

# Visits to physicians for oral health-related complaints in Ontario, Canada

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## ABSTRACT

**OBJECTIVE:** Canada's national system of health insurance facilitates equitable access to health care; however, since dental care is generally privately financed and delivered, access to oral health care remains uneven and inequitable. To avoid the upfront costs, many argue that socially marginalized groups should seek oral health care from medical providers. This study therefore explored the rates and numbers of visits to physicians for oral health-related diagnoses in Ontario, Canada's most populated province.

**METHODS:** A retrospective secondary data analysis of health system utilization in Ontario was conducted for visits to physicians for oral health-related diagnoses. Data for all Ontario Health Insurance Plan (OHIP) approved billing claims were accessed over 11 fiscal years (2001–2011). Age- and sex-adjusted rates were calculated.

**RESULTS:** Approximately 208,375 visits per year, with an average of 1,298/100,000 persons, were made to physicians for oral health-related diagnoses. Women, irrespective of the year, made more visits, and there was an increasing trend in visits made by elderly people.

**CONCLUSION:** The number of people visiting physicians for oral health reasons is arguably high. The public health system is being billed for services for oral health issues that the provider is not appropriately trained to treat. Provision of timely and accessible oral health care for socially marginalized populations needs to be prioritized in health care policy.

**KEY WORDS:** Medical billing; health services; health policy; access to oral health care

La traduction du résumé se trouve à la fin de l'article.

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Canada's national system of health insurance, Medicare, has become associated with the values of equity and solidarity. In general, universal access to health care has become a reality, specifically for physician and hospital services. Yet Canadian Medicare does not include services such as oral health care. In Canada, oral health care is primarily privately financed within a fee-for-service system delivered in private dental offices. Most Canadians pay for this care through employment-based dental insurance (62.6%) and/or through out-of-pocket expenditures (31.9%).<sup>1</sup> In fact, only 6% of dental expenditures in Canada stem from public programs, one of the lowest proportions among OECD (Organisation for Economic Co-operation and Development) countries.<sup>2</sup> As a result, access to oral health care for people in Canada largely relies on employment conditions and the ability to pay, leading to uneven and inequitable access for many in the population.

Importantly, it has been well documented that low-income and other socially disadvantaged groups show a higher prevalence of oral disease while also facing the greatest financial barriers to accessing care.<sup>1</sup> These oral health and access inequalities are exacerbated by the patchwork of Canadian publicly funded oral health care programs. In Ontario, Canada's most populated province, for example, there are several publicly funded programs each with its own eligibility criteria and administration, almost all focusing on at-risk children and adults

receiving social assistance. A recent report from leading provincial stakeholders stressed the importance of unifying the current mix of public programming and identified the need to expand Ontario's public dental programs to reach other at-risk populations, such as low-income adults and seniors.<sup>3</sup> In turn, the Ontario government is now integrating all low-income children's programs into one program named Healthy Smiles Ontario, which expands eligibility to low-income children who have traditionally remained uninsured.<sup>4</sup> Yet despite the expansion, there remain gaps in access to dental care, and for this reason certain populations exhibit particular health-seeking behaviours.

To be sure, the costs of dental care and lack of public oral health care programs mean that some socially marginalized groups have little choice but to seek oral health care from other health providers, hoping to avoid direct costs for dental treatment. It is not surprising, then, that studies have found visits for oral

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health-related diagnoses in hospital emergency departments to be over-represented by adults, low-income groups, those without dental insurance and/or those who do not qualify for public dental care programs.<sup>5,6</sup> Similarly, visits to physician offices for oral health-related complaints are also expected. In the US, while less is known about office-based physician visits than about emergency department visits for oral health-related diagnoses, a few studies have reviewed these visits. In 2001–02, slightly more than 200 visits per 100 persons occurred in primary care offices with a principal diagnosis of diseases of the teeth and supporting structures.<sup>7</sup> Another study, also done in the US, reported that physicians do not have professional dental care training, so visits to medical professionals for oral health problems are inappropriate and do not provide high-quality care to those in need.<sup>8</sup>

In Canada, visits to physician offices for oral health-related complaints are also expected to occur, yet they have not been studied. Therefore, this study was conducted to explore the numbers and rates of visits to physicians for oral health-related diagnoses in Ontario.

**METHODS**

A retrospective secondary data analysis of health system utilization in Ontario was carried out for visits to physicians for oral health-related diagnoses. The target population was individuals who visited physicians and who were given a diagnosis of oral health-related issues. Data, stratified by age and sex, were extracted from IntelliHEALTH ONTARIO, which is a knowledge repository that contains clinical and administrative data collected from various sectors in the Ontario health care system. The data accessed for this study were from the Medical Services database, which contains all Ontario Health Insurance Plan (OHIP) approved billing claims submitted by providers, mainly physicians from a variety of settings. Salaried physician services, such as at some community health centres, health service organizations and academic institutions were excluded because they do not bill OHIP for the services and so their billings do not flow into the database. However, this should not affect our estimates, as salaried physicians in Ontario serve less than 1% of the provincial population.<sup>9</sup>

Included in a typical claim were service date, provider, patient, fee schedule code, number of services (units) and diagnostic information (not always required). The OHIP diagnostic codes 521 to 529, specifically pertaining to diseases of the oral cavity, salivary glands and jaws, were used in this study. All these codes are within the scope of a dental practice; however, diseases of the salivary glands, such as xerostomia, are also considered to be in the domain of general physicians.<sup>10</sup> Although ICD 10 codes were introduced in 2000, ICD 9 codes, without the decimal place, have continued to be used to define the Ontario health diagnostic codes in the Medical Services database in the IntelliHEALTH data repository. This database does not have any mechanism in place to validate the accuracy of the reason or diagnosis for patient visits, which was recognized as a primary limitation of this study. The codes included are described in Table 1.

Data were successfully obtained for 11 fiscal years (April 1 to March 31) from 2001 to 2011. Age and sex adjustments were

**Table 1.** ICD-9 codes for oral health-related diagnoses

ICD-9 Code	Major disease group
521	Diseases of hard tissues of teeth
522	Diseases of pulp and periapical tissues
523	Gingival and periodontal diseases
524	Dentofacial anomalies, including malocclusion
525	Other diseases and conditions of the teeth and supporting structures
526	Diseases of the jaws
527	Diseases of the salivary glands
528	Diseases of the oral soft tissues excluding lesions specific for gingiva and tongue
529	Diseases and other conditions of the tongue

Source: Medical Service, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO Data, last refreshed April 2014.

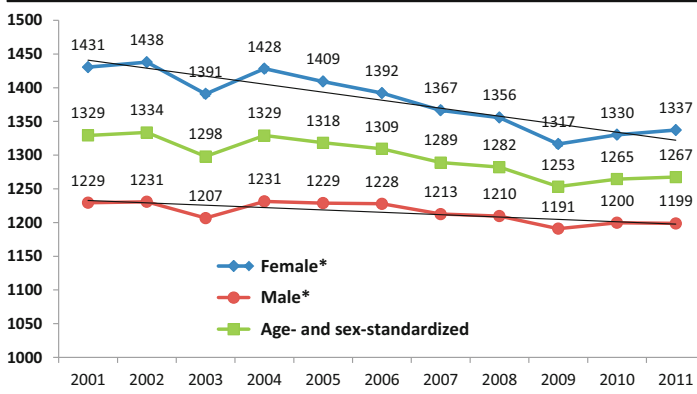
performed using Microsoft Excel, and IBM SPSS Statistics 19 was used to perform descriptive analysis. Crude rates were calculated by dividing the total number of events (in this case, the number of patients visiting physicians for oral health-related diagnoses) in a population by the sum of a population in a specified year, typically expressed per 100,000; this represents the actual experience of a population and should always be examined when assessing the morbidity or mortality of a population.<sup>11</sup> However, crude rates can be misleading when comparing across groups or over time, as the distribution of major demographic factors, such as age and sex, might differ. As a result, the rates were adjusted by both age and sex simultaneously. Also, to demonstrate any potential differences between sexes, sex-specific age-standardized rates were calculated. Further, Kendall’s tau, a simple method that can be used when there are at least five time periods, was used to conduct a time trend analysis of visits over the 11-year period.<sup>12</sup>

Rates were stratified into three age groups, 0–19, 20–64 and 65 years and above. These age groupings were selected because currently publicly funded oral health care programs in Ontario target primarily low-income children under the age of 18 (IntelliHEALTH ONTARIO would not permit the 0–18 age grouping). As well, 65 years and older was selected as there is some very limited public programming for seniors.

Along with assessing the extent of physician visits for oral health-related diagnoses, we also wanted to understand the particular complaints for which these visits were made. Therefore, proportions of each specific code (521 to 529) were calculated overall and specifically for each age group. Finally, South Riverdale Community Health Centre Leadership Team, who oversee the licensed user of IntelliHEALTH ONTARIO, approved the data collection and analysis carried out in its organization as a collaboration with the dental researchers at the University of Toronto Faculty of Dentistry.

**RESULTS**

Between 2001 and 2011, approximately 208,375 visits per year were made to physicians for oral health-related diagnoses. There were an average 1,298/100,000 patient visits per year made for these diagnoses: 1,381/100,000 for women and 1,215/100,000 for men. During the period of observation, the rate of patients visiting physicians declined overall and for both men and women specifically (Figure 1). Kendall’s tau correlation values



**Figure 1.** Physician visits per 100,000 for oral health-related complaints in Ontario: 2001–2011  
Medical Service, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO Data, last refreshed April 2014.

**Table 2.** Number of visits to physicians per 100,000 for oral health-related complaints, by age and sex: 2001 to 2011

Year	Sex	0–19 years	20–64 years	65+ years	Sex-specific age standardized
2001	Female	1438.3	1445.6	1346.7	1431
2001	Male	1379.7	1191.6	1173.2	1229
2002	Female	1444	1459.8	1324.4	1438
2002	Male	1372.1	1193.6	1184.5	1230.9
2003	Female	1394	1415.1	1270.8	1390.9
2003	Male	1341	1169.3	1169.8	1206.6
2004	Female	1457.6	1444.4	1301.6	1428.3
2004	Male	1392.1	1191.5	1169.5	1231.4
2005	Female	1380	1443.7	1297.4	1409.3
2005	Male	1313.8	1201.9	1218	1228.8
2006	Female	1372	1436	1219.8	1392.2
2006	Male	1301	1218.7	1165.3	1227.8
2007	Female	1317.6	1415.7	1218.7	1366.5
2007	Male	1274.7	1205.9	1155.2	1212.5
2008	Female	1322.4	1399.9	1205.2	1355.8
2008	Male	1288.2	1201.8	1134.7	1209.6
2009	Female	1246.5	1367.2	1198.8	1316.6
2009	Male	1230.2	1191	1139	1191
2010	Female	1287.2	1374.1	1198.7	1330.4
2010	Male	1255.2	1192	1155.1	1199.7
2011	Female	1283	1381.4	1223.1	1337.4
2011	Male	1242.8	1198.8	1139.7	1198.7

Source: Medical Service, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO Data, last refreshed April 2014.

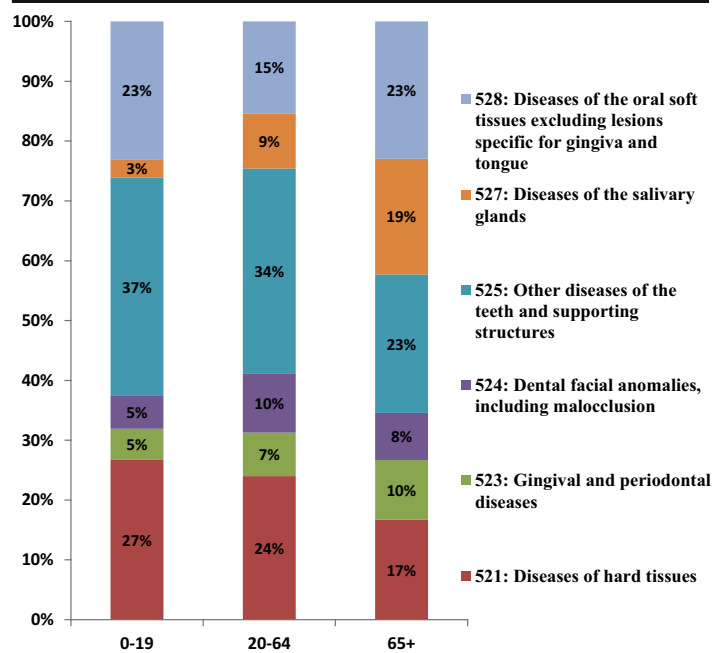
confirmed these trends. Overall, there was a significant negative correlation between number of visits and time period ( $r = -0.745$ ,  $p = 0.001$ ). Importantly, when stratified by sex there was a stronger correlation among men ( $r = -0.745$ ,  $p = 0.001$ ) than women ( $r = -0.636$ ,  $p = 0.006$ ), which suggests that over the 11-year period of observation the reduction in the rate of visiting physicians for oral problems was greater among men than women. For each sex stratified by age group, similar trends were observed, except for males aged 20–64, among whom the rates remained almost constant over the period of observation (Table 2).

Oral health-related diagnoses by physicians were mainly made for six ICD-9 categories and, out of these six, three categories

**Table 3.** Proportion of visits to physicians by ICD-9 code

ICD 9: Diseases of the oral cavity, salivary glands and jaws	Proportion
525: Other diseases of the teeth and supporting structures	33.20%
521: Diseases of hard tissues	23.60%
528: Diseases of the oral soft tissues excluding lesions specific for gingiva and tongue	18.10%
527: Diseases of the salivary glands	9.20%
524: Dental facial anomalies, including malocclusion	8.60%
523: Gingival and periodontal diseases	7.20%
Other	0.10%

Source: Medical Service, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO Data, last refreshed April 2014.



**Figure 2.** Oral health-related diagnoses by age group  
Medical Service, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO Data, last refreshed April 2014.

constituted three quarters of the visits (Table 3). For ages 0–19 and 65+, a large proportion of visits were made for soft tissue lesions (Figure 2). Among those aged 65+, visits for diseases of the salivary glands were also frequent as compared with other age groups; this was likely associated with xerostomia, a prevalent condition in the elderly.<sup>13</sup>

### DISCUSSION

The study described the number of patients visiting physicians in Ontario for oral health-related complaints from 2001 to 2011, and assessed age- and sex-standardized rates for these visits. The number of people visiting physicians is arguably high – an average of over 208,000 people per year. Unfortunately, these figures cannot be compared with visits for any other services, as most are covered under the publicly funded health care system. Visits for eye care cannot be compared either, as they are not billed through the government insurance plan, even at a

physician's office. Nevertheless, a study that investigated visits to the emergency department for problems related to the eye, including trauma, concluded that decisions to use the emergency department arose from not merely the urgency of the situation but also differences in insurance coverage.<sup>11</sup> Therefore, the current literature does not provide any contextual comparator for the findings in this article.

Over the period of observation, there was some reduction in visits to physicians for these complaints, and this was not similar between men and women. There appear to be more women visiting physicians than men. The reasons for this need to be explored in future research, but it could be speculated that the finding is due, in part, to the greater number of women than men who are working at minimum wage jobs (working poor) and who thus experience greater financial barriers to accessing dental care.<sup>14</sup> In Ontario, women also tend to cite cost more often than men as a reason for not seeking dental care.<sup>15</sup> In the US, with a dental care system similar to Canada's, more women than men report poor oral health alongside self-reports of financial hardship in accessing dental care,<sup>16</sup> so it may be that a low-income status for women is more strongly associated with poor access to dental care.

The differences between children, adults and seniors also need to be considered, as diagnoses are different for each age group. The number of visits appears to be increasing (as shown in Table 2) for adults and seniors with slight decreases over the years for children. It will be valuable to monitor the rate of physician visits for dental issues for different age groups, since most Ontario government-funded oral health programs focus on low-income children. With the absolute numbers of visits exceeding 208,000 per year, there is arguably a significant waste of public funds for patient care, by providers who do not have the appropriate training, skills and tools to treat and who are billing the provincial, publicly funded health insurance program for these visits. As mentioned, we acknowledge that some of the oral problems, such as diseases of the salivary glands, are not completely out of physicians' scope of practice; however, had these patients received equal opportunity to access dental care for their oral problems, a shift in patient load for such problems to dental offices could be expected. This could reduce the burden on the health care system and wait times in physicians' offices.

Between 2001 and 2011, there were 2,303,920 visits billed to OHIP by medical services for oral health conditions. The lowest OHIP fee charges are for a Minor Assessment (A001), currently billed at \$21.70, and the Intermediate Assessment (A007), currently billed at \$33.70; both may be used to bill for these visits. This would amount to costs ranging from \$50 million to \$78 million in the last 10 years. These are public funds that could have been more appropriately spent on public dental care programming to prevent and treat oral health problems. Clearly, the government needs to consider a more efficient and effective means to provide appropriate, timely and accessible oral health care for those people who are inappropriately seeking oral health care from medical providers. This evidence is a strong signal to policy-makers that they need to align policy changes with public health need. Again, these oral health needs are not being treated by the appropriate professional, and this could

result in treatments that do not improve and may exacerbate the condition, as such problems tend to worsen over time. Additionally, it is reasonable to assume that some of the acute conditions present in this study could have been avoided with preventive and/or timely curative oral health care.

It also appears that more adults and seniors than children are seeking care in physician offices, again representing poor use of public funds. Redirection of these funds and new public investment in expanded public oral health care programs for low-income adults and seniors would arguably be a more effective approach to caring for the oral health needs of vulnerable populations. Ultimately, appropriate care at the right time in the right setting can be achieved through the implementation of healthy public policy.

The primary limitation for this study is that there is no means to validate the accuracy of the diagnosis in the Medical Service database that contains the OHIP billing claims of providers. As well, salaried providers, including physicians who work in community health centres, were not included in the data. The mandate of the community health centre sector is to serve the most marginalized populations, who may be more vulnerable to oral health complaints and face greater financial barriers to accessing appropriate oral health care, so the number of visits to physicians for oral health problems is likely even higher. While an economic perspective is given, a more detailed economic evaluation needs to be part of future research in this area. We also recommend that future research investigate additional socio-demographic variables that correlate with these visits as a means to target the most vulnerable. Given the differences in Ontario in how oral health care programming is administered in municipalities, regional differences should be explored.

In conclusion, this study will help to inform policy debates regarding the health care impacts of poor access to dental care. The patchwork of different programs that currently exists in Ontario, the gaps in population coverage and the unnecessary costs of incomplete care provided in physicians' offices suggest the need for public policy discussion on how to achieve a better oral health care policy for vulnerable populations.

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## RÉSUMÉ

**OBJECTIF :** Le système national d'assurance-santé du Canada facilite l'accès équitable aux soins de santé; toutefois, comme les soins dentaires sont généralement financés et offerts à titre privé, l'accès aux soins buccodentaires demeure inégal et inéquitable. Pour éviter les coûts initiaux, beaucoup sont d'avis que les groupes socialement marginalisés devraient obtenir des soins buccodentaires auprès de dispensateurs de soins médicaux. Notre étude explore donc les taux et le nombre des visites médicales pour obtenir des diagnostics de santé buccodentaire en Ontario, la province la plus peuplée du Canada.

**MÉTHODE :** Nous avons mené une analyse rétrospective de données secondaires sur l'utilisation du système de santé en Ontario pour ce qui est des visites médicales pour obtenir des diagnostics de santé buccodentaire. Nous avons consulté les données de toutes les demandes de paiement des médecins approuvées par le Régime d'assurance-maladie de l'Ontario (RAMO) au cours de 11 exercices (2001–2011). Les taux rajustés selon l'âge et le sexe ont été calculés.

**RÉSULTATS :** Il y a eu environ 208 375 visites médicales par année (1 298 p. 100 000 personnes en moyenne) pour obtenir des diagnostics de santé buccodentaire. Les femmes, peu importe l'année, ont fait davantage de ces visites, et le nombre de visites effectuées par les personnes âgées affiche une tendance croissante.

**CONCLUSION :** Le nombre de personnes consultant des médecins pour des raisons de santé buccodentaire est probablement élevé. Le système de santé publique est facturé pour des services liés à des problèmes de santé buccodentaire que les dispensateurs n'ont pas la formation nécessaire pour traiter. La politique de soins de santé devrait offrir en priorité des soins buccodentaires rapides et accessibles aux populations socialement marginalisées.

**MOTS CLÉS :** facturation des services médicaux; services de santé; politique de santé; accès aux soins buccodentaires