Using QALYs to Evaluate Chronic Sequelae: The Case of Reactive Arthritis

David Zorn
CFSAN-FDA
David.Zorn@fda.hhs.gov

Background on Valuing Chronic Sequelae

- Buzby, Roberts, Lin, and MacDonald, 1996
  - Hemolitic Uremic Syndrome (HUS)
  - Listeriosis
- Zorn and Klontz, 1998
  - Reactive Arthritis (ReA)
- Scharff and Jessup, 2007
  - ReA
- Apologies to others

Regulatory Analyses including Valuations of Chronic Sequelae

Previous Illustration

Secondary Complications of Campylobacteriosis Health Loss

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Mobility</th>
<th>Physical</th>
<th>Social</th>
<th>Well-being</th>
<th>QALDs Lost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guillain Barre Syndrome</td>
<td>-0.333</td>
<td>-0.09</td>
<td>-0.077</td>
<td>~ 0.106</td>
<td>0.39</td>
</tr>
<tr>
<td>GBS perm disability</td>
<td>-0.299</td>
<td>-0.062</td>
<td>-0.06</td>
<td>~ 0.061</td>
<td>0.52</td>
</tr>
<tr>
<td>ReA</td>
<td>-0.144</td>
<td>0.000</td>
<td>-0.06</td>
<td>0.000</td>
<td>0.80</td>
</tr>
</tbody>
</table>

Simple Method for Valuation of Chronic Sequelae

- Adaptation of FDA’s method for acute illness
- Monetized QALYs + Medical Costs
- Duration of symptoms is lengthened

\[(QALD \text{ loss/symptom}) \times (\text{days}) \times (\$ \text{ of QALD}) + \text{Medical Costs}\]

QALY Valuation of Reactive Arthritis

<table>
<thead>
<tr>
<th>Days</th>
<th>QALDs Lost</th>
<th>Value of QALDs Lost (QALD = $630)</th>
<th>Medical Costs</th>
<th>Total Valuation per Case ReA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term ReA</td>
<td>25</td>
<td>10.8</td>
<td>$6,800</td>
<td>$100</td>
</tr>
<tr>
<td>Long-term ReA</td>
<td>18,250</td>
<td>5,223.2</td>
<td>$970,000</td>
<td>$5,860</td>
</tr>
</tbody>
</table>