
Surprise! Out-of-Network Billing for Emergency Care in the United States

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Introduction

- Each year, there are 41.9 emergency department (ED) visits per 100 people in the US (CDC, 2013)
- Physicians do not necessarily participate in the same insurance networks as the hospitals where they practice
- As a result, a responsible individual can attend an in-network Emergency Department (ED), but be treated by an out-of-network physician that they could not avoid
 - Exposes patients to significant financial risk from balance billing and higher out-of-pocket costs
 - Undercuts the functioning of health care markets by limiting competition over physician prices

This Paper

- Use data obtained from a large national insurer to offer the first national analysis of out-of-network billing in the US
 - *Scale the problem:* identify the frequency that patients are treated at in-network emergency departments by out-of-network physicians
 - *Identify the Drivers of Out-of-Network Billing:* We focus on where out-of-network billing is occurring and explain the underlying economics that give rise to the issue
 - *Propose Policies to Fix the Issue:* Analyze current policies to address the issue and make recommendations to protect consumers
- Illustrate how physicians' outside options in negotiations with insurers impact negotiated rates

Emergency Care in the US and Out-of-Network Billing

Background on Emergency Care

- More than 130 million ED admissions per year (CDC, 2013)
- The US spends ~10% of health dollars on emergency care (CDC, 2013)
- 14.5% of episodes arrive via ambulance (CDC, 2013)
- From 2001 to 2008, the use of EDs grew 60% faster than population growth (Schuur and Venkatesh, 2012)
 - Growth in ED care in the 2000s has driven up waiting times and put pressure on EDs
 - The challenge of managing and staffing EDs (which need to be run 24/7) has given rise to physician outsourcing firms

Two Firms Dominate Physician Outsourcing Market

- **EmCare:** EmCare is a subsidiary of a Envision Healthcare, a publicly traded firm, and operates in 45 states, employs 10% of ED physicians nationally, and delivers over 18 million emergency episodes per year
 - According to Deutsche Bank, *“EmCare is the leading hospital-based physician staffing and outsourcing provider with a broad service offering across multiple hospital-based physician specialties...We believe EmCare is ~50% penetrated into HCA facilities...”* (Deutsche Bank, 2013, pg 15)
- **TeamHealth:** Has 18,000 affiliated professionals and deliverers ~10 million emergency cases per year. Was publicly traded, but was taken private in 2016.
 - According to Piper Jaffray: *“TeamHealth is one of the largest outsourced providers of healthcare professional staffing and administrative services to hospitals and other providers in the United States...We are overweight TeamHealth due to secular hospital outsourcing trends and benefits from the Affordable Care Act”*

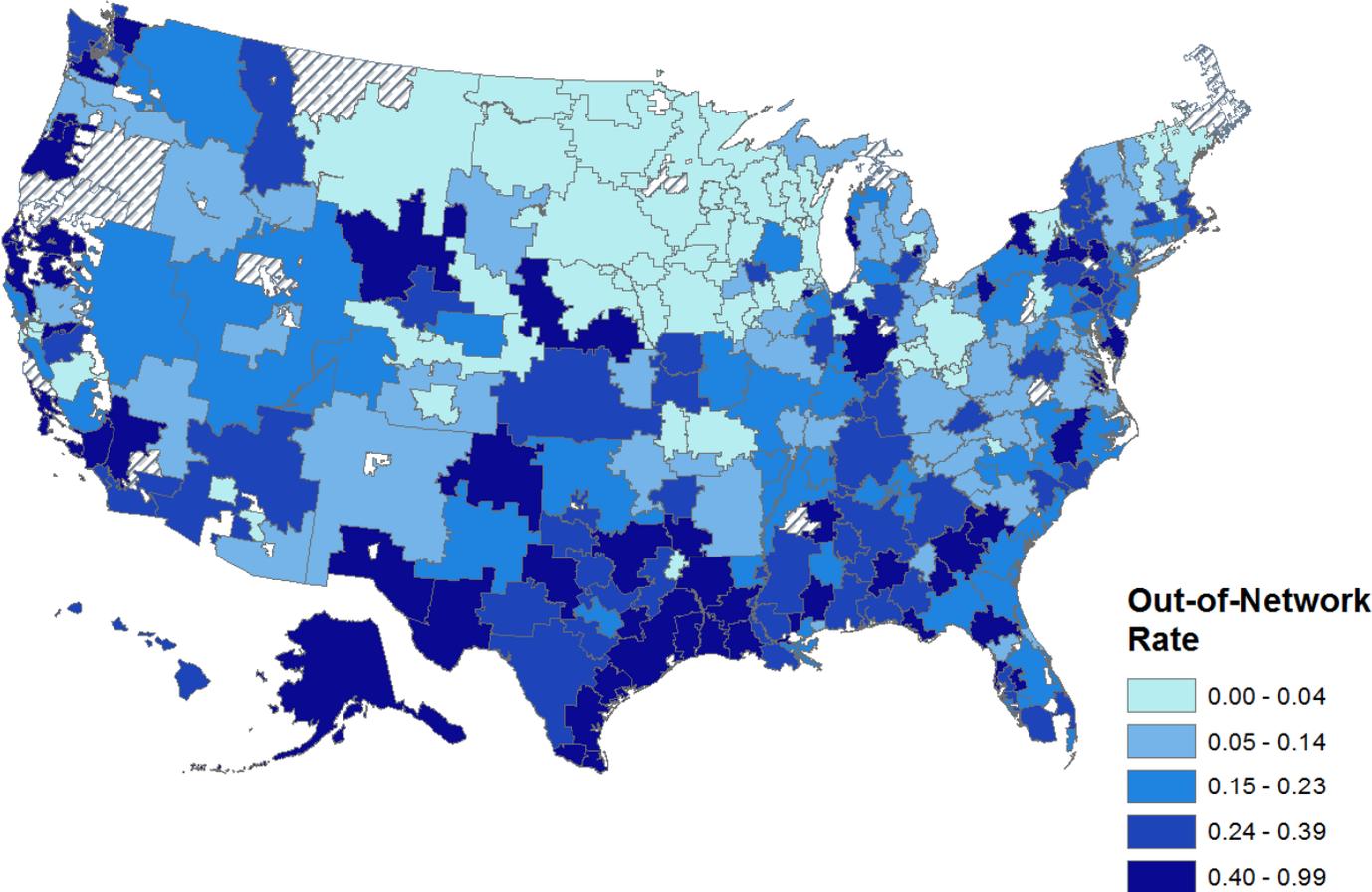
Two Flavors of Out-of-Network Billing

- *Type 1: Out-of-Network Bills from Contracting Frictions*
 - It is hard for physicians to have contracts with every insurer. So, if a patient from Boston goes on vacation to Utah and has an accident, it's possible that her insurance won't have a contract with her Utah ED physician
- *Type 2: Out-of-Network Billing as a Deliberate Strategy to Raise Revenue*
 - “A relatively small but significant number of out-of-network specialists appear to take advantage of the fact that emergency care must be delivered, and advance disclosure is not typically demanded or even expected by consumers. The fees charged by these providers can, in some instances, be many times larger than what private or public payors typically allow, and are another source of consumer complaints”

Evidence on the Presence of Out-of-Network Billing, Con't

- Pogue and Randall (2014): Among three largest insurers in Texas, 45%, 56%, and 21% of in-network hospitals had zero in-network physicians
- Cooper and Scott Morton (2016): in 2014, 22% of patients who went to an in-network hospital in an emergency were treated by an out-of-network physician
- Garmon and Chartock (2017): 20% of patients who went to an in-network hospital in an emergency were treated by an out-of-network doctor

Out-of-Network Billing Rates Across HRRs ('11 - '15)



Source: Cooper et al. 2016

What happens when physician out of network?

1. Physician accepts in-network payment from insurer;
 - Patient experiences in-network costs.
2. The provider demands their “charge,” the insurer pays it;
 - Patient pays more due to co-insurance of higher charge amount
3. The insurer and provider negotiate down from billed charges;
 - Patient pays cost-sharing on negotiated rate which is higher than the in-network rate
4. The insurer doesn’t negotiate charge down but pays the provider a “usual and customary rate” (some percentage of charges or median in-network rates)
 - Lower than the charge
 - But, provider may go after the patient for the difference between what the insurer paid and the charge (‘balance billing’)
5. The insurer does not cover out-of-network care and the patient is wholly responsible

Payment Rates By Physician Specialty

A. Physician Payments as a Percentage of Medicare Rates

Mean In-Network
Payment to Internists
for Office Visits

158%

Mean In-Network
Payments to
Orthopedists for Hip
Replacements

178%

Mean In-Network
Payment to ED
Physician for
Standard Visit

266%

Mean ED Physician
Charge for Standard
Visit

637%

B. Mean Potential Balance Bill (paper has no data on balance bill payments from patients)

Mean charge minus 266% of Medicare rate: **\$448.78**

Business Model Not Understood by Wall Street

Wall Street views EmCare, the primary subsidiary of Envision Healthcare Holdings (EVHC), as the largest outsourced provider of emergency room doctor staffing and management services in the U.S. **It has been growing by acquisitions and increasing profits by operating efficiency and scale.** The weak second half of 2015 was due to a short term staffing issue and a couple of weak contracts. All is well going forward. EVHC also has AMR, an ambulance services subsidiary.

What EmCare actually does is **take over an in-network hospital Emergency Room that is aligned with most local healthcare insurance plans and staff it with physicians who are Out-Of-Network.** This is a debt funded roll-up. As of December 31, 2015 Goodwill was \$3.2 billion, Intangibles \$1.1 billion, Total debt \$3.0 billion, Shareholders equity \$1.97 billion.

Since EmCare is out-of-network, it refuses to sign in-network agreements with local insurance providers, it 1). **can charge exorbitant out-of-network reimbursement rates from the providers** and 2). since it is out-of-network, it can **“balance bill” its patients for the difference between its prices and the amount the insurer believes is “usual and customary”.** This is a license to print money!

Most patients that go to the emergency room at the hospital that is in their insurers network have no idea that the ER doctors are independent contractors not affiliated with the hospital. **EmCare handles all the staffing, management and BILLING.** This allows EmCare to sock ER patients with sky high medical bills that their insurer will only cover some of and then go after the patient for the sometimes considerable difference. Naturally, when patients get the bill they call and complain to the hospital, and oftentimes the hospital itself has no idea what the bill is.

The hospital thought they were going to save a lot of money by getting ER physicians off the payroll and not have the headache of staffing, management and billing. Instead what they get is a **huge balance bill PR problem.** Patients get extremely angry about the deception and take it out on the hospital. The hospital looking to avoid these problems signs high out-of-network reimbursement rates with EmCare.

Out-of-Network Billing

- Fairly extensive coverage of out-of-network billing in the popular press



The Inquirer



A night of pain sent the surprise bill from the misery to the misery

Sarah Gantz

Steve Zangla held on to his pain for as long as he could that night long.

When he couldn't stand the sharp pains in his abdomen, he took him to Riddle Hospital in Media. It wasn't far from his County home, the doctors and nurses had always been perhaps most important — it was in their insurance network.

So the Zanglas were surprised when, weeks later, the hospital said that their insurance plan refused to pay.

Along with it came a hard truth about health care: Just because a doctor is in-network, doesn't mean all the doctors inside the hospital are.

According to the statement, the emergency department doctor who treated what turned out to be a kidney stone in February was not in-network, and he hadn't met his deductible, so their plan did not cover the bill.

"So let me get this straight," said Colleen Zangla. "We're not thinking about insurance other than what we have and we have to ask for the right provider?"

The New York Times

Costs Can Go Up Fast When E.R. Is in Network but the Doctors Are Not

By Elisabeth Rosenthal

Sept. 28, 2014

When Jennifer Hopper raced to the emergency room after her husband, Craig, took a baseball in the face, she made sure they went to a hospital in their insurance network in Texas. So when they got a \$937 bill from the emergency room doctor, she called the insurer, assuming it was in error.

But the bill was correct: UnitedHealthcare, the insurance company, had paid its customary fee of \$151.02 and expected the Hoppers to pay the remaining \$785.98, because the doctor at Seton Northwest Hospital in Austin did not participate in their network.

"It never occurred to me that the first line of defense, the person you have to see in an in-network emergency room, could be out of the network," said Ms. Hopper, who has spent months fighting the bill. "In-network means we just get the building? I thought the doctor came with the E.R."

Patients have no choice about which physician they see when they go to an emergency room, even if they have the presence of mind to visit a hospital that is in their insurance network. In the piles of forms that patients sign in those chaotic first moments is often an acknowledgment that they understand some providers may be out of network.

The New York Times

Insurance Paid for Doctor's Bill

By Elisabeth Rosenthal

at a Florida conference on information when he was struck with terrible abdominal pain at a urgent care center and called several local doctors. So he headed to the nearest emergency room. His insurance company to make sure the visit was covered.

at Pasadena Hospital emergency room, a doctor treated him and tests, and let him go. A month later, feeling better, Mr. Moore, 34, received an emergency room doctor who treated him — for \$1,620.

and kind of breaks my heart," he said.

is doctor's bill, he tried appealing the charge to the insurer. He understood that you went to a preferred provider network to have a choice of the emergency room doctor. His insurer wrote back — but denied the claim because the practice that had sent him the bill. It was not in-network," he said. "Which is great. It's like, would you rather get punched four times or two times? I guess two times is better."

Physicians', Facilities', and Insurers' Incentives to Engage in Out-of-Network Billing

Incentives Facing the Insurer

- The insurer faces a tradeoff between including more physicians in its network and the higher price it would need to pay in order to contract with these physicians
 - The decision about how broad a network to create (and how to handle out-of-network bills) is a function of the preferences of buyers of insurance and how costly the broad network is
 - Buyers may prefer broad network and dislike out-of-network bills (high premiums)
 - Buyers may prefer narrow networks (lower premiums)
 - Out-of-network billing could also function as a very high co-payment for ED services
- If the two sides fail to contract, what are their outside options?
 - The physicians send a bill for “charges”
 - The insurer’s outside option is dictated by state laws on out-of-network billing, other laws against price gouging, or expected outcomes from litigation

Incentives Facing the Hospital

- Hospitals must staff their EDs, so there is an open gateway to the hospital – they incur costs for managing physicians, running the ED (e.g. they may have to pay a fee to a management company to run their ED)
- For physicians to bill out-of-network, ultimately the hospital must allow physicians or physician outsourcing firms to staff the ED while not signing contracts with major insurers
- We conjecture that hospitals receive reputational harm when out-of-network billing occurs from inside their facility
- If so, hospitals will require a transfer from the out-of-network physicians in excess of the costs the hospital incurs from allowing the out-of-network billing firms to operate
- Hospitals' willingness to adopt a profitable out-of-network strategy from their hospital will depend on the relative weight of profits and patient welfare

Data

Overview of Data

- We use insurance claims from a large commercial insurer that covers tens of millions of lives per year
- Majority of individuals in our data are enrolled in self-insured insurance products
- Data includes detailed patient characteristics, provider ID, and the ability to link to a range of 3rd party datasets
- Data runs from January 1, 2011 through December 31, 2015
- We see transactions involving our insurer; we do not see whether the physician collected directly from the patient

Data Cleaning

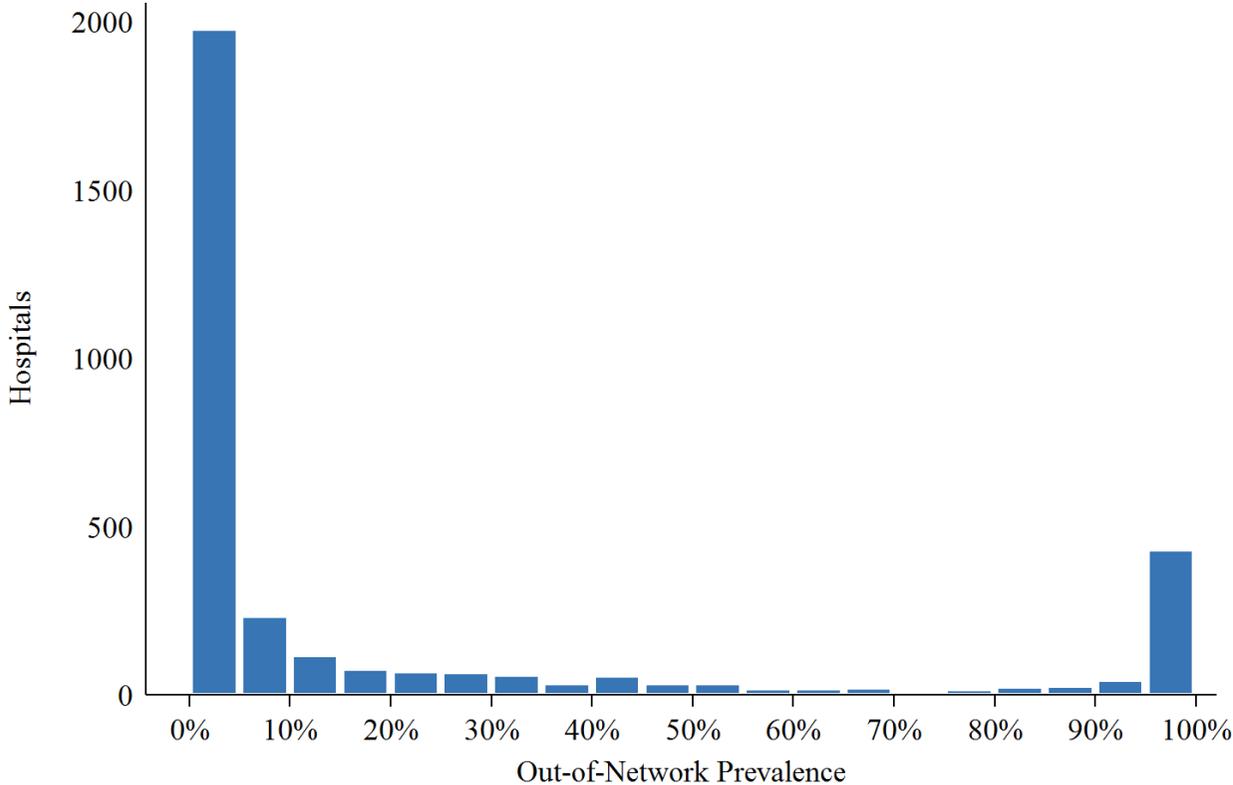
- Identify claims for hospital-based emergency care that occurred at hospitals registered with the American Hospital Association
- Start with a service-line-level dataset
 - Facility side: identify episodes with revenue codes 0450, 0451, 0452, 0453, 0454, 0455, 0456, 0457, 0458, or 0459
 - Physician side: identify episodes with CPT codes 99281, 99282, 99283, 99284, 99285, or 99291
- Exclusions
 - Limit sample to hospitals with at least 10 episodes annually
 - Exclude duplicative claims, unpaid claims, and episodes with negative prices. Also exclude episodes with physician billing that is both in-network and out-of-network
 - Winsorize the top and bottom 1% of prices

Data Captures \$28.5 Billion in Spending

	Emergency Episodes	Total Facility Spending	Total Physician Spending	Percent ASO	Share of Episodes at in-network hospitals
2011	1,699,231	\$4,522,125,246	\$602,579,557	74.4%	99.5%
2012	1,899,458	\$5,012,857,400	\$717,910,698	76.6%	99.5%
2013	1,820,171	\$5,096,898,425	\$753,899,039	78.7%	99.6%
2014	1,745,103	\$5,043,156,176	\$751,756,496	78.1%	99.6%
2015	1,749,157	\$5,262,857,550	\$778,643,424	75.9%	99.5%
Total	8,913,120	\$24,937,894,797	\$3,537,971,169	76.8%	99.5%

Notes: The table shows episodes per year, facility spending per year, physician spending per year, the share of episodes where the patient is on an administrative services only (ASO) plan, and the share of all episodes that occur at an in-network hospital.

Distribution of Out-of-Network Billing Across Hospitals



	Observations	10 th	25 th	50 th	75 th	90 th
Out-of-Network Prevalence	3,345	0	0	0.011	0.278	0.990

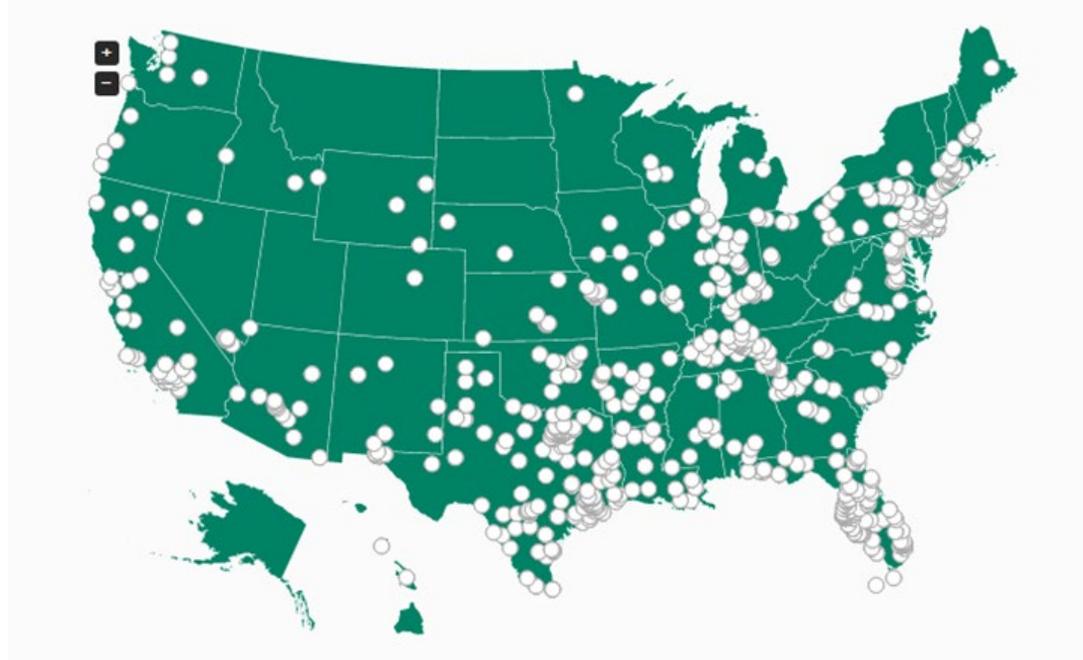
Notes: The figure shows the prevalence of out-of-network ED physician across US hospitals in 2015.

Identifying EmCare Facilities

- EmCare makes it extremely difficult to identify them via insurance claims
 - Continue to use physicians' original Tax IDs and NPIs, even when they are part of a joint hospital/ED physician group venture
- The firm does not post a list of their facilities
- Strategy to identify EmCare facilities:
 - Scraped a map on their webpage to identify approximate hospital locations
 - Scraped their job hiring pages to identify a list of hospitals where they recruited physicians (we can exploit that EmCare is generally the exclusive provider hospitals where they contract)
 - Identify a hospital as EmCare if we find a job advertisement and it is on the map on their webpage. We called the remainder of hospitals

Identifying Hospitals: Maps

**Map of EmCare Locations
from Their Webpage**



- We used georeferencing with ArcMap to obtain latitudes and longitudes for each point on the map. Matched those with the nearest hospital within 30-miles of the point.

Identifying Hospitals: Job Hiring Pages

The screenshot shows the EmCare website's job hiring page. At the top, there are social media icons and navigation links for EMPLOYEES, FOR THE MEDIA, and CONTACT. The EmCare logo is on the left, and navigation links for THE EMCARE DIFFERENCE, SOLUTIONS, CAREERS, CLINICIANS, RESOURCES, NEWS & EVENTS, and ABOUT are on the right. A large banner image of a smiling healthcare worker is at the top. Below it, the 'CAREERS > Clinical Job Search' section is visible. There are buttons for 'SEARCH CAREERS', 'SUBMIT CV', and 'CONTACT A RECRUITER'. A search bar is present with a 'SEARCH >' button. A 'COST OF LIVING CALCULATOR >' link is also visible. A 'RESULTS' section shows a list of job openings. The first result is for a Nurse Practitioner/Physician Assistant at Aventura Hospital & Medical Center. The second result is for an EM Physician at Bailey Medical Center. The third result is for an EM Physician at Choctaw Hospital. The fourth result is for an EM Physician at Liberty Hospital. A 'FILTERS' section on the right allows for filtering by Clinical Specialty (Emergency Medicine), Job Title (Any Job Title), State (Any State), and Job Status (Any Job Status). A 'Working at EmCare' video player is at the bottom right. A callout box highlights the fourth job listing.

EMPLOYEES | FOR THE MEDIA | CONTACT

EmCare THE EMCARE DIFFERENCE SOLUTIONS CAREERS CLINICIANS RESOURCES NEWS & EVENTS ABOUT

CAREERS > Clinical Job Search

SEARCH CAREERS SUBMIT CV CONTACT A RECRUITER

Keyword or Job ID Search

Clinical Specialty
Emergency Medicine

Job Title
Any Job Title

State
Any State

Job Status
Any Job Status

SEARCH >

COST OF LIVING CALCULATOR >

Becker's Hospital Review
150 Great Places to Work
EmCare
Three Year Recognition 2014 - 2015 - 2016

RESULTS Page: 1 of 63

Nurse Practitioner/ Physician Assistant (Full Time, Part Time)
Emergency Medicine
Aventura Hospital & Medical Center - EM
Aventura, FL

EmCare is searching for a Full-Time Emergency Nurse Practitioner or Physician Assistant to become apart of our prestigious practice at...[read more](#)

EM Physician (Full Time, Part Time, PRN)
Emergency Medicine
Bailey Medical Center - EM
Owasso, OK

We are seeking Full, Part Time and PRN Physicians in Owasso, OK. Physician Requirements: Board Eligible/Board Certified in...[read more](#)

EM Physician (Part Time, PRN, Moonlighting)
Emergency Medicine
Choctaw Hospital - EM
Choctaw, MS

We are a seeking physicians for an excellentER opportunity in Choctaw, MS. ATLS, ACLS and PALS are required. 17,000 annual patient ER volume.

EM Physician (Full Time)
Emergency Medicine
Liberty Hospital - EM
Liberty, MO

FILTERS

Sort By:
Date

Descending

Clinical Specialty
 Any Clinical Specialty
 Emergency Medicine

Job Title
 Any Job Title

State
 Any State

Job Status
 Any Job Status

Working at EmCare

EM Physician (Full Time)
Emergency Medicine
Liberty Hospital - EM
Liberty, MO

EM Physician (Full Time)
Emergency Medicine
Liberty Hospital - EM
Liberty, MO

Identifying where EmCare Entered

- Searched for press releases from EmCare that announced they had entered a hospital (which provided dates and names of hospitals where EmCare entered)
- Searched news articles for announcements of when and where EmCare entered a hospital
- Called every hospital and asked about entry dates

Identifying where EmCare Entered

	EmCare Entries	EmCare Exits
2011	1 Hospital	0
2012	7 Hospitals	0
2013	15 Hospitals	1 Hospital
2014	10 Hospitals	0
2015	3 Hospitals	2 Hospitals
<i>Total</i>	<i>36 Hospitals</i>	<i>3 Hospitals</i>

Notes: We identified hospitals that entered into an outsourcing contract with EmCare between 2011 and 2015 based on press releases, news stories, and calls to hospitals

EmCare Entry and Cross-Sectional Hospital Characteristics

Hospital Characteristics	EmCare Hospitals	EmCare Entry Hospitals	P-value from two-sided t-test
For-profit	0.45	0.47	0.80
Non-profit	0.32	0.33	0.91
Government	0.23	0.19	0.67
Teaching	0.03	0.00	0.26
Hospital Beds	151.31	181.06	0.31
Technologies	39.75	42.36	0.63
Hospital HHI	0.57	0.58	0.91
Proportion Medicare	49.54	48.67	0.72
Proportion Medicaid	17.92	20.04	0.22
ED Physicians per Capita (per 10,000)	0.67	0.66	0.83
Physicians per Capita (per 10,000)	21.52	20.08	0.09
Physician HHI	0.41	0.49	0.07
Insurer HHI	0.37	0.35	0.52
Household Income (\$)	37,509.40	35,372.57	0.12
Gini Coefficient	0.33	0.33	0.67

Notes: The table compares the characteristics of hospitals where we observe EmCare enter to hospitals where we infer EmCare has a contract but cannot identify the entry date. The p-value is reported from a two-sided t-test comparing the difference in means between hospitals and hospitals with entry.

Variation in Out-of-Network Billing Across Hospitals

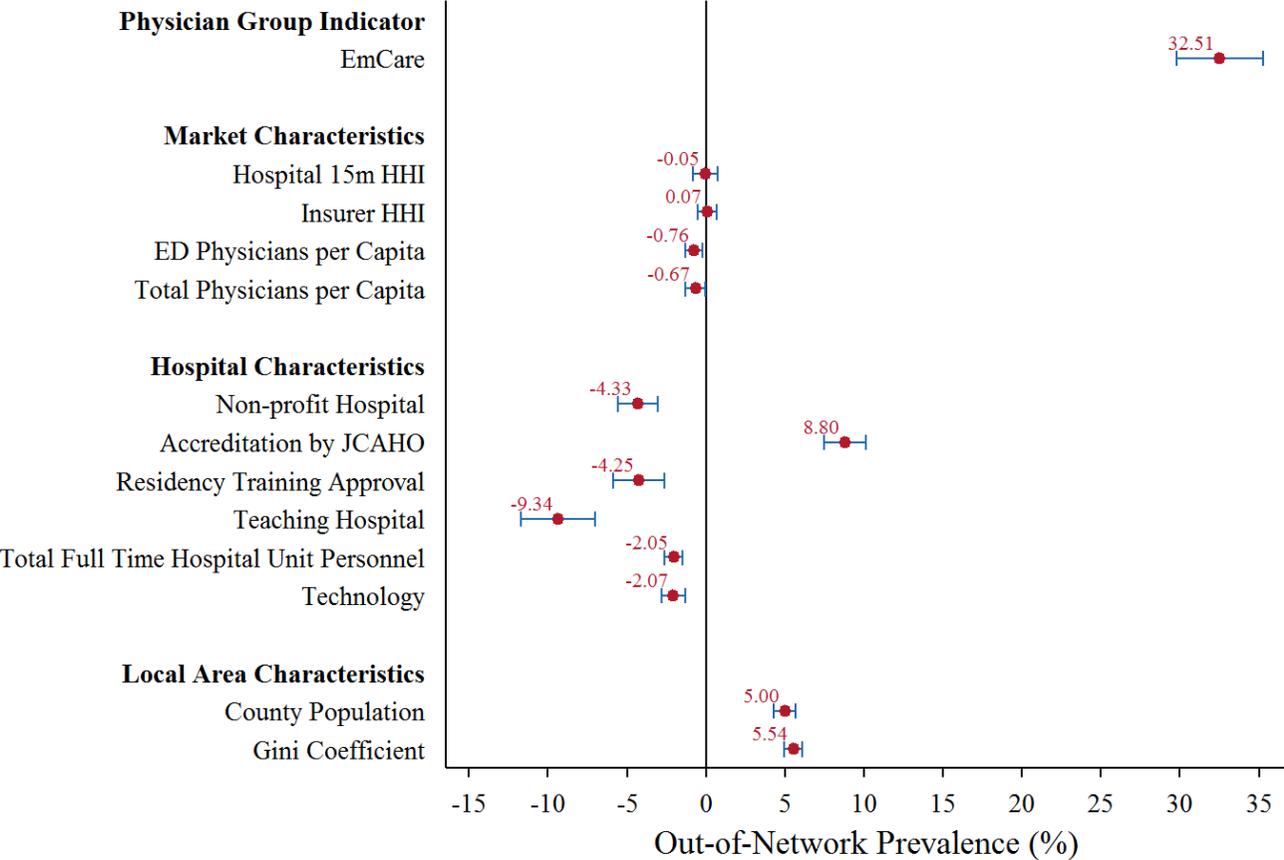
Cross-Sectional Analysis

- Run a sparse least absolute shrinkage and selection operator (LASSO) on hospital out-of-network billing rates and 89 potential right-hand side variables
- Use 10-fold cross-validation to choose the penalizing parameter that minimizes the mean squared error
- Use variables selected by Lasso in a least-squares regression with year fixed effects
- Normalize continuous variables to have mean of zero and SD of 1, so point estimates are the effect of a 1SD change

Variables We Include in LASSO

	Sources	Notes
Local Area Characteristics	U.S. Census Data; Data from Equality of Opportunity Project	21 Variables
Hospital Characteristics	American Hospital Association Data	62 Variables
Physician Market Concentration	SK&A	2 Variables
Hospital Market Concentration	HHIs from Cooper et al. (2015)	1 Variable
Insurance Market Concentration	Health Leader Interstudy	2 Variables
ED Management Company Dummy	Internal Data	1 Variable

LASSO Results



Notes: The figure shows the point estimates from a least-squared regression of hospitals' out-of-network prevalence on variables chosen from our Lasso. We used data from 2011 through 2015. Each observation is a hospital-year prevalence of out-of-network billing. The regression includes year fixed-effects. For continuous variables, we scale the variables so that they have a mean of zero and a standard deviation of one. As a result, the point estimates can be interpreted as the percentage point change in out-of-network prevalence for a one standard deviation increase in the explanatory variable. For binary variables, the point estimate illustrates the impact of having the variable take a value of one. To obtain these results, we run a Lasso with all possible variables (89 in total). We then run an OLS regression of hospital out-of-network prevalence on variables chosen from Lasso. We also include measures of hospital and insurer market concentration and physician group indicator.

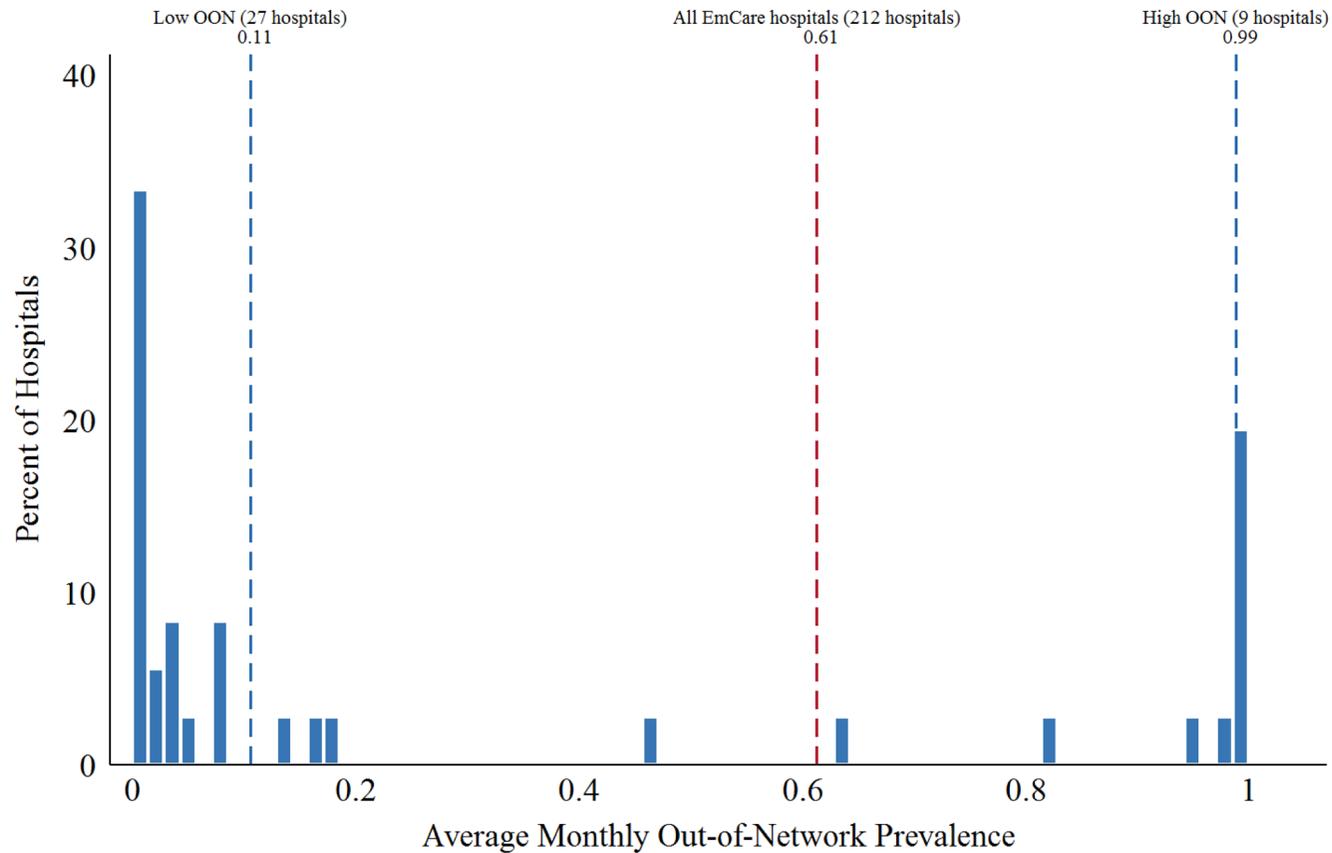
EmCare Entry, Out-of-Network Billing, and Physician Prices

Estimating the Effects of EmCare Entry

$$Y_{i,j,t} = B_0 + B_1 EmCare_{j,t} + \delta_j + \Theta_t + \varepsilon_{i,j,t}$$

- Estimated for patient i who was treated at hospital j in month t
- Estimate EmCare entries and exits separately. EmCare variable turns on in month that hospital is take over by EmCare. EmCare variable turns off when the firm exits a hospital
- Include a vector of hospital fixed effects (δ_j) and unique month dummies (Θ_t)
- Test relative to 3 control groups: all non-EmCare hospitals, hospitals in same state; hospitals matched using propensity scores
- Cluster standard errors around hospitals

The Distribution of Out-of-Network Prevalence Across EmCare Entry Hospitals



Notes: The figure shows a histogram of the average out-of-network prevalence for hospitals where EmCare entered in the months before EmCare entry occurred. There are a total of 36 hospitals where EmCare entered. Each bar shows the percent of hospitals falling into a given out-of-network prevalence. The red vertical line is the average of all EmCare hospitals from 2011-2015.

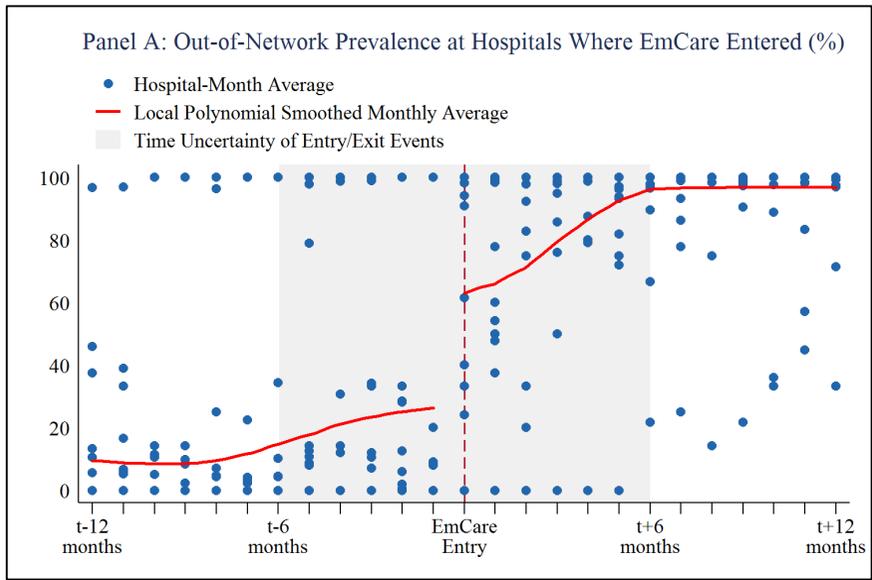
The Impact of EmCare Entry and Exit on Hospitals' Out-of-Network Prevalence

	(1)	(2)	(3)
	Hospitals with OON Prevalence Below 90% Prior to Entry	Hospitals with OON Prevalence Above 90% Prior to Entry	All Hospitals
	EmCare Entry		EmCare Exit
	OON Indicator		OON Indicator
EmCare Entry/Exit	0.828*** (0.060)	-0.027 (0.043)	-0.765*** (0.077)
Hospital FE	Yes	Yes	Yes
Month FE	Yes	Yes	Yes
Mean EmCare	0.060	0.995	1.000
Mean Non-EmCare	0.229	0.229	0.229
Observations	8,362,441	8,386,032	8,323,064
Control	All Non-EmCare Hospitals	All Non-EmCare Hospitals	All Non-EmCare Hospitals

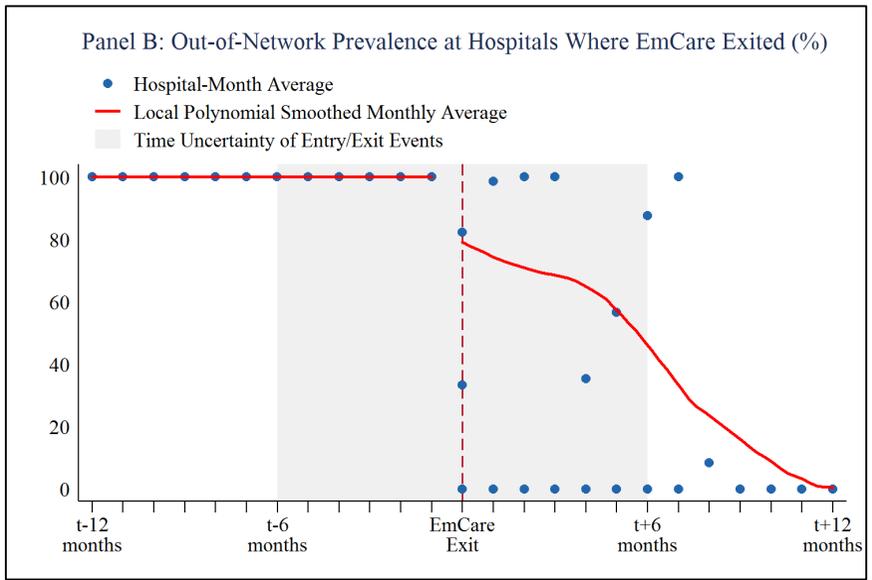
Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. This table presents least-squares estimates of Equation (1). In Column (1), we focus on hospitals that EmCare entered that had out-of-network prevalence prior to entry that were below 90 percent (the mean out-of-network prevalence in these hospitals prior to entry was 11.6 percent). In Column (2), we focus on hospitals that had out-of-network prevalence prior to entry above 90 percent (the mean out-of-network prevalence prior to entry was 99 percent). In Column (3), we focus on the three hospitals where EmCare ended a contract with a hospital. The dependent variable in all regressions is a binary indicator for whether a patient at an in-network hospital was treated by an out-of-network physician. Our analysis is run at the patient-level. The control groups are all hospitals in the US that did not outsource their ED management to EmCare. Each regression includes controls for patient age, gender, race, and Charlson score. Standard errors are clustered around hospitals. Means are drawn from the analytic sample population underlying the regression. In Appendix Table A.2 we show these estimates using alternative control groups.

The Effects of EmCare Entry and Exit on OON Rates

EmCare Entry



EmCare Exit



Notes: The panels plot the monthly average out-of-network prevalence by hospital from 12 months before to 12 months after EmCare entered (Panel A) or exited (Panel B) a hospital. In Panel A, we limit our analysis to hospitals with pre-entry out-of-network prevalence below 90 percent. There is six month period of uncertainty on either side of entry and exit dates, which we denote by shading the area gray.

EmCare Entry and Physician Payments and Activity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Physician Charge	Total Payment	Insurer Payment	Patient Cost Sharing	Potential Balance Bill	CPT High Severity	Patients Treated Annually
EmCare Entry	480.13*** (58.02)	438.20*** (44.13)	391.89*** (43.31)	46.32*** (3.83)	457.21*** (51.43)	0.114*** (0.026)	-69 (163)
Hospital FE	Yes						
Month FE	Yes						
Mean EmCare	470.39	383.79	333.55	50.24	224.33	0.242	1,616
Mean Non-EmCare	504.24	346.88	304.74	42.15	239.23	0.323	1,677
Observations	8,430,842	8,430,842	8,430,842	8,430,842	8,430,842	8,430,842	8,430,842
Control	All Non-EmCare Hospitals						

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. This table presents least-squares estimates of Equation (1) where the EmCare event is the entry of EmCare into a hospital. Each observation is a patient episode. The control group in all regressions is all hospitals in the US exclusive of those that outsourced their ED services to EmCare. We winsorized the top and bottom percentile of hospital and physician payments. Each regression includes controls for patient age, gender, race, and Charlson score. Standard errors are clustered around hospitals. Means are drawn from the analytic sample population underlying the regression. All dollar amounts are inflation adjusted into 2015 dollars. In Appendix Table A.4 and Appendix Table A.5, we show these estimates using alternative control groups.

▲ 102%

▲ 114%

▲ 47%

EmCare Entry and Physician Payments and Activity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Work RVUs	Physician Charges					Total Payments				
	All ED Care	CPT 99281	CPT 99282	CPT 99283	CPT 99284	CPT 99285	CPT 99281	CPT 99282	CPT 99283	CPT 99284	CPT 99285
EmCare Entry	0.21*** (0.07)	-15.80 (10.05)	231.40*** (18.40)	297.00*** (28.74)	405.99*** (39.50)	521.09*** (68.13)	-9.88 (11.46)	206.66*** (14.90)	277.68*** (29.71)	385.48*** (31.19)	481.65*** (67.00)
Hospital FE	Yes										
Month FE	Yes										
Mean EmCare	2.35	122.92	172.49	301.30	482.30	759.64	93.32	143.62	254.11	392.63	608.40
Mean Non-EmCare	2.50	129.59	179.18	303.02	490.32	750.47	71.48	104.41	198.84	332.80	536.96
Observations	8,375,188	27,543	304,195	2,452,057	2,809,866	2,593,849	27,543	304,195	2,452,057	2,809,866	2,593,849
Control	All Non-EmCare Hospitals										

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. This table presents least-squares estimates of Equation (1). We test the impact of EmCare entry on physicians' work RVU (Column (1)), physician charges per CPT (Columns (2) - (6)), and physicians' allowed amounts per CPT (Columns (7) - (11)). The control groups for all columns are all hospitals in the US that did not outsource their ED management to EmCare. Standard errors are clustered around hospitals. Means are drawn from the analytic sample population underlying the regression.

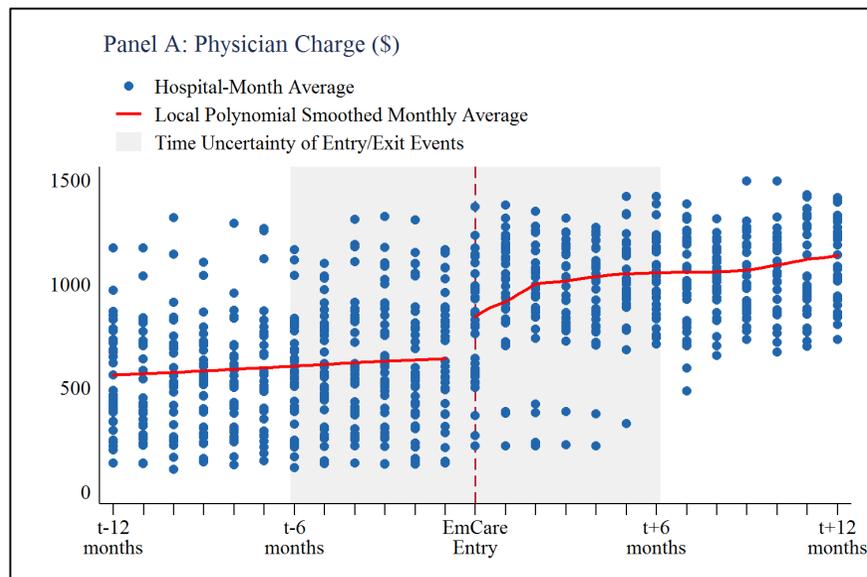
▲ 9%

▲ 134% ▲ 99% ▲ 84% ▲ 69%

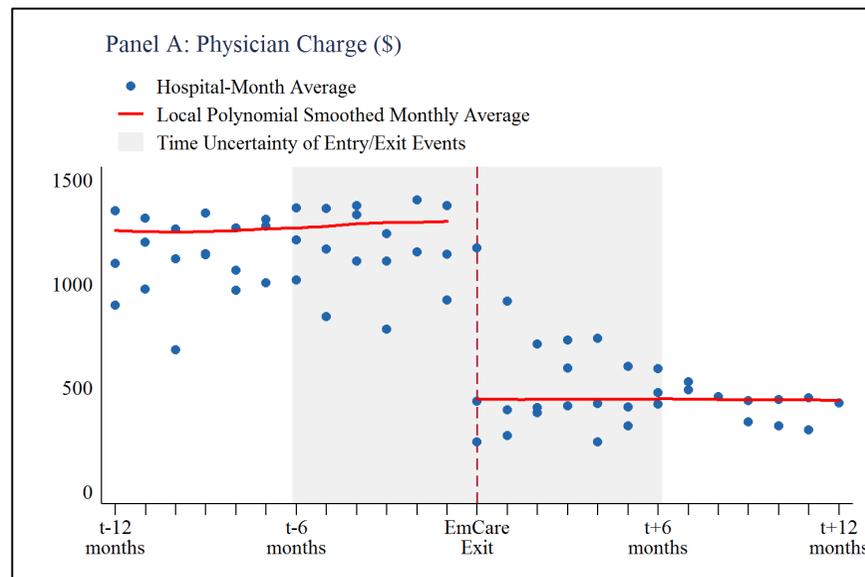
▲ 144% ▲ 109% ▲ 98% ▲ 79%

The Effect of EmCare Entry and Exit on Physician Charges

EmCare Entry



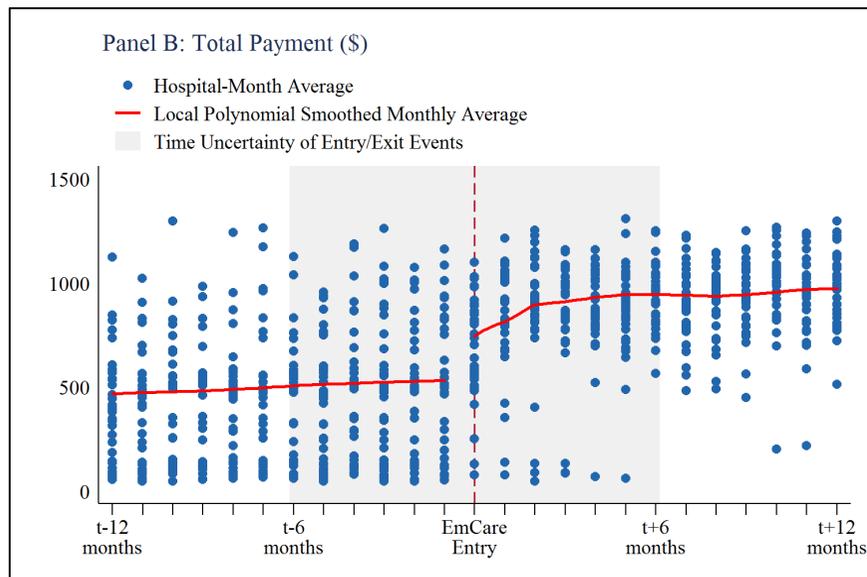
EmCare Exit



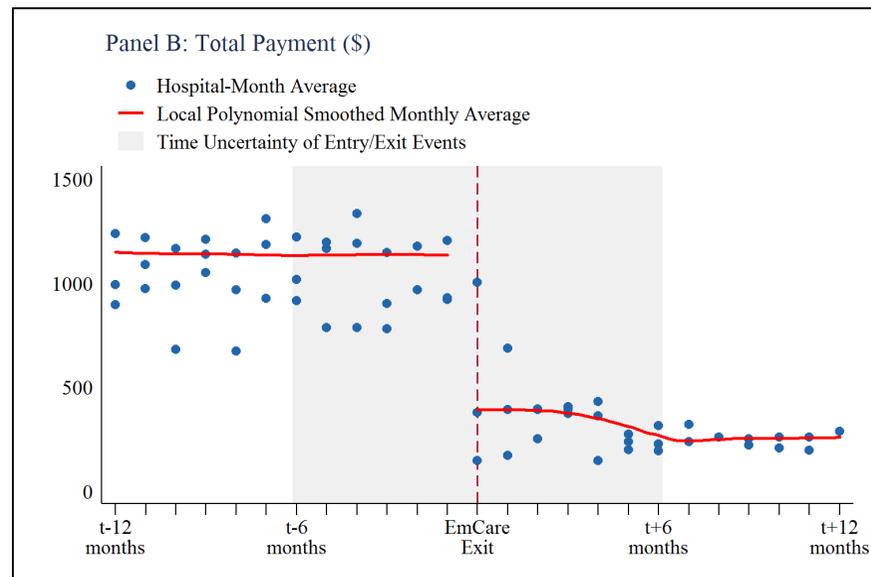
Notes: The panels plot the monthly average by hospital from 12 months before to 12 months after EmCare entered the hospital. We exclude the top 1% observations in the entry panel. The local polynomial is weighted by the number of episodes in each month. There is six month period of uncertainty on either side of entry and exit dates, which we denote by shading the area gray.

The Effect of EmCare Entry and Exit on Negotiated Rates

EmCare Entry



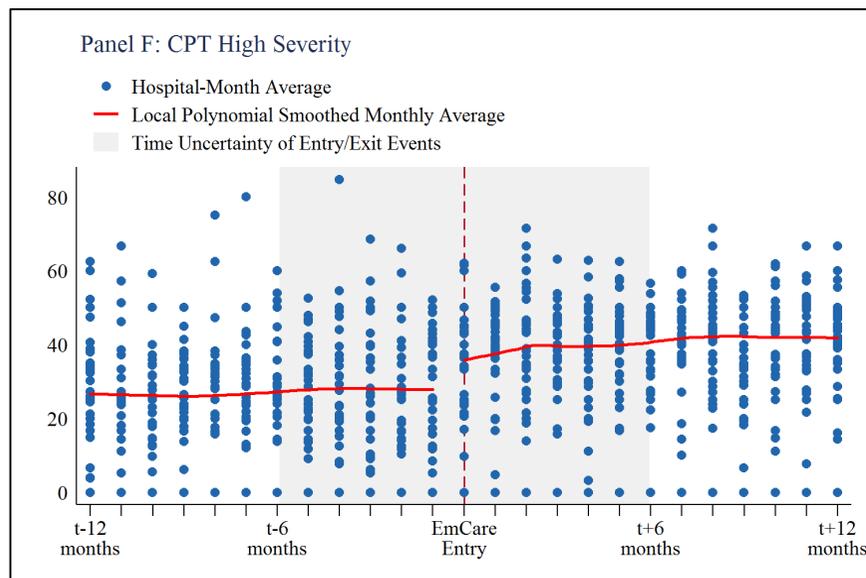
EmCare Exit



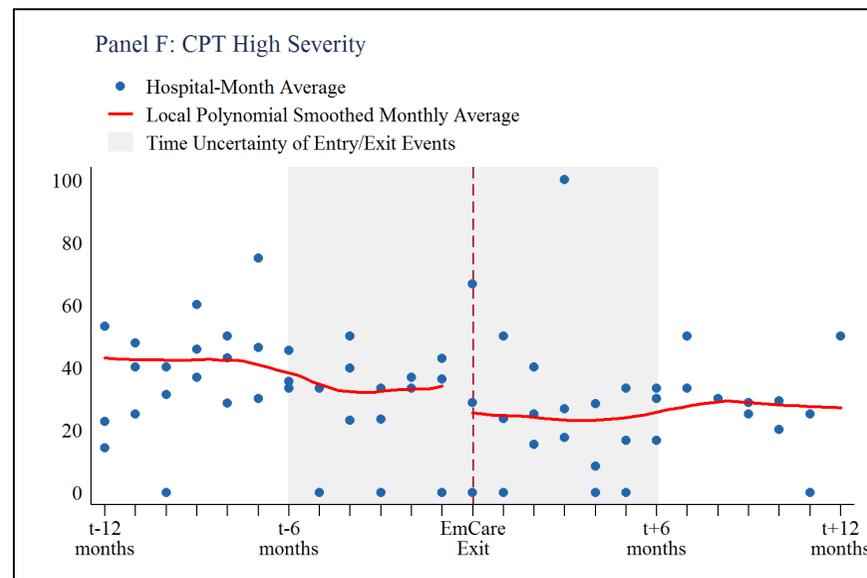
Notes: The panels plot the monthly average by hospital from 12 months before to 12 months after EmCare entered the hospital. We exclude the top 1% observations in the entry panel. The local polynomial is weighted by the number of episodes in each month. There is six month period of uncertainty on either side of entry and exit dates, which we denote by shading the area gray.

The Effect of EmCare Entry and Exit on Physician Coding

EmCare Entry



EmCare Exit



Notes: The panels plot the monthly average by hospital from 12 months before to 12 months after EmCare entered the hospital. We exclude the top 1% observations in the entry panel. The local polynomial is weighted by the number of episodes in each month. There is six month period of uncertainty on either side of entry and exit dates, which we denote by shading the area gray.

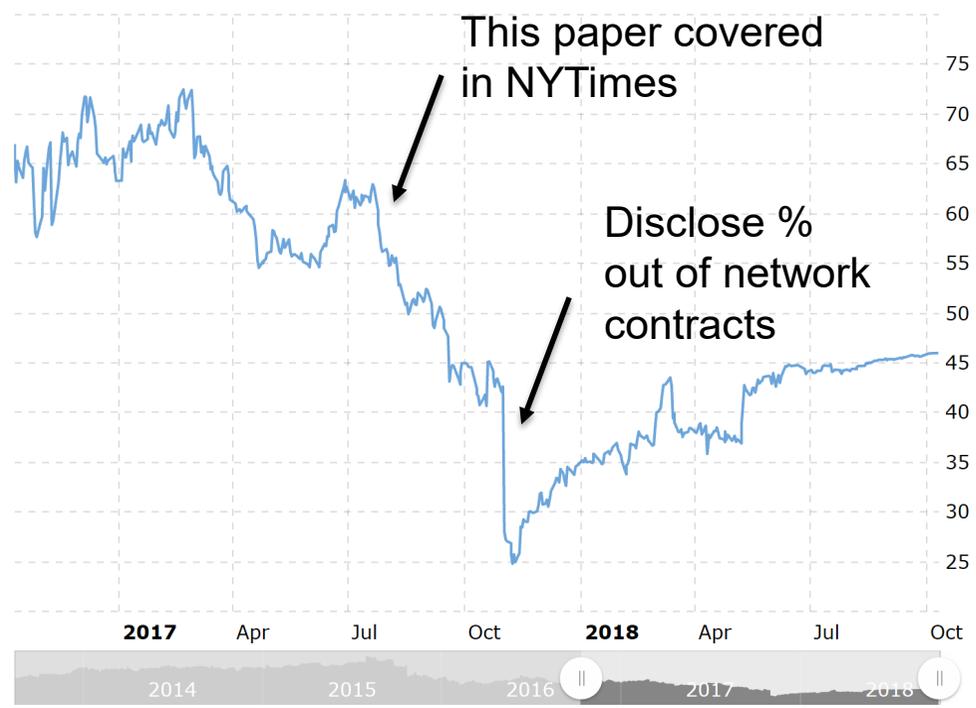
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EmCare Entry, Hospital Activity, and Hospital Transfers

EmCare Entry and Hospital Transfers

1.

Financial payment from ED to hospital (could be a reduction in the subsidy the hospital bears for the ED)

2.

Physicians practicing in a way that financially benefits hospital

3.

Profit sharing in a Joint Venture to run the ED

EmCare Entry and Hospital Transfers

1.

Reduction in ED
subsidy

Example: \$200,000 per year

Appendix 1 Transcript of Discussions about EmCare and Out-of-Network Billing at Glen Rose Medical Center

Video from Glen Rose Medical Center in Glen Rose, Texas.

Accessible at: <https://www.youtube.com/watch?v=6kvM5fKPqCE>.

Recorded on 4/28/15.

Speaker 1: That's what we would have to pay EmCare an additional 200,000 to put those people in-network because right now billing out-of-network they're making more money. So basically we're supplementing them. It would be cheaper on the patients but we're actually absorbing that patient cost that they're [EmCare] getting for billing out-of-network for the patient, so it would actually come back to us.

EmCare Entry and Hospital Transfers

1.

Reduction in ED
subsidy

\$200,000 per year

2.

Physicians practicing
in a way that financial
benefits hospital

Estimates: \$1.7 million per year

EmCare Entry and Hospital Transfers

	(1)	(2)	(3)	(4)	(5)	(6)
	Facility Charge	Total Payment	Insurer Payment	Patient Cost Sharing	Imaging	Admission to Hospital
EmCare Entry	1,270.15*** (329.40)	220.11** (91.49)	173.42** (81.17)	46.70*** (14.02)	0.011*** (0.004)	0.017*** (0.005)
Hospital FE	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Mean EmCare	7,566.25	2,719.70	2,308.49	411.21	0.283	0.079
Mean Non-EmCare	6,100.01	2,660.51	2,320.13	340.38	0.273	0.098
Observations	8,430,842	8,430,842	8,430,842	8,430,842	8,430,842	8,430,842
Control	All Non-EmCare Hospitals					

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. This table presents least-squares estimates of Equation (1) where the EmCare event is the entry of EmCare into a hospital. Each observation is a patient episode. The control group in all regressions is all hospitals in the US exclusive of those that outsourced their ED services to EmCare. We winsorized the top and bottom percentile of hospital and physician payments. Imaging is an indicator variable capturing whether a patient had an imaging study performed during an ED visit. Admission to hospital is an indicator variable that captures whether a patient was admitted to the hospital after an ED visit. Each regression includes controls for patient age, gender, race, and Charlson score. Standard errors are clustered around hospitals. Means are drawn from the analytic sample population underlying the regression. All dollar amounts are inflation adjusted into 2015 dollars. In Appendix Table A.7 and Appendix Table A.8, we show these estimates using alternative control groups.

▲8%

▲22%

- Modal ED treats 20,000 privately insured patients per year: $\$220.11 * 20,000 = \$4.4m$
- Average hospital ED profit margin based on Wilson and Cutler (2014): 39.6 percent
- Additional profit for each hospital: $\$1.7$ million (39.6 percent * $\$4.4m$)

EmCare Exit and Hospital Transfers

	(1)	(2)	(3)	(4)	(5)	(6)
	Facility Charge	Total Payment	Insurer Payment	Patient Cost Sharing	Imaging	Admission to Hospital
EmCare Exit	-395.46** (173.08)	-173.43*** (35.95)	-161.01*** (29.35)	-12.42 (7.97)	-0.006 (0.011)	-0.020*** (0.001)
Hospital FE	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Mean EmCare	3,101.79	2,126.10	1,894.28	231.82	0.192	0.031
Mean Non-EmCare	6,100.01	2,660.51	2,320.13	340.38	0.273	0.098
Observations	8,323,064	8,323,064	8,323,064	8,323,064	8,323,064	8,323,064
Control	All Non-EmCare Hospitals					

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. This table presents least-squares estimates of Equation (1) where the EmCare event is the exit of EmCare from a hospital. Each observation is a patient episode. The control group in all regressions is all hospitals in the US exclusive of those that outsourced their ED services to EmCare. We winsorized the top and bottom percentile of hospital and physician payments. Imaging is an indicator variable capturing whether a patient had an imaging study performed during an ED visit. Admission to hospital is an indicator variable that captures whether a patient was admitted to the hospital after an ED visit. Each regression includes controls for patient age, gender, race, and Charlson score. Standard errors are clustered around hospitals. Means are drawn from the analytic sample population underlying the regression. All dollar amounts are inflation adjusted into 2015 dollars.

EmCare Entry and Hospital Transfers

1.

Reduction in ED
subsidies

\$200,000 per year

2.

Physicians practicing
to benefit hospital

\$1.7 million per year

3.

Profit sharing in ED
JV

Example: \$88,000

EmCare and Joint Ventures

During 2012, EmCare established a joint venture (JV) with HCA....We believe EmCare is ~50% penetrated into HCA's facilities, but its multiple service line penetration is still quite low. The JV offers 50/50 profit sharing above a certain margin threshold, which we believe is in the 13% range.

- Deutsche Bank, 2013

- EmCare physicians generated \$438.20 payment per case
- Annually with 20,000 privately insured patients per year, this generates \$8.8 million in revenue (ignoring Medicare and Medicaid revenue)
- Conservative estimate: if hospitals in a joint venture with EmCare took a 1% cut of these physician payments, it would generate \$88,000 annually)

EmCare Entry and Hospital Transfers

1.

Reduction in ED
subsidies

\$200,000 per year

2.

Aggressive practice

\$1.7 million per year

3.

ED JV

\$88,000

Total: ~\$2,000,000 Annually
(Average hospital profits in 2012: \$12.9 million)

What Hospitals Would Contract with EmCare

Hospital Characteristics	All Hospitals (3,345)	EmCare Hospitals (212)	P-value from two-sided t-test
For-profit	0.19	0.45	0.00
Non-profit	0.61	0.33	0.00
Government	0.20	0.22	0.49
Teaching	0.06	0.03	0.03
Hospital Beds	182.69	156.36	0.04
Technologies	49.04	40.19	0.00
Hospital HHI	0.55	0.57	0.35
Proportion Medicare	49.53	49.39	0.89
Proportion Medicaid	18.65	18.28	0.62
ED Physicians per Capita (per 10,000)	0.77	0.67	0.00
Physicians per Capita (per 10,000)	22.06	21.27	0.02
Physician HHI	0.42	0.42	0.61
Insurer HHI	0.37	0.36	0.21
Household Income (\$)	36,899	37,147	0.59
Gini Coefficient	0.32	0.33	0.00

Notes: The table compares characteristics of hospitals that contract with EmCare to the characteristics of hospitals in the universe of hospitals registered with the American Hospital Association. The number of hospitals in each column is shown in parenthesis. The p-value is reported from a two-sided t-test comparing the difference in means between all hospitals and EmCare hospitals.

New York Surprise Billing Protection Law

Two Key Components of Effective Legislation to Reduce Out-of-Network Billing

1. **Protect the Patient:** Protection so that if patients get treated by an out-of-network provider they could not reasonably avoid, they only pay in-network cost sharing rates
2. **Restore the Missing Price:** A structure so that price for out-of-network physician care is as close to the market-determined rate as possible

New York Law Surprise Billing Law

- Introduced on April 1, 2014
- Two pronged approach
 - *Hold Harmless Provision*: Patients receiving emergency medical care cannot pay more out-of-pocket than they would pay to see an in-network provider
 - *Baseball Rules Arbitration*: Physician asks for specific amount (charge); insurer offers a payment. An arbiter is required to choose one of the two offers
- The law still requires insurers to state how payments relate to UCR
- The law does not apply to fully insured products

Estimating the Effect of New York State Law

$$Y_{i,j,t} = B_0 + B_1NY_t + B_2Post_t + B_3NY_t*Post_t + \delta_j + \Theta_t + \varepsilon_{i,j,t}$$

- Estimated for patient i who was treated at hospital j in year t
- $Post_t$ turns on after the NY law was passed
- Include a vector of hospital fixed effects (δ_j) and quarter dummies (Θ_t)
- Control group are the 21 states in the US that did not have out-of-network billing protections and did not introduce them during our sample period
- Cluster standard errors around hospitals; also, because we have a single treated group, follow Buchmueller et al. (2011), carry out a permutation test and compare the New York treatment effect against the placebo treatment effects from the 21 control states.

ED Episodes and Annual Physician and Facility Spending For ED Care in New York State

	Emergency Episodes	Total Facility Spending	Total Physician Spending	Percent ASO	Share of Episodes at In-Network Hospitals
2011	61,325	\$156,174,143	\$20,152,501	87.6%	99.0%
2012	69,406	\$176,099,801	\$23,549,516	89.2%	99.4%
2013	67,316	\$185,283,334	\$22,938,521	91.5%	99.6%
2014	65,388	\$187,270,755	\$21,558,206	92.1%	99.8%
2015	60,501	\$184,643,289	\$21,198,611	90.4%	99.8%
Total	323,936	\$889,471,321	\$109,397,356	90.2%	99.5%

Notes: The table shows summary statistics for our data in New York State. Only episodes that occur in an in-network hospital are included. There are a small percentage of episodes (> 0.5%) that are missing a label for ASO or fully-insured.

Estimating the Effect of New York State Law

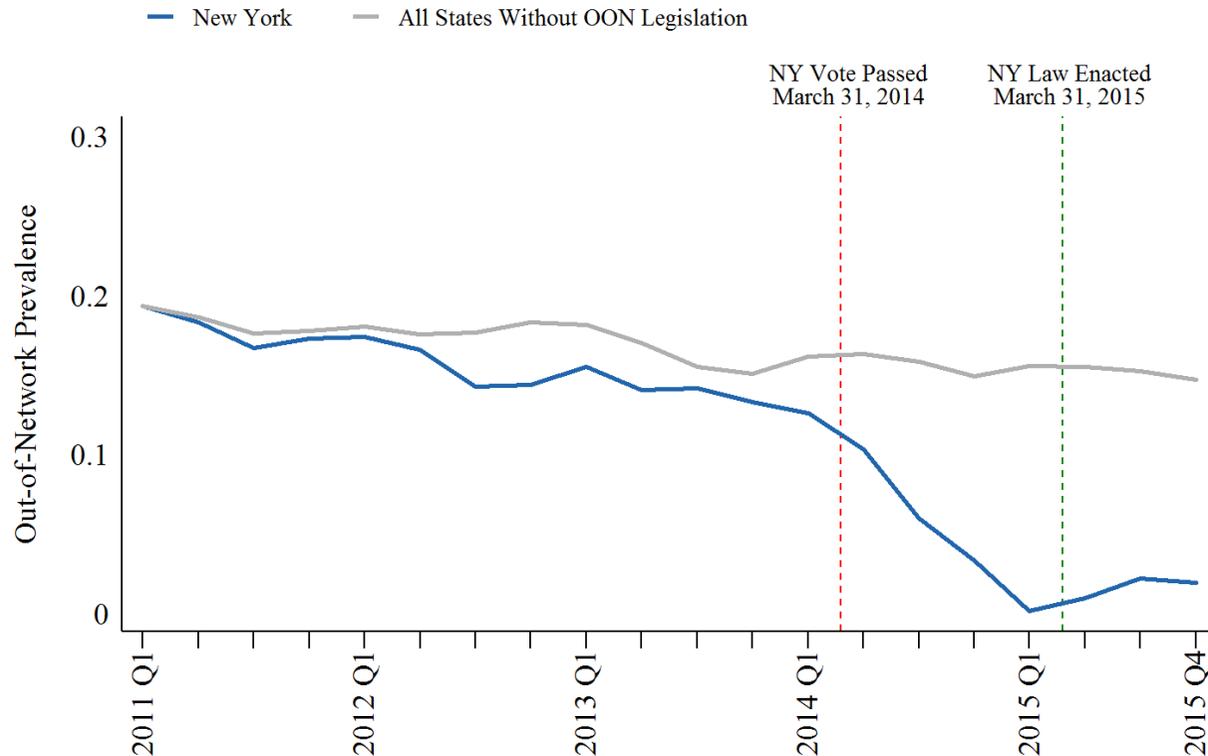
	(1) Out-of- Network Prevalence	(2) Physician Charge	(3) In-Network Physician Payment	(4) Facility Charge	(5) Facility Payment
NY*Post dummy	-0.09*** (0.03)	-14.24 (19.76)	-41.39*** (8.89)	-75.73 (135.45)	39.66 (70.95)
<i>Placebo treatment effects (drawn from distribution of 21 states)</i>					
5th percentile	-0.08	-102.53	-32.35	-338.17	-127.19
95th percentile	0.11	109.91	56.17	380.02	151.16
Hospital FE	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes	Yes
Mean NY	0.16	501.47	293.99	6,083.08	2,745.82
Mean Non-NY	0.17	581.68	315.02	5,750.11	2,577.81
Observations	4,100,767	4,100,767	3,419,554	4,100,767	4,100,767
R-Square	0.61	0.47	0.54	0.10	0.10

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. This table presents least-squares estimates of Equation (2). All regressions are run at the patient level. Each regression includes an indicator variable for whether the episode occurred in New York. The post dummy turns on in 2014 Q1 (when the NY vote was passed). Hospital and physician payments are winsorized at the top and bottom one percentile. The control group includes 21 states that have not introduced surprise billing protections (Alabama, Arizona, Arkansas, District of Columbia, Georgia, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Missouri, Nebraska, Nevada, Ohio, Oklahoma, Oregon, South Carolina, Tennessee, Virginia, Washington, Wisconsin). Each regression includes controls for patient age, gender, race, and Charlson score. Standard errors are clustered around hospitals. Means are drawn from the analytic sample population underlying the regression. All dollar amounts are inflation adjusted into 2015 dollars.

▼ 56%

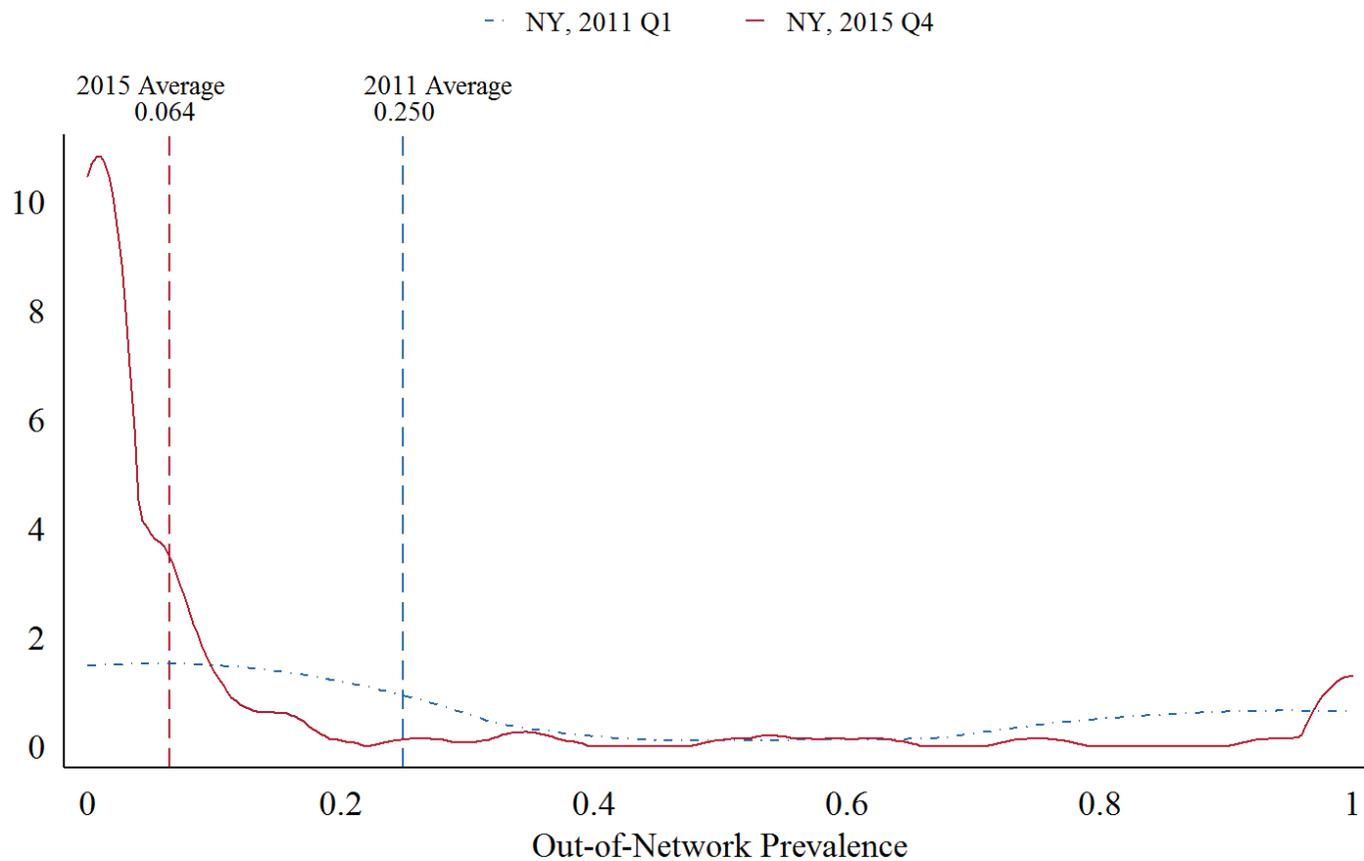
▼ 14%

Out-of-Network Prevalence in New York and States Without Surprise Billing Laws



Notes: The figure presents least-squares estimates of Equation (2) - an episode-level regression where the dependent variable is whether or not a patient at an in-network ED received a bill from an out-of-network physician. We regress that against an indicator for whether the episode occurred in the state of New York, a vector of quarterly fixed effects, and the interaction of the New York indicator and the quarterly fixed effects. Patient age, gender, race, and Charlson scores are included as controls. The omitted category is Q1 2013. We include a vector of hospital fixed effects. The control group is composed of observations from 21 states that did not have surprise billing laws. The red dotted line denotes when the NY vote passed, and the green dotted line denotes when the NY law was enacted.

The Distribution of Out-of-Network Billing in New York in 2011 and 2015



Notes: The figure shows the kernel density distribution of hospital out-of-network prevalence in New York in 2011 and 2015

Policy Options for Addressing Out-of-Network Billing

Policy Options for Addressing Out-of-Network Billing

Policy Approach

Examples

Pros/Cons

1.

Arbitration

Washington, Nevada, New York, Texas, Arizona, Illinois, etc.

Pros: evidence from NY
Cons: devil is in details, administrative cost. Patient responsibility

2.

Regulating the Outside Option

California, Connecticut, Oregon, Maine, Maryland

Pros: Administratively simple
Cons: Set rates too high/low -> distortions; Subject to lobbying over level of payment

3.

Network Matching

None to Date; Included in Senate Finance Proposal

Pros: Administratively simple
Cons: Gives insurers excess bargaining leverage

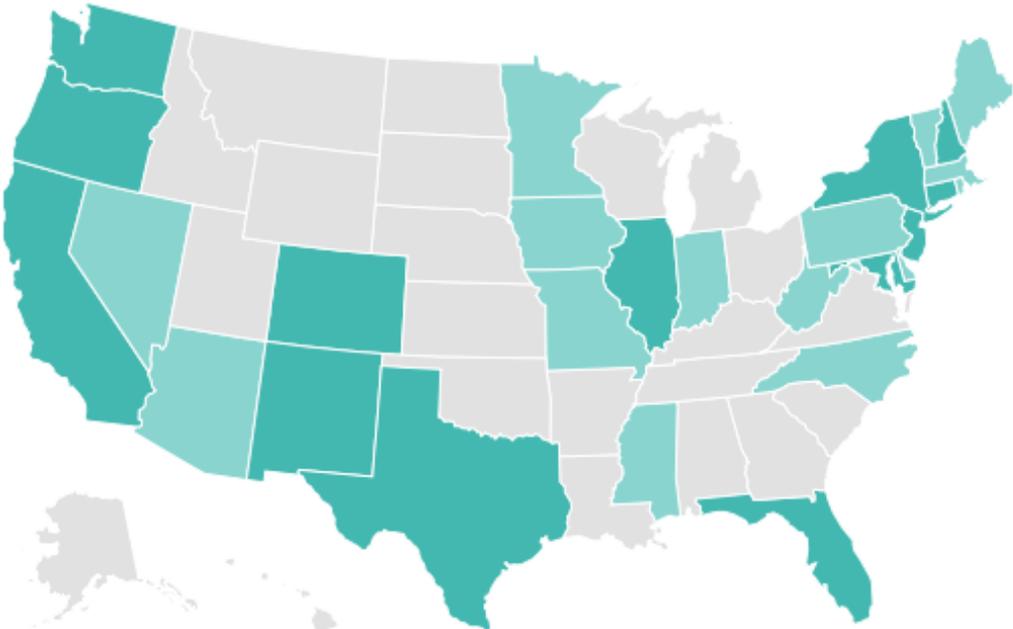
4.

Bundled Payments

None to Date; Included in Senate Finance Proposal

Pros: Government or arbitrator does not set rates; ED labor market does
Cons: contract change

States That Have Addressed Out-of-Network Billing



- No Balance Billing Protections
- Partial Balance Billing Protections
- Comprehensive Balance Billing Protections

- 28 have some laws on the books to protect consumers
- Virtually all states with protections have hold harmless provisions
- State laws only impact individuals enrolled in fully-insured plans (not the 60% of the privately insured with ASO products)
- A range of federal proposals to address the issue but no federal laws passed

Six Bills in Congress to Address Surprise Billing Developed Over the Summer

- S. 1895, introduced by Sens. Alexander (R–Tenn.) and Murray (D–Wash.)
 - Supported by bi-partisan majority and approved by Senate HELP Committee
 - Hold harmless provision + Median in-network payments for OON providers
- H.R. 3630, introduced by Reps. Pallone (D–N.J.) and Walden (R–Ore.)
 - Approved by House Energy and Commerce
 - Hold harmless provision + Median in-network payments for OON providers
 - Backstopped by arbitration (that doesn't consider charges)
 - CBO: reduce premiums by 1%; decrease deficit by \$25bn over 10 years
- S. 1531, introduced by Sens. Cassidy (R–La.) and Hassan (D–N.H.)
 - Hold harmless provision + Arbitration linked to median in-network rates
- H.R. 3502, introduced by Reps. Ruiz (D–Calif.) and Roe (R–Tenn.)
 - Hold harmless provision + Arbitration linked to 80th percentile of charges
 - CBO: Increase deficits by double digit billions; modest increases in premiums

Surprise Billing Reforms Seemed Likely to Pass

The New York Times

TheUpshot

Surprise Medical Bills Give Both Parties an Unexpected Opportunity to Agree

A broad campaign against costs is also expected to include an executive order mandating disclosure of health care prices.

By Margot Sanger-Katz

May 24, 2019



At a White House policy event this month, Dr. Paul Davis of Findlay, Ohio, showed President Trump a surprise \$17,000 medical bill his daughter received for a routine test. Jonathan Ernst/Reuters

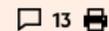
Surprise Billing Reforms Seemed Likely to Pass

FINANCIAL TIMES

US healthcare provider loans tumble as politicians target patient billing

Moves to shield patients from unexpected treatment costs leave debt investors nervous

Joe Rennison and Hannah Kuchler in New York JULY 29 2019



A push on Capitol Hill to stop US patients from being caught unaware by medical bills is weighing on the debt of KKR-backed Envision Healthcare, the target of one of the biggest leveraged [buyouts](#) last year.

The proposed law, seen as having broad bipartisan support in both houses of Congress, would prohibit providers from hitting patients with large, unexpected costs for treatment.

Investors are concerned that a new so-called “surprise billing” law could crimp revenues at companies such as Envision, which employs emergency-room doctors and anaesthetists through its subsidiary EmCare.

Envision’s \$5.4bn loan due in 2025, sold in September when investor demand for leveraged loans was very strong, slid from almost 97 cents on the dollar at the start of May to just 87.8 cents on the dollar on Thursday, as more detail surrounding possible legislation has been released.

Enter Doctor Patient Unity

“Early this summer, Congress appeared on its way to eradicating the large medical bills that have shocked many patients after emergency care. The legislation to end out-of-network charges was popular and had support from both sides of the aisle. President Trump promised his support.

Then, in late July, a mysterious group called Doctor Patient Unity showed up. It poured vast sums of money — now more than \$28 million — into ads opposing the legislation, without disclosing its staff or its funders.”

New York Times, September 13, 2019

Enter “Doctor Patient Unity”

- Approaching \$30 million in two months on direct mail and TV ads



Mystery Solved: Private-Equity-Backed Firms Are Behind Ad Blitz on ‘Surprise Billing’

Two doctor-staffing companies are pushing back against legislation that could hit their bottom lines.

By Margot Sanger-Katz, Julie Creswell and Reed Abelson

Published Sept. 13, 2019 Updated Sept. 16, 2019



Now, the mystery is solved. The two largest financial backers of Doctor Patient Unity are [TeamHealth](#) and [Envision Healthcare](#), private-equity-backed companies that own physician practices and staff emergency rooms around the country, according to Greg Blair, a spokesman for the group.

Like all so-called [dark money](#) political action groups, Doctor Patient Unity is not legally required to reveal the names of its supporters and, in fact, appears to have worked hard to obscure its identity.

The bread crumbs were scant. Filings by the group to the Federal Communications Commission for purposes of advertising listed the name of a treasurer who works for a firm that often fills such roles for Republican political groups. The group's [corporate filing in Virginia lists an agent](#) who is common to more than 150 other political action groups. Neither the treasurer, the named partners

Mystery Solved: Private-Equity-Backed Firms Are Behind Ad Blitz on ‘Surprise Billing’

Two doctor-staffing companies are pushing back against legislation that could hit their bottom lines.

By Margot Sanger-Katz, Julie Creswell and Reed Abelson

Published Sept. 13, 2019 Updated Sept. 16, 2019



The American College of Emergency Physicians and the American Society of Anesthesiologists have also sought changes to the surprise billing legislation, but their message is milder than the TV ads, and they say they want the problem resolved.

Leaders in each of those groups denied knowing who funded Doctor Patient Unity or communicating with the group directly.

“I have no idea who they are — I actually tried Google, and when you look at their website, there’s nothing,” said Michele Kimball, the president of Physicians for Fair Coverage.

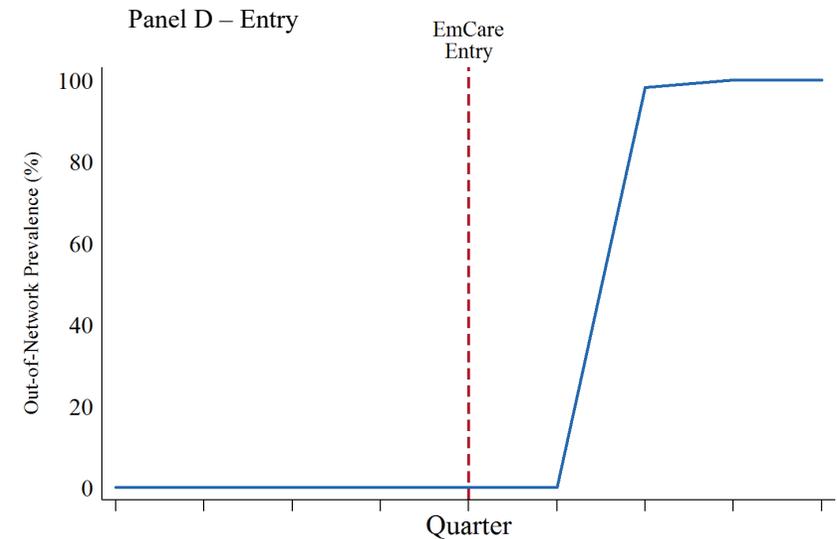
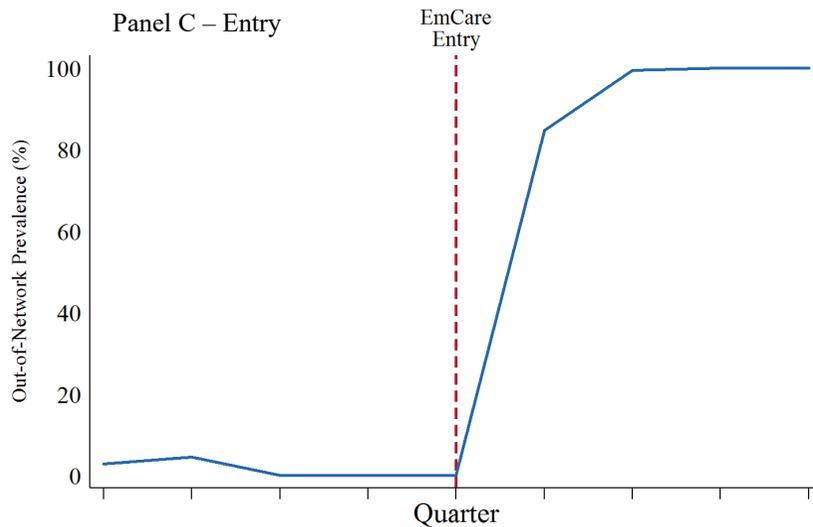
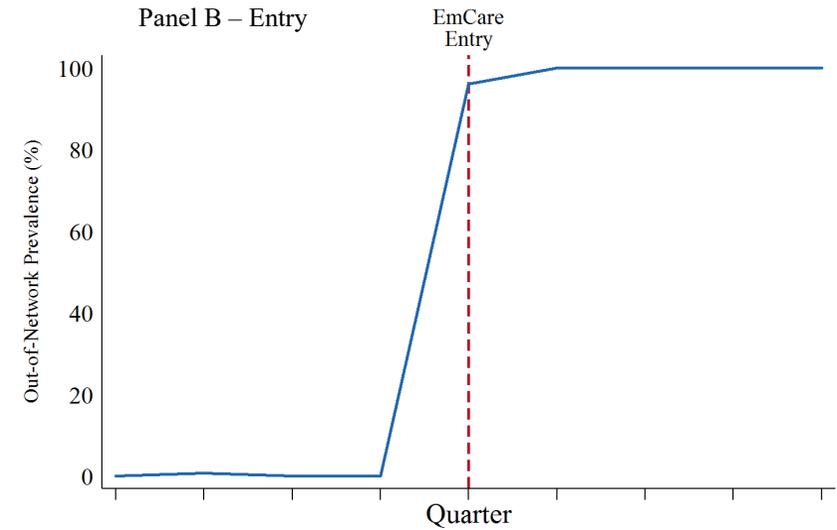
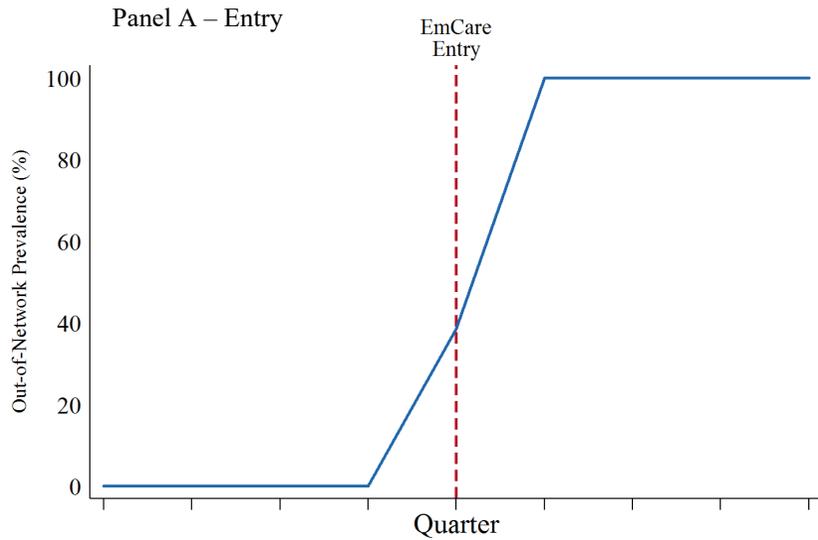
Laura Wooster, a spokeswoman for the American College of Emergency Physicians, said she found the group’s first ad confusing. After learning about the group’s funders, Ms. Wooster distinguished the dark money group’s strategy from that of the college.

“ACEP does not want our proactive efforts over the past two years to help protect patients from surprise bills to be conflated with more negative messages that are perceived as obstructionist,” she said. The organization’s [current president](#) works for TeamHealth; its president elect works for Envision.

Concluding Thoughts

- Out-of-network billing is frequent and can be financially devastating to many individuals. Out-of-network billing is occurring frequently
- Private firms are buying up ED and other PEAR physician practices and exploiting fact that physicians and facilities negotiate separately with insurers
- Clear evidence that EmCare was entering hospitals and raising out-of-network billing rates for emergency services. This generated significant revenue
- Policy could immediately fix the issue; that set off a wave of crushing lobbying
- Coolest part of the economics is evidence showing in-network rates fall when ED physicians don't have a credible threat of surprise billing. Bargaining theory works!

Raw Data on Change in OON Prevalence Post EmCare Entry



Notes: This figure plots the average quarterly out-of-network prevalence at hospitals where EmCare entered. We present data from the four quarters before and the four quarters after EmCare took over the management of each hospital's ED.