1.25, 2.45)**	0.84 (0.48, 1.48)
4	**1.46 (1.19, 1.79)**	**1.45 (1.06, 1.96)**	**1.75 (1.25, 2.44)**	1.24 (0.75, 2.08)
5 (highest)	**1.87 (1.5, 2.33)**	**2.23 (1.52, 3.26)**	**2.39 (1.63, 3.5)**	1.58 (0.97, 2.57)
ICC -practice	*3.26%*	*1.80%*	*2.18%*	*1.78%*
ICC -physician	*6.70%*	*6.74%*	*6.52%*	*7.98%*
PATIENT				
Gender				
Male	ref	ref	ref	ref
Female	0.99 (0.89, 1.1)	1.05 (0.89, 1.25)	0.96 (0.8, 1.16)	0.94 (0.75, 1.18)
Age				
<18	ref	ref	ref	ref
19-34	0.84 (0.5, 1.39)	1.2 (0.56, 2.54)	0.99 (0.41, 2.36)	0.33 (0.09, 1.22)
35-49	0.88 (0.53, 1.45)	1.16 (0.55, 2.42)	1.08 (0.46, 2.54)	0.35 (0.1, 1.28)
50-64	0.94 (0.57, 1.54)	1.23 (0.59, 2.57)	1.1 (0.47, 2.57)	0.42 (0.12, 1.53)
65-74	1.56 (0.94, 2.58)	**2.14 (1.01, 4.52)**	1.79 (0.76, 4.25)	0.69 (0.19, 2.54)
75+	1.4 (0.84, 2.34)	1.35 (0.64, 2.88)	2.03 (0.84, 4.93)	0.74 (0.2, 2.78)
Education				
Some high school or less	ref	ref	ref	ref
High School	**1.32 (1.07, 1.63)**	1.34 (0.93, 1.93)	1.3 (0.9, 1.87)	1.29 (0.87, 1.91)
Some postsecondary	**1.37 (1.07, 1.76)**	1.25 (0.83, 1.88)	**1.76 (1.14, 2.72)**	1 (0.63, 1.59)
College	1.18 (0.96, 1.46)	1.24 (0.87, 1.77)	1.26 (0.88, 1.8)	0.99 (0.67, 1.44)
University	1.17 (0.94, 1.45)	1.09 (0.77, 1.56)	1.24 (0.85, 1.8)	1.03 (0.68, 1.55)
Postgraduate	1.02 (0.8, 1.29)	0.98 (0.67, 1.43)	1.14 (0.74, 1.74)	0.76 (0.46, 1.26)

Primary Language				
Other	ref	ref	ref	ref
English, English and French, English and Other	1.08 (0.84, 1.4)	0.94 (0.67, 1.32)	**1.61 (1.02, 2.54)**	0.86 (0.31, 2.4)
French	0.93 (0.61, 1.42)	0.72 (0.37, 1.39)	1.24 (0.61, 2.51)	1.08 (0.31, 3.85)
Health Status				
Poor	ref	ref	ref	ref
Fair	**1.29 (1.01, 1.66)**	1.37 (0.9, 2.08)	1.13 (0.73, 1.74)	1.24 (0.77, 2)
Good	**1.41 (1.12, 1.77)**	1.35 (0.91, 1.98)	1.46 (0.98, 2.17)	1.31 (0.85, 2)
Very good	**1.98 (1.57, 2.49)**	**1.97 (1.33, 2.9)**	**1.83 (1.23, 2.71)**	**2.06 (1.34, 3.16)**
Excellent	**2.21 (1.72, 2.83)**	**2.3 (1.51, 3.49)**	**1.69 (1.11, 2.59)**	**2.97 (1.82, 4.85)**
Income Quintile				
1 (lowest)	ref	ref	ref	ref
2	1.01 (0.85, 1.2)	1.1 (0.84, 1.44)	0.99 (0.72, 1.35)	0.97 (0.68, 1.4)
3	1.07 (0.9, 1.27)	1.07 (0.82, 1.4)	1.2 (0.88, 1.62)	0.99 (0.69, 1.43)
4	1 (0.84, 1.18)	1.12 (0.86, 1.46)	1.1 (0.82, 1.48)	0.84 (0.59, 1.19)
5	1.08 (0.91, 1.28)	1.11 (0.86, 1.45)	1.24 (0.93, 1.65)	0.88 (0.61, 1.26)
Immigrant Status				
Yes	ref	ref	ref	ref
No	**1.19 (1.03, 1.37)**	**1.25 (1.02, 1.53)**	1.12 (0.87, 1.44)	1.17 (0.83, 1.65)
PHYSICIAN				
Age	1.01 (1, 1.01)	1.01 (1, 1.01)	1.01 (1, 1.02)	1 (0.99, 1.01)
Gender				
Male	ref	ref	ref	ref
Female	0.98 (0.86, 1.11)	0.89 (0.73, 1.08)	1 (0.81, 1.24)	1 (0.76, 1.33)
Canadian Graduate				
No	ref	ref	ref	ref
Yes	**1.2 (1.05, 1.37)**	**1.3 (1.04, 1.62)**	**1.27 (1.02, 1.58)**	0.87 (0.65, 1.17)
Years in Practice	0.98 (0.96, 0.99)	0.96 (0.94, 0.99)	0.99 (0.96, 1.02)	0.98 (0.95, 1.01)
Roster Size	1 (1, 1)	1 (1, 1)	1 (1, 1)	1 (1, 1)
PRACTICE				
Group Size	1 (1, 1.01)	1.01 (1, 1.02)	0.99 (0.98, 1)	1.01 (1, 1.02)

Number of after-hours services	1 (1, 1)	1 (1, 1)	1 (1, 1)	1 (1, 1)
Practice Model				
Non-team	ref	ref	ref	ref
Team	0.92 (0.79, 1.07)	0.86 (0.69, 1.07)	1.19 (0.91, 1.56)	0.72 (0.53, 0.98)

Table 5b. Multivariate analysis – After-Hours Access

Bold = statistically significant, p<0.05, 95% CI

	Total (RIO 0-39) (patient n = 10,778)	RIO 0 (patient n = 4,642)	RIO 1-9 (patient n = 3,542)	RIO 10-39 (patient n = 2,594)
	OR (CI)	OR (CI)	OR (CI)	OR (CI)
MAIN EXPOSURE				
Access Bonus Quintile				
1 (lowest)	ref	ref	ref	ref
2	**1.26 (1.09, 1.47)**	**1.36 (1.13, 1.64)**	**1.41 (1.07, 1.85)**	1.18 (0.64, 2.19)
3	**1.46 (1.23, 1.74)**	**1.84 (1.47, 2.3)**	**1.55 (1.14, 2.12)**	1.07 (0.58, 1.98)
4	**1.77 (1.46, 2.15)**	**2.36 (1.81, 3.09)**	**1.95 (1.39, 2.73)**	1.36 (0.75, 2.48)
5 (highest)	**1.88 (1.52, 2.32)**	**1.92 (1.39, 2.65)**	**2.5 (1.7, 3.68)**	1.69 (0.93, 3.07)
ICC -practice	*17.25%*	*13.03%*	*17.67%*	*22.85%*
ICC -physician	*5.66%*	*4.8%*	*6.99%*	*4.53%*
PATIENT				
Gender				
Male	ref	ref	ref	ref
Female	**1.57 (1.46, 1.68)**	**1.76 (1.58, 1.96)**	**1.39 (1.23, 1.57)**	**1.54 (1.33, 1.79)**
Age				
<18	ref	ref	ref	Ref
19-34	**1.66 (1.26, 2.17)**	**2.04 (1.34, 3.08)**	1.55 (0.96, 2.51)	1.42 (0.81, 2.48)
35-49	**2.45 (1.88, 3.19)**	**3.13 (2.09, 4.69)**	**2.52 (1.57, 4.06)**	1.66 (0.96, 2.86)
50-64	**2.47 (1.9, 3.2)**	**3.06 (2.06, 4.57)**	**2.69 (1.69, 4.29)**	1.59 (0.94, 2.71)
65-74	**2.38 (1.83, 3.1)**	**3.19 (2.13, 4.77)**	**2.71 (1.69, 4.34)**	1.35 (0.79, 2.32)
75+	**1.82 (1.39, 2.38)**	**2.22 (1.47, 3.33)**	**1.84 (1.14, 2.97)**	1.3 (0.75, 2.26)
Education				
Some high school or less	ref	ref	ref	Ref
High School	1.13 (0.99, 1.28)	1.13 (0.91, 1.41)	1.04 (0.83, 1.3)	1.19 (0.93, 1.51)

Some postsecondary	1.13 (0.97, 1.33)	1.2 (0.93, 1.55)	1.12 (0.85, 1.46)	1.01 (0.74, 1.37)
College	**1.29 (1.13, 1.48)**	**1.29 (1.04, 1.61)**	**1.31 (1.04, 1.64)**	1.25 (0.97, 1.6)
University	**1.28 (1.11, 1.47)**	**1.37 (1.1, 1.71)**	1.21 (0.95, 1.53)	1.15 (0.87, 1.52)
Postgraduate	**1.33 (1.14, 1.55)**	**1.46 (1.15, 1.85)**	1.13 (0.85, 1.49)	1.27 (0.89, 1.81)
Primary Language				
Other	ref	ref	ref	ref
English, English and French, English and Other	**1.62 (1.37, 1.92)**	**1.57 (1.26, 1.95)**	**1.81 (1.32, 2.48)**	1.23 (0.67, 2.25)
French	1.11 (0.83, 1.48)	0.87 (0.57, 1.33)	1.43 (0.88, 2.33)	0.73 (0.32, 1.64)
Health Status				
Poor	ref	ref	ref	ref
Fair	1.09 (0.9, 1.32)	0.98 (0.72, 1.33)	1.21 (0.87, 1.69)	0.94 (0.64, 1.39)
Good	1.05 (0.88, 1.26)	1 (0.75, 1.34)	1.12 (0.83, 1.52)	0.89 (0.63, 1.26)
Very good	1.18 (0.99, 1.41)	1.12 (0.84, 1.49)	1.21 (0.89, 1.64)	1.03 (0.73, 1.46)
Excellent	1.04 (0.86, 1.25)	0.97 (0.72, 1.31)	1.04 (0.75, 1.43)	0.99 (0.68, 1.43)
Income Quintile				
1 (lowest)	ref	ref	ref	ref
2	1.03 (0.92, 1.17)	1.11 (0.93, 1.33)	1.03 (0.83, 1.28)	0.96 (0.75, 1.24)
3	1.09 (0.97, 1.22)	0.96 (0.8, 1.14)	**1.31 (1.07, 1.61)**	1.17 (0.91, 1.49)
4	**1.16 (1.03, 1.3)**	1.19 (1, 1.41)	**1.27 (1.04, 1.55)**	1.1 (0.87, 1.41)
5	1.09 (0.97, 1.22)	1.05 (0.89, 1.25)	**1.25 (1.03, 1.53)**	1.01 (0.79, 1.29)
Immigrant Status				
Yes	ref	ref	ref	ref
No	**1.24 (1.13, 1.36)**	**1.24 (1.09, 1.41)**	**1.34 (1.13, 1.59)**	1.17 (0.93, 1.48)
PHYSICIAN				
Age	0.99 (0.99, 1)	1 (0.99, 1)	0.99 (0.99, 1)	0.99 (0.99, 1)

Gender				
Male	ref	ref	ref	ref
Female	1 (0.91, 1.09)	0.97 (0.85, 1.11)	1 (0.85, 1.19)	1.12 (0.9, 1.38)
Canadian Graduate				
No	ref	ref	ref	ref
Yes	1.09 (0.98, 1.2)	1.03 (0.88, 1.21)	1.11 (0.93, 1.33)	1.18 (0.95, 1.47)
Years in Practice	1 (0.99, 1.01)	1.01 (0.99, 1.03)	0.99 (0.97, 1.01)	1.02 (1, 1.04)
Roster Size	1 (1, 1)	1 (1, 1)	1 (1, 1)	1 (1, 1)
PRACTICE				
Group Size	1.01 (1, 1.02)	1.02 (1, 1.03)	1 (0.99, 1.02)	1.01 (0.99, 1.03)
Number of after-hours services	1 (1, 1)	1 (1, 1)	1 (1, 1)	1 (1, 1)
Practice Model				
Non-team	ref	ref	ref	ref
Team	1.23 (0.99, 1.52)	**1.47 (1.13, 1.93)**	1 (0.66, 1.51)	1.29 (0.78, 2.14)

Table 5c. Multivariate analysis – Wait Time for Care

Bold = statistically significant, p<0.05, 95% CI

	Total (RIO 0-39) (patient n = 10,778)	RIO 0 (patient n = 4,642)	RIO 1-9 (patient n = 3,542)	RIO 10-39 (patient n = 2,594)
	OR (CI)	OR (CI)	OR (CI)	OR (CI)
MAIN EXPOSURE				
Access Bonus Quintile				
1 (lowest)	ref	ref	ref	ref
2	1.01 (0.85, 1.2)	1.11 (0.89, 1.37)	0.98 (0.73, 1.32)	0.65 (0.32, 1.3)
3	1.17 (0.97, 1.41)	**1.29 (1.02, 1.64)**	1.05 (0.75, 1.47)	1 (0.54, 1.83)
4	**1.27 (1.05, 1.55)**	**1.32 (1.01, 1.72)**	**1.66 (1.18, 2.35)**	1.3 (0.75, 2.25)
5 (highest)	**1.63 (1.32, 2)**	**2 (1.46, 2.73)**	**2.15 (1.46, 3.14)**	1.56 (0.93, 2.63)
ICC -practice	*4.87%*	*3.27%*	*4.98%*	*1.20%*
ICC -physician	*6.16%*	*4.77%*	*4.96%*	*12.35%*
PATIENT				
Gender				
Male	ref	ref	ref	ref
Female	**1.12 (1.02, 1.23)**	1.13 (0.98, 1.31)	1.18 (0.99, 1.4)	1.08 (0.87, 1.34)
Age				
<18	Ref	ref	ref	ref
19-34	**1.5 (1.01, 2.23)**	1.6 (0.9, 2.84)	1.09 (0.55, 2.18)	2.35 (0.92, 5.98)
35-49	**1.48 (1.01, 2.18)**	1.34 (0.76, 2.33)	1.49 (0.76, 2.94)	2.06 (0.83, 5.1)
50-64	**1.5 (1.02, 2.19)**	1.45 (0.83, 2.52)	1.37 (0.71, 2.66)	2.08 (0.85, 5.09)
65-74	**1.9 (1.3, 2.8)**	**1.87 (1.07, 3.28)**	1.49 (0.76, 2.92)	**3.17 (1.28, 7.82)**
75+	**2.13 (1.44, 3.16)**	**2.03 (1.14, 3.6)**	**2.28 (1.15, 4.53)**	**2.56 (1.01, 6.48)**
Education				
Some high school or less	ref	ref	ref	ref
High School	0.99 (0.82, 1.19)	0.94 (0.7, 1.27)	1.14 (0.81, 1.6)	0.88 (0.61, 1.27)

Some postsecondary	0.85 (0.68, 1.06)	0.83 (0.59, 1.17)	0.94 (0.64, 1.38)	0.79 (0.5, 1.25)
College	0.94 (0.78, 1.14)	0.96 (0.72, 1.29)	1.08 (0.77, 1.51)	0.76 (0.52, 1.1)
University	0.87 (0.72, 1.06)	0.9 (0.67, 1.2)	0.93 (0.65, 1.32)	0.64 (0.43, 0.96)
Postgraduate	0.8 (0.65, 1)	0.81 (0.59, 1.1)	0.9 (0.6, 1.34)	0.65 (0.38, 1.11)
Primary Language				
Other	ref	ref	ref	ref
English, English and French, English and Other	0.88 (0.71, 1.1)	0.88 (0.67, 1.17)	1.21 (0.8, 1.84)	0.71 (0.27, 1.83)
French	0.68 (0.46, 1.01)	0.83 (0.48, 1.42)	0.78 (0.36, 1.69)	0.58 (0.18, 1.92)
Health Status				
Poor	ref	ref	ref	ref
Fair	0.92 (0.72, 1.17)	0.85 (0.59, 1.22)	0.8 (0.52, 1.23)	1.21 (0.74, 1.98)
Good	0.95 (0.76, 1.19)	0.89 (0.63, 1.25)	0.91 (0.62, 1.35)	1.12 (0.71, 1.75)
Very good	1.16 (0.93, 1.44)	0.99 (0.71, 1.39)	1.24 (0.84, 1.84)	1.29 (0.83, 2.02)
Excellent	**1.3 (1.02, 1.65)**	1.18 (0.83, 1.7)	1.27 (0.83, 1.93)	1.38 (0.84, 2.29)
Income Quintile				
1 (lowest)	ref	ref	ref	ref
2	1.05 (0.89, 1.23)	1.04 (0.83, 1.31)	1.13 (0.83, 1.54)	1.04 (0.72, 1.49)
3	1.05 (0.9, 1.23)	0.96 (0.77, 1.21)	1.3 (0.97, 1.76)	0.98 (0.68, 1.4)
4	1.14 (0.97, 1.33)	1.02 (0.81, 1.27)	1.33 (1, 1.78)	1.31 (0.92, 1.85)
5	**1.17 (1.01, 1.37)**	1.04 (0.83, 1.3)	**1.54 (1.16, 2.05)**	1.1 (0.76, 1.57)
Immigrant Status				
Yes	ref	ref	ref	ref
No	1 (0.88, 1.13)	0.98 (0.83, 1.17)	0.96 (0.76, 1.2)	1.33 (0.94, 1.89)
PHYSICIAN				
Age	1 (1, 1.01)	1 (1, 1.01)	1.01 (1, 1.02)	1 (0.99, 1.02)

Gender				
Male	ref	ref	ref	ref
Female	0.92 (0.82, 1.03)	0.88 (0.75, 1.03)	0.94 (0.77, 1.16)	0.95 (0.71, 1.26)
Canadian Graduate				
No	ref	ref	ref	ref
Yes	1.07 (0.94, 1.21)	0.93 (0.77, 1.12)	1.03 (0.83, 1.27)	1.37 (1.01, 1.85)
Years in Practice	0.98 (0.96, 1)	1.01 (0.98, 1.03)	0.96 (0.93, 0.98)	0.97 (0.93, 1)
Roster Size	1 (1, 1)	1 (1, 1)	1 (1, 1)	1 (1, 1)
PRACTICE				
Group Size	0.99 (0.98, 1)	1 (0.99, 1.01)	0.98 (0.97, 0.99)	0.99 (0.98, 1)
Number of after-hours services	1 (1, 1)	1 (1, 1)	1 (1, 1)	1 (1, 1)
Practice Model				
Non-team	ref	ref	ref	ref
Team	1.1 (0.94, 1.28)	1.13 (0.92, 1.38)	1.27 (0.96, 1.69)	0.96 (0.71, 1.31)

Table 5d. Multivariate analysis – Timeliness of Wait

Bold = statistically significant, p<0.05, 95% CI

	Total (RIO 0-39) (patient n = 10,778)	RIO 0 (patient n = 4,642)	RIO 1-9 (patient n = 3,542)	RIO 10-39 (patient n = 2,594)
	OR (CI)	OR (CI)	OR (CI)	OR (CI)
MAIN EXPOSURE				
Access Bonus Quintile				
1 (lowest)				
2	1.29 (0.98, 1.69)	1.13 (0.77, 1.68)	1.48 (0.85, 2.58)	0.87 (0.24, 3.08)
3	1.29 (0.94, 1.77)	0.96 (0.61, 1.52)	**2.15 (1.16, 3.99)**	1.62 (0.48, 5.44)
4	**1.58 (1.16, 2.13)**	1.39 (0.81, 2.36)	**2.39 (1.32, 4.31)**	1.62 (0.58, 4.52)
5 (highest)	**1.98 (1.38, 2.82)**	**3.01 (1.42, 6.38)**	**1.99 (1.01, 3.9)**	2.26 (0.83, 6.14)
ICC -practice	*1.89%*	*3.61%*	*1.30%*	*0.98%*
ICC -physician	*7.93%*	*6.64%*	*9.95%*	*15.61%*
PATIENT				
Gender				
Male	ref	ref	ref	ref
Female	0.83 (0.7, 1)	0.99 (0.74, 1.33)	0.7 (0.49, 0.98)	0.67 (0.37, 1.19)
Age				
<18	ref	ref	ref	ref
19-34	0.44 (0.16, 1.24)	0.41 (0.06, 2.65)	0.29 (0.04, 2.05)	1.1 (0.08, 15.61)
35-49	0.48 (0.16, 1.4)	0.41 (0.06, 2.77)	0.45 (0.06, 3.43)	0.79 (0.05, 12.52)
50-64	0.58 (0.2, 1.66)	0.66 (0.1, 4.38)	0.39 (0.06, 2.7)	0.96 (0.06, 14.32)
65-74	1.08 (0.38, 3.06)	0.99 (0.15, 6.54)	0.9 (0.13, 6.37)	1.85 (0.12, 27.32)
75+	1.17 (0.42, 3.28)	0.89 (0.13, 5.87)	0.98 (0.14, 6.97)	3.88 (0.28, 53.1)
Education				
Some high school or less	ref	ref	ref	ref
High School	1.36 (0.93, 1.97)	**1.85 (1.04, 3.28)**	1.15 (0.55, 2.39)	1.02 (0.37, 2.83)
Some postsecondary	1.42 (0.91, 2.2)	2.03 (0.96, 4.32)	1.17 (0.54, 2.51)	0.83 (0.23, 3.06)
College	1.11 (0.79, 1.57)	1.57 (0.9, 2.71)	0.84 (0.42, 1.68)	1.03 (0.38, 2.78)
University	1.12 (0.79, 1.6)	1.72 (0.99, 2.98)	0.78 (0.37, 1.63)	0.74 (0.27, 2.03)
Postgraduate	1.18 (0.77, 1.8)	1.52 (0.83, 2.78)	0.95 (0.38, 2.38)	1.04 (0.28, 3.81)
Primary Language				
Other	ref	ref	ref	ref

English, English and French, English and Other	1.41 (0.96, 2.08)	1.24 (0.72, 2.13)	**2.68 (1.09, 6.61)**	1.44 (0.1, 21.36)
French	1.3 (0.71, 2.4)	1.55 (0.45, 5.31)	2.5 (0.61, 10.26)	1.2 (0.07, 20.91)
Health Status				
Poor	ref	ref	ref	ref
Fair	1 (0.66, 1.51)	1.29 (0.58, 2.89)	0.72 (0.34, 1.54)	1.01 (0.34, 3.05)
Good	1.39 (0.94, 2.05)	1.42 (0.66, 3.04)	1.32 (0.63, 2.8)	1.39 (0.42, 4.61)
Very good	1.48 (0.99, 2.22)	1.81 (0.83, 3.94)	1.36 (0.67, 2.76)	1.11 (0.35, 3.55)
Excellent	**2.02 (1.31, 3.1)**	1.79 (0.82, 3.91)	**2.39 (1.05, 5.46)**	2.57 (0.67, 9.82)
Income Quintile				
1 (lowest)	ref	ref	ref	ref
2	0.99 (0.71, 1.37)	0.95 (0.54, 1.67)	1.15 (0.64, 2.09)	1.09 (0.46, 2.58)
3	1.23 (0.91, 1.66)	0.86 (0.55, 1.36)	**2 (1.04, 3.83)**	1.87 (0.75, 4.65)
4	0.99 (0.76, 1.29)	0.99 (0.66, 1.49)	1.31 (0.77, 2.21)	0.8 (0.34, 1.89)
5	0.97 (0.74, 1.26)	0.89 (0.58, 1.38)	1.07 (0.6, 1.91)	1.13 (0.51, 2.49)
Immigrant Status				
Yes	ref	ref	ref	ref
No	1.15 (0.9, 1.47)	**1.45 (1.03, 2.02)**	0.68 (0.38, 1.2)	1.63 (0.74, 3.62)
PHYSICIAN				
Age	1.01 (1, 1.02)	1.01 (0.99, 1.02)	1.01 (0.99, 1.03)	1.03 (1, 1.06)
Gender				
Male	ref	ref	ref	ref
Female	1.03 (0.84, 1.25)	0.89 (0.66, 1.21)	**1.57 (1.04, 2.37)**	0.69 (0.35, 1.35)
Canadian Graduate				
No	ref	ref	ref	ref
Yes	1.05 (0.85, 1.31)	0.94 (0.66, 1.33)	1.28 (0.83, 1.98)	0.87 (0.44, 1.74)
Years in Practice	0.98 (0.95, 1.01)	0.99 (0.94, 1.05)	0.99 (0.94, 1.05)	0.95 (0.89, 1.02)
Roster Size	1 (1, 1)	1 (1, 1)	1 (1, 1)	1 (0.99, 1)
PRACTICE				
Group Size	0.99 (0.98, 1)	0.99 (0.98, 1.01)	0.98 (0.96, 0.99)	0.99 (0.97, 1.01)
Number of after-hours services	1 (1, 1)	1 (1, 1)	1 (1, 1)	1 (1, 1)
Practice Model				
Non-team	ref	ref	ref	ref
Team	**1.27 (1.02, 1.59)**	1.29 (0.89, 1.87)	1.4 (0.9, 2.19)	1.19 (0.65, 2.18)