



## Office Of Health Care Access Certificate of Need Application

### Final Decision

**Applicant:** Yale-New Haven Hospital

**Docket Number:** 07-30963-CON

**Project Title:** Acquisition of a 64-Slice Computed Tomography Scanner in the Emergency Department and Relocation of 4-Slice CT Scanner in ED to the Radiology Department

**Statutory Reference:** Section 19a-638 of the Connecticut General Statutes

**Filing Date:** August 17, 2007

**Decision Date:** February 22, 2008

**Default Date:** March 6, 2008

**Staff Assigned:** Paolo Fiducia

**Project Description:** Yale-New Haven Hospital (“Hospital”) proposes to acquire a 64-slice Computed Tomography (“CT”) scanner for its Emergency Department (“ED”) and relocate the 4-slice CT scanner in the ED to the Radiology Department, at an estimated total capital cost of \$2,275,000.

**Nature of Proceedings:** On August 17, 2007, the Office of Health Care Access (“OHCA”) received a Certificate of Need (“CON”) application from Yale-New Haven Hospital (“Hospital”) seeking authorization to acquire a 64-slice CT scanner for its Emergency Department (“ED”) and relocate the 4-slice CT scanner in the ED to the Radiology Department, at an estimated total capital cost of \$2,275,000. The Hospital is a health care facility or institution as defined by Section 19a-630 of the Connecticut General Statutes (“C.G.S.”).

Pursuant to Section 19a-638, C.G.S., a notice to the public concerning OHCA’s receipt of the Hospital’s Letter of Intent was published in *The New Haven Register* on May 21, 2007.

Pursuant to Section 19a-638, C.G.S., three individuals or an individual representing an entity with five or more people had until December 28, 2007, the twenty-first calendar day following the filing of the Hospital's CON application, to request that OHCA hold a public hearing on the Hospital's proposal. OHCA received no hearing requests from the public by December 28, 2007.

OHCA's authority to review and approve, modify or deny the CON application is established by Section 19a-638, C.G.S. The provisions of this section, as well as the principles and guidelines set forth in Section 19a-637, C.G.S., were fully considered by OHCA in its review.

## Findings of Fact

### Clear Public Need

#### **Impact of the Proposal on the Hospital's Current Utilization Statistics Proposal's Contribution to the Quality of Health Care Delivery in the Region Proposal's Contribution to the Accessibility of Health Care Delivery in the Region**

1. Yale-New Haven Hospital ("Hospital" or "YNHH") is an acute care, teaching hospital located at 20 York Street in New Haven. (*May 7, 2007, Letter of Intent, page 2*)
2. In regards to the Emergency Department ("ED"), YNHH is the regional Level 1 Trauma Center for Southern Connecticut and the State's only Level 1 adult and pediatric trauma center. (*August 17, 2007, Initial CON Submission, page 9*)
3. YNHH proposes to upgrade its ED Computed Tomography ("CT") scanner by acquiring a 64-slice CT scanner and relocating the existing 4-slice CT scanner in the ED to the Radiology Department CT suite. (*May 7, 2007, Letter of Intent, page 9*)
4. According to the Hospital, the proposal to replace its 4-slice CT scanner in the ED with a 64-slice CT scanner is the result of several key factors:
  - The current fully depreciated 4-slice scanner is outdated, cannot be upgraded and is no longer state-of-the-art technology for Emergency and Level 1 Trauma scans. Image quality and resolution from the 4-slice scanner do not meet the current standard of practice required for higher-level scanning needs;
  - The best available technology is critical in order to meet the needs of a busy urban ED and major Level 1 trauma center; in this setting, the ability to provide the highest quality scans in the least amount is critical; and
  - The 4-slice CT scanner is unable to perform scans quickly enough for trauma patients with vascular damage given the machine's temporal resolution limitations. (*August 17, 2007, Initial CON Submission, pages 10-11*)
5. In regards to the main Radiology Department, the Hospital proposes to retain the 4-slice CT scanner currently in the ED and dedicate it to the performance of CT-guided procedures such as biopsies. Currently, these scans, which can take several hours to

perform, are done on a scanner which is already heavily scheduled. (*August 17, 2007, Initial CON Submission, page 9*)

6. According to the Hospital, in some cases, patients requiring CT-guided procedures must wait for prolonged periods of time or undergo scans at inconvenient times. By dedicating the 4-slice scanner to CT-guided procedures, the Hospital can provide more timely and efficient care to a greater number of patients. (*August 17, 2007, Initial CON Submission, page 9*)
7. The Hospital states that the availability of an additional CT scanner in Diagnostic Radiology, dedicated to performing approximately 450 CT-guided biopsy and interventional procedures annually, will not only improve scheduled and emergent access to CT technology for a variety of these complicated and invasive exams, but it can also be used for pediatric patients when anesthesia is required to facilitate the CT scan. (*May 7, 2007, Letter of Intent, page 9*)
8. The Hospital indicated that the 64-slice CT scanner is the appropriate choice for a major trauma center ED due to the following factors:
  - Rapid whole-body exams with the 64-slice CT scanner can have a significant impact on ED patient management, especially for polytrauma cases, in which the entire body can be scanned for evaluation in less than 30 seconds;
  - The 64-slice scanner produces more reliable small vessel imaging in the head and neck, abdomen, pelvis and extremities; and
  - The 64-slice scanner offers better clinical performance over a broader range of patients than any other CT platform.(*August 17, 2007, Initial CON Submission, page 11*)
9. According to the Hospital, the new 64-slice scanner will be able to perform multi-detector volume scanning. With this new generation of scanner it is possible to scan and then diagnose dynamic vascular anatomy not possible with the limited 4-slice scanner. It will have the ability to cover more anatomy in less time with more comfort to the patient. (*May 7, 2007, Letter of Intent, page 9*)
10. The Hospital states that a 64-slice scanner has the capability to scan patients faster with superior image quality and flexibility to evaluate the patient in any imaging plane desired. Additionally, the improved quality of specialized imaging such as CT Angiography (“CTA”) will greatly facilitate diagnosis of pulmonary embolism, dissecting aortic aneurysm, and better define the extent of brain damage from stroke. This same technology can be used for CTA of the coronary arteries, a new and promising technique for evaluating patients with chest pain and possible myocardial infarction. (*May 7, 2007, Letter of Intent, page 9*)
11. The current population served and the target population to be served include the residents of Ansonia, Bethany, Branford, Cheshire, Clinton, Deep River, Derby, East Haven, Essex, Guilford, Hamden, Killingworth, Madison, Meriden, Milford, New Haven, North Branford, North Haven, Old Saybrook, Orange, Oxford, Seymour, Wallingford, Westbrook, West Haven and Woodbridge. (*May 7, 2007, Letter of Intent, page 8*)

12. Yale-New Haven Delivery Network currently operates the following CT scanners:

**Table 1: Yale-New Haven Delivery Network Existing CT Scanners**

<b>Facility and Location</b>	<b>CT Description</b>
YNHH (ED), 20 York Street, New Haven	4-slice
YNHH, 20 York Street, New Haven	64-slice
YNHH, 20 York Street, New Haven	16-slice
YNHH, Long Wharf Medical Center, New Haven	4-slice
YNHH-Temple Radiology, Hamden*	Single slice
YNHH-Temple Radiology, New Haven	4-slice
YNHH-Temple Radiology, Shoreline Medical Center, Guilford	16-slice

Note: On September 20, 2007, under Docket Number: 06-30901-CON, OHCA approved the Hospital to replace the single-slice CT scanner with a 64-slice CT scanner at the Temple Radiology facility to become operational in the middle of 2008.

(December 7, 2007, Completeness Responses, page 4)

13. The Hospital indicated that the following are the existing CT providers in the proposed service area:

**Table 2: Existing CT Providers in the Proposed PSA and SSA**

<b>Provider Name and Location</b>	<b>Description of Service</b>
Whitney Imaging Center Hamden, CT	4-slice
Wallingford Diagnostic Imaging Center (MidState Radiology Associates) Wallingford, CT	CT Scan
MidState Medical Center, Meriden, CT	64-slice
S.B.D.I. Holding Company, Milford, CT	8-slice
Milford Hospital, Milford, CT	16-slice
Southern CT Imaging Center, Hamden, CT	CT Scan
Hospital of St. Raphael, New Haven, CT	CT Scan
Griffin Hospital, Derby, CT	16-slice

(August 17, 2007, Initial CON Submission, page 14)

14. The following table shows the volume of YNHH CT scans by Emergency Department, Inpatient and Outpatient for FY 2005, FY 2006 and FY 2007, respectively.

**Table 3: CT Scan Volume**

<b>Description</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>Annualized FY 2007</b>
Emergency Department*	17,901	22,213	26,480
Inpatient	20,151	20,878	21,428
Outpatient	24,773	20,135	20,286
<b>Total</b>	<b>62,825</b>	<b>63,226</b>	<b>68,194</b>

\*Note: This represents volumes by patient designation.

(October 10, 2007, Completeness Response, page 1)

16. The following table shows the volume of Yale-New Haven Delivery Network CT scanners for FY 2005, FY 2006 and FY 2007, respectively.

**Table 4: Volume of Yale-New Haven Delivery Network CT Scanners for FY 2005, 2006 and 2007**

Yale-New Haven Delivery Network	2005	2006	2007
YNHHD ED*	33,843	34,623	35,333
YNHH 20 York Street	7,484	9,836	14,131
YNHH 20 York Street	17,047	14,262	13,552
YNHH Long Wharf	4,453	4,506	5,633
YNHH-Temple Radiology, Hamden	1,476	1,480	1,541
YNHH-Temple Radiology, New Haven	5,370	5,074	4,568
YNHH-Temple Shoreline	3,526	4,828	7,486
<b>Total</b>	<b>73,199</b>	<b>74,609</b>	<b>82,244</b>

*\*Note: This represents volumes performed by ED CT scanner. (December 7, 2007, Completeness Responses, page 1)*

17. The following table shows the actual and projected number of CT scans at YNHH.

**Table 5: Actual and Projected CT Scans Volume at YNHH**

	FY 04	FY 05	FY 06	FY 07 (9 mo)	FY 07 (Annualized)	FY 08 projected	FY 09 projected	FY 10 projected
Number of CT Scanners	4	4	4	4	4	5	5	5
CT proc. Exc. CT-guided proc.*	58,660	62,471	62,664	49,902	66,536	69,463	71,547	73,693
CT-guided proc.**	377	354	562	349	465	579	602	626
<b>Total CT Scans</b>	<b>59,037</b>	<b>62,825</b>	<b>63,226</b>	<b>50,251</b>	<b>67,001</b>	<b>70,042</b>	<b>72,149</b>	<b>74,319</b>

\*The 3-year trended historical growth is almost 4.5%. The proposed replacement of the 4-slice scanner in the ED and dedicating it for CT-guided procedures will allow the Hospital to grow in line with historical rates, although conservatively estimated at 3-4%.

\*\*For CT-guided procedures, physician attrition resulted in a volume drop between FY 2006-2007, which is expected to rebound; and be maintained at a 3-4% annual growth. Dedicating the 4-slice to CT-guided procedures will allow greater capacity for lengthy procedures such as biopsies and RF ablations.

*(August 17, 2007, Initial CON Submission, page 27)*

18. The following table shows the current maximum capacity for the existing scanners at YNHH.

**Table 6: Current Maximum Capacity For Existing Scanners At YNHH**

	Long Wharf	ED	16-Slice	64-Slice	Shoreline*	Hamden	Temple NH	Total
Maximum Capacity Number of Scans	7,085	31,277	17,338	19,440	7,992	3,936***	7,992	<b>98,208</b>
Monday-Friday								
Hours per Week Day	8	24**	16**	16**	9	8	9	<b>90</b>
Days/Week	5	5	5	5	5	5	5	<b>5</b>
M-F Total Hours	40	120	80	80	45	40	45	<b>450</b>
Saturday	-	24	16	16	-	-	-	<b>56</b>
Sunday	-	24	-	10	-	-	-	<b>34</b>
Hours per Week	40	168	96	106	45	40	45	<b>540</b>
Hours Total for 52 Weeks	2,080	8,736	4,992	5,512	2,340	2,080	2,340	<b>28,080</b>
<b>Less:</b>								
8 Holiday/Year		-						
Less Available Hours/Year	(64)	-	(128)	(64)	(72)	(64)	(72)	<b>(464)</b>
Scheduled Preventive Maintenance								
1 Per Month @4hrs each	(48)	(48)	(48)	(48)	(48)	(48)	(48)	<b>(336)</b>
Total Available Hours	1,968	8,688	4,816	5,400	2,220	1,968	2,220	<b>27,280</b>
Procedure level capacity based on average procedure volume per hour of 3.60 (average 16-17 minutes per procedure)	7,085	31,277	17,338	19,440	7,992	3,936***	7,992	<b>98,208</b>

\* The Shoreline CT is also available to the Shoreline Medical Center ED on an on-call basis 5-11 pm, Monday-Friday and 7am-11pm, Saturday-Sunday.

\*\* Average hours per day for the three main campus machines are approximately 18.

\*\*\*The Hamden CT is currently a single-slice machine; due to the increased image acquisition time, procedures average approximately 30 minutes resulting in an average procedure volume per hour of 2.00. Methodology: in addition to holidays and one scheduled preventive maintenance session per month per scanner, there are several other factors that may impact operational output during the course of the year which have not been taken into account, including equipment downtime for longer repairs, technologist training time or shortage, weather-related or other delays that result in late patient arrivals and unanticipated schedule changes.

19. The Hospital will meet the ACR guidelines through clinical policies and procedures, medical staff credentialing, and quality assurance processes. *(August 17, 2007, Initial CON Submission, page 16)*

**Financial Feasibility and Cost Effectiveness of the Proposal and its Impact on the Hospital's Rates and Financial Condition**  
**Impact of the Proposal on the Interests of Consumers of Health Care Services and the Payers for Such Services**  
**Consideration of Other Section 19a-637, C.G.S. Principles and Guidelines**

20. The estimated total capital expenditure of the CON proposal is \$2,275,000. The capital expenditures are itemized as follows:

**Table 7: Total Capital Expenditure**

Non-Medical Equipment (Purchase)	\$1,600,000
Construction/Renovation	\$650,000
Other (move existing 4-slice scanner from ED)	\$25,000
<b>Total Capital Expenditure</b>	<b>\$2,275,000</b>

*(August 17, 2007, Initial CON Submission, page 19)*

21. The proposed project would renovate approximately 597 gross square feet in the existing CT Suite in order to hold the 4-slice CT scanner from the ED. During construction, ED patient scans will be performed on the main department scanners. *(August 17, 2007, Initial CON Submission, pages 19 & 20)*
22. The project will be financed through \$455,000 of the Hospital's equity, and \$1,820,000 of funded depreciation. *(August 17, 2007, Initial CON Submission, pages 20 & 21)*
23. The Hospital states that the proposed CT scanner will provide services to patients in the ED. YNHH does not expect any additional revenue associated with this equipment replacement. However, the new scanner will require a maintenance contract, and the Hospital will also incur depreciation expense at \$346,000 per year based on a five year useful life. *(December 7, 2007, Completeness Response, page 2)*
24. There is no State Health Plan in existence at this time. *(August 17, 2007, Initial CON Submission, page 10)*
25. The Hospital has adduced evidence that the proposal is consistent with its long-range plan. *(August 17, 2007, Initial CON Submission, page 10)*
26. The Hospital has improved productivity and contained costs through energy conservation, group purchasing, reengineering, and application of new technologies. *(August 17, 2007, Initial CON Submission, page 17)*

27. The Hospital's three year projected payer mix for the proposed CT scanner at YNHH is as follows:

**Table 8: Three-Year Projected Payer Mix with the CON Proposal**

<b>Payer Mix</b>	<b>Current</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Medicare	31.09%	29.05%	28.02%	27.01%
Medicaid	12.67%	12.01%	11.90%	11.50%
Champus and TriCare	0.80%	0.80%	0.80%	0.80%
<b>Total Government</b>	<b>44.56%</b>	<b>41.86%</b>	<b>40.72%</b>	<b>39.31%</b>
Commercial Insurers	49.74%	51.83%	52.08%	53.42%
Uninsured	4.28%	5.44%	6.29%	6.36%
Workers Compensation	1.42%	0.87%	0.91%	0.91%
<b>Total Non-Government</b>	<b>55.44%</b>	<b>58.14%</b>	<b>59.28%</b>	<b>60.69%</b>
<b>Total Payer Mix</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>

*(August 17, 2007, Initial CON Submission, page 22)*

28. The proposal will result in changes to the Hospital's current patient/physician mix due to the fact that is the only Adult and Pediatric Level 1 Trauma Center in the State of Connecticut. *(August 17, 2007, Initial CON Submission, page 18)*

29. The Hospital possesses sufficient technical, financial and managerial competence and expertise to provide efficient and adequate service to the public. *(August 17, 2007, Initial CON Submission, page 16)*

30. The Hospital's rates are sufficient to cover the proposed capital expenditures and operating costs associated with the proposal. *(December 7, 2007, Completeness Responses, page 12)*

## Rationale

The Office of Health Care Access (“OHCA”) approaches community and regional need for Certificate of Need (“CON”) proposals on a case by case basis. CON applications do not lend themselves to general applicability due to a variety of factors, which may affect any given proposal; e.g. the characteristics of the population to be served, the nature of the existing services, the specific types of services proposed to be offered, the current utilization of services and the financial feasibility of the proposal.

Yale-New Haven Hospital (“Hospital” or “YNHH”) is an acute care teaching hospital located at 20 York Street in New Haven, Connecticut. YNHH proposes to upgrade its Emergency Department (“ED”) Computed Tomography (“CT”) scanner by acquiring a 64-slice CT scanner and relocating the existing 4-slice CT scanner in the ED to the Radiology Department CT suite. Yale-New Haven Delivery Network operates several CT scanners in New Haven, Hamden and Guilford. In FY 2007, 38.8% of all CT scans performed at YNHH were done in the Emergency Department.

Replacing the 4-slice CT scanner with a 64-slice CT scanner in the Hospital’s Level 1 Trauma Center/ED will allow the Hospital to increase the quality of care provided to its ED and trauma patients through quicker scans that offer far superior CT images. The proposed 64-slice CT scanner offers many advantages, in particular, it has the capability to perform rapid whole-body exams, especially for polytrauma cases; produces more reliable small vessel imaging in the head and neck, abdomen, pelvis and extremities; and perform multi-detector volume scanning. Providing high quality and timely diagnostic imaging services in the ED through the use of the latest technology is essential for providing the best quality care to the Hospital’s patients. The Hospital stated that the proposal will contribute to operational efficiencies and cost effectiveness given that the speed of the 64-slice CT scanner decreases diagnosis time and enhances patient management within the ED. OHCA finds that the acquisition of a 64-slice CT scanner in the ED will improve both access and quality of care for Hospital ED patients in need of CT imaging services.

The Hospital is also proposing to retain the existing 4-slice CT scanner currently in the ED and relocate it to the Radiology Department and dedicate it to CT-guided procedures such as biopsies and radiofrequency ablations. By dedicating the 4-slice CT scanner to CT-guided procedures, the Hospital can provide more timely and efficient care to a greater number of patients. Currently, these scans, which can take several hours to perform, are done on a scanner which is already heavily scheduled. The availability of an additional CT scanner in Diagnostic Radiology, dedicated to performing CT-guided biopsy and interventional procedures annually, will improve scheduled and emergent access to CT technology for a variety of these complicated and invasive exams. It can also be used for pediatric patients when anesthesia is required to facilitate the CT scan. OHCA finds that the relocation of the 4-slice CT scanner to the Radiology Department will improve both access and quality of care for Hospital patients in need of CT-guided procedures such as biopsies and radiofrequency ablations.

The total capital expenditure for the CON proposal is \$2,275,000, financed through the Hospital’s equity and funded depreciation. The Hospital’s financial projections, and volumes

upon which they are based, appear to be reasonable and achievable. Therefore, OHCA finds that the CON proposal is cost effective and is in the best interest of consumers and payers.

## Order

Based upon the foregoing Findings and Rationale, the Certificate of Need application of Yale-New Haven Hospital (“Hospital” or “YNHH”) to acquire a 64-slice Computed Tomography (“CT”) scanner for its Emergency Department (“ED”) and relocate the 4-slice CT scanner in the ED to the Radiology Department at a total capital expenditure of \$2,275,000, is hereby APPROVED.

1. This authorization shall expire on February 22, 2009. Should the Hospital’s CT imaging project not be completed by that date, the Hospital must seek further approval from OHCA to complete the project beyond that date.
2. The Hospital shall not exceed the approved total capital cost of \$2,275,000. In the event that the Hospital learns of potential cost increases or expects that final project costs will exceed those approved, the Hospital shall notify OHCA immediately.
3. The Hospital shall notify OHCA in writing of the following information by no later than one month after the new scanner becomes operational:
  - a) The name of the CT scanner manufacturer;
  - b) The model name and description of the scanning unit; and
  - c) The initial date of the operation of the CT scanner.

Should the Hospital fail to comply with any of the aforementioned conditions, OHCA reserves the right to take additional action as authorized by law.

All of the foregoing constitutes the final order of the Office of Health Care Access in this matter.

By Order of the  
Office of Health Care Access

*Signed by Commissioner Vogel on February 22, 2008*

\_\_\_\_\_  
Date

\_\_\_\_\_  
Cristine A. Vogel  
Commissioner

CAV:pf