

# 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

- 1. “Ratio of Costs and Charges: How Good a Basis for Estimating Costs? Schwartz M et al, 1995**
- 2. “Core-Needle and Surgical Breast Biopsy: Comparison of Three Methods of Assessing Cost” Burkhardt and Sunshine, 1999**
- 3. “A Comparison of Two Methods for Estimating the Technical Costs of External Beam Radiation Therapy” Hayman JA, et al, 2000**
- 4. “Comparison of analytic approaches for the economic evaluation of new technologies alongside multicenter clinical trials” Taira DA et al , 2003**

# Review Methods

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

# 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.

| File      | Total Charges | Total Covered Charges | Medicare Total Payments | Rev Ctr CCR 'Cost' |
|-----------|---------------|-----------------------|-------------------------|--------------------|
| MedPAR    | \$23,963      | \$23,935              | \$8,757                 | \$17,208           |
| Inpatient | \$23,961      | \$23,932              | \$8,759                 | \$14,487           |

# 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**