
HOSPITAL MARKET CONCENTRATION
IN CONNECTICUT:

The Impact of Yale-New Haven Health System's Expansion





EXECUTIVE SUMMARY

The last twenty years have transformed the Connecticut health care system. As recently as 1995, every hospital in the state was independent, but the era of the community hospital is over. If currently proposed mergers are completed, more than 80% of Connecticut's patients will receive care from hospitals owned by large, powerful multi-hospital systems. Driven in part by new "shared savings" reimbursement policies in the state Medicaid and federal Medicare programs, this trend is accelerating.

Connecticut now has five major acquisitions pending, including the expansion of the state's most powerful health care entity. The Yale-New Haven Health System has proposed to buy Lawrence and Memorial Health, which owns both Lawrence and Memorial Hospital in New London and Westerly Hospital in Rhode Island. At the same time, Milford Hospital was forced to shut down Labor and Delivery services when its leading Obstetrician/Gynecologists defected to Yale-New Haven Hospital. Financially distressed, Milford now leases space to Yale-New Haven Hospital for its regional inpatient rehabilitation services. A slow-motion takeover appears to be in process.

The most recent data available show that Connecticut has the 4th highest health care costs in the United States, but lags in most measures of quality. Numerous academic studies show that as providers take each other over and limit competition, prices go up without service improvement—and the more heavily concentrated the market is to begin with, the higher the price increases.

The co-authors of *Hospital Market Concentration in Connecticut: The Impact of Yale-New Haven Health System's Expansion*, have worked together on legislative solutions to the challenges of growing hospital monopoly for the past several years. In continuing that work, we have analyzed state inpatient hospital discharge data and mapped the potential changes to the state's health care markets if Yale-New Haven buys L+M and swallows up Milford Hospital. The report examines five geographic areas, from L+M's relatively small self-defined service area, to an area covering the southern half of the state.

The data yield three key metrics: the percentage market share held by Yale-New Haven Health, the score for each area on a standard government measure of market concentration called the Herfindahl-Hirschmann Index, or “HHI”, and the amount of change in the concentration of the hospital market in each area. The findings include:

- Though consumers already face a market with limited competitive pressure to protect them, the Milford and L+M takeovers will significantly increase the Yale-New Haven Health System’s market share in all five areas. In L+M’s primary service area, Yale-New Haven Health System will grow from 14% to 83% of inpatient discharges.
- All five geographic regions studied easily meet the federal government’s standard for a “highly concentrated” market even before the two takeovers. Highly concentrated markets lack competition and can lead to artificially excessive prices.
- In the market areas studied, the size of the increase in consolidation caused by YNHHS’s expansion would be significantly higher—by a factor ranging between 50% and 900%—than the level that requires regulators to presume that merging entities will “obtain market power,” which federal regulatory standards warn against.¹ Studies show that mergers in already highly consolidated markets can often lead to price increases of 20%.
- Although hospitals are consolidating across the state, the shoreline areas dominated by YNHHS are the most heavily concentrated regions in Connecticut, and thus most vulnerable to price increases. The three-hospital Yale-New Haven system claims a “local service area” comprising nearly half the state’s population. Upon full absorption of Milford and L+M, the Yale-New Haven system will account for 59% of discharges in this area.

The report’s co-authors urge public officials to take three steps before any decisions are made on whether or not, and under what conditions, the merger should proceed.

- In 2015, Connecticut passed a sweeping health care consumer protection law, SB 811. The law requires a cost and market analysis prior to regulatory action on hospital mergers. Although Yale-New Haven and L+M applied for approval before the new law took effect, state officials should conduct the cost and market analysis prior to any action on the proposed merger.
- In particular, state officials should examine the pricing impact in Greater New Haven of Yale-New Haven Hospital’s 2012 takeover of the Hospital of St. Raphael. No data will better illuminate the potential impact of Yale-New Haven’s expansion than what happened to prices after this deal, which created the 6th largest hospital in the United States.
- The L+M transaction should not be viewed in isolation. Yale-New Haven’s market power on the shoreline is expanding by leasing a wing of Milford Hospital. This adds a small but significant further increase in the extent of Yale-New Haven’s market control. State officials should include the potential absorption of Milford in their analyses.

1. GROWING CONCENTRATION IN THE HEALTH CARE MARKETPLACE

The last twenty years have transformed the Connecticut health care system. As recently as 1995, every hospital in the state was independent, but the era of the community hospital is over. If current proposed mergers are completed, more than 80% of Connecticut's inpatients will pass through hospitals owned by large, powerful multi-hospital systems, with few legal checks on price increases to protect them.

The Affordable Care Act has delivered health insurance to millions of people, a significant policy victory. At the same time, however, changes in reimbursement policies, mandates for technology improvements, and new regulations have tilted the market even further in favor of large, wealthy hospital systems. In Connecticut, the State Innovation Model (SIM) and "shared savings" policies for Medicare and Medicaid are creating incentives for large combinations of hospitals and doctors that can accept risk for broad patient populations. These systems are taking advantage of the new conditions to overrun their smaller competitors and build market power.

Unfortunately, the ACA contains few proven cost control measures. Congress largely left it up to states, employers, payers, municipalities, and individual patients to rein in costs as health care

systems undergo rapid consolidation. Academic studies consistently show that the main impact of hospital consolidation is increased prices without improvement in quality.² Nationally, ballooning prices threaten newly expanded access. Although increasing numbers of Americans have health insurance, out of pocket costs are rising at 3-4 times the rate of wages.³ More Americans than ever report delaying needed medical care for cost reasons.⁴ Without cost control, the long-overdue expansion of health insurance coverage will not be sustainable.

These challenges have become clear in Connecticut in recent years. Despite a dramatic growth in their market power – which will continue if the combined \$91 billion Anthem-Cigna and Aetna-Humana deals are completed – health insurers have done little to restrain costs.⁵ Meanwhile, the rise of multi-hospital systems has created concentrated markets in the state, and the Yale-New Haven and Hartford HealthCare systems have developed a dominant grip on health care statewide. The two major health systems account for nearly half the inpatient discharges in the state, and each has even tighter regional control in its respective market. Hospital consolidation and price inflation will continue unless checked at the state level.

Acquisition and Absorption: Yale-New Haven Expands

Yale-New Haven Hospital (YNHH) began the process of industry consolidation in Connecticut in 1995, when YNHH added Bridgeport Hospital to its network. Greenwich Hospital joined the growing system in 1998. In 2010, the health system added Northeast Medical Group, a start-up physician multispecialty group that now employs over 550 doctors and is wholly owned by the Yale-New Haven Health Services Corporation, the parent corporation of the Yale-New Haven Health System (YNHHS).

In 2012, Yale-New Haven Hospital's takeover of the Hospital of St. Raphael created the 6th largest hospital in the country.⁶ After the merger, the Yale-New Haven Health System (YNHHS) market share rose to 98% of inpatient discharges among New Haven residents and 76% in Greater New Haven, up from 68% and 48% respectively.⁷

In 2014, Texas-based for-profit hospital operator Tenet Healthcare proposed purchasing five Connecticut hospitals in an equity partnership with YNHHS, with Tenet owning 80% and Yale-New Haven 20%. Adding five of its competitors to Yale-New Haven's existing market share would have meant that 37.5% of all discharges in the state were from the newly merging system, a major expansion of the Yale network. The deal fell through after the Office of Health Care Access imposed unusually strong requirements on the terms of the deal, in the face of concerns about the impact of the transaction on cost, access, services, financial burden on the uninsured, and accountability of the hospitals to local communities.

Now, YNHHS has two impending hospital takeovers that will expand its control over the health care market along Connecticut's coastline.

One is widely known. The Yale-New Haven Health System has announced a deal to purchase Lawrence + Memorial Health, a smaller system that controls: Lawrence + Memorial Hospital in New London; Westerly Hospital in Westerly, Rhode Island; L+M Physicians Association, a 72-member

multispecialty physician practice; and several other outpatient facilities.⁹

In a series of less publicized moves, YNHHS seems to be quietly acquiring pieces of financially struggling Milford Hospital.

Milford has reported negative operating margins in each of the last seven years. The hospital's license allows it to operate 118 beds, but due to declining patient volume, only 43 are currently staffed. Documents filed with the state Office of Health Care Access reveal that physician defections to Yale-New Haven Hospital contributed to those losses and inflicted severe competitive damage on Milford's labor and delivery service. According to these documents, in 2012, six OB/GYN doctors who accounted for a majority of Milford Hospital's deliveries told management that they would no longer deliver babies there. One had decided to stop delivering babies altogether, but the other five told Milford management that they were making Yale-New Haven Hospital their "exclusive hospital provider."¹⁰

Milford subsequently attempted to hire additional obstetricians, but could not keep them. In February of 2015, Milford applied for state approval to terminate its Labor and Delivery service. Milford's family birthing center, which occupies a large portion of the hospital's third floor, will no longer accept patients.¹¹

Having expanded its OB/GYN network due to Milford's financial distress, Yale-New Haven Hospital announced last fall that it would open a 24-bed inpatient rehabilitation clinic on one of the three floors of Milford Hospital. The clinic would serve patients suffering from certain neurological, orthopedic, musculoskeletal, and other conditions. These patients typically have received inpatient treatment such as surgery for their conditions, and require extensive nursing care and supervision while undergoing treatments such as physical or occupational therapy.

YNHH's proposal would shift all patients who would have been treated in the current rehab unit at the St. Raphael's campus to Milford. Shortly after, YNHHS-owned Bridgeport Hospital submitted its

own paperwork to terminate its inpatient rehabilitation services as well.¹² In essence, YNHHS is regionalizing its inpatient rehabilitation services at its leased space at Milford Hospital, even as Milford's traditional hospital services decline and close. Taken together, these events suggest that Yale-New Haven Health System's absorption of Milford Hospital is in process. Yet state regulators have treated each submission—Milford's closure of its Labor and Delivery service, the opening of Yale-New Haven's inpatient rehabilitation unit, and the two separate YNHHS inpatient rehabilitation unit closures—as distinct, unrelated events.

In contrast to Milford Hospital, Lawrence + Memorial Hospital is a financially successful 256-bed hospital in New London that recently acquired Westerly Hospital in Rhode Island, pledging to invest \$36.5 million over five years in the new acquisition. In September, the parent company of the two hospitals and Yale New Haven Health System filed a Certificate of Need application for YNHHS to take over the L+M system. In the application, YNHHS promises to make a \$300 million capital investment in the region.¹³ This deal is now in front of state regulators seeking approval.

Connecticut's Growing Monopolies

Hospital consolidation is a recent and rapid phenomenon in Connecticut: twenty years ago, every hospital in the state was independent.

The trend has accelerated recently. A tally of transactions by the Universal Health Care Foundation in December 2014 reported that “between 2009 and 2013 there were thirteen attempted and seven successful hospital consolidations and/or partnerships [in Connecticut], a substantial increase from the four that occurred in the previous decade.”¹⁴

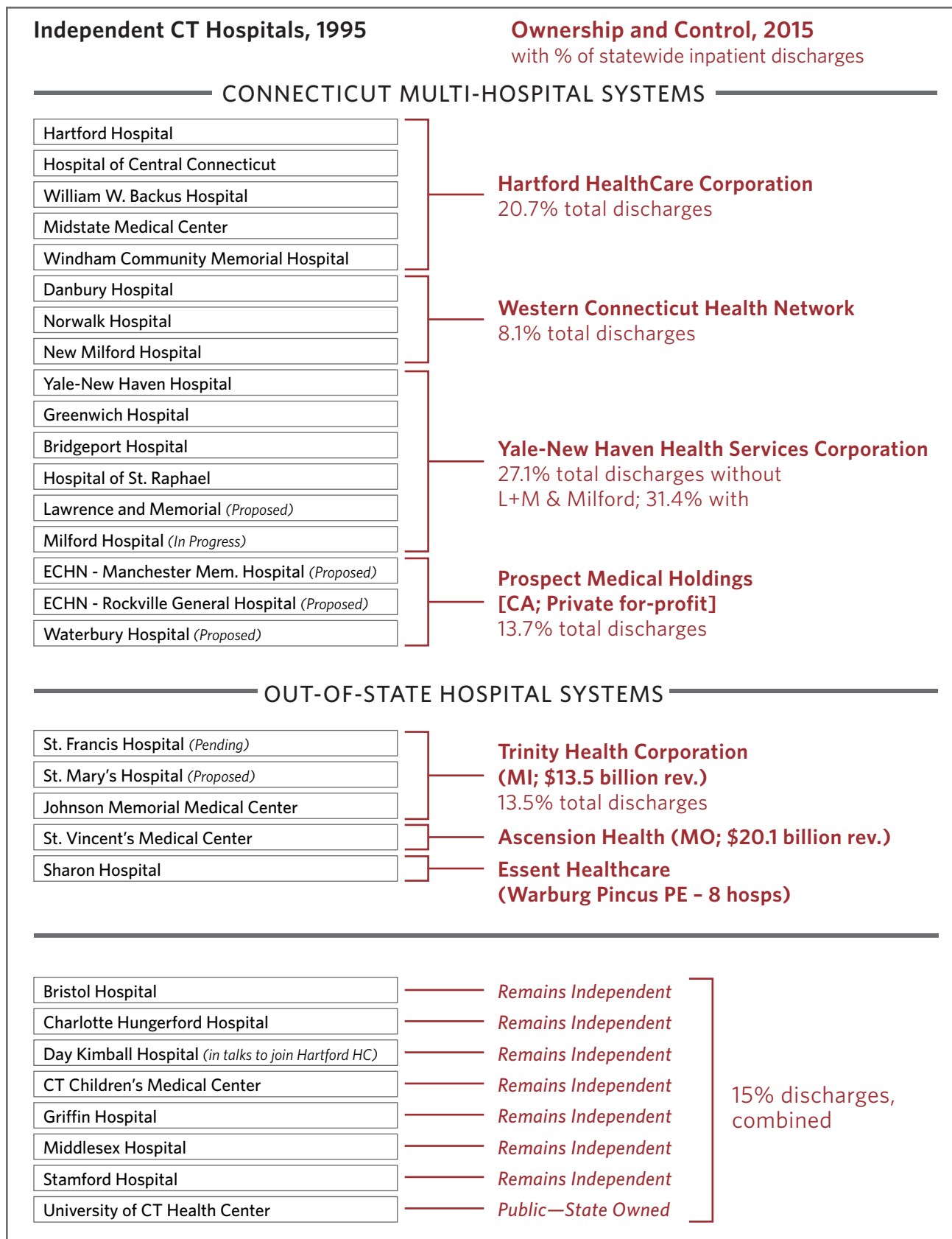
As a result of these consolidations, Hartford HealthCare accounted for 20.7% of inpatient discharges in the state in FY 2013, while Yale-New Haven Health System saw another 27.1%. The two health systems combine for nearly half of the

state's discharges, a lopsided market for Connecticut consumers.

In the year since the UHCF report, at least five major hospital affiliations or purchases have been announced or proposed: private for-profit Prospect Medical Holdings has moved to purchase the Eastern Connecticut Health Network and Waterbury Hospital; St. Francis Hospital affiliated with Trinity Health Corporation, a \$16 billion national company based in Michigan, has acquired Johnson Memorial Hospital, and has moved to acquire St. Mary's Hospital; and Ascension Health has purchased St. Vincent's Medical Center—all in addition to Yale's proposed acquisition of L+M and progressive annexation of Milford. Today, the eight hospitals that will remain independent if all pending transactions are approved provide only 15% of inpatient discharges in the state.

Unless radical change to reimbursement and support for financially distressed hospitals is on the horizon, some consolidation is inevitable. Unlike many of the other recent and proposed hospital acquisitions, however, the Lawrence + Memorial deal is not spurred by a community hospital's financial crisis. The conditions of this proposal create an opportunity for regulators to take a closer look at the growing monopolies in the state.

Figure 1: Hospital Ownership Changes, 1995-2015



2. THE DATA: YALE-NEW HAVEN'S LATEST MOVES INCREASE CONSOLIDATION

New data make it possible to chart the development of Connecticut's hospital systems, including the expansion of Yale's regional control in the last several years, and to anticipate how such control will grow as hospital networks expand. The authors obtained general acute inpatient care discharge data from the Office of Health Care Access, showing the number of discharges from each hospital by patients' town of residence during fiscal year 2013.

The question of how to define health care markets is highly contested and technically complex. For a detailed discussion, see Appendix A. Courts, hospitals, and regulators have disputed market boundaries for a quarter of a century while hospital systems completed 1,881 mergers.¹⁵

Recently, economists have developed improved tools to measure market boundaries, but courts are still catching up. Despite an academic consensus that hospital markets are much smaller and therefore more concentrated than courts were willing to accept a decade ago, only a handful of cases have actually seen anti-trust remedies applied to mergers.¹⁶ Meanwhile, mergers are proceeding at a rate of more than 90 per year.¹⁷

For our initial analysis, we focus on market areas defined by the health systems and hospitals themselves, including concentric areas surrounding different hospitals that define smaller and larger

markets. This approach gives a thorough preliminary analysis of market concentration at varying scales. The analysis examines five areas:

- **Yale-New Haven Health System's local service area:** In the Official Statement accompanying its most recent bond offering, YNHHS defined the "local service area" for its full system as a 55-town region encompassing roughly the southern half of the state. The area includes 1.6 million people, 46% of the state's population.¹⁸
- **Yale-New Haven Hospital local service area:** A 34-town region also defined in YNHHS bond statements.¹⁹
- **Greater New Haven Area/Southern Connecticut Region Council of Governments (SCRCOG):** We use the area defined by membership in the Southern Connecticut Regional Council of Governments (SCRCOG) as a definition of Greater New Haven. SCRCOG contains fifteen towns with 16% of the state's population.
- **Lawrence + Memorial Hospital Primary Service Area:** L+M Hospital defines its primary service area as a ten-town region surrounding New London, both in the Official

Statement for its most recent bond issue and in its Certificate of Need application.

- **Lawrence and Memorial Hospital Secondary Service Area:** In the same sources, L+M also identifies as its secondary service area a twenty-town area surrounding New London.²⁰

Within these five areas, our analysis focuses on three key metrics:

- The percentage market share for the Yale-New Haven Health System in each area prior to and after the absorption of Milford and the purchase of L+M Health.
- The Herfindahl-Hirschman Index, or “HHI,” score for each area pre- and post-acquisitions. HHI measures the degree to which a market is concentrated, and thus how likely consumers are to face anticompetitive practices. It is a standard FTC and DOJ metric, also used by the American Medical Association, Congressional Budget Office, Kaiser Family Foundation, insurance industry, and other economists and regulators for analyses.
- The change in HHI for each area before and after a transaction, a prediction of merging hospitals’ gain in market power.

In examining these metrics, we found that:

- Though consumers already face a market with limited competitive pressure to protect them, the ongoing absorption of Milford and the proposed purchase of L+M will significantly increase the Yale-New Haven Health System’s market share in all five areas we examined – by a factor of 5 or 6 in the markets surrounding New London – at the further expense of competition.
- All five geographic regions studied easily meet the federal government’s standard for a “highly concentrated” market even before the two takeovers. Highly concentrated markets can lead to artificially excessive prices.

- In the market areas studied, the size of the increase in consolidation caused by YNHHS’s expansion would be significantly higher—by a factor ranging between 50% and 900%—than the level that requires regulators to presume that merging entities will “obtain market power,” which federal regulatory standards warn against.²¹

- Although there is rapid consolidation across the state, the coastline areas dominated by YNHHS are the most heavily concentrated regions of the state and therefore are most vulnerable to price increases.

In each of these areas, the expansion is significant. The ultimate absorption of Milford Hospital and the L+M deal as proposed will leave YNHHS with nearly 60% of inpatient discharges in the Yale-New Haven Health System’s local service area, which covers roughly the southern half of the state, including 46% of its population. It will also add the L+M service area to the swath of coastal areas in which YNHHS dominates the market. [See *Figures 3 and 4.*] Yale-New Haven Hospital already treats the second highest volume of patients in L+M’s primary service area and third highest in its larger secondary service area. Combining the two hospital networks will leave YNHHS with monopoly pricing power.

When federal and state anti-trust regulators measure the degree to which a market is concentrated, they use a tool called the Herfindahl-Hirschman Index (HHI), which measures market concentration by aggregating measures of firms’ market shares.

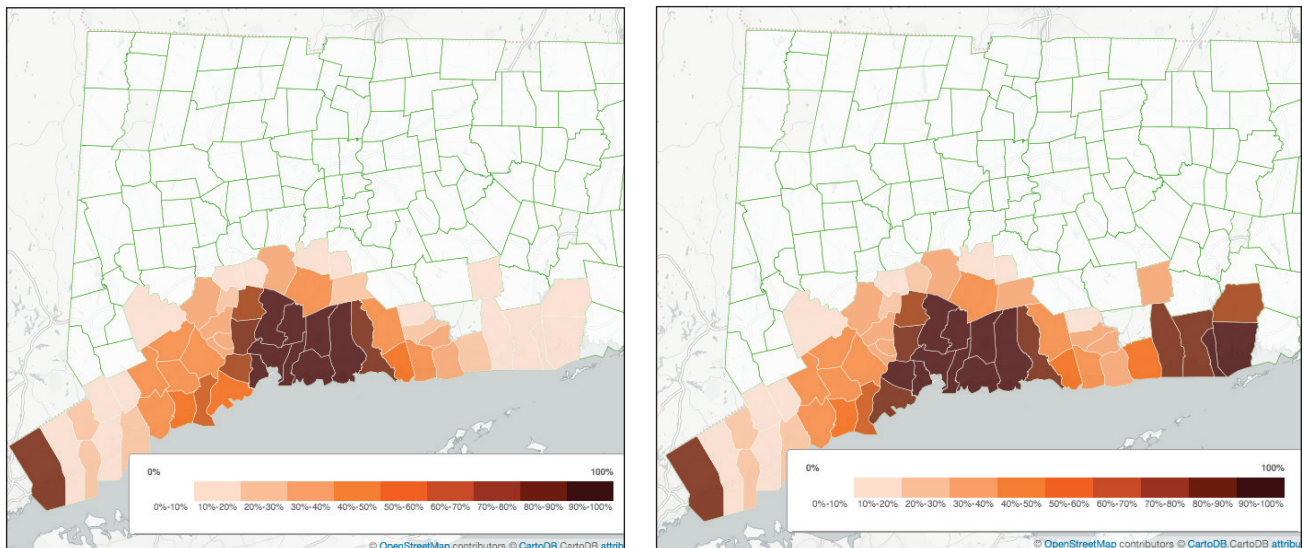
The DOJ and FTC assert that “mergers should not be permitted to create, enhance, or entrench market power or to facilitate its exercise” because of the threat to competition. When a merger increases the HHI in a highly concentrated market by 100 points, regulators expect that merger to “potentially” raise significant concerns because of an increase in market power. When it increases by 200 points or more, they “presume” that an impermissible market power increase is likely. This presumption can be rebutted only by “persuasive evidence showing that the merger is unlikely to enhance market power.”²² We applied HHI to the discharge data from towns and multi-town areas to determine the health of the state’s markets.

Figure 2: YNHHS inpatient discharge share by region, before and after addition of L+M and Milford

	Population	YNHHS discharge share now	YNHHS discharge share with deals
Statewide	3,570,000	27%	31%
YNHHS local service area	1,650,000	51%	59%
YNHH local service area	1,096,135	60%	65%
GNH/SCRCOG	570,000	74%	83%
L+M primary service area	175,000	14%	83%
L+M secondary service area	362,000	12%	59%

Figures 3 and 4: YNHHS local service area market share, before and after

These maps illustrate the percentage of inpatients from each town within the Yale-New Haven Health System's local service area who were discharged from a hospital in the YNHHS, before and after the addition of L+M and Milford.



Measuring Market Power

To calculate HHI, one adds the squares of the market shares together to get a number on a scale of 100-10,000:

- A region with a pure monopoly on a good or service would score an HHI of 10,000: $(100\%)^2 = 10,000$.
- A region with 10 competitors, each with equal market shares of 10% would score 1,000: $(10\%)^2 = 100$ for each competitor. 100×10 competitors = 1,000.
- A region with five competitors, one with 50% market share, one with 20% market share, and three with 10% market share would score 3,200 on HHI. $(50\%)^2 = 2,500$; $(20\%)^2 = 400$; $(10\%)^2 = 100 \times 3$ competitors = 300.

The federal government divides markets into three categories based on HHI scores to assess the risk of monopoly:

- Less than 1,500—unconcentrated market with adequate competition
- Between 1,500 and 2,500—“moderately concentrated” market
- Above 2,500—“highly concentrated” market with an elevated risk of inefficiency and collusion to fix prices.

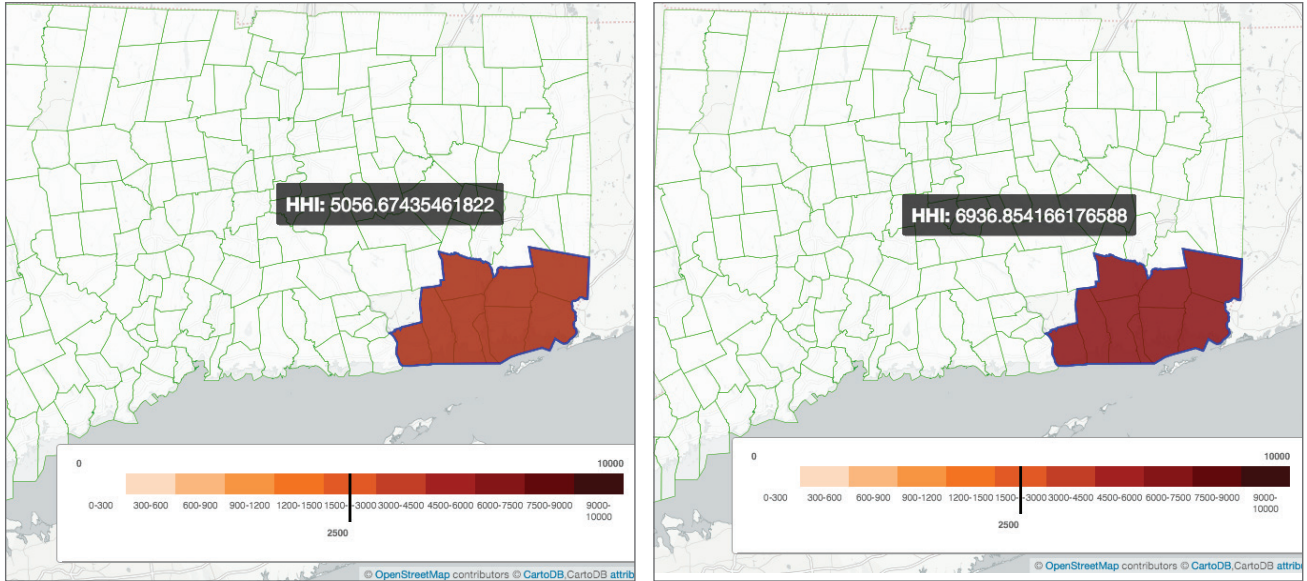
Regulators apply the strictest scrutiny to “highly concentrated” markets with scores of 2,500 or above.¹⁸

We found that every one of the five regions is already a highly concentrated hospital market to begin with. In every region, the increase in HHI was dramatic. The maps on the opposite page illustrate the HHI increase in the L+M service area. For the full table showing HHI and change in HHI for each geographic area, see Appendix B.

In every relevant local or regional area we examined, the HHI indicates that the market is already highly concentrated. When concentration is already high, increases to HHI are more concerning: federal standards indicate that the strictest scrutiny should be applied to markets like these because of the risk to competition. In every one of these markets, the magnitude of the HHI increase is far higher than the 200-point threshold at which federal regulations presume an impermissible increase to market power. In the L+M primary service area, the increase is over nine times the 200-point standard. In the YNHHS local service area—which encompasses 46% of the state’s population—the increase is more than quadruple the standard.

The state of Connecticut is far too large to consider a “market.” Even if we did consider Connecticut as a “market” of its own, however, it would already have an HHI of 1412. After these transactions, it would have an HHI of 1716—an increase of 304 points that would move it from the “unconcentrated” category to the “moderately concentrated” category. These two acquisitions constitute a substantial increase to overall market concentration in the state because they bolster the market power of its largest health system.

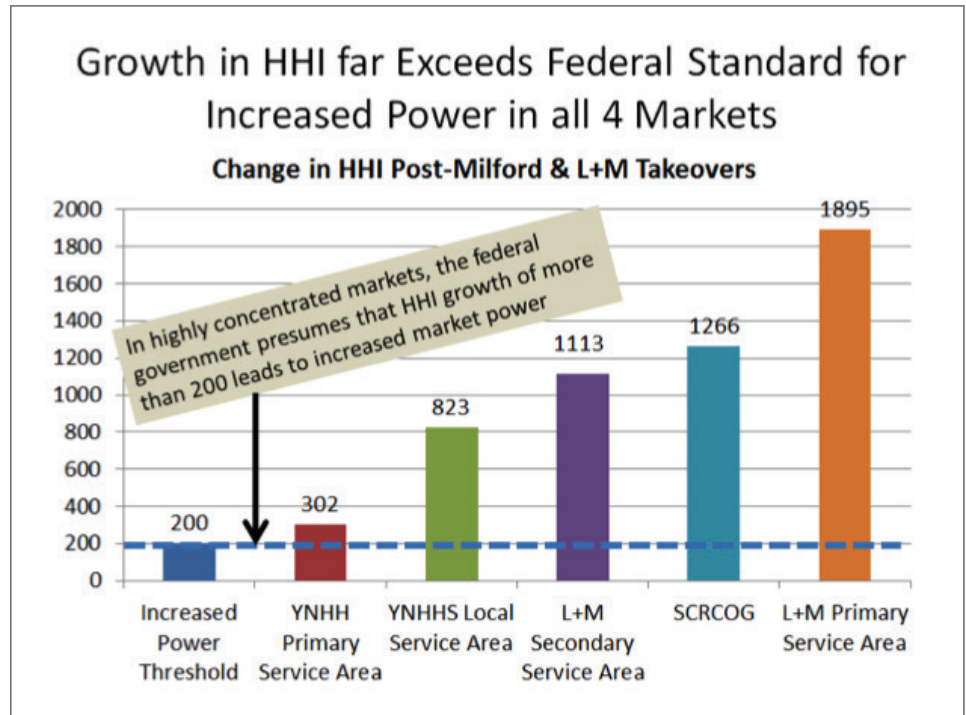
Consolidation is not equally threatening everywhere, however. We also calculated market concentration on a town-by-town basis for the entire state to demonstrate the distribution and comparative level of concentration across regions. Hartford’s expansion in northern Connecticut has been more diffuse than Yale-New Haven’s southern growth to date. In Hartford, for example, Hartford Hospital continues to face direct competition from St. Francis, which is now aligned with a multi-billion dollar national non-profit chain and is itself seeking to buy two hospitals. In the southern half of the state, highly concentrated multi-town regions clearly show the dominance of the Yale-New Haven Health System.



Figures 5 and 6: L+M Service Area HHI, before and after YNHHS takeover

This map demonstrates the dramatic increase in market concentration for the L+M Primary Service Area that will result from the potential takeovers. Because the market is already highly concentrated before the acquisition, combining YNHHS and L+MH will cause a large spike in market concentration, leaving few alternatives to the newly dominant Yale-New Haven system.

Figure 7



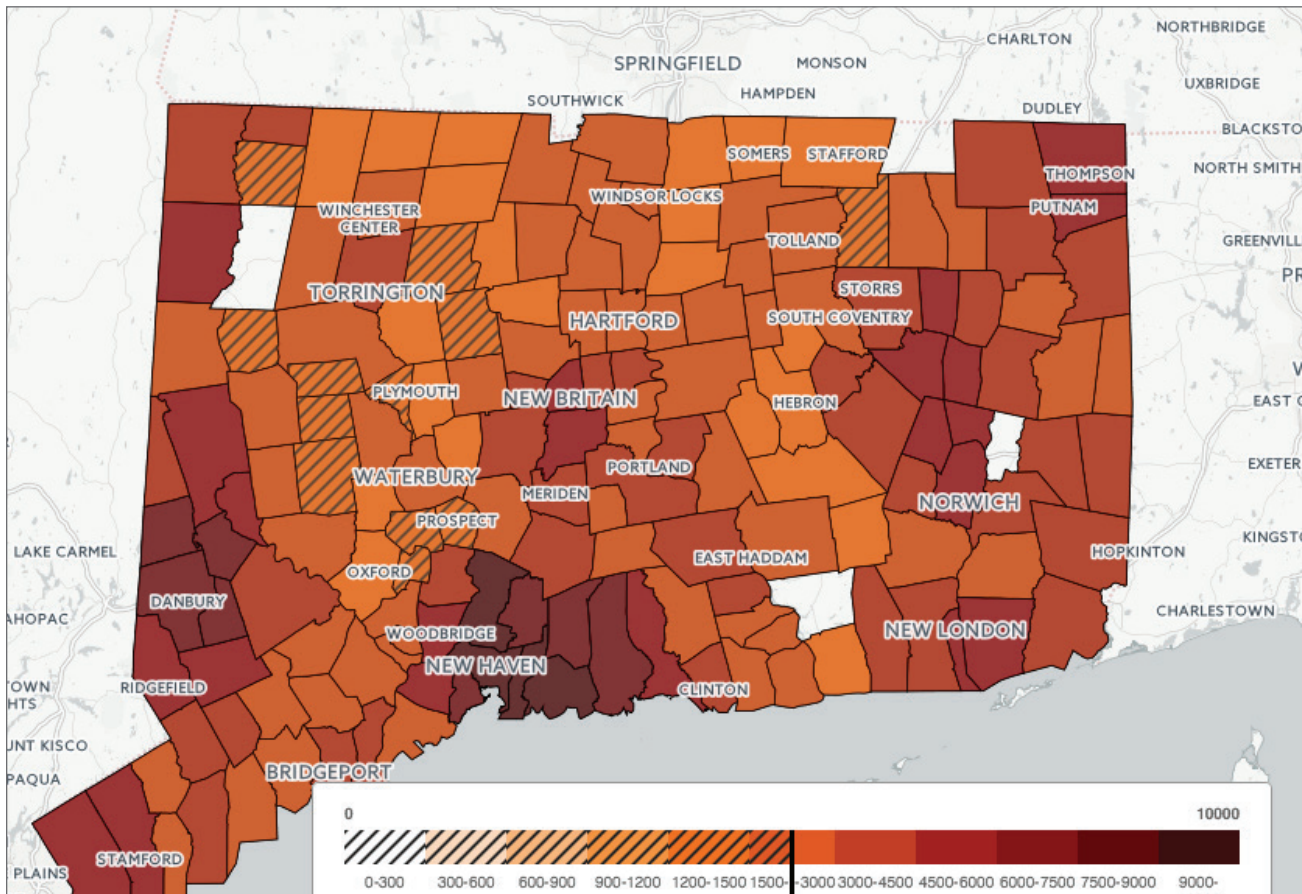


Figure 8: Town-by-town market concentration, Connecticut

This map shows the existing HHI scores for each town in Connecticut. Though discrete towns are not complete health care markets in themselves, the map shows roughly the distribution of highly and extremely concentrated markets throughout the state. Though Hartford HealthCare controls a large number of hospitals statewide, its hospitals are distributed in such a way that most towns in the north of the state exhibit comparatively lower market concentration, although most would still be defined as “highly concentrated” under federal standards. In the Yale-New Haven-controlled southern half, however, we see the highest density of towns with extremely high market concentration—above 6,000, indicating that Yale-New Haven’s control of the market is geographically consolidated. Note that the region around New London is already heavily concentrated, and will become even more so if Yale-New Haven takes over L+M.

3. THE UNAFFORDABLE CONSEQUENCES OF MARKET CONCENTRATION

Prices Go Up as Hospitals Gain Market Power

Hospitals often claim that consolidation increases efficiency. There is little evidence to support this claim.

Independent comprehensive reviews of the academic literature have rejected this interpretation. Nationally, the Robert Wood Johnson Foundation reports, based on a review of five independent studies, that when hospitals “merge in already concentrated markets, the price increase can be dramatic, often exceeding 20 percent.”²³ Locally, the Universal Health Care Foundation of Connecticut concluded in its December 2014 review that “almost all retrospective studies suggest that hospital consolidation results in concentration of market power and a rise in the price of care.”²⁴

In Massachusetts, the Attorney General has documented that monopoly pricing, especially by the non-profit Harvard-affiliated Partners system, is the state’s most significant cost driver.²⁵ In a court ruling this year against a hospital merger involving Partners, the Massachusetts judge found that the system was able to “exercise ‘near monopoly power’ that allows it to charge prices far in excess of its competitors for the same services.”²⁶

The fact that the dominant systems in Connecticut are nominally not-for-profit corporations does not protect Connecticut patients. A majority of U.S. acute care hospitals are structured as private, non-profit enterprises. That fact has not prevented a massive wave of mergers and skyrocketing prices.

For years, judges permitted mergers of non-profit hospitals on the theory that they would behave

charitably with greater market power. In 2007, the Federal Trade Commission studied the pricing impacts of a non-profit merger in Illinois. It found that, according to the hospitals’ own economist, managed care prices increased by 42% over four years, 12% above the market as a whole.²⁷

With rising health care costs one of the largest drivers of perennial state budget crises, state officials are increasingly concerned about the long-term cost of consolidation to taxpayers. Comptroller Kevin Lembo, who administers the state employee health plan covering 210,000 people at a cost of \$1.4 billion annually, recently testified stating, “We’re going to be negotiating potentially with 2 or 3 large systems and that’s basically it, if things keep going the way they are going. I don’t think you need to be an actuary to know that that’s going to be a tough spot for us.”²⁸

Non-profit hospitals claim they need surplus revenue to serve low income people. But Duke University Professor Clark Havighorst points out that the IRS allows non-profit hospitals “to spend their untaxed surpluses on anything that arguably ‘promotes health.’ Much of what hospitals count as charitable behavior or community benefit is not spent on lower income people.”²⁹ University of Illinois tax law professor John Colombo adds:

“The standard non-profit hospital doesn’t act like a charity any more than Microsoft does—they also give some stuff away for free. Hospitals’ primary purpose is to deliver high quality health care for a fee, and they’re good at that. But don’t try to tell me that’s charity. They price like a business. They make acquisitions like a business. They are businesses.”³⁰

We're Not Getting the Quality Care We're Paying For

Already, Connecticut has the 4th highest per capita health care costs in the nation: we paid 27% more per person than the national average for health care in 2009, the most recent year for which data are available,³¹ and what we spend at the hospital annually nearly tripled from 1991 to 2009, from \$3.9 billion to \$9.3 billion.³²

The science of measuring hospital quality is still in its infancy. No single set of metrics is backed by a wide consensus. However, we examined several federal and independent evaluations. The available data provide no evidence that Connecticut's high health care costs are correlated to high quality. On several currently available metrics, Connecticut ranks among the states with the lowest scores.

For example, Medicare penalizes hospitals if patients are frequently readmitted within a month of their discharge. Based on these readmission standards, 90% of Connecticut hospitals received penalties for the 2015-2016 fiscal year, the second highest penalty rate for any state.³³ These 28 penalized hospitals included all three in the Yale-New Haven Health System, and Yale-New Haven Hospital itself received the seventh most severe penalty in the state.³⁴

Medicare also assesses hospitals based on patient satisfaction across a number of areas like communication, cleanliness, and pain management. In the most recent scores compiled from quarterly Hospital Consumer Assessment of Healthcare Providers and Systems surveys, no Connecticut hospital received the top rating of five stars. Eighteen out of twenty-five hospitals received a three star rating, including YNHHS's Bridgeport and Yale-New Haven hospitals.³⁵

The independent Leapfrog Group assesses hospital quality nationally and grades hospitals "A" to "F" based on factors such as safe surgery practices, infection rates, and use of correct staffing and procedures to minimize mistakes.³⁶ Connecticut ranked 36th in the percentage of hospitals scoring "A" in Fall

2015.³⁷ Maine and Massachusetts were 1st and 2nd nationally. Yale-New Haven and Greenwich Hospitals received "C" grades, Bridgeport a "D". Three of Hartford HealthCare's five hospitals received "C" grades, one a "B" and one a "D".³⁸

As the science of quality measurement improves, and analysts are better able to account for factors such as the severity of patients' conditions across populations, these scorecards may yield different results. However, the Robert Wood Johnson Foundation examined the literature on hospital consolidation in relation to currently available quality indicators, and found that "a slim majority of studies find that, at least for some procedures, increases in hospital concentration reduce quality. The strongest studies confirm this result."³⁹

4. CONFRONTING CONNECTICUT'S HOSPITAL MONOPOLIES

The Affordable Care Act and new Connecticut reimbursement policy are accelerating changes in how care is delivered and measured, and how the business of health care is structured. Before our very eyes, Connecticut is being carved up by a few hospital systems. The leader is clearly Yale-New Haven, with a level of control in many areas that easily meets any definition of market power. Meanwhile, our patients and payers are carrying a heavier and heavier financial burden as their health care costs rise.

Fortunately, Connecticut's legislative leaders have acted to curb the threat of consolidation by giving more tools to public consumers and to regulators. Two hospital regulatory bills in the last two years leave Connecticut better prepared to protect its consumers from the ill effects of monopoly. These reforms have put us in the forefront of states asserting the public interest in creating a fair health marketplace that benefits all. State regulators and advocates should use those tools now.

The acquisition of Lawrence + Memorial Health by the Yale-New Haven Health Services Corporation is a pivotal opportunity for stemming the growth

of monopoly in Connecticut's health care market and limiting the ill effects of consolidation. The proposal will be reviewed under Public Act 14-168, which passed in 2014. Portions of Public Act 14-168 were quickly superseded by SB 811, which passed in 2015. However, the L+M acquisition application was submitted before the newer law took effect. Nevertheless, PA 14-168 added new standards for the Certificate of Need. In any decision to grant or refuse a CoN, the law requires the Office of Health Care Access to take into account whether the applicants have

"satisfactorily demonstrated that the proposal will not negatively impact the diversity of health care providers and patient choice in the geographic region; and [w]hether the applicant has satisfactorily demonstrated that any consolidation resulting from the proposal will not adversely affect health care costs or accessibility to care."⁴⁰

The sale as proposed unquestionably poses a threat to both provider diversity and health care costs along the shoreline.

In light of this threat, state officials should

rigorously examine the likely consequences of the transaction in order to decide whether to allow it to proceed. In particular, we recommend that prior to any approval or rejection, and prior to developing any proposed conditions, regulators take the following steps:

- SB 811 requires the state to undertake a “cost and market analysis” for such mergers. Although SB 811 does not formally apply, the Attorney General retains responsibility to enforce the Connecticut Anti-trust Act, and the Office of Health Care Access now must specifically examine the impact of merger-related consolidation on cost and access. Having public market analysis was critical to the process of public comment to the judge in the case of proposed mergers by Partners Health System in Massachusetts. Accordingly, we urge regulators to conduct the cost and market analysis that our state legislators have deemed appropriate for sales like this one.
- In order to understand the likely results of these acquisitions, we also believe that a thorough analysis of potential consolidation-related cost and access impacts calls for a retrospective look at any price changes following YNHH’s acquisition of the Hospital of St. Raphael three years ago. This is a clear test of whether or not YNHHS exercises market power to artificially inflate prices: if St. Raphael’s or Yale-New Haven’s overall prices increased significantly post-merger, there is no question that the system is flexing monopoly muscle within the SCRCOG region. Understanding any changes in the two hospitals’ prices may portend similar behavior in eastern Connecticut.
- We urge OHCA and the Attorney General to view the L+M acquisition in tandem with the unannounced takeover of Milford Hospital. To date, the relationship between YNHHS and

Milford Hospital has been viewed as a series of individual transactions.

The changes to the market statewide pose high potential risks to patients. In the interest of quality and affordability in our health care marketplace, regulators must use these tools and more before they decide whether this transaction should proceed.

APPENDIX A: DEFINING AND MEASURING HOSPITAL MARKETS

The authors have chosen to apply HHI to the five geographic areas identified in the report as an initial illustration of the challenges posed by YNHHS's slow-motion consumption of Milford Hospital and proposed acquisition of L+M Health. We are awaiting further data to allow more thorough analysis, and also expect that regulators will apply a more rigorous methodology as full information on the transaction becomes available.

The definition and measurement of hospital markets is a hotly contested legal subject. As noted in the body of the report, for many years courts tended to assume that it was appropriate to entrust not-for-profit entities with market power because of their "charitable" nature. As courts began to take the threat to competition from consolidating non-profit hospitals seriously, the prosecution of anti-trust cases foundered on the use of analytic tools that fail adequately to account for the inelasticity of hospital demand.

In 1982, the FTC and Department of Justice Guidelines adopted a test that sets the boundaries of a monopoly market at the furthest limits at which a potential cartel or monopolist can impose a small but significant non-transitory increase in price ("SSNIP"). A SSNIP is generally assumed to be a 5% increase for a year without losing market share.

To define the SSNIP boundary, economists used two tests. For hospitals, the Elzinga-Hogarty test uses "patient flow" data to determine consumers' ability to enter and exit the market boundaries. Any boundary in which 10% or more patients leave to get care elsewhere is assumed to have enough competition to preclude anti-competitive behavior. "Critical Loss Analysis" examines the ability of firms to withstand profitably the loss of customers expected under a given market definition following a price increase. Once the market was defined,

analysts would then apply a measure of market concentration such as the Herfindahl-Hirschman Index (HHI) to determine the anti-trust risk.

E-H and CLA both proved inadequate for hospital mergers. Neither accounts for factors that influence patient choice other than price (3rd party payment, role of the physician, proximity, availability of subspecialty services, etc.). Standard CLA analysis often results in "inconsistent logic and erroneous conclusions." Use of these tools allowed hospital defendants to win a series of cases between 1997 and 2004 in part by successfully defining markets as large geographic areas within which any single combination of hospitals posed a minimal threat to competition.

Gaynor, Kleiner, and Vogt estimate that these older methods overstated the elasticity of hospital demand "by a factor of 2.4 to 3.4 and were likely a contributing factor to the permissive legal environment for hospital mergers." That permissive environment allowed 1,425 mergers and acquisitions to be consummated between 1994 and 2009. Dr. Elzinga himself questioned the value of his own test on hospital markets in 2011.

In the early 2000s, economists developed the "option demand" analysis (Town and Vistnes, 2001; Capps, Dranove, and Satterthwaite, 2003) and the Differentiated Bertrand Oligopoly Model (DB). These models attacked the issue of third party reimbursement by envisioning a hypothetical health plan attempting to construct a provider network in the region of the merging competitors. "This is a reasonable characterization of managed care markets," write Gaynor, et al., of the option demand model.

The new methods yield markets far smaller and closer to economic reality than the older tests, and

lead to clearer pictures of market concentration. According to Gaynor et al, they allow analysts “to assess merger effects without a market definition.”

However, they are not yet universally accepted in court, and even though the new methods are capable of assessing merger effects without a market definition, courts expect definitions and FTC guidelines for state Attorneys General insist on them as well. The new tools are powerful, and once we obtain data sufficient to apply them we will attempt to do so.

For our initial analysis, we have chosen to examine markets defined by the hospitals in their public descriptions of themselves. These analyses serve as an adequate preliminary basis for gauging the degree of concentration, and we examine several concentric markets that present analyses at varying scales of market definitions.

However, we recognize that in the policy process, any attempt at market definition will be contentious. Therefore, we urge regulators to heed the words of Kenneth Elzinga closely. In evaluating the usefulness of his original model in the context of

hospital mergers, Dr. Elzinga notes “where direct evidence of anticompetitive effects attributable to a merger is available, its use may diminish the need to rely on geographic market definition tools such as the E-H test,” writes Dr. Elzinga. “Such direct evidence is most readily available in post-closing merger challenges such as the FTC’s Evanston case.”

Connecticut patients cannot wait until Milford and L+M are fully in the Yale-New Haven orbit to understand the potential price impact of the deals. Although there is no direct evidence, there is a useful precedent. Yale-New Haven’s purchase of the Hospital of St. Raphael resulted in intense market concentration in the Greater New Haven area.

The Certificate of Need filed for that transaction in 2012 states that “YNHH has no plans to raise charges as a result of the HSR acquisition,” language similar to that in the Certificate of Need for L+M. If an analysis of the market before and after that merger reveals significant price increases, there will be little question that YNHHS exerts monopoly pricing power.

**APPENDIX B:
HHI TABLE, BEFORE AND AFTER BOTH HOSPITAL ACQUISITIONS, BY AREA**

Market name	HHI before	HHI after	Change
Lawrence + Memorial Primary Service Area	5087	6982	+1895
Lawrence + Memorial Secondary Service Area	3485	4598	+1113
YNHHS Local Service Area	2911	3735	+823
Greater New Haven (SCRCOG)	5665	6931	+1266
YNHH Primary Service Area	3920	4222	+302

**APPENDIX C:
MARKET SHARE AND HHI CALCULATIONS FOR L+M ACQUISITION ONLY,
WITHOUT MILFORD HOSPITAL ACQUISITION, BY AREA**

Data in this table include YNHHS's proposed acquisition of L+M, but not the addition of Milford Hospital. HHI increase is compared to HHI with the Yale-New Haven system as is.

Market name	YNHHS Discharges	HHI	HHI Increase
State	31%	1667	+254
Lawrence + Memorial Primary Service Area	83%	6972	+1884
Lawrence + Memorial Secondary Service Area	59%	4592	+1107
YNHHS Local Service Area	57%	3539	+628
Greater New Haven (SCRCOG)	79%	6309	+643
YNHH Primary Service Area	61%	3933	+14

NOTES

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