

A Health Check on COPAs



Assessing the Impact of Certificates of Public Advantage in Healthcare Markets



**Federal Trade Commission
Constitution Center
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Welcome and Introductory Remarks

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Opening Address

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Chairman
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Historical Context for COPAs and Recent Resurgence in COPA Activity

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Retrospective Empirical Studies of COPAs

Presenters:

Christopher Garmon, Kishan Bhatt, Lien H. Tran, Laura Kmitch

Discussants: Leemore Dafny and Gregory Vistnes

Moderator: Aileen Thompson



The Benefis Health Certificate of Public Advantage: Estimates of Commercial Price Effects

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PRELIMINARY: DO NOT CITE WITHOUT AUTHOR'S PERMISSION



Background

1993:

- COPA legislation passed by Montana Legislature
 - “The express intent of this law [was] to make health care more affordable to Montanans by substituting state-level regulation for competition.”*

1996:

- Columbus Hospital and Montana Deaconess Medical Center merge to form **Benefis Health**
 - Only two short-term general acute care hospitals in Great Falls, Montana
- Montana Department of Justice (MTDOJ) issues COPA shielding merger from antitrust challenge

2007:

- COPA law amended to restrict COPAs to 10 years
- Benefis COPA grandfathered, ending COPA retroactive to 2006

COPA Terms and Conditions

Price:

- Regulated with “Patient Revenue Cap”
 - Patient services portion of Total Cost Target + 6%
 - Total Cost Target: “what costs should be if the merged hospital is producing efficiently”*
 - Adjusted for inflation
 - Cumulative excess revenue capped at \$3.5m
 - Adjusted for inflation

Quality:

- Monitored by Montana Department of Public Health and Human Services

Access:

- Maintain any service that either Montana Deaconess or Columbus provided as of December 31, 1995

Objective

- Estimate commercial inpatient price effect of Benefis merger and COPA
 - COPA Repeal in 2006 allows measurement of merger effect apart from COPA regulation
 - Data not available to fully analyze outpatient prices, quality, or access to care



Data and Price Measurement

- Commercial inpatient price measured using method of Dafny (2009):
 - Revenue data taken from CMS's Healthcare Cost Report Information System (HCRIS)
 - Case-mix-adjusted using case mix indices from CMS's Impact Files
 - HCRIS data only available back to 1997
- MTDOJ Annual COPA Compliance Findings
 - Nominal inpatient and outpatient prices reported relative to 1995

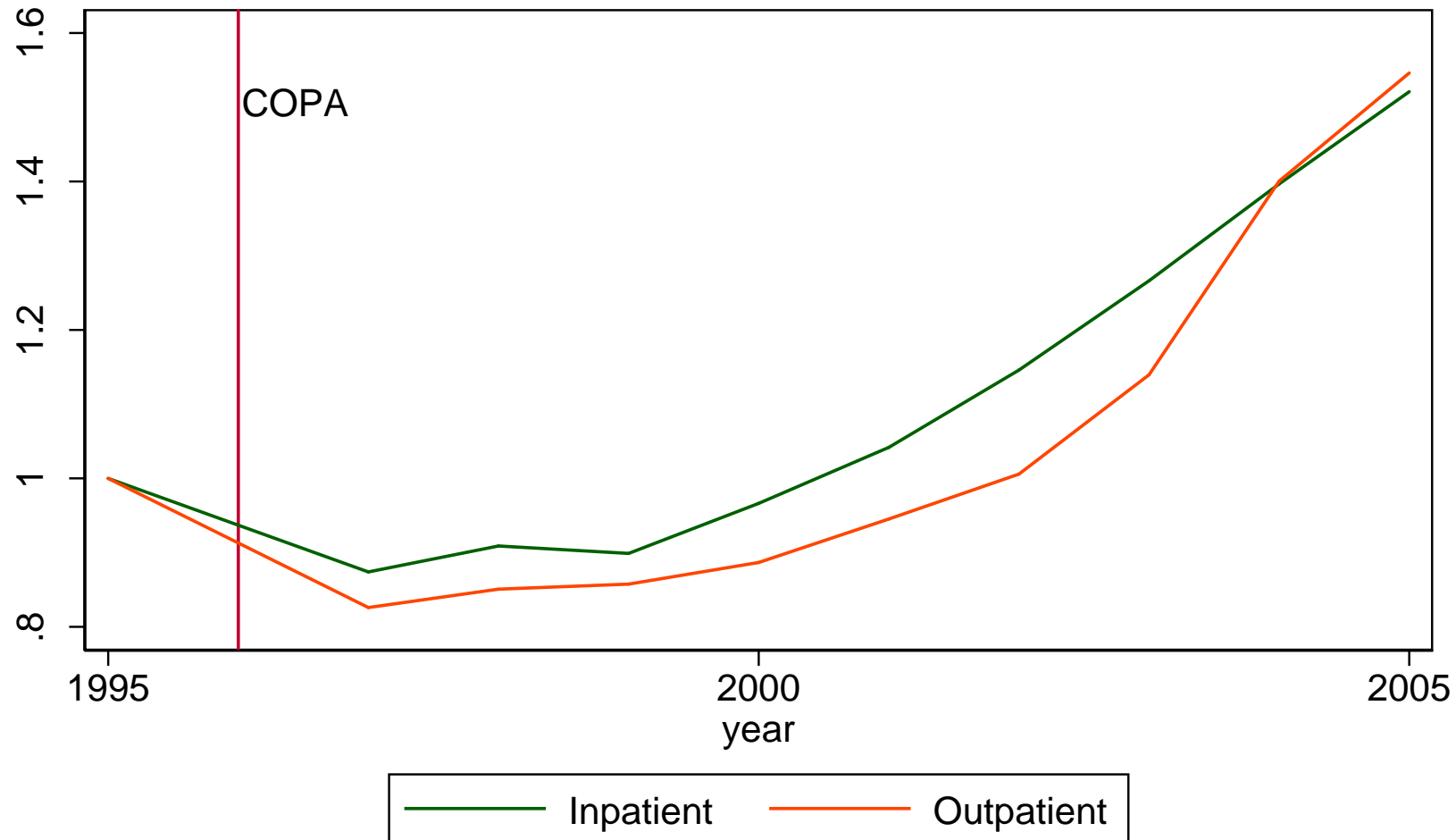


Control Groups

- Montana Duopoly Group:
 - Hospitals in Billings (Billings Clinic and St. Vincent Healthcare) and Missoula (Community Medical Center and St. Patrick Hospital)
- Montana Cohort Group:
 - 9 (non-Benefis) “Large Prospective Payment System Hospitals” in White and Buckner Annual Hospital Reports prepared for MTDOJ
- Missouri Valley Duopoly Group:
 - Hospitals in Bismarck, ND; Cape Girardeau, MO; Dubuque, IA; Fargo, ND-MN; Jefferson City, MO; Joplin, MO; Pueblo, CO; Sioux City, IA-NE-SD; Sioux Falls, SD; and Springfield, MO



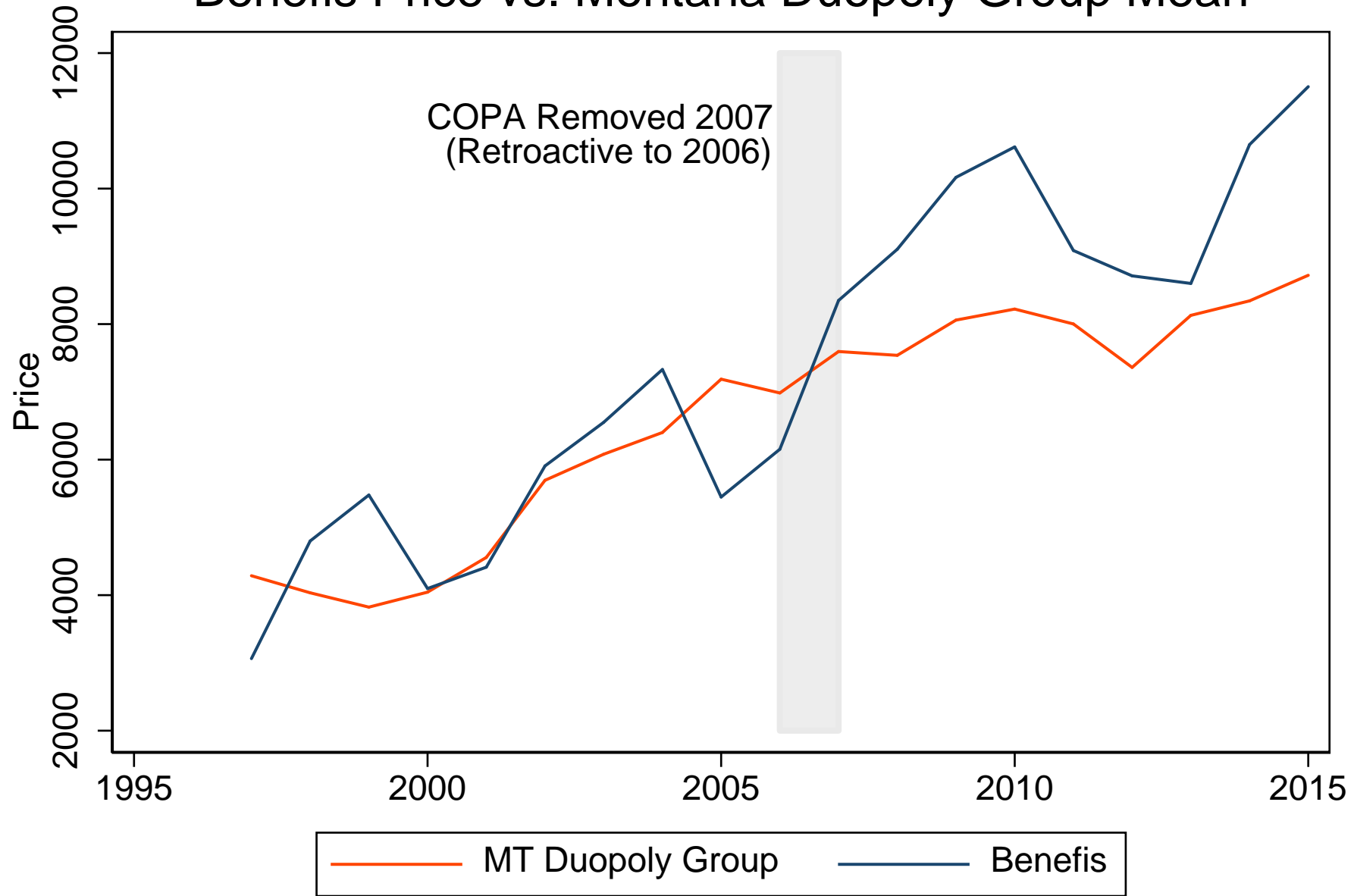
Benefis Inpatient and Outpatient Prices Relative to 1995



Source: MT AG Compliance Reports



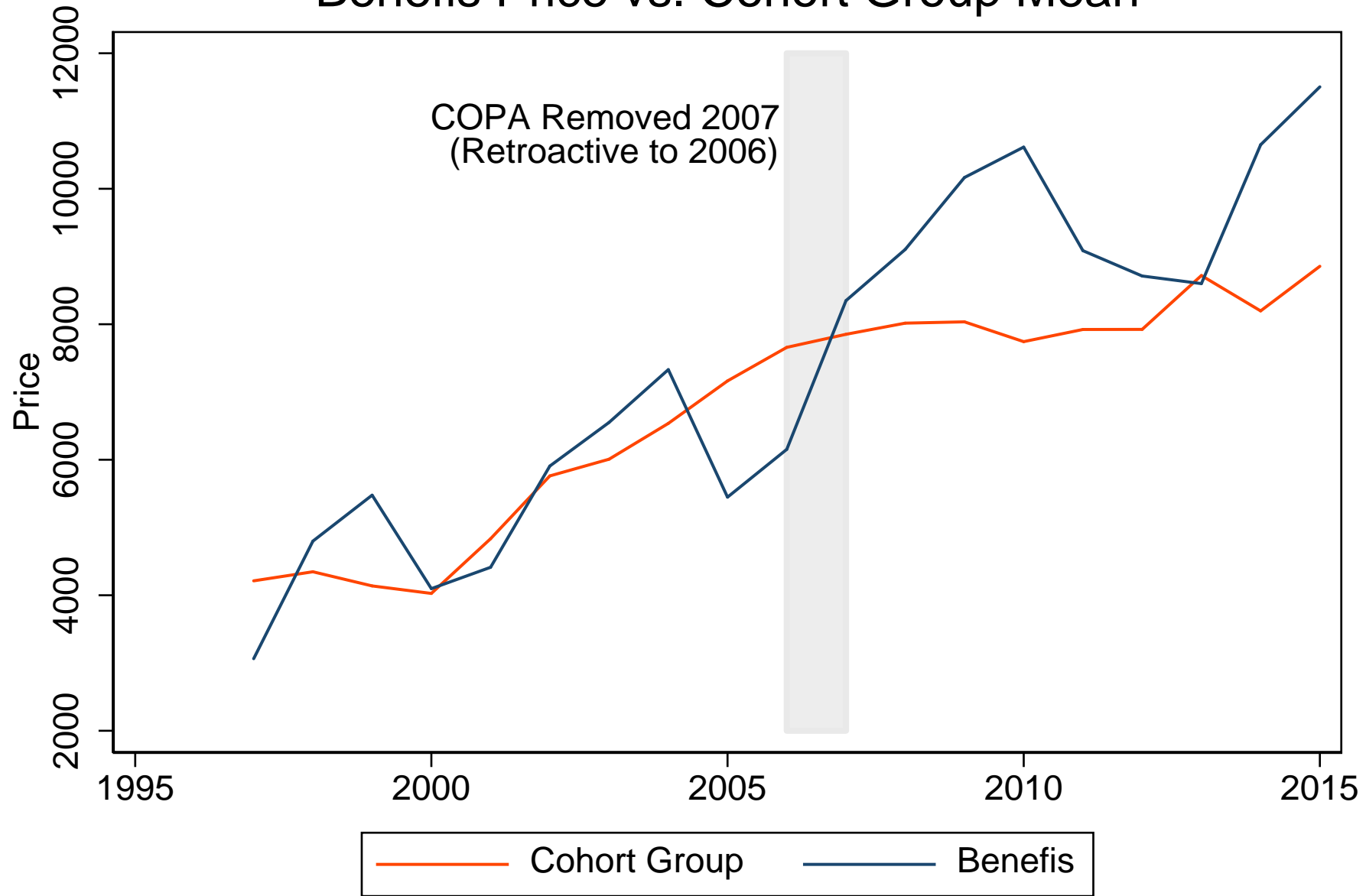
Benefis Price vs. Montana Duopoly Group Mean



COPA repeal price increase = 20.3%
(p = 0.03)



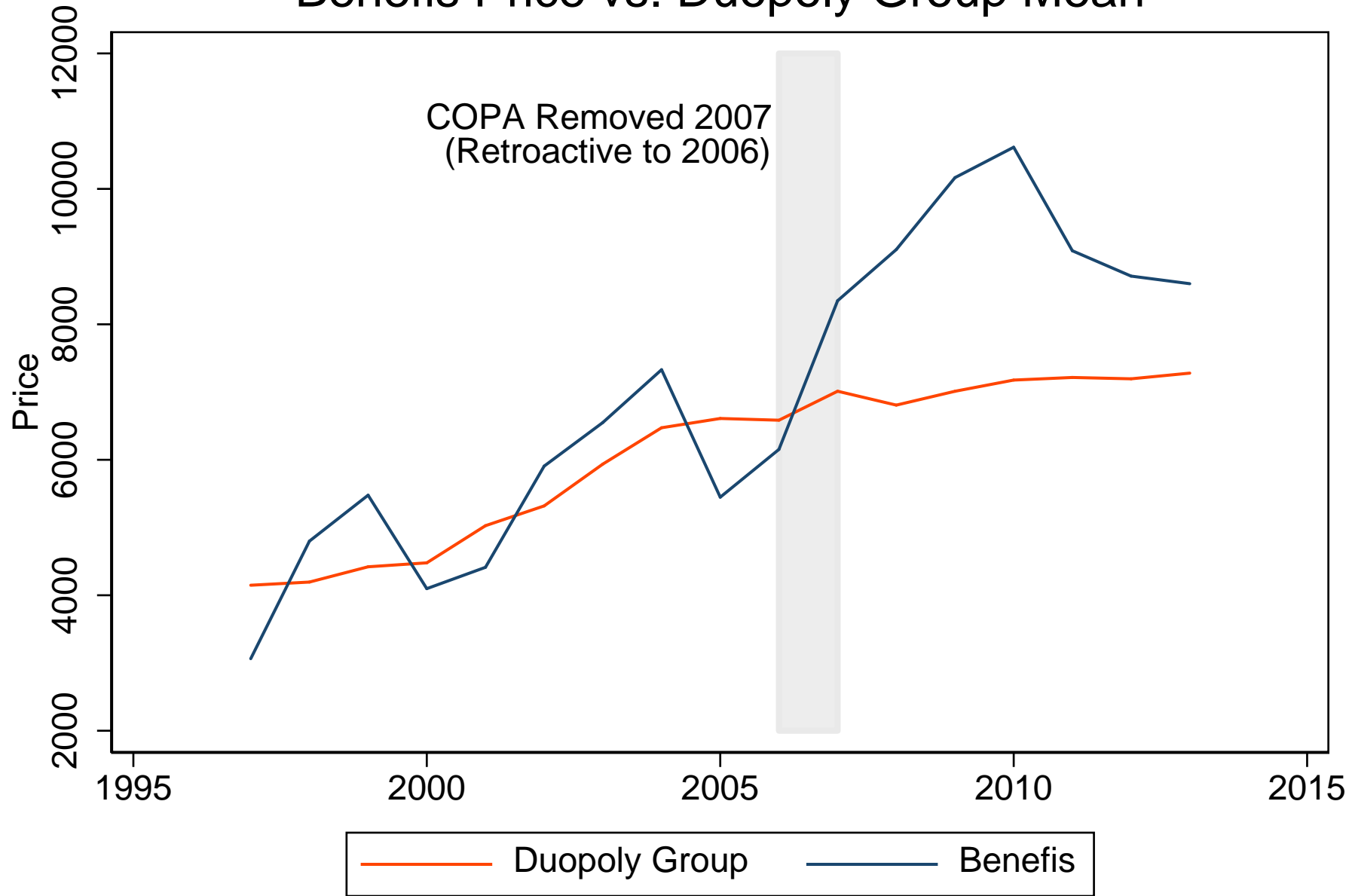
Benefis Price vs. Cohort Group Mean



COPA repeal price increase = 21.2%
($p = 0.02$)



Benefis Price vs. Duopoly Group Mean



COPA repeal price increase = 32.7%
($p = 0.02$)



Conclusions

- During COPA period, Benefis's commercial inpatient price closely tracked control mean suggesting COPA was effective in constraining price at the level of other duopoly markets in Montana and the Missouri River Valley
- After COPA repeal, commercial inpatient price increased at least 20% relative to control trend
 - Robust to alternate control groups
 - Suggests COPA removal can lead to higher prices due to unconstrained provider market power
- Limitations: unable to evaluate change in outpatient prices, quality, or access to care



Additional References

- Dafny, L. (2009). Estimation and Identification of Merger Effects: An Application to Hospital Mergers. *Journal of Law and Economics*, 523-550.
- White L and Buckner A, “Montana’s Hospitals: Issues and Facts Related to the Charitable Purposes of Our Hospitals and the Protection of Montana Consumers Sixth Annual Report,” 2014 <https://media.dojmt.gov/wp-content/uploads/Hospital-Report-2013.pdf>
- Montana Department of Justice Annual Preliminary Findings Concerning Compliance with Terms and Conditions of COPA



Palmetto Health COPA: Evidence on Price Effects

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PRELIMINARY RESULTS – DO NOT CITE WITHOUT AUTHOR'S PERMISSION

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Palmetto Health COPA Background

1995 – South Carolina COPA statute and regulations come into effect

1996 – Baptist Healthcare System and Richland Memorial Hospital submit their COPA application

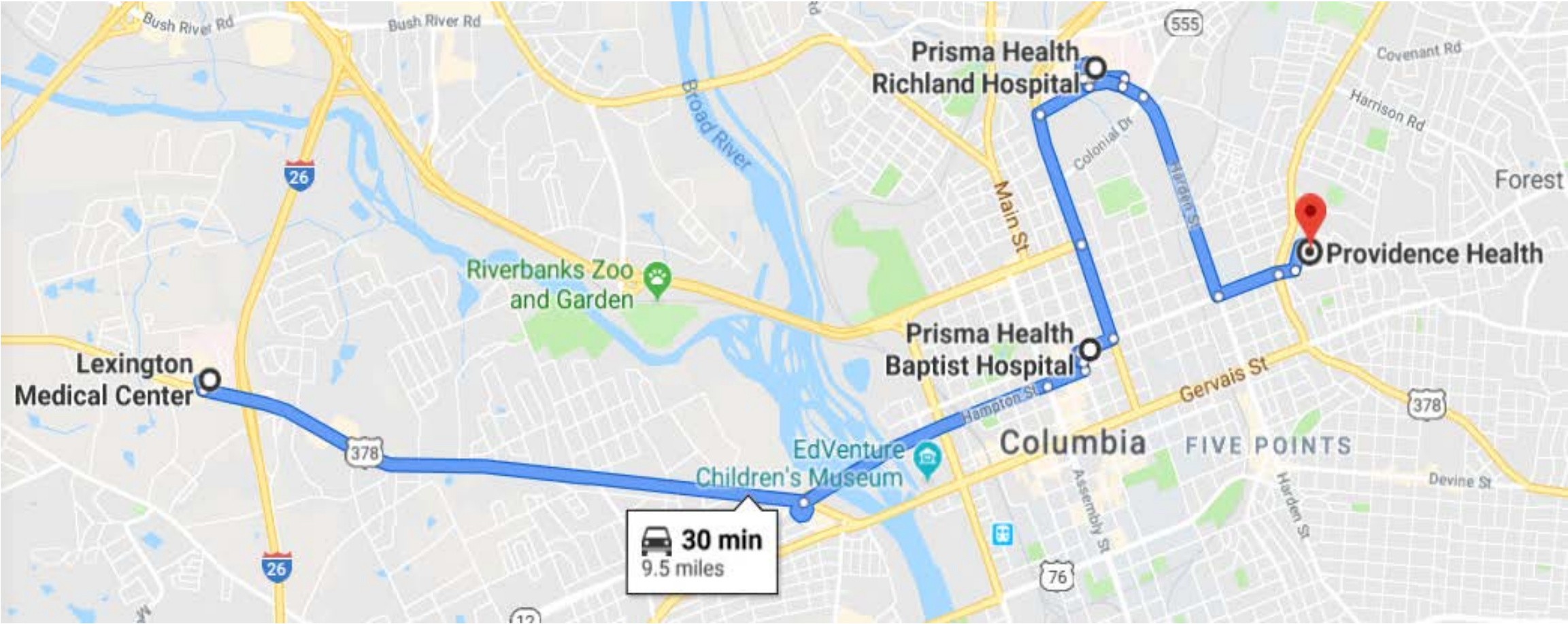
1997 – State authorities approve the COPA application, imposing terms and conditions with the intent to mitigate the potential for anticompetitive harm

1998 – Palmetto Health forms under a Joint Operating Agreement

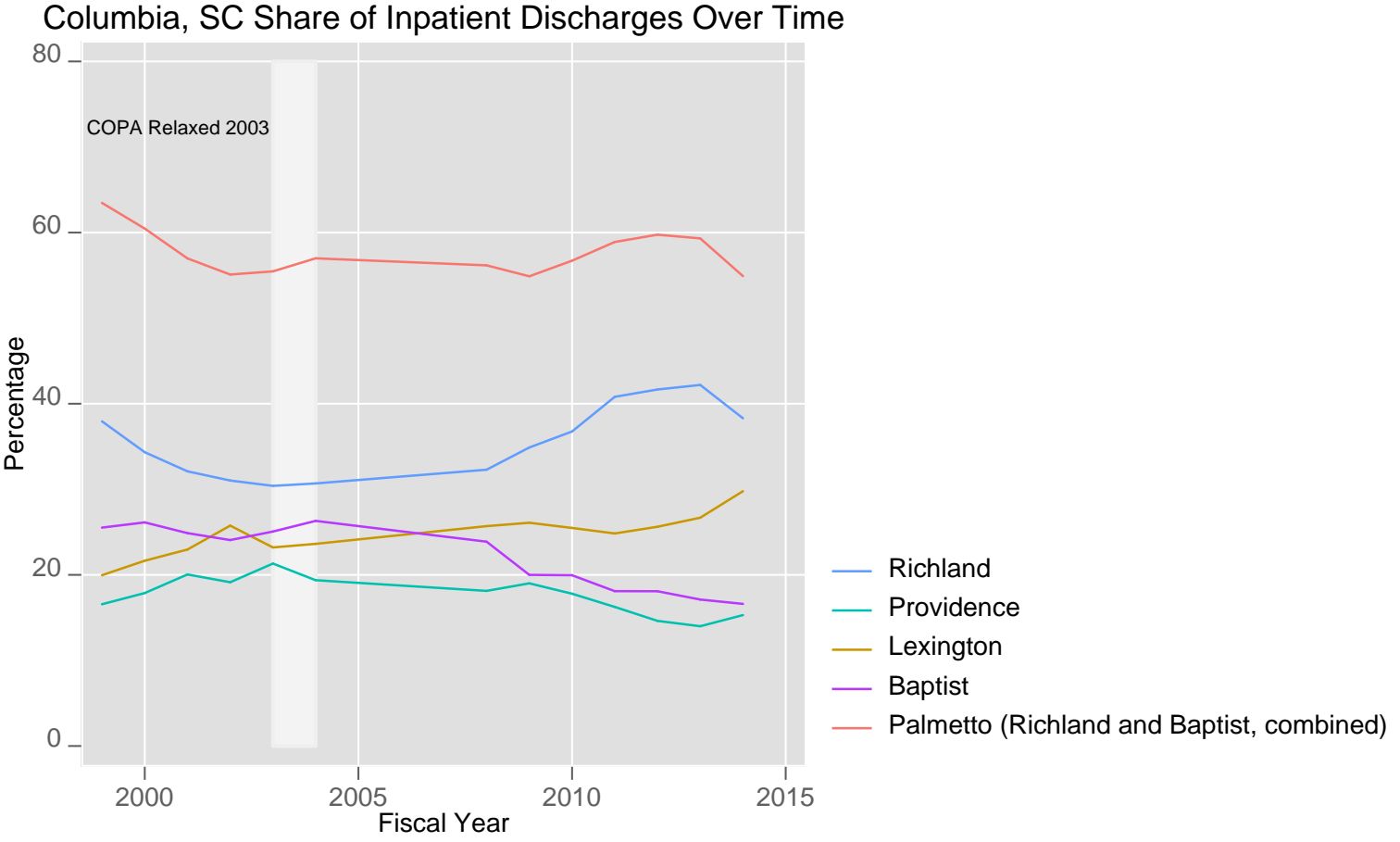
2003 – Palmetto agrees to revised COPA terms



General Inpatient Hospital Services in Columbia, SC



General Inpatient Hospital Services in Columbia, SC (continued)



COPA Terms and Conditions

Oversight

- Submit annual report and 3rd party financial audits to state regulators

Population Health

- Spend 10% of revenues over costs on outreach programs in cancer and maternal & child health

Clinical Service Continuity

- Continue offering services for which Palmetto is the sole local provider
- Receive state approval for any changes in clinical services in the upcoming year

Labor Market

- Protect employees from layoffs

Price and Cost

- Reduce gross charges to all payers during each of the first five years
- Verify cost claims with those of “similar facilities”



COPA Amendments in 2003

Amended Requirements:

- Submit a full report every other year instead of every year
- On off years, an abbreviated report is still required

Eliminated Requirements

- Providing medically necessary services to individuals regardless of ability to pay
- Reducing gross charges to all payers each year
- Adjusting charges to non-governmental payers so the System does not have more revenue per admission than in 1995

These changes might generate price effects separately from the initial COPA.



Question of Interest

After the COPA, did prices increase faster or slower at the merged hospitals than at comparable, non-merged hospitals?

Study objectives:

1. Estimate commercial inpatient price effect of Palmetto merger and COPA regulation
2. Revision in 2003 allows separate identification of effects from the initial and the amended COPA regulation
3. Data not available to fully analyze outpatient prices, quality, or access to care



Data & Methods

Annual CMS HCRIS data for South Carolina for fiscal years 1997-2008

Use Dafny (2009) methodology to estimate average inpatient price per commercial discharge

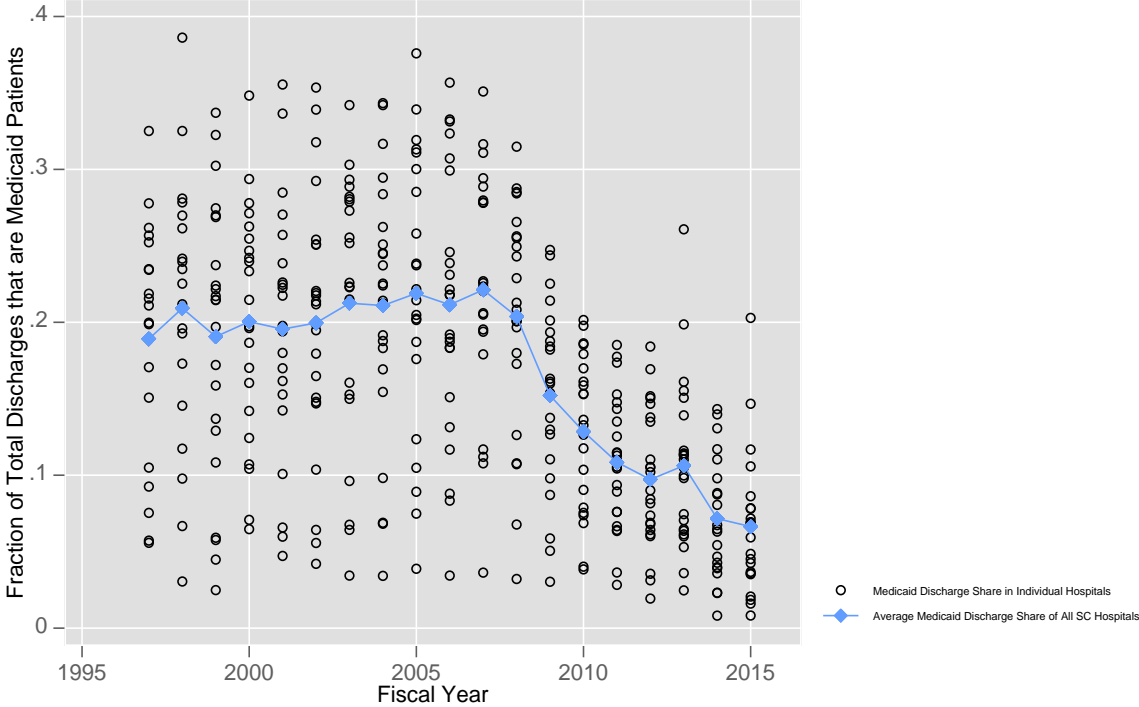
Difference-in-Differences model to compare price change at Palmetto hospitals to controls for the original COPA and the revised COPA

$$\begin{aligned} & \log(\textit{price}) \\ & = \beta_1(\textit{initial} * \textit{treated}) + \beta_2(\textit{revised} * \textit{treated}) + \alpha_{\textit{year}} + \alpha_{\textit{provider}} + u_{it} \end{aligned}$$

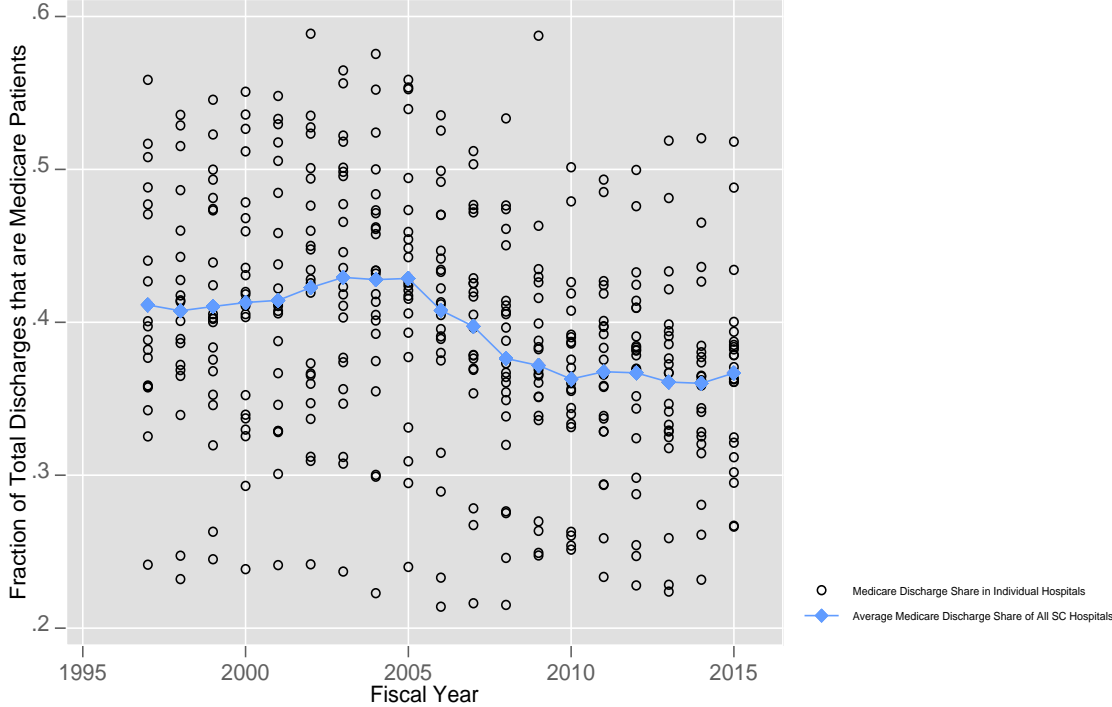


Unable to assess price effects after 2008 using the Dafny method, when the share of Medicaid discharges falls sharply

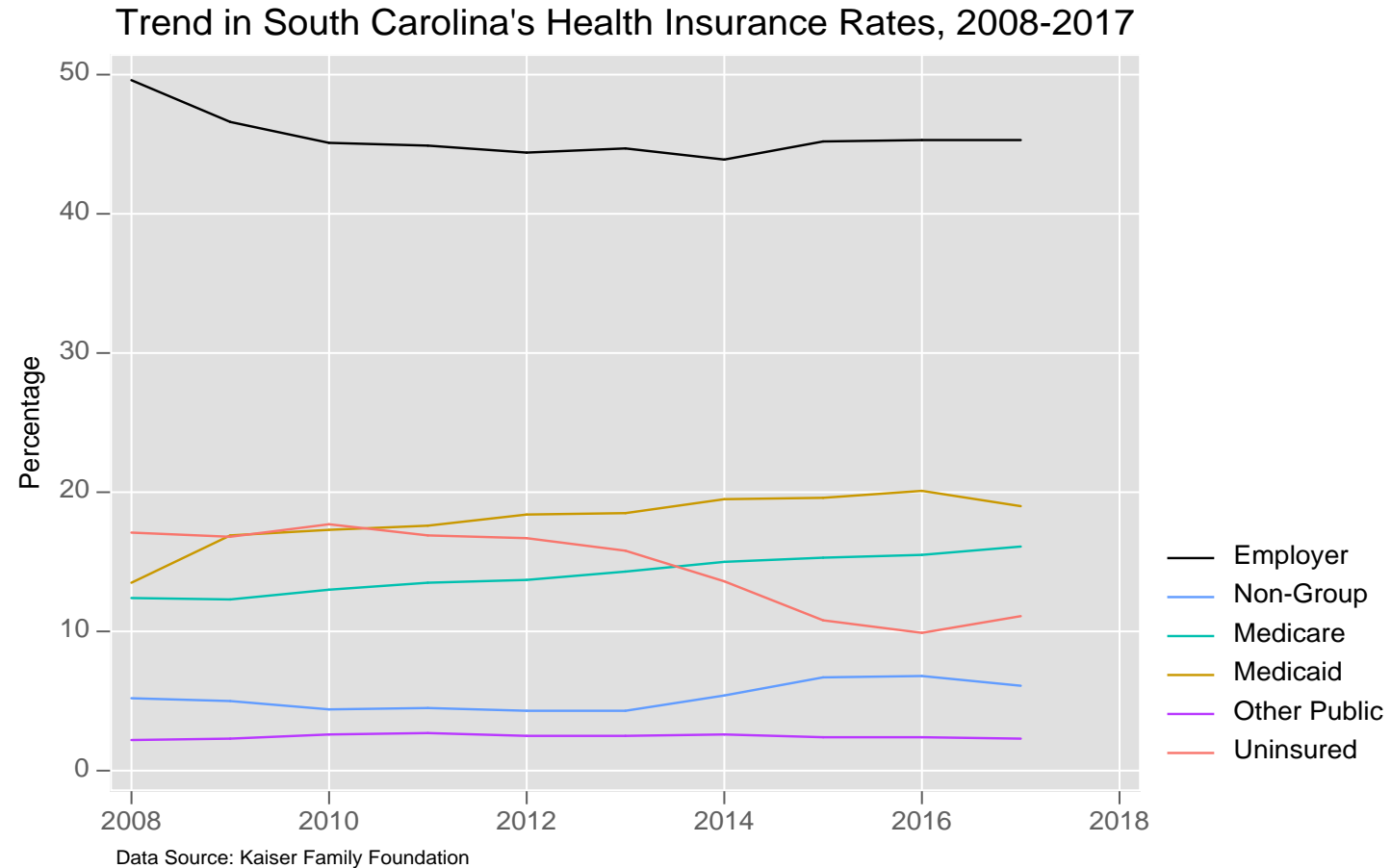
Medicaid Share of South Carolina's Total Discharges Over Time



Medicare Share of South Carolina's Total Discharges Over Time



Share of South Carolinians Insured by Medicaid does not fall after 2008



Control Groups

1. Hospitals in the same Combined Statistical Area
2. Hospitals in cities with similar landscapes in South Carolina
 - Greenville
 - Charleston
 - Spartanburg
 - Florence
3. Control groups based on characteristics of Baptist and Richland*:
 - Staffed beds
 - Net Revenue
 - Case Mix Index (CMI)
 - Share of patients on Medicare or Medicaid

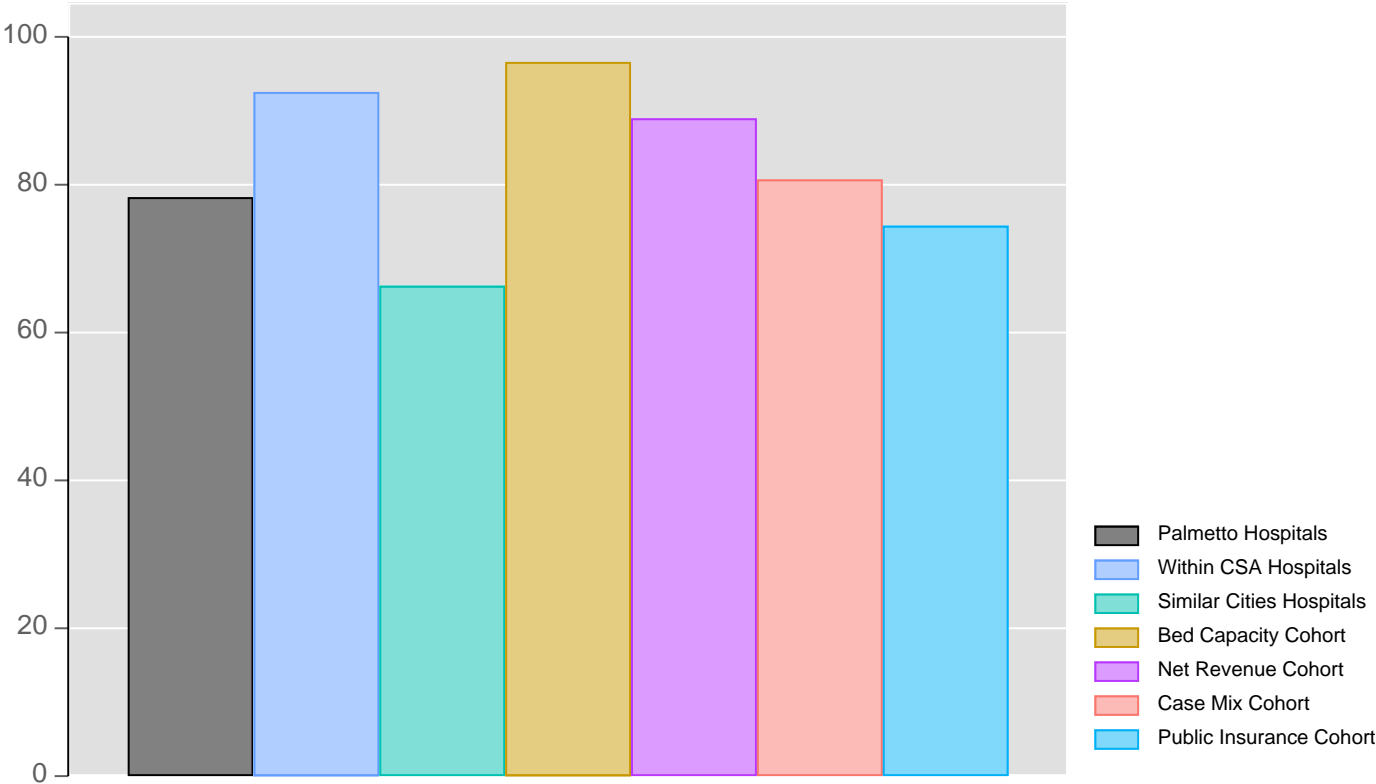
In addition, hospitals involved in a merger from 1997-2008 were excluded in all control groups

* Hospitals that exceed 75% of Baptist/Richland's twelve-year average for at least nine of the twelve study years



Main Finding: Very large inpatient price increase, but statistically indistinguishable from controls

Percentage Price Change from 1999-2008
(Both Initial and Revised COPAs)



Difference-in-Differences Estimates of Original COPA Price Change Relative to Control Groups



Pre-COPA Period = Fiscal Years 1997-1998

Original COPA Period = Fiscal Years 1999-2003

Red Outline: coefficient estimate is statistically significant at the 5% level.

Difference-in-Differences Estimates of Revised COPA Price Change Relative to Control Groups



Pre-COPA Period = Fiscal Years 1997-1998

Revised COPA Period = Fiscal Years 2005-2008

Red Outline: coefficient estimate is statistically significant at the 5% level.

Conclusions

Main finding: Very large inpatient price increase, but statistically indistinguishable from control hospitals

Data limited to inpatient prices:

- No information on post-merger changes in prices for outpatient services
- No information on post-merger changes in quality, requires claims data

Unlike other states, COPA oversight has not been removed, even after 20 years (although explicit price regulation no longer in effect).

Unlike in other COPAs, local competition has always been present.



Conclusions (continued)

Inpatient price effects from COPA mergers are particularly complex.

- Is there a lack of local competition?
- Does the regulation leave any gaps?
- Does the regulation expire, or is it likely to be repealed or amended?
- Are there coordinated effects from other hospitals that make relative price changes difficult to detect?



References

Dafny, L. (2009). Estimation and Identification of Merger Effects: An Application to Hospital Mergers. *Journal of Law and Economics*, 523-550.

Health Care Cooperation Act, South Carolina
<https://www.scstatehouse.gov/code/t44c007.php>

Palmetto Health COPA Filings (1996 application, 1997 agreement, 2003 agreement)



Appendix: Regression Table

Control Group	Price Change of Initial COPA (Relative to Pre-Merger)	Price Change of Revised COPA (Relative to Pre-Merger)	Price Change of Revised COPA (Relative to Initial COPA)	Number of Control Hospitals
Columbia CSA	4.1% (14.2%)	-13.1% (12.2%)	-17.2%* (9.6%)	4
Charleston, Greenville, Florence, Spartanburg	14.8% (12.1%)	12.9% (12.3%)	-2.0% (8.4%)	5
> 75% of Baptist/Richland's average bed capacity	-13.2%** (6.5%)	-15.8%** (6.6%)	-2.6% (4.9%)	2
> 75% of Baptist/Richland's average net revenue	-0.5% (7.2%)	-1.0% (7.4%)	-0.5% (5.5%)	1
> 75% of Baptist/Richland's average case mix index	-0.6% (11.9%)	-3.1% (11.9%)	-2.5% (8.4%)	19
Within 25% of Baptist/Richland's share of publicly insured patients	0.5% (11.7%)	-2.2% (11.8%)	-2.7% (8.2%)	8

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix: Explanation of Graphs and Tables

- Prices increased substantially at Palmetto (nearly 80%) during the first decade of the COPA, but so did prices at comparable hospitals.
- The difference-in-difference coefficients do not reflect actual prices. Coefficient values less than zero do not mean Palmetto hospitals lowered prices, but that they increased them at a slower rate.
 - For example, in the first bar graph, the -13% coefficient for the bed capacity control group means that when Palmetto raised its prices by about 45% in the first five years of the COPA, the control hospitals raised their prices on average by 58%.
- During the original COPA period and the revised COPA period, we do not see statistically significant differences between Palmetto's price increases and the control group price increases, for nearly all control groups studied.



The Mission Health COPA: Evidence on Price Effects from CMS HCRIS Data

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Federal Trade Commission

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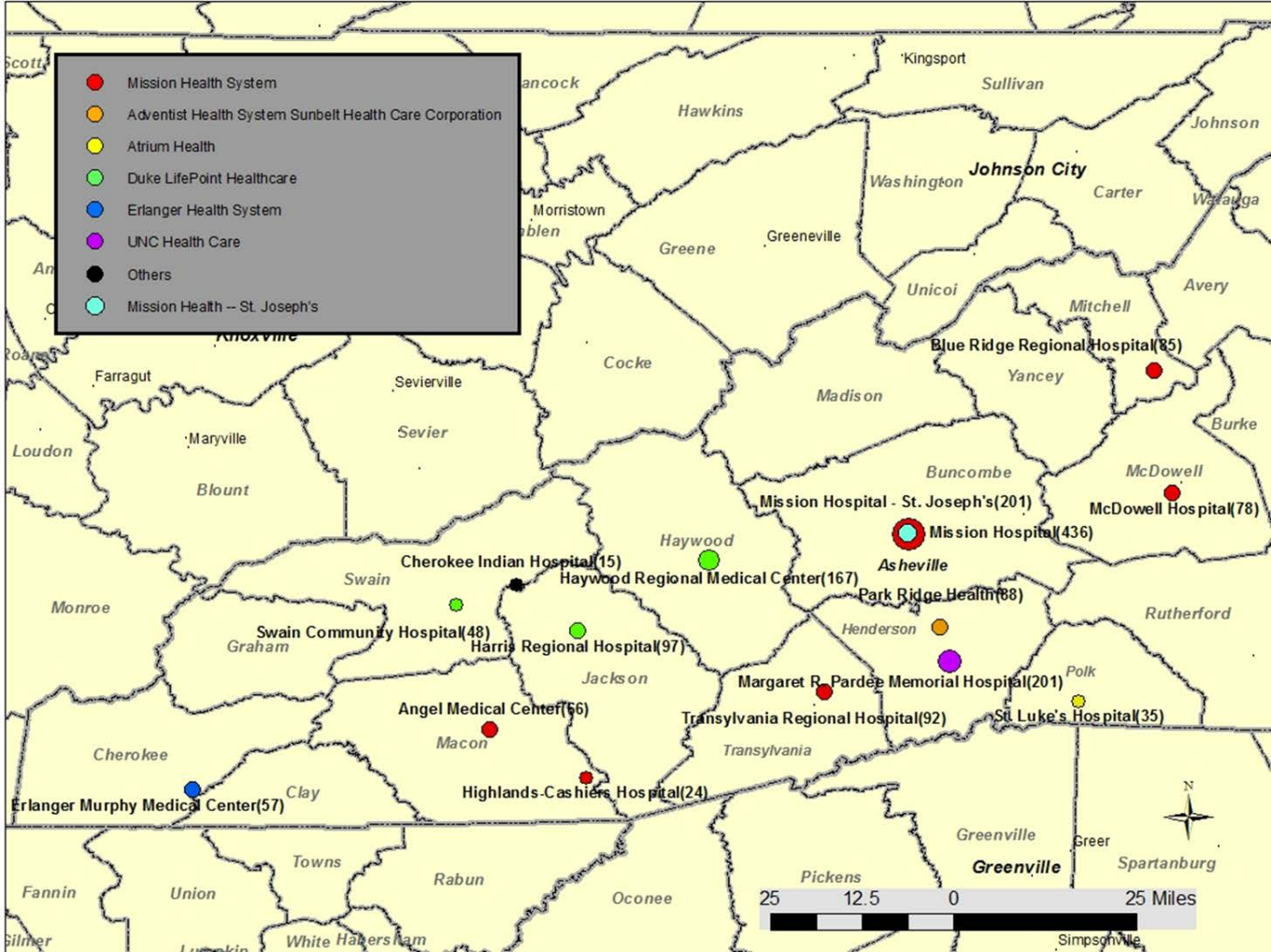
Federal Trade Commission | A Health Check on COPAs | June 18, 2019



Background

- Memorial Mission and St. Joseph's were the only two general acute care hospitals in the city of Asheville, the county seat of Buncombe County, North Carolina.
- In 1995, they entered into a COPA agreement with the NC Department of Health and Human Services and the Attorney General's Office.
- In October 1998, Memorial Mission acquired all of St. Joseph's assets and combined operations under one license as Mission Health System ("MHS").
- In 2016, the NC legislature repealed the COPA law, effectively ending the MHS COPA.
- In 2019, MHS was acquired by HCA Healthcare.

Western North Carolina Hospitals



Regulations under the COPA

- Restriction on net operating margin: net operating margin of MHS to be no less than 3%, but no more than the mean operating margin of “comparable facilities” over any three year period.
- Comparable facilities were defined in the 1995 COPA agreement as non-profit, non-teaching facilities with 300 licensed beds or more.
- Similar restriction for average cost per adjusted-admission.
- Restriction on physician ownership: no more than 20 percent of the physicians practicing in family practice/internal medicine or general pediatrics in MHS’s primary service areas of Buncombe and Madison Counties.
- Other terms: \$74 million cost savings commitment, maintenance of quality and access to care, and fair dealings with insurers.



Related Literature

- Margin and cost caps are key elements of cost-of-service regulation. This type of regulation allows a reasonable rate of return for a regulated firm, but does not incentivize managerial effort (Laffont and Tirole, 1993).
- Reports by Vistnes (2011) and Capps (2011) discuss the incentives under the margin and cost regulations of MHS to:
 - evade the caps through new facility acquisitions and services
 - manipulate costs per adjusted-admission.
- McCarthy (2011) reports that prices and costs were comparable to COPA Benchmark Group hospitals (based on a study by Dixon Hughes for the State) and concludes that the COPA appeared to be effective.
- Bovbjerg and Berenson (2015) provides an account of the MHS COPA's structure, performance, and challenges. Based on reviews of publicly available literature and data, as well as interviews with stakeholders, the report finds that the COPA had some successes. It also finds no definitive evidence about whether the COPA successfully replaced lost competition or to what extent the COPA may have affected MHS's prices, overall health costs, or quality.



Objective

- Estimate the change in *inpatient prices* at Mission Health following the merger relative to what prices would have been but for the merger
 - Data are not readily available to study quality effects or price effects for outpatient services or other services
- Difference-in-Differences model:
 - % change Mission Health price - % change Control Group price, controlling for trend
- Focus on the first ten years of the merger under the COPA (1999-2008)
 - Recession in 2008



Data: CMS Healthcare Cost Report Information System (HCRIS)

- We measure price as the net inpatient revenue per discharge adjusted for case-mix index. We exclude payments for Medicare inpatients, but data are not available to exclude payments for Medicaid inpatients (Dafny, 2009).
- Previous research shows percent changes in this price measure yield reasonable estimates of percent changes in commercial inpatient hospital prices (Garmon, 2017).
- For some regressions, we add the Medicaid share of patients as an independent variable to control for variation in price per discharge due to variation in such share. Estimated price changes are not materially affected by Medicaid share, providing additional confidence in our price measurement.
- Data are available beginning in 1996
 - Pre-merger period = 1996-1998
 - Post-merger period = 1999-2008



Control Groups

We construct control groups based on pre-merger characteristics of Memorial Mission and St. Joseph's Hospitals:

- Staffed beds (200 beds+, 300 beds+, 400 beds+)
- Type of ownership (non-profit, excluding government hospitals)
- Average length of stay greater than 4 days
- Case-Mix Index (CMI)
- Hospitals involved in local mergers were excluded in some control groups

For comparison, we also employ the COPA Benchmark Group used by the State (cited in McCarthy, 2011, footnote 50).

- This group includes hospitals with 300 beds or more.
- It is not clear exactly how this group was chosen, but in contrast to our control groups, this group *includes* government-owned hospitals and hospitals involved in local mergers and also *excludes* some of the hospitals included in our control groups.

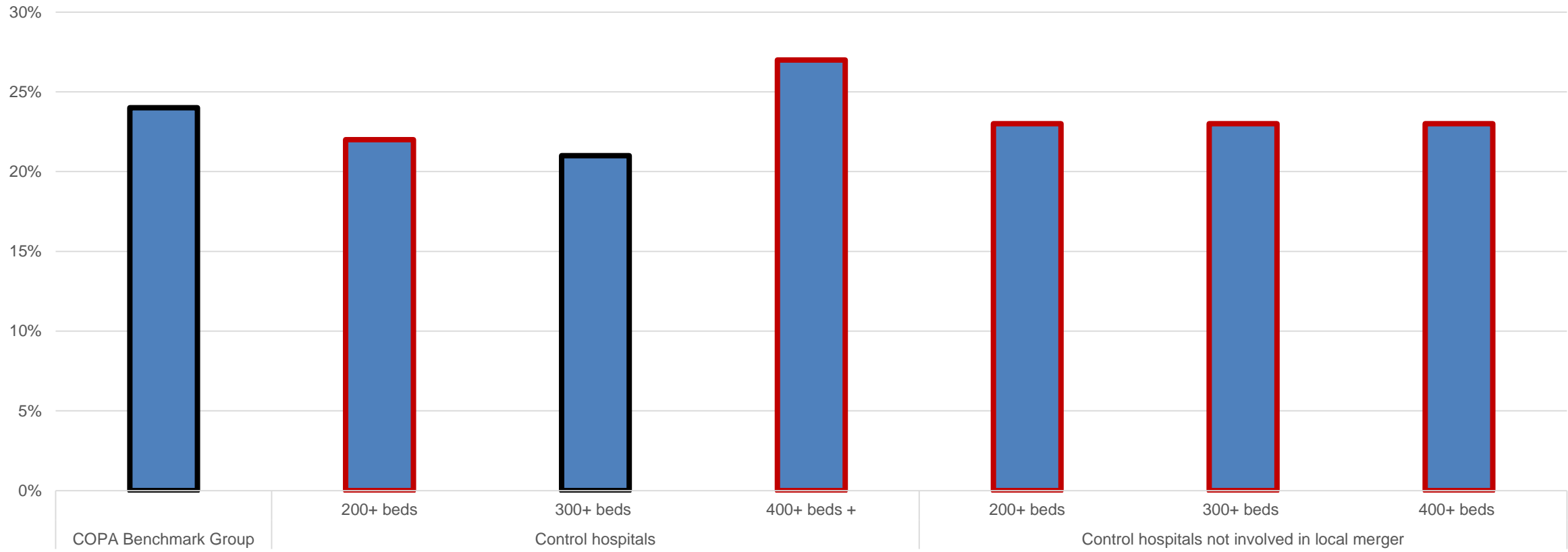


Pre-merger Characteristics of Memorial Mission and St. Joseph's Hospitals

	Memorial Mission	St. Joseph's
Beds	436	201
Length of Stay	4.9	4.6
Case-Mix Index	1.88	1.39



Difference-in-Differences Estimates of Mission Health Post-Merger Price Changes Relative to Control Groups



Pre-Merger Period = 1996-1998

Post-Merger Period = 1999-2008

Red Outline: coefficient estimate of merger effect is statistically significant at the 10% level or lower.



Main Findings

- Our Difference-in-Differences analyses show that controlling for pre-merger characteristics, and local merger activity, *MHS prices increased by at least 20% more than the control group prices.*
 - The estimated merger effect is statistically significant for most control groups.
- Relative to the COPA Benchmark Group employed by the State: the estimated merger effect is positive and similar in magnitude to the estimates based on our control groups, **but not statistically significant.** This may be consistent with the findings by the State that MHS was in compliance with COPA rate regulations.
- The evidence suggests that, despite the margin/cost regulations, the COPA oversight did not prevent MHS from raising prices.



References

- Bovbjerg, R. and Berenson, R. (2015). Urban Institute Research Report. Certificates of Public Advantage: Can They Address Provider Market Power?
- Capps, C. (2011). Revisiting the Certificate of Public Advantage Agreement Between the State of North Carolina and Mission Health System: a Review of the Analysis of Dr. Greg Vistnes, with Additional Recommendations for Lessening Opportunities for Regulatory Evasion by Mission Health System.
- Dafny, L. (2009). Estimation and Identification of Merger Effects: An Application to Hospital Mergers. *Journal of Law and Economics*, 523-550.
- Garmon, C. (2017). The Accuracy of Hospital Merger Screening methods. *Rand Journal of Economics*, 1068-1102.
- Laffont, J. and Tirole, J. (1993). A theory of Incentives in Procurement and Regulation. MIT Press.
- McCarthy, T. (2011). Economist's Report on the Mission Health Certificate of Public Advantage (COPA).
- Vistnes, G. (2011). An Economic Analysis of the Certificate of Public Advantage (COPA) Agreement Between the State of North Carolina and Mission Health.

Technical Appendix



The Model

We estimate fixed effects difference-in-difference equations of the following form for seven groups of control hospitals:

$$\ln p_{ht} = \alpha_h + \beta \text{Trend}_{ht} + \delta \text{Postmerger}_{ht} + \gamma \text{PostmergerMH}_{ht} + \varepsilon_{ht}$$

- Postmerger_{ht} is an indicator variable for the post–merger period (1999 and later)
- MH_{ht} is an indicator variable for MHS
- γ is the estimate of the post–merger change in MHS's ln price relative to the Control Group



Estimation Results for COPA Benchmark Group used by the State

# Control Hospitals	Trend	Post-Merger	Merger Effect
10	.032**	.067	.212

** Statistically significant at the 5% level.

The COPA Benchmark Group includes: Cape Fear Valley Medical Center, Moore Regional Hospital, Forsyth Memorial Hospital, Gaston Memorial Hospital, High Point Regional Hospital, New Hanover Regional Medical Center, Presbyterian Hospital, Rex Hospital, Moses H. Cone Memorial Hospital, Wake Medical (McCarthy, 2011, footnote 50)



Estimation Results for Control Groups of Comparable Hospitals

	# Control Hospitals	Trend	Post-Merger	Merger Effect	Medicaid Share	% Price Change
200 beds+	18	.054**	-.065	.195*		22
		.054**	-.064	.198*	.072	22
300 beds +	11	.054**	-.054	.189		21
		.054**	-.057	.174	.34	19
400 beds +	7	.050**	-.078	.24**		27
		.047**	-.074	.27**	.47	30

* Statistically significant at the 10% level.

** Statistically significant at the 5% level.

Estimation Results for Control Groups of Comparable Hospitals Not Involved in a Local Merger

	# Control Hospitals	Trend	Post-Merger	Merger Effect	Medicaid Share	% Price Change
200 beds+	13	.052**	-.058	.204*		23
		.049**	-.048	.238**	.632	27
300 beds +	6	.048**	-.033	.208**		23
		.046**	-.031	.23**	.347	26
400 beds +	4	.052**	-.061	.207**		23
		.050**	-.057	.23**	.382	26

* Statistically significant at the 10% level.

** Statistically significant at the 5% level.

Hospital Mergers and Antitrust Immunity: The Acquisition of Palmyra Medical Center by Phoebe Putney Health

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Overview

- **Motivating Question:** What is the effect of health care consolidation in the context of antitrust immunity?
- **Natural experiment:** Phoebe Putney Health's acquisition of Palmyra Medical Center
- **Objective:** Estimate price and quality change after Phoebe Putney's acquisition of Palmyra Medical Center
- **Results:**
 - Price spiked immediately after the merger, then declined toward the control price path
 - Most quality measures show a substantial decline in quality after the merger



Background

- Phoebe Putney Memorial Hospital (PPMH) and Palmyra are short-term general acute care inpatient hospitals located approximately two miles apart in Albany, Georgia
 - Phoebe Putney Memorial Hospital is technically owned by the Hospital Authority of Albany-Dougherty County and leased to Phoebe Putney Health System
- FTC and Georgia challenged the acquisition
 - Alleged that post-merger Phoebe Putney would have approximately 86% market share of commercial inpatient discharges in the six-county area surrounding Albany, Georgia
- Acquisition of Palmyra consummated in December 2011, after the district and appellate courts ruled that Phoebe Putney had antitrust immunity due to the state-action doctrine, which allows state law to supersede federal antitrust enforcement



Local press coverage of the acquisition announcement in December 2010

Phoebe Putney Hospital Authority buys Palmyra Hospital

December 21, 2010 at 10:10 PM EST - Updated June 23 at 4:39 AM



By Jennifer Emert - [bio](#) | [email](#)

ALBANY, GA (WALB) – After years of fierce competition and often back and forth lawsuits between Albany's two hospitals, Phoebe and Palmyra are set to become one.

Source: <https://www.walb.com/story/13723226/phoebe-putney-hospital-authority-buys-palmyra-hospital/>

Resolution

- In February 2013, the Supreme Court ruled that the Georgia Hospital Authority Law did not clearly articulate a policy to displace competition and remanded the case back to the lower courts—without opining on the antitrust merits of the case
- By this time, Phoebe had converted Palmyra into Phoebe North, which effectively precluded the divestiture of Palmyra due to Georgia Certificate of Need (CON) laws
- The FTC settled the case in March 2015 with a Consent Order



Literature Review

Price

- Studies analyzing price changes for a sample of hospital mergers:
 - Krishnan (2001), Capps and Dranove (2004), Dafny (2009), Garmon (2017)
- Studies analyzing price changes for specific hospital mergers:
 - Vita and Sacher (2001), Tenn (2011), Thompson (2011), Haas-Wilson and Garmon (2011)

Quality

- Studies analyzing quality changes for a sample of hospital mergers:
 - Ho and Hamilton (2000), Noether and May (2017)
- Study analyzing quality changes for a specific hospital merger:
 - Romano and Balan (2011)



Relevance of Quality

- Competition between hospitals involves both price and non-price dimensions
 - Economic theory indicates that competition raises quality when prices are fixed¹
 - Horizontal Merger Guidelines §1:²

Enhanced market power can also be manifested in non-price terms and conditions that adversely affect customers, including reduced product quality, reduced product variety, reduced service, or diminished innovation. Such non-price effects may coexist with price effects, or can arise in their absence.
- It is nearly impossible to avoid being a consumer of healthcare and healthcare quality may matter more than that of other products
- In 2017, healthcare spending was 17.9% of GDP³

Sources: (1) Martin Gaynor, "What Do We Know About Competition and Quality in Health Care Markets," NBER Working Paper (No. 12301), June 2006, <https://www.nber.org/papers/w12301.pdf>; (2) DOJ & FTC 2010 Horizontal Merger Guidelines, <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010>; (3) CMS NHEA, <https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nationalhealthaccountshistorical.html>;

Measuring the Change in Quality (1 of 3)

CMS Hospital Compare Mortality and Readmission Rates:

- 30-day mortality and readmissions rates for patients who had an inpatient admission for the condition
- Limited to Medicare population
- Risk-adjusted to account for mortality rate differences based on age, medical history, and comorbidities
- Focused on (1) heart attack, (2) heart failure, (3) pneumonia
 - These metrics were the same over time
- These measures now factor into CMS star rating and the mortality rates are 25% of score used to determine quality incentive payments under Medicare's Hospital Value-Based Purchasing program



Measuring the Change in Quality (2 of 3)

CMS Hospital Compare Hospital Consumer Assessment of Healthcare Providers and Systems Survey (HCAHPS):

- Survey administered to a random sample of patients discharged from each Medicare-certified hospital
- We used, “How do you rate the hospital overall?”
 - Patients pick a number between 0 and 10, with 10 being the best.
- HCAHPS scores (for this and other survey questions) now factor into CMS star rating and are 25% of score used to determine quality incentive payments under Medicare’s Hospital Value-Based Purchasing program



Measuring the Change in Quality (3 of 3)

AHRQ Quality Indicators:

- Use entire patient population in the discharge data from the Georgia Hospital Association
- Focus on Inpatient Quality Indicators (IQIs) and Patient Safety Indicators (PSIs) that are endorsed by the National Quality Forum (NQF) and have numerators of at least 15
- Compare to a control group of other Georgia hospitals owned by a Hospital Authority as well as the entire state
- PSI scores (along with Hospital-Acquired Condition scores) now factor into CMS star rating and quality incentive payments under Medicare's Hospital Value-Based Purchasing program



Hospital Compare Quality Change

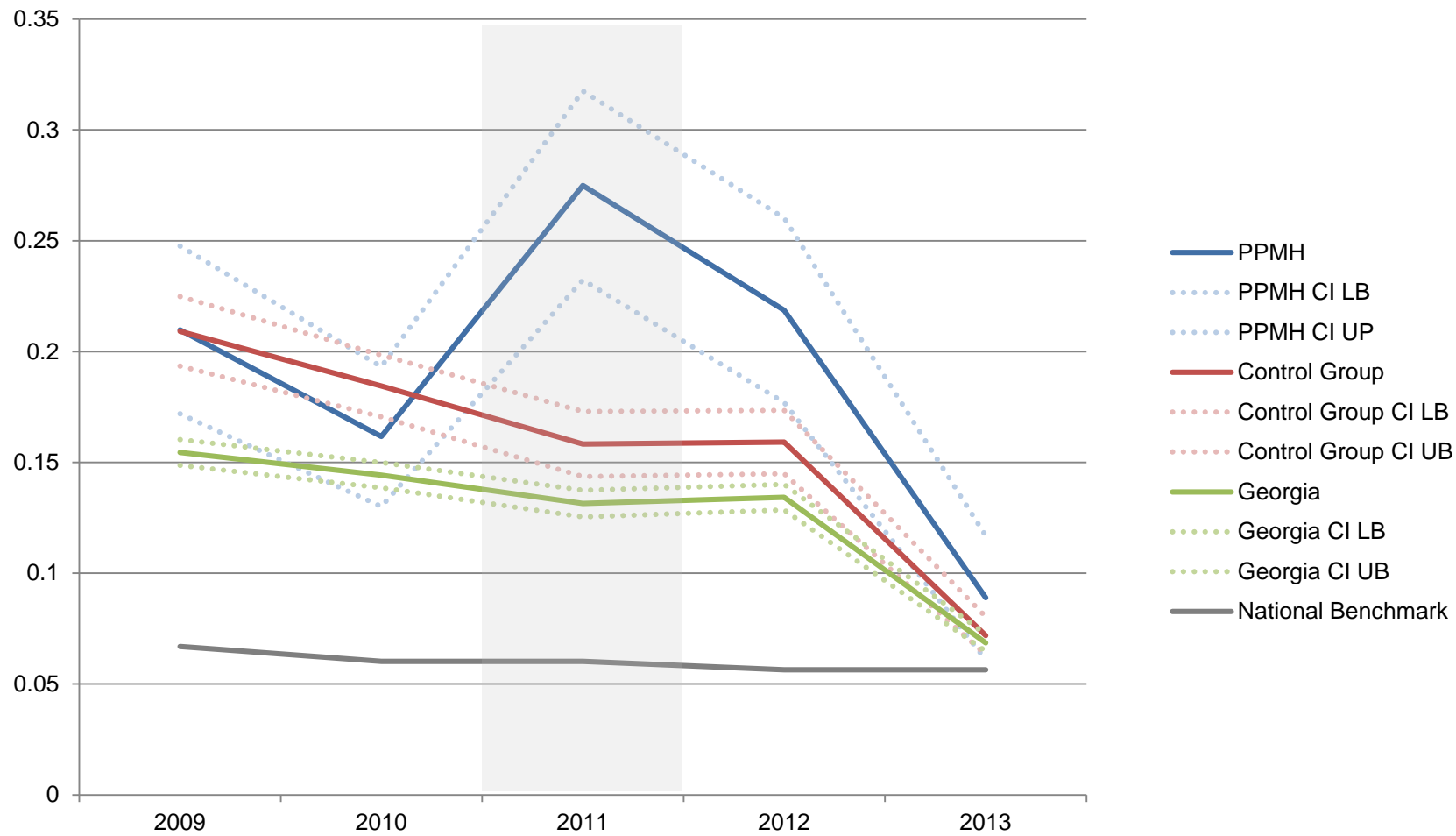
	Post-Merger Change at PPMH	Mean Post-Merger Change Across Control	Difference in Differences (DID)
Heart Attack Mortality	-1.3	-1.6	0.3
Heart Attack Readmissions	-0.9	-2.8	1.9***
Heart Failure Mortality	-0.4	1.3	-1.7***
Heart Failure Readmissions	0.5	-2.4	2.9***
Pneumonia Mortality	8.3	3.9	4.4***
Pneumonia Readmissions	0.3	-0.9	1.2***
Patient Dissatisfaction	3.0	-2.6	5.6***
Patient Satisfaction	-5.0	6.0	-11.0***

*** Difference statistically significant (p<0.01)

Control Group = Non-Merging Hospital Authority Hospitals in Georgia



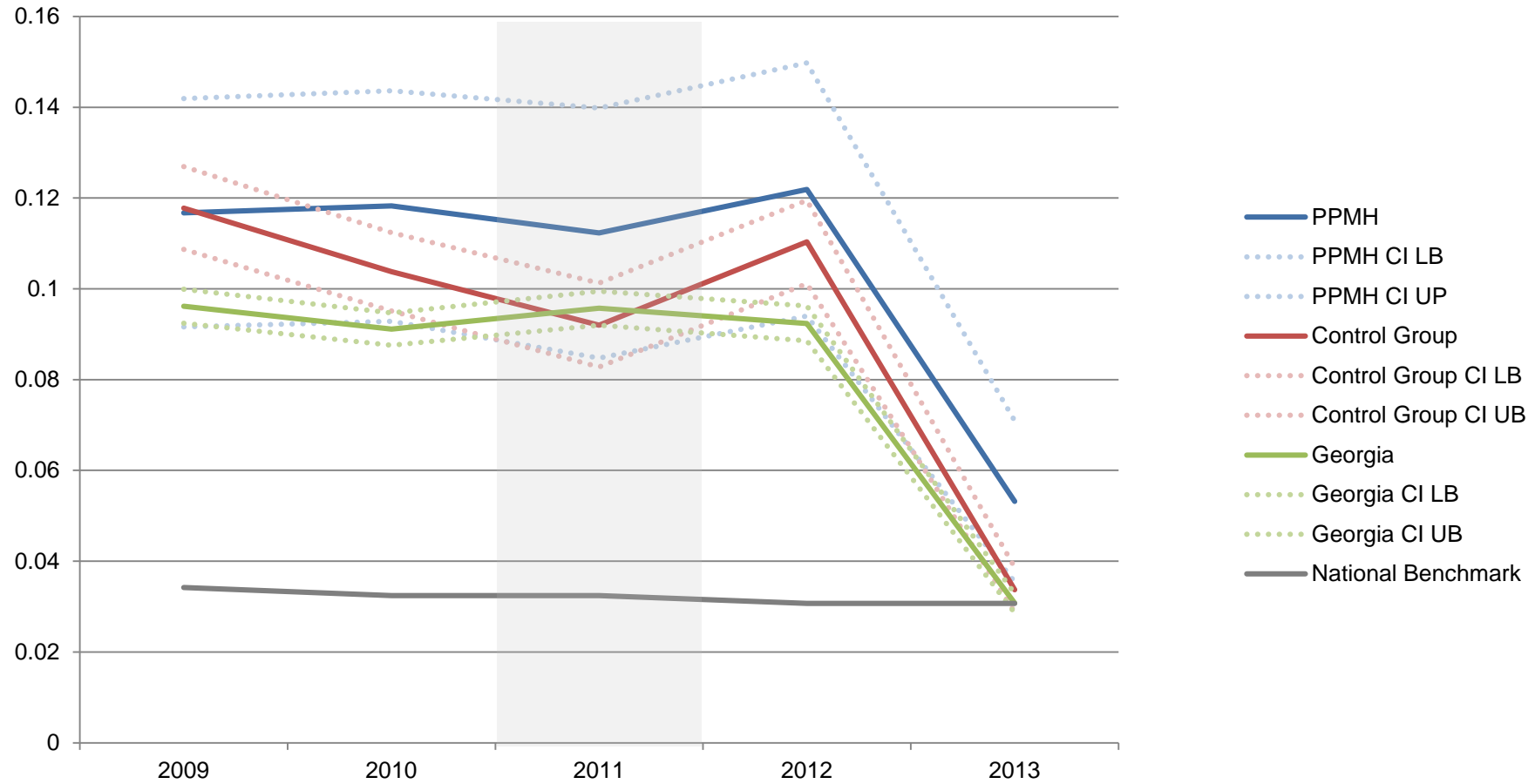
IQI 15 Acute Myocardial Infarction (AMI) Risk-Adjusted Mortality Rate



Source: Calculated from GHA 2009-2013



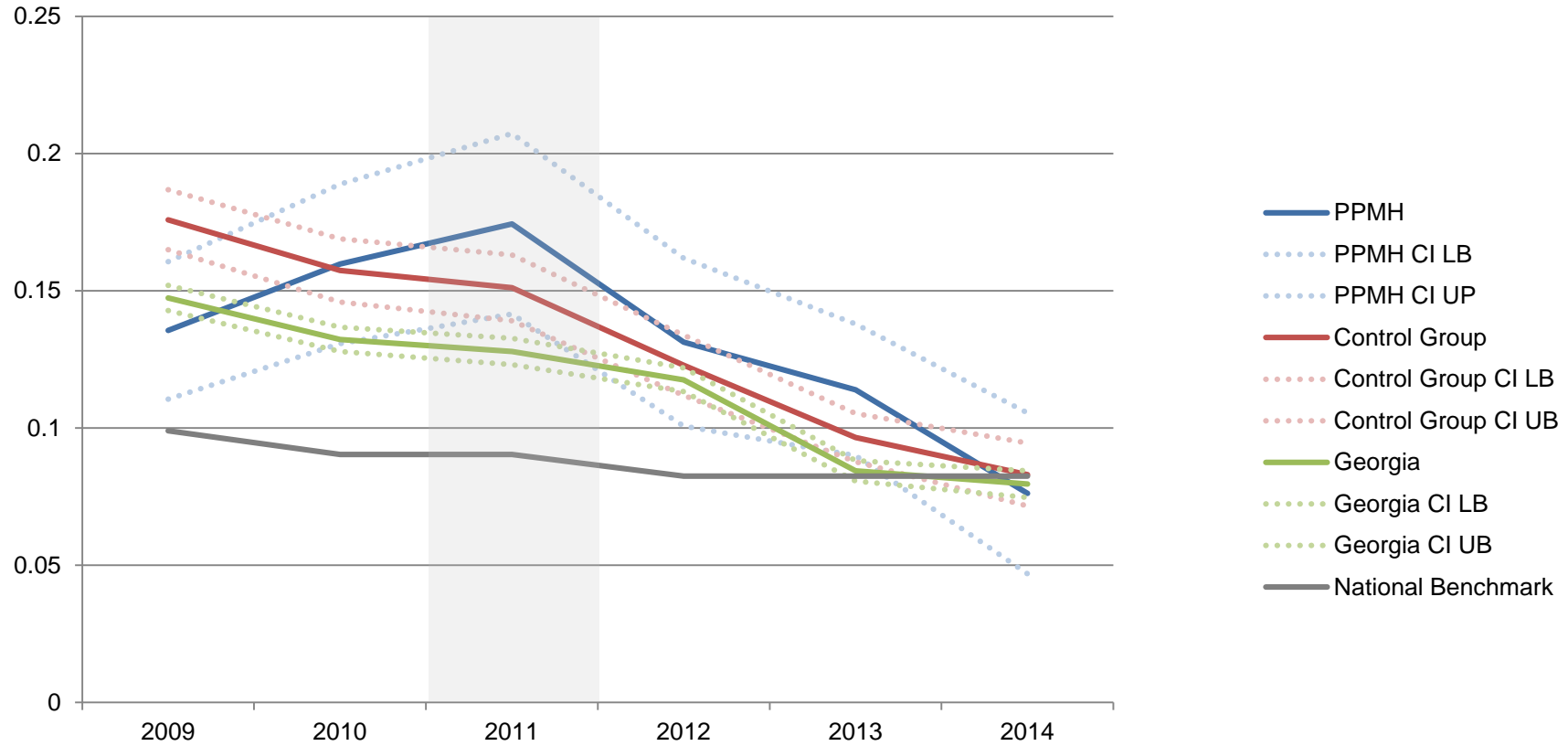
IQI 16 Heart Failure Risk-Adjusted Mortality Rate



Source: Calculated from GHA 2009-2013



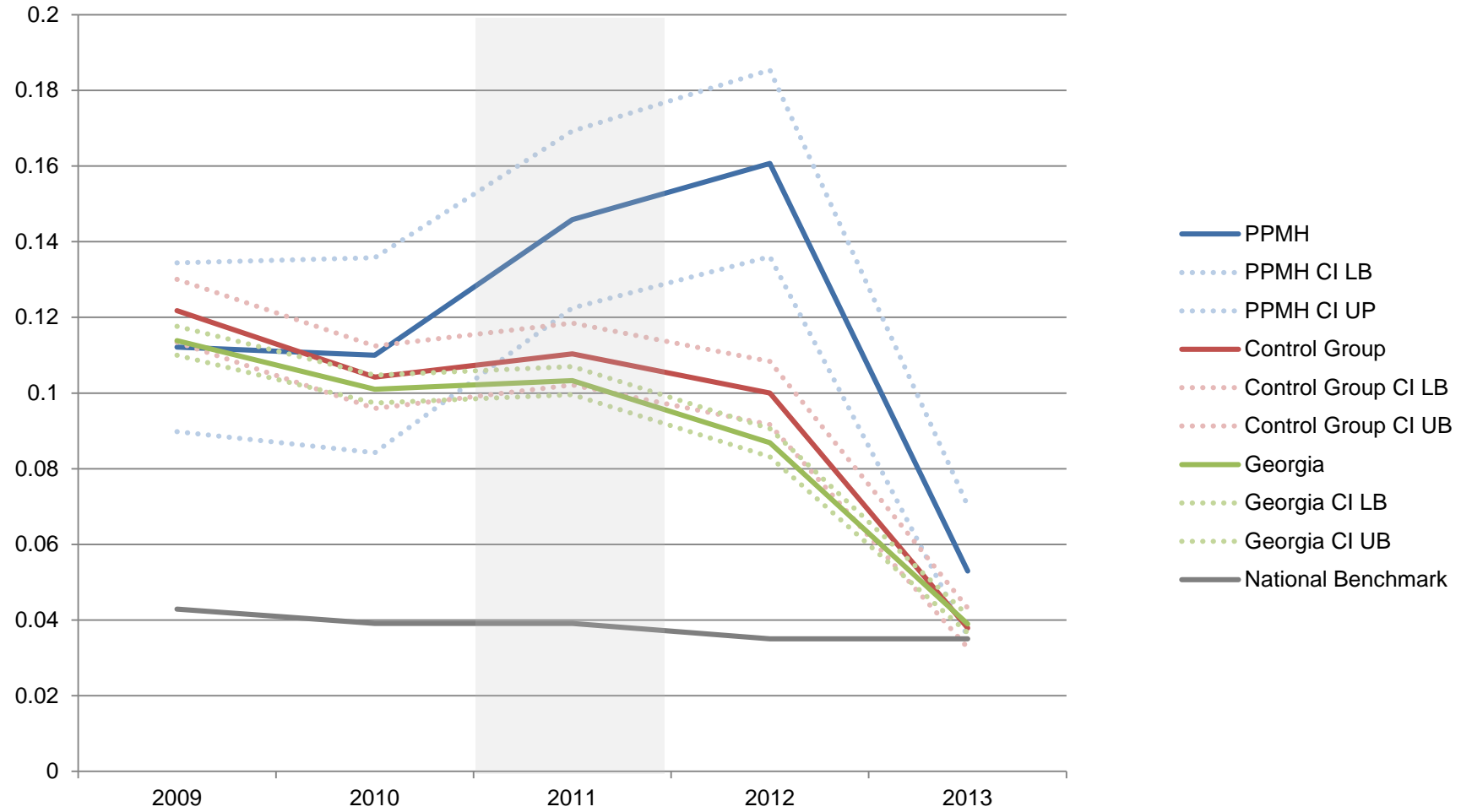
IQI 17 Acute Stroke Risk-Adjusted Rate



Source: Calculated from GHA 2009-2014Q2

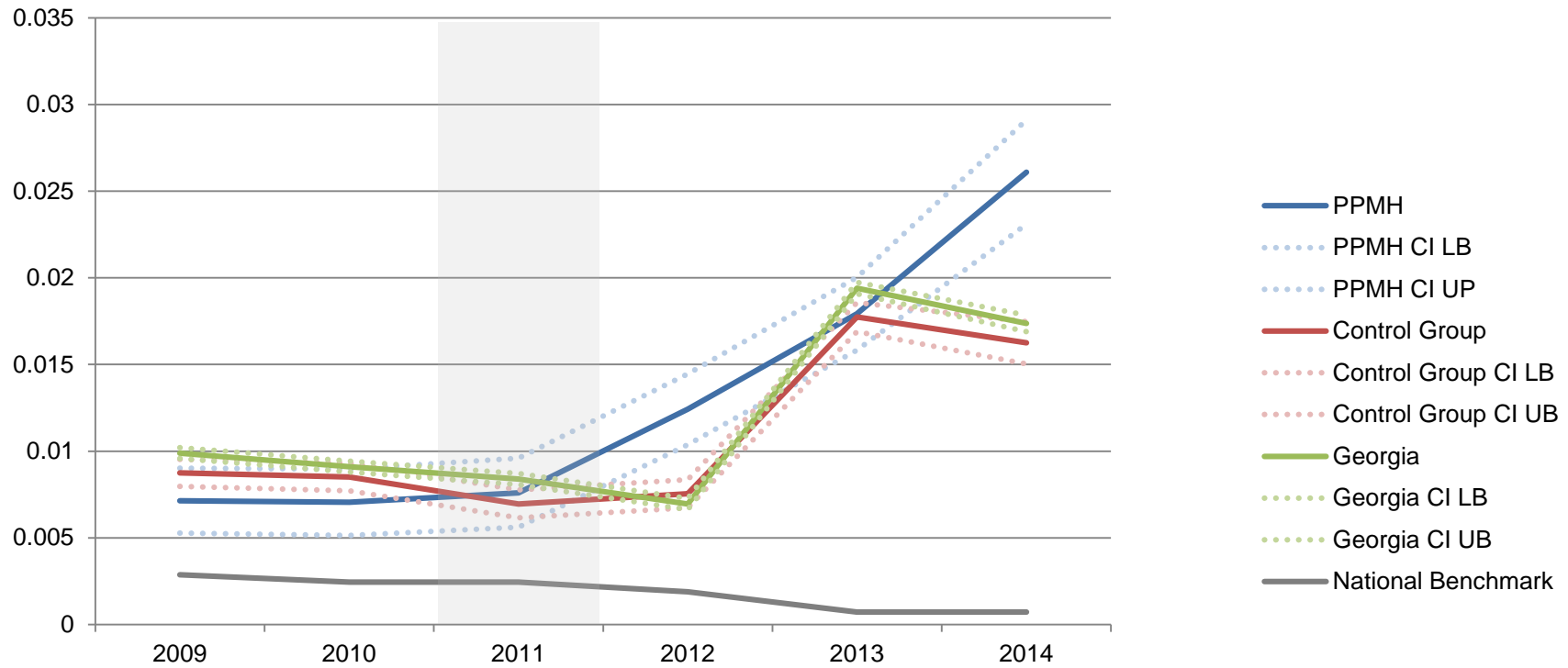


IQI 20 Pneumonia Risk-Adjusted Mortality Rate



Source: Calculated from GHA 2009-2013

PSI 15 Accidental Puncture or Laceration Risk-Adjusted Rate



Source: Calculated from GHA 2009-2014Q2



Conclusion

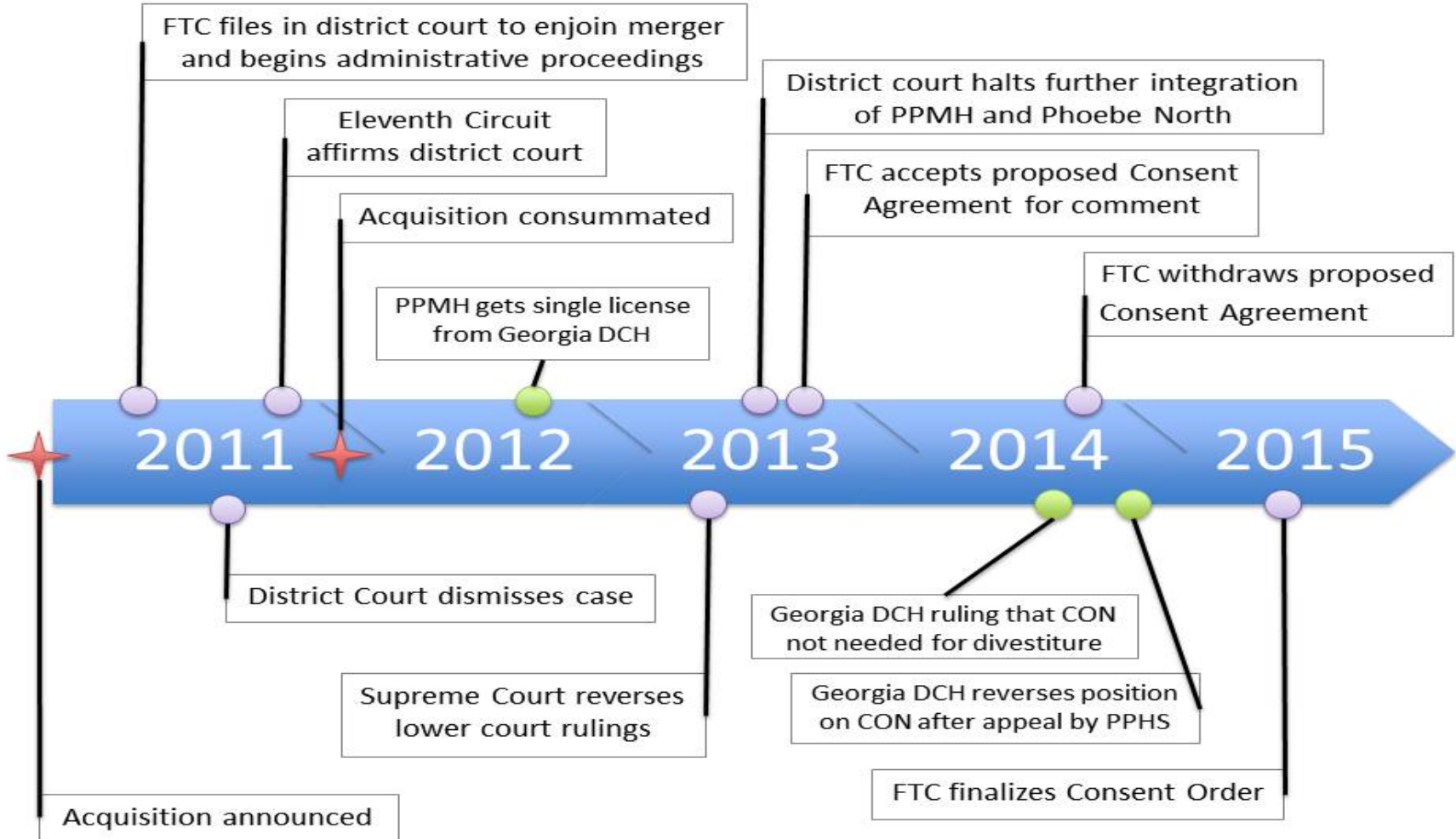
- Most quality metrics (except heart failure) indicate substantial quality decline after the merger
 - Pattern of quality reductions, with most occurring at the time of the merger or shortly thereafter, may indicate disruptions from the merger transition
- Price spiked immediately after the merger then declined back toward control price
- At best, results suggest risks of price and quality regulation
 - Regulators may have difficulty adjusting to mergers



Appendix



Merger Timeline



Measuring the Change in Price

Price measured using method of Dafny (2009)

- Revenue data taken from CMS's Healthcare Cost Report Information System (HCRIS)
- Case-mix-adjusted using commercial discharge data from the Georgia Hospital Association (GHA)

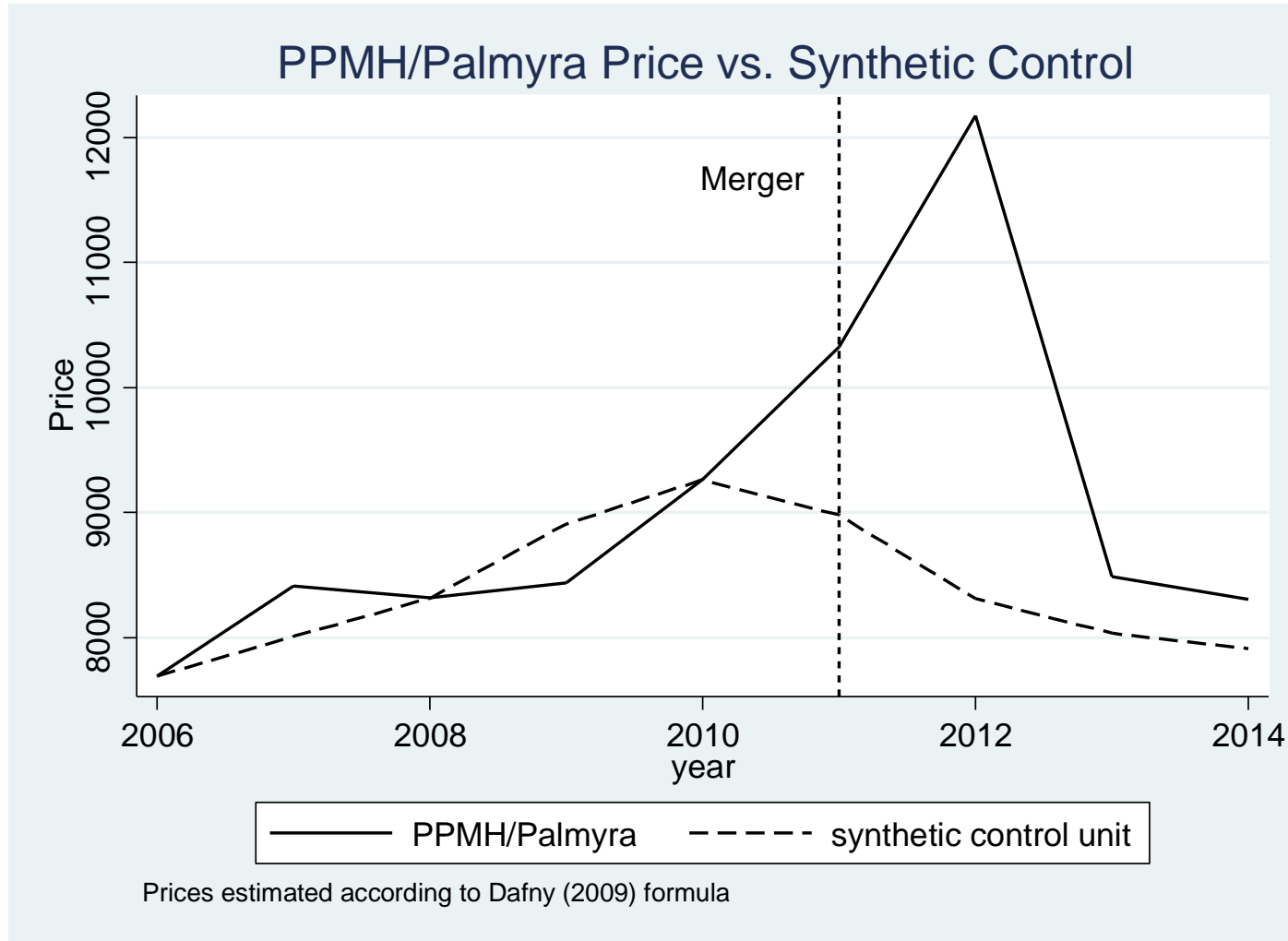
Price change measured relative to synthetic control (Abadie, Diamond, and Hainmueller (2010))

- Weighted average of non-merging hospitals in Georgia, where weights are selected so that synthetic control is similar to the merging hospitals with regard to pre-merger prices and predictors of price:
 - Operating cost per adjusted admission (average variable cost)
 - Residents and interns per bed (teaching intensity)
 - Occupancy rate (capacity)

Alternative Difference-in-Difference estimate with non-merging Georgia Hospital Authority hospitals as the control group



Price Change



Synthetic control price increase from 2012 to 2014 is 15% ($p < 0.01$)

Alternate DID price increase from 2012 to 2014 is 9% ($p = 0.14$)

Paper

Christopher Garmon and Laura Kmitch, “Hospital Mergers and Antitrust Immunity: The Acquisition of Palmyra Medical Center by Phoebe Putney Health,” *Journal of Competition Law & Economics* 14, no. 3 (Sept. 2018): 433-466.

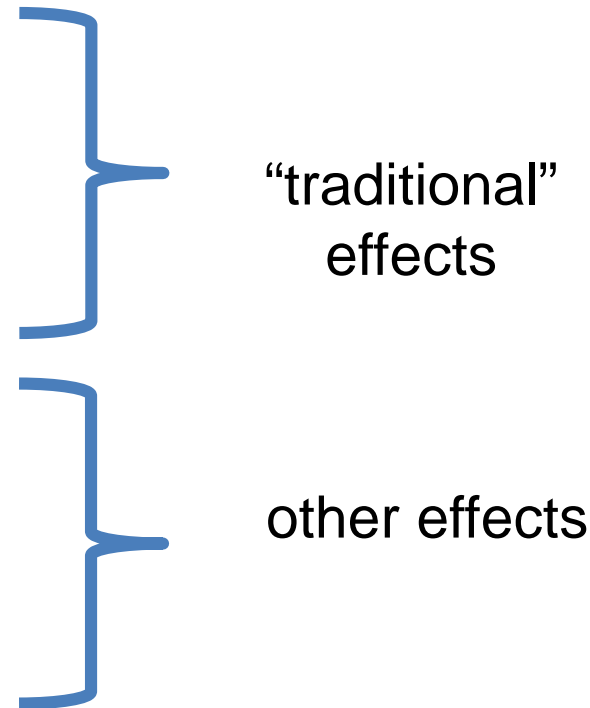


COPA Retrospective Analyses: Takeaways and Implications

Leemore Dafny, PhD
Harvard University



Key Questions in Need of Answers

- What are effects of merger + COPA relative to status quo?
 - Effects of interest
 - Spending (price *and* quantity)
 - Quality (outcomes, patient experience)
 - Access (i.e. convenience)
 - Labor market (monopsony)
 - Labor market (other effects on wages or employment)
 - Inequality
 - Access (to underserved)
- 
- “traditional” effects
- other effects

Synopses of Four Studies

Setting	Pre period	Post period	Compares		Regulation Features
North Carolina (2 → 1) [COPA: 1995-2016]	1996-1998	1999-2008	Monopolist w/ COPA	Peers in NC	Margin cap Cost growth cap Charge growth cap MD growth cap
Montana (2 → 1) [COPA: 1996-2007]	1997-2005	2008-2015	Monopolist w/o COPA	Duopolists in MT	Margin cap Cost target Revenue cap Price monitoring Quality/access reqts
South Carolina (4 → 3) [COPA 1.0: 1997-2003; COPA 2.0: 2004+]	1997-1998	1999-2003 2004-2008	Triopolist + COPA	Peers in SC	P growth cap (1.0) Rev growth cap (1.0) No layoffs (1.0) Access reqts 10% tithe Cost monitoring
Georgia (2 → 1) [Regn: 2011+]	2006-10	2011-2014	Monopolist w/regulation	Peers in GA	“reasonable” rate of return

Synopses of Four Studies

Setting	Price effect	Quality effect
North Carolina (2 → 1) [COPA: 1995-2016]	>20% with COPA	?
Montana (2 → 1) [COPA: 1996-2007]	0% with COPA >20% without COPA	?
South Carolina (4 → 3) [COPA 1.0: 1997-2003; COPA 2.0: 2004+]	0% with COPA	?
Georgia (2 → 1) [Regn: 2011+]	1-year spike of 43%	Negative and immediate

Takeaways

- Only one study explicitly compares COPA+ merger with status quo. It finds the COPA offsets any upward price pressure.
 - But quality effects unknown
 - COPA was repealed
- The other 2 COPA studies yield less conclusive results because of the short pre-COPA periods and the comparison to peers with different market structures (rather than the pre-merger market structure). But the findings suggest 2→1 with COPA worse than 4→3 with COPA
- Regulation did not prevent post-merger quality reductions in GA 2→1

Takeaways

- Studies are limited by lack of uniform, historical data on all measures
 - 6b study might have access to better data
- Results hard to generalize because of variation in market structures, regulations, and implementation
 - Does not mean we can't learn from what has been implemented
- It is difficult to study the range of effects that are of interest to enforcers and regulators
- COPA restrictions – whether effective – are often temporary
 - Hence enforcers' preference for structural to behavioral/conduct remedies



Welfare Effects and Policy Implications of Recent COPA Studies

Gregory S. Vistnes

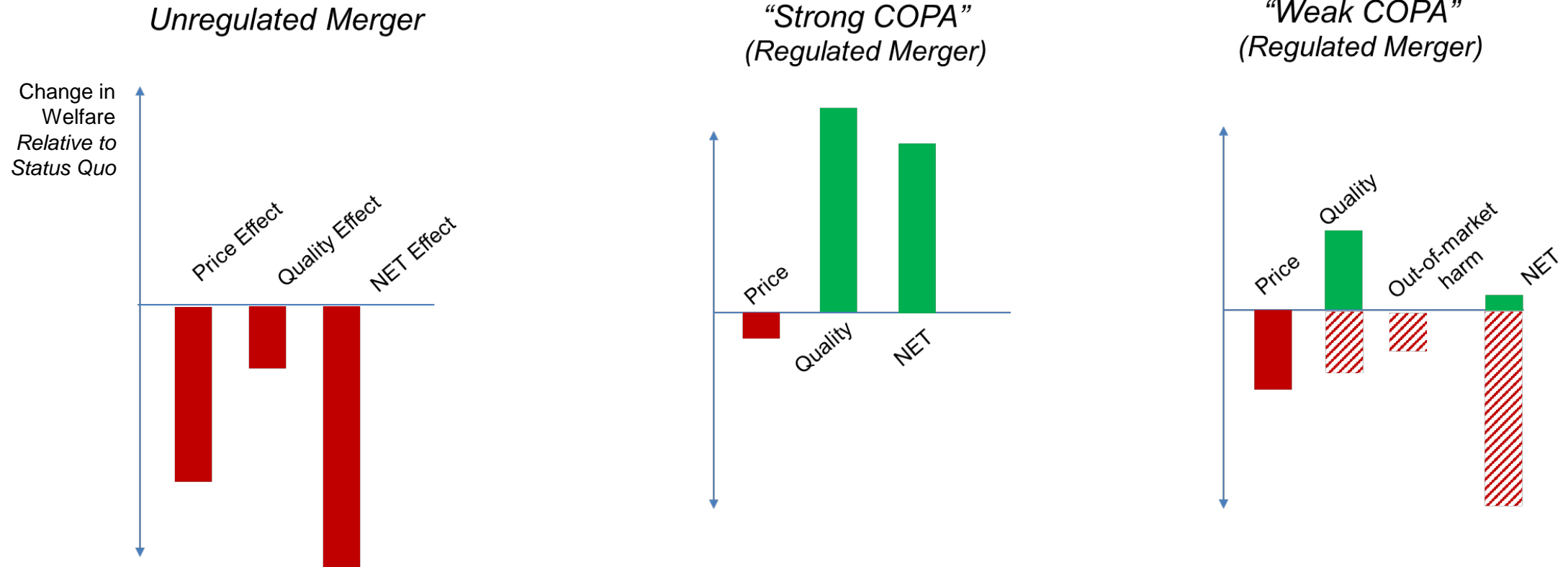
Charles River Associates

Washington, DC



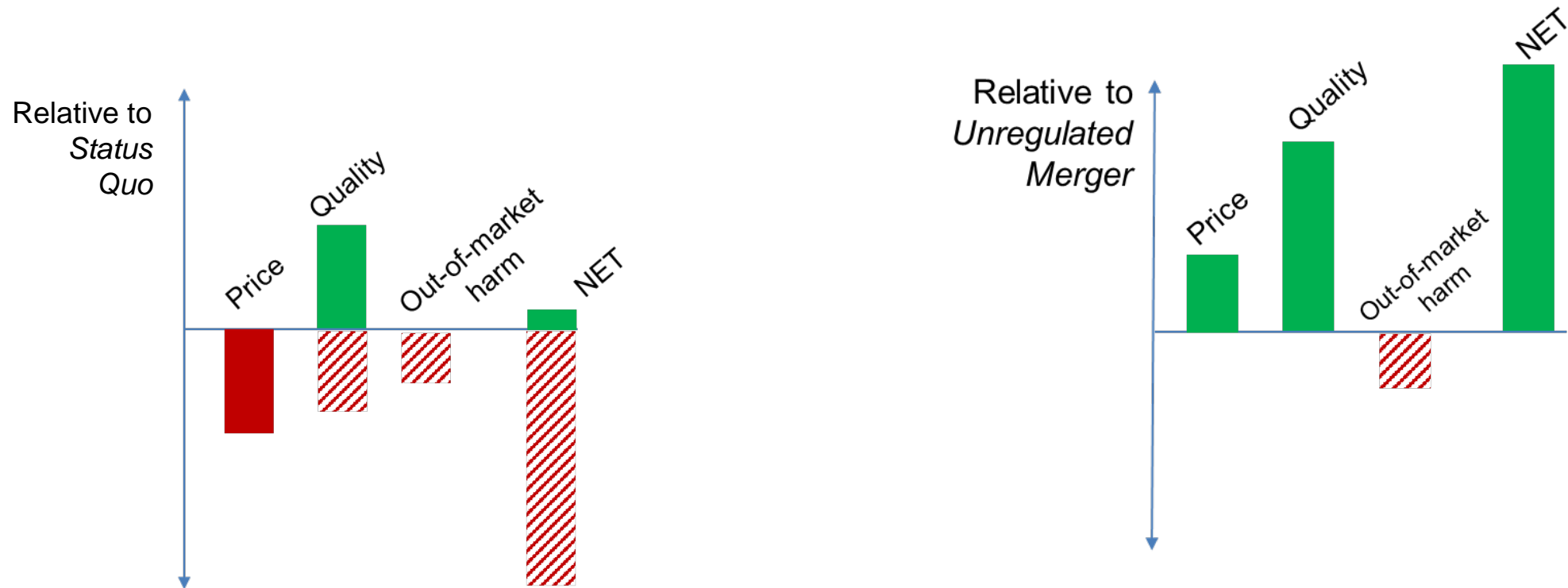
Expected Merger-Related Effects

(Relative to the Status Quo)



Identifying the Appropriate But-For World

(The case of a Weak COPA)



Ranking Outcomes and Choosing Policies

- A **Strong COPA** outcome is the ideal, preferred outcome
 - If the **Strong COPA** outcome is anticipated, then COPA policies “appropriately” displace antitrust enforcement that only maintains the **Status Quo**
- If a **Weak COPA** outcome is anticipated, then the **Status Quo** outcome is preferred
 - If antitrust enforcement can be counted on to preserve the status quo, then COPA policy should “yield” to antitrust enforcement, i.e., COPAs should not displace antitrust enforcement
- But if effective antitrust enforcement is questionable, then a **Weak COPA** is likely preferable to the the **Unregulated Merger** outcome that would result from failed antitrust enforcement
- **Policy Implication:** Absent confidence in a “Strong COPA” outcome, COPA policy should be used to *backstop, not displace*, antitrust enforcement
 - By backstopping, rather than displacing, antitrust enforcement, COPAs can allow for the possibility of preserving the status quo, but provide a safeguard against the Unregulated Merger outcome
- **Key Policy Question:** Are we in a world of *Strong* or *Weak* COPAs?
 - Need to account for Price Effects, Quality Effects and possibly Out-of-Market Effects

Estimated Effects: An Inquiry of Four COPAs

Merger	Date*	Relative to Status Quo			Relative to Unregulated Merger [Presumption]		
		Price Effect	Quality Effect	Net Effect **	Price Effect	Quality Effect	Net Effect **
Asheville, NC (Mission Health) [Tran & Schwarz]	1995	↑	?	?	?	?	?
Great Falls, MT [Garmon]	1996	—	?	?	↓	?	?
Columbia, SC (Palmetto Health) [Bhatt]	1997	—	?	?	↓	?	?
Albany, GA (Phoeby Putney) [Garmon & Kmitch]	2011	↑ —	↓	↓	↓	↓	?

* Merger dates are approximate

** Net effect does not take into consideration possible “out of market” harm

Completed COPAs: Reviewing the Mission Health and Benefis Health COPAs

Participants:

Mark L. Callister, Cory Capps, Kendall Cotton,
John Goodnow, K.D. (Kip) Sturgis

Moderator: Stephanie A. Wilkinson



Ballad Health COPA: Early Experiences and Observations

Participants:

**Erin C. Fuse Brown, Richard G. Cowart,
Scott Fowler, Joseph Hilbert, Janet M. Kleinfelter,
Daniel J. Pohlgeers, John B. Syer, Jr.**

Moderator: Goldie Veronica Walker



Ballad Health COPA: Early Experiences and Observations

Richard G. Cowart

Baker Donelson

Outside Counsel to Ballad Health



About Ballad Health

Created by the merger of Mountain States Health Alliance and Wellmont Health System effective February 1, 2018

- **Not-for-profit** healthcare organization
- Operating **21 hospitals** with 3,293 licensed beds
- Region's only **Children's hospital**
- Over **\$2 billion** in annual revenue
- Over **103,000** discharges
- **450,000 emergency** department visits
- Over **800 employed providers** practicing in over 250 locations
- **15,000+ team members**, making Ballad Health the 4th largest employer in Tennessee



About Our Region

- **Mountainous terrain** of Southern Appalachia
- Serving **29 counties** in Tennessee, Virginia, Kentucky and North Carolina
- Approximately **1 million residents** in the service area



About Our Region

State Health Rankings: TENNESSEE: 45th of 50
 VIRGINIA: 19th of 50

County Health Rankings – Health Outcomes by County			
TENNESSEE		VIRGINIA	
Washington	19 of 95	Washington	63 of 133
Sullivan	25 of 95	Grayson	72 of 133
Greene	41 of 95	Wythe	78 of 133
Carter	47 of 95	Scott	92 of 133
Hamblen	55 of 95	Smyth	102 of 133
Unicoi	64 of 95	Russell	113 of 133
Hawkins	70 of 95	Tazewell	118 of 133
Johnson	77 of 95	Lee	119 of 133
Hancock	86 of 95	Buchanan	122 of 133
Cocke	92 of 95	Wise	124 of 133
		Dickenson	125 of 133

➤ Core “urban” counties of Washington and Sullivan rank 2 and 4 for clinical care

Ballad Health Hospital Operating Income

Hospital	FY18 Actual	Operating Margin
Hancock County Hospital	1,509,257	17.7%
Lonesome Pine Hospital	10,666,651	14.8%
Franklin Woods Community Hospital	11,018,393	13.5%
Johnston Memorial Consolidated	20,609,443	12.4%
Woodridge Psychiatric Hospital	1,646,715	7.6%
Johnson City Medical Center	27,405,121	6.4%
Sycamore Shoals Hospital	2,851,622	6.2%
Norton Community Consolidated	3,123,232	4.1%
Smyth County Consolidated	1,720,743	3.6%
Hawkins County Memorial Hospital	685,896	3.5%
Bristol Regional Medical Center	2,895,651	1.2%
Holston Valley Medical Center	(14,950,918)	-4.4%
Dickenson Community Hospital	(446,569)	-5.2%
Indian Path Community Hospital	(4,689,498)	-5.7%
Takoma Regional Hospital	(4,392,555)	-7.3%
Johnson County Community Hospital	(736,689)	-9.0%
Laughlin Memorial Consolidated	(6,747,437)	-9.7%
Mountain View Regional Hospital	(4,035,167)	-21.0%
Russell County Consolidated	(5,884,016)	-29.5%
Unicoi County Consolidated	(4,208,124)	-36.4%

COPA Terms of Certification / Virginia Order Authorizing Cooperative Agreement

- **Tennessee**

- Terms of Certification
 - 116 Page Document
 - Requires Plans to be Approved by Department of Health
 - Incremental Spending is Measured Annually
 - Prohibitive Covenants
 - Quarterly & Annual Reports
 - COPA Monitor

- **Virginia**

- 151 Page Order
- Conditions of Approval
 - 49 Conditions (17 Pages)
 - Many of the Conditions are the same as (or similar to) the Tennessee Terms of Certification
 - Some Virginia-Specific Conditions



Active Supervision Structure

Active Supervision

- Internal Ballad COPA Compliance Officer
- External COPA Monitor Engaged by Tennessee Attorney General
- The Tennessee and Virginia Departments of Health and Attorneys General Offices all have staff members dedicated to Active Supervision of the COPA/CA
- Three Consultants Engaged by SWVHA

Tennessee , Virginia, and SWVHA Cooperation

- Monthly calls with Ballad
- Quarterly in-person meetings with Ballad
- Quarterly reports from Ballad
- Annual reports from Ballad



Ballad Health's Investments in Our Region



\$85 million toward behavioral health to create capacity for residential addiction recovery services and develop community-based mental health resources, like mobile health crisis management teams and intensive outpatient treatment options.



\$85 million in academics and research to educate and train healthcare providers that are in short supply, and build the research capacity of local universities and colleges to spur outside research investment.



Ballad Health's Investments in Our Region



\$75 million to address key population health needs, focusing on some of our most serious health challenges like diabetes, heart disease and infant mortality.



\$28 million toward rural health services, including better access to same-day primary care, support for maternal and prenatal health, and more.



Ballad Health's Investments in Our Region



\$27 million toward children's services to create pediatric emergency rooms in Kingsport and Bristol and expand pediatric telemedicine, mobile health and specialty clinics in rural areas.



\$8 million to enable health information exchange to allow healthcare providers both inside and outside of Ballad Health to easily share health information that improves patient care.



Indices and Measures

Economic Sub-Index Pass/Fail in Both States

Population Health Sub-Index

- Measures smoking, obesity, drug deaths, vaccines, teen pregnancy rate, infant mortality, etc.
Tennessee: 25 Measures Virginia: 13 Measures (subset of Tennessee measures)

Access to Care Sub-Index

- Measures preventable hospitalizations, cancer screenings, specialist recruitment, etc.
Tennessee: 28 Measures Virginia: 29 Measures (nearly identical to Tennessee)

Other/Quality Sub-Index

- Measures quality of care provided at Ballad hospitals (CMS safety measures, etc.)
Tennessee: 16 Quality Measures; 83 Monitoring Measures
Virginia: 17 Quality Measures; 82 Monitoring Measures (nearly identical to Tennessee)



Accountable Care Community

249 Members



Business



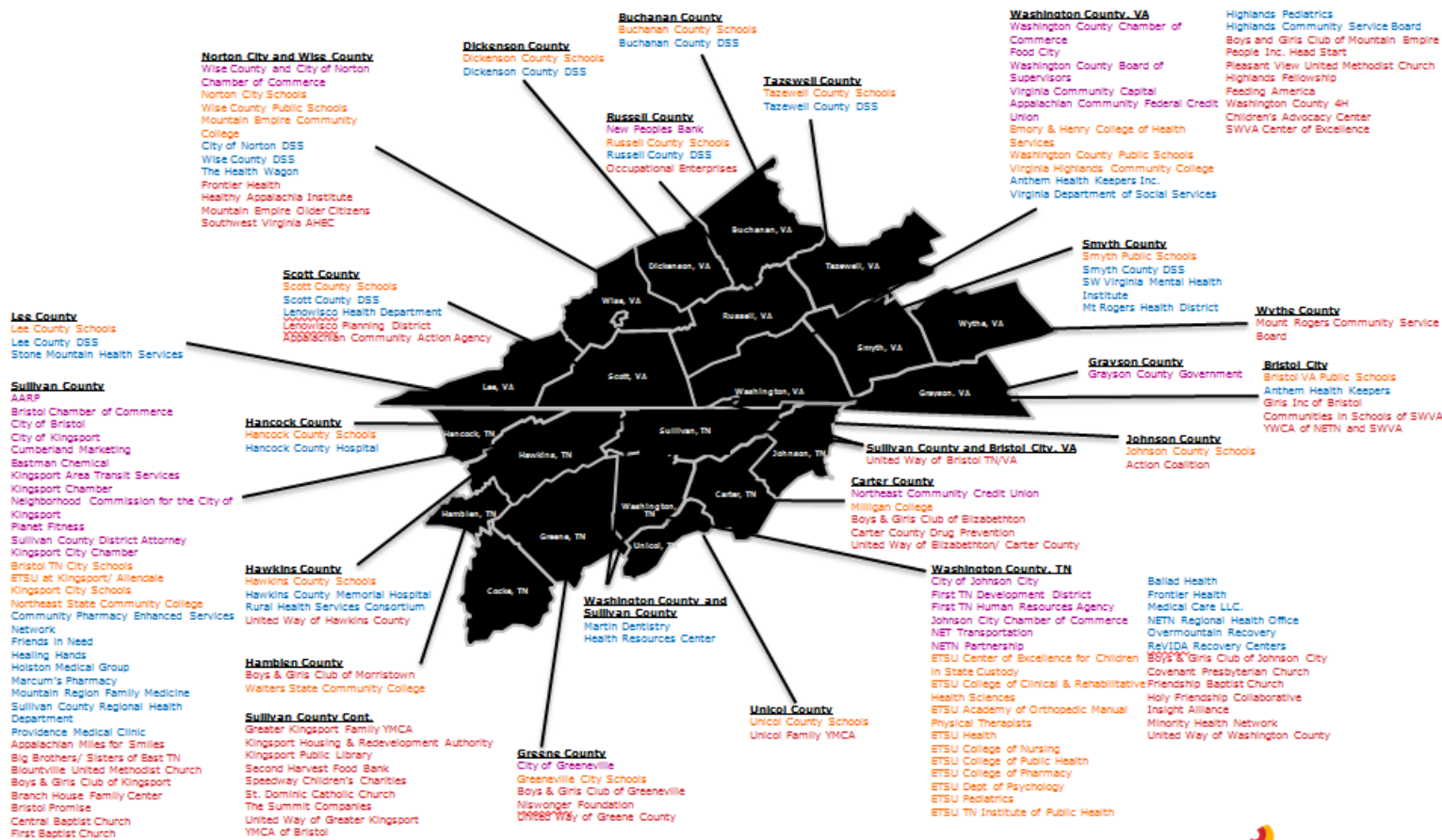
Education



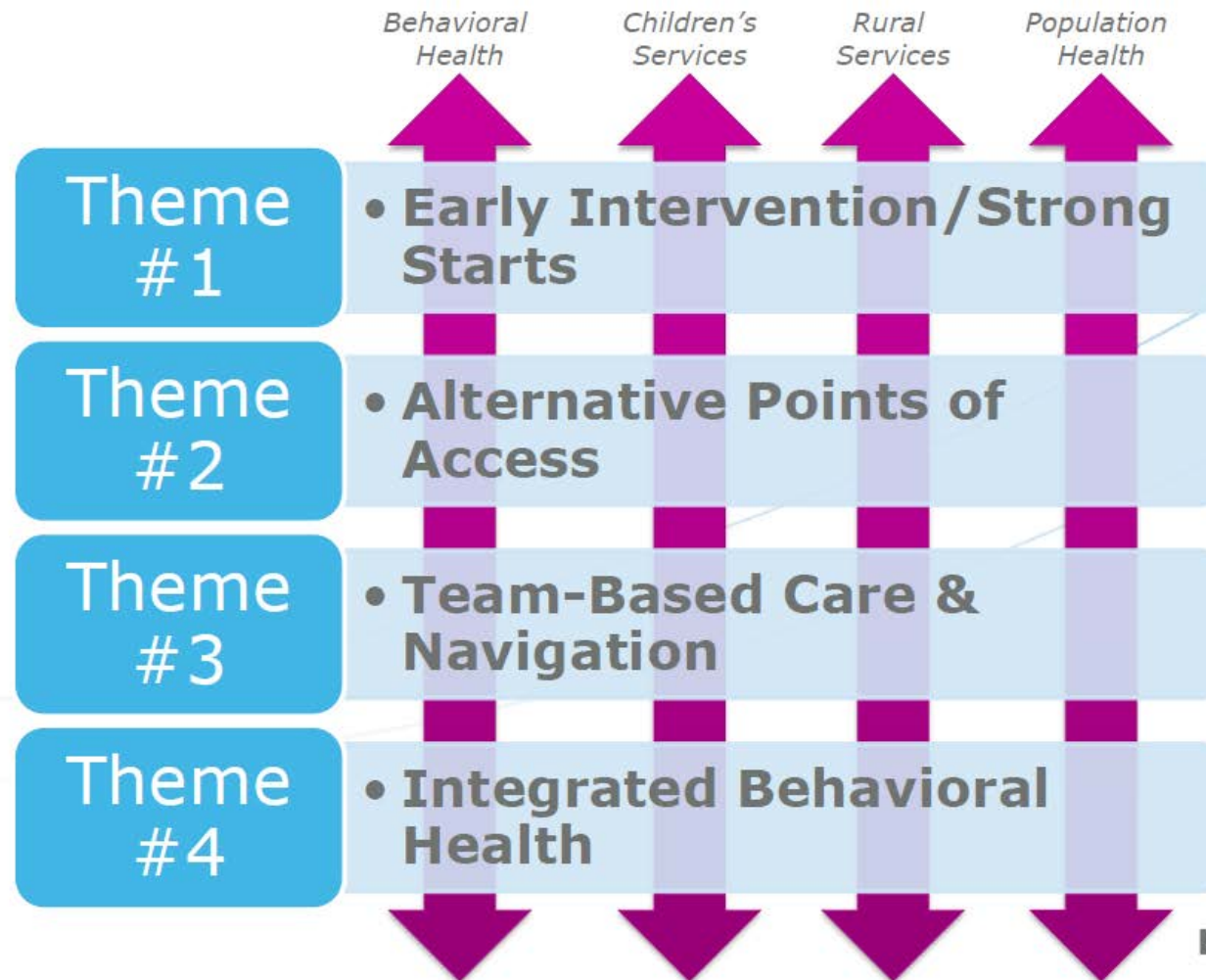
Healthcare



CBO/FBO



Strategic Themes Across All Plans



Ballad Health COPA: Early Experiences and Observations

Participants:

**Erin C. Fuse Brown, Richard G. Cowart,
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Daniel J. Pohlgeers, John B. Syer, Jr.**

Moderator: Goldie Veronica Walker



Policy Implications of Ballad COPA for Other States

Erin C. Fuse Brown, JD, MPH

Associate Professor of Law, Georgia State University College of Law



REPORT

Hospital Mergers and Public Accountability: Tennessee and Virginia Employ a Certificate of Public Advantage

by Erin C. Fuse Brown

SEPTEMBER 2018

To Oversee or Not to Oversee? Lessons from the Repeal of North Carolina's Certificate of Public Advantage Law

by Erin C. Fuse Brown

Issue Brief Summary

In the fall of 2018, the Milbank Memorial Fund published a paper about Virginia and Tennessee's certificate of public advantage (COPA) law. Now, in a new issue brief, the same author writes about North Carolina's COPA, which was initiated to allow a health system to merge and create a monopoly. The law was enacted in 1993 and remained in effect until its repeal in 2015.

- The terms of the approved COPA in North Carolina were considerably different from the recently approved COPA for Ballad Health in Tennessee and Virginia, with fewer resources for public oversight and population health efforts.
- The COPA's subsequent repeal in North Carolina created a regulatory void in state oversight that allowed the merged hospital system to become an unregulated monopoly and then offer itself for sale to a national health system.
- In considering policies to address provider consolidation, state officials must guard against the risk that COPAs will be used as a long-term strategy to gain an unregulated monopoly that creates the very disadvantages the state's COPA law was designed to prevent.

Policy Implications

- COPAs are resource intensive
- COPAs can be a tool to support population health, rural hospitals
- Coordination is key for a multi-state COPA
- COPA conditions must balance specificity and flexibility
- State must define what a successful COPA looks like
- COPAs are risky, and states must remain vigilant



What a successful COPA looks like (?)

- No closures of rural facilities
- Maintenance or improvement of access to key services
- Price increases and spending in line with more competitive markets
- Maintenance or improvement of quality metrics
- Population health improvements on key metrics



States Must Remain Vigilant

- Ongoing measure of effects on price, quality, and access
- How to resist the incentives to evade or repeal COPA oversight 20 or 30 years from now?
- Detailed and updated plan of separation
- Resources and capacity for oversight *in perpetuity*



Policy Considerations for COPAs: Competition, Wages, and Beyond

Participants:

Robert Berenson, Robert Fromberg,
Christopher Garmon, Thomas (Tim) Greaney,
Elena Prager, Thomas Stratmann, Tracy Wertz

Moderator: Katie Ambrogi



Effects of Hospital Mergers on Employee Pay

Elena Prager
Kellogg School of Management
Northwestern University



Effects of Employer Consolidation (Theory)

- Employer consolidation → fewer employers competing for a given worker
- Less competition → less “bidding up” of pay (i.e. lower pay)
- Expect effects only when the consolidated labor market is sufficiently concentrated



Measuring Effects When the Employers Are Hospitals

- Recent academic study measures the effect of actual hospital mergers on employee pay (Prager & Schmitt 2019)
- Compare pay growth rates in labor markets with a recent hospital merger to pay growth rates in labor markets without
- Main finding: *wage growth is ~1/3 slower* after a large merger



Measurement Details (1 of 2)

- Categorize labor markets into five bins:
 - No within-market hospital merger activity
 - Hospital merger with negligible employer consolidation
 - Hospital merger with low employer consolidation
 - Hospital merger with medium employer consolidation
 - Hospital merger with high employer consolidation
- Categories are based on *change in labor market HHI*



Measurement Details (2 of 2)

- Worker pay is growing 3.5–4% per year on average
- Need to “difference out” underlying trends in pay
- Approach: compare pay trends in each bin of mergers to pay trends in the bin without mergers *in the same years*
- Focal workers: non-physician skilled workers (nurses, social workers, etc.)



Main Results

- There is a loss of pay growth following large mergers
- Pay growth following high-consolidation mergers is slower 25–40% than without mergers
- Amounts to a total loss of ~ \$5,500–\$9,000 in raises over four years for a worker initially making \$50,000



Caveats

- Cannot estimate effects on physician pay
- After smaller mergers, we find statistically insignificant effects, consistent with:
 - Pay growth slows down by less than for large mergers
 - Or, pay is not affected at all



How Do COPA Mergers Compare?

- In the study, “high-consolidation mergers” are those with HHI increases of 1,115–5,000 HHI points
- Existing COPAs are within this high consolidation range:
 - Palmetto Health (SC, 1997): 2,800
 - Mission Health (NC, 1998): 2,600
 - Ballad Health (VA/TN, 2018): $\geq 5,000$
 - Cabell Health (WV, 2018): 2,300
- Conclusion: might expect pay to grow slower after a COPA



Certificate of Need Laws

Thomas Stratmann
George Mason University



Certificate of Need (CON) Laws

- Limit the ability to obtain medical treatment
- Have no public health or safety justification

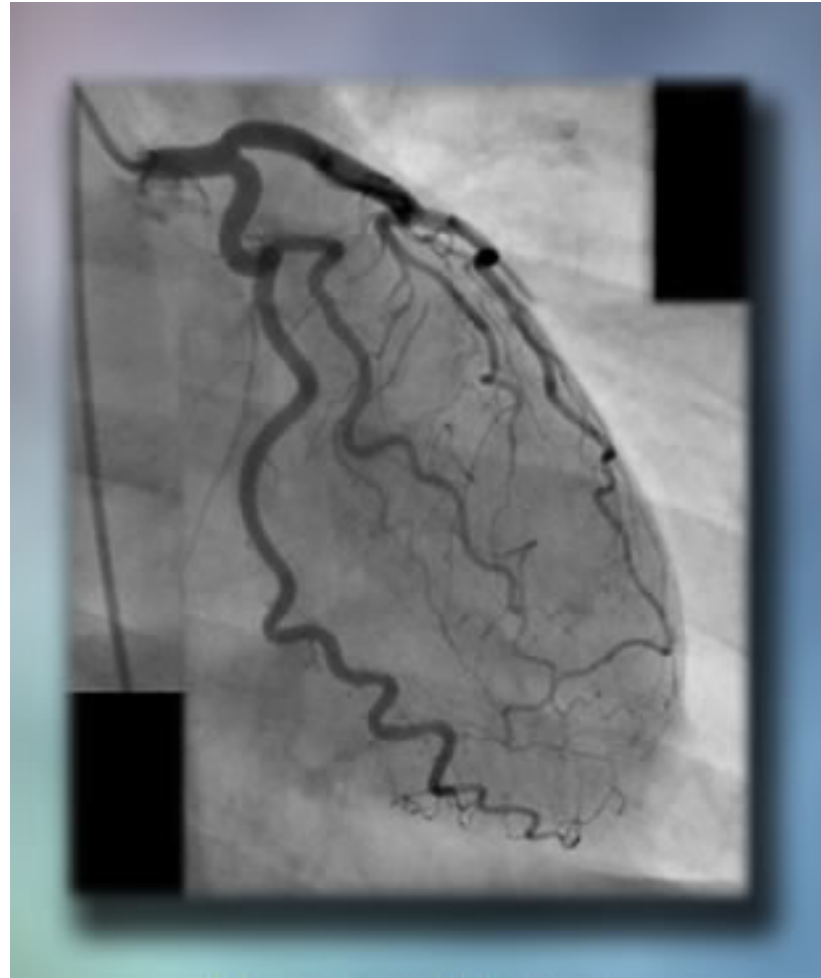


How Did We Get Here?

- First introduced by New York in 1964
- In 1974, the federal government incentivized states to implement CON laws
- Federal law was repealed in 1986
- Today, 35 states in the U.S. still have CON laws in their statutes and enforce them



Cardiac Catheterization Equipment



26



Ambulatory Surgery Center



27

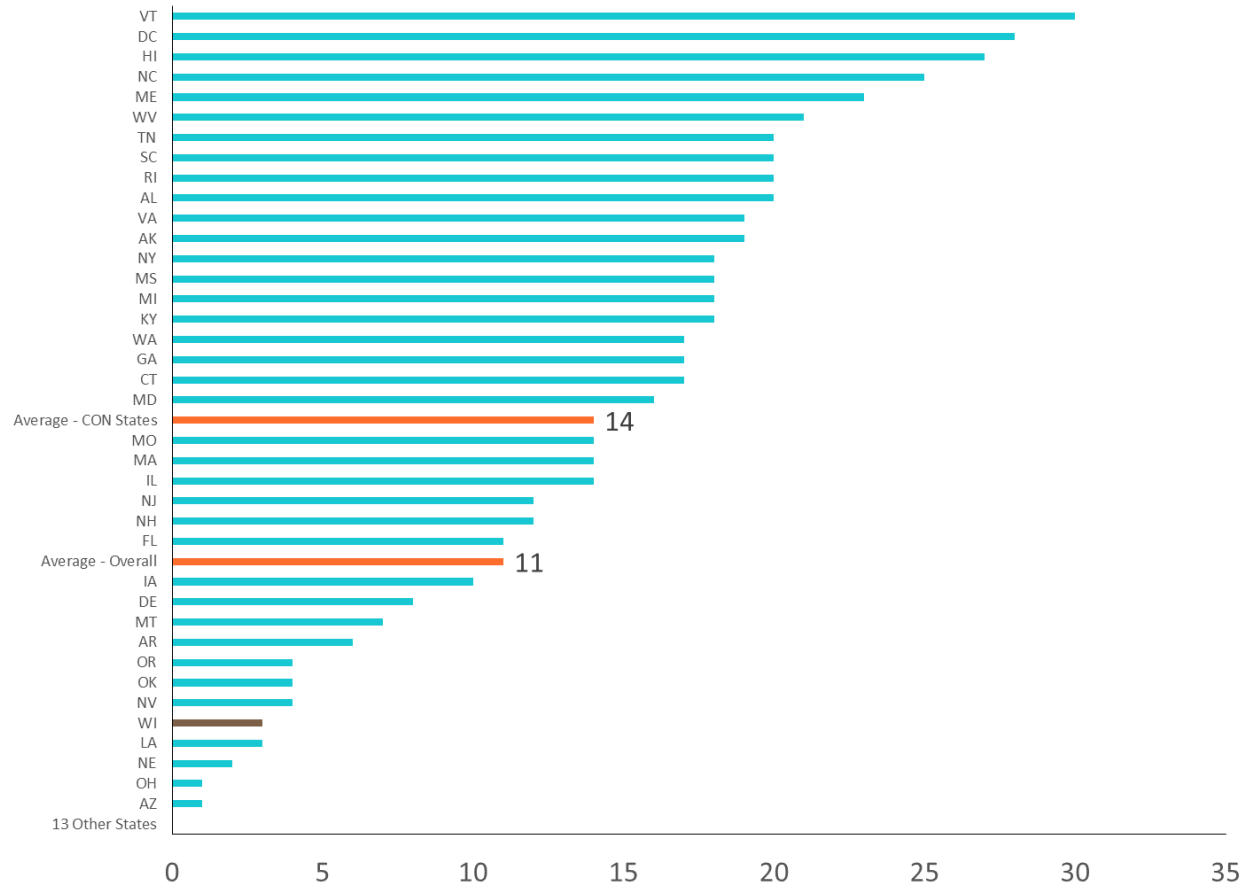


Adding Hospital Beds

28



Number of CON Laws by State



Stated Objectives (Benefits) of CON

- Ensure an adequate supply of healthcare resources
- Ensure access to health care for rural communities
- Promote high-quality health care
- Ensure charity care for those unable to pay
- Restrain the cost of healthcare services



CON Laws in Practice = Barrier to Entry

- Letter of Intent
- Application Form with an up a \$45,000 non-refundable Application Fee
- Public Hearing
- Fact Finding Conference at the State Agency



Findings Summary Certificate of Need Laws:

- Reduce medical inputs: hospital beds, MRI machines, etc.
- Reduce the number of medical providers
- Reduce access to medical care
- Reduce quality of medical services



States with Certificate of Need Laws Have:

27%

fewer hospital beds



35%

fewer hospitals with MRI services



37%

fewer hospitals with CT Scanners



CON and Quality of Medical Services



Hospital Quality Measure	Effect of the CON law
Deaths among surgical patients with serious complications (per 1000)	5% increase
Pneumonia Mortality Rate (% points)	5% increase
Heart Failure Mortality Rate (% points)	3% increase
Heart Attack Mortality Rate (% points)	2% increase



How Much Extra Charity Care Do Hospitals Provide When They Benefit From CON Laws?

?



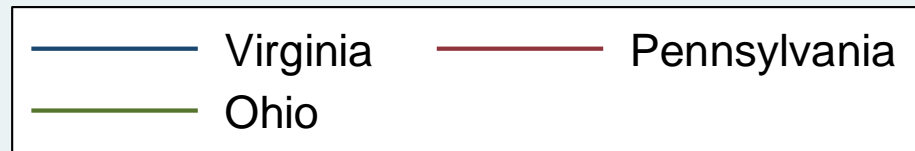
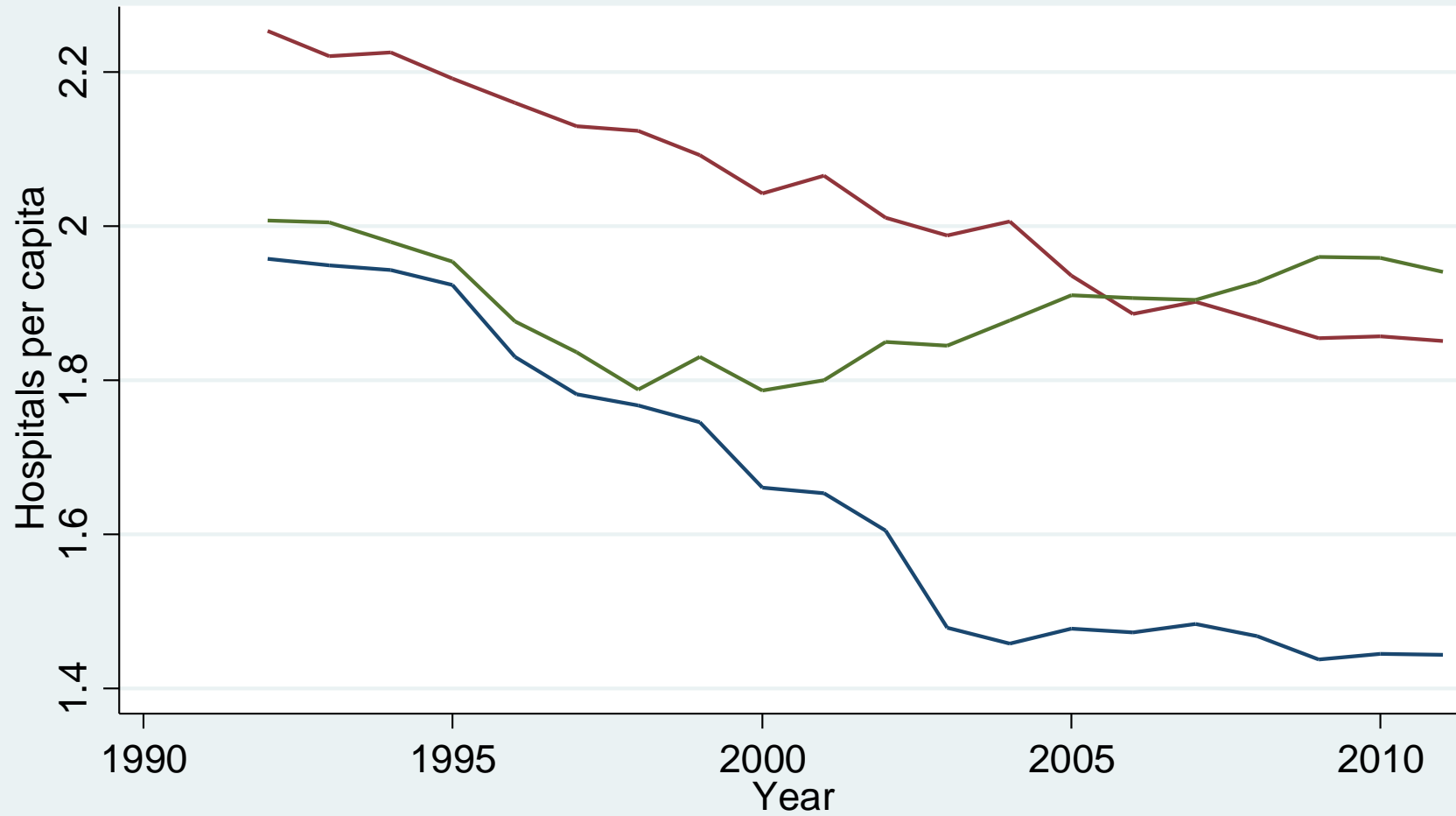
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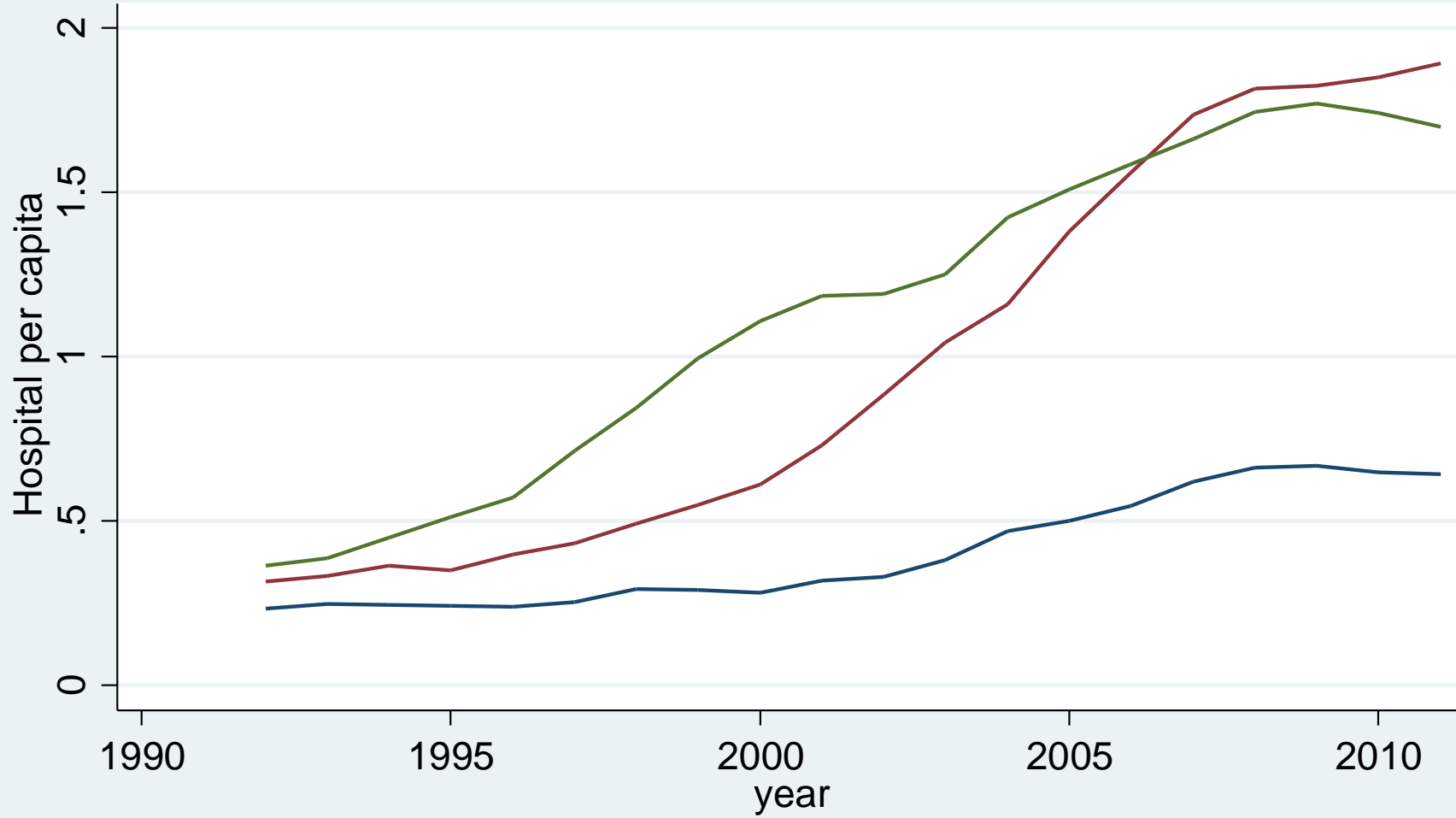
Possibilities – A World Without CON



Total Hospitals per capita



Ambulatory Surgical Centers per capita

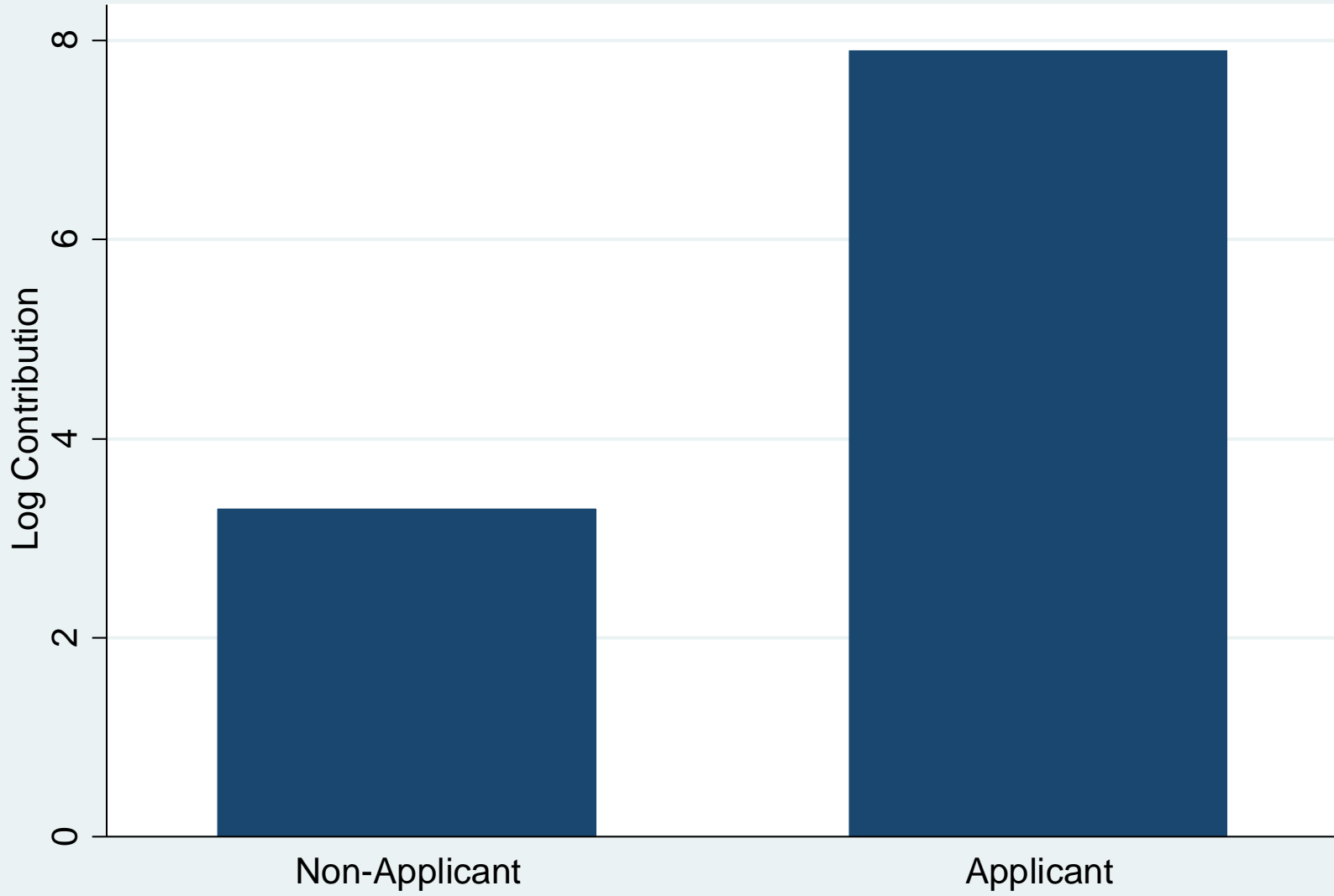


CON Laws Invite Gaming the System

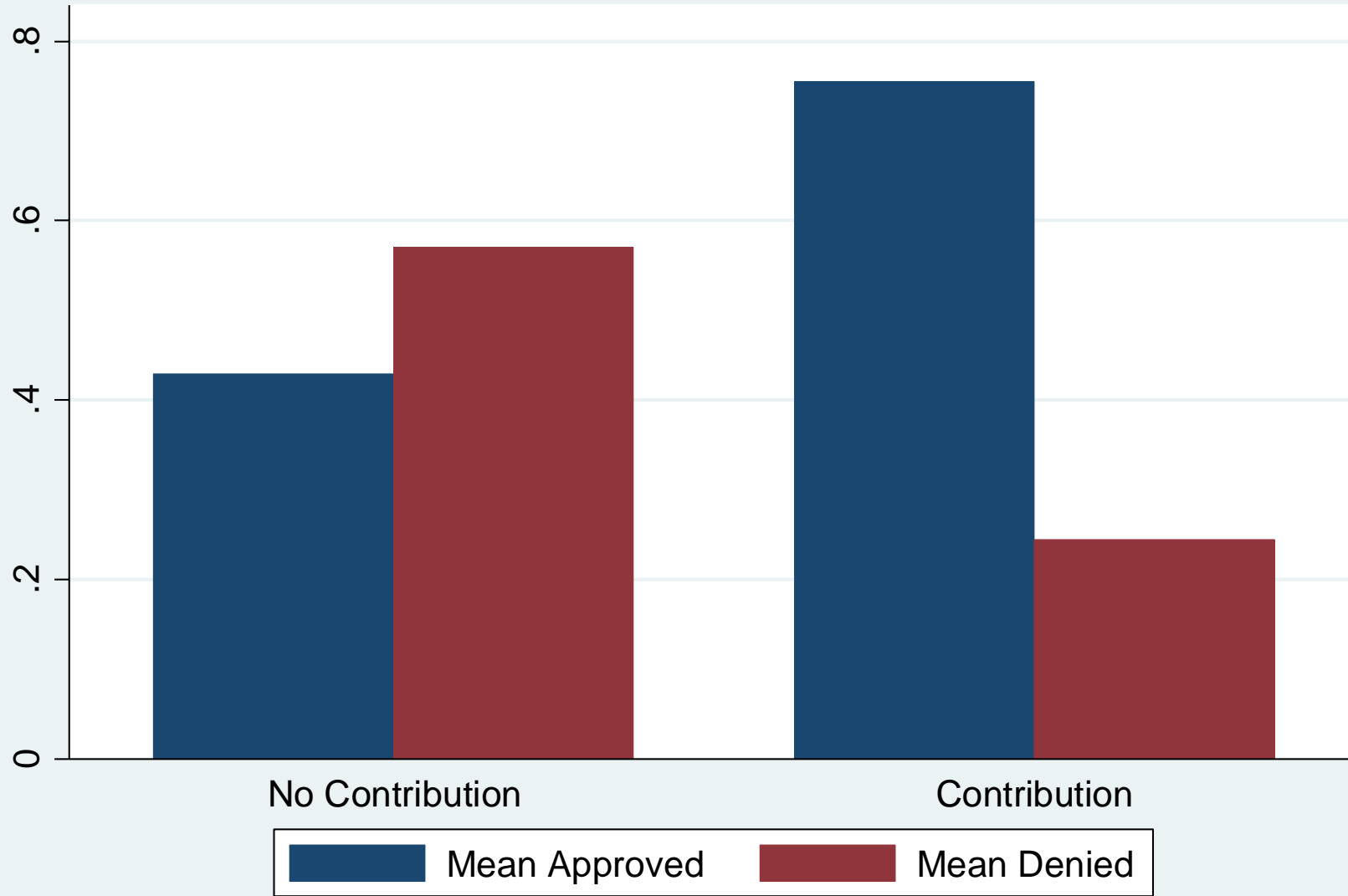
- Laws generate profits for those who have a CON
- Some firms might spend resources on lobbying to seek a CON or using illegal means
- Evidence of CON corruption in Alabama and Illinois



Georgia Hospital Contributions



Application Approval Rates - Georgia



When States Have No CON Laws....

- More access to medical care for both urban and rural populations
- Better quality care
- More competition – lowers health care cost
- Less rent seeking activities and corruption in the political process



The Range of Policy Options to Address High and Variable Provider Prices

Robert A. Berenson, MD
Institute Fellow, Urban Institute



On a Continuum of Market-Based to Overtly Regulatory

Encourage market entry of competitors

- abolish CON if still in place, liberalize state practice acts, etc.

Greater price transparency, e.g., all-payer claims data bases

- to shine a light on prices to facilitate public “shaming”
- support price-conscious consumerism, with complementary benefit designs

Prohibit anti-competitive, insurer-provider contract provisions

- see draft Alexander-Murray legislation in HELP committee

Active purchasing by public payers

- Montana, Oregon, North Carolina?



On a Continuum

“Harmonizing” network adequacy requirements to encourage narrow networks to provide countervailing negotiating leverage

Enhanced antitrust enforcement – both federal and state AGs

- new theories – cross-market mergers, vertical integration
- imposed conduct remedies and post-merger monitoring
- recent consent decrees not only attempt to restrain conduct but also seek greater community benefits

State action immunity with active supervision of mergers – COPAs

Oversight of premium increases, including ability to review and approve insurer-provider contracts, especially negotiated prices

- Rhode Island is the prototype



Various Approaches to Rate Regulation Proposed or in Place

Medicare prohibits billing more than allowed charges – in Medicare Advantage, hospitals and physicians contract at Medicare rates

Placing ceilings on negotiated rates - as a percentage of Medicare

Limiting the annual updates in hospital rates

- WV placed ceilings and floors on rates permitting negotiated rates in between -- 20+ year program repealed in 2016
- Voluntary rate update targets in some states with threat of formal limits if voluntary doesn't work. MA bill to do so failed last year

Full-fledged, all-payer rate setting a la Maryland

- CMS demos testing hospital budgets – MD, VT, rural PA
- Maryland now is supposed to move to area budgets

Concluding Remarks

Katie Ambrogi
Attorney Advisor

Federal Trade Commission, Office of Policy Planning



Thank You For Attending

Public Comments May Be Submitted Through July 31, 2019

www.ftc.gov/copa

