CONCORD-2: role of population-based survival in evaluating health care in high-income countries

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on behalf of the CONCORD Steering Committee

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Outline

- Role of population-based survival in evaluating health care
- Status of cancer surveillance in North America
- What we learned from first CONCORD study
- What we expect to from CONCORD-2
The Role of Population-based Survival in Evaluating Health Care

Clinical trials highest achievable survival

Population-based average survival achieved

Coleman, 1999
Cancer surveillance in North America - Canada

- Nationwide coverage
- 10 provincial registries and 3 territorial registries
- Canadian Cancer Registry (1992+)
- Maintained by Statistics Canada
- Canadian Cancer Statistics report published and includes survival data
Cancer surveillance in North America - USA

**Surveillance, Epidemiology and End Results (SEER) Program**

- 1973+
- 10-28% population
- 9-18 state and metropolitan cancer registries
- National Cancer Institute
- Cancer Statistics Review – including survival

**National Program of Cancer Registries (NPCR)**

- 1995+
- ~96% population
- 45 states, DC and 2 territorial cancer registries
- Centers for Disease Control and Prevention
- WONDER

United States Cancer Statistics Report - joint publication covering 100% - does not currently contain survival
The status of cancer surveillance in North America

US Cancer Surveillance (2001+)

*National Program of Cancer Registries (CDC)
†Surveillance, Epidemiology, and End Results Program (NCI)

American Samoa; Commonwealth of the Northern Mariana Islands; Federated States of Micronesia; Guam; Republic of Marshall Islands; Republic of Palau
<table>
<thead>
<tr>
<th>EUROCARE*</th>
<th>Patients diagnosed</th>
<th>Countries</th>
<th>Cancer registries</th>
<th>Year</th>
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</thead>
<tbody>
<tr>
<td>5</td>
<td>2003 – 2007</td>
<td>-</td>
<td>-</td>
<td>2012</td>
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<tr>
<td>CONCORD-2</td>
<td>1995 – 2009</td>
<td>60</td>
<td>180</td>
<td>2013</td>
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* www.eurocare.it/
Population-based Cancer Survival in High Income Countries

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Cancer survival (5-years) in Europe and USA: patients diagnosed 1985-89

Gatta et al., 2000

Europe

SEER
Population-based Cancer Survival in High Income Countries

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* www.eurocare.it/
National cancer strategies: response to poor UK cancer survival (EUROCARE 4)

Five-year relative survival (%), Europe, 1995-99
All malignancies
What could explain survival differences?

- Longer delays, more advanced disease
- Differences in co-morbidity
- Availability and uptake of screening
- Access to treatment
- Quality of treatment
- Organisation of treatment services
- Human and financial resources

Richards, 2009
National cancer strategies: response to poor UK cancer survival (EUROCARE 4)

Five-year relative survival (%), Europe, 1995-99
All malignancies
## Population-based Cancer Survival in High Income Countries

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* [www.eurocare.it/](http://www.eurocare.it/)
CONCORD Study (1990-1994)
EUROCARE-3

Geographic coverage

- Nordic countries
- South and West Europe
- UK (England, Scotland, Wales)
- Eastern Europe
What we learned from the first CONCORD study....
Five-year relative survival (%) - prostate cancer, (15-99 years)
Five-year relative survival (%) - prostate cancer, (15-99 years): USA, by race
What we learned from the first CONCORD study

- Canada and US survival - among highest worldwide
- In the US, 5-year survival in black men and women was systematically and substantially lower than in white men and women.
  - Breast Cancer - survival was 85% for white women and 71% for black women \(\text{(difference of 15\%)}\)
  - Colorectal Cancers - survival was 60% for white men and women and 50% for black men and women \(\text{(difference of 10\%)}\)
  - Prostate Cancer - survival was 92% for white men and 86% for black men \(\text{(difference of 7\%)}\)
- Differences most likely are due to access to health care
- Differences represent a large number of avoidable deaths.
Paradox!
Cancer Survival by SES

- High-income persons had better survival in San Francisco than in Toronto.
- After adjustment for stage, survival was better for low-income residents of Toronto than for those of San Francisco.
- Middle- to low-income patients were more likely to receive indicated chemotherapy in Toronto than in San Francisco.

Background to the CONCORD-2 Study

- Cancer registration in the US has expanded to nationwide coverage
  - Not all US registries collect complete follow-up information
- Changes in clinical practice have continued to improve in the 15+ years since the patients included in the first CONCORD study were diagnosed.
- Changes in diagnosis, screening and treatment have undoubtedly improved the prognosis for cancer patients, at least in wealthier countries.
- And per capita health expenditures have increased in many countries
What we expect to learn from the CONCORD-2 study

- **Trends over 15+ years**
  - Do Canada and the US retain their comparative advantage?
  - Do racial disparities within the US persist?
- **Prevalence:**
- **Proposed analysis between Canada and the US by SES:**
  - Is there a Canadian advantage in survival among lower SES group?
  - Is there a US advantage in survival among higher SES group?
- **Avoidable deaths:**
  - How many cancer-related deaths within five years of diagnosis would be expected *not* to occur, if racial and socio-economic inequalities were eliminated?
Avoidable premature deaths per year in Britain vs. highest European survival

Abdel-Rahman et al. 2009
What we expect to learn through participation in the CONCORD-2 study

- Trends over 15+ years
  - Do Canada and the US retain their comparative advantage?
  - Do racial disparities within the US persist?
- Prevalence:
- Proposed analysis between Canada and the US by SES:
  - Is there a Canadian advantage in survival among lower SES group
  - Is there a US advantage in survival among higher SES group
- Avoidable deaths:
  - How many cancer-related deaths within five years of diagnosis would be expected *not* to occur, if racial and socio-economic inequalities were eliminated?
  - Estimate costs due to lost productivity from premature deaths and the cost to treat excess deaths (e.g., late stage cancers)
Thank You

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The findings and conclusions in this presentation are those of the presenter and do not necessarily represent the official position of the Centers for Disease Control and Prevention.