Disparities in treatment for heart attack and end-stage renal disease among Aboriginal peoples in Canada

CAHSPR Conference May 28-31, 2013

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Methodology

• Goal to look at disparities in health care rates and treatments between Aboriginal and Non-Aboriginal populations in heart attacks and End Stage Renal Disease (ESRD)

• Lack of consistent information on First Nations, Inuit, Métis in most health administrative databases
  – Area-based (Geozones) methodology, developed by STC to fill this gap.
  – Identifies patients living in areas where a relatively high proportion of residents self-identified as First Nations and Inuit (known as high–First Nations and high-Inuit areas)

• Aboriginal population identifier available in Canadian Organ Replacement Register for ESRD analysis
  – does not allow identification for First Nations, Inuit or Métis
Do disparities exist in heart attack rates and related treatments between residents of high-First Nation and low-Aboriginal areas?
Residents of high–First Nations areas were:
- 76% more likely to experience a heart attack and do so at a younger age (7 years)
- 20% more likely to be admitted to hospital with comorbid conditions, especially diabetes

Notes
* Statistically significant. Data pooled 2004–2005 to 2010–2011, due to the small number of heart attack events in high-Aboriginal areas. Rates do not include Quebec due to differences in data collection.

Sources
Heart Attack Procedures Distance to Care

- 38% of patients from high–First Nations areas travelled more than 250 km to access hospitals with cardiac revascularization capacity, versus 8% from low-Aboriginal areas.
- All heart attack patients in high-Inuit areas needed to travel more than 500 km to access hospitals with cardiac revascularization capacity.

**Notes**
Distance is calculated using mid-points of patient and hospital postal codes and thus provides an approximation rather than actual driving distance.
Rates do not include Quebec data due to differences in data collection.

**Sources**
Heart Attack Treatments

Heart attack patients from high–First Nations areas were less likely to receive cardiac angiography and revascularization procedures (PCI in particular) than patients from low-Aboriginal areas; *this pattern persists after controlling for patient and clinical factors*

**AMI Patients (20+) Who Underwent Cardiac Procedures**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>High–First Nations Areas</th>
<th>Low-Aboriginal Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angiography*</td>
<td>51%</td>
<td>58%</td>
</tr>
<tr>
<td>PCI*</td>
<td>31%</td>
<td>38%</td>
</tr>
<tr>
<td>CABG</td>
<td>9%</td>
<td>9%</td>
</tr>
</tbody>
</table>

**Notes**
* Statistically significant.
Rates do not include Quebec data due to differences in data collection.

**Sources**
Do disparities exist in rates of ESRD and related treatments and outcomes between Aboriginal and non-Aboriginal patients?
ESRD Prevalent cases

• Aboriginal peoples were nearly 3 times more likely to be receiving treatment for ESRD
• Aboriginal ESRD patients were almost a decade younger and twice as likely to be diagnosed with diabetes (49% vs 27%) and more likely to be obese (40% vs 27%)

Prevalent cases of ESRD (20+)

Note: * Statistically significant.
Source: Canadian Organ Replacement Register (CORR) 2011, Canadian Institute for Health Information.
20% of Aboriginal ESRD patients are required to travel more than 250 km to their health care facility to receive treatment, compared to less than 5% of non-Aboriginal ESRD patients.

**Distance to Treatment**

- **Aboriginal**
  - <50 KM: 70%
  - 50 - <100 KM: 10%
  - 100 - <250 KM: 10%
  - 250 - <500 KM: 5%
  - 500+ KM: 5%

- **Non-Aboriginal**
  - <50 KM: 90%
  - 50 - <100 KM: 5%
  - 100 - <250 KM: 4%
  - 250 - <500 KM: 1%
  - 500+ KM: 0%

**Notes:**
Results are statistically significant. Distance is calculated using centre-points of patients and facilities postal codes.
**Source:** Canadian Organ Replacement Register, 2011, Canadian Institute for Health Information.
ESRD Treatment Differences

- Aboriginal ESRD patients less likely to receive kidney transplants than non-Aboriginal ESRD patients (27% vs 42%), differences persisted after controlling for age, sex, diabetes.

**Note:** Crude percentages are presented. Rates have not been adjusted for age, sex, diabetes or distance to treatment.

**Source:** Canadian Organ Replacement Register, 2011, Canadian Institute for Health Information.
ESRD Treatment Outcomes

• Aboriginal ESRD patients had lower risk-adjusted survival rates following initial dialysis treatment (adjusted for age, sex, diabetes and distance to treatment)
• Poorer survival rates following initial dialysis treatment, but similar outcomes following kidney transplants

Source
Canadian Organ Replacement Register, 2002-11, Canadian Institute for Health Information.
Conclusion

- Higher rates of heart attack (for residents of high-First Nation areas) and ESRD (for Aboriginal peoples) than for other Canadians.
  - younger, more comorbidities, particularly conditions such as diabetes that increase their risk of developing the condition.
- Risk adjustment did narrow the gap in procedure rates and outcomes, but did not fully explain the disparity
  - Poorer survival rates following initial dialysis treatment, but similar outcomes following kidney transplants
- Distance barriers to access the care required
- Scan of interventions to identify promising approaches to health service delivery showed the importance of relationships between patients, providers and their communities in addressing geographical and cultural barriers
Where to from here?

To paint a comprehensive picture of the health needs of First Nations, Inuit and Métis patients:

- Improve data collections to enable more comprehensive reporting on First Nations, Inuit and Métis.

- Explore treatment interventions beyond diagnostic and revascularization procedures in both acute care and primary health care settings, including fatal heart attacks in and outside of hospital.

- Consider longer-term outcomes that assesses quality and effectiveness in the management of chronic disease across the health care system.

- Undertake further research exploring the lived experiences of patients with chronic disease, and how personal, family and community factors may relate to improved outcomes.
Contact Us

- Hospital Care for Heart Attacks Among First Nations, Inuit and Métis
- End Stage Renal Disease Among Aboriginal Peoples in Canada: Treatment and Outcomes

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Thank You