Composite Indicator of Potentially Avoidable Hospitalizations

Yana Gurevich, MD, MPH
Canadian Institute for Health Information

Presentation to HCQI experts meeting
November 14, 2014
Project Background
Project background

- Multiple HCQI indicators measuring potentially avoidable hospitalizations:
  - Asthma
  - Chronic Obstructive Pulmonary Diseases (COPD)
  - Congestive Heart Failure (CHF)
  - Hypertension (HTN)
  - Uncontrolled diabetes without complications
  - Diabetes short-term complications
  - Diabetes long-term complications
Project background

Purpose:

• Explore validity and utility of a composite indicator versus a number of disease specific indicators

• Explore the extent to which a composite indicator improves international comparability
Project background

Scope:

• to utilize currently collected indicators of potentially avoidable hospitalizations

• potentially avoidable hospitalizations for *selected chronic conditions*

  – for which access to appropriate primary care could prevent the need for *the current admission* to hospital
Results
Approach

• To address the potential effect of different coding practices internationally, subgroups were created.

• Subgroups represent conditions that can potentially be coded as a principal diagnosis interchangeably:
  – Asthma + COPD
  – CHF + HTN
  – 3 Diabetes (uncontrolled, short-term and long-term complications)

• The overall composite was also calculated.
Asthma + COPD, 2011 (or nearest year)
CHF + Hypertension, 2011 (or nearest year)
Diabetes, 2011 (or nearest year)
Overall Composite, 2011 (or nearest year)
## Overall Composite, 2011 (or nearest year)
### International Variation

<table>
<thead>
<tr>
<th>Condition</th>
<th>Highest Rate (per 100,000)</th>
<th>Lowest Rate (per 100,000)</th>
<th>Variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma</td>
<td>151</td>
<td>11</td>
<td>14-fold</td>
</tr>
<tr>
<td>COPD</td>
<td>378</td>
<td>23</td>
<td>16-fold</td>
</tr>
<tr>
<td>COPD and Asthma</td>
<td>451</td>
<td>58</td>
<td>8-fold</td>
</tr>
<tr>
<td>CHF</td>
<td>595</td>
<td>57</td>
<td>10-fold</td>
</tr>
<tr>
<td>Hypertension</td>
<td>374</td>
<td>1</td>
<td>374-fold</td>
</tr>
<tr>
<td>CHF and Hypertension</td>
<td>810</td>
<td>58</td>
<td>14-fold</td>
</tr>
<tr>
<td>Diabetes Uncontrolled</td>
<td>181</td>
<td>3</td>
<td>60-fold</td>
</tr>
<tr>
<td>Diabetes Short-term</td>
<td>65</td>
<td>8</td>
<td>8-fold</td>
</tr>
<tr>
<td>Diabetes Long-term</td>
<td>271</td>
<td>19</td>
<td>14-fold</td>
</tr>
<tr>
<td>Diabetes Overall</td>
<td>405</td>
<td>54</td>
<td>8-fold</td>
</tr>
<tr>
<td>Overall</td>
<td>1,339</td>
<td>363</td>
<td>4-fold</td>
</tr>
</tbody>
</table>
Summary of findings

• Results suggest that differences in coding practices between interchangeable codes do exist (e.g. Austria, Korea for HTN & CHF)

• Rankings continue to be similar

• Two years of results show similar patterns

• Composite indicator shows reduction in international variation

• Additional work is required to finalize the methodology of the composite indicator
Suggested methodological adjustments

• Explore exclusion of deaths:
  – hospitalization where death occurs is mostly likely not immediately avoidable

• Explore exclusion of patients age 75 and older:
  – older patients have higher morbidity and mortality and are more likely to require a hospitalization which is not avoidable

• Refine definitions of the individual conditions as determined by the UK R&D project
Considerations for the composite indicator in its current form

Advantages:

• Provides a simple, easy to communicate overall assessment of primary care

• Has defined scope: avoidable hospitalizations for selected chronic conditions

• Groups individual conditions in a clinically meaningful way

• Improves face validity and international comparability

• Allows for inclusion of primary health care indicators in *Health at a Glance*
Considerations for the composite indicator in its current form

Disadvantages:

• Not covering the whole universe of potentially avoidable hospitalizations
  – Revising the scope will require substantial R&D work

• Several countries do not submit data for one or more of the individual conditions, which may result in exclusion from a composite
Key questions

• Do HCQI experts support reporting potentially avoidable hospitalizations as a composite indicator in general?

• Do HCQI experts agree with the scope of this composite indicator as:
  – Potentially avoidable hospitalizations for selected chronic conditions, for which access to appropriate primary care could prevent the need for the current admission to hospital?
Recommendations for data collection

• Collect data for all 7 chronic conditions (including hypertension)

• Collect information to support completion of R&D work:
  – Collect counts with and without in-hospital deaths for the 7 conditions
  – Question set to identify any country-specific coding standards for current selection of chronic conditions and why data is missing (e.g. not collected vs. alternate coding practice)
Acknowledgments

Canada’s project team
• Yana Gurevich, Sunita Karmakar-Hore, Mahbubul Haq

Ireland
• Deirdre Mulholland

Israel
• Yael Applbaum, Anat Ekka-Zohar, Shulamit Gordon

Italy
• Fabrizio Carinci

New Zealand
• Vladimir Stevanovic

Singapore
• Denise Lee

South Korea
• Sun Min Kim, Kyoung Hoon Kim

United Kingdom
• Veena Raleigh, Candida Ballantyne
Thank You!