Spend more? Ration care?
*Might we have another choice?*

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Dartmouth Medical School

Director for Population Health and Policy
The Dartmouth Institute for Health Policy and Clinical Practice
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

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.
### Per-capita Medicare Spending Trends: 1992 to 2006

<table>
<thead>
<tr>
<th>City</th>
<th>Per-Capita Spending</th>
<th>Annual Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miami</td>
<td>$16,351</td>
<td>5.0</td>
</tr>
<tr>
<td>E. Long Island</td>
<td>$10,801</td>
<td>4.0</td>
</tr>
<tr>
<td>Boston</td>
<td>$9,526</td>
<td>3.0</td>
</tr>
<tr>
<td>San Francisco</td>
<td>$8,331</td>
<td>2.4</td>
</tr>
<tr>
<td>Salem, OR</td>
<td>$5,877</td>
<td>2.3</td>
</tr>
<tr>
<td>US Average</td>
<td>$8,304</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Annual savings if Long Island had grown at San Francisco rate: $1 billion

Projected savings if US grew at San Francisco rate from now to 2023: $1.42 trillion

Variations in practice and spending

The Dartmouth Atlas

1. Spending and quality: what we know
2. Some current points of confusion
3. What’s going on? What might we do?
4. Moving forward
Variations in spending and quality

RWJF, National Institutes of Aging funded research

Health implications of regional variations in spending

Initial study: About 1 million Medicare beneficiaries with AMI, colon cancer and hip fracture

Compared content, quality and outcomes across high and low spending regions

Per-capita Spending
Low (pale): $3,992
High (red): $6,304

Difference: $2,312
(61% higher)

(2) Baicker et al. Health Affairs web exclusives, October 2004
(3) Fisher et al. Health Affairs, web exclusives, November 2005
(4) Skinner et al. Health Affairs web exclusives, February 2006
(6) Fowler et al. JAMA: 299: 2406-2412
Variations in spending and quality

*Where does the money go?*

**Effective Care: benefit clear for all**
- Reperfusion in 12 hours (Heart attack)
- Aspirin at admission (Heart attack)
- Mammogram, Women 65-69
- Pap Smear, Women 65+
- Pneumococcal Immunization (ever)

**Preference Sensitive: values matter**
- Total Hip Replacement
- Total Knee Replacement
- Back Surgery
- CABG following heart attack

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

If bar on this side higher spending regions get more
Variations in spending and quality

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If bar on this side higher spending regions get more
What does higher spending buy?

Utilization of supply-sensitive care among patients with serious chronic illness at Premier’s QUEST hospitals (last 2 years of life)
Variations in spending and quality

What is the relationship between spending and quality?

**Health Outcomes**
- No gain in survival
- No better function

**Physician’s Perceptions**
- Worse communication
- Greater difficulty ensuring coordination
- Greater perception of scarcity

**Patient-Perceived Quality**
- Lower satisfaction with hospital care
- Worse access to primary care
- No less sense that care is rationed

(2) Baicker et al. Health Affairs web exclusives, October 7, 2004
(3) Fisher et al. Health Affairs, web exclusives, Nov 16, 2005
(4) Skinner et al. Health Affairs web exclusives, Feb 7, 2006
(6) Fowler et al. JAMA: 299: 2406-2412
(7) Wennberg et al; Health Affairs 2009; 28: 103-112
(8) Yasaitis et al; Health Affairs; web exclusive, May 21, 2009
Variations in spending and quality
What is the relationship between spending and quality?

Key finding: per-capita costs of care over time are essentially unrelated to quality or outcomes. Some systems achieve high quality and low costs. It matters what you spend the money on.

Health Outcomes
- Physician perceptions

- Patient perceptions
- Worse health outcomes
- Lower satisfaction
- No gain in survival
- No better function
- Greater difficulty
- Lower satisfaction with hospital care
- Worse access to care
- Ensuring coordination

Key finding:
(2) Baicker et al. Health Affairs web exclusives, October 7, 2004
(3) Fisher et al. Health Affairs, web exclusives, Nov 16, 2005
(4) Skinner et al. Health Affairs web exclusives, Feb 7, 2006
(6) Fowler et al. JAMA: 299: 2406-2412
(7) Wennberg et al; Health Affairs 2009; 28: 103-112
(8) Yasaitis et al; Health Affairs; web exclusive, May 21, 2009

EXHIBIT 5
Percentile Ranking And Spending For Individual Hospitals In New York (Manhattan And The Bronx) And Los Angeles, 2004-2007

<table>
<thead>
<tr>
<th>Percentile</th>
<th>Los Angeles</th>
<th>New York</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td></td>
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<tr>
<td>60</td>
<td></td>
<td></td>
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<tr>
<td>40</td>
<td></td>
<td></td>
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<tr>
<td>20</td>
<td></td>
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</tr>
</tbody>
</table>

SOURCE: Authors’ analysis (see text for complete details).
Variations in practice and spending
The Dartmouth Atlas

1. Spending and quality: what we know
2. Some current points of confusion
Some current points of confusion

Look forward or look back?

End-of-life spending (2001-2005) vs average one-year spending for AMI, hip fracture and colon cancer patients (98-01) in 480 large U.S. hospitals with at least 50 patients.

Skinner – under preparation

Association between look forward treatment intensity measure and look back intensity (end-of-life patients only) in Pennsylvania hospitals.

Barnato et al Med Care 2009;47: 1098–1105
Some current points of confusion

Poverty

Across large U.S. hospitals, hospital use (and spending, not shown) varies by over two fold for both low income and high income beneficiaries.

Systems that use the hospital as site of care for high income patients do the same for their low income patients.

Wennberg, Skinner. Forthcoming
Some current points of confusion

Poverty, Prices

Analysis compared unadjusted and price-adjusted per-capita spending across all U.S. HRRs.

Slight reduction in magnitude of variation.

Medical education and DSH payments were important in a few areas (notably NYC).

Gottlieb et al. Health Affairs 2010 published online, January 28.
Some current points of confusion
Poverty, Prices, **Health**

But explains only a small fraction of regional differences in spending

Health is the most important determinant of spending

Sutherland, Skinner, Fisher. NEJM 2009; 366:1227
Understanding variations
Not “either-or”, rather “both-and”

Some differences are due to forces beyond providers control
- Poverty – poor patients may have inadequate social supports at home
- Health status – some providers and regions have sicker patients
- Prices differ across regions
- Academic missions are variably subsidized through current payments

Dramatic differences in utilization remain
- Across physicians, across care systems, across regions
- Higher use of hospital as site of care (admissions and readmissions)
- More frequent discretionary physician services

High cost imaging rates, PCPs in a single practice at Partners
May 29, 2008 Presentation at Federal Trade Commission
Tom Lee, MD  (Partners Healthcare System)  (with permission)
Variations in practice and spending

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What’s going on?
Research on causes of regional variations

Patient Preferences
Slight preference for specialists in high specialist regions
No difference in wish for test MD says not needed
No difference in wish for aggressive EOL care

Malpractice Environment
Explains less than 10% state differences in spending

Capacity & Payment System
Payment system ensures that all stay busy
Capacity thus strongly correlated, but explains less than 50%

Clinical Judgment

(2) Barnato et al. Medical Care 2007; 45:386-393
(4) Baicker, et al. Health Affairs 2007; 26: 841-852
(6) Sirovich et al. Archives of Internal Medicine. 165(19):2252-6
(7) Sirovich et al. Health Affairs 27, no. 3 (2008): 813-823
What’s going on?

The role of clinical judgment

Evidence-based decisions:

Doctors sometimes disagreed — but was unrelated to regional differences.

Gray-area Guideline-free decisions:

For a patient with well-controlled high blood pressure and no other medical problems, when would you schedule the next visit?

Other guideline-free decisions:

- Referral to specialist
- Reflux angina
- Diagnostic testing: cardiac ultrasound, chest CT
- Hospital admission: angina, heart failure
- Admission to ICU: heart failure
- Referral to palliative care: heart failure

Siropich et al. Health Affairs 27, no. 3 (2008): 813-823
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Malpractice Environment
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Capacity & Payment System
- Payment system ensures that all stay busy
- Capacity thus strongly correlated, but explains less than 50%

Clinical Judgment
- No difference in decisions with strong evidence
- More likely to intervene in gray areas

(2) Barnato et al. Medical Care 2007; 45:386-393
(4) Baicker, et al. Health Affairs 2007; 26: 841-852
(6) Sirovich et al. Archives of Internal Medicine. 165(19):2252-6
(7) Sirovich et al. Health Affairs 27, no. 3 (2008): 813-823
What’s going on?

*Case studies beginning to shed some light*

“Here … a medical community came to treat patients the way subprime mortgage lenders treated home buyers: as profit centers.”

Atul Gawande

<table>
<thead>
<tr>
<th>2006 Spending</th>
<th>92-06 Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>McAllen</td>
<td>$14,946</td>
</tr>
<tr>
<td>La Crosse</td>
<td>$5,812</td>
</tr>
</tbody>
</table>

“…a culture that focuses on the wellbeing of the community, not just the financial health of our system.”

Jeff Thompson, MD
CEO Gunderson-Lutheran
La Crosse, WI
### Underlying problem

**Confusion** about aims – what we’re trying to produce

**Absent or poor data** leaves practice unexamined and public assuming that more is always better.

**Flawed conceptual model.** Health is produced only by individual actions of “good” clinicians, working hard.

**Wrong incentives** reinforce model, reward fragmentation, induce more care and entrepreneurial behavior.

### Key principles

**Clarify aims:** Better health, better care lower costs – for patients and communities

**Better information** that engages physicians, supports improvement; informs consumers

**New model: It’s the system.** Establish organizations **accountable for aims** and capable of **redesigning practice and managing capacity**

**Rethink our incentives:** Realign incentives – both financial and professional – with aims.
Variations in practice and spending
*The Dartmouth Atlas*

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The new policy environment
Clarifying aims and performance measures

Emerging alignment on aims: National Priorities Partners
  Better health: improving population health
  Better care: improving safety, reliability, coordination and patient engagement
  Lower costs: eliminating overuse

Performance measurement – the critical lever
  National Quality Forum “Episode Measurement Framework”
    Core issue: how did the patient do over the relevant time-course?
    Value is multidimensional: outcomes, risks, quality, costs

Requires organizational accountability for patients over time
The new policy environment

Aside: a well-intentioned, but not-quite-right approach

The Value Index

Intent – improve value of care
Approach: create simple regional score of quality and per-capita costs
High quality, low cost: fees are increased on each service
Low quality, high cost: fees are decreased on each service

The problem

Punishes good providers in poorly performing regions (and vice-versa)
Response of those with cuts? Increase volume of positive-margin services

We need to help all providers improve
New Models of Care and Payment
Episode (bundled) payments

Approach:
- Single payment creates incentive for providers to work together to improve care and reduce costs within the episode
- Examples: inpatient and post acute care; major elective procedures

Current status and evidence
- Efforts to develop and test approaches underway: Geisinger – Provencare
- Not much evidence

Challenges:
- Requires an organization to either accept or distribute payments;
- Quality and outcome measures available, but difficult to deploy;
- May not reduce overall costs: incentive remains to increase number of episodes
New Models of Care and Payment
Patient Centered Medical Home

Approach:
Practice redesign to support core functions of primary care: enhanced access; pro-active care management of population; team-based care
Payment reform to support currently non-reimbursed activities

Current status: numerous pilots underway,
Group Health: better care experience (including md-pt interaction, informed choice, access; activation, goal setting); technical quality; reduced ER & hospital use; year 2 (unpublished) – reduced total costs; much lower staff burnout

Challenges
Responsibility for coordination lies entirely with primary care practice
Impact on costs uncertain
(1) No explicit incentives or accountability for overall costs
(2) Community costs may not be affected. (specialists and hospitals unlikely to allow incomes to fall)

New Models of Care and Payment
Accountable Care Organizations

**Theory**

Establish provider organizations that can effectively manage the full continuum of care as a real or virtually integrated local delivery system

Performance measurement – to ensure focus on demonstrably improving care and lowering costs

Payment reform: establish target spending levels; shared savings – under fee-for-service or partial capitation; no beneficiary “lock-in”.

Fisher et al. Creating Accountable Care Organizations, Health Affairs 26(1) 2007:w44-w57.
New Models of Care and Payment
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Potential ACOs
Integrated delivery systems – academic medical centers
Hospitals with aligned (or owned) physician practices
Physician networks (e.g. Independent Practice Associations)
Community networks / community foundations (putting both hospitals and physicians under community governance with common aims)

Would entail little disruption of current referral patterns

Fisher et al. Creating Accountable Care Organizations, Health Affairs 26(1) 2007:w44-w57.
New Models of Care and Payment
Accountable Care Organizations

Evidence limited but promising
Physician Group Practice demonstration – mixed results
Where critical mass of payers engaged – more promising results

Geisinger Health System: (1) Medicare spending fell by 15% relative to US (92-96) (2) Teachers given $7,000 raise (over 3 years)

ACOs only reform approach that provides accountability for total costs – and incentives to eliminate unneeded capacity (and share in savings)

National interest, federal support likely, payers engaged
Legislation includes ACOs as national program (Senate) or pilots (House)
Several states moving forward: MA, VT, NC (network)
Brookings-Dartmouth collaborative – strong interest

Fisher et al. Creating Accountable Care Organizations, Health Affairs 26(1) 2007:w44-w57.
New Models of Care and Payment
Accountable Care Organizations: Initial Pilot Sites

<table>
<thead>
<tr>
<th>Carilion Clinic</th>
<th>Norton Healthcare</th>
<th>Tucson Medical Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roanoke, VA</td>
<td>Louisville, KY</td>
<td>Tucson, AZ</td>
</tr>
<tr>
<td>~900 Providers</td>
<td>~400 Providers</td>
<td>~80 Providers</td>
</tr>
<tr>
<td>60,000 Medicare Patients Assigned</td>
<td>30,000 Medicare Patients Assigned</td>
<td>10,000 Medicare Patients Assigned</td>
</tr>
</tbody>
</table>

Large Group | Small Group

Low Competitive Environment | Highly Competitive Environment

Fully Integrated System | Multiple Independent Provider Groups

Fisher et al. Creating Accountable Care Organizations, Health Affairs 26(1) 2007:w44-w57.
Moving forward
Playing value-based payment forward

ACO’s seek:
To improve care management (e.g. home-based care, e-health, etc.)
To reduce costs compared to alternative: Cost-effectiveness considered
To align care with patients and caregivers’ values
To make careful “buy vs build” decisions

Referral centers should seek:
To demonstrate value (and deliver high quality / low cost episodes)
To manage their own primary care populations as ACOs

Implications for hospital leaders:
Variations in discretionary use of hospital are substantial
Consider the future role of the hospital – given aim of lower costs
How should you prepare for a new payment environment?
ACOs could be a promising path forward
Moving forward
Local leadership and engagement likely to be critical

“How do they do that?” conference

Everett, WA  Portland, ME
Sacramento, CA  Sayre, PA
La Crosse, WI  Richmond, VA
Cedar Rapids, IA  Asheville, NC
Temple, TX  Tallahassee, FL

Lighter colors = lower spending

Common themes
Shared aims, accountable to community
Strong foundation of primary care
Physician engagement as leaders
Savings through reduced use of hospital
Use of data to drive change

Medicare Spending per capita 2006

- $10,250 to 17,184 (55)
- 9,500 to < 10,250 (69)
- 8,750 to < 9,500 (64)
- 8,000 to < 8,750 (53)
- 6,039 to < 8,000 (65)
- Not Populated
Moving forward
Local leadership and engagement likely to be important

“There, there it is again—the invisible hand of the marketplace giving us the finger.”
Moving forward
Local leadership and engagement likely to be important

“How do they do that?”
conference

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Lighter colors = lower spending
Self-confident, engaged, “if not us, who?”