Health Care Industry Consolidation: Facts, Impacts, and Policy Options
or
"How Do You Reform Health Care with an 800 Pound Gorilla in the Room?"

Martin Gaynor

E.J. Barone Professor of Economics and Health Policy
Heinz College
Carnegie Mellon University

National Healthcare Reform: The Good, the Bad, and the Ugly
James A. Baker III Institute for Public Policy
Rice University

November 11, 2011

The Health Care Industry

- Health care is a very large and important industry.
  - Large
    - 2009 – Hospital care 5.4% of GDP, Physician services 3.6%, Health insurance 1%.
    - Grown dramatically: 1980 – Hospitals 3.5%, Physicians 1.7%, Insurance 0.34%.
  - Important
    - Saves lives, improves quality of life.
    - Improves productivity.

Markets and the US Health Care System

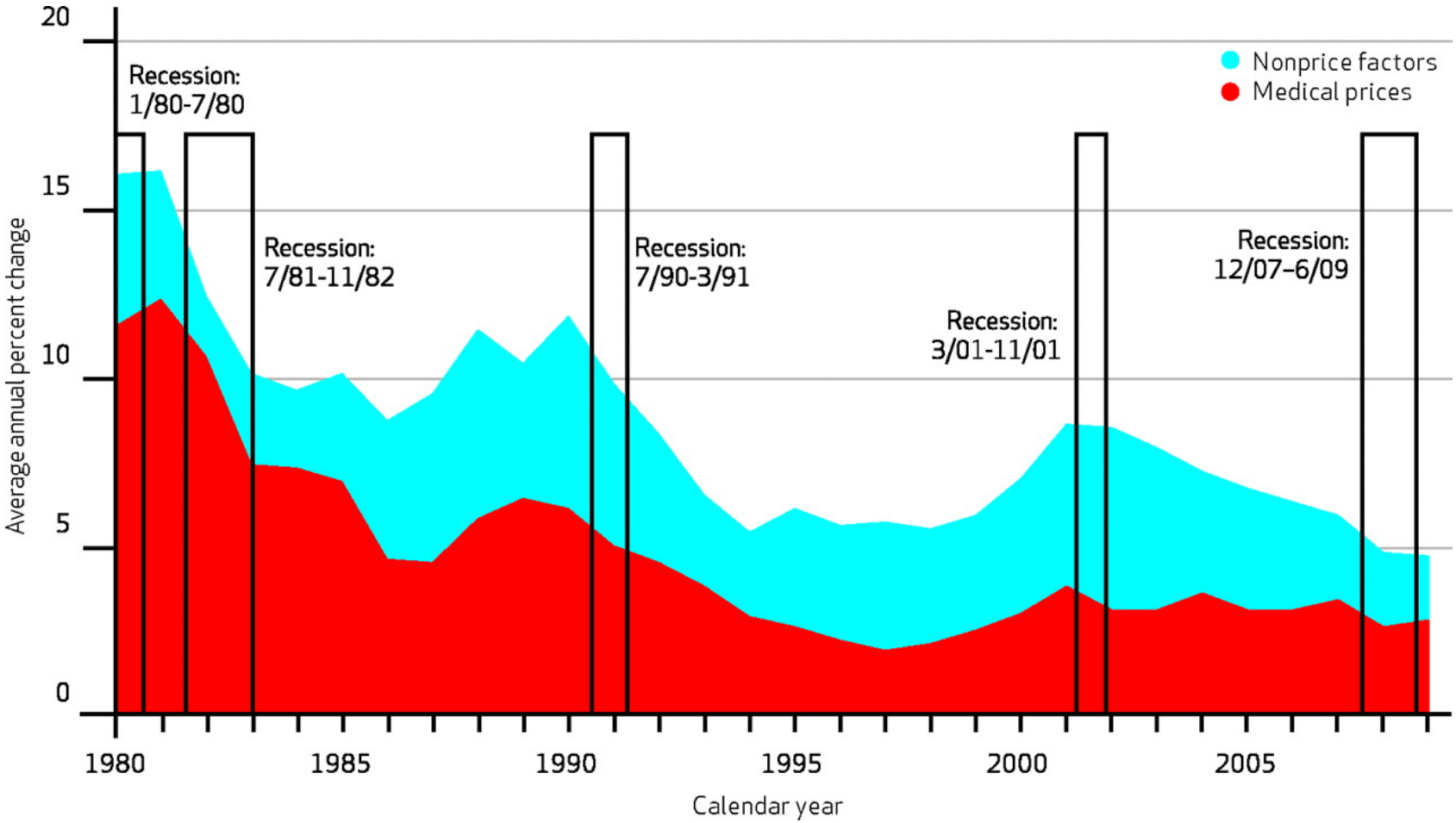
- The US depends on markets for the delivery of care.
  - Supply is overwhelmingly privately provided.
  - True for both the privately and the publicly insured.
    - Prices market determined for the privately insured.
    - Quality, access, etc. market determined for all patients.
- The functioning of markets is a necessary condition for the successful functioning of the US health care system.
  - This is not changed by health reform.
    - The health reform law is incremental – builds on the current system.
    - Therefore depends on the successful functioning of healthcare markets.

Reform and 800 Pound Gorillas

- Market power on the part of providers is a serious problem.
  - Health care markets have become very consolidated.
  - Increases in prices appear to be a major component of increased costs.
- Any serious attempt to control costs or improve quality has to deal with this.
- PPACA does not do this.
  - Very hard to impossible to pass health reform if opposed by providers, particularly doctors.
- As a consequence, PPACA is unlikely to control costs (e.g., Massachusetts).
  - It may even make things worse (ACOs).
- There also may be problems with expanding insurance coverage.
  - If exchange markets function poorly.

Prices as Driver of Health Care Spending

Source: CMS



Outline of Talk

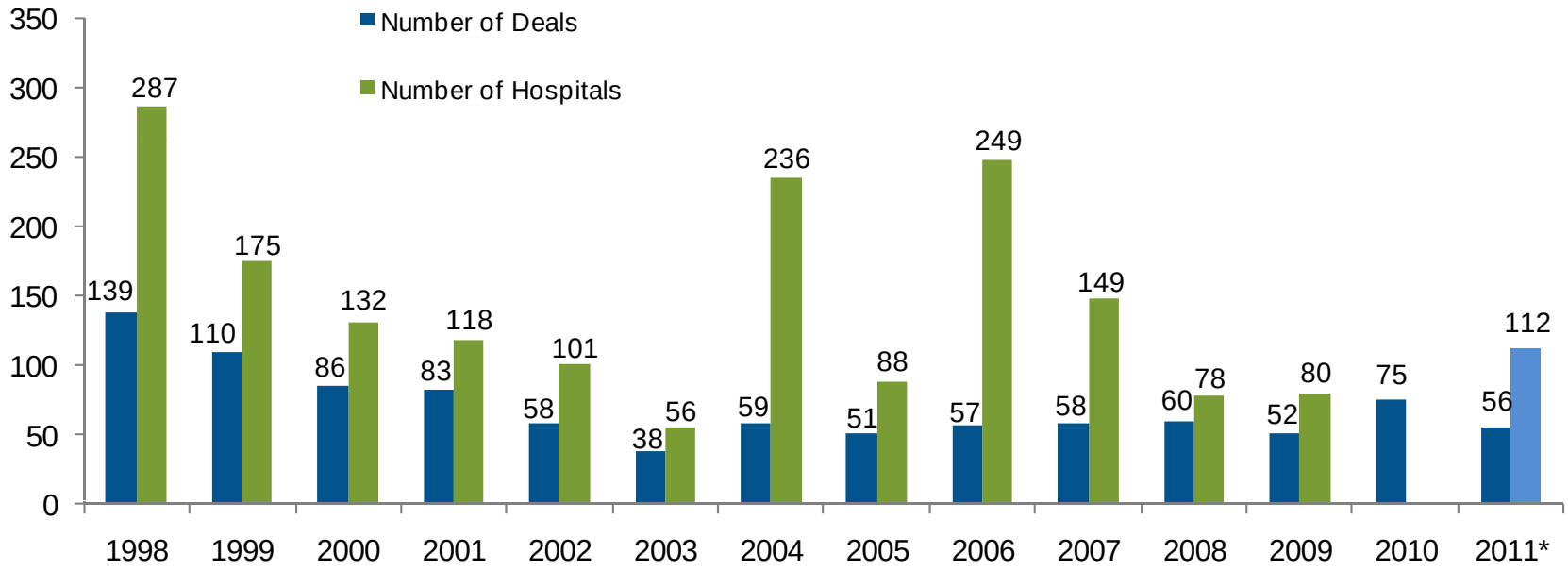
- Introduction
- Consolidation – What's Happened?
  - "Horizontal"
    - Hospitals
    - Insurance
    - Physicians
  - "Vertical"
    - Hospital-Physician
    - Insurer-Provider
- Evidence on the Effects of Consolidation
  - By Market
  - Prices
  - Quality
  - Who Pays?
- Reform and Policy

Hospital Consolidation

- There has been a tremendous amount of consolidation in the hospital industry.
  - Mergers and Acquisitions.
    - Over 900 deals 1994-2000.
    - Consolidation slowed in 2000s, but has picked up recently.
  - Hospital Market Concentration.
    - Herfindahl-Hirschmann Index (HHI): sum of squared market shares.
    - Average MSA level HHI.
    - 1992 – 2,440; about like a market with 4 firms of equal size.
    - 2006 – 3,261; about like a market with 3 equally sized firms.
    - FTC/DOJ cutoff for highly concentrated market – HHI = 2,500.
    - In 2006, 75% of MSAs were highly concentrated.
  - Pittsburgh
    - University of Pittsburgh Medical Center – 72% market share 2009; 42% 1999.
    - Next largest – West Penn/Allegheny 26% market share.
  - Why Did Hospitals Consolidate?
    - Response to rise of managed care (Chernew, 1995; Dranove et al., 2002).

Hospital Mergers and Acquisitions, 1998-2010

Source: Irving Levin Associates, Inc., The Health Care Acquisition Report, Sixteenth Edition, 2010.



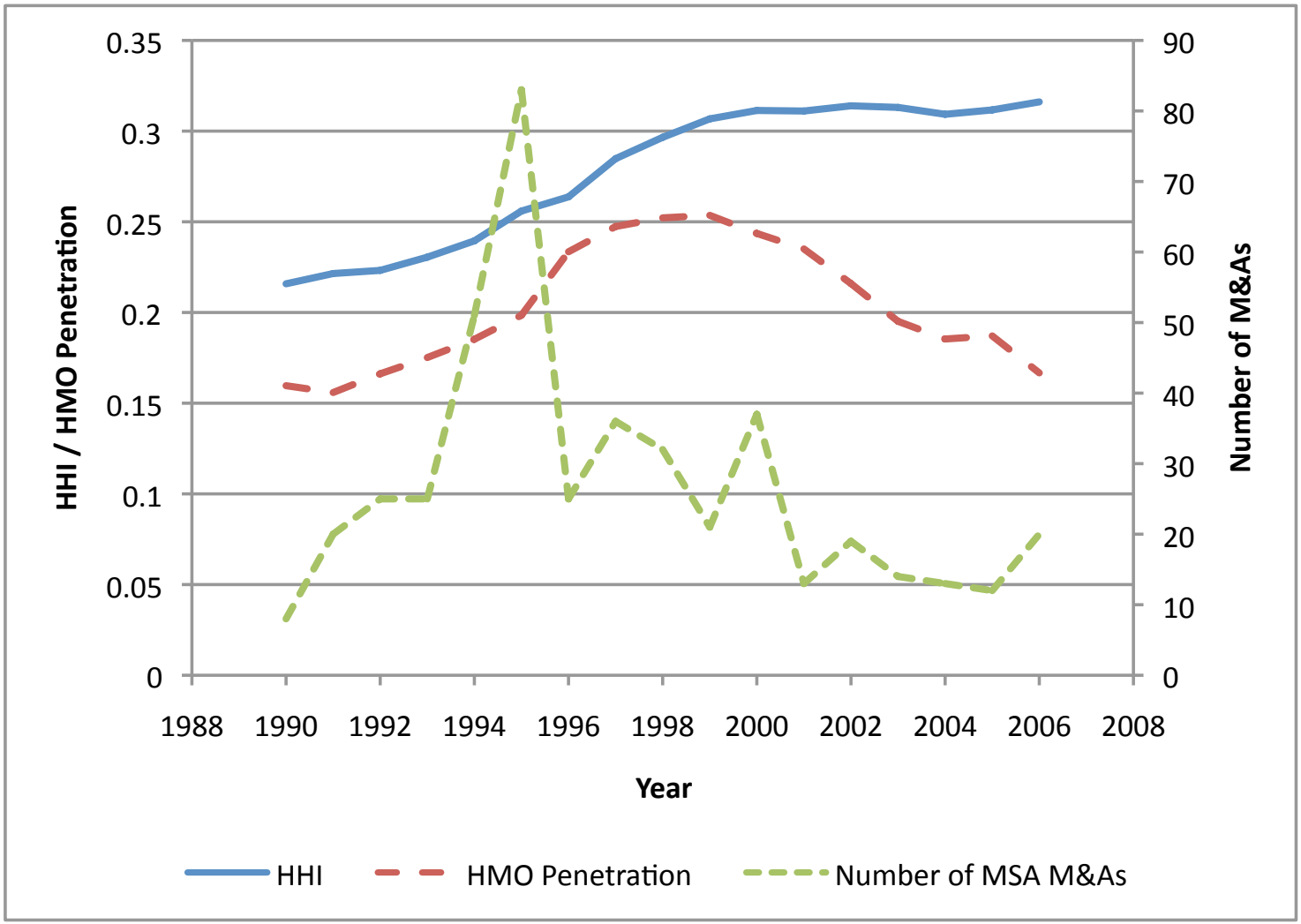
Hospital Market Concentration, 1987-2006

Source: American Hospital Association.

Year	Mean HHI	Change
1987	2,340	—
1992	2,440	100
1997	2,983	543
2002	3,236	253
2006	3,261	25

- Herfindahl-Hirschmann Index
  - Definition: $HHI = \sum_{i=1}^{n} s_i^2$.
  - Monopoly: $HHI = 10,000$; Equal Shares: $HHI = 1/n$
  - 3 equal-sized firms, $HHI = 3,333$
  - $HHI > 2,500$: Highly concentrated

Trends in Hospital Concentration, M&A Activity and HMO Penetration: 1990-2006



Insurer Consolidation

- Insurer Consolidation.
  - Information not as good as for hospitals, but better than for physicians.
- Large Employer Market.
  - 1998 – 2,172; about like a market with 5 firms of equal size.
  - 2006 – 2,956; somewhere between a market with 3 and 4 equally sized firms.
  - Average insurance market is highly concentrated after 2004.
  - Concentration starts increasing after 2002 (compared to mid to late 1990s for hospitals).
- Small Group Market.
  - Market share of largest carrier has been increasing over time (33% 2002; 47% 2008).
  - 87% of states had five firms controlling 75% or more of the market in 2008; 56% in 2002.

Large Employer Insurance Market Concentration, 1998-2009

Source: These #s were graciously provided by Leemore Dafny. The data are for large multisite employers.

Year	Self + Fully Insured Mean HHI	Change	Fully Insured Only Mean HHI	Change
1998	2,172	—	2,984	—
1999	1,997	-175	2,835	-149
2000	2,175	178	3,092	257
2001	2,093	-82	3,006	-86
2002	2,280	187	3,158	152
2003	2,343	63	3,432	274
2004	2,519	176	3,706	274
2005	2,609	90	3,951	245
2006	2,740	131	4,072	121
2007	2,873	133	4,056	-16
2008	2,916	43	4,201	145
2009	2,956	40	4,126	-75

Small Group Insurance Market Structure, 2000-2003

GAO (2009)

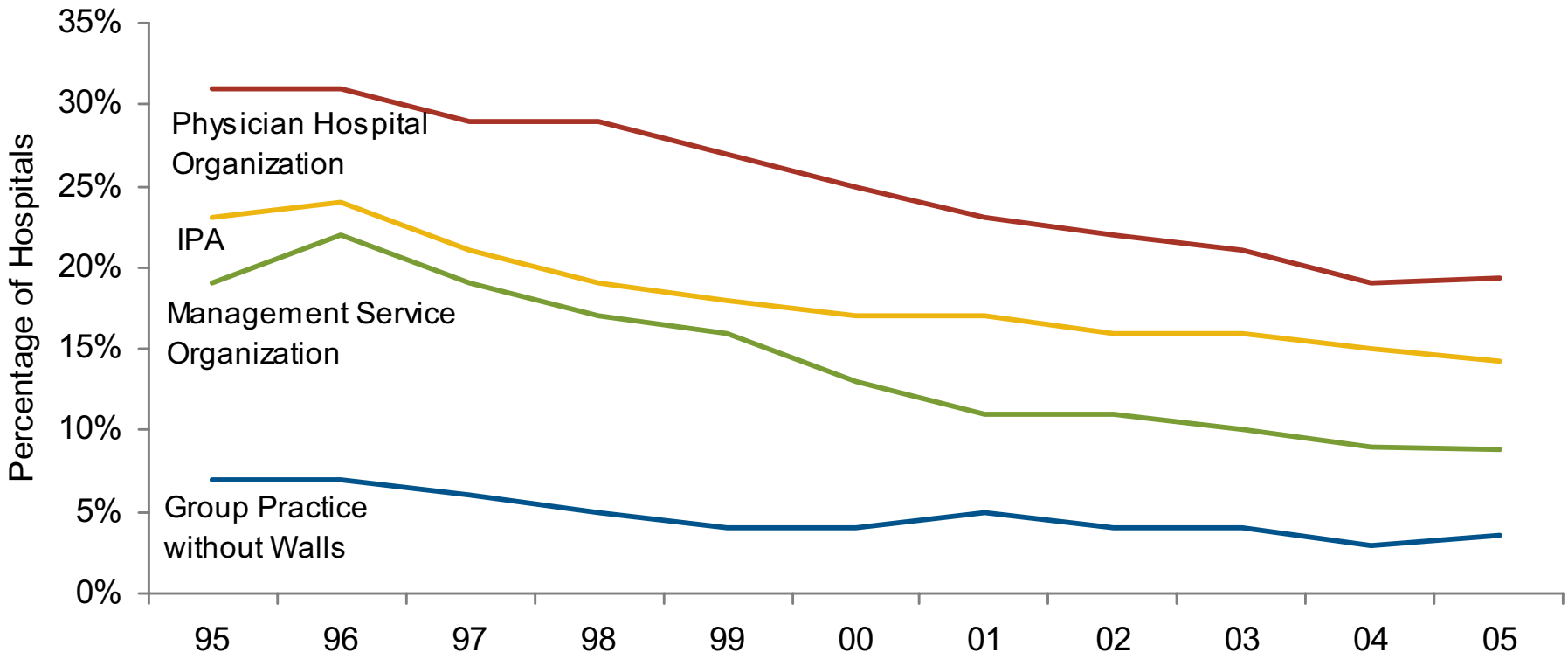
Year	Median Market Share, Largest Carrier	# of States with 5 firm concentration ratio $\geq$ 75%
2002	33%	19 (of 34; 56%)
2005	43%	26 (of 34; 77%)
2008	47%	34 (of 39; 87%)

Physician, Vertical Consolidation

- There is not nearly as much information about consolidation in the physician market as there is for hospitals.
  - Size of Physician Practices.
    - Practices getting larger (Liebhaber and Grossman, 2007).
    - Proportion in large groups and employed has grown over time.
    - No real increase in the # of physicians per capita (NCHS, 2011).
  - County HHI for physician practices 4,430 in CA in 2001 (Schneider et al., 2008).
- Vertical Consolidation
  - Physicians-hospitals; Insurers-providers.
  - A great deal of interest in physician-hospital consolidation in particular.
  - Most forms of physician-hospital integration peaked in the mid-1990s (e.g., PHOs), and have declined steadily since then.
  - The exception is the employment of physicians by hospitals, which has been growing steadily.
  - Recent reports of increased activity.

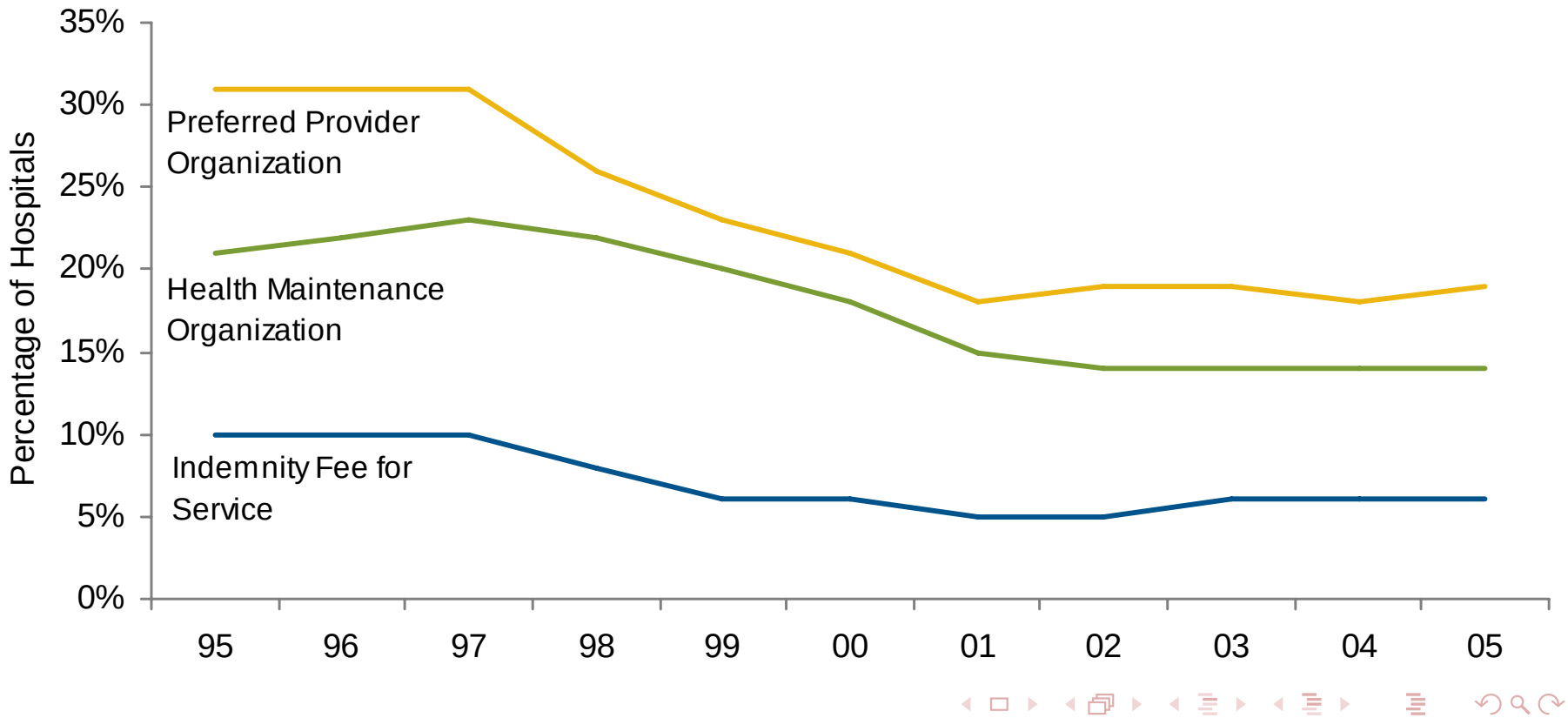
Percentage of Hospitals with Physician Affiliation by Type, 1995–2005

Source: American Hospital Association, "Trendwatch Chartbook 2007,"



Percentage of Hospitals with Insurance Products by Type of Insurance, 1995-2005

Source: American Hospital Association, Chicago, Illinois, "Trendwatch Chartbook 2007"



Hospital Markets

- Prices
  - Price-Concentration Studies (e.g., Dranove et al., 2008; Melnick and Keeler, 2007)
    - A 5→4 merger leads to ∼5% increase in price (800 pt increase in HHI).
    - HHI increased about 900 pts 1992-2006, ⇒ ∼ 5.6% increase.
    - Almost certainly an underestimate.
  - Studies of Consummated Mergers (e.g., Haas-Wilson and Garmon, 2011; Dafny, 2009; Sacher and Vita, 2001)
    - Price increases of ∼ 20 - 40% due to merger.
    - Prices at Sutter hospital increased 28-44% after its merger with Alta Bates (Tenn, 2011).
    - As many as 2,000 mergers 1994-present. If every one results in a 20% price increase . . .
  - Structural Models (Demand, Supply, Equilibrium) (e.g., Brand et al., 2011; Capps et al., 2003; Gaynor and Vogt, 2003; Town and Vistnes, 2001)
    - Average hospital demand elasticity in CA is -4.85.
    - Merger in San Luis Obispo, CA → price increases of up to 53%.

Hospital Markets (cont.)

- Not-for-Profit Status
  - Many papers have tested for different pricing behavior by not-for-profits.
  - Little difference.
  - Not-for-profits set lower prices, but no different from for-profits in exploiting market power, merger.
  - Duggan (2002), Dafny (2005) find differences in other kinds of behavior.
- Quality
  - Regulated prices (e.g., Medicare) – consolidation reduces quality (Kessler and McClellan, 2000; Shen, 2003; Kessler and Geppert, 2005; Cooper et al., 2011; Gaynor et al., 2010).
    - Medicare AMI patients treated at hospitals in more concentrated markets were at substantially higher risk of death (Kessler and McClellan, 2000).
    - Reform in the NHS led to mortality falling faster in less concentrated markets post-reform (Cooper et al., 2011; Gaynor et al., 2010).

Hospital Markets (cont.)

- Market determined prices – evidence mixed; not clear.
  - Price deregulation in New Jersey $\rightarrow$ mortality $\uparrow$ (Volpp et al., 2003). Similar result in NHS (Burgess et al., 2008).
  - Mergers and Quality: Romano and Balan (2011)– no increase in quality due to merger; Ho and Hamilton (2000) – no effect on mortality, some effect on readmissions and early discharge; Capps (2005) – no effect on most indicators but an additional 12 deaths in yr. following merger for AMI or CHF patients.
  - Market Concentration and Quality: Sari (2002) concentration reduces patient safety; Sohn and Rathouz (2003) – competition reduces mortality; Mukamel (2002) – concentration reduces mortality.
- Costs
  - Cost savings can be realized if merger leads to true integration (Dranove and Lindrooth, 2003).
  - Evidence on prices does not indicate that any cost savings get passed on to consumers.

Hospital Markets (cont.)

- Charity Care
  - Not-for-profits provide more charity care than for-profits, in large part due to where they're located.
  - Not-for-profits are no more likely than for-profits to spend money gained from the exercise of market power on charity care (Capps et al., 2010).
  - NFPs don't seem to be "playing Robin Hood."

Insurance Markets

- Not as much evidence for insurance markets.
  - Lack of data.
- Some very recent new evidence.
  - Evidence that insurance premiums are higher in more concentrated markets (large employers)(Dafny, Duggan, Ramanarayan, 2011).
  - There seems to be substantial search costs in health insurance markets – more firms doesn't necessarily lead to lower prices (Frank and Lamiraud, 2009; Maestas et al., 2009; Bolhaar et al., 2010).
  - Evidence of substantial market power in the Medigap market.
    - Market dominated by United Healthcare and Mutual of Omaha.
    - Prices marked up substantially over costs.
  - Evidence that competition has a large effect on premiums in Medicare+Choice (Lustig, 2010; Town and Liu (2003).

Physicians, Vertical Integration

- Physicians: not a lot of evidence – lack of data.
  - Physicians diffuse out to smaller towns when the total stock of physicians increases (Newhouse et al., 1982; Rosenthal et al., 2005).
  - Physician practices possess market power (Wong, 1996).
  - Schneider et al. (2008) find that a 1% increase in the physician practice HHI increases prices by 1-4%. Insurer HHI has no impact on price.
- Physician-Hospital Integration
  - Theory
    - Integration can be efficiency enhancing (internalize spillovers, reduce transactions costs, eliminate holdup problems).
    - Integration can also be anticompetitive (foreclosure, collusion)
  - Evidence
    - Price – 2 studies; opposite results (Ciliberto and Dranove, 2005; Cuellar and Gertler, 2005).
    - Cost, Quality – little evidence of any impact (Burns and Muller, 2008; Madison, 2004).
    - Anticompetitive motivation – Interviews, Berenson et al. (2010); Burns et al. (2000) – integration due to HMO presence in market.

Who Pays?

- Who Pays for Higher Prices?
  - If health care prices increase due to consolidation, who pays – insurers? employers? or consumers?
    - Evidence shows that increased health benefit costs to employers are passed on to workers in reduced pay (or lower increases), greater cost sharing of premiums, or reduced benefits (Gruber, 1997; Baicker and Chandra, 2008).
    - This includes loss of insurance (Town et al., 2010).
- Who Pays for Lower Quality?
  - If health care quality falls due to lessened competition, who pays?
    - Obviously patients and their families.
    - Also the rest of society through lost productivity and well being.
    - Everyone pays for increased costs due to lower quality of care.

Reform and the Functioning of Markets

- How well can reform work without market competition?
  - Exchanges
    - Set up as a market.
    - Heavily regulated.
    - Probably won't work very well if dominated by a small number of insurers.
  - Provider Measures
    - Hard to effect if providers have market power.
- Anti-Competitive Organizations?
  - ACOs created to encourage integration.
  - There may be gains from integration, but past evidence isn't very encouraging.
  - Integration can be anticompetitive.
  - Reasons to be concerned that increased negotiating power is the primary motivation behind integration.

Policy Options

- Health care markets are very concentrated. What to do?
  - Antitrust Enforcement
    - Mergers
    - Anticompetitive Conduct
    - Safe Harbors
    - Countervailing Power
  - Supply Side Policies – Facilitating Entry
    - Entry can take care of problems due to consolidation.
    - Avoid foreclosure.
  - Demand Side Policies
    - Selective Contracting.
    - Consumer Information.
  - Rate Regulation.
    - If markets have become too concentrated.
  - Community Pressure.