

# Breast Cancer Survival in Ontario, 1985 to 2005

Evidence of Equitable Advances  
Across Most Diverse  
Urban and Rural Places

# Co-Investigators

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# Why study breast cancer? It's a *sentinel* health care quality indicator.

**Relatively common over the life course**

**Effective screens (including primary care) and treatments exist.**

**Timely diagnosis and access to the best available treatments matter.**

**Excellent prognoses expected: Long survival & high quality of survivable life**

# Historical-Political Canadian Context: Past 20 Years

**Significant uptake and advancement of breast cancer screening and increasingly effective treatments**

**Anecdotes about Canadian health care failures abound.**

- Long waits
- Scarce resources (physicians & equipment)

**Some surveys have suggested increasing dissatisfaction with the health care system.**

**Political rhetoric advocating for 'American-like' private enterprise solutions to such woes has become prevalent.**

# Historical-Scientific Context in Ontario: Past 20 Years

## **Mid-1980s to early-1990s: Series of metropolitan analyses**

- No observed SES-breast cancer survival gradients
- 2 later studies equivocal: 1 significant, 1 null
- Has socioeconomic equity been maintained?

## **Later-1980s to mid-1990s: Province wide analyses**

- Small SES-breast cancer survival gradients observed
- Very diverse places are lumped together though.
- Where are there survival disadvantages?

# Research Questions

**Given the significant improvement in breast cancer survival during the past generation:**

- 1. Has this medical advance been enjoyed equitably by women across Ontario's diverse places: very small to very large cities, towns and villages, and rural and remote places?**
- 2. Can personal income levels explain any observed place disadvantages?**

# Methods

Comparison of Historical Cohorts:  
Mid-1990s Followed to 2005  
Versus  
Mid-1980s Followed to 1995

# Sample Design

## Ontario Cancer Registry

- 98% complete
- Very high demonstrated validity

**29,934 women, 25 years of age and older with primary invasive breast cancer**

## Places defined by Statistics & Health Canada

- Income measure: Census tract prevalence of low-income households



# Place Definitions:

Place

Population

<b>City of Toronto</b>	<b>2.5 million</b>
<b>Remainder GMT</b>	<b>2.5 million</b>
<b>Large cities</b>	<b>500,000 to 1 million</b>
<b>Mid-sized cities</b>	<b>250,000 to 499,999</b>
<b>Small cities</b>	<b>100,000 to 249,999</b>
<b>Very small cities</b>	<b>50,000 to 99,999</b>
<b>Towns &amp; villages</b>	<b>10,000 to 49,999</b>
<b>Rural</b>	<b>&lt; 10,000 &amp; &lt; 400/km<sup>2</sup></b>
<b>Remote</b>	<b>100-199 km from city</b>
<b>Very remote</b>	<b>200-299 km from city</b>
<b>Extremely remote</b>	<b>300+ km from city</b>

# Results

## 5-Year Breast Cancer Survival Advance (%)

### Place

City of Toronto	19
Other GMT	22
Large cities	20
Mid-size cities	23
Small cities	18
Very small cities (6%)	11
Towns & villages	22
Rural	16
Remote	17
Very remote	14
Extremely remote (< 1%)	51

# Two More Exemplary Findings

## 1980s Greater Metropolitan Toronto

- Complete absence of income gradient
- Matchless in worldwide public health annals

## 1990s Extremely Remote Areas of Ontario

- Absence of income gradient
- Survival experience similar to Toronto's

**Both demonstrations of equity stand in stark contrast to contemporaneous findings in similar US places.**

# Discussion

# Summary/Conclusion

**Women with breast cancer in nearly all of Ontario's diverse places have equitably enjoyed contemporary survival advances.**

**Small inequities seem unrelated to personal economic resources.**

**The most likely explanation for such remarkably equitable advances seems to be Canada's single-payer, universally accessible health care system.**

# Community Resources: Health Care Service Endowments in Areas

**What may account for the observed patterns of relatively better or worse survival advancements in certain places?**

## **Extremely remote areas (1%)**

- **Cancer Care Ontario instituted screening and treatment outreach in remote areas in 1990s**

## **Small cities (6%)**

- **Advocates have suggested long waits secondary to resource problems (physicians & equipment)**

# Our Group's Future Research

## International Cancer Care Database (under construction)

- Diverse places in California & Ontario
- Breast & colon cancer
- Retrospective & prospective, 1985 to 2010
- Personal & community resources
  - Wait times
  - Primary care and specialist physician supplies
  - Investigative and treatment equipment

## Hypotheses:

- Community resources more predictive in Canada
- Personal resources more predictive in America