Measuring Health Care Efficiency

Tom Rosenthal, MD
AHA Taskforce on Variation in Health Care Spending
Feb. 10, 2010
California now has thousands of physicians who have stepped forward and expressed their willingness to be held accountable and to be a part of systems of care. Policies should be examined through the prism of whether they enhance and offer incentives to the continued development of physician groups.
What we’ve learned in the past year about geographic variation

- Price differences matter
- Medicare education payments matter
- Health status matters
- Socio-economic status matters
- Patient preferences matter
What we’ve learned in the past year about geographic variation

Geographic regions or states are not the best unit of measurement, because they mask important intra-regional differences.
### Los Angeles County (HRR) demographics

<table>
<thead>
<tr>
<th></th>
<th>LA Co. total</th>
<th>LA Core</th>
<th>LA All other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>10.2M</td>
<td>2.3M</td>
<td>7.9M</td>
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<tr>
<td>Per Cap Income</td>
<td>$20,700</td>
<td>$11,500</td>
<td>$23,400</td>
</tr>
<tr>
<td>% Black &amp; Latino</td>
<td>55%</td>
<td>80%</td>
<td>48%</td>
</tr>
<tr>
<td>% &lt; 100% Poverty</td>
<td>15%</td>
<td>56%</td>
<td>3%</td>
</tr>
<tr>
<td>% Uninsured</td>
<td>28%</td>
<td>44%</td>
<td>23%</td>
</tr>
</tbody>
</table>

[Map of Los Angeles County]
Impact of urban poverty on hospital utilization

- LA Poverty Core: 2,500
- LA County: 2,000
- LA minus Central & South LA: 1,500
- Minnesota: 1,000

Days per 1,000 Medicare Enrollees
What we’ve learned in the past year about geographic variation

Medicare spending does not correlate with overall health spending.
Medicare spending correlates poorly with total health care spending at state level

Each point is one U.S. State

R² = 0.1461

Per enrollee Medicare spending/U.S. Average

Per capita total health care spending /U.S. Average

Health Affairs, Vol 26, Issue 6, w651-663w
Medicare spending correlates poorly with total health care spending at state level.
Scientific principles of efficiency measurement

Evidence based risk-adjustment for factors known to affect metric that are present at the start of care including disparities & patient preferences

Information produced by the measure is useful for informing quality improvement initiatives

Quality and cost measures are integrated

Proper attribution of the measure

Cost improvement does not reduce quality

AHA/ACC guidelines. JAmCollCard. 52:1518, 2008
NQF. http://www.qualityforum.org/Measuring_Performance
Do Medicare death cases meet scientific standards as measure of efficiency?

<table>
<thead>
<tr>
<th>Feature</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prospective</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Risk adjusted (including patient preferences)</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Integrates quality and cost</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Proper attribution of cases</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Useful for quality improvement</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
UC Consortium to study variation

Goals

• Carefully analyze variation

• Implement projects to reduce variation (lower cost/improve quality)

• Collaboration between outcomes researchers and clinician leadership
**Project Team**

**P.I. Mike Ong**

**Research Investigators**
- UCD: Patrick Romano
- UCI: Sheldon Greenfield, Shaista Malik
- UCLA: Michael Ong, Jose Escarce, Carol Mangione
- UCSD: Theodore Ganiats
- UCSF: Andrew Auerbach, Lee-lynn Chen, Michael Gropper
- CSHS: Bruce Davidson

**Chief Medical Officers**
- UCD: Allan Siefkin
- UCI: Eugene Spiritus
- UCLA: Tom Rosenthal
- UCSD: Angela Scioscia
- UCSF: Ernest Ring
- CSHS: Michael Langberg

**Research Staff (UCLA)**
- Alfonso Ang
- Ben Leong
- Hope Watkins
- Wenyi Xiong
- Jo Ann Zhou

**Supported by California Healthcare Foundation**
Study Design

- All Medicare patients > age 65 with 1º congestive heart failure
- 2001-2005
- N=7,301 with 1,373 Deaths
- Exclude transfers and transplants
- Risk adjusted for demographics and co-morbidities
- Some chart review
- 180 Day cost & mortality analyzed
Looking Forward, Looking Back: Assessing Variations in Hospital Resource Use and Outcomes for Elderly Patients with Heart Failure

Michael K. Ong, Carol M. Mangione, Qiong Zhou, Andrew D. Auerbach, Alein Chun, Bruce Davidson, Theodore G. Ganiats, Sheldon Greenfield, Michael A. Gropper, Shaista Malik, Patrick S. Romano, J. Thomas Rosenthal, and Jose J. Escarce

CIRCULATIONAHA/2008/825612 [R1]
Dartmouth Atlas shows large variation between UC centers

Relative Performance

ICU Days

Dartmouth Atlas
Carefully risk adjusting death only cases reduces variation and changes the rank order among hospitals.

**Relative Performance**

- **ICU Days**
  - Dartmouth Atlas
- **Total hospital days**
  - Last 6 months life
  - Medicare & CHF
  - UC Study
Considering all cases further reduces variation and changes the rank order among hospitals.
Lowest mortality is in highest utilization site

CHF Mortality

- Initial hospitalization: 17.0%
- 1 month: 26.0%
- 6 months: 20.0%
Efficiency comparison
Cost (LOS)/Outcome (survival)

Relative Performance (Lower is better)

Individual hospital
AAMC/UHC/UC collaborative to study variation

<table>
<thead>
<tr>
<th>UCSD</th>
<th>Johns Hopkins</th>
</tr>
</thead>
<tbody>
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<td>UCLA</td>
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<td>NY Presbyterian</td>
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<td>NY Weill Cornell</td>
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<td>UCD</td>
<td>U. Penn.</td>
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<tr>
<td>Cedars-Sinai</td>
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<tr>
<td>Emory</td>
<td>Vanderbilt</td>
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<tr>
<td>Rush</td>
<td>Howard</td>
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Next steps

**Intervention studies**

Disease management program to improve efficiency
(lower cost/improve outcomes)

End of life intervention to reduce unnecessary ICU admissions and improve palliative care for dying patients
Observations

• Health care cost is an important component of health policy.

• To compare efficiency, well-defined cohorts including all patients with good risk adjustment and outcomes must be done and at an accountable level.

• This type of work is expensive; funding is in short supply; it requires collaboration of outcomes researchers and clinical leadership.

• Geographic variation in Medicare spending is not a good measure of efficiency; it has become heavily politicized; continued focus is a diversion from the essential tasks.