

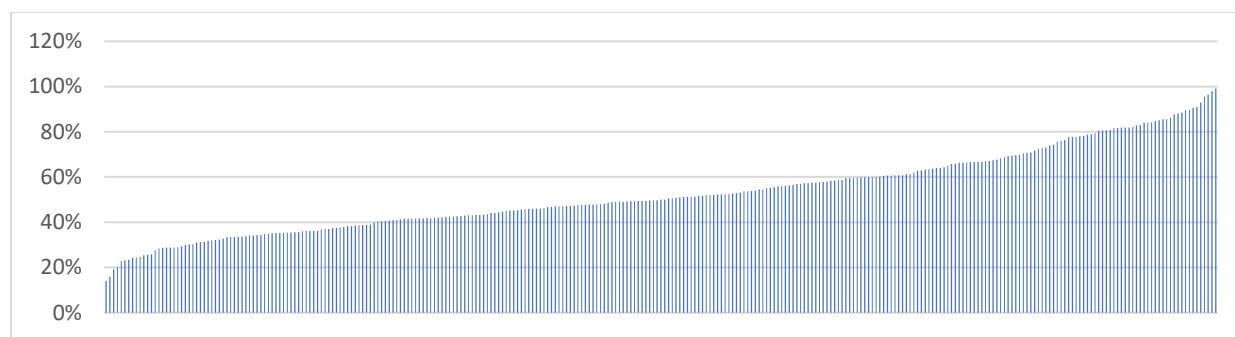
Appendix

Analysis of Out-of-Network Hospital Pricing Leverage and Benchmarks Using CA Data

We access data from the California Office of Statewide Health Planning and Development (OSPHD) to analyze out of network hospital pricing leverage and two potential benchmarks for capping out of network emergency prices. OSHPD collects and makes available to the public detailed financial and patient level data from all California hospitals each year. Our analyses utilize the most current available data (2016 for patient level data and 2017 for financial data) for all general acute care hospitals. The sample sizes vary depending on the specific analysis but generally cover 275+ hospitals.

Emergency Patients Account for a Large Share of Hospital Volume: Total ED visits in California grew from 8.9 million in 2002 to 14.4 million in 2017, an increase of 61 percent. Data from California below show that half of all California hospitals admit 50 percent or more of their inpatients through their ERs. Emergency services now represent the majority of volume in most hospitals.

Exhibit 1: Percentage of Inpatient Admissions Thru ED, Commercial Patients, California Hospitals (2016)

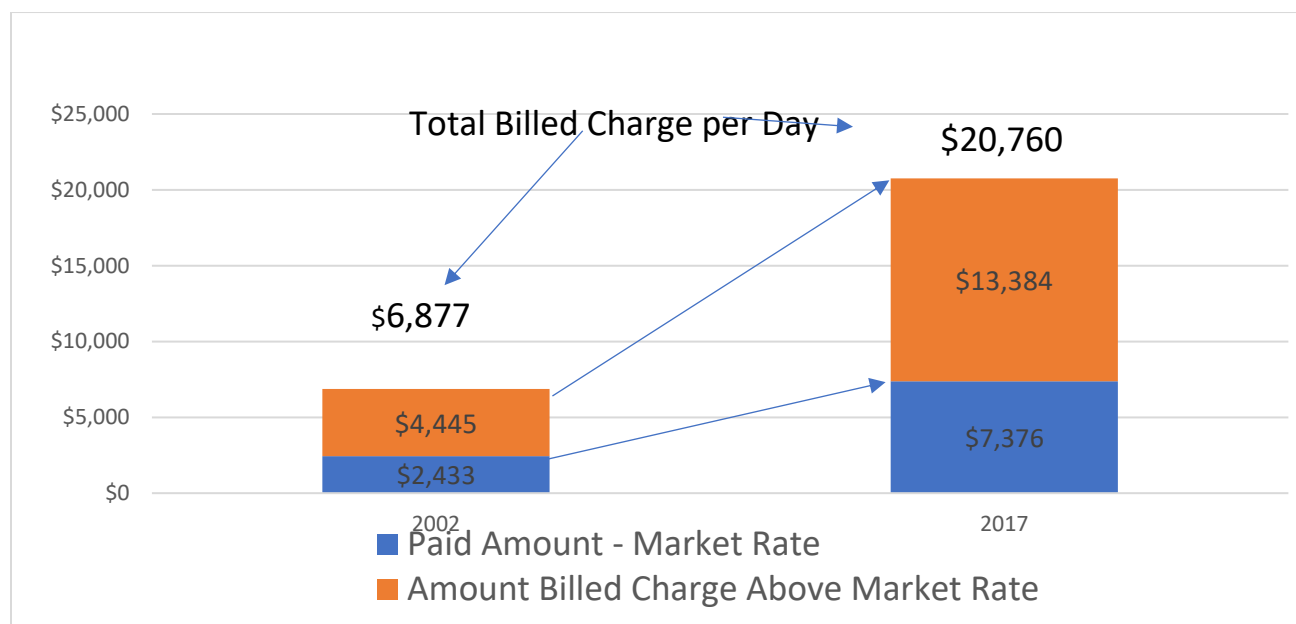


Notes: N= 294; Median = 50%, Average (hospital weighted) = 53%

Source: California Office of Statewide Health Planning and Development, PD Data, 2016.
Excludes hospitals without EDs.

Hospital Billed Charge Inflation: Hospital unilaterally set their billed charges, without external regulation, and largely without regard for market forces. Not surprisingly, there has been substantial inflation of hospital billed charges in the US. Data from California below show by 2017 billed charges per day had reached \$20,760 while average contracted in-network rates totaled \$7,376 – a difference of \$13,384 (compared to a difference of \$4,445 in 2002). This substantial difference between billed charges and contracted rates is important because most hospitals typically demand their full billed charges for treating out-of-network emergency patients.

Exhibit 2: Billed Charges Are Substantially Above Market Rates



Source: California Office of Statewide Health Planning and Development,
Hospital Financial Data, 2017

Illustration of Out-of-Network Hospital Pricing Leverage Using CA Data

Starting Assumptions: In this example, we assume a hospital has 1,000 patient days paid under contract at the California average contracted market rate of \$7,376 per day for total net revenue of \$7.376 million and net income (profit) of \$2,601,000 as an in-network hospital. Now assume that the hospital cancels its contract with the plan. Under prudent layperson regulations, some of the plan's patients will still go to the out-of-network hospital for emergency care and the hospital will now set its price based on full billed charges, or \$20,760 per day (based on the California average). Our internal research shows hospitals can retain approximately 50 percent of their pre-cancellation ED volume for two years after going out of network. Displaced patients from the hospital going out of network are assumed to go to other in-network hospitals that are paid at the average market rate (\$7,376).

Volume and Net Income Effects of Hospitals Going Out-of-Network: The impact of a hospital going out of network will depend on its pre-cancellation ED volume and the difference between its billed charges and pre-cancellation, contract prices. Exhibit 3 uses data on the distribution of ED volume across all California hospitals to examine the differential effects of going out of network on hospital retained volume and net income. The data, presented below, show that all hospitals, regardless of their pre-cancellation ED admission rate, will have positive profits as result of going out-of-network and slightly less than half will see increases in their net income.

Exhibit 3. Volume and Net Income Effects on Hospitals Going Out-of-Network

Percentile Grouping -- Hospitals	Average % Admissions Thru ED	% Total Volume Retained	Retained Volume - (50% ED/0% Non-ED)	Displaced Volume to Other In-Network Hospitals	Hospital Net Income, OON Volume at Billed Charge Rate	Net Income OON as % of In-Network Net Income
1-10%	27%	14%	135	865	\$933,713	36%
11-25%	36%	18%	175	825	\$1,634,813	63%
26-50%	42%	21%	210	790	\$2,248,275	86%
51-75%	57%	25%	250	750	\$2,949,375	113%
76-90%	72%	36%	355	645	\$4,789,763	184%
91-100%	87%	44%	435	565	\$6,191,963	238%

Note: Assumptions: Contracted market rate of \$7,376 per day, billed charge per day of \$20,760 per day; average cost per day of \$4,775; marginal cost (70% of average) of \$3,343. Some numbers may not add due to rounding.

Hospitals with lowest level of volume thru the ED will experience a decline in their net income while the hospitals at higher levels of ED volume will see an increase in their net income from going out of network and charging the average billed charges as the out-of-network price. However, even those hospitals experiencing a decline in net revenue will still remain profitable if they go out of network and approximately half of hospitals will see an increase in their net income by going out of network. It is important to note that while the net income effects of going out of network may be strong, there are likely other benefits to hospitals remaining in a health plan's network which may offset net income increases.

In addition, approximately two-thirds of US hospitals are now members of multi-hospital systems. These systems are increasingly negotiating contracts on an "all-or-none" basis, demanding that health plans take all system member hospitals under their contracts or the plan will lose all the hospitals. This is another source of growing bargaining leverage on the part of hospitals that is potentially magnified by their ability to pull all of their hospitals out of a health plan's network and still remain profitable across their system.

Exhibit 4: Increase in Health Costs from Hospitals Going Out-of-Network

Percentile Grouping -- Hospitals	Percentile - Hospitals	Average % Admissions Thru ED	Plan Cost – OON at Average Billed Charge Rate	Plan Cost - Displaced Volume at Average Market Rate	Total Plan Cost - OON + Displaced Volume	Plan Cost - \$ Increase from Hospital Going OON	Plan Cost - % Increase from Hospital Going OON
1-10%	10%	27%	\$2,802,600	\$6,380,240	\$9,182,840	\$1,806,840	24%
11-25%	25%	36%	\$3,633,000	\$6,085,200	\$9,718,200	\$2,342,200	32%
26-50%	50%	45%	\$4,359,600	\$5,827,040	\$10,186,640	\$2,810,640	38%
51-75%	75%	57%	\$5,190,000	\$5,532,000	\$10,722,000	\$3,346,000	45%
76-90%	90%	72%	\$7,369,800	\$4,757,520	\$12,127,320	\$4,751,320	64%
91-100%	100%	87%	\$9,030,600	\$4,167,440	\$13,198,040	\$5,822,040	79%

Exhibit 4 shows the increase in costs to health plans when hospitals go out of network. This is the largest source of hospital leverage when threatening a plan to go out of network. When a hospital goes out of network, the health plan must cover the costs of any out-of-network emergency care plus the cost of patients displaced from the out-of-network hospital when they go to an in-network hospital.

Exhibit 5: Increase in Costs to Health Plans When Hospitals Go Out-of-Network

%	Average % Admissions Thru ED	Plan Payments – In-Network, Contracted, Average Market Rate	Plan Payment - OON, Average Billed Charge Rate	Plan Payment - Displaced Volume, Average Market Rate	Total Plan Payment - OON + Displaced Volume	Plan Payment \$ Increase from OON Volume	Plan Payment % Increase from OON Volume, Billed Charge Rate
Group							
% ED							
1-10%	27%	\$7,376,000	\$2,802,600	\$6,380,240	\$9,182,840	\$1,806,840	24%
11-25%	36%	\$7,376,000	\$3,633,000	\$6,085,200	\$9,718,200	\$2,342,200	32%
26-50%	45%	\$7,376,000	\$4,359,600	\$5,827,040	\$10,186,640	\$2,810,640	38%
51-75%	57%	\$7,376,000	\$5,190,000	\$5,532,000	\$10,722,000	\$3,346,000	45%
76-90%	72%	\$7,376,000	\$7,369,800	\$4,757,520	\$12,127,320	\$4,751,320	64%
91-100%	87%	\$7,376,000	\$9,030,600	\$4,167,440	\$13,198,040	\$5,822,040	79%

Source: Author's Analysis of California Office of Statewide Health Planning and Development, PD and Hospital Financial Data

The columns on the far right summarize total and percentage increase in total costs for the 1,000 patient days used in this example. As can be seen, while there is a range of increases in costs across the different categories of hospitals based on their emergency volume, the increase is quite large across all groups. The minimum increase is \$1.8 million (+24%) while the largest increase is \$5.8 million (+79%).

These results are highly significant since they represent the upper bound for an in-network price increase that would be fully offset the increased costs to the plan to keep the hospital in the network. Even a hospital with only 27% of its inpatient volume coming thru the ER could impose a substantial increase in costs and still have positive profits from its retained commercial volume. For almost half the hospitals in our example, they could increase their net income by going out of network and at the same time impose +45% or more increase in costs on commercial health plans.

How Would Caps on Out-of-Network Hospital Prices Affect Negotiating Leverage and Health Plan Costs: Exhibit 6 in our example summarizes the impact on health plan payments if out-of-network emergency prices were benchmarked to average in-network rates and capped at either 110% or 120% of in-network rates. As can be seen, benchmarking out-of-network prices and capping them at either 110% or 120% of contracted market prices would substantially reduce the potential increase in costs to health plans when a hospital goes out of network. When prices are capped at 110% of market rates, even hospitals with the largest ED volume would only be able to threaten plans with a 4% increase in their costs if the hospital were to go out of network

and only a 9% increase when out-of-network emergency prices are capped at 20% above the market average.

Exhibit 6: Estimated Plan Cost Increases: Full Billed Charges vs 110% and 120% of In-Network Market Rates

Percentile Grouping -- Hospitals	Percentile – Hospitals	Average % Admissions Thru ED	Plan Payment % Increase from OON Volume, Billed Charge Rate	Plan Payment % Increase from OON Volume, 110% of Average In Network Rate	Plan Payment % Increase from OON Volume - 120% of Average In Network Rate
1-10%	10%	27%	24%	1%	3%
11-25%	25%	36%	32%	2%	4%
26-50%	50%	45%	38%	2%	4%
51-75%	75%	57%	45%	3%	5%
76-90%	90%	72%	64%	4%	7%
91-100%	100%	87%	79%	4%	9%

Source: Author's Analysis of California Office of Statewide Health Planning and Development,

PD and Hospital Financial Data

Assessment of Benchmarks

We analyze two different potential benchmarks:

- Market-Based – median market rate (calculated as net revenue per adjusted discharge, controlling for each hospital's case-mix and wage index)
- Cost and Market-Based - using each hospital's own operating costs multiplied by 1.6 to reflect the average commercial price to cost ratio in California

Using California hospital data, we show the distribution of the two benchmarks along with measures of hospital charges and costs. Billed charges substantially exceed market rates for all hospitals and most hospitals are paid above their costs. The wider the distribution, the greater the incentive for hospitals and/or health plans to cancel their contracts to improve their financial position or negotiating leverage. Both benchmarks have a wide distribution, however, the benchmark based on costs has a more narrow distribution across hospitals.

Exhibit 7: Distribution of Hospital Across Benchmarks, Costs, and Charges

			Benchmark 1	Benchmark 2
Percentile	Hospital's Charges as a % Hospitals Market Rate	Hospital's Current Market Rate as % Hospital's Cost	Hospital's Current Market Rate % Above/Below Median Rate All Hospitals	Hospital's Current Market Rate % Above/Below Hospital's Own Cost*1.6
10th	170%	100%	-49%	-38%
25th	218%	130%	-28%	-19%
50th - Median	293%	160%	0%	0%
75th	380%	189%	25%	18%
90th	479%	219%	54%	37%

Source: Author's Analysis of California Office of Statewide Health Planning and Development, Hospital Financial Data (2017)

We further analyzed the negotiating and leverage dynamics for both benchmarks using actual data for hospitals at the 25th and 75th percentiles.

Exhibit 8 below uses data for the hospital at the 25th percentile to estimate the effect of a low-priced hospital going out of network and being paid using Benchmark 1. As can be seen, while the hospital would receive a 39 % increase in price by going out of network, total net revenue would actually decline substantially (-68%), despite retaining 23 % of its pre-cancellation volume.

Exhibit 8: Impact on Net Revenue for Hospital with Price Below Benchmark Dropping Out of Network

	Hospital at 25th Percentile (Hospital's Price is 28% Below Median Market Rate)
Median % of Hospital's Current Market Rate	139%
Hospital's % Volume Through ED	46%
Retained Volume % OON (50% of ED)	23%
Net Revenue OON as % of In Network Net Revenue	32%
Reduction in Total Net Revenue from Going OON	-68%

Source: Author's Analysis of California Office of Statewide Health Planning and Development, PD and Hospital Financial Data

The Exhibit below uses data for a high-priced hospital (75 percentile, hospital's price is 125% of Median Market Rate) to simulate the effect of health plans cancelling their contracts with the hospital and using different Benchmarks to pay the hospital for retained out of network emergency volume.

Exhibit 9: Impact on Health Plan Costs of Cancelling Contract with High Priced Hospital

	Hospital at 75th Percentile - Hospital's Price is 125% of Median Market Rate
<u>Hospital In-Network</u>	
Plan Cost - Paid at Hospital's In Network Market Rate	\$169,229,182
Hospital's % Volume Through ED	55%
<u>Hospital Out of Network</u>	
Plan Cost for OON Hospital Retained ED Volume (Assumes retained ED volume (27.5%) is 50% of ED volume) Paid at:	
- Hospital's Full Billed Charges	\$153,434,074
- Hospital's Contracted Market Rate	\$46,211,675
- Median Market Rate	\$36,969,340
- Hospital's Cost * 1.6	\$45,439,106
<u>Plan Cost for Diverted Volume Paid to Other Hospitals at:</u>	
Diverting Hospital's Rate (125% of Median)	\$123,017,507
Median Market Rate	\$98,538,649
<u>Total Reduced Plan Cost for Hospital OON</u>	
OON Paid at Median Rate + Diverted Volume Paid at Hospital's Market Rate (125% median)	\$9,242,335
OON and Diverted Paid at Median Rate	\$33,721,193

Source: Author's Analysis of California Office of Statewide Health Planning and Development, PD and Hospital Financial Data

In this example, the hospital is paid a total of \$169.2 million under its contracted rate and volume. If the hospital were to cancel its contract and retain 27.5% of its volume and charged full billed charges, total net revenue would decline only slightly, to \$153.4 million, despite losing almost ¾ quarters of its commercial volume. This shows the tremendous leverage generated by hospitals with unrestrained out of network emergency prices.

In contrast, when retained ED volume at the out of network hospital is paid based on either Benchmark the cost to the plan is much lower, and, in fact, is not much different from what the

plan paid the hospital as an in-network provider. Using the data in this example, the total reduction in health plan costs from cancelling this hospital's contract is not very substantial, ranging from \$9.2 million if the diverted volume to other hospitals was paid at 125% of median rate to \$33.7 million if the diverted volume is paid at the median of the market. It is likely that final rate for the diverted volume will fall between these two levels, depending on local market characteristics.