Variation in Profitability under Medicare: Emergency Department (ED) vs Scheduled Admissions

Megan McHugh, PhD
Director, Research
Background

• Medicare’s goals:

  1. Assure access to quality care for beneficiaries
  2. Achieve good value

• Importance of payment accuracy
Background

- Some DRGs are more profitable than others
- Hospitals may engage in patient selection (“skimming” and “dumping”)
- This can lead to poor access (long lines, reduced choices) for unprofitable services
Patient Selection by Source of Admission

- Medicare payment does not vary by route of admission
- ED and scheduled admissions “compete” for the same beds
- If ED admissions are less profitable, hospitals may allocate beds to scheduled admissions first
Why Should We Care?

- One out of five hospitals board patients on average 8 hours.
- Half of hospitals experience serious crowding on a daily basis.
- One ambulance diversion every minute.
Why Should We Care?

- ED crowding compromises quality
  - Longer times to treatment for pneumonia
  - Poor pain management
  - Increased likelihood of LWBS & AMA
  - Increased risk of in-hospital mortality

- ED crowding compromises readiness for disasters
Why Should CMS Care?

- The Impact is greatest on Medicare patients
  - High rates of ambulance transport
  - They are more likely to be admitted from the ED
  - 60% of Medicare admissions are initiated in the ED.
Purpose

• To investigate differences in profitability between ED admissions and scheduled admissions under Medicare

• To explore possible reasons for differences in profitability
Methods: Data

- 2003 Nationwide Inpatient Sample (NIS)
  - Data
    - DRG
    - Admission source
    - Severity of illness (APR-DRG)
    - Charges
    - Hospital characteristics
  - Sample
    - ~1 Million Medicare patients
    - 321 Non-rural hospitals
    - 25 States
Methods: Data

- 2003 Medicare Impact File
  - Wage Index
  - DSH
  - IME

- Dollar Margin = Revenue - Cost
Methods: Analysis

- T-tests and chi-square tests
  - ED admits in low profit-DRGs?
  - ED admits have higher levels of severity?
- Multivariate Regression
  - OLS and HLM models
  - Controlling for hospital (ownership, size, trauma, DSH, teaching) and patient (DRG, med/surg, outlier, severity, route of admission) characteristics
ED Admissions are Significantly Less Profitable than Scheduled Admissions

- Heart Failure & Shock: -$399
- Pneumonia with CC: -$414
- Joint & Limb Reattachment: -$1,317
- Pneumonia without CC: -$281
- GI Hemorrhage With CC: -$608
- ED Admissions: $68
- Scheduled Admissions: $290
- $308
- $899
ED Admissions are More Likely to Have Higher Levels of Severity

![Bar chart showing the comparison between ED Admissions and Scheduled Admissions across different APR-DRGs (lowest to highest level of severity).](chart.png)
## Results: Multivariate Analysis

<table>
<thead>
<tr>
<th>Model Description</th>
<th>Coefficient for ED Admission (Standard Error)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Severity measures excluded from model</td>
</tr>
<tr>
<td>Model 1: All patients in the 100 most common DRGs</td>
<td>-1261* (91)</td>
</tr>
<tr>
<td>Model 2: Heart failure &amp; shock (DRG 127)</td>
<td>-407* (110)</td>
</tr>
<tr>
<td>Model 3: Simple pneumonia with CC (DRG 89)</td>
<td>-774* (112)</td>
</tr>
<tr>
<td>Model 4: Major joint &amp; limb reattachment/procedures of lower extremity (DRG 209)</td>
<td>-957* (212)</td>
</tr>
</tbody>
</table>

*p<0.01
Conclusions

• ED admission is an economically meaningful patient classification.

• Hospitals have a financial incentive to engage in patient selection by route of admission.

• “U of C emergency room to get more selective” (Chicago Tribune, 2009)
Policy Implications

- CMS should consider adjusting Medicare payment to take route of admission into account.
- The new MS-DRG system may not mitigate differences in profitability between ED and scheduled admissions.
Limitations

- Cost-to-charge ratio
- Exclusion of admissions with very low charges
- Non-representative sample
- “Old” DRG system