Sharing insights from across the world: Breast Cancer Survivor Study, British Columbia, Canada

Professor Mary McBride, Distinguished Scientist
BC Cancer Agency; University of British Columbia
Vancouver, Canada

Abstract code: PS.4.99 -2

Disclosure of Interest: None Declared
About British Columbia

Key Statistics

Area of Canada (km²) 9,985,000

Canada Popn (million) 33.9

BC Popn (million) 4.4

Major cities (million)
Montreal 3.6
Toronto 5.1
Vancouver 2.3 (3rd)

HDI 0.966
About the Organization & Delivery of Health/Cancer Services

Prov/Territory Govt
MoH

Regional governance structure(s)
HA's/LHIN's

Acute & emergency care (hospitals)
Primary Care
Chronic & institutional care
Palliative & hospice/end of life care
Organized' cancer control system

Facilities / institutions
Personnel
Service delivery/care
Specialized services (incl. pediatrics & ped oncology)
Disease networks (agencies)

Ped Onc. Surgical Oncology CON Family Practice Rehab Survivorship Palliative/eol/sc Networks

Cancer strategy Registry & surveillance Facilities Personnel Special diagnostics / technology Treatment Cancer drugs

ML McBride
Melbourne, 5 December 2014
Cancer Survivorship: Health and Healthcare Priorities

Problem:
The increasing number of cancer survivors are at excess risk for long-term morbidity, premature mortality, and other functional and social limitations, related directly to the cancer itself, to exposure to therapy, and to pre-existing comorbidities.

Solution:
To understand the needs of those living with cancer AND develop models of care that meet their needs.

Gap:
There is a lack of data and evidence relating to health and other survivor outcomes, their needs, and effective models of services, care and support.

BC Breast Cancer Survivor Study

Program (health) care goal:
To optimize breast cancer survivor (health) outcomes, by generating evidence to support sustainable models of quality survivor (health) care within the Canadian health system.

Approach:
Develop an ongoing population-based data resource on a retrospective cohort of the total BC female breast cancer population, and a population comparison

Research to 1) comprehensively identify long-term (health) issues and their predictors, and 2) identify factors affecting quality (accessible, appropriate, timely, equitable) risk-based survivor care; 3) inform a risk-based model of care.

Activities to inform change in policy and practice

Breast Cancer Survivors – Late Hospital-related Morbidity
(Rate per 1000 Person-Years)

Dx 18–39

Dx 40+

Cases

Controls

Melbourne, 5 December 2014

ML McBride
Relative risk of hospital-related morbidity by body system among survivors 40+ YAD

Relative Risk of Morbidity - Survivors dx 40+ vs Comparison Group

<table>
<thead>
<tr>
<th>Category</th>
<th>Controls</th>
<th>No Relapse</th>
<th>Relapse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>12.8</td>
<td>27.7</td>
<td>72.4</td>
</tr>
<tr>
<td>Overall - Non-Cancer</td>
<td>12.4</td>
<td>18.8</td>
<td>23.3</td>
</tr>
<tr>
<td>Overall - Cancer (excl Breast)</td>
<td>12.3</td>
<td>18</td>
<td>28.8</td>
</tr>
<tr>
<td>Infections</td>
<td>11.9</td>
<td>15.8</td>
<td>17.3</td>
</tr>
<tr>
<td>Endocrine</td>
<td>1.7</td>
<td>2.9</td>
<td>4.2</td>
</tr>
<tr>
<td>Blood</td>
<td>20.5</td>
<td>29.5</td>
<td>31.5</td>
</tr>
<tr>
<td>Mental</td>
<td>22.8</td>
<td>33.4</td>
<td>35.6</td>
</tr>
<tr>
<td>Nervous</td>
<td>7.5</td>
<td>9.7</td>
<td>18</td>
</tr>
<tr>
<td>Circulatory</td>
<td>16.9</td>
<td>23.2</td>
<td>26.9</td>
</tr>
<tr>
<td>Respiratory</td>
<td>22.8</td>
<td>35.8</td>
<td>32.4</td>
</tr>
<tr>
<td>Digestive</td>
<td>3.8</td>
<td>4.9</td>
<td>5.4</td>
</tr>
<tr>
<td>Genitourinary</td>
<td>1.4</td>
<td>2.4</td>
<td>8.5</td>
</tr>
<tr>
<td>Skin</td>
<td>2.9</td>
<td>3.6</td>
<td>7.4</td>
</tr>
<tr>
<td>Musculoskeletal</td>
<td>14.5</td>
<td>25.4</td>
<td>90.2</td>
</tr>
<tr>
<td>Signs and Symptoms</td>
<td>1.9</td>
<td>2.4</td>
<td>3.8</td>
</tr>
<tr>
<td>Injury and Poisoning</td>
<td>103.4</td>
<td>181.1</td>
<td>258.5</td>
</tr>
<tr>
<td>Supplementary Classifications</td>
<td>111.9</td>
<td>205</td>
<td>360.4</td>
</tr>
</tbody>
</table>

Melbourne, 5 December 2014
Distribution of all healthcare-related morbidity

NUMBER OF ADGS AMONG BREAST CANCER SURVIVORS

- 0 ADGs: 3%
- 1-3 ADGs: 27%
- 4-5 ADGs: 26%
- 6+ ADGs: 44%
Factors affecting Survivor Care

Survivor and health system factors:

Older age at diagnosis (higher risk of hospitalization)
Older attained age (higher risk of hospitalization, more admissions, length of stay.)
Health region (higher risk of admission, and longer length of stay; more surgery visits)
Disadvantaged socioeconomic status (longer length of stay overall)
Rural residence ((higher risk of hospitalization, more admissions; more surgery visits)

Clinical factors:

Advanced stage at diagnosis (longer length of stay)
Relapse or second cancer (higher risk of hospitalization, number of admissions and length of stay)
Treatment No significant effect on hospitalizations or outpatient primary or specialist services
Next Steps

Risk stratification for cost-effective care:

High-risk: Central multi-disciplinary clinic
Moderate risk: Oncology-trained regional primary care physician
Low risk: Primary care physician with support from cancer agency

Assess additional attributes of quality care:

Adherence to guidelines (appropriate care)
Adherence by risk group (equity of care)
Underserved groups (access to care)
Over-utilization of services (efficiency)
Physician adherence (patient-centred care)
Impacts of Research Outputs

Goal: identification of late effects; sustainable models of quality survivor care

- Among Policymakers and Managers:
  - System redesign; Identify workload, costs to the system of inappropriate care, roles of health care providers, and appropriate resources; support cost-effective models of care; monitor uptake and cost-effectiveness of care

- Among Oncologists and other cancer specialists:
  - Raise awareness of issues; identify treatment toxicities; contribute to clinical decision-making; inform survivor care guideline development; encourage research into treatment alternatives

- Among Family physicians and other care providers:
  - Raise awareness of late complications; identify high-risk survivors; provide targeted risk-based care

- Among Survivors:
  - Raise awareness of long-term issues for self-management
Conclusions

Based on the large and increasing special population of cancer survivors, it is imperative to address the gaps in data and evidence to inform survivorship research, in particular the development of effective models of services, care, and support for cancer survivors.

Linked population-based registries, and clinical and administrative databases are a uniquely valuable tool to develop such evidence.

The goal is the development of a sustainable model of quality survivor care appropriate for the health system.