Calculating “Cost”: Review Methods

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Objectives

- Review different methods of costing
- Review journal articles and findings that have used these methods of costing
- Compare ‘cost’ from knee cohort example
Question: What is Your Definition of Cost?

- The cost to whom?
  - Hospital/Facility
  - Medicare
  - Beneficiary
Hospital’s Cost

- Options to estimate Hospital’s cost
  - Use CCRs at hospital or cost center level to convert charges to estimated cost
  - Use Medicare allowed charge amounts as a proxy
  - Use Medicare payment amounts as a proxy
  - Obtain Hospital’s cost from internal cost accounting system

- NEVER use Charge amounts alone to estimate cost!!
Calculating Cost for Other Facilities

- Cost information in cost reports will vary by the facility submitting the information
  - Hospitals submit cost and charge information by cost center
  - SNFs submit cost per day
  - HHA submit cost per visit
  - Hospice submit cost per day
  - Renal Dialysis submit cost per treatment
  - RHC/FQHCs submit cost per visit

- Total costs for all patients
- Medicare costs
Medicare’s Cost

- Options to estimate Medicare cost
  - Use Medicare payment amounts
  - Use Medicare allowed charge amounts
  - Use the Medicare cost-to-charge ratio applied to charges
Beneficiary’s Cost

- Options to estimate Beneficiary’s cost
  - Beneficiary copayments and deductibles
  - Medicare claims only capture copayments and deductibles
  - Doesn’t include other incurred costs related to seeking healthcare, such as transportation cost to provider or caregiver costs
Review Methods from Literature

- Hospital specific, cost-center level CCR approach
- Overall hospital CCR
- Medicare payment
- Medicare total charge
Review Literature

2. “Core-Needle and Surgical Breast Biopsy: Comparison of Three Methods of Assessing Cost” Burkhardt and Sunshine, 1999
4. “Comparison of analytic approaches for the economic evaluation of new technologies alongside multicenter clinical trials” Taira DA et al, 2003
## Review Methods

<table>
<thead>
<tr>
<th>Author</th>
<th>Hospital specific, Cost-center CCR</th>
<th>Overall Hospital CCR</th>
<th>Medicare Payment</th>
<th>Medicare Total Charges</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Schwartz, 1995</td>
<td>Closest to actual hospital cost</td>
<td>Not a good measure of cost</td>
<td>–</td>
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<td>2. Burkhardt, 1999</td>
<td>–</td>
<td>–</td>
<td>Overestimated cost</td>
<td>Overestimated cost</td>
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<td>3. Hayman 2000</td>
<td>Higher than actual hospital cost</td>
<td>–</td>
<td>Closest to actual hospital cost</td>
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<tr>
<td>4. Taira, 2003</td>
<td>Closest to actual hospital cost</td>
<td>Not a good measure of cost</td>
<td>–</td>
<td>Not a good measure of cost</td>
</tr>
</tbody>
</table>
Literature Summary

- Two articles found that the cost center level CCR approach was closest to provider’s cost.
- One article found that Medicare payment was a valid option.
- None found Overall hospital or Total Charge amount a good measure.
Costing Methods Considerations

- Are you trying to cost services for one service (hospital) or across the continuum?
  - Consider the difficulty in determining ‘cost’ of services in different settings
  - May want to consider Medicare payment amounts or covered charges as a proxy

- Consider the potential benefit gained in using more complex methods (cost center level CCRs) versus the time it will take complete the analysis
Example: Research Methods

- Knee replacement cohort from 2002 from MedPAR and Inpatient file
- Compared the following ‘cost’ variables
  - Total charges
  - Covered/allowed charges
  - Medicare payment
  - Calculated ‘cost’ using CCRs
Example: ‘Cost’ Comparison

Values of ‘cost’ for knee replacement cohort from 2002 MedPAR and Inpatient files.

<table>
<thead>
<tr>
<th>File</th>
<th>Total Charges</th>
<th>Total Covered Charges</th>
<th>Medicare Total Payments</th>
<th>Rev Ctr CCR ‘Cost’</th>
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</thead>
<tbody>
<tr>
<td>MedPAR</td>
<td>$23,963</td>
<td>$23,935</td>
<td>$8,757</td>
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<tr>
<td>Inpatient</td>
<td>$23,961</td>
<td>$23,932</td>
<td>$8,759</td>
<td>$14,487</td>
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</tbody>
</table>
Summary

- Costs will vary depending on the file used.
- Costs will vary depending on the variable or method used.
- Consider the time that you will invest and your outcome.