

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

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Outline & Goals

- Background
- Aims
- Methods
- Results
- Strengths & limitations
- Conclusions & implications

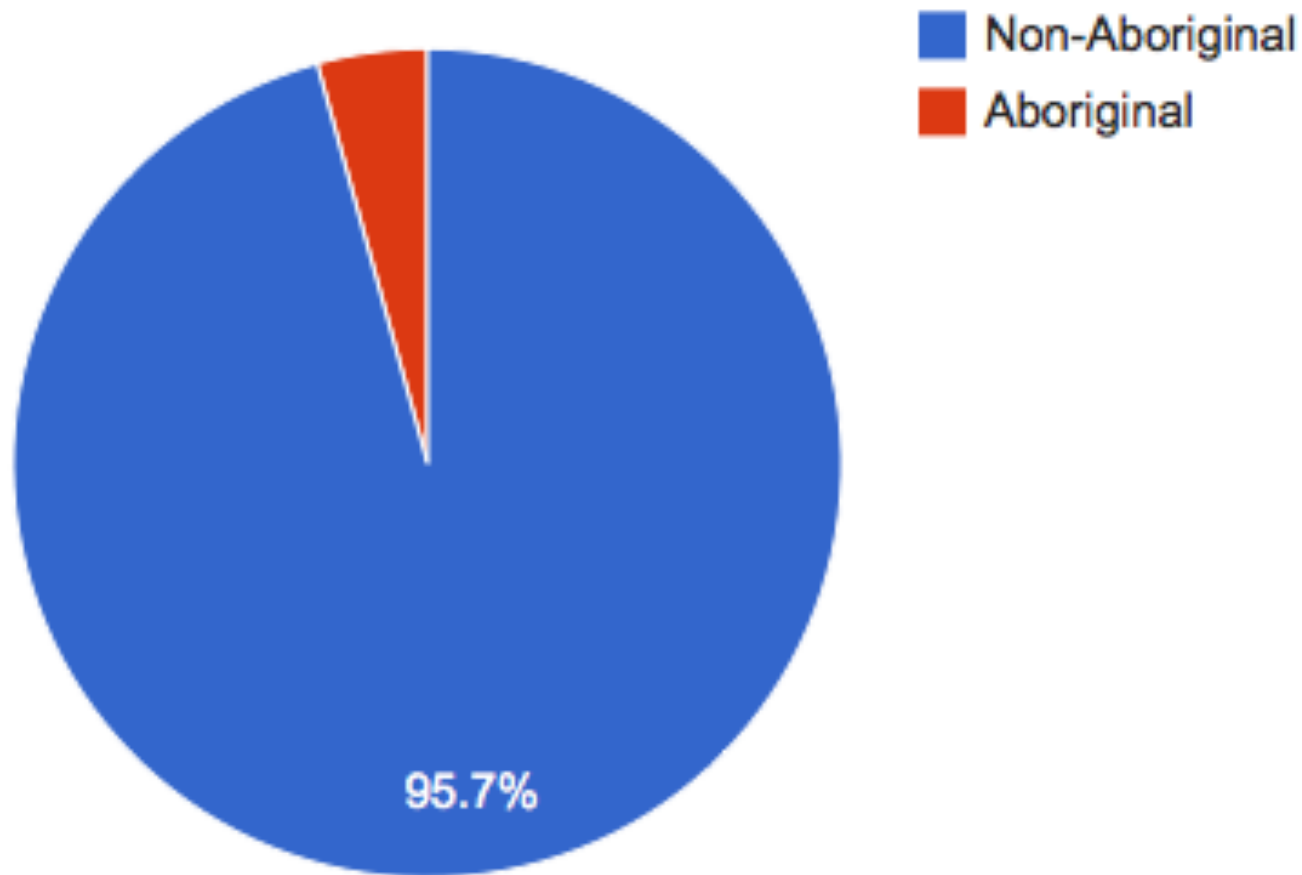
1. To describe the data challenges that have led to a paucity of research about cancer survival in First Nations and Métis in Canada
2. To describe how the 1991 Census Mortality Cohort overcomes some of these challenges
3. To describe cancer survival in First Nations and Métis and compare it to that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

First, some good to know

- Who are the First Nations and Métis?

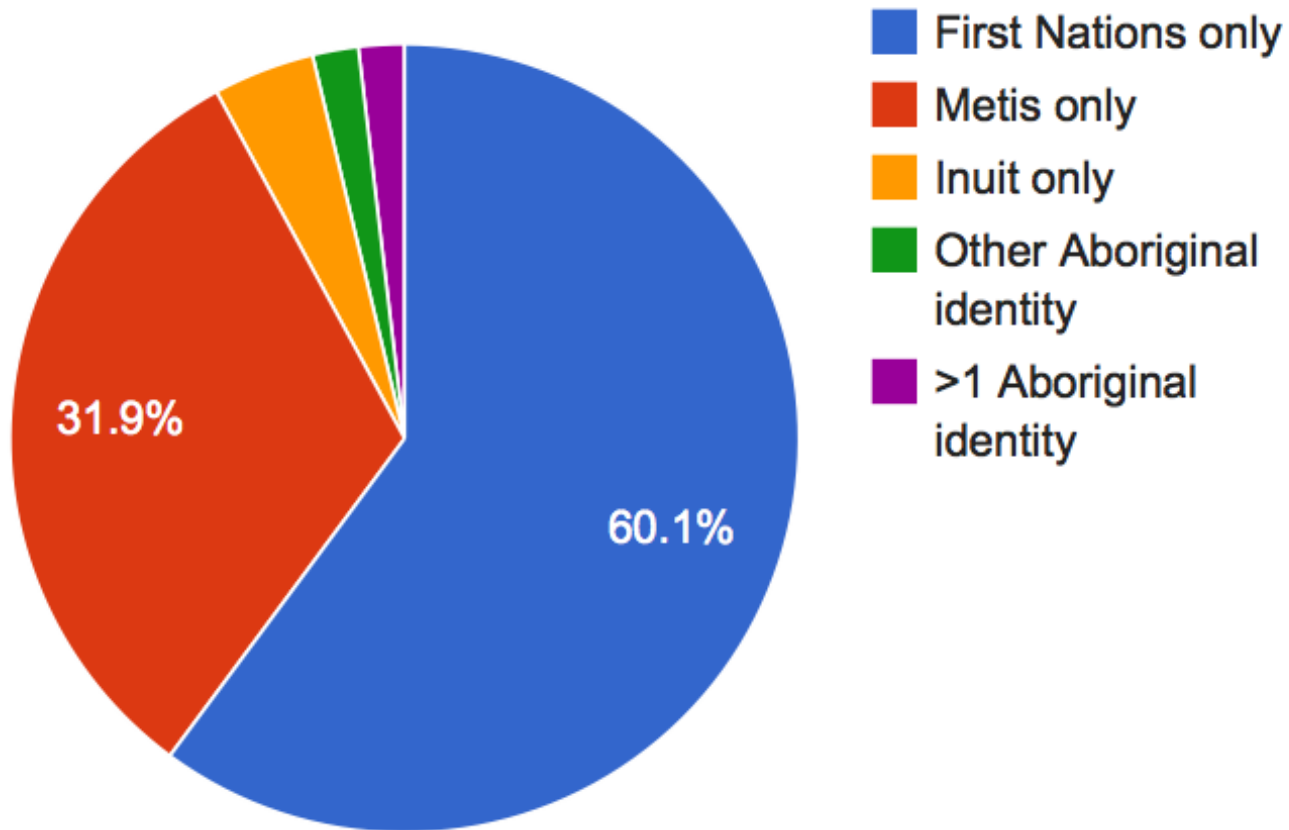
Who are the First Nations and Métis?

Population of Canada, 2011 National Household Survey

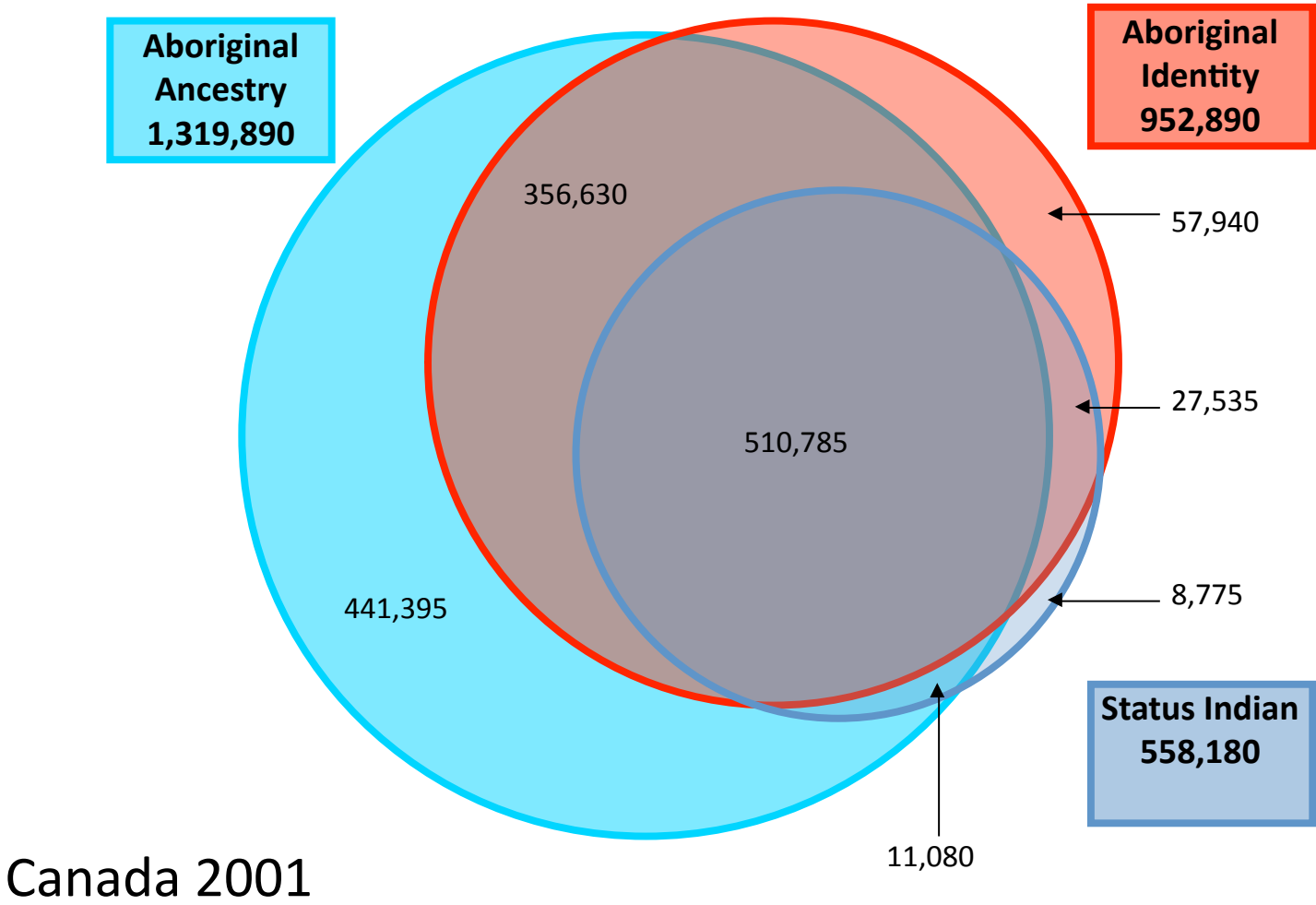


Who are the First Nations and Métis?

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



Who are the First Nations and Métis?



Eric Guimond, Personal communication, 2011

First, some good to know

- 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

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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

	Registered Indians		Métis	
	Male	Female	Male	Female
1	Circulatory System Diseases	Circulatory System Diseases	Circulatory System Diseases	Cancer
2	External causes	Cancer	Cancer	Circulatory System Diseases
3	Cancer	External causes	External causes	Respiratory Disease

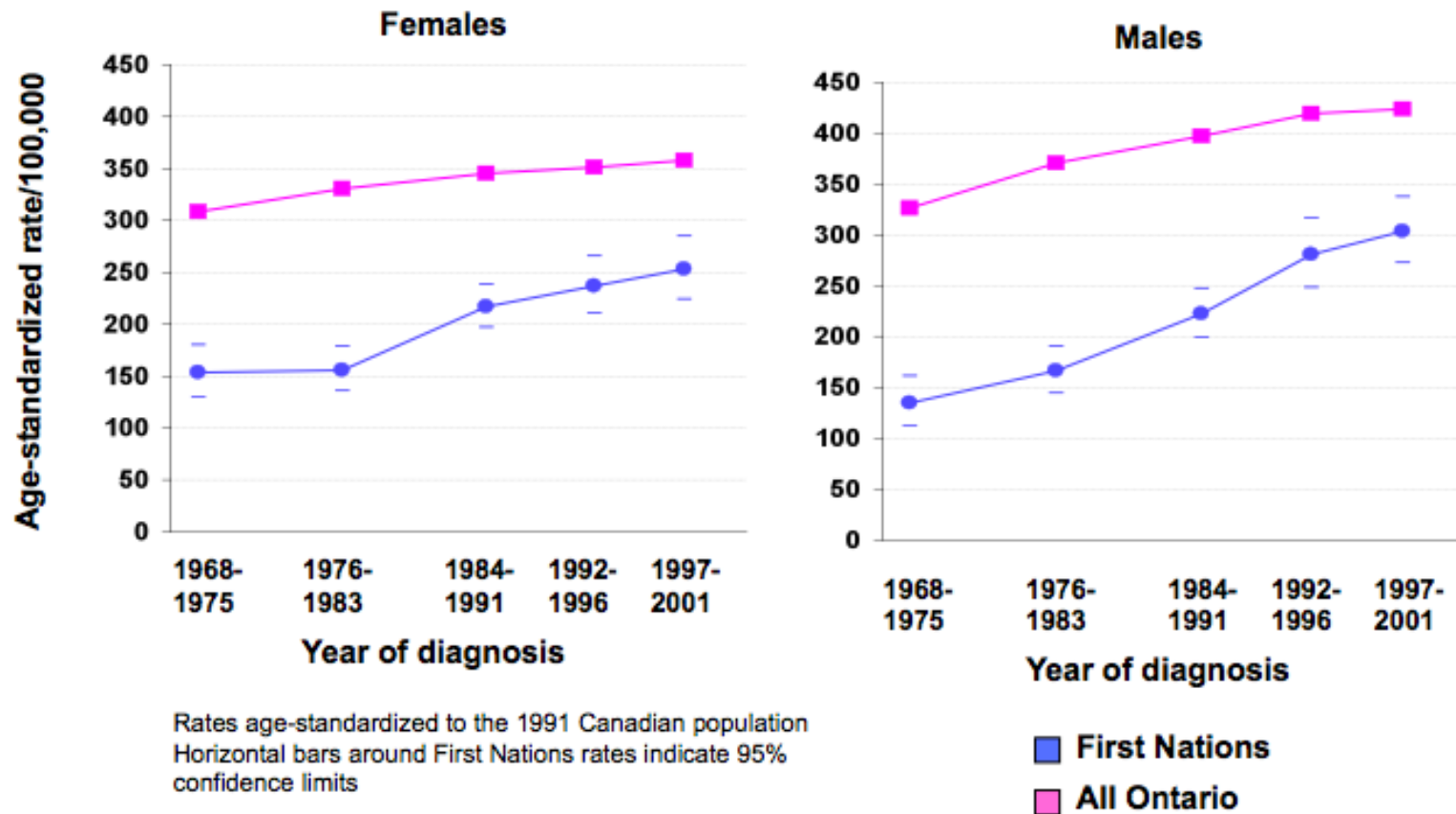
Cancer mortality among Registered Indians and Métis in Canada

	Registered Indians		Métis	
	Male	Female	Male	Female
1	Circulatory System Diseases	Circulatory System Diseases	Circulatory System Diseases	Cancer (33%)
2	External causes	Cancer (25%)	Cancer (23%)	Circulatory System Diseases
3	Cancer (18%)	External causes	External causes	Respiratory Disease

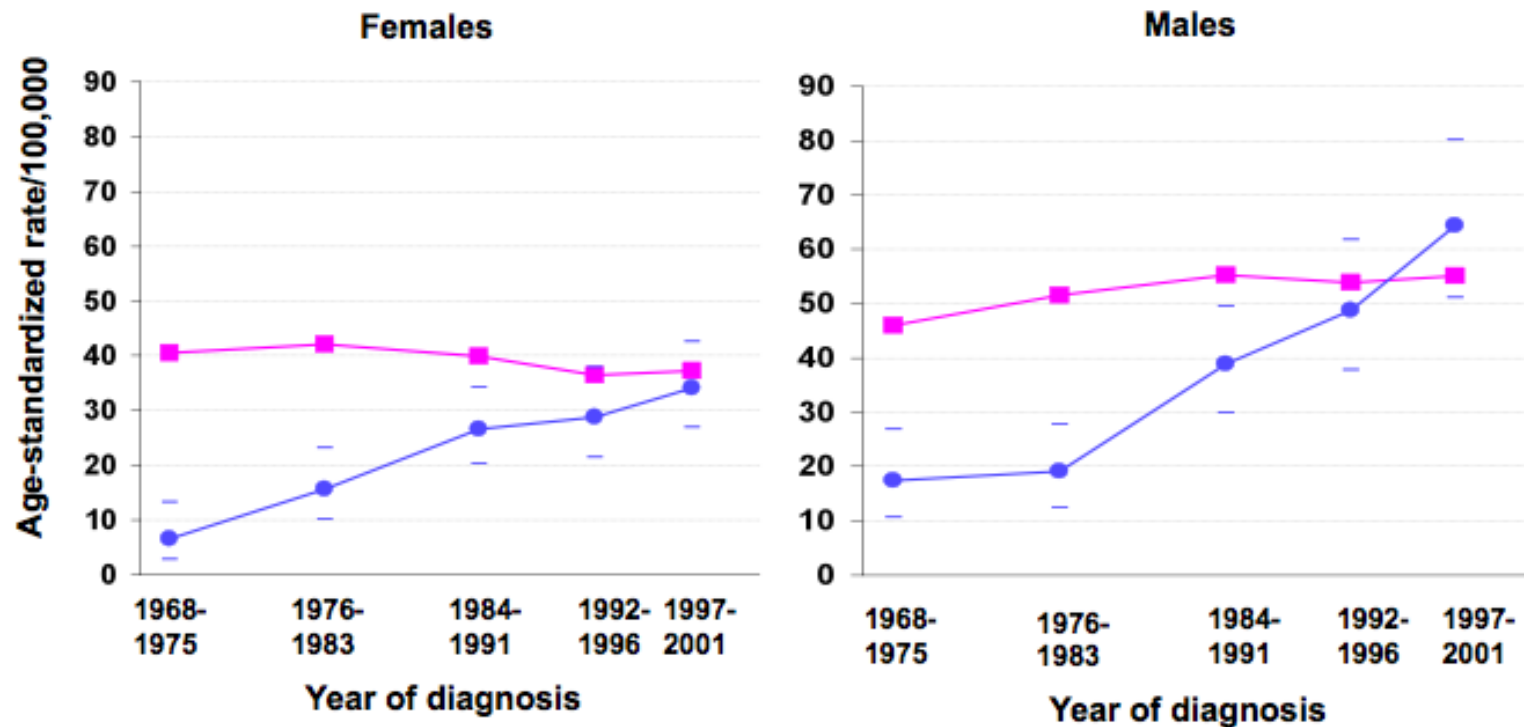
What do we know about cancer burden among Aboriginal people?

- Mortality
- **Incidence**
- Survival

All cancer incidence, Ontario, 1968-2001, ages 15-74



Colorectal cancer incidence, Ontario, 1968-2001, ages 15-74



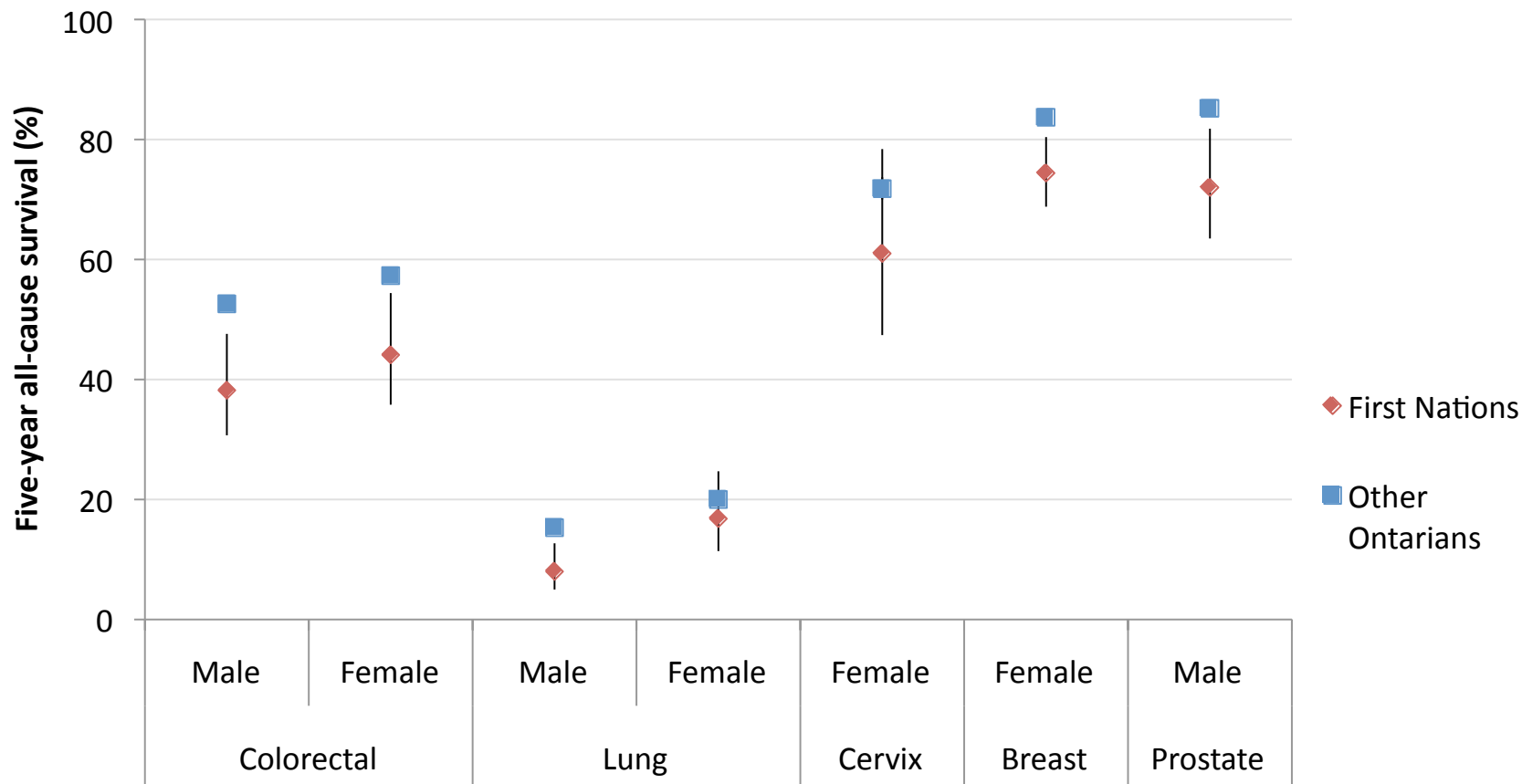
Rates age-standardized to the 1991 Canadian population
Horizontal bars around First Nations rates indicate 95% confidence limits

■ First Nations
■ All Ontario

What do we know about cancer burden among Aboriginal people?

- Mortality
- Incidence
- **Survival**

Survival of Registered First Nations in Ontario, 1992-2001



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.

Source: Nishri ED, Sheppard A, Withrow DR, Marrett LD. Cancer survival among First Nations people of Ontario, Canada (1968-2007). *International Journal of Cancer*. May 2014. *In press*.

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

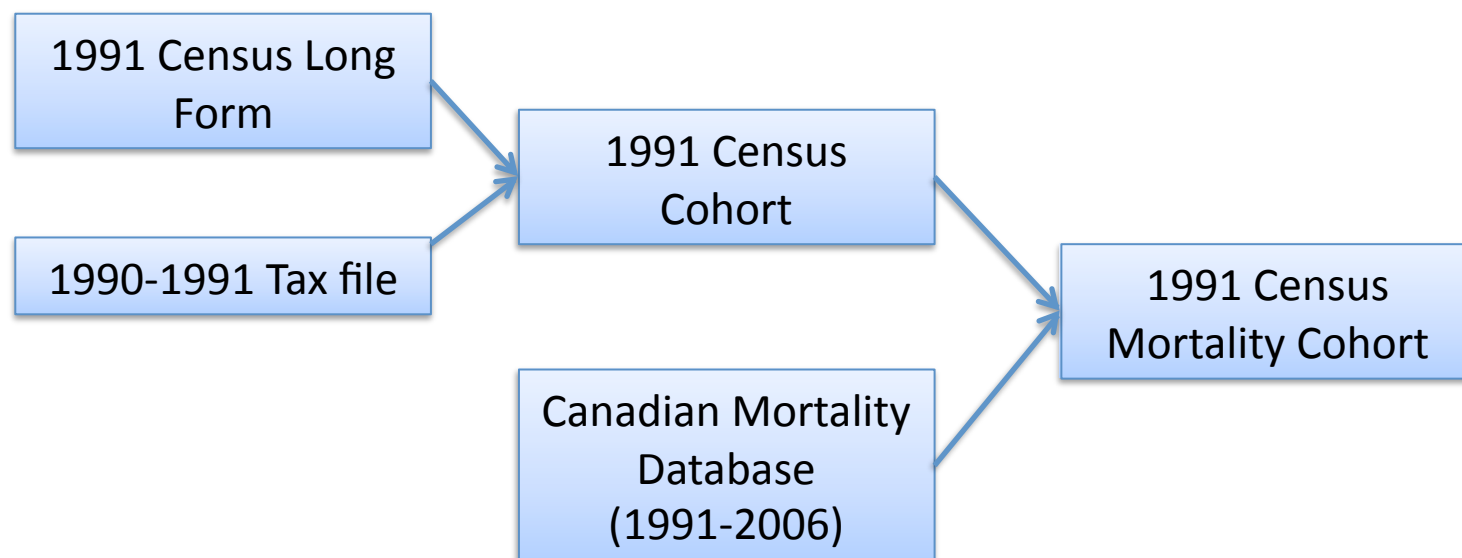
1. Describe the survival from cancer among First Nations and Métis adults in Canada
 - a) Compare these to the non-Aboriginal population
2. Explore patterns in survival from cancer among First Nations and Métis
 - a) Over time
 - b) By region

Aims

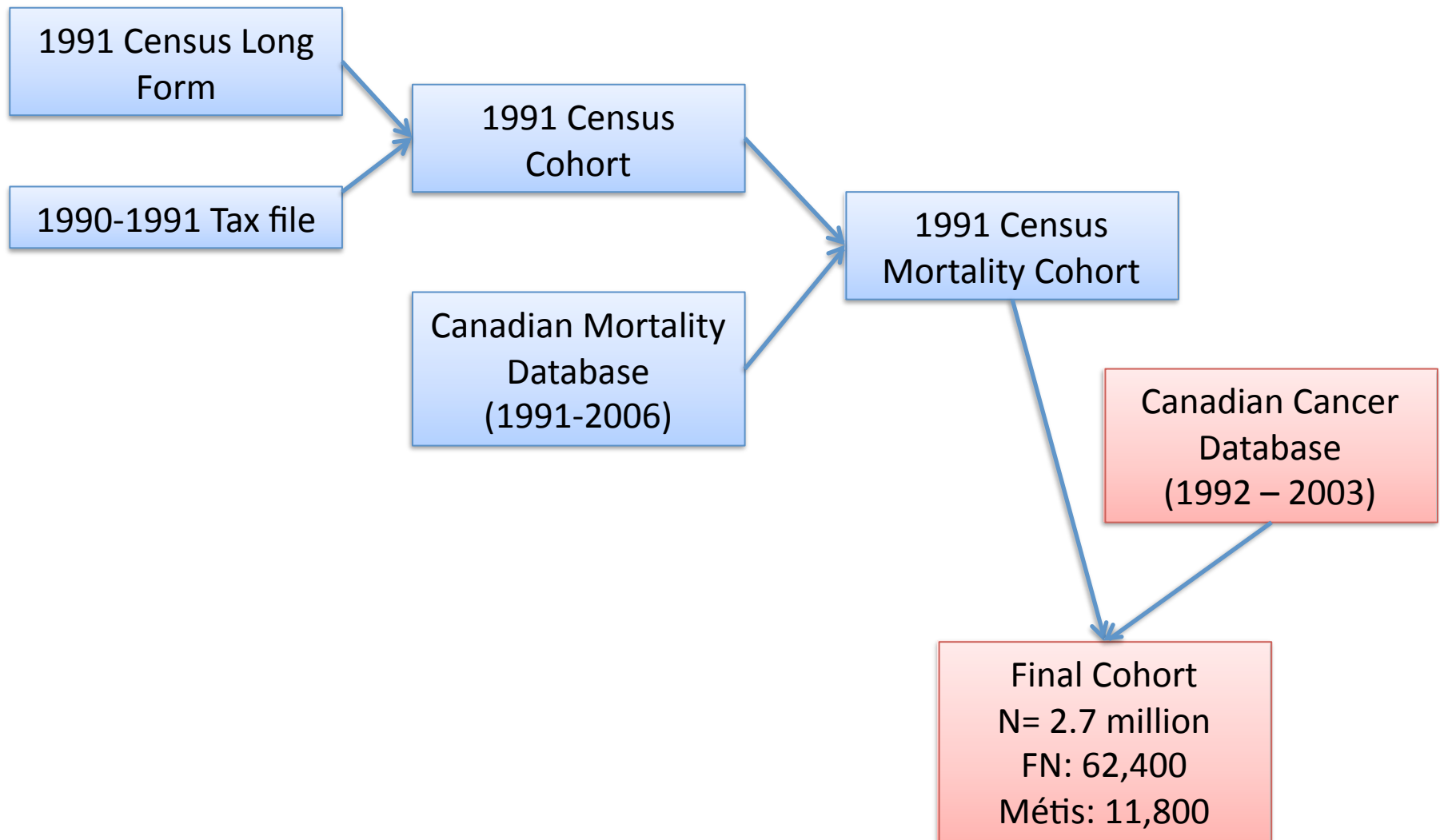
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Methods: The Cohort



Methods: The Cohort



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

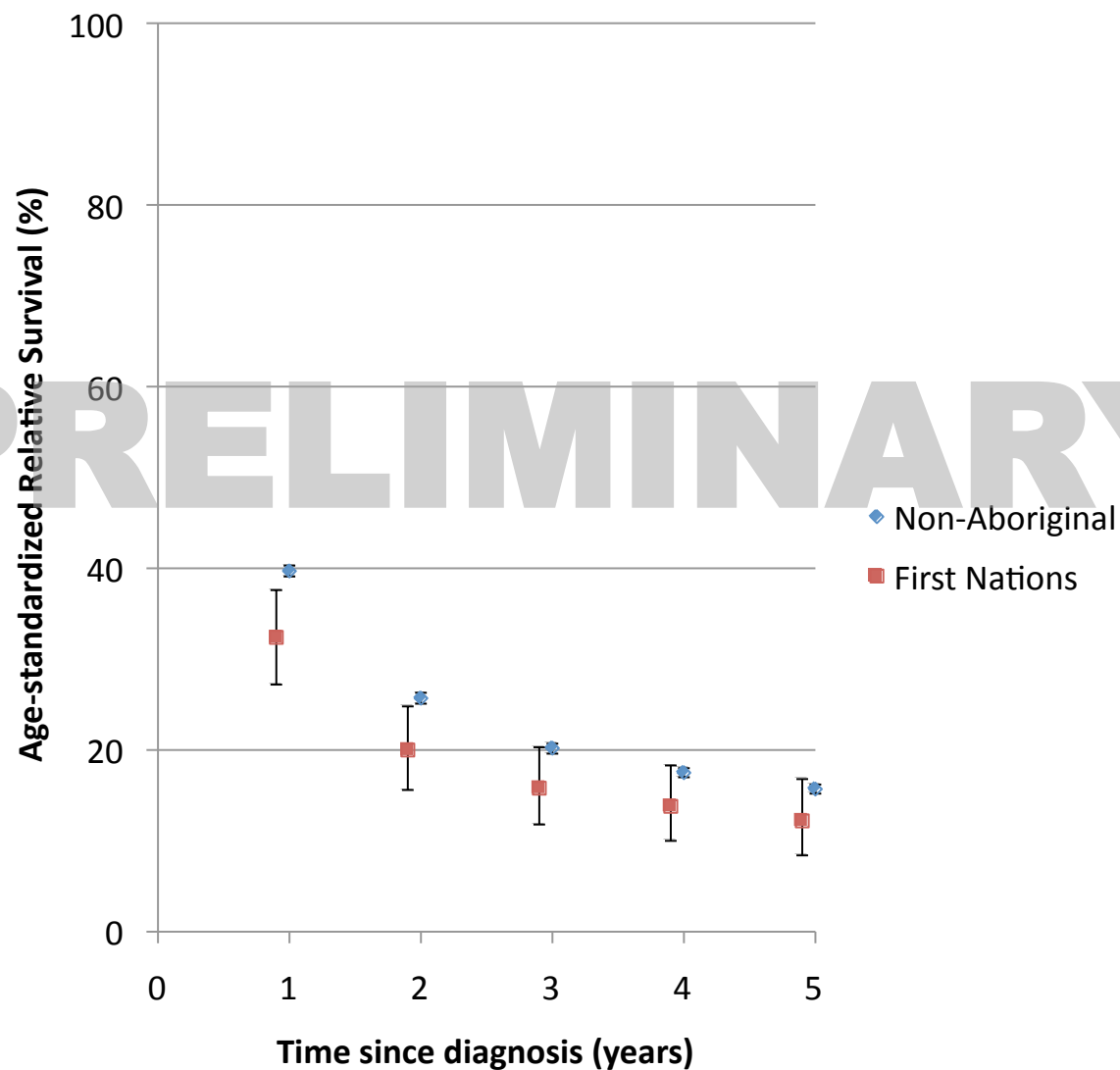
- Cancer cases arise from the census cohort
- Age-, sex-, and ethnicity-specific life tables were constructed
- Small sample → modeling of expected mortality using flexible parametric modeling

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

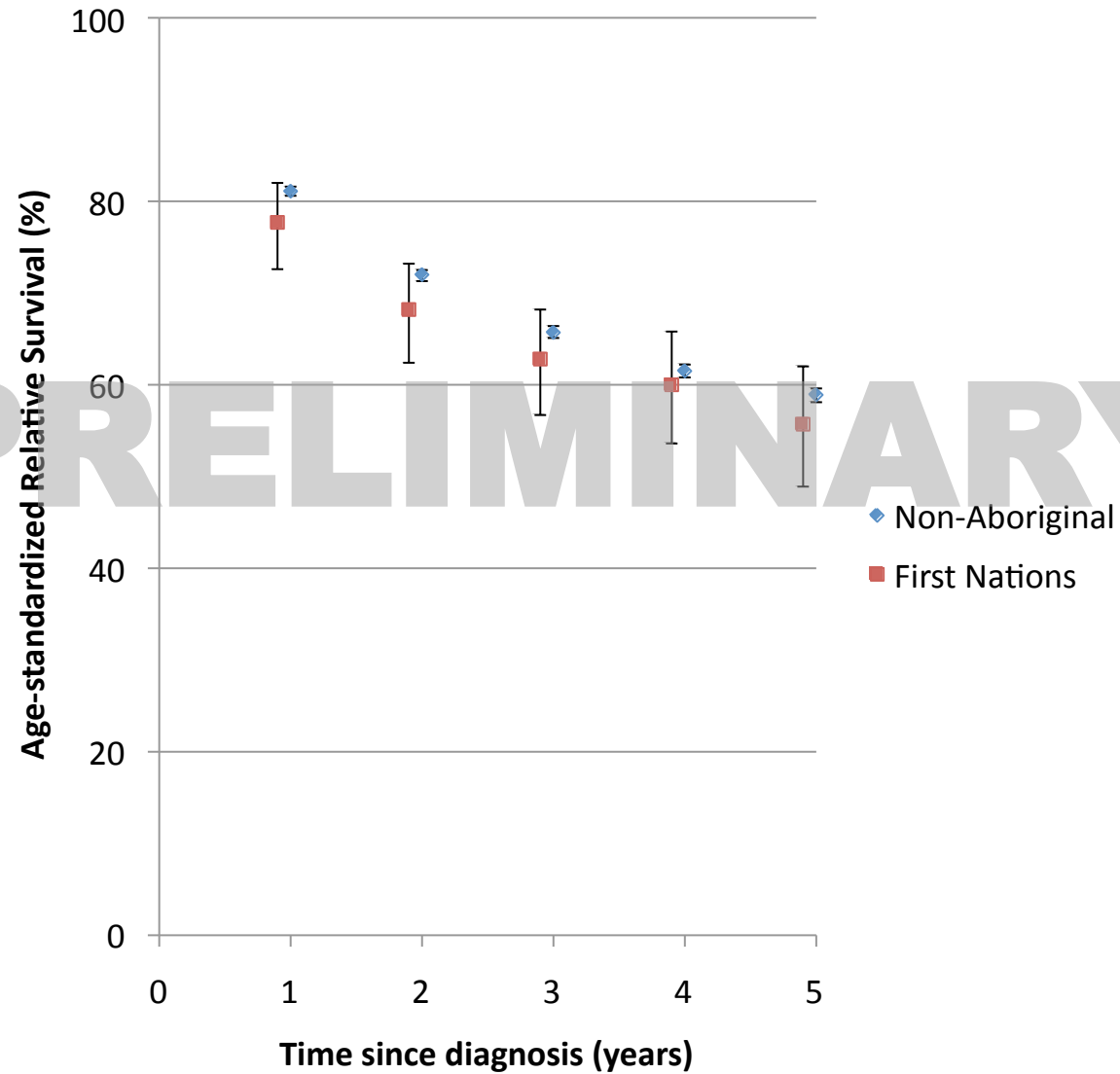
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LUNG



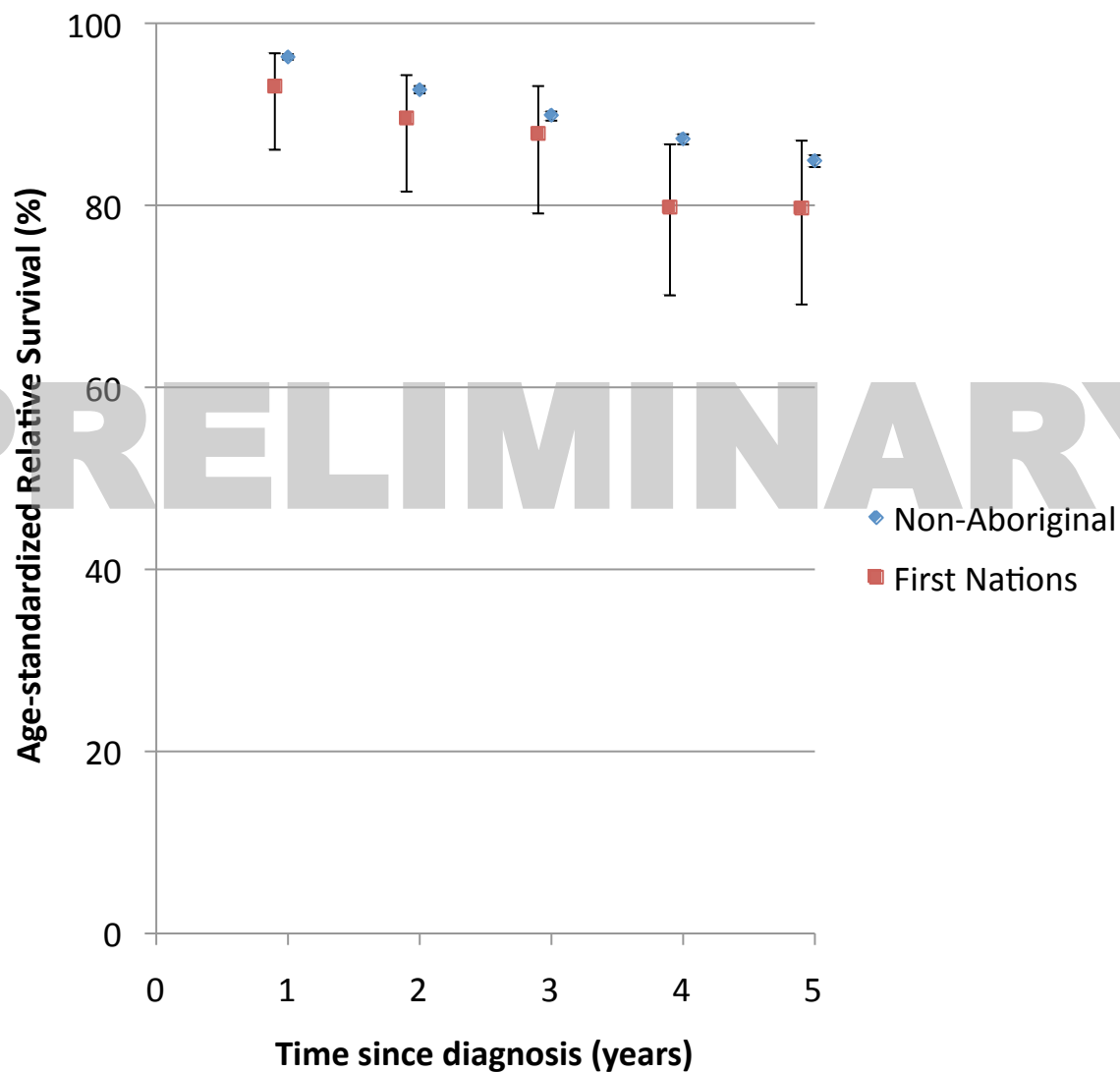
Source:1991 Census Mortality Cohort, Statistics Canada **Notes:** Men and women aged 40-95 diagnosed with lung cancer between January 1st 1992 and December 31st 2003. Followed up for mortality until December 31st 2006. Age-standardized to the International Cancer Survival Standard. **Produced by:** Diana Withrow, Cancer Care Ontario and University of Toronto, June 2014.

COLORECTAL



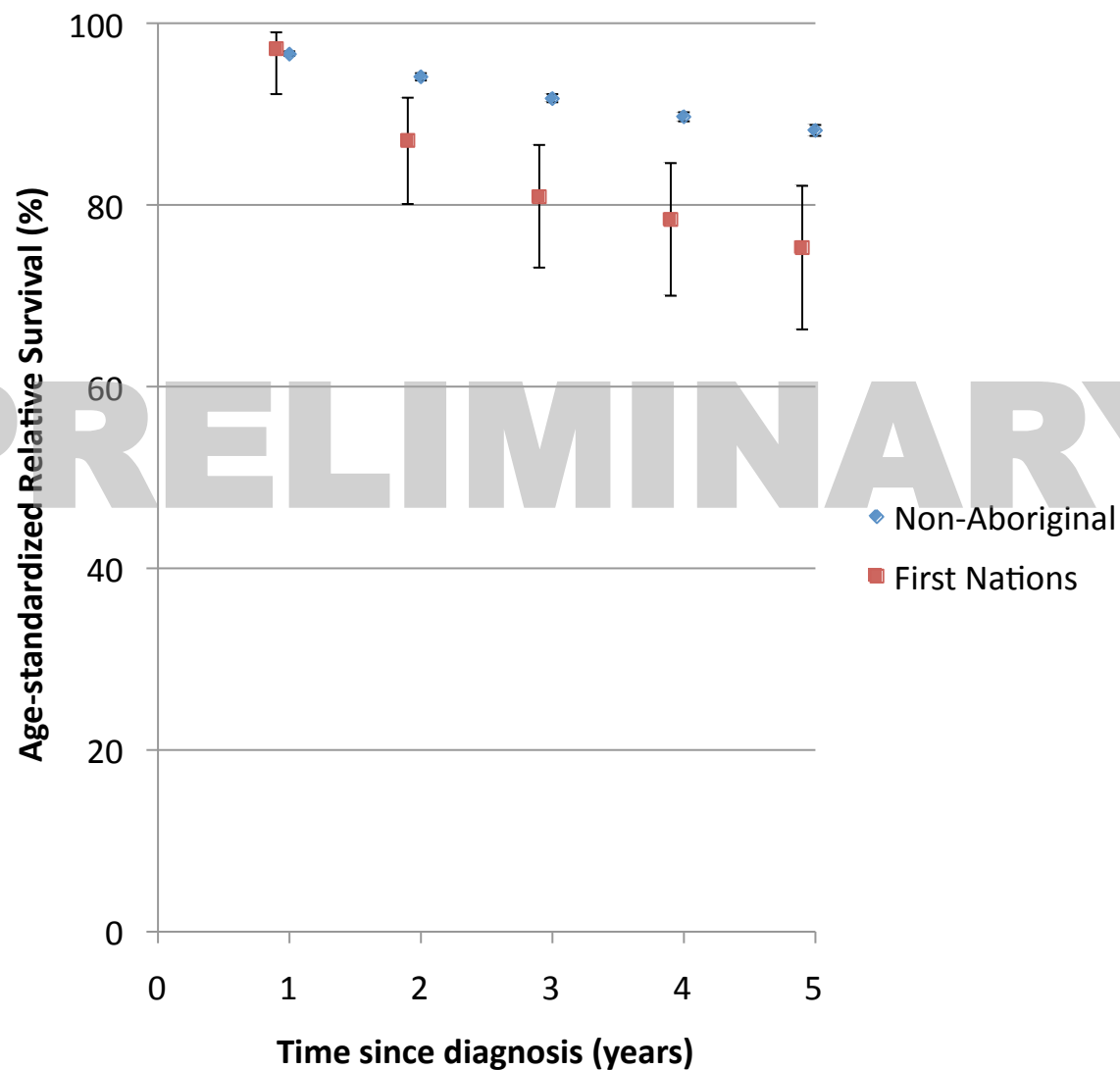
Source:1991 Census Mortality Cohort, Statistics Canada **Notes:** Men and women aged 40-95 diagnosed with colorectal cancer between January 1st 1992 and December 31st 2003. Followed up for mortality until December 31st 2006. Age-standardized to the International Cancer Survival Standard. **Produced by:** Diana Withrow, Cancer Care Ontario and University of Toronto, June 2014.

FEMALE BREAST



Source:1991 Census Mortality Cohort, Statistics Canada **Notes:** Women aged 40-95 diagnosed with breast cancer between January 1st 1992 and December 31st 2003. Followed up for mortality until December 31st 2006. Age-standardized to the International Cancer Survival Standard. **Produced by:** Diana Withrow, Cancer Care Ontario and University of Toronto, June 2014.

PROSTATE



Source:1991 Census Mortality Cohort, Statistics Canada **Notes:** Men aged 40-95 diagnosed with prostate cancer between January 1st 1992 and December 31st 2003. Followed up for mortality until December 31st 2006. Age-standardized to the International Cancer Survival Standard. **Produced by:** Diana Withrow, Cancer Care Ontario and University of Toronto, June 2014.

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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

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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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CIHR IRSC
Canadian Institutes of Health Research
Instituts de recherche en santé du Canada

- Statistics Canada



Statistics
Canada

Statistique
Canada

- Health Canada

