Creating Accountable Care Organizations

*Why the Extended Hospital Medical Staff?*

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Variations in practice and spending

Origins

Small Area Variations in Health Care Delivery

A population-based health information system can guide planning and regulatory decision-making.

John Wennberg and Alan Gittelsohn

Science, December 14, 1973; Volume 182, pp 1102-08

Recent legislation has extended planning and regulatory authority in the health field in a number of important areas. The 1972 amendments to the impact of regulatory decisions on the equality of distribution of resources and dollars and the effectiveness of medical care services.
Variations in practice and spending

*The Dartmouth Atlas*
Variations in practice and spending
Percutaneous Coronary Interventions 2003

Missoula, MT  13.6
Olympia, WA  10.7
Great Falls, MT  10.3
Yakima, WA  10.2
Tacoma, WA  9.9
Idaho Falls, ID  9.2
Boise, ID  9.0
Billings, MT  8.9
Seattle, WA  7.5
Spokane, WA  7.0
Everett, WA  6.9
Variations in practice and spending

Per-capita Medicare Spending, 2003

Miami, FL $11,352
Los Angeles, CA $9,752
Worcester, MA $8,203
Boston, MA $7,901
Springfield, MA $7,103
San Francisco, CA $6,408
Lebanon, NH $5,254
Minneapolis, MN $5,213
How can the best medical care in the world cost twice as much as the best medical care in the world?

Uwe Reinhardt
Overview

What I know: the paradox of plenty
What I think I know: unraveling the paradox
What I’d like to know: how to foster effective reform

Causes and Consequences of Health Care Intensity
Dartmouth Atlas of Health Care

With support from:
National Institute on Aging
Robert Wood Johnson Foundation
California Healthcare Foundation
Wellpoint Foundation
Aetna Foundation
United Health Foundation
Commonwealth Fund

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Variations in spending
What are the implications for health?

Differences in *spending* largely due to differences in overall quantity of care (*intensity*) provided to similar populations.

Key Question:

*What does more spending -- greater intensity -- buy?*

N Engl J Med 2004; 349;17:1665-1667
Health Affairs web exclusives, October 7, 2004
Health Affairs, web exclusives, Nov 16, 2005
Health Affairs web exclusives, Feb 7, 2006
Ann Intern Med: 2006; 144: 641-649
Variations in spending

What are the implications for health?

Study population -- Medicare enrollees

Acute myocardial infarction \( n = 159,393 \)
Colorectal Cancer \( n = 195,429 \)
Hip Fracture \( n = 614,503 \)
Medicare Current Beneficiary Survey \( n = 18,190 \)

Study design -- natural experiment:
Divided populations into five equal groups according to practice intensity of region of residence

Practice intensity measured in different population (other Medicare enrollees in last six months of life)
## Variations in spending

*Content of care -- three categories*

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective care</td>
<td>Evidence-based services that all patients should receive. No tradeoffs involved.</td>
</tr>
<tr>
<td></td>
<td><em>Acute revascularization for AMI</em></td>
</tr>
<tr>
<td>Preference-sensitive care</td>
<td>Treatment choices that entail tradeoffs among risks and benefits. Patients’ values and preferences should determine treatment choice.</td>
</tr>
<tr>
<td></td>
<td><em>CABG for stable angina</em></td>
</tr>
<tr>
<td>Supply-sensitive services</td>
<td>Services where utilization is strongly associated with local supply of health care resources</td>
</tr>
<tr>
<td></td>
<td><em>Frequency of MD visits, specialist consultations use of hospital or ICU as a site of care, tests, imaging and minor procedures</em></td>
</tr>
</tbody>
</table>

Wennberg, Skinner and Fisher, Geography and the Debate over Medicare Reform
Health Affairs, web exclusives, February 13, 2002
Ratio of Use Rates in High vs Low Spending Regions -- in similar patients

*If red dot is to right, high spending regions get MORE*

Effective Care: *technical quality*
Reperfusion in 12 hours (Heart attack)

<table>
<thead>
<tr>
<th></th>
<th>Low Spending</th>
<th>High Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Quality</td>
<td>55.8</td>
<td>49.8</td>
</tr>
</tbody>
</table>

Lower in High Spending Regions

Higher in High Spending Regions
Ratio of Use Rates in High vs Low Spending Regions -- in similar patients

If red dot is to right, high spending regions get MORE

Effective Care: technical quality
Reperfusion in 12 hours (Heart attack)
Aspirin at admission (Heart attack)
Mammogram, Women 65-69
Pap Smear, Women 65+
Pneumococcal Immunization (ever)
**Ratio of Use Rates in High vs Low Spending Regions -- in similar patients**

*If red dot is to right, high spending regions get MORE*

**Effective Care: technical quality**
- Reperfusion in 12 hours (Heart attack)
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- Pap Smear, Women 65+
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**Preference Sensitive Care: elective surgery**
- Total Hip Replacement
- Total Knee Replacement
- Back Surgery
- CABG following heart attack

*Lower in High Spending Regions*  
*Higher in High Spending Regions*
Ratio of Use Rates in High vs Low Spending Regions -- in similar patients

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- Reperfusion in 12 hours (Heart attack)
- Aspirin at admission (Heart attack)
- Mammogram, Women 65-69
- Pap Smear, Women 65+
- Pneumococcal Immunization (ever)

**Preference Sensitive Care: elective surgery**
- Total Hip Replacement
- Total Knee Replacement
- Back Surgery
- CABG following heart attack

**Supply sensitive services: often avoidable care**
- Total Inpatient Days
- Inpatient Days in ICU or CCU
- Evaluation and Management (visits)
- Imaging
- Diagnostic Tests

*Lower* in High Spending Regions

*Higher* in High Spending Regions
# The paradox of plenty

*What do higher spending regions -- and systems -- get?*

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
</table>
| **Content / Quality of Care**<sup>1,2</sup>   | Technical quality worse  
No more elective surgery  
More hospital stays, visits, specialist use, tests |
| **Health Outcomes**<sup>1,2</sup>             | Slightly higher mortality  
No better function                                                           |
| **Physician’s perceptions**<sup>5</sup>       | Worse communication among physicians  
Greater difficulty ensuring continuity of care  
Greater difficulty providing high quality care  
Greater perception of scarcity                                                   |
| **Patient-perceived quality**<sup>1,3</sup>   | Lower satisfaction with hospital care  
Worse access to primary care                                                    |
| **Trends over time**<sup>4</sup>              | Greater growth in per-capita resource use  
Lower gains in survival (following AMI)                                       |

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<sup>1</sup> Ann Intern Med: 2003; 138: 273-298  
<sup>2</sup> Health Affairs web exclusives, October 7, 2004  
<sup>3</sup> Health Affairs, web exclusives, Nov 16, 2005  
<sup>4</sup> Health Affairs web exclusives, Feb 7, 2006  
<sup>5</sup> Ann Intern Med: 2006; 144: 641-649
Major points

*What I know*: Higher spending across regions and physician groups is largely due to overuse of *supply-sensitive services* -- hospital and ICU stays, MD visits, specialist consults; and *-- at the margin -- more is worse.*
What might be going on?

*Some general attributes of U.S. healthcare*

Inadequate information on risks and benefits

Assumption that more is better

Financial incentives -- for providers -- promote “more”

Fear of malpractice is widespread
What might be going on?
What explains the differences in practice?

Patient preferences -- can’t explain the differences observed
What might be going on?

*What explains the differences in practice?*

*Patient preferences -- can’t explain the differences observed*

*Capacity and payment*
What might be going on?
What explains the differences in practice?

Patient preferences -- can’t explain the differences observed

Capacity and payment

<table>
<thead>
<tr>
<th>Region</th>
<th>Hospital Beds</th>
<th>Medical Specialists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>2.0</td>
<td>30</td>
</tr>
<tr>
<td>High</td>
<td>3.0</td>
<td>40</td>
</tr>
<tr>
<td>Low</td>
<td>1.0</td>
<td>10</td>
</tr>
<tr>
<td>High</td>
<td>4.0</td>
<td>50</td>
</tr>
</tbody>
</table>

32% higher
65% higher
What might be going on?
What explains the differences in practice?

Patient preferences -- can’t explain the differences observed

Capacity and payment

Whatever capacity is in place will be fully utilized
What might be going on?

*What explains the differences in practice?*

*Patient preferences -- can’t explain the differences observed*

*Capacity and payment*

Percutaneous Coronary Interventions
Age-sex-race adjusted rate per 1000 enrollees in 2003

*Current payment system rewards volume and new (high margin) procedures*
What might be going on?  
*What explains the differences in practice?*

Patient preferences -- can’t explain the differences observed

Capacity and payment

Percutaneous Coronary Interventions  
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Current payment system rewards volume and new (high margin) procedures
What might be going on?
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Capacity and payment

Current payment system rewards volume and new (high margin) procedures
What might be going on?
*What explains the differences in practice?*

*Patient preferences -- can’t explain the differences observed*

*Capacity and payment -- are important drivers*
  *(but capacity explains less than 50% of difference, and it’s the same payment system everywhere)*
What might be going on?

What explains the differences in practice?

Patient preferences -- can’t explain the differences observed

Capacity and payment -- are important drivers

Clinical decision-making
What might be going on?

What explains the differences in practice?

Patient preferences -- can’t explain the differences observed

Capacity and payment -- are important drivers

Clinical decision-making

In general, how often do you schedule routine follow-up visits for your patients with well-controlled hypertension?
What’s going on?
What explains the differences in practice?

Patient preferences -- can’t explain the differences observed

Capacity and payment -- are important drivers

Clinical decision-making -- in the gray areas -- is critical

Training environment -- findings underscore the importance of local context and culture.
How do we make sense of this?

*What we think is going on...*

Clinical evidence (e.g. RCTs, guidelines) and principles of professionalism are a critically important -- *but limited* -- influence on clinical decision-making.

Physicians practice within a local organizational context and policy environment that profoundly influences their decision-making. Payment system ensures that existing (and new capacity) is fully utilized. (We need to maintain our incomes).

Consequence: *reasonable* individual clinical and local decisions (given current payment system) lead, in aggregate, to higher utilization rates, greater costs, perception of scarcity, *and inadvertently*, worse outcomes and worse quality
Major points

What I know: Higher spending across regions and physician groups is largely due to overuse of supply-sensitive services -- hospital and ICU stays, MD visits, specialist consults; and -- at the margin -- more is worse.

What I think I know: Overuse is largely a consequence of reasonable differences in clinical judgment that emerge in response to local organizational attributes (capacity, clinical culture) and financial incentives that promote unnecessary growth and more care.
Why might this be important?

Current approaches to P4P could make things worse
   Individual provider focus will reinforce fragmentation
   Limited measures risk making bad apples look good -- on both
       quality (narrow technical measures) and costs (episodes).
   Will fail to address the problems of rising costs and the key role of
       judgment in clinical practice

Controlling costs (and improving quality) will require:
   Creating incentives for organized and integrated care
   Developing mechanisms to limit (punish?) excessive growth

Theory suggest three strategies
   Foster organizational accountability -- at the local level
   Invest in comprehensive performance measurement
   Move toward fundamental payment reform
Addressing the underlying causes of poor quality and high costs

Foster local organizational accountability

Theory: improving quality and costs will require local organizational accountability across multiple dimensions:

- Decisions about capacity: investment, recruitment, practice location
- Financial capacity to invest in electronic health records
- Organizational support for quality improvement, monitoring, feedback, informed patient choice, care coordination

Potential “Accountable Care Organizations” (ACOs)

- Individual physicians (advanced medical home)
- Established multi-specialty group practices

Hospital medical staff

- Welch-Miller proposed in early 1990’s for inpatient stays
- We extend this idea to include all patients and physicians
The Extended Hospital Medical Staff

Multispecialty group practice for all?

Approach

Use claims data to define where physicians work
Use claims data to identify the population they serve
The Extended Hospital Medical Staff
*Multispecialty group practice for all?*

**Approach**

**Results:** empirically defined multi-specialty groups

<table>
<thead>
<tr>
<th>Specialty mix and size of Extended Hospital Medical Staff</th>
<th>Urban or Large Town</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Large</td>
<td>Med.</td>
</tr>
<tr>
<td>Primary Care</td>
<td>30</td>
<td>29</td>
</tr>
<tr>
<td>Medical Specialist</td>
<td>26</td>
<td>18</td>
</tr>
<tr>
<td>Surgeon</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>Other</td>
<td>45</td>
<td>34</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>103</td>
<td>83</td>
</tr>
</tbody>
</table>
The Extended Hospital Medical Staff

*Multispecialty group practice for all?*

**Approach**

**Results:** empirically defined multi-specialty groups where most care is delivered by the group or referral center

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**Percent of Medicare beneficiaries’ care provided by group**

<table>
<thead>
<tr>
<th>Primary Hospital</th>
<th>Secondary Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician Services (E&amp;M)</td>
<td></td>
</tr>
<tr>
<td>Medical Discharges</td>
<td></td>
</tr>
<tr>
<td>Surgical Discharges</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percent of beneficiaries:</th>
<th>48</th>
<th>37</th>
<th>3</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average All US</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large Urban or Large Town</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium Urban or Large Town</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lrg/Med Rural</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Rural</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Extended Hospital Medical Staff

*Multispecialty group practice for all?*

**Approach**

**Results:** empirically defined multi-specialty groups where most care is delivered by the group or referral center performance differs on important dimensions

<table>
<thead>
<tr>
<th>Average group performance across regional spending levels</th>
<th>Low Spending</th>
<th>Middle</th>
<th>High Spending</th>
<th>Ratio High to Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammography 65-69</td>
<td>51.1</td>
<td>49.2</td>
<td>44.7</td>
<td>0.87</td>
</tr>
<tr>
<td>Colorectal Cancer screen</td>
<td>12.2</td>
<td>13.4</td>
<td>15.9</td>
<td>1.30</td>
</tr>
<tr>
<td>Eye exams, diabetes</td>
<td>41.3</td>
<td>41.0</td>
<td>40.7</td>
<td>0.98</td>
</tr>
<tr>
<td>HBA1c, diabetes</td>
<td>57.8</td>
<td>57.2</td>
<td>53.6</td>
<td>0.92</td>
</tr>
<tr>
<td>Hospital Discharges</td>
<td>308</td>
<td>374</td>
<td>407</td>
<td>1.32</td>
</tr>
<tr>
<td>SNF stays</td>
<td>70</td>
<td>78</td>
<td>85</td>
<td>1.20</td>
</tr>
<tr>
<td>Care transitions</td>
<td>0.80</td>
<td>0.94</td>
<td>1.01</td>
<td>1.26</td>
</tr>
<tr>
<td>Physician services**</td>
<td><strong>$2,085</strong></td>
<td><strong>$2,560</strong></td>
<td><strong>$3,295</strong></td>
<td>1.58</td>
</tr>
<tr>
<td>Acute care hospital</td>
<td><strong>$2,086</strong></td>
<td><strong>$2,432</strong></td>
<td><strong>$2,649</strong></td>
<td>1.26</td>
</tr>
</tbody>
</table>
The Extended Hospital Medical Staff

Multispecialty group practice for all?

Approach

Results: empirically defined multi-specialty groups where most care is delivered by the group or referral center performance differs dramatically on important dimensions and in the magnitude of spending growth

<table>
<thead>
<tr>
<th>Percent increase</th>
<th>Absolute increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>46%</td>
<td>$936</td>
</tr>
<tr>
<td>33%</td>
<td>$675</td>
</tr>
<tr>
<td>27%</td>
<td>$551</td>
</tr>
<tr>
<td>21%</td>
<td>$431</td>
</tr>
<tr>
<td>10%</td>
<td>$198</td>
</tr>
</tbody>
</table>
Fostering organizational accountability

Advantages of focusing on medical groups or hospital - staff

Performance measurement more tractable at medical group or hospital-medical staff level
- Can include all physicians who contribute to care within frame of measurement immediately -- with adequate sample sizes
- Broader measures feasible: quality, outcomes, coordination, costs.
- May face lower resistance from physicians than individual reporting.
- More practical

Establishes a locus of accountability for capacity
- No other logical candidate
  - Shared savings, even under fee-for-service would create incentives to constrain capacity growth

Hospitals (or large physician groups) have resources to support quality improvement
- Finance electronic health records for associated physicians
- Implement quality improvement initiatives
**Major points**

*What I know:* Higher spending across regions and physician groups is largely due to overuse of *supply-sensitive services* -- hospital and ICU stays, MD visits, specialist consults; *and* -- *at the margin* -- *more is worse.*

*What I think I know:* Overuse is largely a consequence of reasonable differences in clinical judgment that emerge in response to local organizational attributes (capacity, clinical culture) and a national policy and culture that promotes growth and more care.

*What I’d like to know:* How to shift the focus of the health care system from simply “delivering care” to improving health and reducing suffering. *My best guess is that this will require*

1. organizational accountability at the local delivery system level;
2. performance measurement: longitudinal quality (outcomes) and costs;
3. reform of the payment system (getting the invisible hand to help). *In the short term, shared savings approaches may be promising*