Cancer Survival in First Nations and Métis: Follow-up of the 1991 Census Mortality Cohort

Diana Withrow
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Outline & Goals

1. To describe the data challenges that have led to a paucity of research about cancer survival in First Nations and Métis in Canada
2. To describe how the 1991 Census Mortality Cohort overcomes some of these challenges
3. To describe cancer survival in First Nations and Métis and compare it to that in the general population of Canada
First, some good to knows

• Who are the First Nations and Métis?
Who are the First Nations and Métis?

Population of Canada, 2011 National Household Survey

95.7%

Who are the First Nations and Métis?

Aboriginal population of Canada according to identity, 2011 National Household Survey

- 60.1% First Nations only
- 31.9% Métis only
- Inuit only
- Other Aboriginal identity
- >1 Aboriginal identity

Who are the First Nations and Métis?

Aboriginal Ancestry 1,319,890

Aboriginal Identity 952,890

Status Indian 558,180

Canada 2001

Eric Guimond, Personal communication, 2011
First, some good to knows

• Who are the First Nations and Métis?
  – Identity vs. Ancestry vs. Registration
• There are no ethnic identifiers in provincial cancer registries
• Stage has not been routinely collected
• The results I’m presenting today are from a preliminary version of the data
• Data release is...tricky
• Background
• Aims
• Methods
• Results
• Strengths & limitations
• Conclusions & implications
What do we know about cancer burden among Aboriginal people?

- Mortality
- Incidence
- Survival
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# Cancer mortality among Registered Indians and Métis in Canada

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<tr>
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<th>Métis</th>
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<td>1</td>
<td>Circulatory System Diseases</td>
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<td>2</td>
<td>External causes</td>
<td>Cancer</td>
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<td><strong>Cancer (18%)</strong></td>
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Statistics Canada, Catalogue no. 82-003-XPE - Health Reports, Vol. 20, no. 4, December 2009

Mortality of Métis and Registered Indian adults • Research article
What do we know about cancer burden among Aboriginal people?

- Mortality
- Incidence
- Survival
All cancer incidence, Ontario, 1968-2001, ages 15-74


Source: Surveillance & Aboriginal Cancer Care Units, CCO (2007)
What do we know about cancer burden among Aboriginal people?

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Notes: Five-year age-standardized observed survival (%) by cancer site and sex comparing the First Nations population to other Ontarians for cancers diagnosed between 1992-2001 with follow-up to December 31st, 2007 and censoring at age 75.
So what?

• Cancer burden appears to be significant and increasing
• Harder to identify subgroups of Aboriginal people have been neglected in research to date
• No national data
• Particularly limited knowledge of survival and survival disparities
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• **Aims**
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Aims

1. Describe the survival from cancer among First Nations and Métis adults in Canada
   a) Compare these to the non-Aboriginal population

2. Explore patterns in survival from cancer among First Nations and Métis
   a) Over time
   b) By region
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Methods: The Cohort

1991 Census Long Form

1990-1991 Tax file

1991 Census Cohort

Canadian Mortality Database (1991-2006)

1991 Census Mortality Cohort
Methods: The Cohort

1991 Census Long Form

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1991 Census Cohort

Canadian Mortality Database (1991-2006)

1991 Census Mortality Cohort


Final Cohort
N= 2.7 million
FN: 62,400
Métis: 11,800
Methods: Relative survival

• Ratio of the observed survival in those diagnosed with cancer to the expected survival of a comparable group in the general population

• Compared to cause-specific survival,
  – Does not rely on accurate coding of cause of death
  – Takes into account differences in background mortality between populations
  – Requires age-, sex-, time- and ethnicity-specific life tables
Methods: Relative Survival

• Cancer cases arise from the census cohort
• Age-, sex-, and ethnicity-specific life tables were constructed
• Small sample → modeling of expected mortality using flexible parametric modeling
Methods: Relative Survival

- Four cancer sites: breast, prostate, lung, colorectal
- Dx-ed 1992-2003
- Followed up until first of
  - Death OR
  - Age 95 OR
  - 5 years post-diagnosis OR
  - December 31st, 2006
- Age-standardized to International Cancer Survival Standard
- Expected survival estimated using Ederer II, cohort approach
• Background
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LUNG

Source: 1991 Census Mortality Cohort, Statistics Canada
COLORECTAL

Source: 1991 Census Mortality Cohort, Statistics Canada
**FEMALE BREAST**

**Source:** 1991 Census Mortality Cohort, Statistics Canada  
PROSTATE

Source: 1991 Census Mortality Cohort, Statistics Canada
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Strengths

• National perspective
• Will include harder to identify groups
• Relative survival with appropriate life tables
• Number of cancers and length of follow-up
Limitations

• Number of cancers and follow-up
• Stage
• Ancestry rather than identity concept for identification of Aboriginal persons
• Background
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Conclusions and Implications

• Cancer is a growing concern in Aboriginal populations
• Lacking ethnic identifiers are one reason for limited survival research to date
• Preliminary data show poorer survival among First Nations than the general population for four major cancer sites
• Further analyses will elucidate potential areas for action
Acknowledgements

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