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New Brunswick Institute for Research, Data and Training

Health Services Use of Newcomers to New Brunswick

Ted McDonald, PhD
Chandy Somayaji, MSc

Jennifer Charters
Emily E. Thomson, BSc

MSSU · USSM

Project Title

Health services use of newcomers to New Brunswick

Principal Investigator

Ted McDonald, Director, NB-IRDT

Research Team

Jennifer Charters, Research Assistant, NB-IRDT
Chandy Somayaji, Senior Data Analyst, NB-IRDT
Emily Elizabeth Thomson, Research Assistant, NB-IRDT

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Table of Contents

Executive Summary 1
Introduction 4
Background 4
Data 6
Methodology 7
Results 9
Visits to Walk-in Clinics 9
Emergency Room Visits 13
Visits to General Practitioners 16
Hospital Admissions 20
Health Service Use by Health Zone and Socioeconomic Status 23
Discussion 24
Limitations 25
Conclusion 26
References 27
Appendix 28

List of Figures

Figure 1: Age-standardized walk-in clinic visits for recent and long-term immigrants and non-immigrants 10
Figure 2: Age-standardized walk-in clinic visits for permanent residents and non-immigrants 10
Figure 3: Age-standardized walk-in clinic visits for temporary residents and non-immigrants 11
Figure 4: Frequency of walk-in clinic visits in the first year after arrival, by arrival year cohort (immigrants only) 12
Figure 5: Age-standardized ER visits for recent and long-term immigrants and non-immigrants 13
Figure 6: Age-standardized ER visits for permanent residents and non-immigrants 14
Figure 7: Age-standardized ER visits for temporary residents and non-immigrants 14
Figure 8: Frequency of ER visits in the first year after arrival, by arrival year cohort (immigrants only) 15
Figure 9: Age-standardized GP visits for recent and long-term immigrants and non-immigrants 16
Figure 10: Age-standardized GP visits for permanent residents and non-immigrants 17
Figure 11: Age-standardized GP visits for temporary residents and non-immigrants 18

Figure 12: Frequency of GP visits in the first year after arrival, by arrival year cohort (immigrants only) 19
Figure 13: Age-standardized hospitalizations for recent and long-term immigrants and non-immigrants 20
Figure 14: Age-standardized hospitalizations for permanent residents and non-immigrants 21
Figure 15: Age-standardized hospitalizations for temporary residents and non-immigrants 21
Figure 16: Frequency of hospitalizations in the first year after arrival, by arrival year cohort (immigrants only) 22

Supplementary figures and tables are included (and listed) in the Appendix at the end of this report.

Executive Summary

The province of New Brunswick (NB) has been experiencing a rate of population growth not seen in more than 40 years. Though some of this is attributable to positive inter-provincial migration, the main driver of this increase is immigration from outside Canada.

While immigrants overall tend to be healthier upon their arrival in Canada as compared to the non-immigrant population, studies show an overall decline in immigrant health status over time, often dropping to levels below that of the general population [1]. This trend may be due in part to lower utilization of health care services by immigrant populations because of numerous barriers to access that they may experience. This pattern is of concern for both individual patient health and the potential cost to the health care system in the long term.

This study aims to understand the utilization patterns of health services among newcomers to New Brunswick – that is, recent immigrants who have been resident in NB for less than 5 years.

We compare newcomers' health service use to that of long-term immigrants (who have been resident in NB for more than 5 years) as well as non-immigrants (individuals originally from NB as well as migrants from other provinces/territories within Canada). We identify trends, between and within various groups, in health service use over time. Specifically, we consider:

Hospitalizations	*(2017-2020)*	**Emergency room visits**	*(2017-2021)*
Visits to walk-in clinics	*(2017-2021)*	**Visits to general practitioners**	*(2017-2021)*

This information is useful for policymakers in assessing whether specific interventions might be needed to address newcomers' health needs and mitigate the risk of deteriorating health over time.

Highlight of Findings

- Of the four population groups examined, **newcomers had the fewest visits to emergency rooms (ERs) and general practitioners (GPs) but the most visits to walk-in clinics.**
    - Newcomers' lower engagement with primary care services (GP visits) suggests possible barriers to accessing primary healthcare, including waitlists for family doctors or a lack of familiarity navigating the health system.
    - Likewise, newcomers' more frequent use of walk-in clinics may reflect immediate though non-urgent healthcare needs and a response to health issues arising shortly after arrival.

- When we divide immigrants into permanent and temporary residents,[1] we see that one permanent resident group **– refugees – consistently had more ER visits than all other groups, including non-immigrants**.

    - This could be attributed to factors like health issues faced upon arrival, which may not be able to be addressed through other forms of primary care.

- Among the immigrant subgroups, **international students and their dependents are least likely to seek any form of healthcare.**

    - These findings may align with this demographic group's potentially better health status even after standardizing for age differences. It is also likely that international students may be accessing primary care through university health clinics – though, it should be noted that their dependents are typically not eligible for on-campus care and so must rely on the public healthcare system.

- Among the immigrant subgroups, **skilled workers tend to have lower rates of hospitalization.**

    - This finding may suggest skilled workers' more stable health conditions, which are likely the result of having a more secure socioeconomic status, allowing for easier navigation through the healthcare system, fewer barriers to access and utilization of preventive healthcare services.

- Just as health service use differs across immigrant groups, we also observed **variations in health service use by health zone and socioeconomic status.**

    - Health Zone 1 (Moncton) consistently shows the highest rate of walk-in clinic visits, suggesting regional disparities in healthcare access or service distribution. Meanwhile, ER visits are significantly higher for recent immigrants in Zone 4 (Edmundston), indicating potential barriers to other forms of primary care in that region.

    - Although hospitalization rates are elevated among all groups in Zone 4, those in the lowest quintile experience the highest rates of hospitalization, which may point to the impact of socioeconomic status on healthcare needs.

- Overall, we find that **the longer immigrants stay in New Brunswick, the less likely they are to be hospitalized or visit a walk-in clinic or emergency room – and the more likely they are to visit a GP.**

[1] The permanent resident category includes skilled workers and their dependents, sponsored families and their dependents and refugees and their dependents. The temporary resident category includes international students and their dependents and temporary foreign workers.

- The initial higher use of health services among newcomers may reflect a period of adjustment as more recent arrivals seek healthcare to address pre-existing conditions as part of the settlement process. The decline in health service use likely reflects a shift towards preventive healthcare practices as immigrants settle and become more integrated into the community.

We find that health service use differs across immigrant groups, with newcomers demonstrating diverse health needs and variations in care-seeking practices that may be shaped by temporal, socioeconomic, geographic, cultural and even structural factors. To develop policies that cater to the needs of both newcomers and longer-term residents in NB, it is crucial to first understand these patterns of health service use. Tailored and culturally competent healthcare services, combined with initiatives to reduce systemic barriers, can significantly enhance the healthcare experience of newcomers, leading to better health outcomes and a more inclusive healthcare system. This, in turn, can contribute to enhanced immigrant settlement experiences, longer-term retention of newcomers and a prosperous future for our province.

Introduction

This study analyzes newcomers' interactions with the New Brunswick publicly funded healthcare system as compared to long-term immigrants and non-immigrants in order to better understand newcomer health needs and utilization patterns.

We examine the use of walk-in clinics, emergency departments and visits to general practitioners, as well as the number of hospital admissions. In addition to comparisons with non-newcomer groups, we also look for variations in use of primary care services within the group of newcomers, including differences by immigrant category, health region of residence and, as well as other basic demographic metrics. Understanding these trends better positions us to assess whether additional supports are required to address newcomers' healthcare needs and, if so, to develop appropriate strategies to improve newcomer health outcomes, ensure overall population health and decrease system costs.

For the purposes of this study, a newcomer is defined as someone who has recently arrived in New Brunswick (i.e., within 5 years) from outside of Canada – this includes permanent residents (skilled workers, sponsored families and refugees) and their dependants, as well as temporary residents (international students and their dependents, and temporary foreign workers). A long-term immigrant is defined as someone who arrived in NB from outside of Canada *more* than 5 years ago. The term 'immigrant' does not include migrants from other provinces or territories, whether Canadian or foreign-born – rather, these individuals are included under the definition for non-immigrant, along with individuals originally from New Brunswick.

Background

In August 2019, the Government of New Brunswick (GNB) introduced a 5-year population growth strategy and action plan aimed at attracting, recruiting and retaining newcomers. The strategy was developed in light of demographic trends expected to have a significant impact on the province's workforce and the broader economy, most notably interprovincial migration loss among youth, the growing exit of the 'baby boom' generation from the workforce and a low birth rate.

Given these demographic challenges, international immigration was targeted as the main driving force for future population growth and to address forthcoming labour market needs in the province, with three main goals for the year 2024:

- Increase economic immigration to 7,500 newcomers annually.
- Boost the 1-year retention rate of newcomers to 85%.
- Expand the proportion of French-speaking newcomers to reflect the province's linguistic balance [2,3].

In March 2022, the population of New Brunswick exceeded 800,000 for the first time, an increase of more than 40,000 people over the previous 5 years and the highest rate of growth in the

province since 1976 [4]. Since then, New Brunswick's population has continued to swell. The most recent estimates put the provincial population at 834,691 people as of July 1, 2023 – this represents a net increase of nearly 44,000 residents in just two years, more than the entire population increase in the previous 29 years. As the death rate continues to outpace the birth rate by a ratio of 4 to 3, this recent surge in population is therefore attributable entirely to newcomers – through both interprovincial migration and immigration from other countries [5,6].

To date, New Brunswick's strategy is exceeding expectations. Yet, despite all the positives, such growth can also present challenges. Overcrowding in schools, lack of capacity in the housing market and under-employment due to lack of recognition of foreign credentials can all be at odds with the strategy's second goal: newcomer retention. For the immigration strategy to be successful and sustainable, the province must be able to entice people to stay with settlement support services that enable newcomers' integration into the community, key among which is timely and appropriate access to healthcare.

It is well-documented that immigrants to Canada tend to be healthier overall than the native-born population – a trend known as the 'healthy immigrant effect' [1]. This is believed to be attributable to both self-selection and government-imposed screening procedures that favour aspects of human capital correlated with better health. This advantage, however, tends to be short-lived, with immigrants' health status deteriorating over time, often to levels below that of the Canadian-born population [1]. Barriers to accessing healthcare likely play a role in this decline: Language challenges, lack of transportation, cultural conventions, access to childcare, fear of repatriation, financial constraints and simply being unfamiliar with the medical system are widely reported obstacles faced by newcomers navigating their healthcare needs. Even when they do access health services, it is often done in 'incorrect' settings, contributing to additional system costs because of "disjointed care and duplication of services" [7, p. 1086].

Failing to access care when needed and accessing the 'wrong' services are important issues for public health officials to consider as they indicate the potential for increased upfront costs on an already strained healthcare system and increased demand over the long-term as newcomer health declines. As such, an examination of recent utilization patterns among newcomers in the New Brunswick healthcare setting is necessary to help understand the current landscape, to predict future trends and to determine if any interventions are warranted to fill gaps within the system. The end goal is to ensure that newcomers receive effective care in a timely manner, improving the health outcomes of this growing subset of the population as they integrate fully into our communities.

Data

This report is based on the most recent data provided to the New Brunswick Institute for Research, Data and Training (NB-IRDT) as of project commencement from the New Brunswick Department of Health, the Regional Health Authorities and Immigration, Refugees and Citizenship Canada (IRCC).

Citizen Data

The Citizen Data contains data on all individuals residing in New Brunswick who have been issued a provincial Medicare card. When linked with other data sets, it provides useful demographic information including residency in rural or urban areas, area-level income, sex, age and other relevant characteristics. For this study, we used Citizen Data records up to January 31, 2021.

Permanent Resident Data

The federal IRCC database contains all permanent resident landing records of primary applicants and their dependents. This data set has information on landing dates, country of citizenship, education level, occupation, language and intended destination (Census Metropolitan Area/Census Agglomeration). For this study, we used records from the Permanent Resident Data up to December 31, 2021.

Discharge Abstract Data

This database captures administrative, clinical and demographic information on New Brunswick residents who have been hospitalized, including diagnoses, dates of admission and discharge information. For this study, we specifically analyzed hospitalizations that occurred between April 1, 2017 and March 31, 2021.

Emergency Department Data

The emergency department data reviewed in this study are from data sets from both the Horizon Health Network and the Vitalité Health Network – New Brunswick's two Regional Health Authorities. Both data sets provide information pertaining to emergency room visits, including reason for visit, triage level, departure disposition and other relevant characteristics. The Horizon data set covers the period from January 2019 to December 2021, and the Vitalité data set covers the period from January 1, 2017 through December 31, 2021.

NB Physician Billing

This database contains service claims by service code of fee-for-service physicians, salary physician payments, reciprocal medical claims for NB residents and reciprocal hospital claims for NB residents, as well as reciprocal medical claims for out-of-province residents. For this study, we analyzed these data between January 1, 2017 and December 31, 2021.

Methodology

The analysis in this study is based on longitudinal administrative data using the above data sets and includes both descriptive statistics and regression analyses.

Newcomers were identified as either permanent or temporary residents based on information captured in both the Citizen Data and IRCC landing records.

Based on the primary applicant's category in the landing records, permanent residents and their dependents were further identified as skilled workers, refugees or sponsored families. In the analysis of permanent residents based on landing records alone, we were limited to those whose intended destination at landing was New Brunswick.

Temporary residents were subdivided based on their status in the provincial Medicare registry (Citizen Data) as either international students and their dependents or temporary foreign workers.

Definitions for the four primary immigrant/non-immigrant groups examined in this report are as follows:

Newcomers / recent immigrants	Individuals who arrived in NB from outside Canada and have lived in NB for **less than 5 years**.
Long-term immigrants	Individuals who arrived in NB from outside Canada and have lived in NB for **more than 5 years**.
Recent non-immigrants	Individuals who arrived in NB from other provinces/territories in Canada and have lived in NB for **less than 10 years.**
Long-term non-immigrants	Individuals who arrived in NB from other provinces/territories in Canada and have lived in NB for **more than 10 years,** as well as individuals originally from NB.

We examined four outcomes to determine health service utilization among the different groups:

- **Visits to walk-in clinics**
- **Visits to emergency rooms (ERs)**
- **Visits to general practitioners (GPs)**
- **Hospital admissions**

The visits were further broken down by age group (0-4, 5-17, 18-34, 35-49, 50-64, and 65+), sex, health zone, rurality, and area-level income quintile. All visits are presented here as visits per 100 people in the respective subgroup and are age-standardized where mentioned. We also present frequency of health service utilization in the first full calendar year following year of arrival for the 2012-2020 arrival cohorts (i.e., for the 2017 arrival cohort, we present health service utilization between January 1 and December 31, 2018).

We used logit models to examine the odds of a visit to a walk-in clinic, emergency room (ER), and general practitioner (GP), and the odds of hospitalization, holding other factors constant. All models were adjusted to control for age, sex, health zone and income quintile based on place of residence in NB.

The models allow for comparisons between newcomers, long-term immigrants, recent non-immigrants and long-term non-immigrants. Further, they also compare all subcategories of immigrants (permanent and temporary residents) to non-immigrants, with permanent resident-specific variables like arrival year cohort and time spent in New Brunswick.

Results

In the main part of this report, we display three graphs for each health outcome:

- Comparisons of health service use between **immigrants and non-immigrants**.
- Comparisons of health service use between **permanent residents and non-immigrants**.
- Comparisons of health service use between **temporary residents and non-immigrants.**

Immigrants are divided into newcomers (represented as 'recent immigrants' within the graphs below) and long-term immigrants while non-immigrants are identified as recent non-immigrants and long-term non-immigrants.

Permanent residents are subdivided into skilled workers (this includes those who arrived via the Atlantic Immigration Pilot program, provincial nominees and other skilled workers) sponsored family and refugees.

Temporary residents are subdivided into international students and their dependents (represented as 'students' within the graphs below) and temporary foreign workers (represented as 'TFWs'). Each graph displays the age-standardized rates per 100 people within each respective group.

In the Appendix, we present more detailed breakdowns of the main results. For each measure of health service use, differences across groups are presented by health zone and by area-level socioeconomic status, respectively. The Appendix also includes results of a regression analysis that identifies factors associated with differences in health service use holding other factors constant.

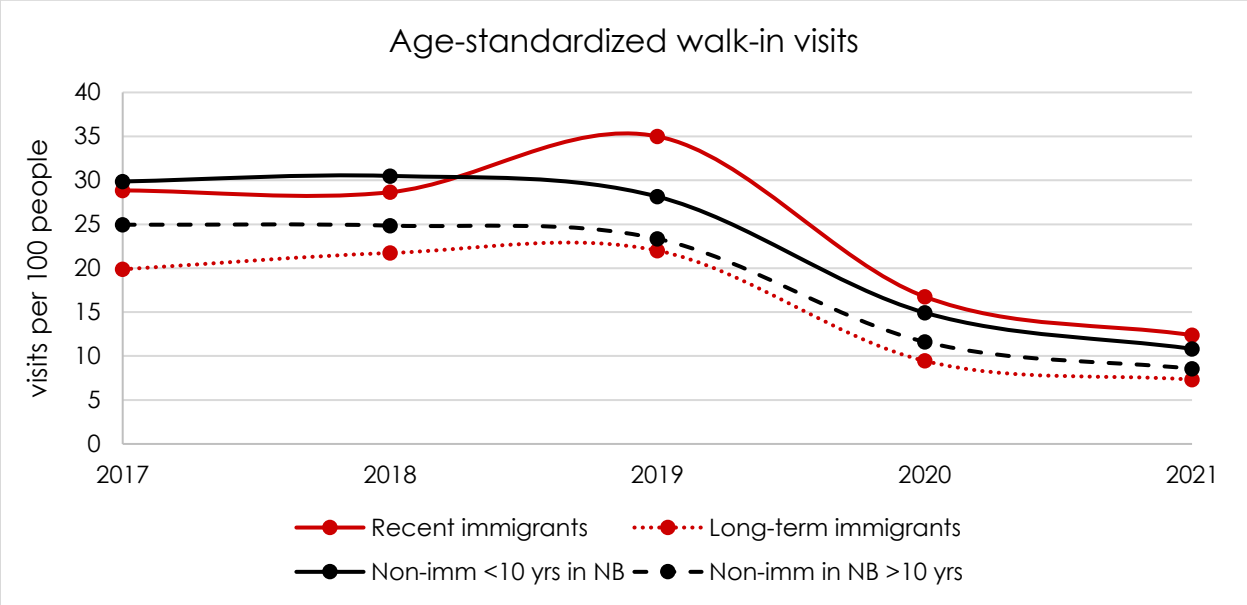
It is important to note that the composition of these groups changes from year to year because of arrivals, departures and aging, and so the patterns of health service use are not those of a specific cohort of individuals. Cohort-specific analysis, in which we trace patterns in health service use as newcomers spend more time in NB, is considered briefly here and could be the subject of future work.

Visits to Walk-in Clinics

Figures 1-3 below show age-standardized walk-in clinic visits per 100 people within each respective group of immigrants and non-immigrants.

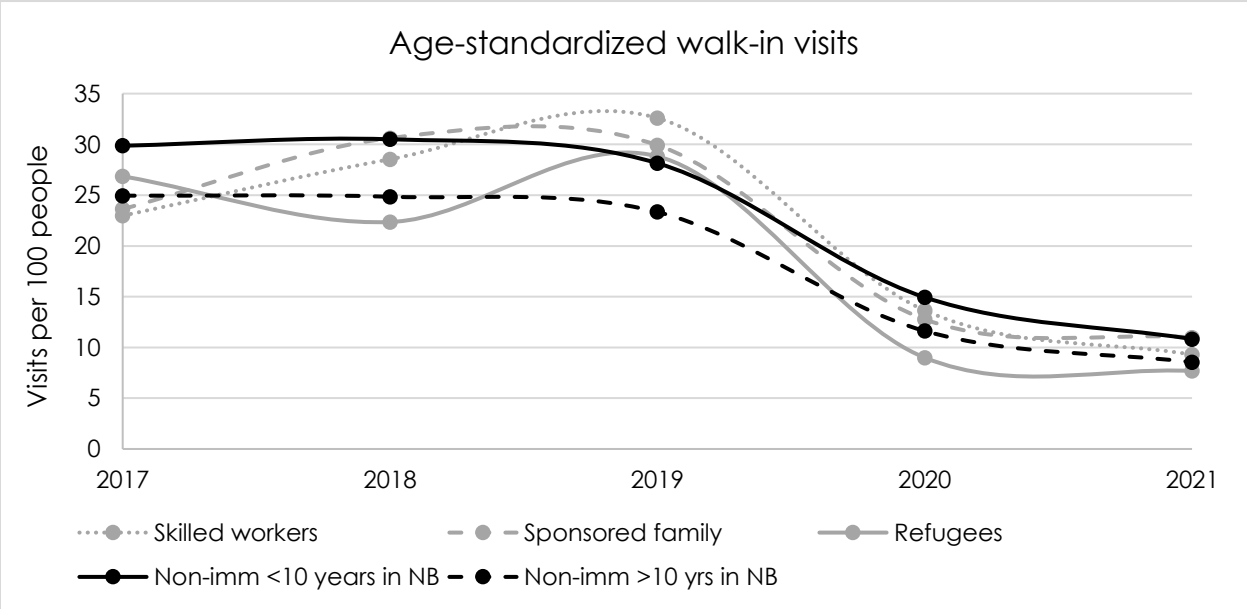
Figure 4 presents the number of walk-in clinic visits segmented by arrival year cohorts ranging from 2012 to 2020.

Figure 1: Age-standardized walk-in clinic visits for recent and long-term immigrants and non-immigrants



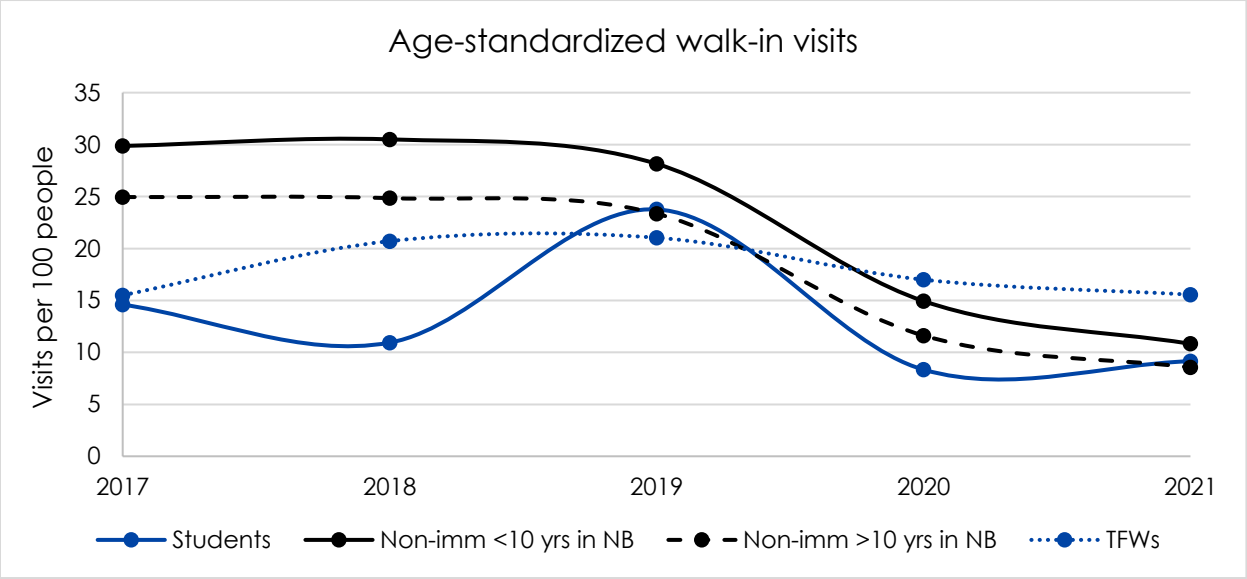
The trends in Figure 1 indicate that from 2018 onwards, newcomers (recent immigrants) had more visits to walk-in clinics compared to the other groups, with long-term immigrants having the smallest number of visits. The differences between the groups increased markedly in 2019 before narrowing again in 2020 and declining relative to earlier years with the onset of the COVID-19 pandemic. The broader consequences of the pandemic on health service use are the subject of a separate report.

Figure 2: Age-standardized walk-in clinic visits for permanent residents and non-immigrants



The trends in Figure 2 show that within the permanent resident category, skilled workers and sponsored family members had the most visits to walk-in clinics until 2020, while refugees had the fewest visits overall. From 2020 to 2021, there was a general decline in visits to walk-in clinics across all groups, with rates converging to similar levels by 2021.

Figure 3: Age-standardized walk-in clinic visits for temporary residents and non-immigrants



The trends in Figure 3 demonstrate that throughout most of the study period, international students and their dependents had the lowest rate of visits to walk-in clinics among the temporary resident group. Frequency of visits remained relatively steady among temporary foreign workers (TFWs) over the 5 years while the other groups saw sharp drops in visits during the pandemic years.

Overall, non-immigrants visited walk-in clinics more often than temporary residents.

Figure 4: Frequency of walk-in clinic visits in the first year after arrival, by arrival year cohort (immigrants only)

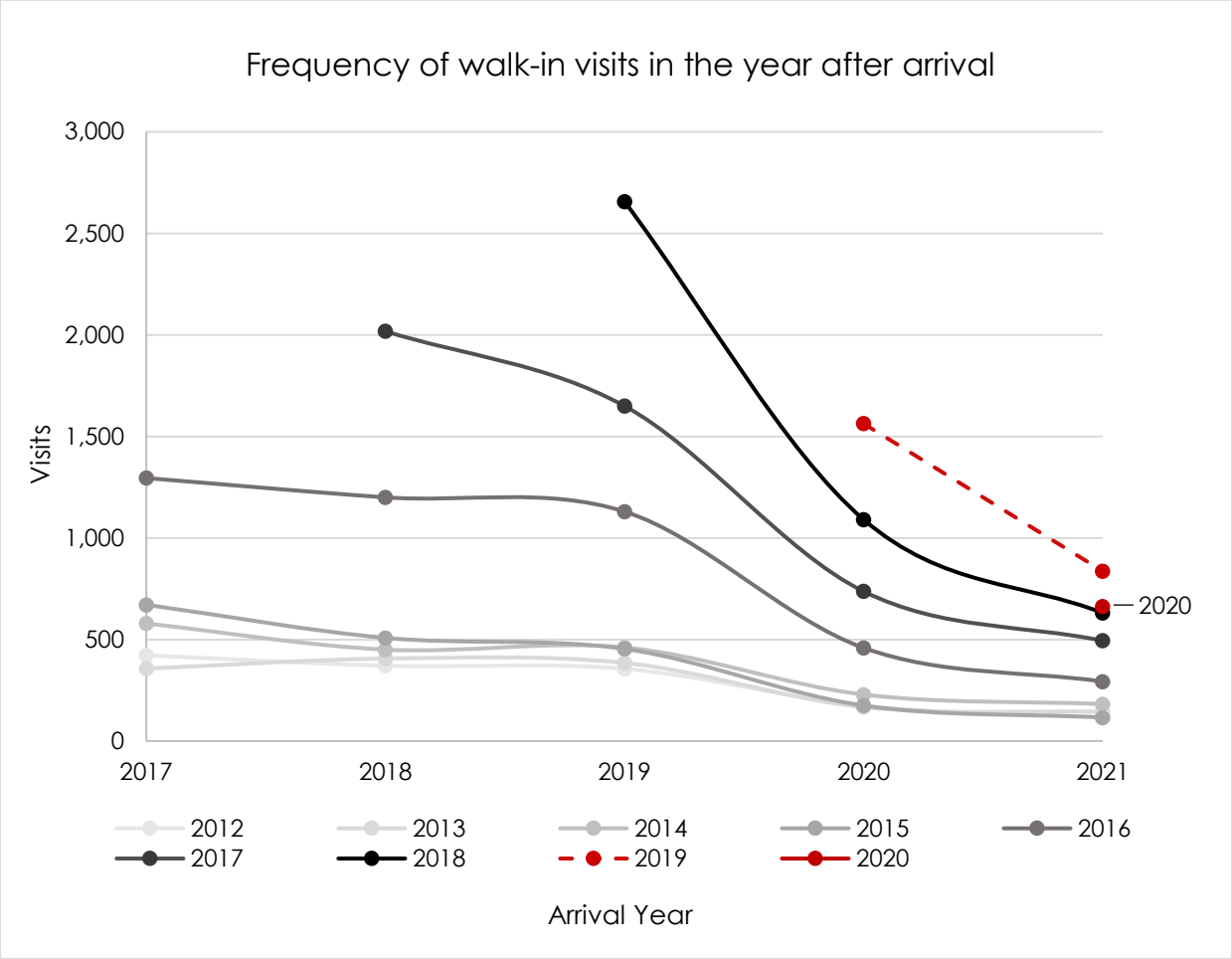


Figure 4 illustrates a trend in which more recent arrival cohorts tend to have a higher number of walk-in clinic visits.

For instance, the 2018 arrival cohort shows significantly higher use of visits in the first full calendar year after arrival compared to the 2017 cohort in their first year after arrival, which is in turn higher than the number of visits for earlier arrival cohorts. However, the 2019 cohort has a lower level of service use in 2020, reflecting in part COVID-19 restrictions. Also notable is that the rate of visits for a particular arrival cohort declines with additional years in NB.

Literature has found evidence of declining health status with years in Canada [1], a result that is apparently contrary to what is found here with declining health service use over time. It should be noted that health service use and health status, though closely related, are measuring different outcomes. As well, our analysis is considering changes over a relatively short period of time and is based on administrative data rather than survey responses. Future work could consider changes with time in Canada of measures of health status such as incidence of chronic disease that are based on administrative data.

When we control for a range of demographic, economic and geographic factors in regression analysis (see Tables A1 and A2 in the Appendix for detailed results), we see that immigrants overall are significantly less likely to visit a walk-in clinic compared to long-term non-immigrants. However, among the immigrant categories, newcomers are significantly more likely to visit a walk-in clinic compared to long-term non-immigrants.

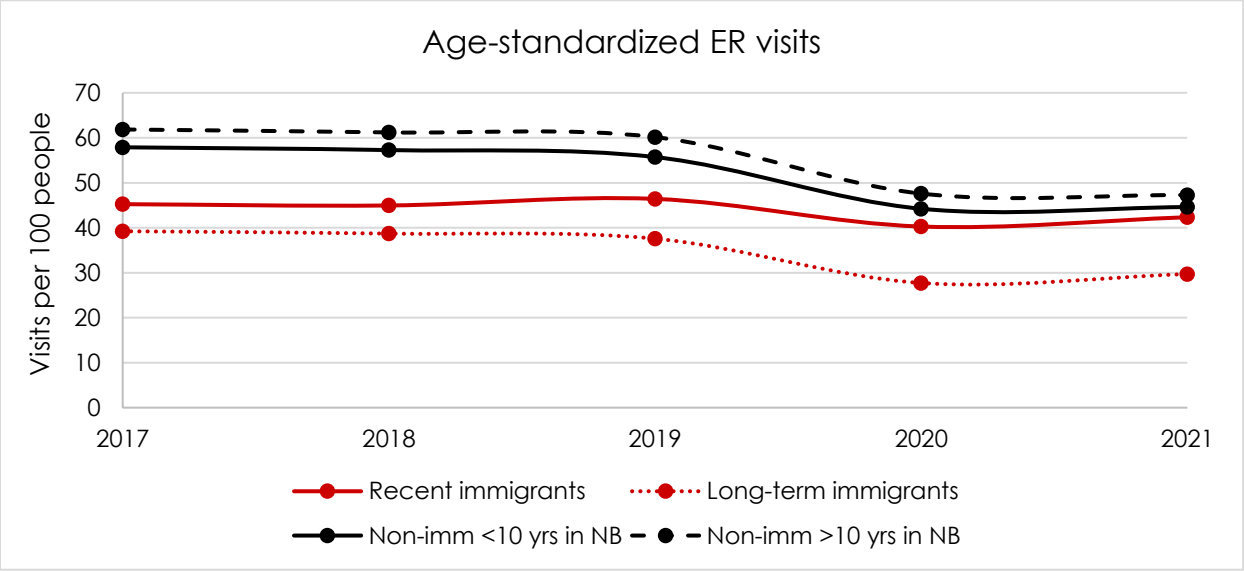
Among temporary residents, international students/dependents and TFWs are least likely to visit a walk-in clinic compared to other immigrant categories, including permanent residents. For permanent residents, the likelihood of visiting a walk-in clinic decreases as time since arrival increases, with the highest odds among those in their first year in the province (<1) and significantly lower odds for those who have been in New Brunswick for 10 or more years.

Compared to those who arrived between 2000 and 2004, more recent arrivals have lower odds of a walk-in clinic visit on arrival, perhaps indicating better health status of newcomers on arrival, and possibly due to the pandemic in the later years. The analysis indicates significant regional variations, with health zones 2-7 showing lower odds of a walk-in clinic visit compared to zone 1.

Emergency Room Visits

Figures 5-7 below show age-standardized ER visits per 100 people within each respective group of immigrants and non-immigrants. Figure 8 presents the number of ER visits by arrival year cohorts ranging from 2012 to 2020.

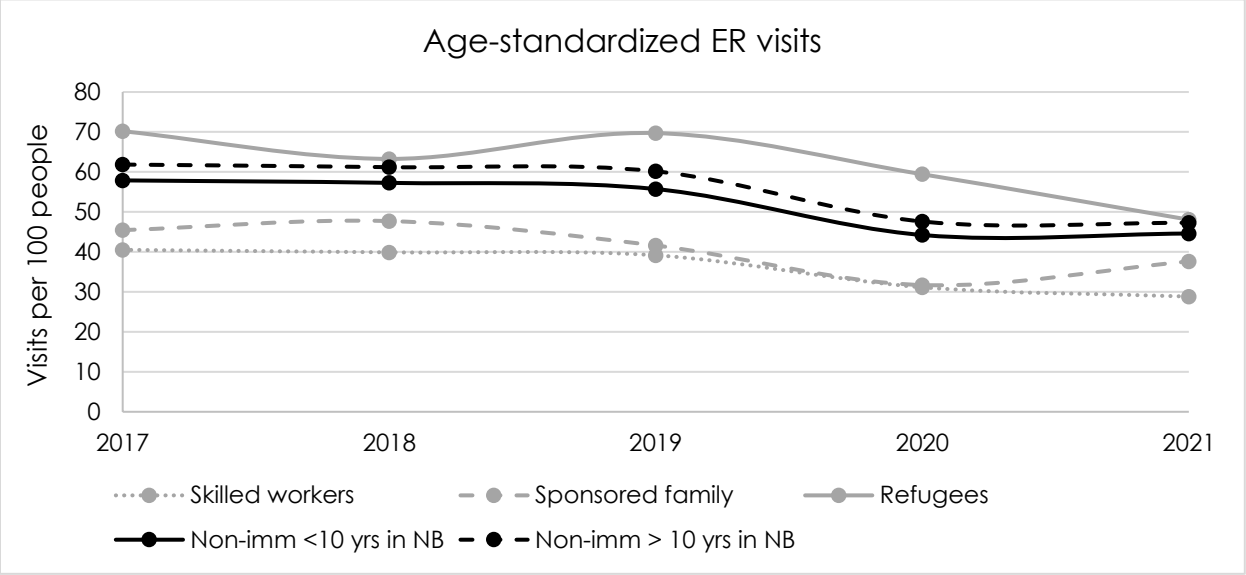
Figure 5: Age-standardized ER visits for recent and long-term immigrants and non-immigrants



The trends in Figure 5 indicate that immigrants overall had lower rates of ER visits compared to the non-immigrant cohort, with newcomers (recent immigrants) having rates that were more

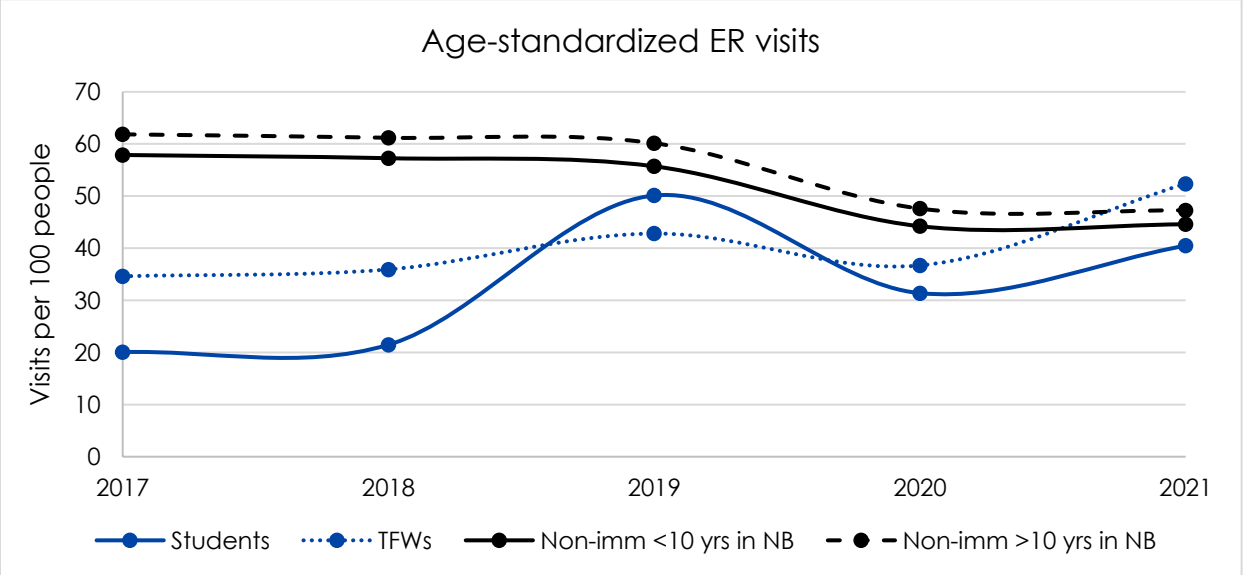
similar to those of non-immigrants during the pandemic years. Long-term immigrants had the lowest rate of ER visits throughout the study period.

Figure 6: Age-standardized ER visits for permanent residents and non-immigrants



The trend among permanent residents in Figure 6 shows that refugees had the highest rate of ER visits until 2021, even compared to the non-immigrant cohort. Skilled workers and sponsored family members had the lowest rates of ER visits throughout the study period.

Figure 7: Age-standardized ER visits for temporary residents and non-immigrants



Among the temporary resident group (Figure 7), TFWs had higher rates of ER visits overall, peaking in 2021. The non-immigrant cohort generally had higher rates of ER visits than temporary residents, even with a decline in visits from 2020 onwards. These trends demonstrate a stabilization of rates among non-immigrants throughout the pandemic while temporary residents appear to show an increase in ER visits.

Figure 8: Frequency of ER visits in the first year after arrival, by arrival year cohort (immigrants only)

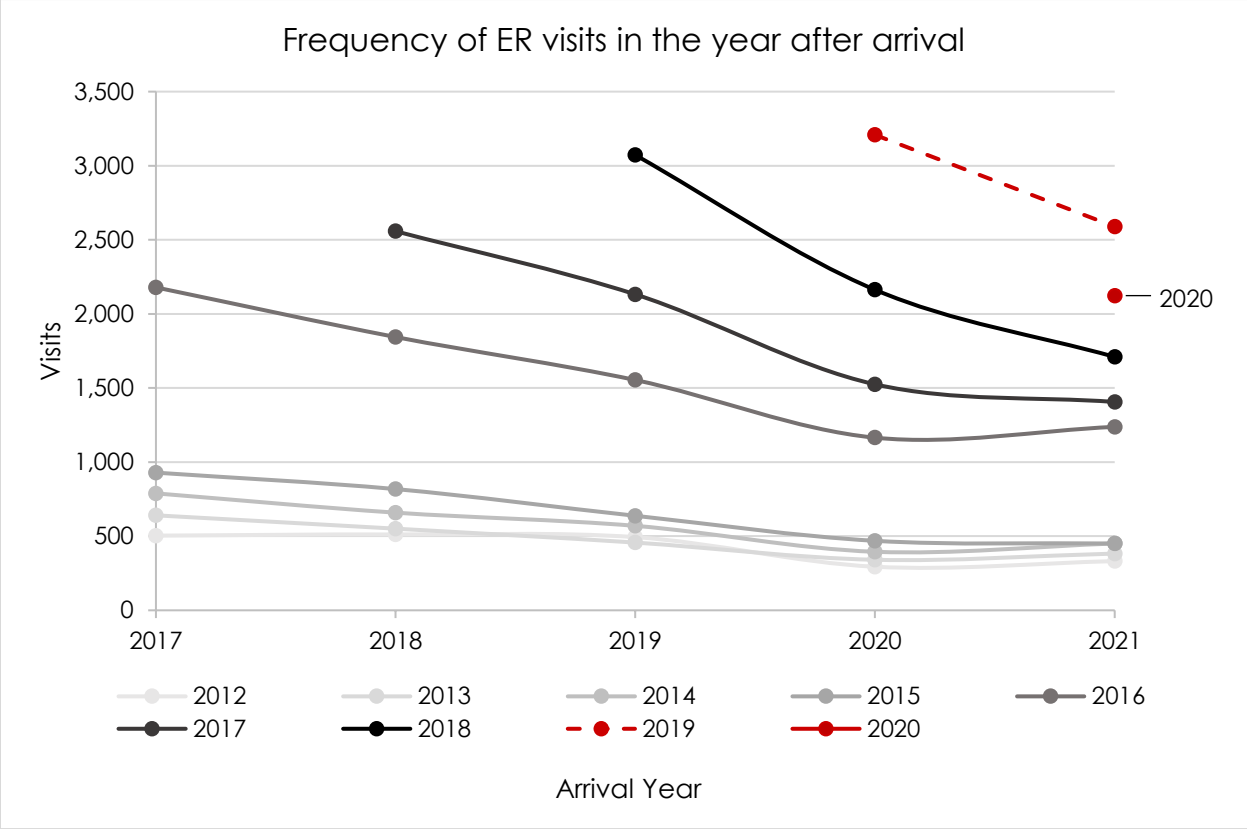


Figure 8 shows that the cohorts who arrived in more recent years, notably 2018 and 2019 cohorts, initially had a higher number of ER visits in the year after arrival than did earlier arrival cohorts after their arrival in NB.

The 2019 cohort, for example, exhibits a pronounced peak in ER visits during the first year after arrival, which then declines significantly in the following year. The cohorts from earlier years (2016 to 2018) show a more consistent pattern of ER visits over time, with relatively low and stable numbers. This pattern may suggest a higher immediate need for emergency care upon arrival or possibly less familiarity with the healthcare system, leading to increased ER use.

Over time, as immigrants likely become more accustomed to the healthcare system and establish regular care, their reliance on emergency services appears to diminish.

After controlling for a range of demographic, economic and geographic factors (see Tables A3 and A4 in the Appendix), we see that immigrants (both recent and long-term) are significantly less likely to visit the ER compared to long-term non-immigrants. Among immigrants, international students and their dependents and skilled workers are the least likely to visit the ER. Compared to those who arrived between 2000 and 2004, more recent arrivals (2010 and onwards) had significantly lower odds of an ER visit. The likelihood of an ER visit increases in the first two years after arrival, but as individuals spend more time in NB, their odds of visiting an ER decrease.

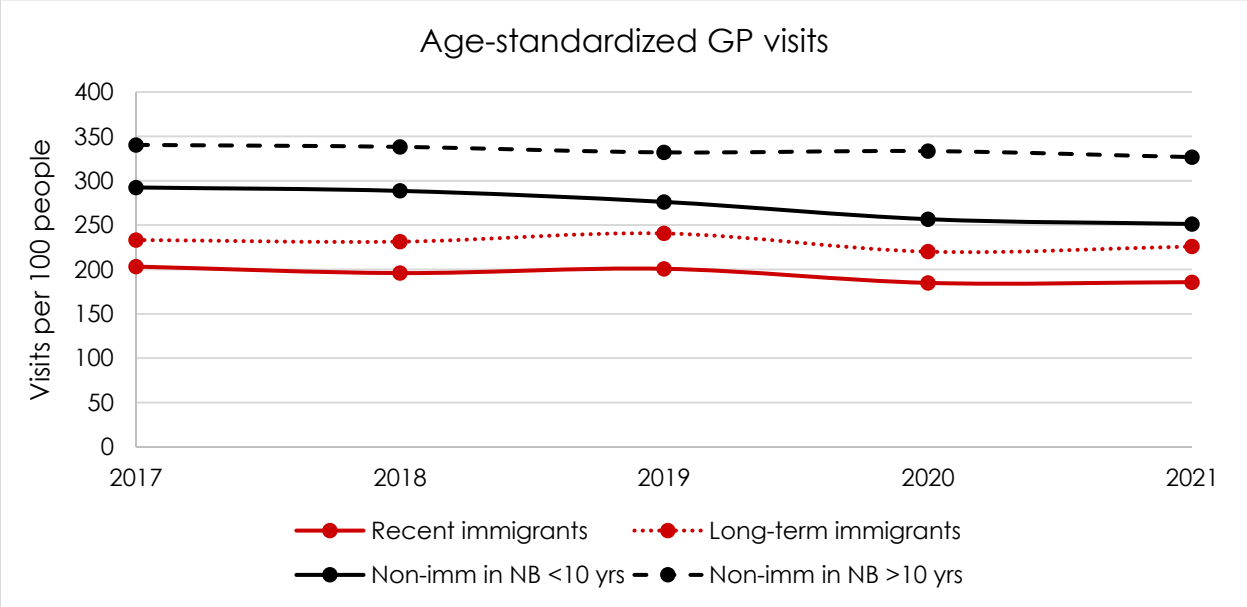
We also observed regional variations with results indicating that individuals in health zones 3, 5, 6 and 7 all have higher odds of an ER visit compared to those in zone 1. Individuals in health zone 4 have significantly lower odds of an ER visit compared to those in zone 1, while there is no difference in the odds of ER utilization between zones 2 and 1.

Visits to General Practitioners

Figures 9-11 below show age-standardized GP visits per 100 people within each respective group of immigrants and non-immigrants. Figure 12 presents the number of GP visits by arrival year cohorts ranging from 2012 to 2020.

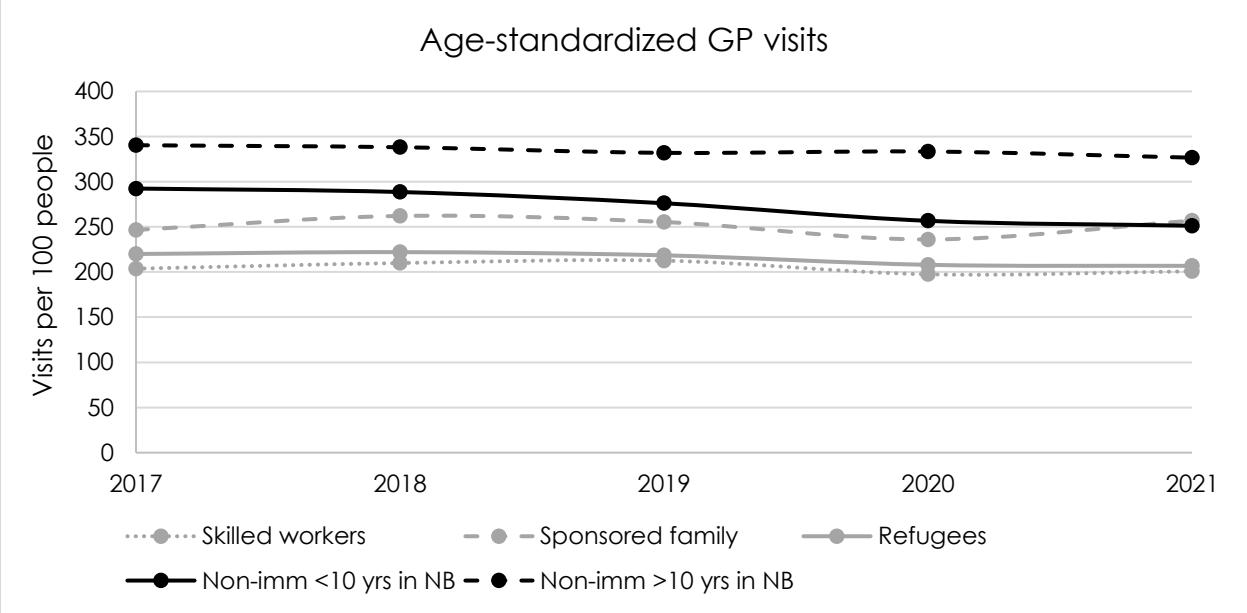
GP visits include not only visits to a GP's office but also services provided in settings such as hospitals and nursing homes, provided by physicians specialized in general practice. GP visits specifically exclude visits to walk-in clinics to maintain a clear distinction between regular GP services and ad-hoc walk-in services.

Figure 9: Age-standardized GP visits for recent and long-term immigrants and non-immigrants



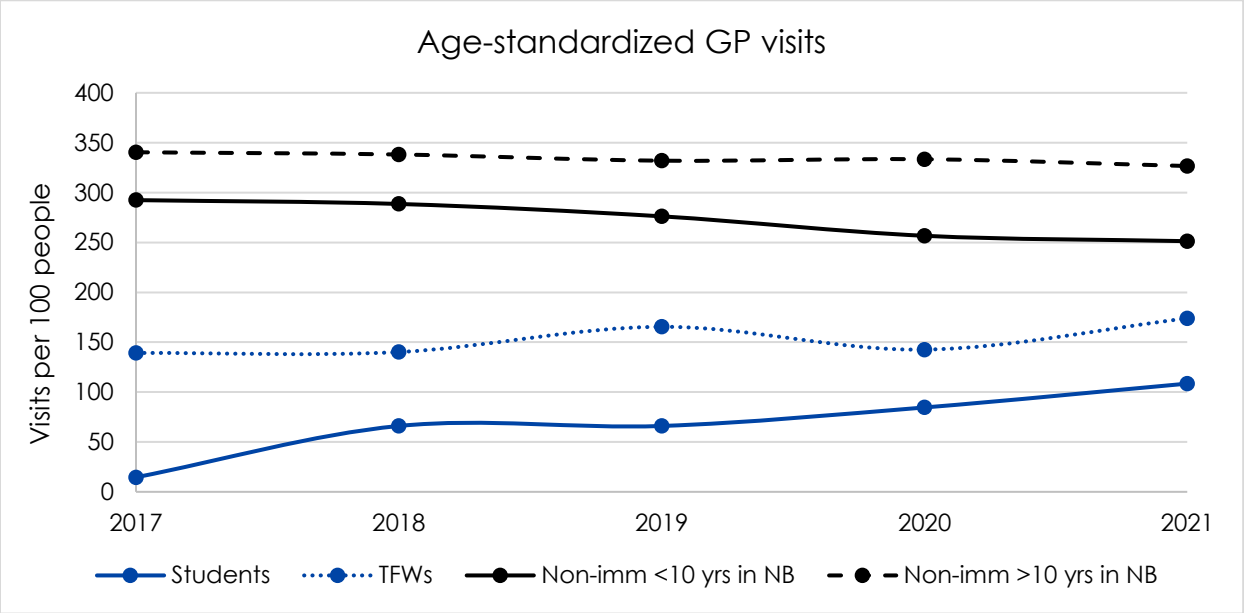
The trends in Figure 9 show that immigrants overall had lower rates of visits to a GP compared to non-immigrant groups, with newcomers (recent immigrants) having the lowest rate throughout the study period. Non-immigrants in the province for less than 10 years had higher GP visit rates compared to the immigrant groups, while long-term non-immigrants consistently had the highest rates of GP visits across all years. This likely reflects a larger proportion of longer-term residents who have a family doctor, though long-term immigrants also had relatively lower rates of GP visits.

Figure 10: Age-standardized GP visits for permanent residents and non-immigrants



Closely mirroring Figure 7, the trends in Figure 10 above indicate that non-immigrants had higher rates of visits to GPs than immigrants, with only the sponsored family group surpassing visits among long-term non-immigrants (<10 years in NB) in 2021. Among permanent residents, sponsored families had the highest rate of GP visits throughout the study period, while refugees and skilled workers had the lowest rates.

Figure 11: Age-standardized GP visits for temporary residents and non-immigrants



The trend among temporary residents as compared to non-immigrants (Figure 11) is similar to that of permanent residents, with long-term non-immigrants having the highest rate of visits to GPs. International students and their dependents had the lowest rates compared to all the other groups; however, there appears to be an upward trend in the number of GP visits among both students and TFWs over time.

Figure 12: Frequency of GP visits in the first year after arrival, by arrival year cohort (immigrants only)

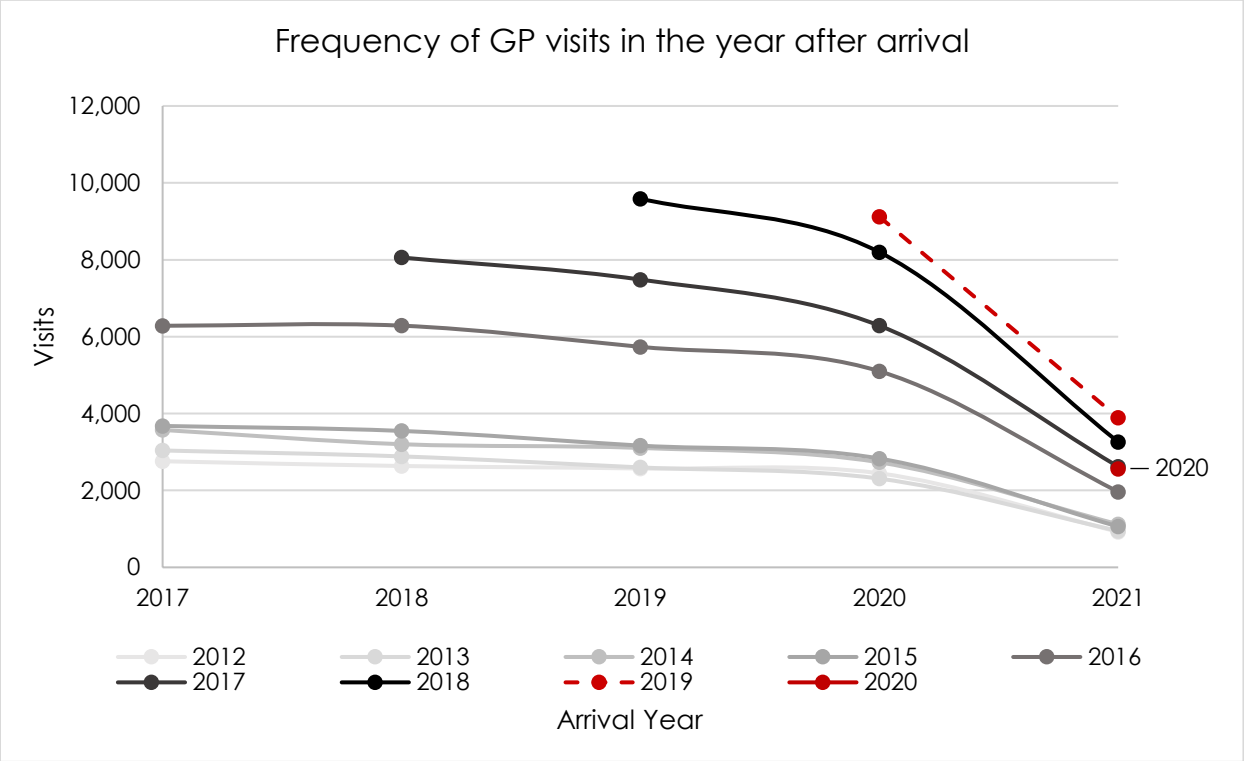


Figure 12 tracks the frequency of GP visits over time for particular immigrant arrival cohorts defined by the year of arrival, from 2012 to 2020. As with other measures of health service use, more recent arrival cohorts have higher rates of GP visits in the year after arrival than do earlier cohorts. As well, rates of GP visits also decline with additional years in Canada, though at a much more gradual rate than was the case for walk-in clinic and ER visits. Rates also show the impact of pandemic limitations on primary care access.

When we control for demographic, economic and geographic factors (see Tables A5 and A6 in the Appendix), we see that both recent and long-term immigrants are significantly less likely to visit a GP, other things equal, compared to non-immigrants who have lived in the province for more than 10 years.

Among the different immigrant subgroups, international students and their dependents and TFWs are the least likely to visit a GP. For permanent residents, the likelihood of visiting a GP increase as the time since arrival increases, perhaps reflecting increased access to a family doctor and/or underlying health status changes. Compared to those who arrived between 2000 and 2004, more recent arrivals have lower odds of a GP visit. Except for those in health zone 6, individuals in all the other zones have lower odds of a GP visit compared to those in zone 1; zone 6 alone has higher odds of a visit.

Hospital Admissions

Figures 13-15 below show the age-standardized number of hospitalizations per 100 people within each respective group of immigrants and non-immigrants.

Figure 16 presents the number of hospitalizations for arrival year cohorts from 2012 to 2020.

Figure 13: Age-standardized hospitalizations for recent and long-term immigrants and non-immigrants

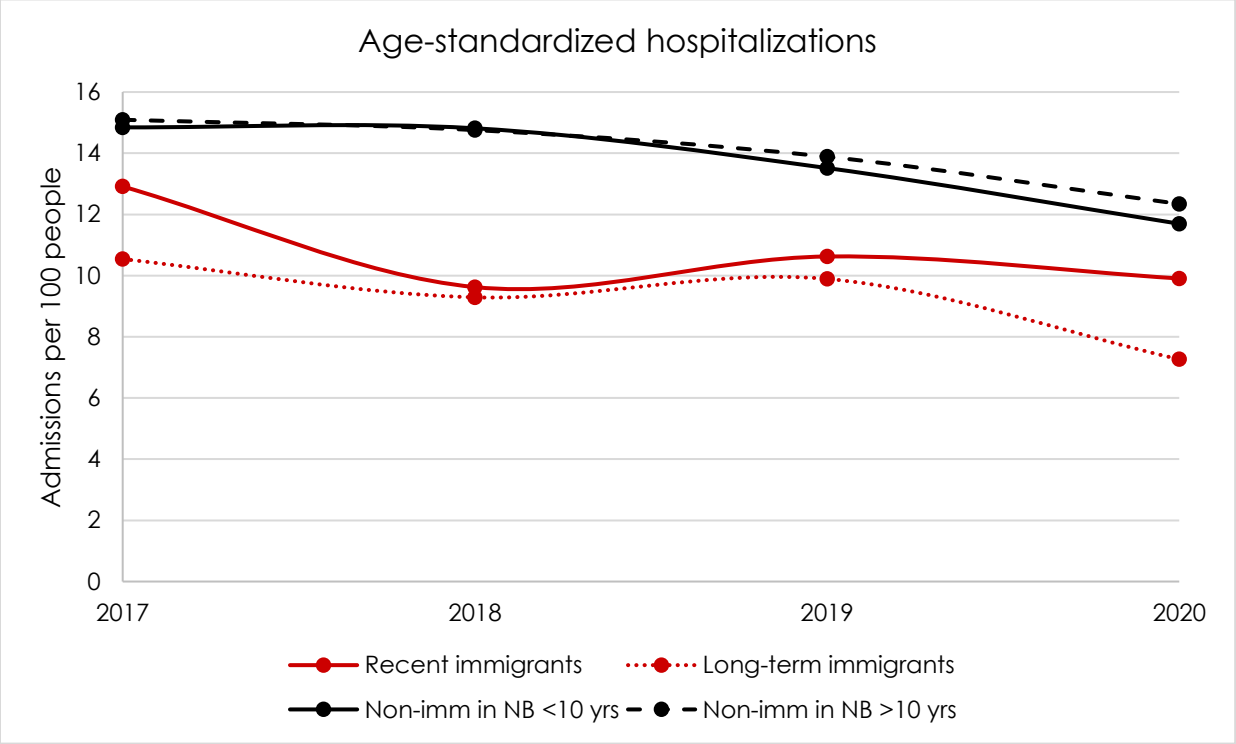


Figure 13 shows that immigrants, both recent and long-term, had lower rates of hospitalization than non-immigrants. It is interesting to note that both the non-immigrant groups had similar trends throughout the study period, with rates of hospitalization declining even prior to the onset of the pandemic.

Figure 14: Age-standardized hospitalizations for permanent residents and non-immigrants

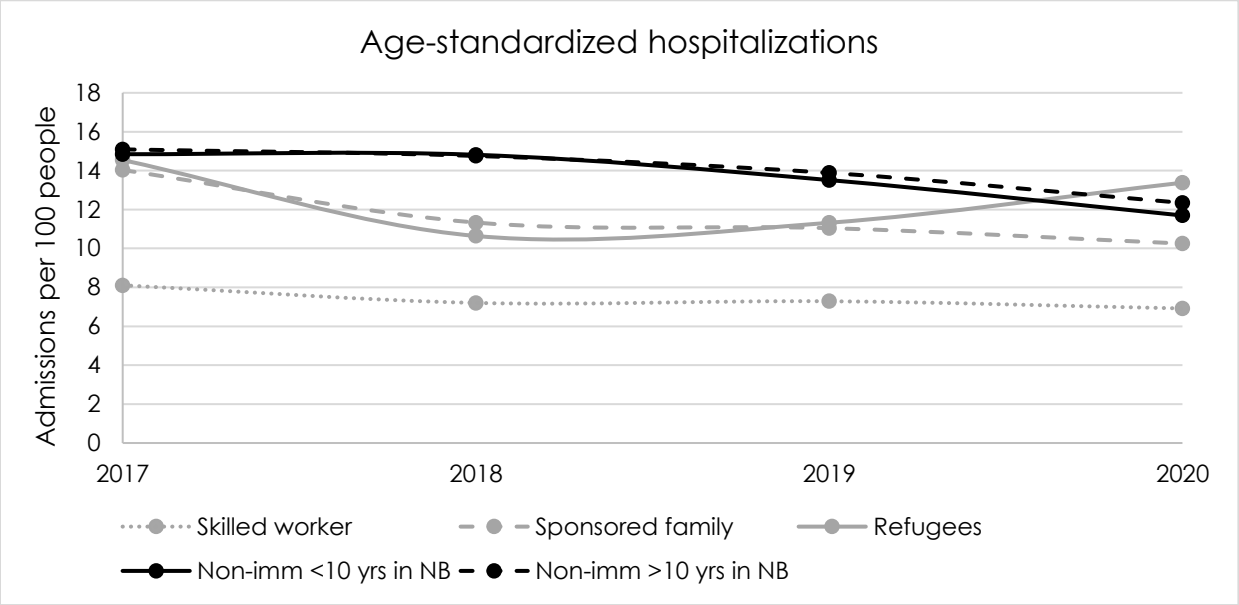
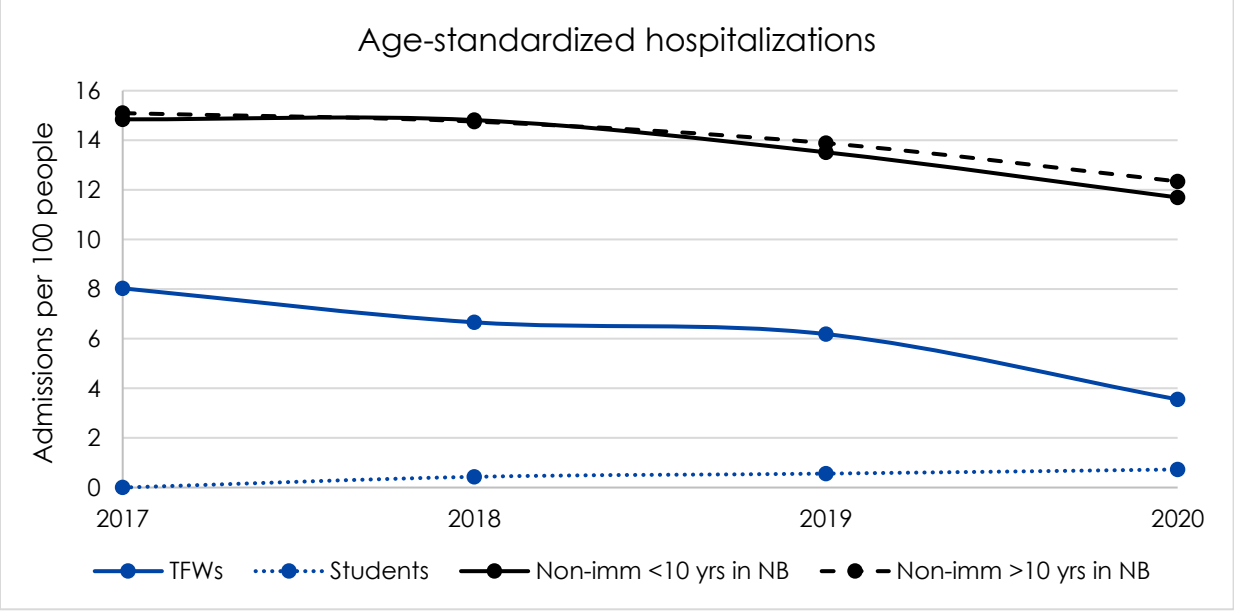


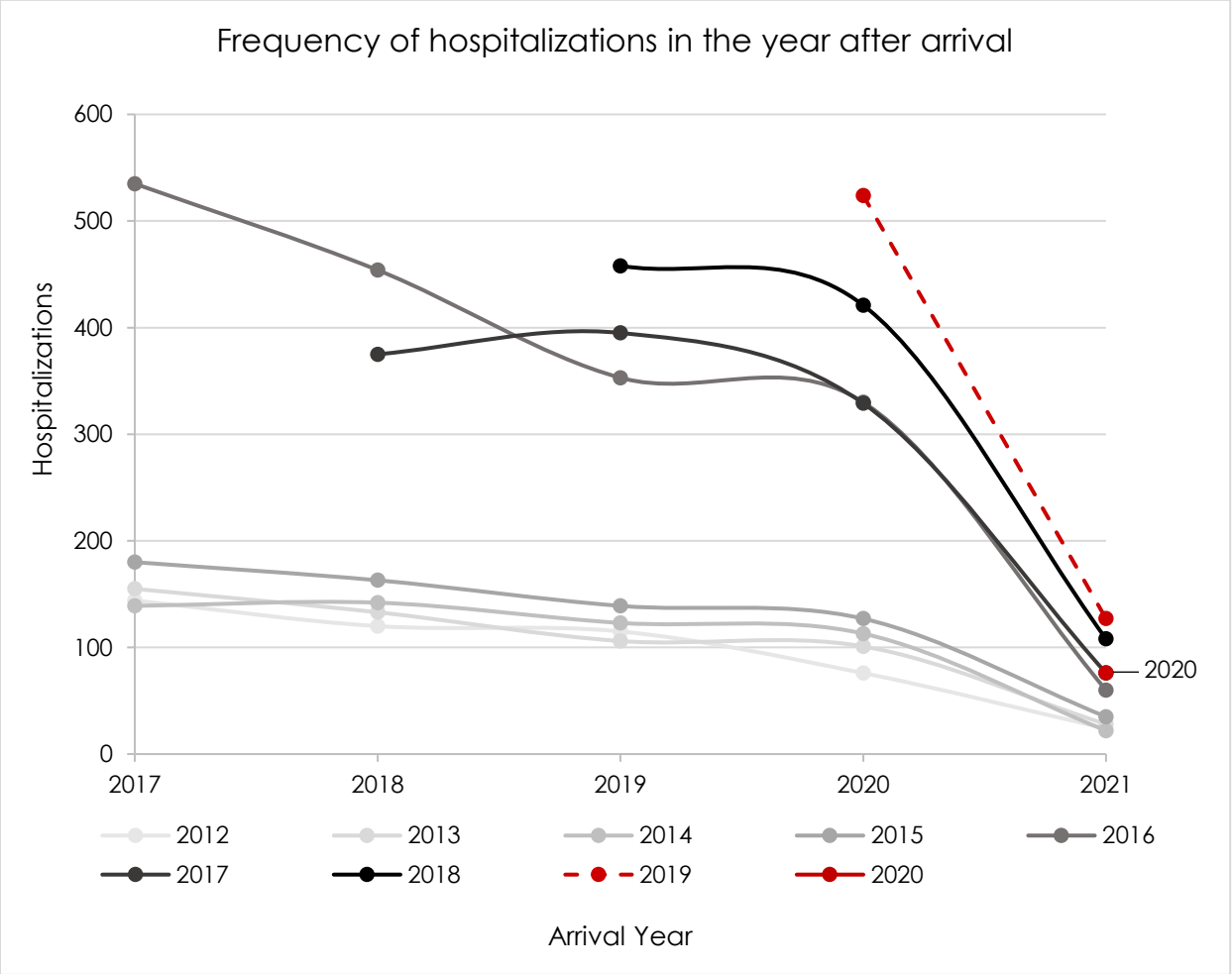
Figure 14 demonstrates that among permanent residents, skilled workers had the lowest rate of hospitalization. Overall, permanent residents had lower rates of hospitalization as compared to non-immigrants – at least up until 2020 when refugees had the highest rate.

Figure 15: Age-standardized hospitalizations for temporary residents and non-immigrants



Among temporary residents, TFWs had the higher rate of hospitalizations, although the rate declined steadily throughout the study period. Similar to the above trends, hospitalizations among temporary residents were lower compared to both groups of non-immigrants.

Figure 16: Frequency of hospitalizations in the first year after arrival, by arrival year cohort (immigrants only)



In Figure 16, there is some indication of higher rates of hospitalization in the year after arrival for more recent cohorts, though the 2016 cohort appears to be an outlier. This could reflect the influx of Syrian refugees in 2015-2016 and higher rates of health concerns requiring hospitalization. There is little change with additional years in Canada for most arrival cohorts, with the exception of the 2016 arrival cohort where rates of hospitalization decline with years in Canada. As well, hospitalization rates decline markedly for all arrival cohorts in 2021.

After controlling for demographic, economic and geographic factors (see Tables A7 and A8 in the Appendix), we see that the immigrant cohort overall is significantly less likely to be admitted to hospital compared to the long-term non-immigrant group.

Among the different subgroups of immigrants, international students and their dependents are the least likely to be admitted to hospital. There are no significant differences in hospitalizations between refugees, recent non-immigrants and long-term non-immigrants. For permanent residents, the likelihood of a hospital admission decreases as their time since arrival increases, with the highest odds of a hospitalization occurring during their first two years in New Brunswick.

Compared to those who arrived between 2000 and 2004, more recent arrivals have lower odds of hospitalization. Regarding health zones, there is no significant difference in hospitalizations between individuals in zones 1 and 2. Health zone 6 has significantly lower odds of hospitalization compared to zone 1, while zones 3, 4, 5, and 7 have significantly higher odds of hospitalization compared to zone 1.

Health Service Use by Health Zone and Socioeconomic Status

Overall, our analysis (as presented in the Appendix) highlights distinct regional and socioeconomic patterns in healthcare utilization among immigrant and non-immigrant groups. Zone 1 (Moncton) consistently shows the highest walk-in clinic visit rates, suggesting regional disparities in healthcare access and/or service distribution. ER visits are significantly higher for recent immigrants in Zone 4 (Edmundston), indicating potential barriers to primary care in that region.

Trends in GP visit differ by income levels, with recent immigrants in higher income areas and long-term non-immigrants in lower income areas visiting GPs more frequently.

Hospitalization rates are most elevated in Zone 4 across all groups, with those in the lowest income quintile experiencing the highest rates, pointing to socioeconomic influences on healthcare needs.

Discussion

This analysis of healthcare utilization patterns among recent and long-term immigrants, and various immigrant groups in New Brunswick, presents a complex picture shaped by temporal, socioeconomic, geographic, cultural and even structural factors.

Newcomers, or recent immigrants, show a lower engagement with primary care services as indicated by fewer visits to general practitioners. This trend suggests possible barriers to accessing primary healthcare, including waitlists for family doctors or a lack of familiarity navigating the health system. Instead, there is a tendency for this group to utilize walk-in clinics more frequently, which may reflect immediate, though perhaps not urgent, healthcare needs and a response to health issues arising shortly after arrival.

It is, however, essential to consider the distribution and accessibility of walk-in clinics as a potential factor influencing the observed patterns of walk-in clinic utilization among newcomers. The higher rates of walk-in clinic visits by newcomers, as compared to longer-term residents, may reflect the geographic concentration of these clinics in areas of significant immigrant population (i.e., Zone 1 [Moncton region]). Proximity to walk-in clinics would naturally lead to higher utilization rates, especially since newcomers tend to reside in urban regions where such services are more available.

Among the immigrant subgroups, international students and their dependents are least likely to seek any form of healthcare, which perhaps aligns with this demographic group's younger average age and potentially better health status even after standardizing for age differences. It should be noted, however, that international students typically access primary care through university health clinics, the data for which are not captured here. Their dependents, who do not have access to university health clinics, tend to access care through the public healthcare system.

Refugees are more likely to visit an emergency room and be admitted to hospital. This could be attributed to factors like health issues faced upon arrival, which may not be addressed through primary care.

Skilled workers tend to have lower rates of hospitalization, suggesting more stable health conditions. This stability is likely the result of having a more secure socioeconomic status, allowing for easier navigation through the healthcare system, fewer barriers to access and utilization of preventive healthcare services.

The initial higher use of health services among newcomers may reflect a period of adjustment as more recent arrivals seek healthcare to address pre-existing conditions as part of the settlement process. The longer immigrants stay in the province, the less likely they are to access a walk-in clinic, be admitted to hospital, or visit an emergency room. They are also more likely to visit a general practitioner the longer they stay in the province. This likely reflects a shift towards preventive healthcare practices as immigrants settle and become more integrated into the community.

Limitations

While our analysis provides robust insights into newcomer health service utilization, there are certain limitations to this study.

For instance, it does not account for variability in health status among individuals, which may significantly influence healthcare utilization patterns. Including measures of health status, particularly chronic diseases, could help clarify whether the observed patterns of utilization are due to actual health needs or other barriers to care.

The study period may not be sufficiently long to observe the full effects of the healthy immigrant effect, which suggests that immigrants' health advantages may diminish over time, leading to increased health service use. Our analysis might not have captured the phase in which the healthy immigrant effect wanes, which could explain the lower utilization rates observed among immigrants. An extended longitudinal analysis would be beneficial to gain a clearer understanding of the evolution of health service use among immigrants.

The study also does not account for alternative healthcare services like eVisitNB and Tele-care, which have become increasingly relevant, particularly in the context of the pandemic. Incorporating data on utilization of these services would provide a more comprehensive understanding of healthcare utilization.

Further, we recognize that the study analyzes a narrow time window during which we also experienced a pandemic – it is possible that trends could be distorted as result.

Conclusion

The health service utilization patterns among immigrants to New Brunswick highlight diverse and evolving healthcare needs within and across these populations. Understanding these patterns is crucial for developing policies that cater to the diverse healthcare needs of various immigrant populations. Tailored and culturally competent healthcare services, combined with initiatives to reduce systemic barriers, can significantly enhance the healthcare experience of newcomers, leading to better health outcomes and a more inclusive healthcare system. This, in turn, can contribute to enhanced immigrant settlement experiences, longer-term retention of newcomers and a prosperous future for our province.

References

1. Vang Z, Sigouin J, Flenon A, Gagnon A. The healthy immigrant effect in Canada: a systematic review. Population Change and Lifecourse Strategic Knowledge Cluster Discussion Paper Series/Un Réseau stratégique de connaissances changements de population et parcours de vie Document de travail. 2015;3(1):4. Available from: https://ir.lib.uwo.ca/pclc/vol3/iss1/4

2. Government of New Brunswick. New beginnings: a population growth strategy for New Brunswick: 2019-2024. Government of New Brunswick; 2019. Available from: https://www2.gnb.ca/content/dam/gnb/Departments/petl-epft/PDF/PopGrowth/Population_growth_strategy.pdf

3. Government of New Brunswick. New Brunswick Francophone immigration action plan: 2014-2017. Government of New Brunswick; 2014 Jun. Available from: https://www2.gnb.ca/content/dam/gnb/Departments/petl-epft/PDF/PopGrowth/FrancophoneImmigrationPlan2014-17.pdf

4. Government of New Brunswick. New Brunswick population reaches 800,000: Government of New Brunswick; 25 Mar 2022. Available from: https://www2.gnb.ca/content/gnb/en/news/news_release.2022.03.0164.html.

5. Statistics Canada. Population estimates, quarterly (Table: 17-10-0009-01): Statistics Canada; 19 Dec 2023. Available from: https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710000901.

6. Jones R. New Brunswick smashes population growth record set last year. CBC News. 29 Sep 2023. Available from: https://www.cbc.ca/news/canada/new-brunswick/population-growth-record-1.6981745#:~:text=In%20new%20figures%20released%20this,over%20the%20prior%2029%20years

7. Kohler G, Holland T, Sharpe A, Irwin M, Sampalli T, MacDonell K, et al. The newcomer health clinic in Nova Scotia: a beacon clinic to support the health needs of the refugee population. Int J Health Policy Manag. 2018 Dec;7(12):1085–9. Available from: https://doi.org/10.15171/ijhpm.2018.54

Appendix

List of Figures

Figure A1: Age-standardized walk-in clinic visits for recent immigrants by health zone 30
Figure A2: Age-standardized walk-in clinics visits for long-term immigrants by health zone..... 30
Figure A3: Age-standardized walk-in clinic visits for recent non-immigrants by health zone 31
Figure A4: Age-standardized walk-in clinic visits for long-term non-immigrants by health zone 31
Figure A5: Frequency of walk-in clinic visits for recent immigrants by socioeconomic status 32
Figure A6: Frequency of walk-in clinic visits for long-term immigrants by socioeconomic status... 32
Figure A7: Frequency of walk-in clinic visits for recent non-immigrants by socioeconomic status 33
Figure A8: Frequency of walk-in clinic visits for long-term non-immigrants by socioeconomic status 33
Figure A9: Age-standardized ER visits for recent immigrants by health zone 37
Figure A10: Age-standardized ER visits for long-term immigrants by health zone 37
Figure A11: Age-standardized ER visits for recent non-immigrants by health zone 38
Figure A12: Age-standardized ER visits for long-term non-immigrants by health zone 38
Figure A13: Frequency of ER visits for recent immigrants by socioeconomic status 39
Figure A14: Frequency of ER visits for long-term immigrants by socioeconomic status..... 39
Figure A15: Frequency of ER visits for recent non-immigrants 40
Figure A16: Frequency of ER visits for long-term non-immigrants..... 40
Figure A17: Age-standardized GP visits for recent immigrants by health zone 44
Figure A18: Age-standardized GP visits for long-term immigrants by health zone 44
Figure A19: Age-standardized GP visits for recent non-immigrants by health zone 45
Figure A20: Age-standardized GP visits for long-term non-immigrants by health zone 45
Figure A21: Frequency of GP visits for recent immigrants by socioeconomic status 46
Figure A22: Frequency of GP visits for long-term immigrants by socioeconomic status..... 46
Figure A23: Frequency of GP visits for recent non-immigrants by socioeconomic status 47
Figure A24: Frequency of GP visits for long-term non-immigrants by socioeconomic status..... 47
Figure A25: Age-standardized hospitalizations for recent immigrants by health zone 51
Figure A26: Age-standardized hospitalizations for long-term immigrants by health zone 51
Figure A27: Age-standardized hospitalizations for recent non-immigrants by health zone 52
Figure A28 : Age-standardized hospitalizations for long-term non-immigrants by health zone 52
Figure A29: Frequency of hospitalizations for recent immigrants by socioeconomic status..... 54
Figure A30: Frequency of hospitalizations for long-term immigrants by socioeconomic status 54
Figure A31: Frequency of hospitalizations for recent non-immigrants by socioeconomic status... 55

Figure A32: Frequency of hospitalizations for long-term non-immigrants by socioeconomic status 55

List of Tables

Table A1: Odds of visiting a walk-in clinic (newcomers vs non-immigrants) 34
Table A2: Odds of visiting a walk-in clinic (Immigrant subgroups vs non-immigrants) 35
Table A3: Odds of visiting an ER (newcomers vs non-immigrants) 41
Table A4: Odds of visiting an ER (immigrant subgroups vs non-immigrants) 42
Table A5: Odds of visiting a GP (newcomers vs non-immigrants) 48
Table A6: Odds of visiting a GP (immigrant subgroups vs non-immigrants) 49
Table A7: Odds of a hospitalization (newcomers vs non-immigrants) 56
Table A8: Odds of a hospitalization (immigrant subgroups vs non-immigrants) 57

Figure A1: Age-standardized walk-in clinic visits for recent immigrants by health zone

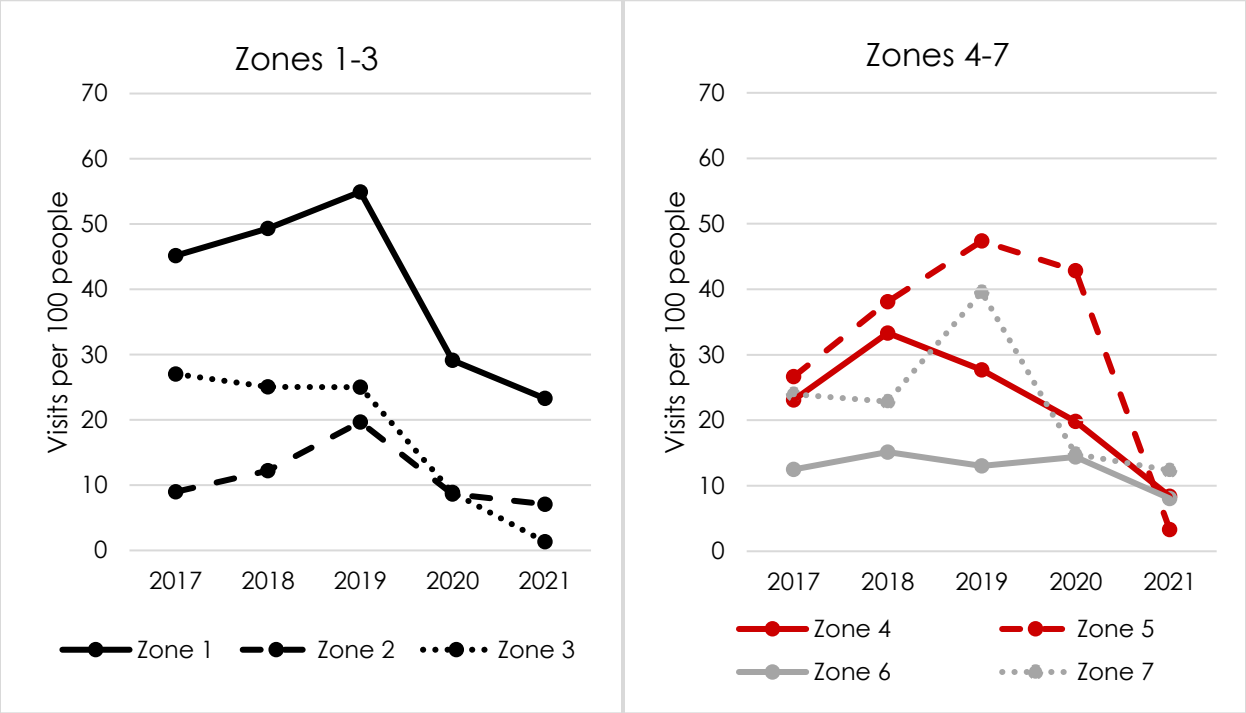


Figure A2: Age-standardized walk-in clinics visits for long-term immigrants by health zone

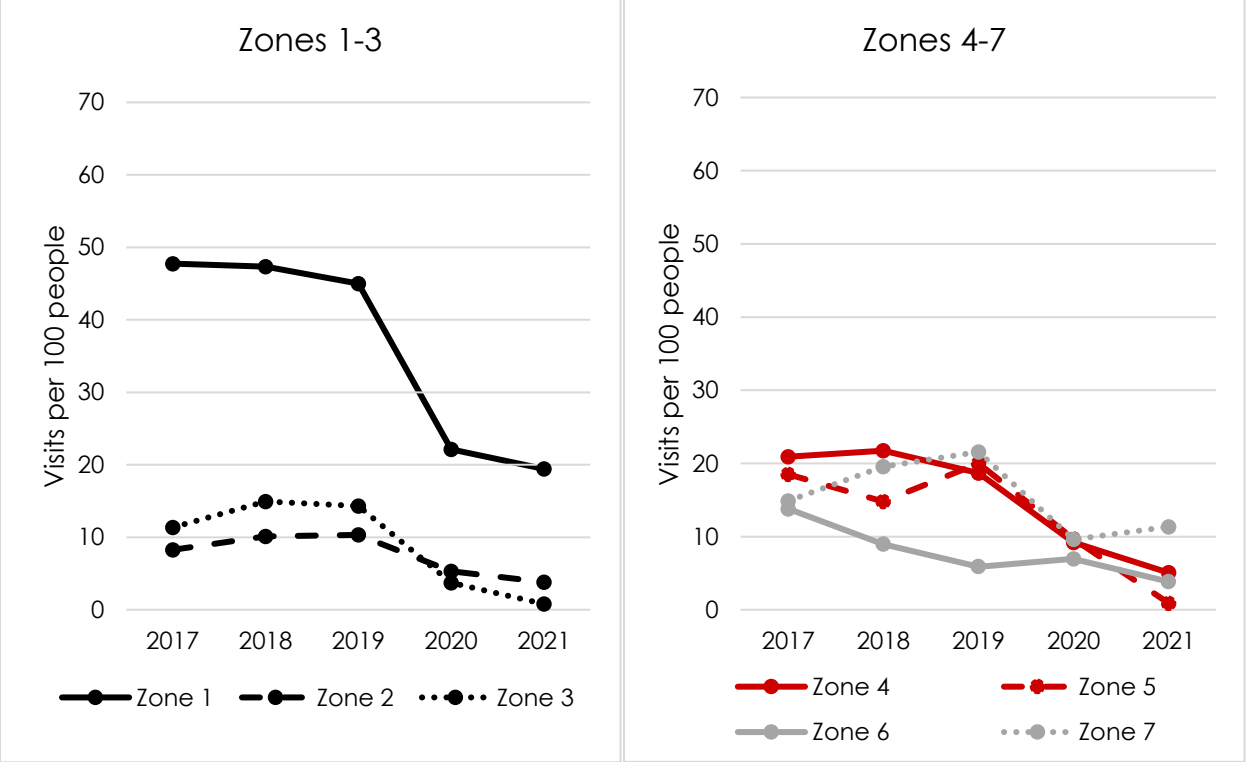


Figure A3: Age-standardized walk-in clinic visits for recent non-immigrants by health zone

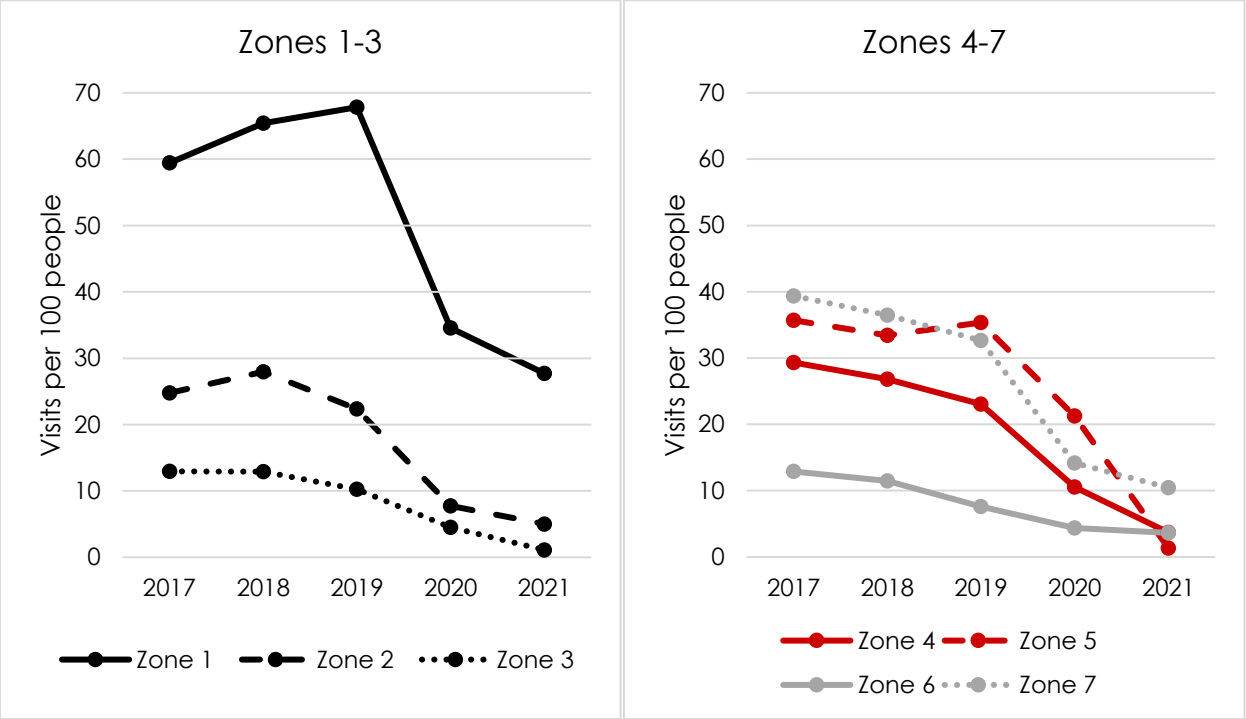


Figure A4: Age-standardized walk-in clinic visits for long-term non-immigrants by health zone

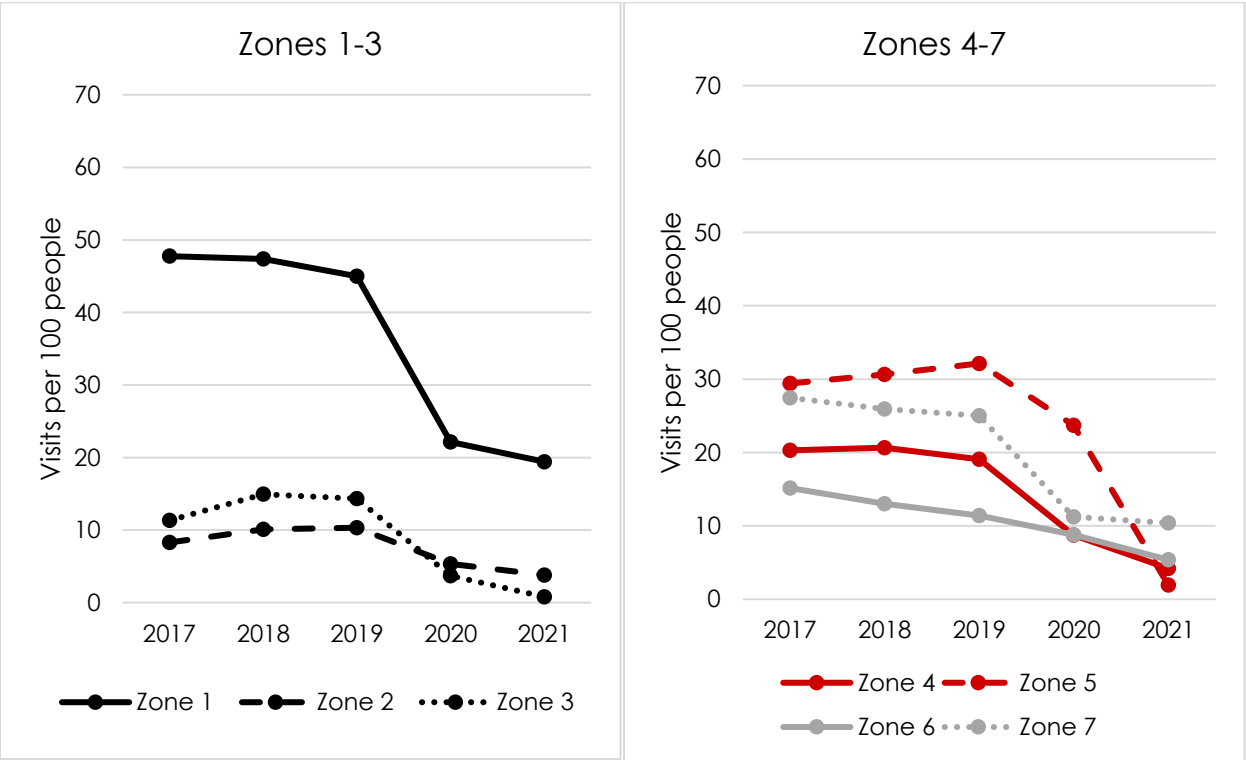


Figure A5: Frequency of walk-in clinic visits for recent immigrants by socioeconomic status

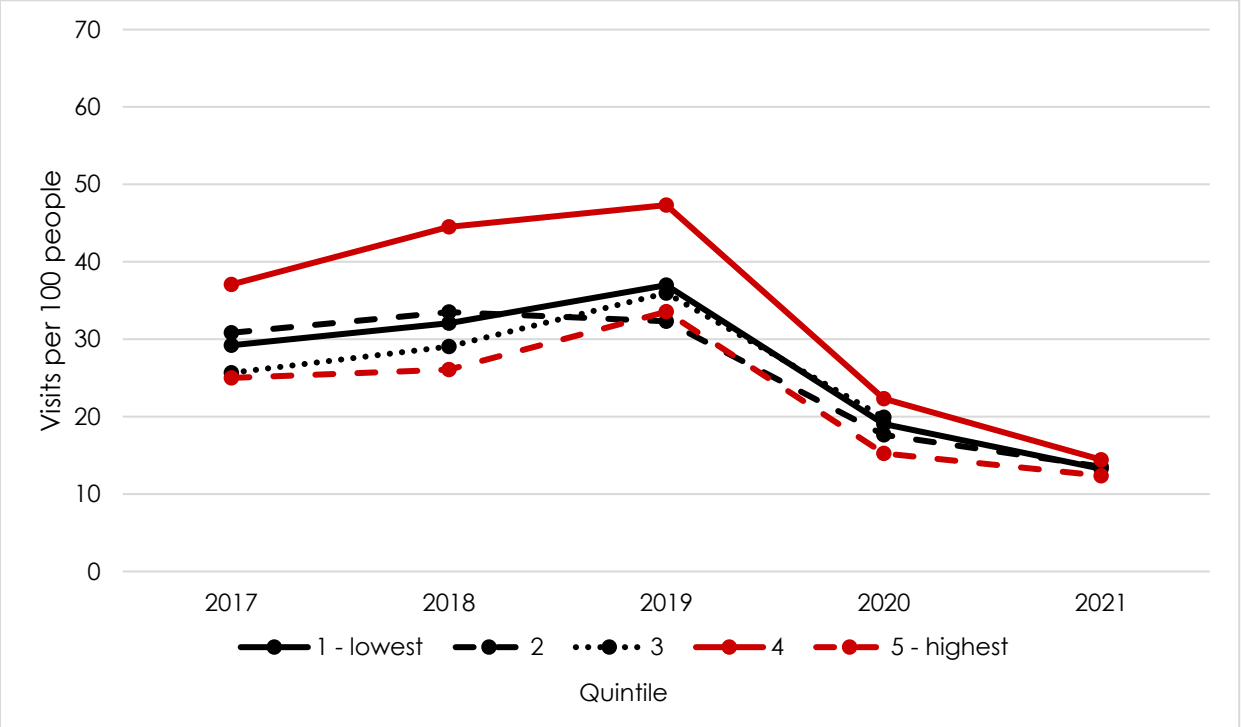


Figure A6: Frequency of walk-in clinic visits for long-term immigrants by socioeconomic status

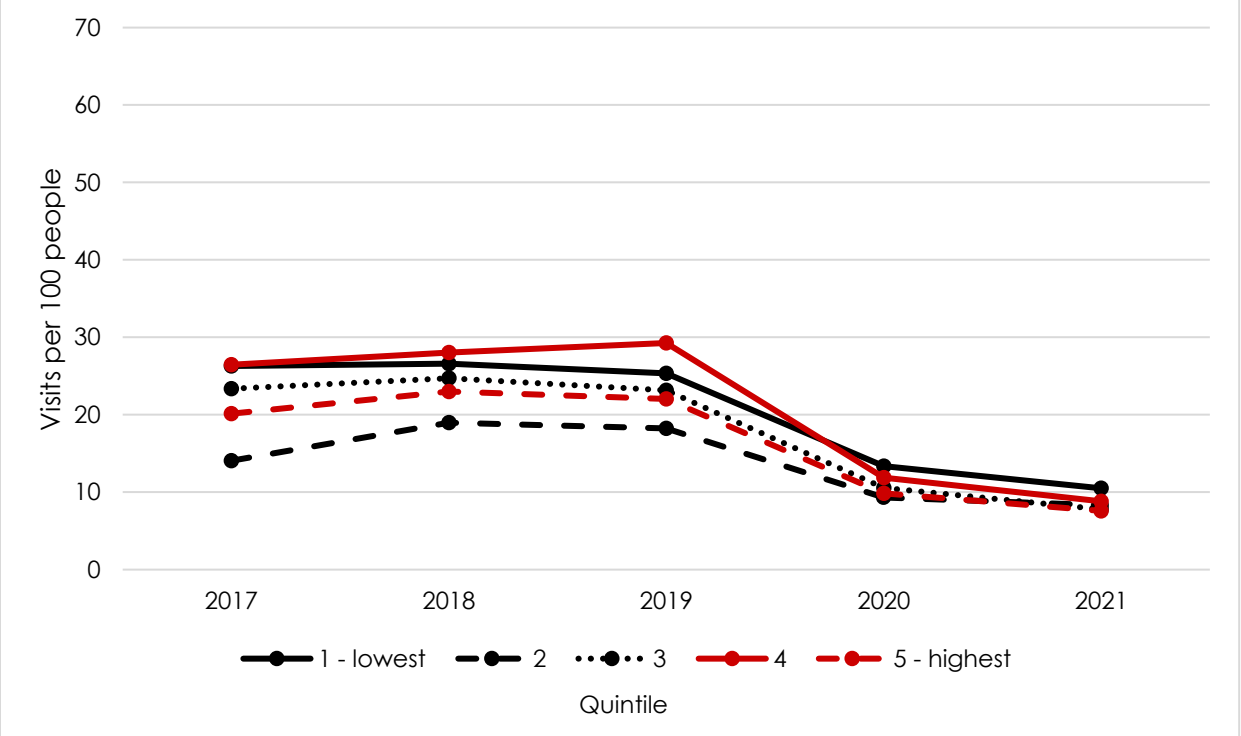


Figure A7: Frequency of walk-in clinic visits for recent non-immigrants by socioeconomic status

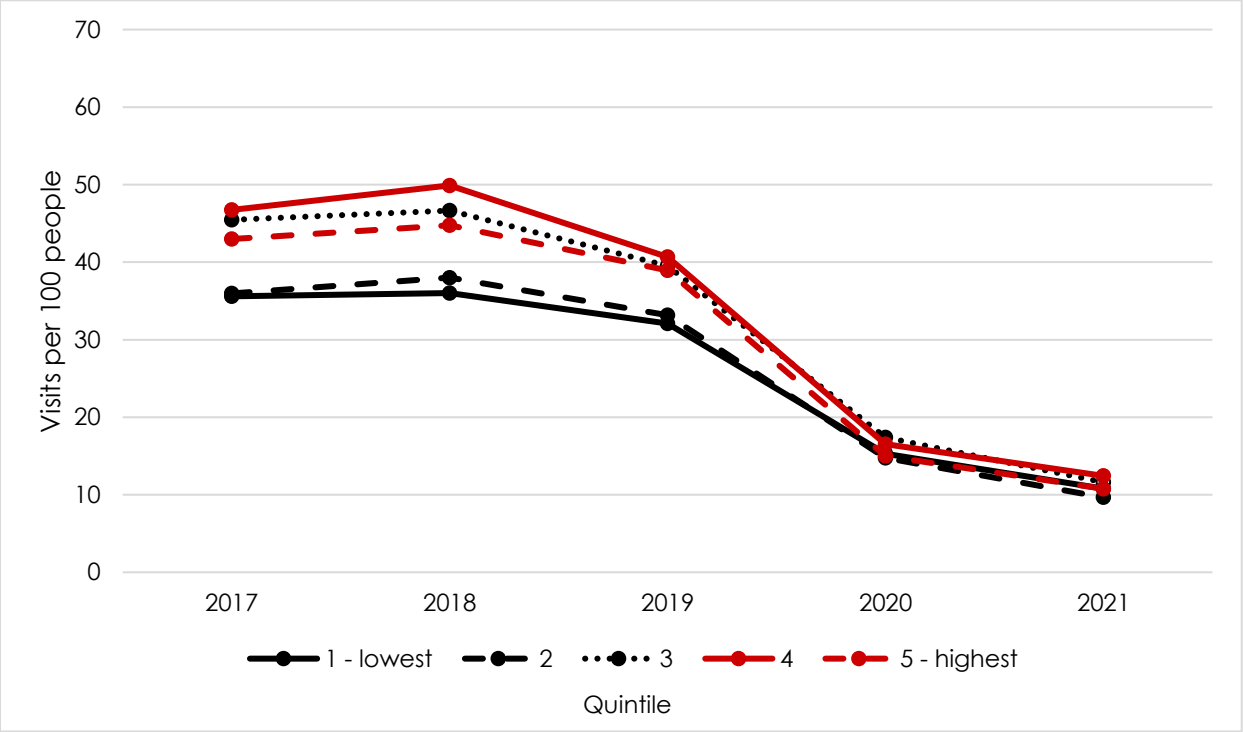


Figure A8: Frequency of walk-in clinic visits for long-term non-immigrants by socioeconomic status

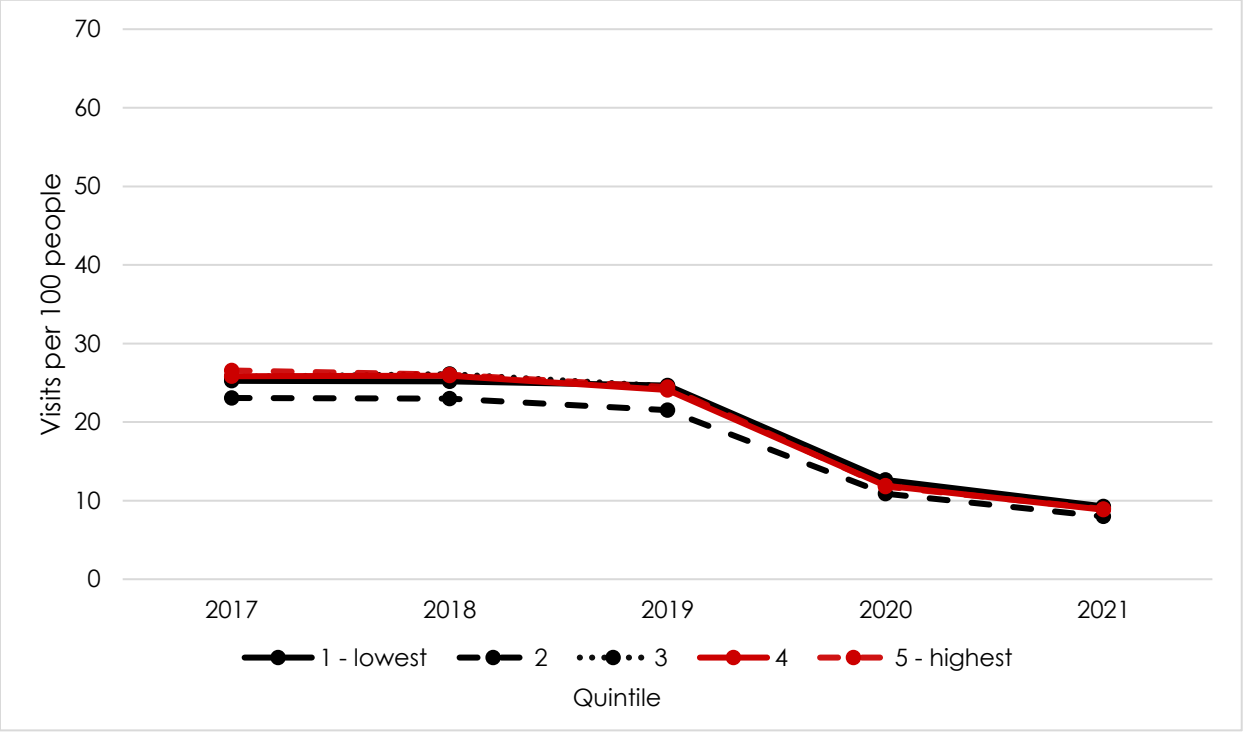


Table A1: Odds of visiting a walk-in clinic (newcomers vs non-immigrants)

Analysis Of GEE Parameter Estimates Empirical Standard Error Estimates							
Parameter		**Estimate**	**Standard Error**	**95% Confidence Limits**		**Z**	**Pr > |Z|**
Intercept		-0.9179	0.0041	-0.9259	-0.9099	-224.86	<.0001
imm_cat	Recent immigrant	0.4552	0.0447	0.3675	0.5429	10.17	<.0001
imm_cat	longterm immigrant	-0.0707	0.0281	-0.1257	-0.0157	-2.52	0.0118
imm_cat	non immigrant <10 yrs	-0.0415	0.0049	-0.0511	-0.0318	-8.42	<.0001
imm_cat	**non immigrant > 10 yrs**	**0**	**0**	**0**	**0**	**.**	**.**
arrival_year	1970-1979	0.0422	0.0655	-0.0862	0.1706	0.64	0.5192
arrival_year	1980-1989	-0.1496	0.0791	-0.3046	0.0054	-1.89	0.0586
arrival_year	1990-1999	0.02	0.0392	-0.0569	0.0968	0.51	0.6103
arrival_year	2005-2009	-0.6252	0.039	-0.7017	-0.5488	-16.03	<.0001
arrival_year	2010-2014	-1.88	0.0511	-1.9801	-1.78	-36.82	<.0001
arrival_year	2015-2019	-3.4235	0.0602	-3.5414	-3.3056	-56.91	<.0001
arrival_year	2020-2021	-4.5263	0.0769	-4.6771	-4.3756	-58.84	<.0001
arrival_year	NA	0	0	0	0	.	.
arrival_year	**2000-2004**	**0**	**0**	**0**	**0**	**.**	**.**
Age	0-4	0.5553	0.0085	0.5387	0.5718	65.6	<.0001
Age	18-34	0.0649	0.0039	0.0573	0.0725	16.71	<.0001
Age	35-49	0.0817	0.0037	0.0744	0.089	21.99	<.0001
Age	5-17	-0.0001	0.0049	-0.0098	0.0095	-0.03	0.9772
Age	50-64	0.0728	0.0034	0.0661	0.0794	21.36	<.0001
Age	**65+**	**0**	**0**	**0**	**0**	**.**	**.**
yearssince_arrival	1-2	2.4457	0.0581	2.3319	2.5595	42.11	<.0001
yearssince_arrival	3-5	1.7649	0.0509	1.6652	1.8647	34.68	<.0001
yearssince_arrival	6-9	1.3284	0.0349	1.2599	1.3969	38.02	<.0001
yearssince_arrival	<1	2.8613	0.0603	2.7431	2.9795	47.44	<.0001
yearssince_arrival	NA	0	0	0	0	.	.
yearssince_arrival	**10+**	**0**	**0**	**0**	**0**	**.**	**.**
QATIPPE	1	0.0087	0.004	0.0009	0.0165	2.19	0.0285
QATIPPE	2	0.0081	0.0038	0.0006	0.0156	2.11	0.0348
QATIPPE	3	0.0421	0.0038	0.0346	0.0497	11	<.0001
QATIPPE	4	0.0392	0.0038	0.0317	0.0467	10.21	<.0001
QATIPPE	**5**	**0**	**0**	**0**	**0**	**.**	**.**
HEALTH_REGION	2	-0.7084	0.0034	-0.715	-0.7018	-209.82	<.0001
HEALTH_REGION	3	-0.8672	0.0033	-0.8738	-0.8607	-259.47	<.0001
HEALTH_REGION	4	-0.6182	0.0055	-0.629	-0.6075	-112.61	<.0001

HEALTH_REGION	5	-0.3343	0.0067	-0.3475	-0.3212	-49.8	<.0001
HEALTH_REGION	6	-0.6862	0.0043	-0.6946	-0.6778	-160.1	<.0001
HEALTH_REGION	7	-0.409	0.0056	-0.4199	-0.3981	-73.38	<.0001
HEALTH_REGION	**1**	**0**	**0**	**0**	**0**	**.**	**.**
SEX	Male	0.3254	0.0025	0.3206	0.3302	132.78	<.0001
SEX	**Female**	**0**	**0**	**0**	**0**	**.**	**.**

Table A2: Odds of visiting a walk-in clinic (Immigrant subgroups vs non-immigrants)

Analysis Of GEE Parameter Estimates Empirical Standard Error Estimates							
Parameter		**Estimate**	**Standard Error**	**95% Confidence Limits**		**Z**	**Pr > |Z|**
Intercept		-0.9182	0.0041	-0.9262	-0.9102	-224.97	<.0001
imm_cat	Family sponsorship/other	-0.0453	0.0288	-0.1018	0.0111	-1.57	0.1155
imm_cat	Int students/dependents	-1.1702	0.0493	-1.2669	-1.0736	-23.73	<.0001
imm_cat	Refugee	-0.1401	0.0402	-0.2188	-0.0613	-3.48	0.0005
imm_cat	Skilled worker	-0.0836	0.0312	-0.1447	-0.0225	-2.68	0.0073
imm_cat	TFW	-0.7264	0.0238	-0.7731	-0.6796	-30.46	<.0001
imm_cat	non immigrant <10 yrs	-0.0395	0.0049	-0.0491	-0.0298	-8.01	<.0001
imm_cat	**non immigrant > 10 yrs**	**0**	**0**	**0**	**0**	**.**	**.**
arrival_year	1970-1979	0.0219	0.0659	-0.1073	0.1512	0.33	0.7395
arrival_year	1980-1989	-0.1543	0.0791	-0.3093	0.0008	-1.95	0.0511
arrival_year	1990-1999	0.0014	0.0397	-0.0764	0.0791	0.03	0.9728
arrival_year	2005-2009	-0.6243	0.0394	-0.7015	-0.547	-15.84	<.0001
arrival_year	2010-2014	-1.8712	0.0516	-1.9724	-1.77	-36.24	<.0001
arrival_year	2015-2019	-3.3009	0.0612	-3.4208	-3.1809	-53.95	<.0001
arrival_year	2020-2021	-4.5063	0.0941	-4.6908	-4.3217	-47.87	<.0001
arrival_year	NA	0	0	0	0	.	.
arrival_year	**2000-2004**	**0**	**0**	**0**	**0**	**.**	**.**
Age	0-4	0.5524	0.0085	0.5358	0.569	65.27	<.0001
Age	18-34	0.0686	0.0039	0.061	0.0762	17.66	<.0001
Age	35-49	0.0808	0.0037	0.0735	0.088	21.73	<.0001
Age	5-17	-0.0027	0.0049	-0.0124	0.007	-0.55	0.5812
Age	50-64	0.0725	0.0034	0.0659	0.0792	21.3	<.0001
Age	**65+**	**0**	**0**	**0**	**0**	**.**	**.**
yearssince_arrival	1-2	2.9728	0.0531	2.8686	3.0769	55.95	<.0001
yearssince_arrival	3-5	2.1266	0.0463	2.0359	2.2173	45.95	<.0001
yearssince_arrival	6-9	1.3377	0.0351	1.2689	1.4065	38.1	<.0001

yearssince_arrival	<1	3.5009	0.0566	3.3901	3.6118	61.9	<.0001
yearssince_arrival	NA	0	0	0	0	.	.
yearssince_arrival	**10+**	**0**	**0**	**0**	**0**	**.**	**.**
QATIPPE	1	0.0099	0.004	0.0021	0.0177	2.5	0.0124
QATIPPE	2	0.0089	0.0038	0.0014	0.0164	2.31	0.0208
QATIPPE	3	0.0427	0.0038	0.0352	0.0502	11.16	<.0001
QATIPPE	4	0.0389	0.0038	0.0314	0.0465	10.14	<.0001
QATIPPE	**5**	**0**	**0**	**0**	**0**	**.**	**.**
HEALTH_REGION	2	-0.7093	0.0034	-0.7159	-0.7027	-210.13	<.0001
HEALTH_REGION	3	-0.8678	0.0033	-0.8744	-0.8613	-259.74	<.0001
HEALTH_REGION	4	-0.618	0.0055	-0.6288	-0.6073	-112.55	<.0001
HEALTH_REGION	5	-0.3345	0.0067	-0.3477	-0.3214	-49.84	<.0001
HEALTH_REGION	6	-0.6862	0.0043	-0.6946	-0.6778	-160.08	<.0001
HEALTH_REGION	7	-0.4097	0.0056	-0.4207	-0.3988	-73.52	<.0001
HEALTH_REGION	**1**	**0**	**0**	**0**	**0**	**.**	**.**
SEX	Male	0.3251	0.0025	0.3203	0.3299	132.65	<.0001
SEX	**Female**	**0**	**0**	**0**	**0**	**.**	**.**

Figure A9: Age-standardized ER visits for recent immigrants by health zone

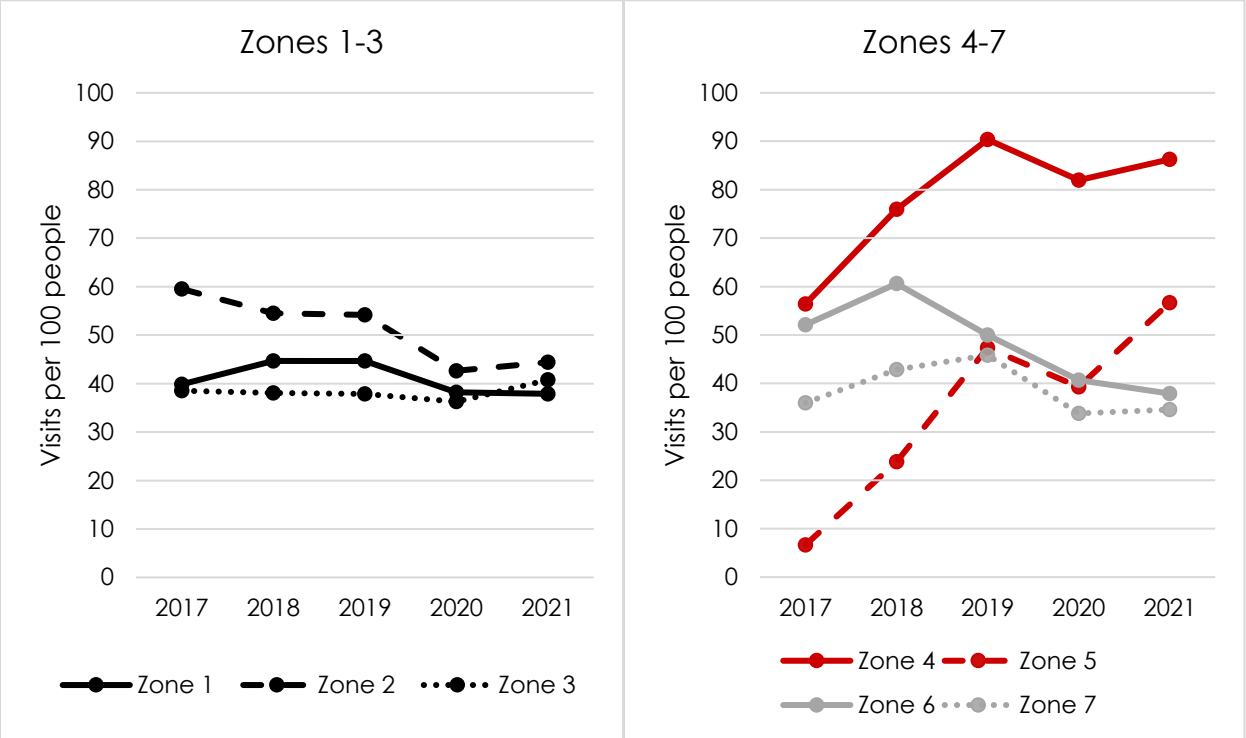


Figure A10: Age-standardized ER visits for long-term immigrants by health zone

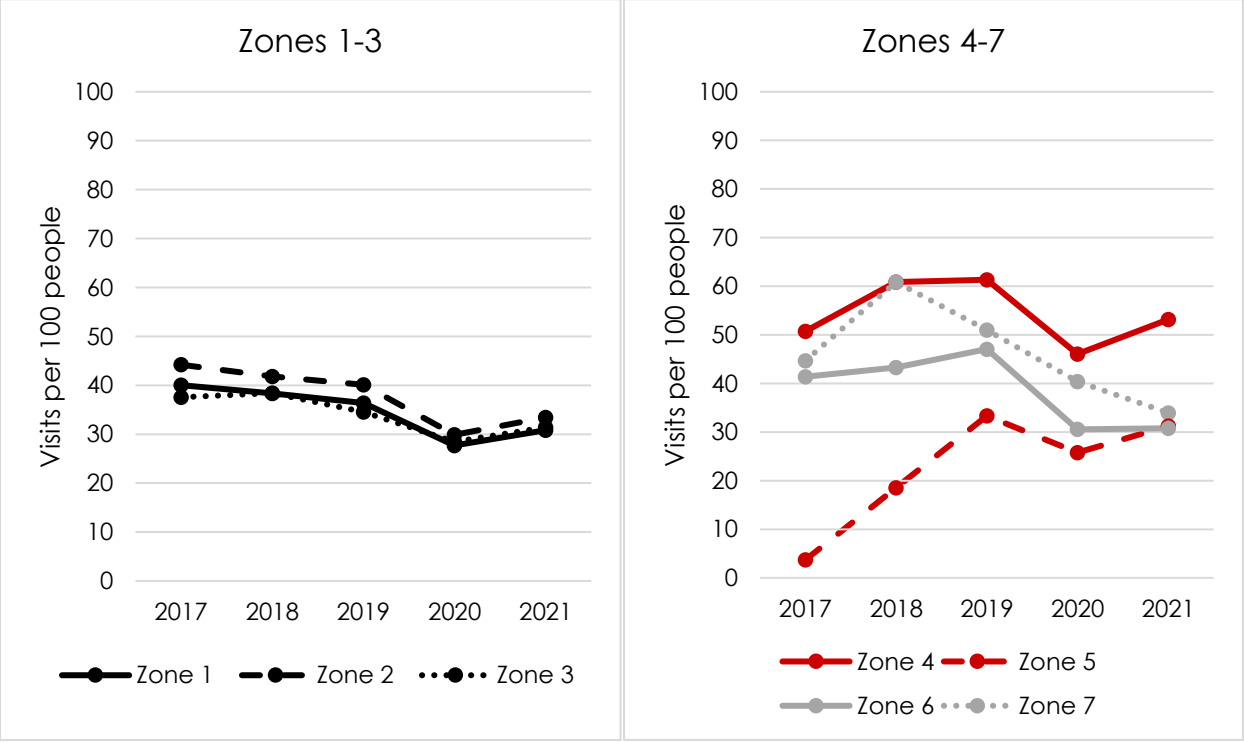


Figure A11: Age-standardized ER visits for recent non-immigrants by health zone

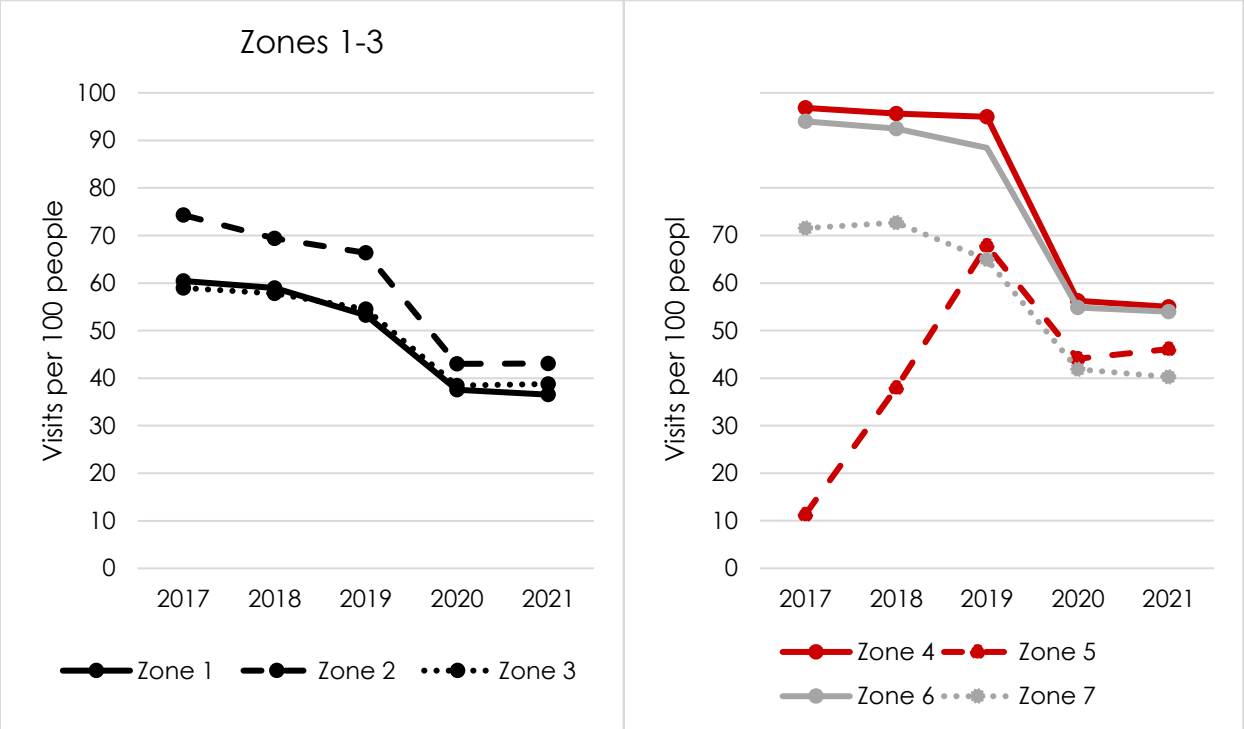


Figure A12: Age-standardized ER visits for long-term non-immigrants by health zone

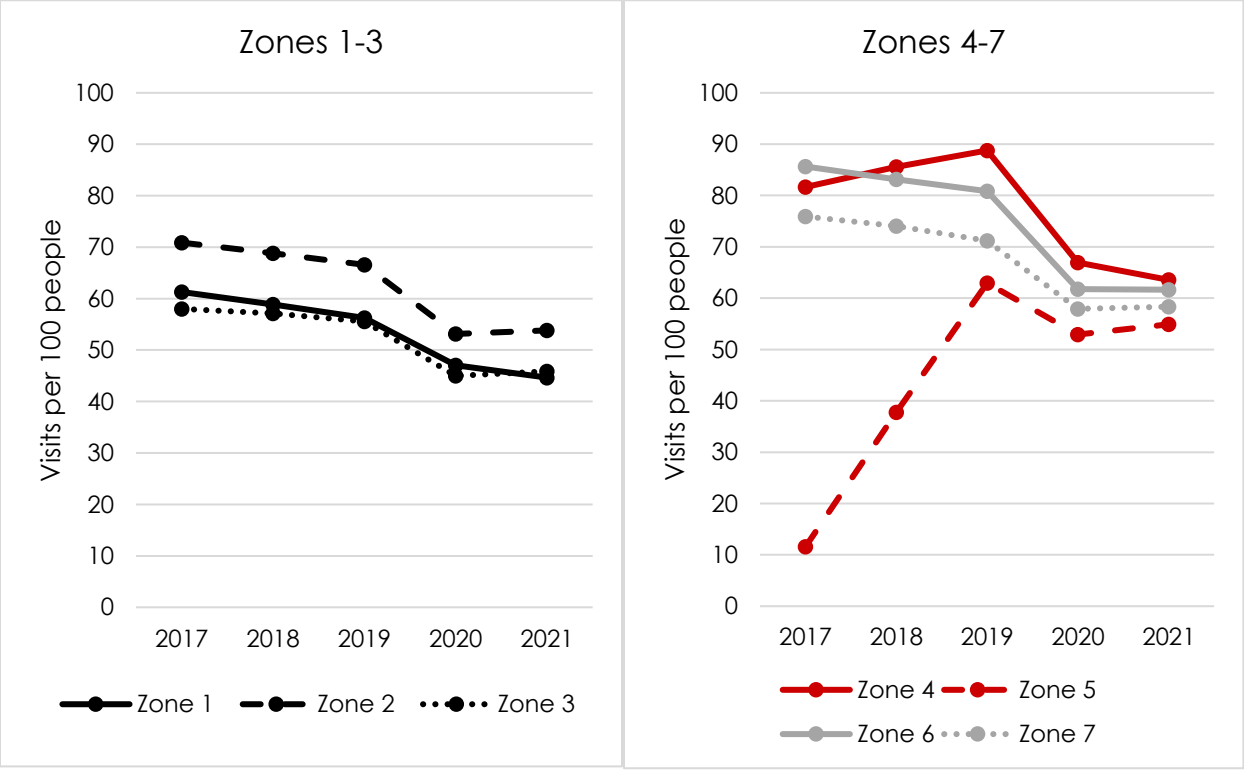


Figure A13: Frequency of ER visits for recent immigrants by socioeconomic status

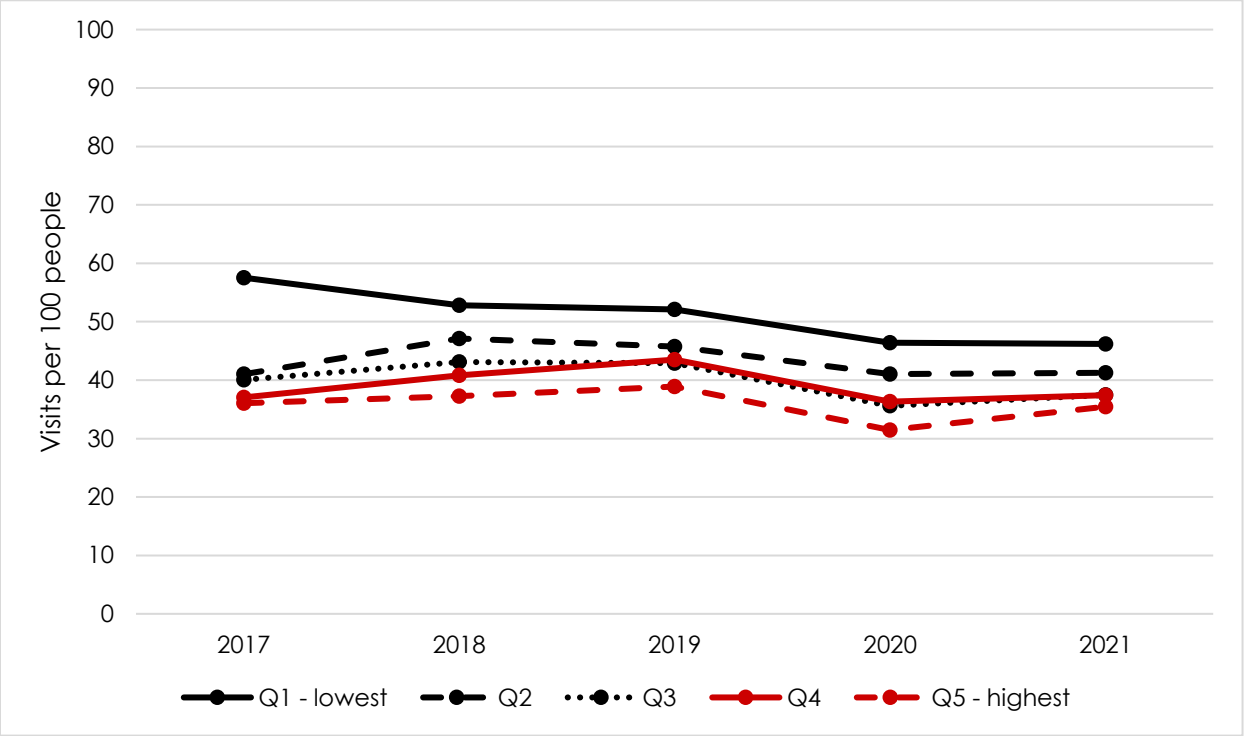


Figure A14: Frequency of ER visits for long-term immigrants by socioeconomic status

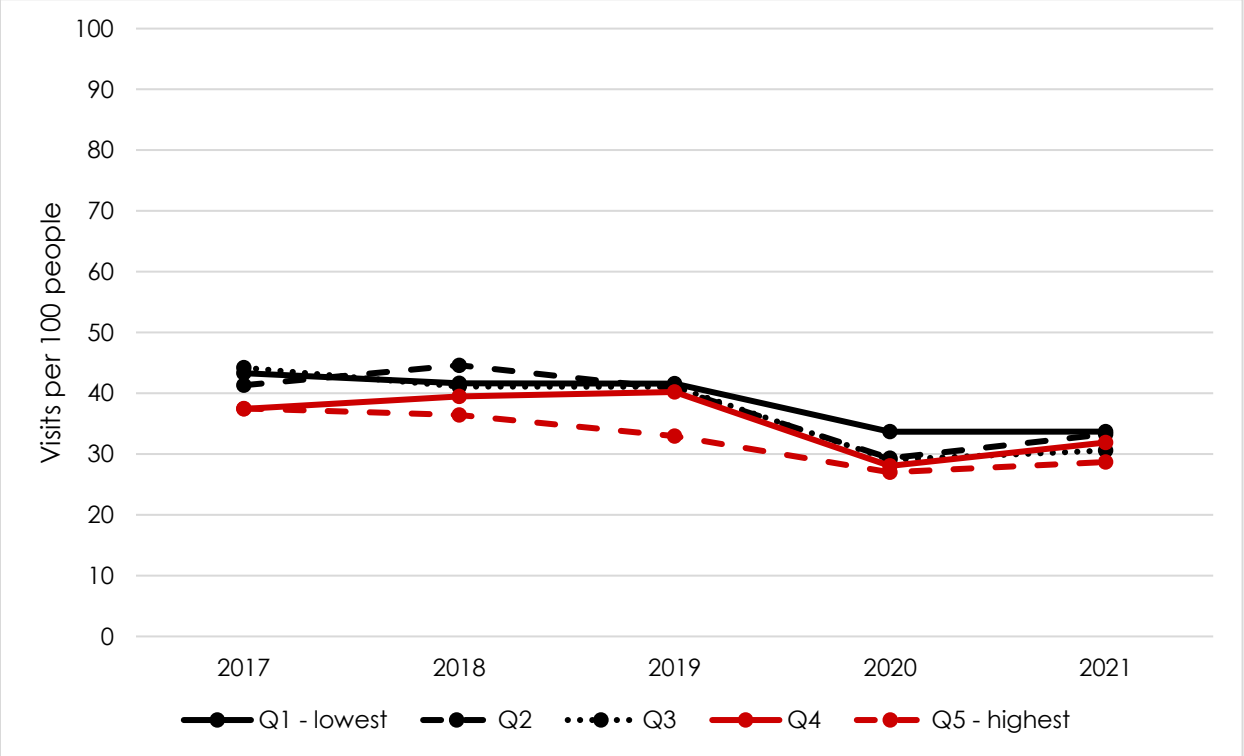


Figure A15: Frequency of ER visits for recent non-immigrants by socioeconomic status

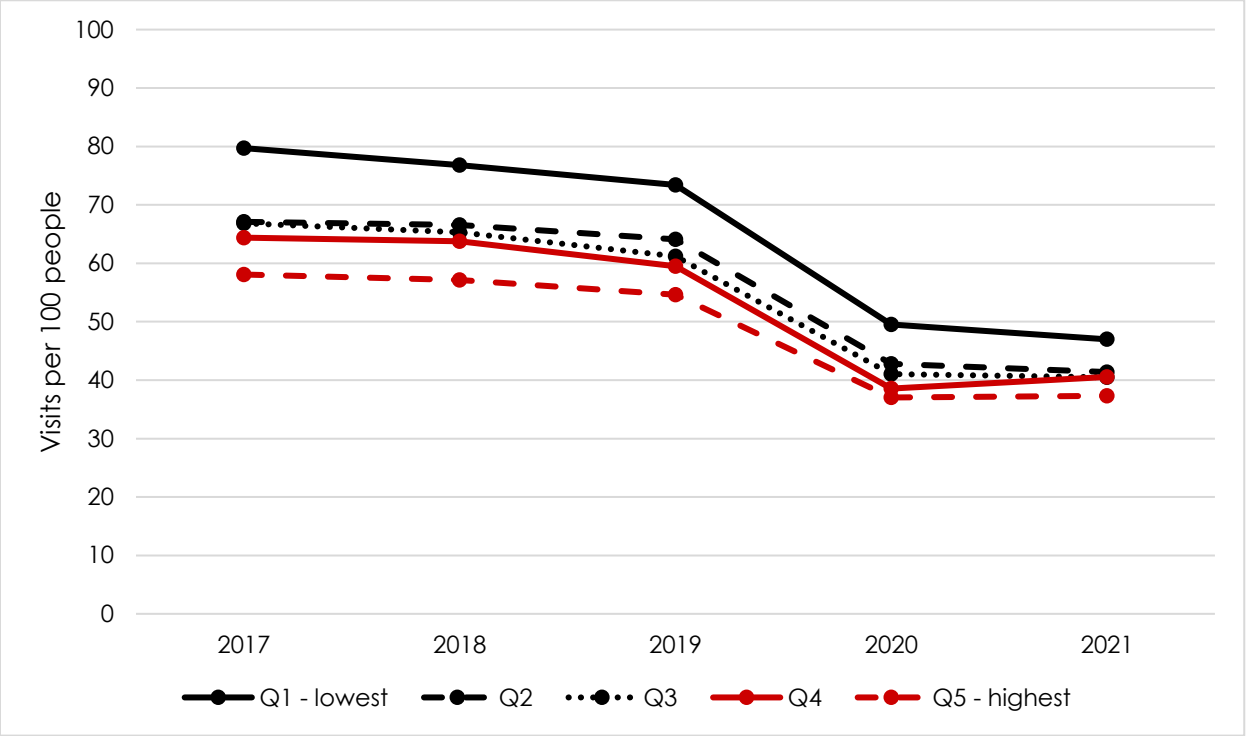


Figure A16: Frequency of ER visits for long-term non-immigrants by socioeconomic status

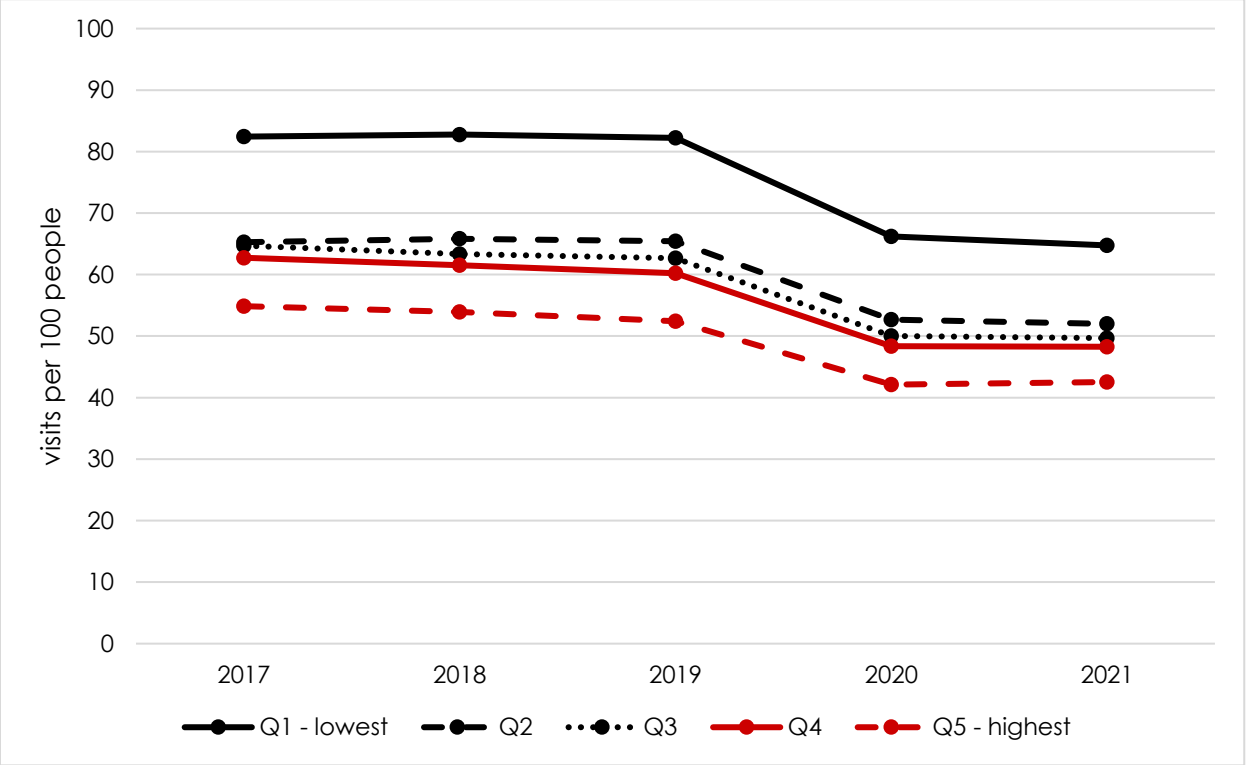


Table A3: Odds of visiting an ER (newcomers vs non-immigrants)

Analysis Of GEE Parameter Estimates Empirical Standard Error Estimates							
Parameter		**Estimate**	**Standard Error**	**95% Confidence Limits**		**Z**	**Pr > |Z|**
Intercept		-1.0752	0.0053	-1.0856	-1.0648	-201.95	<.0001
imm_cat	Recent immigrant	-0.1572	0.0503	-0.2559	-0.0586	-3.12	0.0018
imm_cat	longterm immigrant	-0.3362	0.0367	-0.4081	-0.2643	-9.17	<.0001
imm_cat	non immigrant <10 yrs	-0.1065	0.0054	-0.117	-0.0959	-19.78	<.0001
imm_cat	**non immigrant > 10 yrs**	**0**	**0**	**0**	**0**	**.**	**.**
arrival_year	1970-1979	0.3753	0.0908	0.1974	0.5532	4.14	<.0001
arrival_year	1980-1989	0.306	0.0959	0.1181	0.4939	3.19	0.0014
arrival_year	1990-1999	0.0901	0.0514	-0.0107	0.1909	1.75	0.0798
arrival_year	2005-2009	-0.1005	0.0446	-0.1879	-0.013	-2.25	0.0244
arrival_year	2010-2014	-0.2894	0.054	-0.3952	-0.1836	-5.36	<.0001
arrival_year	2015-2019	-0.2658	0.0615	-0.3864	-0.1453	-4.32	<.0001
arrival_year	2020-2021	-0.3913	0.0708	-0.5301	-0.2524	-5.52	<.0001
arrival_year	NA	0	0	0	0	.	.
arrival_year	**2000-2004**	**0**	**0**	**0**	**0**	**.**	**.**
yearssince_arrival	1-2	0.1583	0.0539	0.0526	0.264	2.94	0.0033
yearssince_arrival	3-5	0.0477	0.049	-0.0483	0.1437	0.97	0.3298
yearssince_arrival	6-9	0.0789	0.0341	0.012	0.1457	2.31	0.0208
yearssince_arrival	<1	0.2244	0.0553	0.116	0.3328	4.06	<.0001
yearssince_arrival	NA	0	0	0	0	.	.
yearssince_arrival	**10+**	**0**	**0**	**0**	**0**	**.**	**.**
Age	0-4	0.5066	0.0088	0.4894	0.5238	57.67	<.0001
Age	18-34	-0.0131	0.0047	-0.0223	-0.0039	-2.8	0.0051
Age	35-49	-0.2033	0.0047	-0.2126	-0.194	-42.95	<.0001
Age	5-17	-0.2048	0.0057	-0.2161	-0.1935	-35.65	<.0001
Age	50-64	-0.2355	0.0044	-0.2441	-0.2269	-53.5	<.0001
Age	**65+**	**0**	**0**	**0**	**0**	**.**	**.**
QATIPPE	1	0.3171	0.0049	0.3076	0.3267	65.04	<.0001
QATIPPE	2	0.1342	0.0049	0.1246	0.1438	27.46	<.0001
QATIPPE	3	0.1271	0.0048	0.1176	0.1366	26.26	<.0001
QATIPPE	4	0.0987	0.0048	0.0892	0.1082	20.38	<.0001
QATIPPE	**5**	**0**	**0**	**0**	**0**	**.**	**.**
HEALTH_REGION	2	0.2277	0.0043	0.2194	0.236	53.51	<.0001
HEALTH_REGION	3	0.0066	0.0044	-0.002	0.0152	1.5	0.1338
HEALTH_REGION	4	0.3304	0.007	0.3166	0.3441	47.09	<.0001

HEALTH_REGION	5	-0.2283	0.0089	-0.2457	-0.2109	-25.72	<.0001
HEALTH_REGION	6	0.3959	0.0054	0.3853	0.4065	73.25	<.0001
HEALTH_REGION	7	0.2901	0.0068	0.2767	0.3035	42.48	<.0001
HEALTH_REGION	**1**	**0**	**0**	**0**	**0**	**.**	**.**
SEX	Male	0.1227	0.0031	0.1167	0.1286	40.1	<.0001
SEX	**Female**	**0**	**0**	**0**	**0**	**.**	**.**

Table A4: Odds of visiting an ER (immigrant subgroups vs non-immigrants)

Analysis Of GEE Parameter Estimates Empirical Standard Error Estimates							
Parameter		**Estimate**	**Standard Error**	**95% Confidence Limits**		**Z**	**Pr > |Z|**
Intercept		-1.0747	0.0053	-1.0852	-1.0643	-201.84	<.0001
imm_cat	Family sponsorship/other	-0.3155	0.0375	-0.389	-0.2421	-8.42	<.0001
imm_cat	Int students/dependents	-0.5177	0.0359	-0.588	-0.4474	-14.43	<.0001
imm_cat	Refugee	-0.1007	0.044	-0.187	-0.0145	-2.29	0.0221
imm_cat	Skilled worker	-0.462	0.0388	-0.5381	-0.3859	-11.9	<.0001
imm_cat	TFW	-0.2847	0.0205	-0.3249	-0.2445	-13.89	<.0001
imm_cat	non immigrant <10 yrs	-0.1047	0.0054	-0.1153	-0.0942	-19.45	<.0001
imm_cat	**non immigrant > 10 yrs**	**0**	**0**	**0**	**0**	**.**	**.**
arrival_year	1970-1979	0.3589	0.0913	0.18	0.5378	3.93	<.0001
arrival_year	1980-1989	0.3116	0.0958	0.1238	0.4995	3.25	0.0011
arrival_year	1990-1999	0.0713	0.052	-0.0306	0.1732	1.37	0.1702
arrival_year	2005-2009	-0.0615	0.0448	-0.1493	0.0263	-1.37	0.1696
arrival_year	2010-2014	-0.2497	0.0545	-0.3566	-0.1429	-4.58	<.0001
arrival_year	2015-2019	-0.2638	0.062	-0.3853	-0.1424	-4.26	<.0001
arrival_year	2020-2021	-0.4356	0.0835	-0.5992	-0.272	-5.22	<.0001
arrival_year	NA	0	0	0	0	.	.
arrival_year	**2000-2004**	**0**	**0**	**0**	**0**	**.**	**.**
yearssince_arrival	1-2	0.3681	0.0499	0.2702	0.466	7.37	<.0001
yearssince_arrival	3-5	0.1694	0.0456	0.08	0.2589	3.71	0.0002
yearssince_arrival	6-9	0.0894	0.0346	0.0215	0.1573	2.58	0.0098
yearssince_arrival	<1	0.489	0.0525	0.3861	0.592	9.31	<.0001
yearssince_arrival	NA	0	0	0	0	.	.
yearssince_arrival	**10+**	**0**	**0**	**0**	**0**	**.**	**.**
Age	0-4	0.5041	0.0088	0.4869	0.5213	57.36	<.0001
Age	18-34	-0.0117	0.0047	-0.0209	-0.0025	-2.5	0.0125
Age	35-49	-0.203	0.0047	-0.2123	-0.1937	-42.88	<.0001

Age	5-17	-0.207	0.0058	-0.2183	-0.1957	-35.98	<.0001
Age	50-64	-0.2353	0.0044	-0.2439	-0.2267	-53.46	<.0001
Age	**65+**	**0**	**0**	**0**	**0**	**.**	**.**
QATIPPE	1	0.315	0.0049	0.3055	0.3246	64.53	<.0001
QATIPPE	2	0.1334	0.0049	0.1238	0.143	27.29	<.0001
QATIPPE	3	0.1272	0.0048	0.1177	0.1367	26.28	<.0001
QATIPPE	4	0.0985	0.0048	0.089	0.108	20.34	<.0001
QATIPPE	**5**	**0**	**0**	**0**	**0**	**.**	**.**
HEALTH_REGION	2	0.2271	0.0043	0.2188	0.2354	53.36	<.0001
HEALTH_REGION	3	0.0068	0.0044	-0.0018	0.0155	1.55	0.1205
HEALTH_REGION	4	0.3307	0.007	0.3169	0.3444	47.13	<.0001
HEALTH_REGION	5	-0.2273	0.0089	-0.2447	-0.2099	-25.62	<.0001
HEALTH_REGION	6	0.3964	0.0054	0.3858	0.407	73.35	<.0001
HEALTH_REGION	7	0.2902	0.0068	0.2768	0.3036	42.49	<.0001
HEALTH_REGION	**1**	**0**	**0**	**0**	**0**	**.**	**.**
SEX	Male	0.1224	0.0031	0.1164	0.1284	40.01	<.0001
SEX	**Female**	**0**	**0**	**0**	**0**	**.**	**.**

Figure A17: Age-standardized GP visits for recent immigrants by health zone

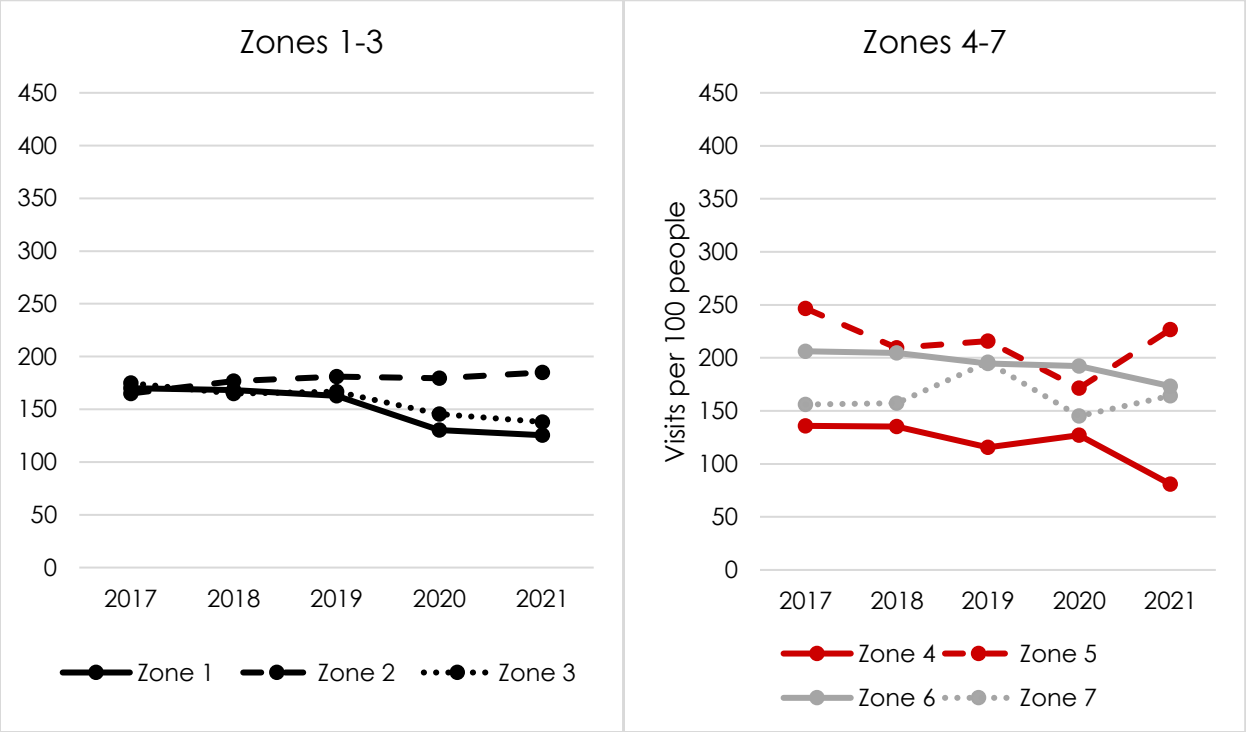


Figure A18: Age-standardized GP visits for long-term immigrants by health zone

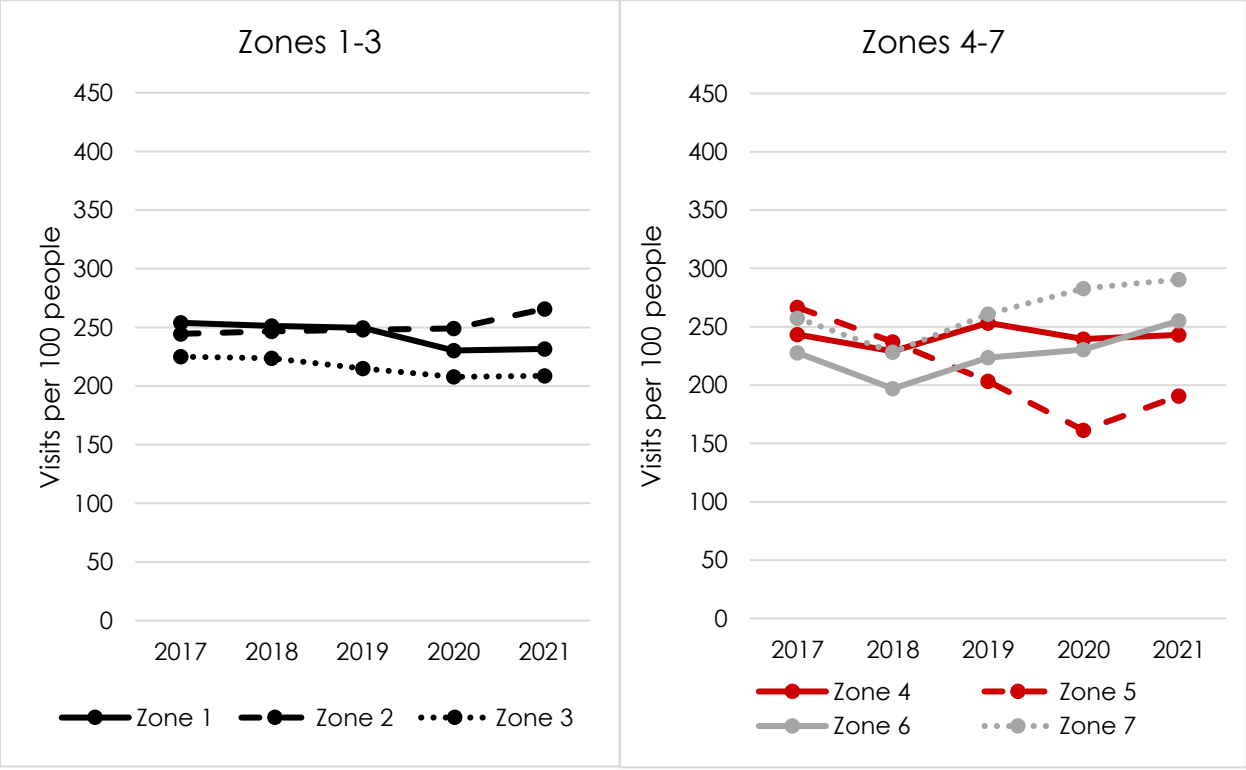


Figure A19: Age-standardized GP visits for recent non-immigrants by health zone

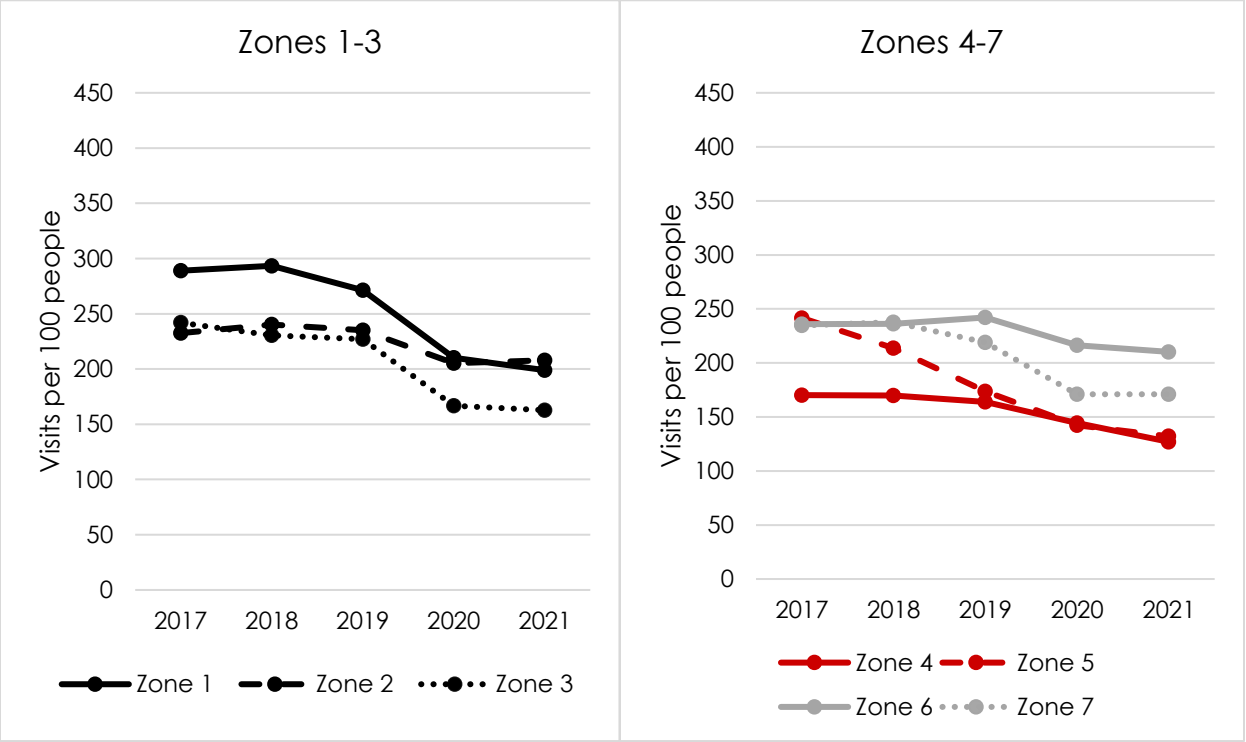


Figure A20: Age-standardized GP visits for long-term non-immigrants by health zone

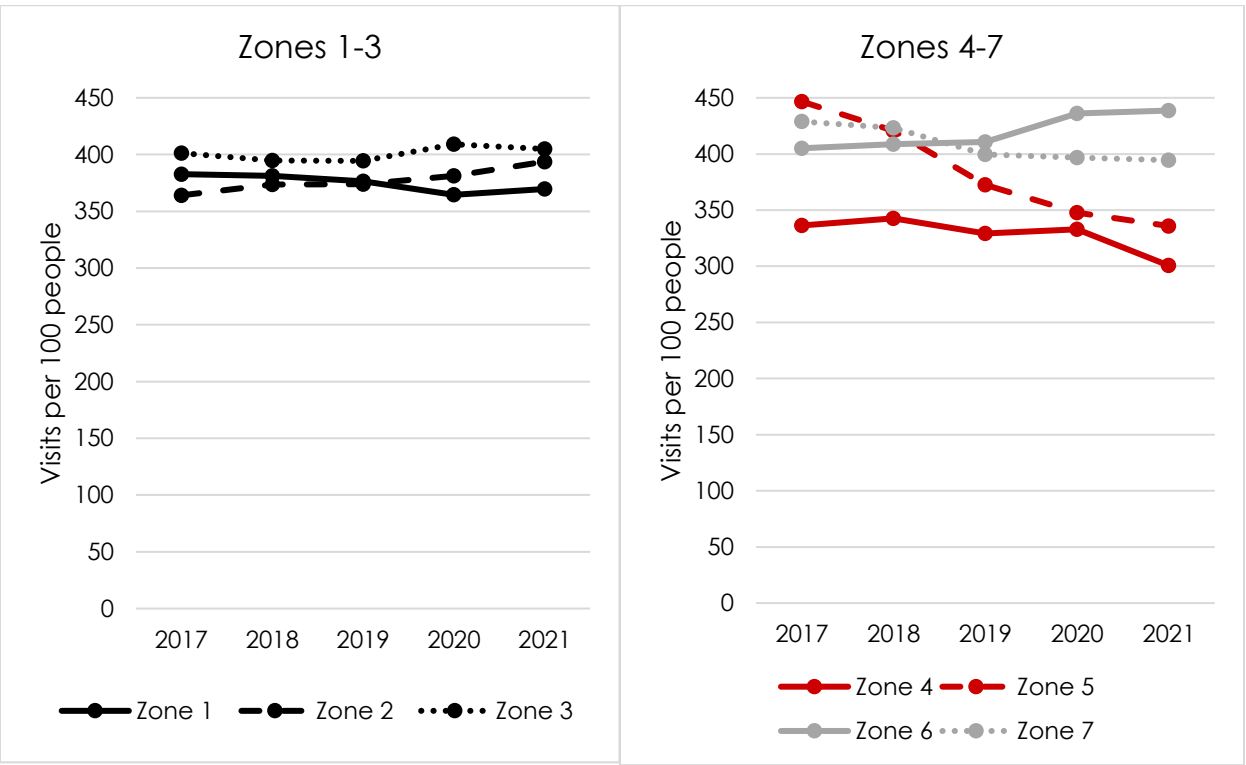


Figure A21: Frequency of GP visits for recent immigrants by socioeconomic status

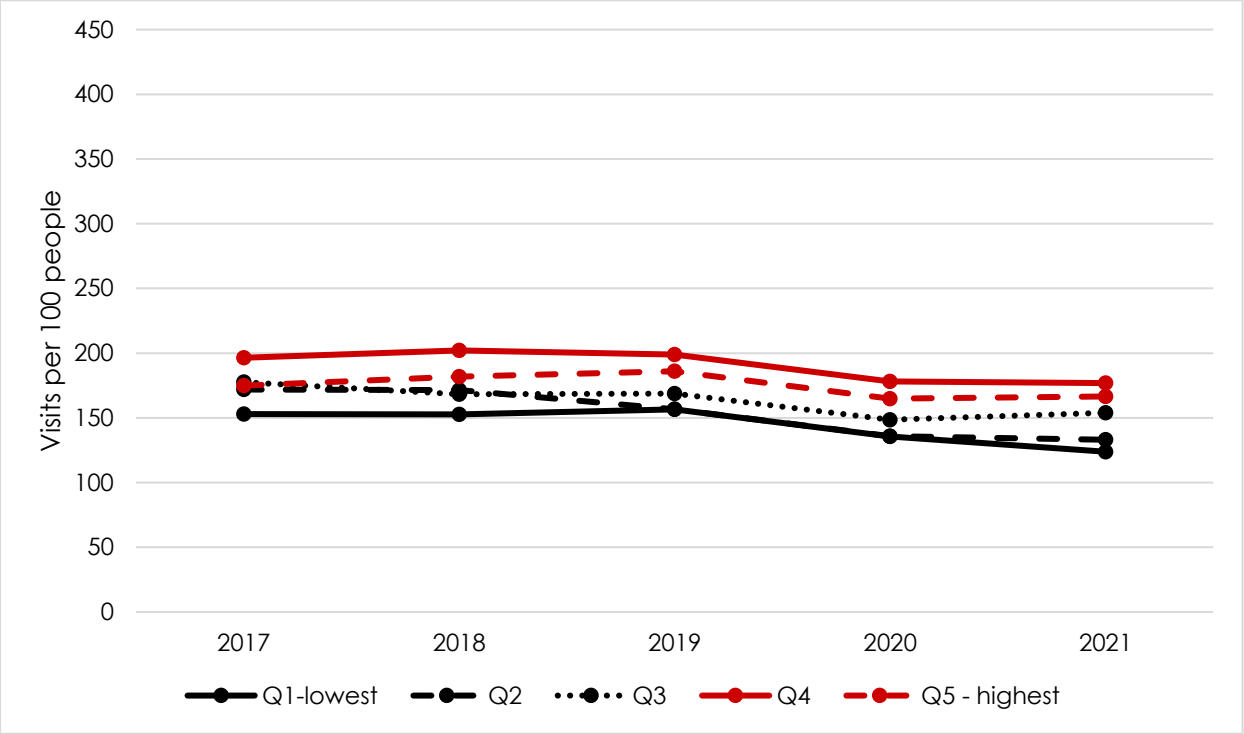


Figure A22: Frequency of GP visits for long-term immigrants by socioeconomic status

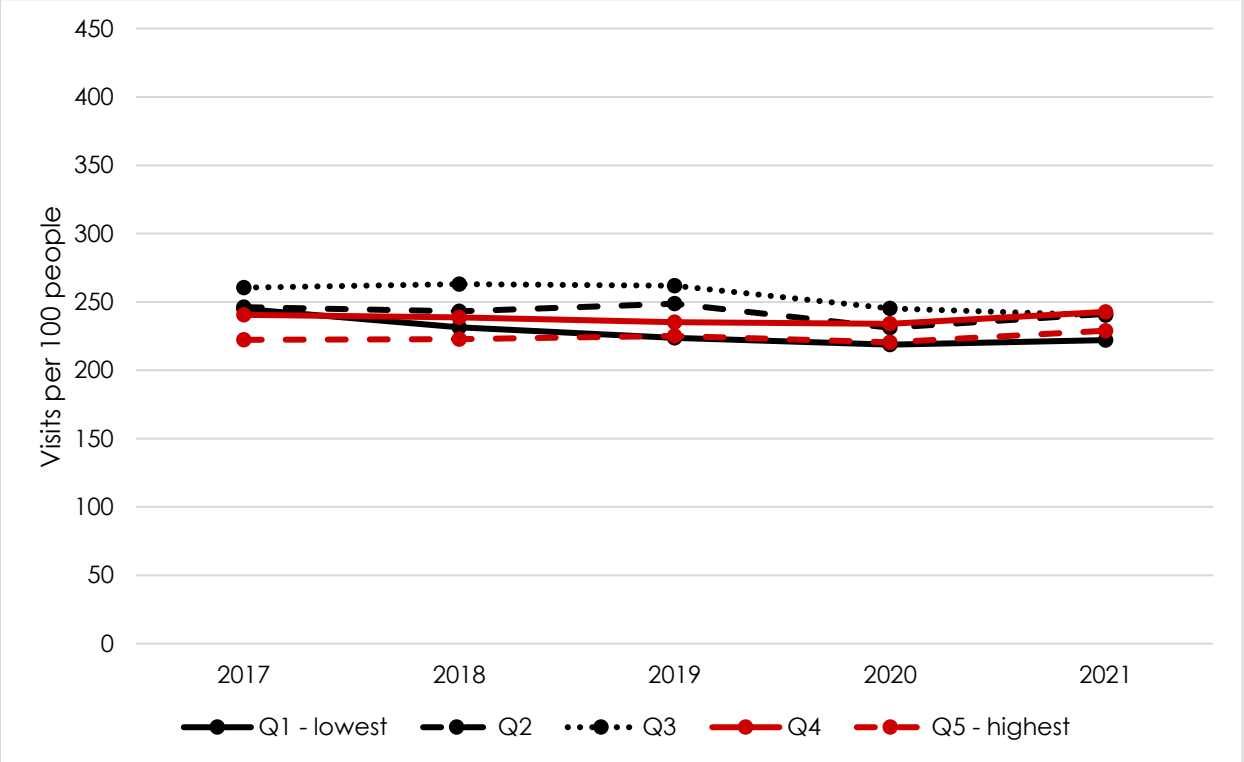


Figure A23: Frequency of GP visits for recent non-immigrants by socioeconomic status

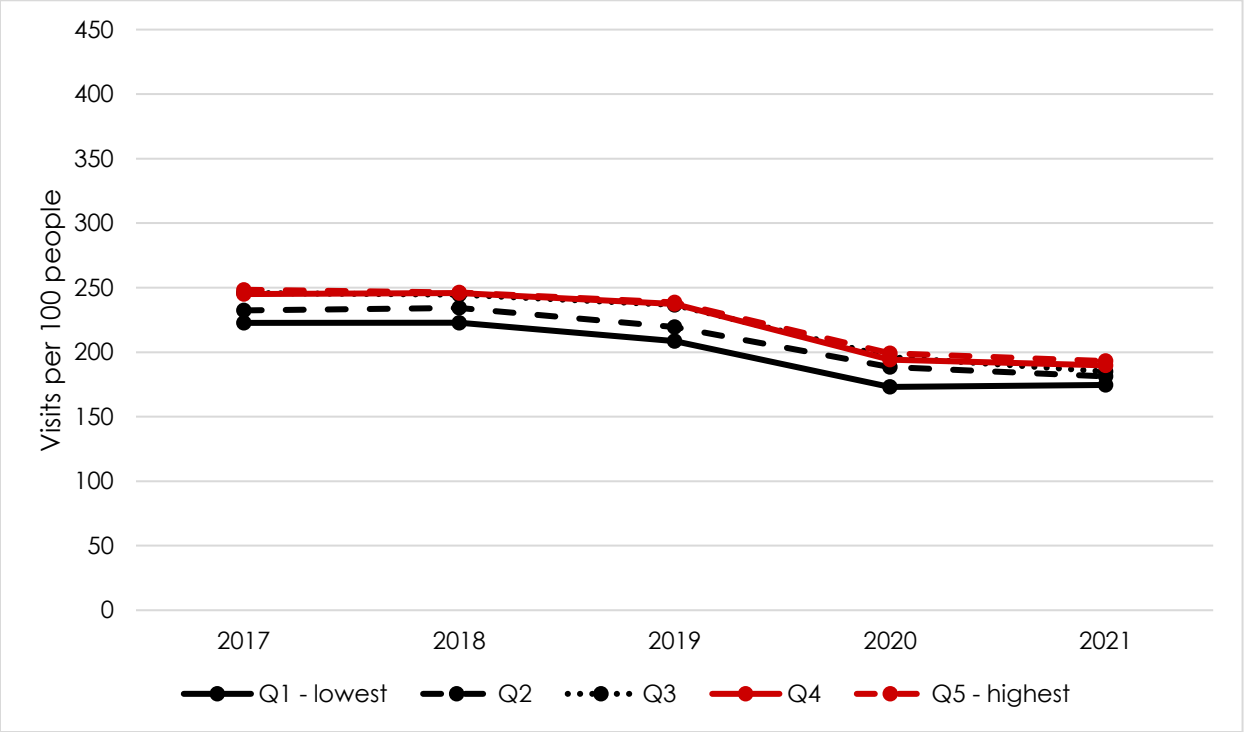


Figure A24: Frequency of GP visits for long-term non-immigrants by socioeconomic status

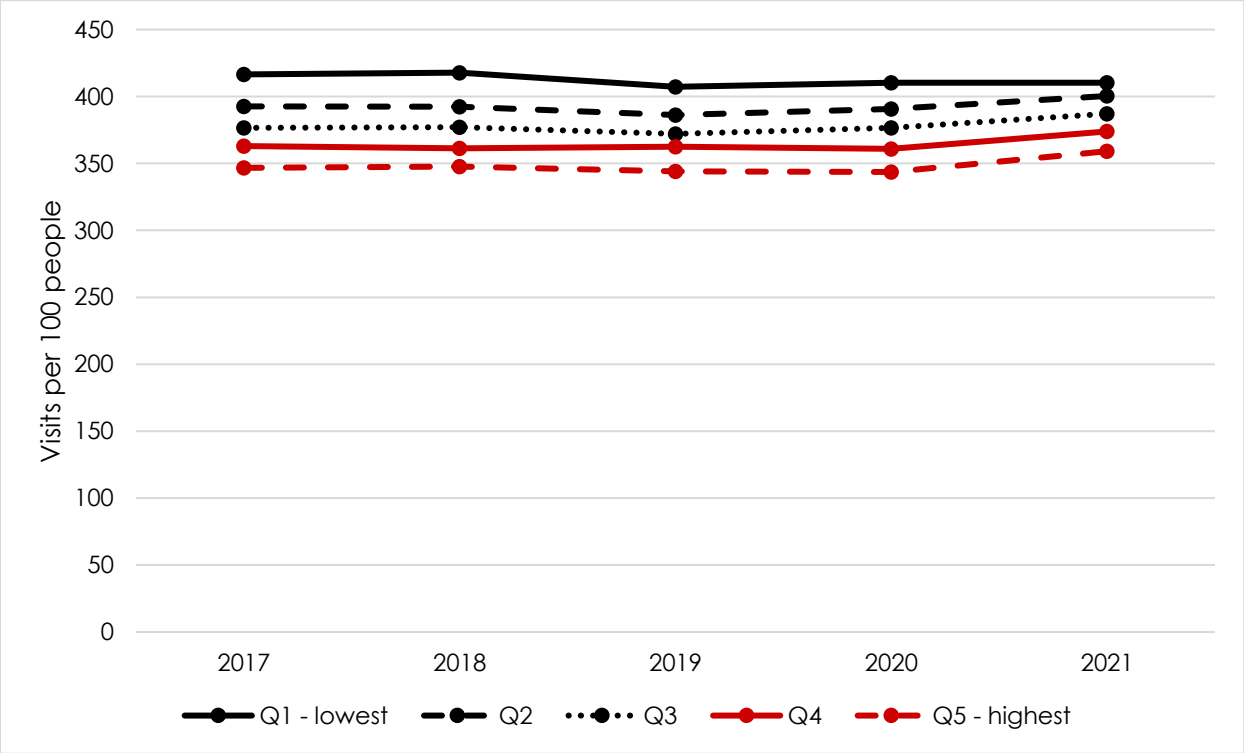


Table A5: Odds of visiting a GP (newcomers vs non-immigrants)

Analysis Of GEE Parameter Estimates Empirical Standard Error Estimates							
Parameter		**Estimate**	**Standard Error**	**95% Confidence Limits**		**Z**	**Pr > |Z|**
Intercept		2.0747	0.0078	2.0595	2.09	266.23	<.0001
imm_cat	Recent immigrant	-0.3208	0.0479	-0.4148	-0.2269	-6.69	<.0001
imm_cat	longterm immigrant	-0.4586	0.0403	-0.5376	-0.3796	-11.38	<.0001
imm_cat	non immigrant <10 yrs	-0.371	0.0061	-0.3829	-0.3591	-61.12	<.0001
imm_cat	**non immigrant > 10 yrs**	**0**	**0**	**0**	**0**	.	.
arrival_year	1970-1979	0.0107	0.1168	-0.2182	0.2396	0.09	0.927
arrival_year	1980-1989	-0.1489	0.1238	-0.3916	0.0939	-1.2	0.2293
arrival_year	1990-1999	0.1047	0.0604	-0.0137	0.2231	1.73	0.083
arrival_year	2005-2009	-0.1007	0.0481	-0.195	-0.0064	-2.09	0.0363
arrival_year	2010-2014	-0.3311	0.054	-0.437	-0.2252	-6.13	<.0001
arrival_year	2015-2019	-0.4373	0.0605	-0.556	-0.3187	-7.22	<.0001
arrival_year	2020-2021	-1.0829	0.0688	-1.2177	-0.9481	-15.74	<.0001
arrival_year	**NA**	**0**	**0**	**0**	**0**	.	.
arrival_year	**2000-2004**	**0**	**0**	**0**	**0**	.	.
Age	0-4	-0.6572	0.0114	-0.6794	-0.6349	-57.85	<.0001
Age	18-34	-1.612	0.007	-1.6257	-1.5983	-230.54	<.0001
Age	35-49	-1.2401	0.0072	-1.2542	-1.226	-172.42	<.0001
Age	5-17	-1.6816	0.0078	-1.6969	-1.6662	-214.93	<.0001
Age	50-64	-0.7352	0.0072	-0.7492	-0.7211	-102.32	<.0001
Age	**65+**	**0**	**0**	**0**	**0**	.	.
yearssince_arrival	1-2	0.0204	0.0452	-0.0682	0.1089	0.45	0.6521
yearssince_arrival	3-5	0.0039	0.0413	-0.077	0.0847	0.09	0.925
yearssince_arrival	6-9	0.0267	0.0294	-0.0309	0.0843	0.91	0.3631
yearssince_arrival	<1	-0.0503	0.0468	-0.142	0.0415	-1.07	0.2827
yearssince_arrival	NA	0	0	0	0	.	.
yearssince_arrival	**10+**	**0**	**0**	**0**	**0**	.	.
QATIPPE	1	-0.265	0.006	-0.2768	-0.2531	-43.83	<.0001
QATIPPE	2	-0.1243	0.0061	-0.1361	-0.1124	-20.53	<.0001
QATIPPE	3	-0.0638	0.006	-0.0756	-0.052	-10.58	<.0001
QATIPPE	4	-0.0307	0.006	-0.0425	-0.019	-5.12	<.0001
QATIPPE	**5**	**0**	**0**	**0**	**0**	.	.
HEALTH_REGION	2	-0.1134	0.0054	-0.1241	-0.1027	-20.85	<.0001
HEALTH_REGION	3	-0.3264	0.0053	-0.3368	-0.3161	-61.62	<.0001
HEALTH_REGION	4	-0.4584	0.0081	-0.4743	-0.4426	-56.71	<.0001

HEALTH_REGION	5	-0.2493	0.0108	-0.2705	-0.228	-23	<.0001
HEALTH_REGION	6	0.1211	0.0076	0.1063	0.1359	16.03	<.0001
HEALTH_REGION	7	-0.1136	0.0088	-0.1309	-0.0962	-12.84	<.0001
HEALTH_REGION	**1**	**0**	**0**	**0**	**0**	**.**	**.**
SEX	Male	0.635	0.0039	0.6274	0.6426	163.77	<.0001
SEX	**Female**	**0**	**0**	**0**	**0**	**.**	**.**

Table A6: Odds of visiting a GP (immigrant subgroups vs non-immigrants)

Analysis Of GEE Parameter Estimates Empirical Standard Error Estimates							
Parameter		**Estimate**	**Standard Error**	**95% Confidence Limits**		**Z**	**Pr > |Z|**
Intercept		2.1943	0.1043	1.99	2.3987	21.05	<.0001
imm_cat	Family sponsorship/other	-0.5415	0.1117	-0.7605	-0.3225	-4.85	<.0001
imm_cat	Int students/dependents	-1.3157	0.1173	-1.5456	-1.0857	-11.21	<.0001
imm_cat	Refugee	-0.7695	0.1149	-0.9947	-0.5443	-6.7	<.0001
imm_cat	Skilled worker	-0.5719	0.1125	-0.7924	-0.3514	-5.08	<.0001
imm_cat	TFW	-1.0596	0.1133	-1.2816	-0.8375	-9.35	<.0001
imm_cat	non immigrant <10 yrs	-0.3688	0.0061	-0.3807	-0.3569	-60.72	<.0001
imm_cat	**non immigrant > 10 yrs**	**0**	**0**	**0**	**0**	**.**	**.**
arrival_year	1970-1979	-0.0225	0.1173	-0.2524	0.2073	-0.19	0.8476
arrival_year	1980-1989	-0.1757	0.1239	-0.4184	0.0671	-1.42	0.1561
arrival_year	1990-1999	0.0729	0.061	-0.0466	0.1924	1.2	0.232
arrival_year	2005-2009	-0.1032	0.0485	-0.1982	-0.0081	-2.13	0.0334
arrival_year	2010-2014	-0.3262	0.0544	-0.4328	-0.2195	-5.99	<.0001
arrival_year	2015-2019	-0.3253	0.0601	-0.4431	-0.2075	-5.41	<.0001
arrival_year	2020-2021	-0.8558	0.0693	-0.9915	-0.72	-12.36	<.0001
arrival_year	NA	0	0	0	0	.	.
arrival_year	**2000-2004**	**0**	**0**	**0**	**0**	**.**	**.**
Age	0-4	-0.6598	0.0114	-0.6821	-0.6376	-58.06	<.0001
Age	18-34	-1.6071	0.007	-1.6208	-1.5934	-229.66	<.0001
Age	35-49	-1.2417	0.0072	-1.2558	-1.2276	-172.63	<.0001
Age	5-17	-1.684	0.0078	-1.6993	-1.6686	-215.16	<.0001
Age	50-64	-0.7353	0.0072	-0.7494	-0.7213	-102.36	<.0001
Age	**65+**	**0**	**0**	**0**	**0**	**.**	**.**
yearssince_arrival	1-2	0.2	0.0437	0.1144	0.2856	4.58	<.0001
yearssince_arrival	3-5	0.1055	0.0399	0.0273	0.1836	2.65	0.0082
yearssince_arrival	6-9	0.0291	0.0294	-0.0285	0.0868	0.99	0.3221

yearssince_arrival	<1	0.1832	0.0456	0.0938	0.2725	4.02	<.0001
yearssince_arrival	NA	0	0	0	0	.	.
yearssince_arrival	**10+**	**0**	**0**	**0**	**0**	**.**	**.**
QATIPPE	1	-0.2616	0.0061	-0.2735	-0.2497	-43.17	<.0001
QATIPPE	2	-0.1225	0.0061	-0.1344	-0.1106	-20.23	<.0001
QATIPPE	3	-0.0628	0.006	-0.0746	-0.051	-10.41	<.0001
QATIPPE	4	-0.0307	0.006	-0.0425	-0.0189	-5.12	<.0001
QATIPPE	**5**	**0**	**0**	**0**	**0**	**.**	**.**
HEALTH_REGION	2	-0.1147	0.0054	-0.1254	-0.1041	-21.08	<.0001
HEALTH_REGION	3	-0.3275	0.0053	-0.3379	-0.3171	-61.8	<.0001
HEALTH_REGION	4	-0.4585	0.0081	-0.4743	-0.4426	-56.68	<.0001
HEALTH_REGION	5	-0.2499	0.0108	-0.2712	-0.2287	-23.05	<.0001
HEALTH_REGION	6	0.1208	0.0076	0.106	0.1356	15.99	<.0001
HEALTH_REGION	7	-0.1149	0.0088	-0.1322	-0.0976	-12.99	<.0001
HEALTH_REGION	**1**	**0**	**0**	**0**	**0**	**.**	**.**
SEX	Male	0.6346	0.0039	0.627	0.6422	163.61	<.0001
SEX	**Female**	**0**	**0**	**0**	**0**	**.**	**.**

Figure A25: Age-standardized hospitalizations for recent immigrants by health zone

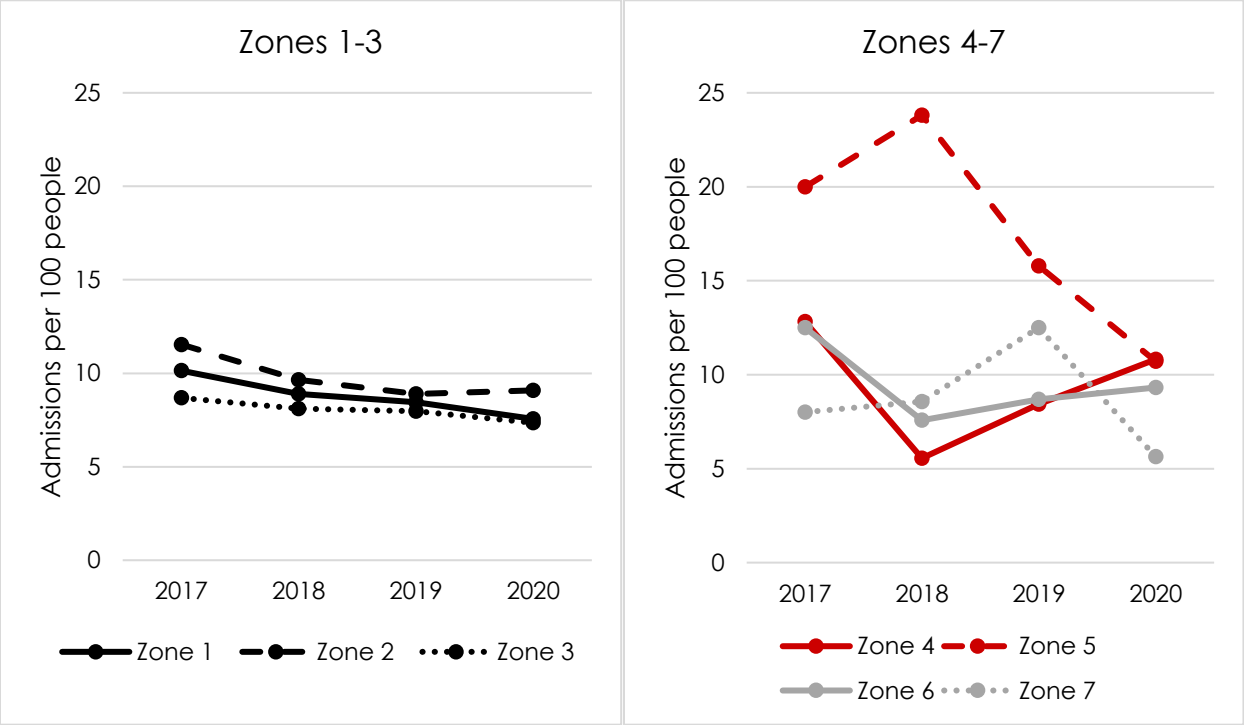


Figure A26: Age-standardized hospitalizations for long-term immigrants by health zone

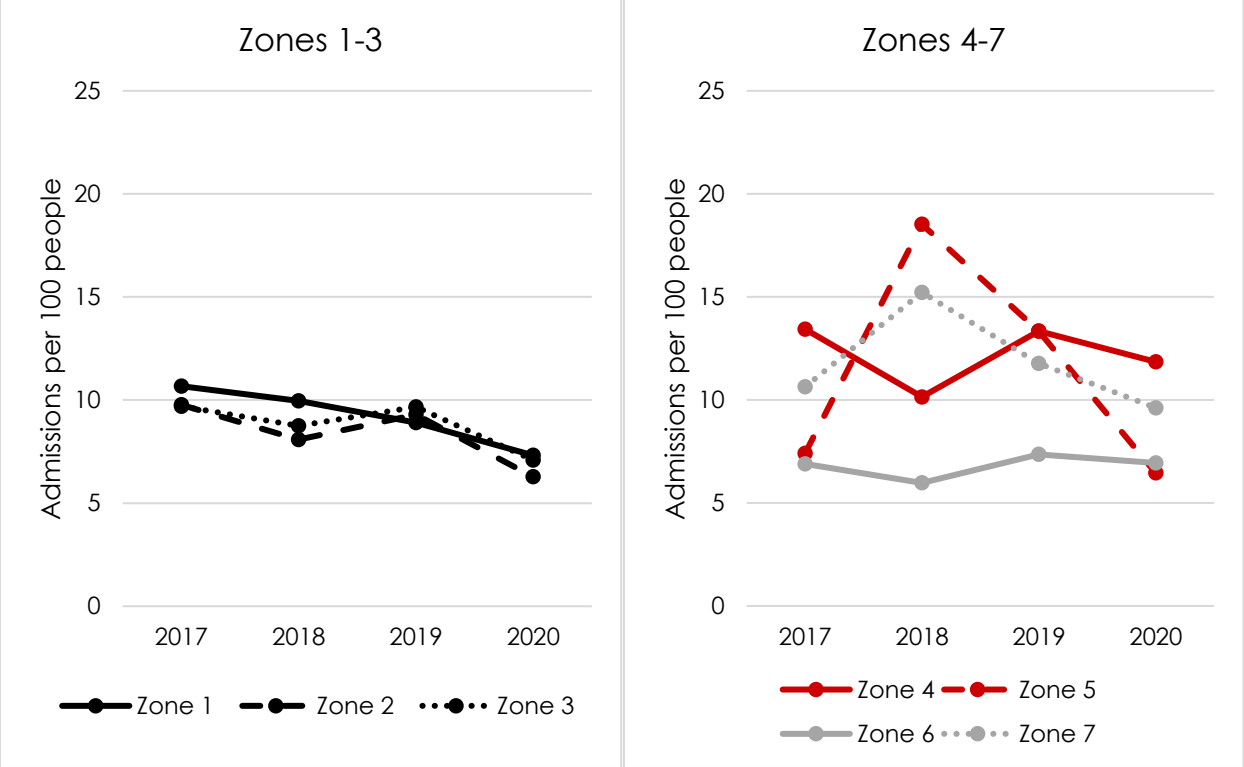


Figure A27: Age-standardized hospitalizations for recent non-immigrants by health zone

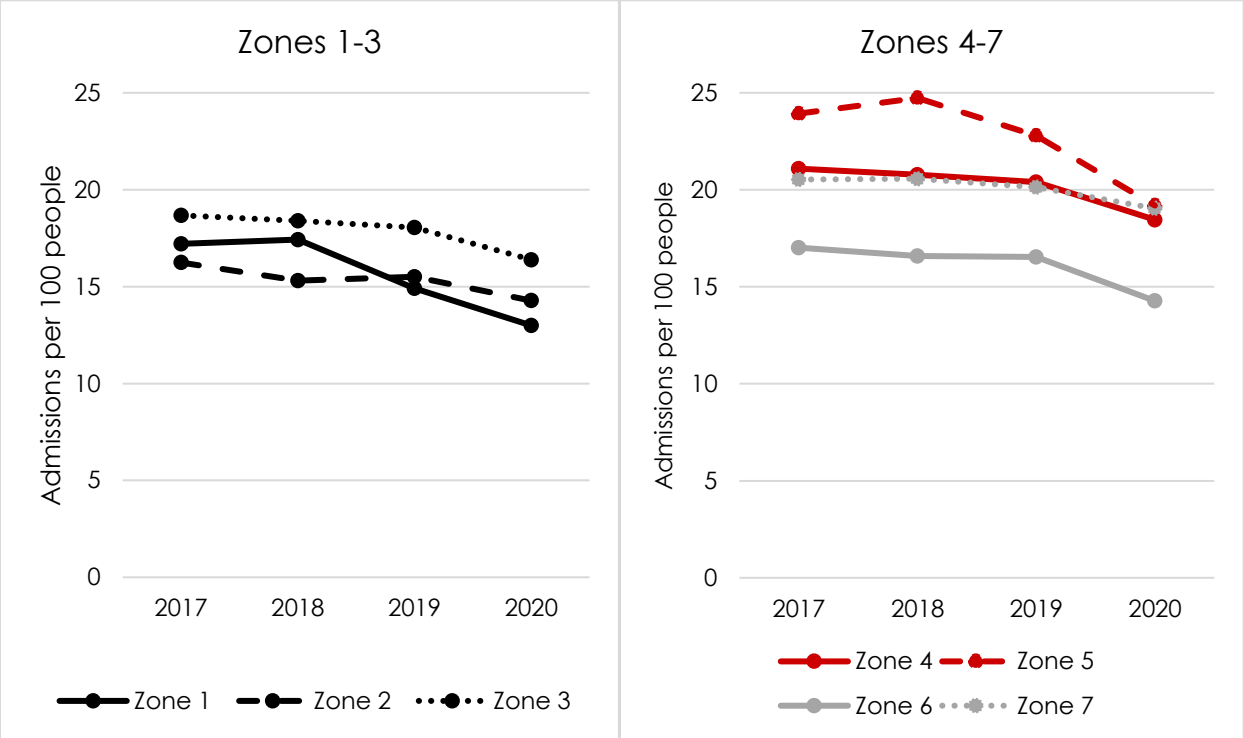


Figure A28 : Age-standardized hospitalizations for long-term non-immigrants by health zone

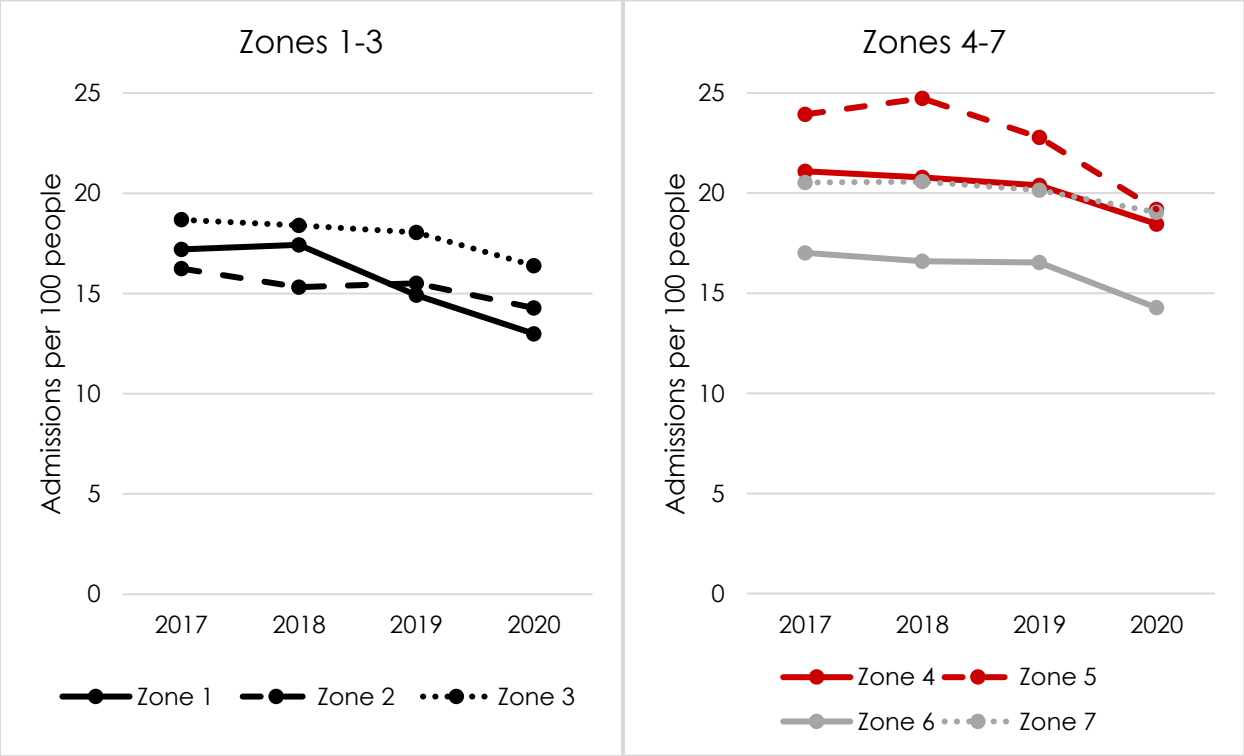


Figure A29: Frequency of hospitalizations for recent immigrants by socioeconomic status

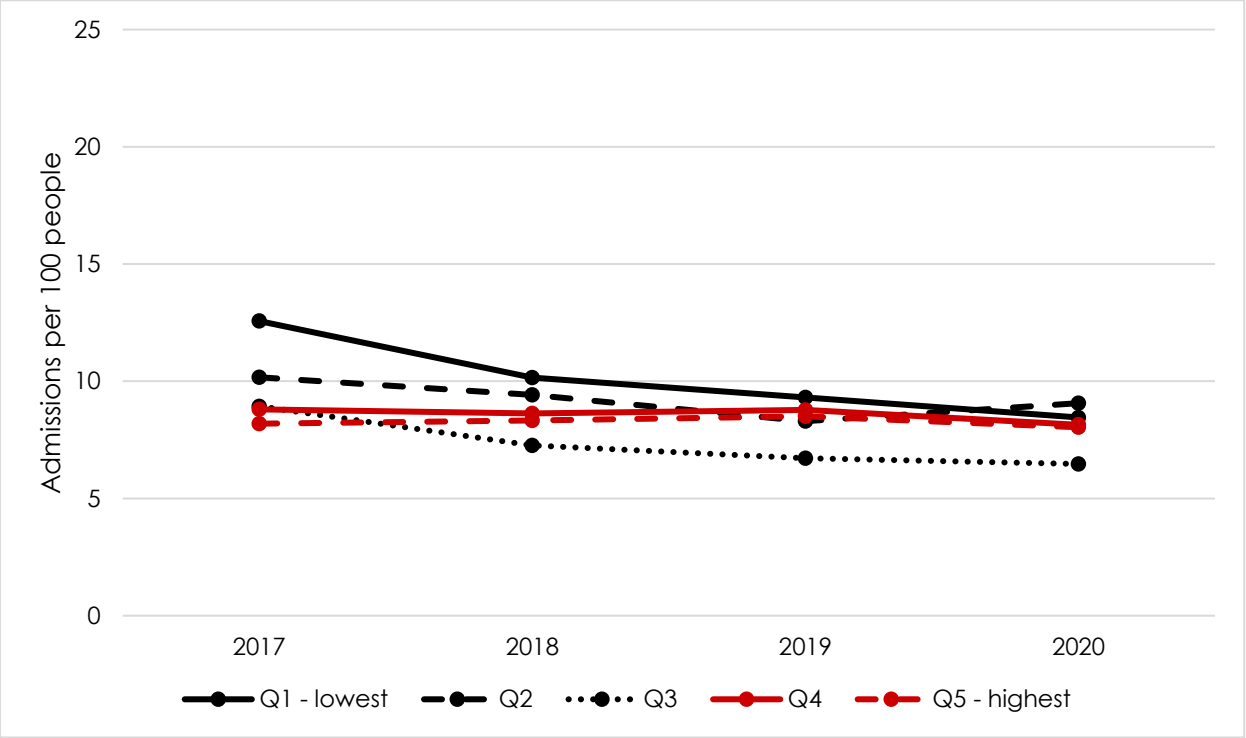


Figure A30: Frequency of hospitalizations for long-term immigrants by socioeconomic status

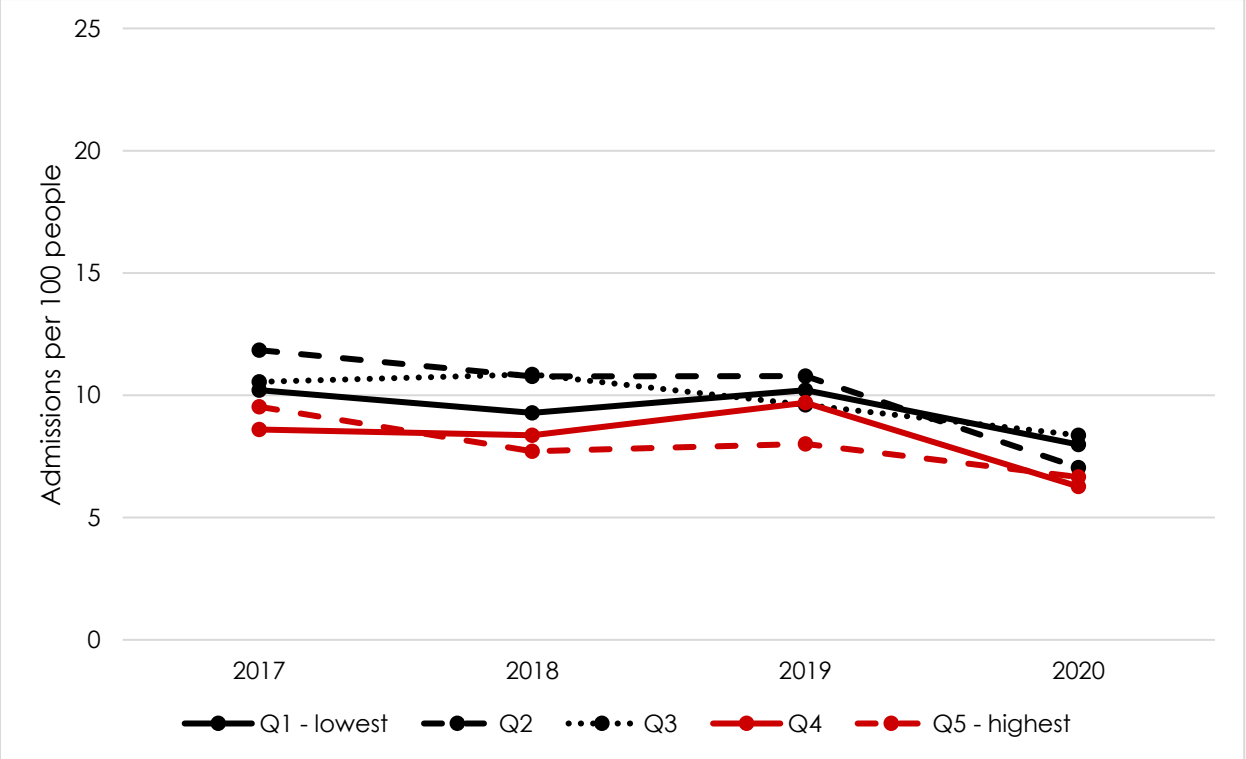


Figure A31: Frequency of hospitalizations for recent non-immigrants by socioeconomic status

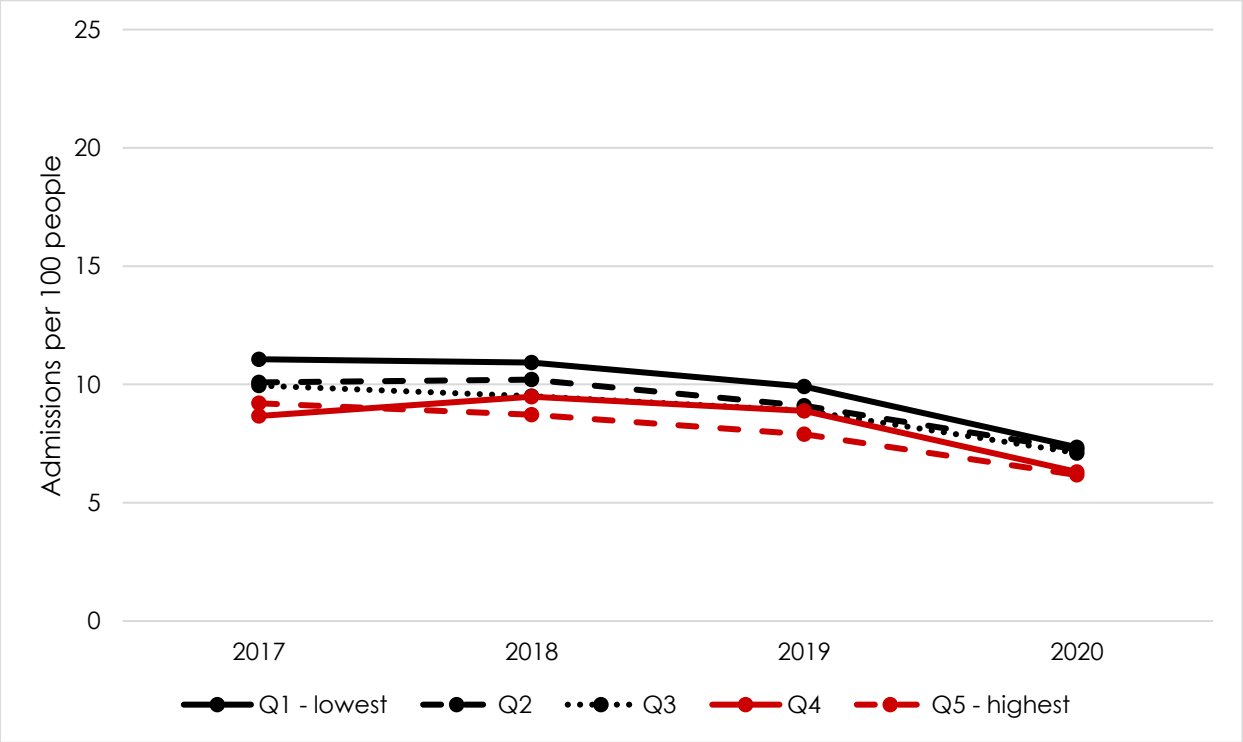


Figure A32: Frequency of hospitalizations for long-term non-immigrants by socioeconomic status

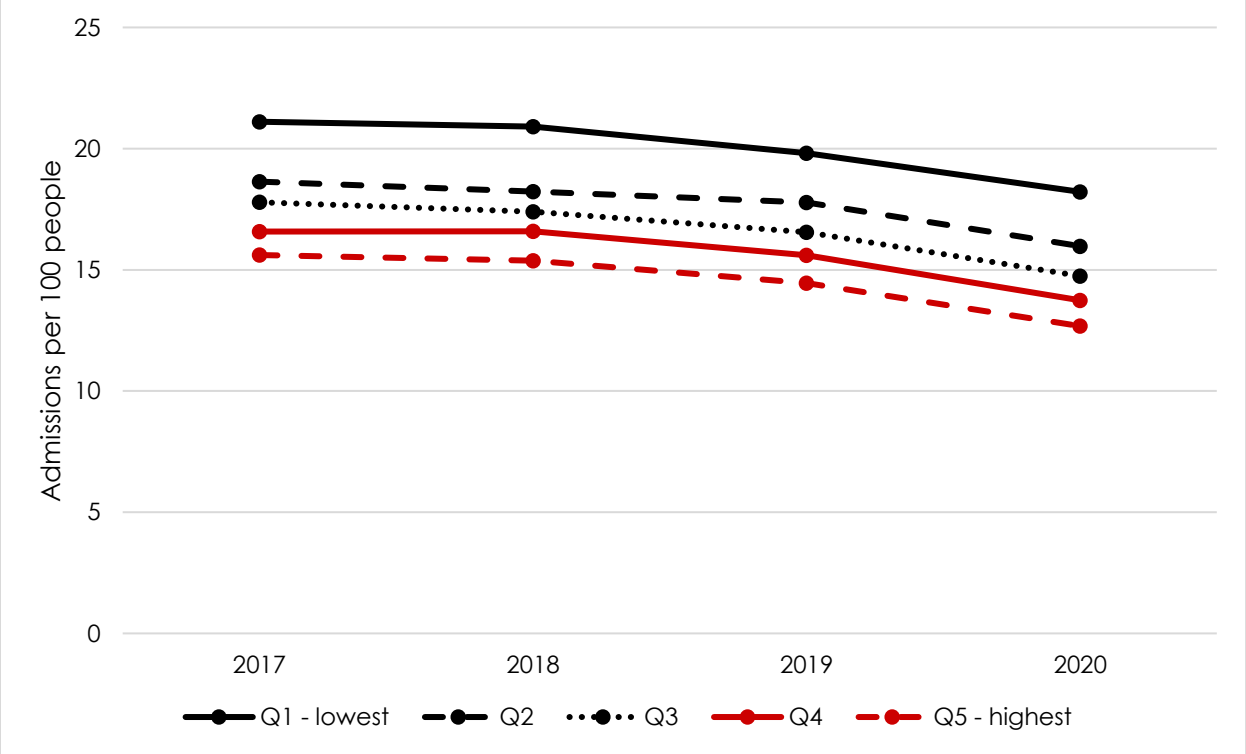


Table A7: Odds of a hospitalization (newcomers vs non-immigrants)

Analysis Of GEE Parameter Estimates Empirical Standard Error Estimates							
Parameter		**Estimate**	**Standard Error**	**95% Confidence Limits**		**Z**	**Pr > |Z|**
Intercept		-1.8939	0.0073	-1.9081	-1.8797	-261.19	<.0001
imm_cat	Recent immigrant	-0.2912	0.0893	-0.4663	-0.1161	-3.26	0.0011
imm_cat	longterm immigrant	-0.4632	0.0567	-0.5744	-0.3521	-8.17	<.0001
imm_cat	non immigrant <10 yrs	-0.0168	0.0087	-0.034	0.0003	-1.93	0.0538
imm_cat	**non immigrant > 10 yrs**	**0**	**0**	**0**	**0**	**.**	**.**
arrival_year	1970-1979	0.4631	0.1165	0.2348	0.6914	3.98	<.0001
arrival_year	1980-1989	0.3871	0.1395	0.1137	0.6605	2.77	0.0055
arrival_year	1990-1999	0.1212	0.078	-0.0318	0.2741	1.55	0.1205
arrival_year	2005-2009	-0.1763	0.0728	-0.319	-0.0336	-2.42	0.0155
arrival_year	2010-2014	-0.4971	0.0895	-0.6725	-0.3217	-5.56	<.0001
arrival_year	2015-2019	-0.855	0.1045	-1.0598	-0.6501	-8.18	<.0001
arrival_year	2020-2021	-2.7925	0.1997	-3.1838	-2.4011	-13.99	<.0001
arrival_year	NA	0	0	0	0	.	.
arrival_year	**2000-2004**	**0**	**0**	**0**	**0**	**.**	**.**
Age	0-4	-1.1916	0.0158	-1.2227	-1.1606	-75.19	<.0001
Age	18-34	-1.0916	0.0067	-1.1047	-1.0785	-163.11	<.0001
Age	35-49	-1.0436	0.0066	-1.0565	-1.0307	-158.83	<.0001
Age	5-17	-1.7179	0.0102	-1.7378	-1.698	-169.12	<.0001
Age	50-64	-0.7088	0.0056	-0.7198	-0.6978	-126.2	<.0001
Age	**65+**	**0**	**0**	**0**	**0**	**.**	**.**
yearssince_arrival	1-2	0.7242	0.1038	0.5207	0.9277	6.97	<.0001
yearssince_arrival	3-5	0.5422	0.0906	0.3646	0.7197	5.98	<.0001
yearssince_arrival	6-9	0.3898	0.0623	0.2678	0.5119	6.26	<.0001
yearssince_arrival	<1	0.8701	0.1072	0.66	1.0803	8.11	<.0001
yearssince_arrival	NA	0	0	0	0	.	.
yearssince_arrival	**10+**	**0**	**0**	**0**	**0**	**.**	**.**
QATIPPE	1	0.2057	0.007	0.1921	0.2193	29.6	<.0001
QATIPPE	2	0.1197	0.007	0.106	0.1334	17.14	<.0001
QATIPPE	3	0.0781	0.007	0.0644	0.0918	11.19	<.0001
QATIPPE	4	0.0573	0.0071	0.0434	0.0712	8.1	<.0001
QATIPPE	**5**	**0**	**0**	**0**	**0**	**.**	**.**
HEALTH_REGION	2	0.0059	0.0062	-0.0063	0.0181	0.95	0.3412
HEALTH_REGION	3	0.112	0.0062	0.0999	0.1241	18.13	<.0001
HEALTH_REGION	4	0.1733	0.0093	0.1551	0.1915	18.69	<.0001

HEALTH_REGION	5	0.2914	0.0116	0.2686	0.3143	25.02	<.0001
HEALTH_REGION	6	-0.0191	0.0079	-0.0347	-0.0035	-2.41	0.0161
HEALTH_REGION	7	0.1939	0.0096	0.1751	0.2126	20.3	<.0001
HEALTH_REGION	**1**	**0**	**0**	**0**	**0**	**.**	**.**
SEX	Male	0.1797	0.0044	0.1711	0.1882	41	<.0001
SEX	**Female**	**0**	**0**	**0**	**0**	**.**	**.**

Table A8: Odds of a hospitalization (immigrant subgroups vs non-immigrants)

Analysis Of GEE Parameter Estimates Empirical Standard Error Estimates							
Parameter		**Estimate**	**Standard Error**	**95% Confidence Limits**		**Z**	**Pr > |Z|**
Intercept		-1.8928	0.0072	-1.907	-1.8786	-261.09	<.0001
imm_cat	Family sponsorship/other	-0.4003	0.0583	-0.5147	-0.286	-6.86	<.0001
imm_cat	Int students/dependents	-1.4697	0.1123	-1.6899	-1.2495	-13.08	<.0001
imm_cat	Refugee	-0.0303	0.0676	-0.1627	0.1022	-0.45	0.6541
imm_cat	Skilled worker	-0.7999	0.063	-0.9235	-0.6764	-12.69	<.0001
imm_cat	TFW	-0.897	0.0503	-0.9956	-0.7983	-17.82	<.0001
imm_cat	non immigrant <10 yrs	-0.014	0.0087	-0.0311	0.0031	-1.61	0.1078
imm_cat	**non immigrant > 10 yrs**	**0**	**0**	**0**	**0**	**.**	**.**
arrival_year	1970-1979	0.3931	0.1177	0.1625	0.6237	3.34	0.0008
arrival_year	1980-1989	0.3364	0.1403	0.0614	0.6113	2.4	0.0165
arrival_year	1990-1999	0.0547	0.0793	-0.1008	0.2102	0.69	0.4904
arrival_year	2005-2009	-0.0795	0.0737	-0.2239	0.0649	-1.08	0.2804
arrival_year	2010-2014	-0.3994	0.091	-0.5778	-0.2211	-4.39	<.0001
arrival_year	2015-2019	-0.7906	0.1057	-0.9978	-0.5835	-7.48	<.0001
arrival_year	2020-2021	-2.4809	0.2417	-2.9547	-2.0071	-10.26	<.0001
arrival_year	NA	0	0	0	0	.	.
arrival_year	**2000-2004**	**0**	**0**	**0**	**0**	**.**	**.**
Age	0-4	-1.1969	0.0158	-1.2279	-1.1658	-75.64	<.0001
Age	18-34	-1.0883	0.0067	-1.1014	-1.0752	-162.78	<.0001
Age	35-49	-1.043	0.0066	-1.0559	-1.0302	-158.76	<.0001
Age	5-17	-1.7234	0.0102	-1.7433	-1.7035	-169.62	<.0001
Age	50-64	-0.7084	0.0056	-0.7194	-0.6974	-126.14	<.0001
Age	**65+**	**0**	**0**	**0**	**0**	**.**	**.**
yearssince_arrival	1-2	1.0214	0.0897	0.8457	1.1971	11.39	<.0001
yearssince_arrival	3-5	0.6726	0.0807	0.5144	0.8309	8.33	<.0001
yearssince_arrival	6-9	0.4115	0.0633	0.2874	0.5356	6.5	<.0001

yearssince_arrival	<1	1.2653	0.0957	1.0777	1.4529	13.22	<.0001
yearssince_arrival	NA	0	0	0	0	.	.
yearssince_arrival	**10+**	**0**	**0**	**0**	**0**	**.**	**.**
QATIPPE	1	0.2029	0.007	0.1893	0.2165	29.17	<.0001
QATIPPE	2	0.119	0.007	0.1053	0.1327	17.04	<.0001
QATIPPE	3	0.0777	0.007	0.064	0.0914	11.12	<.0001
QATIPPE	4	0.0568	0.0071	0.0429	0.0706	8.02	<.0001
QATIPPE	**5**	**0**	**0**	**0**	**0**	**.**	**.**
HEALTH_REGION	2	0.0047	0.0062	-0.0075	0.0169	0.76	0.4498
HEALTH_REGION	3	0.1118	0.0062	0.0997	0.1239	18.1	<.0001
HEALTH_REGION	4	0.1736	0.0093	0.1554	0.1918	18.72	<.0001
HEALTH_REGION	5	0.2914	0.0116	0.2685	0.3142	25.02	<.0001
HEALTH_REGION	6	-0.019	0.0079	-0.0345	-0.0034	-2.39	0.0167
HEALTH_REGION	7	0.1935	0.0096	0.1748	0.2123	20.26	<.0001
HEALTH_REGION	**1**	**0**	**0**	**0**	**0**	**.**	**.**
SEX	Male	0.1791	0.0044	0.1705	0.1877	40.88	<.0001
SEX	**Female**	**0**	**0**	**0**	**0**	**.**	**.**