Cancer Control & Intervention Working Group Report

2017 CCSS Investigators’ Meeting

Paul Nathan, Jacqueline Casillas, Jennifer Ford, Kevin Oeffinger, Kiri Ness, Melissa Hudson, Tara Henderson, Wendy Leisenring
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What is cancer control?

• Health service utilization
  • Surveillance/screening, general medical care, risk-based care, hospitalization/ED, complementary medicine, dental etc.

• Health status
  • General health, mental health, physical function, activity limitation, pain, anxiety/fear
What is cancer control (and intervention)?

- Lifestyle behaviors
  - Exercise, diet, smoking, alcohol, sun protection
- Financial/insurance outcomes
- Social outcomes
- Risk-reducing interventions e.g. surveillance/screening
- Health economics
Publications 2015-17

16 publications: 1 Annals of Internal Medicine, 2 JCO, 1 JNCI, 3 Cancer


2. INSURANCE/SOCIOECONOMIC: *Childhood Cancer Survivor Study participants' perceptions and understanding of the Affordable Care Act.* Park. JCO

3. SCREENING/SURVEILLANCE: *Health care utilization, lifestyle, and emotional factors and mammography practices in the Childhood Cancer Survivor Study.* Rosenberg. CEBP


5. INTERVENTION: *Advancing Survivors' Knowledge (ASK) about Skin Cancer Study: Study Protocol for a Randomized Controlled Trial.* Daniel. Trials
### Table 1: Self-reported Health Status in Childhood Cancer Survivors and Siblings

<table>
<thead>
<tr>
<th>Domain</th>
<th>Survivors</th>
<th>Siblings</th>
</tr>
</thead>
<tbody>
<tr>
<td>General health (fair/poor)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Mental health (BSI)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Functional impairment*</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Activity limitations**</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Cancer-related pain</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Cancer-related fears/anxiety</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

*needs help with personal care, routine needs or difficulty attending school or work
**difficulty with moderate activities (e.g. walking one block)
Changes over time

- Fewer received:
  - Cranial radiation
  - Chest radiation
  - Amputation

- For most chemotherapy agents
  - Higher proportion received agent
  - Cumulative dose lower
Treatment score and adverse health status outcome, by treatment decade

Treatment score is illustrated by the box-and-whisker plots (left y axes). Dots represent the percentage of survivors with an adverse health status outcome (right y axes).
<table>
<thead>
<tr>
<th>Disease</th>
<th>Construct</th>
<th>1970s</th>
<th>1980s</th>
<th>1990s</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>Poor general health</td>
<td>9.5%</td>
<td>9.9%</td>
<td>13.9%</td>
</tr>
<tr>
<td></td>
<td>Cancer-related pain</td>
<td>7.5%</td>
<td>9.5%</td>
<td>13.7%</td>
</tr>
<tr>
<td></td>
<td>Cancer-related anxiety</td>
<td>11.3%</td>
<td>12.2%</td>
<td>16.1%</td>
</tr>
<tr>
<td>Astrocytoma</td>
<td>Functional impairment</td>
<td>33.4%</td>
<td>28.9%</td>
<td>18.1%</td>
</tr>
<tr>
<td></td>
<td>Activity limitation</td>
<td>21.1%</td>
<td>15.4%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Medulloblastoma</td>
<td>Functional impairment</td>
<td>45.8%</td>
<td>28.6%</td>
<td>26.5%</td>
</tr>
<tr>
<td>Osteosarcoma</td>
<td>Poor mental health</td>
<td>16.8%</td>
<td>17.3%</td>
<td>24.8%</td>
</tr>
<tr>
<td></td>
<td>Cancer-related pain</td>
<td>23.9%</td>
<td>23.4%</td>
<td>26.1%</td>
</tr>
</tbody>
</table>
Plausible explanations

• More “high-risk” patient are surviving – some may have subclinical conditions that interfere with QOL

• Better surveillance may reduce morbidity & mortality but decrease perceptions about health status

• Access to organized follow-up care and educational materials about late effects → different internal standards (expectations) on which to judge health status outcomes
Opportunities in the follow-up #5 questionnaire

Rich in “cancer control questions”

- Health care utilization
- Risky and health behaviors (EtOH, tobacco, physical activity)
- Health status
- Schooling, employment, income, insurance
Opportunities in the follow-up #5 questionnaire

First uniform assessment of health care utilization for the entire cohort:

- Outpatient visits (PCP, survivor clinics, cancer center)
- Emergency department visits
- Hospitalizations – number, reason, procedures & surgeries
- Surveillance:
  - Breast, colon, skin, thyroid, cervical, prostate cancer
  - Cardiac and carotid artery disease
  - Bone density
- Survivor care plans
- “Risk-based” care
Concepts in development using F/U #5 data

• Compliance with surveillance for SMNs and cardiac dysfunction in the era of the COG guidelines

• Health care utilization and costs of care in survivors

• Exercise and late mortality in survivors
Financial Toxicity and Cancer Treatment (PDQ®)–Health Professional Version

Financial Toxicity Associated with Cancer Care–Background and Prevalence

- Introduction
- Background
- Etiology and Risk Factors
- Prevalence
  - Prevalence of high out-of-pocket costs
  - Prevalence of productivity loss
  - Prevalence of asset depletion and medical debt
  - Incidence and prevalence of bankruptcy
  - Prevalence of financial stress, distress, or worry
  - Prevalence of financial hardship as a composite measure
Elyse Park and Anne Kirchhoff:

• Ancillary study in 2011-2012 (ACA time)
• 698 survivors and 173 siblings
• Several new manuscripts under revision or pending submission:
  • Relationship between health insurance and outpatient care (Mueller)
  • Job lock (Kirchhoff)
  • High out of pocket medical costs → financial burden (Nipp)
  • Relationship between insurance coverage and financial concerns (Park)
Financial toxicity assessment in follow-up #6:

- 1/3rd of cohort
- 31 questions
  - Health insurance
  - Medical debt
  - Impact of prior cancer on work, ability to work and job lock
  - Assets and debt
  - Bankruptcy
Future opportunities:

- Cost-effectiveness of screening → optimization of guidelines

- Impact of risk-based care/survivorship guidelines on health outcomes, costs etc.

- Comparison of health system costs between different therapeutic approaches (e.g. amputation vs limb salvage)
Conclusion: The COG guidelines could reduce the risk for heart failure in survivors at less than $100,000/QALY. Less frequent screening achieves most of the benefits and would be more cost-effective than the COG guidelines.

Conclusion: Current recommendations for cardiac assessment may reduce CHF incidence, but less frequent assessment may be preferable.