Diabetes Prevalence and Care in the Métis Population of Ontario, Canada

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OBJECTIVE—The Métis are a distinct Aboriginal people in Canada with a unique history, culture, and language. This study examined diabetes prevalence and care in the Métis of Ontario.

RESEARCH DESIGN AND METHODS—The 14,480 people in the citizenship registry of the Métis Nation of Ontario were linked with provincial health care databases to determine diabetes prevalence and processes of care. Rates were compared between the Métis and the general Ontario population.

RESULTS—The age/sex standardized prevalence of diabetes for the Métis was 11.2%, nearly 29% higher than that of the general Ontario population. Métis were more likely to be hospitalized (12.7% vs. 10.7%) or require emergency room visits (36.1% vs. 27.7%).

CONCLUSIONS—Métis people have an increased burden of diabetes that puts them at risk for complications and morbidity. Ensuring adequate access to and quality of care for diabetes is essential to maintain the health of the Métis people.

Prevalence of diabetes as of 1 January 2009 was calculated by linking with the ODD. Prevalence was indirectly standardized on age and sex, using the general Ontario population as the reference.

Individuals with prevalent diabetes as of 1 January 2009 were selected. Those who died before 31 December 2009 were excluded to ensure complete follow-up. The number of office visits with a primary care physician during 2009 was determined by linkage with physician service claims, dichotomized at ≤3 versus ≥4 visits in the year. Ambulatory visits with a diabetes specialist, retinopathy screening evaluations with an ophthalmologist or optometrist, and all-cause hospitalizations and emergency department visits during the year were also captured.

Crude frequencies of each measure were calculated. The frequencies in the Métis were indirectly standardized on age, sex, northern residence, and income to the general Ontario population. Frequencies were compared using $\chi^2$ testing.

RESULTS—Of the 14,480 individuals in the Métis citizenship registry, 14,021 were successfully linked (96.8%). Of them, 12,820 were alive, adult, and residents of Ontario on 1 January 2009. Métis citizens were slightly younger than the general Ontario population (45.2 vs. 46.5 years) and were poorer. They were far more likely to reside in northern Ontario (46% vs. 6%). The crude prevalence of diabetes was 9.0% in the general Ontario population, versus 10.4% in the Métis. After age and sex standardization, this prevalence rose to 11.2%.

Table 1 shows the frequencies of each process of care. Visits to both primary care physicians and specialists were less frequent for the Métis than the general Ontario population. However, when standardized, these differences were attenuated. Métis people had very similar rates of retinopathy screening as the general Ontario population. However, Métis people were much more likely to be hospitalized or have an emergency department visit, even after standardization.

CONCLUSIONS—Adult Métis citizens in Ontario had an age/sex standardized diabetes prevalence of 11.2%, nearly...
Diabetes in the Métis population

Table 1—Prevalence of diabetes, and crude and standardized frequencies for processes of diabetes care in 2009

<table>
<thead>
<tr>
<th>Processes of care</th>
<th>General Ontario Population</th>
<th>Métis (crude)</th>
<th>P</th>
<th>Métis (standardized)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥4 primary care visits</td>
<td>63.5</td>
<td>59.7</td>
<td>0.005</td>
<td>64.8 (60.3–69.5)†</td>
<td>0.6</td>
</tr>
<tr>
<td>≥1 specialist care visit</td>
<td>18.9</td>
<td>15.2</td>
<td>0.0007</td>
<td>18.1 (15.7–20.9)†</td>
<td>0.6</td>
</tr>
<tr>
<td>Retinopathy screening</td>
<td>50.1</td>
<td>51.9</td>
<td>0.2</td>
<td>51.8 (47.9–55.9)†</td>
<td>0.4</td>
</tr>
<tr>
<td>Hospitalization</td>
<td>10.7</td>
<td>14.3</td>
<td>&lt;0.0001</td>
<td>12.7 (10.9–14.7)†</td>
<td>0.035</td>
</tr>
<tr>
<td>Emergency department visit</td>
<td>27.7</td>
<td>43.0</td>
<td>&lt;0.0001</td>
<td>36.1 (33.1–39.2)†</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

95% Confidence intervals are shown. *Standardized to the general Ontario population on age and sex; †Standardized to the general Ontario population on age, sex, northern residence, and income.

25% higher than that of the general Ontario population. Furthermore, Métis people with diabetes were more likely to be hospitalized or require an emergency department visit, which suggests either greater medical comorbidity or poorer quality of care. Physician service utilization did not differ from the general Ontario population after accounting for baseline differences between populations. In particular, northern Ontario residence, where availability of physicians is limited, likely accounted for much of the apparent disparity.

There have been few previous studies of diabetes in the Métis. The Aboriginal Peoples Survey from Statistics Canada found a self-reported prevalence of 7% in 2006 (2). A study similar to ours, linking the Manitoba Métis Federation citizenship registry with administrative data sources, found a crude diabetes prevalence of ~10% in people aged ≥25 years (3). There have been no previous studies of health care utilization for diabetes in the Métis.

This study includes by far the largest reported sample of Métis people to have been used in a study of diabetes prevalence. However, there are some limitations to note. Although the ODD that was used for diabetes case ascertainment has been validated and shown to be highly sensitive and specific (1), this validation was not carried out specifically in a Métis population. In addition, the citizenship registry of the Métis Nation of Ontario may not be representative of the entire Métis population in Ontario. Individuals who have not registered may be different (in demographic, behavioral, or clinical terms) from registered citizens, so generalizing these results to all Métis people in Ontario may not be appropriate.

Although Métis people in Canada have a shorter life expectancy than the non-Aboriginal population (4), there is a virtual absence of data in either the peer-reviewed or gray literature on Métis health risks (5). This study showed an increased burden of diabetes among Métis people, which may contribute to the excess mortality. Greater community awareness of the risks of diabetes and the behavioral and pharmacological interventions that can be used to reduce these risks are needed. Quality medical care needs to be accessible to reduce the burden of diabetes and its complications, particularly for Métis people living in rural or remote areas. Finally, representative organizations like the Métis Nation of Ontario should take a leadership role in promoting the health of their constituency.

Acknowledgments—The study was funded by the Public Health Agency of Canada through the “Capacity Building for Public Health Surveillance” initiative. The Institute for Clinical Evaluative Sciences (ICES) is funded in part by the Ontario Ministry of Health and Long-Term Care. B.R.S. receives salary support from the Canadian Institutes of Health Research and the Canadian Diabetes Association and is the guarantor.

No potential conflicts of interest relevant to this article were reported.

B.R.S. researched data, contributed to discussion, and drafted, reviewed, and edited the manuscript. K.C.-D. drafted, reviewed, and edited the manuscript. L.P. contributed to discussion and reviewed and edited the manuscript.

Preliminary results of the study were presented at the Canadian Diabetes Association Annual Professional Conference, October 2010.

The authors thank Nelson Chong, ICES, for his assistance with the data linkage, and Fangyun Wu, ICES, and Hong Zheng, ICES, for their assistance with the analyses.

References