Population-based measures of ambulatory care quality: Potentially preventable admissions and emergency department visits

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Context

- Fee-for-service (FFS) rewards volume with little regard to quality and value
- Commission continues to consider ways to improve the value of Medicare FFS
  - ACOs, medical homes, bundling
- Today’s presentation: Discuss population-based indicators that measure potentially preventable admissions and emergency department visits
Today’s presentation

- Summarize the use of potentially preventable admissions (PPAs) and emergency department (ED) visits (PPVs) as population-based quality measures
- Review preliminary results of analysis of rates of PPAs and PPVs across and within hospital referral regions
- Discuss next steps
Potentially preventable admissions and ED visits

- Population-based quality measures; not measures of hospital quality
- Reflect access to and the quality of care furnished in a region
- Not all events are avoidable; the relative rate is important
- Comparatively higher rates in a region may suggest opportunities for improvement
Potentially preventable admissions (PPAs)

- Admissions for conditions that could have been avoided with adequate ambulatory care
- AHRQ’s indicators consist of 14 ambulatory care sensitive conditions (ACSCs)
- 3M Health Information Systems’ PPAs based on ACSCs; more comprehensive than AHRQ’s indicators
Potentially preventable emergency department visits (PPVs)

- ED visits that might have been furnished in less costly ambulatory settings
- Researchers and policymakers have begun using PPV rates as population-based quality indicators
- 3M’s PPVs based on ACSCs but exclude visits that result in hospital admission and exclude visits for surgical procedures
Objective: Examine the feasibility of using rates of PPAs and PPVs as population-based quality measures

Contracted with 3M Health Information Services to quantify rates nationally and explore differences regionally

Examined rates of PPAs and PPVs using 2006-2008 Medicare claims data
Analysis of PPA and PPVs rates, 2006 - 2008

- Across hospital referral regions (HRRs) for a 5 percent sample of FFS beneficiaries nationally
- Across hospital service areas (HSAs) within HRRs for all FFS beneficiaries in six markets (100 percent)
- Rates are risk adjusted using clinical risk groups and age
- Regression variables included gender, race, disability, dual eligibility, ESRD status, urbanicity, and hospital occupancy rates
PPAs and PPVs account for a large share of all admissions and ED visits

- **PPAs**: 25% of all initial hospital admissions
  - Annual rate ~ 94 per 1,000 beneficiaries
  - Heart failure most frequent clinical reason
- **PPVs**: 59% of all ambulatory ED visits (treat and release)
  - Annual rate ~ 158 per 1,000 beneficiaries
  - Infections of upper respiratory tract most frequent clinical reason

Data are preliminary and subject to change
PPA and PPV rates vary by HRR

<table>
<thead>
<tr>
<th></th>
<th>PPA</th>
<th>PPV</th>
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<tbody>
<tr>
<td></td>
<td>Risk-adjusted cases/1,000</td>
<td>Risk-adjusted cases/1,000</td>
</tr>
<tr>
<td>All HRRs</td>
<td>60.5</td>
<td>33.0</td>
</tr>
<tr>
<td>Top quartile (lowest rates)</td>
<td>52.9</td>
<td>23.7</td>
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<tr>
<td>Bottom quartile (highest rates)</td>
<td>69.8</td>
<td>42.7</td>
</tr>
</tbody>
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Note: PPA rates exclude readmissions
Source: 3M analysis of 2007 and 2008 5 percent Medicare claims data

- PPA range: 36.9 – 107.0
- PPV range: 14.0 – 65.6
Hospital Referral Region (HRR) versus Hospital Statistical Area (HSA)

- Preliminary analysis of HSAs within HRRs
- Considerations in measuring at the HRR versus HSA level:
  - Ability to improve quality
  - Statistical and methodological challenges
Variation of HSAs by HRR

<table>
<thead>
<tr>
<th>Market</th>
<th>PPA risk-adjusted rate/1,000</th>
<th>PPV risk-adjusted rate/1,000</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>All HSAs</td>
<td>Min HSA</td>
</tr>
<tr>
<td>Orange Co., CA</td>
<td>51.7</td>
<td>42.9</td>
</tr>
<tr>
<td>Minneapolis, MN</td>
<td>52.1</td>
<td>36.1</td>
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</tbody>
</table>

Note: PPA rates exclude readmissions
Source: 3M analysis of 2007 and 2008 100 percent Medicare claims data

- Large range between highest and lowest performing HSAs in the markets

Data are preliminary and subject to change
Regression results

- Effect size relatively small for all factors
- Disability status and age tied to more PPAs
- African American race associated with more PPVs compared to whites
- Urban regions had lower PPA rates and slightly higher PPV rates than rural areas
- Dual eligibility associated with more PPAs and PPVs
- As hospital occupancy rates decrease, the rates of both PPVs and PPAs increase
Access to ambulatory care

- Need for further research on how access to ambulatory care impacts PPAs and PPVs
  - Care directly preceding event
  - Availability of ambulatory care resources in the community
Next steps

- Measure at the HSA level
- Define and measure access to ambulatory care prior to PPA and PPV