

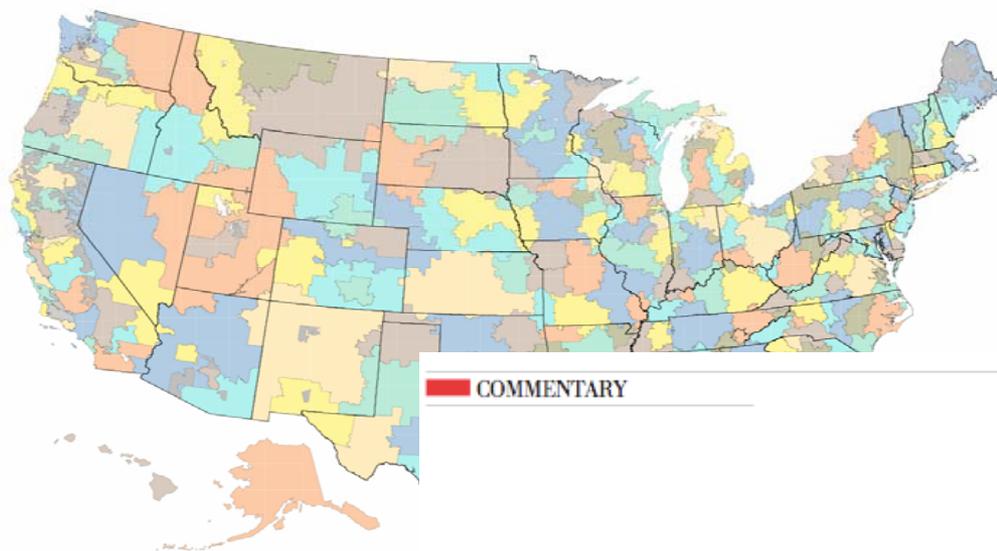
Figure 1. The challenge confronting U.S. Health Care Spending, Quality -- and the Health of the Public

The Quality of Medical Care in the United States

A Report



U.S. Hospital Referral Regions



COMMENTARY

A Pay-for-Population Health Performance System

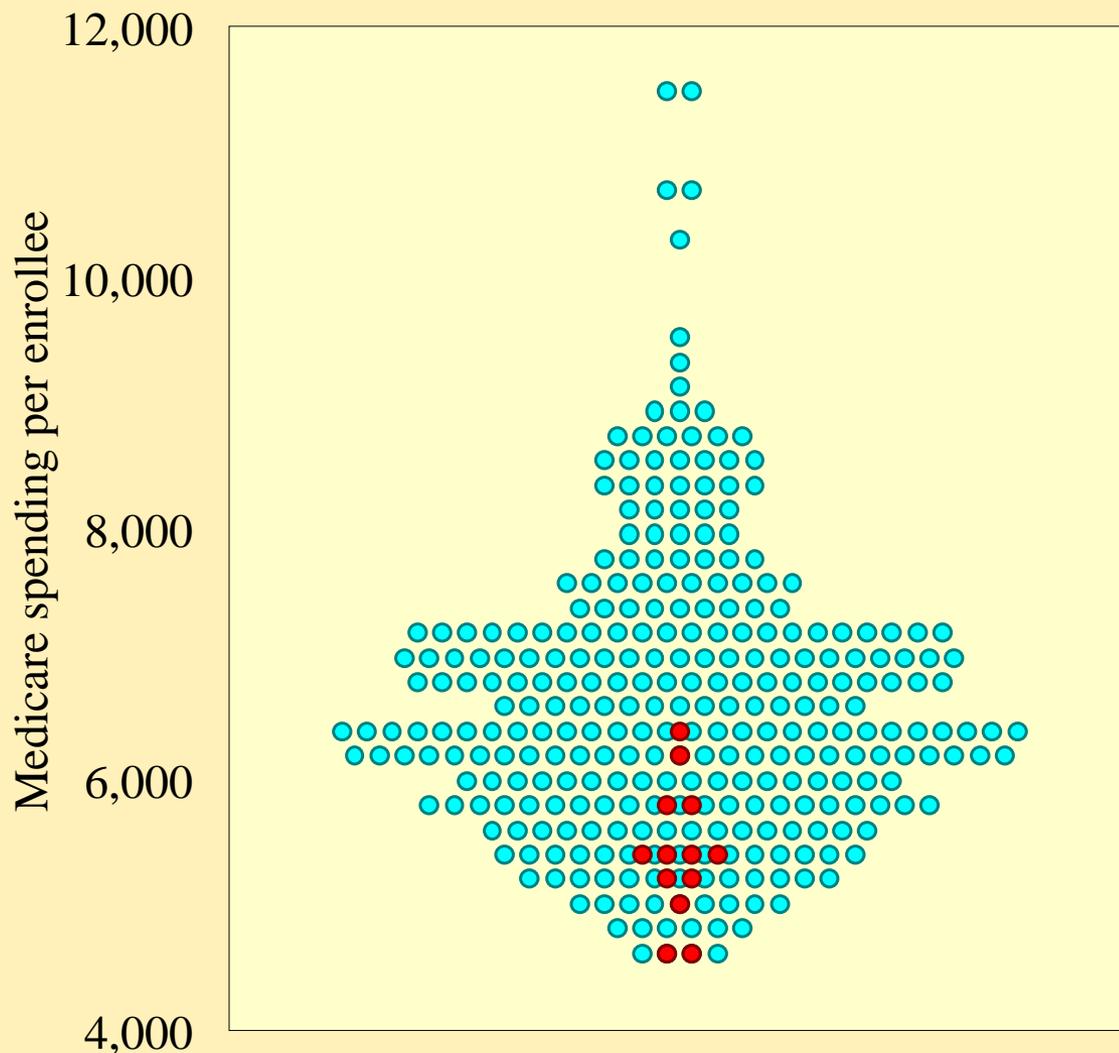
David A. Kindig, MD, PhD

THE REPORT *REWARDING PROVIDER PERFORMANCE*,¹ recently released by the Institute of Medicine, concludes that early experience with pay-for-performance has been promising and recommends

that physicians should be paid based on the health of the population they serve. Physicians who care for populations with higher rates of chronic disease and lower rates of health care utilization have a mortality rate of 211/100 000 persons while those with less than a high school education have a mortality rate of 575/100 000 persons.³ Minnesota has a mortality rate of 749/100 000 persons while Mississippi has a rate of 1035/100 000 persons.³ The percentage of persons reporting fair to poor health is 6% for persons above the poverty line and 20% for those in poverty.³

Medicare spending per enrollee (2003)

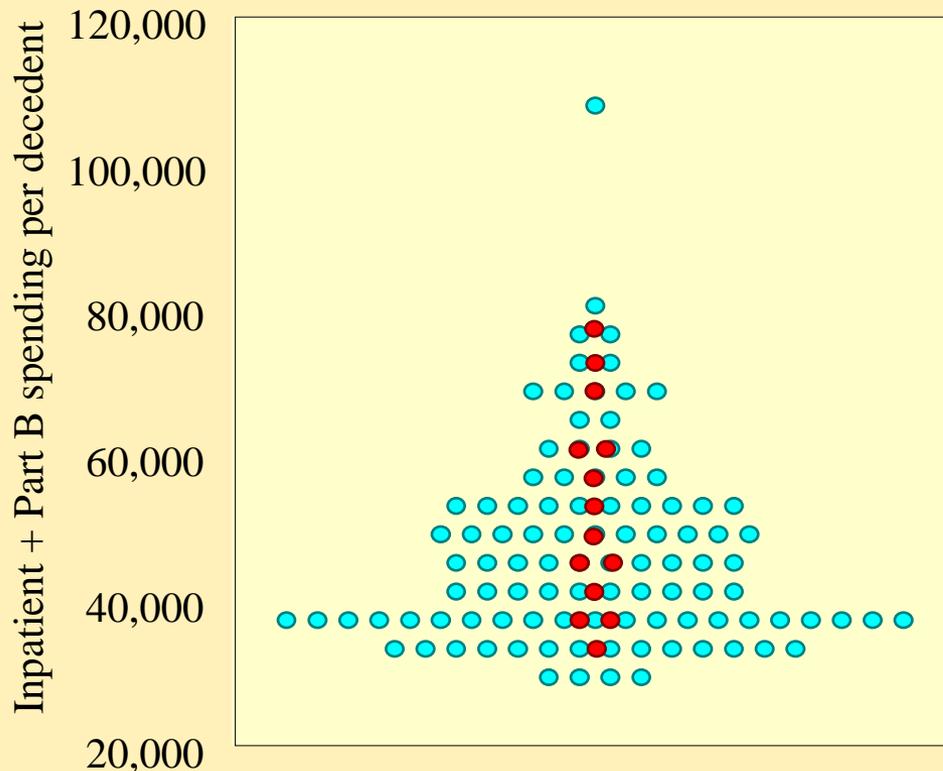
Red dots indicate Wisconsin and Minnesota HRRs



Milwaukee, WI	6,304
Marshfield, WI	6,116
Rochester, MN	5,876
St. Paul, MN	5,833
Madison, WI	5,472
Minneapolis, MN	5,438
Wausau, WI	5,402
St. Cloud, MN	5,381
Neenah, WI	5,270
Duluth, MN	5,193
Green Bay, WI	5,040
La Crosse, WI	4,649
Appleton, WI	4,587

Figure 2. Variations in spending across medical centers

Variations in spending for patients with severe chronic disease across U.S. News and World Reports top 15 “Honor Roll” academic Medical Centers.



Spending per Medicare beneficiary with severe chronic disease

(Last 2 years of life, 2000-2003)

UCLA Medical Center	72,793
New York-Presbyterian	69,962
Univ. of Pennsylvania	61,290
Johns Hopkins	60,653
UCSF Medical Center	56,859
Brigham and Womens	53,123
Univ. of Washington	50,716
Univ. of Michigan	49,367
Mass. General	47,880
Barnes-Jewish	44,463
Duke University Hosp.	37,765
Mayo Clinic (St. Mary's)	37,271
Cleveland Clinic	35,455

Most of the differences in spending are due to differences in volume (or intensity), not price. For example, 66% of the variation in spending across academic medical centers can be explained by the number of inpatient days and physician visits alone.

Figure 3. What does higher spending “buy”?

Compared to the lowest spending regions, what do residents of higher spending regions get for the additional \$3000 per beneficiary (in 2000)?

Resource levels ¹	<i>More hospital beds per capita (32%) More medical specialists (65%) and internists (75%)</i>
Content / Quality of Care ^{1,2}	<i>Technical quality worse No more major elective surgery</i>
<i>Supply-sensitive services</i> →	<i>More hospital stays, visits, specialist use, tests, procedures</i>
Health Outcomes ^{1,2}	<i>Slightly higher mortality No better function</i>
Physician-reported quality ⁵	<i>Worse communication among physicians Greater difficulty ensuring continuity of care Greater difficulty providing high quality care</i>
Patient-reported quality ^{1,3}	<i>Lower satisfaction with hospital care Worse access to primary care</i>
Trends over time ⁴	<i>Lower gains in survival (following AMI) Greater growth in per-capita resource use</i>
<i>Supply-sensitive services</i> →	

(1) Ann Intern Med: 2003; 138: 273-298

(2) Health Affairs web exclusives, October 7, 2004

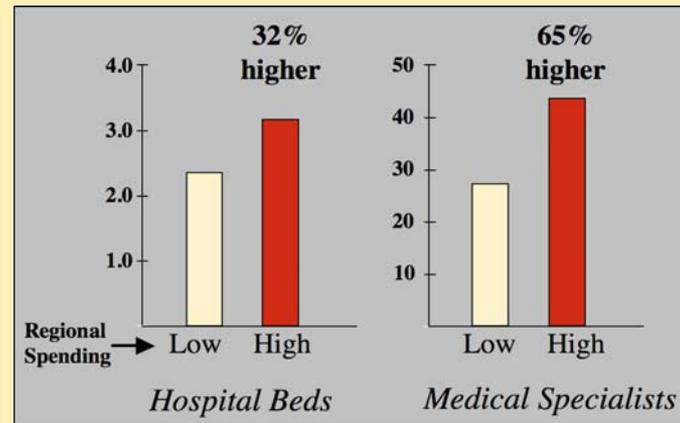
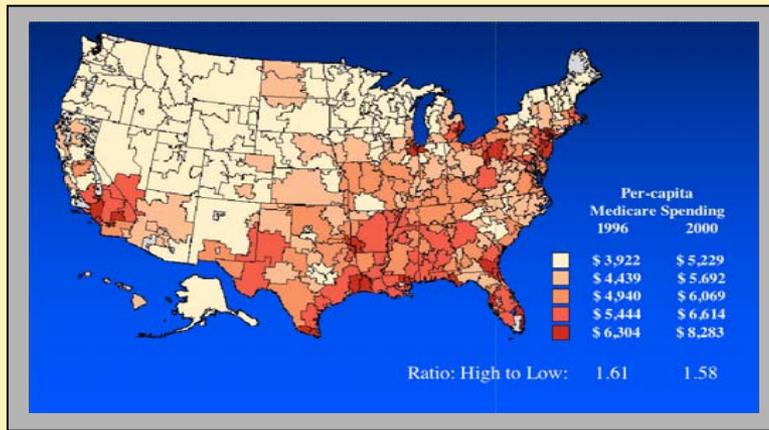
(3) Health Affairs, web exclusives, Nov 16, 2005

(4) Health Affairs web exclusives, Feb 7, 2006

(5) Ann Intern Med: 2006; 144: 641-649

Figure 4. The role of supply and current payment systems

Compared to the lowest spending regions (tan) the highest spending regions have 32% more beds and 65% more specialists per-capita



Ann Intern Med: 2003; 138: 273-298

Current payment systems reward high margin services (e.g. angioplasty) and ensure that physicians stay busy: more cardiologists per capita --> more visits

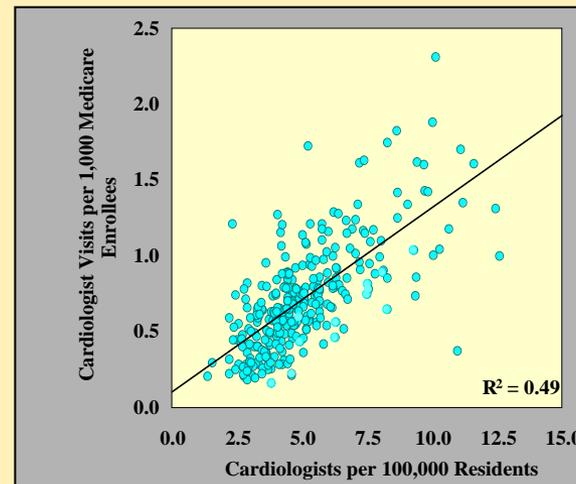
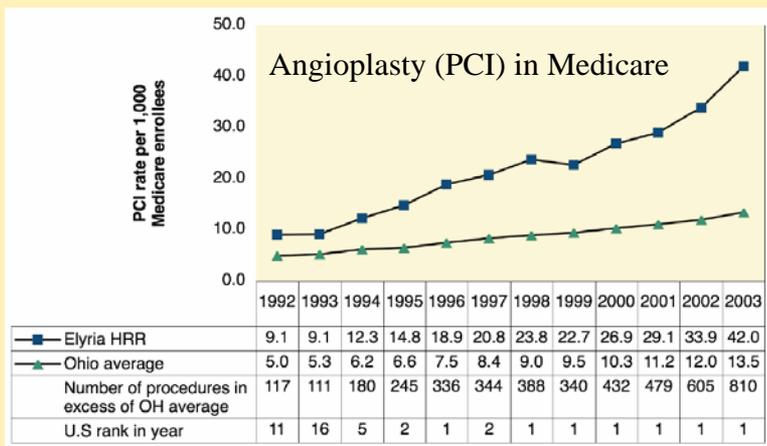


Figure 5. The role of judgment in discretionary settings

For clinical services where judgment is required and no clear guidelines exist physicians in high spending regions are more likely to intervene.

Percent of patients for whom physicians would recommend the intervention in low and high spending regions in each scenario:

	Low Spending Regions	High Spending Regions	Trend significant
Cardiology referral for chest pain and abnormal stress test	91	93	no
Drug treatment of high cholesterol with no other risk factors	44	53	yes
Urology referral for mild symptoms of prostatic enlargement	23	32	yes
MRI for back pain and mildly abnormal nerve function	69	82	yes
Prostate cancer screening test for 60 year old white male	68	78	yes
Visit for patient with isolated high blood pressure in 3 months or less	22	49	yes

Figure 6. Why is spending higher? Why might harm occur?

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. Physicians adapt to available resources: more referrals, more admissions, more ICU stays.

Consequence: *reasonable* individual clinical and local decisions lead, in aggregate, to higher utilization rates, greater costs -- *and inadvertently* -- worse outcomes

The more complicated care becomes, the more likely mistakes are to occur.

Hospitals are dangerous places if you don't need to be there.

Clinical Evidence
Professionalism

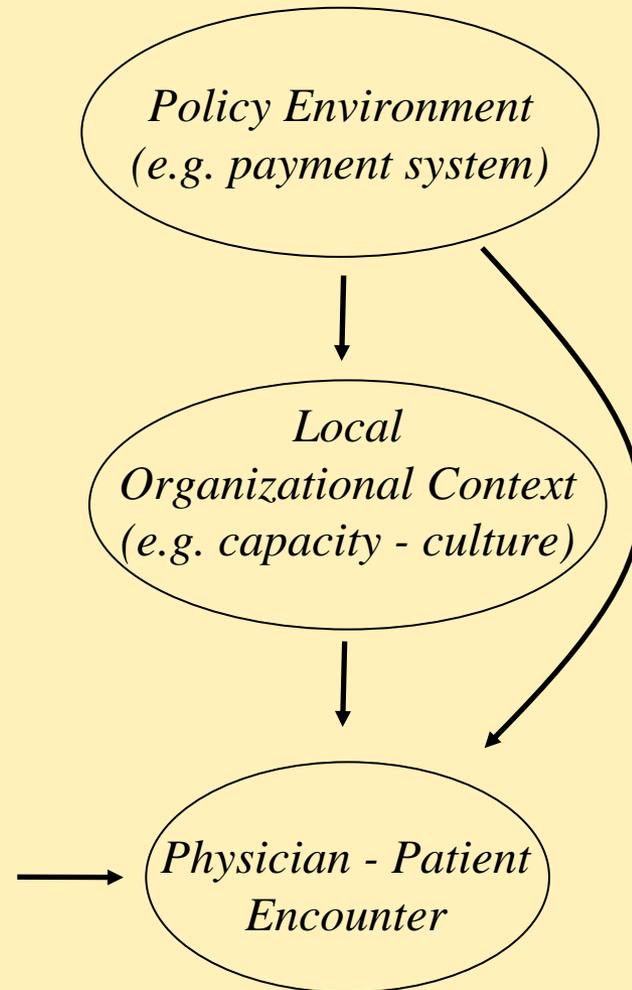


Figure 7a. A serious challenge

capitalize on imaging opportunities in urology

The introduction of Multislice Computed Tomography (MSCT) has changed the way urologists diagnose their patients. Today, CT has become the gold standard for many diagnostic examinations in urology.

Now Siemens Medical Solutions is making this fascinating imaging technology available to private practices like yours. Adding computed tomography can not only improve patient convenience — by combining diagnosis and care in one location — but it can also significantly improve the overall bottom line of your practice. Furthermore, in today's competitive marketplace, adding this service can help distinguish and grow your practice successfully.

NEW: Quick Start Package

To get you started quickly, we will prepare your personal "CT Quick Start Package for Urology." Simply use the Quick Checks #1-4 and we will customize your personal information package with these features:

Product brochures

	Procedures Per Day	Days Per Month	Average CPT	Income	FMVL Cost	ROI* Per Month	ROI for 5 Years
A	1.8	20	\$220	\$7,950	\$7,950	Break Even	Break Even
B	5	20	\$220	\$22,000	\$7,950	\$14,050	\$843,000
C	10	20	\$220	\$44,000	\$7,950	\$36,050	\$2,163,000

*Sample computation – Basic SOMATOM Spirit configuration, based on a 5-year Fair Market Value Lease (FMVL). Prices will vary with additional options. Please consult your Siemens Account Executive for details.
Return on Investment.

Siemens makes it easy

Sit back and relax. We help you step by step.

Siemens has a dedicated team of experts to help you step-by-step. Your team includes:

Business Development Manager Your local Siemens Sales Representative will be your personal contact partner. He or she will listen to your plans and advise you on the right products and solutions. In addition, he or she will introduce the right specialist at the right time and prepare the appropriate system quote.

Project Manager Your local Project Manager is responsible for assessing your site and supporting the installation process.

Financial Analyst Your Financial Analyst will prepare a business pro forma and calculate income, expenses, and profitability. He or she will also show you Siemens financing solutions that meet your financial and administrative needs.

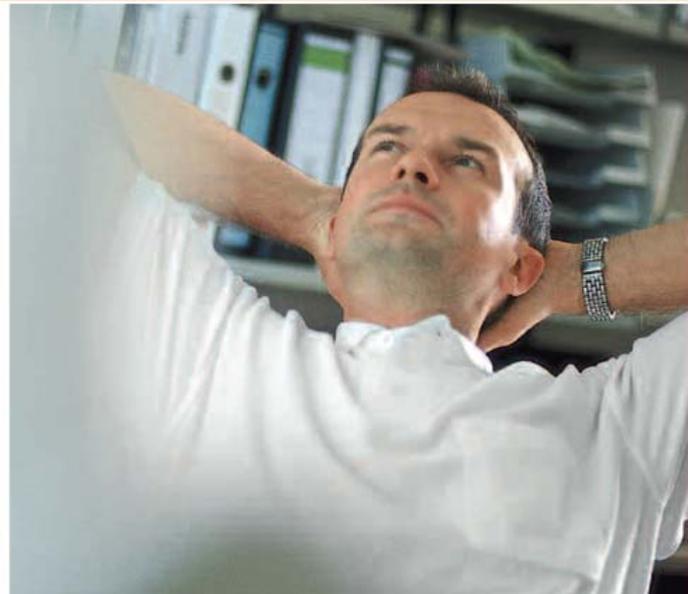


Figure 7b. A serious challenge

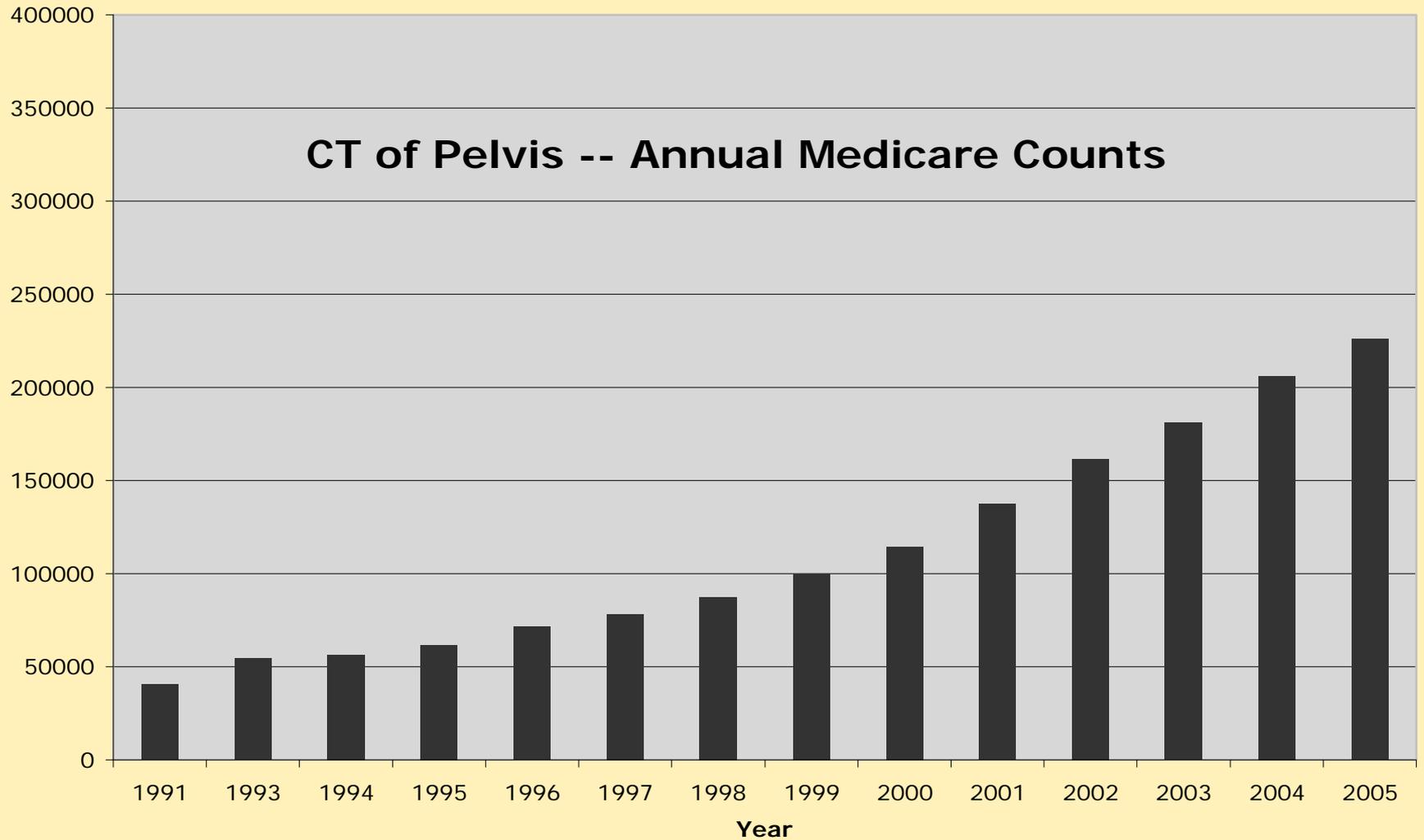


Figure 8. Potential policy levers

Research priorities (comparative effectiveness)
Coverage policy
Performance measurement / Public reporting
Payment system reform
Workforce policy (medical schools, GME)
Certificate of need / global budgets

Recruitment / practice location decisions
Capital investment (hospital, outpatient)
Organizational structure (hospital, MD group)
Process management (QI, IT adoption)

Specialty certification
Graduate Medical Education
Continuing Medical Education
HIT for care and decision-support
Patient / public education and incentives

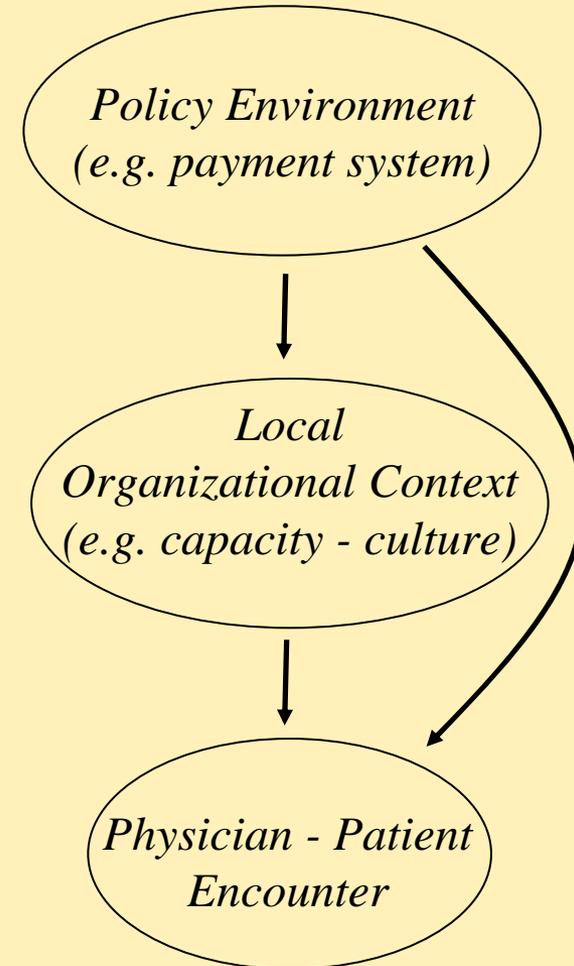


Figure 9. Core strategies in a market-oriented system

Underlying cause

Failure to recognize key role of *local* system (capacity, clinical culture) as driver

Assumption that more is better
Equating less care with rationing

Payment system that rewards more care, increased capacity, high margin treatments, entrepreneurial behavior

General Approach

Foster development of local organizations (delivery systems) accountable for care (with incentives to limit future growth): ACOs

Balanced information on risks / benefits
Comprehensive performance measures

Reform of payment system (long term)
Shared savings as interim approach

Figure 10. Fostering organizational accountability

Essential attributes of an Accountable Care Organization

Sufficient size to support comprehensive performance measurement

Provides (or can effectively manage) continuum of care as a real or virtually integrated local delivery system

Capable of prospectively planning budgets, capacity and resource needs

Potential Accountable Care Organizations

Large multi-specialty group practices that own their own hospitals
(Mayo, Virginia Mason, Scott White, Cleveland Clinic, Partners)

Physician-Hospital Organizations / Practice Networks
(Middlesex Health System)

Hospitals that own physician groups
(Intermountain Healthcare, many rural hospitals)

Figure 12. Accountable Care Organizations *Extended Hospital Medical Staff*

Physician referral networks -- around local hospitals

MDs with inpatient work (62%): where they do most work

MDs with no inpatient work (38%): where their patients are admitted

Create highly coherent “virtual” networks

Hospitals and Associated Extended Medical Staff in Wisconsin -- 2003-5

	% of Medicare Population	N of Hospitals	% of visits within Primary EHMS*	% visits within Prim & Secondary EHMS*
Large Groups (5000+ Medicare)	74	46	80 (65-88)	86 (77-92)
Small Groups (Less than 5000)	26	67	58 (45-80)	73 (62-89)

* Median hospital, with 10th and 90th percentiles shown below in parentheses

Figure 13. Why focus on developing ACO's?

Most physicians already practice within “virtual” ACOs

Virtually all MDs (95%) and Medicare beneficiaries (93%) can be assigned based on claims data to their local hospital and its medical staff

Most care is already delivered within these virtual multi-specialty groups

Modest incentives might prompt physicians to establish formal organizations that would not have to disrupt their current practices or patient care.

Performance measurement more tractable in the near term

All physicians could be included in measurement with adequate sample sizes, less difficulty in attribution.

Diverse and important measures are feasible (see Figure 14).

ACOs more likely to have capacity to invest in improvement: electronic health records, care management, etc

Figure 14: Feasibility of performance measurement

US - 2003 average performance, stratified by regional intensity*

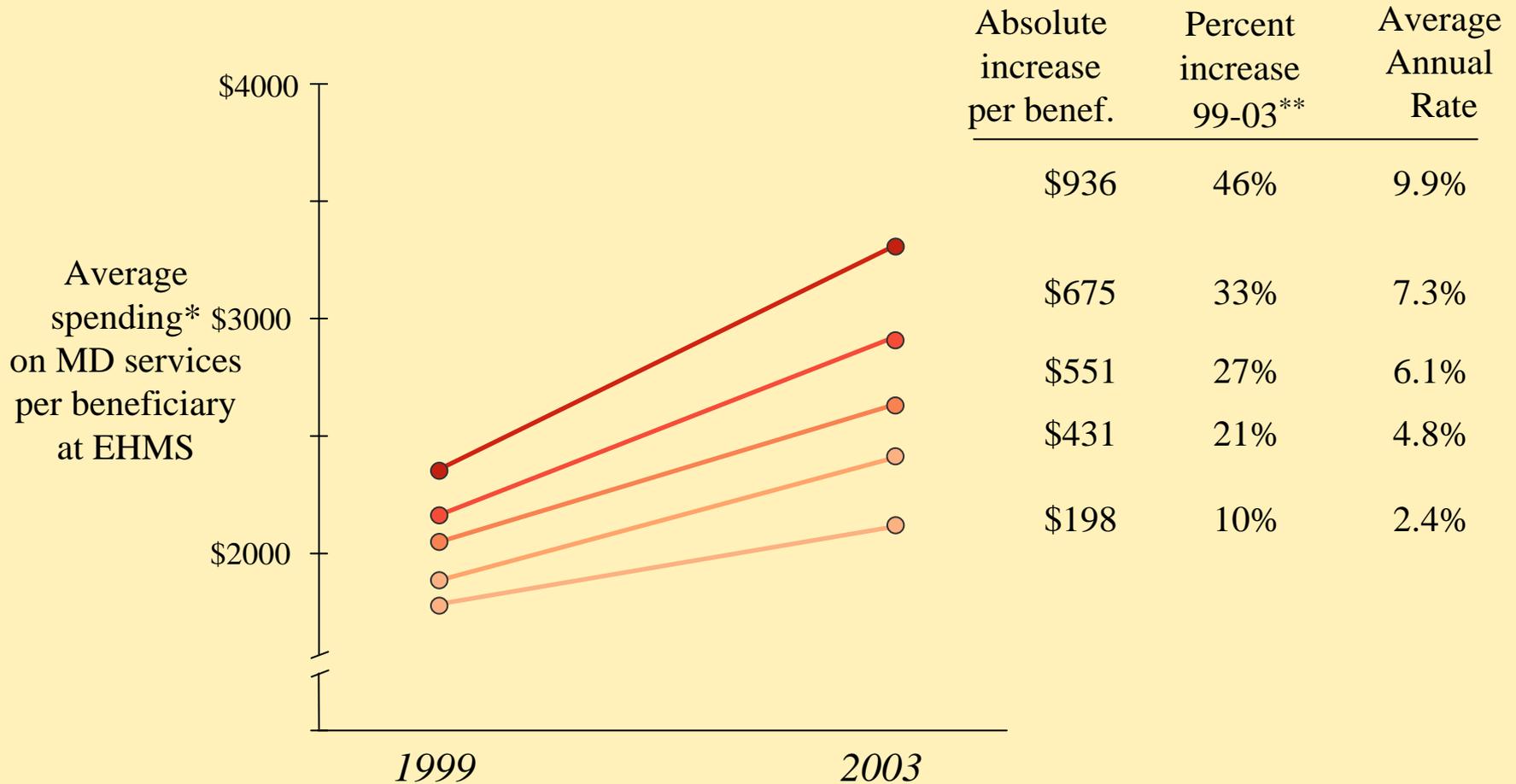
	<i>Low Spending</i>	<i>High Spending</i>	<i>Ratio High to Low</i>
<i>Mammography 65-69</i>	51.1	44.7	0.87
<i>Eye exams, diabetes</i>	41.3	40.7	0.98
<i>HBA1c, diabetes</i>	57.8	53.6	0.92
<i>Hospital Discharges</i>	308	407	1.32
<i>SNF stays</i>	70	85	1.20
<i>Care transitions</i>	0.80	1.01	1.26
<i>Physician services**</i>	\$2,085	\$3,295	1.58
<i>Acute care hospital</i>	\$2,086	\$2,649	1.26

* Regional intensity defined using end-of-life intensity index

** Physician and hospital spending calculated using standardized national prices (spending and utilization data are age-sex-race adjusted)

Figure 15: Growth in spending can be measured

Per-beneficiary spending in EHMS (n = 4772) sorted into quintiles by magnitude of per-beneficiary growth (1999-2003)



* Using standardized payments, using 2003 RVU

** Percent increase calculated relative to average 1999 per-beneficiary spending

Figure 16. Summary: It takes a community...
Reforming health care through shared accountability and payment reform

The Paradox of Plenty: In medicine, more isn't better

Why not? Underlying causes of the current mess

Lack of accountability: for capacity, care coordination, quality

Inadequate information: about biotechnology and care delivery

A toxic payment system:

Prescription for change: ***a broader conceptual model***

Foster organizational accountability: ACOs

Better information: especially on care delivery (NQF)

Reform payment: shared savings for participating ACOs