



HEALTHCARE INDUSTRY GROUP

BAROMETER OF THE POST-COVID HEALTHCARE ECONOMY

Update: Q1 2022



Executive Summary

INTRODUCTION AND OBJECTIVE

Alvarez & Marsal's (A&M) Healthcare Industry Group (HIG) helps health systems navigate local, state and federal market dynamics. The COVID-19 pandemic, and its accompanying economic and social disruptions, led A&M to investigate the impact of these forces on the healthcare economy. A&M analyzed the financial and operating performance of the top 25 U.S. not-for-profit health systems, with publicly available datasets. Our previous reports told the story through Q4 2021. In this report, we have aggregated the Q1 2022 data and provide a detailed analysis. The timeframe ends with the passing of the first Omicron surge that again overwhelmed hospitals and aggravated staffing issues. This report contains executable insights for healthcare leaders, investors and lenders, as they continue to navigate the changes and evolutions of the COVID-19 healthcare environment.

SUMMARY OF TRENDS

Q1 2022 was a challenging and negative quarter for hospitals when it came to net revenue generated by not-for-profit hospitals in the U.S. Net Patient Revenue (NPR) fell sharply for the first time since the beginning of the COVID-19 pandemic (Q1 2020). While hospitals in the Northeastern states saw less NPR degradation, NPR decreased by almost 25%, on an annualized basis, in Q1 2022.

In Q4 2021, hospitals saw increased expenses particularly due to supply chain shortages, supply price increases and staffing problems. The trend reversed in the subsequent Q1 2022 quarter, mimicking a seasonal pattern we also saw in 2021 but more pronounced. Although expenses in Q1 2022 returned towards Q3 2021 levels, -- still +14% above pre-pandemic levels --, operating income tumbled further because of the sharp dip in NPR. Ultimately, operating income dropped -4.5 percentage points per unit of Q4 2021 revenue Q1 2022.

Q1 2022 captured a large part of the biggest COVID-19 wave thus far in the pandemic. It was the first wave caused by Omicron, the variant that would replace the Delta variant in many countries, including the U.S. Compared to Delta, Omicron causes less severe COVID-19 disease. Omicron has been found to be much more contagious than Delta due to a plethora of mutations on Omicron's spike protein. This elevated contagiousness explains the significant increase in COVID-19 hospitalizations and deaths in Q1 2022, despite a milder clinical picture. In January 2022, the number of COVID-19 related hospitalizations in the U.S. peaked at 154,500, which is 21,300 more hospitalizations than the same month in 2021. However, the Omicron wave waned relatively quickly, already in February 2022. Even so, in the beginning of Q1 2022, elective surgeries were again postponed throughout the U.S., mainly in the West and Midwest. This, combined with continuous high contract labor and employee turnover, high supply costs and the start of a period of inflation, compromised operating income for not-for-hospitals.

In Q1 2022 surgery volumes declined with an aggregate number of procedures across the U.S. 10% below pre-pandemic levels. Patient discharges were also lower in Q1 2022 than in Q4 2021 (decline of -4.9%), despite the extra volume of COVID-19 patients. Length of stay and the number of patient days both decreased in Q1 2022, although the latter remained +2.4% above pre-pandemic levels. Lastly, because of Omicron and other COVID-19 accelerated movements, including the shift of care outside the hospital walls, total emergency visits declined by -17%, to -40% on an annualized basis, depending on the U.S. region. Overall, in absence of extra CARES Act funds, this all resulted in decreased hospital margins. COVID-19 has put hospitals in a headlock in Q1 2022.

In Q1 2022, the Southeast region of the United States became an outlier in both financial and operational measures. Decreases in Net Patient Revenue and Operating Expenses were most pronounced in the Southeast (annualized decline of 48% and 37% respectively), whereas the number of discharges and patient days increased in that region, reversing the trend in all other U.S. areas. The Southeast region is notably the U.S. region with the lowest COVID-19 vaccination rates, resulting in relatively low immunity to COVID-19 and more people at risk of severe disease ended up in the hospital with Omicron. Indeed, Omicron had a more pronounced effect on states in the Southeast. The 7-day moving average of COVID-19 admissions in the matching Health and Human Services (HHS) region 4 was 4,900 new admissions per day at the Omicron peak, the highest in the U.S. [1]. This explains, in part, the stronger decrease in Net Patient Revenue and Operating Income because hospitals do not generate as much profit treating COVID-19 patients as they would performing elective procedures.

Vaccination rates in Northeastern states are among the highest in the United States. In our previous report on Q4 2021, we predicted the curtail of elective surgeries from increases in the number of patient days, notably in the Northeast. Closures must have been short term in this region since the decrease in surgeries, -- albeit not in ED visits --, in the Northeast was relatively low compared to other regions in the United States. Even though patients in the Northeast seem to have more luck finding acute care elsewhere than in an ED, the rebound in surgeries translated in a better-preserved Net Patient Revenue (NPR) in Northeastern hospitals in Q1 2022. However, such regional variations in financial and operational measures are not able to conceal the widespread fear of COVID-19 and the impact on every part of our country. in the early months of 2022.

[1] <https://covid.cdc.gov/covid-data-tracker/#new-hospital-admissions>

By the numbers:

- **NET PATIENT REVENUE:** increased 14% from 2020 to 2021 and even though it ended 4.9% above pre-pandemic levels* in Q1 2022, net patient revenue was 6.7% lower than in the previous quarter.
- **TOTAL OPERATING EXPENSE:** increased 8.9% from 2020 to 2021 and grew 14% above pre-pandemic levels* in Q1 2022.
- **OPERATING INCOME:** increased 67% from 2020 to 2021 due to large infusions of CARES Act funds. In Q1 2022, operating income was twofold lower than in pre-pandemic times*.
- **DISCHARGES:** increased 3.9% from 2020 to 2021 but were still 10% below pre-pandemic levels* in Q1 2022.
- **PATIENT DAYS:** increased 7.4% from 2020 to 2021 and were 2.4% above pre-pandemic levels* in Q1 2022.
- **LENGTH OF STAY:** increased 4% from 2020 to 2021 and ended up being almost 75% longer in Q1 2022 than before the pandemic.
- **SURGERIES:** increased 13.8% from 2020 to 2021 but came down to 10% below pre-pandemic levels* in Q1 2022.
- **EMERGENCY ROOM VISITS:** increased 10% from 2020 to 2021 but remained 12% below pre-pandemic volumes in Q1 2022.

*pre-pandemic level point of comparison: Q4 2019

THE DATA

To better understand the effect of COVID-19 on healthcare providers, A&M created a cross-section of health systems across the country by analyzing the publicly available financial statements of the 25 “largest” not-for-profit health systems in the United States. The initial “sizing” of health systems was defined by the number of hospitals within those health systems. Financial statements were accessed via health system websites and/or websites where bond-related information is reported publicly. The reporting of these financial statements usually occurs between three to six months post quarter-end, creating a lag in the data. However, an alternative data set does not exist in the industry that collectively models all these health systems. The data time-period analyzed begins at the start of calendar year 2019 to establish a pre-pandemic baseline.

DEMOGRAPHICS OF THE TOP 25 “LARGEST” NOT-FOR-PROFIT HEALTH SYSTEMS STUDIED

- Out of all 6,093 hospitals in the U.S., 49% (2,960) is a non-government, not-for-profit community hospital (1).
- The top 25 largest not-for-profit health systems included in this analysis jointly own more than 1,000 hospitals, representing roughly a third of all non-profit hospitals.
- All U.S. health systems together account for more than \$1,2T in OpEx⁽¹⁾. This analysis covers roughly one quarter of that.

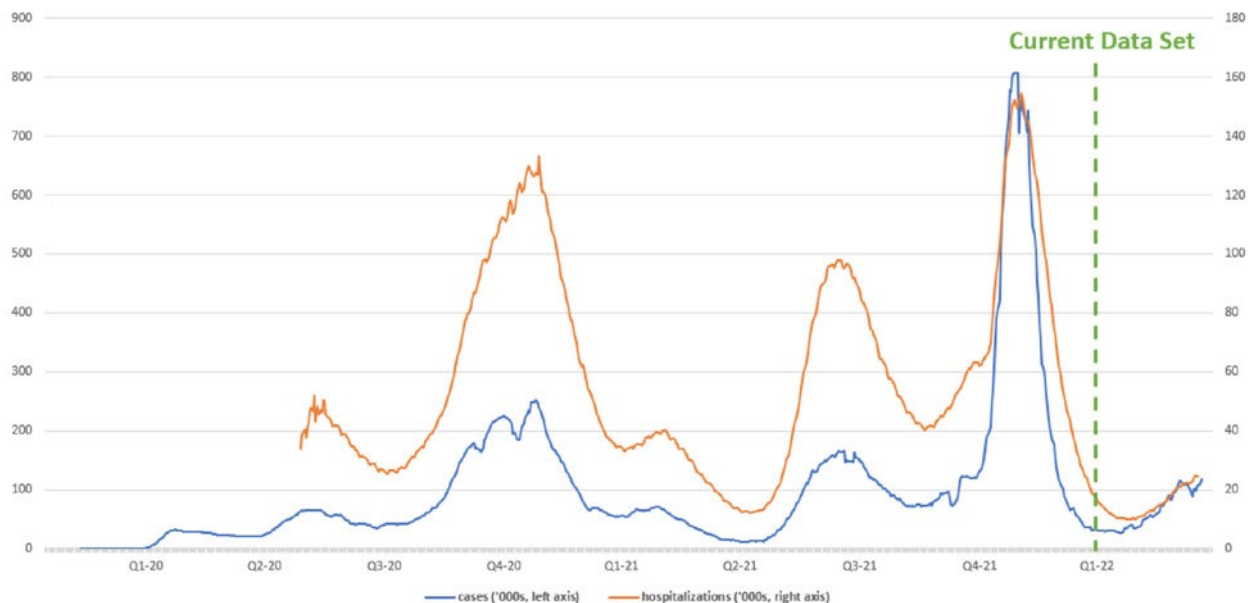
⁽¹⁾ Source: <https://www.aha.org/statistics/fast-facts-us-hospitals>, accessed June 6th, 2022. Data from the 2020 AHA Annual Survey. *AHA Hospital Statistics, 2022 Edition*

A&M will continue to generate this report quarterly, to monitor and track trends driving the health system economy leading to unique market dynamics and the continued impact of COVID-19.

THE STATE OF THE COVID-19 PANDEMIC

The trends described in this report played out against the backdrop of the COVID-19 pandemic. Our current dataset ends after Q1 2022, marking the second anniversary of the COVID pandemic. It not only encompasses the bulk of the first Omicron surge (B1 variant of SARS-CoV-2), but also witnessed the arrival of a second Omicron variant, B2. To summarize:

Daily cases and new hospital admissions of patients with confirmed COVID-19 in the USA 2019 - 2022



Source: www.ourworldindata.org

Q1 2020:

- The first U.S. COVID-19 patient is identified in January, leading to a public health emergency.
- The WHO declares the COVID-19 pandemic (March) and countries are restricting travel to try to contain the virus.
- Later in March, the first major lockdowns (New York, California) are enforced.

Q2 2020 – Q3 2020:

- Ongoing lockdowns and surging cases force businesses and schools to close. Hospitals in parts of the U.S. are overwhelmed; COVID-19 becomes the third leading cause of death in the U.S.
- U.S. hospitals lost an estimated \$22.3 billion between March and May due to delays and cancellations of elective surgeries. [Sourav KB, et al. The costs of quarantine. *Ann Surg* 2021; 273(5); 844-9.]
- Phased re-opening in some states leads to more COVID-19 cases.

Q4 2020:

- A winter surge of the classic COVID-19 virus puts even more emphasis on social distancing and mask wearing.
- The Pfizer and Moderna mRNA vaccines receive Emergency Use Authorization (EUA) from the FDA.

Q1 2021:

- As the winter surge slowly recedes, variants like the Alpha (British) and Beta (South African) variant turn up.
- While the Pfizer and Moderna vaccines are rolled out, the J&J vaccine receives an EUA as well.

Q2 2021:

- The spring and early summer of 2021 saw relative calm, on the COVID-19 front in the U.S. as half of all adults received at least one COVID-19 vaccine dose and adolescents became vaccine eligible.

Q3 2021:

- Seventy percent of the U.S. population and 90% of Americans 65 years and older, have received at least one doses of a COVID-19 vaccine; several companies mandate COVID-19 vaccines for employees.
- In Q2 2021, the Delta variant emerged, causing a surge in cases towards the end of Q3 2021. Delta is more transmissible than the Alpha variant and the classic COVID-19 virus and less susceptible to existing COVID-19 vaccines.
- Importantly, the surge in cases is not distributed evenly over the U.S. Initially the surge hit the South, but towards the end of Q3 2021, Delta became widespread across other parts of the country.

Q4 2021:

- In November, the U.S. restricts travel from South Africa and seven other African countries because of concern over a new variant from that area, called Omicron. The first case of Omicron is detected in the U.S. (December 1st). Omicron would become the dominant COVID-19 strain in the second half of December.
- The CDC advises everyone 18 years and older to receive a booster after they are fully vaccinated.
- Hospitals, already understaffed after many healthcare workers left the profession, become again overwhelmed with the Omicron surge.

Q1 2022:

- At the height of the first Omicron wave (January 2022), hospitalizations due to COVID-19 increased more than 50% compared to the summer months. Hospitals throughout the U.S. again postpone elective surgeries. In January 2022, the U.S. surpassed 75M COVID-19 cases and approached 900,000 deaths caused by the disease.
- While the Omicron-B1 variant surge declined in the U.S., a new B2 variant reared its head in Europe and reaches the U.S. in March 2022.
- At the end of Q1 2022, the CDC issued the guidance for people over 50 years old, and those who are immunocompromised to receive a second COVID-19 booster. As a sign of trust in the progressive build-up of immunity against COVID-19 in the population, mask mandates in New York public schools, and elsewhere, are lifted.

The Healthcare Economy: Detailed Report Updated Through Q1 2022

OBJECTIVE

Alvarez & Marsal's (A&M) Healthcare Industry Group (HIG) helps health systems navigate local, state and federal market dynamics. The COVID-19 pandemic, and its accompanying economic and social disruptions, led A&M to investigate the impact of these economic and social forces on the healthcare economy. We aim to provide executable insights for healthcare leaders, investors and lenders as they navigate the COVID-19 healthcare environment, based on financial and operating trends of the top 25 U.S. not-for-profit health systems through Q1 2022.

THE DATA

To better understand the effect of COVID-19 on healthcare providers, A&M analyzed a cross-section of health systems throughout the U.S., using publicly available financial statements of the 25 "largest" not-for-profit health systems. The size of health systems was defined by the number of hospitals within those health systems. Financial statements were accessed via health system websites, and/or websites where bond-related information is reported publicly. Data were collected from the beginning of calendar year 2019, to establish a pre-pandemic baseline, through Q1 2022. Financial statements are usually reported between three and six months after the end of the quarter, creating a lag in the data. However, there is no alternative data set in our industry that collectively models these health systems. A high-level, blinded summary of the health systems is included in the analysis below:

#	Number of Hospitals	Calendar Year (2020) Net Patient Service Revenue (in 000s)	Calendar Year (2020) Total Operating Revenues (in 000s)	Fiscal Year End
1	145	\$22,686,935	\$26,103,659	June 30
2	137	\$26,905,000	\$30,947,000	June 30
3	92	\$15,377,531	\$19,405,182	June 30
4	52	\$8,470,000	\$10,844,000	June 30
5	51	\$18,964,000	\$25,675,000	December 31
6	50	\$8,970,458	\$9,969,660	December 31
7	46	\$11,572,183	\$12,623,222	December 31
8	46	\$3,611,525	\$6,654,113	December 31
9	42	\$6,520,536	\$7,290,964	December 31
10	40	\$9,199,717	\$23,093,417	December 31
11	35	\$1,899,653	\$2,612,513	June 30
12	35	\$5,198,499	\$5,890,088	June 30
13	30	\$7,370,066	\$10,397,111	December 31
14	27	\$4,458,777	\$4,861,920	December 31
15	26	\$10,216,386	\$13,132,189	December 31
16	24	\$10,532,000	\$13,220,000	December 31
17	23	\$11,501,000	\$13,910,000	December 31
18	23	\$9,081,218	\$13,430,463	December 31
19	23	\$4,916,815	\$8,253,201	December 31
20	22	\$3,932,963	\$4,612,051	December 31
21	15	\$2,346,544	\$2,550,780	June 30
22	10	\$7,653,326	\$9,115,093	December 31
23	20	\$4,097,000	\$4,774,000	December 31
24	12	\$2,910,118	\$3,311,063	December 31
25	12	\$3,978,564	\$8,861,351	December 31
1,038		\$ 222,370,814	\$291,538,040	

NOTE:

1. Not-for-Profit Health Systems with publicly available financial statements are included.
2. The initial "sizing" of health systems was defined by number of hospitals.
3. N = 25.
4. Dollars displayed in 000s.

DEMOGRAPHICS FOR THE 25 NOT-FOR-PROFIT HEALTH SYSTEMS INCLUDED IN THIS ANALYSIS

Whereas this analysis includes only 25 health systems, it covers a significant part of the U.S. health system because of the size and scale of these organizations.

- Out of all 6,093 hospitals in the U.S., 49% (2,960) are non-government, not-for-profit community hospitals ⁽¹⁾.
- The top 25 largest not-for-profit health systems included in this analysis jointly own more than 1,000 hospitals, representing roughly a third of all non-profit hospitals.
- All U.S. health systems together account for more than \$1,2T in OpEx ⁽¹⁾. This analysis covers roughly one quarter of that.









⁽¹⁾ Source: <https://www.aha.org/statistics/fast-facts-us-hospitals>, accessed June 6th, 2022. Data from the 2020 AHA Annual Survey. *AHA Hospital Statistics, 2022 Edition*

PERFORMANCE METRICS

The metrics reported in publicly available financial statements with the most overlap across the health systems, are detailed below along with their sample size, N (out of the 25 health systems):

1. NET PATIENT REVENUE, NPR (in \$ per Q, N = 25) Revenue collected from paid medical bills.
2. TOTAL OPERATING EXPENSES (in \$ per Q, N = 25)
Operating expenses as part of care delivery, incl. salaries/benefits, medical supplies, interest and depreciation on buildings and equipment.
3. OPERATING INCOME (in \$ per Q, N = 25)
Total operating revenue (incl. net patient revenue/NPR, 340B profits, CARES relief funds, grants and contracts) minus Total operating expenses.
4. DISCHARGES (patients per quarter, N = 22)
Total number of patients released from the hospital in the quarter period.
5. PATIENT DAYS (patients per quarter, N = 21)
Total number of patients (daily census) occupying beds for all days in the quarter period.
6. LENGTH OF STAY (average number of days in the quarter, N = 21)
Average length of an inpatient episode of care from day of admission to discharge in the quarter period (Patient days/Discharges).
7. SURGERIES (surgeries per quarter, N = 14)
Total number of inpatient surgeries, leading to at least one night in the hospital, in the quarter period.
8. EMERGENCY DEPARTMENT VISITS (N = 18)
Total number of emergency department visits in the quarter period.

RESULTS

	<p>NET PATIENT REVENUE</p>	<p>Decreased 2.7% from 2019 to 2020 Increased 14% from 2020 to 2021 In Q1 2022, 4.9% above pre-pandemic levels*, but 6.7% lower than in Q4 2021</p>
	<p>TOTAL OPERATING EXPENSE</p>	<p>Increased 5% from 2019 to 2020 Increased 8.9% from 2020 to 2021 In Q1 2022, 14% above pre-pandemic levels*, but 3.7% lower than in Q4 2021</p>
	<p>OPERATING INCOME <i>Note: CARES Act Funding included</i></p>	<p>Decreased 11% from 2019 to 2020 Increased 67% from 2020 to 2021 In Q1 2022, 1.9-fold below pre-pandemic levels*, and 4.5 percentage points per unit of Q4 2021 revenue</p>
	<p>DISCHARGES</p>	<p>Decreased 9% from 2019 to 2020 Increased 3.9% from 2020 to 2021 In Q1 2022, 10% below pre-pandemic levels*, and 4.9% lower than in Q4 2021</p>
	<p>PATIENT DAYS</p>	<p>Decreased 4.4% from 2019 to 2020 Increased 7% from 2020 to 2021 In Q1 2022, 4.9% above pre-pandemic levels*, but 3.1% lower than in Q4 2021</p>
	<p>LENGTH OF STAY</p>	<p>Decreased 6% from 2019 to 2020 Increased 4% from 2020 to 2021 In Q1 2022, 3/4 days above pre-pandemic levels*, and 2% above the length in Q4 2021</p>
	<p>SURGERIES</p>	<p>Decreased 12% from 2019 to 2020 Increased 13.8% from 2020 to 2021 In Q1 2022, 10% below pre-pandemic levels*, but 8% lower than in Q4 2021</p>
	<p>EMERGENCY ROOM VISITS</p>	<p>Decreased 18% from 2019 to 2020 Increased 10% from 2020 to 2021 In Q1 2022, 12% below pre-pandemic levels*, but 7% lower than in Q4 2021</p>

*Pre-pandemic level point of comparison: Q4 2019

Further details associated with each metric are provided on the following pages.

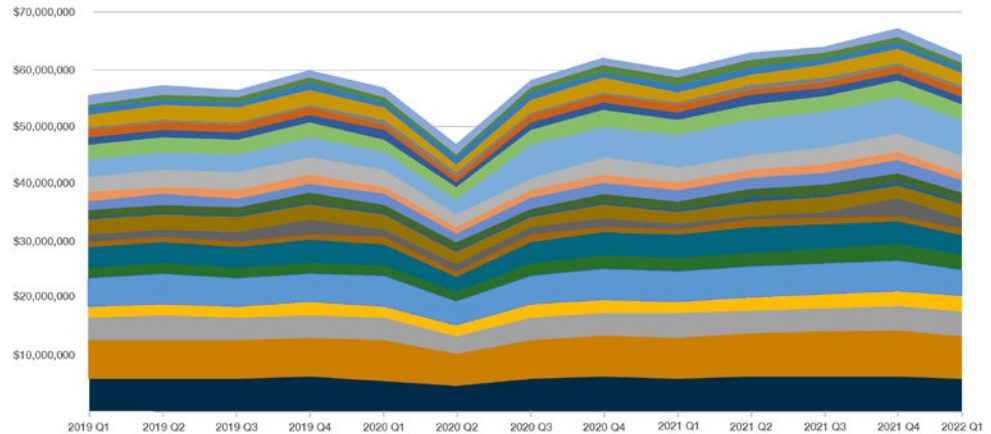


Key Insights and Trends: Net Patient Revenue

Net Patient Revenue (NPR) Accumulated Across Quarters from Q1 2019 Through Q1 2022

- N = 25 health systems (names blinded, the bandwidth of each layer represents the NPR of that system)
- NPR dropped 21.4% from Q4 2019 (pre-COVID benchmark) to Q2 2020 (effect lockdowns after the first COVID-19 winter surge).
- NPR increased with 43% from Q2 2020 to Q4 2021, and by that time is 12% higher than pre-COVID (Q4 2019).
- For the first time since Q2 2020, NPR decreased significantly in Q1 2022 with 24.3% from Q4 2021 on an annualized basis.

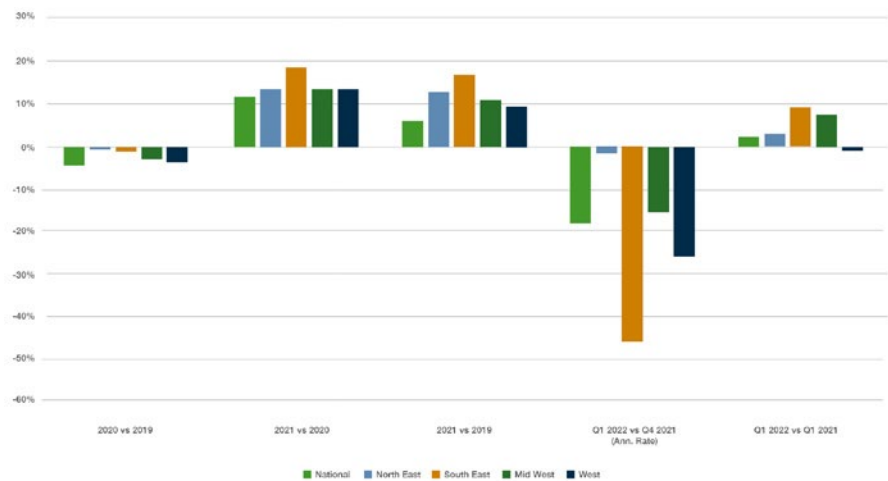
NET PATIENT REVENUE (NPR)



Rate of Change of Total Net Patient Revenue (NPR): 2019 – 2022

- N = 25 health systems National = nationwide systems
- NPR declined 1%-4% across the board between 2019 and 2020.
- NPR increased between 12% - 19% from 2020 to 2021, resulting in similar increases over the two years from 2019 to 2021.
- The annualized dip in NPR in Q1 2022 was notably profound in the Southeast (-48%), while NPR in Northeastern hospitals remained almost flat.
- Even so, Q1 2022 NPR in all U.S. regions, including the Southeast, was still higher than, or equal to the prior year NPR (Q1 2021).

% CHANGE IN NET PATIENT REVENUE (NPR)



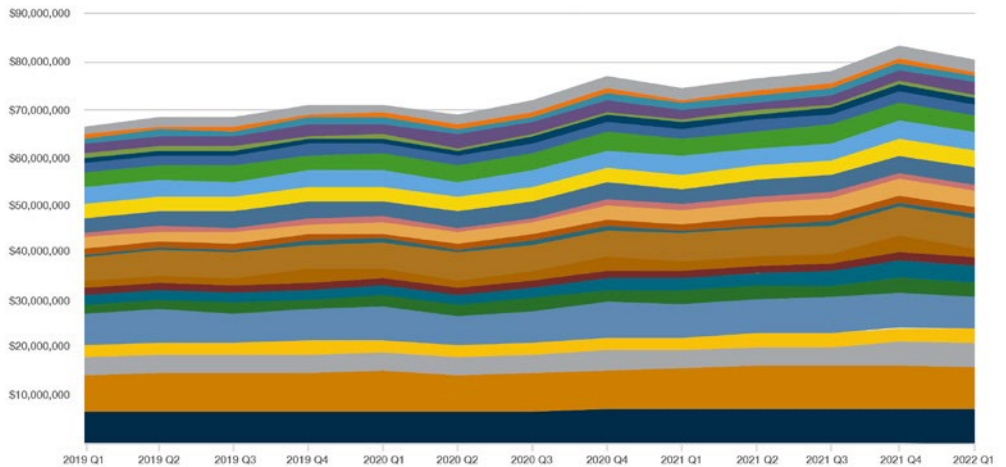


Key Insights and Trends: Total Operating Expense

Total Operating Expense Accumulated Across Quarters from Q1 2019 Through Q1 2022

- N = 25 health systems (names blinded, the band width of each layer represents the OpEx of that system)
- OpEx steadily increased since the start of 2019 up until Q4 2021, in particular over the last parts of 2020 and 2021.
- OpEx increased 5% from 2019 to 2020 and 8.9% from 2020 to 2021.
- Just like Q1 2021, Q1 2022 saw a decrease in expenses compared to the previous quarter (-13.9% on an annualized basis).
- During this time (Q4 2021 to Q1 2022), salaries, wages, and benefits decreased 6.1% (annualized), still an 19.3% rise from pre-pandemic levels (Q4 2019).

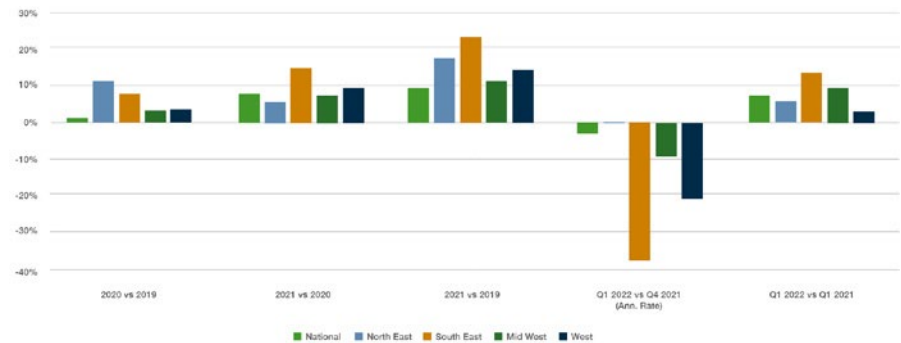
OPERATING EXPENSE



Rate of Change of Total Operating Expense (OpEx): 2019 – 2022

- N = 25 health systems National = nationwide systems
- OpEx increased 1-11% between 2019 and 2020, with the largest health systems experiencing the smallest increase (1%).
- OpEx increased 10%-24% from 2019 to 2021, but decreased in the first quarter of 2022, mainly in the Southeast (on annualized terms: -37%).
- Even so, Q1 2022 OpEx in all U.S. regions, including the Southeast, was higher than in the prior year (Q1 2021).

% CHANGE IN OPERATING EXPENSE (OPEX)



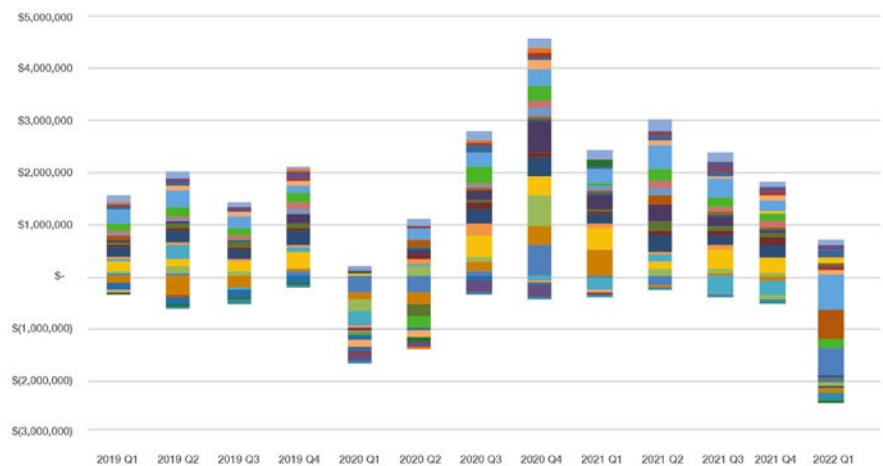


Key Insights and Trends: Operating Income

Total Operating Income by Quarter Q1 2019 Through Q1 2022

- N = 25 Health Systems (names blinded, each colored band represents a health system)
- Operating Income = Total Operating Revenue (incl. NPR) minus Total Operating Expenses
- Because of the dip in NPR in Q2 of 2020, Operating Income for not-for-profit hospital systems were down 11% in Q2 2020 compared to Q4 2019 (pre-pandemic level).
- NOTE that these data include CARES Act funding if and where accepted. Not-for-profit health systems in our analysis collectively received \$14.7B in relief funds, mainly recognized by the health systems at the end of 2020. 2021 also includes smaller portions. Therefore, the 68% increase in Operating Income from Q3 2020 to Q4 2020 is artificial.
- Since Q2 2021, there has been a downward trend, aggravated in Q1 2022, with a more than twofold decrease in operating income between Q4 2021 and Q1 2022.
- Notably, in Q1 2022 the spread in operating income among the 25 hospitals in our sample is wider with more hospitals losing larger amounts of operating income in that quarter. Indeed, for the first time since the height of the pandemic (Q1/Q2 2020) most hospitals lost money.

OPERATING INCOME



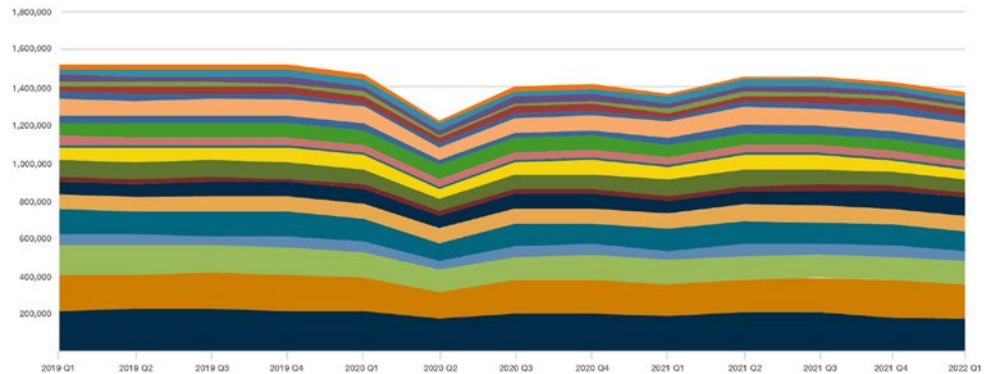


Key Insights and Trends: Discharges

Discharge Volume Across Quarters from Q1 2019 Through Q1 2022

- N = 22 Health Systems (names blinded; the bandwidth of each layer represents the number of discharges from that health system)
- From Q4 2019 to Q2 2020, discharges decreased 18%.
- Overall, discharges decreased 9% between 2019 and 2020, but increased again 3.9% from 2020 to 2021 with an overall decrease of 5.4%.
- In Q1 2022, discharges decreased further with an annualized rate of 17% compared to Q4 2021, to end almost 10% below pre pandemic levels (Q4 2019).

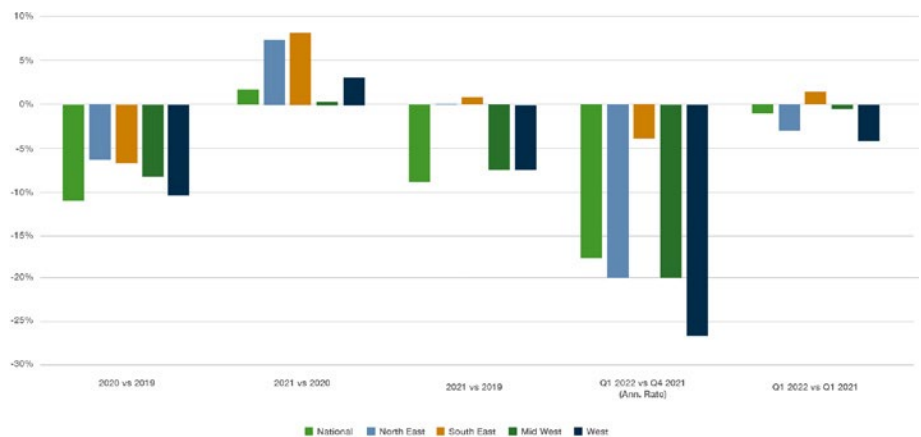
NUMBER OF DISCHARGES



Rate of Change of Total Discharge Volume: 2019 - 2022

- N=22 health systems
National = nationwide systems
- Discharges decreased 5-11% between 2019 and 2020, with the greatest decreases for the largest health systems and the West region (11%).
- Discharges increased (1%-8%) from 2020 to 2021: The Northeast and Southeast regions outperform other regions with 7% and 8% growth in discharge volume respectively.
- However, discharges decrease again across the board (4%-27%), least so in the Southeast, comparing Q1 2022 to Q4 2021 on an annualized basis.
- Compared to the previous year, the number of discharges in Q1 2022 remained more or less stable (-4.3% to 1.5%).

% CHANGE DISCHARGES



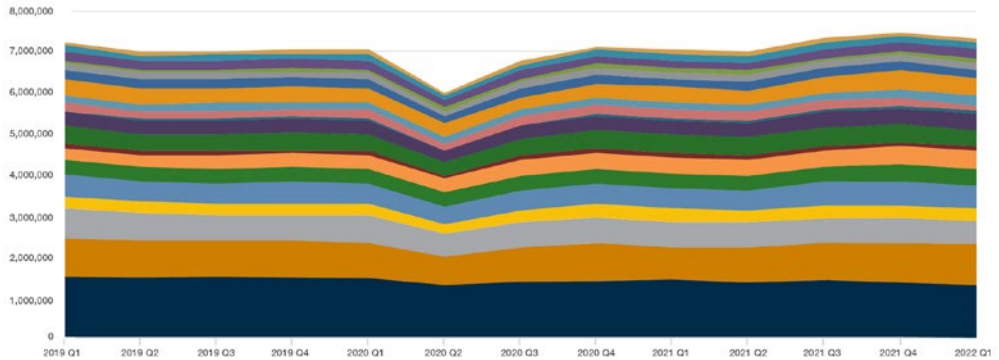


Key Insights and Trends: Patient Days

Total Patient Days by Quarter Across Q1 2019 Through Q1 2022

- N = 20 health systems (names blinded; the band width of each layer represents the number of patient days for that system).
- Patient days decreased 13% from Q4 2019 to Q2 2020 and 4% overall from 2019 to 2020.
- Patient days increased 7% from 2020 to 2021, but decreased in the first quarter thereafter (12% on an annualized basis).
- A decline in both discharges and patient days are indicative of renewed holds on elective surgeries and lower (non-COVID related) hospital admissions overall.

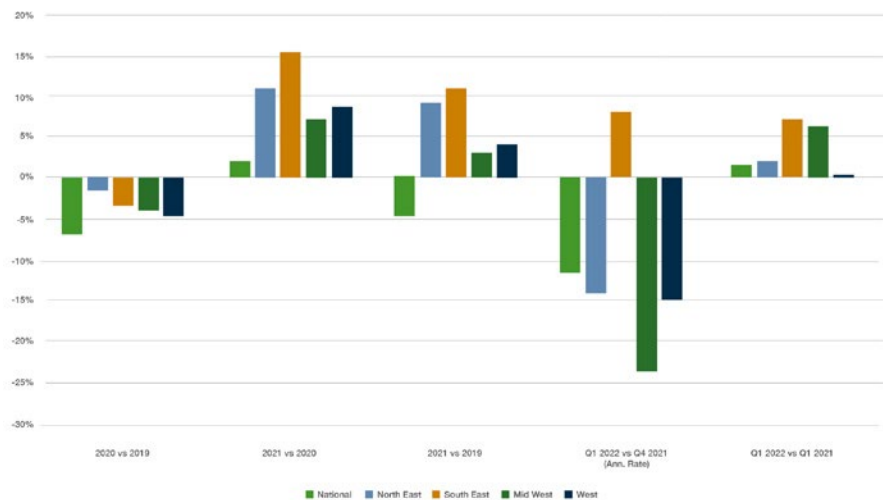
NUMBER OF PATIENT DAYS



Rate of Change of Total Patient Days: 2019 - 2022

- N = 20 health systems National = nationwide systems
- Patient days decreased 1%-7% between 2019 and 2020, with the largest health systems experiencing the most decrease.
- From 2020 to 2021, patient days increased 2% - 15%.
- On an annualized basis, Q1 2022 results show reductions in the number of patient days in all U.S. regions (12%-24%), except in the Southeast where patient days increased (8.5%). Combined with a relatively stable number of discharges, compared to other regions, this shows patients in Southeastern hospitals were sicker, likely related to COVID-19.
- Year over year (Q1 2022 vs Q1 2021), the number of patient days increased in all regions or remained stable (0-7%).

% CHANGE PATIENT DAYS



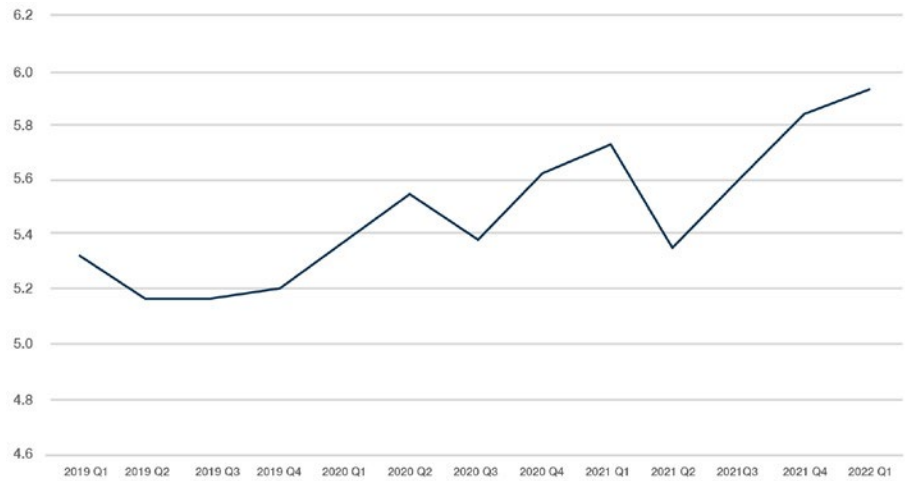


Key Insights and Trends: Length of Stay

Length of Stay per Quarter (Average Across Entire Data Set)

- N = 20 Health systems
- The length of stay increased 6% from 2019 to 2020, and 4% from 2020 to 2021.
- In Q1 2022, the total length of stay, albeit growing at a slower pace than in previous two quarters, was almost three quarters of a day longer than before the pandemic (Q4 2019), reflecting a higher acuity of patients in the COVID-19 pandemic and staffing shortages.
- On an annualized basis, the length of stay increased by 7.7% in the last quarter (Q1 2022).

DAYS



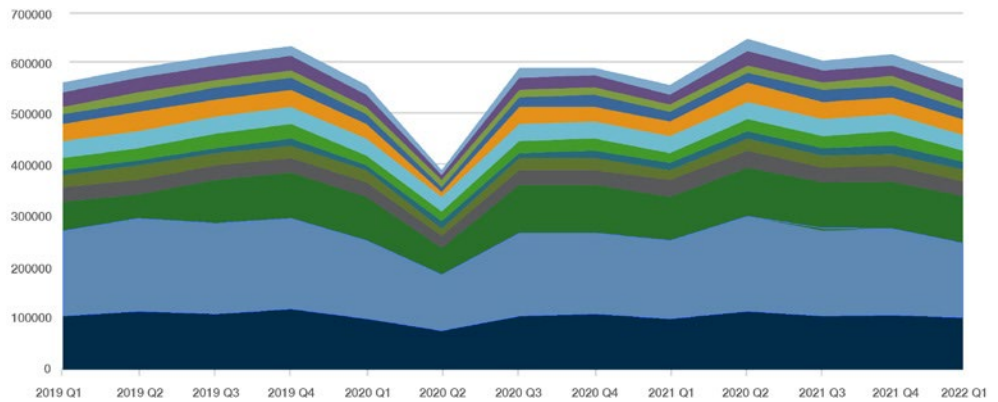


Key Insights and Trends: Surgeries

Total Surgery Volume by Quarter Across Q1 2019 Through Q1 2022

- N = 13 Health systems (names blinded; the band width of each layer represents the number of surgeries for that system)
- Surgeries decreased 38% between Q4 2019 and Q2 2020, and 12% overall between 2019 and 2020.
- Surgeries rebounded in 2021, increasing almost 14% between 2020 and 2021.
- While surgeries decreased both in Q1 2021 and in Q1 2022, the annualized decrease in Q1 2022 exceeded the one in Q1 2021 by almost 6% (Q1 2021: 22.6%; Q1 2022: 28.4%).

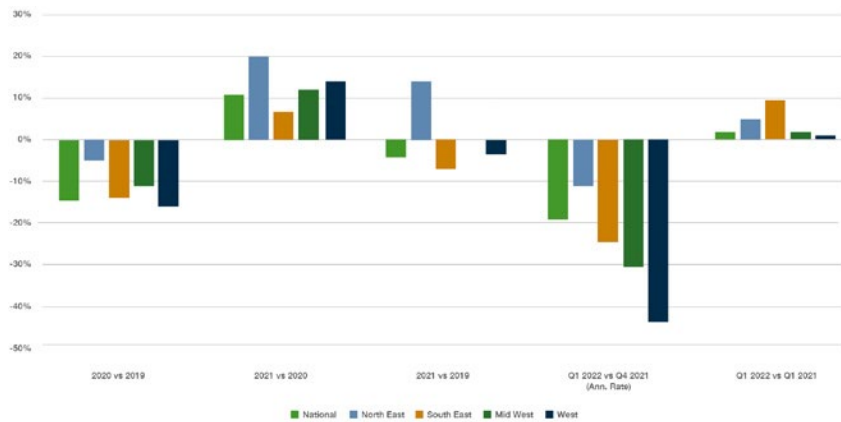
NUMBER OF SURGERIES



Rate of Change of Total Surgery Volumes: 2019 – 2022

- N=13 health systems
National = nationwide systems
- Surgeries decreased 5%-16% across the board from 2019 to 2020, with the Northeast experiencing the smallest decrease.
- 2020 to 2021 saw a rebound in surgeries across all regions, ranging from 7%-20%.
- Over the first two pandemic years, 2020-2021, surgery volume in the Northeast appeared most resilient.
- During the Omicron surge (Q1 2022), with elective surgeries again postponed, surgery volume drastically decreased across the U.S. (12%-44% on an annualized basis), with the Northeast again, least affected.

% CHANGE SURGERIES



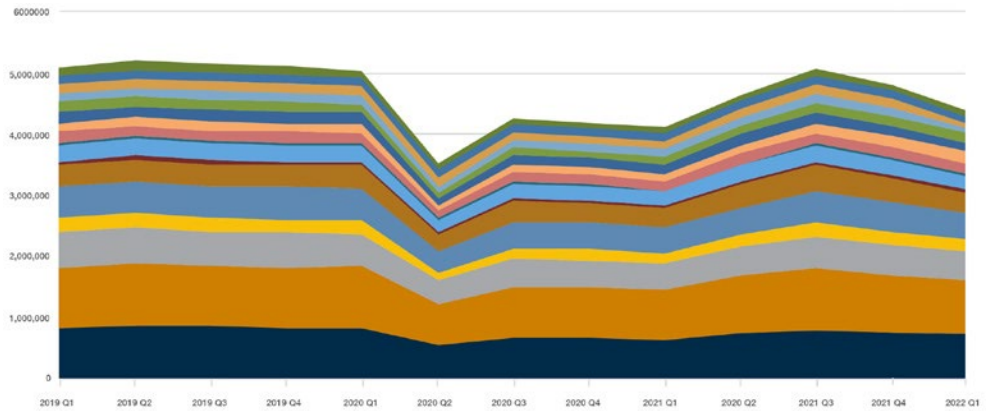


Key Insights And Trends: Emergency Room Visits

Total Emergency Room Visits by Quarter Across Q1 2019 Through Q4 2022

- N = 17 Health systems (names blinded: the band width of each layer represents the number of emergency room visits at that system)
- Emergency room visits decreased 31% from Q4 2019 to Q2 2020, and 18% overall from 2019 to 2020.
- In Q3 2021, emergency room visits peaked to almost pre-COVID-19 levels, but only to decline again in the subsequent two quarters, with 23% on an annualized basis.
- In Q1 2022, emergency visits were only 80% of what they were before the COVID-19 Pandemic.

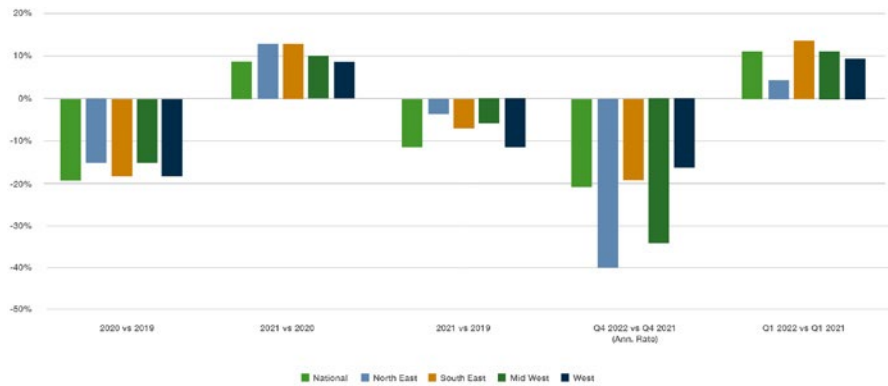
NUMBER OF EMERGENCY ROOM VISITS



Rate of Change of Total Emergency Visits: 2019 - 2021

- N = 17 health systems
- National = nationwide systems
- Emergency visits decreased 15%-19% across the board between 2019 and 2020.
- Emergency visits increased 8%-13% across all regions from 2020 to 2021, but this increase did not make up for previous volume losses.
- The first quarter of 2022 saw again large drops in the number of emergency visits, mostly in the Northeast and the West (17%-40% on an annualized basis).
- However, year-over-year (Q1 2021 to Q1 2022), emergency visits continued their come-back.

% CHANGE EMERGENCY VISITS



Conclusion

Omicron marked a new phase for U.S. hospitals in dealing with the COVID-19 pandemic. In the previous two years, hospitals have been able to moderate their financial losses with federal grants under the CARES Act. CARES Act grants, however, were not meant to continue indefinitely. From the first quarter of 2022 onwards, with decreasing revenue and high expenses compared to the pre-pandemic era, many not-for-profit health systems fell into the red and will likely remain so for the foreseeable future. Elevated operating expenses, importantly defined by staffing problems and the market opportunities seized by contract labor companies, will continue to be a problem for U.S. hospitals. On its merit, Omicron did continue to increase our collective immunity to COVID-19 from vaccinations and prior COVID-19 infections. The emergence of new variants, however, and the low uptake in COVID-19 “booster” shots, will challenge that collective immunity. Still, COVID-19 related hospitalizations were never as high as in Q1 2022, and likely hospitals can count on a more predictive COVID-19 future going forward, hopefully with fewer COVID-19 admissions as new variants and “waves” emerge.



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