



HEALTHCARE INDUSTRY GROUP

BAROMETER OF THE POST-COVID HEALTHCARE ECONOMY

Update: Q2 – Q3 2022



ALVAREZ & MARSAL
LEADERSHIP. ACTION. RESULTS.™

Executive Summary

INTRODUCTION AND OBJECTIVE

Alvarez & Marsal's (A&M) Healthcare Industry Group 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 Q1 2022. In this report, we have aggregated the Q2 and Q3 2022 data and provide a detailed analysis. The timeframe ends with a subsiding wave of Omicron-BA variants, and the introduction of bi-valent COVID-19 vaccines. This report contains executable insights for healthcare leaders, investors and lenders, as they continue to navigate the changes and evolutions of the post-COVID-19 healthcare environment.

SUMMARY OF TRENDS

Q3 2022 ended on the tail of the most subdued and protracted surge of COVID-19 we had seen in the previous two years of the pandemic. Nevertheless, the highly transmittable stealth variant of Omicron, Omicron-BA.2, was reason to restrict elective cases in some areas in the Northeast deep into Q2 (May) 2022. COVID-19 was not the only infectious disease that factored into the time period we cover in this report. In September 2022, cases of another respiratory virus, the respiratory syncytial virus (RSV), surged much earlier in the year as we normally experience. RSV would usher in a new pandemic variety: the triple-demic, consisting of surges in COVID-19, RSV and influenza in the same time frame. With the flu coming up only in October 2022, this triple-demic is mostly a hallmark of Q4 2022 and its effect will be analyzed in our next report, update Q4 2022.

Number of positive RSV tests

Cases of RSV stayed much higher than normal over the summer of 2022 and surged in September and October.

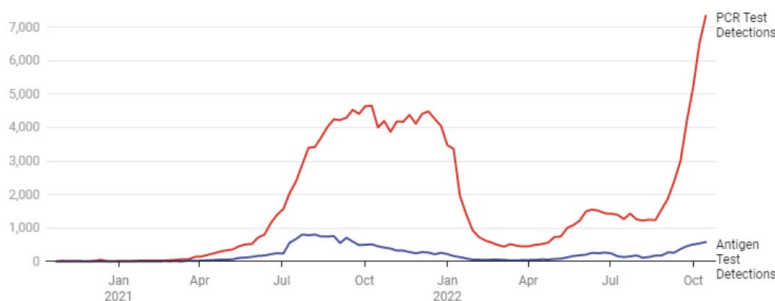
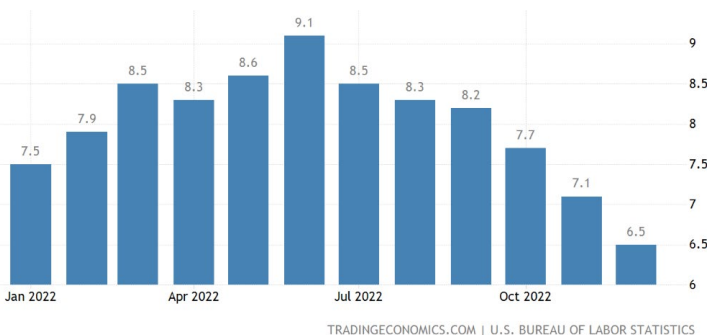


Chart: The Conversation CC-BY-ND. Source: Centers for Disease Control and Prevention

Significant inflationary pressures in Q2 and Q3, impacting labor and supply costs, added to financial distress and reduced operating margins during the second and third quarter of 2022. The annual inflation rate in the U.S. topped in June 2022 at 9.1%. It followed readings of 8.3% and 8.6% in April and May 2022, the highest seen since the mid-1980s. Only by the end of Q4 2022 would inflation slightly moderate. The hospital metrics we present in this report should be seen against the background of developments in U.S. society at large, described above.



More specific to the hospital industry, -- as is reflected in our analysis of operating income --, labor shortages, supply-chain disruptions and lower volumes in profitable service lines, continued to influence hospital financial performance throughout Q3 2022. Operating Income in Q3 2022 for hospital systems in this report was about one fifth of what it was in pre-pandemic periods. Reduced operating income for not-for-profit hospitals, accompanied by significant decreases in median days cash on hand, contrasted with that of some for-profit hospitals which saw operating margins exceeding pre-pandemic performance at least through Q3 2022 for some systems [1].

Operating Income is Total Operating Revenue (including Net Patient Revenue (NPR)) minus Operating Expenses, including Salaries, Wages & Benefits (SWB). In Q3 2022, we witnessed an increase in expenses of 17% above pre-pandemic levels for the not-for-profit hospitals in our sample, due to the pressures on supplies and the labor markets. Furthermore, NPR was not at a level that would have been predicted in the absence of the COVID-19 pandemic. Even though NPR was able to catch up in Q2 and Q3 2022 after dipping with the first Omicron surge in Q1 2022, hospital revenues continued to be constrained by COVID-19's effect on patient volumes and investment losses from declining stock markets. But unlike the first Omicron surge, the smaller Omicron-BA.2 wave no longer seemed to have a depressing effect on NPR, based on Q3 2022 NPR levels.

SWB is typically the largest input of hospital Operating Expenses. While Operating Expenses continue to climb, mostly in the Southeast, we saw a stabilization in SWB after Q4 2021 when hospitals braced themselves for the first Omicron surge. Throughout Q2 and Q3 2022, resources spent on SWB by nationwide systems and hospitals located in the Western region decreased slightly, by a few percentage points, which provided some hopeful signals for many labor markets that depend too heavily on inconsistent, unpredictable and expensive contract labor.

Volume metrics (Discharges, Total Patient Days, Surgery Volume and ED visits) showed a return to previous year levels, Q3 2021, (for: Discharges; Surgery Volume; ED visits) or pre-COVID, Q4 2019, (for: Patient Days) volumes, when Omicron was not yet circulating in the U.S. In Q3 2022, all volume metrics showed an upward trend, or remained stable in the case of surgeries, and it remains to be seen if those trends keep up or stabilize further in the quarters following. There is reason to be optimistic because we do know that major disruptions from COVID-19 have not returned since the aftermath of the first Omicron surge, with growing immunity among the population through vaccination or prior infection. For example, the dip in surgery volume in Q1 2022 was directly related to that Omicron wave, while the Omicron BA.2 has not had a similar, depressing effect on surgery procedures in Q3 2022. In addition, the reduction in Length Of Stay in Q2 2022 suggests that hospitals now have a better grip on the new normal. A question remains, however, on why surgery volumes and discharges stay well below pre-pandemic levels (6% and 7% respectively) now that the acute phase of the pandemic seems over? Changing clinical patterns, patient factors including patient preferences and patient hardship (having to pay for (part of) their care out-of-pocket), and reductions in unnecessary medical interventions are likely all playing a role in these decreased volumes. Going forward, in addition to reducing their costs by enhancing operational efficiency and price-awareness, acute care hospitals will need to reduce patient attrition through improvements in access for new patients and in handling referrals. Eventually, some hospitals may need to "right size" and tailor their perioperative departments to optimize for the volume they do have. With value-based contracts and payment arrangements likely to increase at most hospital systems, the profitability of care will need to be judged based on total episodes, from diagnosis to non-invasive therapy and rehabilitation.

[1] Operating margins among the largest for-profit health systems have exceeded 2019 levels for the majority of the COVID-19 pandemic. Hulver S., Levinson Z., Godwin J. KFF. Dec 5th, 2022.

By the numbers:

- **NET PATIENT REVENUE:** increased 2.1% from Q3 2021 to Q3 2022 and ended 10% above pre-pandemic levels*.
- **SALARIES, WAGES, AND BENEFITS:** increased 6.2% from Q3 2021 to Q3 2022 and stabilized at 19% above pre-pandemic levels*.
- **TOTAL OPERATING EXPENSE:** increased 6.1% from Q3 2021 to Q3 2022 and remained 17% below pre-pandemic levels*.
- **OPERATING INCOME:** decreased 83% from Q3 2021 to Q3 2022 and was 18% of operating income in pre-pandemic times*.
- **DISCHARGES:** decreased 3.2% from Q3 2021 to Q3 2022 but remained 7.1% below pre-pandemic levels*.
- **PATIENT DAYS:** decreased 3.5% from Q3 2021 to Q3 2022 and came back to pre-pandemic level* in Q3 2022.
- **LENGTH OF STAY:** after a peak in Q4 2021, came back in Q3 2022 to the same level as in Q3 2021, almost half a day longer than before the pandemic.
- **SURGERIES:** increased 0.5% from Q3 2021 to Q3 2022 and ended 5.8% below pre-pandemic levels*.
- **EMERGENCY ROOM VISITS:** decreased 1.2% from Q3 2021 to Q3 2022 and ended only 1.7% lower than pre-pandemic volumes.

*pre-pandemic level point of comparison with last data point in our analysis (Q3 2022): 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 U.S. 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.

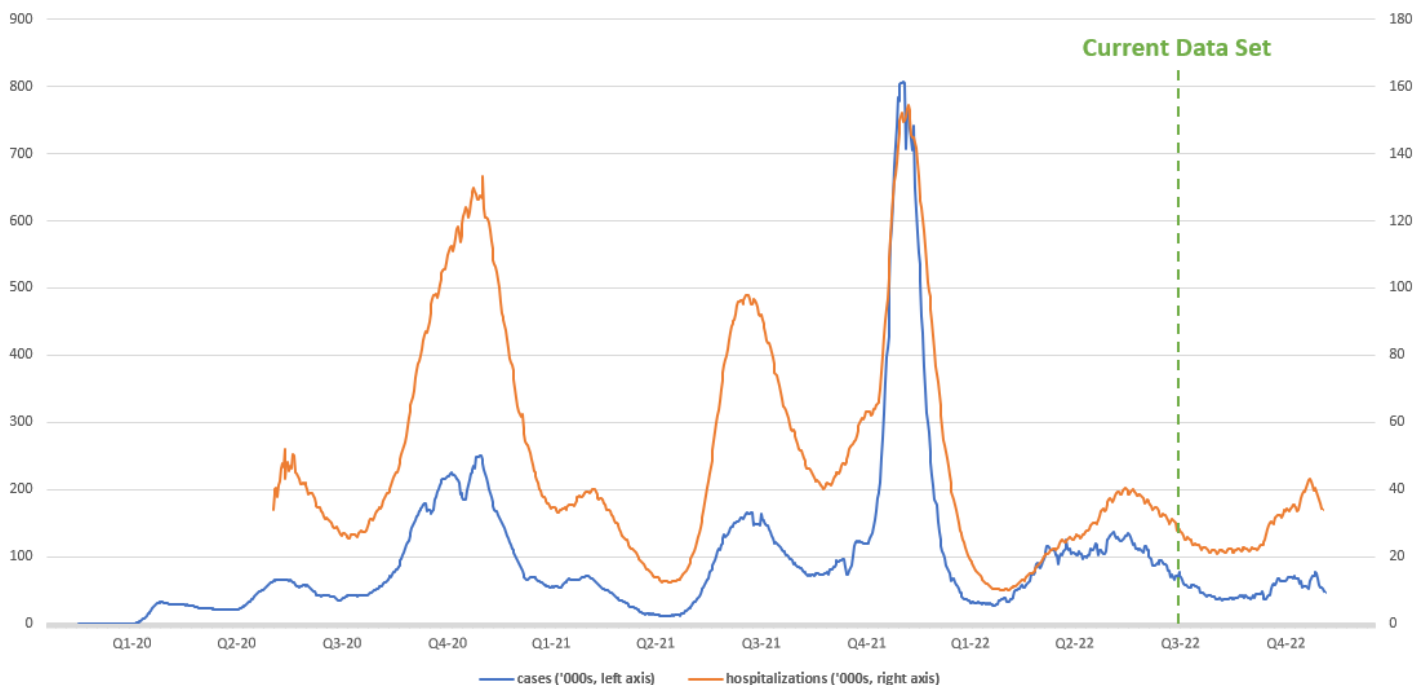
⁽¹⁾ Source: <https://www.aha.org/statistics/fast-facts-us-hospitals>, accessed June 6th, 2022. Data from the 2020 AHA Annual Survey. *AHA Hospital Statistics, 2022 Edition*

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 Q3 2022, when the authorization of bivalent COVID-19 boosters gave people something in hand to prepare for the winter. To summarize:

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



Source: www.ourworldindata.org

Q3 2022:

- In Q3 2022, cases and hospitalizations went down, prompting President Biden to suggest that the COVID-19 Pandemic is over. His remarks encounter backlash from experts and the public.
- COVID-19 related deaths continue to hover around 500 deaths per day.
- At the end of August, the FDA authorized bi-valent COVID-19 booster shots, targeting both classic COVID-19 and the Omicron-BA.4/5 subvariant that rose into dominance over the summer to be given to anyone 12 years (Pfizer) or 18 years (Moderna) and older who had completed their primary series or most recent COVID-19 booster with the old shots at least two months prior. In the meantime, new and more immune-evasive Omicron variants like BA.2.75.2 continue to present themselves.

Q2 2022:

- Just as hospitalizations for COVID-19 saw an all-time low early in Q2 2022, Omicron-BA.2 caused a COVID-19 surge in the North-east at the end of April 2022, only to spread out over the country afterwards.
- Immunity through vaccinations and previous infections proved protective, and by June 2022 it became clear the wave of cases was

about to top, with hospitalizations typically following right after.

- In mid-June, the FDA granted emergency authorization for COVID-19 vaccines (Pfizer, Moderna) to be given to children from the age of 6 months onwards.

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.

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.

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.

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.

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.

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.

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.

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.

The Healthcare Economy: Detailed Report Updated Through Q3 2022

OBJECTIVE

Alvarez & Marsal's (A&M) Healthcare Industry Group 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 Q3 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 Q3 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. **SALARIES, WAGES AND BENEFITS** (in \$ per Q, N=25)
Accumulated SWB including bonuses, incentive earnings and paid leaves.
3. **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.
4. **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.
5. **DISCHARGES** (patients per quarter, N = 22)
Total number of patients released from the hospital in the quarter period.
6. **PATIENT DAYS** (patients per quarter, N = 21)
Total number of patients (daily census) occupying beds for all days in the quarter period.
7. **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).
8. **SURGERIES** (surgeries per quarter, N = 14)
Total number of inpatient surgeries, leading to at least one night in the hospital, in the quarter period.
9. **EMERGENCY DEPARTMENT VISITS** (N = 18)
Total number of emergency department visits in the quarter period.

RESULTS

	NET PATIENT REVENUE	<p>Decreased 2.7% from 2019 to 2020 Increased 14% from 2020 to 2021 In Q3 2022, 10% above pre-pandemic levels*, and 2.1% higher than in Q3 2021</p>
	SALARIES, WAGES AND BENEFITS	<p>Increased 4.6% from 2019 to 2020 Increased 9.2% from 2020 to 2021 In Q3 2022, 19% above pre-pandemic levels*, and 6.2% higher than in Q3 2021.</p>
	TOTAL OPERATING EXPENSE	<p>Increased 5.1% from 2019 to 2020 Increased 8.9% from 2020 to 2021 In Q3 2022, 17% above pre-pandemic levels*, and 6.1% higher than in Q3 2021</p>
	OPERATING INCOME <i>Note: CARES Act Funding included</i>	<p>Decreased 11% from 2019 to 2020 Increased 67% from 2020 to 2021 (<i>incl. CARES Act Funding</i>) In Q3 2022, 82% below pre-pandemic levels*, and 83% lower than in Q3 2021</p>
	DISCHARGES	<p>Decreased 8.8% from 2019 to 2020 Increased 3.8% from 2020 to 2021 In Q3 2022, 7.1% below pre-pandemic levels*, and 3.2% lower than in Q3 2021</p>
	PATIENT DAYS	<p>Decreased 4.2% from 2019 to 2020 Increased 7.5% from 2020 to 2021 In Q3 2022, at pre-pandemic level*, but 3.5% lower than in Q3 2021</p>
	LENGTH OF STAY	<p>Decreased 5.3% from 2019 to 2020 Increased 3.1% from 2020 to 2021 In Q3 2022, 0.4 days above pre-pandemic levels*, and as long as in Q3 2021</p>
	SURGERIES	<p>Decreased 11% from 2019 to 2020 Increased 13% from 2020 to 2021 In Q3 2022, 5.8% below pre-pandemic levels*, and 0.5% lower than in Q3 2021</p>
	EMERGENCY ROOM VISITS	<p>Decreased 17% from 2019 to 2020 Increased 10% from 2020 to 2021 In Q3 2022, 1.7% below pre-pandemic levels*, and 1.2% lower than in Q3 2021</p>

*Pre-pandemic level point of comparison: Q4 2019

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

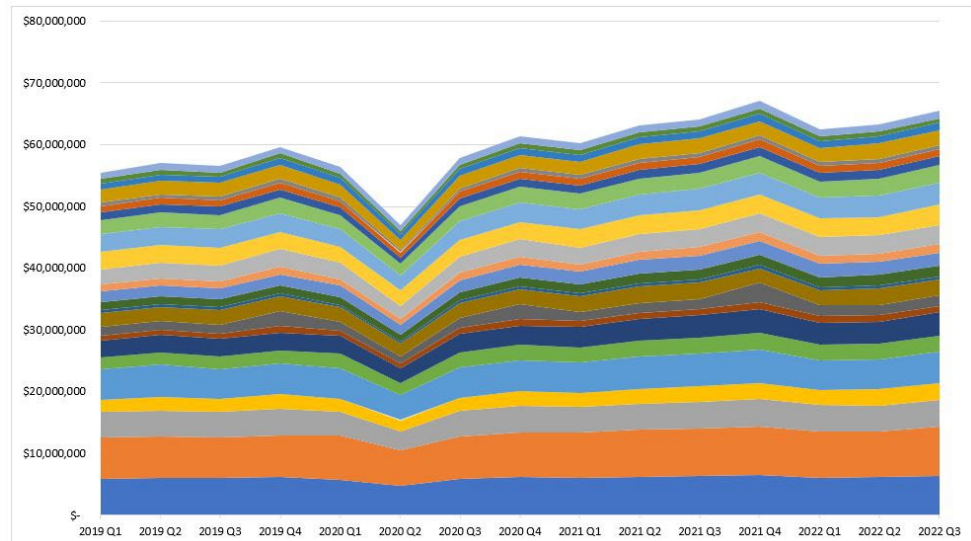


Key Insights and Trends: Net Patient Revenue

Net Patient Revenue (NPR) Accumulated Across Quarters from Q1 2019 Through Q3 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 an all-time high in Q4 2021, 12% higher than pre-COVID (Q4 2019).
- After dipping in Q1 2022, NPR recuperated over the next two quarters, ending in Q3 2022 very close to the Q3 level of the previous year (2.1% increase from Q3 2021 to Q3 2022), still 9.8% higher than pre-COVID (Q4 2019)

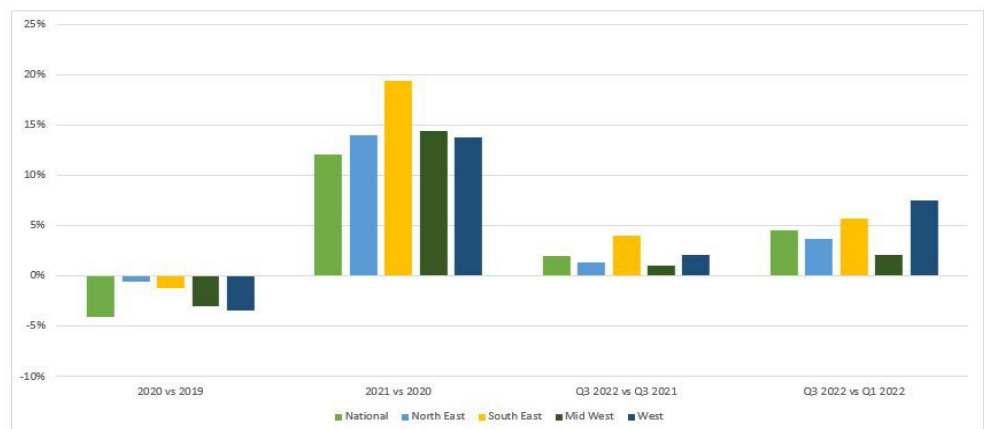
NET PATIENT REVENUE (NPR)



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.
- In Q3 2022, with a year-over-year increase of 1% to 4% across the U.S. from the year before, NPR had hardly changed.
- The NPR catch up in Q2 2022 and Q3 2022 played out across the U.S. (2%-7%), mostly so in the Western region.

% CHANGE IN NET PATIENT REVENUE (NPR)



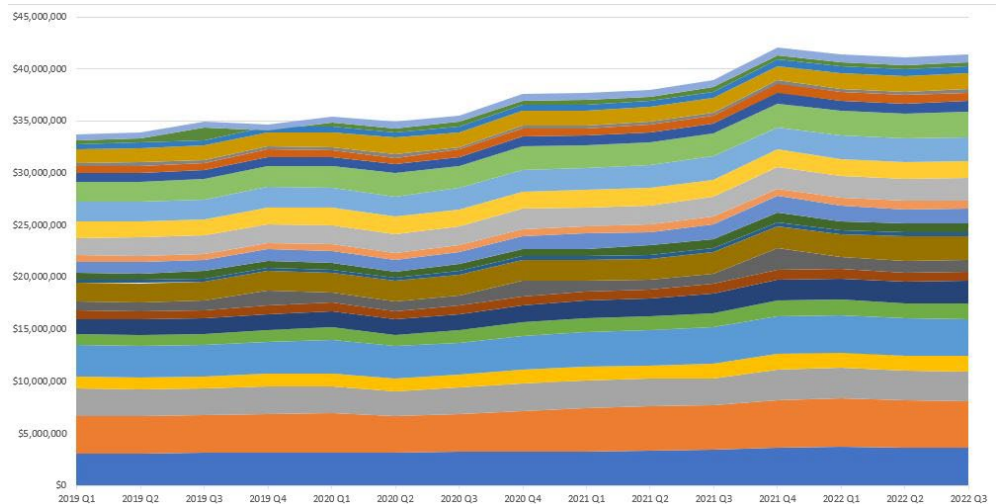


Key Insights and Trends: Salaries, Wages, and Benefits

Salaries, Wages, and Benefits (SWB) Accumulated Across Quarters from Q1 2019 Through Q3 2022

- N = 25 health systems (names blinded, the bandwidth of each layer represents the SWB of that system)
- SWB increased 4.6% from 2019 to 2020.
- SWB remained on the same growth curve until Q3 2021, continuing on a steeper slope in Q4 2021 – it resulted in a higher year-over-year increase from 2020 to 2021 of 9.2%.
- SWB stabilized in the three subsequent quarters at that higher level, ending only 1.5% lower in Q3 2022 from the peak in Q4 2021.

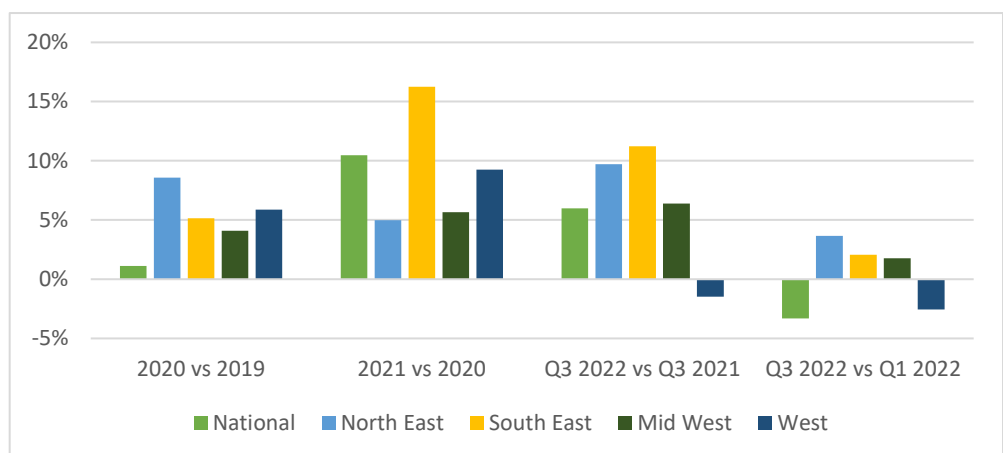
SALARIES, WAGES, AND BENEFITS (SWB)



Total Change in Salaries, Wages, and Benefits (SWB): 2019 – 2022

- N = 25 health systems; National = nationwide systems
- Salaries, Wages, & Benefits (SWB) increase across all regions from 2019 to 2020 and 2020 to 2021 (range: 1% - 16% per year)
- The stabilization after Q4 2021 was visible in all U.S. regions with remarkable decreases in SWB for the largest hospital systems (3.3%) and the Western region (2.5%) from Q1 2022 to Q3 2022. Increases in other regions were modest (1.8%-3.7%)

% CHANGE IN SALARIES, WAGES, AND BENEFITS (SWB)



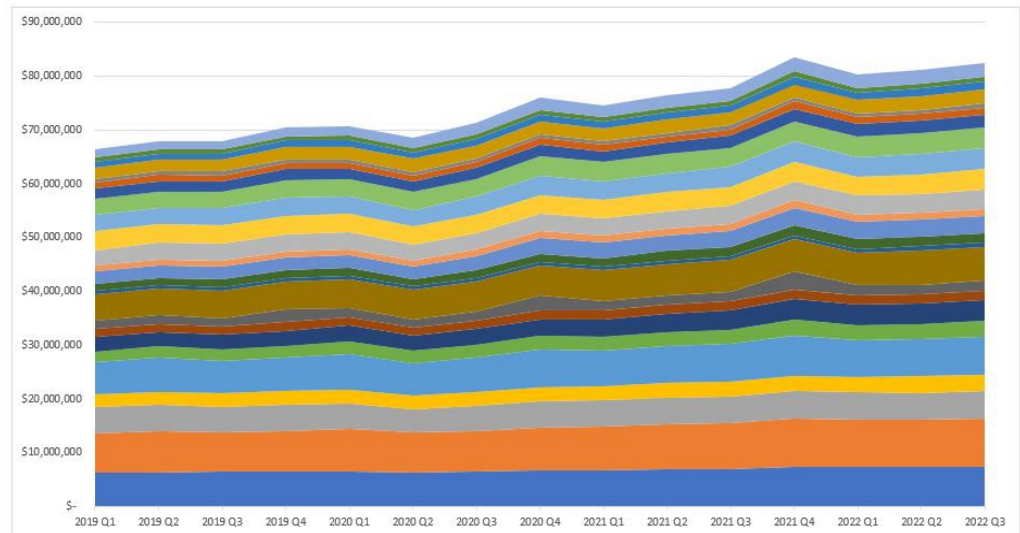


Key Insights and Trends: Total Operating Expense

Total Operating Expense Accumulated Across Quarters from Q1 2019 Through Q3 2022

- N = 25 health systems (names blinded, the bandwidth of each layer represents the total OPEX of that system).
- OpEx increased 5.1% 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 (-8% and -14.7% respectively on an annualized basis).
- Growth in OPEX from Q1 2022 to Q3 2022 picked up the same pace as in 2021 after the Q1 dip, with Q3 ending 17% higher than pre-pandemic (Q4 2019).

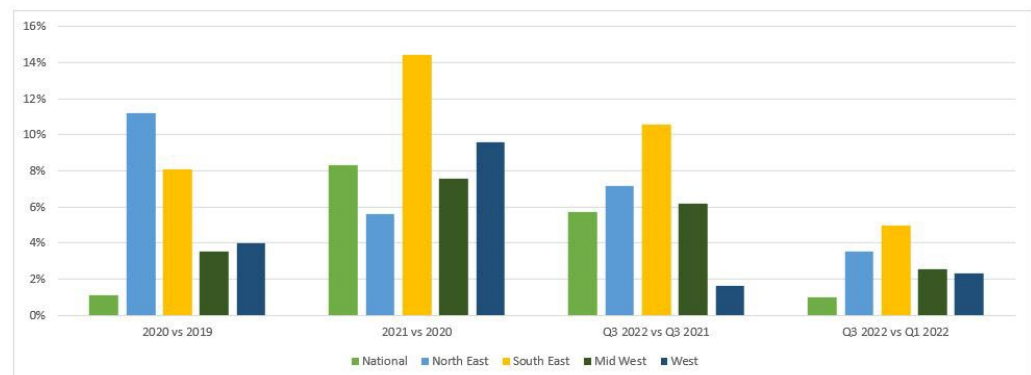
TOTAL OPERATING EXPENSE (OPEX)



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.
- OpEx increased 6%-14% from 2020 to 2021, with the highest increases in the Southeast.
- From Q1 2022 to Q3 2022, OpEx grew with 5.4% on annualized terms, again mostly in the Southeast.

% CHANGE IN OPERATING EXPENSE (OpEx)



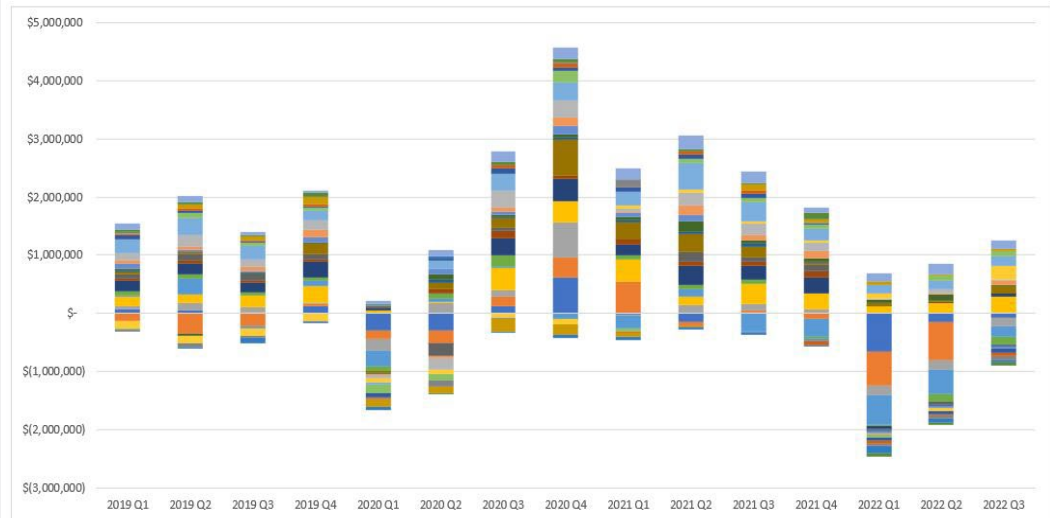


Key Insights and Trends: Operating Income

Total Operating Income by Quarter Q1 2019 Through Q3 2022

- N = 25 Health Systems (names blinded, each colored band represents a health system)
- These data include a total of \$14.7B in CARES Act funding collectively accepted by the not-for-profit health systems in our analysis. The relief funds were mainly recognized in Q4 2020, with smaller portions in the beginning of 2021.
- Operating Income for not-for-profit hospital systems was down 1.2 fold Q2 2020 compared to Q4 2019 (pre-pandemic level), in part due to the dip in NPR in Q2 2020.
- Q4 2020 saw an artificial increase (68% from Q3 2020) in Operating Income as a result of CARES Act funding.
- From Q2 2021 to Q1 2022, there was a downward trend, with a more than two-fold decrease in operating income between Q4 2021 and Q1 2022 and most hospitals losing money.
- Improvement came gradually for at least half of the hospital systems in our sample, with total operating income becoming narrowly positive again in Q3 2022 (Total Operating Income \$353,450).

OPERATING INCOME



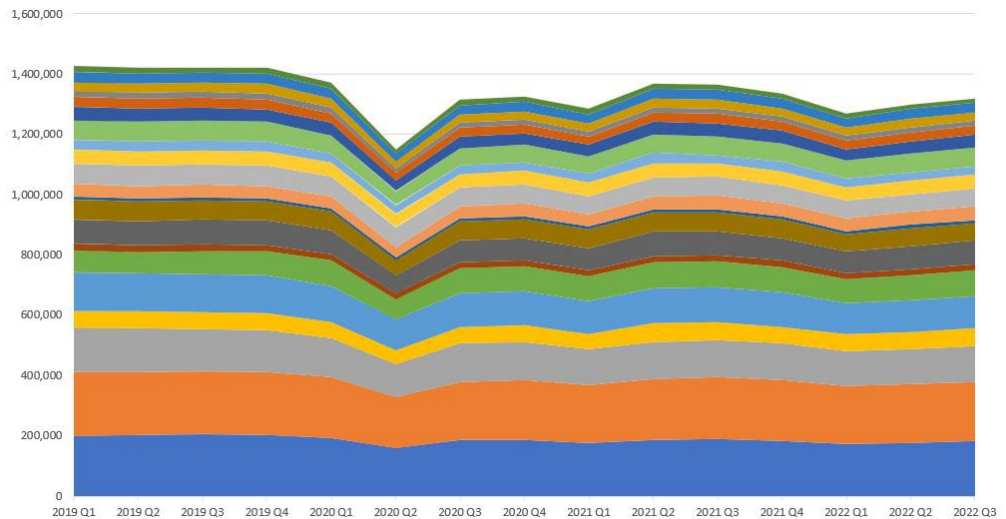


Key Insights and Trends: Discharges

Discharge Volume Across Quarters from Q1 2019 Through Q3 2022

- N = 21 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%.
- Year-over-year, discharges decreased 8.8% from 2019 to 2020. The decrease was made up for in part by an increase of 3.8% from 2020 to 2021, leading to overall decrease of 5.3% between 2019 and 2021.
- In Q3 2022, discharges had returned to previous year levels (-3.2% compared to Q3 2021), still 7.1% below pre-pandemic levels (Q4 2019).

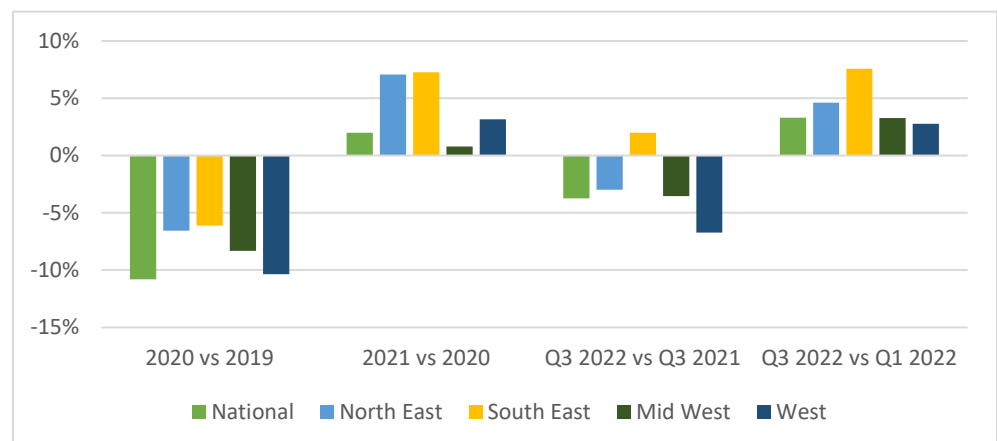
NUMBER OF DISCHARGES



Rate of Change of Total Discharge Volume: 2019 – 2022

- N = 21 health systems; National = nationwide systems
- Discharges decreased 6-11% between 2019 and 2020, with the greatest decreases for the largest health systems and the West region (11%).
- Discharges increased slightly from 2020 to 2021: The Northeast and Southeast regions outperform other regions (7% and 8% growth in volume resp.).
- The slight decrease in the volume of discharges from Q3 2021 to Q3 2022 did not affect the Southeastern part of the U.S.
- The volume of discharges continued to grow most in the Southeastern region in the second and third quarter of 2022 (7.6%).

% CHANGE IN DISCHARGES



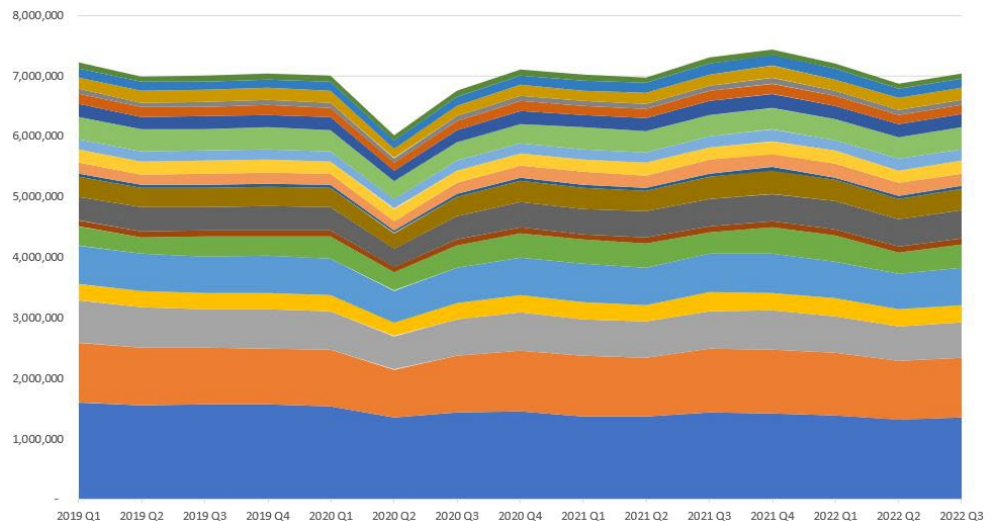


Key Insights and Trends: Patient Days

Total Patient Days by Quarter Across Q1 2019 Through Q3 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 14% from Q4 2019 to Q2 2020 and 4.2% overall from 2019 to 2020.
- Patient days increased 7.5% from 2020 to 2021 but decreased in the first two quarters thereafter (an annualized decline of 15% from Q4 2021 to Q2 2022).
- Q3 2022 saw again an increase in patient days of 10% in annualized terms, ending at the pre-COVID level (Q4 2019).

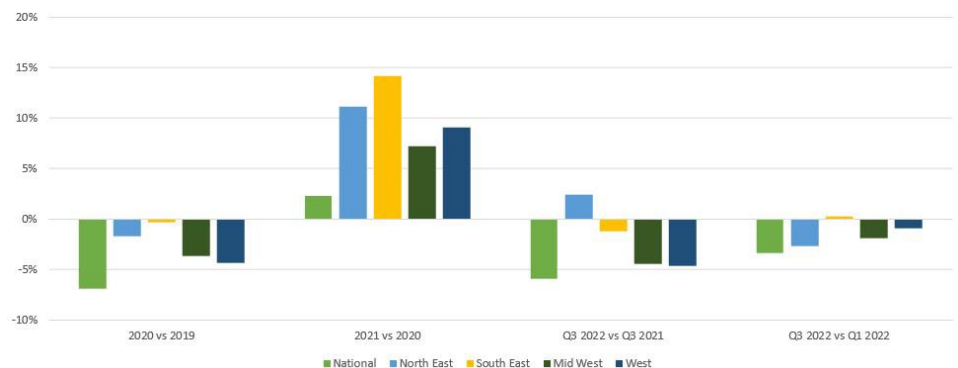
NUMBER OF PATIENT DAYS



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%-14%.
- The 3% increase overall in patient days from 2019 to 2021 was lost in Q3 2022 annual terms (range -6% - 2%). In Q3 2022 the number of patient days was back to pre-pandemic level.
- In the last two quarters of our analysis (Q2/Q3 2022) the decrease in total patient days compared to Q1 2022 (range: -3% - 0%) does not reflect the observed dip in patient days in Q2 2022. Compared to Q1 2022, patient days in the Northeast decreased 7% in Q2 2022, most of all U.S. regions.

% CHANGE IN PATIENT DAYS



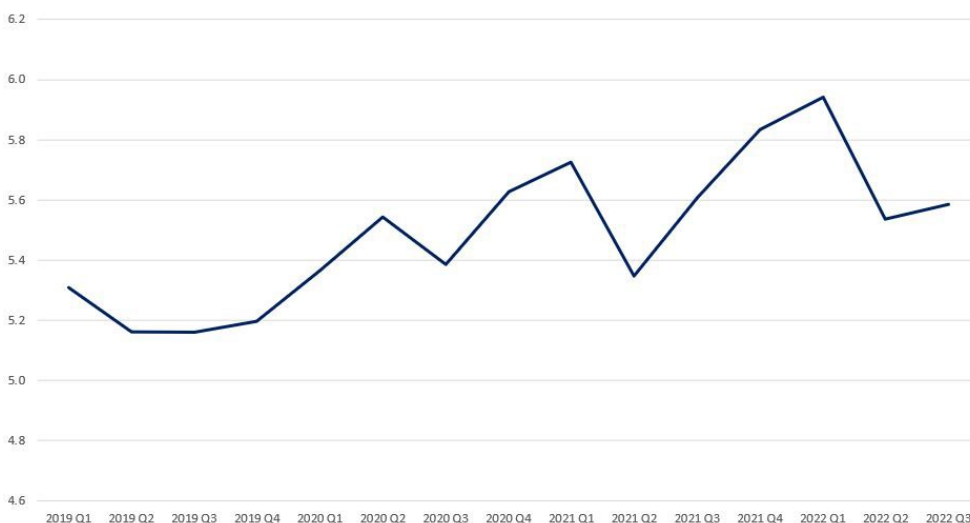


Key Insights and Trends: Length of Stay

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

- N = 20 Health systems
- The length of stay (LOS) increased 5.3% from 2019 to 2020, and 3.1% from 2020 to 2021.
- In Q1 2022, a LOS all-time-high since the start of the pandemic, LOS 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.
- Since, the average LOS has significantly decreased to roughly half a day over the average pre-pandemic LOS.

LENGTH OF STAY (DAYS)



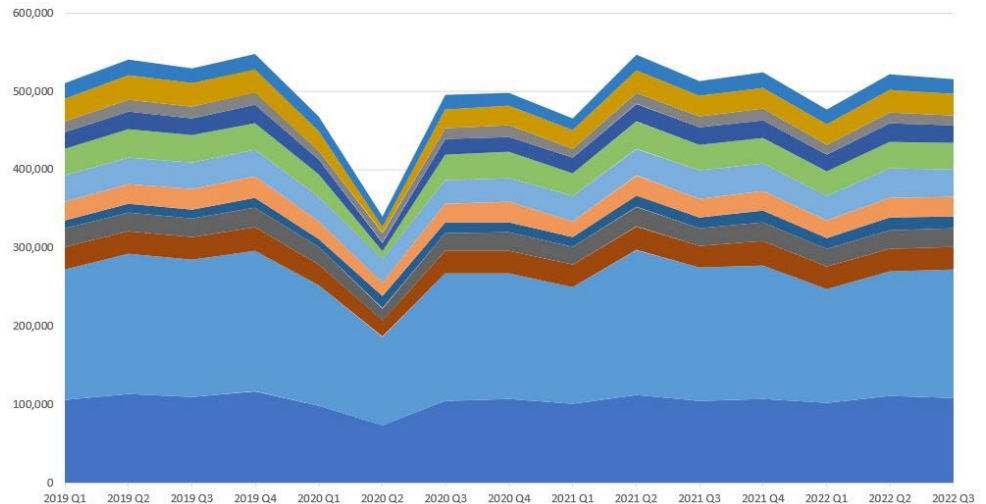


Key Insights and Trends: Surgeries

Total Surgery Volume by Quarter Across Q1 2019 Through Q3 2022

- N = 12 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 11% overall between 2019 and 2020
- Surgeries rebounded in 2021, increasing 13% between 2020 and 2021
- After a dip in surgery volume in Q1 2022, an annualized decrease of 7.6% from the post-pandemic peak in Q2 2021, surgery volume picked up again and ended 5.8% below pre-pandemic levels (Q4 2019) in Q3 2022.

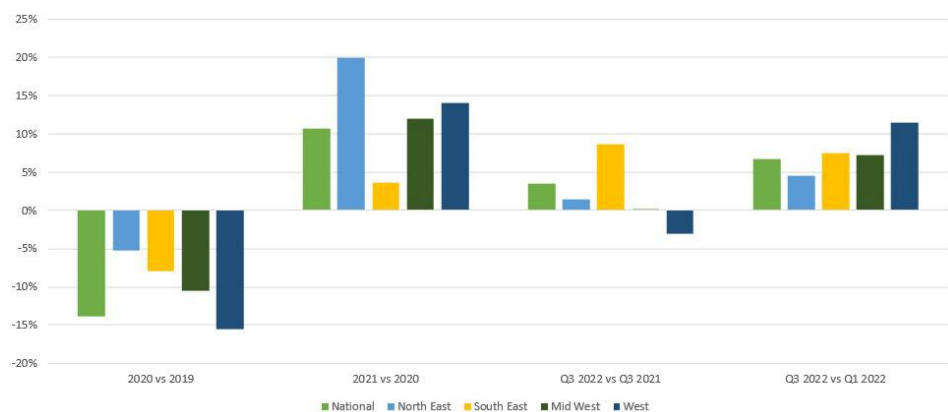
NUMBER OF SURGERIES



Rate of Change of Total Surgery Volumes: 2019 – 2022

- N = 12 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 4%-20%.
- With significant year-over-year gains in volumes from Q3 2021 to Q3 2022 only for the Southeast (8.6%), the number of surgical procedures grew more equally over all U.S. regions in the last two quarters of our current analysis, Q2 2022 and Q3 2022 (range: 5%-11%).

% CHANGE IN SURGERIES



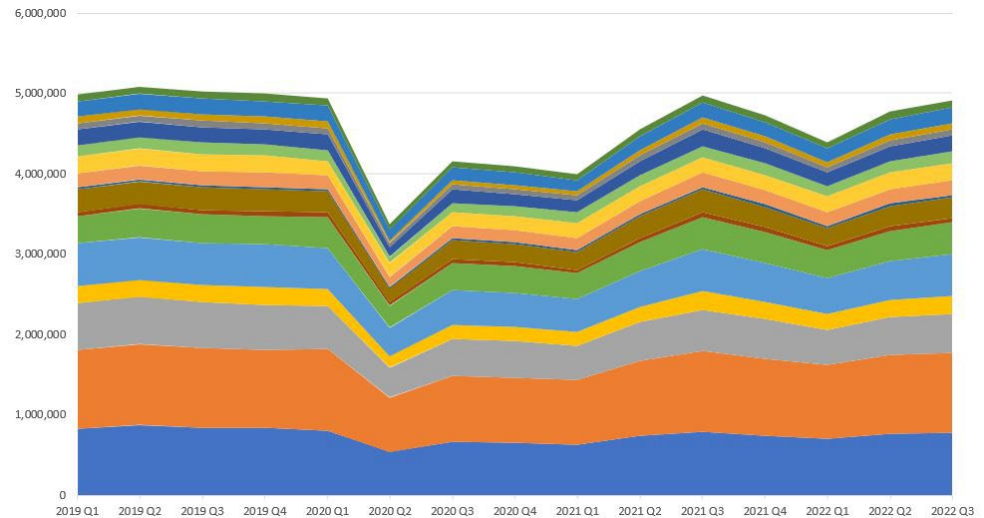


Key Insights And Trends: Emergency Department Visits

Total Emergency Department Visits by Quarter Across Q1 2019 Through Q3 2022

- N = 17 Health systems (names blinded: the band width of each layer represents the number of emergency department visits at that system)
- Emergency department visits decreased 31% from Q4 2019 to Q2 2020, and 17% overall from 2019 to 2020.
- In Q3 2021, emergency department visits peaked to almost pre-COVID-19 levels, only to decline again in the subsequent two quarters, with 23% on an annualized basis.
- By Q3 2022, emergency visits were back up, only 1.2% below the Q3 2021 peak and 1.7% below pre-pandemic levels (Q4 2019).

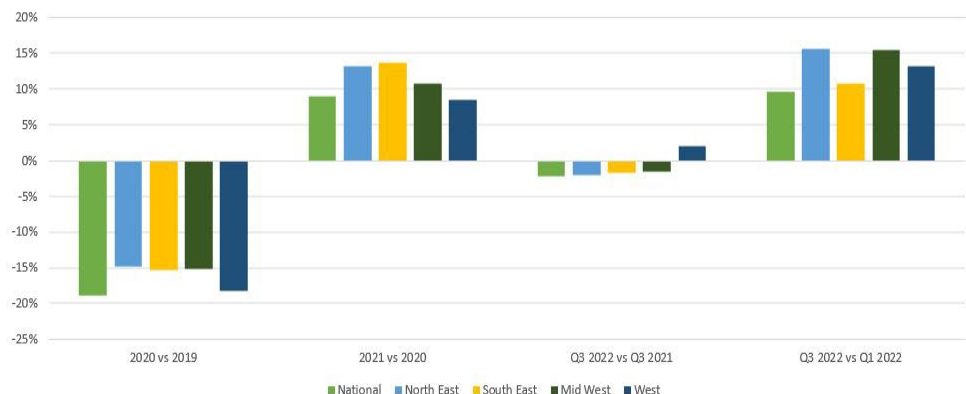
NUMBER OF EMERGENCY DEPARTMENT VISITS



Rate of Change of Total Emergency Department Visits: 2019-2022

- N = 17 health systems
National = nationwide systems
- Emergency Department (ED) visits decreased 15%- 19% across the board between 2019 and 2020.
- ED visits increased 8.5%-14% across all regions from 2020 to 2021, but this increase did not make up for previous volume losses.
- Despite the dip in ED visits in Q1 2022, the volume of visit levels in Q3 2022 were similar to Q3 2021 across all U.S. regions.
- Changes in ED visits between Q1 2022 and Q3 2022 does not mimic the pattern seen with surgery volumes. ED visits in the Northeast and other US regions notably increase during this period.

% CHANGE IN EMERGENCY DEPARTMENT VISITS



Conclusion

Q2 2022 marked the end of the first and important Omicron surge. Being more transmittable but causing less severe disease than Delta, Omicron required yet another adjustment of our immune systems. Subsequently, more subdued Omicron waves have been less disruptive to both the hospital world and broader society or were part of a larger palette of respiratory infections (e.g., the triple-demic in Q3 2022). Q2 and Q3 2022 mark the first two quarters of the current COVID-19 era where COVID-19 has been incorporated into “normal” life and less and less seen as a public health crisis. That return to “semi-normalcy” however, did not translate to not-for-profit hospital operating margins. Operating Income remained at around 20% of pre-pandemic levels, with many hospital systems operating in the red. This is partly due to Operating Expenses that have not stopped growing since the start of the pandemic, importantly determined by Salaries, Wages and Benefits (SWB).

There are other reasons to be more optimistic, beyond the current, more manageable state of the pandemic: increases to Salaries, Wages and Benefits are slightly leveling and volume metrics (e.g., discharges, surgeries, ED visits, patient days) are on an upward trajectory. With private payer contracts not being quickly renegotiable into higher reimbursement, and COVID-19 government aid for hospitals having essentially ended, it will be up to improvements in SWB and volume increases to help restore the financial position of the not-for-profit hospitals to pre-pandemic levels.



HEALTHCARE INDUSTRY GROUP

BAROMETER OF THE POST-COVID HEALTHCARE ECONOMY

Update: Q2 – Q3 2022



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