Connecticut Department of Public Health

Cost and Market Impact Review of Hartford HealthCare's Proposed Affiliation with The Charlotte Hungerford Hospital 16-32135-CMIR

Pursuant to C.G.S. §19a-639f

Final Report

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Department of Public Health

Antony Casagrande
Micheala Mitchell
Shauna Walker

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Acronyms and Abbreviations

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Acronym	Abbreviation
APCD	All-Payer Claims Database
AFS	Audited Financial Statement
AHA	American Hospital Association
AHRQ	Agency for Healthcare Research and Quality
AAOP	Average Age of the Operating Plant
Backus	William H. Backus Hospital
BH	Behavioral Health
BCMA	Bar Code Medication Administration
Bristol	Bristol Hospital
Bristol Group	Bristol Hospital and Health Care Group
CAGR	Compound Annual Growth Rate
CDC	Centers for Disease Control and Prevention
Charlotte Hungerford	Charlotte Hungerford Hospital
CHNA	Community Health Needs Assessment
CMI	Hospital Case Mix Index
CMIR	Cost and Market Impact Review
CMS	Centers for Medicare and Medicaid Services
CON	Certificate of Need
CPOE	Computerized Physician Order Entry
C-section	Cesarean Section
CT	Connecticut
CY	Calendar Year
DPH	Connecticut Department of Public Health
DSS	Department of Social Services
ED	Emergency Department
FY	Fiscal Year
Gov't	Government
Griffin	Griffin Hospital
Griffin Health	Griffin Health Services
HAI	Healthcare-Associated Infection
Hartford	Hartford Hospital
Hartford HealthCare	Hartford HealthCare Corporation, Hartford HealthCare System
HCAHPS	Hospital Consumer Assessment of Healthcare Providers and Systems
HHC	Hartford HealthCare Corporation
HHCMG	Hartford HealthCare Medical Group
HPC	Massachusetts Health Policy Commission
HOCC	Hospital of Central Connecticut, also Central Connecticut
ICU	Intensive Care Unit
IQI	Inpatient Quality Indicator
L + M	Lawrence + Memorial Hospital
Leapfrog	The Leapfrog Group
MRSA	Methicillin-resistant Staphylococcus Aureus
NICU	Neonatal Intensive Care Unit

Acronym	Abbreviation
Non-Gov't Payer	Non-Government Payer, which excludes Medicaid and Medicare
NPSR	Net Patient Service Revenue
NSQIP	National Surgical Quality Improvement Program
OB	Obstetrics
OHCA	Office of Health Care Access
OP	Outpatient
OSC	Office of the State Comptroller
PSA	Primary Service Area
Sharon	Sharon Hospital
Sharon Hosp. Holding	Sharon Hospital Holding Co.
TME	Total Medical Expenses
UCONN	University of Connecticut School of Medicine
WCHN	Western Connecticut Health Network, Western Connecticut
YNHH	Yale New Haven Hospital
Y-NHHS	Yale-New Haven Health Services Corporation, Yale-New Haven Health System

Introduction

For many years, the Connecticut Department of Public Health (DPH) has conducted a Certificate of Need (CON) program to support community-based planning for health services and facilities. The CON program is intended to prevent costly duplication of health services and to promote access to and continuity of health care services for Connecticut residents.

In 2015, the Connecticut General Assembly passed Section 29 of Public Act 15-146, codified as C.G.S. §19a-639f (commonly referred to as "Section 639f"). Section 639f requires the Office of Health Care Access (OHCA), which conducts the state's CON program, to comprehensively review certain CON applications that involve hospital ownership affiliations that have the potential to affect health care costs or the performance of the health care market. Specifically, OHCA is obligated to conduct a "cost and market impact review" (CMIR) when a CON application proposes a transfer of hospital ownership, and the purchaser is:

1. a hospital or hospital system with net patient service revenue exceeding $1.5 billion in 2013, or
2. organized or operated as a for-profit entity.

This Final Report examines a proposed affiliation of The Charlotte Hungerford Hospital (Charlotte Hungerford) with Hartford HealthCare Corporation (Hartford HealthCare). Under the proposed affiliation, Charlotte Hungerford will transfer ownership to Hartford HealthCare, which will become the sole corporate member of Charlotte Hungerford. The proposed affiliation will not change Charlotte Hungerford's status as a non-profit, tax-exempt organization, and Charlotte Hungerford will retain a separate hospital license.

The Affiliation Agreement requires Hartford HealthCare to invest up to $73 million for the benefit of Charlotte Hungerford. In addition, Hartford HealthCare commits to providing $3 million to certain community organizations in Charlotte Hungerford's service area. Both parties conveyed in the CON application and associated hearing testimony that the affiliation will allow Charlotte Hungerford to continue to provide services to the communities in its service area, and will result in improved quality of care by "achieving certain clinical and operational advancements and economies of scale."[1]

Informed by the parties' CON and cost and market impact review-related submissions and the best available data, this report describes the circumstances surrounding the affiliation and the likely impact of it on the health care market in Connecticut. This report includes several potential impacts, including on the market positions of the involved parties, the cost of health care, access to health care services, the quality of services and care delivery, and on consumers.

Section 639f requires that a CMIR shall examine the business and relative market positions of the involved parties. In addition, subsection (d) of the law enumerates 12 specific factors that a CMIR may examine, which are excerpted here:

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 state wide;*

[1] CT DPH Office of Health Care Access, Certificate of Need Application, Version 9/21/16, page 13.

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; and*
12. *any other factors that the office determines to be in the public interest.*

Section 639f sets out timelines for the series of events associated with the CMIR process, which require OHCA to provide notice of the initiation of a CMIR, with requests for information from the parties, within 21 days of the CON filing. Transacting parties have 30 days to respond to the requests for information, and after OHCA determines compliance with its data requests, it has 90 days to issue a Preliminary Report. The transacting parties may respond to the Preliminary Report within 30 days, and after 30 more days OHCA must issue a Final Report.

OHCA is obligated to refer any Final Report to the Attorney General if it indicates that either party a) currently has or is likely to have a dominant market share for the services the transacting party provides, and b) currently charges or is likely to charge prices that are materially higher than the median prices or currently has or is likely to have a health status adjusted total medical expense that is materially higher than the median total medical expense. In such a case, the Attorney General may utilize the Final Report as evidence in any action undertaken pursuant to existing legal authority.

Section 639f contemplates that OHCA will contract with an independent consultant with expertise in performing economic analyses of health care market functioning and health care costs and prices. For this CMIR, OCHA retained Health Management Associates (HMA), a health care policy research and consulting firm, to perform the analysis outlined in Section 639f.

Notably, this is the first CMIR conducted under Section 639f. Over the course of producing this work, OHCA and HMA have comprehensively assessed the availability of health care market data in Connecticut and have identified some challenges to addressing all factors included in Section 639f, particularly with respect to commercial market data. Nevertheless, OHCA and HMA worked closely together and with the parties to identify the best sources of data available to inform this report and are confident that the findings in this report rest on sound and reasonably relevant information. The CMIR process, which is independent of the CON process and separate from any law enforcement review, is a policy-oriented assessment of the influence of hospital market changes on the vitality of the health care market in Connecticut. The process enhances transparency and builds awareness of the important issues that arise when significant affiliations are proposed that alter the structure and composition of the hospital provider market.

Executive Summary

On November 28, 2016, Hartford HealthCare submitted a Certificate of Need (CON) application for the affiliation of Charlotte Hungerford with Hartford HealthCare. Under the proposed affiliation, Charlotte Hungerford will transfer ownership to Hartford HealthCare. Hartford HealthCare will become the sole corporate member of Charlotte Hungerford.[2] The Affiliation Agreement does not contemplate any reductions of services at Charlotte Hungerford. Charlotte Hungerford would be integrated into Hartford HealthCare's existing five-hospital system and would retain a separate hospital license. The Affiliation Agreement requires Hartford HealthCare to invest up to $73 million for the benefit of Charlotte Hungerford. In addition, Hartford HealthCare commits to providing $3 million to certain community organizations in Charlotte Hungerford's service area.

This CMIR is the first undertaken pursuant to Section 639f, which requires OHCA to comprehensively review certain CON applications that involve hospital ownership affiliations that have the potential to affect health care costs or the performance of the health care market.

Informed by the parties' CON application, other information submitted by the parties, and other available data, this Final Report describes the circumstances surrounding the proposed affiliation and the likely impact of it on the health care market in Connecticut. This report examines potential impacts to the market positions of the involved parties and on the cost of health care, access to health care services, the quality of services, and care delivery.

This report is organized into three main sections. Section I provides an overview of the analytic approach to the issues, including a description of the data sources used and an identification of appropriate hospitals or integrated health systems to which Hartford HealthCare and Charlotte Hungerford are compared for the purposes of the analysis. Section II is a description of the parties and provides a detailed account of the elements of the proposed affiliation. Section III makes findings about the parties' baseline performance and the potential impact of the affiliation on that performance, across four domains: 1) costs and market factors; 2) access and availability of services; 3) quality and care delivery; and 4) consumer concerns. Our findings, organized by these four domains, are summarized below:

1. Costs and Market Factors
   - Charlotte Hungerford is facing significant financial challenges that are likely to continue to deepen without an intervention. Hartford HealthCare is in strong financial condition.
   - Charlotte Hungerford, with 122 beds in 2015, is one of the smallest hospitals in the state. Hartford HealthCare is the 2nd largest health system in the state, with 1,679 beds in 2015 representing 19.4% of all the beds in the state.
   - The largest health system in the state, Yale-New Haven Health System, represents 27% of the total beds in the state in 2015.
   - Because Charlotte Hungerford is a small hospital, the affiliation will only increase Hartford HealthCare's market share by 1.5 percentage points or less, when measured by number of beds, discharges or NPSR.
   - The proposed affiliation would improve Charlotte Hungerford's financial condition, which is weak and in the absence of the affiliation, likely to worsen.
   - The proposed affiliation would increase the size of the Hartford HealthCare system. Specifically, the affiliation would increase the number of beds in the Hartford HealthCare system by 7.3%. Total hospital discharges would increase by 7.4%, and NPSR would increase by 5.1%. This growth would extend Hartford HealthCare's market footprint further to the west, giving it broad east to west coverage across the mid to upper portion of the state.

[2] See Certificate of Need Application, Affiliation of The Charlotte Hungerford Hospital with the Hartford HealthCare Corporation, November 28, 2016. See: http://www.ct.gov/dph/lib/dph/ohca/conapplications/2016/16_32135_con.pdf

- The proposed affiliation could lead to an increase in Charlotte Hungerford's prices from commercial payers over time. Provider consolidations or alignments can affect market leverage and negotiated prices.

2. Access and Availability of Services
   - Charlotte Hungerford provides a substantial amount of care to Medicare-covered individuals including adults with disabilities and seniors and is an important provider of hospital care to Medicaid populations including mothers, infants, children and adolescents, as well as those who are uninsured.
   - The proposed affiliation would preserve access to Charlotte Hungerford for these populations and has the potential to improve the community's ability to address identified community needs.
   - Overall, these new investments, coupled with many other investments promised under the proposed affiliation, hold promise for improving access and the availability of services for all populations, including children, adolescents, adults and seniors.

3. Quality of Care and Care Delivery
   - There is room for improvement on quality and safety performance for both Charlotte Hungerford and Hartford Hospital, with Charlotte Hungerford results showing many areas for improvement.[3]
   - The Charlotte Hungerford Community Health Needs Assessment identifies significant unmet needs in Charlotte Hungerford's primary service area, including primary care and behavioral health access needs.
   - The Hartford HealthCare quality of care structures and initiatives have the potential to support improvements in quality of care and patient experience at Charlotte Hungerford.
   - In terms of care delivery, Hartford HealthCare commits to support an array of new or expanded services in Charlotte Hungerford's service area and these commitments appear to be informed by identified community needs.

4. Consumer Concerns
   - No data was identified showing the parties engaging in unfair methods of competition or any unfair or deceptive act or practices and no specific consumer concerns were raised at the CON public hearing held on May 8, 2017.
   - While the governance provisions of the Affiliation Agreement maintain a role for the existing Charlotte Hungerford board and place two additional members on the Hartford HealthCare Governing Board drawn from Charlotte Hungerford, the state may wish to monitor community involvement during the transition period to ensure a smooth transition for all stakeholders including consumers.

[3] This concern also applies to Hartford HealthCare, however, far less data was available about the system to conclude that definitively.

I. Analytic Approach and Data Sources

A. Analytic Approach and Framework

DPH contracted with HMA to conduct this CMIR, drawing upon its expertise and experience in hospital management, finance, and clinical care delivery. Together, DPH and HMA developed an approach to examine the proposed affiliation of Charlotte Hungerford with Hartford HealthCare, and the likely impact of the affiliation on the health care market in Connecticut. The approach is anchored in C.G.S. §19a-639f ("Section 639f") and explained in this section.

The following questions summarize the approach:

1. What are the current cost and market conditions for the transacting parties prior to affiliation? The answer to this question forms the "baseline" analysis.
2. What is likely to happen to the costs and market conditions for the transacting parties post affiliation? The answer to this question forms the "impact" analysis due to the affiliation.

Section 639f directs DPH to conduct the CMIR and to examine several factors relating to the business and the relative market positions of the transacting parties. More specifically, the statute includes 12 factors that DPH may include in its analysis. In compliance with this directive, an analytic framework was established that assigns each of the 12 factors to four domains of interest, as described below.

Using these four domains, the "baseline," or current state of the health care market was developed with respect to the transacting parties, and the likely "impact" of the proposed affiliation was projected on the current state of the market. The four domains and the factors comprising the domains are defined below.

Domain 1. Costs and Market

This domain addresses four of the 12 factors, including the transacting parties' (1) size and market share within its primary service area, by major service category and within its dispersed areas; (2) prices for services, including the transacting parties' relative prices compared to other health care providers for the same services in the same market; (3) cost and cost trends in comparison to total health care expenditures state wide; and (4) health status adjusted total medical expenses including the transacting parties' health status adjusted total medical expense compared to that of similar health care providers. Also examined was the financial performance of the transacting parties.

Domain 2. Access and Availability of Services

This domain captures four of the 12 factors including the (1) availability and accessibility of services similar to those provided by each transacting party, or proposed to be provided as a result of ownership of a hospital within each transacting party's primary service areas and dispersed service areas; (2) methods used by the transacting parties to attract patient volume and to recruit or acquire health care professionals or facilities; (3) role of each party in serving at-risk, underserved populations, 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 areas; and (4) role of each transacting party in providing low-margin or negative margin services within each transacting parties' primary service area.

Domain 3. Quality and Care Delivery

This domain captures two of the 12 factors including the (1) quality of the services provided by the transacting parties, including patient experience; and (2) care delivery.

Domain 4. Consumer Concerns

This domain captures one of the 12 factors, which is 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 practice.

Other Factors

Finally, Section 639f also indicates that DPH may examine any other factor that the office determines to be in the public interest. This is the twelfth factor outlined in Section 639f.

B. Methods and Measures Used to Conduct the Analysis

The analysis of the 12 factors by domain was conducted by using a set of methods and measures to establish the baseline. The data and information available for this CMIR heavily influenced the choice of methods and measures. Future CMIRs should build upon these measures and methods as more commercial market data becomes available and key methods and measures are added and broadened in response to the changing health care market in Connecticut and nationally. See Table 1: Methods and Measures by Domain.

Table 1: Methods and Measures by Domain

Domain	Measure	Methods
Domain 1. **Costs and Market**	Financial condition	A comprehensive analysis was performed of the financial condition of the transacting parties and their comparators. Measures used included total revenue, expenses, operating margin, days cash on hand, and average age of the plant.
	Size and market share	Several measures were examined including the number of beds, inpatient discharges and net patient service revenue (NPSR).
	Price	The "price" per unit of service, (admission or visit, for example) could not be examined due to data limitations. Instead, an examination was made of the average cost per inpatient admission and the average cost per outpatient visit to Medicaid, which represents the revenue to the hospital for providing Medicaid services.
	Costs and Costs Trends	An examination was made of paid claims data for Medicaid for inpatient care and outpatient visits and of financial information based on audited financial statements. An examination could not be made of the following measures including: total health care expenditures state wide and health status adjusted TME for the transacting parties' health status adjusted TME compared to that of similar health care providers. The data to adjust TME for health status was not available to conduct this analysis, which is critical to examining prices.

Domain	Measure	Methods
	Case Mix Index	An examination was made of the variation across hospitals, based on the overall case mix index (CMI) for each hospital. It was not possible to examine adjusted total medical expenses without the ability to adjust each hospital's expenses for health status difference. This type of an analysis requires a more extensive set of data on each hospital's expenses and significant diagnostic information to adjust expenses for differences in health status across the hospitals.
Domain 2. Access and Availability of Services	Availability and access	An examination was made of the extent of services provided to seniors, to individuals covered under Medicaid, as well as access to emergency department and behavioral health services.
	Methods to attract volume or recruit professionals	A brief examination of this factor was conducted drawing upon the testimony of the transacting parties at the hearing on this CON application held by DPH, (May 2017).
	Role of each party in serving at-risk underserved populations	To examine the role of each party in serving at-risk and underserved populations, an examination was made of the payer mix for the transacting parties and their comparators and of each of their roles in providing services to Medicaid and Medicare populations, who include many populations who are at risk and underserved.
	Role in providing low-margin and negative margin	An examination was made of the extent to which the transacting parties provide services to Medicaid populations and to uninsured persons.
Domain 3. Quality and Care Delivery	Quality and patient experience	An examination was made of several relevant measures including metrics of hospital system structure, clinical process, clinical outcome and patient experience.
	Care delivery	Qualitative and quantitative information about the care delivery system today and the proposed changes for the care delivery system was reviewed. Several sources were used including the CON application and Charlotte Hungerford's Community Health Needs Assessment included with the application.
Domain 4. **Consumer Concerns**	Consumer concerns	Overall, all aspects of this CMIR were considered to address consumer concerns around cost, access and quality.

C. Key Sources of Data and Information

Several sources of data and information were relied upon to conduct this CMIR. These sources include data and information collected from state, federal and independent agencies and organizations including Charlotte Hungerford and Hartford HealthCare. Only data that can be made publicly-available data was used in this CMIR. [4]

Several state agencies including the Department of Public Health, the Department of Social Services (DSS), and the Office of the Comptroller provided data for this analysis. A substantial amount of data was provided by DSS to take a "deep

[4] Information from the All-Payer Claims Database (APCD) was not available for this CMIR. Future CMIRs would benefit from access to the APCD.

dive" into the transacting parties' Medicaid market and by the Office of the State Comptroller to examine the transacting parties' state employee market.

Much of the information produced by the transacting parties was marked confidential. For this CMIR, such information was not disclosed unless it could also be obtained from a publicly-available source. See Table 2: Key Sources of Data and Information Used in CMIR.

Table 2: Key Sources of Data and Information Used in CMIR

Organization	Description
American Hospital Association (AHA)	• American Hospital Association (AHA) database
Centers for Medicare and Medicaid Services (CMS)	• Hospital Compare • Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)
Department of Public Health (DPH)	• Audited Financial Statements (AFS) for the hospitals and comparators FY 2012-FY2016 • Financial Stability Reports (FY2012-2015) • Certification of Need (CON) application filed by the transacting parties, including the Community Health Needs Assessment
Department of Social Services (DSS)	• Paid claims for inpatient and outpatient services
Office of the State Comptroller (OSC)	• Paid claims for State of Connecticut Employee Health Plans
The Leapfrog Group	• Leapfrog Hospital Survey • Leapfrog Hospital Safety Grade

D. Comparators

Several of the factors outlined in Section 639f require consideration of other health care providers operating in the same market or providing similar services. Modeled after the types of analyses performed elsewhere in the country, a group of comparator hospitals for Charlotte Hungerford and Hartford HealthCare were selected to examine their cost and market conditions around costs, access and quality. See Table 3: Transacting Parties and Their Respective Comparators.

The selection process utilized herein is straightforward. Comparator hospitals for Charlotte Hungerford were selected based on geography, size, and services, namely short-term acute hospitals. Comparator systems for Hartford HealthCare were chosen based on size. For this reason, Yale-New Haven Health System (Y-NHHS) and Western Connecticut Health Network were selected. The Hartford HealthCare system falls in between these two systems in terms of Net Patient Service Revenue (NPSR).

Within any hospital or system, there is diversity in expertise, patient base, service array, care delivery approaches, and staff. Each hospital or system has its own culture and community. This makes the selection of comparators an imperfect process. Nonetheless, the use of comparators makes an important contribution to the analysis of the current cost and market conditions in Connecticut and how the affiliation is likely to affect the cost of healthcare, access to healthcare services, and the quality of services and care delivery.

Table 3: Transacting Parties and Their Respective Comparators

Transacting Party	Comparators
Charlotte Hungerford	Five comparator hospitals including Bristol, Griffin, Sharon, Waterbury and New Milford.
Hartford HealthCare	Yale-New Haven Health System (Y-NHHS) was used as the sole comparator for all analyses except for the analysis of the financial performance measures. Y-NHHS is comprised of the following hospitals: Bridgeport, Greenwich, L + M, Yale New Haven, and St. Raphael. Western Connecticut Health Network was used as the second comparator for the financial performance analysis. The Western Connecticut Network is comprised of Danbury, New Milford, and Norwalk and was used to assess the financial performance of Hartford HealthCare.

II. Overview of the Parties and the Affiliations

This Final Report examines a proposed affiliation of Charlotte Hungerford and Hartford HealthCare, under which Hartford HealthCare will become the sole corporate member of Charlotte Hungerford. Before enumerating the terms of the proposed affiliation, this report describes the parties and their existing affiliations.

Hartford HealthCare

Hartford HealthCare is a Connecticut non-stock, tax-exempt corporation serving as the parent to a system of integrated health care entities (the "System"). The Hartford HealthCare System includes five hospitals, a variety of non-acute hospital provider networks and services, and a large multi-specialty physician group. Across this system, Hartford HealthCare's goal is to provide patients with a comprehensive, coordinated care experience driven by an organizational structure where clinical care, education and research enable the utilization of the latest technology and operational efficiencies.

Key components of the Hartford HealthCare System are:

- Hartford Hospital has 867 beds and is a tertiary care teaching hospital affiliated with the University of Connecticut School of Medicine (UConn) serving the New England region. Founded in 1854, Hartford Hospital maintains the only Level 1 Trauma Center in the region and operates the state's largest air ambulance system, LIFE STAR.
- The Hospital of Central Connecticut (Central Connecticut) was created in 2006 as a result of the merger of the former New Britain General and Bradley Memorial Hospitals. With 446 licensed beds, it has been a member of the System since 2011. Central Connecticut is also a UConn teaching hospital, with residency programs for internal medicine, obstetrics and gynecology, otolaryngology, and general surgery.
- The William H. Backus Hospital (Backus), the most recent hospital member to join the system, is licensed for 233 beds. Located in Norwich, Backus operates the only trauma center in Windham and New London Counties. Backus-affiliated providers include health centers in Montville, Colchester, Ledyard, Norwich and North Stonington, and the Plainfield Backus Emergency Care Center, which is a new standalone emergency department and outpatient center.
- MidState Medical Center is a community hospital with 156 beds, located in Meriden.
- Windham Hospital is a community hospital with 144 beds, located in Windham.
- Hartford HealthCare Medical Group (HHCMG) is a multi-specialty group that includes primary and urgent care providers and physician specialists. Integrated Care Partners is a clinical integration organization that includes HHCMG and other private physician practices.

- In addition to these components of the System, Hartford HealthCare operates a network of behavioral health providers, including the Institute of Living, Natchaug Hospital, and Rushford. The System also includes the Hartford HealthCare Rehabilitation network and offers home care services and senior services.

The Charlotte Hungerford Hospital

Charlotte Hungerford is a 122-bed acute care hospital founded in 1916 that serves an 11-town primary service area in Northwest Connecticut. Charlotte Hungerford is organized as a Connecticut non-stock, tax-exempt corporation which also holds interests in four subsidiaries that operate outpatient healthcare facilities or perform related community and ancillary services for the Hospital (the Charlotte Hungerford Affiliates).

Charlotte Hungerford owns and operates a local physician network consisting of over 60 clinicians who are employed by or contracted with the hospital, The Charlotte Hungerford Multi-Specialty Group (TCHMSG). These providers staff outpatient hospital departments and coordinate care across the hospital and its affiliates and specialists.

The Charlotte Hungerford Affiliates include:

- Advanced Medical Imaging of Northwestern Connecticut, a medical imaging center in Torrington.
- MedConn Collection Agency, based in Rocky Hill.
- Litchfield County Healthcare Services, a physician practice group based in Torrington.
- The Cancer Care Fund of Litchfield Hills, an organization that provides support to cancer patients using a fund administered by the Community Foundation of Northwestern Connecticut.

The degree to which Charlotte Hungerford owns the Affiliates differs and existing ownership arrangements will continue under the proposed affiliation.

The Hospital has a range of off-campus sites, including the Center for Cancer Care in Torrington, the Hungerford Sleep Laboratory in Winsted, the Hungerford Center for Cardiac Rehabilitation and Diabetes care in Torrington, the Hungerford Imaging and Mammography Center in Torrington, and Winsted, and Wound Care and Hyperbaric Medicine Service located in Torrington. In addition, the Hospital operates two outpatient emergency centers located in the towns of Torrington and Winsted, and an urgent care center located in Torrington.

Towns in Charlotte Hungerford's primary service area include Barkhamsted, Colebrook, Goshen, Harwinton, New Hartford, Norfolk, Litchfield, Morris, Thomaston, Torrington, and Winchester (aka Winsted)

More than 90% of the Hospital's inpatient discharges originate from 11 towns, and more than 50% of patients are from Torrington. The Hospital is a full service, community hospital offering primary care, cancer care, cardiovascular medicine, general surgery, maternity and women's health, orthopedics, and behavioral healthcare among other services.

The Proposed Affiliation

The proposed affiliation will make Charlotte Hungerford a member of the Hartford HealthCare system. Per the CON application, the parties do not propose any terminations or reductions in service at Charlotte Hungerford. The affiliation was proposed after an extensive planning process and the issuance by Charlotte Hungerford of a Request for Proposal (RFP) to potential partners. This section outlines that process and describes in detail the terms of the proposed affiliation.

In February 2014, the Charlotte Hungerford Board of Governors began evaluating the need for a strategic affiliation with a larger health system to sustain the Hospital's operational, financial and clinical enterprise over the long-term. The

Board chartered an Independence Strategy Evaluation Committee to establish the guiding principles that Charlotte Hungerford would use in evaluating any partnership or affiliation.

The CON application and associated hearing testimony provided an in-depth description of the Board's assessment and planning process. It resulted in a consensus that Charlotte Hungerford should seek a strategic partner, driven by the following motivating factors:

- growing difficulty recruiting and retaining physicians in both primary care and key specialties;
- declining and very slim hospital operating margins, inhibiting growth and delaying reinvestments in needed facilities improvements;
- an unfavorable payer mix, with publicly-funded programs (Medicaid and Medicare) comprising the large majority of revenue;
- declining inpatient discharges; and
- a belief that broader healthcare trends toward more integrated care supports the need for expanded outpatient services and access to a clinically-integrated care delivery system.

Charlotte Hungerford issued an RFP for a strategic partnership in July 2015. Hartford HealthCare was selected as the health care system that most closely shared Charlotte Hungerford's vision for the future of healthcare in the region and best met the criteria established by the Committee. Notably, the choice built upon existing clinical partnerships already established between Charlotte Hungerford and Hartford Healthcare in trauma care, interventional cardiology, and neurology. Data submitted in the CON application indicates that a majority percentage of Charlotte Hungerford's emergency department transfers go to Hartford Hospital and Hartford Hospital receives a far greater share of Charlotte Hungerford's inpatient transfers than from any other hospital.

The proposed affiliation will not change Charlotte Hungerford's status as a non-profit, tax-exempt organization, and Charlotte Hungerford will retain a separate hospital license. The governing body of Charlotte Hungerford will remain in place to include the current 15 members of the present Board of Directors, along with the addition of 4 directors appointed by Hartford HealthCare. The Hartford HealthCare Board of Directors will include, for a three-year transition period, 2 individuals serving on the Charlotte Hungerford Board directly prior to the closing of the affiliation.

The Affiliation Agreement between the parties requires Hartford HealthCare to invest up to $73 million for the benefit of Charlotte Hungerford. In addition, Hartford Healthcare will provide $3 million to certain community organizations in Charlotte Hungerford's service area. These investments include:

- $50 million over seven years to fund maintenance and capital projects for Charlotte Hungerford, which shall be identified through a strategic planning process outlined in the Affiliation Agreement. At least $20 million of this amount will be invested within the first four years of the affiliation to fund certain emergency department renovations, infrastructure and physical plant improvements, and outpatient facility upgrades.
- An additional $3 million to support medical staff development and recruitment efforts over the three-year transition period.

In addition to the $53 million committed above, the Affiliation Agreement establishes that Hartford Healthcare, in its discretion, may make up to $20 million in investments in program and service opportunities in the local service area, based upon whether any proposed projects enhance and support the level of services provided at Charlotte Hungerford and satisfy other specified investment criteria.

Following the closing date, Hartford HealthCare will also make a repetitive grant of $100,000 for each of 5 consecutive years in the name of Charlotte Hungerford to Fit Together of Northwest Connecticut to support Litchfield County's participation in a Community Transformational Grant Program sponsored by the CDC to create healthier communities by making healthy living easier and more affordable.

Finally, Hartford HealthCare will fund a distribution by Charlotte Hungerford of $2.5 million to Northwest Connecticut Community Foundation, Inc., a tax-exempt charitable organization, for the express purpose of enhancing economic and community development in Charlotte Hungerford's service area.

The CON application outlines "other benefits" that demonstrate the parties' intent to work collaboratively to implement initiatives that will make the affiliation successful. Hartford HealthCare will also be responsible for the capital and installation costs incurred by Charlotte Hungerford to support the initial installation of an electronic health record platform. In general, these initiatives demonstrate a commitment to establish a wide range of existing services and programs elsewhere operated by Hartford HealthCare into the Northwest region. These initiatives appear to be designed to simultaneously enhance the services available at Charlotte Hungerford and in the Northwest region and to expand the footprint of Hartford HealthCare into that region.

See Figure 1: Key Facts; Transacting Parties: Charlotte Hungerford Hospital and the Hartford HealthCare System for an overview of the key facts about the transacting parties.

Figure 1: Key Facts
Transacting Parties: Charlotte Hungerford Hospital and the Hartford HealthCare System

Beds and Market Share (2015)	Volume - All Payers Hospital Discharges (2015)	Hospital Case Mix Index (CMI) (2015)
Charlotte Hungerford: 122 or 1.4% of all beds in the state Hartford HealthCare: 1,679 or 19.4% of all beds in the state	Charlotte Hungerford: 6,030 Hartford HealthCare: 81,492	Charlotte Hungerford: 1.24 Hartford HealthCare: 1.47

Payer Mix Non Gov't Share of Discharges, % (2015)	Access Medicaid Share of Hospital Discharges, % of total (2015)	Quality The Leapfrog Group Safety Grade, (2013-2017)
Charlotte Hungerford: 23.7% Hartford HealthCare: 30%	Charlotte Hungerford: 19.9% Hartford HealthCare: 24.6%	Charlotte Hungerford: C/D Hartford HealthCare: B/C

Avg. Cost to Medicaid Index, relative to avg. cost for all CT. hospitals (2014)	Operating Margin, % (2016)	Average Age of Plant (AAOP), in years (2015)
Charlotte Hungerford: .70 (lower than the state average) Hartford HealthCare: 1.09 (higher than the state average)	Charlotte Hungerford: -5.7% Hartford HealthCare: 5.0%	Charlotte Hungerford: 20.4 Hartford HealthCare: 13.1

Source: Several sources were used to describe the transacting parties, including data and information from CT DPH, Office of Health Care Access and the Department of Social Services, the Center for Medicare and Medicaid Services, and The Leapfrog Group.

III. Analysis of Parties' Baseline Performance and Impact

A. Costs and Market Factors

In this section, an examination was conducted of the parties' baseline performance on costs and market prior to the affiliation, and a projection of what is likely to happen post affiliation.

To develop a composite picture of the costs and market for the transacting parties, several sources of data and information were relied upon. Cost and market factors were examined based on the scope of the CMIR including the parties' financial condition, size and market share, the average cost to Medicaid (or the revenue received by providers) per Medicaid admission and outpatient visit, trends in these costs, and hospital case mix.

KEY FINDINGS:

1. **Financial performance**

Charlotte Hungerford is facing significant financial challenges that are likely to continue to deepen without an intervention. Hartford HealthCare is in strong financial condition. Hartford HealthCare could likely weather any potential negative impact from the affiliation, with the ability to invest in a turn-around for Charlotte Hungerford.

2. **Size and market share for transacting parties**

Charlotte Hungerford, with 122 beds in 2015, represents 1.4% of all the beds in Connecticut. As such, Charlotte Hungerford is one of the smallest hospitals in the state. Its selected comparators represent between 1.1% and 3.3% of all the beds in the state. Hartford HealthCare is the 2nd largest health system in the state. Hartford HealthCare system had 1,679 beds in 2015 and represents 19.4% of all the beds in the state. In comparison, Y-NHHS, is the largest health system in the state and represented 27.3% of the total beds in the state in 2015.

3. **Medicaid payment**

Charlotte Hungerford receives average payments from Medicaid per admission and per outpatient visit that are lower than the statewide average. Relative to its comparators, Charlotte Hungerford receives one of the lowest average payments from Medicaid, based on Medicaid paid claims for 2014.

4. **Medicaid trends**

Payments from Medicaid per admission and per visit have increased for Charlotte Hungerford and decreased for Hartford HealthCare over the last three years. Medicaid's average cost per admission and visit has been flat during this period accounting for all claims paid to all hospitals.

5. **Prices**

Without the benefit of strong data on the parties, the evidence on affiliations of this type create the strong likelihood of increases in Charlotte Hungerford's prices overtime. Charlotte Hungerford has a problem with declining NPSR today. The decline in NPSR is a likely result of several factors driving revenue including price, utilization, provider mix (types of providers), and service mix (types of services). Provider consolidations or alignments can affect all such factors including prices.5 Post affiliation, Charlotte Hungerford may be able to secure price increases in prices from commercial payers. See Box 1: Future Cost and Market Analyses Should Leverage More Comprehensive Data Sources for a discussion about leveraging more comprehensive data sources in future CMIRs.

6. **Case mix**

As of 2015, the overall case mix index (CMI) at Charlotte Hungerford was 1.24, and 1.47 for Hartford HealthCare system. These CMIs are for all payer business. The CMI for Hartford HealthCare system reflects the average across all of Hartford HealthCare's hospitals weighted by hospital discharges. Charlotte Hungerford's CMI reflects a lower level of acuity in its patient base than in the Hartford HealthCare system. Y-NHHS has a CMI that is higher than the CMI for Hartford HealthCare system.

[5] See JAMA, December 2015. http://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2463591. See Brookings Institution. https://www.brookings.edu/testimonies/health-care-market-consolidations-impacts-on-costs-quality-and-access/. See also Massachusetts Health Policy Commission (HPC). http://www.mass.gov/anf/docs/hpc/hpc-preliminary-review-of-phs-ssh-harbor-12-18-2013.pdf.

Box 1. Future Cost and Market Analyses Should Leverage More Comprehensive Data Sources

Our ability to examine the commercial market for the parties was significantly comprised by the lack of data on the parties' commercial market. Commercial data is critical to an examination of TME for patients in health plans and to assess a provider's health adjusted total medical expenses and prices. The lack of commercial data is important, because hospitals may have more ability to negotiate with commercial payers than with government payers around payment and prices. Due to this data limitation, a comprehensive analysis of the cost and market conditions could not be performed for the following: total health care expenditures state wide, health status adjusted TME for the transacting parties and its comparators, and cost and market trends for the transacting parties and their comparators. With respect to this CMIR, data sources were identified to provide general information about relative prices and relative health status of patients. Moreover, Charlotte Hungerford's commercial share of NPSR is low relative to other hospitals, which does not eliminate the issue but does make it less problematic and impactful from a policy perspective. Future CMIRs would benefit from the use of an All-Payer Claims Database (APCD) to examine costs market trends in price and health status. If all payer data were fully available and updated, OHCA could quantify total health care expenditures adjusted for health status for providers or systems.

A.1. Analysis of the Baseline Performance

An examination of several measures was conducted to establish the cost and market baseline for Charlotte Hungerford and for Hartford HealthCare. The baseline results for Charlotte Hungerford and Hartford HealthCare were then compared to their comparators.

A.1.a. Financial Condition of the Parties

The financial condition of the parties was examined by reviewing five years of audited financial statements (AFS) from Fiscal Year 2012 through 2016 and the numbers presented in Financial Stability Report summarized by DPH from Fiscal Year 2013 through 2015.[6] This examination was conducted for Charlotte Hungerford and Hartford HealthCare, and for Charlotte Hungerford's and Hartford HealthCare's comparators. The key measures of financial performance or financial condition comprising the analysis are outlined in Table 4: Financial Condition of the Parties.

Table 4: Financial Condition of the Parties

#	Financial Performance Measure	Description of Measure
1	**Net patient service revenue (NPSR)**	This measures the provider's total inpatient and outpatient revenue from all payers including the government and other third-party payers as well as patients for services provided to patients.
2	**Total operating revenue**	This measures total operating revenue that is comprehensive of all revenue including NPSR and other revenues generated through hospital operations (e.g. it could include cafeteria revenues).
3	**Operating income**	This measures the hospital's or system's profitability from patient care services and other operations. It is calculated as follows: total operating revenues less total operating expenses.
4	**Operating margin**	This measures the hospital's or system's profitability from patient care services and other operations, dividing gain/(loss) from operations by the sum of operations and non-operating revenue.
5	**Current ratio**	This measures the hospital's or system's ability to meet its current liabilities with its current assets. A ratio of 1.0 or higher indicates that all current liabilities could be covered by the existing current assets. This is calculated as follows: total current assets divided by

[6] System Statement of Operations (2013-2015), Office of Health Care Access. CT DPH.

#	Financial Performance Measure	Description of Measure
		total current liabilities (current refers to asset that can be converted into cash within 12 months and liabilities that will need to be paid within 12 months).
6	**Days cash on hand**	This measures the number of days of operating expenses that the hospital or system could pay with its short-term available cash and cash equivalents.
7	**Age of the plant or average age of the plant**	This measures the average age of the hospital's or system's facilities, including capital improvements and major equipment purchases. This was calculated as follows: the average age of plant by dividing accumulated depreciation by the most current year's depreciation expense, which represents a good mathematical proxy for average age.

Overall Financial Condition of the Parties and its Comparators

Key measures of the financial condition of the transacting parties and its comparators were reviewed. Two key measures are Net Patient Service Revenue (NPSR) and operating margin.

A hospital's NPSR and operating margins are critically important. NPSR must be positive for hospitals to remain in a strong financial condition. Operating margins reflect the overall financial solvency of the hospital. These measures similarly apply at a system level.

There is some evidence to suggest that a hospital's financial condition may be correlated with quality; for example, in one study, the author found a significant and statistical relationship between the financial performance of the hospital and quality. The author concludes that, "when a hospital made more profit, [it] had the capacity to finance investment using debt, paid higher wages presumably to attract more skilled nurses, its quality of care would generally improve."[7] This study also points out the importance of carefully monitoring the quality of hospitals with poor financial performance.

Findings based upon an analysis of financial reports collected by DPH for Charlotte Hungerford and Hartford HealthCare include:

1. Charlotte Hungerford is in a weak financial condition, with negative operating results for two consecutive years due to a steady erosion of NPSR. Based upon our examination of the AFS', Charlotte Hungerford's deteriorating financial condition also reflects the market for other small hospitals in Connecticut.
2. Hartford HealthCare is in relatively strong financial condition, with positive operating results for three consecutive years including ending FY 2016 with a positive operating margin of 5.0%. Hartford HealthCare's comparators, however, are in a stronger financial condition overall.

The tables included in the Appendix section of this report provide evidence of the financial condition of the transacting parties and its comparators. These tables include several measures including the NPSR and the operating margin at the hospital level for Charlotte Hungerford and its comparators, and at the system level for Hartford HealthCare and its comparators. Hartford HealthCare comparators for this portion of the CMIR are Y-NHHS and Western Connecticut Health Network.

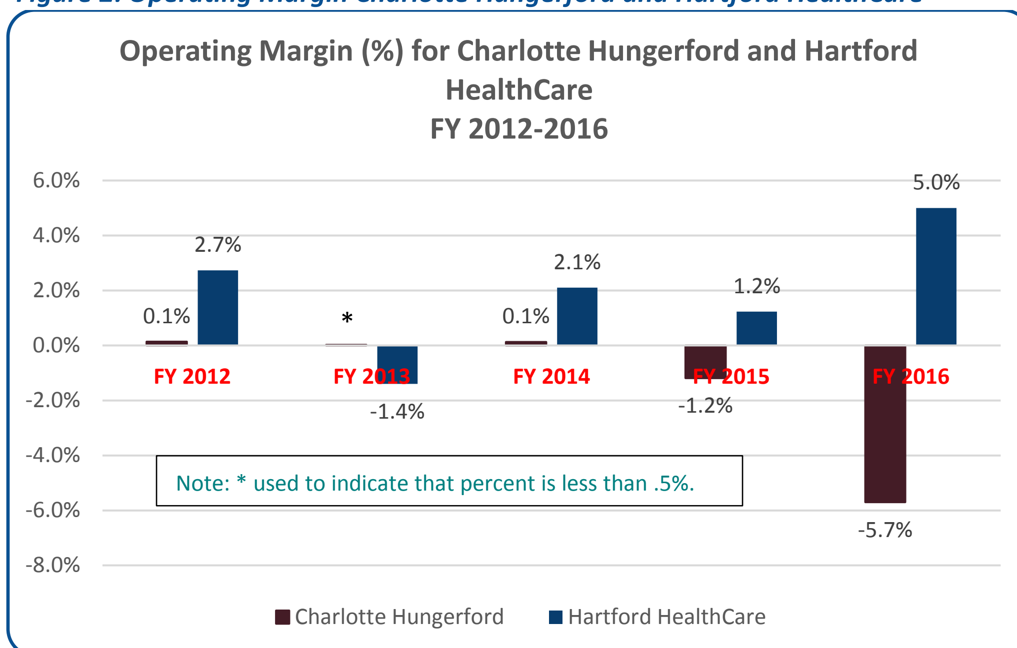
Charlotte Hungerford in Weak Financial Condition, Hartford HealthCare in Strong Financial Condition

Charlotte Hungerford's financial condition has been steadily eroding. As Figure 2: Operating Margin Charlotte Hungerford and Hartford HealthCare shows, the financial conditions for Charlotte Hungerford and Hartford HealthCare

[7] Dong, Gang Nathan. "Performing Well in Financial Management and Quality of Care: Evidence from Hospital Process Measures for Treatment of Cardiovascular Disease." BMC Health Services Research 15 (2015): 45. PMC. Web. 2 June 2017.

are starkly different. Charlotte Hungerford's condition went from a positive result of .1% to a negative result or -5.7% between FY 2012 and FY 2016. Conversely, and more positively, Hartford HealthCare's financial condition has moved over the last three years from 2.1% in 2014 to 5.0% in 2016.

Figure 2: Operating Margin Charlotte Hungerford and Hartford HealthCare



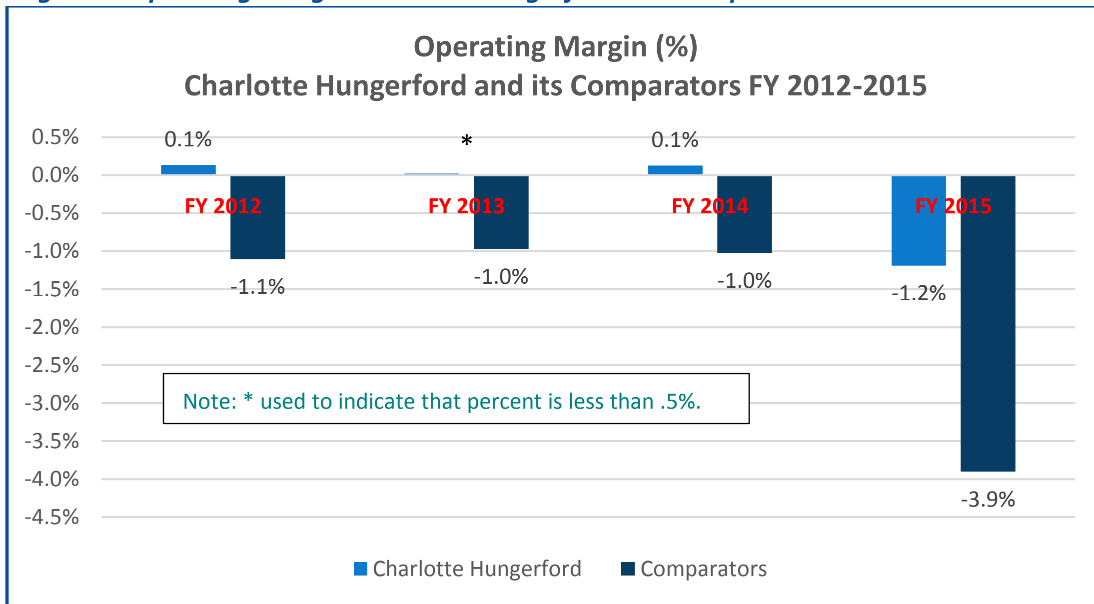
Source: CT DPH, Office of Health Care Access, based upon an analysis of Annual Report on the Financial Status of Connecticut's Short-Term Acute Care Hospitals 2015 and Audited Financial Statements for hospitals for Fiscal Years 2012-2016.

Charlotte Hungerford and its Comparators

Charlotte Hungerford and its comparators are experiencing very similar financial situations. As Figure 3: Operating Margin Charlotte Hungerford and Comparators illustrates, the financial condition of Charlotte Hungerford's comparators, taken as a group, tell an important story to Connecticut policymakers about Charlotte Hungerford's financial condition in the context of the Connecticut healthcare market. A more comprehensive level of detail on the financial condition of Charlotte Hungerford and its comparators can be found in the Appendix section of this report.

Figure 3: Operating Margin Charlotte Hungerford and Comparators shows a worsening trend for Charlotte Hungerford's comparators from FY 2012 to FY 2015. It is possible that this trend will continue to worsen for Charlotte Hungerford's comparators, just as the trend for Charlotte Hungerford has continued to decline from -1.2% in 2015 to -5.7% in 2016 as shown in Figure 2.

Figure 3: Operating Margin Charlotte Hungerford and Comparators

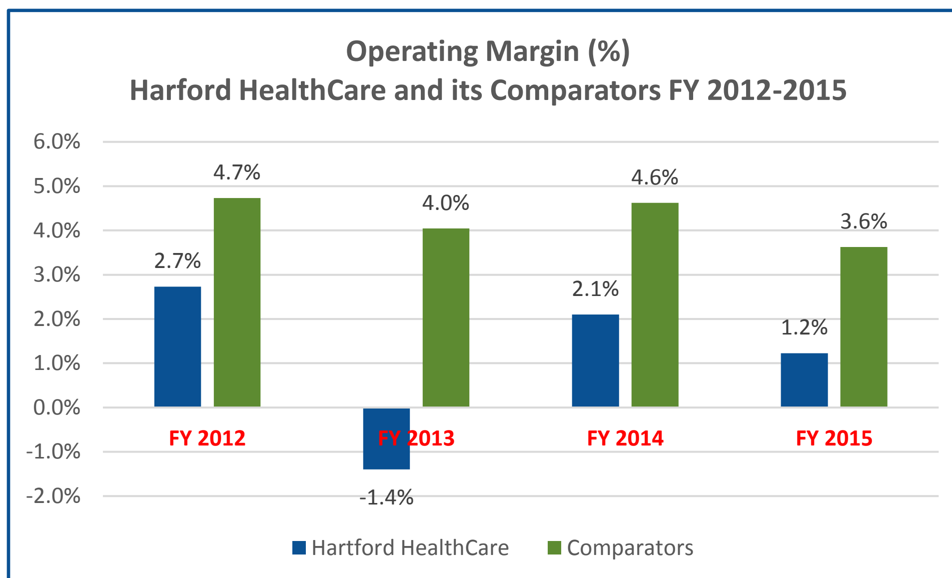


Source: CT DPH, Office of Health Care Access, based upon an analysis of Annual Report on the Financial Status of Connecticut's Short-Term Acute Care Hospitals 2015 and Audited Financial Statements for hospitals for Fiscal Years 2012-2016.

Hartford HealthCare and its Comparators

The financial picture for the Hartford HealthCare system is positive. As shown in Figure 4: Operating Margin Hartford HealthCare and Comparators, the operating margins for Hartford HealthCare have been positive for all but one of the four consecutive fiscal years between 2012 and 2015. Operating margins for its comparators, Y-NHHS and Western Connecticut, shown together, have also been positive for all four years. A more comprehensive level of detail on the financial condition of Hartford HealthCare and its comparators can be found in the Appendix section of this report. The tables in the appendix provide an important account of Hartford HealthCare and its strength in its NPSR, operating margin and days of cash on hand.

Figure 4: Operating Margin Hartford HealthCare and Comparators



Source: CT DPH, Office of Health Care Access, based upon an analysis of Annual Report on the Financial Status of Connecticut's Short-Term Acute Care Hospitals 2015 and Audited Financial Statements for hospitals for Fiscal Years 2012-2016.

The Average Age of the Plant

The Average Age of the Plant (AAOP) measures the average age of the hospital's or system's facilities, including capital improvements and major equipment purchases. This measure is important to examine more closely, because of Hartford HealthCare's plans, as outlined in the proposed affiliation, to make significant investments into Charlotte Hungerford Hospital.

Three major considerations are relevant to the average age of the plant:

1. **Charlotte Hungerford and Hartford HealthCare**

   The AAOP for Charlotte Hungerford is 20.4 years, which is twice the median age of 11 for all hospitals in the U.S, based on data from the American Hospital Association (AHA).[8] Hartford HealthCare as a system has a lower AAOP than Charlotte Hungerford, but Hartford HealthCare has an AAOP that is higher than its comparators and higher than the median age of 11.

2. **Health systems and all hospitals**

   Figure 5: Average Age of Plant illustrates the difference between the systems and the smaller hospitals. Smaller hospitals including Charlotte Hungerford fell within a range of 17.2 to 33.7 years. The three largest health systems ranged between 8.3 and 13.1 years and are comparatively much younger than the smaller community hospitals.

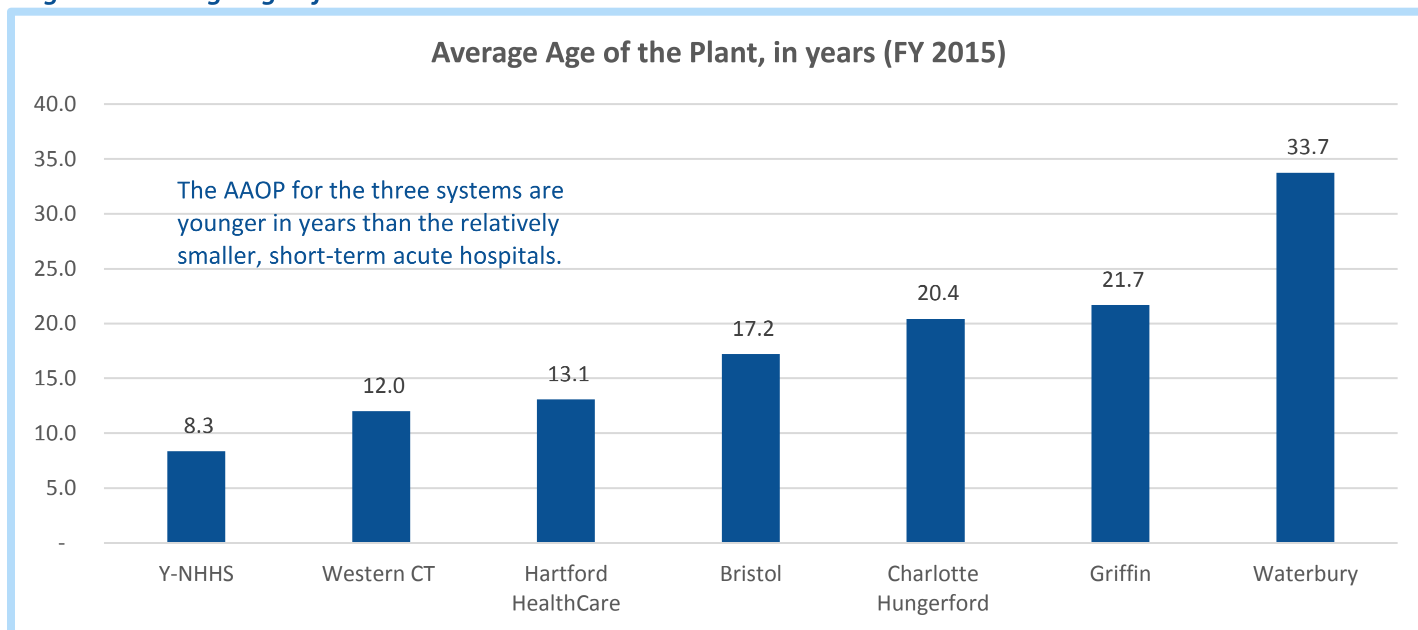
3. **Patient experience**

   The AAOP has implications for patient experience but there are differences in points of view on this. The literature set forth below includes many discussions about the relationship between the age of the plant – or conditions of the facility – and the patient experience.

[8] "Average Age of Plant: Hospitals about 11 years." *American Hospital Association Resource Center. 2015. Web. 2 June 2017.*

- One report by the AHA, *Improving the Patient Experience Through the Health Care Physical Environment* – an industry perspective on age – reports that the physical environment affects many areas included in the HCAHPS survey. "For example, research has shown that patients' perception of cleanliness can be improved with lighting, decor choices and furniture selection. Pain management is influenced by positive distractions, such as views of art and nature. Staff responsiveness can be affected by the layout of a hospital unit, and communication scores can improve when hospitals provide quiet spaces for staff to discuss issues with patients."[9]
- A second study offers that the physical environment affects the healing process and the well-being of patients and their families, and staff. The study highlights some design features related to the physical environment and the well-being of patient families and staff including single-patient rooms, identical rooms, technical equipment and indoor (environmental) quality.[10]
- Finally, the Health Care Financial Management Association notes that "new or renovated facility can improve the patient experience that have no scientific 'evidenced based' proof but regardless uplift the spirit and reduce anxiety through perceived cleanliness, soothing lighting and homelike attributes. As the measurement of environmental factors becomes even more sophisticated, it may be able to judge even more of what of these elements contributes most to patient satisfaction so resources can best be allocated in the most judicious manner. In the meantime, architects and designers will continue to work with administrators and caregivers to understand what operational improvements can be best supported by the physical environment and which of these improvements most improve the patient and family experience."[11]

Figure 5: Average Age of Plant



Source: CT DPH, Office of Health Care Access, DPH, based upon an analysis of Audited Financial Statements for hospitals for Fiscal Years 2012-2015.

[9] American Hospital Association. The American Society for Healthcare Engineering. "Improving the Patient Experience Through the Health Care Physical Environment." 2016. Web. 2 June 2017.

[10] Huisman, E.R.C.M, Morales E, van Hoof, J., Kort, H.S.M. "Healing Environment: A Review of the Impact of Physical Environment Factors on Users." 2012. Web. 2 June 2017.

[11] Healthcare Financial Management Association. "Key Hospital Financial Statistics and Ratio Medians: Glossary of Formulas." Web. 2 June 2017.

A.1.b Size and Market Share

The size and market share of Charlotte Hungerford and Hartford HealthCare were examined using three measures of size and market share: hospital beds, hospital discharges, and NPSR. Table 5: Hospital Market Shares for Charlotte Hungerford and Hartford HealthCare and Its Comparators provides data on the three measures for 2015.

KEY FINDINGS INCLUDE:

1. **Charlotte Hungerford's Size and Market Share**

   Charlotte Hungerford, a small, acute care hospital with 122 beds, represents 1.4% of the total number of beds in the state and 1.5% of total hospital discharges. Similarly, Charlotte Hungerford represents 1.0% of the state's NPSR for all hospitals. There are only three hospitals in Connecticut that are smaller than Charlotte Hungerford. With 1.4% share of the beds statewide, Charlotte Hungerford is closer in size to Sharon Hospital than Waterbury Hospital.

2. **Hartford HealthCare Size and Market Share**

   Hartford HealthCare is comprised of five hospitals and has a total of 1,679 beds, which represents 19.4% of total beds in the state, 20.3% of total hospital discharges, and a slightly smaller share of NPSR at 18.9. Hartford HealthCare is the 2nd largest health system in the state, and includes Hartford Hospital, which is the 2nd largest hospital in the state. Hartford HealthCare was compared to Y-NHHS, which is much larger than Hartford HealthCare system. Y-NHHS has 2,359 beds and represents 27.3% of the total number of beds in the state, 31.3% of the total hospital discharges, and 29.5% of NPSR. Y-NHHS has roughly one-third more hospital discharges than Hartford HealthCare's 81,492.

Table 5: Hospital Market Shares for Charlotte Hungerford and Hartford HealthCare and Its Comparators

	Charlotte Hungerford and Its Comparators					Hartford HealthCare and Y-NHHS	
Data (2015)	**Charlotte Hungerford**	**Sharon**	**Bristol**	**Griffin**	**Waterbury**	**Hartford HealthCare**	**Y-NHHHS**
Beds	122	94	154	180	282	1,679	2,359
All Hospital Discharges	6,030	2,466	7,071	6,950	11,646	81,492	125,633
NPSR ($000)	$113,736	$54,952	166,109	$151,666	$233,666	$2,239,380	$3,492,685
Market Share of Beds, Hospital Discharges, Net Patient Service Revenue							
Beds	1.4%	1.1%	1.8%	2.1%	3.3%	19.4%	27.3%
All Hospital Discharges	1.5%	0.6%	1.8%	1.7%	2.9%	20.3%	31.3%
NPSR	1.0%	0.5%	1.4%	1.3%	2.0%	18.9%	29.5%

Source: Based upon an analysis of data and information collected by CT DPH, Office of Health Care Access.

Average "Cost" Per Medicaid Admission and Medicaid Visit

Two measures were examined including the average cost per admission and the average cost per outpatient visit to Medicaid for the transacting parties and their comparators, based on the paid claims data for Medicaid-covered admission and Medicaid-covered visits. Data for CY 2014 was used, since this year represented the most recent and most complete source of data. The average cost was calculated by dividing the total claims paid by Medicaid by the total number of admissions.

The average cost to Medicaid per admission or visit represents more than price. Several factors are reflected in the average cost including the service provided, the intensity of services, and the price. As such, the average cost per unit of

service is not a substitute for price but provides a useful metric for understanding the parties' role in the Medicaid market.

Figures 6 through 10 (Figure 6: Relative Average Cost, Figure 7: Relative Cost per Admission; Charlotte Hungerford, Figure 8: Relative Cost per Outpatient Visit; Charlotte Hungerford, Figure 9: Relative Cost per Admission; Hartford HealthCare, and Figure 10: Relative Cost per Outpatient Visit; Hartford HealthCare) show the average cost per admission and visit for Charlotte Hungerford and Hartford HealthCare, and how they compare to their comparators and to the average for the state based on an account of all hospitals included in the Medicaid claims data from DSS. An average for two groups of hospitals was also calculated, which included the transacting party. A "group" average was calculated for Charlotte Hungerford and its comparators which included Charlotte Hungerford in the calculation; and, a "group" average was calculated for Hartford HealthCare and its comparators which included Hartford HealthCare in the calculation.

KEY FINDINGS, ONLY APPLICABLE TO MEDICAID, INCLUDE:

1. **Charlotte Hungerford and Hartford HealthCare**

   A comparison between what Medicaid pays Charlotte Hungerford to what Medicaid pays Hartford HealthCare was made. Charlotte Hungerford receives less revenue per admission and less revenue per visit than Hartford HealthCare. Charlotte Hungerford's average cost per admission and average cost per visit to Medicaid is about 70% of the statewide average. The statewide average is the average for all hospitals. Hartford HealthCare's average payment from Medicaid per admission is 86% of the statewide average and its average payment per outpatient visit is 104% of the statewide average. See Figure 6.

2. **Charlotte Hungerford**

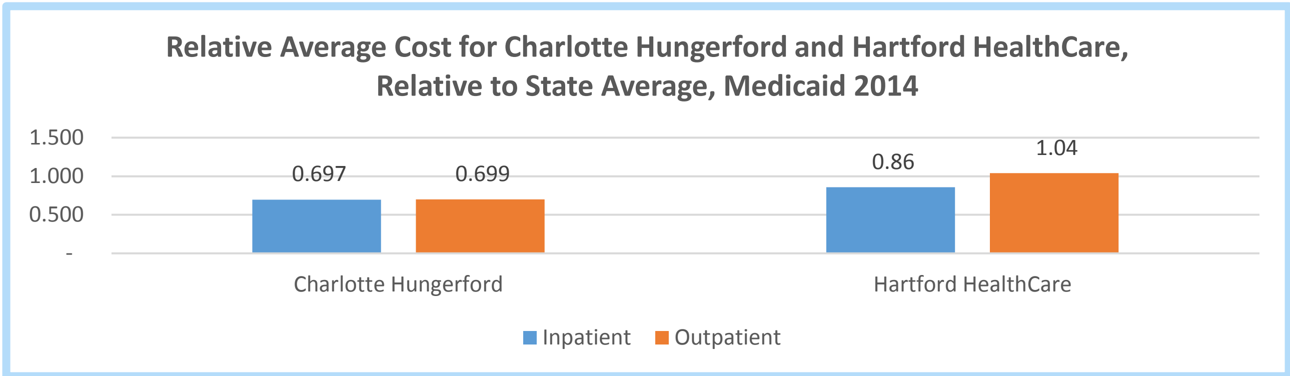
   A comparison between what Medicaid pays Charlotte Hungerford and what it pays its comparators was made using two benchmarks: (1) the average cost for the group which includes Charlotte Hungerford and its comparators; and (2) the statewide average cost. Charlotte Hungerford's average cost per admission is 98% of the average for its comparator group, but is higher than what Bristol and Sharon are paid. Charlotte Hungerford's average cost per visit is 109% of the average cost for the group; only Griffin has a higher average cost than Charlotte Hungerford for this small group**.** See Figures 7 and 8.

3. **Hartford HealthCare**

   A comparison between what Medicaid pays Hartford HealthCare and what it pays to Y-NHHS was made. Hartford HealthCare's average payment from Medicaid per admission, at the system level, is 91% of the average for the pair. Y-NNHS' average cost is 106% of the average for the pair. At the system level, relative to the state's average, Hartford HealthCare is below 86% of the average for the state, and Y-NNHS falls at the average. In terms of outpatient visits, both systems fall above the statewide average but Y-NNHS receives an average payment that is 127% of the statewide average compared to 104% for Hartford HealthCare. See Figures 9 and 10.

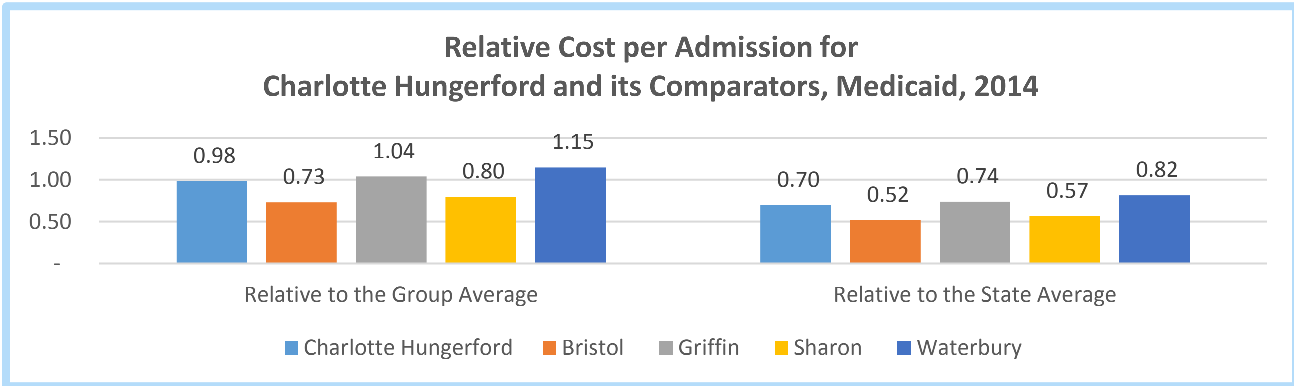
Comparisons in the Average Payment from Medicaid Per Hospital Admission and Outpatient Visit for Charlotte Hungerford and Hartford HealthCare System and its Comparators

Figure 6: Relative Average Cost



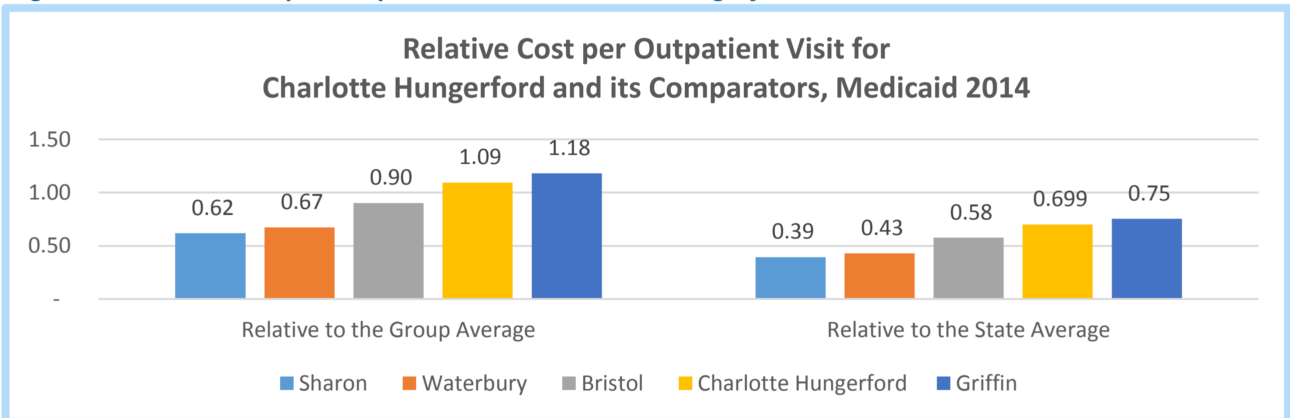
Source: CT DPH, Office of Health Care Access, based upon an analysis of DSS Medicaid data.

Figure 7: Relative Cost per Admission; Charlotte Hungerford



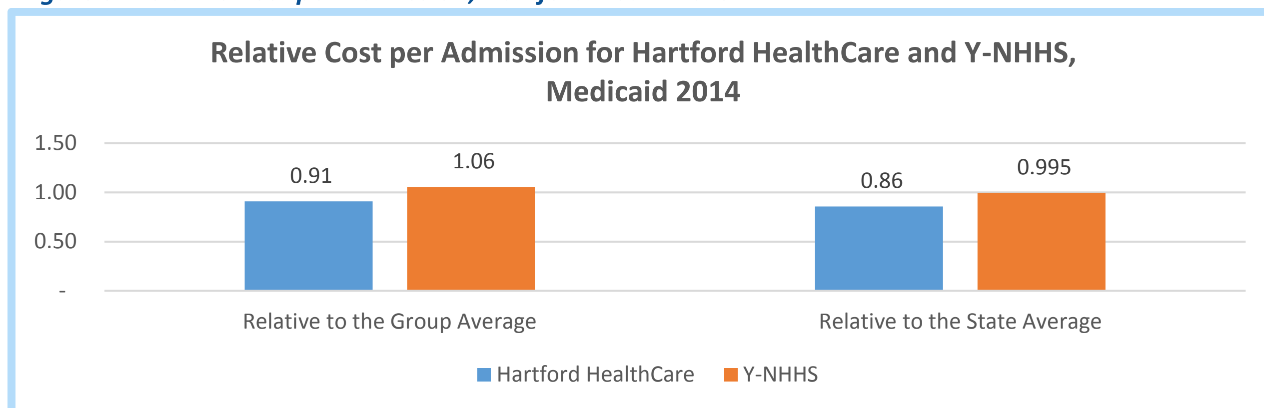
Source: CT DPH, Office of Health Care Access, based upon an analysis of DSS Medicaid data.

Figure 8: Relative Cost per Outpatient Visit; Charlotte Hungerford



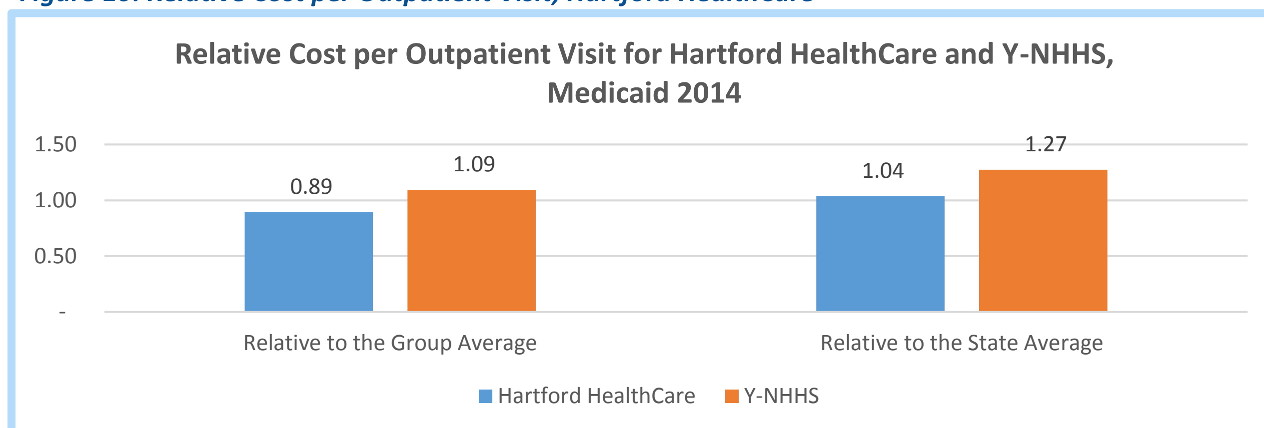
Source: CT DPH, Office of Health Care Access, based upon an analysis of DSS Medicaid data.

Figure 9: Relative Cost per Admission; Hartford HealthCare



Source: CT DPH, Office of Health Care Access, based upon an analysis of DSS Medicaid data.

Figure 10: Relative Cost per Outpatient Visit; Hartford HealthCare



Source: CT DPH, Office of Health Care Access, based upon an analysis of DSS Medicaid data.

A.1.c Costs and Cost Trends

An examination was performed of the trends for the average payment per admission from Medicaid for the transacting parties and its comparators in the Medicaid market only. For Charlotte Hungerford and Hartford HealthCare, trends in the average payment per inpatient admission for each CY were examined. This analysis was performed for Charlotte Hungerford and Hartford Hospital using four years of Medicaid data, including CYs 2012-2014.[12] The average trends are shown in Table 6: Trend for the Average Payment from Medicaid Per Hospital Admission (2012-2014).

In addition to this section's discussion about trends, see also discussion about the impact of provider consolidations on bargaining power as provided in Box 2: A Review of the Evidence on the Effect of Provider Consolidations on Bargaining Power with Insurers.

KEY FINDINGS, ONLY APPLICABLE TO MEDICAID, INCLUDE:

1. **Medicaid trends for Charlotte Hungerford**

   From CY 2012-2014, Charlotte Hungerford experienced increases in the average payment received per admission. Per admission, revenue increased by 2.3% from CY 2012-2013, and by 14.7% from CY 2013 to 2014. The compound average growth rate (CAGR) was 8.3% from CY 2012-2014.

[12] Data was available for FY 2015 but was not used because it was not fully complete due to the lag in claims payment.

2. Medicaid trends for Hartford HealthCare

Data was not available for the entire Hartford Healthcare system, but data was available for Hartford Hospital, which represents about 50% of Hartford HealthCare's total Medicaid admissions. Hartford Hospital experienced a negative trend between CY 2012-2014; the CAGR was -1.7%.

3. Medicaid trends for all hospitals or the statewide average

Trends in the average cost per admission to Medicaid were nearly flat across the state. The data shows the average payment to Medicaid increasing and then decreasing between CY 2012-CY 2014, with the overall effect of remaining nearly flat over this period.

Table 6: Trend for the Average Payment from Medicaid Per Hospital Admission (2012-2014)

Hospital	CY 2012-2013	CY 2013-2014	Compound Average Growth Rate (CAGR) CY 2012-2014
Charlotte Hungerford	2.3%	14.7%	8.3%
Hartford Hospital	-2.2%	-1.3%	-1.7%
All Connecticut Hospitals ("State")	-4.1%	5.7%	0.7%

Source: CT DPH, Office of Health Care Access, based upon an analysis of DSS Medicaid data.

Box 2. A Review of the Evidence on the Effect of Provider Consolidations on Bargaining Power with Insurers

Based on the testimony of economist Paul Ginsberg of the Brookings Institution, *"Health care markets are becoming more consolidated, causing price increases for purchasers of health services, and this trend will continue for the foreseeable future despite anti-trust enforcement."* [1]

The transacting parties testified that this affiliation would not increase prices for Charlotte Hungerford hospital. OHCA should closely monitor prices post affiliation for the parties to determine whether that proves accurate. In the meantime, OHCA should turn to the documented evidence, which is substantial, that consolidations do lead to higher prices.

A direct result of this transaction is that Charlotte Hungerford, currently an independent community hospital with its own insurer contracts, will negotiate commercial insurer contracts for both hospital and affiliated physician reimbursement with Hartford HealthCare. Hartford HealthCare is a much larger provider with significantly greater bargaining power in such negotiations than Charlotte Hungerford. In other words, for commercial insurance contracts negotiated by or on behalf of Charlotte Hungerford, the affiliation will lead to a shift in bargaining power in favor of Charlotte Hungerford. That increased bargaining power can lead to higher negotiated prices is both a fairly intuitive conclusion and a proposition that has been, particularly over the last decade, confirmed by a wide range of health services researchers and health economists.[2] It is well established that provider consolidation can enhance bargaining power with insurers[3], and that this conclusion holds for both hospital consolidation[4] and affiliations that consolidate physician practices.[5] Federal and state regulators have also emphasized the importance of market leverage on price growth. The Federal Trade Commission, which enforces federal antitrust laws, has reported that "[m]ost studies of the relationship between competition and hospital prices generally find increased hospital concentration is associated with increased price."[6] In Massachusetts, an Attorney General's examination of health care market trends found that "price variations are correlated to market leverage as measured by the relative market position of the [provider] compared with other [providers] within a geographic region."[7] In fact, attention on the influence of provider market power has led in Massachusetts to the creation of a state agency that, among other things, conducts market reviews very similar to those authorized by Section 639f.

Sources:

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6. Federal Trade Commission & U.S. Dept. of Justice, *Improving Healthcare: A Dose of Competition* (July 2004), available at http://www.ftc.gov/reports/healthcare/040723healthcarerpt.pdf.
7. Report of the Massachusetts Attorney General. 2010, *Examination of Health Care Cost Trends and Cost Drivers*, Report for annual public hearing, Office of Attorney General Martha Coakley.

A.1.d. Case Mix

An examination of the overall case mix of each hospital was performed by relying upon the hospital's case mix index (CMI). The CMI reflects differences in the diversity, clinical complexity, and the need for resources in the population of all patients at a hospital. A hospital's CMI measures, "acuity based on the average level of resources needed for the procedures performed for that hospital's patients."[13] As such, the CMI can be used to examine the variation in acuity across the state and to provide evidence of the role that each hospital plays in providing services in the Connecticut market.

The CMI can also be used to adjust prices and costs for the acuity level of the hospital's patients. That analysis was not conducted in this CMIR, due to the lack of data and uncertainty around the data that was available. The CMIs for Charlotte Hungerford and Hartford HealthCare and its comparators are provided in Figure 11: Case Mix Index and Figure 12: Case Mix Index; Hartford HealthCare.

KEY FINDINGS INCLUDE:

1. **Charlotte Hungerford and Hartford HealthCare**

   Charlotte Hungerford has a much lower CMI than Hartford HealthCare. Charlotte Hungerford has a CMI of 1.24; Hartford HealthCare has an overall CMI of 1.47. That CMI reflects the weighted average of CMIs across all hospitals that comprise Hartford HealthCare. Charlotte Hungerford and Hartford HealthCare fall on either side of the statewide CMI. See Figure 11.

2. **Charlotte Hungerford and its Comparators**

   Charlotte Hungerford has a higher level of acuity than three (3) of its comparators. Charlotte Hungerford and its comparators have a CMI below the statewide average. *This figure is not shown.*

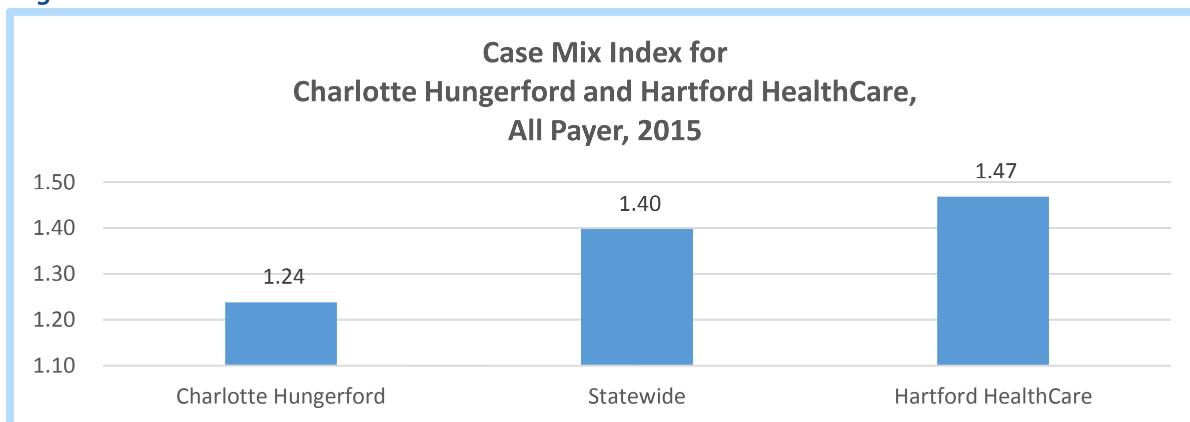
3. **Hartford HealthCare and its Comparator**

   The acuity levels of the patients serviced by Hartford HealthCare and its largest hospital, Hartford Hospital, and the Yale-New Haven Health System and Yale New Haven Hospital are higher than the statewide average. Hartford Hospital has the highest acuity level at 1.6, followed by Yale New Haven Hospital with a CMI of 1.53. Hartford Hospital and Yale New Haven Hospital have the highest CMIs for short-term acute care hospitals in the state of Connecticut.[14] See Figure 12.

[13] Commonwealth of Massachusetts Health Policy Commission. "Community Hospitals as a Crossroads: Findings from an Examination of the Massachusetts Health Care System." 2016. Web. 2 June 2016.

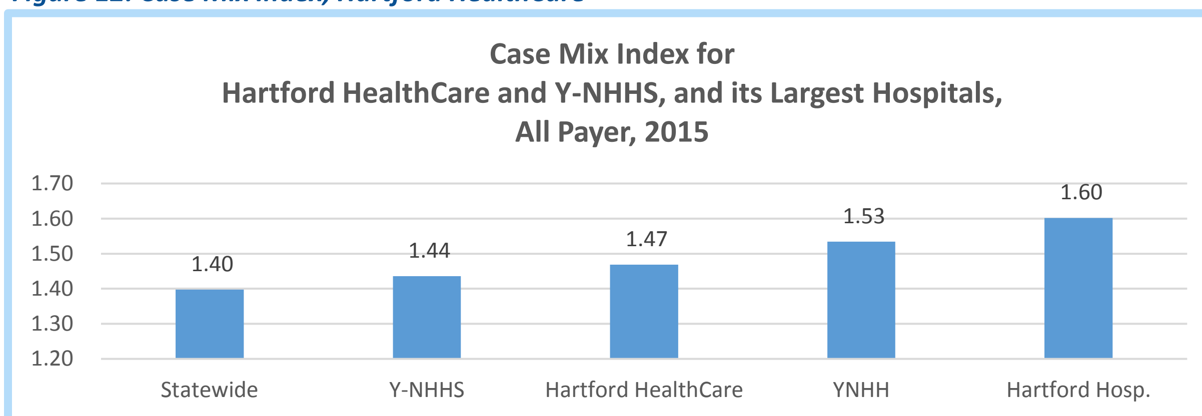
[14] The only exception to this finding is Connecticut Children's Medical Center, which has a higher CMI than Hartford Hospital and YNHH.

Figure 11: Case Mix Index



Source: Based upon an analysis of CT DPH, Office of Health Care Access data on hospital case mix.

Figure 12: Case Mix Index; Hartford HealthCare



Source: Based upon an analysis of CT DPH, Office of Health Care Access data on hospital case mix.

A.2. Impact Analysis

As our baseline analysis indicates, a solid understanding has been developed of the costs and market for Charlotte Hungerford and Hartford HealthCare, and more broadly, the Connecticut health care market.

Section 639f raises several questions relevant to how the proposed affiliation will affect the cost and market in Connecticut with an interest to the specific impact on:

1. the financial condition of the transacting parties;
2. the size and market share of the transacting parties;
3. the prices of the transacting parties; and
4. the cost and cost trends in comparison to total health care expenditures state wide.

Two separate impact analyses are provided in this section as shown in the following tables: Table 7: Impact Analysis of the Proposed Affiliation on Connecticut and Table 8: Impact of the Proposed Affiliation on Hartford HealthCare System.

KEY FINDINGS ABOUT THE IMPACT OF THE PROPOSED AFFILIATION ON COSTS AND MARKET:

1. Charlotte Hungerford is a small hospital and would therefore only increase Hartford HealthCare's market share by 1.5 percentage points or less, when measured by number of beds, discharges or NPSR. See Table 7.

Table 7: Impact Analysis of the Proposed Affiliation on Connecticut

Data (2015)	Hartford HealthCare without Charlotte Hungerford	Combined: Hartford HealthCare with Charlotte Hungerford	Statewide Figures (2015)	Market Share without Charlotte Hungerford	Market Share with Charlotte Hungerford	Difference in Market Share
Beds	1,679	1,801	8,647	19.4%	20.8%	1.4%
Hospital Discharges	81,492	87,522	401,471	20.3%	21.8%	1.5%
NPSR	$2,239,380,000	$2,353,116,000	$11,846,155,000	18.9%	19.9%	1.0%

Source: Based upon an analysis of data and information collected by CT DPH, Office of Healthcare Access.

2. The most significant impact of this affiliation is on Charlotte Hungerford financially; the proposed affiliation would improve Charlotte Hungerford's financial condition. Charlotte Hungerford is in a weak financial condition, which is likely to worsen.

3. The proposed affiliation would also lead to an increase in the size of the Hartford HealthCare system. The affiliation would increase the number of beds in the Hartford HealthCare system by 7.3%. Total hospital discharges would increase by 7.4%, and NPSR would increase by 5.1%. It is also important to note where this growth is occurring. This proposed affiliation would extend Hartford HealthCare's footprint further to the west, giving it broad east to west coverage across the mid to upper portion of the state. See Table 8.

Table 8: Impact Analysis of the Proposed Affiliation on Hartford Health System

Data (2015)	Charlotte Hungerford	Hartford HealthCare	Combined: Hartford Health System with Charlotte Hungerford	Increase for Hartford HealthCare
Beds	122	1,679	1,801	7.3%
Hospital Discharges	6,030	81,492	87,522	7.4%
NPSR	$113,736,000	$2,239,380,000	$2,353,116,000	5.1%

Source: Based upon an analysis of data and information collected by CT DPH, Office of Healthcare Access.

4. The proposed affiliation could lead to an increase in Charlotte Hungerford's prices overtime. Charlotte Hungerford has a NPSR problem today; NPSR has been declining overtime, a likely result of several factors that drive revenue including price, utilization, provider mix (types of providers), and service mix (types of services). Provider consolidations or alignments can affect all such factors including prices.[15] Post affiliation, Charlotte Hungerford may be able to secure price increases from commercial payers.

B. Access and Availability of Services

In this section, an examination of the parties' baseline performance is provided on the availability and access to services prior to the affiliation, and a projection of what is likely to happen post affiliation. With respect to future CMIRs, see also Box 3: Considerations for Expanding Data Focus on Access in Future CMIRs.

KEY FINDINGS INCLUDE:

1. **<u>Availability and access</u>**

Charlotte Hungerford provides a substantial amount of care to Medicare-covered individuals including adults with disabilities and seniors. The data also indicates that Charlotte Hungerford's emergency department is busier than

[15] See JAMA, December 2015. http://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2463591. See Brookings Institution. https://www.brookings.edu/testimonies/health-care-market-consolidations-impacts-on-costs-quality-and-access/. See also Massachusetts HPC. http://www.mass.gov/anf/docs/hpc/hpc-preliminary-review-of-phs-ssh-harbor-12-18-2013.pdf.

most with a large population with behavioral health conditions, perhaps compensating for the lack of these types of services in the community. It is hard to say this definitively without further analysis of the behavioral health needs of the communities served by Charlotte Hungerford.

2. **Methods to attract volume or recruit professionals**

Charlotte Hungerford has faced significant troubles in recruitment of medical professionals, citing many challenges akin to the situation that all community hospitals face. Post affiliation, Hartford HealthCare and Charlotte Hungerford will work together to conduct a physician needs recruitment assessment to improve overall recruitment at the community hospital. Charlotte Hungerford hopes to benefit in recruitment from leveraging Hartford HealthCare's solid infrastructure for recruitment of medical professionals. There is evidence that Hartford HealthCare will improve the recruitment of medical professionals for Charlotte Hungerford.[16]

3. **Role of each party in serving at-risk underserved populations**

Charlotte Hungerford is an important provider of hospital care to Medicaid populations including mothers, infants, children and adolescents, as well as those who are uninsured and who are seniors.

4. **Role of each party in providing low-margin and negative-margin services**

Charlotte Hungerford plays a significant role in providing services to individuals covered under Medicaid and to uninsured populations.

Box 3. Considerations for Expanding Data Focus on Access in Future CMIRs

Access is a broad topic with many definitions and a critical one for Connecticut individuals who currently rely upon the services at Charlotte Hungerford and its comparator hospitals. In this report, the focus was on the following metrics of access as outlined in Section 639f, including (1) availability and accessibility of services "similar" to those provided by each transacting party, or proposed to be provided – a result of ownership of a hospital within each transacting party's primary service areas and dispersed service areas; (2) the role of each party in serving at-risk underserved populations; and (3) the role of each party in providing services with low and negative margins. Future CMIRs may define access more broadly, as more comprehensive data is provided and in response to the important concerns of each proposed affiliation and the evolution of the Connecticut marketplace around consolidations.

B.1 Baseline Performance

Several measures were examined and analyzed to establish the baseline for Charlotte Hungerford and for Hartford and their comparators.

B.1.a. Availability and Access

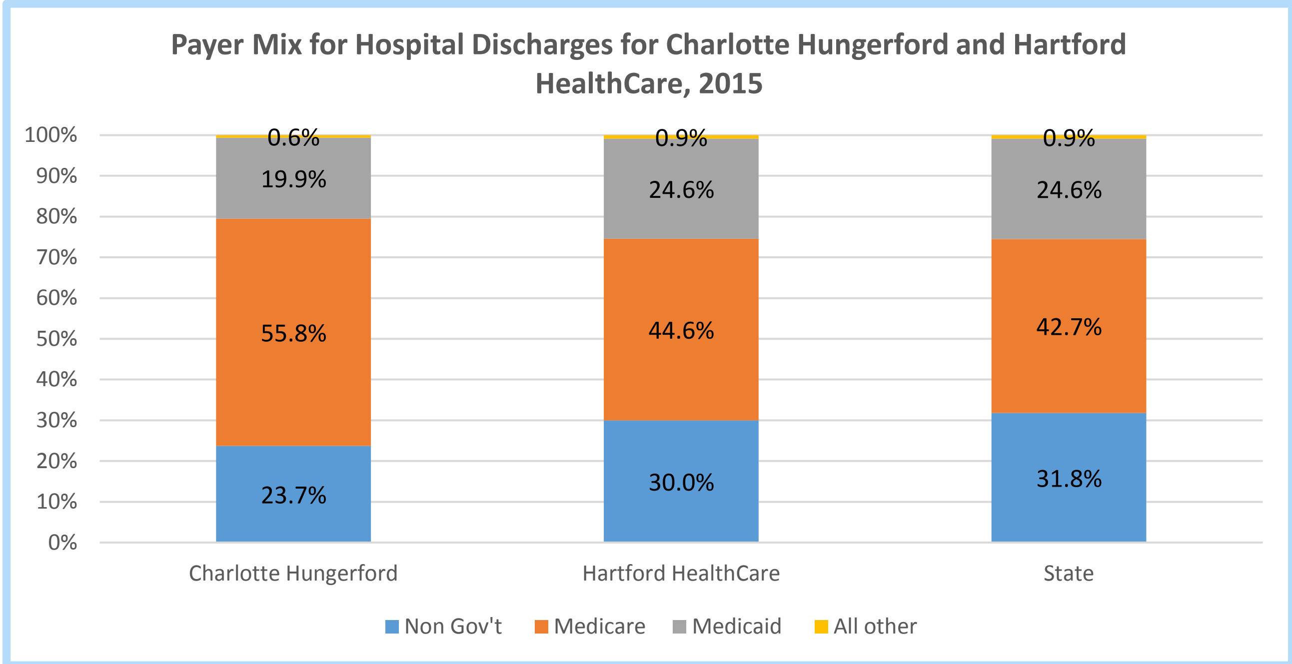
An examination was conducted of the availability and accessibility of services provided by each transacting party, or proposed to be provided under this affiliation in the community at large.

Charlotte Hungerford is an important provider of services to the community, providing a substantial amount of care to populations covered under Medicare. This means that Charlotte Hungerford is an important provider to adults with disabilities and seniors. Charlotte Hungerford's payer mix reveals that about 56% of its discharges were covered under

[16] Community Hospitals at a Crossroads: Findings from an Examination of the Massachusetts Health Care System, March 2016. Commonwealth of Massachusetts, Health Policy Commission. See http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/publications/community-hospitals-at-a-crossroads.pdf.

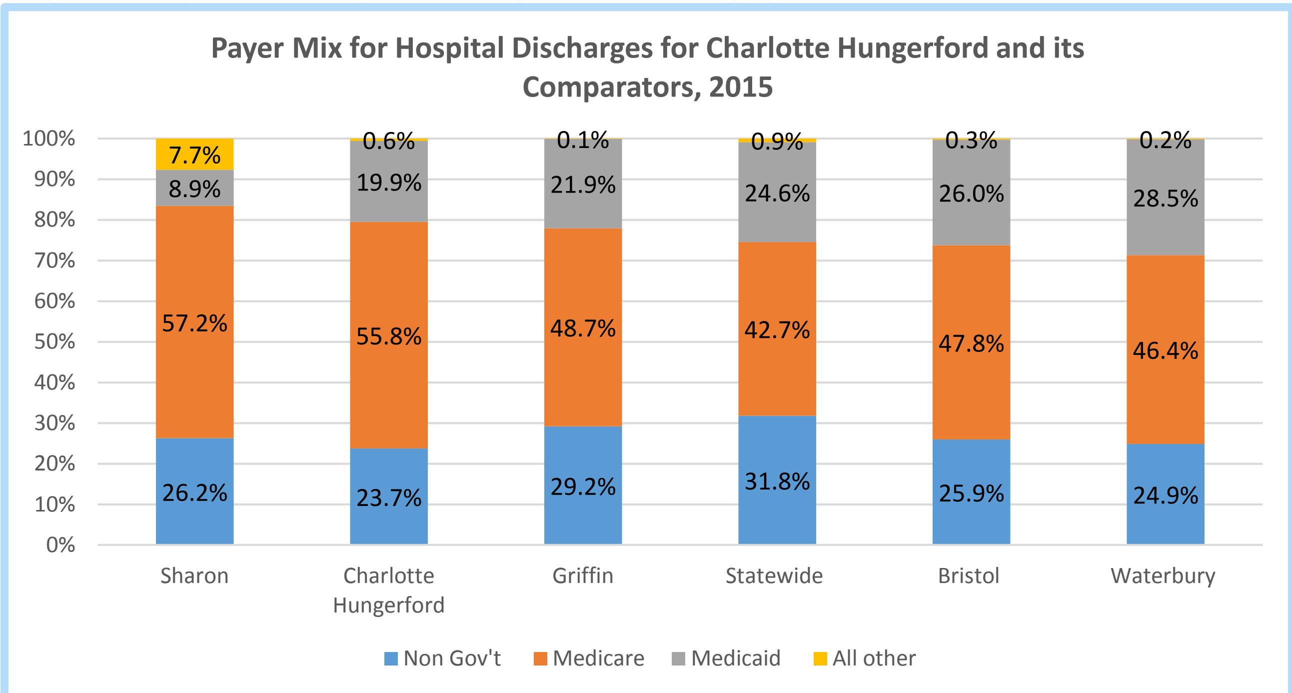
Medicare, which is 13 percentage points higher than the state average. See Figure 13: Payer Mix for Hospital Discharges for Charlotte Hungerford and Hartford HealthCare, 2015. Charlotte Hungerford's share of discharges for Medicare-covered populations is also higher than all if its comparators except for Sharon Hospital. See Figure 14: Payer Mix for Hospital Discharges for Charlotte Hungerford and its Comparators, 2015.

Figure 13: Payer Mix by Hospital Discharge



Source: Based upon an analysis of CT DPH, Office of Health Care Access data.

Figure 14: Payer Mix by Hospital Discharge; Charlotte Hungerford



Source: Based upon an analysis of CT DPH, Office of Health Care Access data.

Charlotte Hungerford is also an important provider of outpatient services to the Medicaid populations, with 63% of its total revenue coming from Medicaid-covered outpatient services. See Table 10: The Role in Providing Outpatient Care to Medicaid Populations by Transacting Parties and Their Comparators, CY 2014. A review of the Medicaid data for Charlotte Hungerford and its comparators indicates that revenue from outpatient services represents a much higher share of its total revenue for Charlotte Hungerford than for its comparators. Revenue from outpatient services for Charlotte Hungerford represented 63% of its total Medicaid revenue, as compared to 25% of total revenue for its comparators. See Table 10.

Also of note, Charlotte Hungerford receives a high volume of outpatient visits from populations with behavioral health needs in the emergency department. Nearly 47% of emergency department visits are for, or related to, a behavioral health condition. See Table 10.

B.1.b. Methods to Attract Volume or Recruit Professionals

At the CON hearing on May 8, 2017, officials from Charlotte Hungerford testified about the financial difficulties that it has faced due to staffing losses and challenges in physician recruitment. Not only has Charlotte Hungerford experienced a reduction of 46 medical staff including extender staff since 2013 due to retirements and resignations but it also has faced great difficulties in recruitment of physicians. Given declining revenues for inpatient care, Charlotte Hungerford sought to expand its revenue base in the community, with efforts focused on recruiting primary care and specialist physicians. These efforts have not yielded the desired results. As Charlotte Hungerford testified, difficulties in recruitment have "greatly hampered" Charlotte Hungerford's ability to "improve access and revenues by developing relevant service lines in response to community needs."[17]

Charlotte Hungerford sees their difficulties in recruitment very much related to the challenges that many community hospitals face including: (1) the presence of multi-disciplinary collaborative colleagues; (2) special laboratories and research opportunities; (3) academic appointments; (4) coverage (off-shift operations, nights, weekends, for the kind of critical care support systems that it needs, the depth and breadth of those systems to make sure that patients are appropriately cared for in a way that it would like to care for them); and (5) a deep reservoir of medical technology or information technology.

B.1.c. Role of Each Party in Serving At-Risk Underserved Populations

Charlotte Hungerford provides services to over 1,000 unique individuals covered under Medicaid including any who are under the age of 19. Nearly 25% of the patient population is under the age of 19. See Table 9: The Role in Providing Inpatient Care to Medicaid Populations by Transacting Parties and Their Comparators, CY 2014.

Obstetrical admissions are also a big part of the business at Charlotte Hungerford. Deliveries comprise 18% of all admissions at Charlotte Hungerford.

Table 9: Role in Providing Inpatient Care to Medicaid Populations by Transacting Parties and Comparators, CY 2014

Data	Charlotte Hungerford (CH)	Comparators without CH	Hartford HealthCare	Y-NHHS	All CT Hospitals
Unique Patients					
Unique Patients	1,004	5,333	15,746	29,697	72,924
Age Breakdown					
Infants/Children/Teens <19	256	1,432	4,238	*	23,912

[17] Transcript of CON Hearing. State of Connecticut, Department of Public Health, Office of Health Care Access, Hartford HealthCare Corporation and The Charlotte Hungerford Hospital, Transfer Ownership of The Charlotte Hungerford Hospital to Hartford HealthCare Corporation, Docket No. 16-32135-CON, May 8, 2017, 4:00 P.M. Torrington Town Post Reporting Service. Hamden, CT.

Data	Charlotte Hungerford (CH)	Comparators without CH	Hartford HealthCare	Y-NHHS	All CT Hospitals
Adults: 19-64	743	3,833	11,090	*	47,270
Seniors: 65 and older	6	75	426	*	1,817
All ages	1,005	5,340	15,754	*	72,999
Services					
All Admissions	1,237	6,509	19,281	31,398	97,758
Infants/Children/Teens <19	261	1,446	4,461	13,145	27,718
<19 years of age % of All	**21%**	**22%**	**23%**	**42%**	**28%**
Obstetric (OB) Admissions	225	1,319	1,759	4,965	16,816
OB as a % of All	**18%**	**20%**	**9%**	**16%**	**17%**
Case Mix Index (Medicaid)	**0.9574**	**0.9413**	**1.1536**	**1.2113**	**1.1621**
Medicaid Payments					
Inpatient	$6,464,097	$34,773,334	$127,303,261	$234,219,793	$732,745,063
Outpatient	$11,037,563	$11,505,583	$133,855,078	$200,698,848	$669,858,461
Total	$17,501,660	$46,278,917	$261,158,339	$434,918,641	$1,402,603,524
Medicaid Payments for Inpatient as a % of Total	**37%**	**75%**	**49%**	**54%**	**52%**

Note: Data not available (*). Source: CT DPH, Office of Health Care Access, based upon an analysis of DSS Medicaid data.

Table 10: Role in Providing Outpatient Care to Medicaid Populations by Transacting Parties and Comparators, CY 2014

Data (In State only)	Charlotte Hungerford (CH)	Comparators without CH	Hartford HealthCare	Y-NHHS	All CT Hospitals
All Outpatient (OP) Visits, including PH and BH					
ED Visits	14,818	52,891	164,309	153,524	668,517
Non-ED Visits	31,050	72,466	210,303	336,142	1,151,042
All OP Visits (PH & BH)	45,868	125,357	374,612	489,666	1,819,559
ED as a % of All	**32%**	**42%**	**44%**	**31%**	**37%**
Behavioral Health OP Visits					
BH ED	6,971	7,929	34,943	41,595	191,779
BH Non-ED	6,285	15,068	14,050	18,664	105,388
All BH Visits	13,256	22,997	48,993	60,259	297,167
Total BH OP % of All OP Visits	**29%**	**18%**	**13%**	**12%**	**16%**
BH ED Visits as % of All BH Visits	**53%**	**34%**	**71%**	**69%**	**65%**
BH ED Visits as a % of All ED Visits	**47%**	**15%**	**21%**	**27%**	**29%**
Medicaid Payments					
Outpatient	$11,037,563	$11,505,583	$133,855,078	$200,698,848	$669,858,461
Inpatient	$6,464,097	$34,773,334	$127,303,261	$234,219,793	$732,745,063
Total Medicaid Payments	$17,501,660	$46,278,917	$261,158,339	$434,918,641	$1,402,603,524
Medicaid Payments for OP as a % of Total	**63%**	**25%**	**51%**	**46%**	**48%**

Source: CT DPH, Office of Health Care Access, based upon an analysis of DSS Medicaid data.

B.1.d. Role in Providing Low-Margin and Negative Margin

Charlotte Hungerford plays a significant role in providing services to individuals covered under Medicaid and to uninsured populations. In 2015, populations covered under Medicaid and those who were uninsured represented 22% of Charlotte Hungerford's total discharges, as compared to 25.5% of Hartford HealthCare's total discharges. See Table 11: Discharges at the Hospital of the Transacting Parties.

Table 11: Discharges at the Hospitals of the Transacting Parties

Hospital or System	Discharges (2015)			% of All Discharges		
	Medicaid	Uninsured	All	Medicaid	Uninsured	Total
Charlotte Hungerford	1,200	102	6,030	19.9%	1.7%	21.6%
Hartford	20,010	739	81,492	24.6%	0.91%	25.5%
Statewide	98,750	5,392	401,471	24.6%	1.34%	25.9%

Source: Based upon an analysis of data and information collected by CT DPH, Office of Health Care Access.

B.2. Impact Analysis

Section 639f raises several questions relevant to how the proposed affiliation will affect access and availability of services in Connecticut, with an interest to the specific impact on:

1. the availability and accessibility of services;
2. patient volume and recruitment of health care professionals or facilities;
3. services for at-risk, underserved populations and government payer-patient populations, including those with behavioral, substance use disorder and mental health conditions; and
4. services with low negative margins within each transacting parties' primary service area.

KEY FINDINGS ABOUT THE IMPACT OF THE PROPOSED AFFILIATION ON ACCESS AND MARKET:

1. **Access**

The proposed affiliation would preserve access to Charlotte Hungerford for: Medicaid populations including populations under the age of 19 and for deliveries, adults with disabilities and seniors covered under Medicare, and for services with margins that are low or negative.

2. **Accessibility of services**

The proposed affiliation has the potential to improve the community's ability to address several needs including many needs identified in the Community Health Needs Assessment.

The next section details the commitments that Hartford HealthCare has made to the Charlotte Hungerford and the northwest region including: improving the primary care and ambulatory care network, expanding Hartford HealthCare's ambulatory care to children and adolescents, enhancing cardiac care at Charlotte Hungerford, and implementing gastrointestinal and digestive diseases and orthopedic programs.

Overall, these new investments, coupled with many other investments promised under the proposed affiliation, hold promise for improving access and the availability of services for all populations, including children, adolescents, adults, and seniors.

3. **Recruitment of health care professionals**

The proposed affiliation has the potential to improve Charlotte Hungerford's ability to address several barriers to successful recruitment of medical professionals. Hartford HealthCare has a solid infrastructure for recruitment today that can be leveraged to support Charlotte Hungerford, which has already been used to help Charlotte Hungerford in recruiting a surgeon. Post affiliation, Hartford HealthCare and Charlotte Hungerford will work together to conduct a physician needs recruitment assessment to improve overall recruitment at the community hospital.

C. Quality of Care Performance and Care Delivery

In this section, an examination is provided of the parties' baseline performance on quality and care delivery prior to the affiliation, as well as a projection of what is likely to happen post affiliation.

The following factors of the analysis are addressed including hospital quality of care performance, patient experience and the impact of the affiliation on competing options for the delivery of health care services.

KEY FINDINGS INCLUDE:

1. **Quality of care**

   Overall, there is room for improvement on quality and safety performance for both hospitals, with Charlotte Hungerford results showing many areas for improvement. Leapfrog Hospital survey results for Charlotte Hungerford find the hospital achieved 88% of the target for medication safety measures and 63% of the target for maternity care and infection and injury composite measures. On the Leapfrog Safety Grade, Charlotte Hungerford scored a C/D average over the 7 performance periods, compared to grades ranging between A/B and B/C for comparator hospitals. Using the CMS Hospital Compare overall rating, Charlotte Hungerford scored 2 stars, while its comparator hospitals are either 2 or 3 stars. Hartford Hospital's overall rating is also 2 stars, with its comparator hospital, YNHH, scoring 3 stars overall.

2. **Patient experience**

   Using the Hospital CAHPS survey, Charlotte Hungerford's performance was lower than the statewide average for 9 out of 11 measures, suggesting many opportunities to improve patient experience. Hartford's performance was lower than the statewide average for 9 out of 11 measures, which are very like the results for Charlotte Hungerford, while Hartford's comparator Yale New Haven Hospital had slightly higher patient experience scores than Hartford that allowed them to perform at or above the statewide average on 8 out of 11 measures.

3. **Competing care delivery options**

   The Charlotte Hungerford Community Health Needs Assessment identifies significant unmet needs in Charlotte Hungerford's primary service area (Litchfield County), including primary care and behavioral health access needs.[18]

Specific data sources used to assess baseline performance and consider potential impacts from the affiliation are discussed further below, followed by an analysis of baseline performance and a discussion of the potential impact.

C.1. Baseline Performance

C.1.a. Quality of Care and Patient Experience

To assess the transacting parties' performance on Quality of Care, HMA reviewed several independent, publicly available data sources and selected for baseline analysis the Leapfrog Hospital Survey, the Leapfrog Hospital Safety Grade, and hospital comparison data published by the Centers for Medicare and Medicaid Services (CMS). They reflect a combination of process and health outcome measures as well as measures of patient safety. Patient safety has increasingly been accepted as an integral element of quality and focuses on systems of care delivery that prevent errors, learn from errors that are not prevented, and promote a "culture of safety" engaging all hospital staff, including healthcare professionals, and patients.

[18] TCHH Community Health Assessment (2016-2019) and Community Health Improvement Plan, and Community Health Needs Assessment (2015 Update) provided in the Certificate of Need application.

Leapfrog Hospital Survey Results for Charlotte Hungerford and Comparator

The Leapfrog Hospital Survey[19] annually assesses hospital quality, safety, and efficiency using national performance measures. The survey is for general acute and freestanding pediatric hospitals across the United States who voluntarily participate. The measures are selected with input from scientific advisors at the Armstrong Institute for Patient Safety and volunteer expert panels. Information submitted by hospitals undergoes a data review and on-site data verification process.

Table 12: Leapfrog Hospital Survey Composite Results, 2016 for Charlotte Hungerford and Bristol Hospitals provides the results of Charlotte Hungerford compared to one of its comparator hospitals, Bristol Hospital (Bristol) using the Leapfrog Hospital Survey from 2016. Bristol was the only comparator hospital identified for this review who voluntarily chose to participate in the Leapfrog Hospital Survey in 2016 along with Charlotte Hungerford.

The results of the survey are sorted into the following six groups: Inpatient Care Management, Medication Safety, Maternity Care, High-Risk Surgeries, and Infections and Injuries. Each group is comprised of 2 to 7 different measures. Each measure is scored on a four-tiered scale, from highest to lowest, depending on the hospital Fully Meeting the Standard (4), Making Substantial Progress (3), Some Progress (2), or Willing to Report (1). The High-risk Surgery composite is not reported for Charlotte Hungerford or Bristol due to not performing high-risk surgeries. Composites with scores less than 90% of the Leapfrog's target for Charlotte Hungerford include Medication Safety, Maternity Care and Infection and Injury performance.

Table 12: Leapfrog Hospital Survey Composite Results, 2016 for Charlotte Hungerford and Bristol Hospitals

Composite Domain	Leapfrog Composite Description	Target	Charlotte Hungerford		Bristol	
		#	#	%	#	%
Inpatient Care Management	To provide the safest, highest-quality care, hospitals must staff their units with appropriate expertise and have effective policies in place to manage and reduce errors. The biggest impact on patient outcomes comes from a deliberate and hospital-wide commitment to these practices.	20	18	90%	12	60%
Medication Safety	Medication errors are the most common mistakes in hospitals, contributing to an estimated 7,000 deaths annually. Computerized physician order entry (CPOE) and bar code medication administration (BCMA) are proven ways of significantly reducing medication errors when a medication is prescribed and given to patients.	8	7	88%	8	100%
Maternity Care	Having a baby is one of life's most exciting experiences, and with nine months to plan, families can take the time they need to choose the best hospital for delivery. It's important to pay attention to a hospital's rate of C-sections, early elective deliveries, and episiotomy, as well as	16	10	63%	14	88%

[19] Leapfrog Hospital Survey results can be accessed at http://www.leapfroggroup.org/compare-hospitals.

Composite Domain	Leapfrog Composite Description	Target	Charlotte Hungerford		Bristol	
		#	#	%	#	%
	performance on standard processes of care and delivery outcomes in high-risk situations.					
High-Risk Surgeries	For many high-risk surgeries, choosing where to receive care can mean the difference between life and death. Patients who need certain complex procedures should choose facilities with high survival rates and consult their surgeon about how many procedures he or she has done to ensure they receive the best care possible.	0	0	n/a	0	n/a
Infections and Injuries	Hospital-acquired infections and injuries are complications that were not present when a patient was admitted, but developed due to errors or accidents in the hospital. These conditions are entirely preventable, and some hospitals have made huge strides in getting to zero infections and injuries.	16	10	63%	15	94%
TOTAL		**60**	**45**	**75%**	**49**	**82%**

Source: Leapfrog Hospital Survey, 2016

A more detailed analysis of the composites with results less than 90% of the target for Charlotte Hungerford is in Table 13: Leapfrog Hospital Survey Measure Results, 2016 for Charlotte Hungerford and Bristol Hospitals; Maternity Care, which identify more targeted opportunities for improvement.

Table 13: Leapfrog Hospital Survey Results, 2016 for Charlotte Hungerford and Bristol Hospitals; Maternity Care

Maternity Care	Leapfrog Measure Rationale	Target	Charlotte Hungerford	Bristol
Early Elective Deliveries	Both moms and babies are at risk when deliveries are scheduled too early.	4	4	4
Cesarean Sections	Hospitals with lower rates of Cesareans tend to manage labor better.	4	1	4
Episiotomies	Once routine, episiotomies cause more harm than good.	4	1	2
Maternity Care Processes	Measures screening for newborns for jaundice prior to discharge and use of techniques to prevent blood clots for women with Cesareans.	4	4	4
High-Risk Deliveries	Babies are managed better in experienced Neonatal Intensive Care Units (NICUs)	4	*Does Not Apply**	*Does Not Apply*
Total		20	10 (out of 16)	14 (out of 16)

*Does Not Apply Score is used by Leapfrog when a hospital does not perform the procedure or service. Source: Leapfrog Hospital Survey, 2016

Table 14: Leapfrog Hospital Survey Results, 2016 for Charlotte Hungerford and Bristol Hospitals; Medication Safety

Medication Safety	Leapfrog Measure Rationale	Target	Charlotte Hungerford	Bristol
Doctors order medications through a computer	Electronic prescribing systems alert staff to potentially dangerous medication errors	4	4	4
Safe Medication Administration	Special barcoding technology can significantly cut down on errors	4	3	4
Total		8	7	8

Source: Leapfrog Hospital Survey, 2016

Table 15: Leapfrog Hospital Survey Results, 2016 for Charlotte Hungerford and Bristol Hospitals; Infections and Injuries

Infections and Injuries	Leapfrog Measure Rationale	Target	Charlotte Hungerford	Bristol
Central-Line Infections in Intensive Care Units (ICUs)	Potentially deadly infections can be avoided with proper protocol	4	2	4
Urinary Catheter Infections in ICUs	When not inserted and removed correctly, can cause serious infections	4	4	4
Methicillin-resistant Staphylococcus Aureus (MRSA) Infections	Without proper protocols, patients can be infected with dangerous strains of bacteria	4	*Unable to Calculate**	2
C. difficile Infections	Without proper protocols, patients can be infected with dangerous strains of bacteria	4	1	3
Surgical Site Infection Following Major Colon Surgery	Using appropriate antibiotics and closely monitoring patients reduces risk	4	3	4
Total		20	10 (out of 16)	15

* Leapfrog reports "Unable to Calculate Score" when patient volume for the measure is too low to accurately calculate a score.
Source: Leapfrog Hospital Survey, 2016

Hartford HealthCare and its affiliated hospitals did not participate in the Leapfrog Hospital Survey. Therefore, information about the performance of Hartford relative to its comparators or to Charlotte Hungerford is not available for this review.

Leapfrog Safety Grade Performance

Leapfrog Hospital Safety Grades[20] are measured for general acute-care hospitals across the United States two times per year. The Leapfrog Hospital Safety Grade uses 30 national performance measures from multiple sources to develop a composite score for each hospital that is represented as a single letter grade reflecting overall performance on preventable patient safety, including prevention of errors, injuries and infections. Measures include both (1) Process/Structural Measures or (2) Outcome Measures, each accounting for 50% of the overall score. The measure sources include the Centers for Medicare & Medicaid Services (CMS), the Leapfrog Hospital Survey, the Agency for Healthcare Research and Quality (AHRQ), the Centers for Disease Control and Prevention (CDC), and the American Hospital Association's Annual Survey and Health Information Technology Supplement. The methodology is peer reviewed.

For this review, HMA analyzed 7 review periods, from Spring 2014 – Spring 2017, and calculated average performance across the periods by translating the safety grade into a numeric score (Grade A = 4; B = 3; C = 2; D = 1; F = 0). Scores are available for Charlotte Hungerford and its comparator hospitals, Bristol Hospital, Griffin Hospital, Sharon Hospital and Waterbury Hospital and are provided in Table 16: Leapfrog Safety Grade Results, 2014 – 2017 for Charlotte Hungerford

[20] Leapfrog Safety Grade information can be accessed at http://www.hospitalsafetygrade.org/.

Hospital and Comparators. Scores show that Charlotte Hungerford scored a C/D average (1.3 out of 4) over the 7 performance periods, which was lower than its comparators ranging from A/B to B/C (3.9 to 2.0).

Table 16: Leapfrog Safety Grade Results, 2014 – 2017 for Charlotte Hungerford Hospital and Comparators

Period	Charlotte Hungerford		Bristol		Griffin		Sharon		Waterbury	
	Grade	#	Grade	#	Grade	#	Grade	#	Grade	#
Spring 2017	C	2	C	2	A	4	A	4	C	2
Fall 2016	B	3	B	3	A	4	NS*	NS	C	2
Spring 2016	D	1	B	3	A	4	NS	NS	C	2
Fall 2015	C	2	B	3	A	4	NS	NS	C	2
Spring 2015	C	2	C	2	A	4	NS	NS	C	2
Fall 2014	D	1	D	1	A	4	NS	NS	C	2
Spring 2014	D	1	C	2	B	3	NS	NS	C	2
Total		**12**		**16**		**27**		**4**		**14**
Average	**C/D**	**1.7**	**B/C**	**2.3**	**A/B**	**3.9**			**C**	**2.0**

Source: Leapfrog Safety Grade, 2014-2017

HMA calculated a "System Level" Leapfrog Safety Grade based on the grades over 7 performance periods during 2014 through 2017 for each of the hospitals comprising Hartford HealthCare Corporation and its comparator hospital systems, Yale-New Haven and Western Connecticut Health Network. The performance of Hartford Healthcare system relative to its comparators shows grades higher than its comparator hospital systems (average 2.4 grade for Hartford HealthCare compared to 2.0 for Yale-New Haven and Western Connecticut systems). In addition, the Hartford HealthCare system has a higher grade than Charlotte Hungerford (average of 2.4 or Grade B/C for the system compared to 1.7 or Grade C/D for Charlotte Hungerford). Table 17: Leapfrog Safety Grade System Level Results, 2014 – 2017 for Hartford HealthCare and Comparators shows the system level Leapfrog Safety Grades for Hartford HealthCare Corporation and its comparators.

Table 17: Leapfrog Safety Grade System Level Results, 2014 – 2017 for Hartford HealthCare and Comparators

Period	Hartford HealthCare	Yale-New Haven	Western Connecticut
Spring 2017	2.2	1.6	2.0
Fall 2016	2.2	2	1.5
Spring 2016	2.6	2.25	1.5
Fall 2015	2	1.75	2.0
Spring 2015	2.6	2.25	2.0
Fall 2014	2.6	2.25	2.3
Spring 2014	2.4	2	2.3
Average	**2.4**	**2.0**	**2.0**
Overall Grade	**B/C**	**C**	**C**

Source: Leapfrog Safety Grade, 2014-2017

CMS Hospital Compare

The CMS Hospital Compare[21] includes an overall hospital quality rating summarizing up to 57 quality measures for commonly treated conditions, such as heart attacks or pneumonia. The ratings provide a comparison of each hospital's performance, on average, compared to other U.S. hospitals, with over 4,000 Medicare-certified hospitals included. The ratings range from one to five stars, with more stars representing better performance.

[21] The CMS Hospital Compare website provides hospital comparison data as well as detailed information about the methodology used by CMS to collect and calculate the measures. The website can be accessed at https://www.medicare.gov/hospitalcompare/search.html.

Some of the measures used to calculate the overall rating are based only on data from Medicare patients, while others are based on data from all patients. For example, claims-based measures are based on Medicare fee-for-service (FFS) hospital claims data only, while process of care, healthcare-associated infection (HAI), and HCAHPS Survey measures include data for all patients served at each participating hospital.

Table 18: Hospital Ratings Based on CMS Hospital Compare 5-Star System provides overall ratings using the most currently available data on CMS Hospital Compare[22] for Charlotte Hungerford compared to its comparators and the Connecticut and national averages. The table also provides results for Hartford Hospital and its comparator hospital, Yale New Haven. The overall rating for Charlotte Hungerford is 2 stars, while its comparator hospitals are either 2 or 3 stars. Hartford Hospital's overall rating is also 2 stars, with Yale New Haven Hospital scoring 3 stars overall.

Table 18: Hospital Ratings Based on CMS Hospital Compare 5-Star System

Hospital Compare Overall Rating	Target	Charlotte Hungerford	Bristol	Griffin	Sharon	Waterbury	Hartford Hospital	Yale New Haven Hospital
Overall Rating	5 stars	2 stars	3 stars	2 stars	3 stars	2 stars	2 stars	3 stars

Source: CMS Hospital Compare

Patient Experience

Another important measure of quality is patient experience of their hospital care. The CMS Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) is a publicly available measure of hospital patient experience of care across 11 topics. CMS and the Agency for Healthcare Research and Quality (AHRQ), developed the HCAHPS Survey, also known as Hospital CAHPS®, to provide a standardized survey instrument and data collection methodology for measuring patients' perspectives on hospital care. All short-term, acute care, non-specialty hospitals are invited to participate, with over 4,000 hospitals participating. Hospital-level results are publicly reported quarterly on the CMS Hospital Compare website, using the last available four quarters of data. The HCAHPS data are collected through a post-discharge survey of a random set of adult hospital patients between 48 hours and 6 weeks after discharge, including Medicare beneficiaries and other non-Medicare patients.

Charlotte Hungerford's performance was lower than the statewide average for 9 out of 11 measures, suggesting many opportunities to improve patient experience (see Table 19: Patient Experience Performance from CMS HCAHPS – Charlotte Hungerford and Comparators). There were only 2 out of 11 measures with performance higher than the state average performance. For the measure on whether the patients received help as soon as they wanted, Charlotte Hungerford was still below most of its comparators. On the measure where 90% of Charlotte Hungerford's patients reported that they were given information about what to do during their recovery at home, Charlotte Hungerford had comparable performance to some of its comparators and better results for others.

Table 19: Patient Experience Performance from CMS HCAHPS – Charlotte Hungerford and Comparators

Patient Experience of Care Measure	National	CT Average	Charlotte Hungerford	Bristol	Griffin	Sharon	Waterbury
Patients who reported that their nurses "Always" communicated well	80%	80%	77%	85%	81%	82%	77%
Patients who reported that their doctors "Always" communicated well	82%	80%	73%	82%	81%	84%	77%

[22] Centers for Medicare and Medicaid. Hospital Compare. Web. 2 June 2017.

Patient Experience of Care Measure	National	CT Average	Charlotte Hungerford	Bristol	Griffin	Sharon	Waterbury
Patients who reported that they "Always" received help as soon as they wanted	69%	65%	66%	73%	69%	74%	57%
Patients who reported that their pain was "Always" well controlled*	71%	71%	67%	74%	70%	71%	68%
Patients who reported that staff "Always" explained about medicines before giving it to them	65%	61%	53%	67%	68%	62%	56%
Patients who reported that their room and bathroom were "Always" clean	74%	74%	73%	75%	79%	82%	66%
Patients who reported that the area around their room was "Always" quiet at night	63%	52%	40%	56%	59%	59%	50%
Patients who reported that YES, they were given information about what to do during their recovery at home	87%	87%	90%	90%	90%	85%	87%
Patients who "Strongly Agree" they understood their care when they left hospital	52%	51%	48%	55%	52%	51%	43%
Patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest)	72%	69%	60%	72%	77%	75%	64%
Patients who reported YES, they would definitely recommend the hospital	72%	71%	61%	73%	78%	71%	66%

* Note: CMS reports that the pain management questions on the HCAHPS Survey are under review for possible revision.
Source: CMS Hospital Compare, HCAHPS

Table 20: Patient Experience Performance from CMS HCAHPS – Hartford and Yale New Haven Hospitals provides patient experience results for Hartford Hospital compared to Yale New Haven Hospital and other benchmarks. Hartford's performance was lower than the statewide average for 9 out of 11 measures; this is nearly the same as the results for Charlotte Hungerford. Yale New Haven had slightly higher patient experience scores than Hartford that allowed them to perform at or above the statewide average on 8 out of 11 measures.

Table 20: Patient Experience Performance from CMS HCAHPS – Hartford and Yale New Haven Hospitals

Patient Experience of Care Measure	National	CT Average	Hartford	Yale New Haven	Charlotte Hungerford
Patients who reported that their nurses "Always" communicated well	80%	80%	78%	81%	77%
Patients who reported that their doctors "Always" communicated well	82%	80%	79%	80%	73%
Patients who reported that they "Always" received help as soon as they wanted	69%	65%	58%	64%	66%
Patients who reported that their pain was "Always" well controlled*	71%	71%	69%	70%	67%
Patients who reported that staff "Always" explained about medicines before giving it to them	65%	61%	61%	62%	53%
Patients who reported that their room and bathroom were "Always" clean	74%	74%	68%	65%	73%
Patients who reported that the area around their room was "Always" quiet at night	63%	52%	48%	52%	40%
Patients who reported that YES, they were given information about what to do during their recovery at home	87%	87%	89%	88%	90%

Patient Experience of Care Measure	National	CT Average	Hartford	Yale New Haven	Charlotte Hungerford
Patients who "Strongly Agree" they understood their care when they left the hospital	52%	51%	50%	53%	48%
Patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest)	72%	69%	66%	72%	60%
Patients who reported YES, they would definitely recommend the hospital	72%	71%	72%	77%	61%

* Note: CMS reports that the pain management questions on the HCAHPS Survey are under review for possible revision.
Source: CMS Hospital Compare, HCAHPS

C.1.b. Care Delivery

Baseline measures of the care delivery system, especially at Charlotte Hungerford, reflect services consistent with a full-service community hospital and are described in Section II of this report.

Key characteristics of the baseline care delivery context that may factor into the impact analysis include the following based on information from the CON application, including the Charlotte Hungerford Community Needs Assessment (CHNA) submitted as part of the application:

1. Charlotte Hungerford is a community hospital serving mostly low-income populations who reside in the communities surrounding the hospital.[23]
2. Charlotte Hungerford and Hartford HealthCare have a longstanding clinical relationship, resulting in most of Charlotte's emergency department and other hospital transfers being referred to Hartford HealthCare.
3. The Charlotte Hungerford CHNA identifies significant unmet needs in Charlotte Hungerford's primary service area (Litchfield County), including primary care and behavioral health access needs.
4. Litchfield is a federally designated health professional shortage area, with Torrington being specifically designated as a primary care health professional shortage area.
5. There are three acute care hospitals in Litchfield County, including Charlotte Hungerford (in Torrington), New Milford Campus of Danbury Hospital (in New Milford), and Sharon Hospital (in Sharon). There is also one federally qualified health center, the Community Health and Wellness Center of Greater Torrington, which provides preventive, primary and specialty services.

C.2. Impact Analysis

C.2.a. Quality of Care and Patient Experience Impact Analysis

As indicated in the results above, Charlotte Hungerford's performance was below targets on multiple quality measures, including patient safety performance. Although Hartford HealthCare has results that are stronger than the results for Charlotte Hungerford, Hartford HealthCare still has room for improvement, especially in certain patient safety measures and patient experience performance.

As part of the transacting parties' CON application and related addenda, the parties highlight quality organizational structures and processes that exist within Hartford HealthCare's system that could potentially benefit Charlotte Hungerford's performance, including centralized quality accountability and structure that engages Hartford HealthCare

[23] In the CON application, the parties indicate Charlotte Hungerford's Service Area as Barkhamsted, Colebrook, Goshen, Harwinton, New Hartford, Norfolk, Litchfield, Morris, Thomaston, Torrington, Winchester, accounting for 91% of inpatient utilization.

affiliated hospitals in regional quality improvement activities to establish improvement targets and monitor performance. Hartford HealthCare also participates in clinical registries to monitor and validate clinical performance, such as the American College of National Surgical Quality Improvement Program (NSQIP). Charlotte Hungerford would join the Hartford HealthCare system's NSQIP program and likely benefit from this membership. Both Hartford Hospital and Backus Hospital have been nationally recognized for performance in the top 10th of participating hospitals, based upon the CON application.

As to patient safety impact potential, Hartford HealthCare has instituted a broad-based staff training program to reduce Serious Safety Events (SSEs). The CON application notes that over the past three years, the system has observed a 70% reduction in the rate of SSEs, suggesting substantive progress on improving systems and spreading a culture of safety throughout the system. It is possible that similar improvements could be achieved at Charlotte Hungerford, with additional training and ongoing system support.

Implementation of a centralized approach to patient experience is used at Hartford HealthCare, and would be extended to Charlotte Hungerford. Recognizing flat performance across the Hartford HealthCare system on HCAHPS, the system plans to establish an "experience team" under the direction of a chief experience officer specifically focused on improving patient experience across the system.

The Hartford HealthCare quality of care structures and initiatives have the potential to support improvements in quality of care and patient experience at Charlotte Hungerford. It is likely that many of the areas where Charlotte Hungerford needs improvement will also be priorities of the initiatives planned. What may be a factor in ongoing improvement is the onboarding process of the hospital into the structures as well as the level of commitment of the Board to quality improvement.[24] In addition, understanding the issues driving patient experience at Charlotte Hungerford will be critical to improving care experiences. The CHNA for Charlotte Hungerford identified, through key informant interviews and focus groups, that patients have many positive feelings about interactions with health care professionals, while also having issues with developing provider trust due to language barriers (i.e., not enough Spanish speaking staff at Charlotte Hungerford). A focus on local issues and strategies to address patient experience may be needed for improvements to be made.

C.2.b. Care Delivery Impact Analysis

The affiliation proposes to have an important impact on care delivery in the Northwest Region of Connecticut, where Charlotte Hungerford operates. Many of the new or expanded services will help meet the unmet needs identified in the CHNA, including the need for improved primary care and behavioral health access, and improved cardiac care delivery. The initiatives are specifically targeted to certain population needs, especially for the growing population of Litchfield County residents 65 years of age or older, who are disproportionately represented in the County relative to the state average, based on 2014 Connecticut Economic Resource Center town profile data.[25] Table 21: Care Delivery Initiatives Proposed by Transacting Parties and Cross-walk to Community Needs summarizes the care delivery aspects of the transition, including the array of new or expanded services that Hartford HealthCare commits to support.

[24] This study finds that higher quality performing hospitals were more likely to have Board members who identified quality as a top priority and had some level of training and understanding of quality. Accessed May 16, 2016 at http://content.healthaffairs.org/content/29/1/182.full.pdf+html

[25] In Litchfield County, 17% were 65 years of age and over compared with 15% for the state. Data accessed from Connecticut Economic Resource Center at http://profiles.ctdata.org/profiles/

Table 21: Care Delivery Initiatives Proposed by Transacting Parties and Cross-walk to Community Needs

Care Delivery Initiatives Description	New Service/ Service Expansion	Identified Community Health Need Priority[26]
Extensive **primary care and ambulatory care** network including: • use of patient-centered medical homes; • development and expansion of services and programs offered to the greater Winsted, Connecticut community, including the development of a new, modern multispecialty care center; and • development of an ambulatory surgery network in the Northwest (NW) Region.	Yes	Yes
Expansion of HHC's **ambulatory care to children and adolescents** in NW Region	Yes	Yes
Inclusion in HHC's state-wide **telehealth network**	Yes	
Enhancement of **cardiac care** at Charlotte Hungerford and for NW Region with local specialists Includes integrated congestive heart failure program and on-site electrophysiology	Yes	Yes
Aging at home and palliative care program in NW Region. Coordinated with HHC's statewide senior care leadership and programs	Yes	
Implementation of a **gastrointestinal and digestive diseases and orthopedic programs**	Yes	
Behavioral health network implementation	Yes	Yes
Expansion of **neurology and neurosciences** service lines	Yes	
Access to HHC's **personalized medicine program**, including access to genetic diagnostic and treatment resources	Yes	
Expanded participation in HHC's **Maternal and Fetal Medicine Program** including local access to peri-natologists	Yes	
Establishment of a **Mobile Simulation Program** to provide advanced training and education to NW Region practitioners, including training on rural medicine	Yes	
Creation of a **Geriatric Medicine Institute**	Yes	
Maintenance of clinical relationship with Connecticut Children's Medical Center for pediatric patients in need of complex care	No	

Source: Certificate of Need Application, 16-32135.

D. Consumer Concerns

For this domain, OHCA and HMA attempted to identify data sources that captured complaints or other allegations about the transacting parties that provide evidence of engaging in unfair methods of competition or any unfair or deceptive act or practices. No relevant data sources were identified and no specific consumer concerns were raised at the public hearing held May 8, 2017 by OHCA about the affiliation with respect to these concerns.

However, one issue to note from a consumer perspective, which was raised from the perspective of the community at the May 8, 2017 CON hearing, is how the new governance structure for Charlotte Hungerford will work as the composition of the governing body changes. The proposed affiliation will include a change in governance structure. The governing body of Charlotte Hungerford will remain in place, including the current 15 members of the Board along with four new directors appointed by Hartford HealthCare. The Hartford HealthCare Board will include, for a three-year transition period, two additional individuals serving on the Charlotte Hungerford Board directly prior to the closing of the affiliation. This will be an issue that the state will want to monitor to ensure a smooth transition for all stakeholders including consumers.

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[26] Reflects community health priorities for Charlotte Hungerford's service area identified in the Community Health Improvement Plan in the Charlotte Hungerford Hospital Community Needs Assessment, 2016-2019, provided to DPH as part of this CMIR review and in the CON application.

Conclusion

This report examines the baseline performance of Charlotte Hungerford and Hartford HealthCare regarding costs and market, access, quality and care delivery, and the effect of the affiliation on those factors.

In this section, we address the requirements of Section 639f, which require DPH to determine whether a transacting party meets the following criteria:

a. 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;

b. (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.

For any CMIR, if the answer to any of those criteria is affirmative, DPH is obligated to refer its Final Report to the Attorney General.

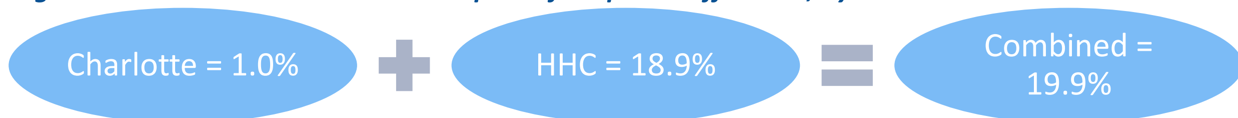
As described in Section III of this Final Report, an inability to access comprehensive claims and payer data presents significant challenges to this analysis. This is particularly true with respect to these specific requirements of Section 639f, which require conclusions about market share, prices, and total medical expense that are necessarily reliant on an analysis of comprehensive, statewide data from all health care payers. Below we discuss the conclusions we draw concerning the proposed affiliation based on available data concerning the two central elements of the requirements, market share and price.

Section 639f Requirements: Discussion

Market Share

In this CMIR, an examination of market share was provided on a statewide basis. Hartford HealthCare system is the 2nd largest health system in Connecticut, with 19.4% of total beds, 20.3% of hospital discharges, and 18.9% of NPSR. The proposed affiliation would increase Hartford HealthCare system modestly, increasing its share of NPSR to 19.9%, or by 1.0 percentage point. Simply put, this proposed affiliation will have very little effect on Hartford HealthCare's existing statewide market share. Figure 15: Statewide Market Share Impact of Proposed Affiliation, by Net Patient Service Revenue illustrates the increase in dominant market share for Hartford HealthCare system.

Figure 15: Statewide Market Share Impact of Proposed Affiliation, by Net Patient Service Revenue



Market dominance is ideally assessed for health care providers with respect to geographic areas, usually primary service areas (PSAs). With the data that was available for analysis in this report, DPH is not able to conduct a comprehensive analysis of structural market dominance within appropriately defined markets. In the circumstances, DPH declines to reach any conclusion about whether Hartford HealthCare has or is likely to have dominant market share. However, as noted above, the effect of this transaction itself on Hartford HealthCare's statewide market share is not considerable,

because Charlotte Hungerford's share of the statewide market is very small. Moreover, this proposed affiliation is not between current competitors that share a PSA and are consolidating market share within it.

In future CMIRs, a comprehensive and meaningful assessment of market share and market dominance would need to focus on defined markets – most likely PSAs – which are smaller and more relevant for hospitals.

Prices for Services

The evidence from several well-established sources indicates that it is realistic to expect that the proposed affiliation will lead to an increase in negotiated prices for services delivered by Charlotte Hungerford physicians and for inpatient and outpatient hospital services. Certain fundamental factors, however, point to a conclusion that the overall effect on spending will not be very significant. That is because negotiated price increases are anticipated for Charlotte Hungerford's commercial business; it is far less likely for prices to increase for its Medicaid and Medicare business and government business represents the large majority of Charlotte Hungerford's revenue base.

Following an affiliation of this type, hospitals and health system are more likely to negotiate higher prices with commercial payers. Price changes can happen for many reasons. New physicians join higher-priced physician groups. Physician and hospital have increased bargaining leverage. Facility fees are added when physician groups and their ancillaries are acquired by a hospital system. Finally, referral patterns (provider mix) change when physicians shift utilization to their higher priced new system.

It is very likely that prices will increase for commercial business, driven by a shift in Charlotte Hungerford's bargaining power. However, it is important to emphasize that the magnitude of any such price change would be small. Charlotte Hungerford's revenue base is over 75% derived from government sources and less than 25% from commercial payers. Consequently, any increase in prices at Charlotte Hungerford would be minimal given that government pricing is unlikely to fluctuate and commercial business is a small share of their overall revenue.

Moreover, Charlotte Hungerford comprises only 1.0% of statewide NPSR. To the degree that there is a change in prices at Charlotte Hungerford, less than 0.25% of statewide health care spending will be affected.[27]

The incremental price increase on commercial spending is unlikely to be as large as that found under mergers of large systems in highly consolidated markets, and the price increase is not likely to be as large as that found in true monopoly markets.[28]

With respect to Hartford HealthCare's benefit in terms of insurer bargaining leverage from the addition of the new hospital to its system, Charlotte Hungerford is very small, which makes it very unlikely that this would lead to much benefit in terms of prices in the short run. In the longer run, however, Hartford HealthCare has the potential to grow in this new geographic area of the state.

Health-Adjusted Total Medical Expenses

In this CMIR, an examination of total medical expenses, and health status adjusted TME, could not be provided.

As was previously discussed, provider consolidations or affiliations like this one can affect prices. In general, however, TME are influenced by changes in four primary factors: price, utilization, provider mix (meaning greater utilization of higher-cost providers), and service mix (meaning greater utilization of higher-cost services). Such changes might occur

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[27] This calculation is based on multiplying Charlotte Hungerford's current share of commercial revenue (25%) by Charlotte Hungerford's current share of the overall Connecticut market (1.0%), all in terms of its NPSR.

[28] Cooper, Z., Craig, S., Gaynor, M., Van Reenen, J., The *Price Ain't Right? Hospital Prices and Health Spending on the Privately Insured,* National Bureau of Economic Research Working Paper 21815 available at http://www.nber.org/papers/w21815

resulting from added facility fees when physician groups and their ancillaries are acquired by a hospital system, changes in referral patterns (provider mix) as Charlotte Hungerford physicians shift utilization to their higher priced new system.

It is unlikely that the referral patterns will change significantly, since most of Charlotte Hungerford's transfers from emergency departments and from inpatient acute beds to tertiary facilities already go to Hartford HealthCare. While there is reason to expect changes in transfer patterns after the affiliation, those changes will affect the minority of patients that are not already transferred to Hartford HealthCare.

Finally, with respect to the overall size and market share of Charlotte Hungerford, it is projected that it is very unlikely that this proposed affiliation would increase TME beyond a very small percent, if at all.

Overall, DPH recognizes that there are potentially positive and negative effects from the proposed affiliation. Charlotte Hungerford is a small and financially weak community hospital with significant challenges. The proposed affiliation is likely to provide it and its community with important support needed to continue providing services. Hartford HealthCare is a major system that will also benefit from the affiliation. Hartford HealthCare's relative strength in the market will increase, but not very substantially. The resulting entity will likely have leverage to increase prices at Charlotte Hungerford, but the share of commercially-negotiated prices at that hospital is minor and the associated influence on health care spending overall is likely negligible. Based on these findings, DPH declines to refer this report to the Attorney General pursuant to Section 639f.

Appendix

Table 23: Key Financial Performance Measures for Charlotte Hungerford Hospital and its Comparators

Fiscal Year (FY)	Charlotte Hungerford	Comparator Group with Charlotte Hungerford	Comparator Group without Charlotte Hungerford
Net Patient Service Revenue ($000)			
FY 2012	116,314	703,517	587,203
FY 2013	116,678	709,436	592,758
FY 2014	114,622	728,686	614,064
FY 2015	113,736	720,129	606,393
Growth Rate			
FY 2012-13	0.3%	0.8%	0.9%
FY 2013-14	-1.8%	2.7%	3.6%
FY 2014-15	-0.8%	-1.2%	-1.2%
Compound Annual Growth Rate (CAGR)	**-0.7%**	**0.8%**	**1.1%**
Operating Margin			
FY 2012	0.1%	-0.9%	-1.1%
FY 2013	*	-0.8%	-1.0%
FY 2014	0.1%	-0.8%	-1.0%
FY 2015	-1.2%	-3.5%	-3.9%

Note: * used to indicate that percent is less than .5%.

Table 24: Key Financial Performance Measures for Hartford HealthCare Corporation and its Comparators

Fiscal Year	Hartford HealthCare Corporation	Comparator Group With HHC	Comparator Group Without HHC
Net Patient Service Revenue ($000)			
FY 2012	1,879,748	5,097,919	3,218,171
FY 2013	1,906,243	5,664,917	3,758,674
FY 2014	2,271,219	6,517,200	4,245,981
FY 2015	2,239,380	6,855,887	4,616,507
Growth Rate			
FY 2012-13	1.4%	11.1%	16.8%
FY 2013-14	19.1%	15.0%	13.0%
FY 2014-15	-1.4%	5.2%	8.7%
Compound Annual Growth Rate (CAGR)	6.0%	10.4%	12.8%
Operating Margin			
FY 2012	2.7%	4.0%	4.7%
FY 2013	-1.4%	1.9%	4.0%
FY 2014	2.1%	3.6%	4.3%
FY 2015	1.2%	2.8%	3.6%
FY 2012-2015	1.1%	3.0%	4.1%

Table 25: Financial Performance Summary -Charlotte Hungerford Hospital and Its Comparator Hospitals (2012-2015)

Performance Measurement by Year	Charlotte Hungerford	Bristol Hospital and Health Care Group	Griffin Health Services	Sharon Hospital Holding Co.	Greater Waterbury Health Network, Inc.
Net Patient Service Revenue ($000)					
FY 2012	116,314	130,360	123,980	59,379	273,484
FY 2013	116,678	155,469	129,011	60,249	248,029
FY 2014	114,622	168,232	140,783	56,110	248,939
FY 2015	113,736	166,109	151,666	54,952	233,666
Total Operating Revenue ($000)					
FY 2012	122,049	167,295	147,409	59,862	286,712
FY 2013	124,928	162,121	144,870	60,678	260,452
FY 2014	122,156	176,068	153,577	57,316	260,472
FY 2015	120,546	172,427	166,682	55,886	245,068
Operating Income ($000)					
FY 2012	166	(98)	(7,389)	(20)	202
FY 2013	28	338	(4,485)	1,524	(3,485)
FY 2014	157	682	2,104	(1,410)	(7,978)
FY 2015	(1,433)	87	795	(2,869)	(22,985)
Operating Margin (at Hospital Level)					
FY 2012	0.1%	0.8%	-1.8%	5.9%	4.0%
FY 2013	0.02%	1.0%	1.6%	8.8%	1.6%
FY 2014	0.1%	0.7%	6.4%	5.8%	0.2%
FY 2015	-1.2%	0.4%	5.1%	0.8%	-5.9%
Current Ratio					
FY 2012	1.39	1.48	1.89	1.67	1.80
FY 2013	1.76	1.48	1.81	1.95	2.09
FY 2014	1.31	1.46	1.89	1.93	1.98
FY 2015	1.45	1.67	1.92	1.45	1.59
Days Cash on Hand (cash and cash equivalents only)					
FY 2012	31	30	131	0	40
FY 2013	27	39	111	1	45
FY 2014	23	41	114	0	114
FY 2015	18	46	106	2	35
Average Age of Plant (Years)					
FY 2012	17.6	16.6	14.9	8.1	25.0
FY 2013	18.6	17.0	15.5	9.6	27.1
FY 2014	19.7	17.5	16.9	12.1	31.4
FY 2015	20.4	17.2	21.7	-	33.7

Table 26: Financial Performance Summary for Hartford HealthCare Corporation and Its Comparator Hospital Systems (2012-2015)

Performance Measurement by Year	**Hartford HealthCare Corporation**	**Yale-New Haven Health Services Corporation**	**Western Connecticut Health Network**
Net Patient Service Revenue ($000)			
FY 2012	1,879,748	2,481,250	736,921
FY 2013	1,906,243	3,065,053	693,630
FY 2014	2,271,219	3,287,692	958,289
FY 2015	2,239,380	3,492,685	1,123,822
Total Operating Revenue ($000)			
FY 2012	2,147,286	2,563,077	766,829
FY 2013	2,128,288	3,165,941	712,509
FY 2014	2,481,582	3,394,686	990,544
FY 2015	2,446,595	3,602,280	1,157,439
Operating Income ($000)			
FY 2012	60,576	139,626	17,863
FY 2013	(34,769)	133,681	23,237
FY 2014	52,186	170,112	32,556
FY 2015	30,007	159,656	12,792
Operating Margin			
FY 2012	2.7%	5.4%	2.3%
FY 2013	-1.4%	4.1%	3.2%
FY 2014	2.1%	5.0%	2.5%
FY 2015	1.2%	4.4%	1.1%
Current Ratio			
FY 2012	1.94	2.26	2.54
FY 2013	1.76	3.00	1.94
FY 2014	2.05	2.97	1.68
FY 2015	1.81	2.94	1.71
Days Cash on Hand (cash and cash equivalents only)			
FY 2012	38	156	38
FY 2013	52	127	40
FY 2014	67	145	64
FY 2015	60	152	35
Average Age of Plant (Years)			
FY 2012	12.5	9.2	11.9
FY 2013	12.4	7.9	12.8
FY 2014	12.9	7.5	14.5
FY 2015	13.1	8.3	12.0

Note: NPSR data for FY 2013 for Harford HealthCare is based on DPH Report on Systems Operations.

Table 27: Audited Financial Statements (AFS) From DPH Website*

Name	Fiscal Years
The Charlotte Hungerford Hospital	2016/15, 2015/14, 2014/13, 2013/12, and 2012/11
Hartford HealthCare Corporation (HHC)	2016/15, 2015/14, 2014/13, 2013/12, and 2012/11
Hartford Hospital (part of HHC)	2014/13, 2013/12, and 2012/11
MidState Medical Center (part of HHC)	2014/13, 2013/12, and 2012/1
Hospital of Central Connecticut (part of HHC)	2014/13, 2013/12, and 2012/11
Backus Hospital (part of HHC)	2014/13, 2013/12, and 2012/11
Windham Hospital (part of HHC)	2014/13, 2013/12, and 2012/11
Bristol Hospital and Health Care Group	2016/15, 2015/14, 2014/13, and 2013/12
Griffin Health Services	2016/15, 2015/14, 2014/13, and 2013/12
Essent-Sharon Hospital	2015 ONLY, 2014/13, 2013/12, and 2012/11
Danbury Hospital and Subsidiary	2015/14, 2014/13, 2013/12, and 2012/11
The New Milford Hospital	2014/13, 2013/12, and 2012/11
The Waterbury Hospital and Subsidiary	2015/14, 2014/13, 2013/12, and 2012/11
Western Connecticut Health Network and Subsidiaries	2015/14, 2014/13, 2013/12, and 2012/11
Yale-New Haven Health Services Corporation	2015/14, 2014/13, 2013/12, and 2012/11
Yale-New Haven Hospital	2015/14, 2014/13, 2013/12, and 2012/11
John Dempsey Hospital (UConn)	2015/14, 2014/13, 2013/12, and 2012/11
St. Francis Hospital and Medical Center	2015/14, 2014/13, 2013/12, and 2012/11
Saint Mary's Hospital	2015/14, 2014/13, 2013/12, and 2012/11
Middlesex Health System and Subsidiaries	2015/14, 2014/13, 2013/12, and 2012/11
Norwalk Health Services Corporation	2013/12
Greenwich Health Care Services, Inc.	2013/12
Bridgeport Hospital and Subsidiaries	2013/12

Source: Department of Public Health. See link*:* http://www.ct.gov/dph/cwp/view.asp?a=3902&q=276986

Exhibit A: Responses to the Preliminary Report

Connecticut Department of Public Health

Cost and Market Impact Review of Hartford HealthCare Corporation's

Proposed Affiliation with

The Charlotte Hungerford Hospital

Docket No. 16-32135-CMIR

Pursuant to C.G.S. § 19a-639f

Preliminary Report

Preliminary Report Response

On Behalf of:

Hartford HealthCare Corporation

The Charlotte Hungerford Hospital

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I. Executive Summary

Hartford HealthCare Corporation ("HHC") and The Charlotte Hungerford Hospital ("TCHH" or "Charlotte Hungerford") (together, the "Parties") provide this joint response to the Department of Public Health ("DPH") Preliminary Report dated June 8, 2017. This response is organized in the following manner:

- Response to the Preliminary Report's specific findings regarding the proposed affiliation's impact on:
  - Market share and structural measures
  - Prices and bargaining power
  - Quality and quality measures
  - TCHH's ability to address identified health needs in the community

- Appendix of factual corrections or amendments to information presented in the Preliminary Report.

There are some data inaccuracies that may have influenced the findings and recommendations in the report in an unintended manner. This is particularly the case with regard to market shares of HHC. The findings, once corrected for data inaccuracies, demonstrate that the market share of HHC is only 19-20%, much less than the 27% in the Preliminary Report.

This correction is particularly important, because this lower share does not meet any definition of dominance that the Parties have been able to identify from antitrust agencies' healthcare guidance. Furthermore, neither does a share of 27% based on our review.

This response also provides greater clarification regarding potential "price" increases that the Report raises. In addition, "anticompetitive" concerns based on the findings in the Preliminary Report appear to be predicated on the application of certain economic literature on the potential price effects of consolidation even though the overall finding is that the net effect of the proposed affiliation is considered to be no material adverse effect. We recommend additional literature to provide a more inclusive view on the effects of consolidation.

Finally, this response provides additional detail and information on the quality initiatives and service enhancements that will be available to TCHH as a result of the proposed affiliation to address some potential gaps in the Preliminary Report.

II. Market Share and Structural Measures

A. Measures of Market Share

The Preliminary Report provides an assessment of market share of HHC and TCHH before and after the proposed affiliation. The Preliminary Report defines and calculates market share by measuring net patient service revenue (NPSR), available beds, and discharges. As highlighted in the attached Appendix, there are calculation and data inaccuracies in the Preliminary Report: the NPSR measure presented in the report uses an incorrect denominator; and the share based on discharges represents only Hartford Hospital, and not Hartford HealthCare Corporation's hospitals collectively.

Table 1 below has been calculated as an alternative to Table 7 in the Preliminary Report to provide a summary of the corrected share metrics for HHC, TCHH, and a combined HHC-TCHH affiliation. As a result of the corrections, regardless of the metric used, the market share for HHC in total is only 19-20%, considerably less than the 27% stated in the Preliminary Report. The recalculated discharge shares, which reflect the shares for all of HHC's hospitals, instead of only Hartford Hospital (which had been used as the measure in the Preliminary Report), are slightly higher, but now demonstrate the consistency in share across all three metrics. In addition, NPSR shares are measured using data from both Appendix A (system-level NPSR) and Appendix I (hospital-level NPSR) of the Financial Stability Report (FY2015), and the results are comparable for each.

These share measures are low, and do not support a conclusion or inference of dominance. Furthermore, for all metrics, the addition of TCHH to HHC increases HHC's total share by no more than 1.6 percentage points, with the combined share for the HHC-TCHH affiliation at 18.4% to 21.8%, depending on the metric used. In the Appendix, we present a full list of data corrections to the Preliminary Report.

Table 1: Market Share Metrics, 2015 – Corrected Table 7 in Preliminary Report

Data (2015)	*Hartford HealthCare without Charlotte Hungerford*	*Hartford HealthCare with Charlotte Hungerford*	*Statewide Figures (2015)*	*Market Share without Charlotte Hungerford*	*Market Share with Charlotte Hungerford*	*Difference in Market Share*
Beds	1,679	1,801	8,647	19.4%	20.8%	1.4%
Hospital Discharges	81,492	87,522	401,471	20.3%	21.8%	1.5%
NPSR - System-level ($000s)	2,239,380	2,353,116	11,846,155	18.9%	19.9%	1.0%
NPSR - Hospital-level ($000s)	1,895,108	2,008,844	10,304,993	18.4%	19.5%	1.1%

Source: Financial Stability Report (FY2015) Appendix A (System-level NPSR), Appendix I (Hospital-level NPSR), and Appendix S (Beds and Discharges).

The Preliminary Report weights the value of the NPSR-based measure for share more heavily than shares based on discharges or beds.[1] We note however, that other anti-trust agencies, in

[1] Based upon Conclusion, Table 22, and Figure 15 in the Preliminary Report, which use NPSR as the sole metric when describing market share. "Cost and Market Impact Review of Hartford HealthCare's Proposed Affiliation with The Charlotte Hungerford Hospital, Preliminary Report," Connecticut Department of Public Health, June 8, 2017, p. 55.

reviewing transactions, have more commonly used discharges as a measure of share for inpatient services or in some instances, beds.[2] NPSR reflects the overall size of a health system, and may be consistent with measures based on discharges and/or beds. Absent any principled basis for relying predominantly on NPSR for market share assessment – particularly where shares substantially vary based on NPSR rather than for discharges, and without a specific reference to define dominance – we recommend that the CMIR report all three measures to provide a balanced and objective approach.

B. Definitions of Dominant Market Share

The Preliminary Report identifies HHC hospitals as having an "existing dominant market share."[3] This conclusion about dominant market share is based on a calculated share of 27% using NPSR. Since the Preliminary Report has not provided any definition of what constitutes a dominant market share, it is unknown how this conclusion occurred. Thus, in this section, we seek to substantiate a definition of "dominance"

In guidelines and other merger reviews in healthcare, threshold levels for "dominance" are well above a 27% market share. For example, the Massachusetts Health Policy Commission defines dominant market share for inpatient general acute care services as 40% of the commercial discharges in one or more of its hospitals' primary service areas, and has applied these standards in its CMIR review.[4] The Federal Trade Commission (FTC) and Department of Justice (DOJ) developed antitrust guidance for hospitals (or hospital systems) participating in accountable care organizations (ACOs). Under these guidelines, the definition of dominance is "a greater than 50

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[2] When estimating market share for screening purposes, other agencies have used market shares based on inpatient discharges within a geographic area for the hospital. For example, the Federal Trade Commission and Department of Justice, "Statement of antitrust enforcement policy regarding accountable care organizations participating in the Medicare shared savings program," *Fed Regist* 76, no. 209 (2011): 67026-67032, available at https://www.justice.gov/sites/default/files/atr/legacy/2014/05/30/279568.pdf (accessed July 2017), states, "for inpatient services, the ACO should calculate its shares of inpatient discharges, using state-level all-payer hospital discharge data where available, for the most recent calendar year for which data are available." As another example, the Massachusetts Health Policy Commission has used the share of hospital commercial discharges to determine hospital market share in several CMIRs. See "Review of Lahey Health System's Proposed Acquisition of Winchester Hospital (HPC-CMIR-2013-3)," Commonwealth of Massachusetts Health Policy Commission, May 22, 2014, http://www.mass.gov/anf/docs/hpc/material-change-notices/20140522-final-cmir-report-lhs-wh.pdf, p. 18. "Review of Partners HealthCare Systems' Proposed Acquisitions of South Shore Hospital (HPC-CMIR-2013-1) and Harbor Medical Associates (HPC-CMIR-2013-2)," Commonwealth of Massachusetts Health Policy Commission, February 19, 2014, http://www.mass.gov/anf/docs/hpc/20140219-final-cmir-report-phs-ssh-hmc.pdf, p. 39. See "HPC-CMIR-2013-4: Partners HealthCare System, Inc. and Hallmark Health Corporation," "HPC-CMIR-2015-1: Beth Israel Deaconess Care Organization, New England Baptist Hospital, and New England Baptist Clinical Integration Organization," and "HPC-CMIR-2015-2: Beth Israel Deaconess Care Organization and MetroWest Medical Center," http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/material-change-notices-cost-and-market-impact-reviews/hpc-cost-and-market-impact-reviews.html.

[3] "Cost and Market Impact Review of Hartford HealthCare's Proposed Affiliation with The Charlotte Hungerford Hospital, Preliminary Report," Connecticut Department of Public Health, June 8, 2017, p. 55.

[4] "Dominant Market Share. A Provider's share of Health Care Services, including but not limited to inpatient services, outpatient services, or professional services, in such Provider's service area that is of significant importance to Payer networks. For inpatient general acute care services, a Provider or Provider Organization has Dominant Market Share if it has 40% of the commercial discharges in one or more of its hospitals' Primary Service Areas. For other services, thresholds for Dominant Market Share may be set forth in a Technical Bulletin, as determined by the Commission based on best available data." 958 Code of Massachusetts Regulations (CMR) 7.02, available at http://www.mass.gov/anf/docs/hpc/regs-and-notices/consolidated-regulations-circ.pdf.

percent share in its primary service area (PSA) of any service that no other ACO participant provides to patients in that PSA."[5] The FTC/DOJ defines a "safety zone" for cases where independent ACO participants that provide a common service "have a combined share of 30 percent or less of each common service" in the PSA.[6]

Corrected measures of share for HHC hospitals are approximately 19-20% based on the data we provide in Section III.A, which is well below any of these threshold measures identified above by other agencies. In the geographic area as defined in the Preliminary Report, HHC hospitals would not be close to having a dominant market share when measured in hospital discharges, NPSR, or beds. Moreover, as shown in Table 1 above, the addition of TCHH to HHC insignificantly increases the combined market share.

[5] Federal Trade Commission and Department of Justice, "Statement of antitrust enforcement policy regarding accountable care organizations participating in the Medicare shared savings program," *Fed Regist* 76, no. 209 (2011): 67026-67032, available at https://www.justice.gov/sites/default/files/atr/legacy/2014/05/30/279568.pdf (accessed July 2017). Shares are defined based on discharge data for inpatient services.

[6] "For an ACO to fall within the safety zone, independent ACO participants that provide the same service (a 'common service') must have a combined share of 30 percent or less of each common service in each participant's PSA, wherever two or more ACO participants provide that service to patients from that PSA." Federal Trade Commission and Department of Justice, "Statement of antitrust enforcement policy regarding accountable care organizations participating in the Medicare shared savings program," *Fed Regist* 76, no. 209 (2011): 67026-67032, available at https://www.justice.gov/sites/default/files/atr/legacy/2014/05/30/279568.pdf (accessed July 2017).

III. Pricing and Bargaining Power Effects

A. Overview

As is recognized in the Preliminary Report, Charlotte Hungerford's business currently is and will likely remain predominantly government payor based.

> "Certain fundamental factors, however, point to a conclusion that the overall effect on spending will not be very significant. That is because *negotiated price increases* are anticipated for Charlotte Hungerford's commercial business; it is far less likely for prices to increase for its Medicaid and Medicare business and government business represents the large majority of Charlotte Hungerford's revenue base."[7] [Emphasis added]

> "*It is very likely that prices will increase for commercial business, driven by a shift in Charlotte Hungerford's bargaining power.* However, it is important to emphasize that the magnitude of any such price change would be small. Charlotte Hungerford's revenue base is over 75% derived from government sources and less than 25% from commercial payers. Consequently, any increase in prices at Charlotte Hungerford would be minimal given that government pricing is unlikely to fluctuate and commercial business is a small share of their overall revenue."[8] [Emphasis added]

In reaching its conclusions about the prospect of changes in negotiated prices for the relatively small book of commercial business of TCHH, the Preliminary Report assumes significant changes in TCHH's prices merely due to the occurrence of the affiliation by assuming a "shift" or increase in its bargaining power in payor negotiations. No substantive proof is provided to support this conclusion other than the general literature and broad testimony about mergers and consolidation in the healthcare industry. An objective approach is to expand the scope of articles cited to include some recent research that addresses the benefits and cost savings from mergers and transactions and literature contemporaneous with that cited in the Preliminary Report that provides a balancing view on the effects of consolidation on price. The Preliminary Report also cites factors that could result in price changes and price increases for competitively benign reasons such as changes in referral patterns by stating:

> "Based on the testimony of economist Paul Ginsberg of the Brookings Institution, 'Health care markets are becoming more consolidated, causing price increases for purchasers of health services, and this trend will continue for the foreseeable future despite anti-trust enforcement.' *The transacting parties testified that this affiliation would not increase prices for Charlotte Hungerford hospital. OHCA should closely monitor prices for the parties post affiliation to determine whether that proves accurate.*"[9] [Emphasis added.]

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[7] "Cost and Market Impact Review of Hartford HealthCare's Proposed Affiliation with The Charlotte Hungerford Hospital, Preliminary Report," Connecticut Department of Public Health, June 8, 2017, p. 56.
[8] "Cost and Market Impact Review of Hartford HealthCare's Proposed Affiliation with The Charlotte Hungerford Hospital, Preliminary Report," Connecticut Department of Public Health, June 8, 2017, p. 56.
[9] "Cost and Market Impact Review of Hartford HealthCare's Proposed Affiliation with The Charlotte Hungerford Hospital, Preliminary Report," Connecticut Department of Public Health, June 8, 2017, p. 27.

> "Following an affiliation of this type, hospitals and health system are more likely to negotiate higher prices with commercial payers. Price changes can happen for many reasons, including new physicians join higher-priced physician groups, physician and hospital have increased bargaining leverage, facility fees are added when physician groups and their ancillaries are acquired by a hospital system, and referral patterns (provider mix) change when physicians shift utilization to their higher priced new system."[10]

B. Clarification on "Price" Increases

As a starting point, we seek to clarify the nature of the Preliminary Report's comments on price increases and particularly its comment with regard to that "this affiliation would not increase prices for Charlotte Hungerford hospital." Specifically we aim to verify that the Report is concerned only about anticompetitive price increases or increased bargaining power from mergers, as opposed to price increases driven by other factors (e.g., medical inflation, supplier increases). We assume that the Report would not include in its assessment any "price increases" due to post-merger adjustments, such as outside cost factors, realignment, or efficiencies after the merger. Hospitals and healthcare systems generally face many sources of cost inflation, including pharmaceuticals, labor, and operating costs to name just a few. These are all potential sources of cost changes that a hospital would seek to adjust revenues to some extent in order to operate efficiently and sustain services, and that may require some modest inflation adjustment.

Through Pre-Filed Testimony filed with OHCA, Charles L. Johnson, III, HHC's Chief Financial Officer, stated as follows:

> "[A]s was stated at page 36 of our CON Application, there are no plans to change Charlotte Hungerford's price structure or impose additional facility fees as a part of this proposal. In addition, the proposal is not expected to adversely affect patient healthcare costs…. We of course did not include in our forecast going forward any such increases beyond normal inflationary type increases….
>
> "[O]ur projections indicate that Charlotte Hungerford's Cost per Case Mix Adjusted Equivalent Discharge will improve over time, as new volumes are added. While costs per case will remain relatively flat in FY 2017 and FY 2018, at $5,946 and $5,964, respectively, we anticipate a decrease of approximately 3% to $5,789 in FY 2018."

Docket No. 16-32135-CON, May 1, 2017, Record at page 508.

HHC and TCHH also addressed these specific concerns in their initial CMIR Response previously filed with OHCA, and indicated that any such changes would likely be limited and consistent with the normal course of business. For convenience, we include them here again in a form to be directly responsive to the concerns:

[10] "Cost and Market Impact Review of Hartford HealthCare's Proposed Affiliation with The Charlotte Hungerford Hospital, Preliminary Report," Connecticut Department of Public Health, June 8, 2017, p. 56.

> "Based on analyses and review of materials, anticipated unit prices after the transaction are likely to remain consistent with current levels and in line with overall economic and financial conditions. There are several factors that support that conclusion, including assumptions used in projections about the proposed transaction; and the prospect of downward pressure on prices and spending from opportunity for efficiency and cost improvements, and improved access and quality of care."[11]

> "Based on information from the Parties, the assumptions used in the CON application to project the expected revenues and other financial projections – e.g., the FY 2018 and FY 2019 projections included with the certificate of need -- did not assume any changes outside the "normal course of business" as a result of the proposed transaction. These also are consistent with an expectation of unit prices remaining consistent with overall trends. Changes with respect to revenues and expenses were based on inflation assumptions that Hartford Healthcare would expect to experience for FY 2018 and FY 2019 with or without the proposed transaction. Request #5 also asks for changes that could affect spending or unit prices, including changes in payer mix, service offerings, or other shifts and changes. The projections underlying the CON application contemplate no changes from the base year payer mix of FY 2017 for FY 2018 or FY 2019. A base year payer mix for TCHH is provided in the data reported in Section II for TCHH as well as for its comparator hospitals."[12]

In addition, it is not anticipated that there would be substantial shifts in referrals or in patient mix of the type addressed in the Preliminary Report that would result in significant changes from current levels. Any changes that may occur are likely ones that would benefit patients (both commercial and government pay) from enhanced access to services and quality of care.[13]

> "There are some changes contemplated in the projections related to the transaction that are consistent with overall hospital experience with regard to some continued shifts in patient mix from inpatient to outpatient… With regard to assumptions, Hartford HealthCare included in each year FY 2018 and FY 2019 a projected shift of activity from inpatient to outpatient of 1% each year. Hartford HealthCare has also projected some change in patient/service mix with an increase in activity in four of its areas of focus

[11] "Hartford HealthCare / The Charlotte Hungerford Hospital Cost and Market Impact Review Summary Analysis and Response," Section V, page 11 (filed Jan. 18, 2017).

[12] "Hartford HealthCare / The Charlotte Hungerford Hospital Cost and Market Impact Review Summary Analysis and Response," Section V, page 12 (filed Jan. 18, 2017).

[13] "Particularly relevant factors supporting the conclusion that overall costs of health care spending are likely to remain stable if not improve are the benefits that the transaction brings to TCHH and its community members. These benefits derive from the availability and impact of the HHC's model of high quality care delivery. This model, which is further detailed in the attached Appendix at Section IX, is structured and centrally focused to provide a fully integrated health system that is patient centric, providing coordinated care that involves a clinically integrated network aligning the needed set of providers around patient care. HHC is organized around a clinically integrated network, Integrated Care Partners, which is charged with improving the health of communities and providing value to consumers. HHC encompasses an integrated delivery system organized into three regions and includes an academic medical center, five community hospitals, a large physician enterprise, home care, rehabilitation, senior services, and the state's largest behavioral health network. All of these work together to provide the results and efficiencies set forth in Section IX of the Appendix, including improved care, outcomes, and impact on total cost of care." "Hartford HealthCare / The Charlotte Hungerford Hospital Cost and Market Impact Review Summary Analysis and Response," Section V, page 13 (filed Jan. 18, 2017).

(Cardiovascular, Orthopedics, Neurosciences and Cancer). The inpatient discharges projected for FY 2018 and FY 2019 are 1,259 and 700 respectively. The outpatient surgeries related to the four areas of focus are anticipated to increase by approximately 1,400 in each fiscal year of FY 2018 and FY 2019."[14]

"Information provided by the Parties does not appear to project any substantial change in referral or patient or service mix patterns at TCHH. It appears likely that by assuring the stability of the hospital through this transaction, and making possible the quality and other improvements including to costs, that there will be continued or improved access locally to services offered currently at TCHH. There is some prospect that additional steps to provide for physicians and supporting care could lead to some expanded ability to serve patients locally."[15]

C. Competition Concerns

We note that the Preliminary Report's stated concerns about the potential for increased bargaining power and anticompetitively increased pricing at TCHH draws heavily from its summary of the academic literature and FTC statements about the effects of consolidations.[16]

While we note that this research about hospital merger effects is oft-cited, the extensive literature and testimony on hospital mergers includes broader views that we believe warrant consideration for inclusion about the overall effects of hospital mergers on pricing, costs, and efficiencies. Some of this literature includes a broader overview of hospital transactions and their effects, including testimony by a former FTC Chairman. Their inclusion would provide a balanced and more objective perspective in the Preliminary Report.

The vast majority of hospital mergers are not challenged by the agencies: FTC Chairman Leibowitz stated: "Let me pause here lest you get the impression that we never see a hospital merger we like. These are rough numbers, but according to public sources, 2007 to 2011 witnessed approximately 333 hospital mergers nationwide. About one third of those, approximately 111, were reported to the FTC under Hart-Scott-Rodino. Of those, approximately one tenth triggered Second Requests. We challenged only four in court – less than two percent of all hospital mergers over the last five years." Jon Leibowitz, Chairman, Federal Trade Commission, *Are Titanic Health Care Costs Sinking*

[14] "Hartford HealthCare / The Charlotte Hungerford Hospital Cost and Market Impact Review Summary Analysis and Response," Section V, pages 12-13 (filed Jan. 18, 2017).

[15] "Hartford HealthCare / The Charlotte Hungerford Hospital Cost and Market Impact Review Summary Analysis and Response," Section V, page 13 (filed Jan. 18, 2017).

[16] For example, the Preliminary Report notes, "Charlotte Hungerford, currently an independent community hospital with its own insurer contracts, will negotiate commercial insurer contracts for both hospital and affiliated physician reimbursement with Hartford HealthCare. Hartford HealthCare is a much larger provider with significantly greater bargaining power in such negotiations than Charlotte Hungerford. In other words, for commercial insurance contracts negotiated by or on behalf of Charlotte Hungerford, the affiliation will lead to a shift in bargaining power in favor of Charlotte Hungerford. That increased bargaining power can lead to higher negotiated prices is both a fairly intuitive conclusion and a proposition that has been, particularly over the last decade, confirmed by a wide range of health services researchers and health economists." "Cost and Market Impact Review of Hartford HealthCare's Proposed Affiliation with The Charlotte Hungerford Hospital, Preliminary Report," Connecticut Department of Public Health, June 8, 2017, p. 33.

Us? What the FTC is Doing to Keep Patients Afloat, Remarks at the ANTITRUST IN HEALTHCARE CONFERENCE, American Bar Association/American Health Lawyers Association, Arlington, VA (May 3, 2012) available online at http://www.ftc.gov/speeches/leibowitz/120503antitrusthealthcare.pdf.

The literature on the price effects of mergers includes studies that show no significant correlation between increased concentration and increased prices: Using 1999-2005 data, authors find that changes in hospital market concentration were not correlated with increases in price. Akosa Antwi, Yaa, Martin S. Gaynor, and William B. Vogt. "A bargain at twice the price? California hospital prices in the new millennium." Forum for Health Economics & Policy, vol. 12, no. 1. 2009.

Newer research on recent mergers (2009-2014 transactions) supports that mergers can lead to reductions in operating expense and net patient revenue per admission. Noether, Monica, and Sean May. "Hospital Merger Benefits: Views from Hospital Leaders and Econometric Analysis." (2017)

Other research on actual mergers found empirical evidence of cost savings from mergers: David Dranove and Richard Lindrooth, *Hospital Consolidation and Costs: Another Look at the Evidence*, 22 JOURNAL OF HEALTH ECONOMICS 6 (2003):983-97.

Consolidation facilitates integrated delivery systems, which can lead to increased quality of care and reduced utilization, associated with improved costs. Hwang, Wenke, Jongwha Chang, Michelle LaClair, and Harold Paz. "Effects of integrated delivery system on cost and quality." American Journal of Managed Care 19, no. 5 (2013): e175-84.

A study conducted by Truven of hospital systems showed that system affiliation provides small and medium hospitals access to resources, and hospitals that are part of a system demonstrated superior performance on the studied metrics, with the potential for improved patient care and outcomes, compared to independent hospitals of the same size. Castellucci, Maria. 2017. "Hospitals in systems fare better in value-based climate versus their independent peers." Modern Healthcare 47, no. 23: S002.

The Preliminary Report accords important weight to TCHH's status as a smaller hospital facing substantial financial and other challenges, and should focus heavily on the benefits of this affiliation, absence of public concerns, and to the likelihood of improving overall costs and quality.

IV. Quality Measures

The assessment of quality of care at TCHH and HHC hospitals is based on two sources primarily – Leapfrog and very limited use of CMS' Hospital Compare star-rating. As noted in the preliminary report, HHC and its affiliated hospitals did not participate in the Leapfrog hospital survey. Therefore information about quality performance in the Preliminary Report for HHC is limited to results published in CMS hospital compare. In addition, there is a significant data lag for CMS and Leapfrog data of 3-5 years. Current efforts to advance quality at HHC have accelerated during the past two years.

HHC has a robust quality program as described in HHC's Response to Request for Information to Transacting Parties beginning on page 156. As described in the response to the Request for Information, the quality program at HHC consists of 40 clinical quality councils and disease management teams within key clinical institutes as well as several health system wide quality collaboratives all of which drive high quality at HHC hospitals. Each council is supported by quality analysts with a quality dashboard utilizing embedded support from informatics to enhance the use of the Electronic Health Record, and from supply chain to assist the council in achieving cost savings.

HHC plans to make additional investments that will have significant benefits for quality at TCHH. The potential immediate quality benefits to TCHH resulting from the affiliation with HHC include:

- A focus on harm reduction with the development of a culture of high reliability. All physicians and staff members are educated in the principles of high reliability organizations and the frequency of "serious safety events" (episodes of medically induced harm) is tracked. The serious safety event rate has dropped 73% over the past 3 years in all HHC hospitals.
- Participation in national registries to support benchmarking and provide tools to support best practice implementation [e.g. National Surgical Quality Improvement Program (NSQIP) and National Database of Nursing Quality Indicators (NDNQI)]. Current access to these tools is financially unattainable for TCHH at this time. Two HHC hospitals (Hartford and Backus) have achieved national top decile NSQIP recognition – the other hospitals have performance improvement plans to reach that level of excellence.
- Data analytics to support timely access to information and risk adjustment for clinical indicators (mortality, readmissions, Hospital Acquired Conditions, Patient Safety Indicators). Current capacity does not permit real-time analysis of these data. Using data, HHC system clinical councils and quality collaboratives have been successful in reducing hospital mortality as well as adverse hospital acquired conditions such as post-op blood clots, falls with injury, pressure ulcers and urinary tract infections.
- Expanded organizational knowledge of process improvement methodologies and techniques including data interpretation, analysis and presentation, benchmarking and goal setting, use of Lean and PDCA-S methods (Plan, Do, Check, Act, Sustain/Share).
- Enhanced and standardized communication regarding clinical quality and safety matters with key stakeholders (administrative leadership, medical staff and other clinical leadership, front-line staff, patients, community leaders, etc.).
- Expanded participation in learning/improvement collaboratives (e.g. via Connecticut

Hospital Association (CHA) and other professional entities).

- Continued and enhanced current work on deploying tactics of high reliability; and supporting/ monitoring the adoption of safety behaviors.
- Continued development/enhancement of a "continuous readiness" mindset and infrastructure (regulatory, accreditation, certification, etc.).
- Participation in clinical councils on a system wide basis to support standardization of care and best practice development.

New research shows that system affiliation may be able to provide small and medium hospitals access to resources, including staff, which enables performance improvement. A new study using Truven data found that affiliation with a system for small- or mid-sized hospitals results in improved quality of care and outcomes when compared to independent hospitals of the same size.[17] Other research, exploring recent mergers occurring between 2009 and 2014, shows that mergers can be associated with reductions in operating expense and net patient revenue per admission, suggesting that consolidation yields benefits.[18]

The shift to value-based care requires considerable resources along with a robust technology infrastructure and a sophisticated approach to data analytics. These essential requirements for success under the value-based model are out of reach for small independent hospitals. In addition, all providers face increasing pressure from declining payment for services. Declining payment streams and the increasing resource requirements for success under value-based payment models has made it very difficult for small community hospitals to remain independent.

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[17] Castellucci, Maria. 2017. "Hospitals in systems fare better in value-based climate versus their independent peers." *Modern Healthcare* 47, no. 23: S002.

[18] Noether, Monica, and Sean May. "Hospital Merger Benefits: Views from Hospital Leaders and Econometric Analysis." (2017).

V. Ability to Address Identified Health Needs in the Community

A principal finding articulated in the Preliminary Report is that the proposed affiliation has the potential to improve the community's ability to address many of the health needs identified in the Community Health Needs Assessment (CHNA).[19] The Parties agree that the proposed affiliation is necessary to preserve access to essential health services and to allow TCHH to continue to address and improve the health status of the communities served.

As described in the Certificate of Need application, the CHNA reported that similar to the rest of the state and the nation, chronic conditions such as heart disease, cancer, stroke, and chronic lower respiratory disease rank among the leading causes of death in the region. The CHNA report also found that the prevalence of obesity has increased in Northwest Connecticut during the past decade, along with an increase in binge drinking among adults and adolescents. Related to the latter, the region experienced an increase in emergency department visits for alcohol and other substance use disorders and, like Connecticut as a whole, deaths from prescription pain killers and heroin have increased. Prescription drug misuse and overdose were identified as emerging public health challenges and leading causes of injury and/or death.

As a whole, the data reported in the CHNA indicates that the target population for this proposal will continue to require the essential health care services that TCHH has historically provided. This is especially true for the growing aged population in the service area.

The intended programmatic enhancements described in Section 5.4 of the Parties' Affiliation Agreement support the TCHH Community Health Improvement Plan (CHIP) by enhancing and expanding specialty services in the community to address many of the identified health needs. Through an affiliation with HHC, TCHH and the communities it serves will benefit from enhanced access to primary and specialty care services and the ability to attract and retain talented physicians to the community. Specific service enhancements envisioned include:

- Establishment of an extensive primary care and ambulatory care network.
- Participation in population health initiatives undertaken by HHC.
- Creation of a Geriatric Medicine Institute at TCHH and the establishment in the Northwest Region of a new site for the "Center for Healthy Aging."
- Enhancement of the delivery of cardiac care at TCHH and for the Northwest Region with local specialists, to include an integrated congestive heart failure program and on-site electrophysiology.
- Implementation of a gastrointestinal and digestive diseases program for the Northwest Region in coordination with statewide programs developed by HHC.
- Implementation of an orthopedic program for the Northwest Region in coordination with statewide programs developed by HHC.
- Implementation of a behavioral health network for the Northwest Region, including capabilities in the care and treatment of dementia and related diseases, in coordination

[19] "The proposed affiliation has the potential to improve the community's ability to address several needs including many needs identified in the Community Health Needs Assessment." "Cost and Market Impact Review of Hartford HealthCare's Proposed Affiliation with The Charlotte Hungerford Hospital, Preliminary Report," Connecticut Department of Public Health, June 8, 2017, p. 43.

with statewide programs developed by HHC.

- Development of a woman's health program, including access to uro-gynecological specialists and nationally-recognized reconstructive and breast surgeons.
- Inclusion in HHC's state-wide telehealth network.
- Expanded participation in HHC's Maternal and Fetal Medicine Program including local access to perinatologists.
- Expansion of neurology and neurosciences service lines by building upon the existing telestroke program and establishing practice clinics in the Northwest Region, including a pain management satellite location in Torrington, Connecticut or another appropriate location determined by the Northwest Region Board.
- Maintenance of clinical relationship with Connecticut Children's Medical Center for pediatric patients in need of complex care.
- Extension of the HHC Medical Group Centers for Weight Loss Surgery program to the Northwest Region, to provide clinical care, nutrition support services, and education sessions to bariatric surgery patients in the Northwest Region.

The service enhancements described above will allow TCHH to continue to improve the health status of the communities it serves, and provide TCHH with the necessary resources to address the professional shortages identified in the Northwest region, especially in the areas of primary care and behavioral health. Moreover, this proposal will allow TCHH to participate in care coordination and population health management best practices of HHC providers to raise the quality of care, improve its cost-effectiveness and increase patient satisfaction in keeping with the "Triple Aim" of healthcare reform.

In addition, two specific commitments detailed in the affiliation agreement which will directly improve TCHH's ability to execute their community health improvement plan are 1) a repetitive $100,000 transformation grant for five years to fund the "Fit Together" program and 2) the $2.5 million grant to the Community Foundation to fund local community health improvement initiatives. In addition to service expansion, these commitments can change the health of a population and influence the lifestyle choices of the community at large.

Connecticut Department of Public Health

Cost and Market Impact Review of Hartford HealthCare Corporation's

Proposed Affiliation with

The Charlotte Hungerford Hospital

Docket No. 16-32135-CMIR

Pursuant to C.G.S. § 19a-639f

Preliminary Report

Appendix to the Preliminary Report
Response

On Behalf of:

Hartford HealthCare Corporation

The Charlotte Hungerford Hospital

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I. Supplemental Tables

A. Introduction

In the Preliminary Report, net patient service revenue (NPSR) is used as one of three measures to determine HHC's market share. However, the estimates in the Preliminary Report use the incorrect statewide NPSR total in the denominator. Specifically, the Preliminary Report states the value of $8,593,230,174 for Total Statewide Net Patient Revenue FY2015, but this value is not the total featured in neither the Financial Stability Report Appendix A (FY 2015 Hospital Health System Statement of Operations Data) nor Financial Stability Report Appendix I (FY 2015 Hospital Statement of Operations Data).

In the Preliminary Report, the numerator for the NPSR share estimate is taken from different sources. For TCHH and its comparators, the Preliminary Report authors use two different numerators for the hospital's or health system's NPSR share. For health systems (HHC and Yale-New Haven Health System [Y-NHHS]), the NPSR amounts are taken from Appendix A: FY 2015 Hospital Health System: Statement of Operations Data of the Financial Stability Report (FY 2015). For individual hospitals, the NPSR values used are from Appendix I: FY 2015 Hospital Statement of Operations Data of the Financial Stability Report (FY2015). Within each Appendix, the "statewide total," which is the denominator for the NPSR share metric, differs. For consistently and inclusiveness, we reproduce two versions of the share tables below using the values found in both appendices. The correct estimates for HHC's market share using the NPSR share metric are lower than the value listed in the report by approximately 8 percentage points.

Additionally, another share metric, the discharge share, is calculated incorrectly in the Preliminary Report because the authors inadvertently use the discharges of only Hartford Hospital, not HHC (i.e., the system) to calculate HHC's market share in Connecticut. This correction increases HHC's market share to a level more commensurate with the NPSR and available beds metrics.

In this section, we present share tables for the three metrics used in the Preliminary Report to estimate market share: discharges (all payers and commercial), NPSR (hospital-level and system-level), and available beds. For our discharge share calculations, we use CHIME Decision Support FY2015 data, which are hospital discharge data, instead of the Financial Stability Report, as used in the Preliminary Report, to provide the DPH with additional data not captured in the Preliminary Report. For NPSR and available bed shares, we use data from the appendices in the Financial Stability Reports.

In the remainder of the Appendix Sections, we offer data clarifications and corrections to text, tables, and figures from the Preliminary Report.

B. Exhibit 1: Discharge Shares for All Payors and All Zip Codes – Inpatient, FY2015

System	Hospital	Discharges	Share
Total		**699,444**	**100%**
Yale New Haven Health System		213,204	30.5%
	Yale New Haven	143,252	
	Bridgeport	35,640	
	L+M	24,096	
	Greenwich	10,216	
Hartford Healthcare		145,720	20.8%
	Hartford	77,758	
	HOCC	27,158	
	Backus	19,144	
	MidState	16,318	
	Windham	5,342	
Trinity Health		83,554	11.9%
	Saint Francis	56,662	
	Saint Mary's	21,448	
	Johnson Memorial	5,444	
Western Connecticut Health Network		56,832	8.1%
	Danbury	34,414	
	Norwalk	22,418	
Prospect Medical Holdings, Inc.		39,762	5.7%
	Waterbury	20,964	
	Manchester	14,688	
	Rockville	4,110	
Ascension Health		34,074	4.9%
	St. Vincent's	34,074	
Stamford		23,760	3.4%
	Stamford	23,760	
Middlesex		23,746	3.4%
	Middlesex	23,746	
Dempsey		16,580	2.4%
	Dempsey	16,580	
Bristol		13,020	1.9%
	Bristol	13,020	
Griffin		12,466	1.8%
	Griffin	12,466	
CT Children's		11,984	1.7%
	CT Children's	11,984	
Charlotte Hungerford Hospital		11,002	1.6%
	Hungerford	11,002	
Day Kimball		7,622	1.1%
	Day Kimball	7,622	
Milford		6,118	0.9%
	Milford	6,118	

Source: CHIME Decision Support FY2015

C. Exhibit 2: Discharge Shares for Commercial and All Zip Codes – Inpatient, FY2015

System	Hospital	Discharges	Share
Total		**96,046**	**94%**
Yale New Haven Health System		31,502	32.8%
	Yale New Haven	22,673	
	Bridgeport	4,332	
	L+M	2,472	
	Greenwich	2,025	
Hartford Healthcare		19,007	19.8%
	Hartford	11,270	
	HOCC	3,176	
	Backus	2,261	
	MidState	1,843	
	Windham	457	
Trinity Health		9,813	10.2%
	Saint Francis	7,027	
	Saint Mary's	2,154	
	Johnson Memorial	632	
Western Connecticut Health Network		9,473	9.9%
	Danbury	6,131	
	Norwalk	3,342	
Prospect Medical Holdings, Inc.		4,820	5.0%
	Waterbury	2,295	
	Manchester	2,146	
	Rockville	379	
Ascension Health		4,401	4.6%
	St. Vincent's	4,401	
Stamford		3,841	
	Stamford	3,841	
Middlesex		3,120	3.2%
	Middlesex	3,120	
CT Children's		2,491	2.6%
	CT Children's	2,491	
Dempsey		2,111	2.2%
	Dempsey	2,111	
Griffin		1,500	1.6%
	Griffin	1,500	
Bristol		1,423	1.5%
	Bristol	1,423	
Charlotte Hungerford Hospital		1,066	1.1%
	Hungerford	1,066	
Milford		790	0.8%
	Milford	790	
Day Kimball		688	0.7%
	Day Kimball	688	

Source: CHIME Decision Support FY2015

D. Exhibit 3: NPSR Share Calculated Using Financial Stability Report, Appendix A (System-Level), FY2015

System	Net Patient Revenue	Share
Total	**$ 11,846,155,228**	**100%**
Yale - New Haven Health Services Corp.	$ 3,492,685,000	29.5%
Hartford Healthcare Corporation	$ 2,239,380,000	18.9%
Western CT Health Network, Inc.	$ 1,123,822,000	9.5%
Trinity Health - New England, Inc.	$ 772,752,000	6.5%
Stamford Health Inc.	$ 521,110,947	4.4%
University of CT Health Center	$ 512,960,175	4.3%
St. Vincent's Health Services Corp.	$ 442,387,000	3.7%
Lawrence + Memorial Corporation	$ 438,782,073	3.7%
Middlesex Health System, Inc.	$ 377,006,000	3.2%
CCMC Corporation Inc.	$ 341,250,390	2.9%
Eastern CT Health Network Inc.	$ 297,145,105	2.5%
St. Mary's Health System, Inc.	$ 285,389,000	2.4%
Greater Waterbury Health Network, Inc.	$ 233,666,461	2.0%
Bristol Hospital & Healthcare Group	$ 166,109,451	1.4%
Griffin Health Services Corporation	$ 151,665,668	1.3%
Day Kimball Healthcare Inc.	$ 127,223,508	1.1%
C. Hungerford Hospital	$ 113,735,732	1.0%
Johnson Memorial Medical Center, Inc.	$ 89,233,234	0.8%
Milford Health & Medical, Inc.	$ 64,899,709	0.5%
Sharon Hospital Holding Company, Inc.	$ 54,951,775	0.5%

Source: Financial Stability Report, Appendix A (FY2015)

E. Exhibit 4: NPSR Share Calculated Using Financial Stability Report, Appendix I (Hospital-Level), FY2015

System	Hospital	Net Patient Revenue	Share
Total		**$10,304,993,152**	**100%**
Yale New Haven Health System		$ 3,589,823,055	34.8%
	Yale-New Haven	$ 2,457,989,000	
	Bridgeport	$ 466,074,000	
	Greenwich	$ 340,737,210	
	L+M	$ 325,022,845	
Hartford Healthcare		$ 1,895,107,597	18.4%
	Hartford	$ 980,434,820	
	Hosp of Central CT	$ 339,151,859	
	Backus	$ 285,527,689	
	Midstate	$ 212,391,809	
	Windham	$ 77,601,420	
Trinity Health		$ 966,540,106	9.4%
	St. Francis	$ 649,231,569	
	St. Mary's	$ 251,920,803	
	Johnson	$ 65,387,734	
Western Connecticut Health Network		$ 948,387,000	9.2%
	Danbury	$ 592,876,000	
	Norwalk	$ 355,511,000	
Stamford		$ 476,412,504	4.6%
	Stamford	$ 476,412,504	
Prospect Medical Holdings, Inc.		$ 431,998,820	4.2%
	Waterbury	$ 192,703,886	
	Manchester	$ 176,292,453	
	Rockville	$ 63,002,481	
Ascension Health		$ 402,610,000	3.9%
	St. Vincent's	$ 402,610,000	
Middlesex		$ 357,636,636	3.5%
	Middlesex	$ 357,636,636	
Dempsey		$ 337,300,171	3.3%
	Dempsey	$ 337,300,171	
CT Children's		$ 293,034,805	2.8%
	CT Children's	$ 293,034,805	
Griffin		$ 142,949,359	1.4%
	Griffin	$ 142,949,359	
Bristol		$ 133,327,930	1.3%
	Bristol	$ 133,327,930	
Charlotte Hungerford Hospital		$ 113,735,731	1.1%
	Hungerford	$ 113,735,731	
Day Kimball		$ 106,271,224	1.0%
	Day Kimball	$ 106,271,224	
Milford		$ 60,372,640	0.6%
	Milford	$ 60,372,640	
Sharon		$ 49,485,574	0.5%
	Sharon	$ 49,485,574	

Source: Financial Stability Report, Appendix I (FY2015)
Note: System designations are defined using web research.

F. Exhibit 5: Share of Available Beds, 2015

		2015	
System	**Hospital**	**Beds**	**Shares**
Total		**8,647**	**100%**
YALE NEW HAVEN HEALTH SYSTEM		2,359	27.3%
	YALE-NEW HAVEN	1,522	
	BRIDGEPORT	383	
	L+M	248	
	GREENWICH	206	
HARTFORD HEALTHCARE		1,679	19.4%
	HARTFORD	802	
	HOSP OF CENTRAL CT	344	
	BACKUS	233	
	MIDSTATE	156	
	WINDHAM	144	
TRINITY HEALTH		912	10.5%
	ST. FRANCIS	607	
	ST. MARY'S	210	
	JOHNSON	95	
WESTERN CONNECTICUT HEALTH NETWORK		787	9.1%
	DANBURY	456	
	NORWALK	331	
PROSPECT MEDICAL HOLDINGS, INC.		683	7.9%
	MANCHESTER	283	
	WATERBURY	282	
	ROCKVILLE	118	
ASCENSION HEALTH		446	5.2%
	ST. VINCENT'S	446	
STAMFORD		325	3.8%
	STAMFORD	325	
MIDDLESEX		245	2.8%
	MIDDLESEX	245	
DEMPSEY		234	2.7%
	DEMPSEY	234	
CT CHILDREN'S		187	2.2%
	CT CHILDREN'S	187	
GRIFFIN		180	2.1%
	GRIFFIN	180	
BRISTOL		154	1.8%
	BRISTOL	154	
CHARLOTTE HUNGERFORD HOSPITAL		122	1.4%
	HUNGERFORD	122	
DAY KIMBALL		122	1.4%
	DAY KIMBALL	122	
MILFORD		118	1.4%
	MILFORD	118	
SHARON		94	1.1%
	SHARON	94	

Source: Financial Stability Report, Appendix S

II. Text Corrections

A. Exhibit 6 – Page 8

Summary of error:

Discharge market share incorrectly uses Hartford Hospital statistics in place of Hartford HealthCare statistics.

Original Text:

- "The proposed affiliation would increase the size of the Hartford HealthCare system. Specifically, the affiliation would increase the number of beds in the Hartford HealthCare system by 7.3%. Total hospital discharges would increase by 13.9%, and NPSR would increase by 5.1%. This growth would extend Hartford HealthCare's market footprint further to the west, giving it broad east to west coverage across the mid to upper portion of the state."

Corrected Text:

- "The proposed affiliation would increase the size of the Hartford HealthCare system. Specifically, the affiliation would increase the number of beds in the Hartford HealthCare system by 7.3%. Total hospital discharges would increase by 7.4%, and NPSR would increase by 5.1%. This growth would extend Hartford HealthCare's market footprint further to the west, giving it broad east to west coverage across the mid to upper portion of the state."

Source: Appendix A & S of Annual Report on the Financial Status of Connecticut's Short Term Acute Care Hospitals 2015.

B. Exhibit 7 – Page 27

Summary of error:

NPSR shares are incorrectly calculated due to an error in the denominator (statewide net patient revenue). Corrected NPSR shares correspond to statewide totals at the system-level. Additionally, discharges and discharge shares incorrectly uses Hartford Hospital discharge data in place of Hartford HealthCare data.

Original Text:

"Similarly, Charlotte Hungerford represents 1.3% of the state's NPSR for all hospitals…

Hartford HealthCare is comprised of five hospitals and has a total of 1,679 beds, which represents 19.4% of total beds in the state, 10.8% of total hospital discharges, and a larger share of NPSR at 26.1%. Hartford HealthCare is the 2nd largest health system in the state, and includes Hartford hospital, which is the 2nd largest hospital in the state. Hartford HealthCare was compared to Y-NHHS, which is much larger than Hartford HealthCare system. Y-NHHS has 2,359 beds and represents 27.3% of the total number of beds in the state, 31.3% of the total hospital discharges, and 40.6% of NPSR. Y-NHHS has roughly three times as many hospital discharges as Hartford HealthCare's 43,350."

Corrected Text:

"Similarly, Charlotte Hungerford represents 1.0% of the state's NPSR for all hospitals…

Hartford HealthCare is comprised of five hospitals and has a total of 1,679 beds, which represents 19.4% of total beds in the state, 20.3% of total hospital discharges, and a larger share of NPSR at 18.9%. Hartford HealthCare is the 2nd largest health system in the state, and includes Hartford hospital, which is the 2nd largest hospital in the state. Hartford HealthCare was compared to Y-NHHS, which is much larger than Hartford HealthCare system. Y-NHHS has 2,359 beds and represents 27.3% of the total number of beds in the state, 31.3% of the total hospital discharges, and 29.5% of NPSR. Y-NHHS has roughly 50% more hospital discharges as Hartford HealthCare's 81,492.

Source: Appendix A & S of Annual Report on the Financial Status of Connecticut's Short Term Acute Care Hospitals 2015.

C. Exhibit 8 – Page 55

Summary of error:

NPSR shares are incorrectly calculated due to an error in the denominator (statewide net patient revenue). Corrected NPSR shares correspond to statewide totals at the system-level. Additionally, the shares calculation for beds incorrectly uses Charlotte Hungerford Hospital data in place of Hartford HealthCare data.

Original Text:

"In this CMIR, an examination of market share was provided. Hartford HealthCare system is the 2nd largest health system in Connecticut, with 1.4% of total beds and 1.3% of NPSR. The proposed affiliation would increase Hartford HealthCare system modestly, increasing its share of NPSR to 27%, or by 1.3 percentage points. Simply put, this proposed affiliation will have very little effect on Hartford HealthCare's existing dominant market share. Figure 15: Market Share Impact of Proposed Affiliation, by Net Patient Service Revenue illustrates the increase in dominant market share for Hartford HealthCare system."

Corrected Text:

"In this CMIR, an examination of market share was provided. Hartford HealthCare system is the 2nd largest health system in Connecticut, with 19.4% of total beds and 18.9% of NPSR. The proposed affiliation would increase Hartford HealthCare system modestly, increasing its share of NPSR to 18.9%, or by 1.0 percentage points. Simply put, this proposed affiliation will have very little effect on Hartford HealthCare's existing dominant market share."

Source: Appendix A & S of Annual Report on the Financial Status of Connecticut's Short Term Acute Care Hospitals 2015.

D. Exhibit 9 – Page 56

Summary of Error:

NPSR shares are incorrectly calculated due to an error in the denominator (statewide net patient revenue). Corrected NPSR shares correspond to statewide totals at the system-level.

Original text:

"Moreover, Charlotte Hungerford comprises only 1.3% of statewide NPSR."

Corrected Text:

"Moreover, Charlotte Hungerford comprises only 1.0% of statewide NPSR."

Source: Appendix A of Annual Report on the Financial Status of Connecticut's Short Term Acute Care Hospitals 2015.

III. Table Corrections

A. Exhibit 10 – Page 28, Table 5

Summary of error:

NPSR shares are incorrectly calculated due to an error in the denominator (statewide net patient revenue). Corrected NPSR shares correspond to statewide totals at the system-level. Additionally, discharges and discharge shares incorrectly uses Hartford Hospital discharge data in place of Hartford HealthCare data.

Original Table:

Table 5: Hospital Market Shares for Charlotte Hungerford and Hartford HealthCare and Its Comparators

Charlotte Hungerford and Its Comparators						Hartford HealthCare and Y-NHHS	
	Charlotte Hungerford	Sharon	Bristol	Griffin	Waterbury	Hartford HealthCare	Y-NHHHS
Beds	122	94	154	180	282	1,679	2,359
All Hospital	6,030	2,466	7,071	6,950	11,646	43,350	125,633
NPSR ($000)	$113,736	$49,486	133,328	$142,949	$192,704	$2,239,380	$3,492,685
Market Share of Beds, Hospital Discharges, Net Patient Service Revenue							
Beds	1.4%	1.1%	1.8%	2.1%	3.3%	19.4%	27.3%
All Hospital	1.5%	0.6%	1.8%	1.7%	2.9%	10.8%	31.3%
NPSR	1.3%	0.6%	1.6%	1.7%	2.2%	26.1%	40.6%

Source: Based upon an analysis of data and information collected by CT DPH, Office of Health Care Access.

Corrected Table:

Table 5: Hospital Market Shares for Charlotte Hungerford and Hartford HealthCare and Its Comparators

Charlotte Hungerford and Its Comparators						Hartford HealthCare and Y-NHHS	
	Charlotte Hungerford	Sharon	Bristol	Griffin	Waterbury	Hartford HealthCare	Y-NHHHS
Beds	122	94	154	180	282	1,679	2,359
All Hospital	6,030	2,466	7,071	6,950	11,646	81,492	125,633
NPSR ($000)	$113,736	$54,952	$166,109	$151,666	$233,666	$2,239,380	$3,492,685
Market Share of Beds, Hospital Discharges, Net Patient Service Revenue							
Beds	1.4%	1.1%	1.8%	2.1%	3.3%	19.4%	27.3%
All Hospital	1.5%	0.6%	1.8%	1.7%	2.9%	20.3%	31.3%
NPSR	1.0%	0.5%	1.4%	1.3%	2.0%	18.9%	29.5%

Source: Based upon an analysis of data and information collected by CT DPH, Office of Health Care Access. Appendix S of Annual Report on the Financial Status of Connecticut's Short Term Acute Care Hospitals 2015.

B. Exhibit 11 – Page 36, Table 7

Summary of error:

NPSR shares are incorrectly calculated due to an error in the denominator (statewide net patient revenue). Corrected NPSR shares correspond to statewide totals at the system-level. Additionally, discharges and discharge shares incorrectly uses Hartford Hospital discharge data in place of Hartford HealthCare data.

Original Table:

Table 7: Impact Analysis of the Proposed Affiliation on Connecticut

Data (2015)	Hartford HealthCare without Charlotte Hungerford	Combined: Hartford Health System with Charlotte Hungerford	Statewide Figures (2015)	Market Share without Charlotte Hungerford	Market Share with Charlotte Hungerford	Difference in Market Share
Beds	1,679	1,801	8,647	19%	21%	1.4%
Hospital Discharges	43,350	49,380	401,471	11%	12%	1.5%
NPSR ($s)	2,239,380,000	2,353,116,000	8,593,230,174	26%	27%	1.3%

Source: Based upon an analysis of data and information collected by CT DPH, Office of Healthcare Access.

Corrected Table:

Table 7: Impact Analysis of the Proposed Affiliation on Connecticut

Data (2015)	Hartford HealthCare without Charlotte Hungerford	Combined: Hartford Health System with Charlotte Hungerford	Statewide Figures (2015)	Market Share without Charlotte Hungerford	Market Share with Charlotte Hungerford	Difference in Market Share
Beds	1,679	1,801	8,647	19.4%	20.8%	1.4%
Hospital Discharges	81,492	87,522	401,471	20.3%	21.8%	1.5%
NPSR ($s)	2,239,380,000	2,353,116,000	11,846,155,000	18.9%	19.9%	1.0%

Source: Based upon an analysis of data and information collected by CT DPH, Office of Healthcare Access.
Appendix A & S of Annual Report on the Financial Status of Connecticut's Short Term Acute Care Hospitals 2015.

C. Exhibit 12 - Page 37, Table 8

Summary of error:

Discharges and discharge shares incorrectly uses Hartford Hospital discharge data in place of Hartford HealthCare data.

Original Table:

Table 8: Impact Analysis of the Proposed Affiliation on Hartford Health System

Data (2015)	Charlotte Hungerford	Hartford HealthCare	Combined: Hartford Health System with Charlotte Hungerford	Increase for Hartford HealthCare
Beds	122	1,679	1,801	7.3%
Hospital Discharges	6,030	43,350	49,380	13.9%
NPSR	$113,736,000	$2,239,380,000	$2,353,116,000	5.1%

Source: Based upon an analysis of data and information collected by CT DPH, Office of Healthcare Access.

Corrected Table:

Table 8: Impact Analysis of the Proposed Affiliation on Hartford Health System

Data (2015)	Charlotte Hungerford	Hartford HealthCare	Combined: Hartford Health System with Charlotte Hungerford	Increase for Hartford HealthCare
Beds	122	1,679	1,801	7.3%
Hospital Discharges	6,030	81,492	87,522	7.4%
NPSR	$113,736,000	$2,239,380,000	$2,353,116,000	5.1%

Source: Based upon an analysis of data and information collected by CT DPH, Office of Healthcare Access. Appendix S of Annual Report on the Financial Status of Connecticut's Short Term Acute Care Hospitals 2015.

D. Exhibit 13 – Page 41, Table 9

Summary of error:

Table incorrectly copies and pastes outpatient Medicaid payment data across several columns.

Original Table:

Table 9: The Role in Providing Inpatient Care to Medicaid Populations by Transacting Parties and Their Comparators, CY 2014

	Charlotte Hungerford	Comparators without Charlotte Hungerford	Hartford HealthCare	Y-NHHS	All CT Hospitals
Unique Patients					
Unique Patients	1,004	5,333	15,746	29,697	72,924
Age Breakdown					
Infants/Children/Teens <19 years of age	256	1,432	4,238	*	23,912
Adults: 19-64	743	3,833	11,090	*	47,270
Seniors: 65 and older	6	75	426	*	1,817
All ages	1,005	5,340	15,754	*	72,999
Services					
All Admissions	1,237	6,509	19,281	31,398	97,758
Infants/Children/Teens <19 years of age	261	1,446	4,461	13,145	27,718
<19 years of age % of	**21%**	**22%**	**23%**	**42%**	**28%**
Obstetric Admissions	225	1,319	1,759	4,965	16,816
OB as a % of All	**18%**	**20%**	**9%**	**16%**	**17%**
Case Mix Index	**0.9574**	**0.9413**	**1.1536**	**1.2113**	**1.1621**
Medicaid Payments					
Inpatient	$6,464,097	$34,773,334	$127,303,261	$234,219,793	$732,745,063
Outpatient	$11,037,563	$11,505,583	$133,855,078	$133,855,078	$133,855,078
Total	$17,501,660	$46,278,917	$261,158,339	$368,074,871	$866,600,141
Medicaid Payments for Inpatient as a %	**37%**	**75%**	**49%**	**64%**	**85%**

Note: Data not available (*).

Source: CT DPH, Office of Health Care Access, based upon an analysis of DSS Medicaid data.

Corrected Table:

Table 9: The Role in Providing Inpatient Care to Medicaid Populations by Transacting Parties and Their Comparators, CY 2014

	Charlotte Hungerford	Comparators without Charlotte Hungerford	Hartford HealthCare	Y-NHHS	All CT Hospitals
Unique Patients					
Unique Patients	1,004	5,333	15,746	29,697	72,924
Age Breakdown					
Infants/Children/Teens <19 years of age	256	1,432	4,238	*	23,912
Adults: 19-64	743	3,833	11,090	*	47,270
Seniors: 65 and older	6	75	426	*	1,817
All ages	1,005	5,340	15,754	*	72,999
Services					
All Admissions	1,237	6,509	19,281	31,398	97,758
Infants/Children/Teens <19 years of age	261	1,446	4,461	13,145	27,718
<19 years of age % of	**21%**	**22%**	**23%**	**42%**	**28%**
Obstetric Admissions	225	1,319	1,759	4,965	16,816
OB as a % of All	**18%**	**20%**	**9%**	**16%**	**17%**
Case Mix Index	**0.9574**	**0.9413**	**1.1536**	**1.2113**	**1.1621**
Medicaid Payments					
Inpatient	$6,464,097	$34,773,334	$127,303,261	$234,219,793	$732,745,063
Outpatient	$11,037,563	$11,505,583	$133,855,078	$200,698,848	$669,858,461
Total	$17,501,660	$46,278,917	$261,158,339	$434,918,641	$1,402,603,524
Medicaid Payments for Inpatient as a %	**37%**	**75%**	**49%**	**54%**	**52%**

Note: Data not available (*).
Source: CT DPH, Office of Health Care Access, based upon an analysis of DSS Medicaid data.

E. Exhibit 14 – Page 42, Table 10

Summary of error:

Table incorrectly copies and pastes inpatient Medicaid payment data across two columns.

Original Table:

Table 10: The Role in Providing Outpatient Care to Medicaid Populations by Transacting Parties and Its Comparators, CY 2014

Data (In State only)	Charlotte Hungerford	Comparators without Charlotte Hungerford	Hartford HealthCare	Y-NHHS	All CT Hospitals
All Outpatient Visits, including PH and BH					
ED Visits	14,818	52,891	164,309	153,524	668,517
Non-ED Visits	31,050	72,466	210,303	336,142	1,151,042
All OP Visits (PH & BH)	45,868	125,357	374,612	489,666	1,819,559
ED as a % of All	**32%**	**42%**	**44%**	**31%**	**37%**
Behavioral Health OP Visits					
BH ED	6,971	7,929	34,943	41,595	191,779
BH Non-ED	6,285	15,068	14,050	18,664	105,388
All BH Visits	13,256	22,997	48,993	60,259	297,167
Total BH OP % of All OP Visits	**29%**	**18%**	**13%**	**12%**	**16%**
BH ED Visits as a % of All BH Visits	**53%**	**34%**	**71%**	**69%**	**65%**
BH ED Visits as a % of All ED Visits	**47%**	**15%**	**21%**	**27%**	**29%**
Medicaid Payments					
Outpatient	$11,037,563	$11,505,583	$133,855,078	$200,698,848	$669,858,461
Inpatient	$6,464,097	$34,773,334	$127,303,261	$127,303,261	$732,745,063
Total Medicaid Payments	$17,501,660	$46,278,917	$261,158,339	$328,002,109	$1,402,603,524
Medicaid Payments for OP as a % of Total	**63%**	**25%**	**51%**	**61%**	**48%**

Source: CT DPH, Office of Health Care Access, based upon an analysis of DSS Medicaid data.

Corrected Table:

Table 10: The Role in Providing Outpatient Care to Medicaid Populations by Transacting Parties and Its Comparators, CY 2014

Data (In State only)	Charlotte Hungerford	Comparators without Charlotte Hungerford	Hartford HealthCare	Y-NHHS	All CT Hospitals
All Outpatient Visits, including PH and BH					
ED Visits	14,818	52,891	164,309	153,524	668,517
Non-ED Visits	31,050	72,466	210,303	336,142	1,151,042
All OP Visits (PH & BH)	45,868	125,357	374,612	489,666	1,819,559
ED as a % of All	**32%**	**42%**	**44%**	**31%**	**37%**
Behavioral Health OP Visits					
BH ED	6,971	7,929	34,943	41,595	191,779
BH Non-ED	6,285	15,068	14,050	18,664	105,388
All BH Visits	13,256	22,997	48,993	60,259	297,167
Total BH OP % of All OP Visits	**29%**	**18%**	**13%**	**12%**	**16%**
BH ED Visits as a % of All BH Visits	**53%**	**34%**	**71%**	**69%**	**65%**
BH ED Visits as a % of All ED Visits	**47%**	**15%**	**21%**	**27%**	**29%**
Medicaid Payments					
Outpatient	$11,037,563	$11,505,583	$133,855,078	$200,698,848	$669,858,461
Inpatient	$6,464,097	$34,773,334	$127,303,261	$234,219,793	$732,745,063
Total Medicaid Payments	$17,501,660	$46,278,917	$261,158,339	$434,918,641	$1,402,603,524
Medicaid Payments for OP as a % of Total	**63%**	**25%**	**51%**	**46%**	**48%**

Source: CT DPH, Office of Health Care Access, based upon an analysis of DSS Medicaid data.

F. Exhibit 15 – Page 48, Table 16

Summary of error:

Table 16 incorrectly calculates the average hospital grade for Waterbury hospital across the seven time periods.

Original Table:

Period	Charlotte Hungerford Grade	#	Bristol Grade	#	Griffin Grade	#	Sharon Grade	#	Waterbury Grade	#
Spring 2017	C	2	C	2	A	4	A	4	C	2
Fall 2016	B	3	B	3	A	4	NS*	NS	C	2
Spring 2016	D	1	B	3	A	4	NS	NS	C	2
Fall 2015	C	2	B	3	A	4	NS	NS	C	2
Spring 2015	C	2	C	2	A	4	NS	NS	C	2
Fall 2014	D	1	D	1	A	4	NS	NS	C	2
Spring 2014	D	1	C	2	B	3	NS	NS	C	2
Total		**12**		**16**		**27**		**4**		**14**
Average	**C/D**	**1.7**	**B/C**	**2.3**	**A/B**	**3.9**			**A/B**	**3.7**

Corrected Table:

Period	Charlotte Hungerford Grade	#	Bristol Grade	#	Griffin Grade	#	Sharon Grade	#	Waterbury Grade	#
Spring 2017	C	2	C	2	A	4	A	4	C	2
Fall 2016	B	3	B	3	A	4	NS*	NS	C	2
Spring 2016	D	1	B	3	A	4	N	NS	C	2
Fall 2015	C	2	B	3	A	4	N	NS	C	2
Spring 2015	C	2	C	2	A	4	N	NS	C	2
Fall 2014	D	1	D	1	A	4	N	NS	C	2
Spring 2014	D	1	C	2	B	3	N	NS	C	2
Total		**1**		**1**		**2**		**4**		**1**
Average	**C/D**	**1**	**B/C**	**2.**	**A/B**	**3**			**C**	**2**

G. Exhibit 16 – Page 55, Table 22

Summary of error:

NPSR shares are incorrectly calculated due to an error in the denominator (statewide net patient revenue). Corrected NPSR shares correspond to statewide totals at the system-level.

Original Table:

Requirement	Yes or No	Explanation
Dominant Market Share (for services provided by transacting parties)	Yes	Hartford HealthCare's market share is 26% today. This affiliation would increase its market share by 1.3 percentage points to 27%.
Prices for services that are materially higher than the median prices charged by other providers (same services, same market)	No	Accounting for facts of the CMIR, the Connecticut marketplace, and evidence from the literature, the proposed affiliation is not likely to lead to 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.
Health-status adjusted TME that is materially higher than the median TME for all other providers (same service, same market)	No	Accounting for the facts of the CMIR, the Connecticut marketplace, and evidence from the literature, the proposed affiliation is not likely to lead to health-adjusted TME that is materially higher than the median prices for all other health care providers for the same service in the same market.

Corrected table:

Requirement	Yes or No	Explanation
Dominant Market Share (for services provided by transacting parties)	See Summary Response Section II B	Hartford HealthCare's market share is 18.9% today. This affiliation would increase its market share by 1.0 percentage points to 19.9%.
Prices for services that are materially higher than the median prices charged by other providers (same services, same market)	No	Accounting for facts of the CMIR, the Connecticut marketplace, and evidence from the literature, the proposed affiliation is not likely to lead to 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.

Health-status adjusted TME that is materially higher than the median TME for all other providers (same service, same market)	No	Accounting for the facts of the CMIR, the Connecticut marketplace, and evidence from the literature, the proposed affiliation is not likely to lead to health-adjusted TME that is materially higher than the median prices for all other health care providers for the same service in the same market.

Source: Appendix A of Annual Report on the Financial Status of Connecticut's Short Term Acute Care Hospitals 2015.

H. Exhibit 17 – Page 58, Table 24

Summary of error:

NPSR figures in Table 24 for Hartford HealthCare and its comparator group do not match the numbers presented in the Financial Stability Report. Due to lack of sourcing, tables values cannot be replicated. FY 2012 system-level data are not available, so calculations using 2012 data cannot be verified.

Original Table:

Table 24: Key Financial Performance Measures for Hartford HealthCare Corporation and its Comparators

Year	Hartford HealthCare Corporation	Comparator Group with HHC	Comparator Group Without HHC
Net Patient Service Revenue ($000)			
FY 2012	2,097,825	5,592,198	3,494,373
FY 2013	2,129,453	6,347,257	4,217,804
FY 2014	2,271,219	6,547,266	4,276,047
FY 2015	2,256,455	6,872,962	4,616,507
Growth Rate			
FY 2012-2013	1.5%	13.5%	20.7%
FY 2013-2014	6.7%	3.2%	1.4%
FY 2014-2015	-0.7%	5.0%	8.0%
Compound Annual Growth Rate (CAGR)	2.5%	7.1%	9.7%
Operating Margin			
FY 2012	3.7%	4.4%	5.0%
FY 2013	-0.6%	2.4%	4.0%
FY 2014	2.1%	3.7%	4.6%
FY 2015	1.3%	2.8%	3.6%
FY 2012-2015	1.6%	3.3%	4.2%

Corrected Table:

Table 24: Key Financial Performance Measures for Hartford HealthCare Corporation and its Comparators

Year	Hartford HealthCare Corporation	Comparator Group with HHC	Comparator Group Without HHC
Net Patient Service Revenue ($000)			
FY 2012	2,097,825	5,592,198	3,494,373
FY 2013	1,906,243	5,664,917	3,758,684
FY 2014	2,271,219	6,517,200	4,245,981
FY 2015	2,239,380	6,855,887	4,616,507
Growth Rate			
FY 2012-2013	-9.1%	0.1%	7.6%
FY 2013-2014	19.2%	15.0%	13.0%
FY 2014-2015	-1.4%	5.2%	8.7%
Compound Annual Growth Rate (CAGR)	2.5%	7.1%	9.7%
Operating Margin			
FY 2012	3.7%	4.4%	5.0%
FY 2013	-1.4%	1.9%	4.0%
FY 2014	2.1%	3.5%	4.3%
FY 2015	1.2%	2.8%	3.6%
FY 2012-2015	1.4%	3.2%	4.2%

Source: System Statement of Operations (2013-2015), Office of Health Care Access,CT Department of Public Health, available at: http://www.ct.gov/dph/cwp/view.asp?a=3902&q=276986.

I. Exhibit 18 – Page 59, Table 25

Summary of error:

Due to lack of sourcing, data was difficult to verify. Numbers found in the Financial Stability Reports vary significantly from data presented in the table.

Original Table:

Table 25: Financial Performance Summary for Charlotte Hungerford Hospital and Its Comparator Hospitals (2012- 2015)

Performance Measurement by Year	Charlotte Hungerford	Bristol Hospital and Health Care Group	Griffin Health Services	Sharon Hospital Holding Co.	Waterbury Hospital
Net Patient Service Revenue ($000)					
FY 2012	113,188	152,617	123,980	56,155	258,148
FY 2013	116,678	155,469	129,041	60,249	243,346
FY 2014	114,622	168,232	140,783	56,110	244,399
FY 2015	113,736	166,109	151,666	54,952	228,661
Total Operating Revenue ($000)					
FY 2012	118,923	159,688	147,409	58,491	269,542
FY 2013	124,928	162,121	144,900	61,993	253,976
FY 2014	122,156	176,068	159,000	57,316	254,139
FY 2015	120,546	172,427	169,394	55,886	238,150
Operating Income ($000)					
FY 2012	166	(98)	(7,389)	2,246	403
FY 2013	28	338	(4,485)	3,998	(3,732)
FY 2014	157	682	2,104	(341)	(8,276)
FY 2015	(1,433)	87	795	461	(23,413)
Operating Margin					
FY 2012	0.1%	-0.1%	-5.0%	3.8%	0.1%
FY 2013	0.0%	0.2%	-3.1%	6.4%	-1.5%
FY 2014	0.1%	0.4%	1.3%	-0.6%	-3.3%
FY 2015	-1.2%	0.1%	0.5%	0.8%	-9.8%
Current Ratio					
FY 2012	1.39	1.48	1.89	1.86	1.64
FY 2013	1.32	1.48	1.81	1.95	1.91
FY 2014	1.71	1.64	1.89	1.90	1.89
FY 2015	1.45	1.67	1.92	1.45	1.51
Days Cash on Hand (with Board-designated funds)					
FY 2012	115	95	148	-	104
FY 2013	112	105	129	1	113
FY 2014	117	98	127	0	118
FY 2015	113	99	118	2	93
Average Age of Plant (Years)					
FY 2012	17.6	16.6	14.9	8.1	25.0
FY 2013	18.6	17.0	15.5	9.6	27.1
FY 2014	19.7	17.5	16.9	12.1	31.4
FY 2015	20.4	17.2	21.7	-	33.7

Corrected Table:

Table 25: Financial Performance Summary for Charlotte Hungerford Hospital and Its Comparator Hospitals (2012- 2015)

Performance Measurement by Year	Charlotte Hungerford	Bristol Hospital and Health Care Group	Griffin Health Services	Sharon Hospital Holding Co.	Greater Waterbury Health Network, Inc.
Net Patient Service Revenue ($000)					
FY 2012	116,314	130,360	123,980	59,379	273,484
FY 2013	116,678	155,469	129,011	60,249	248,029
FY 2014	114,622	168,232	140,783	56,110	248,939
FY 2015	113,736	166,109	151,666	54,952	233,666
Total Operating Revenue ($000)					
FY 2012	122,049	167,295	147,409	59,862	286,712
FY 2013	124,928	162,121	144,870	60,678	260,452
FY 2014	122,156	176,068	153,577	57,316	260,472
FY 2015	120,546	172,427	166,682	55,886	245,068
Operating Income ($000)					
FY 2012	166	(98)	(7,389)	(20)	202
FY 2013	28	338	(4,485)	1,524	(3,485)
FY 2014	157	682	2,104	(1,410)	(7,978)
FY 2015	(1,433)	87	795	(2,869)	(22,985)
Operating Margin					
FY 2012	0.1%	0.8%	-1.8%	5.9%	4.0%
FY 2013	0.0%	1.0%	1.6%	8.8%	1.6%
FY 2014	0.1%	0.7%	6.44%	5.75%	0.18%
FY 2015	-1.2%	0.4%	5.12%	0.8%	-5.85%
Current Ratio					
FY 2012	1.39	1.48	1.89	1.67	1.80
FY 2013	1.76	1.48	1.81	1.95	2.09
FY 2014	1.31	1.46	1.89	1.93	1.98
FY 2015	1.45	1.67	1.92	1.45	1.59
Days Cash on Hand (with Board-designated funds)					
FY 2012	31	30	131	0	40
FY 2013	27	39	111	1	45
FY 2014	23	41	114	0	114
FY 2015	18	46	106	2	35
Average Age of Plant (Years)					
FY 2012	17.6	16.6	14.9	8.1	25.0
FY 2013	18.6	17.0	15.5	9.6	27.1
FY 2014	19.7	17.5	16.9	12.1	31.4
FY 2015	20.4	17.2	21.7	-	33.7

Source: System Statement of Operations 2013-2015; Hospital Statement of Operations 2012-2015; Financial Stability Reports (FY2012-2015), Office of Health Care Access, CT Department of Public Health, available at: http://www.ct.gov/dph/cwp/view.asp?a=3902&q=276986.

J. Exhibit 19 – Page 60, Table 26

Summary of error:

Due to lack of sourcing, data was difficult to verify. Numbers found in the Financial Stability Reports vary significantly from data presented in the table. (See Table: Hospital Health System Liquidity Ratios, Column: Days Cash on Hand). FY 2012 data are not available for NPSR, Total Operating Revenue, Operating Income, Operating Margin, or Average Age of Plant.

Original Table:

Table 26: Financial Performance Summary for Hartford HealthCare Corporation and Its Comparator Hospital Systems (2012-2015)

Performance Measurement by Year	Hartford HealthCare Corporation	Yale-New Haven Health Services Corporation	Western Connecticut Health Network
Net Patient Service Revenue ($000)			
FY 2012	2,097,825	2,416,325	1,078,048
FY 2013	2,129,453	3,161,782	1,056,022
FY 2014	2,271,219	3,287,692	988,355
FY 2015	2,256,455	3,492,685	1,123,822
Total Operating Revenue ($000)			
FY 2012	2,373,312	2,498,142	1,128,975
FY 2013	2,358,438	3,280,354	1,093,895
FY 2014	2,481,582	3,394,686	1,020,611
FY 2015	2,465,079	3,602,280	1,157,439
Operating Income ($000)			
FY 2012	87,141	141,403	38,462
FY 2013	(13,235)	136,182	37,113
FY 2014	52,186	170,112	32,556
FY 2015	31,074	159,656	12,960
Operating Margin			
FY 2012	3.7%	5.7%	3.4%
FY 2013	-0.6%	4.2%	3.4%
FY 2014	2.1%	5.0%	3.2%
FY 2015	1.3%	4.4%	1.1%
Current Ratio			
FY 2012	1.94	2.26	2.54
FY 2013	1.65	2.37	2.08
FY 2014	2.05	2.97	1.68
FY 2015	1.81	2.94	1.71
Days Cash on Hand (with Board-designated funds)			
FY 2012	196	165	258
FY 2013	218	137	289
FY 2014	247	173	287
FY 2015	257	175	229
Average Age of Plant (Years)			
FY 2012	12.5	9.2	11.9

FY 2013	12.4	7.9	12.8
FY 2014	12.9	7.5	14.5
FY 2015	13.1	8.3	12.0

Corrected Table:

Table 26: Financial Performance Summary for Hartford HealthCare Corporation and Its Comparator Hospital Systems (2012-2015)

Performance Measurement by Year	Hartford HealthCare Corporation	Yale-New Haven Health Services Corporation	Western Connecticut Health Network
Net Patient Service Revenue ($000)			
FY 2012	2,097,825	2,416,325	1,078,048
FY 2013	1,906,243	3,065,053	693,630
FY 2014	2,271,219	3,287,692	958,289
FY 2015	2,239,380	3,492,685	1,123,822
Total Operating Revenue ($000)			
FY 2012	2,373,312	2,498,142	1,128,975
FY 2013	2,128,288	3,165,941	712,509
FY 2014	2,481,582	3,394,686	990,544
FY 2015	2,446,595	3,602,280	1,157,439
Operating Income ($000)			
FY 2012	87,141	141,403	38,462
FY 2013	(34,769)	133,681	23,237
FY 2014	52,186	170,112	32,556
FY 2015	30,007	159,656	12,792
Operating Margin			
FY 2012	3.7%	5.7%	3.4%
FY 2013	-1.4%	4.1%	3.2%
FY 2014	2.1%	5.0%	2.5%
FY 2015	1.2%	4.4%	1.1%
Current Ratio			
FY 2012	1.94	2.26	2.54
FY 2013	1.76	3.00	1.94
FY 2014	2.05	2.97	1.68
FY 2015	1.81	2.94	1.71
Days Cash on Hand (with Board-designated funds)			
FY 2012	38	156	38
FY 2013	52	127	40
FY 2014	67	145	64
FY 2015	60	152	35
Average Age of Plant (Years)			
FY 2012	12.5	9.2	11.9
FY 2013	12.4	7.9	12.8
FY 2014	12.9	7.5	14.5
FY 2015	13.1	8.3	12.0

Source: System Statement of Operations 2013-2015; Financial Stability Reports (FY2012-2015), Office of Health Care Access, CT Department of Public Health, available at: http://www.ct.gov/dph/cwp/view.asp?a=3902&q=276986.

IV. Figure Corrections

A. Exhibit 20 – Page 18, Figure 1

Summary of error:

Figure 1 incorrectly uses Hartford Hospital discharge data in place of Hartford HealthCare data. In addition, "Payer Mix - Non Gov't Share of Discharges, % (2015)" is mislabeled as "Payer Mix - Non Gov't Share of Revenue, % (2015)." Operating margin values for Charlotte Hungerford and Hartford HealthCare vary from values found public filings.

Original Figure:

Figure 1: Key Facts

Transacting Parties: Charlotte Hungerford Hospital and the Hartford HealthCare System

Beds and Market Share (2015)	**Volume - All Payers Hospital Discharges (2015)**	**Hospital Case Mix Index (CMI) (2015)**
Charlotte Hungerford: 122 or 1.4% of all beds in the state Hartford HealthCare: 1,679 or 19.4% of all beds in the state	Charlotte Hungerford: 6,030 Hartford HealthCare: 43,450	Charlotte Hungerford: 1.24 Hartford HealthCare: 1.47
Payer Mix Non Gov't Share of Revenue, % (2015)	**Access Medicaid Share of Hospital Discharges, % of total (2015)**	**Quality The Leapfrog Group Safety Grade, (2013-2017)**
Charlotte Hungerford: 23.7% Hartford HealthCare: 30%	Charlotte Hungerford: 19.9% Hartford HealthCare: 24.6%	Charlotte Hungerford: C/D Hartford HealthCare: B/C
Avg. Cost to Medicaid Index, to avg. cost for all CT. hospitals	**Operating Margin, % (2016)**	**Average Age of Plant (AAOP), in years (2015)**
Charlotte Hungerford: .70 (lower than the state average) Hartford HealthCare: 1.09 (higher than the state average)	Charlotte Hungerford: -5.8% Hartford HealthCare: 5.1%	Charlotte Hungerford: 20.4 Hartford HealthCare: 13.1

Source: Several sources were used to describe the transacting parties, including data and information from CT DPH, Office of Health Care Access and the Department of Social Services, the Center for Medicare and Medicaid Services, and The Leapfrog Group.

Corrected Figure:

Figure 1: Key Facts

Transacting Parties: Charlotte Hungerford Hospital and the Hartford HealthCare System

Beds and Market Share (2015) Charlotte Hungerford: 122 or 1.4% of all beds in the state Hartford HealthCare: 1,679 or 19.4% of all beds in the state	**Volume - All Payers Hospital Discharges (2015)** Charlotte Hungerford: 6,030 Hartford HealthCare: 81,492	**Hospital Case Mix Index (CMI) (2015)** Charlotte Hungerford: 1.24 Hartford HealthCare: 1.47
Payer Mix **Non Gov't Share of Discharges, % (2015)** Charlotte Hungerford: 23.7% Hartford HealthCare: 30.0%	**Access** **Medicaid Share of Hospital Discharges, % of total (2015)** Charlotte Hungerford: 19.9% Hartford HealthCare: 24.6%	**Quality** **The Leapfrog Group Safety Grade, (2013-2017)** Charlotte Hungerford: C/D Hartford HealthCare: B/C
Avg. Cost to Medicaid Index, to avg. cost for all CT. hospitals Charlotte Hungerford: .70 (lower than the state average) Hartford HealthCare: 1.09 (higher than the state average)	**Operating Margin, % (2016)** Charlotte Hungerford: -5.7% Hartford HealthCare: 5.0%	**Average Age of Plant (AAOP), in years (2015)** Charlotte Hungerford: 20.4 Hartford HealthCare: 13.1

Sources: Several sources were used to describe the transacting parties, including data and information from CT DPH, Office of Health Care Access and the Department of Social Services, the Center for Medicare and Medicaid Services, and The Leapfrog Group. Appendix S of Annual Report on the Financial Status of Connecticut's Short Term Acute Care Hospitals 2015.
http://www.ct.gov/dph/lib/dph/ohca/hospitalfillings/2016/results_system_statement_of_ops_2016.pdf

Exhibit B: DPH Analysis of the Transacting Parties' Written Responses to Preliminary Report

This document addresses the main topics raised in the Preliminary Report Response of Hartford HealthCare Corporation (Hartford HealthCare) and The Charlotte Hungerford Hospital (Charlotte Hungerford) (together, the parties) to the Cost and Market Impact Review of Hartford HealthCare's Proposed Affiliation with The Charlotte Hungerford Hospital issued by the Connecticut Department of Health (16-32135-CMIR). These topics include:

1. DPH's methodology and findings related to the parties' market share, including structural measures of market dominance;
2. DPH's findings relating to the effect of the proposed affiliation on pricing and bargaining power; and,
3. DPH's assessment of quality of care at Hartford HealthCare and Charlotte Hungerford, and the potential of the proposed affiliation to address certain community health needs.

This document describes how, if at all, these topics are addressed in the DPH's Final Report. The Final Report also makes certain clarifications to the Preliminary Report to support the DPH's goal to support transparency and build awareness of the issues that arise from significant changes to the Connecticut health care provider market. The parties should note that the Final Report also includes certain corrections, as well as changes in the numbers presented on the financial performance summary tables. These changes were made by the reviewers based on consideration of the parties' implied preference to use a different data source and rely upon different definitions for certain financial performance measures.

1. Market Share and Market Dominance

Measures of Market Share

DPH has included in the Final Report measures of market share based on revenue (NPSR), number of beds, and number of discharges. Market share has been calculated using a statewide denominator. The Preliminary Report did not use the statewide totals but used a narrower denominator excluding certain hospitals.

Market Dominance

Hartford HealthCare is a large health system and plays a very significant role in the overall health care system in Connecticut. It is the second largest health system in the state, and its largest hospital, Hartford Hospital, is the second largest hospital in the state. Statewide, and in the Hartford area, Hartford HealthCare is a powerful market force with significant leverage in commercial payer negotiations.

The Preliminary Report characterizes Hartford HealthCare as having a "dominant market share" (see Preliminary Report pg. 55). Upon reflection, we think this characterization, which carries with it an implication of potential anti-competitive harm, was imprecise and is insufficiently supported based on the data available for this analysis.

As the parties' Response correctly points out, market dominance is typically assessed for health care providers with reference to geographic areas, usually primary service areas (PSAs). With the data available for analysis for this report, DPH is not able to conduct a comprehensive analysis of structural market dominance within appropriately defined markets. In the Final Report, we decline to reach any conclusion about whether Hartford HealthCare has or is likely to

have dominant market share. The relevant section of the Final Report (Conclusion) has also been modified to reflect these points.

In future CMIRs, a comprehensive and meaningful assessment of market share and market dominance would need to focus on defined markets – most likely PSAs – which are smaller and more relevant for hospitals than the statewide metrics available and cited in the Final Report.

2. Pricing and Bargaining Power

The Final Report addresses the potential for price increases due to increased commercial bargaining power on the part of Charlotte Hungerford because of the transaction. Hartford HealthCare has testified that there are "no plans to change Charlotte Hungerford's price structure or impose additional facility fees as a part of this proposal." Hartford HealthCare also suggests that the Final Report should encompass broader research on the effects of hospital mergers, including that such transactions can support cost efficiencies and provide resources to small hospitals. DPH recognizes that the proposed affiliation may have effects, particularly on Charlotte Hungerford, beyond those attributable to an increase in price bargaining leverage. However, with respect to the influence of the proposed affiliation on prices, DPH concludes that price increases are a potential long-term concern that DPH should monitor closely.

The potential for price increases has been recognized by other states regulators, including in the context of a hospital consolidations subjected to regulatory review. The Massachusetts Health Policy Commission has summarized:

> *Commercial prices for health care services are established through contract negotiations between payers and providers. The results of these negotiations – both the prices that payers will pay for services and other contractual terms – are influenced by the bargaining leverage of the negotiating parties. Bargaining leverage impacts negotiations because a payer network that excludes important providers will be less marketable to purchasers (employers and consumers). If there are few or no effective substitutes for that provider in a market, the potential cost to a payer of excluding the provider from that payer's network will be high, and that provider will have increased ability to command a higher price (or other favorable contract terms) from the payer.*[1]

DPH believes that its analysis and the fundamental conclusions of the Preliminary Report are accurate. Specifically, DPH finds that a merger of providers like the proposed affiliation will lead to increased market leverage in the commercial market and that, given the facts of the proposed affiliation, the effect of that increased market leverage is unlikely to be substantial. Based on this finding, DPH recommends that price trends merit monitoring as the affiliation is executed over time.

3. Quality and Care Delivery

The comments to the Preliminary Report from the transacting parties' notes that the measures used to assess quality of care for the report were based on two primary sources of data, both of which were subject to data lag considerations. DPH believes that the sources used are independent, publicly available data sources and reflect a combination of process and health outcome measures as well as measures of patient safety. Furthermore, data lag is an issue for all

[1] Massachusetts Health Policy Commission, "Review of Lahey Health System's Proposed Acquisition of Winchester Hospital (HPC-CMIR-2013-2)," May 22, 2014.

quality measurement and is not unique to these particular measures. DPH appreciates that Hartford HealthCare and its affiliated hospitals have undertaken extensive efforts advancing quality at HHC and the Preliminary and Final Reports highlight many of these efforts.

In terms of care delivery and community needs, comments from the transacting parties acknowledge that one of the key findings is the potential for the affiliation to address many of the unmet health needs identified in the Community Health Needs Assessment submitted as part of the CON application. The report specifically highlights the proposed service enhancements committed as part of the affiliation process and how they could help address specific community needs. In addition, the parties identify two specific affiliation agreement commitments that they claim will further improve Charlotte Hungerford Hospital ability to implement its community health improvement plan and improve the health of the community and promote positive lifestyle choices.

DPH respectfully acknowledges the potential for the affiliation to improve quality at Charlotte Hungerford Hospital and address important community health needs through enhanced funding and clinical services in Torrington, but declines to make any modifications to the Final Report on this topic.