

HANDBOOK OF HEALTH ECONOMICS

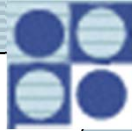
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איך הכל התחיל?

Uncertainty and the Welfare Economics of Medical Care
Kenneth Arrow (AER, 1963)



תקציר: עלייה בהוצאות וחוסר יעילות

- ברוב המדינות ההוצאה לבריאות עולה בקצב מהיר מהתוצר.
- לעלייה בהוצאות הבריאות סיבות רבות שהחשובה בהם היא ההתפתחות הטכנולוגית.
- ניצול לא נכון של משאבים (כלומר חוסר יעילות) היא תופעה נפוצה מאד בכל מערכות הבריאות.
- המרכיב העיקרי של חוסר היעילות הוא טיפולים "לא נכונים" - בחלק מהמקרים טיפולים מיותרים בחלק מהמקרים טיפולים חסרים. הסיבה העיקרית לטיפולים לא נכונים היא היעדר הנחיות קליניות ברורות.
- בעולם נעשו ניסיונות רבים לעצור את העלייה בהוצאות הבריאות ולהקטין את חוסר היעילות. חלק מהן לא הצליחו בהשגת אף אחת מהמטרות וחלק מהם האטו במידה מסוימת את העלייה בהוצאות אך לא בהכרח שיפרו את היעילות.
- למודל הביטוח תפקיד חשוב מאד בריסון העלויות. managed care - selective contracting עזרו רבות בריסון עלויות.

תקציר: תמריצים משפיעים

- תמריצים כלכליים משפיעים הן על התנהגות המטופלים והן על התנהגות המטפלים.
- כאשר ההשתתפות העצמית עולה הצרכנים רוכשים פחות שירותים. יש הערכות רבות ושונות לגבי גמישות הביקוש.
- כאשר ההשתתפות העצמית עולה הצרכנים צורכים פחות שירותים חשובים ולא חשובים פחות או יותר באותה מידה.
- כאשר משלמים לרופאים יותר על פעולות או כאשר ישנם יותר רופאים, הם מבצעים בדרך כלל יותר פעולות (לא כולם בהכרח נדרשות). יש הערכות רבות ושונות לגבי עוצמת התופעה.

תקציר: תחרות ברפואה

- בשונה ממה שהיה (או ממה שחשבו) בעבר, תחרות ברפואה כבר לא בהכרח פוגעת ביעילות או מזיקה לבריאות. במקרים רבים תחרות מביאה לשיפור האיכות וירידה במחיר.
- שתי סיבות עיקריות:
 1. לצרכנים יש יותר מידע על מחירים ובמידה מסויימת גם על איכות.
 2. הצרכנים לא קונים את השירות ישירות מהמטפלים אלא באמצעות מבטחים להם יש יותר מידע ויותר כוח שוק (selective contracting).
- ככל שלצרכנים יש יותר כוח התחרות יעילה יותר.
- יש דוגמאות למקרים בהם התחרות הזיקה.

תקציר: כמות = איכות

- כאשר רופאים מבצעים יותר טיפולים (לדוגמא ניתוחים) הביצועים שלהם משתפרים.
- הביצועים של הרופא משתפרים יותר (עם העלייה בכמות) אם את כל הניתוחים הוא מבצע באותו בית חולים. ההשפעה של הכמות על האיכות היא מערכתית ולא יחידנית.

תקציר: תמהיל ציבורי פרטי

- הביקוש לביטוחים פרטיים גובר כאשר (הפציינטים סבורים ש) איכות המערכת הציבורית יורדת. אורך התורים הוא המדד המקובל ביותר לאיכות המערכת הציבורית.
- רב המחקרים לא מצאו קשר חזק ומובהק בין הביקוש לטיפול במערכת הציבורית ואיכות השירות הציבורי. עלייה של 10% במשך התור בשירות הציבורי הורידה את הביקוש לטיפולים ב-1%.
- עלייה בשיעור בעלי הביטוחים הפרטיים מעלה את השימוש בשירותים.
- למרות ש dual practice (רופאים או בתי חולים שעבדים הן עבור המערכת הציבורית והן עבור הפרטית) היא תופעה נפוצה במערכות בריאות, אין כמעט מחקרים אמפיריים על ההשלכות של התופעה.

תקציר: תמהיל ציבורי פרטי-סוג הבעלות

- בעולם ישנם שלושה סוגים (עיקריים) של בתי חולים: ממשלתי
פרטי ללא כוונת רווח
פרטי עם כוונות רווח.
- רב מחקרים לא מצאו קשר חזק ומובהק בין שלושת סוגי הבעלות ובין איכות הטיפול והיעילות של בתי החולים. בחלק אחר של המחקרים התקבלו תוצאות הפוכות.
- בתי חולים עם כוונות רווח נוטים כנראה יותר לבצע ברירת מטופלים.

תקציר: מדדי איכות

- השימוש במדדי איכות מתרחב בקצב מהיר מאד בכל מערכות הבריות.
- נכון להיום, ברוב המקרים השימוש במדדי איכות לא הוכיח את עצמו. בחלק מהמקרים הוא הזיק, בחלק אחר הוא שיפר פחות מהמצופה ובחלק מהמקרים התוצאות לא הצדיקו את העלות.
- ישנם מקרים בהם מדדי איכות שיפרו ביצועים.

מסקנות:

- ישנן הרבה מאד דרכים לארגן את מערכת הבריאות.
- אין מודל אחד של ארגון המערכת שניתן לומר עליו שהוא באופן חד משמעי עדיף על האחרים.
- יש לא מעט דוגמאות למודלים (לדוגמא של תחרות או של שילוב של רפואה פרטית וציבורית) שהצליחו בזמן או במקום אחד ונכשלו בזמן או במקום אחר.
- ההצלחה של המודלים השונים תלויה בהרבה מאד משתנים חלקם חיצוניים וחלקם פנימיים למערכת, חלקם יחודיים למערכת וחלקם כלליים.
- לא ניתן ללמוד באופן חד משמעי מההצלחה או כישלון במקום אחד לגבי ההצלחה או הכישלון במקום אחר.
- מה שכן אפשר ללמוד ממקרים קודמים ואחרים הוא על הסכנות מהן יש להיזהר או להתגונן ועל אפשרויות אותן כדאי לנסות.
- כל מודל בו נבחר יש להפעילו לאט ובזהירות תוך בקרה הדוקה.



Health Care Spending Growth

Michael E. Chernew and Joseph P. Newhouse

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למה הוצאות הבריאות עולות ולמה יש כאלה הבדלים בין מדינות?

- כי ההכנסה עולה
- כי הילודה יורדת
- כי תוחלת החיים עולה
- כי השכר במערכת עולה (ללא עלייה מגבילה בתפוקה)
- כי הכיסוי הביטוחי גדל (השפעות של טווח קצר וטווח ארוך)
- כי רופאים עושים יותר רפואה מתגוננת
- כי התחרות גדלה ותחרות מגדילה כפילויות והוצאות מיותרות אחרות
- **טכנולוגיה**

Table 1.3 Medical Technology and Spending Growth, Residual and Related Studies

Study	Study Period	Method	Findings
(Newhouse, 1992, 1993b)	Varied	Residual approach, reviewing non-technology cause of spending growth	“The principal cause of increased costs appears to be the increased capabilities of medicine.”
(Schwartz, 1987)	1977–1984	Residual approach, reviewing non-technology cause of spending growth	Medical innovation and diffusion is the primary, controllable factor contributing to the underlying, upward trend in health care expenditures.
(Peden and Freeland, 1998)	1960–1993	Regression analysis using the level of insurance coverage and non-commercial research spending as proxies for technology	70% of spending growth is attributable to medical technology (much of which was induced by insurance coverage).
(Newhouse, 1981, Varied, 1988)		Regression analysis examining the change in prices as a function of the level of, and changes in, insurance coverage and gross national product (GNP)	The most important explanation of medical price inflation is that high levels of insurance coverage induced high rates of new product development and use.
(Cutler, 1995)	1940–1990	Residual approach	Technology accounts for 49% of the growth in real health care spending per capita from 1940 to 1990.
(Smith et al., 2009)	1960–2007	Residual approach (update to Newhouse’s 1992 paper, with some modifications to model)	Attribute 27 to 48% of growth to spending on new technologies.
(Bundorf et al., 2009)	2001–2006	Decompose spending growth into increases in price and increases in quantity	Attributed 100% of growth in outpatient services and 72% of growth in pharmaceuticals to increases in quantity.
(Frogner, 2010)	1970–2005	Evaluate impact of growth in average health care wage on growth in spending in the US, Australia, and Canada	Growth in wages is not a significant driver of spending growth.
(Finkelstein, 2007)	1950–1990	Estimated impact of expanded health insurance on spending growth	Spread of insurance accounts for ~50% of the growth in Medicare spending.

Table 1.4 Medical Technology and Spending Growth, Affirmative Studies

Study	Study Period	Method	Findings
(Scitovsky, 1985)	1971–1981	Examined changes in treatment patterns for common illnesses at the Palo Alto Medical Clinic	Big ticket new technologies were responsible for spending growth.
(Scitovsky and McCall, 1976)	1951–1971	Examined changes in treatment patterns for common illnesses at the Palo Alto Medical Clinic	Little ticket items were responsible for spending growth.
(Showstack et al., 1982)	1972–1977	Examined changes in treatment patterns for patients hospitalized at the UCSF hospital for 1 of 10 diagnoses	Increased use was largely attributable to the use of new technologies.
(Holahan et al., 1990)	1983–1985	Used two-stage least squares regression analysis to examine changes in Medicare expenditures per enrollee in different specialties	Spending growth was greatest in specialties likely to have experienced the greatest rate of technical innovation.
(Cutler and McClellan, 1996)	1984–1991	Examined hospital adoption of, and patient receipt of, coronary revascularization technologies	The expansion of invasive cardiac surgeries accounts for almost all of the growth in treatment costs for heart attacks.
(Bradley and Kominski, 1992)	1984–1987	Decomposed Medicare inpatient costs per case into input price inflation, changes in costs with diagnostic related groups (DRGs), and changes in case mix across DRGs	Technology-related factors accounted for at least 35% of the real increase in costs per case.
(Katz et al., 1997)	1987–1992	Examined spending growth across different clinical categories	Spending growth was greatest in service categories considered more technologically expensive.

(Continued)

Table 1.4 (Continued)

Study	Study Period	Method	Findings
(Okunade and Murthy, 2002)	1960–1997	Used total research and development spending and health research and development spending as a proxy for technological change	“Technological change is a major escalator of health care expenditure and confirm a significant and stable long-run relationship among per capita real health care expenditure, per capita real income and broad-based R&D expenditures.”
(Di Matteo, 2005)	1975–2000	Used time as a partial proxy for technological change	Technological change accounts for approximately two-thirds of the increases in real per capita health expenditures in US and Canada from 1975 to 2000.
(Mas and Seinfeld, 2008)	1982–1995	Hospitals’ acquisition of technology (as a proxy for spending growth)	Increases in HMO market share reduce the adoption of technologies that are new and already at the steady-state level, thus lowering the ultimate level of technology and leading to ultimate long-term reductions in medical spending growth.

ריסון העלייה בהוצאות

- לסוג הביטוח תפקיד שחשוב מאד בריסון העלויות. managed care ו- selective contracting הם סוג הביטוחים שעזרו רבות בריסון עלויות.
- "The central findings from these studies were that hospital cost and revenue growth slowed markedly following the introduction of selective contracting and that the effects were stronger in more competitive markets."

Table 1.6 Managed Care and Spending Growth, Market-level Studies

Study	Study Period	Main Unit of Observation	Primary Findings
(Robinson, 1991)	1982–1988	Hospitals in California	An increase of 10 percentage points in HMO penetration results in a 9.4% reduction in the rate of increase in cost per admission.
(Robinson and Casalino, 1996)	1983–1993	Hospitals in California	Spending growth per admission was 44% lower in markets with high HMO penetration compared with markets with low HMO penetration, largely because of reductions in the volume and mix of services.
(Robinson and Luft, 1988)	1982–1986	Hospitals	All payer rate regulation reduced cost between 6.3 and 16.3%. California's market-oriented strategy reduced costs by 10.1%.
(Gaskin and Hadley, 1997)	1985–1993	Hospitals	Spending growth in hospitals in areas with high rates of HMO penetration was slower than in areas with low HMO penetration (8.3% vs. 11.2%).
(Melnick et al., 1989a and b)	1980–1987	Hospitals in California	Hospital revenue growth in competitive markets was similar to that in non-competitive markets prior to selective contracting, but lower after selective contracting.
(Zwanziger et al., 1994a)	1982–1988	Hospitals in California	Hospitals in the most competitive markets had a 17% lower increase in inflation-adjusted expenses relative to hospitals in the least competitive markets. These reductions in expense growth were not concentrated in particular cost or revenue centers.

(Continued)

Table 1.6 (Continued)

Study	Study Period	Main Unit of Observation	Primary Findings
(Zwanziger et al., 1994b)	1975–1990	Hospitals in California	Prior to selective contracting, costs in highly competitive areas were 17% higher than those in less competitive markets. By 1990, after selective contracting, the gap narrowed to 4%.
(Melnick and Zwanziger, 1995)	1980–1991	Statewide and national data on hospital, physician, and pharmaceutical expenditures	Inflation-adjusted expenditures in California for hospital, physician, and pharmaceuticals grew by 27, 58, and 41%, respectively, over the study period. Comparable national figures were 54, 82, and 65%.
(Zwanziger and Melnick, 1988)	1980–1995	Hospitals in California	The introduction of selective contracting reduced the magnitude of the positive relationship between hospital competition and hospital costs.
(Melnick and Zwanziger, 1988)	1980–1985	Hospitals in California	Between 1983 and 1985 inflation-adjusted inpatient costs in highly competitive markets decreased by 11.3% compared with a less than 1% increase in less competitive markets.
(Melnick et al., 1989a and b)	1977–1986	Hospitals	Hospital expenses as a percentage of per capita income fell in California between 1982 and 1986. Most of the decline, and most of the divergence in the trend between California and the United States, is attributable to the 1982–1983 period. California and the United States had similar trends from 1984 through 1986.
(Wickizer and Feldstein, 1995)	1985–1992	Insured employee groups	A 25% increase in market-level HMO penetration would result in a 16% decline in premium growth.

(Continued)

Table 1.6 (Continued)

Study	Study Period	Main Unit of Observation	Primary Findings
(Hill, and Wolfe, 1997)	1981–1994	Health plans offered to state employees in Madison, Wisconsin	Lower premium growth occurred in the first two years following a rapid transition for managed care and the rate of increase returned to national trends.
(Cutler and Sheiner, 1998)	1988–1993, 1980–1993	Physician, prescription, and drug expenditures	Between 1988 and 1993, every 10 percentage point increase in average HMO penetration resulted in a 0.5% reduction in hospital spending growth and a 0.4% reduction in overall spending growth. From 1980 to 1993, increases in physician and prescription drug spending growth mostly offset the reduction in hospital spending growth.

Source: Chernew et al. (1998).

חוסר יעילות

- ניצול לא נכון של משאבים (כלומר חוסר יעילות) היא תופעה נפוצה מאד בכל מערכות הבריאות.
- המרכיב העיקרי של חוסר היעילות הוא טיפולים לא נכונים-בחלק מהמקרים טיפולים מיותרים בחלק מהמקרים טיפולים חסרים. הסיבה העקרית לטיפולים לא נכונים היא היעדר הנחיות קליניות ברורות.
- חלק גדול מהניסיונות שנעשו במערכות השונות לעצור את העלייה בהוצאות ולהקטין את חוסר היעילות נכשלו או שהצליחו פחות מהמצופה.

CHAPTER TWO

Causes and Consequences of Regional Variations in Health Care

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Health Care Spending Risk, Health Insurance, and Payment to Health Plans

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Who Ordered That? The Economics of Treatment Choices in Medical Care

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Variation by Procedure, 1981

rate per 10,000 beneficiaries

Procedure	High	Mean	Low	CV
Hip arthroplasty	18	9	2	0.69
Total Knee	20	9	3	0.47
CABG	23	13	7	0.41
Malignant skin Lesion excision	260	150	77	0.37
2 Craniotomy	8	5	3	0.31

Table 2.1 Regional Variation in Utilization and Health: Selected Measures

Column/HRR	1	2	3	4	5	6	7	8	9
Year	2007 Medicare Expenditures	2007 Medicare Expenditures (price adjusted)	2007 Mortality Rates (per 1,000)	2005 Hip Fractures (per 1,000)	1994/95 β Blocker Use (%) ideal pts	2007 Back Surgery (per 1,000)	2003 PSA Tests Age 80 + (%)	2007 End-of- Life ICU Days	2001–05 Last 2 yrs MD Visits
Grand Junction, CO	6,196	6,283	4.58	7.47		5.9	9.0	1.4	38
Huntington, WV	8,634	9,269	6.38	8.73	46	2.8	12.0	2.0	59
New York, NY	12,190	9,691	4.37	6.30	61	2.0	27.0	4.0	88
Rochester, NY	6,613	6,923	5.50	6.99	82	3.4	5.3	2.1	45
Chicago, IL	10,369	9,782	4.70	6.70	36	2.5	13.7	7.4	81
San Francisco, CA	8,498	6,881	4.25	5.45	65	3.1	13.4	4.6	64
Los Angeles, CA	10,973	9,685	4.42	6.24	44	4.0	24.8	8.0	109
Seattle, WA	7,126	6,718	4.68	6.27	52	5.3	13.4	2.9	45
McAllen, TX	14,890	15,026	4.59	6.30	5	3.3	24.9	8.0	100
Miami, FL	16,316	15,971	4.96	7.27	52	2.5	30.4	10.7	106
Bend, OR	6,520	6,457	4.67	7.72	50	7.4	8.4	1.6	38
US average	8,571	8,571	5.04	7.34	51	4.5	19.0	3.9	61
Coefficient of variation	0.18	0.16	0.09	0.14	0.27	0.31	0.35	0.43	0.32
Correlation coefficient*	0.87	1.00	0.37	0.33	−0.24	−0.12	0.36	0.62	0.68

*With price adjusted per capita Medicare spending.

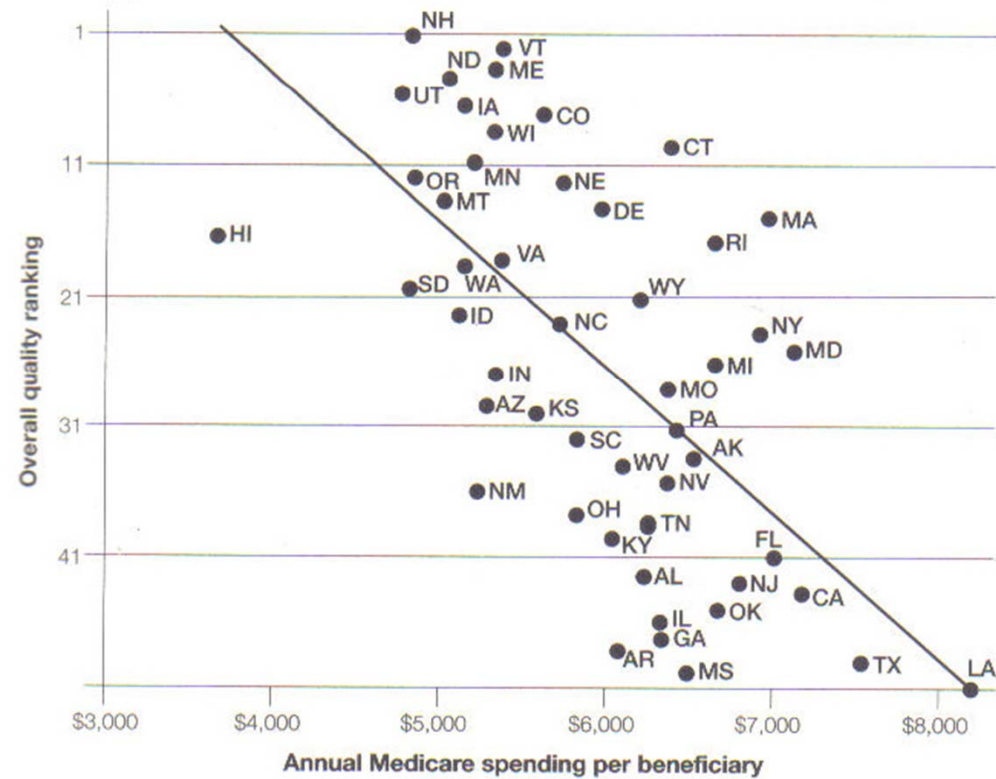
Sources noted in text.

The Gray Area of Medicine

For a person going to the doctor with chest pain, there are over 7,000 cardiology guidelines for individual clinical decisions. For a simple cough, there are over 4,000 infectious disease guidelines, of which 14 percent are based on randomized controlled trials and 55 percent are from opinions or case series ([Lee and Vilemeyer, 2011](#)). In addition, many of the guidelines are based on studies excluding people with multiple chronic conditions (often present in the elderly) or based on other non-random samples. Indeed, clinical guidelines in most fields of medicine suffer from poor adherence to methodological standards ([Shaneyfelt et al., 1999](#); [Atkins et al., 2004](#); [Dahm et al., 2008](#)).

FIGURE 1-14

Medicare spending and quality of care by state, 2001



Source: Baicker, K., and A. Chandra, "Medicare Spending, the Physician Workforce, and Beneficiaries' Quality of Care," *Health Affairs Online*. Copyright 2003 by Project Hope. Reproduced with permission of Project Hope via Copyright Clearance Center.

ניסיונות שונים (שנעשו ולא ממש הצליחו) לצמצום חוסר היעילות במערכות בריאות בעולם:

- קיצוב.
- פיקוח על השקעה ואימוץ של טכנולוגיות רפואיות.
- גביית השתתפויות עצמיות מהמטופלים.
- תגמול קופות חולים, בתי חולים, רופאים ומטפלים אחרים באופן שיתמרץ אותם לחסוך.
- הגדלת התחרות.
- הגדלת המעורבות של מערכת המשפט (רשלנות רפואית).
- מעורבות רבה יותר של המנהלים בעבודת הרופא.

מה ניתן ללמוד מ"כלכלת בריאות"?

פרופ' קובי גלזר

HANDBOOK OF HEALTH ECONOMICS

Edited by

MARK V. PAULY

THOMAS G. MCGUIRE

PEDRO P. BARROS

Amsterdam • Boston • Heidelberg • London • New York • Oxford
Paris • San Diego • San Francisco • Singapore • Sydney • Tokyo
North Holland

Cutler: Your Money or Your Life

Cutler applies an economic analysis to show that our spending on medicine is well worth it—and that we could do even better by spending more.

- בחמישים השנים האחרונות העלייה בהוצאה על בריאות הייתה בהחלט משתלמת: התשואה על ההשקעה הייתה גבוהה מאד (בהשוואה לכל השקעה ציבורית או פרטית אחרת).
- ניתן היה להשיג תשואה גבוהה עוד יותר ע"י ארגון אחר של מערכת (בארה"ב).
- עיקר חוסר היעילות היה בטיפולים לא נכונים (עודפים או חסרים) למחלות שיחסית קל לנהל אותן.
- קושי עיקרי של מערכת הבריאות במאבק על עוגת המשאבים נובע מכך שבעוד שהוצאות הבריאות הם בערכים כלכליים רגילים (כסף, או אחוז התל"ג המופנה לבריאות) הרי שהתשואה עליהן היא בחלקה הגדול בערכים אחרים (תוחלת חיים, איכות חיים וכו').

Who Ordered That? The Economics of Treatment Choices in Medical Care

Amitabh Chandra, David Cutler, and Zirui Song¹

Harvard University and NBER, USA

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תמריצים משפיעים על מטופלים

- כאשר ההשתתפות העצמית עולה הצרכנים רוכשים פחות שירותים. יש הערכות רבות ושונות לגבי גמישות הביקוש.
- הגדלת ההשתתפות העצמית איננה גורמת לצרכנים להקטין בהכרח את השירותים הפחות חיוניים.
- כאשר ההשתתפות העצמית עולה הצרכנים צורכים פחות שירותים חשובים ולא חשובים פחות או יותר באותה מידה.
- כתוצאה מכך נולד הלהיט החדש: V-Bid

By and large, the HIE results hold up well. Most of the demand elasticities from these natural experiments are along the lines of the HIE. In some areas, the RAND results have been refined with newer data. In particular, recent studies show that:

- Use of prescription drugs is very price sensitive (Hsu et al., 2006; Huskamp et al., 2003; Joyce et al., 2002). In general, the literature finds elasticities of about -0.2 to -0.6 (Goldman and Joyce, this Handbook).
- People seem to cut back on both necessary and unnecessary care. When cost sharing increases, people use fewer services, but the services foregone are neither uniformly valuable nor wasteful (Buntin et al., 2011; Chandra et al., 2010).
- Higher cost sharing deters recommended preventive and chronic care, which may lead to undesirable “offsets” in greater use and spending on other services, such as hospital care (Trivedi et al., 2010; Chandra et al., 2010; Hsu et al., 2006). The economic theory of offsets is discussed in Goldman and Philipson (2007) and Newhouse (2006).
- There are complementarities across types of care (Buntin et al., 2011). Raising costs for prescription drugs increases hospital costs, and lowering costs for preventive care has only a modest effect on utilization if people need to see their primary care physician before accessing preventive care.

Price Elasticity

Study	Dependent Variable	Price Elasticity
All Expenditures:		
Rosett and Huang (1973)	Expenditures for hospital and physician services	-0.35 to -1.5 ^a
Manning et al. (1987)	All expenditures	-0.17 to 0.22
Physician Services:		
Fuchs and Kramer (1972)	Physician visits per capital	-0.15 to -0.20
Newhouse and Phelps (1976)	Physician office visits	-0.08
Cromwell and Mitchell (1986)	Surgical services	-0.14 to -0.18
Wedig (1988)		
Health perceived excellent/good	Physician visits	-0.35
Health perceived fair/poor	Physician visits	-0.16
Hospital Services:		
Feldstein (1971)	Hospital admissions per capita	-0.63
Newhouse and Phelps (1976)	Hospital length of stay	-0.06
Manning et al. (1987)	Hospital admissions	-0.14 to -0.17
Nursing Homes:		
Chiswick (1976)	Nursing home residents per elderly population	-0.69 to -2.40
Lamberton et al. 1986)	Nursing home patient days per capita elderly	-0.69 to -0.76

^aRosett and Huang report that price elasticity varies by level of coinsurance. Elasticities reported range from -0.35 for 20 percent coinsurance to -1.5 for 80 percent coinsurance. Wedig reported estimates based on the National Medical Care Utilization and Expenditures Survey (NMCUES) for 1980 and separated 5,322 observations on adults into subsamples by perceived health status.

תמריצים כלכליים משפיעים על מטפלים

- כאשר משלמים לרופאים יותר על פעולות או כאשר ישנם יותר רופאים, הם מבצעים בדרך כלל יותר פעולות. יש הערכות רבות ושונות לגבי עוצמת התופעה.
- רופאים המתוגמלים על פעולות עושים יותר פעולות מיותרות ויותר פעולות נדרשות לעומת רופאים המתוגמלים ללא קשר למספר הפעולות.
- עלייה של 10% במספר הרופאים העלתה את הביקוש לשירותים ב 3%-4% (Fuchs).
- רופאים שהיה להם אינטרס כלכלי בבדיקות כמו CT, MRI פיסיותרפיה היפנו יותר לבדיקות אלה.

במחקר שנעשה בשנות ה 80 חילקו את הרופאים לשתי קבוצות. חלקם קיבלו שכר קבוע וחלקם תיגמול לפי פעולות.

מס. זימונים	מס. ביקורים	פעולות "חסרות"	פעולות "עודפות"	
לפי שכר	3.8	2.9	9%	4%
לפי פעולות	4.8	3.6	4%	22%

פחות ביקורים ב ER בקרב אלה שרופאיהם תוגמלו לפי פעולות (0.12 לעומת 0.22)

Health Care Spending Risk, Health Insurance, and Payment to Health Plans

Friedrich Breyer, M. Kate Bundorf and Mark V. Pauly

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Competition in Health Care Markets¹

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Health Care Markets, Regulators, and Certifiers

David Dranove

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הגישה הישנה: תחרות בבריאות זה רע כי:

- תחרות מעלה את ההיצע ובבריאות ועלייה בהיצע יוצרת מרוץ חימוש וטיפולים מיותרים.
- התחרות היא לא בהכרח על הדברים החשובים באמת כי הפציינטים לא מבינים מה טוב להם.

• הגישה החדשה:

- אם התחרות היא לא מול המטופל הבודד אלא מול "נציגים" שלו (קרי, מבטחים, קופות חולים, ארגוני רכישה) אז תחרות מורידה מחירים ומעלה את האיכות.
- "נציגי" המטופלים ממלאים את תפקיד ה"מפקח" בלי חלק מהמגבלות של מפקח ממשלתי. (Observability vs. Verifiability)

Dranove: Conclusions

Early studies presented a theory of harmful competition that was the direct result of moral hazard and delegation—the Medical Arms Race. Empirical research steeped in the tradition of the structure conduct performance paradigm showed that health care costs did seem to be higher in more competitive markets, although these studies never fully addressed concerns about endogeneity bias inherent in CP regressions.

As US markets transitioned to selective contracting, and the locus of purchasing power shifted from the individual patient to the insurer, evidence showed that prices were higher in more concentrated markets and that mergers also led to higher prices. In the past decade, empirical research has become more structural; these models confirm the adverse consequences of provider market power and are integral to antitrust analyses of mergers.

Table 9.8 Summary of Hospital Price-Concentration Literature

Study	Primary Data Source, Services, Location and Time Period	Measures of Market Structure/Price	Empirical Approach	Results
Akosa Antwi et al. (2009)	OSHPD; Inpatient; CA; 1999–20025	County-level HHI; average net revenue per discharge	Graphical analysis of price growth trends	Prices increased 2-fold over period and growth is highest in monopoly markets; however, changes in market structure are not associated with differential price growth
Burgess et al. (2005)	AHA, OSHPD, inpatient; CA; 1994–1998	Average net private revenue per private discharge; hospital system HHI is weighted average zip code HHI	Estimate GEE to account for within-hospital correlations	Hospital system HHI is positively correlated with price
Dranove et al. (2008)	OSHPD, Florida State Center for Health Statistics; AHA; inpatient; CA and FL; 1990–2003	Hospital system HHI based on actual and predicted patient flows	OLS and IV regression of price on concentration and measure of MC intensity	The association between concentration and price increased during the 1990s and leveled off during the 2000s
Melnick and Keeler (2007)	OSHPD, AHA; inpatient; CA; 1999–2003	Average net private revenue per private discharge; hospital system HHI is weighted average zip code HHI	Linear regression of log price on concentration indexes and system indicators	System HHI is positively associated with price growth; hospitals in large systems experienced higher price growth
Moriya et al. (2010)	MedStat insurance claims, AHA data; all inpatient; US; 2001–2003	HHI calculated using AHA data, DRG-adjusted prices from claims data	Estimate the relationship between insurer/hospital concentration and price using OLS w/market FE	Insurer concentration is negatively associated with hospital prices; hospital

(Continued)

Table 9.8 (Continued)

Study	Primary Data Source, Services, Location and Time Period	Measures of Market Structure/Price	Empirical Approach	Results
Wu (2008)	Medicare cost reports, AHA; inpatient; MA; 1990–2002	Outcome of interest is change in private payments per admission	Examines impact of hospital closures on prices using DDD approach	price/concentration relationship is insignificant Hospitals in which a rival closed experienced a price increase relative to controls
Zwanziger et al. (2000)	OSHPD; inpatient; CA; 1980–1997	Outcome of interest is hospital revenue and expenditures, HHI is weighted average zip code HHI	Estimate the impact of hospital concentration allowing for the impact to vary by year; estimate with hospital FE	The association between market concentration and hospital revenue is monotonically increasing from 1983 to 1997
Zwanziger and Mooney (2005)	HMO annual reports, SPARCS, NY cost reports; inpatient; NY; 1995–1999	Price is HMO payments/risk-adjusted discharges; hospital/system HHI is weighted average zip code HHI	Estimate the relationship between hospital concentration and price leveraging NY deregulation of hospital pricing in 1997 w/hospital FE	The relationship between system HHI and prices became large and significant after reform

Note: Lists only those studies published after 2000.

Table 9.9 Summary of Hospital Merger Literature

Study	Primary Data Source and Time Period	Location/Merger	Services	Price Measure	Empirical Approach	Results
Capps and Dranove (2004)	Insurer claims 1997–2001	Analysis of 12 inpatient hospitals involved in mergers	Inpatient	Inpatient prices from claims	Difference-in-difference (DID)	Nine of the 12 hospitals had price increases exceeding the median
Dafny (2009)	AHA, Medicare reports 1989–1996	Analyzes 97 hospital mergers US	Inpatient	CMI-adjusted inpatient revenue per discharge	Instrumental variables	Merging hospitals had 40 percent higher prices than non-merging hospitals
Haas–Wilson and Garmon (2011)	Insurer claims 1997–2003	Evanston, mergers of Evanston NW and Highland Park and St. Therese and Victory Memorial	Inpatient	Inpatient prices from claims	DID	Post-merger, Evanston–NW hospital had 20 percent higher prices than control group; no price effect at St. Therese–Victory
Krishnan (2001)	Ohio Dept. of Health and OSHPD 1994–1995	OH and CA analysis of 37 different hospital mergers	Inpatient	DRG prices based on charge to revenue information	DID	Merging hospitals increased price 16.5 and 11.8 percent in OH and CA, respectively
Spang et al. (2001)	AHA, Medicare cost reports 1989–1997	Analyzes 204 hospital mergers across US	Inpatient	Adjusted inpatient revenue per admission	OLS	Merging hospitals experienced a 5 percentage point lower price growth relative to rivals

(Continued)

Table 9.9 (Continued)

Study	Primary Data Source and Time Period	Location/Merger	Services	Price Measure	Empirical Approach	Results
Tenn (2011)	Insurer claims 1997–2002	SF Bay Area, CA Sutter/Summit merger	Inpatient	Risk-adjusted inpatient price from claims	DID	Summit prices increased 28.4 to 44.2 percent compared to control group
Thompson (2011)	Insurer claims 1997–98 and 2001–02	Wilmington, NC New Hanover-Cape Fear 1998 merger	Inpatient	Risk-adjusted inpatient price from claims	DID	Three of 4 insurers experienced a large price increase; one insurer experience a decrease in prices
Town et al. (2006)	CPS, AHA and InterStudy, 1991–2003	Entire US	Not applicable	Rate of uninsurance	DID	Aggregate merger activity increased the uninsured rate by 0.3 percentage points
Sacher and Vita (2001)	OSHPD data, 1986–1996	Santa Cruz, CA merger of Dominican and Watsonville hospitals	Inpatient	Average net revenue received per inpatient acute-care admission	DID	Average net revenue from private payers Dominican hospital prices were 22 percent higher after the merger relative to controls

Note: Lists only those studies published after 2000.

Table 9.10 Health Care Quality and Competition Empirical Studies: Regulated Prices

Study	Time Period	Geographic Area	Medical Condition	Payers	Quality Measure	Competition Measure	Effect of Competition on Quality
Kessler and McClellan (2000)	1985, 1988, 1991, 1994	US	Heart attack	Medicare	Mortality	HHI	Increase (<i>mortality</i> ↓)
Gowrisankaran and Town (2003)	1991–1993 (Heart attack), 1989–1992 (pneumonia)	Los Angeles	Heart attack, pneumonia	Medicare	Mortality	HHI	Decrease (<i>mortality</i> ↓)
Kessler and Geppert (2005)	1985–1996	US (non-rural)	Heart attack	Medicare	Readmission, mortality	HHI	Increase (<i>mortality</i> ↓, <i>readmissions</i> ↓)
Mukamel et al. (2001)	1990	US (134 MSAs)	All	Medicare	Mortality	HHI	No effect
Shen (2003)	1985–1990, 1990–1994	US (non-rural)	AMI	Medicare	Mortality	# of hospitals interacted with Medicare payment, HMO penetration	Interacted with Medicare payment: 1985–90—no effect, 1990–94—increase (<i>mortality</i> ↓); interacted with HMO penetration: 1985–90—decrease (<i>mortality</i> ↑), 1990–94—no Effect
Tay (2003)	1994	California, Oregon, Washington	Heart attack	Medicare	Mortality	Demand elasticity	Increase (<i>mortality</i> ↓)
Gaynor et al. 2010	2003/04, 2007/08	England	Heart attack, all conditions	NHS	Mortality	HHI	Increase (<i>mortality</i> ↓)

(Continued)

Table 9.11 Health Care Quality and Competition Empirical Studies: Market Determined Prices

Study	Time Period	Geographic Area	Medical Condition	Payers	Quality Measure	Competition Measure	Effect of Competition on Quality
Gowrisankaran and Town (2003)	Heart attack, 1991–1993; pneumonia, 1989–1992	Los Angeles	Heart attack, pneumonia	HMO	Mortality	HHI	Increase (<i>mortality</i> ↓)
Sohn and Rathouz (2003)	1995	California	PTCA	All	Mortality	Competition coefficient	Increase (<i>mortality</i> ↓)
Mukamel et al. (2002)	1982, 1989	California	All, AMI, CHF, pneumonia, stroke	All	Mortality	HHI	Decrease (<i>mortality</i> ↑)
Encinosa and Bernard (2005)	1996–2000	Florida	All, nursing surgery	All	Patient safety event	Low hospital operating margin	Decrease (<i>patient safety events</i> ↑)
Propper et al. (2004)	1995–1998	UK	Heart attack	NHS	Mortality	Number of competitors	Decrease (<i>mortality</i> ↑)
Sari (2002)	1991–1997	16 states	All	All	Quality indicators	HHI	Increase (<i>quality indicators</i> ↑)
Ho and Hamilton (2000)	1992–1995	California	Heart attack, stroke	All	Mortality readmission	Merger	No effect; mortality increase: readmission (↓)
Capps (2005)	1995–2000	New York	All	All	Quality indicators	Merger	No effect: 13 inpatient and patient safety indicators Decrease: 1 year post-merger in-hospital mortality for AMI, heart failure (<i>mortality</i> ↑)

(Continued)

Table 9.11 (Continued)

Study	Time Period	Geographic Area	Medical Condition	Payers	Quality Measure	Competition Measure	Effect of Competition on Quality
Volpp et al. (2003)	1990–1995	New Jersey	Heart attack	All	Mortality	Price deregulation	Decrease (<i>mortality</i> ↑)
Burgess et al. (2008)	1991–1999	UK	Heart attack	NHS	Mortality	Deregulation, number of competitors	Decrease (<i>mortality</i> ↑)
Howard (2005)	2000–2002	US	Kidney transplant	All	Graft failure	Demand elasticity	Increase (small) (<i>elasticity</i> ↑)
Abraham et al. (2007)	1990	US	All	All	Quantity consumed	# of hospitals	Increase (<i>quantity</i> ↑)
Cutler et al. (2010)	1994, 1995, 2000, 2002, 2003	Pennsylvania	CABG	All	Mortality	Entrants' market share	Increase (<i>market share of high-quality physicians</i> ↑)
Escarce et al. (2006)	1994–1999	California, New York, Wisconsin	Heart attack, hip fracture, stroke, gastrointestinal hemorrhage, congestive heart failure, diabetes	All	Mortality	HHI	Increase—CA, NY; no effect—WI (<i>mortality</i> ↓, 0)
Rogowski et al. (2007)	1994–1999	California	Heart attack, hip fracture, stroke, gastrointestinal hemorrhage, congestive heart failure, diabetes	All	Mortality	1-HHI, 1–3 firm concentration ration, # of competitors	Increase (3–5 conditions), no effect (<i>mortality</i> ↓, 0)

Healthcare competition saves lives

Under what circumstances does the introduction of choice and competition into public healthcare provision lead to improved outcomes?

Carol Propper describes the key findings of CMPO research on competition and quality in the English National Health Service.

Competition among English hospitals saves patients' lives and decreases their overall length of stay, all without increasing overall expenditure.

Competition under fixed prices has beneficial results while competition where hospitals bargain over price and quality does not.

ואם כבר מדברים על Carol Propper (פרק 14 בספר)

Propper, C. & Van Reenen, J. (2010):

Can pay regulation kill? Panel data evidence on the effects of labor markets on hospital performance.

Journal of Political Economy, 118(2), 222-273.

Selective Contracting

“payer competition” (providers compete for plan contracts) instead of “patient competition” (providers compete for individual patients).

Cutler et al. (2000) found contracting **reduced prices** for heart attack treatments at hospitals. Ma and McGuire (1998) found **quantity reductions** when selective contracting was introduced for office-based mental health care providers. More recently, Wu (2009). Found that **size helps a health plan in bargaining with hospitals over price, but so does the ability to “channel” patients,**

Experience of contracting in California has also been studied extensively. Melnick et al. (1992) and Melnick and Zwanziger (1988) studied selective contracting for hospitals in California and large metropolitan areas, respectively, and document that **MCOs obtain discounts by selective contracting, and more competitive hospital markets allow larger discounts.**

Dranove (CHAPTER 10)

The overall conclusion is that the growth of selective contracting eliminated or even reversed the perverse relationship between market performance and market concentration.

Most studies suggest that competition either improves quality or is neutral; a possible exception is the [Propper et al. \(2004\)](#) study of competition in the UK during the 1990s. More recent competitive reforms in the UK seem to have improved quality without increasing costs

כמות = איכות

- כאשר רופאים מבצעים יותר טיפולים (לדוגמא ניתוחים) הביצועים שלהם משתפרים.
- הביצועים של הרופא משתפרים יותר (עם העלייה בכמות) אם את כל הניתוחים הוא מבצע באותו בית חולים.
- בכל מה שקשור לאיכות הטיפול השלם גדול מסכום מרכיביו: איכות הטיפול גדלה עם הכמות אם העבודה נעשית על ידי אותו הצוות.

The Home Hospital Effect:

[Huckman and Pisano \(2006\)](#) ask whether it is a surgeon's volume at a particular hospital, or his/her overall volume that influences surgical outcomes. They find that the mortality rate of a surgeon's patients **at a specific hospital** improves significantly with increases in his or her volume at that hospital **but not with increases in his or her volume elsewhere**. [Ramanarayanan \(2008\)](#) also attempts to identify physician specific volumeoutcome effects for CABG surgery. Unlike Huckman and Pisano, he does find that surgeon experience is somewhat portable across hospitals. However, it is not fully portable—**surgeon volume at the “home” hospital has a much bigger impact on outcomes than does volume at other hospitals**. The results from these two papers ([Ramanarayanan, 2008](#); [Huckman and Pisano, 2006](#)) provide a more nuanced view on the volume outcome relationship. Physicians play an important role, but it is not simply the physician's volume that determines outcomes. There are hospital-specific aspects to the volume outcome relationship, implying that concentrating procedures at a hospital can play a significant role in improved outcomes.

Table 9.12 Health Care Quality and Competition Empirical Studies: Volume—Outcome

Study	Time Period	Geographic Area	Medical Condition	Payers	Quality Measure	Factor Affecting Quality	Effect on Quality
Ho (2002)	1984–1986	California	PTCA	All	Mortality, CABG	Surgical volume	Increase (small) (<i>volume</i> ↑ → <i>mortality</i> ↓)
Gowrisankaran et al. (2004)	1993–1997 (CA), 1988–1999 (FL)	California, Florida	Whipple procedure, CABG, abdominal aortic aneurysm	All	Mortality	Surgical volume	Increase (<i>volume</i> ↑ → <i>mortality</i> ↓)
Gaynor et al. (2005)	1983–1999	California	CABG	All	Mortality	Surgical volume	Increase (<i>volume</i> ↑ → <i>mortality</i> ↓)
Huckman and Pisano (2006)	1994–1995	Pennsylvania	CABG	All	Mortality	Surgical volume (physician)	Increase (<i>volume</i> ↑ → <i>mortality</i> ↓)
Ramanarayanan (2008)	1998–2006	Florida	CABG	All	Mortality	Surgical volume (physician)	Increase (<i>volume</i> ↑ → <i>mortality</i> ↓)
Huesch (2009)	1998–2006	Florida	CABG	All	Mortality	Surgical volume (new surgeons)	No effect (<i>volume</i> ↑ → <i>mortality</i>)

Public and Private Sector Interface

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תמהיל ציבורי פרטי

- The theoretical prediction is simple. Take a National Health Service providing both insurance protection and direct health care provision. Larger quality differences between public and private health care provision lead to higher private health insurance coverage.
- The empirical evidence supports this prediction. Private health insurance is taken up as a way to have access to higher quality in the private sector. Quality of care has often been measured using waiting time.
- Existing evidence suggests quality and waiting times affect the choice of buying supplementary private health insurance across a range of countries

השפעת הבעלות על בתי חולים

- בעולם ישנם שלושה סוגים (עיקריים) של בתי חולים:
ממשלתי
פרטי ללא כוונת רווח
פרטי עם כוונות רווח.
- רב מחקרים לא מצאו קשר חזק ומובהק בין שלושת סוגי הבעלות ובין איכות הטיפול והיעילות של בתי החולים. בחלק אחר של המחקרים התקבלו תוצאות הפוכות.
- בתי חולים עם כוונות רווח נוטים כנראה יותר לבצע ברירת מטופלים.

Hospital Ownership: Quality

[Milcent \(2005\)](#) investigates differences in quality (as measured by AMI mortality rates) between public and private for profit and not-for-profit hospitals in France.

The study finds that public hospitals and private non-profit ones have similar outcomes. Private for-profit hospitals have lower mortality rates than non-profit ones (though the difference is not significant when controlling for size and the number of innovative procedures,...)

[Jensen et al. \(2009\)](#) control for possible selection by including in their sample of Australian hospitals only patients who were affected by their first AMI: they find that private hospitals have lower (unplanned) readmission and mortality rates associated with acute myocardial infarction.

A recent meta-analysis suggests that differences in quality between public and private providers in the US give mixed evidence ([Eggleston et al., 2008](#)). They find that whether for-profit hospitals provide lower or higher quality depends on the context (region, data source, and period of analysis).

Hospital Ownership: Cost

In line with [Eggleston et al. \(2008\)](#), [Shen et al. \(2007\)](#) conduct a meta-analysis which compares in the US the financial performance of for-profit, non-profit, and government hospitals.

Overall, the study finds little difference in cost among types of hospital.

Several recent studies test for differences in efficiency between public and private hospitals in different European countries.

The results are mixed.

Hospital Ownership: Cream Skimming

There is evidence that private hospitals may have a stronger incentive to select less severe patients.

[Duggan \(2000\)](#) finds that private hospitals, regardless of the for-profit or non-profit status, responded by cream skimming the patients who were profitable under the new scheme, and leaving the unprofitable ones to the public sector. In contrast, public hospitals were rather unresponsive.

He also provides evidence that public hospitals have soft budget constraints, and that private for-profit and non-profit hospitals do not differ in their degree of altruism.

Dual Practice

- In many countries, doctors working for publicly funded health systems (of the NHS type) are also allowed to work privately. This is the case, for example, in France, Italy, Portugal, Spain, and the Scandinavian countries.
- Health care systems differ in the way dual practice is regulated. In some countries dual practice is forbidden (for example, in Canada). In others it is allowed but with restrictions on the income gained in the private practice (France and the United Kingdom) or the number of hours or quantity provided in the private practice (Austria and Italy). Some countries offer higher salaries to doctors who work exclusively for the public sector (Portugal and Spain). Finally, dual practice may be practiced outside the public hospital or within the public hospital (*intra moenia* or *intra mura*).

Dual Practice in Practice

- Dual practice has seen mainly descriptive or theoretical pieces. [Socha and Bech \(2011\)](#) provide a recent review of the literature, including the few empirical works. These rely on surveys to physicians. They address the motives but not the implications of dual practice. **In particular, there is not a detailed treatment of verification of conditions for dual practice to be welfare improving.**

מדדי איכות

- השימוש במדדי איכות מתרחב בקצב מהיר מאד בכל מערכות הבריות.
- נכון להיום, ברוב המקרים השימוש במדדי איכות לא הוכיח את עצמו. בחלק מהמקרים הוא הזיק, בחלק אחר הוא שיפר פחות מהמצופה ובחלק מהמקרים התוצאות לא הצדיקו את העלות.
- ישנם מקרים בהם מדדי איכות שיפרו ביצועים.

5.4. Does Disclosure Improve Quality?

In 19901992, New York and Pennsylvania adopted a hospital and surgeon report card based on cardiovascular mortality rates. [Chassin \(2002\)](#) reports that risk-adjusted inpatient surgical mortality in New York fell dramatically after the publication of the report cards. As discussed below, this optimistic finding may be premature because Chassin cannot rule out that hospitals refused to treat patients who had risk factors not included in the risk adjustment algorithm.

Disclosure may harm consumers if quality is multidimensional and only some dimensions are disclosed, as firms may boost reported quality but shirk on unreported quality. [Werner et al. \(2009\)](#) and [Lu \(2008\)](#) both find evidence that this occurred with the Nursing Home Quality Initiative. NHQI collects data on a wide variety of quality dimensions but only reports a subset of this data. Both studies find that reported quality increased after the introduction of the NHQI, but that quality deteriorated along different dimensions of unreported quality.

Dranove: Conclusion

The weight of the research evidence suggests that report cards and P4P have improved quality, although the effects seem small.

Multitasking remains a problem and theorists have made little to no headway towards designing optimal report cards and P4P programs.

Table 10.7 Empirical Studies of Quality Report Cards

Author	Subject	Results
Jin (2005)	Health plans	Plans do not fully disclose quality
Jin and Sorensen (2006)	Health plans	Higher quality plans more likely to disclose; disclosure moves market shares ^a
Wedig and Tai-Seale (2002)	Health plans	Report cards move market shares
Scanlon et al. (2002)	Health plans	Report cards move market shares; effect strongest for low-quality plans and for new employees
Chernew et al. (2008)	Health plans	Report cards lead to a modest updating of beliefs about plan quality
Beaulieu (2002)	Health plans	Report cards move market share effect stronger for employees with longer tenure
Dafny and Dranove (2008)	Medicare managed care	Report cards move market share; “market learning” was occurring prior to report card release
Bundorf et al. (2009)	Fertility clinics	Report cards move market shares; patients are sophisticated when interpreting report card scores
Schneider and Epstein (1998)	Hospitals	Report cards do not move market share
Romano and Zhou (2004)	Hospitals	Report cards do not move market share
Cutler et al. (2004)	Hospitals	Lower ranking hospitals lose market share
Dranove and Sfekas (2008)	Hospitals	“News” in report cards moves market share away from lower ranking hospitals
Pope (2006)	Hospitals	Report cards move market share, even when controlling for continuous quality scores
Jin and Leslie (2003)	Restaurant hygiene	Disclosure leads to improvements in hygiene
Bennear and Olmstead (2009)	Drinking water	Disclosure leads to reduction in contaminants
Chen (2008)	Nursing homes	Report cards lead to quality improvements, especially in competitive markets
Kolstad (2010)	Surgeons	Report cards lead to quality improvements; most of the improvement comes from intrinsic motivation
Werner et al. (2009)	Nursing homes	Disclosed dimensions of quality improve; undisclosed dimensions get worse
Lu (2008)	Nursing homes	Disclosed dimensions of quality improve; undisclosed dimensions get worse

(Continued)

Table 10.7 (Continued)

Author	Subject	Results
Wu (2011)	Fertility clinics	Disclosed dimensions of quality improve; undisclosed dimensions get worse
Dranove et al. (2003)	Hospitals	Hospitals avoid sicker patients
Werner et al. (2005)	Hospitals	Hospitals avoid minorities
Zhang (2011)	Hospitals	Report cards facilitate matching of toughest cases to the best physicians; physician report cards undo matching

^aUnless otherwise stated, market share moves away from lower ranked plans towards higher ranked plans.

מסקנות:

- ישנן הרבה מאד דרכים לארגן את מערכת הבריאות.
- אין מודל אחד של ארגון המערכת שניתן לומר עליו שהוא באופן חד משמעי עדיף על האחרים.
- ההצלחה של כל מודל תלויה בהרבה מאד משתנים חלקם חיצוניים וחלקם פנימיים למערכת, חלקם יחודיים למערכת וחלקם כלליים. על כן, לא ניתן ללמוד באופן חד משמעי מההצלחה או כישלון של מודל מסויים במקום אחד לגבי ההצלחה או הכישלון, של אותו מודל, במקום אחר.
- מה שכן אפשר ללמוד ממקרים קודמים ואחרים הוא על הסכנות מהן יש להיזהר או להתגונן ועל אפשרויות אותן נכון לנסות.
- כל מודל בו נבחר יש להפעילו בהדרגה ובזהירות תוך בקרה ולווי הדוקים.

תודה רבה ובהצלחה!

(ושנהיה בריאים)