The Connecticut Office of Health Strategy

Cost and Market Impact Review of

Northwell HS, Inc.'s Proposed Affiliation

with Nuvance Health

24-32717-CMIR

Pursuant to C.G.S. §19a-639f

Final Report

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Acronym Glossary

APCD	All-Payer Claims Database
ASC	Ambulatory Surgery Center
CGS	Connecticut General Statutes
CMIR	Cost and Market Impact Review
CON	Certificate of Need
CT	Connecticut
DOH	Department of Health
DPH	Department of Public Health
DSA	Dispersed Service Area
GAC	General acute care
HHI	Herfindahl-Hirschman Index
M&A	Mergers and acquisitions
NY	New York
PSA	Primary Service Area
OHS	Office of Health Strategy

Executive Summary

This Cost and Market Impact Review (CMIR) analyzes Northwell HS, Inc.'s ("Northwell") proposed affiliation with Nuvance Health ("Nuvance").

Northwell is an integrated tax-exempt charitable health system that comprises 21 hospitals and multiple sites of service providing physician, ambulatory, and related health care services primarily in New York State. It currently has no hospital operations in Connecticut.

Nuvance has six hospitals across seven campuses, including three in Connecticut – Danbury Hospital (and its New Milford campus), Norwalk Hospital, and Sharon Hospital – and multiple sites of service providing physician, ambulatory, and home care throughout western Connecticut and the Hudson Valley in New York. The focus of this report is on Nuvance's Connecticut operations and every reference to Nuvance should be assumed to be a reference to its Connecticut entities unless stated explicitly otherwise.

Northwell and Nuvance will effectuate the Affiliation primarily through an amendment to the governance documents of Nuvance Health (the parent corporation) that adds Northwell HS, Inc. as the sole corporate member of the Nuvance Health corporation, thereby making Northwell, Inc. (the sole member of Northwell HS, Inc.) the ultimate parent of Nuvance Health and its subsidiaries and affiliates.

Despite Northwell affiliating with (as opposed to acquiring) Nuvance, the Affiliation Agreement gives Northwell a number of ways to exert control over Nuvance. Because of this control, we analyzed the transaction as if it were an acquisition and applied all analytic tools that have been previously used and validated in the context of evaluating hospital mergers and acquisitions.

Our analyses show there is little direct competition between Northwell and Nuvance. The service areas of Northwell hospitals hardly overlap with the service areas of Nuvance hospitals. Northern Westchester Hospital in Mount Kisco, New York is the closest Northwell hospital to Nuvance at 21 miles (~40 minute drive) to Norwalk Hospital and 28 miles (~40 minute drive) to Danbury Hospital. Phelps Hospital (Sleepy Hollow, NY) is the next closest Northwell hospital to Nuvance at 32 miles from Norwalk Hospital (45 minutes to 1 hour drive) and 38 miles (45 minutes to 1 hour drive) to Danbury Hospital. The rest of Northwell's hospitals are for the most part on Long Island in New York. Thus, we do not see Northwell having a dominant market share in any parts of Connecticut post-transaction.

However, despite limited service overlap, we anticipate prices at Nuvance hospitals to increase post-affiliation and potentially be materially higher than the median prices charged by all other health care providers for the same services in the same market. There are several reasons to expect this. First, Northwell's four most recent hospital acquisitions (all in New York) show signs of

considerable price increases post-acquisition. Price data obtained from Northwell for Mather Hospital shows that commercial inpatient hospital prices increased by 70% on average between 2017 (the year prior to Northwell acquiring Mather) and 2023 across the hospital's top 30 discharges by commercial revenue. This increase is more than double the average commercial inpatient price increase nationwide over this period.[1]

Commercial revenue data suggests considerable price increases at Northwell's other three recent hospital acquisitions. The data for Phelps Hospital shows a 132% increase in commercial revenue since it joined Northwell in 2014 ($301.3 million vs. $129.4 million). Commercial revenue at both Northern Westchester Hospital (acquired in 2014) and Peconic Bay Medical Center (acquired in 2015) was relatively flat across the few years prior to and after joining Northwell, but is now much higher. Northern Westchester Hospital's commercial revenue in 2023 was 98% higher than it was in 2014 when it joined Northwell ($364.6 million vs. $184.3 million) while Peconic Bay Medical Center's commercial revenue in 2023 was 129% higher than it was in 2015 when it joined Northwell ($205.0 million vs. $89.6 million). Part of these revenue increases could be explained by increases in commercial volume, but the magnitude of these increases suggests price increases are likely a significant contributor.

Leaving Northwell's prior hospital acquisitions aside for a moment, Northwell is overall a high-priced system. It was ranked the 17th most expensive system in the country in RAND's most recent hospital pricing study.[2] This is in stark contrast to the ranks of 146th for Yale New Haven and 161st for Hartford Healthcare – Connecticut's two most expensive systems. The RAND study reports prices as a percent of Medicare. That is, the relative price reported is the allowed amount from private health plan claims divided by the Medicare allowed amount—for the same services provided by the same hospital, using Medicare's price-setting formulas. Since Medicare payments are adjusted for geographic variation in wages, prices as a percent of Medicare should take into account cost-of-living differences across states and thus enable a more appropriate comparison of what truly is an expensive price. Even after this adjustment, New York is the 8th most expensive state in terms of hospital prices while Connecticut is 22nd.

In fairness to Northwell, several other New York systems show up in the top 20 of the RAND study's health system relative price ranking: Montefiore ranked 6th, NYU Langone ranked 10th, WMC Health ranked 12th, Catholic Health ranked 21st, and New York Presbyterian ranked 23rd. Additionally, many of these New York systems are renowned for high quality care, so this is not a commentary on these systems being overpriced, but rather that they are objectively high priced.

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[1] Inpatient prices increased by 20% from 2018 to 2022 according to the Health Care Cost Institute's 2022 Health Care Cost and Utilization Report. https://healthcostinstitute.org/images/pdfs/HCCI_2022_Health_Care_Cost_and_Utilization_Report.pdf . Mather Hospital's average price increase across its top 30 discharges by revenue was 57% from 2018 to 2022.

[2] Whaley CM, Kerber R, Wang D, Koffner A, Briscombe B. Prices Paid to Hospitals by Private Health Plans: Findings from Round 5.1 of an Employer-Led Transparency Initiative. RAND Corporation. December 10, 2024. https://www.rand.org/pubs/research_reports/RRA1144-2-v2.html

We see it as likely that Nuvance's Connecticut hospitals will experience a price increase after being acquired by one of them, the question is the magnitude of the increase.

A price increase at Nuvance hospitals could be a particular problem for Connecticut if other systems in the state are able to raise prices in response (e.g., if Yale New Haven or Hartford can increase prices following increases at Nuvance facilities and prices in Connecticut creep up to those in New York). That said, although our analysis suggests that prices will likely increase, the lack of patient overlap between Northwell and Nuvance suggests that the harm to competition is likely lower than it would be if the acquirer were an in-state system with market power.

Outside of the concern that prices will increase, the transaction appears to be positive by nearly every other measure. Given Nuvance's financial struggles, it is likely that without a strategic partner, access and quality at Nuvance's three hospitals could continue to deteriorate. The Certificate of Need (CON) application for this transaction mentions that Nuvance considered and pursued service reductions to stem significant financial losses. Specifically, the Nuvance Health Board and leadership reviewed the utilization of its existing services as well as the financial losses attributed to underutilized services. Out of this review a transformation plan for Sharon Hospital was put in place that included the gradual closure of its underutilized maternity unit. Based on this plan, Sharon Hospital filed a CON seeking termination of its maternity services. At Norwalk Hospital, Nuvance identified underutilized inpatient behavioral services and the opportunity to relocate those beds to develop an expanded, modernized center of excellence at Danbury Hospital. In response to these findings Norwalk Hospital filed a CON for termination of its inpatient behavioral services. These two service termination CON applications are concerning from an access standpoint. Both maternity care and inpatient behavioral services are often in short supply. Northwell being able to continue these services post-affiliation would be a major positive outcome of this transaction.

In terms of quality, Northwell is more highly rated than Nuvance. Northwell's North Shore University Hospital is one of the 20 best hospitals in the US, is nationally ranked in nine specialties, and considered high performing in 16 procedures/conditions according to US News. Long Island Jewish Medical Center is nationally ranked in nine specialties and is high performing in one specialty and 14 procedures/conditions. In addition to North Shore University Hospital and Long Island Jewish Medical Center, five other Northwell hospitals are nationally ranked in at least one specialty (Lenox Hill - 6; Huntington - 3; Plainview, Northern Westchester, Glen Cove - 1 each). There are 12 Northwell hospitals that are considered either nationally ranked or high performing in at least one specialty. Nuvance hospitals, in comparison, are not nationally ranked or high performing in any specialties. There are 11 Northwell hospitals that are high performing in at least 6 procedures/conditions. Among Nuvance hospitals, Danbury is considered high performing for 5 procedures/conditions, Norwalk Hospital is considered high performing for 1, and Sharon Hospital is not considered high performing for any procedures/conditions. The transaction appears overwhelmingly positive from a quality perspective.

Northwell's four recent hospital acquisitions suggest Nuvance's hospitals may be in store for considerable investment. When Northwell acquired Peconic Bay Medical Center in 2016, its labor and delivery unit recorded only 329 deliveries over the previous year, which is less than one per day, and was struggling operationally. The population in its service area had been aging and its population of child-bearing age was declining. The number of deliveries had declined further by 2018. Northwell took a holistic approach and focused on expanding ambulatory women's health services. Among other steps, Northwell improved facilities and recruited new clinical leadership, enhancing engagement of local physicians. The result was a 35% increase in deliveries from 2018 to 2022. There are now no plans to close the labor and delivery unit at Peconic Bay Medical Center. Although Northwell did not address this in its response, the unit's volume is likely still not profitable, so the plan to continue it is a credit to the system.

Nuvance's Sharon Hospital might be in a similar position to Peconic Bay Medical Center, with a declining and aging population. Indeed, as outlined at the November 6, 2024 hearing on this affiliation, the intervenors from Save Sharon Hospital described the agreement that had been reached with Northwell concerning building up maternity services at Sharon Hospital. The intervenors stated that Northwell has agreed to "a dedicated effort to grow Sharon Hospital maternity service by using appropriate marketing, by recruiting and engaging the needed staff and physicians based on market appropriate rates, and by increasing call pay for community physicians to market rates. This includes -- and there would also be recruitment of various needed doctors, including at least two OBGYNs, and that they would provide appropriate engagement vehicles to community physicians to promote recruitment such as possibly an income guarantee or other recruitment vehicle."

The listing of investments by Northwell into recently acquired community hospitals includes additional instances of investing in low-margin services. These include a planned renovation and expansion of labor and delivery services at Northern Westchester Hospital and a renovation and expansion of the maternity unit at Phelps Hospital. In addition, at South Oaks Hospital, Northwell has expanded behavioral and mental health services by, among other things, adding inpatient psychiatric beds, adding an adolescent track to the substance abuse disorder ambulatory clinic, and opening a pediatric outpatient mental health unit (currently underway). Overall, we see substantial investment in low-margin services at Northwell's newly acquired hospitals, which likely reflects Northwell's willingness and financial ability to maintain or expand low-margin services that are important in these communities.

Aside from what we view to be a likely increase in prices at Nuvance hospitals, this transaction is positive from nearly every other perspective. The affiliation should financially stabilize Nuvance's hospitals and has the potential to keep certain service lines open that otherwise would close. Additionally, access and quality at Nuvance's hospitals appear more likely to stay the same or improve if the affiliation with Northwell is effectuated. Northwell's history of investments in previous acquisitions and its track record of recruiting health care professionals make us optimistic that Nuvance's hospitals will similarly benefit from more investment and better

recruitment and retention of health care professionals. Consequently, it seems reasonable for state officials to approve the transaction, but because of the likely price increases, it is imperative for the state to require Northwell to meet the promises they made in their application and for the state to make sure it reaps the potential benefits of the transaction.

Introduction

C.G.S. §19a-639f requires the Office of Health Strategy (OHS) to review certain Certificate of Need (CON) applications involving a hospital ownership affiliation that have the potential to significantly impact health care costs or markets in Connecticut. Specifically, OHS is obligated to conduct a Cost and Market Impact Review (CMIR) in each case where:
(1) an application for a CON filed pursuant to section C.G.S. §19a-638 involves the transfer of ownership of a hospital, and
(2) the purchaser is a hospital or hospital system with net patient revenue for fiscal year 2013 in an amount greater than one billion five hundred million dollars ($1.5 billion).

This Preliminary Report examines Northwell's proposed affiliation with Nuvance. In 2013, Northwell, operating as North Shore-Long Island Jewish Health System, Inc., reported a net patient revenue of $5.85 billion and is therefore subject to the CMIR requirements of C.G.S. §19a-639f.

Northwell and Nuvance will effectuate the affiliation primarily through an amendment to the governance documents of Nuvance Health (the parent corporation) that adds Northwell as the sole corporate member of the Nuvance Health corporation, thereby making Northwell (the sole member of Northwell HS, Inc.) the ultimate parent of Nuvance and its subsidiaries and affiliates.

Nuvance is currently the corporate parent of an integrated health system with six hospitals across seven campuses, including three in Connecticut (Danbury Hospital, Norwalk Hospital, and Sharon Hospital) and multiple sites of service providing physician, ambulatory, and home care throughout western Connecticut and the Hudson Valley in New York. The affiliation will not constitute a merger of Nuvance into Northwell or an acquisition of Nuvance or its assets by Northwell, and there will be no direct change of ownership of Nuvance's licensed hospitals, Nuvance Health Medical Practice CT, Inc. (NHMP CT), or Norwalk Surgery Center (NSC). Nuvance's Connecticut operations are the focus of this CMIR and thus, unless stated explicitly otherwise, it should be assumed that all references to Nuvance are to its Connecticut operations.

Northwell is an integrated tax-exempt charitable health system that comprises 21 hospitals and multiple sites of service providing physician, ambulatory, and related health care services primarily in New York State. It currently has no hospital operations in Connecticut.

This Preliminary Report uses the parties' CON application, information submitted by the parties to OHS related to this CMIR, and various databases, including Connecticut's All-Payer Claims Database (APCD), to assess the likely impact of the affiliation on health care markets in Connecticut. C.G.S. §19a-639f(d) states the CMIR shall examine factors relating to the businesses and relative market positions of the transacting parties as defined in C.G.S. §19a-639d and may include, but need not be limited to the following 12 analyses:

1. The transacting parties' size and market share within its primary service area, by major service category and within its dispersed service areas.
2. The transacting parties' prices for services, including the transacting parties' relative prices compared to other health care providers for the same services in the same market.
3. The transacting parties' health status adjusted total medical expense, including the transacting parties' health status adjusted total medical expense compared to that of similar health care providers.
4. The quality of the services provided by the transacting parties, including patient experience.
5. The transacting parties' cost and cost trends in comparison to total health care expenditures statewide.
6. The availability and accessibility of services similar to those provided by each transacting party, or proposed to be provided as a result of the transfer of ownership of a hospital within each transacting party's primary service areas and dispersed service areas.
7. The impact of the proposed transfer of ownership of the hospital on competing options for the delivery of health care services within each transacting party's primary service area and dispersed service area including the impact on existing service providers.
8. The methods used by the transacting parties to attract patient volume and to recruit or acquire health care professionals or facilities.
9. The role of each transacting party in serving at-risk, underserved and government payer patient populations, including those with behavioral, substance use disorder and mental health conditions, within each transacting party's primary service area and dispersed service area.
10. The role of each transacting party in providing low margin or negative margin services within each transacting party's primary service area and dispersed service area.
11. Consumer concerns, including, but not limited to, complaints or other allegations that a transacting party has engaged in any unfair method of competition or any unfair or deceptive act or practice.
12. Any other factors that the unit determines to be in the public interest.

C.G.S. §19a-639f provides the following timeline for CMIRs:

1. OHS must provide notice of initiation of a CMIR and request information from the parties within 21 days of the CON filing.
2. Transacting parties have 30 days to respond to requests for information.
3. Once OHS determines compliance with its information requests, it has 90 days to issue a Preliminary Report.
4. The transacting parties may respond to the Preliminary Report within 30 days.
5. 60 days after the Preliminary Report is issued OHS must issue a Final Report.

According to C.G.S. §19a-639f(e), the Preliminary Report

> shall include, but shall not be limited to, an indication as to whether a transacting party meets the following criteria:
> (1) Currently has or, following the proposed transfer of operations of the hospital, is likely to have a dominant market share for the services the transacting party provides; and
> (2) (A) currently charges or, following the proposed transfer of operations of the hospital, is likely to charge prices for services that are materially higher than the median prices charged by all other health care providers for the same services in the same market, or (B) currently has or, following the proposed transfer of operations of a hospital, is likely to have a health status adjusted total medical expense that is materially higher than the median total medical expense for all other health care providers for the same service in the same market.[3]

OHS may refer to the Attorney General any Final Report on any proposed transfer of ownership that meets the criteria described immediately above. The Attorney General may utilize the Final Report as evidence in any action undertaken pursuant to existing legal authority.

C.G.S. §19a-639f(j) allows OHS to retain an independent consultant with expertise on the economic analysis of the health care market and health care costs and prices to conduct each CMIR. For this CMIR, OHS retained Arnold Analytics LLC.

[3] https://law.justia.com/codes/connecticut/title-19a/chapter-368z/section-19a-639f/

Summary of the transacting parties and proposed affiliation

Northwell HS, Inc.

Northwell is a comprehensive, integrated tax-exempt charitable health system that comprises 21 hospitals and multiple sites of service providing physician, ambulatory, and related health care services centered in New York State. Northwell cares for over two million people annually and has a strong balance sheet. Northwell has for more than 25 years been investing in and strengthening its hospital partners, including several for which significant financial declines were reversed, economies of scale were achieved, access to capital was provided, and performance and reputation were improved.

Nuvance Health

Nuvance is the corporate parent of an integrated health system with six hospitals across seven campuses, including three in western Connecticut (Danbury Hospital, Norwalk Hospital, and Sharon Hospital), three hospitals in the Hudson Valley in New York and multiple sites of service providing physician, ambulatory, home care, and related health care services throughout western Connecticut and the Hudson Valley in New York.

Proposed Affiliation

Nuvance and Northwell will effectuate the Affiliation primarily through an amendment to the governance documents of Nuvance Health (the parent corporation) that adds Northwell HS, Inc. as the sole corporate member of the Nuvance Health corporation, thereby making Northwell, Inc. (the sole member of Northwell HS, Inc.) the ultimate parent of Nuvance Health and its subsidiaries and affiliates. The Affiliation will not constitute a merger of Nuvance Health into Northwell Health or an acquisition of Nuvance Health or its assets by Northwell Health, and there will be no direct change of ownership of Nuvance Health's licensed hospitals, Nuvance Health Medical Practice CT, Inc. (NHMP CT), or Norwalk Surgery Center, LLC (NSC).

Under the Affiliation, the current 18-member Board of Directors of the Nuvance Health corporation (the "Nuvance Health Board") will expand to 25 Directors by adding six individuals who also serve on the Northwell, Inc. and Northwell HS, Inc. Boards, as well as Northwell, Inc.'s President and CEO. The Boards of Trustees of Northwell, Inc. and Northwell HS, Inc. will expand to add six individuals from the Nuvance Health Board, as representatives of Nuvance Health, as set forth in more detail in the Affiliation Agreement.

Nuvance Health's current Chief Executive Officer, Dr. John Murphy, will continue in that position upon the closing of the Affiliation. The Nuvance Health Board will remain upon the closing in its current role as the Nuvance Health parent board, overseeing the Nuvance Health hospitals and affiliates, while Northwell HS, Inc. will have authority over the day-to-day operations of the Nuvance Health Connecticut hospitals and affiliates, subject to the specific rights and obligations of the Applicants under the Affiliation Agreement. Northwell HS, Inc. will have approval rights over certain threshold decisions, which shall ensure the integration and access to the advantages of being a part of the Northwell Health system.

Analytic framework and data sources

Analytic framework

As discussed in the previous section, though Northwell is affiliating with Nuvance as opposed to acquiring it, the Affiliation Agreement gives Northwell a number of ways to exert control over Nuvance and as such we view it as appropriate to analyze the transaction as a merger and apply all analytic tools that have been previously used and validated in the context of evaluating hospital mergers. Additionally, we see it as prudent to keep in mind the general findings from the large literature on hospital mergers while assessing the specifics of this transaction (see the section "The Impact of Hospital Mergers and Acquisitions" later in the report for a review of this literature).

This report follows closely the 12 analyses outlined in statute. Notably, the analyses in statute do not call for a direct analysis of the financial stability of either the entity being acquired or the entity doing the acquiring. Given this, financial stability is only alluded to at times in the report if it has bearing on a particular analysis. For instance, the fact that Nuvance has proposed certain service reductions due to its financial challenges is directly relevant to Analysis 6 that assesses the availability and accessibility of services. All this being said, Northwell is in a better financial position than Nuvance and the transaction is likely to improve Nuvance's financial stability.[4]

Throughout this report we also look closely at Northwell's recent hospital acquisitions to gain insight into what might happen to Nuvance's hospitals post-affiliation. Northwell acquired Mather Hospital in 2018, Peconic Bay Medical Center in 2015, and both Northern Westchester Hospital and Phelps Hospital in 2014. All four hospitals are located in New York, but are similar to Nuvance's hospitals in the sense that their service areas did not overlap much with Northwell prior to being acquired (see Analysis 2). We use these recent acquisitions as evidence of what might be expected in terms of price or quality changes at Nuvance's hospitals post-affiliation.

Data sources

We reviewed the parties' CON application as well as additional information submitted to OHS, such as:

1. Contracted prices at Northwell's provider acquisitions since January 1, 2018 for the top 30 discharges (hospitals) and top 30 professional procedures (medical groups) in the year prior to the acquisition and all years following up to 2023.
    a. Mather Hospital and Mather Medical Group were the only two Northwell provider acquisitions since January 1, 2018.
2. Changes in quality and utilization after prior acquisitions.

[4] Nuvance lost $220 million during its last two fiscal years and projects to lose nearly $150 during its current fiscal year. Northwell has a significant balance sheet and a A3/A-/A- rating by Moody's, Standard & Poor's and Fitch, respectively, all with stable outlooks.

3. Investments into recently acquired provider organizations.

Additionally, Table 1 lists all other data sources we used during our analysis.

Table 1. Data Sources

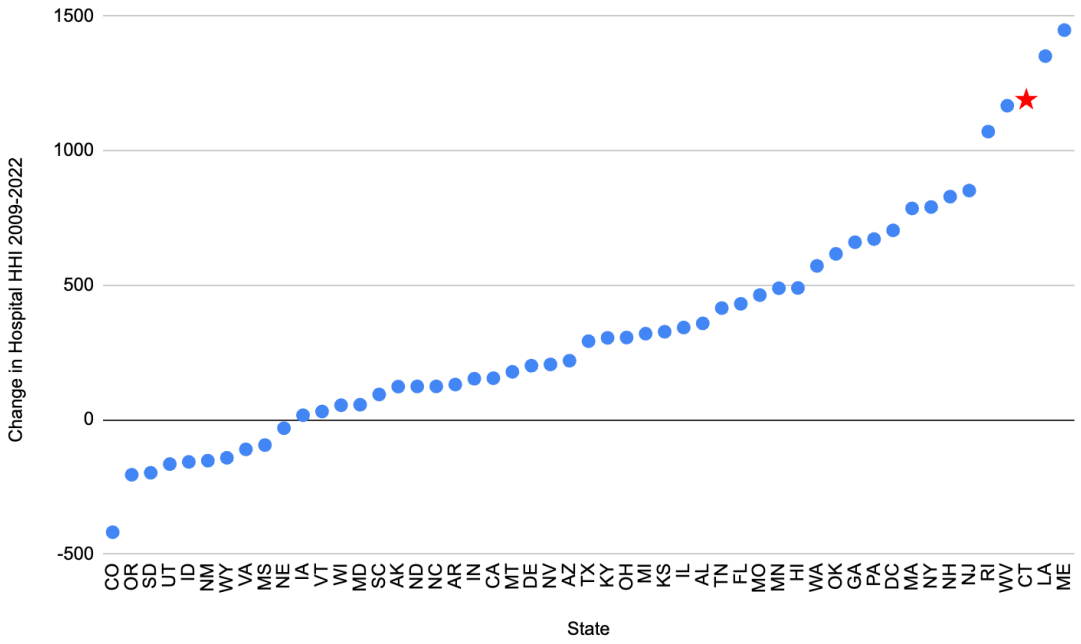
Data Source	**Main Purpose**	**Used in**
American Hospital Association's Annual Survey Database	Measures of hospital market concentration	"Connecticut Hospital Markets" section
CMS Hospital Compare	Hospital quality measures	Analysis 4
Connecticut's All-Payer Claims Database	Measuring hospital inpatient and outpatient prices	Analysis 2
Connecticut's Inpatient Discharge Data	Defining service areas and measuring utilization	Analyses 1, 6, 7, 9, and "Connecticut Hospital Markets" section
Connecticut's Outpatient Surgery Encounter Data	Measuring utilization	"Connecticut Hospital Markets" section
NASHP Hospital Cost Tool	Hospital operating costs	Analysis 5
New York Department of Health website	Inspection reports and plans of corrective action	Analysis 11
New York's Inpatient Discharge Data	Defining service areas and measuring utilization	Analyses 1, 2, and 9
RAND Hospital Data*	Measures of costs and revenues	Analyses 2 and 3
State of Connecticut elicense website	Inspection reports and plans of corrective action	Analysis 11
US News Best Hospitals 2024-2025	Hospital quality measures	Analysis 4

Notes: * The RAND Hospital Data is essentially a cleaned version of CMS's Hospital Cost Reports. This is not the data source used in the RAND hospital pricing study that is referenced throughout this report.

Connecticut hospital markets

This section presents an overview of Connecticut hospital markets to provide context for evaluating the Northwell-Nuvance transaction. Connecticut, like much of the US, has highly concentrated hospital markets. While hospitals have been consolidating nationwide, hospital consolidation in Connecticut has outpaced other states over the last decade.[5] Figure 1 shows how the hospital Herfindahl-Hirschman Index (HHI) changed in all US states (and DC) from 2009 to 2022.[6] The average change in hospital HHI across states from 2009-2022 was 342. Connecticut had the third largest change among states at 1,190.

Figure 1. Change in Hospital HHI by State, 2009-2022



Source: AHA's Annual Survey Database

Notes: HHI=Herfindahl-Hirschman Index. Only general acute care hospitals are included. HHIs are calculated at the county-year level and then weighted to the state-year level using each county's population in 2015. Market shares are based on a hospital's share of admissions among hospitals located in its county. All hospitals in the same county that are part of the same system count as one for purposes of calculating market shares.

[5] See the report prepared by Altarum on behalf of OHS entitled "Impacts of Connecticut Hospital and Health Care System Consolidation (2016-2021)" for a recent review of hospital consolidation in CT. https://portal.ct.gov/ohs/-/media/ohs/reports/analysis-of-impacts-of-hospital-consolidation-in-ct_032624.pdf

[6] HHI is a widely used measure of market concentration that can range from 0 to 10,000. It is calculated by squaring and summing the market shares of firms. For instance, a market with two firms where one has 60% of the market and the other has 40% would have an HHI of 5,200 ($=60^2 + 40^2$). The U.S. Department of Justice and Federal Trade Commission's Merger Guidelines consider markets with HHIs above 1,800 to be highly concentrated. U.S. Department of Justice and the Federal Trade Commission. Merger Guidelines. December 18, 2023. https://www.ftc.gov/system/files/ftc_gov/pdf/2023_merger_guidelines_final_12.18.2023.pdf

Table 2 shows the number of discharges across all payers at Connecticut's 26 general acute care (GAC) hospitals in 2023. There were just over 365,000 discharges in 2023, with Yale New Haven Hospital and Hartford Hospital alone counting for 32% (19% and 13%, respectively). At the system level, Yale New Haven accounted for 33% statewide discharges while Hartford Healthcare accounted for the second most with 29% (Table 3). After Hartford Healthcare, the statewide percentage of discharges drops off considerably with Nuvance Health, Trinity Health, and Prospect Medical Holdings at 9%, 9%, and 6%, respectively. All other GAC hospitals in Connecticut are independent and combined accounted for 15% of statewide GAC discharges in 2023.

Table 2. Discharges from Connecticut GAC Hospitals, 2023

	Hospital	**System**	**Discharges**	**% of Discharges**
1	Yale New Haven Hospital	Yale New Haven	70,319	19%
2	Hartford Hospital	Hartford HealthCare	46,263	13%
3	Bridgeport Hospital	Yale New Haven	24,162	7%
4	Saint Francis Hospital	Trinity Health	21,901	6%
5	Danbury Hospital	Nuvance Health	20,986	6%
6	Stamford Hospital		15,548	4%
7	The Hospital of Central Connecticut	Hartford HealthCare	15,079	4%
8	Saint Vincent's Medical Center	Hartford HealthCare	14,421	4%
9	Greenwich Hospital	Yale New Haven	13,472	4%
10	Lawrence and Memorial Hospital	Yale New Haven	12,881	4%
11	William W. Backus Hospital	Hartford HealthCare	11,737	3%
12	Middlesex Hospital		11,455	3%
13	Waterbury Hospital	Prospect Medical Holdings	11,451	3%
14	John Dempsey Hospital		10,847	3%
15	MidState Medical Center	Hartford HealthCare	10,231	3%
16	Manchester Memorial Hospital	Prospect Medical Holdings	9,496	3%
17	Norwalk Hospital	Nuvance Health	9,489	3%
18	Saint Mary's Hospital	Trinity Health	8,492	2%
19	Griffin Hospital		6,876	2%
20	Charlotte Hungerford Hospital	Hartford HealthCare	6,094	2%
21	Bristol Hospital		5,367	1%
22	Day Kimball Hospital		3,500	1%
23	Windham Community Memorial Hospital	Hartford HealthCare	2,139	1%
24	Sharon Hospital	Nuvance Health	1,538	0%
25	Johnson Memorial Hospital	Trinity Health	1,504	0%
26	Rockville General Hospital	Prospect Medical Holdings	338	0%
	TOTAL		**365,586**	**100%**

Source: CT Inpatient Discharge Data
Notes: GAC=general acute care. Hospitals listed without a system are independent. This list includes discharges across all payers.

Table 3. Discharges from Connecticut GAC Hospitals by System, 2023

System	Discharges	% of Discharges
Yale New Haven	120,834	33%
Hartford HealthCare	105,964	29%
Nuvance Health	32,013	9%
Trinity Health	31,897	9%
Prospect Medical Holdings	21,285	6%
Independent Hospitals	53,593	15%
TOTAL	**365,586**	**100%**

Source: CT Inpatient Discharge Data

Notes: The hospitals listed without a system in Table 1 are included here under "Independent Hospitals."

Table 4 shows the top 20 entities in terms of outpatient encounters in Connecticut in 2023. The entities included in the table are hospitals as well as freestanding ambulatory surgery centers (ASCs). In total, there were 676,744 outpatient encounters statewide with the top 20 entities shown in Table 4 accounting for 54.5% of them. Outpatient encounters are less concentrated among particular entities than are inpatient discharges.

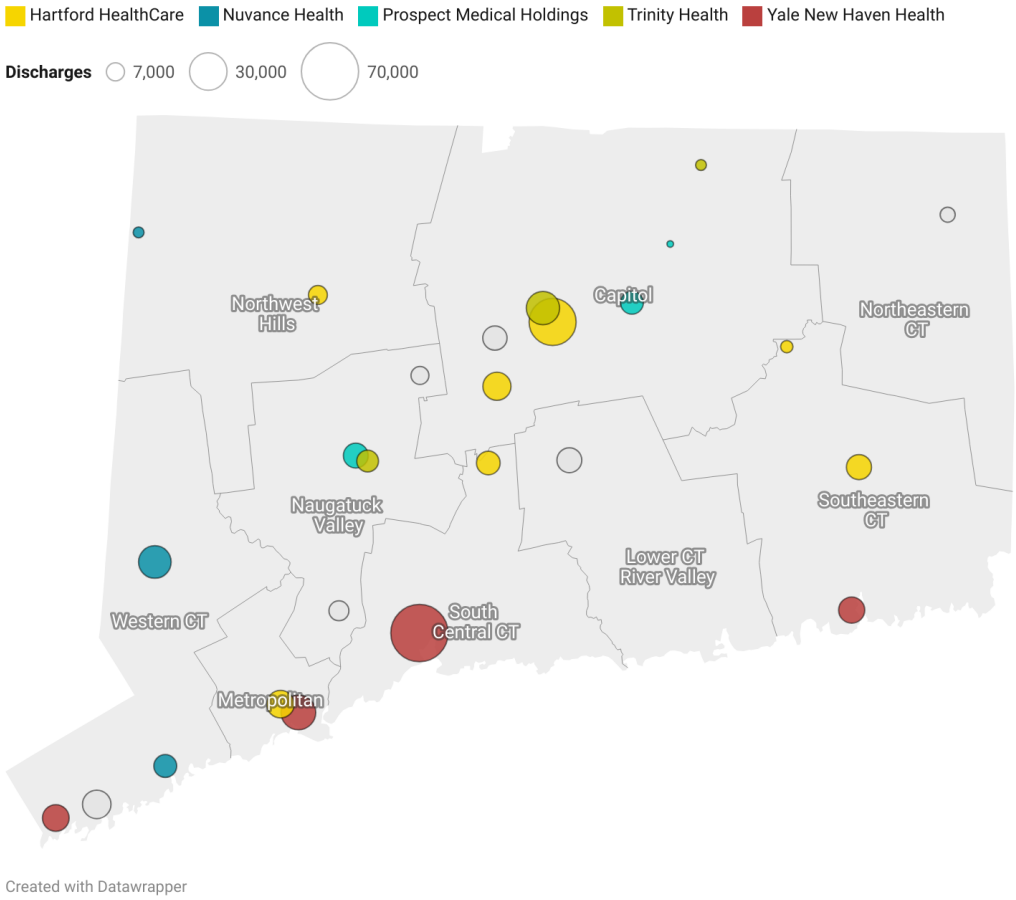
Table 4. Outpatient Surgery Encounters in Connecticut by Hospital/ASC, 2023

	Hospital/ASC	Encounters	% of Encounters
1	Hartford Hospital	48,087	7.1%
2	Yale New Haven Hospital	36,785	5.4%
3	John Dempsey Hospital	31,265	4.6%
4	Bridgeport Hospital	25,073	3.7%
5	Danbury Hospital	24,569	3.6%
6	Saint Francis Hospital	20,510	3.0%
7	William W. Backus Hospital	16,868	2.5%
8	Charlotte Hungerford Hospital	16,360	2.4%
9	Yale New Haven Hospital (St. Raphael Campus)	15,917	2.4%
10	Tully Surgery Center	15,374	2.3%
11	Manchester Memorial Hospital	13,522	2.0%
12	The Hospital of Central Connecticut	13,483	2.0%
13	MidState Medical Center	13,480	2.0%
14	Norwalk Hospital	12,816	1.9%
15	Saint Vincent's Medical Center	12,507	1.8%
16	Bristol Hospital	11,408	1.7%
17	Connecticut Children's Medical Center	11,359	1.7%
18	Griffin Hospital	10,382	1.5%
19	Orthopedic Associates Surgery Center	9,810	1.4%
20	Stamford Hospital	9,583	1.4%
	TOTAL	**369,158**	**54.5% of state total**

Source: CT Outpatient Surgery Encounter Data

Ultimately, hospital markets are local because consumers are not generally willing to travel far to obtain care.[7] Figure 2 presents a map of Connecticut's GAC hospitals. Each circle represents one of the 26 GAC hospitals with the larger circles representing the larger hospitals in terms of discharges (e.g., Yale New Haven Hospital is the largest). The circles are color coded by system. Given the importance of distance in determining which hospitals patients choose, it is clear from Figure 2 that the amount of competition faced by GAC hospitals in Connecticut differs across the state with hospitals in the center and southwest parts of the state facing more than those in other regions of the state. However, even in the perceived more competitive parts of the state, nearby hospitals are only in competition with each other if they are part of separate systems. Hartford Hospital (largest yellow circle) has removed some of its local market competition by acquiring nearby GAC hospitals in the center of the state, while Yale New Haven Hospital (largest red circle) has done the same in the southwest portion of the state.

Figure 2. Health System Inpatient Discharges in Connecticut



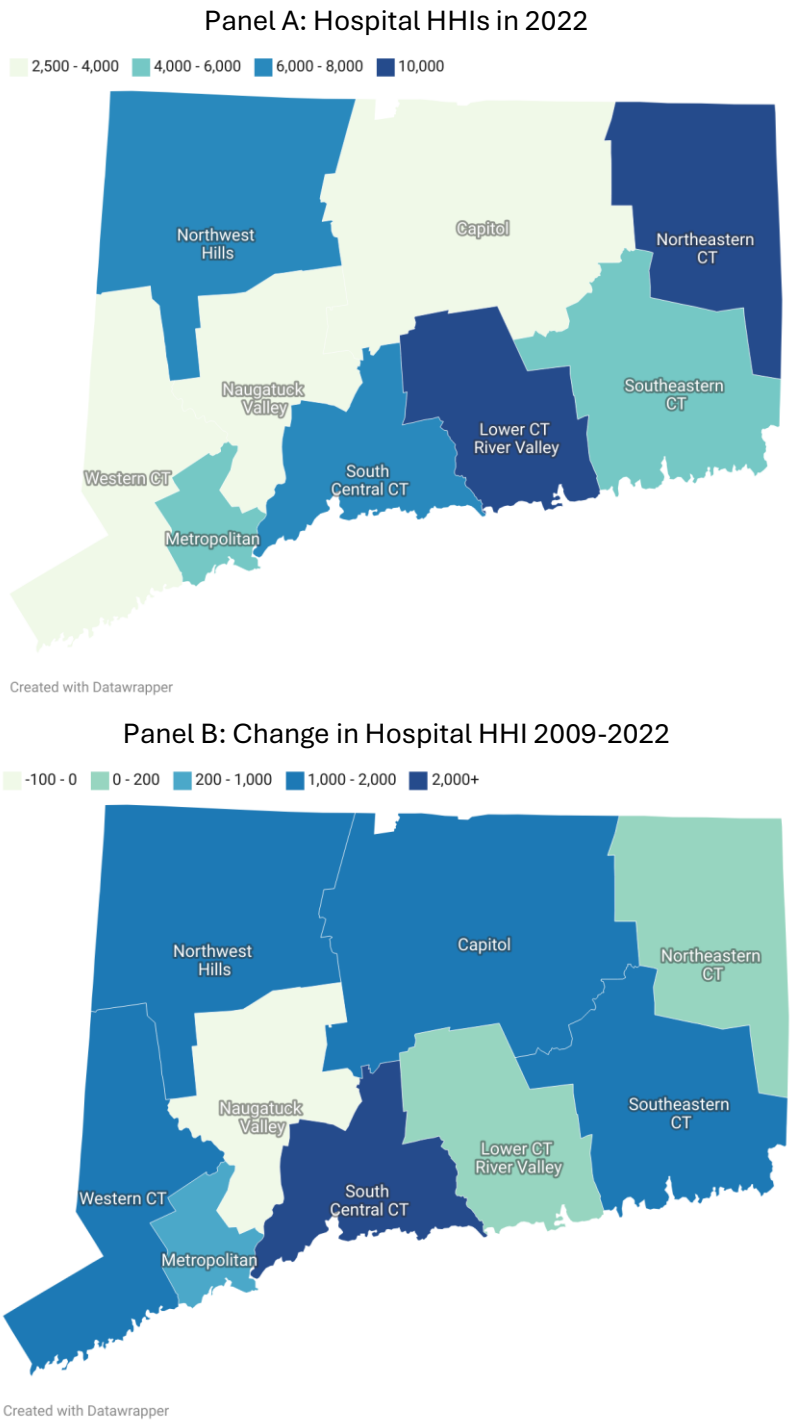
Source: CT Discharge Data
Notes: Independent hospitals shown as gray circles.

[7] Glied SA, Altman SH. Boosting competition among hospitals, health systems will improve health care. STAT. September 20, 2017. https://www.statnews.com/2017/09/20/hospitals-competition-health-care/

Fifty years ago, many regions in the country were able to support several competing local hospitals. Since then, hospital stays have become shorter and the number of admissions has fallen, even as the population has grown. The total number of days Americans spent in hospitals in 2013 was nearly one-third lower than it was in 1975 with a significant number of services that were previously performed in an inpatient setting being moved to outpatient settings.[8] The current relative lack of competition (and reduction over time) in Connecticut hospital markets can be seen across nearly all planning regions in the state (Figure 3). Panel A of Figure 3 shows the hospital HHI for each of Connecticut's nine planning regions in 2022. The planning regions ranged from an HHI of 2,676 (Naugatuck Valley) to 10,000 (Lower CT River Valley and Northeastern CT) with the average across the nine planning regions being 5,099 HHI. Panel B shows how the HHI changed across the nine planning regions from 2009 to 2022. The change in HHI ranged from -10 (Naugatuck Valley) to 3,744 (South Central CT). Over half of Connecticut's nine planning regions saw an increase of over 1,000 HHI from 2009-2022 (Capitol, Northwest Hills, South Central CT, Southeastern CT, and Western CT). Nuvance's hospitals are located in planning regions that have recently experienced considerable increases in hospital market concentration (Danbury Hospital and Norwalk Hospital are located in Western CT while Sharon Hospital is located in Northwest Hills). The positive of this transaction is that it does not lead to further consolidation of these counties given Northwell has no hospitals in Connecticut.

[8] Glied SA, Altman SH. Boosting competition among hospitals, health systems will improve health care. STAT. September 20, 2017. https://www.statnews.com/2017/09/20/hospitals-competition-health-care/

Figure 3. Planning Region-Level Hospital HHIs



Source: AHA's Annual Survey DatabaseNotes: Only general acute care hospitals are included. HHIs are calculated at the planning region-year level. Market shares are based on a hospital's share of admissions among hospitals located in its planning region. All hospitals in the same planning region that are part of the same system count as one for purposes of calculating market shares.

The impacts of hospital mergers and acquisitions

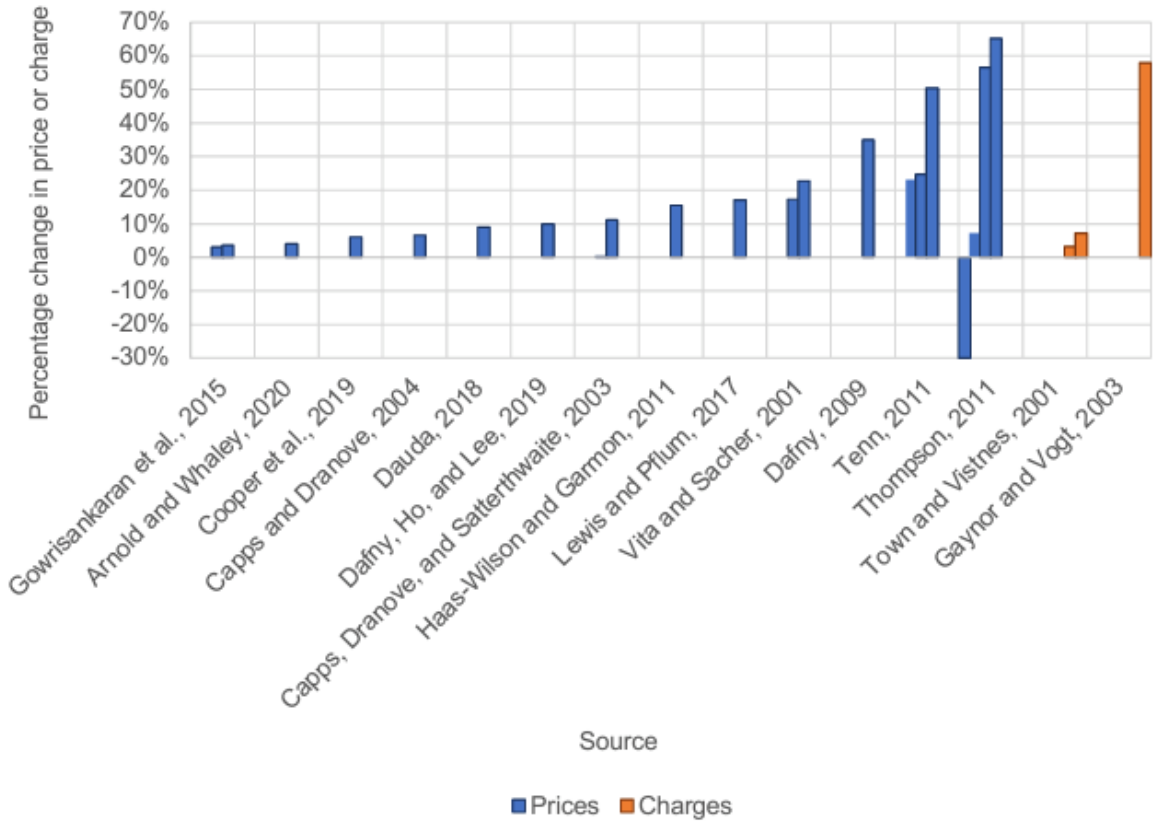
Summary
Studies examining the impact of hospital mergers on negotiated prices overwhelmingly find positive associations between hospital mergers and increases in prices. A recent report summarized these studies, and across a range of studies, found substantial increases in commercial insurance prices following hospital mergers. A study analyzing 2009-2013 hospital mergers found the mergers to be associated with no improvements in clinical quality metrics and worsening impacts on patient satisfaction. Other studies have found hospital mergers limit employment options for nurses and physicians.

Hospital mergers and acquisitions (M&A) are a dominant form of health care market provider consolidation. Over the 1998 to 2023 period, over 2,000 hospital mergers took place in the United States.[9] As a result of hospital M&A, nearly all US health care markets are not competitive, using market concentration thresholds commonly applied by the US Department of Justice and Federal Trade Commission.[10] Hospital mergers include consolidation between local hospitals, cross-market acquisitions, and the combining of large health systems.

A large and growing body of research has examined the impacts of hospital mergers. These studies primarily focus on the financial impacts of mergers. Hospitals often justify mergers on the basis of cost reductions from scale economies and efficiencies that will lead to quality improvement. However, mergers can also lead to increased bargaining leverage with commercial insurers when negotiating prices. Studies examining the impact of hospital mergers on negotiated prices overwhelmingly find positive associations between hospital mergers and increases in prices. A recent report summarizes these studies, and across a range of studies, finds substantial increases in commercial insurance prices following hospital mergers (Figure 4).[11]

[9] There were 1,577 hospital mergers from 1998 to 2017 according to Gaynor M. What to Do about Health- Care Markets? Policies to Make Health- Care Markets Work. Hamilton Project Policy Proposal. 2020 Mar 10;10:11-4. https://www.hamiltonproject.org/publication/policy-proposal/what-to-do-about-health-care-markets-policies-to-make-health-care-markets-work/. From 2017 to 2023 there were 464 announced hospital mergers according to Irving Levin Associates.
[10] Fulton, Brent D. 2017. "Health Care Market Concentration Trends In The United States: Evidence And Policy Responses." Health Affairs 36 (9): 1530–38. https://doi.org/10.1377/hlthaff.2017.0556.
[11] Liu, Jodi L., Zachary M. Levinson, Annetta Zhou, Xiaoxi Zhao, PhuongGiang Nguyen, and Nabeel Qureshi. 2022. "Environmental Scan on Consolidation Trends and Impacts in Health Care Markets." RAND Corporation. https://www.rand.org/pubs/research_reports/RRA1820-1.html.

Figure 4. Hospital Price or Charge Percentage Changes Following Hospital Horizontal Consolidation



Source: Figure 4.2 in Liu, Jodi L., Zachary M. Levinson, Annetta Zhou, Xiaoxi Zhao, PhuongGiang Nguyen, and Nabeel Qureshi. 2022. "Environmental Scan on Consolidation Trends and Impacts in Health Care Markets." RAND Corporation. https://www.rand.org/pubs/research_reports/RRA1820-1.html

Notes: Studies that have more than one bar reported price changes for more than one site or payer. For example, Vita and Sacher, 2001, examined the price changes in two hospitals, Dominican Santa Cruz Hospital and Watsonville Community Hospital in California. Thompson, 2011, reported price changes for four insurers following a merger of two hospitals. The results from Krishnan, 2001, indicate price increases of 11.8 to 16.5 percentage points but are not shown on the figure because they do not readily translate into percent changes.

Due to these price effects, recent studies suggest that antitrust regulators have not blocked mergers that lead to price increases that should have triggered regulatory review.[12] Because employer-sponsored insurance plans finance health care benefits from worker wages and other benefits, hospital mergers lead to reductions in worker wages, and through payroll taxes,

[12] Brot-Goldberg, Zarek, Zack Cooper, Stuart Craig, and Lev Klarnet. 2024. "Is There Too Little Antitrust Enforcement in the U.S. Hospital Sector?" American Economic Review: Insights. https://doi.org/10.1257/aeri.20230340.

government tax revenue.[13] One estimate suggests that over the 2012 to 2022 period, hospital mergers have reduced worker wages by nearly $1 trillion in the United States.

In addition to price increases, hospital mergers can have adverse impacts on quality. Particularly when prices are set administratively, as is the case for Medicare payments, hospitals compete for patient volume through quality and reputation.[14] The reduced competitive environment due to hospital mergers reduces hospital incentives to invest in quality improvement. Consistent with this theory, a recent analysis of hospital mergers over the 2009 to 2013 period finds that hospital mergers are associated with no improvements in clinical quality metrics and worsening impacts on patient satisfaction.[15] Other studies find that hospital commercial insurance price increases, consistent with price increases following mergers, do not lead to meaningful improvements in clinical quality metrics.[16]

In addition to patient outcomes, other studies have linked hospital mergers to health care provider employment. In addition to increased negotiation leverage, hospital consolidation limits employment options for nurses and physicians. Due to this "monopsony" effect, hospital mergers have also been linked to reductions in nurse wages.[17]

[13] Arnold, Daniel, and Christopher M. Whaley. 2020. "Who Pays for Health Care Costs?: The Effects of Health Care Prices on Wages." Working Paper. Santa Monica, CA: RAND Corporation. https://www.rand.org/pubs/working_papers/WRA621-2.html.
Brot-Goldberg, Zarek, Zack Cooper, Stuart V. Craig, Lev R. Klarnet, Ithai Lurie, and Corbin L. Miller. 2024. "Who Pays for Rising Health Care Prices? Evidence from Hospital Mergers." Working Paper. Working Paper Series. National Bureau of Economic Research. https://doi.org/10.3386/w32613.
[14] Gaynor, Martin. 2006. "What Do We Know About Competition and Quality in Health Care Markets?" Working Paper. Working Paper Series. National Bureau of Economic Research. https://doi.org/10.3386/w12301.
[15] Beaulieu, Nancy D., Leemore S. Dafny, Bruce E. Landon, Jesse B. Dalton, Ifedayo Kuye, and J. Michael McWilliams. 2020. "Changes in Quality of Care after Hospital Mergers and Acquisitions." The New England Journal of Medicine 382 (1): 51–59. https://doi.org/10.1056/NEJMsa1901383.
[16] Crespin, Daniel J., and Christopher Whaley. n.d. "The Effect of Hospital Discharge Price Increases on Publicly Reported Measures of Quality." Health Services Research n/a (n/a). Accessed July 26, 2022. https://doi.org/10.1111/1475-6773.14040.
[17] Prager, Elena, and Matt Schmitt. 2021. "Employer Consolidation and Wages: Evidence from Hospitals." American Economic Review 111 (2): 397–427. https://doi.org/10.1257/aer.20190690.

Analyses

C.G.S. §19a-639f(d) states the cost and market impact review shall examine factors relating to the businesses and relative market positions of the transacting parties as defined in subsection (d) of section 19a-639 and may include, but need not be limited to the following 12 analyses:

1. The transacting parties' size and market share within its primary service area, by major service category and within its dispersed service areas.
2. The transacting parties' prices for services, including the transacting parties' relative prices compared to other health care providers for the same services in the same market.
3. The transacting parties' health status adjusted total medical expense, including the transacting parties' health status adjusted total medical expense compared to that of similar health care providers.
4. The quality of the services provided by the transacting parties, including patient experience.
5. The transacting parties' cost and cost trends in comparison to total health care expenditures statewide.
6. The availability and accessibility of services similar to those provided by each transacting party, or proposed to be provided as a result of the transfer of ownership of a hospital within each transacting party's primary service areas and dispersed service areas.
7. The impact of the proposed transfer of ownership of the hospital on competing options for the delivery of health care services within each transacting party's primary service area and dispersed service area including the impact on existing service providers.
8. The methods used by the transacting parties to attract patient volume and to recruit or acquire health care professionals or facilities.
9. The role of each transacting party in serving at-risk, underserved and government payer patient populations, including those with behavioral, substance use disorder and mental health conditions, within each transacting party's primary service area and dispersed service area.
10. The role of each transacting party in providing low margin or negative margin services within each transacting party's primary service area and dispersed service area.
11. Consumer concerns, including, but not limited to, complaints or other allegations that a transacting party has engaged in any unfair method of competition or any unfair or deceptive act or practice.
12. Any other factors that the unit determines to be in the public interest.

This section conducts each of these 12 analyses.

Analysis 1: Size and market share

The transacting parties' size and market share within its primary service area, by major service category and within its dispersed service areas

Summary
There is little overlap in the service areas of Nuvance and Northwell hospitals. We do not see Northwell having a dominant market share in any parts of Connecticut post-transaction. Though it is often mistakenly thought that little service overlap implies no increase in market power and no increases in prices or costs, there are at least four ways this is not guaranteed: (1) quality increases (2) brand recognition (3) change in control and (4) common employers. If quality increases at Nuvance's hospitals after they become part of Northwell, a price increase should be expected and, as long as the quality increase is commensurate with the price increase, there is no reason to be opposed to that sort of price increase. But that still will increase prices post-acquisition despite there being little service overlap prior to the acquisition. We see ways 1 and 2 (quality increases, brand recognition) as likely to lead to price increases post-acquisition at Nuvance's Connecticut hospitals. The best evidence we have on whether reasons 3 and 4 are likely is based on Northwell's prior acquisitions and what we know about employers having a number of employees that live in both Connecticut and New York. Overall, we are of the opinion that this transaction will lead to price increases, but the price increases will likely be smaller than those that would be predicted to arise from a merger between two systems that were geographically very proximate to each other. Additionally, there are both good signals of high quality at current Northwell hospitals and evidence that Northwell has invested significantly in previously acquired hospitals and done nothing in the way of cutting service lines or closing hospitals (or hospital units) after they have acquired them. On net, this transaction seems a positive development in light of Nuvance's significant financial troubles and its inability to achieve all of the goals of its formation.

Table 2 above showed the number of discharges across CT's 26 GAC hospitals in 2023. The three Nuvance hospitals ranked 5th (Danbury Hospital), 17th (Norwalk Hospital), and 24th (Sharon Hospital) in terms of total discharges in 2023.[18] In total, there were just over 365,000 discharges at Connecticut GAC hospitals in 2023 with 21,000 (6%), 9,500 (3%), and 1,500 (<1%) discharges at Danbury Hospital, Norwalk Hospital, and Sharon Hospital, respectively.

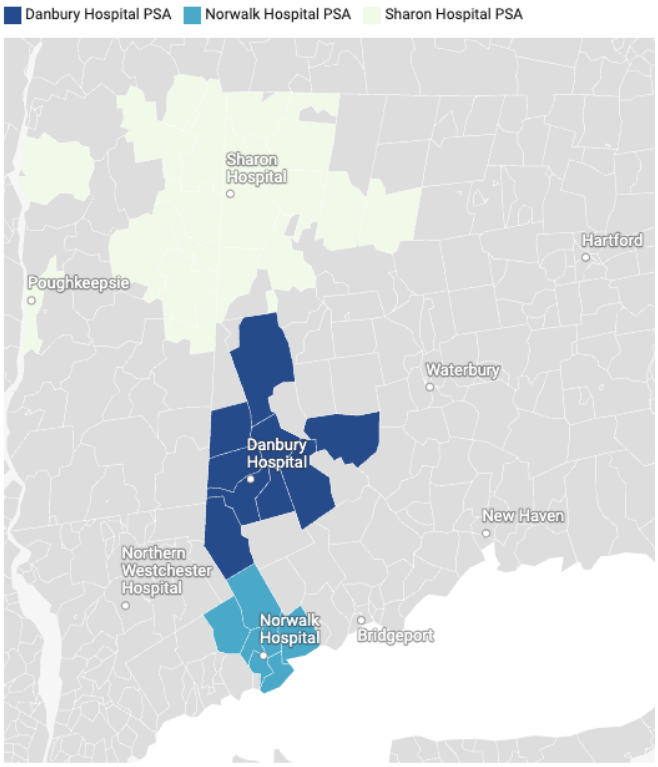
Figure 5 shows the primary service areas (PSAs) for Danbury Hospital, Norwalk Hospital, and Sharon Hospital calculated using 2023 discharge data. A PSA for a hospital is constructed by ranking zip codes from top to bottom based on the number of the hospital's discharges of patients residing in each zip code. Zip codes are continually added from the ranked list until the collection of zip codes accounts for 75% of the hospital's discharges. The Danbury Hospital PSA includes the towns of Danbury, New Milford, Bethel, Brookfield, Ridgefield, Southbury, Newtown, and New Fairfield.[19] The Norwalk Hospital PSA includes the towns of Norwalk, Westport, Wilton, and New

[18] Discharges at Danbury's New Milford campus are included in Danbury's total.
[19] Danbury is a city, not a town, but for simplicity we will not differentiate between cities and towns.

Canaan. Notably, all of the zip codes that make up the Danbury Hospital PSA and the Norwalk Hospital PSA are in Connecticut, as opposed to New York, which could have been the case given the proximity of each of them to the Connecticut-New York state line. The importance of this will become clear when we discuss the PSAs of Northern Westchester Hospital and Phelps Hospital, the only two Northwell hospitals that, based on distance, could potentially be close enough to Danbury Hospital and Norwalk Hospital to directly compete with them.

The PSA for Sharon Hospital is also shown in Figure 5. It covers a number of zip codes in the northwest part of Connecticut as well as some zip codes in New York. However, despite drawing some of its patients from New York, Sharon Hospital is nowhere near any Northwell hospitals (57 miles to Northern Westchester Hospital and 66 miles to Phelps Hospital) and thus its acquisition by Northwell is the least concerning from a strictly direct competition perspective.

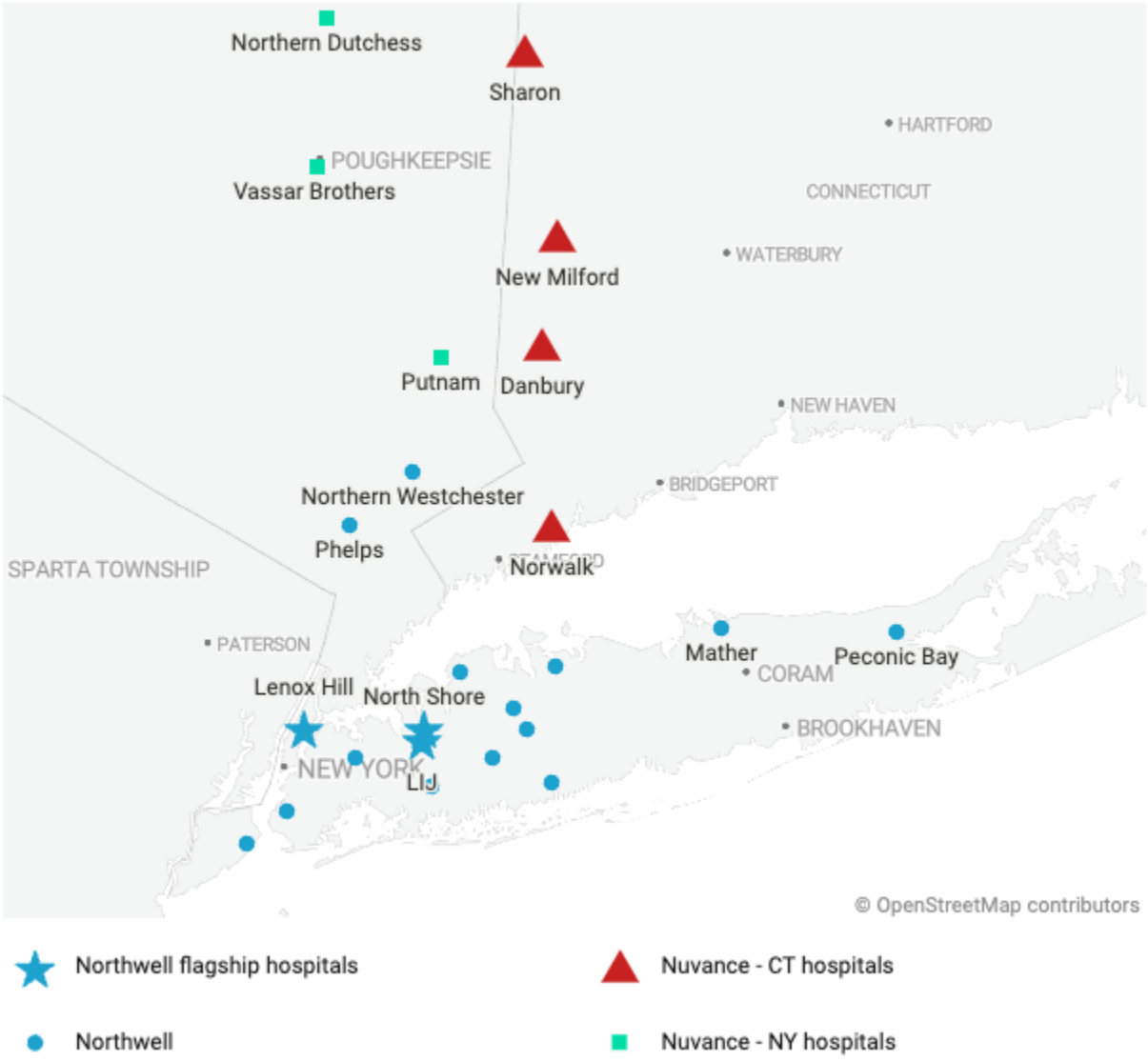
Figure 5. Primary Service Areas of Nuvance's Connecticut hospitals



Source: CT Discharge Data
Notes: A PSA for a hospital is constructed by ranking zip codes from top to bottom based on the number of the hospital's discharges from patients residing in each zip code. Zip codes are continually added from the ranked list until the collection of zip codes accounts for 75% of the hospital's discharges. Discharges at Danbury's New Milford campus are included as part of Danbury's total.

Northwell has 21 hospitals in New York, mostly on Long Island (see Figures 6 and 7). Northern Westchester Hospital is the closest Northwell hospital to one of Nuvance's hospitals.[20] It is 21 miles (~40 minute drive) to Norwalk Hospital and 28 miles (~40 minute drive) to Danbury Hospital. Phelps Hospital is the next closest hospital to Nuvance's Connecticut hospitals at 32 miles from Norwalk (45 minutes to 1 hour drive) and 38 miles (45 minutes to 1 hour drive) to Danbury Hospital.

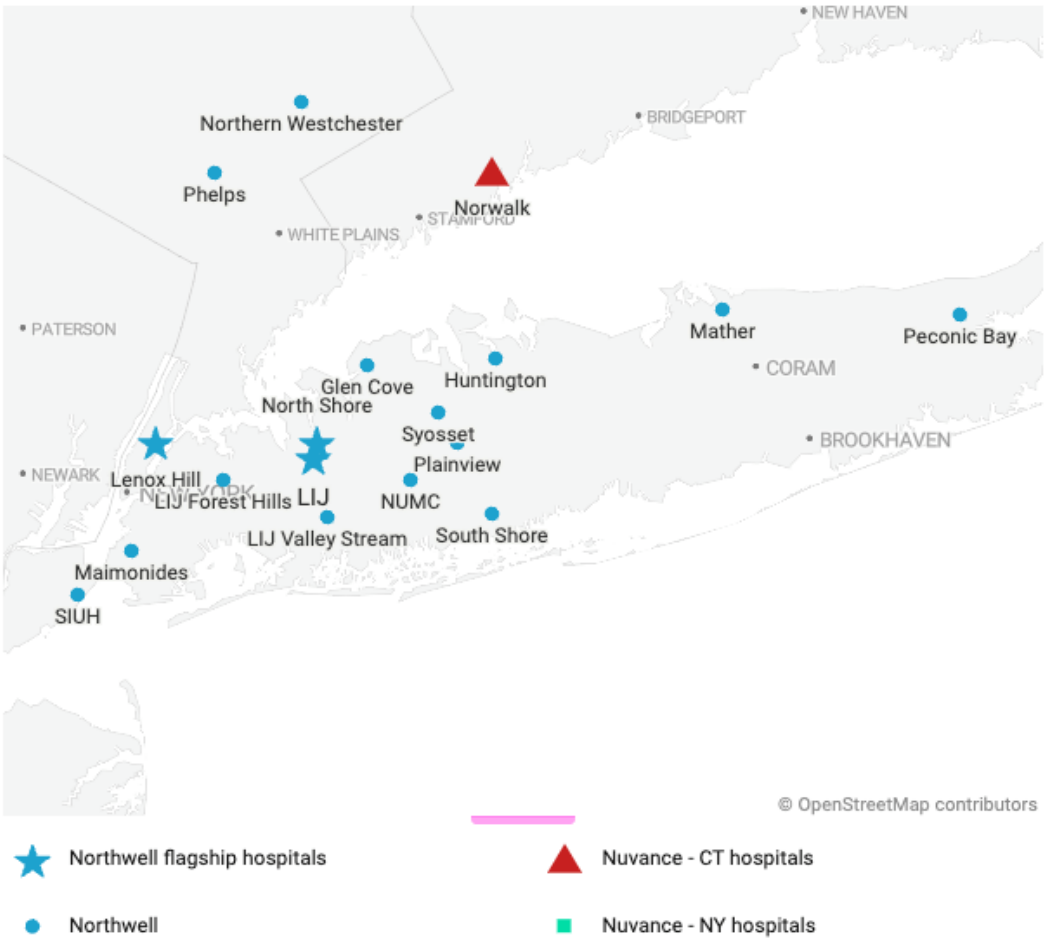
Figure 6. Nuvance and Northwell Hospitals in CT and NY



Source: Nuvance and Northwell's websites
Notes: We consider Long Island Jewish Medical Center, North Shore University Hospital, and Lenox Hill Hospital to be the three flagship hospitals of the Northwell system.

[20] As shown in Figure 6, Nuvance also has three hospitals in New York. Any reference to "Nuvance hospitals" in this report is to Nuvance's CT hospitals unless otherwise stated.

Figure 7. A closer look at Northwell's NY hospitals



Source: Nuvance and Northwell's websites
Notes: We consider Long Island Jewish Medical Center, North Shore University Hospital, and Lenox Hill Hospital to be the three flagship hospitals of the Northwell system.

Using New York's inpatient discharge data we calculated the PSAs for Northern Westchester Hospital and Phelps Hospital in 2022, the most recent year of data available. New York's discharge data lists 3-digit zip codes where patients reside so it is less granular than the Connecticut discharge data we utilized to calculate PSAs for Nuvance's Connecticut hospitals.

Nonetheless, for both Northern Westchester Hospital and Phelps Hospital, we calculated the PSA to be New York's 3-digit zip code 105. That is, one 3-digit zip code accounts for over 75% of each hospital's discharges and, as such, no Connecticut zip codes are part of Northern Westchester Hospital or Phelps Hospital's PSA. Given the PSAs of the two Northwell hospitals closest to Danbury Hospital and Norwalk Hospital do not overlap with the PSAs of either hospital, it seems

unlikely there is currently much direct competition between Northwell hospitals and Nuvance's Connecticut hospitals.[21]

It is often mistakenly thought that little service overlap implies no increase in market power and no increases in prices or costs.[22] There are at least four ways this is not guaranteed. First, and most obviously, if quality increases at Nuvance's Connecticut hospitals after they become part of Northwell, a price increase should be expected and, as long as the quality increase is commensurate with the price increase, there is no reason to be opposed to that sort of price increase. But that still will increase prices post-acquisition despite there being little service overlap prior to the acquisition.

The second way also relates to quality, but in a perceived way. Northwell has a better brand than Nuvance. That will become clear in later analyses in this report. It would not be surprising to see a price increase post-acquisition that the market will bear just through the fact that Northwell is a highly-regarded health system.

The third reason is a "change-in-control" price increase which could come from Northwell being better in price negotiations or having different objectives than Nuvance. The possibility of this is best documented in a 2017 academic paper by Matthew Lewis and Kevin Pflum.[23] The authors found that prices at hospitals acquired by out-of-market systems increased by about 17% more than unacquired, stand-alone hospitals. Additionally, the authors showed that out-of-market mergers resulted in a relaxation of competition whereby the prices of nearby competitors to the acquired hospitals increased by around 8%.

The fourth reason is based on a theory of "common customers." The idea behind common customers is that there is an underlying base of customers (most often thought of as employers) that need coverage in multiple geographic areas. For this transaction, the most likely common customer would be employers who have employees in both New York and Connecticut. There would seem to be several employers that fit this description given the number of people who live in Connecticut, but work in New York City. The increased market power in this scenario comes from

[21] We also calculated the dispersed service areas (DSAs) for each of the five hospitals mentioned in this section. Dispersed service areas (DSAs) are the zip codes that need to be added to PSAs to account for at least 90% of a hospital's discharges. Three of Danbury Hospital's DSA zip codes overlapped with Northern Westchester Hospital and Phelps Hospital's PSA of 3-digit zip code 105. One of Norwalk Hospital's DSA zip codes likewise overlapped with 3-digit zip code 105. We view this level of overlap as minimal concern in terms of direct competition. Generally speaking, markets constructed based on the minimum number of zip codes that capture 90% of a hospital's discharges tend to be implausibly large (see e.g., Frech III HE, Langenfeld J, McCluer RF. Elzinga-Hogarty tests and alternative approaches for market share calculations in hospital markets. Antitrust LJ. 2003;71:921).

[22] Attorney Benjamin Jensen, representing Nuvance for this transaction, said something very much along these lines at the November 6, 2024 public CON hearing discussing this transaction. Specifically, he said "Now, here because there's a minimal geographic overlap in the services provided by the applicants, there is no increase in market power which is something that was discussed today. Now, as a result, there would not be corresponding increases in prices or cost of care consistent with the state plan." https://portal.ct.gov/ohs/con-public-hearings

[23] Lewis MS, Pflum KE. Hospital systems and bargaining power: evidence from out-of-market acquisitions. The RAND Journal of Economics. 2017 Aug;48(3):579-610.

hospital systems that cover both Connecticut and New York knowing they have more leverage with insurers as they are able to create more "holes" in an insurer's provider network than hospital systems that cover only Connecticut or only New York. This theory is the most likely explanation behind price increases observed in Dafny et al. (2019) and Arnold et al. (2024).[24] Dafny et al. (2019) analyzed hospital mergers across distinct geographic markets and showed that such combinations can reduce competition among merging hospitals for inclusion in insurers' networks, leading to higher prices (or lower-quality care). Using data on hospital mergers from 1996–2012, the authors found support that this mechanism operates within state boundaries: cross-market, within-state hospital mergers yielded price increases of 7%–9 % for acquiring hospitals, whereas out-of-state acquisitions did not yield significant increases. Arnold et al. (2024) found that six years after acquisition, cross-market hospital mergers had increased the prices of acquirers by 13% relative to control hospitals, but had no discernible impact on measures of quality, such as mortality and readmission rates for heart failure, heart attacks, or pneumonia. The authors also found a stronger effect for serial acquirers, that is, systems that make several cross-market acquisitions over the course of several years. For serial acquirers, the price effect increased to 16%. In contrast to Dafny et. al (2019), the authors found the magnitude of the price effect was similar for out-of-state and in-state cross-market mergers.

If this report were for an antitrust case, it would be particularly important to do as much as possible to determine which one (or several) of these reasons were most likely to drive a potential price increase post-acquisition. The first three reasons are not antitrust concerns, whereas the fourth one could be if a hospital system used its leverage with respect to common customers to tie hospitals in a way that forced insurers to decide between having all or none of the system's hospitals in-network. Further analyses will make this clear, but we do think there is good reason to believe that reasons one and two (quality increases, brand recognition) are likely to lead to price increases post-acquisition at Nuvance's Connecticut hospitals. The best evidence we have on whether reasons three and four are likely is based on Northwell's prior acquisitions and what we know about employers having a number of employees that live in both Connecticut and New York. Overall, we are of the opinion that this transaction will lead to price increases, but the price increases will likely be smaller than those that would be predicted to arise from a merger between two systems that were geographically very proximate to each other. Additionally, there are both good signals of high quality at current Northwell hospitals and evidence that Northwell has invested significantly in previously acquired hospitals and done nothing in the way of cutting service lines or closing hospitals (or hospital units) after they have acquired them. On net, this transaction seems a positive development in light of Nuvance's significant financial troubles and its inability to achieve all of the goals of its formation.[25]

[24] Dafny L, Ho K, Lee RS. The price effects of cross-market mergers: theory and evidence from the hospital industry. The RAND Journal of Economics. 2019 Jun;50(2):286-325; Arnold DR, King JS, Fulton BD, Montague AD, Gudiksen KL, Greaney TL, Scheffler RM. New evidence on the impacts of cross-market hospital mergers on commercial prices and measures of quality. Health Services Research. 2024 Apr 23.

[25] Nuvance's inability to achieve all of the goals of its formation was discussed during the November 6, 2024 public CON meeting for this transaction.

Analysis 2: Prices

Transacting parties' prices for services, including the transacting parties' relative prices compared to other health care providers for the same services in the same market

Summary

A particular concern for this transaction would be Northwell increasing prices at Nuvance hospitals. A recent RAND study calculated Yale New Haven Hospital's relative price for inpatient and outpatient services to be 272% of Medicare. The same study calculated 12 of Northwell's New York hospitals to be above that, ranging from 317% of Medicare at Northern Westchester Hospital to 528% of Medicare at Phelps Hospital. According to the report, Northwell has the 17th highest relative price among health systems in the US whereas Nuvance Health, Yale New Haven, and Hartford Healthcare rank 122nd, 146th, and 161st, respectively

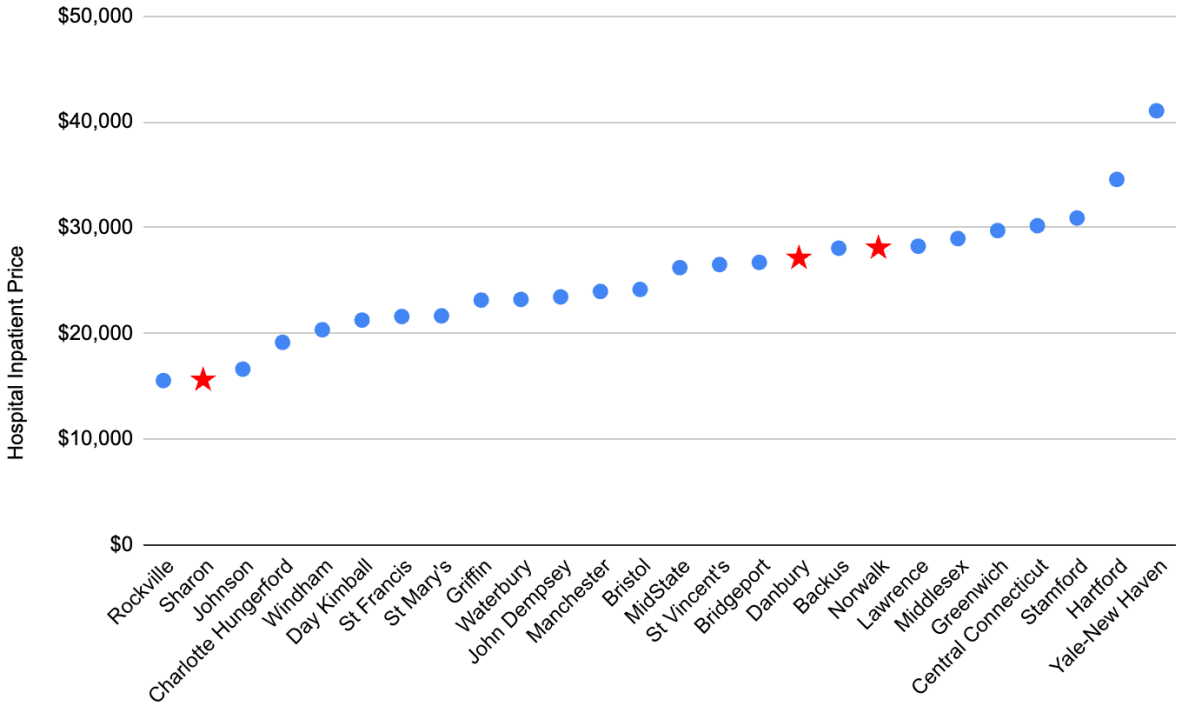
Price increases at Northwell's four most recent hospital acquisitions also raise concerns about prices at Nuvance hospitals potentially being materially higher than the median prices charged by all other health care providers for the same services in the same market should approval be granted for them to join Northwell. Price data obtained from Northwell for Mather Hospital shows that commercial inpatient hospital prices increased by 70% on average between 2017 (the year prior to Northwell acquiring Mather) and 2023 across the hospital's top 30 discharges by commercial revenue. This increase is more than double the average commercial inpatient price increase nationwide over this period. Such substantial price increases would be negative for payers and purchasers in Western Connecticut. But on the other hand, there likely will be benefits to patients in the region from higher quality, more investment, and continuation of important service lines at Nuvance's hospitals, factors leading to support for the transaction.

Figure 8 shows the commercial hospital inpatient price for each GAC hospital in CT in 2023 adjusted for its mix of treatments and patients.[26] The average commercial hospital inpatient price in the sample was $34,551 while the median was $25,180.[27] The main takeaways from Figure 8 are that Yale New Haven Hospital and Hartford Hospital are considerably more expensive than other hospitals in the state at just above $40,000 and just under $35,000 per inpatient stay, respectively. Most of the hospitals in CT fall in the $20,000-$30,000 range per inpatient stay, including Danbury Hospital and Norwalk Hospital. Sharon Hospital is the second lowest priced GAC hospital in Connecticut, just ahead of Rockville General Hospital.

[26] Specifically, we regressed the allowed amount for a commercial inpatient stay in 2023 on hospital fixed effects, patients characteristics (age and sex), and a vector of DRG fixed effects. We then recovered hospital fixed effects and calculated a hospital price index at the sample means of the patient characteristics and DRG indicators. This is identical to the method used in Cooper Z, Craig SV, Gaynor M, Van Reenen J. The price ain't right? Hospital prices and health spending on the privately insured. The quarterly journal of economics. 2019 Feb 1;134(1):51-107.

[27] Yale New-Haven Hospital and Hartford Hospital being both the highest volume and highest priced hospitals in the state skews the average to be much higher than the median.

Figure 8. Adjusted Hospital Inpatient Price, 2023



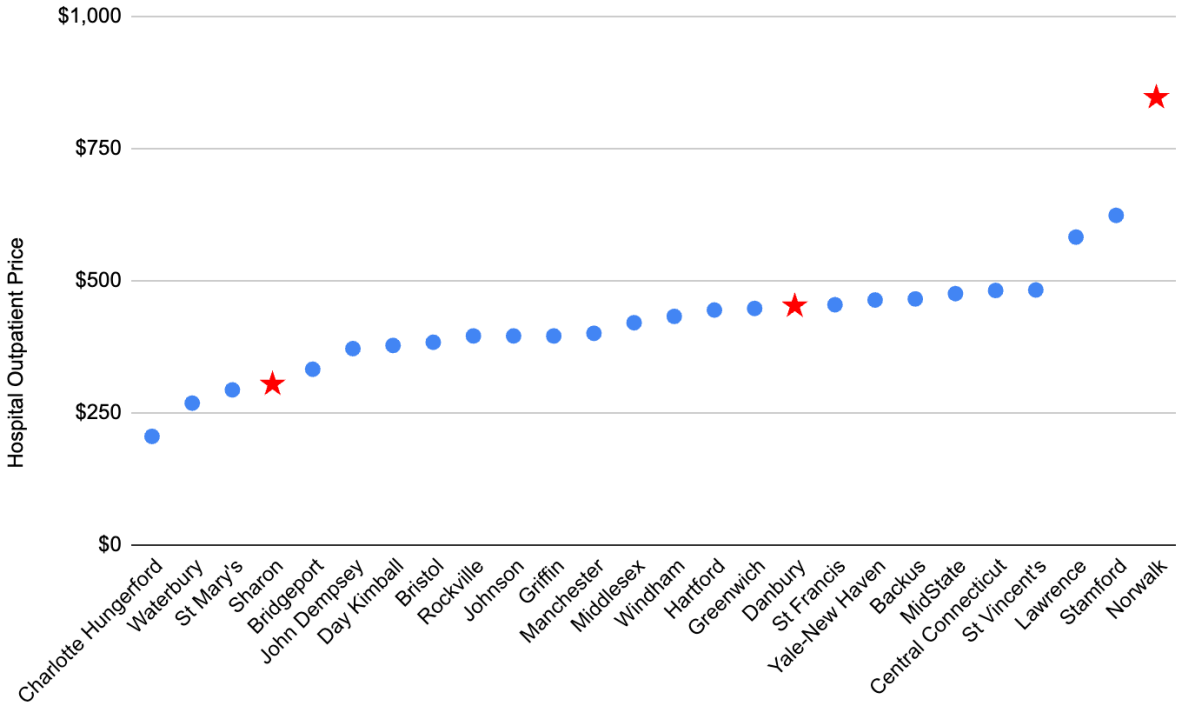
Source: APCD

Notes: Prices were adjusted as follows. We regressed the allowed amount for a commercial inpatient stay in 2023 on hospital fixed effects, patients characteristics (age and sex), and a vector of DRG fixed effects. We then recovered hospital fixed effects and calculated a hospital price index at the sample means of the patient characteristics and DRG indicators. This adjusts for differences in treatments (DRGs) and patients (age, sex) across hospitals. This is identical to the method used in Cooper Z, Craig SV, Gaynor M, Van Reenen J. The price ain't right? Hospital prices and health spending on the privately insured. The quarterly journal of economics. 2019 Feb 1;134(1):51-107.

Figure 9 repeats the analysis in Figure 8, but for outpatient prices.[28] The average commercial hospital outpatient price in the sample was $620 while the median was $426. Norwalk Hospital appears to be a considerable outlier in terms of outpatient prices as the most expensive at $846. Danbury Hospital is in the middle at just under $500, while Sharon Hospital is on the low end at around $300.

[28] Specifically, we regressed the allowed amount for a commercial inpatient stay in 2023 on hospital fixed effects, patients characteristics (age and sex), and a vector of DRG fixed effects. We then recovered hospital fixed effects and calculated a hospital price index at the sample means of the patient characteristics and DRG indicators. This is identical to the method used in Cooper Z, Craig SV, Gaynor M, Van Reenen J. The price ain't right? Hospital prices and health spending on the privately insured. The quarterly journal of economics. 2019 Feb 1;134(1):51-107.

Figure 9. Adjusted Hospital Outpatient Price, 2023

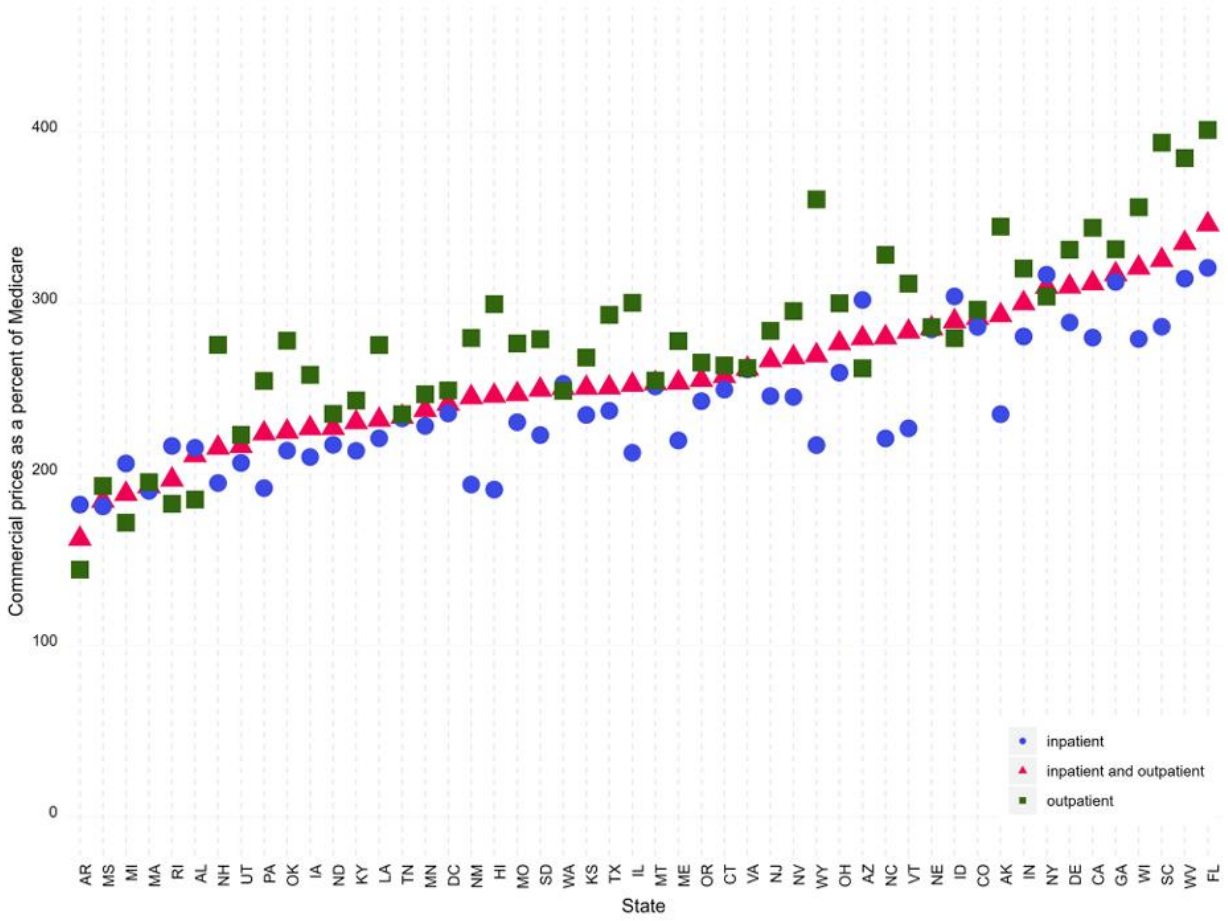


Source: APCD

Notes: Prices were adjusted as follows. We regressed the allowed amount for a commercial inpatient stay in 2023 on hospital fixed effects, patients characteristics (age and sex), and a vector of CPT fixed effects. We then recovered hospital fixed effects and calculated a hospital price index at the sample means of the patient characteristics and CPT indicators. This adjusts for differences in procedures (CPTs) and patients (age, sex) across hospitals.

The current price points for Nuvance's hospitals leaves room for price increases should Northwell choose to follow the price increasing strategies laid out at the end of the previous section. A particular concern for this transaction would be Northwell increasing prices at Nuvance hospitals. Figure 10 is reproduced from RAND's most recent study on commercial hospital prices. Prices are shown in Figure 10 as a percent of Medicare. That is, the relative price is the allowed amount from private health plan claims divided by the Medicare allowed amount—for the same services provided by the same hospital, using Medicare's price-setting formulas. Medicare payments are adjusted for geographic variation in wages, which enables a comparison across states that can vary widely in terms of cost-of-living. New York is the 8th most expensive state in terms of hospital prices while Connecticut is 22nd.

Figure 10. Relative Hospital Prices by State, 2022



Source: Figure 3.2 in Whaley CM, Kerber R, Wang D, Koffner A, Briscombe B. Prices Paid to Hospitals by Private Health Plans: Findings from Round 5.1 of an Employer-Led Transparency Initiative. RAND Corporation. December 10, 2024. https://www.rand.org/pubs/research_reports/RRA1144-2-v2.html

To make the point about Connecticut versus New York prices another way, the aforementioned RAND report calculated Yale New Haven Hospital's relative price for inpatient and outpatient services to be 272% of Medicare using claims from 2020-2022. It calculated 12 of Northwell's New York hospitals to be above that, ranging from 317% of Medicare at Northern Westchester Hospital to 528% of Medicare at Phelps Hospital. According to the report, Northwell has the 17th highest relative price among health systems in the US whereas Nuvance Health, Yale New Haven, and Hartford Healthcare rank 122nd, 146th, and 161st, respectively.[29] Notably, Northwell's prices are high for both inpatient at outpatient services. The RAND report calculates Northwell's relative price for inpatient services to be 360% of Medicare and its relative price for outpatient services to be 351% of Medicare. In fairness to Northwell, several other New York systems show up in the top 25 of the health system relative price ranking: Montefiore ranked 6th, NYU Langone ranked 10th, WMC Health ranked 12th, Catholic Health ranked 21st, and New York Presbyterian ranked 23rd. Additionally, many of these New York systems are renowned for high quality care, so this is not a

[29] Nuvance's New York hospitals are included in this ranking.

commentary on these systems being overpriced, but rather that they are objectively high priced. We expect Nuvance's Connecticut hospitals to experience price increases after being acquired by one of them, the question is the magnitude of the increases.

As mentioned in the analytic approach section, we believe Northwell's prior acquisitions are informative of what is likely to occur should the affiliation with Nuvance close. As part of information gathering for this CMIR, we asked Northwell to provide, for each hospital or provider organization that it acquired since January 1, 2018, the contracted prices and contract structure for each entity's top 30 discharges (by DRGs) and top 30 professional procedures (by CPT codes) in terms of total payment to the entity's three largest commercial payers in 2023. This information was to be provided for the commercial plans of the entity's three largest commercial payers for the year prior to the acquisition and each subsequent year through 2023. Northwell provided this information for Mather Hospital and Mather Medical Group, the only two hospitals or provider organizations Northwell acquired since January 1, 2018. Mather Hospital joined Northwell in 2018 and Mather Medical Group's billing system converted to Northwell following their affiliation in 2019. For both entities we received price data from 2017 to 2023.

The data for each of the two acquired entities contained about 630 prices (= 30 discharges/procedures x 3 payers x 7 years).[30] We calculated the 2017-2023 percent change for each of the 90 DRG-payer combinations we had for Mather Hospital and each of the 90 CPT-payer combinations we had for Mather Medical Group.[31] The average 2017-2023 percent change across the 90 DRG-payer observations we had was 70%. The average 2017-2023 percent change across the 90 CPT-payer observations we had was 74%. Price increases on the order of 70% over seven years are considerable. As points of comparison, from July 2017 to July 2023 the overall Consumer Price Index (CPI) increased by 25%, the New York-Newark-Jersey City, NY-NJ-PA CPI increased by 20%, and the CPI for hospital services specifically increased by 22%.[32] Comparing directly to other commercial inpatient prices, the Health Care Cost Institute shows a 20% increase from 2018-2022. The average 2018-2022 percent change across the 90 DRG-payer observations from Mather Hospital was 57%.

It is worth noting that Mather Hospital also likely would not have been considered to have much service overlap with Northwell at the time it was acquired in 2018. Mather Hospital is further east on Long Island than most of the Northwell Hospitals (see Figure 6). The closest Northwell hospitals to it are Peconic Bay Medical Center (21 miles) and Huntington Hospital (26 miles), which are in the range of 35 minutes to over an hour by drive-time depending on traffic. Northwell's other three relatively recent hospital acquisitions – Northern Westchester Hospital (2014), Peconic Bay

[30] 33 DRGs were included in the data for Mather Hospital so there were 693 prices. 14 CPT-payer-year observations were missing in the Mather Medical Group data so we received 616 prices for Mather Medical Group.
[31] Due to the extra DRGs included for Mather Hospital and the missingness in the Mather Medical Group data this ended up being 99 DRG-payer combinations and 84 CPT-payer combinations.
[32] https://data.bls.gov/toppicks?survey=cu and https://data.bls.gov/timeseries/CUURS12ASA0?amp%253bdata_tool=XGtable&output_view=data&include_graphs=true

Medical Center (2015), and Phelps Hospital (2014) – also fit the bill of being relatively far from other Northwell hospitals when they were acquired.[33] So in this sense significant price increases should not have been observed if it is to believe that minimal service overlap means no price or cost increases.

To make this last point more concrete, Table 5 shows Northwell's four recent hospital acquisitions, the year each hospital was acquired, the zip code(s) that made up the hospital's PSA, and Northwell's market share of the PSA in the year prior to acquisition. The Mather Hospital acquisition would have been the most likely to be considered a "within-market" acquisition as other Northwell hospitals had a 36% market share in Mather's PSA. The most direct competitors to Mather Hospital at the time were Stony Brook University Hospital (15% market share in Mather's PSA) and Good Samaritan Hospital Medical Center (13%) – neither of which were Northwell hospitals – though Northwell's South Shore University Hospital (11%) and Huntington Hospital (8%) were reasonably strong competition to Mather Hospital in terms of serving patients residing in its PSA. Nonetheless, neither hospital is within 15 miles (an often used heuristic for determining a hospital's biggest competitors) of Mather Hospital so a geographic market defined using more granular data could find South Shore University and Huntington Hospital were not particularly strong competitors to Mather Hospital at the time of acquisition. In sum, the price increase at Mather Hospital would potentially be considered either a within-market or cross-market price increase. Any price increases observed at Northwell's other three recent hospital acquisitions (Peconic Bay Medical Center, Northern Westchester Hospital, and Phelps Hospital) would almost certainly be considered cross-market price increases as Northwell had hardly any presence (1-4% market share) in the relevant PSAs prior to the transactions.

Table 5. Northwell's market overlap in previous acquisitions

Hospital	**Year Acquired by Northwell**	**3-digit zip code(s) that made up PSA in year prior to being acquired**	**Northwell's market share in PSA in year prior to the acquisition**
Mather Hospital	2018	117	36%
Peconic Bay Medical Center	2015	119	4%
Northern Westchester Hospital	2014	105	1%
Phelps Hospital	2014	105	1%

Source: NY Discharge Data

We have already observed the price increases for Mather Hospital, but unfortunately do not have the same price data for Northern Westchester Hospital, Peconic Bay Medical Center, and Phelps Hospital to be able to observe how prices increased after these acquisitions. Instead, we analyze

[33] Note the closest Northwell hospital to Peconic Bay Medical Center at the time was South Shore Hospital given Mather Hospital was not yet part of Northwell. South Shore Hospital is a 45-minute drive from Peconic Bay Medical Center with no traffic.

commercial revenues and utilization in tandem to get a sense of price increases at these three hospitals. Using revenues instead of prices is less than ideal given commercial revenues can increase for reasons even beyond utilization, such as complexity of services or revenue cycle improvements, but the more detached commercial revenues are from utilization, the likelier it becomes that a price change is also at play.

Figure 11 shows estimates of commercial hospital revenue from RAND's Hospital Data for Mather Hospital, Northern Westchester Hospital, Peconic Bay Medical Center, and Phelps Hospital.[34] The year each hospital was acquired by Northwell is shown as a dotted vertical line in the graphs. The estimate of commercial revenue for Mather Hospital increased by 47% from 2017-2023 ($186.5 million to $274.4 million) which is lower than the 70% price increase reported in our prior analysis using the DRG and CPT price data obtained from Northwell. Part of this difference between revenue increases and price increases likely has to do with the reduction of commercial discharges at Mather Hospital over the same time period. Utilizing New York's discharge data we calculated the number of commercial discharges at Mather Hospital decreased by 34% from 2017 to 2022 (2023 data is not yet available).

Commercial discharges also decreased at Phelps Hospital (-28%) and Peconic Bay Medical Center (-2%) over the 2017 to 2022 period. Northern Westchester Hospital saw a 5% increase in commercial discharges over this period. With those utilization changes in mind, Figure 11 can be used to get a sense of the likely commercial price changes at these three hospitals. Commercial revenue at Phelps Hospital increased by 6% from 2011 to 2014 when it joined Northwell. From 2014 to 2017 commercial revenue increased by 20%. The most recent commercial revenue data for Phelps Hospital in 2023 indicates a 132% increase in the commercial revenue at Phelps Hospital since it joined Northwell in 2014 ($301.3 million vs. $129.4 million).

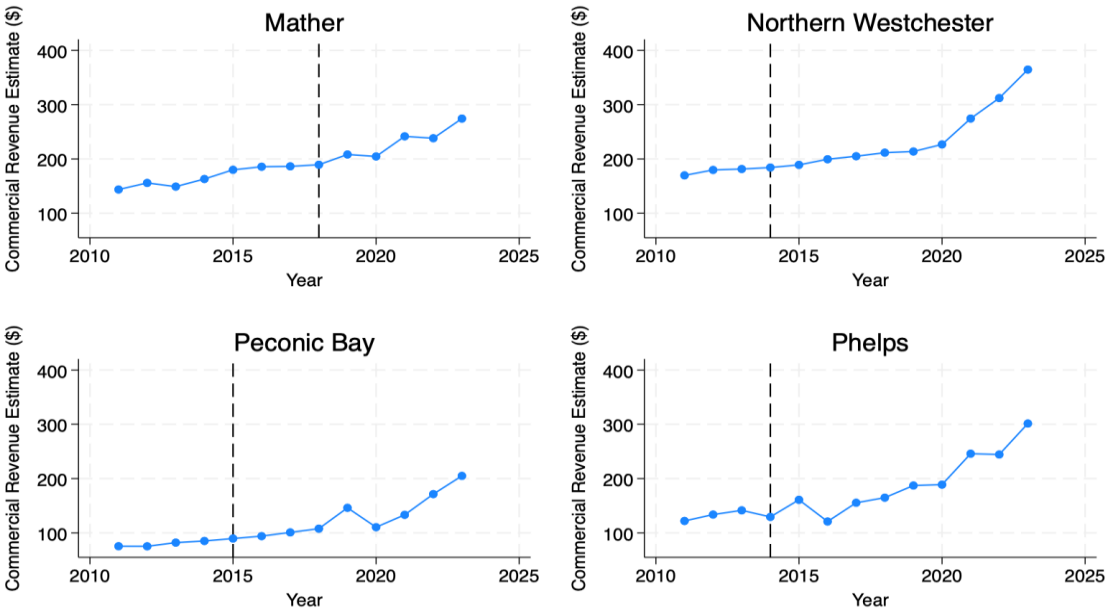
Commercial revenue at both Northern Westchester Hospital and Peconic Bay Medical Center was relatively flat across the few years prior to and after joining Northwell. Commercial revenue at both, however, is now much higher than it was prior to joining Northwell. Northern Westchester Hospital's commercial revenue in 2023 is 98% higher than it was in 2014 when it joined Northwell ($364.6 million vs. $184.3 million) while Peconic Bay Medical Center's commercial revenue in 2023 is 129% higher than it was in 2015 when it joined Northwell ($205.0 million vs. $89.6 million).

The price increases at Northwell's four most recent hospital acquisitions raise concerns about prices at Nuvance hospitals potentially being materially higher than the median prices charged by all other health care providers for the same services in the same market should approval be granted for them to join Northwell. This would be a negative for payers and purchasers in Western Connecticut. But on the other hand, there likely will be benefits to patients in the region from higher quality, more investment, and continuation of important service lines at Nuvance's Connecticut

[34] RAND's Hospital Data is public cost report data from the CMS Healthcare Cost Report Information System (HCRIS) processed into panel datasets with a few additional metrics added, such as health system information from AHRQ.

hospitals, factors leading to support for the transaction. These considerations are discussed in the following sections of this report.

Figure 11. Commercial Revenues Estimates for Select Hospitals, 2011-2023



Source: RAND Hospital Data

Notes: The vertical dotted line in each graph is the year the hospital was acquired by Northwell. Commercial revenue is defined in the RAND Hospital Data as estimated revenues from commercial payers, i.e. net patient revenues minus revenues from Medicare (fee-for-service plus estimated Medicare Advantage), Medicaid, SCHIP, and state/local indigent.

Analysis 3: Health status adjusted medical expense

Transacting parties' health status adjusted total medical expense, including the transacting parties' health status adjusted total medical expense compared to that of similar health care providers

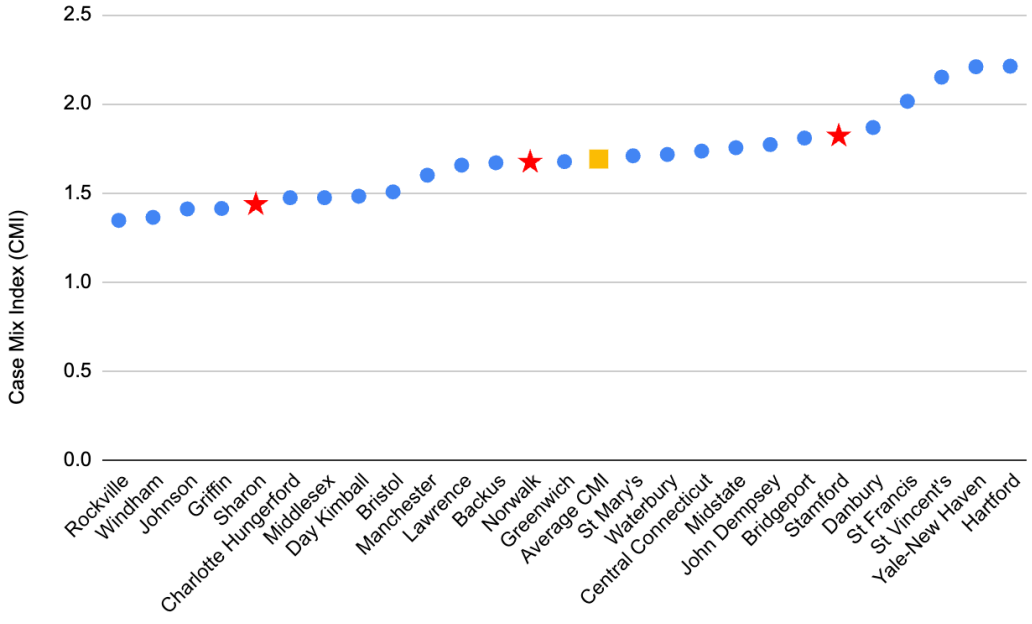
Summary

Northwell hospitals treat more complex patients than Nuvance's hospitals, but neither system appears to be a high outlier in terms of health status adjusted medical expenses.

The complexity of patients treated can differ considerably across hospitals. The Centers for Medicare & Medicaid Services (CMS)'s Case Mix Index (CMI) is one measure that tries to capture these differences. It is used to determine how much a hospital will be reimbursed for Medicare and Medicaid patients. A higher CMI means that a hospital has treated more complex patients, and will receive a higher reimbursement rate.

Figure 12 shows the CMIs for Connecticut hospitals in 2023. The average CMI across Connecticut's 26 GAC hospitals was 1.69 in 2023. Danbury Hospital was above average at 1.87 while Norwalk Hospital was slightly below average at 1.67 and Sharon Hospital was considerably below average at 1.44.

Figure 12. Case Mix Indices for Connecticut Hospitals, 2023

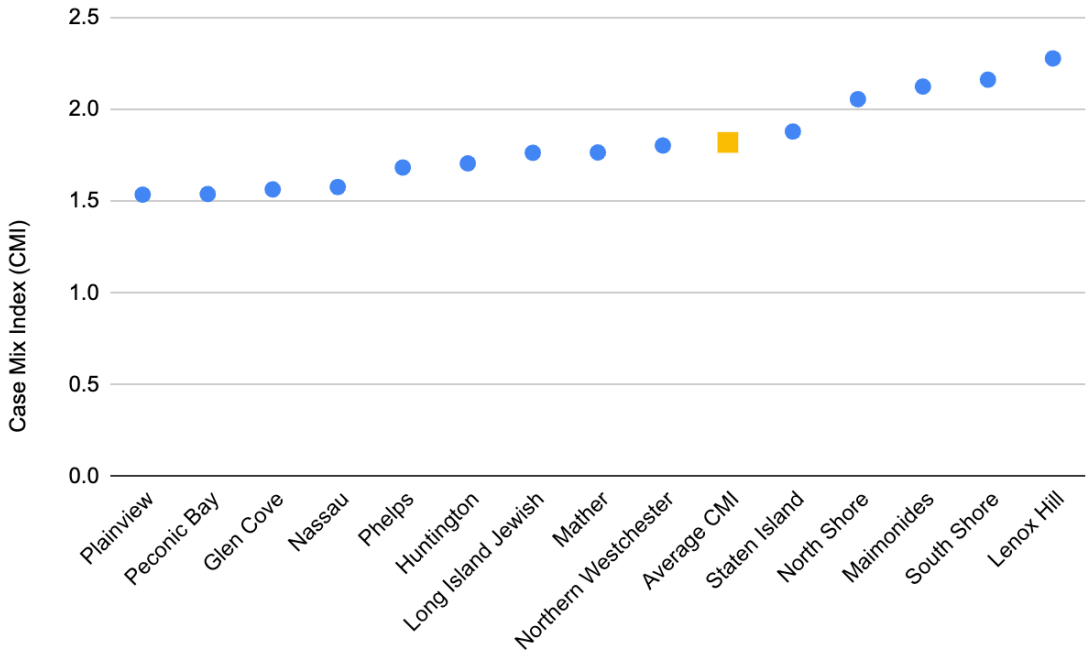


Source: RAND Hospital Data

Notes: Only includes GAC hospitals. Nuvance hospitals shown as red stars. Average CMI shown as orange square.

Figure 13 shows the CMIs for Northwell's hospitals in 2023. The average CMI across Northwell's hospitals was 1.82 in 2023 and four of Northwell's hospitals had a CMI above 2 (North Shore, Maimonides, South Shore, and Lenox Hill) indicating that Northwell's hospitals are generally treating more complex patients than Nuvance's hospitals. Because of this additional complexity it would be reasonable for Northwell's hospitals to have higher costs in order to properly care for these more complex patients.

Figure 13. Case Mix Indices for Northwell's Hospitals, 2023



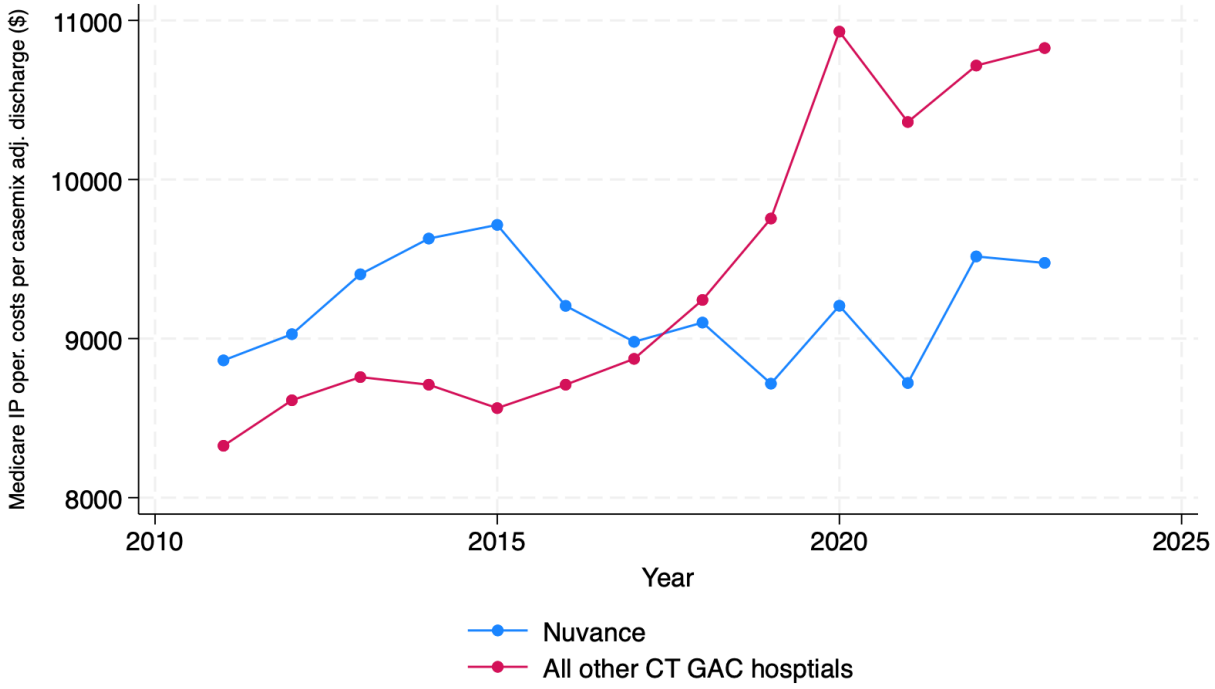
Source: RAND Hospital Data
Notes: Only includes GAC hospitals. Average CMI shown as orange square.

The goal of the analysis in this section is to analyze how Nuvance's and Northwell's costs compare to other hospitals in their respective states after accounting for differences in the complexity of patients treated.[35] We will do this by comparing Nuvance's Medicare inpatient operating costs per Medicare inpatient hospital discharge, adjusted for Medicare CMI to other hospitals in Connecticut. We likewise do a similar comparison for Northwell's hospitals by comparing them to other hospitals in New York.

[35] Note that this analysis does not attempt to calculate total medical expense (TME) at the provider level as described in the Connecticut Healthcare Benchmark Initiative https://portal.ct.gov/-/media/ohs/cost-growth-benchmark/guidance-for-payer-and-provider-groups/posted-11-21-22/ct-ohs-implementation-manual-v22-2022-11-18.pdf . Doing a full accounting of TME, much less health status adjusted TME, is difficult due to a number of data limitations. These data limitations are described in the recent CMIR analyzing Yale New Haven's proposed acquisition of Prospect's three Connecticut hospitals https://portal.ct.gov/ohs/press-room/press-releases/2024-press-releases/ohs-ynhhs-and-prospect-reach-agreed-settlement?language=en_US

Figure 14 shows Medicare inpatient operating costs per Medicare inpatient hospital discharge, adjusted for Medicare CMI were relatively stable at Nuvance hospitals from 2011 to 2023 period. In comparison, the average across the rest of GAC hospitals in Connecticut has been increasing considerably.

Figure 14. Nuvance's Medicare inpatient operating costs per Medicare inpatient hospital discharge, adjusted for Medicare casemix index (CMI), 2011-2022

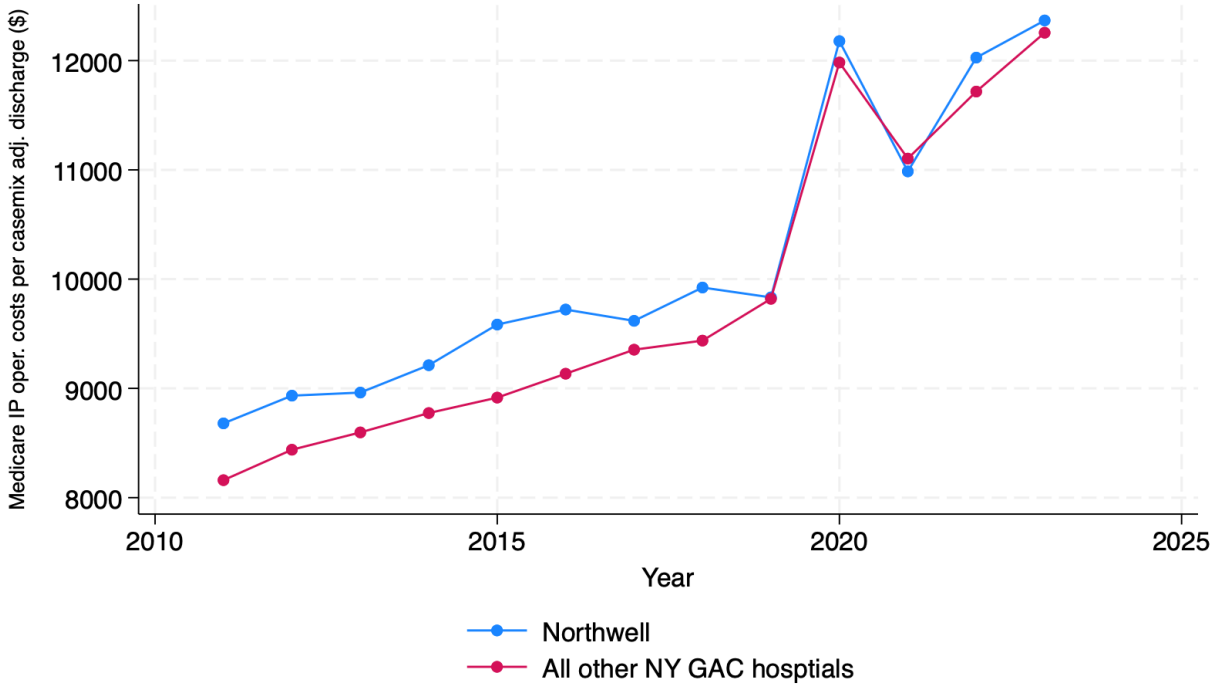


Source: RAND Hospital Data

Notes: Medicare inpatient operating costs per Medicare inpatient hospital discharge, adjusted for Medicare casemix index (CMI) are first calculated at the hospital's level and then weighted using Medicare inpatient hospital discharges, adjusted for Medicare CMI.

Figure 15 shows Medicare inpatient operating costs per Medicare inpatient hospital discharge, adjusted for Medicare CMI at Northwell hospitals track the increases at the rest of GAC hospitals in New York almost perfectly over the 2011 to 2023 period. Figures 13 and 14 lead to the conclusion that neither Nuvance nor Northwell are high outliers in terms of health status adjusted medical expenses.

Figure 15. Northwell's Medicare inpatient operating costs per Medicare inpatient hospital discharge, adjusted for Medicare casemix index (CMI), 2011-2022



Source: RAND Hospital Data

Notes: Medicare inpatient operating costs per Medicare inpatient hospital discharge, adjusted for Medicare casemix index (CMI) are first calculated at the hospital's level and then weighted using Medicare inpatient hospital discharges, adjusted for Medicare casemix index (CMI).

Analysis 4: Quality

The quality of the services provided by the transacting parties, including patient experience

Summary
The quality of care appears to be generally fine at Nuvance's Connecticut hospitals, but it is not at the level of Northwell's hospitals. Twelve (12) Northwell hospitals are considered nationally ranked or high performing in at least one specialty. Nuvance hospitals, in comparison, are not nationally ranked or high performing in any specialties. Northwell also has a good recent history of improving quality at the hospitals it acquires. Overall, the transaction appears positive in terms of a potential for quality improvement at Nuvance's hospitals.

Table 6 shows several quality measures for both Nuvance and Northwell's hospitals. CMS's overall star rating, which ranges from 1 (worst) to 5 (best), is shown in column (1). The rating is a summary score that is calculated by taking the weighted average of a hospital's score for five measure groups: mortality, safety, readmission, patient experience, and timely and effective care. The latest data (July 2024) show the star distribution across 4,658 hospitals to be 6% 1 star, 13% 2 stars, 18% 3 stars, 17% 4 stars, 8% 5 stars, and 39% NA.[36] Table 6 includes all Nuvance and Northwell hospitals with a star rating in 2024. Nuvance's hospitals have CMS overall star ratings of 3 (Danbury Hospital), 3 (Norwalk Hospital), and 5 (Sharon Hospital) with the average being 3.7 stars. Northwell's hospitals range from 1 star (Staten Island University Hospital, Maimonides Medical Center, Nassau University Medical Center) to 5 stars (Northern Westchester Hospital, Glen Cove Hospital, Mather Hospital) with the average being 3.3 stars.

Column (2) of Table 6 shows each hospital's patient survey rating. The patient survey asks recently discharged patients about topics such as how well nurses and doctors communicated, how responsive hospital staff were to their needs, and the cleanliness and quietness of the hospital environment. Again, Nuvance's hospitals do fine on this measure (average 3.3 stars) and a bit better than Northwell's hospitals (average 2.7 stars) on the overall star rating.

Columns (3)-(5) in Table 6 is where Northwell hospitals shine. North Shore University Hospital is one of the 20 best hospitals in the US according to US News.[37] North Shore University Hospital is nationally ranked in nine specialties and is considered high performing in 16 procedures/conditions. Long Island Jewish Medical Center is nationally ranked in nine specialties and is high performing in one specialty and 14 procedures/conditions. In addition to North Shore University Hospital and Long Island Jewish Medical Center, five other Northwell hospitals are nationally ranked in at least one specialty (Lenox Hill - 6; Huntington - 3; Plainview, Northern Westchester, Glen Cove - 1 each). There are 12 Northwell hospitals that are considered either nationally ranked or high performing in at least one specialty. Nuvance hospitals, in comparison,

[36] https://data.cms.gov/provider-data/topics/hospitals/overall-hospital-quality-star-rating
[37] https://health.usnews.com/health-care/best-hospitals/articles/best-hospitals-honor-roll-and-overview

are not nationally ranked or high performing in any specialties. There are 11 Northwell hospitals that are high performing in at least 6 procedures/conditions. Among Nuvance hospitals, Danbury is considered high performing for 5 procedures/conditions, Norwalk Hospital is considered high performing for 1, and Sharon Hospital is not considered high performing for any procedures/conditions. The last column in Table 6 displays the US News's patient experience rating (1 to 5 stars). The US News patient experience score lines up well with CMS's overall star rating in that Nuvance is slightly better on average than Northwell (3.3 stars vs. 2.8 stars).

Table 6. Quality Ratings at Nuvance and Northwell GAC Hospitals

	(1) CMS Overall star rating	(2) CMS Patient survey rating	(3) US News number of nationally ranked specialties	(4) US News number of high performing specialties	(5) US News number of high performing procedures/ conditions	(6) US News Patient Experience
Danbury Hospital	3	3	0	0	5	3
Norwalk Hospital	3	3	0	0	1	3
Sharon Hospital	5	4	0	0	0	4
Nuvance average	3.7	3.3	0.0	0.0	2.0	3.3
Long Island Jewish Medical Center	3	3	9	1	14	3
North Shore University Hospital	4	3	9	0	16	3
Lenox Hill Hospital	4	2	6	5	16	3
Huntington Hospital	4	3	3	5	10	3
Plainview Hospital	3	3	1	2	6	3
Northern Westchester Hospital	5	4	1	1	6	3
Glen Cove Hospital	5	4	1	1	4	4
Mather Hospital	5	4	0	5	6	4
Staten Island University Hospital	1	2	0	4	14	2
South Shore University Hospital	4	2	0	3	16	3
Maimonides Medical Center	1	2	0	2	9	2
Phelps Hospital	3	2	0	1	1	2
Peconic Bay Medical Center	3	3	0	0	7	3
Nassau University Medical Center	1	1	0	0	0	1
Northwell average	3.3	2.7	2.1	2.1	8.9	2.8

Source: CMS Hospital Compare and U.S. News Best Hospitals 2024-2025

Northwell also has a good recent history of improving quality at the hospitals it acquires. Table 7 shows the CMS overall star rating over time at the four hospitals Northwell recently acquired.

Northwell acquired Mather Hospital in 2018 when its star rating was a 3 and today it is a 5. Northern Westchester Hospital today is 5 stars, but was 3 stars in the year after Northwell acquired it in 2015. Peconic Bay Medical Center also improved by 2 stars from 1 star in 2016 to 3 stars today. The only recent acquisition where quality slipped according to CMS's star rating was Phelps Hospital, which had 4 stars in 2015 (the first year after being acquired by Northwell) and today is only 3 stars.

Overall, the transaction appears positive in terms of a potential for quality improvement at Nuvance's hospitals.

Table 7. Quality at Northwell's recent hospital acquisitions, 2015-2024

	Affiliation date	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Mather Hospital	2018	NA	4	4	3	3	2	3	4	5	5
Northern Westchester Hospital	2014	3	4	3	4	3	2	3	4	4	5
Peconic Bay Medical Center	2015	NA	1	2	2	1	3	4	4	3	3
Phelps Hospital	2014	4	3	3	5	4	4	4	3	3	3

Source: CMS Hospital Compare archive

Notes: NA=not available

Analysis 5: Costs and cost trends

The transacting parties' cost and cost trends in comparison to total health care expenditures statewide

Summary
Neither Nuvance nor Northwell appear to be particular outliers in their respective states in terms of costs.

Figure 16 shows the hospital operating costs per adjusted patient discharge for Nuvance's hospitals in comparison to other GAC hospitals in Connecticut while Figure 17 compares the same measure for Northwell's hospitals to GAC hospitals in New York. Hospital operating costs are the portion of hospital expenses (inclusive of all services) related only to hospital patient care and eligible for reimbursement per Medicare federal regulations, sometimes referred to as Medicare Allowed Costs. Adjusted patient discharges are a combined measure of hospital inpatient and outpatient discharges, which is computed by multiplying inpatient volume by an outpatient factor. The outpatient factor is total hospital charges divided by inpatient hospital charges.

By the measure shown in Figures 16 and 17, neither Nuvance nor Northwell appear to be cost outliers when compared to other GAC hospitals in their respective states. Nuvance is on average 5% below other other GAC hospitals in Connecticut per year in terms of hospital operating costs per adjusted discharge, but the cost trend for Nuvance is nearly identical to other GAC hospitals in Connecticut.

Northwell, on the other hand, is above other GAC hospitals in New York in terms of hospital operating costs per adjusted discharge. Over the 2011-2022 period it was 6% above other GAC hospitals on average. But given much higher costs generally in the New York City area than the rest of the state, it is not surprising that Northwell costs are higher than the state average. Northwell's trend nevertheless is closely tracking that of other hospitals in the state, so it does not appear to be becoming more costly over time. Overall, neither Nuvance nor Northwell appear to be particular outliers in their respective states in terms of costs.

Figure 16. Nuvance's Hospital Operating Costs Per Adjusted Patient Discharge, 2011-2022

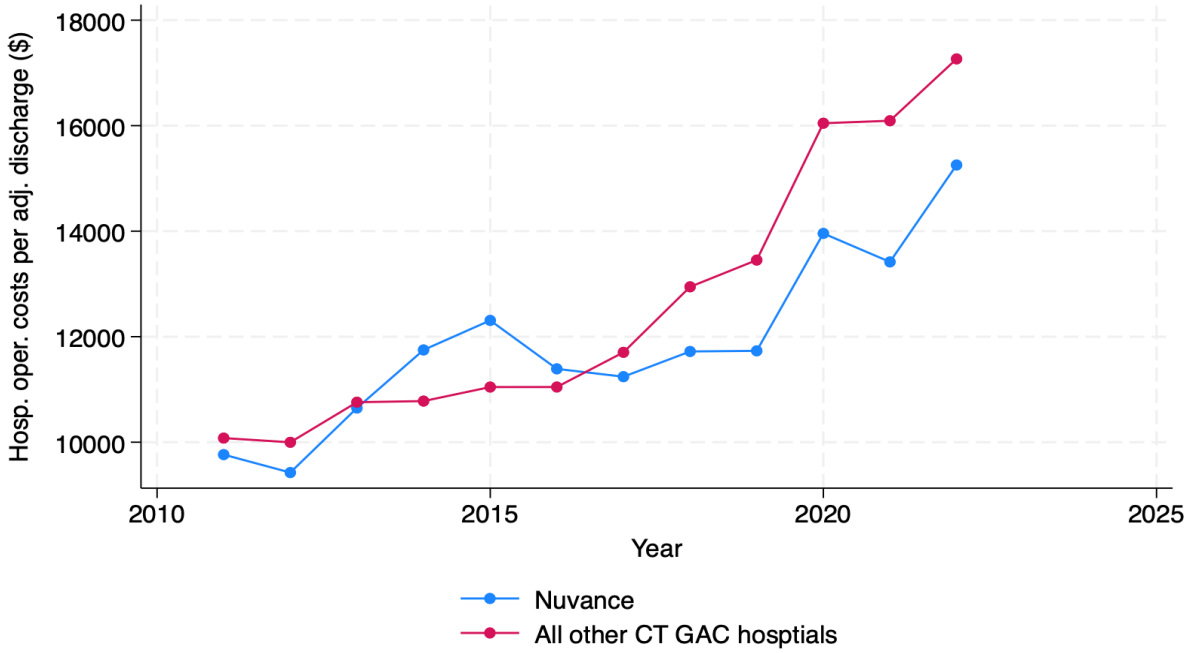
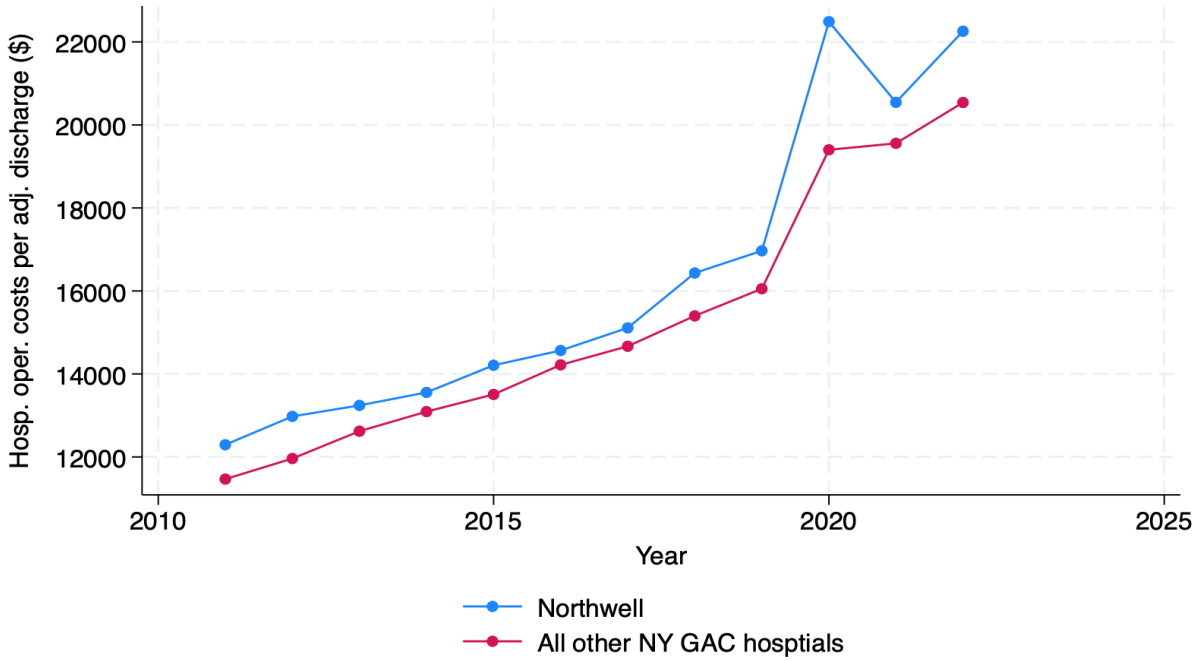


Figure 17. Northwell's Hospital Operating Costs Per Adjusted Patient Discharge, 2011-2022



Source: NASHP

Notes: Hospital operating costs per adjusted discharge are first calculated at the hospital's level and then weighted using adjusted patient discharges.

Analysis 6: Availability and access

The availability and accessibility of services similar to those provided by each transaction party, or proposed to be provided as a result of the transfer of ownership of a hospital within each transacting party's primary services areas and dispersed service areas

Summary
The two service termination CON applications from Nuvance hospitals are concerning from an access standpoint. Both maternity care and inpatient behavioral services are often in short supply. Northwell being able to continue these services post-affiliation would be a major positive outcome of this transaction.

Table 8 shows the percentage of discharges that each Nuvance hospital accounted for in its respective PSA in 2023 by service line. The Connecticut discharge data classifies discharges as either medical/surgical (which accounts for 75% of discharges), newborn (10%), maternity (7%), psychiatric (5%), pediatric (3%), or rehabilitation (1%). Table 8 is meant to show a few things. First, a high percentage is some combination of patient preference for a particular hospital and not having many nearby alternatives. It seems clear from Table 8 that Danbury Hospital is a particularly important provider of inpatient services to the people living in its PSA. In 2023, Danbury Hospital accounted for 84% of the maternity discharges of people residing in its PSA. Danbury Hospital was likewise particularly important for providing inpatient medical/surgical services (80%), inpatient newborn services (75%), and inpatient rehabilitation services (93%). It was not as important of a provider of inpatient pediatric (25%) and psychiatric (56%) services for residents of its PSA, but given the general shortage in these services lines (particularly psychiatric) it is still important for Danbury Hospital to continue being a provider of these services after the affiliation.

The story for Norwalk Hospital is a bit different. Norwalk Hospital is the majority provider of medical/surgical discharges (63%) for residents of its PSA, but is not as important of a provider of inpatient maternity (31%) and newborn (37%) as Danbury Hospital is for its PSA. Notably, Norwalk Hospital accounts for 53% of the psychiatric discharges for residents of its PSA.

Sharon Hospital, due to its smaller size and lower volume, ends up not being responsible for a large percentage of the discharges of residents of its PSA. Across the six service lines analyzed, Sharon Hospital accounted for between 0% and 10% of the discharges from residents of its PSA. However, Danbury Hospital is actually a significant provider of services to Sharon Hospital's PSA as shown by the percentages in the parentheses in the bottom row of Table 8. Hence, Nuvance as a system is an important provider to residents in Sharon Hospital's PSA.

Table 8. Percentage of Discharges in PSA by Service Line, 2023

Hospital	% PSA's Maternity Discharges	% PSA's Medical/ Surgical Discharges	% PSA's Newborn Discharges	% PSA's Pediatric Discharges	% PSA's Psychiatric Discharges	% PSA's Rehabilitation Discharges
Danbury Hospital	84%	80%	75%	25%	56%	93%
Norwalk Hospital	31%	68%	37%	3%	53%	0%
Sharon Hospital	8% (39%)*	7% (27%)	10% (24%)	1% (8%)	8% (11%)	0% (46%)

Source: CT Discharge Data

Notes: *The percentages in parentheses in this row are Danbury Hospital's percentage of discharges to residents in Sharon Hospital's PSA.

The CON application for this transaction mentions that Nuvance considered and pursued service reductions in order to stem significant financial losses. Specifically, the Nuvance Health Board and leadership reviewed the utilization of its existing services as well as the financial losses attributed to underutilized services. Out of this review a transformation plan for Sharon Hospital was put in place that included the gradual closure of its underutilized maternity unit. Based on this plan, Sharon Hospital filed a CON seeking termination of its maternity services.

At Norwalk Hospital, Nuvance identified underutilized inpatient behavioral services and the opportunity to relocate those beds to develop an expanded, modernized center of excellence at Danbury Hospital. In response to these findings Norwalk Hospital filed a CON for termination of its inpatient behavioral services.

These two service termination CON applications are concerning from an access standpoint. Both maternity care and inpatient behavioral services are often in short supply.[38] Northwell being able to continue these services post-affiliation would be a major positive outcome of this transaction.

[38] See e.g., Howard J. First on CNN: US faces maternity care crisis, with 1 in 3 counties lacking obstetric doctors to provide care, report warns. September 10, 2024. https://www.cnn.com/2024/09/10/health/maternity-care-crisis-march-of-dimes/index.html and McBain RK, Cantor JH, Eberhart NK. Estimating psychiatric bed shortages in the US. JAMA psychiatry. 2022 Apr 1;79(4):279-80. https://jamanetwork.com/journals/jamapsychiatry/fullarticle/2789297

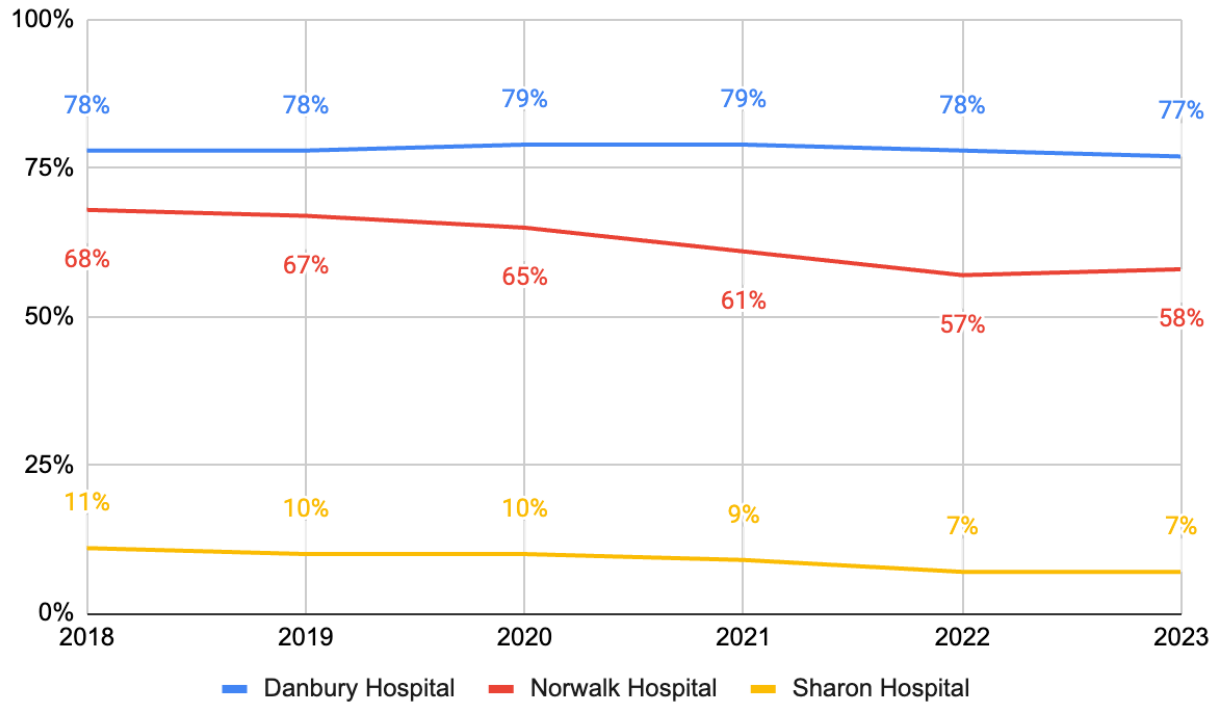
Analysis 7: Services by primary and dispersed service area

The impact of the proposed transfer of ownership of the hospital on competing options for the delivery of health care services within each transacting party's primary service area and dispersed service area including the impact on existing service providers

Summary
Northwell turning Norwalk Hospital and Sharon Hospital into hospitals that could handle more complex cases would be a welcome development for people living in their respective PSAs.

The hope (and expectation) is that the Northwell affiliation will make Nuvance's hospitals more competitive in the market. Norwalk Hospital and Sharon Hospital have both lost market share in their PSAs over the last five years while Danbury Hospital has maintained a steady and high market share in its PSA (Figure 18).

Figure 18. Nuvance Hospitals PSA Market Share, 2018-2023



Source: CT Discharge Data
Notes: Hospital operating costs per adjusted discharge are first calculated at the hospital's level and then weighted using adjusted patient discharges.

Northwell's bigger competitive impact could come as a provider of tertiary and quaternary care services. Danbury Hospital is responsible for 86% of the low acuity discharges of patients in its PSA

and a similar 83% of high acuity discharges (defined in Table 9).[39] At Norwalk Hospital, however, there is considerable drop off across discharges of different acuity. Norwalk Hospital accounts for 53% of the low acuity discharges from people residing in its PSA, but these people are more likely to go somewhere else for a high acuity care (Norwalk's share drops to 44%) or very high acuity care (35%). Sharon Hospital follows a similar pattern, but from a smaller initial share of PSA discharges. Northwell turning Norwalk Hospital and Sharon Hospital into hospitals that could handle more complex cases would be a welcome development for people living in their respective PSAs.

Table 9. Percentage of Discharges in PSA by Service Line, 2023

Hospital	% PSA's Low Acuity Discharges	% PSA's High Acuity Discharges	% PSA's Very High Acuity Discharges
Danbury Hospital	86%	83%	82%
Norwalk Hospital	53%	44%	35%
Sharon Hospital	7% (38%)*	3% (34%)	1% (33%)

Source: CT Discharge Data

Notes: High acuity is defined as discharges where the DRG has a weight of 2 or greater. Very high acuity is defined as discharges where the DRG has a weight of 4 or greater. *The percentages in parentheses in this row are Danbury Hospital's percentage of discharges to residents in Sharon Hospital's PSA.

[39] We are defining low acuity as discharges where the DRG has a weight of less than 2. High acuity discharges are defined as discharges where the DRG has a weight above 2 and very high acuity discharges are defined as discharges where the DRG has a weight above 4. Tertiary is often synonymous with high acuity discharges. https://www.cms.gov/medicare/payment/prospective-payment-systems/acute-inpatient-pps/ms-drg-classifications-and-software

Analysis 8: Attracting patient volume and health care professionals

The methods used by the transacting parties to attract patient volume and to recruit or acquire health care professionals or facilities

Summary
The three Nuvance hospitals in Connecticut have struggled in the past few years to attract both patient volume and health care professionals. Both factors have contributed to the financial distress of the Nuvance facilities. Northwell anticipates significant increases in patient volume at the Danbury and Norwalk hospitals with smaller increases at Sharon Hospital following the affiliation due to both population changes and the ability to increase the number of patients in the area that seek care locally rather than traveling to other hospitals. Nuvance claims one of the primary benefits of the affiliation would be Northwell's expertise in recruiting and retaining a diverse workforce of health care professionals. In particular, Nuvance notes the benefit of drawing candidates from a wider geographic area to Nuvance facilities located in health professional shortage area ("HPSA") designated areas.

With respect to methods to attract patient volumes, Northwell estimates annual increases in both inpatient and outpatient care at Danbury and Norwalk for each of the 3 years following the affiliation and smaller annual increases at Sharon Hospital in years 2 and 3 following the affiliation. Northwell reports basing these forecasts on four factors: 1) increases in inpatient and outpatient service utilization and length of stay, 2) an aging demographic utilizing more clinical services, 3) strengthened clinical programs and services offered in each community, and 4) potential retention of patients in local communities who, without the Affiliation, may have sought care at facilities outside the service area of their local hospital. At the public hearing, Northwell indicated they anticipate an 8-10% increase in volume following the transaction, and reported that they did not know how much of that increase would be due to preventing "leakages," that is from patients that would previously have chosen to seek care outside the primary service area of a Nuvance Hospital. While Northwell does not give specifics on the methods they will use, it is likely beneficial to the patients if they choose to obtain care closer to their homes. Furthermore, as will be discussed in Analysis 10, Sharon Hospital would likely benefit from an increase in patient volumes that will allow the hospital to maintain and expand maternity care in the area.

The methods for attracting and retaining health care professionals is also an important consideration for this transaction. In its application for the Certificate of Need, Nuvance describes significant challenges in recruiting and retaining physicians and other clinical team members and says that the need to manage staffing shortages through expensive staffing agencies contributed to its financial challenges. Specifically, in the CON application, Nuvance explained that its reliance on contract staffing agencies increased contract labor expenses by 258% in 2022 compared to pre-pandemic levels and that per patient supply expenses increased by 18.5% between 2019 and 2022. In response to the second request for information, Nuvance reports that "attracting and retaining

talent will be an immediate focus post-closing, given the critical importance of appropriate workforce staffing to providing high quality care."

Nuvance Health's partnership with Northwell Health is expected to bring several benefits in terms of recruiting and retaining top healthcare professionals. For example, through affiliation with Northwell Health, Nuvance Health will likely be able to tap into a larger and more diverse pool of healthcare talent and attract candidates from wider geographic areas to the Nuvance Health facilities and medical practices in Connecticut. Nuvance also states that it will "seek to increase partnerships with community-based groups, faith-based organizations and professional and diverse associations for purposes of providing education and introducing programs to address gaps in the job market." Both parties note in the CON application that they have academic and clinical relationships with schools and other education and training programs that have improved the recruitment of staff who train in both Nuvance Health's and Northwell Health's facilities and programs. Additionally, Nuvance claims one of the primary benefits of the transaction would be to use Northwell Health's "robust pipeline, strategies, and tools for developing and attracting local talent, including medical school, nursing school, and high school outreach programs" and the ability to bring these health care professionals to Nuvance facilities located in health professional shortage area ("HPSA") designated areas.

Analysis 9: Underserved populations

The role of each transacting party in serving at-risk, underserved and government payer patient populations, including those with behavioral, substance use disorder and mental health conditions, within each transacting party's primary service area and dispersed service area

Summary
Danbury, Norwalk, and Sharon Hospitals provide more uncompensated care as a percentage of expenses than the average in Connecticut, and they provide care to a significant portion of Medicaid patients and those of racial and ethnic minorities in their primary service areas. While it is important to consider the role of the three Nuvance facilities in providing care to underserved populations in their areas, Northwell's track record of maintaining the amount of care provided to those with Medicaid coverage and racial and ethnic minorities following previous acquisitions suggests that those facilities will likely continue to provide significant care to underserved populations.

Two of the three Nuvance hospitals in Connecticut - Danbury Hospital and Norwalk Hospital - provide a significant amount of care for patients covered by Medicaid and for racial/ethnic minorities in their service areas. All three Nuvance hospitals have some of the highest rates of uncompensated care as a percentage of expenses in the state and are significantly above the state average (see Table 10). As a result of the significant role that these hospitals play in delivering care to underserved populations, it is important to assess whether the affiliation with Northwell is likely to reduce the provision of care for those populations. Reassuringly, the changes in both the percentage of Medicaid discharges and the percentage of racial/ethnic minority discharges at the four hospitals most recently acquired by Northwell in New York remained unchanged following the change in ownership.[40]

Table 10. Rates of Uncompensated Care as a Percentage of Expenses

Hospital	Uncompensated Care % of Total Expenses	Statewide
Danbury Hospital	2.9%	1.8%
Norwalk Hospital	4.5%	
Sharon Hospital	2.9%	

Source: OHS Hospital Financial Stability Report 2023

[40] Reliable race/ethnicity data was not available for Peconic Bay Medical Center so its percentage of racial/ethnic minority discharges trend is not reported.

Table 11 shows the percentage of Medicaid discharges and racial/ethnic minority discharges among patients residing in each hospital's PSA in 2023 for each of Nuvance's Connecticut hospitals. For example, Danbury Hospital accounted for 74% of the 1,999 Medicaid discharges across the zip codes that make up Danbury's PSA in 2023. Yale New Haven Hospital was a distant second in that PSA at 6%. Norwalk's PSA had 2,606 Medicaid discharges in 2023 and Norwalk Hospital accounted for 64% of them. Stamford Hospital was second with 13%. Among the Connecticut zip codes that make up Sharon Hospital's PSA, Sharon Hospital accounted for only 4% of the 1,988 Medicaid discharges in 2023. Charlotte Hungerford Hospital accounted for 42% of the Medicaid discharges in Sharon Hospital's PSA, but importantly, Danbury Hospital was second at 19%, so Nuvance hospitals are still important providers of Medicaid services in the Sharon Hospital PSA. Overall, Nuvance hospitals are currently important providers of services to Medicaid enrollees living within their service areas.

The last column of Table 11 repeats the same analysis, but for racial/ethnic minority discharges across all payers. The results are similar in that Danbury Hospital (67%) and Norwalk Hospital (52%) are particularly important in providing hospital services to members of these groups that reside in their PSAs. Sharon Hospital (7%) is less important, but Danbury Hospital (15%) accounts for a non-negligible portion of the racial/ethnic minority discharges in Sharon Hospital's PSA.

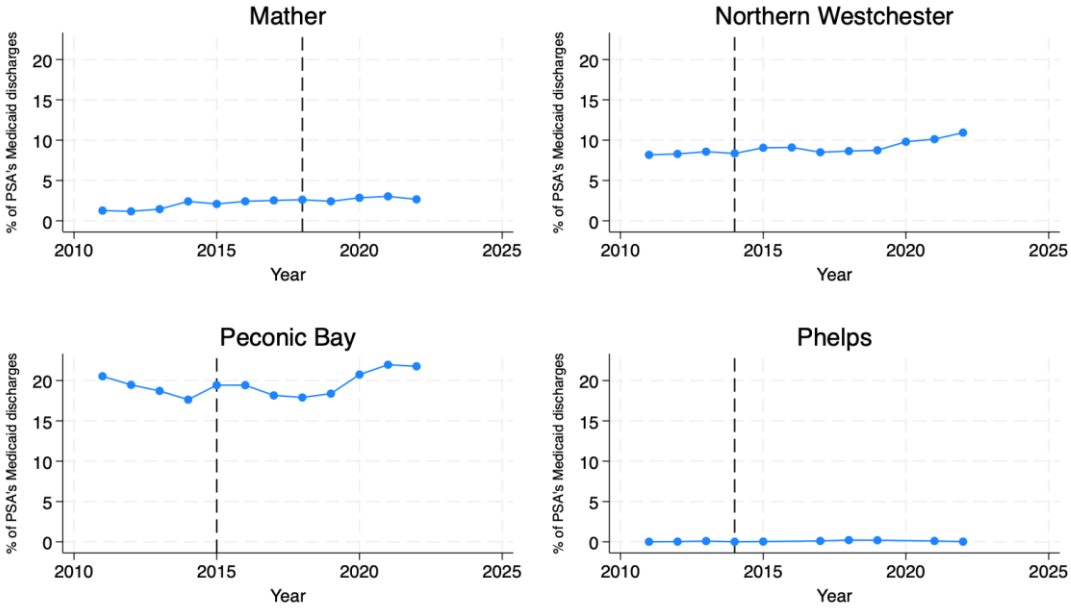
Table 11. Percentage of Medicaid and Racial/Ethnic Minority Discharges in PSA, 2023

Hospital	**% PSA's Medicaid Discharges**	**% PSA's Racial/Ethnic Minority Discharges**
Danbury Hospital	74%	67%
Norwalk Hospital	64%	52%
Sharon Hospital	4%	7%

Source: CT Discharge Data
Notes: Racial/ethnic minority is defined as "American Indian Non-hispanic", "Asian Non-hispanic", "Black Non-hispanic", "Native Hawaii Pacific Islander Non-hispanic", and "Other Non-hispanic."

Figure 19 shows the percentage of Medicaid discharges that each of the four recently acquired Northwell hospitals in New York accounted for in their PSAs before and after they were acquired by Northwell. Figure 20 repeats the analysis for the percentage of racial/ethnic minority discharges. Comfortingly, there are no dips in these percentages after the acquisitions.

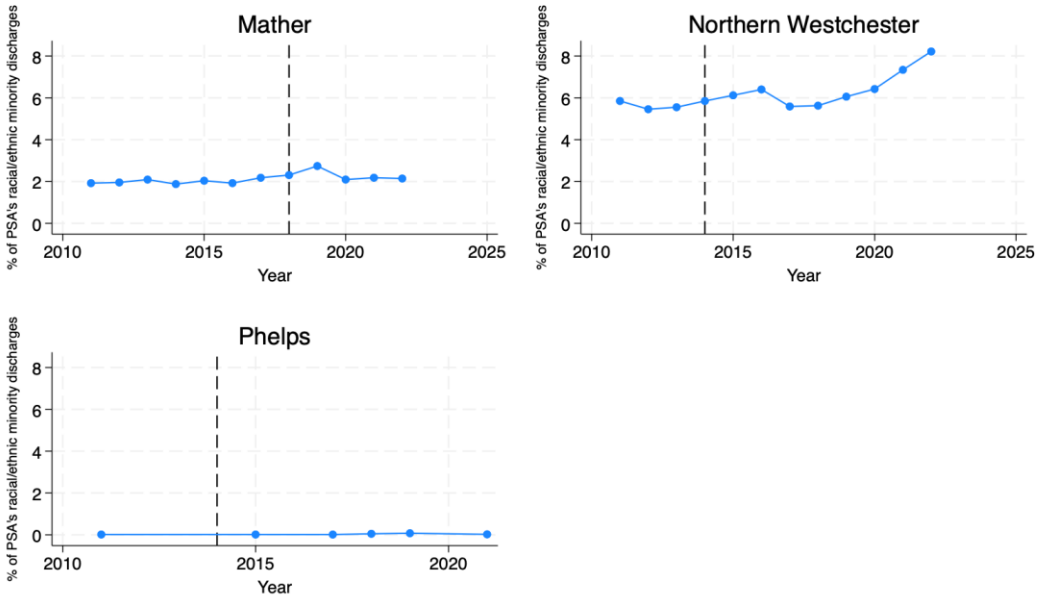
Figure 19. Percentage of Medicaid Discharges in PSA, 2011-2022



Source: NY Discharge Data

Notes: Racial/ethnic minority is defined as "American Indian Non-hispanic", "Asian Non-hispanic", "Black Non-hispanic", "Native Hawaii Pacific Islander Non-hispanic", and "Other Non-hispanic."

Figure 20. Percentage of Racial/Ethnic Minority Discharges in PSA, 2011-2022



Source: NY Discharge Data

Notes: Racial/ethnic minority is defined as "Black/African American", "Multiracial", "Other Race", and "Spanish/Hispanic." Peconic Bay is excluded here because its race data was inconsistent over time with some years simply classifying all discharges as "Other Race" while in other years race was labeled "Unknown" for a large portion of discharges.

Beyond the analyses of discharge data, Northwell reports in their CON application that it has a Center for Equity of Care to advance diversity, equity, and inclusion ("DEI"). Northwell reports that its focus on "a culture and workforce that is diverse, culturally responsive and prepared to deliver equitable care" has led Diversity, Inc. to recognize Northwell Health as the #1 health care system overall for DEI for the three consecutive years 2020-2022, and to induct Northwell into its Hall of Fame in 2023. In addition, each of Northwell Health's hospitals have received LGBTQIA+ Healthcare Equality Leader status, a national recognition for implementing policies related to the equity and inclusion of LGBQIA+ patients, visitors and employees. All of these factors suggest that Northwell will continue to advance care to underserved populations in the PSAs of the three Nuvance hospitals.

In summary, while the Nuvance hospitals in Connecticut provide a significant amount of care to Medicaid patients and those of racial and ethnic minorities, Northwell's track record of maintaining the amount of care provided to those with Medicaid coverage and racial and ethnic minorities following an acquisition should reassure regulators that those facilities will likely continue to provide significant care to underserved populations. Nonetheless, given the importance of the Nuvance facilities to these patients, regulators may choose to impose conditions that require the Danbury, Norwalk, and Sharon hospitals to maintain similar levels of Medicaid discharges and uncompensated care for a number of years following the affiliation.

Analysis 10: Low margin services

The role of each transacting party in providing low margin or negative margin services within each transacting party's primary service area and dispersed service areas

Summary
Some hospital services generally have low margins as a result of flaws in insurer payment models or because a high proportion of patients using those services are either uninsured or are covered by Medicaid. Behavioral health services, both inpatient and outpatient tend to be low margin for both of these reasons. Maternity services generally do not have low margins, but in hospitals with insufficient volume, losses can be substantial. Communities value having access to these low margin services, but hospitals under financial pressure struggle to continue to offer them, which is the case in some of the Nuvance hospitals. The proposed combination with Northwell Health offers a way to continue or even expand offerings of behavioral health and maternity services. Northwell is financially strong and has demonstrated in its recent acquisitions in New York State a willingness to maintain or expand these services through investing in them. Indeed, it has committed to doing this in Nuvance hospitals as part of the merger agreement.

Providers consistently encounter the reality that some services that they provide or might provide have higher margins than others. This pattern comes from two elements in payment systems. One is that relative payment rates from different payers are not closely aligned with the relative costs of providing different services. The second is that some services are accessed disproportionately by patients who are uninsured or covered by Medicaid programs, which commonly pay much less than other payers. Mental health services are a prime example of this second element.

Much of the deviation of relative payment rates from relative costs is not intended by the payers. The most influential payer, the federal Medicare program, attempts to determine its payment rates for different services on the basis of relative costs of providing them. For the Inpatient Prospective Payment System (widely known for its basing relative payment on diagnosis related groups (DRG)), the relative payments are based on Medicare Cost Report data. Medicare payment for outpatient hospital services is also based on relative costs. Relative payments for physician services are based on relative costs, but with a large portion of physician costs being physician compensation, and without the benefit of cost data comparable to hospital cost reports, Medicare physician payment rates have larger distortions when compared to relative costs than do inpatient payment rates. With the sharp increase in employment of physicians by hospitals, physician payment is now more directly impactful to hospital finances.

Medicare aims for its relative payment rates to track relative costs both to avoid incentives for providers to emphasize generously-paid services at the expense of others and to have its payment approaches be perceived as "fair." But the goal is not always achieved. For inpatient care, there is evidence that surgical services tend to be paid more in relation to costs than medical services. The distortions are likely much larger for physician services, where a substantial evidence base has

shown that office, hospital and other visits are underpaid in relation to procedures, both surgical and nonsurgical. While provider payment in Medicaid is determined by each state, most states have adopted Medicare approaches. DRGs are now used for inpatient care in most states' Medicaid programs, with DRG relative payments adjusted for the younger population served by these programs. Nevertheless, Medicaid payments overall to hospitals and physicians do vary substantially in relation to Medicare rates that apply in their states.

Private insurers, for a number of reasons, often use Medicare relative payments as a starting point, but market forces cause deviations. Indeed, much payment by private insurers is based on a negotiated percentage of what Medicare pays in the area. But the percentages vary by hospital and across large physician practices reflecting private insurers' need to attract sufficient highly-regarded providers to their networks. While the variation across hospitals does not have a large effect on relative payment for different types of hospital services, this is not the case for physician services. In many areas, most specialty physicians provide services through single specialty practices. Moderate-sized practices of physicians in specialties that are small often have more clout with insurers than those in specialties that are large because a small specialty practice often accounts for a larger share of the market than a large primary care practice. So for many physician specialties, rates for procedures specific to the specialty tend to be relatively higher than rates for visits, which apply to primary care and many specialties. This is another factor that makes payment rates for services for many procedures high in relation to visits.

A group of services that is widely recognized as having low margins is behavioral health. For inpatient care, payment rates have lower margins than procedural services. For outpatient care, the fact that psychiatrists' and other mental health professionals' billings are mostly for visits keeps relative payments low. In addition, the payer mix for mental health services leads to low payment rates. Since those needing mental health services, especially those with drug addiction problems, are limited in their earning power, many are uninsured and, of those with coverage, a high proportion are covered by Medicaid or Medicare (eligibility for Medicare on the basis of disability or on the basis of age).

Despite the relative, or absolute margins for mental health services being low, communities look to hospitals to provide the services nevertheless. Those hospitals that provide extensive mental health services despite the low margins are perceived to deserve praise, but those in a poor financial position are often limited in the extent to which they can continue to provide or expand mental health services.

Whether or not maternity services are low margin is more complex. On the one hand, a negative for maternity services is the payer mix. Roughly 50 percent of deliveries are covered by Medicaid. But Cesarean deliveries are more profitable due to the surgery and a proportion of newborns are treated in neonatal intensive care units (NICU), which are reputed to be relatively profitable. Historically, hospitals have been enthusiastic providers of maternity services as a way to provide women of childbearing age an opportunity for a positive experience at the hospital, since those

with a positive experience might be more inclined to choose the hospital for care when they are older and need more care.

The problem with financing maternity care units is specific to hospitals with low and declining volumes of childbirths. Hospitals in areas where the population is aging and shrinking overall might experience long-term declines in numbers of births per year. Some hospitals might be increasingly bypassed in favor of larger hospitals with more specialized services for either mothers or their infants. With diminished volume, hospitals that once had profitable maternity services might find them very unprofitable because low volumes lead to much higher costs per delivery. Some hospitals have such low volume that hospital staff cannot maintain their skills, leading to problems of low quality. If they are aware of these low volumes, mothers may be further inclined to opt instead for larger hospitals with more specialized maternity and neonatal services if the extra distance is manageable. As in the case of mental health services, absorbing losses on the maternity unit is more difficult for hospitals in weaker financial condition.

The challenges of maintaining low margin services are described in some detail in Nuvance Health's CON application. It describes the challenges at Sharon Hospital in its underutilized maternity unit, which after a comprehensive process involving all stakeholders including the public, led to a plan to gradually close the maternity unit and the filing of a CON to terminate maternity services (OHS Version 7/18/2022, page 36). Nuvance also described an underutilized inpatient behavioral service unit at Norwalk Hospital and its plan to expand progressive outpatient behavioral health services, while closing its inpatient unit to consolidate with inpatient facilities at Danbury Hospital. A CON was filed by Norwalk Hospital to close its inpatient unit (page 36). Nuvance believes that the proposed affiliation with Northwell opens more options to maintain these important but low-margin services.

Given its financial strength and extensive capabilities, the affiliation with Northwell Health certainly raises the potential for Northwell to develop and support plans to maintain or expand these important services. To better assess the potential, our team requested that OHS ask Northwell for information about implementation of recent acquisitions or affiliations with community hospitals in New York State. Northwell provided this information in a document titled "CMIR – 2nd RFI – Northwell Response (Final – Compiled)," which was submitted September 23, 2024.

This additional submission was responsive to the question and highly illuminating. On pages 34-36, the submission lists programmatic investments by Northwell at each of the four recently-acquired community hospitals: Mather Hospital, Northern Westchester Hospital, Peconic Bay Medical Center and Phelps Hospital. It proceeds to elaborate on the labor and delivery investment at Peconic.

When Northwell acquired Peconic Bay Medical Center in 2016, its labor and delivery unit recorded only 329 deliveries over the previous year, which is less than one per day, and was struggling operationally. Population in its service area had been aging and its population of child-bearing age was declining. The number of deliveries had declined further by 2018. Northwell took a holistic

approach and focused on expanding ambulatory women's health services. Among other steps, facilities were improved and new clinical leadership was recruited, enhancing engagement of local physicians. The result was a 35 percent increase in deliveries during the period 2018 and 2022. There are now no plans to close the labor and delivery unit. Although Northwell did not address this in its response, the unit's volume is likely still not profitable, so the plan to continue it is a credit to the system. Nuvance's Sharon hospital might be in a similar position to Peconic Bay, with a declining and aging population. Indeed, as outlined at the November 6, 2024 hearing on this affiliation, the intervenors from Save Sharon Hospital described the agreement that had been reached with Northwell concerning building up maternity services at Sharon Hospital. The intervenors stated that Northwell has agreed to "a dedicated effort to grow Sharon Hospital maternity service by using appropriate marketing by recruiting and engaging the needed staff and physicians based on market appropriate rates and by increasing call pay for community physicians to market rates. This includes -- and there would also be recruitment of various needed doctors, including at least two OBGYNs, and that they would provide appropriate engagement vehicles to community physicians to promote recruitment such as possibly an income guarantee or other recruitment vehicle."[41]

The intervenors advocate including these commitments in the Certificate of Need. The intervenors expressed a lot of confidence in Northwell's commitment to do this, but noted that commitments in earlier mergers were not kept. Later in the hearing, Michael Dowling (Northwell CEO) stated "and I just want to reiterate that we have never walked away from a facility. We have in all cases improved the facility and expanded services."[42]

The listing of investments by Northwell into recently acquired community hospitals includes additional instances of investing in low-margin services. These include a planned renovation and expansion of labor and delivery services at Northern Westchester Hospital and a renovation and expansion of the maternity unit at Phelps Hospital. We could not find a description of these investments that parallel the discussion of the project at Peconic Bay Medical Center. In addition, the Northwell response listed many expansions of behavioral and mental health services at South Oaks Hospital, including additional inpatient psychiatric beds, an adolescent track to the substance abuse disorder ambulatory clinic and opening of a pediatric outpatient mental health unit, which is underway.

Overall, Northwell's status as the second largest Medicaid and mental health provider in New York, coupled with Northwell's substantial investment in low-margin services at the newly acquired hospitals demonstrate that Northwell is likely willing and has the financial ability to maintain or expand low-margin services that are important in the communities surrounding the Nuvance hospitals in Connecticut.

[41] Transcript pg. 75 https://portal.ct.gov/ohs/-/media/ohs/ohca/public-hearings/11-6-24/24-11-06con.pdf?rev=735da1d05886431fa6131ea250dc2f84
[42] Transcript pg. 119 https://portal.ct.gov/ohs/-/media/ohs/ohca/public-hearings/11-6-24/24-11-06con.pdf?rev=735da1d05886431fa6131ea250dc2f84

Analysis 11: Consumer concerns

Consumer concerns, including, but not limited to, complaints or other allegations that a transacting party has engaged in any unfair method of competition or any unfair or deceptive act or practice

Summary
In Connecticut, the Nuvance hospitals have each had inspections in the last five years that have required plans of corrective action, but the frequency and severity of these violations is difficult to compare with other hospitals in Connecticut. The New York State Department of Health reports that Northwell hospitals have rates of citations and complaints that are significantly below the state average while the Nuvance hospitals in that state have rates that exceed the state averages. Consequently, we anticipate that rates of consumer concerns are unlikely to increase following the transaction.

The New York State Department of Health (DOH) and the Connecticut Department of Public Health (DPH) each collect complaints from consumers about both providers and hospitals licensed in their state. Both departments also conduct inspections of hospitals and other facilities and approve plans of correction for any violations.

In the state of New York, the DOH's website publicly reports the number of complaints the department received per 10,000 patient days, the number of complaints that resulted in citations per 10,000 patient days, and the percentage of allegations that were substantiated by state officials. Table 12 reports the data for each of the Northwell and Nuvance facilities in New York and compares them to the state average for the period from January 1, 2021 through December 31, 2023. On average, the Northwell hospitals have both fewer complaints and fewer substantiated complaints per 10,000 patient days than the statewide average in New York. The averages for the Nuvance hospitals in New York more closely follows the statewide average, but has significantly higher variation. Vassar Brothers Medical Center has had much higher numbers of complaints and percentage of allegations that were substantiated than the statewide average, while Northern Dutchess Hospital had no complaints filed with the DOH between January 1, 2021 and December 31, 2023.

Table 12. Complaints and Citations reported by the New York Department of Health at Northwell and Nuvance Hospitals located in New York (January 1, 2021 and December 31, 2023)

Hospital	Complaints received per 10,000 patient days	Complaints reviewed resulting in citations, per 10,000 patient days	Percentage of substantiated allegations
Statewide Average	0.3	0.1	20.50%
Northwell NY Average	0.14	0.06	
Lenox Hill Hospital	0.1	0.1	28.60%
Long Island Jewish Medical Center	0.1	0.1	42.90%
Maimonides Medical Center	0.4	0.1	15.20%
Mather Hospital	0.1	0.1	0.00%
North Shore University Hospital	0.1	0	0.00%
Northern Westchester Hospital	0.2	0.2	37.50%
Peconic Bay Medical Center	0.3	0.2	50.00%
South Shore University Hospital	0.1	0	12.50%
Staten Island University Hospital	0.2	0.1	33.30%
Nassau University Medical Center	0.4	0.2	27.80%
Lenox Health Greenwich Village	0	NONE	
Syosset Hospital	0	NONE	
Phelps Hospital	0.1	0	50.00%
Huntington Hospital	0.2	0	0.00%
Glen Cove Hospital	0	NONE	
Long Island Jewish Valley Stream	0	NONE	
Plainview Hospital	0.2	0	0.00%
Long Island Jewish Forest Hills	0	NONE	
Nuvance NY Hospital Average	0.63	0.17	
Putnam Hospital	0.5	0.2	0.00%
Vassar Brothers Medical Center	1.4	0.3	75.40%
Northern Dutchess Hospital	0	0	

Source: NYS Hospital Profiles on NY DOH website: https://profiles.health.ny.gov/hospital

Public data was unavailable for any of the Northwell facilities prior to their association with the Northwell system, so we were unable to determine if the association with Northwell increased or decreased consumer complaints over time. Additionally, no consumers speaking at the November 6 public hearing gave comments about complaints at either Nuvance or Northwell hospitals.

The Connecticut DPH does not publish similar statistics, but provides the public with a list of Inspection results and Plans of Corrective Action for all hospitals licensed in the state. All three of the Nuvance hospitals had inspection findings that required plans of corrective action. The CON application included reports from two inspections (on 11/22/2022 and 12/13/22) at Danbury Hospital in which multiple deficiencies were found that required a plan of corrective action and a report from an inspection of Norwalk Hospital on 1/11/2022 that also required a plan of corrective action. The revisit inspection at Norwalk Hospital on 3/29/2022 found no deficiencies. We also used the Connecticut eLicense system to obtain earlier inspection reports and plans of corrective action for the three Nuvance hospitals located in the state. Violations that required a plan of

corrective action were found at Sharon Hospital in the spring of 2016, the summer of 2019 and in August 2021; at Danbury Hospital in the spring of 2019, in January 2021, in September of 2022; and at Norwalk Hospital in June 2019, January 2021, August 2021, January 2022, and July 2022. Given the information available on the state website and the difficulty in comparing written records of violations across hospitals, it is difficult to assess whether the violations at the Nuvance facilities were significantly higher than the state averages.

Overall, the Northwell hospitals have, on average, significantly lower complaints and citation rates than the statewide averages in New York while the Nuvance hospitals in New York hospitals have rates of complaints and citations that exceed the New York state average. As a result, we anticipate that the affiliation may have a positive impact on consumer concerns and, at a minimum, violations and complaints are unlikely to increase following the transaction.

Analysis 12: Public interest

Any other factors that the office determines to be in the public interest

OHS did not determine any additional factors to be in the public interest.

Discussion of analyses

The analyses show despite the little direct competition between Northwell and Nuvance hospitals, we anticipate prices (inpatient and outpatient) at Nuvance hospitals are likely to increase post-affiliation. Northwell is a high-priced system - the 17th most expensive system in the country according to RAND's most recent hospital pricing study. Northwell is also significantly more expensive than the two most expensive systems in Connecticut, Yale New Haven (146th) and Hartford Healthcare (161st) in the same RAND study. In addition, our analysis of prior acquisitions by Northwell demonstrates significant increases in inpatient hospital prices and commercial revenue following the acquisition. Nonetheless, our other analyses suggest that this transaction may have positive impacts in the communities currently served by Nuvance hospitals. Specifically,

- On average, Northwell and Nuvance hospitals have similar overall Medicare Star Ratings (albeit Northwell has a much higher spread in quality ratings) while Northwell has significantly higher quality ratings in the metrics used by U.S. News to rank hospitals, including the number of nationally ranked and high-performing specialties.
- Quality, as measured by the Medicare Star Rating, has improved over the last 10 years at most of the facilities that Northwell acquired.
- Two of Nuvance's hospitals – Danbury and Norwalk – provide a significant portion of the medical/surgical, maternity, newborn, and psychiatric discharges in their primary service areas. While Sharon Hospital is smaller, it clearly plays an important role in the community. Without any transaction, the financial state of Nuvance makes it likely that these facilities will need to close low-margin service lines or close altogether.
- The Nuvance hospitals, especially Sharon Hospital, have struggled to attract and maintain physicians and other clinical team members. In fact, Nuvance cites the need to manage staffing shortages through expensive staffing agencies as a contributing factor to its financial difficulties. Northwell has earned many awards for being a "top employer," including being named "A Best Workplace in Health Care" by Fortune.
- Northwell hospitals have a track record of maintaining the amount of care provided to those with Medicaid coverage and racial and ethnic minorities following an acquisition. Ensuring that the transacting party with Nuvance will maintain the level of care provided to Medicaid patients and those of racial and ethnic minorities is particularly important because the Nuvance hospitals in Connecticut provide a significant amount of care to those populations.
- Two Nuvance hospitals filed CONs to terminate services: Norwalk Hospital filed a CON to terminate its inpatient behavioral health services and Sharon Hospital filed to terminate its maternity services. Although both applications were denied, Nuvance has clearly encountered challenges trying to provide those services in an economically viable manner. Northwell's status as the 2nd largest Medicaid provider and the 2nd largest mental health provider in New York and commitments they made in a letter to the community

organization, Save Sharon Hospital, coupled with Northwell's history of investing in labor and delivery services at Peconic Bay Medical Center after it acquired that facility suggest that Northwell may invest substantially in those hospitals and services.

Collectively, our analyses suggest that there is a significant concern that prices will increase substantially following the transaction, but the transaction may also have a positive impact on the communities served by Nuvance hospitals as measured by most other factors. Additionally, Nuvance's financial struggles suggest that without a strategic partner, access and quality at the three Nuvance hospitals could continue to deteriorate. Our analyses show little patient overlap between Northwell and Nuvance, so the harm to competition is likely lower than it would be if the acquirer were an in-state system with market power.

Conclusion

Aside from what we view to be a likely increase in prices at Nuvance hospitals, this transaction is positive from nearly every other perspective. The affiliation should financially stabilize Nuvance's hospitals and has the potential to keep certain service lines open that otherwise would have closed. Additionally, access and quality at Nuvance's hospitals appear more likely to stay the same or improve if the affiliation with Northwell is effectuated. Northwell's history of investments in previous acquisitions and its track record of recruiting health care professionals make us optimistic that Nuvance's hospitals will similarly benefit from more investment and better recruitment and retention of health care professionals. Consequently, it seems reasonable for state officials to approve the transaction, but because of the likely price increases it becomes imperative for the state to require Northwell to meet the promises they made in their application and for the state to make sure it gets the benefits that it thinks it is going to get in the transaction.