

Yale-New Haven Hospital (YNHH), Bridgeport Hospital (BH)
Consolidation of Pediatric Services Into a Single Program
Owned and Operated by Yale-New Haven Hospital and Located
at Bridgeport Hospital

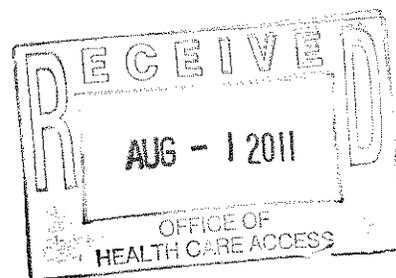
Certificate of Need Application

Friday, July 29, 2011



July 29, 2011

Kimberly Martone
 Director of Operations
 Office of Health Care Access
 410 Capital Avenue, MS #13HCA
 P O Box 340308
 Hartford, CT 06106



RE: Certificate of Need Application
 Yale-New Haven Hospital, Bridgeport Hospital
 Yale-New Haven Hospital, Bridgeport Hospital—Consolidation of Pediatric Services
 Into a Single Program Owned and Operated by YNHH and Located at BH

Dear Mrs. Martone,

Enclosed please find the original, four (4) hard copies and an electronic copy on CD of the Certificate of Need (CON) application for the Consolidation of Pediatric Services Into a Single Program Owned and Operated by Yale-New Haven Hospital and Located at Bridgeport Hospital.

A notice to the public regarding the CON application was published in the New Haven Register and the Connecticut Post pursuant to Section 19a-638 of the Connecticut General Statutes. Copies of the legal notices are enclosed for your information.

Please forward any correspondence to:
 Jean Ahn, System Director
 Yale-New Haven Hospital
 Planning & Business Development Office (Howe 3)
 20 York Street
 New Haven, CT 06504

Thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read 'Norman G. Roth'.

Norman G. Roth
 Senior Vice President
 Administration

Enclosures

cc: William Aseltyne, Esq.
 Rebecca Matthews, Esq.

**YALE-NEW HAVEN HOSPITAL
BRIDGEPORT HOSPITAL**
**Consolidation of Pediatric Services Into a Single Program Owned and Operated by Yale-
New Haven Hospital and Located at Bridgeport Hospital**

Certificate of Need Application

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Public Notice Affidavits

**The New Haven Register
The Connecticut Post**

AFFIDAVIT OF PUBLICATION

New Haven Register

STATE OF CONNECTICUT

County of New Haven

I, Judith Aslanyuk of New Haven

Connecticut, being duly sworn, do depose and say that I am a Classified Rep

of the New Haven Register, and that on the following date 6/17, 18, 19, 20/11 to wit:

there was published in the regular daily edition of the said newspaper an advertisement,

LEGAL NOTICE

Pursuant to section 19a-638 of Connecticut General Statutes, Yale-New Haven Hospital and Bridgeport Hospital will submit the following Certificate of Need application:

Applicant(s):
Yale-New Haven Hospital (YNHH)
Bridgeport Hospital (BH)

Address: 267 Grant Street
Town: Bridgeport

Proposal:
Yale-New Haven Hospital, Bridgeport Hospital — Consolidation of Pediatric Services into a Single Program Owned and Operated by YNHH and Located at BH

Estimated Total Project Cost/
Expenditure: \$200,000

and that I
Subscrib

annexed were clipped from each of the above-named issues of said newspaper.

20th day of June 2011 before me.

Mary Federica Notary Public

My Commission Expires 10/31/2012

CONNECTICUT POST

410 State Street • Bridgeport, CT 06604

YALE NEW HAVEN HOSPITAL-OBGYN/MASON
INC
C/O MASON, INC, 23 AMITY RD.
BETHANY CT 06524

CONNECTICUT POST CERTIFICATE OF PUBLICATION

This is to certify that the attached advertisement was published in the Connecticut Post newspaper as stated below.

PUBLIC NOTICE	
Pursuant to section 19a-538 of Connecticut General Statutes, Yale New Haven Hospital and Bridgeport Hospital will submit the following Certificate of Need application:	
Applicant(s):	Yale-New Haven Hospital (YNHH) Bridgeport Hospital (BH)
Address:	267 Grant Street
Town:	Bridgeport
Proposal:	Yale-New Haven Hospital, Bridgeport Hospital - Consolidation of Pediatric Services into a Single Program Owned and Operated by YNHH and located at BH
Estimated Total Project Cost/ Expenditure:	\$200,000

[Signature]

(Advertising Representative)

Subscribed and sworn to before me, on this 21st day of June, A.D. 2011

Pamela B. Calvete

Notary Public
State Commission Expires 1/31/2013

<u>PO Number</u>		<u>Amount</u>
		\$569.70
<u>Publication</u>	<u>Ad Number</u>	<u>Ad Caption</u>
Connecticut Post	0001651860-01	PUBLIC NOTICE Pursuant to se

Publication Schedule
6/17/2011, 6/18/2011, 6/19/2011

Filing Fee

**OFFICE OF HEALTH CARE ACCESS
REQUEST FOR NEW CERTIFICATE OF NEED
FILING FEE FORM**

APPLICANT: <u>Yale-New Haven Hospital and Bridgeport Hospital</u> Hospital _____ PROJECT TITLE: <u>Yale-New Haven Hospital, Bridgeport Hospital—Consolidation of Pediatric Services Into a Single Program Owned and Operated by Yale-New Haven Hospital and located at Bridgeport Hospital</u> DATE: <u>July 29, 2011</u>	FOR OHCA USE ONLY: <table style="width: 100%;"> <thead> <tr> <th></th> <th style="text-align: center;">DATE</th> <th style="text-align: center;">INITIAL</th> </tr> </thead> <tbody> <tr> <td>1. Check logged (Front desk)</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>2. Check rec'd (Clerical/Cert.)</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>3. Check correct (Superv.)</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>4. Check logged (Clerical/Cert.)</td> <td>_____</td> <td>_____</td> </tr> </tbody> </table>		DATE	INITIAL	1. Check logged (Front desk)	_____	_____	2. Check rec'd (Clerical/Cert.)	_____	_____	3. Check correct (Superv.)	_____	_____	4. Check logged (Clerical/Cert.)	_____	_____
	DATE	INITIAL														
1. Check logged (Front desk)	_____	_____														
2. Check rec'd (Clerical/Cert.)	_____	_____														
3. Check correct (Superv.)	_____	_____														
4. Check logged (Clerical/Cert.)	_____	_____														

NEW CERTIFICATE OF NEED APPLICATION	
TOTAL FEE DUE:	\$500.00

ATTACH HERE CERTIFIED OR CASHIER'S CHECK ONLY (Payable to: Treasurer, State of Connecticut)



Cashier's Check

No. 1326071

Notice to Purchaser: In the event this check is lost, misplaced or stolen, a sworn statement and 90-day waiting period will be required prior to replacement. This check should be negotiated within 90 days.

Date: JULY 06 2011 30°1/1140
NIX

Banking Center: YALE NEW HAVEN HOSPITAL

0021178 00005 0001326071 YNHH-BEDS CON
Remitter: (Purchased By)

Pay ****FIVE HUNDRED DOLLARS AND 00 CENTS**** \$ ****500.00****

To The Order Of ****TREASURER, STATE OF CONNECTICUT****

Peterson
Authorized Signature

Bank of America, N.A.
San Antonio, Texas **VOID AFTER 90 DAYS**

⑈ 1326071 ⑈ ⑆ 14000019 ⑆ 001641005545 ⑈

Hospital Affidavits

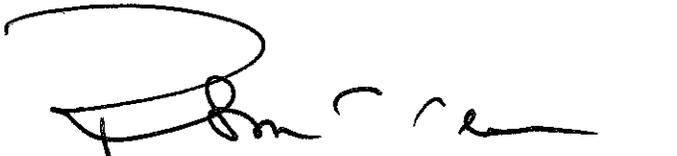
AFFIDAVIT

Applicant: **Bridgeport Hospital (BH)**

Project Title: **Yale-New Haven Hospital, Bridgeport Hospital—Consolidation of Pediatric Services into a Single Program Owned and Operated by Yale-New Haven Hospital and located at Bridgeport Hospital**

I, **Patrick McCabe, Chief Financial Officer of Bridgeport Hospital** being duly sworn, depose and state that **Bridgeport Hospital's** information submitted in this Certificate of Need

Application is accurate and correct to the best of my knowledge.



Signature

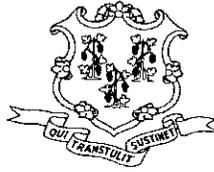
7-27-11
Date

Subscribed and sworn to before me on 7-27-11

Gardelyn D. Gonzalez

Notary Public/Commissioner of Superior Court ~~My Commission Expires~~ **Expires 03/31/2016**

My commission expires: 03/31/2016



**State of Connecticut
Office of Health Care Access
Certificate of Need Application**

Instructions: Please complete all sections of the Certificate of Need (“CON”) application. If any section or question is not relevant to your project, a response of “Not Applicable” may be deemed an acceptable answer. If there is more than one applicant, identify the name and all contact information for each applicant. OHCA will assign a Docket Number to the CON application once the application is received by OHCA.

Docket Number: TBD

Applicant: Yale-New Haven Hospital, Bridgeport Hospital

Contact Person: Jean Ahn

Contact Person’s Title: System Director

Contact Person’s Address: Yale-New Haven Hospital, Planning & Business Development
20 York Street (Howe 3), New Haven, CT 06519

Contact Person’s Phone Number: (203) 688-2609

Contact Person’s Fax Number: (203) 688-5013

Contact Person’s Email Address: jean.ahn@ynhh.org

Project Town: Bridgeport

Project Name: Yale-New Haven Hospital, Bridgeport Hospital—Consolidation of Pediatric Services into a Single Program Owned and Operated by Yale-New Haven Hospital and located at Bridgeport Hospital

Statute Reference: Section 19a-638, C.G.S.

Estimated Total Capital Expenditure: \$200,000

1. Project Description and Need: Change of Ownership or Control

a. Please provide a narrative detailing the proposal.

Long-standing Yale New Haven Health System (YNHHS) members, Yale-New Haven Hospital (YNHH) and Bridgeport Hospital (BH), are proposing to consolidate their two pediatric services into a single program. Under this proposal, Bridgeport Hospital will transfer ownership of its 42 inpatient pediatric beds and its outpatient pediatric clinics to Yale-New Haven Hospital. This greater integration of pediatric services within YNHHS represents a logical evolution of YNHHS as it continues to create one standard of patient care and service across the System, with the foremost goal to improve clinical quality and patient safety in an efficient and effective manner.

As YNHH's dedicated pediatric hospital, Yale-New Haven Children's Hospital (YNHCH) is the primary teaching hospital for pediatric specialists from the Yale University School of Medicine, offering a comprehensive array of clinical services and programs. YNHCH offers new approaches to childhood diseases, new technologies for diagnosis and new therapies for treatment, and its advanced medical care is nationally recognized. The 2011 edition of *U.S. News & World Report's* survey of America's Best Children's Hospitals ranked YNHCH's diabetes and endocrinology program seventh in the nation, and also ranked its pediatric gastroenterology, urology, neonatology and pulmonology programs as among the nation's best. In addition, YNHCH draws on the strength and depth of Yale-New Haven Hospital, which was recently granted Magnet recognition by the American Nurses Credentialing Center, one of only six percent of the nation's hospitals to earn this prestigious honor for excellence in nursing care.

Bridgeport Hospital is distinguished by its longtime experience in serving the pediatric community with clinical excellence and providing high quality service to patients and families. It provides a range of pediatric specialty services through its community medical staff, including specialized, family-centered care to infants, children and adolescents. Its P.T. Barnum Pediatric Center features a 20-bassinet neonatal intensive care nursery, an 18-bed pediatric unit and a 4-bed pediatric intensive care unit (for a total of 42 inpatient pediatric beds); these units are staffed by full-time pediatric nurses with around-the-clock coverage by certified pediatric resident physicians, neonatologists as well as pediatric hospitalists.

Under this proposal, ownership of the pediatric inpatient beds at Bridgeport Hospital will be transferred to Yale-New Haven Hospital, which will see an increase of 42 licensed beds, and Bridgeport Hospital will reduce its bed license by the same number. Inpatient pediatric services (including neonatal intensive care services) and outpatient pediatric clinics formerly operated by Bridgeport Hospital will be operated as part of a provider-based pediatric satellite of Yale-New Haven Hospital under unified pediatric leadership. The well newborn nursery will remain part of Bridgeport Hospital.

The current and proposed number of licensed beds available at each location involved in this proposal are as follows:

Location	Existing Licensed Beds	Net Change	Proposed Total Licensed
BH	425	(42)	383
YNHH	966	+42	1,008

- b. Explain how each Applicant determined need for the proposal and discuss the benefits of this proposal for each Applicant (discuss each Applicant separately in separate paragraphs).

The benefits of this proposal are many and include enhanced patient safety, clinical quality and satisfaction through greater System-wide standardization of best practices that will reduce the variation in care and service provided, greater System-wide coordination of care through use of a common medical record system and the provision of the same high standard of clinical care and service across both YNHHS locations.

Bridgeport Hospital: Bridgeport Hospital determined the need for the proposed integration of pediatric services through an ongoing assessment of its clinical services to ensure they are operating at an optimal level and meeting the needs of its patients, families and physicians today and into the future. The new era of health care reform calls for improved care coordination and quality and more cost-effective delivery. Integrating Bridgeport Hospital's pediatric services into Yale-New Haven Children's Hospital using best practices, creating an integrated delivery network to coordinate care, and using a single medical record to link ambulatory, acute, and rehabilitation services, as well as physicians, will increase access, improve quality of care and be more efficient.

Bridgeport Hospital's pediatric residency program is already integrated with Yale-New Haven Hospital, and is a longstanding member of Yale New Haven Health System, making Yale-New Haven Children's Hospital a natural choice as a partner for enhancing Bridgeport Hospital's pediatric services. As members of the Yale-New Haven Hospital medical staff, Bridgeport Hospital physicians will benefit from enhanced collaboration and cooperation with Yale-New Haven Hospital and Yale University School of Medicine specialists. As a Yale New Haven Health System member, Bridgeport Hospital has benefited from System-wide collaboration and sharing of best practices. The proposed consolidation will benefit Bridgeport Hospital pediatric services and its employees through enhanced collaboration with YNHCH staff—including through exchange of expertise with colleagues at a premier children's hospital, and access to pediatric-focused education and training opportunities.

Finally, the proposed integration will improve efficiency at Bridgeport Hospital through economies of scale and shared resources.

Yale-New Haven Children's Hospital: As stated above, both YNH and BH are members of Yale New Haven Health System, which focuses on enhancing its clinical programs through greater intra-System collaboration and on opportunities to integrate clinical services across its members when appropriate to provide enhanced quality clinical care. By creating a single pediatric program with two locations, the proposed relationship with Bridgeport Hospital is a logical evolution of greater System integration and provides a logical way to build on YNHCH's existing relationship with BH through its pediatric residency program.

As a recognized national leader, Yale-New Haven Children's Hospital's integration with BH's pediatric program, which has a longstanding tradition of delivering excellent clinical care, will allow YNH to strengthen its clinical, academic, and research missions. The increased capacity will strengthen Yale New Haven Health System's ability to more closely coordinate quality care across a wider continuum and across the System's pediatric population, recruit and retain top pediatric faculty, and grow its research programs. The creation of a single pediatric program with locations in Bridgeport and New Haven will allow for implementation of the same best practices to reduce variation in care, consistent staff education, and use of a single medical record at both campuses, with the end result of enhanced clinical practices, coordination of care and communication. Please see Attachment I for a copy of the standard practice guidelines that will be followed at both sites.

- c. Provide a history and timeline of the proposal (e.g., When did discussions begin between the Applicants? What have the Applicants accomplished so far?).

Although the System has discussed greater clinical integration for a number of years, the Applicants began formal discussion regarding this pediatric-focused proposal in late fall of 2010. After considerable thought and discussion, a decision was reached that the two programs would be stronger as an integrated pediatric program than as two separate programs. During the past year, the Applicants have obtained approval from each hospital's Board of Directors and the YNHHS Board for the proposed relationship. The Applicants have also developed and implemented a communication plan to inform their respective stakeholders about the proposed consolidation. In addition, ongoing meetings of operational and clinical staff from each hospital are being held on a regular basis to decide on operating and standard of care details. Finally, the credentialing of BH pediatric medical staff at YNH is in process.

- d. List any changes to the clinical services offered by the Applicants that result from this proposal, and provide an explanation.

All the existing pediatric clinical services that are currently offered at Bridgeport Hospital will continue to be offered to patients under the new relationship with YNH. No reduction in the scope of clinical services will occur as a result of this

proposal. Pediatric surgery and gastrointestinal services in Bridgeport are expected to be enhanced in Year 2 of this proposal with the planned addition of an YNHCH pediatric surgeon and gastroenterologist at the Bridgeport Hospital site on a part-time basis. This enhancement will supplement and expand the existing availability of these services. Additional future pediatric clinical programmatic enhancements or additions at BH will be evaluated once the initial transition has occurred.

Although the existing pediatric programs will continue, YNHCH will determine where it will make investments to further develop or expand services.

- e. Describe the existing population served by the facility changing ownership or control, and how the proposal will impact these populations. Include demographic information as appropriate.

The existing population served by Bridgeport Hospital primarily includes children between 0-17 years of age who live in the hospital's primary and secondary service area towns of Bridgeport, Ansonia, Beacon Falls, Derby, Easton, Fairfield, Milford, Monroe, Naugatuck, Newtown, Orange, Oxford, Seymour, Shelton, Stratford, Trumbull, Weston, and Westport. The pediatric population of the BH service area towns is as follows:

Bridgeport Hospital Service Area Towns	
Town	0 - 17 Population, 2010
Ansonia	724
Beacon Falls	261
Bridgeport	6,033
Derby	476
Easton	443
Fairfield	2,728
Milford	2,177
Monroe	1,092
Naugatuck	1,464
Newtown	1,538
Orange	688
Oxford	614
Seymour	684
Shelton	1,676
Stratford	2,081
Trumbull	1,795
Weston	701
Westport	1,744
Total	26,919

The proposal will benefit Bridgeport Hospital's patients in these communities through expanded breadth and depth of services provided through integration with Yale-New Haven Children's Hospital, as well as through enhanced clinical quality and patient safety through greater System-wide standardization of best practices, training, policies and procedures. No changes to referral patterns are expected.

- f. Describe the transition plan and how the Applicants will ensure continuity of services. Provide a copy of a transition plan, if available.

The Applicants will ensure the continuity of services currently offered at BH by continuing to provide all the existing pediatric programs at BH, with no interruption in service to patients and families resulting from the change in bed ownership. The transition will be as seamless as possible. Specific aspects of the transition include:

- **Ancillary Services:** BH and YNHCH are in discussions related to specific ancillary services BH will provide to YNHCH, including housekeeping, supplies, operating rooms, etc. and how BH will be reimbursed for these services. Details will be finalized prior to the proposed start date, in order to allow for a seamless transition.
- **Billing:** Patients will receive one bill for services rendered at YNHCH at Bridgeport, including ancillary services. As discussed under IT services below, YNHCH and BH are working on a process for services to be consolidated onto a single bill.
- **Clinical Protocols & Policies:** As mentioned above, an internal working group has been meeting to best determine how YNHCH policies, practices, standard of care, education and operating details will be finalized and implemented at Bridgeport.
- **Governance:** The Bridgeport Hospital Chair of Pediatrics will become Administrative Director of the Yale-New Haven Children's Hospital at Bridgeport, with a reporting relationship to the Vice President of Women's & Children's Services and Executive Director of YNHCH. He will retain clinical oversight of the Bridgeport-based program, and will continue to report to the Chief Medical Officer at Bridgeport Hospital.
- **Human Resources:** Integral to the successful assimilation of the Bridgeport Hospital inpatient Pediatrics units and outpatient pediatric clinic into the YNHCH is the smooth transfer of Bridgeport Hospital personnel to the YNHCH human resources system. The team reviewing this assimilation process includes Human Resources representation from both hospitals as well as the Yale New Haven Health System to ensure the correct compensation and benefits for transferring employees. Although the compensation program, job valuation and many employee benefit programs are much the same across the System, there are variations at the delivery network level, such as employee co-pays for medical plans that differ based on market and organizational practices. The objective is to transfer personnel with as minimal individual impact as possible and to maintain a high level of employee satisfaction and commitment.
- **Information Technology:** One key component of the transition involves the overall Yale New Haven Health System transition of the clinical and administrative systems of its hospitals to the Epic platform to create and maintain one complete patient record. Until the full Epic roll-out to Bridgeport Hospital, expected in June 2013, the clinical and administrative systems for YNHCH at Bridgeport patients will be maintained. Clinical protocols, order sets and practice guidelines of YNHCH at Bridgeport will be updated to align

with standards of practice of YNHCH. A single standard will be preserved across the two campuses.

- **Physician Credentialing:** Discussions have begun in regard to the details and timeline related to credentialing Bridgeport Hospital physicians to join the medical staff at YNHCH.
- **Public Notice:** Public notice has been made in local papers as a pre-requisite to filing this CON application. In addition, handouts and brochures that explain the transition will also be made available in public spaces to inform families about the change. BH employees will also be available to answer questions about the transition.
- **Signage:** Internal and external signage that identifies the pediatrics unit, neonatal intensive care nursery and general pediatric clinic in Bridgeport as part of YNHCH will be added prior to the transition.

g. For each Applicant (and any new entities to be created as a result of the proposal), provide the following prior to and after this proposal:

i. Legal chart of corporate or entity structure including all affiliates.

Please see Attachment II for copies of entity structure prior to and after implementation of this proposal.

ii. List of owners and the % ownership and shares of each.

YNHH will be 100% owner of the pediatric inpatient beds (including the neonatal intensive care nursery) and general pediatric clinic service.

h. Provide copies of all signed written agreements or memorandum of understanding, including all exhibits/attachments, between the Applicants related to the proposal. Note: If a final version is not available, provide a draft with an estimated date by which the final agreement will be available.

Please see Attachment III for the memorandum of understanding and the respective Board approvals of the proposed consolidation.

2. Quality Measures

a. Submit a list of all key professional, administrative, clinical, and direct service personnel related to the proposal. Attach a copy of their Curriculum Vitae.

Please see Attachment IV for copies of Curriculum Vitae.

b. Explain how the proposal contributes to the quality of health care delivery in the region.

Greater System-wide integration, through the proposed integration of Bridgeport Hospital's pediatric services with Yale-New Haven Children's Hospital, will have a positive impact on the quality of health care delivery in the region. The creation of a single nationally recognized pediatric program with locations in Bridgeport and

New Haven will combine best practices at both campuses to enhance clinical quality and patient safety through standardized procedures and practices, as well as provide the consistency of quality staff education and standard of care represented by a Magnet organization. Furthermore, implementation of a single System-wide medical record will improve the coordination and quality of care, and improve efficiency.

3. Organizational and Financial Information

- a. Identify the Applicant's ownership type(s) (e.g. Corporation, PC, LLC, etc.).

The ownership type is Corporation.

- b. Does the Applicant have non-profit status?
 Yes (Provide documentation) No

Please see Attachment V for documentation of non-profit status.

- c. Provide a copy of the State of Connecticut, Department of Public Health license(s) currently held by the Applicant and indicate any additional licensure categories being sought in relation to the proposal.

Please see Attachment VI for copies of licenses. Upon a decision by the Office of Health Care Access on this proposal, the number of licensed beds, location and services to be provided will be reported to the Department of Public Health (DPH) and the Joint Commission (TJC) for review and further approval as required.

- d. Financial Statements

- i. If the Applicant is a Connecticut hospital: Pursuant to Section 19a-644, C.G.S., each hospital licensed by the Department of Public Health is required to file with OHCA copies of the hospital's audited financial statements. If the hospital has filed its most recently completed fiscal year audited financial statements, the hospital may reference that filing for this proposal.

Copies of both YNHH's and BH's audited financial statements for FY 2010 are currently on file with OHCA.

- ii. If the Applicant is not a Connecticut hospital (other health care facilities): Audited financial statements for the most recently completed fiscal year. If audited financial statements do not exist, in lieu of audited financial statements, provide other financial documentation (e.g. unaudited balance sheet, statement of operations, tax return, or other set of books.) **Not applicable.**

- e. Submit a final version of all capital expenditures/costs as follows:

Table 2: Proposed Capital Expenditures/Costs

Medical Equipment Purchase	
Imaging Equipment Purchase	
Non-Medical Equipment Purchase	
Land/Building Purchase *	
Construction/Renovation **	
Other Non-Construction: YNHCH Signage (external & internal)	\$200,000
Total Capital Expenditure (TCE)	\$200,000
Medical Equipment Lease (Fair Market Value) ***	
Imaging Equipment Lease (Fair Market Value) ***	
Non-Medical Equipment Lease (Fair Market Value) ***	
Fair Market Value of Space ***	
Total Capital Cost (TCC)	
Total Project Cost (TCE + TCC)	\$200,000
Capitalized Financing Costs (Informational Purpose Only)	
Total Capital Expenditure with Cap. Fin. Costs	

* If the proposal involves a land/building purchase, attach a real estate property appraisal including the amount; the useful life of the building; and a schedule of depreciation.

** If the proposal involves construction/renovations, attach a description of the proposed building work, including the gross square feet; existing and proposed floor plans; commencement date for the construction/ renovation; completion date of the construction/renovation; and commencement of operations date.

*** If the proposal involves a capital or operating equipment lease and/or purchase, attach a vendor quote or invoice; schedule of depreciation; useful life of the equipment; and anticipated residual value at the end of the lease or loan term.

- f. List all funding or financing sources for the proposal and the dollar amount of each. Provide applicable details such as interest rate; term; monthly payment; pledges and funds received to date; letter of interest or approval from a lending institution.

The design, production, and installation of internal and external signage to identify Yale-New Haven Children's Hospital to patients and visitors of Bridgeport Hospital are estimated to collectively cost \$200,000. The source of funding for this project will be 20% operating funds and 80% funded depreciation which will be funded by Yale-New Haven Hospital through the use of operating funds. The Hospital does not intend to borrow any dollars to fund this project.

- g. Demonstrate how this proposal will affect the financial strength of the state's health care system.

Through greater System-wide integration and alignment of care practices, staff, education, policies, procedures and programs, facilitated by a joint medical record and unified leadership structure, the single pediatric program will promote more efficient care and enhanced patient care coordination, which in turn will result in improved care and greater cost efficiencies.

4. Patient Population Mix: Current and Projected

- a. Provide the current and projected patient population mix (based on the number of patients, **not based on revenue**) with the CON proposal for the proposed program.

Table 3: Patient Population Mix- YNHCH

	Current FY 2011	Year 1 FY 2012	Year 2 FY 2013	Year 3 FY 2014
Medicare*	0%	0%	0%	0%
Medicaid*	47%	48%	48%	48%
CHAMPUS & TriCare	1%	1%	1%	1%
Total Government	48%	50%	50%	50%
Commercial Insurers*	51%	49%	49%	49%
Uninsured	1%	1%	1%	1%
Workers Compensation	0%	0%	0%	0%
Total Non-Government	52%	50%	50%	50%
Total Payer Mix	100%	100%	100%	100%

* Includes managed care activity.

** New programs may leave the "current" column blank.

*** Fill in years. Ensure the period covered by this table corresponds to the period covered in the projections provided.

Table 3a: Patient Population Mix- Bridgeport Hospital Pediatrics

	Current FY 2011	Year 1 FY 2012	Year 2 FY 2013	Year 3 FY 2014
Medicare*	0%	0%	0%	0%
Medicaid*	56%	56%	56%	56%
CHAMPUS & TriCare	0%	0%	0%	0%
Total Government	56%	56%	56%	56%
Commercial Insurers*	43%	43%	43%	43%
Uninsured	1%	1%	1%	1%
Workers Compensation	0%	0%	0%	0%
Total Non-Government	44%	44%	44%	44%
Total Payer Mix	100%	100%	100%	100%

- b. Provide the basis for/assumptions used to project the patient population mix.

In developing the financial projections for the pediatric program, Bridgeport Hospital's overall current payer mix of 56% governmental and 44% non-governmental payers is expected to hold constant for future years. Reflecting the consolidation of the two programs, Yale-New Haven Hospital's projected payer mix shows a slight increase in Medicaid/governmental payers, and a slight decline in commercial insurers/non-governmental payers given the incorporation of Bridgeport Hospital's payer mix.

5. Financial Attachments I & II

- a. Provide a summary of revenue, expense, and volume statistics, without the CON project, incremental to the CON project, and with the CON project. **Complete Financial Attachment I.** (Note that the actual results for the fiscal year reported in the first column must agree with the Applicant's audited financial statements.) The projections must include the first three full fiscal years of the project.

Please see Attachment VII.

- b. Provide the assumptions utilized in developing **Financial Attachment II** (e.g., full-time equivalents, volume statistics, other expenses, revenue and expense % increases, project commencement of operation date, etc.).

Please see Attachment VIII.

- c. Identify the entity that will be billing for the proposed service(s).

Yale-New Haven Hospital will bill for the proposed services.

- d. As a result of the proposal, will there be any change to existing reimbursement contracts between the Applicants and payers (e.g. Medicare, Medicaid, commercial)? Explain.

There will be no changes to the existing reimbursement contracts for Yale-New Haven Hospital and Bridgeport Hospital.

- e. Provide the minimum number of units required to show an incremental gain from operations for each fiscal year.

Minimum Number of Units required			
	<u>2012</u>	<u>2013</u>	<u>2014</u>
Expenses from operations	\$12,313,250	\$17,391,000	\$18,258,000
Cases Needed to show incremental gain from operations	1,271	1,267	1,254
Average Revenue per case by year	\$9,687	\$13,724	\$14,559
Volume	1,336	1,336	1,336
Revenue	\$ 12,941,333	\$ 18,335,294	\$ 19,450,245

- f. Explain any projected incremental losses from operations contained in the financial projections that result from the implementation and operation of the CON proposal.

No incremental losses from operations are anticipated.

- g. Describe how this proposal is cost effective.

As noted above, through greater System-wide integration and alignment of care practices, staff, education, policies, procedures and programs, facilitated by a joint medical record and unified leadership structure, the single pediatric program will promote more efficient care and enhanced patient care coordination, which in turn will result in improved care and greater cost efficiencies.

APPENDIX I

- Standard Practice Guidelines
American Academy of Pediatrics:**
- **Staffing Patterns for Patient Care and Support Personnel in a General Pediatric Unit**
 - **Clinical Report – Guidance for the Clinician in Rendering Pediatric Care**

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Committee on Hospital Care
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Staffing Patterns for Patient Care and Support Personnel in a General Pediatric Unit

Committee on Hospital Care

The profile of inpatient hospital care for children and youth has changed dramatically during the past two decades. With the implementation of prospective hospital payment plans initiated by diagnosis-related groups, the growth of managed health care systems, the explosive expansion of medical knowledge, and the increased emphasis on outpatient management of major as well as minor illnesses, several trends in pediatric inpatient care at community hospitals have emerged¹:

- a decrease in the rate of hospitalization and number of total inpatient days for children;
- an increasing severity and complexity of illnesses for hospitalized children;
- an increasing proportion of hospital beds occupied by children with chronic illnesses;
- a stabilization or shortening of lengths of stay for most pediatric admissions; and
- a growing utilization of advanced medical technology in noncritical care settings.

In contrast to community hospitals, admission rates for children's hospitals, both freestanding and non-freestanding, have actually increased by 15% in the past decade.²

Overall, however, fewer children are now hospitalized; they have shorter stays but require more intense and sophisticated care for their chronic and/or complicated illnesses.

In addition to these trends, there has been the long overdue recognition of the special needs of children and youth in hospitals^{3,pp41-44}:

- age- and size-appropriate furniture, toilet facilities, recreational areas, and diversional activities;
- unit design to allow for constant supervision and observation of patients, particularly those younger than 10 years of age;
- developmentally appropriate safety programs both in facilities and procedures;
- separate areas for parents/family to gather for rest;
- specially trained staff familiar with the unique and constantly evolving physiology, development, and psychology of infants, children, and youth; and
- increased numbers of staff to provide care for patients who are not independent or self-sufficient.

The recommendations in this policy statement do not indicate an exclusive course of treatment or procedure to be followed. Variations, taking into account individual circumstances, may be appropriate.
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Staffing requirements for an inpatient pediatric unit will vary greatly, depending on the unit's size and mission. This statement is not intended to address the needs of pediatric intensive care, neonatal, psychiatric, or other special care units. Rather, it will focus on the general inpatient pediatric facility in which youngsters with common medical or surgical conditions requiring no more than level II care would be hospitalized. Patients needing ventilatory support, those requiring intravenous medications to sustain cardiovascular function, or those with illnesses that demand one-on-one nursing care would not be cared for in this unit.

UNIT PERSONNEL

Although design and physical characteristics have a significant impact on the comfort and functionality of a pediatric inpatient unit, the unit personnel's knowledge, skills, judgment, and commitment ultimately determine the efficacy and quality of patient care. The number, types, levels of training and experience, and work schedules of the personnel assigned to a pediatric unit will vary according to the size and geography of the facility, the number of rooms and beds, the demographics of the patients, and the severity of the patients' illnesses. In general, the following disciplines and support personnel will be required to provide complete care for children in a hospital: medicine and nursing; physical, occupational, and respiratory therapies; audiology and speech pathology; nutrition; clinical social work and psychology; therapeutic recreation/child life; pastoral care; laboratory and x-ray technologists; unit secretaries; and environmental services personnel. Requirements for each of these are addressed in the following section and in the Table.

PHYSICIANS

Medical Director

To ensure continuous and accountable leadership for the pediatric unit, a qualified member of the active medical staff with recognized expertise in the care of children and documented administrative skills should be appointed or elected to serve as the unit's medical director. In collaboration with the unit's nursing leadership, the medical director should be responsible for the implementation and monitoring of operational policies established by the institution and for ensuring that the medical care is appropriate through an active program of quality improvement

TABLE. Staffing for a General Pediatric Inpatient Unit

Personnel	Size of Unit, No. of Beds					Comments (80% occupancy assumed)
	6	12	18	24	30	
Medical director	(1)*	(1)	(1)	(1)	(1)	Usually a volunteer job. Larger units, particularly with house staff, may require FTE.†
Nursing director	(1)	(1)	(1)	1	1	For units with <18 beds, director may supervise more than one unit or perform clinical tasks part time.
Nursing staff, requirements per shift						
7 AM to 3 PM	2	3	4	5	6	At least 2 RNs Remainder of nursing personnel may be LPNs or assistants depending on nature of patient load
3 PM to 11 PM	1	2	3	4	5	
11 PM to 7 AM	1	2	2	3	4	
Total staff	4	7	9	12	15	
Total needed FTEs	6.5	11	14	18.5	23	Extra FTEs required to provide weekend/illness coverage
Nurse specialists						Need will depend on mission of unit
Recreational therapy/child life	(1)	(1)	(1)	1	1.5	ACCH standard: 1 child life worker per 20 beds, particularly in units with chronic patients
Occupational/physical therapies	(1)	(1)	(1)	(1)	(1)	Unless census is unusually biased with orthopedic and/or neurologic patients, part-time contracted therapists should be able to provide adequate coverage
Audiology/speech pathology	(1)	(1)	(1)	(1)	(1)	
Dietetics/nutrition	(1)	(1)	(1)	(1)	(1)	
Respiratory therapy	(1)	1	2	2	2	During winter months increased need for respiratory therapy should be anticipated
Clinical social work	(1)	(1)	(1)	1	1	
Pastoral care	(1)	(1)	(1)	(1)	(1)	
Unit secretary	(1)	1	1	1	2	
Environmental services	(1)	2	2	2.5	3.0	Dependent on size and configuration of unit.

* Numbers in parentheses = part-time position.

† Abbreviations: FTE, full-time employee; RN, registered nurse; LPN, licensed practical nurse.

and risk management that involves all unit personnel. Depending on the size and mission of the facility, the medical director may be required to devote a substantial portion of his or her work day to unit management and thus be contracted with or employed by the hospital on a part-time or full-time basis. In other settings, the director may delegate many of the responsibilities for unit operation to a qualified hospital administrator.

Attending Physicians

Guidelines for medical staff appointment and delineation of pediatric privileges in hospitals have been addressed in a separate statement by the Committee on Hospital Care.⁴ Those guidelines are in compliance with standards established by the Joint Commission on Accreditation of Healthcare Organizations and serve to ensure that physicians admitting patients to a pediatric unit have the qualifications to provide care for children. All attending physicians should participate actively in the unit's program of quality improvement, regularly attend staff meetings at which unit issues and policies are reviewed, and demonstrate continued interest in the hospital's pediatric programs.

Resident Physicians

On those pediatric units to which house staff are assigned, there should be clear delineation of their responsibilities and a detailed operating plan for their education and training. Resident physicians play an integral role on the health care team, but the attending physician is always ultimately responsible for all aspects of medical care. Continuous, open communi-

cation between attending physicians, house staff, nurses, patients, and their families is essential to maintain effectiveness, efficiency, and consistency of care.

NURSING STAFF

Pediatric Unit Nursing Director

In addition to possessing expertise in the nursing care of children, the pediatric nurse manager must have the professional credibility and management skills necessary to serve as a supervisor, consultant, and role model for the remainder of the nursing staff. In collaboration with the medical director, the nurse director also plans, implements, and monitors the unit budget; ensures adherence to policies and procedures for patient care and unit operations; and promotes optimal communication between nurses and physicians.

Through ongoing in-service training programs and, when possible, by encouraging attendance at educational conferences, the nurse director should strive continuously to advance the knowledge and skills of the nursing staff. In smaller hospitals without separate pediatric units, the nurse in charge has the added challenge of keeping nursing personnel proficient in their pediatric skills and current in their knowledge of nursing advances, even though they are not caring for children on a full-time basis.

Nurse Specialists

Pediatric Clinical Nurse Specialists are individuals with advanced academic degrees in nursing and allied disciplines, who often possess added expertise in the management of children with specific problems such as diabetes mellitus, chronic respiratory illness,

oncologic disease, or with conditions requiring technological support such as parenteral nutrition or enterostomal care. These highly trained and skilled professionals enhance inpatient nursing care, promote efficient transition from hospital to home, and under physician supervision may continue to provide home treatment of children when required.

The issues of where clinical nurse specialists are assigned in the hospital organization and to whom they are accountable for their professional activities could become subject for debate. Because they often work very closely with physicians outside of the hospital, nurse specialists are sometimes regarded as more appropriately aligned with the medical rather than the nursing communities. Nonetheless, all clinical nurse specialists must be credentialed and receive their clinical privileges through the institution's department of nursing. Evaluations of their professional performances may be provided appropriately by physicians and/or administrators as well as nurses.

Nurse Staffing Patterns

Because of their dependency and the nature of their illnesses, hospitalized children and youth require significantly more nursing attention than older patients. Consequently, nurse staffing needs for a pediatric inpatient unit will always exceed those for an adult unit of comparable size.^{5,6} Reliable methods for determining those extra needs are discussed below.

For consistency and continuity of care, a registered nurse should be responsible and accountable for all aspects of the nursing management of each patient including the following: patient/family assessments; development, implementation, and monitoring of individualized care plans; and, where appropriate, delegation and coordination of nursing tasks. A nurse should be specifically identifiable by each patient and/or family as their nursing care provider. Licensed practical nurses, experienced in pediatrics, may provide care to those children with less complex conditions. Nursing assistants are best employed when assigned specific tasks in the care of selected patients. Although many hospitals have moved to primary care nursing programs with all registered nurses,⁷ this may not be achievable because of fiscal constraints within the institution⁸ or limitations in available nursing personnel in the community.

On large units (24 beds or more), the nursing staff may be divided into smaller groups or teams, with each team having 10 to 15 patients, usually based on room or bed locations. For continuity of care and also to allow for the development of positive group dynamics, nurses should be assigned to the same team for periods of at least 6 to 8 weeks. The team leaders should be assigned for much longer periods to ensure long-term continuity as well as accountability.

There are two models of inpatient nursing that are recognized generally. "Team nursing" occurs when the care to an individual patient is divided among several members of the nursing staff. Alternatively, in the "primary nursing" model, there is a case-manager nurse (the primary nurse) who provides all nursing services each shift to an individual patient.^{9,10} Usually the primary nurse has more opportunity to develop

a therapeutic and trusting relationship with the child and his or her parents than nurses working in the team system.

Ideally, nursing staff requirements should be determined using a scientifically validated system that accurately profiles the type and severity of illness along with the specific needs of each patient and, based on those data, projects the number and mix of nursing personnel necessary to provide efficient, quality care. Indeed, most hospitals now utilize patient classification systems that index illness acuties and, in some cases, predict staffing needs for the next 8 to 24 hours.¹¹⁻¹⁷ However, confirmation of the applicability and accuracy of these systems is still pending.¹⁸⁻²² Thus nursing departments still employ other methods to determine staff needs and assignments.

One method for determining nursing needs on a pediatric unit is to develop nurse-to-patient ratios based on ages and diseases of children. No national standards have been established or published; however, most hospitals have developed their own guidelines. In general, for infants and preschool children, more nursing time per patient will be required, thus allowing each nurse to care for no more than three to four patients at a time. As the ages of the children increase, assuming the same intensity of care level, the nurse-to-patient ratio may also increase to 1:5 or 1:6. On units where the design allows excellent observation and where floor space is compact, fewer nurses may be required.

The distribution of nursing staff between day, evening, and night hours will vary according to the age of the patients as well as the nature and severity of their illnesses. Because hospitalized children now tend to require more intense and sophisticated care for fewer days, it has become less feasible to reduce nursing staff during evening, night, and weekend hours. On units in which most children are 3 years of age or less, equal distribution of nursing personnel over 24 hours will be required. Where there are predominantly older patients, nursing strength may be reduced by 15% or 20% during evening and night hours (see Table). When 24 hours of nursing are divided differently (eg, 10- and 12-hour shifts), assignments usually will be equal for each shift.^{23,24}

OTHER DIRECT PATIENT CARE PERSONNEL

For pediatric units with less than 20 beds, full-time personnel in physical therapy, occupational therapy, respiratory therapy, nutrition, audiology and speech pathology, therapeutic recreation, and clinical social work are usually not feasible. Patient care needs, however, rather than unit size must ultimately drive the number of personnel assigned. Once a unit census exceeds 30 children, full-time employees are more easily justifiable. In most community hospitals with small pediatric programs, contractual arrangements are made with outside agencies to provide specialty therapists as they are needed. These agreements must be flexible and allow for seasonal variations in the unit's requirements for the services and for changes in its size and mission. Because many of these therapists may not have extensive training or experience in

the care of children, close monitoring of their professional activities with quality improvement indicators will be required.

Physical Therapy/Occupational Therapy

Although national guidelines do not exist, therapists in these disciplines generally measure their productivity in terms of units of time. Fifteen-minute work units are usual. An hour of therapy includes 45 minutes of hands-on patient care and 15 minutes for record keeping and other administrative chores. Unlike the adult patient care setting, in which one physical or occupational therapist may effectively provide care to several patients at the same time, treatment of children usually demands one-on-one interaction between therapist and child. On a general pediatric unit, physical therapists and occupational therapists typically participate in the management of patients with orthopedic, neurologic, developmental, and feeding problems.

Audiology/Speech Pathology

For most small pediatric units a part-time audiologist or speech pathologist will suffice. In those institutions with an active otolaryngology service, a full-time therapist performing services for both adult and pediatric patients may be required. Because hospital stays for children are so brief, there is usually sufficient time only for initiation of speech and hearing services, which must then be continued in an outpatient setting.

Recreational Therapy/Child Life

The services of a child life coordinator/recreational therapist are essential for the establishment and perpetuation of a child friendly environment in a pediatric inpatient unit. A child life worker should be involved with the preoperative preparation of youngsters and their families, the planning and supervision of age-appropriate diversional activities, and the training and organization of volunteers who provide these activities to the children. Guidelines developed by the Association for the Care of Children's Health suggest that one full-time therapist be assigned for every 20 beds on a pediatric unit.

Clinical Social Work

Units that care for children who are victims of abuse and neglect, those who are physically challenged and/or intellectually impaired, or those with chronic illnesses, and families in crisis will frequently need the services of a clinical social worker. The social worker should be knowledgeable in the normal development of children, their age-appropriate rearing needs, normal and abnormal family dynamics, and the resources in the community available to help children and their families. Generally, units with more than 25 patients will require a full-time social worker.

Dietitian/Nutritionist

To remain in compliance with standards set by governmental agencies and/or Joint Commission on Accreditation of Healthcare Organizations, every hospital must provide supervision of its dietary pro-

grams by a qualified nutritionist.^{3,pp11-15} For the pediatric unit, the dietitian must also ensure that the nutritional requirements for children at various ages are met each day in both regular and therapeutic diets. Although no national standards for staffing are published, it is suggested that for every 60 to 100 patients, a full-time, hospital-based nutritionist be employed.^{25,26}

Respiratory Therapy

Respiratory therapists involved in the care of children must have demonstrated knowledge of the evolving respiratory physiology of pediatric patients and the variations in their management that are dictated by their age and development. Pediatric units with more than 20 beds may require a full-time respiratory therapist, particularly during the fall and winter seasons. In many institutions, routine respiratory therapy treatments (ie, every 3 to 4 hours) are administered by the nursing staff, allowing respiratory therapists to direct their attention to those patients with complex respiratory problems requiring treatments continuously or every 1 to 2 hours.

OTHER SUPPORT PERSONNEL

Unit Secretary

Each inpatient unit should have assigned to its staff an individual to complete clerical and telephone receptionist tasks during the day and evening shifts. As a member of the unit team, the secretary must have sufficient understanding of physicians' and nurses' orders to respond with the appropriate level of urgency and accuracy to promote efficient, cost-effective patient care.

Environmental Services

The number of housekeeping personnel assigned to a pediatric unit will depend on the size of the facility (number of rooms, number of beds, square footage), the average length of stay for the patients, and the nature of their illnesses. In general, environmental services personnel are assigned according to the square footage of space for which they are responsible or according to "work units" that take into consideration the difficulty of the tasks and time required for their completion. Both systems are effective for projecting personnel needs, but it is the commitment and industry of the people that ensure thorough cleansing of both the common and the patient care areas. For a unit of less than 20 beds, a single full-time environmental services individual will be required for day and evening hours. For nights, responsibilities for several areas may be shared. With more than 20 beds, two or more individuals will be required.

Laboratory and X-ray Technologists

To obtain blood from infants or complete radiographic studies on young children demands sensitivity for children's needs and their parents' concerns as well as technical skills. When a technologist is inexperienced or uncomfortable dealing with pediatric patients or a specific child, unit nursing staff should provide assistance. On each unit, there should be written protocols specifically addressing the perfor-

mance of invasive or uncomfortable procedures on-site and minimizing adverse effects on the patients. For children, particularly those for whom it is difficult to obtain intravenous access, the unit's most competent phlebotomist should be assigned the task of obtaining blood or placing a vascular line.

PASTORAL CARE

Spiritual support for each patient and his or her family must be available, particularly in times of critical illness and crisis. This specifically requires that the unit staff maintain a high level of sensitivity for the religious needs of their patients and that pastoral care be initiated with appropriate timeliness. The hospital chaplain may be full- or part-time, an on-call employee of the institution, or a volunteer. Because skills of clerics in crisis situations vary, assignment of chaplains to special units of the hospital such as pediatrics must be based on pastoral capabilities and strengths. Those individuals with specific training and experience in hospital chaplaincy and crisis management are best suited to the task.

SUMMARY

The mission of a pediatric inpatient unit, no matter how large or small, whether in a private or public hospital, is to provide optimum, age-appropriate care for each patient and to lend sensitive and understanding support to his or her family. The key to success in achieving this mission is the quality and commitment of the personnel on the unit. If the skills and the dedication are present and there is flexibility in staffing assignments, the desired patient care outcomes will be inevitable.

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REFERENCES

1. American Hospital Association. Chicago: key trends in calendar year 1990. *Econ Trends*. 1991;7:1-12
2. *Annual Report on Utilization and Financial Indicators of Children's Hospitals: Trends and Group Comparisons*. Alexandria, VA: National Association of Children's Hospitals and Related Institutions, Inc; 1991:D1-D17
3. *Accreditation Manual for Hospitals*. Oakbrook Terrace, IL: Joint Commission on Accreditation of Healthcare Organizations. AMH 1/93:11-15,41-44
4. American Academy of Pediatrics, Committee on Hospital Care. Medical staff appointment and delineation of pediatric privileges in hospitals. *Pediatrics*. 1990;85:607-617
5. Wirth DR, Vestal KW. Managing a pediatric service in a general hospital. *J Pediatr Nurs*. 1986;1:342-344
6. *Children's Hospitals' Utilization, Personnel and Finances Schedule of Operating Indicators: American Hospital Association Survey of Hospitals*. Alexandria, VA: National Association of Children's Hospitals and Related Institutions; 1983
7. Halloran EJ. RN staffing: more care—less cost. *Nurs Manage*. 1983;14:18-22
8. Hancock WM, Fuhs PA. The relationship between nurse staffing policies and nursing budgets. *Health Care Manage Rev*. 1984;9:21-26
9. Marriner-Tomey A. *Guide to Nursing Management*. St Louis, MO: CV Mosby Co; 1988:146-150
10. Jefferson C. Primary nursing in a short-term pediatric setting. In: *The Realities of Primary Nursing Care*. New York, NY: NLN Publications; 1978(52-1716):67-72
11. Chagnon M, Audette LM, Lebrum L, Tilquin C. A patient classification system by level of nursing care requirements. *Nurs Res*. 1978;27:107-112
12. Donnelly LJ. Patient classification: an effective management tool. *Nurs Manage*. 1981;12:42-43
13. Alward RR. Patient classification systems: the ideal vs reality. *J Nurs Adm*. 1983;13:14-19
14. Tomsky CN. Acuity-based staffing controls costs. *Nurs Manage*. 1983;14:36-37
15. Adams R, Duchene P. Computerization of patient acuity and nursing care planning. New approach to improved patient care and cost-effectiveness staffing. *J Nurs Adm*. 1985;15:11-17
16. Grohar ME, Myers J, McSweeney M. A comparison of patient acuity nursing resource use. *J Nurs Adm*. 1986;16:19-23
17. Donnelly P. Management: staffing a children's unit. *Nurs Times*. 1986;82:35-36
18. Van Slyck A. A systems approach to management of nursing services, I: introduction. *Nurs Manage*. 1991;22:16,19
19. Van Slyck A. A systems approach to management of nursing services, II: patient classification system. *Nurs Manage*. 1991;22:23-25
20. Soeken KL, Prescott PA. Patient intensity for nursing index: the measurement model. *Res Nurs Health*. 1991;14:297-304
21. Kelleher C. Validated indexes: key to nursing acuity standardization. *Nurs Econ*. 1992;10:31-37
22. Phillips CY, Castorr A, Prescott PA, Soeken K. Nursing intensity. Going beyond patient classification. *J Nurs Adm*. 1992;22:46-52
23. Trofino J. JCAHO nursing standards: nursing care hours LOS per DRG—Part I. *Nurs Manage*. 1989;20:29-32
24. Nelson BJ, Blasdel AL. Comparing quality in eight- and twelve-hour shifts. *Nurs Manage*. 1988;19:64A,64D,64H
25. Dietetic Staffing Study Committee. Identification of clinical dietetic practitioner's time use for the provision of nutrition care. *J Am Diet Assoc*. 1981;79:708-715
26. Blackburn SA, Himburg SP. Nutrition care activities and DRGs. *J Am Diet Assoc*. 1987;87:1535-1538

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CLINICAL REPORT

Guidance for the Clinician in Rendering Pediatric Care

Ted D. Sigrest, MD, and the Committee on Hospital Care

Facilities and Equipment for the Care of Pediatric Patients in a Community Hospital

ABSTRACT. Many children who require hospitalization are admitted to community hospitals that are more accessible for families and their primary care physicians but vary substantially in their pediatric resources. The intent of this clinical report is to provide basic guidelines for furnishing and equipping a pediatric area in a community hospital.

ABBREVIATIONS. AAP, American Academy of Pediatrics; JCAHO, Joint Commission on Accreditation of Healthcare Organizations.

BACKGROUND

Of the 6.4 million admissions of children to hospitals in the United States in 1997, approximately 24% were to children's hospitals. Another 35% were admissions to large, primarily urban pediatric units in municipal or regional medical centers. The remaining 41% of pediatric admissions were to community hospitals that are more accessible and convenient for patients' families and physicians.¹ These smaller hospitals vary in their equipment, staffing, diagnostic resources, and treatment capabilities for pediatric patients. Some smaller hospitals may have no permanently designated pediatric beds and few, if any, staff dedicated exclusively to the care of children. In these smaller facilities, services may be provided by physicians and health care professionals with widely varying levels of expertise in children's health care.

As the number of hospitalized children and average length of stay have decreased, hospitals have been compelled to reassess their commitment to the maintenance of pediatric inpatient units. Some have elected to discontinue their pediatric programs. Others have decreased their services to children, but to remain competitive, continue to attempt to meet patient and community needs. The purpose of this clinical report is to provide guidelines for the basic facilities and equipment needed to adequately care for children in community hospitals with the realization that there are significant budgetary constraints to be acknowledged in the provision of these ser-

vices. Detailed information on the facilities and equipment needed to care for newborns can be found in the American Academy of Pediatrics (AAP) *Guidelines for Perinatal Care* (see "Resources" section).

THE FACILITY

In addition to recommendations of the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) for facilities used in the provision of care to hospitalized patients, the following is a list of basic facility needs for the care of children from birth to 18 years of age:

- Single- or double-occupancy rooms that comply with guidelines for prevention of nosocomial infections² and that are large enough to accommodate parents who stay with their children.
- Patient room configuration and bed positioning that allow convenient observation and supervision of patients by nursing staff, especially if parents are not available.
- Covered electrical outlets, childproof window locks and door latches, padding of sharp edges, and nonslip, easily maintained floor surfaces.
- Age-appropriate furniture, including cribs equipped with safe overhead restraints and beds with covered mechanical or electrical controls.
 - Beds, cribs, and other furniture should meet Consumer Product Safety Commission standards (<http://www.cpsc.gov>).
- Area set aside for play, entertainment, education, and other child life activities.
- Separate treatment room for patient assessment and procedures.

Interior design and decor are not addressed in this statement. Information about child-friendly, developmentally appropriate environments may be obtained from the Institute for Family-Centered Care (see "Resources" section).

EQUIPMENT

Essential medical equipment for pediatric care is included in the following list. Additional information on pediatric resuscitation equipment is included in the AAP policy statement "Guidelines for Pediatric Emergency Care Facilities"³ and in standard pediatric emergency care textbooks.⁴

The guidance in this report does not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.
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- Resuscitation cart containing pediatric-specific supplies
 - Common pediatric emergency drugs should be readily accessible and plainly labeled. Drug dosing by weight or length should be easily referenced.
 - The resuscitation cart should also have an appropriate assortment of the various sizes of pediatric oxygen masks, endotracheal tubes, laryngoscope blades, oropharyngeal and nasopharyngeal airways, and self-inflating bags (ie, Ambu bags [Ambu International, Linthicum, MD]) with various sizes of masks. A size-appropriate backboard for resuscitation should be available.
 - A cardiac defibrillator designed for pediatric use with paddles for infants and children.
 - A chart for appropriate joule dosages for weight should be readily available.
 - Cardiorespiratory monitors appropriate for the level of pediatric care provided.
 - Respiratory equipment in appropriate sizes for infants and children.
 - Necessary items include oxygen masks, nasal cannulas, tubing, self-inflating (Ambu) bags and masks, oropharyngeal and nasopharyngeal airways, suctioning equipment and catheters, nebulizers with pediatric-sized face masks, spacer devices and masks for metered-dose inhalers, pulse oximeters with appropriate infant and pediatric probes, and infant and pediatric tracheostomy supplies.
 - Intravenous catheters, phlebotomy equipment, and lumbar puncture trays that are size appropriate; extremity warmers, such as chemical packs that warm via exothermic reaction, for improving peripheral blood flow and facilitating blood sampling in infants; papoose boards, adequately padded, of at least 2 sizes for immobilization of infants and children.
 - Common neonatal and pediatric intravenous solutions, such as small vials of 10% dextrose, 100 and 250 mL bags of common pediatric intravenous solutions such as 5% dextrose with one-half normal saline or lactated Ringer's solution, 5% dextrose with one-quarter normal saline or lactated Ringer's solution, and intravenous infusion pumps designed for pediatric use with precise administration of small infusion rates.
 - Scales and stadiometers for infants and older children.
 - Pediatric-appropriate dietary supplies, such as common newborn formulas, pediatric nutritional supplements, and dietary choices that appeal to children; appropriately sized assortment of orogastric and nasogastric feeding tubes and enteral feeding pumps designed for precise administration of small infusion rates.
 - Pediatric urine collection devices and appropriately sized urinary catheters.
 - Mercury-free thermometers and blood pressure devices (various sizes of blood pressure cuffs).
 - Pediatric orthopedic equipment, including wheelchairs, crutches, slings, and splints.

- Infant incubators for small infants with temperature control problems.
- Portable lamps for bedside procedures.
- Developmentally appropriate books, toys, games, and when economically feasible, electronic media such as videocassette players and computers.
 - Toys and equipment should be safe for use by children with impaired mobility.
 - Infection control should be a priority, with all toys, equipment, and play surfaces regularly cleaned with appropriate germicidal solutions.
 - Computers that are available for pediatric patient use should have Internet access limited to child-appropriate sites.

SUPPORT SERVICES

The following therapeutic and diagnostic facilities should be available on a 24-hour basis:

- Routine radiograph imaging, with a radiologist available for reading of emergency films.
 - Availability of computed tomography is strongly recommended.
- Clinical laboratory services appropriate for neonatal and pediatric needs, including hematologic profiles, blood chemistries, blood gas studies, microbiologic profiles, and standard urine studies.
 - Equipment should be available to process all commonly ordered tests such as complete blood cell counts and renal and hepatic function tests using samples of less than 1 mL ("micro" samples).
 - Minimum amounts of blood, urine, and cerebrospinal fluid required for tests should be obtained and posted in the hospital laboratory and pediatric areas.
 - Response times should be appropriate for timely diagnosis and treatment of the child's condition.
 - Topical anesthetics should be available and used before obtaining blood samples whenever possible.
- Pharmacy services providing age- and size-appropriate drug administration and dosing.
 - Commonly used oral suspensions should be immediately available. The equipment necessary to create pediatric liquid formulations, including pill crushers, suspension agents, and flavoring solutions, should be available. Pediatric oral suspension delivery devices, such as oral medication syringes and pacifiers that deliver liquid medications, should be available.
 - Doses of antibiotics that are known to cause ototoxicity or nephrotoxicity, such as vancomycin, tobramycin, and gentamycin, should be calculated using computer programs or calculations based on appropriate neonatal or pediatric pharmacokinetic models. Serum drug concentrations should be obtained to optimize dosage amounts and intervals. Clinical judgment should be used before ordering multiple serum concentrations if the antibiotic is to be discontinued with negative cultures or oral antibiotics.

are to be started as soon as the patient is afebrile.

—Current references for pediatric drug dosing and drug interactions should be easily available. A liaison with a tertiary care children's hospital pharmacy is advised to help minimize the possibility of adverse consequences in off-label use of drugs and drug dosing.

The following services should be available as needed: social work services; pastoral services; sign and foreign language interpretation; and respiratory, physical, occupational, and speech therapy. Professionals providing these services should have adequate training and continuing education provided in the pediatric applications of their respective fields. If a child is hospitalized for more than 2 school days, a designated hospital employee, such as nurse, social worker, or child life specialist, should serve as a liaison with the child's school to assist the parents in providing for the child's educational needs. Child life services are recommended whenever feasible.⁵ These specialists provide a valuable service in addressing the psychosocial concerns of children and families during hospitalization and provide support for the concept of family-centered care in the medical setting.

CONTINUING EDUCATION

All health care professionals in a pediatric area should be familiar with the unique and changing physical and psychosocial needs of children. Continuing education should be provided to reinforce these concepts. Nurses and physicians should have current certification in pediatric life support techniques. All should know the location of carts and equipment for cardiopulmonary resuscitation and mock codes should be conducted on a regular basis. Instruction on the use of cardiorespiratory monitors and their alarms should be provided on an ongoing basis. If patients are provided with monitors that feature electrocardiogram readouts, appropriate training should be provided. Education sessions and mock codes should be documented for review by hospital quality assurance committees and the JCAHO.

REFERRAL NETWORKS

Community hospitals and physicians providing care for children must have well-established referral networks for timely consultation by pediatric subspecialists and, when necessary, for transfer of patients to a pediatric center that offers more advanced levels of care. This includes access to an air and ground transportation system that is responsive and appropriately equipped and staffed to care for children of all ages. Guidelines for regionalization of care and transfer of injured patients have been published by the AAP⁶ and the American College of Surgeons.⁷

ADMISSION AND TRANSFER CRITERIA

Because community hospitals vary significantly in their resources for providing pediatric care, there is no single set of criteria for admission and transfer of

pediatric patients that has universal applicability. Each institution must assess its own capabilities and limitations in light of its mission and then formulate guidelines. Once guidelines for transfer of patients have been established, those for admission become less difficult to define. This challenging process requires input from all members of the health care team, including hospital administration. The goal is to ensure that each patient in the facility receives the optimal care that is most appropriate for his or her medical and psychosocial needs.

COMMITTEE ON HOSPITAL CARE, 2002–2003

John M. Neff, MD, Chairperson
 Jerrold M. Eichner, MD
 David R. Hardy, MD
 Michael Klein, MD
 Jack M. Percelay, MD, MPH
 Ted D. Sigrest, MD
 Erin R. Stucky, MD

LIAISONS

Susan Dull, RN, MSN, MBA
 National Association of Children's Hospitals and Related Institutions
 Mary T. Perkins, RN, DNSc
 American Hospital Association
 Jerriann M. Wilson, CCLS, MEd
 Child Life Council

CONSULTANT

Timothy E. Corden, MD

STAFF

Stephanie Mucha, MPH

REFERENCES

1. HCUPnet. Healthcare Cost and Utilization Project [database]. Rockville, MD: Agency for Healthcare Research and Quality. Available at: <http://www.hcrq.gov/data/hcup/hcupnet.htm>. Accessed June 26, 2002.
2. Garner JS, and US Department of Health and Human Services, Public Health Service, Hospital Infection Control Practices Advisory Committee. Guideline for isolation precautions in hospitals. *Infect Contr Hosp Epidemiol.* 1996;17:53–80, and *Am J Infect Control.* 1996;24:24–52. Available at: <http://www.cdc.gov/ncidod/hip/isolat/isolat.htm>. Accessed June 26, 2002.
3. American Academy of Pediatrics, Committee on Pediatric Emergency Medicine. Guidelines for pediatric emergency care facilities. *Pediatrics.* 1995;96:526–537.
4. Fleisher GR, Ludwig S, eds. *Textbook of Pediatric Emergency Medicine.* 4th ed. Baltimore, MD: Williams & Wilkins; 1999:1904–1905.
5. American Academy of Pediatrics, Committee on Hospital Care. Child Life Services. *Pediatrics.* 2000;106:1156–1159.
6. American Academy of Pediatrics, Committee on Pediatric Emergency Medicine, and American College of Critical Care Medicine Society of Critical Care Medicine, Pediatric Section, Task Force on Regionalization of Pediatric Critical Care. Consensus report for regionalization of services for critically ill or injured children. *Pediatrics.* 2000;105:152–155.
7. American College of Surgeons, Committee on Trauma. *Resources for Optimal Care of the Injured Patient: 1999.* Chicago, IL: American College of Surgeons; 1999.

RESOURCES

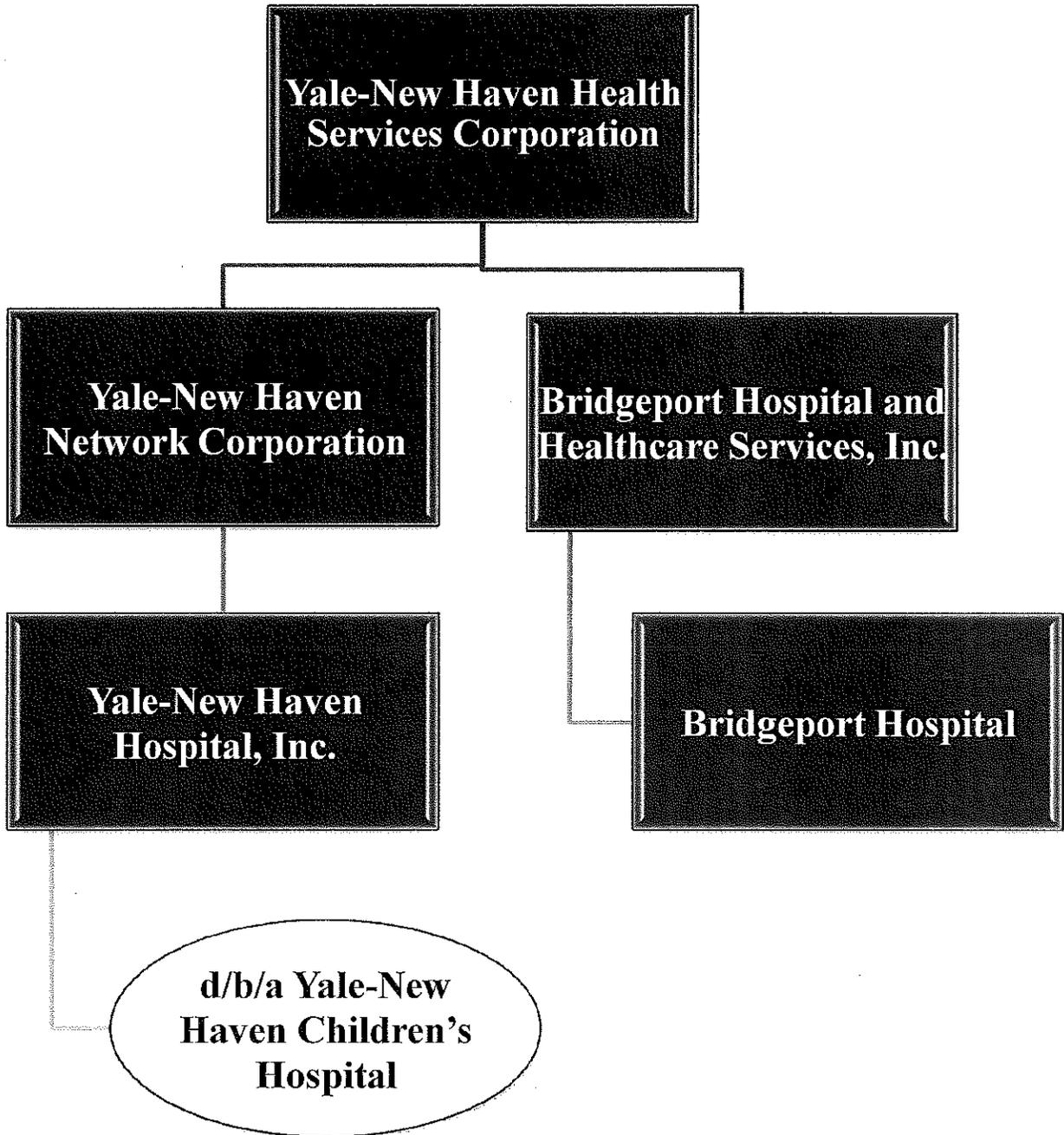
American Academy of Pediatrics, Committee on Fetus and Newborn and American College of Obstetricians and Gynecologists, Committee on Obstetrics, Maternal and Fetal Medicine. *Guidelines for Perinatal Care.* 4th ed. Elk Grove Village, IL: American Academy of Pediatrics; 1997.
 Institute for Family Centered Care, 7900 Wisconsin Avenue, Suite 405, Bethesda, MD 20814. <http://www.familycenteredcare.org>

All clinical reports from the American Academy of Pediatrics automatically expire 5 years after publication unless reaffirmed, revised, or retired at or before that time.

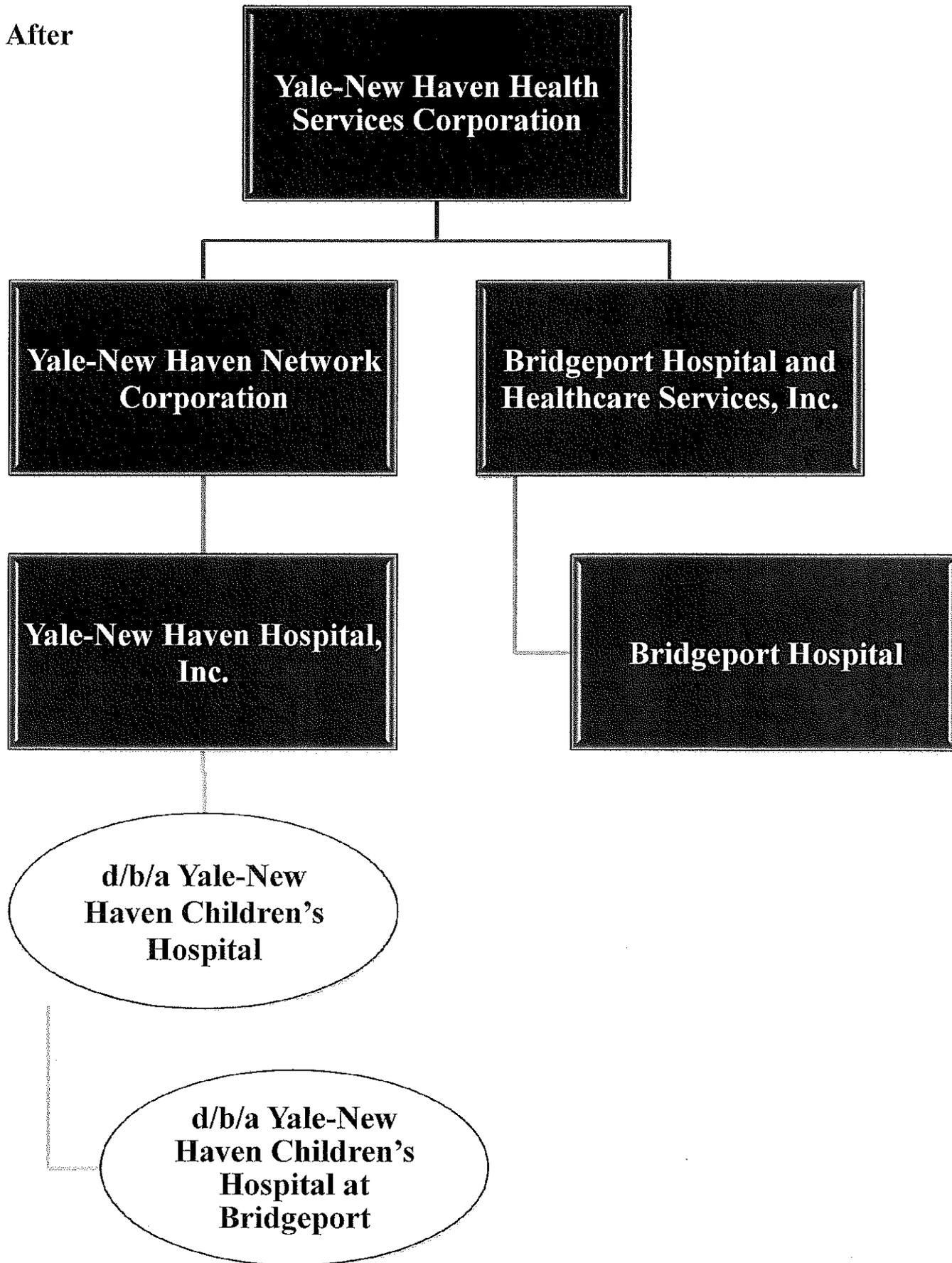
APPENDIX II

Entity Structure (Before and After Implementation)

Before



After



APPENDIX III

**Memorandum of Understanding (MOU)
Yale-New Haven Hospital Board of Trustees
Approval
Bridgeport Hospital Board of Directors
Approval
Yale New Haven Health Services
Corporation Approval**

**MEMORANDUM OF UNDERSTANDING
YALE-NEW HAVEN CHILDREN'S HOSPITAL AT BRIDGEPORT HOSPITAL**

THIS MEMORANDUM OF UNDERSTANDING ("*MOU*"), dated as of July 29, 2011, is by and between **YALE-NEW HAVEN HOSPITAL, INC.**, a Connecticut nonstock corporation with an address of 20 York Street, New Haven, Connecticut 06510, acting through its Yale-New Haven Children's Hospital ("*YNHH*") and **BRIDGEPORT HOSPITAL**, a Connecticut nonstock corporation with an address of 267 Grant Street, Bridgeport, Connecticut 06610 ("*BH*") (YNHH and BH are referred to collectively as the "*Parties*" and individually as a "*Party*").

WITNESSETH

WHEREAS, YNHH and BH are both members of the Yale New Haven Health System ("*YNHHS*") an integrated health system that provides comprehensive, cost effective, advanced patient care; and

WHEREAS, YNHH operates the State of Connecticut's preeminent provider of pediatric hospital care; and

WHEREAS, BH has a history of high quality pediatric care in its community; and

WHEREAS, the Parties seek to address a national shift in pediatric hospital care to larger integrated pediatric networks by integrating the pediatric service at BH with that of YNHH, in order to create a two (2) campus Yale-New Haven Children's Hospital (the "*Integrated Program*"); and

WHEREAS, integration of the pediatric service at BH with that of YNHH will enable the Parties to (i) realize opportunities for enhancing patient safety and quality and improving clinical and operational efficiencies, and (ii) offer a set of comprehensive, high quality and accessible clinical services to children and their families throughout the region served by the Parties.

NOW, THEREFORE, the parties agree as follows:

1. **Agreement**. The Parties agree to use commercially reasonable efforts to develop and implement the Integrated Program, which shall include integration of BH's existing inpatient pediatric department, neonatal intensive care unit and outpatient pediatric clinic under the control of YNHH as provider-based operations of YNHH in compliance with 42 C.F.R. § 413.65.

2. **Conflicting Arrangements**. Each Party hereby represents and warrants for itself and its affiliates that it is not a party to nor subject to any agreement, instrument, law, statute, proceeding or order that would prevent or impede its ability to participate in the development of the Integrated Program.

3. **Transition of Integrated Program to YNHH**. As of the Effective Date (as hereinafter defined), YNHH shall:

- (a) own, operate and supervise the Integrated Program as a provider-based

operation of YNHH under the control and licensure of YNHH;

(b) provide unified clinical and administrative leadership and oversight for the entire Integrated Program and its operations going forward;

(c) provide enhanced training opportunities for clinical staff at both BH and YNHH;

(d) employ or engage clinical and administrative personnel necessary or desirable for operation of the Integrated Program; in furtherance of the foregoing, the Parties agree that (i) employees of BH who, as of the time immediately prior to the Effective Date, provide clinical services in BH's inpatient pediatric department, neonatal intensive care unit and outpatient pediatric clinic shall become employees of YNHH; and (ii) certain ancillary services shall be provided by BH and its employees as contemplated in Section 4 hereof; and

(e) maintain a single medical staff providing services to the Integrated Program at both campus sites; which staff shall include all pediatricians, neonatologists and other applicable specialists on the medical staff of BH who satisfy credentialing criteria of YNHH.

4. **Resources and Services to be Provided by BH.** BH shall support the Integrated Program and the operations thereof as provided herein. BH will lease to YNHH the space and equipment currently used for its inpatient pediatric department, neonatal intensive care unit and outpatient pediatric clinic and shall, to the extent that it provides such ancillary services to its patients, provide ancillary services to the patients of the Integrated Program at the request of YNHH. In furtherance of the foregoing, BH and YNHH shall develop plans for the preparation and execution of written agreements on terms and conditions mutually agreeable to the Parties (collectively, the "*Lease and Services Agreements*").

5. **Special Provisions Regarding Inpatient Services.**

(a) As of the Effective Date and in accordance with the approval of the State Department of Public Health and the Office of Health Care Access, BH shall relinquish its staffed inpatient pediatric bed capacity (consisting of forty-two (42) beds) and such beds will be added to the license of YNHH;

(b) BH agrees that, as of the Effective Date emergency department patients at BH who require inpatient pediatric services will be transferred to YNHH's location at BH, except where a patient expresses a preference for a different provider or where a referral to another provider is in the patient's best interest; and

(c) At all times, patients will be billed by the Party who performs the service.

6. **Confidentiality.** Each Party agrees that it will not disclose any "*Proprietary Information*" (as defined in this Section) that it receives in the course of implementing the Integrated Program and performing under this MOU except as is reasonably necessary for the purposes of developing and implementing the Integrated Program, and it will not use Proprietary Information except for the purposes of developing and implementing the Integrated Program. Each Party shall treat as confidential the Proprietary Information of the other Party and shall each use its best efforts to

hold the Proprietary information of the other Party in strict confidence. A Party shall only disclose Proprietary Information received from the other Party to its representatives who need to know the Proprietary Information for the purpose of the Integrated Program, who are informed of the confidential nature of the Proprietary Information, and who agree to be bound by the terms of this MOU. Each Party receiving Proprietary Information shall use due care to prevent its representatives from disclosing the Proprietary Information and shall be liable to the other party for any damages caused by the breach of this provision by its representatives.

If a Party or a Party's representative is requested or required by any governmental authority to disclose the Proprietary Information of the other Party, it shall provide the other Party with prompt written notice of the request or demand, so the other Party may seek an appropriate protective order. No Party shall be liable for the disclosure of Proprietary Information if said disclosure is required by law or order of an appropriate administrative agency.

For the purposes of this MOU, "*Proprietary Information*" shall include all tangible and intangible information which is related in any way to the Integrated Program and is of a confidential or proprietary nature, including but not limited to, analyses, business or strategic plans, compilations, financial statements, proposals, studies, patient revenue, gross charges, payor mix, employment or compensation models or other information relating to the business of a party or any of its corporate affiliates related to the Integrated Program. Any discussions with respect to the Program shall also constitute Proprietary Information.

7. Conditions of Parties' Participation. The Parties' obligations to commence the implementation of the Program are subject to:

- (a) the approval of the Integrated Program by the Boards of YNHH, BH and YNHHS, which approvals have been obtained;
 - (b) the issuance of a Certificate of Need ("*CON*") by the Department of Public Health's Office of Health Care Access;
 - (c) the approval of licensure change for YNHH by the Department of Public Health;
- and
- (d) the execution of the Lease and Services Agreements on mutually agreed upon terms.

8. Effective Date. The Program shall commence on a date mutually agreed upon by the Parties after the last of the following conditions are met (the "*Effective Date*"):

- (a) all of the conditions precedent referenced above have been satisfied; and
- (b) the consent of all governmental authorities has been obtained and any applicable appeal periods have expired without any appeal having been taken and not resolved.

9. Term and Termination.

- (a) This MOU shall commence on the date hereof and continue until terminated as

provided herein.

- (b) This MOU shall terminate automatically:
- Agreements;
- (i) upon the expiration or the termination of the Lease and the Services
 - (ii) upon the mutual agreement of the Parties;
 - (iii) if any approval, license or permit to operate the Program expires, is terminated, revoked suspended or withdrawn; or
 - (iv) if the actions contemplated in this MOU become prohibited or illegal.

- (c) This MOU may be terminated by either Party:
- (i) if a default exists in the due observance of any of the covenants or agreements by any Party set forth herein; provided, however that such right of termination shall only apply if written notice of such default has been given and the defaulting party has not cured such default within sixty (60) days of receipt of such notice; or
 - (ii) if the conditions precedent for the Effective Date referenced in Section 8 above have not been satisfied by June 30, 2012.

10. Public Communications. No public announcement regarding this MOU or the Integrated Program shall be made unless the Parties have mutually agreed in writing on the content and timing of such announcement. The Parties recognize, however, that the substance of this MOU will, in fact, be disclosed to the Office of Health Care Access as part of the Certificate of Need Application in connection with the Integrated Program, and to the Department of Public Health in connection with any necessary licensure proceedings.

11. Miscellaneous.

- (a) This MOU shall be governed by the laws of the State of Connecticut.
- (b) This MOU shall not be amended or otherwise modified except by a written amendment duly executed by authorized representatives of both Parties.
- (c) The failure of either Party hereto to insist upon strict adherence to any provision of this MOU on any occasion shall not be considered a waiver of such Party's right to insist upon strict adherence to such provision on any other occasion or to any other provision of this MOU in any instance. Any waiver shall be in writing signed by a duly authorized representative of the Party against whom such waiver is sought to be enforced.
- (d) If one or more provisions of this MOU is found by an arbitrator or court of competent jurisdiction to be illegal, invalid or unenforceable in whole or in part, the remaining terms and provisions of this MOU shall remain in full force and effect disregarding such illegal, invalid or

unenforceable portion and such arbitrator or court shall be empowered to modify, if possible, such unenforceable provision to the extent necessary to make this MOU enforceable in accordance with the intent and purposes of the Parties expressed herein to the fullest extent permitted by applicable law.

(e) The section headings contained in this MOU are for convenience only and they in no way define, limit or enlarge the scope of the provisions of such sections and shall not be considered in the interpretation or enforcement of this MOU.

(f) This MOU shall be deemed to have been drafted jointly by the Parties hereto and no presumption or rules of construction based upon the drafting of this MOU shall be made in any arbitration or legal proceedings arising hereunder.

[Signature page follows.]

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be signed by their duly authorized officers as of the day and year first above written.

YALE-NEW HAVEN HOSPITAL, INC.

BRIDGEPORT HOSPITAL

By: 
Name: Richard D' Aquila
Title: Chief Operating Officer

By: 
Name: William M. Jennings
Title: President and Chief Executive Officer

YALE-NEW HAVEN HOSPITAL**BOARD OF TRUSTEES
EXECUTIVE COMMITTEE****RESOLUTIONS RELATING TO PEDIATRICS DEPARTMENT INTEGRATION**

May 6, 2011

WHEREAS, Yale-New Haven Hospital ("Yale-New Haven") and Bridgeport Hospital ("Bridgeport"), both affiliated delivery networks of Yale-New Haven Health Services Corporation ("HSC"), desire to create a collaborative model that integrates pediatric services at Bridgeport and Yale-New Haven, resulting in Yale-New Haven Children's Hospital having two inpatient campuses; and

WHEREAS, the integration of the two pediatrics departments and the creation of Yale-New Haven Children's Hospital at Bridgeport would: (i) achieve a high standard of clinical care and customer service for patients and referring physicians; (ii) address the national trend in the pediatric market of shifting to large, integrated pediatric networks; (iii) leverage service line strategies across HSC; (iv) maximize the revenue opportunities from the reimbursement differential; (v) allow for efficiencies and cost savings; and (vi) further Bridgeport's efforts to leverage the Yale New Haven Health System brand in the local market; and

WHEREAS, both Yale-New Haven and Bridgeport are committed to developing and operating a set of comprehensive and accessible children's programs; and

WHEREAS, the integration of the pediatrics departments will require a Certificate of Need from the Office of Health Care Access (OHCA) and changes to the respective hospital licenses of both Yale-New Haven and Bridgeport; and

WHEREAS, the Executive Committee of the Board of Trustees is authorized to act on behalf of the Board of Trustees pursuant to Article IV, Section 2 of the Yale-New Haven Hospital Bylaws; and

WHEREAS, in furtherance of Yale-New Haven's goals, the Executive Committee of the Board of Trustees has determined that it is in the best interest of Yale-New Haven to integrate its pediatrics department with Bridgeport to create Yale-New Haven Children's Hospital at Bridgeport.

NOW, THEREFORE, BE IT RESOLVED, by the Executive Committee of the Board of Trustees, as follows:

Section 1. The Executive Committee hereby approves the creation of Yale-New Haven Children's Hospital at Bridgeport and authorizes Yale-New Haven Hospital's Chief Executive Officer, Yale-New Haven Hospital's Chief Financial Officer, and their respective

designees to move forward with an implementation plan to integrate the Bridgeport Hospital Pediatrics Department with Yale-New Haven Children's Hospital.

Section 2. The Executive Committee hereby authorizes Yale-New Haven Hospital's Chief Executive Officer, Yale-New Haven Hospital's Chief Financial Officer, and their respective designees to seek all necessary regulatory approvals that they deem necessary, including but not limited to a Certificate of Need (CON) and the approval of the Department of Public Health.

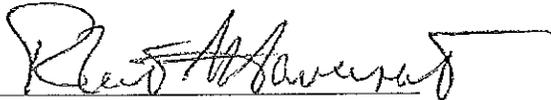
Section 3. Yale-New Haven Hospital's Chief Executive Officer, Yale-New Haven Hospital's Chief Financial Officer, and their respective designees are, and each of them hereby is, authorized and directed to perform and take such other actions as may be necessary and proper to accomplish the intent and purposes expressed in these resolutions.

Section 4. Any and all actions previously taken by the trustees, officers or employees of Yale-New Haven Hospital in connection with the foregoing resolutions are hereby ratified, approved and confirmed in all respects.

CERTIFICATION

The undersigned secretary of Yale-New Haven Hospital hereby certifies that the foregoing resolution was adopted by the Executive Committee of the Board of Trustees and remains in full force and effect without amendment.

Adopted this 6th day of May, 2011



Robert A. Haversat
Secretary

**BRIDGEPORT HOSPITAL
BOARD OF DIRECTORS MEETING
APRIL 28, 2011**

Pediatrics Integration

After having discussed the proposal to its satisfaction, the Board on motion made, seconded and unanimously carried voted to adopt the following resolutions:

WHEREAS, Bridgeport Hospital ("Bridgeport") and Yale New Haven Hospital ("Yale New Haven"), both affiliated delivery networks of Yale-New Haven Health Services Corporation ("HSC"), desire to create a collaborative model that integrates pediatric services at Bridgeport and Yale New Haven, resulting in Yale New Haven Children's Hospital having two inpatient campuses; and

WHEREAS, the integration of the two pediatrics departments and the creation of Yale New Haven Children's Hospital at Bridgeport would: (i) achieve a high standard of clinical care and customer service for patients and referring physicians; (ii) address the national trend in the pediatric market of shifting to large, integrated pediatric networks; (iii) leverage service line strategies across HSC; (iv) allow for efficiencies and cost savings; and (v) further Bridgeport's efforts to leverage the Yale New Haven Health System brand in the local market; and

WHEREAS, both Bridgeport and Yale New Haven are committed to developing and operating a set of comprehensive and accessible children's programs; and

WHEREAS, the integration of the pediatrics departments will require a Certificate of Need from the Office of Health Care Access (OHCA) and changes to the respective hospital licenses of both Bridgeport and Yale New Haven; and

WHEREAS, in furtherance of Bridgeport's goals, the Board of Directors has determined that it is in the best interest of Bridgeport to integrate its pediatrics department with Yale New Haven to create Yale New Haven Children's Hospital at Bridgeport.

NOW, THEREFORE, BE IT RESOLVED, by the Board of Directors, subject to approval by Yale-New Haven Health Services Corporation, as follows:

Section 1. The Board of Directors hereby approves the creation of Yale New Haven Children's Hospital at Bridgeport and authorizes Management to move forward with an implementation plan to integrate the Bridgeport Hospital Pediatrics Department with Yale New Haven Children's Hospital.

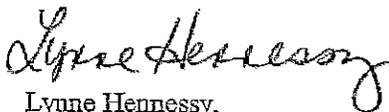
Section 2. The President and the Chief Financial Officer, or their delegates, are hereby authorized and directed to negotiate and execute any and all contracts, agreements, and documents that they deem necessary and appropriate to effectuate the intent of the foregoing resolutions.

Section 3. The Board of Directors authorizes Management to seek all necessary regulatory approvals that they deem necessary, including but not limited to a Certificate of Need (CON) and the approval of the Department of Public Health.

Section 4. The Board of Directors hereby authorizes and directs the President and Chief Executive Officer of the Hospital to execute and to perform and take such other actions as may be necessary and proper to accomplish the intent and purposes expressed in these resolutions.

Section 5. Any and all actions previously taken by the officers or employees of Bridgeport Hospital in connection with the foregoing resolutions are hereby ratified, approved and confirmed in all respects.

Respectfully submitted,



Lyne Hennessy,
Assistant Secretary, Bridgeport Hospital



May 13, 2011

To: Gayle L. Capozzalo
James M. Staten

From: Marna P. Borgstrom

The items listed below were approved at a recent Bridgeport Hospital Board of Directors meeting and require(s) Yale-New Haven Health Services Corporation (YNHHSC) approval. Background material is attached for your review. Please indicate your recommendation and sign and return to me for processing.

- Pediatrics Department Integration

I recommend approval of the above items.

I feel additional discussion with you is necessary and I will contact you immediately.

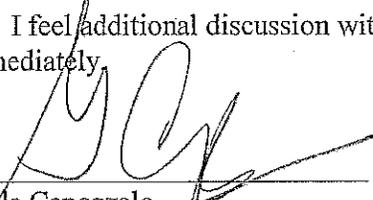


 James M. Staten
 Executive Vice President
 Corporate and Financial Services

5-13-11
 Date

I recommend approval of the above items.

I feel additional discussion with you is necessary and I will contact you immediately.



 Gayle Capozzalo
 Executive Vice President
 Strategy & System Development

5/18/11
 Date

cc: Debbie Woodworth ✓



May 3, 2011

Marna P. Borgstrom
 President & Chief Executive Officer
 Yale New Haven Health System
 789 Howard Avenue, CB 1065
 New Haven, CT 06519

Dear Marna:

Enclosed is information regarding matters which were approved at the Bridgeport Hospital Board of Directors meeting held on April 28, 2011 that require approval by the Yale New Haven Health Services Corporation. Those matters are as follows:

- *Pediatrics Department Integration*

In accordance with the policy adopted at the October 25, 1996 meeting of YNHHS you may, as CEO, approve these matters on behalf of YNHHS or may present them to the YNHHS Board for its consideration.

I would appreciate your signing and returning a copy of this letter for our files evidencing approval by you or the YNHHS Board .

Sincerely,

William M. Jennings
 President and
 Chief Executive Officer

cc: William Aseltyne, Esq.

Agreed to by Yale New Haven Health Services Corporation

 Marna P. Borgstrom
 President & Chief Executive Officer
 Yale New Haven Health Services Corporation

 Date

267 Grant Street
 P.O. Box 5000
 Bridgeport, CT 06610-0120
 203.384.3000

**PROPOSED RESOLUTIONS
BRIDGEPORT HOSPITAL
BOARD OF DIRECTORS**

PEDIATRICS DEPARTMENT INTEGRATION

April 28, 2011

WHEREAS, Bridgeport Hospital ("Bridgeport") and Yale New Haven Hospital ("Yale New Haven"), both affiliated delivery networks of Yale-New Haven Health Services Corporation ("HSC"), desire to create a collaborative model that integrates pediatric services at Bridgeport and Yale New Haven, resulting in Yale New Haven Children's Hospital having two inpatient campuses; and

WHEREAS, the integration of the two pediatrics departments and the creation of Yale New Haven Children's Hospital at Bridgeport would: (i) achieve a high standard of clinical care and customer service for patients and referring physicians; (ii) address the national trend in the pediatric market of shifting to large, integrated pediatric networks; (iii) leverage service line strategies across HSC; (iv) maximize the revenue opportunities from the reimbursement differential; (v) allow for efficiencies and cost savings; and (vi) further Bridgeport's efforts to leverage the Yale New Haven Health System brand in the local market; and

WHEREAS, both Bridgeport and Yale New Haven are committed to developing and operating a set of comprehensive and accessible children's programs; and

WHEREAS, the integration of the pediatrics departments will require a Certificate of Need from the Office of Health Care Access (OHCA) and changes to the respective hospital licenses of both Bridgeport and Yale New Haven; and

WHEREAS, in furtherance of Bridgeport's goals, the Board of Directors has determined that it is in the best interest of Bridgeport to integrate its pediatrics department with Yale New Haven to create Yale New Haven Children's Hospital at Bridgeport.

NOW, THEREFORE, BE IT RESOLVED, by the Board of Directors, subject to approval by Yale-New Haven Health Services Corporation, as follows:

Section 1. The Board of Directors hereby approves the creation of Yale New Haven Children's Hospital at Bridgeport and authorizes Management to move forward with an implementation plan to integrate the Bridgeport Hospital Pediatrics Department with Yale New Haven Children's Hospital.

Section 2. The President and the Chief Financial Officer, or their delegates, are hereby authorized and directed to negotiate and execute any and all contracts, agreements, and documents that they deem necessary and appropriate to effectuate the intendment of the foregoing resolutions.

Section 3. The Board of Directors authorizes Management to seek all necessary regulatory approvals that they deem necessary, including but not limited to a Certificate of Need (CON) and the approval of the Department of Public Health.

Section 4. The Board of Directors hereby authorizes and directs the President and Chief Executive Officer of the Hospital to execute and to perform and take such other actions as may be necessary and proper to accomplish the intent and purposes expressed in these resolutions.

Section 5. Any and all actions previously taken by the officers or employees of Bridgeport Hospital in connection with the foregoing resolutions are hereby ratified, approved and confirmed in all respects.

Minutes of the Meeting of the
Yale-New Haven Hospital Board of Trustees
Executive Committee
May 6, 2011
Page 5

YALE-NEW HAVEN HOSPITAL

BOARD OF TRUSTEES
EXECUTIVE COMMITTEE

RESOLUTIONS RELATING TO PEDIATRICS DEPARTMENT INTEGRATION

May 6, 2011

WHEREAS, Yale-New Haven Hospital ("Yale-New Haven") and Bridgeport Hospital ("Bridgeport"), both affiliated delivery networks of Yale-New Haven Health Services Corporation ("HSC"), desire to create a collaborative model that integrates pediatric services at Bridgeport and Yale-New Haven, resulting in Yale-New Haven Children's Hospital having two inpatient campuses; and

WHEREAS, the integration of the two pediatrics departments and the creation of Yale-New Haven Children's Hospital at Bridgeport would: (i) achieve a high standard of clinical care and customer service for patients and referring physicians; (ii) address the national trend in the pediatric market of shifting to large, integrated pediatric networks; (iii) leverage service line strategies across HSC; (iv) maximize the revenue opportunities from the reimbursement differential; (v) allow for efficiencies and cost savings; and (vi) further Bridgeport's efforts to leverage the Yale New Haven Health System brand in the local market; and

WHEREAS, both Yale-New Haven and Bridgeport are committed to developing and operating a set of comprehensive and accessible children's programs; and

WHEREAS, the integration of the pediatrics departments will require a Certificate of Need from the Office of Health Care Access (OHCA) and changes to the respective hospital licenses of both Yale-New Haven and Bridgeport; and

WHEREAS, the Executive Committee of the Board of Trustees is authorized to act on behalf of the Board of Trustees pursuant to Article IV, Section 2 of the Yale-New Haven Hospital Bylaws; and

Minutes of the Meeting of the
Yale-New Haven Hospital Board of Trustees
Executive Committee
May 6, 2011
Page 6

WHEREAS, in furtherance of Yale-New Haven's goals, the Executive Committee of the Board of Trustees has determined that it is in the best interest of Yale-New Haven to integrate its pediatrics department with Bridgeport to create Yale-New Haven Children's Hospital at Bridgeport.

NOW, THEREFORE, BE IT RESOLVED, by the Executive Committee of the Board of Trustees, as follows:

Section 1. The Executive Committee hereby approves the creation of Yale-New Haven Children's Hospital at Bridgeport and authorizes Yale-New Haven Hospital's Chief Executive Officer, Yale-New Haven Hospital's Chief Financial Officer, and their respective designees to move forward with an implementation plan to integrate the Bridgeport Hospital Pediatrics Department with Yale-New Haven Children's Hospital.

Section 2. The Executive Committee hereby authorizes Yale-New Haven Hospital's Chief Executive Officer, Yale-New Haven Hospital's Chief Financial Officer, and their respective designees to seek all necessary regulatory approvals that they deem necessary, including but not limited to a Certificate of Need (CON) and the approval of the Department of Public Health.

Section 3. Yale-New Haven Hospital's Chief Executive Officer, Yale-New Haven Hospital's Chief Financial Officer, and their respective designees are, and each of them hereby is, authorized and directed to perform and take such other actions as may be necessary and proper to accomplish the intent and purposes expressed in these resolutions.

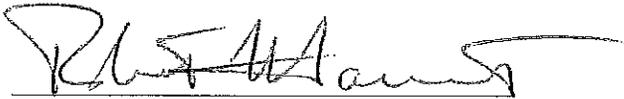
Section 4. Any and all actions previously taken by the trustees, officers or employees of Yale-New Haven Hospital in connection with the foregoing resolutions are hereby ratified, approved and confirmed in all respects.

Minutes of the Meeting of the
Yale-New Haven Hospital Board of Trustees
Executive Committee
May 6, 2011
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CERTIFICATION

The undersigned secretary of Yale-New Haven Hospital hereby certifies that the foregoing resolution was adopted by the Executive Committee of the Board of Trustees and remains in full force and effect without amendment.

Adopted this 6th day of May, 2011



Robert A. Haversat
Secretary

APPENDIX IV
Curriculum Vitae

SUMMARY: Health Care Executive with extensive leadership experience at academic medical centers, community teaching hospitals and children's hospitals, including strategic and program development, capital project development, hospital operations and physician relations. Strong background in health policy and health advocacy efforts, and close collaborations with state, local and community leaders.

**PROFESSIONAL
EXPERIENCE:**

YALE-NEW HAVEN HOSPITAL, New Haven, CT (2010-Present)

Vice President, Women's and Children's Services
Executive Director, Yale-New Haven Children's Hospital

Member of the executive management team of Yale-New Haven Hospital and executive responsible for Women's and Children's service lines for the Yale New Haven Health System.

SPARER ASSOCIATES, INC., New York, N. Y. (2009-2010)

President

Provided strategic planning and business development consultation to a range of clients in the health care industry, including hospitals, physician groups, and corporations.

NEW YORK-PRESBYTERIAN HOSPITAL, New York, N.Y. (1997 – 2008)

**Senior Vice President and Chief Operating Officer – Women's Children's and
Community Health (2000-2008)**

Member of the corporate management team of New York-Presbyterian Hospital (NYP), the 2,300 bed academic teaching hospital of Columbia and Cornell.

- Directed women's, children's emergency services and transfer/access service lines, the 1M-visit Ambulatory Care Network of NYP, Revenue Cycle Operations of NYP, and two Medicaid Managed Care Plans.
- Produced \$250M in enhanced recurring revenue in seven years.
- Secured over \$1M/year in grants and contracts to support Ambulatory Network.

Executive Director, Children's Hospital of New York-Presbyterian (1998-2008)

- Oversaw design and development of the new 202-bed Morgan Stanley Children's Hospital, opened in November 2003, including \$120M Capital Campaign to fund project.
- Developed 100-bed children's hospital-within-a-hospital, Komansky Center for Children's Health, at Weill Cornell Campus.
- Created 16-hospital regional NYP Children's Health System and Medical Advisory Board.
- Redeveloped Sloane Hospital for Women at Columbia, including Center for Prenatal Pediatrics for high-risk obstetrics and fetal diagnosis and treatment.

MONMOUTH MEDICAL CENTER, Long Branch, N.J. (1989 – 1997)

An affiliate of the Saint Barnabas Health Care System

Executive Director (1996-1997)

Managed transition of Monmouth Medical Center, a 527-bed community teaching hospital, from freestanding to a merged affiliate of newly formed Saint Barnabas Health Care System.

Executive Vice President and Chief Operating Officer (1992-1996)

- Headed Medical Center's reengineering effort, reducing expenses by 15 % over two years.
- Chaired Performance Improvement Team, expanded quality metrics and introduced organizational performance report card.
- Established Jacqueline M. Wilentz Comprehensive Breast Center, Cardiac Cath and MRI Centers.
- Developed master site plan for hospital campus.

Vice President and Administrator, Schneider Children's Hospital

Member of the corporate management of Long Island Jewish Medical Center (LIJMC), 850-bed teaching hospital affiliate of the State University of New York at Stony Brook.

- Executive responsibility for 150-bed Schneider Children's Hospital.
- Developed satellite practice program for full-time pediatric medical staff.
- Established bone marrow transplantation program.

UNIVERSITY HOSPITALS OF CLEVELAND, Cleveland, Ohio (1977 – 1987)

Vice President

Member of the corporate management of University Hospitals of Cleveland (UHC), the 900-bed primary teaching hospital affiliate of Case Western Reserve University.

- Executive responsibility for 240-bed Rainbow Babies & Children's Hospital .
- Developed RB&C's first strategic and annual operating plans.
- Implemented product line costing to support development of managed care contracts.
- Formed Association of Ohio Children's Hospitals in collaboration with Cincinnati, Columbus, Akron and Dayton Children's Hospitals

COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS

New York, N.Y. (1975 – 1977)

Program Coordinator, the Child Health Care Project of the Robert Wood Johnson Foundation

BELLEVUE HOSPITAL CENTER, New York, N.Y. (1973 – 1975)

Assistant Director

HOSPITAL FOR JOINT DISEASES & MEDICAL CENTER, New York, N.Y. (1973)

Administrative Resident

EDUCATION: **Master of Public Administration in Health Policy Planning and Administration, 1976**

Wagner School of Public Administration
New York University, New York, N.Y.

Bachelor of Arts in Political Science, 1971

School of Government and Public Affairs
American University, Washington, D.C.

PROFESSIONAL *Board of Trustees, Ronald McDonald House of New Haven, 2010-Present*

APPOINTMENTS/ *CEO Forum & Strategic Planning Committee, Child Health Corporation of America, 2005 – 2008*

MEMBERSHIPS: *Board of Trustees, National Association of Children's Hospitals and Related Institutions, 2000 - 2006*

Officer and Member of Executive Committee 2003 – 2006; Education Council 2006 – 2008

Board of Trustees, Randall's Island Sports Foundation, 2008-present

Board of Trustees, Angels on a Leash, Westminster Kennel Club, 2007-2010

Vice Chairperson, Board of Trustees, Monmouth County Urban League, 1995-1998

Board of Trustees, United Cerebral Palsy of Monmouth-Ocean Counties, 1995-1999

Board of Trustees, Central Jersey Blood Bank, 1995-1997

Board of Trustees, Ranney School, 1994-2008

Board of Trustees, Regional Perinatal Consortium of Monmouth-Ocean Counties, 1992-1997

Board of Trustees, Ronald McDonald House of Long Island, 1987-1989

Board of Trustees, Association of Ohio Children's Hospitals, 1985-1987 President-elect, 1987

Instructor, Department of Pediatrics, Case Western Reserve University School of Medicine, 1977-1987

Health Services Project Review Committee, American Heart Association of Northeast Ohio, 1977-1984

Instructor, St. Francis College, Brooklyn, New York, 1976-1977

Instructor, Department of Pediatrics, Columbia University College of Physicians and Surgeons, 1976-1977

CURRICULUM VITAE

Name: Clifford W. Bogue, M.D.

Address: Department of Pediatrics
Yale University School of Medicine
333 Cedar Street
PO Box 208064
New Haven, CT 06520-8064

Office Telephone: (203) 785 - 4638
Facsimile: (203) 785 - 6925
Email: clifford.bogue@yale.edu

Education: B.A. University of Virginia, Charlottesville, VA 1981
M.D. University of Virginia, Charlottesville, VA 1985

Career/Academic Appointments:

7/1985 - 6/1988 Resident, Pediatrics, Vanderbilt University Medical Center, Nashville, TN
7/1988 - 6/1989 Chief Resident, Pediatrics, Vanderbilt University Medical Center, Nashville, TN
7/1989 - 6/1993 Post-doctoral Fellow, Critical Care Medicine, Dept. of Pediatrics, Yale University School of Medicine, New Haven, CT
7/1992 - 6/1993 Consultant in Pediatrics, Pediatric Intensive Care Unit, Yale-New Haven Hospital, New Haven, CT
7/1993 - 6/1994 Instructor, Dept. of Pediatrics, Yale University School of Medicine, New Haven, CT
7/1994 - 6/2000 Assistant Professor, Dept. of Pediatrics, Yale University School of Medicine, New Haven, CT
7/2000 - 6/2003 Associate Research Scientist, Dept. of Pediatrics, Yale University School of Medicine, New Haven, CT
7/2003 - present Associate Professor, Dept. of Pediatrics, Yale University School of Medicine, New Haven, CT

Administrative Positions:

7/1993 - 6/2003 Director, Pediatric Transport Service, Yale-New Haven Children's Hospital, New Haven, CT
7/2002 - 6/2003 Co-Director, Postdoctoral Training Grant *Development of Cardiovascular and Pulmonary Function* (T32), NHLBI/National Institutes of Health
7/2003 - 2/2005 Director, Pediatric Critical Care Medicine Fellowship Program, Yale University School of Medicine, New Haven, CT.
7/2003 - present Program Director, Postdoctoral Training Grant *Development of Cardiovascular and Pulmonary Function* (T32 HL07272), NHLBI/National Institutes of Health
7/2008 - 6/2010 Director, Pediatric Critical Care Medicine Fellowship Program, Yale University School of Medicine, New Haven, CT.
9/2003 - present Chief, Section of Critical Care Medicine, Dept. of Pediatrics, Yale University School of Medicine, New Haven, CT.

7/2004 – present	Director, Pediatric Intensive Care Unit, Yale-New Haven Children's Hospital, New Haven, CT
11/2008 – present	Associate Chair (Strategic Planning), Dept. of Pediatrics, Yale University School of Medicine, New Haven, CT
11/2008 – present	Director, Program in Vertebrate Development, Yale University School of Medicine, New Haven, CT
8/2010 – present	Interim Chair, Department of Pediatrics, Yale University School of Medicine, New Haven, CT
8/2010 – present	Physician-in-Chief, Yale-New Haven Children's Hospital, New Haven, CT
9/2010 – present	Program Director, Child Health Research Center Grant Developmental Adaptation (K12 HD001401), NICHD

Board Certification:

1986	Diplomate, National Board of Medical Examiners
1993	Diplomate, American Board of Pediatrics, Sub-Board of Pediatric Critical Care Medicine (recertified 2001, 2009)

Professional Honors & Recognition:**A. International/National/Regional**

2008	Elected to membership in the American Pediatric Society
2007	Senior Associate, King's College, University of Cambridge, Cambridge UK
2007	Visiting Scholar, CRC/Wellcome Trust Gurdon Institute, University of Cambridge, Cambridge, UK
2004 – present	Best Doctors in America
2003 – present	America's Top Pediatricians
1998	Child Health Research Fellow, Charles H. Hood Foundation
1998	NIH Young Investigator Award, Perinatal Research Society
1997	Elected to membership in the Society for Pediatric Research
1995	Parker B. Francis Fellow in Pulmonary Research
1994	Young Investigator Award, Eastern Society for Pediatric Research
1989	Fellow, American Academy of Pediatrics

B. Local

2002 - present	Fellow, Berkeley College, Yale University, New Haven, CT
2000	Mae Gailani Junior Faculty Award, Department of Pediatrics, Yale University School of Medicine, "in recognition of junior faculty whose dedication to research and patient care bespeaks the promise of this department."
1990	Pediatric Fellow Teaching Award, Department of Pediatrics, Yale University, New Haven, CT

Grant History:**A) Current Grants**

Agency:	NIH/NHLBI
I.D.#	5 T32 HL07272 – 32
Title:	"The development of cardiovascular and pulmonary function"
P.I.:	Clifford Bogue, M.D.

Percent effort: 0.6 calendar months (5%)
 Direct Costs/yr: \$300,000
 Total Costs for project period: \$1,600,000
 Project Period: 07/01/2007 – 06/30/2012

Agency: NIH/NIDDK
 I.D.# 2R01DK061146-08
 Title: "Hex – a homeobox gene essential for liver development"
 P.I.: Clifford Bogue, M.D.
 Percent effort: 1.8 calendar months (15%)
 Direct Costs/yr: \$244,939
 Total Costs for project period: \$824,822
 Project Period: 09/25/2009 – 06/30/2011

Agency: NIH/NICHD
 ID#: 5K12HD001401-10
 Title: Developmental Adaptation
 P.I.: Clifford Bogue, M.D.
 Percent effort: 0.6 calendar months (5%)
 Direct costs/yr: \$390,000
 Total costs for project period: \$1,950,000
 Project Period: 12/01/2010 – 11/30/2015

B) Past Grants

Agency: PKD Foundation
 I.D.# Research Grant
 Title: "Mechanism of polycystic liver disease in Hhex mutant mice"
 P.I.: Clifford Bogue, M.D.
 Percent effort: 5%
 Direct Costs/yr: \$75,000
 Total Costs for project period: \$150,000
 Project Period: 02/01/2007 – 12/31/2009 (no cost extension until 8/10)

Agency: NIH/NIDDK
 ID# R56 DK061146-06
 Title: "Hhex – a homeobox gene essential for liver development"
 P.I.: Clifford Bogue, M.D.
 Percent effort: 20%
 Total Costs for Project Period: \$420,000
 Project Period: 07/1/06 – 06/30/09

Agency: NIH/NIDDK
 I.D.# P50 DK057328 (Yale PKD Center) – Pilot Project
 Title: "Hhex – a new gene involved in ciliary biogenesis"
 P.I.: Clifford Bogue, M.D.
 Percent effort: 5%
 Direct Costs/yr: \$19,000
 Total Costs for project period: \$38,000
 Project Period: 09/01/2006 – 08/31/2008

Agency: NIH/NIDDK
 ID# R01 DK061146
 Title: "Hhex - a homeobox gene essential for liver development"
 P.I.: Clifford Bogue, M.D.
 Percent effort: 25%
 Total Costs for Project Period: \$2,050,000
 Project Period: 07/1/01 - 06/30/06

Agency: Charles H. Hood Foundation
 ID# Research Grant
 Title: "The ontogeny of lymphocyte development"
 P.I.: Ramsay Fuleihan, M.D.
 Role on Project: Co-Investigator
 Percent effort: 5%
 Total Costs for Project Period: \$67,320
 Project Period: 07/1/02 - 06/30/03

Agency: NIH/NHLBI
 ID# K08 HL03471
 Title: "Hex expression and regulation in the developing lung"
 P.I.: Clifford W. Bogue, M.D.
 Percent effort: 75%
 Total Costs for Project Period: \$491,180
 Project Period: 07/01/96 - 06/30/01

Agency: NIDDK/NIH
 ID# P30-34989 (Yale Liver Center) - Pilot Project
 Title: "Hex localization and function in liver development"
 P.I.: Clifford W. Bogue, M.D.
 Percent effort: 5%
 Total Costs for Project Period: \$31,064
 Project Period: 09/01/00 - 08/31/01

Agency: NIDDK/NIH
 ID# P3034989 (Yale Liver Center) - Pilot Project
 Title: "Characterization of the *Hex* promoter in liver cells"
 P.I.: Clifford W. Bogue, M.D.
 Percent effort: 5%
 Total Costs for Project Period: \$31,064
 Project Period: 07/01/98 - 06/30/00

Agency: Charles H. Hood Foundation
 ID# Research Grant
 Title: "The Ontogeny of Lymphocyte Development"
 P.I.: Joseph B. Warshaw
 Role on Project: PI of subproject
 Percent effort: 5%
 Total Costs for Project Period: \$300,000
 Project Period: 01/01/98 - 12/31/00

Agency: American Lung Association
 ID# RG-059-N

Title: "Hex Expression and Regulation in the Developing Embryo"
 P.I.: Clifford W. Bogue, M.D.
 Percent effort: 25%
 Total Costs for Project Period: \$50,000
 Project Period: 07/01/97 - 06/30/99

Agency: NIH/NICHD
 ID# P30 HD277757
 Title: "Developmental Adaptation"
 P.I.: Joseph Warshaw, M.D.
 Role on Project: PI of subproject
 Percent effort: 25%
 Total Costs for Project Period: \$99,000
 Project Period: 12/01/95 - 11/30/97

Agency: Parker B. Francis Foundation
 ID# Fellowship Award
 Title: "Developmental Regulation and Expression of Hex in the Lung"
 P.I.: Clifford W. Bogue, M.D.
 Percent effort: 75%
 Total Costs for Project Period: \$108,000
 Project Period: 07/01/95 - 06/30/98 (Relinquished after one year owing to receipt of K08 award)

Agency: Charles H. Hood Foundation
 ID# Research Grant
 Title: "Expression and Regulation of Homeobox Genes in the Developing Lung"
 P.I.: Clifford W. Bogue, M.D.
 Percent effort: 25%
 Total Costs for Project Period: \$50,000
 Project Period: 07/01/94 - 07/01/96

C) Pending Grants

Agency: Connecticut Stem Cell Research Fund
 Title: The Homeobox Gene HHEX is Necessary for Hepatic Specification
 Role: PI
 Total Costs: \$200,000
 Project Period: 7/01/11 - 6/30/2013

Lectures, Courses:

- 2011 Yale University School of Medicine, New Haven, CT: "Investigating the Role of *Hhex* During Development - New Insights Into Mechanisms of Hepatobiliary Disease"
- 2010 Society for Critical Care Medicine 2010 Congress, Pediatric Refresher Course, Miami, FL: "Ventilator Weaning Protocols"
- 2008 Visiting Professor, University of Texas - Southwestern Dept. of Pediatrics, Dallas, TX: "New Insights into the Genetic Control of Hepatic Epithelial Differentiation and Morphogenesis"

- 2007 American Association for the Study of Liver Diseases Annual Meeting, Pediatric Symposium - *Fibrocystic Diseases of the Liver*, Boston, MA, Plenary Speaker: "Embryology and Development of the Ductal Plate"
- 2007 Institute of Liver Studies, King's College Hospital, London, UK, Postgraduate Academic Research Seminar: "New Insights Into the Genetic Control of Hepatic Epithelial Morphogenesis"
- 2007 Cochin Institute Seminar, Paris France: "New Insights Into the Genetic Control of Hepatic Epithelial Morphogenesis"
- 2007 Christian de Duve Institute of Cellular Pathology Research Seminar, Université Catholique de Louvain, Brussels, Belgium: "New Insights Into the Genetic Control of Hepatic Epithelial Morphogenesis"
- 2007 MRC National Institute for Medical Research, Mill Hill, UK, Genetics and Developmental Biology Seminar: "New Insights Into the Genetic Control of Hepatic Epithelial Morphogenesis"
- 2007 University Hospital of Cologne, Cologne, Germany: "Tight Glucose Control in Critically Ill Children – Is it Ready for Prime Time?"
- 2007 Helios Klinikum, University of Witten/Herdecke, Wuppertal, Germany: "Tight Glucose Control in Critically Ill Children – Is it Ready for Prime Time?"
- 2007 University of Cambridge Developmental Biology Lecture Series, Cambridge UK: "The homeobox gene Hhex has essential roles during liver development"
- 2006 CRC/Wellcome Trust Gurdon Institute of Cancer and Developmental Biology Research Seminar, University of Cambridge, Cambridge UK: "Conditional Mutagenesis Reveals Multiple Roles for the Homeobox Gene Hhex in Hepatobiliary Development"
- 2006 New York Pediatric Critical Care Society Meeting, New York, NY: "Tight Glucose Control in Critically Ill Children – Is it Ready for Prime Time?"
- 2006 Grand Rounds, Blythedale Children's Hospital, Valhalla, NY: "Pediatric Parenteral Nutrition"
- 2006 FASEB Summer Research Conference - Liver Growth, Development and Disease, Snowmass, CO. Invited Speaker: "The Homeobox Gene Hhex is required for morphogenesis of the biliary tract"
- 2006 Yale Liver Center Research Seminar, Yale School of Medicine: "Conditional Mutagenesis Reveals Critical and Unexpected Roles for the Homeobox gene Hhex in Hepatobiliary Development"
- 2005 NACHRI Annual Meeting, Indian Wells, CA, Invited Symposium Speaker: "Pediatric Critical Care Response Team – A Success Story"
- 2005 15th International Society of Developmental Biologists Congress, Sydney, Australia, Invited Speaker: "Conditional Mutagenesis Reveals a Critical Role for the Homeobox Gene Hhex in Hepatocyte and Biliary Tract Development and Function"
- 2005 Pediatric Academic Societies' Annual Meeting, San Francisco, CA., *Functional Genomics in the Mouse* Educational Workshop Speaker: "Mouse Mutagenesis Techniques"

- 2004 15th Annual Pediatric Critical Care Colloquium, New York, NY. Plenary Speaker: "Hepatopulmonary Syndrome"
- 2004 Kansas University Medical Center Department of Anatomy and Cell Biology Seminar: "The Homeobox Gene Hhex Plays Multiple Roles During Organogenesis"
- 2004 Department of Internal Medicine (Hematology) Research Conference, Yale School of Medicine: "Hhex – One Gene With Many Functions During Mouse Development"
- 2004 Pediatric Academic Societies' Annual Meeting, San Francisco, CA., *Functional Genomics in the Mouse* Educational Workshop Speaker: "Mouse Mutagenesis Techniques"
- 2004 Pediatric Academic Societies' Annual Meeting, San Francisco, CA, Plenary Speaker and Chair: "Lung Organogenesis – Vascular and Alveolar Interactions"
- 2003 Inaugural Joseph B. Warshaw Developmental Biology Symposium "The Cardiovascular System – From Development to Disease," Speaker, Yale School of Medicine: "The Homeobox Gene Hhex and Cardiovascular Development"
- 2002 Vanderbilt University School of Medicine Pediatric Research Seminar: "The Homeobox Gene Hex Plays Multiple Roles During Organogenesis"
- 2002 University of Virginia School of Medicine Pediatric Research Conference: "The Homeobox Transcription Factor Hex is Necessary for Liver and Cardiovascular Development"
- 2002 Research Conference, Department of Pediatrics, Baylor College of Medicine, Houston, TX. Lecture title: "Hex – One Gene With Many Important Functions During Development"
- 2002 New Frontiers in Pediatric Critical Care Research, American Thoracic Society International Conference, Atlanta GA, Plenary Speaker: "Transcriptional Control of Lung and Cardiovascular Development"
- 2002 American Thoracic Society International Conference, Plenary Speaker, Pediatric Clinical Year In Review, Atlanta GA: "Embryonic Stem Cells and Their Future in Pediatric Pulmonary and Critical Care Medicine"
- 2001 Berkeley College Master's Tea, Yale University, Panel Discussant: "Coming To Medicine"
- 2000 Duke University Pediatric Research Seminar: "Hex – One Gene With Many Important Functions During Development"
- 1999 Connecticut Thoracic Society Annual Lung Research Conference, Rocky Hill, CT. Invited Speaker: "Expression of the Homeobox Gene Hex During Lung Development"
- 1999 IPOKRaTES Post-Graduate Seminar, Munich, Germany, Visiting Professor: "Contemporary and Experimental Techniques in Cardiorespiratory Support: Basis and Clinical Application"
- 1999 MRC National Institute for Medical Research, The Ridgeway, Mill Hill, London UK, Mammalian Development Seminar: "Hex and Liver Development"
- 1998 University of Utah Pediatric Research Seminar, Salt Lake City, UT: "The Function and Regulation of Hex During Development"

- 1998 NHLBI Workshop on Molecular Embryology of the Lung, Bethesda, MD, Panel Discussant.
- 1998 Yale Liver Center Research Seminar, Yale School of Medicine: "The Role of Hex in Liver Development and Function"
- 1998 Vanderbilt University School of Medicine Pediatric Research Seminar: "Hox Genes and Branching Morphogenesis in the Lung"
- 1998 Connecticut Thoracic Society Annual Lung Research Conference, Southbury, CT. Invited Speaker: "Expression of Hox Genes During Lung Morphogenesis"
- 1996 Pulmonary Lung Biology Research Conference, Department of Internal Medicine, Yale School of Medicine: "Hox Genes and Lung Development"
- 1993 The University of North Carolina Pediatric Research Conference: "Homeobox Genes and Lung Branching Morphogenesis"
- 1993 The University of Virginia Pediatric Research Conference: "Homeobox Genes and Lung Branching Morphogenesis"

PROFESSIONAL SERVICE

Peer Review Groups/Grant Study Sections

- 2010 - present AHA National Peer Review Committee: Basic Cell – Genetics and Epigenetics
- 2010 Special Emphasis Panel ZDK1 GRB-N, NIDDK, NIH
- 2009 Special Emphasis Panel ZRG-1, NIDDK, NIH
- 2008 – 2009 AHA National Lung, Resuscitation, and Respiration Peer Review Committee
- 2003 Co-Chair, NEA-3 Study Section, American Heart Association
- 1999 – 2003 Member, American Heart Association CV/Renal/Lung Peer Review Committee

External Reviewer: Charles Hood Foundation; Wellcome Trust, UK; Cancer Research UK; Canada Foundation for Innovation; Breast Cancer Campaign (UK)

Journal Service

- 1996 – present Reviewer for *Development*, *FASEB J*, *Pediatric Research*, *Biochemical Journal*, *American Journal of Physiology – Lung*, *American Journal of Pathology*, *Atherosclerosis*, *Journal of Pediatrics*, *FEBS Letters*, *American Journal of Physiology – Gastrointestinal and Liver Physiology*, *American Journal of Respiratory Cell and Molecular Biology*, *European Journal of Pediatrics*

Professional Organizations

Society for Pediatric Research

- 2010 – present Co-Chair, Philanthropy/Finance Committee
- 2006 – 2008 Chair, Medical Student and Housestaff Award Committee
- 2005 – 2008 Critical Care Representative, Council (elected)
- 2005 – 2008 Member, Finance Committee
- 2004 Member, Nominating Committee

Eastern Society for Pediatric Research

- 2003 – 2008 Member of Council (elected)
- 2002 – 2008 Member, Program Committee

BAA Network "Re-engineering Clinical Research in Critical Care," (NIH/NHLBI)

- 2006 – 2008 Member, Steering Committee
 2006 – 2008 Member, Publications Committee

American Academy of Pediatrics

- 2008 – present Chair, Subcommittee on Resident Research Grants, COPR
 2007 – present Member, Committee on Pediatric Research (COPR)

Meeting Planning/Participation

- 2010 Organizer, 3rd Joseph B. Warshaw Developmental Biology Symposium, Yale School of Medicine, New Haven, CT
 2009 Chair, Critical Care Scientist Development Program Symposium, Pediatric Academic Societies' Annual Meeting, Baltimore, MD
 2008 Chair, Critical Care Platform Session, Pediatric Academic Societies' Annual Meeting, Honolulu, HI
 2008 Leader, Meet the Professor Breakfast (Critical Care), Pediatric Academic Societies' Annual Meeting, Honolulu, HI
 2008 Educational Workshop Organizer, Pediatric Academic Societies' Annual Meeting, Honolulu, HI: "Frogs, Mice, and Fish – Using model organisms for gene discovery as a translational approach to human development"
 2007 – 2009 Member, Pediatric Academic Societies' Program Committee
 2004 – 2005 Educational Workshop Organizer, Pediatric Academic Societies' Annual Meeting, Washington, D.C.: "Functional Genomics in the Mouse"
 2003 Organizer, Inaugural Joseph B. Warshaw Developmental Biology Symposium "The Cardiovascular System – From Development to Disease," Speaker, Yale School of Medicine.
 2002 Chair, Plenary Session, "Regenerative Medicine – From Stem Cells to Tissues" Pediatric Academic Societies Annual Meeting, Baltimore MD,
 2002 Chair, Critical Care Platform Session, Pediatric Academic Societies Annual Meeting, Baltimore MD
 2001 – present Abstract Reviewer, Pediatric Academic Societies' Meeting
 2001 – 2004 Member, Pediatric Academic Societies' Program Committee
 1998 Chair, Developmental Biology Platform Session Pediatric Academic Societies Annual Meeting, New Orleans, LA

Yale University Service

Medical School

- 2010 – present Finance Committee, Yale Medical Group
 2010 – present Dean's Advisory Committee
 2004 – present Director, *Seminars in Pediatrics: Bedside to Bench*, Medical Scientist Training Program
 2004 – present Member, M.D./Ph.D. Faculty and Admissions Committee
 2004 – 2007 Member, Funds and Fellowship Committee
 2004 – 2006 Yale Stem Cell and Regenerative Medicine Program Steering Committee
 1998 – 2000 Member, Admissions Committee
 1997 – 1999 Clinical Tutor, Doctor – Patient Encounter Course

Departmental

- 2005 – present Member, Inpatient Services Committee
 2004 – 2005 Member, Fellowship Oversight Committee
 2003 – 2005 Member, Clinical Services Committee
 2003 – 2004 Member, Finance Committee
 2003 – 2004 Member, Basic Science Research Committee

2002 – 2004	Chair, Pediatric Respiratory Medicine Faculty Search Committee
2001 – 2002	Member, Liaison Committee to Pediatric Chairman Search Committee
2000	Member, Committee to Review Basic Science Research

Hospital Boards & Committees

2010 – present	Member, YNHH Medical Board
2010 – present	Member, YNHH Medical Board Administrative Committee
2010 – present	Member, Children's Hospital and Ambulatory Service Line Planning Committees
2009 – present	Member, YNHH Organ Donation Committee
2009 – 2010	Member, YNHH Electronic Medical Record Task Force
2009 – present	Co-Chair, Children's Hospital Executive Committee
2006 – present	Member, Children's Hospital Operations Group
2004 – present	Chair, Pediatric ICU Executive Committee
2004 – 2008	Member, ICU Director's Group
2004 – 2008	Chair, Pediatric ICU Performance Improvement Committee
2004 – 2006	Executive Steering Committee, Yale New Haven Children's Hospital
2003 – 2004	WP-7 Renovation User's Group
2001	Sedation Analgesia Council Subcommittee for Pediatric Sedation
1994 – 1998	Co-chair, Pediatric Code 7 Committee
1993 – 1995	Pediatric Quality Assurance Committee

Public Service

2000 – 2007	President, Board of Directors, Hope for New Haven, Inc.
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BIBLIOGRAPHY

- Bogue CW**, Wise JD, Gray GF, and Edwards KM. Antibiotic therapy for cat-scratch disease? *JAMA* 262:813-816, 1989.
- Bogue CW** and Lister G. New approaches to diagnosis and therapy in pediatric critical care. *Curr Opin Pediatr* 4:431-436, 1992.
- Bogue CW**, Gross I, Vasavada H, Dynia DW, Wilson CM, and Jacobs HC. Identification of *Hox* genes in newborn lung and the effects of gestational age and retinoic acid on their expression. *Am J Physiol* 266 (*Lung Cell. Mol. Physiol.* 10): L448-L454, 1994.
- Landry ML, Fonseca SNS, Cohen S, and **Bogue CW**. Fatal enterovirus type 71 infection: rapid detection and diagnostic pitfalls. *Pediatr Infect Dis J* 14:1095-1100, 1995.
- Bogue CW**, Lou LJ, Vasavada H, Wilson CM, and Jacobs HJ. Expression of *Hoxb* genes in the developing mouse foregut and lung. *Am J Respir Cell Mol Biol* 15:163-171, 1996.
- Bogue CW**, Jacobs HJ, Dynia DW, Wilson CM, and Gross I. Retinoic acid increases surfactant protein mRNA in fetal rat lung in culture. *Am J Physiol* 271(*Lung Cell Mol Physiol* 15): L862-L868, 1996.
- Jacobs HJ*, **Bogue CW***, Pinter E*, Wilson CM, Warshaw JB, and Gross I. Fetal lung mRNA levels of *Hox* genes are differentially altered by maternal diabetes and butyrate in rats. *Pediatr Res* 44:99-104, 1998.
*These authors contributed equally to this work.
- Donnelly KM and **Bogue CW**. Use of high frequency and non-conventional ventilation for respiratory failure. *Curr Opin Pediatr* 10:278-283, 1998.

- Ganea GR and **Bogue CW**. Pain management and weaning from narcotics and sedatives. *Curr Opin Pediatr* 11:207-212, 1999.
- Ghosh B, Jacobs HC, Wiedemann LM, Brown A, Bedford FK, Nimmakayalu MA, Ward DC and **Bogue CW**. Genomic structure, cDNA mapping and chromosomal localization of the mouse homeobox gene *Hex*. *Mammalian Genome* 10:1023-1025, 1999.
- Denson LA, McClure MH, **Bogue CW**, Karpen SJ and Jacobs HC. HNF3b and GATA-4 transactivate the liver-enriched homeobox gene, *Hex*. *Gene* 246:311-320, 2000.
- Denson LA, Karpen SK, **Bogue CW**, and Jacobs HC. The divergent homeobox gene, *Hex*, is a regulator of the Na⁺- dependent bile acid cotransporter, ntcp. *Am J Physiol (Gastro and Liver Physiol)* 279:G347 – G355, 2000.
- Bogue CW**, Ganea GR, Sturm E, Iannucci R, Jacobs HC. *Hex* expression suggests a role in the development and function of organs derived from foregut endoderm. *Dev Dyn* 219:84 – 89, 2000.
- Ghosh B, Ganea GR, Denson LA, Iannucci R, Jacobs HC and **Bogue CW**. Immunocytochemical characterization of murine *Hex*, a homeobox-containing protein. *Pediatr Res* 48:634 – 638, 2000.
- Bogue CW**. Genetic models of respiratory tract development – from invertebrates to vertebrates, in Genetic Models in Cardiorespiratory Biology. Haddad GG and Xu T, ed. Marcel Dekker, New York, pp. 59 – 89, 2001.
- Bogue CW**. Genetic and molecular basis of airway and lung development, in Basic Mechanisms of Pediatric Respiratory Disease. Haddad GG, Abman SH and Chernick V, ed. B. C. Decker, Hamilton, Ontario. pp. 9 – 23, 2002.
- Baltimore RS and **Bogue CW**. Bacterial meningitis and septicemia beyond the neonatal period, in Gellis and Kagan's Current Pediatric Therapy. Gellis SS and Kagan BM, ed. W.B. Saunders, Philadelphia, PA. pp. 39 – 44, 2002.
- Bogue CW**. Functional genomics in the mouse – powerful techniques for unraveling the basis of human development and disease. *J Appl Physiol* 94: 2502 – 2509, 2003.
- Lakhani S and **Bogue CW**. Toll-like receptor signaling in sepsis. *Curr Opin Pediatr* 15:278 – 282, 2003.
- Bogue CW**, Zhang P.-X., McGrath J, Jacobs HC and Fuleihan RL. Impaired B cell development in mice with a targeted disruption of the homeobox gene *Hex*. *Proc Natl Acad Sci, USA*. 100(2): 556-561, 2003.
- Puppin C, D'Elia AV, Pellizzari L, Russo D, Arturi F, Presta I, Filetti S, **Bogue CW**, Denson LA, Damante G. Thyroid-specific transcription factors control *Hex* promoter activity. *Nuc Acids Res* 31(7):1845-1852, 2003.
- Hallaq H, Pinter E, Enciso J, McGrath J, Zeiss C, Brueckner M, Madri J, Jacobs HC, Wilson CM, Vasavada H, Xiang X, and **Bogue CW**. A null mutation of *Hhex* results in abnormal cardiac development, defective vasculogenesis and elevated VEGFA levels. *Development* 131: 5197-5209, 2004.
- Djavani M, Topisirovic I, Zapata JC, Sadowska M, Yang Y, Rodas J, Lukashevich IS, **Bogue CW**, Borden KLB, Salvato MS. The proline-rich homeodomain (PRH/HEX) protein is down-regulated in liver infection with lymphocytic choriomeningitis virus. *J Virol*. Feb;79(4):2461-73, 2005.

Cong R, Jiang X, Wilson C, Hunter MP, **Bogue CW**. The homeodomain protein *Hhex* is a direct repressor of *endothelial cell-specific molecule 1 (ESM-1)*. *Biochem Biophys Res Commun* 346(2):535-545, 2006.

Hunter MP, Wilson CM, Jiang X, Cong R, Vasavada H, Kaestner K, and **Bogue, CW**. The homeobox gene *Hhex* is essential for proper hepatoblast differentiation and bile duct morphogenesis. *Dev Biol* 15;308(2):355-67, 2007.

Canarie MF, **Bogue CW**, Banasiak KJ, Weinzimer SA, Tamborlane WV. Decompensated hyperglycemic hyperosmolarity without significant ketoacidosis in the adolescent and young adult population. *J Pediatr Endocrinol Metab.* 20(10):1115-24, 2007.

Lazar I and **Bogue CW**. Infectious Disease-Associated Syndromes in Pediatric Critical Care Medicine: Basic Science and Clinical Evidence. Wheeler D, Wong H. and Shanley TP. ed. Springer-Verlag Inc, London, pp. 1511 – 1522, 2007.

Weinzimmer S, Faustino EV, Canarie M, Tamborlane WV, and **Bogue CW**. Disorders of Carbohydrate Metabolism in Rogers Textbook of Pediatric Intensive Care, 4th ed. Nichols, D. ed. Wolters Kluwer/Lippincott Williams and Wilkins, pp. 1599 – 1614, 2008.

Paz H, Lynch MR, **Bogue CW**, and Gasson JC. The homeobox gene *Hhex* regulates the earliest stages of definitive erythropoiesis. *Blood*, 116(8):1254-62, 2010.

Faustino, EV and **Bogue, CW**. Relationship between hypoglycemia and mortality in critically ill children. *Pediatr Crit Care Med*, 11(6):690-8, 2010.

Bogue, CW. Embryology and Development of the Ductal Plate in *Fibrocystic Diseases of the Liver*, Editors - Murray KF and Larson, AM. New York: Humana Press, 2010.

Bogue, CW. Acute Inflammation in *Rudolph's Pediatrics*, 22nd edition. Editors – Rudolph CD, Rudolph AM, Lister GE, First L and Gershon, AA. New York: McGraw Hill (in press).

Arterbery A, Wilson CM, and **Bogue CW**. *Hhex* is necessary for hepatic specification of mouse embryonic stem cells. *In preparation*.

McKenna LB., Raum JC, Morgan CP, **Bogue CW**, and Klaus H. Kaestner. The T2DM-associated transcription factor *Hhex* is necessary for differentiation of progenitor cells to mature pancreatic ducts. *In preparation*.

RESEARCH TRAINEES

Past Trainees

Bidyut Ghosh, Ph.D. Training level: Post-doctoral fellow

Dates of training: 1/01/97 – 12/31/00

Previous degree: Ph.D., University of Calcutta

Project: *Hex* expression and function in the developing liver

Current Position: Asst Prof, Dept. of Surgery, Johns Hopkins Medical School

Eron Sturm Training level: Undergraduate student, Yale University

Dates of training: 6/97- 5/98

Previous degree: none

Project: *Hhex* expression during development

Current position: Cardiology Fellow, U Penn

Rocco Iannucci, M.D. Training level: Medical student

Dates of Training: 6/98 – 8/99

Previous Degree: BA

Project: *Hex* expression during lung development

Current Position: Child and Adolescent Psychiatrist

Gheorghe Ganea, M.D. Training level: Post-doctoral fellow

Dates of training: 6/98 – 7/00

Previous degree: MD, Institute of Medicine, Bucharest Romania

Project: Transcriptional regulation of *Hhex* in the lung epithelial cells

Current Position: Senior Attending Physician, St. Luke's Hospital, NY, NY

William McGrath Training level: Undergraduate student, Yale University

Dates of training: 6/99 – 5/00

Previous degree: none

Project: Expression of *Hhex* during embryonic development

Haifa Hallaq, Ph.D. Training level: Post-doctoral fellow

Dates of training: 7/01 – 6/03

Previous degree: PhD, Hebrew University, Jerusalem, Israel

Project title: Characterization of *Hhex*^{-/-} cardiovascular phenotype

Current position: Assistant Professor, Vanderbilt University Medical School

Sam Adefeyisan, M.D. Training level: Post-doctoral fellow (clinical)

Dates of training: 7/02 – 6/05

Previous degree: M.D., University of Ibadan, Nigeria

Project: Validation of the Use of Auditory Evoked Potentials for Monitoring Level of Sedation in Critically Ill Children

Current Position: Assistant Professor, Pediatrics and Anesthesiology, U Tenn School of Medicine

Rong Cong, MD, Ph.D. Training level: Post-doctoral fellow

Dates of training: 10/02 – 7/06

Previous degrees: MD/PhD, Tongji Medical University, China

Project: Identification of targets of the homeobox gene *Hhex*

Current Position: Research Associate, Yale University

Xiaobing Jiang, Ph.D. Training level: Post-doctoral fellow

Dates of training: 12/03 – 6/06

Previous degree: Ph.D. (Molecular Biology), University of So. California, Los Angeles, CA

Project: *Hhex* function in cardiovascular development

Current Position: Research Associate, U Penn Medical School

Michael Hunter, Ph.D. Training level: Post-doctoral fellow

Dates of training: 9/03 – 8/07

Previous degree: Ph.D. (Developmental Biology), University of Chicago, Chicago IL

Project: The role and regulation of *Hhex* in liver development

Current Position: Associate Research Scientist, Dept of Surgery, U of Chicago, Chicago, IL

Adam Christopher, BA Training level: Medical Student

Dates of training: 6/09 – 8/09

Previous Degree: BA, Cornell University, Ithaca NY
 Project: Identification of Direct Targets of the Homeobox Gene *Hhex*
 Current position: Medical student, U of Pittsburgh, Pittsburgh, PA

Jennifer Seibyl Training level: High School Student
 Dates of training: 6/10 – 8/10
 Previous degree: none
 Project: Effects of an endothelial-specific deletion of *Hhex*
 Current Position: High school student, Choate-Rosemary Hall, Wallingford, CT

Current

Adam Arterbery, Ph.D. Training level: Post-doctoral fellow
 Dates of Training: 7/09 - present
 Previous degree: Ph.D. Cornell University
 Project: Mechanisms of early liver stem cell differentiation

Maria Zoupa, Ph.D. Training level: Post-doctoral fellow
 Dates of Training: 10/09 - present
 Previous degree: Ph.D. King's College, London, UK
 Project: Role of *Hhex* in cardiovascular development

Ritu Rana, Ph.D. Training level: Post-doctoral fellow
 Dates of training: 1/11 – present
 Previous Degree Ph.D., National Dairy Institute, India
 Project: The effect of *Hhex* deletion on liver regeneration

Clinical Trainees

Name	Years in Program	Current Position
Isaac Lazar, M.D.	2001 – 2004	Senior Physician, Soroka Hospital, Israel
Stefanie Breitenstein, M.D.	2004 – 2006	
Federico Nievas, M.D.	2004 – 2006	Attending Physician, LeBonheur Children's Hospital, Memphis, TN
Michael Canarie, M.D.	2004 – 2007	Attending Physician, Baystate Medical Center, West Springfield, MA Clinical Instructor, Yale University, New Haven, CT
K. Claire White, M.D.	2005 – 2007	Hospitalist, Peds Crit Care Boston Children's Hospital Boston, MA
Claudiu Faraon-Pogaceanu, M.D.	2006 – 2009	Senior Fellow, Southampton University Hospital, Southampton, UK
Simon Li, M.D.	2007 – 2010	Assistant Professor, New York Medical College, Valhalla, NY

Sarah Kandil, M.D.	2008 - 2011	Postdoctoral Fellow, Yale University, New Haven, CT
Engin Deniz, M.D.	2009 - 2012	Postdoctoral Fellow, Yale University, New Haven, CT
Kimberly Marohn, M.D.	2009 - 2012	Postdoctoral Fellow, Yale University, New Haven, CT
Cecilia Thompson, M.D.	2009 - 2012	Postdoctoral Fellow, Yale University, New Haven, CT
Francis Ulmer, M.D.	2009 - 2012	Postdoctoral Fellow, Yale University, New Haven, CT

Harris C. Jacobs, M.D.

267 Grant Street
 Bridgeport, CT 06610
phjaco@bpthosp.org

Professional Profile

M.D. from Albert Einstein College of Medicine; Clinical Professor of Pediatrics at Yale University School of Medicine; Clinical Neonatologist at Yale-New Haven Hospital and Bridgeport Hospital; MBA from University of Massachusetts due in 2011; Director, Well Baby Nursery at Bridgeport Hospital; Chairman, Pediatrics at Bridgeport Hospital

Professional Experience

Bridgeport Hospital	1999 – Present
Chairman, Pediatrics	
Director, Well Baby Nursery	
Associate Director, NICU	
Senior Attending	
Yale University School of Medicine	1984 - Present
Clinical Professor of Pediatrics	
NICU Attending	
Research Scientist	
Associate Professor of Pediatrics	
Assistant Professor of Pediatrics	
Harbor – UCLA Medical Center	1983 - 1984
Adjunct Assistant Professor of Pediatrics	

National Committees

- Charles H. Hood Foundation, Child Health Advisory Committee, 1994 - 2000
 - Reviewed research grants from young investigators and recommended which grants merit funding
- Academic Pediatric Societies (APS), Program Committee, 1995 - 1998
 - Responsible for determining content of 1/3 of the program for APS national meeting with 4000 attendees
- Society for Pediatric Research (SPR) Young Investigator Award Committee, 1995 - 1998
 - Chair, SPR Young Investigator Award Committee 1997 - 1998
 - Reviewed nominees for national award and decided on winner
- Reviewer, NIH Program Projects, 1996
 - Reviewed large, multi-investigator grant proposals and scored them for funding
- SPR Long Range Planning Committee, 1996
- APS-SPR Web Page Coordinator, 1996 - 1998
 - Responsible for the content and layout of web page for two national research organizations
- Editorial Board, Pediatric Research, 1996 - 1998
- SPR Press Liaison, 1996 - 1999
- SPR-APS Long Range Planning Committee, SPR representative, 1997 – 1999

Hospital Committees

Physician Order Entry Committee, Bridgeport Hospital, 2009 – present
 Clinical Risk Committee, Bridgeport Hospital, 2009 - present
 Chair, Ethics Committee, Bridgeport Hospital, 2002 - 2009
 By Laws Committee, Bridgeport Hospital, 2002 - present
 Critical Care Committee, Bridgeport Hospital, 2000 - 2003
 Credentials Committee, Bridgeport Hospital, 2001 - present
 Ethics Committee, Bridgeport Hospital, 2001 - 2010

Education

University of Massachusetts, M.B.A. due in 2011
 American College of Physician Executives, prerequisites for MBA completed in 2008
 Albert Einstein College of Medicine, M.D., May 1977
Alpha Omega Alpha, 1976
 Harbor-UCLA Medical Center, 1977 - 1983
 Pediatric Intern, Resident, and Neonatal Fellow
 Massachusetts Institute of Technology, graduate studies in biology, 1973 - 1974
 The Johns Hopkins University, B.A., Physics, May, 1973
Phi Beta Kappa, University Honors, Department Honors

License and Board Certifications

Connecticut Physician License
 Board Certified, Pediatrics, 1982
 Sub-board Certified Neonatal-Perinatal Medicine, 1984

Other Society Memberships and Honors

Individual Postdoctoral Fellowship Award, 1982 - 1984
 David W. Smith Pediatric Trainee Research Award
 Western Society for Pediatric Research, 1984
 American Thoracic Society
 Society for Pediatric Research
 American Pediatric Society
 Society for Pediatric Research, Council for Neonatology, 1993 - 1996
 American Academy of Pediatrics, Committee on Pediatric Research,
 SPR Liaison, 1994 - 1996

Grants

Principal Investigator
 Individual Postdoctoral Fellowship Award, 1982 - 1984
 NIH - New Investigator Research Award, 1984 - 1987
 March of Dimes - Basil O'Connor Starter Research Scholarship, 1986 - 1988
 NIH-RO1 Physiology and Biophysics of Pulmonary Surfactant, 1987 - 1990
 NIH SCOR - Response of the Developing Lung to Injury
 Project #3, Relationship Between Stress Proteins and Antioxidants in
 Hyperoxia, 1991 - 1996

Hood Foundation - The Ontogeny of Lymphocyte Development
Project #2, The Role of Hex in the Development of the Immune System,
1998 - 2001
Yale Liver Center - Characterization of the Hex Promoter in Liver Cells,
1999 - 2001

Co-Principal Investigator

Hood Foundation-Expression and Regulation of Homeobox Genes in the
Developing Lung, 1994 - 1995
Participant with Yale in NICHD, Neonatal Network

Clinical Lectures and Conferences (Since joining Bridgeport Hospital)

Multiple lectures to Yale Neonatal Fellows and Nurses
Multiple presentations at Perinatal Conferences
Presentations on ethics at joint resident conferences
Pediatric Grand Rounds

Patents

Pressure regulator for bubble CPAP – 2006

Software

Chief developer - Bridgeport Hospital NICU database

1. Jobe, A., Ikegami, M., and Jacobs, H.: Changes in the amount of lung and airway phosphatidylcholine in 0.5-12.5 day old rabbits. *Biochim. Biophys. Acta* 664: 182-187, 1981.
2. Ikegami, M., Jobe, A., Jacobs, H. and Jones, S.: Sequential treatment of premature lambs with artificial surfactant and natural surfactant. *J. Clin. Invest.* 68:491-496, 1981.
3. Jacobs, H., Jobe, A., Ikegami, M. and Jones, S.: Surfactant phosphatidyl-choline source, fluxes and turnover times in 3 day old, 10 day old and adult rabbits. *J. Biol. Chem.* 257:1805-1810, 1982.
4. Jacobs, H., Jobe, A., Ikegami, M., Glatz, T., Jones, S. and Barajas, L.: Premature lambs rescued from respiratory failure with natural surfactant: Clinical and biophysical correlates. *Pediatr. Res.* 16:424-429, 1982.
5. Baylen, B.G., Ogata, H., Ikegami, M., Jacobs, H.C., Jobe, A.H. and Emmanouilides, G.C.: Left ventricular performance and regional blood flows before and after ductus arteriosus occlusion in premature lambs treated with surfactant. *Circulation* 67:837-843, 1983.
6. Ikegami, M., Jacobs, H., and Jobe, A.: Surfactant function in the respiratory distress syndrome. *J. Pediatr.* 102:443-447, 1983.
7. Jacobs, H., Jobe, A., Ikegami, M., Conaway, D., Jones, S.J.: The significance of reutilization of surfactant phosphatidylcholine in 3 day old rabbits. *J. Biol. Chem.* 258:4159-4165, 1983.
8. Jobe, A., Jacobs, H., Ikegami, M., Jones, S.: Cardiovascular effects of surfactant suspensions given by tracheal instillation to premature lambs. *Pediatr. Res.* 17:444-448, 1983.
9. Jobe, A., Ikegami, M., Jacobs, H., Jones, S.: Surfactant pool sizes and severity of RDS in prematurely delivered lambs. *Am. Rev. Respir. Dis.* 127:751-755, 1983.
10. Jobe, A., Ikegami, M., Jacobs, H., Jones, S., Conaway, D.: Permeability of premature lamb lungs to protein and the effect of surfactant on that permeability. *J. Appl. Physiol.* 55:169-176, 1983.
11. Jacobs, H., Jobe, A., Ikegami, M., Jones, S. and Miller, D.: Route of incorporation of alveolar palmitate and choline into surfactant phosphatidylcholine in rabbits. *Biochim. Biophys. Acta* 752:178-181, 1983.
12. Jobe, A., Ikegami, M., Jacobs, H., Jones, S.: Surfactant and pulmonary blood flow distributions following treatment of premature lambs with natural surfactant. *J. Clin. Invest.* 73:848-856, 1984.

13. Jacobs, H., Jobe, A., Ikegami, M., Miller, D. and Jones, S.: Reutilization of phosphatidylcholine analogues by the pulmonary surfactant system - the lack of specificity. *Biochim. Biophys. Acta* 793:300-309, 1984.
14. Padbury, J.F., Jacobs, H.C., Lam, R.W., Conaway, D., Jobe, A.H. and Fisher, D.A.: Adrenal epinephrine and the regulation of pulmonary surfactant release in neonatal rabbits. *Exp. Lung Res.* 7:177-186, 1984.
15. Ikegami, M., Jobe, A., Jacobs, H., and Lam, R.: A protein from the airways of premature lambs that inhibits surfactant function. *J. Appl. Physiol.* 57:1134-1142, 1984.
16. Jacobs, H., Jobe, A., Ikegami, M., Jones, S.: Accumulation of alveolar surfactant following delivery and ventilation of premature lambs. *Exp. Lung Res.* 8:125-140, 1985.
17. Jobe, A., Jacobs, H., Ikegami, M.: Lack of correlation of severity of lung disease with the phosphatidylcholine concentration in fetal lung fluid from premature lambs at 133-136 days gestational age. *J. Devel. Physiol.* 6:417- 421, 1985.
18. Jobe, A., Jacobs, H., Ikegami, M., Berry, D.: Lung protein leaks in ventilated lambs: effect of gestational age. *J. Appl. Physiol.* 58:1246- 1251, 1985.
19. Jacobs, H., Jobe, A., Ikegami, M., Jones, S.: Reutilization of phosphatidyl- glycerol and phosphatidylethanolamine by the pulmonary surfactant system in 3-day-old rabbits. *Biochim. Biophys. Acta.* 834:172-179, 1985.
20. Berry, D., Jobe, A., Jacobs, H., Ikegami, M.: Distribution of pulmonary blood flow and protein leak in relation to atelectasis in premature lamb lungs. *Am. Rev. Resp. Dis.* 132:500-503, 1985.
21. Baylen, B.G., Ogata, H., Ikegami, M., Jacobs, H.C., Jobe, A.H., Emmanouilides, G.: The contractile state and performance of the preterm left ventricle before and after early patent ductus arteriosus occlusion in surfactant treated lambs. *Ped. Res.* 19:1053-1058, 1985.
22. Jacobs, H.C., Ikegami, M., Jobe, A.H., Berry, D.D., Jones, S.: Reutilization of surfactant phosphatidylcholine in adult rabbits. *Biochim. Biophys. Acta* 837: 77-84, 1985.
23. Oguchi, K., Ikegami, M., Jacobs, H., Jobe, A.: Clearance of large amounts of natural surfactant and liposomes of dipalmitoylphosphatidylcholine from lungs of rabbits. *Exp. Lung. Res.* 9:221-235, 1985.
24. Solimano, A., Bryan, C., Jobe, A., Ikegami, M., Jacobs, H.: Effects of high-frequency and conventional ventilation on the premature lamb lung. *J. Appl. Physiol.* 59:1571-1577, 1985.
25. Robertson, B., Berry, D., Curstedt, T., Grossmann, G., Ikegami, M., Jacobs, H., Jobe, A., and Jones, S.: Leakage of protein in the immature rabbit lung; effect of 25. surfactant replacement. *Resp. Physiol.* 61:265-276, 1985.

26. Jacobs, H.C., Berry, D.D., Duane, G., Ikegami, M., Jobe, A.H., Jones, S.: Normalization of arterial blood gases following treatment of surfactant deficient lambs with Tween 20. *Am. Rev. Resp. Dis.* 132:1313-1318, 1985.
27. Oguchi, K., Baylen, B., Ikegami, M., Jacobs, H., Berry, D., Jobe, A., Emmanouilides, G.: Hemodynamic effects of high frequency ventilation (HFV) in preterm lambs. *Biol. Neonate* 49:21-28, 1986.
28. Baylen, B., Ogata, H., Ikegami, M., Jacobs, H., Jobe, A., Emmanouilides, G.: Left ventricular performance and contractility before and after volume infusion: A comparative study of preterm and term newborn lambs. *Circulation* 73:1042-1049, 1986.
29. Padbury, J.F., Ludlow, J.K., Ervin, M.G., Jacobs, H.C., Humme, J.A.: Thresholds for the metabolic and hemodynamic effects of plasma catecholamines in fetal sheep. *Am. J. Physiology* 252:E530-E538, 1987.
30. Fiascone, J.M., Jacobs, H.C., Moya, F.R., Mercurio, M.R., Lima, D.M.: Betamethasone increases pulmonary compliance in part by surfactant- independent mechanisms in preterm rabbits. *Ped. Res.* 22:730-735, 1987.
31. Jacobs, H.C., Lima, D.M., Fiascone, J.M., Mercurio, M.R.: Reutilization of surfactant phosphatidylglycerol and lysophosphatidylcholine by adult rabbits. *Biochim. Biophys. Acta* 962:227-233, 1988.
32. Mercurio, M.R., Fiascone, J.M., Lima, D.M., Jacobs, H.C.: Surface tension and pulmonary compliance in premature rabbits. *J. Appl. Physiol.* 66:2039- 2044, 1989.
33. Gladstone, I.M., Mercurio, M.R., DeVenny, S.G., Jacobs, H.C.: Antenatal steroids, postnatal surfactant, and pulmonary function of premature rabbits. *J. Appl. Physiol.* 67(4):1377-1382, 1989.
34. Gladstone, I.M., Ehrenkranz, R.A., Jacobs, H.C.: Pulmonary function tests and fluid balance in neonates with chronic lung disease during dexamethasone treatment. *Pediatrics* 84:1072-1076, 1989.
35. Gladstone, I.M., Ray, A.O., Salafia, C.M., Perez-Fontan, J., Mercurio, M.R., Jacobs, H.C.: Effect of artificial surfactant on pulmonary function in preterm and full-term lambs. *J. Appl. Physiol.* 69(2):465-472, 1990.
36. Fiascone, J.M., Mercurio, M.R., Lima, D.M., Jacobs, H.C.: Corticosteroids and intratracheal surfactant both alter the distribution of intratracheally administered radiolabeled phosphatidylcholine in the preterm rabbit. *Exp. Lung Res.* 16(4):311-321, 1990.
37. Strand, C.E., Warshaw, J.B., Snow, K., Jacobs, H.C.: Heat shock does not induce tolerance to hyperoxia. *Lung* 172:79-89, 1994.

38. Bogue, C.W., Gross, I., Vasavada, H., Dynia, D.W., Wilson, C.M., Jacobs, H.C.: Identification of *Hox* genes in newborn mouse lung and the effects of gestational age and retinoic acid on their expression in mouse and rat. *Am. J. Physiol (Lung Cell. Mol. Physiol.)* 10:L448-L454, 1994.
39. Bogue, C.W., Lou, L.J., Vasavada, H., Wilson, C.M., Jacobs, H.C.: Expression of *Hoxb* genes in the developing mouse foregut and lung. *Am. J. Resp. Cell Molec. Biol.* 15:163-171, 1996.
40. Bogue, C.W., Wilson, C.M., Jacobs, H.C., Gross, I.: Retinoic acid increases surfactant protein mRNA in fetal rat lung in culture. *Am. J. Physiol.* 271:L862-L868, 1996.
41. Schwartz, D.S., Gettner, P.A., Konstantino, M.M., Bartley, C.L., Keller, M.S., Ehrenkranz, R.A., Jacobs, H.C.: Umbilical venous catheterization and the risk of portal vein thrombosis. *J. Peds* 131:760-762, 1997.
42. Moya, F.R., Llanos, A.J., Rios, A.J., Riquelme, R.A., Moraga, F.A., Rubio, L.A., Salvo, J.D. and Jacobs, H.C.: Repeated doses of the perfluorocarbon FC-100 improve lung function of preterm lambs. *Ped. Res.* 42:893-898, 1997.
43. Jacobs, H.C., Bogue, C.W., Pinter, E., Wilson, C.M., Warshaw, J.B., Gross, I.: Effect of diabetes and butyrate on *Hox* gene expression in fetal rat lung. *Ped. Res.* 44:99-104, 1998.
44. Ghosh, B., Jacobs, H.C., Wiedemann, L.M., Brown, A., Bedford, F.K., Nimmakayalu, M.A., Ward, D.C., Bogue, C.W.: Genomic structure, cDNA mapping and chromosomal localization of the mouse homeobox gene, *Hex*. *Mammal. Genome* 10:1023-1025, 1999.
45. Denson, L.A., McClure, M.H., Bogue, C.W., Karpen, S.J., Jacobs, H.C.: HNF3 β and GATA-4 transactivate the liver-enriched homeobox gene, *Hex*. *Gene* 246:311-20, 2000.
46. Bogue, C.W., Ganea, G.R., Sturm, E., Ianucci, R., Jacobs, H.C.: *Hex* expression suggests a role in the development and function of organs derived from foregut endoderm. *Develop. Dynamics* 219:84-89, 2000.
47. Denson, L.A., Karpen, S.J., Bogue, C.W., Jacobs, H.C.: Divergent homeobox gene *Hex* regulates promoter of the Na(+)-dependent bile acid co-transporter. *Am. J. Physiol. Gastrointest Liver Physiol.* 279:G347-G355, 2000.
48. Ghosh, B., Ganea, G.R., Denson, L.A., Ianucci, R., Jacobs, H.C., Bogue, C.W.: Immunocytochemical characterization of murine *Hex*, a homeobox-containing protein. *Ped. Res.* 48:634-8, 2000.
49. Douglas, N.C., Jacobs, H.C., Bothwell, A.L., Hayday, A.C.: Defining the specific physiologic requirements for c-Myc during T-cell development: *Nat. Immunol.* 2:307-315, 2001.
50. Bogue, C.W., Zhang, P.X., McGrath, J., Jacobs, H.C., Fuleihan, R.L.: Impaired B cell development and function in mice with a targeted disruption of the homeobox gene *Hex*. *PNAS* 100:556-561, 2003.

51. Rivkees, S.A., Mayes, L., Jacobs, H.C., Gross, I.: Rest-activity patterns of premature infants are regulated by cycled lighting. *Pediatrics* 113:833-839, 2004.
52. Hallaq, H., Pinter, e., Enciso, J., McGrath, J., Zeiss, C., Bruchkner, M., Madri, J., Jacobs, H.C., Wilson, C.M., Vasavada, H., Jiang, X., Bogue, C.W.: A null mutation of *Hhex* results in abnormal cardiac development, defective vasculogenesis and elevated VEGF-A levels. *Development* 131: 5197-5209, 2004.
53. Jacobs, H.C.: The Texas Advance Directives Act – Is It a Good Model: Seminars in *Perinatology* 33: 384-390, 2009.

1. Jobe, A., Jacobs, H., Ikegami, M.: Physiologic and therapeutic approaches using prematurely delivered lambs to the understanding and treatment of RDS. Respiratory Distress Syndrome Symposium, Hanasaari Congress Center, Helsinki, Finland, August 9-13, 1982.
2. Jobe, A., Ikegami, M., Jacobs, H.: Surfactant metabolism and artificial surfactant treatment of premature lambs. Presentation for Symposium, Oct. 30-31, 1982, Bad Nauheim, West Germany, pp 153-168.
3. Jobe, A., Jacobs, H.: Catabolism of Pulmonary Surfactant. In: Pulmonary Surfactant, Robertson, Batenburg, Van Golde, eds., Elsevier/North Holland Medical Press, 1984, pp 271-293.
4. Jacobs, H.C.: Surfactant kinetics. In: Seminars in Perinatology, D.E. Woodrum, Guest Ed., Grune and Stratton, Inc., 1984, Vol 8, pp 258-271.
5. Jobe A., Jacobs, H., Ikegami, M.: Approaches to the understanding and treatment of RDS using prematurely delivered lambs. In: Respiratory Distress Syndrome, Raivio, K.O., Hallman, M., Kouvalainen, K., Valimaki, I., eds., Academic Press, 1984, pp 109-122.
6. Jacobs, H. C., Mercurio, M. R.: Other therapeutic alternatives to treat RDS. In: Seminars in Perinatology, F. R. Moya, Guest Ed., W. B. Saunders Co., 1993, Vol 17, pp 295-302.

1. Jobe, A., Ikegami, M. and Jacobs, H.: Correlation of growth, lung phospholipids, and lung protein in newborn rabbits. *Clin. Res.* 29:148, 1981.
2. Jacobs, H., Ikegami, M., Jobe, A., Glatz, T.: Natural surfactant (NS) therapy and lung physical properties. *Clin. Res.* 29:142, 1981 (presented).
3. Ikegami, M., Jobe, A., Jacobs, H., Jones, S.: Testing an artificial surfactant (AS) in premature lambs. *Pediatr. Res.* 15:665, 1981 (presented).
4. Jobe, A., Ikegami, M., Jacobs, H.: Correlations of growth, lung phosphatidylcholine and lung protein in newborn rabbits. *Pediatr. Res.* 15:482, 1981.
5. Jacobs, H., Ikegami, M., Jobe, A., Jones, S., Glatz, T. and Barajas, L.: Natural surfactant therapy: Clinical and biophysical correlates in premature lambs. *Pediatr. Res.* 15:721, 1981 (presented).
6. Jacobs, H., Jobe, A., Ikegami, M. and Jones, S.: Surfactant secretion rates in 3 day old and adult rabbits. *Am. Rev. Respir. Dis.* 123:226, 1981 (presented).
7. Ikegami, M., Jacobs, H. and Jobe, A.: Inhibition of surfactant function in the respiratory distress syndrome (RDS). *Clin. Res.* 30:143A, 1982 (presented).
8. Jobe, A., Ikegami, M., Jacobs, H. and Jones, S.: Does surfactant pool size correlate with severity of respiratory distress syndrome (RDS) in premature lambs? *Clin. Res.* 30:150A, 1982.
9. Jobe, A., Jacobs, H., Ikegami, M., Jones, S.: Effects of surfactant treatments on cardiac output and lung function in lambs. *Clin. Res.* 30:143A, 1982 (presented).
10. Baylen, B.G., Ogata, H., Ikegami, M., Jacobs, H.C., Jobe, A.H. and Emmanouilides, G.C.: Regional blood flow in surfactant treated preterm lambs before and after occlusion of patent ductus arteriosus (PDA). *Clin. Res.* 30:140A, 1982 (presented).
11. Baylen, B.G., Ogata, H., Ikegami, M., Jacobs, H.C., Jobe, A.H. and Emmanouilides, G.C.: Hemodynamics before and after patent ductus arteriosus (PDA) occlusion in preterm lambs treated with surfactant at birth. *Clin. Res.* 30:111A, 1982.
12. Jacobs, H.C., Jobe, A.H., Ikegami, M., Conaway, D. and Jones, S.J.: Importance of reutilization of surfactant phosphatidylcholine (PC). *Am. Rev. Respir. Dis.* 125:206, 1982 (presented).
13. Jobe, A.H., Ikegami, M., Jacobs, H.C. and Jones, S.J.: Alveolar protein permeability and the effect of natural surfactant on protein permeability in premature lambs. *Am. Rev. Respir. Dis.* 125:194, 1982 (presented).
14. Jacobs, H.C., Jobe, A.H., Ikegami, M., Jones, S.J.: How lambs with RDS accumulate a surfactant pool with time. *Pediatr. Res.* 16:292A, 1982.

15. Ikegami, M., Jobe, A.H., Jacobs, H.C. and Jones, S.J.: Surfactant pool sizes, inhibitors and the severity of respiratory distress syndrome (RDS) in premature lambs. *Pediatr. Res.* 16:351A, 1982 (presented).
16. Jobe, A.H., Jacobs, H.C., Ikegami, M., Jones, S.J.: Effects of surfactant treatments on cardiac output and lung function in lambs. *Pediatr. Res.* 16:293A, 1982 (presented).
17. Ikegami, M., Jacobs, H.C., and Jobe, A.H.: Inhibition of surfactant function in the respiratory distress syndrome (RDS). *Pediatr. Res.* 16:292A, 1982 (presented).
18. Jobe, A.H., Ikegami, M., Jacobs, H.C. and Jones, S.J.: The effect of natural surfactant therapy on alveolar permeability in premature lambs with RDS. *Pediatr. Res.* 16:352A, 1982 (presented).
19. Baylen, B.G., Ogata, H., Ikegami, M., Jacobs, H.C., Jobe, A.H. and Emmanouilides, G.C.: Hemodynamics and organ blood (BF) flow before and after ductus arteriosus (PDA) occlusion in surfactant treated preterm lambs. *Pediatr. Res.* 16:96A, 1982 (presented).
20. Baylen, B.G., Ogata, H., Ikegami, M., Jacobs, H., Jobe, A., Emmanouilides, G.: The "contractile state" and performance of the preterm left ventricle before and after early patent ductus arteriosus occlusion in surfactant treated lambs. *Clin. Res.* 31:132A, 1983.
21. Padbury, J.F., Jacobs, H., Lam, R.W., Jobe, A.H., Fisher, D.A.: Endogenous epinephrine secretion regulates surfactant release. *Clin. Res.* 31:137A, 1983.
22. Ikegami, M., Jobe, A.H., Jacobs, H.C.: Characterization of a protein from immature lambs that inhibits surfactant function. *Clin. Res.* 31:141A, 1983.
23. Jobe, A., Jacobs, H., Ikegami, M. and Jones, S.: Distribution of surfactant and pulmonary blood flow following surfactant treatment of premature lambs. *Clin. Res.* 31:141A, 1983 (presented).
24. Jacobs, H., Jobe, A., Ikegami, M., Jones, S., Conaway, D.: Metabolism of synthetic dipalmitoylphosphatidylcholine mixed with natural surfactant. *Clin. Res.* 31:135A, 1983 (presented).
25. Baylen, B.G., Ogata, H., Jacobs, H., Ikegami, M., Jobe, A. and Emmanouilides, G.: Frank-Starling performance and "contractile state" of the preterm and term left ventricle. *Pediatr. Res.* 17:108A, 1983 (presented).
26. Solimano, A., Bryan, C., Jobe, A.H., Ikegami, M., Jacobs, H.C.: High frequency oscillation (HFO) vs conventional ventilation (CV) of premature lambs. *Pediatr. Res.* 17:333A, 1983 (presented).
27. Jacobs, H.C., Jobe, A.H., Ikegami, M., Jones, S.J., Miller, D.: Metabolism of synthetic dipalmitoylphosphatidylcholine (DPPC) mixed with natural surfactant (NS). *Pediatr. Res.* 17:379A, 1983 (presented).

28. Jobe, A.H., Jacobs, H.C., Ikegami, M. and Jones, S.J.: Distribution of surfactant and pulmonary blood flow following surfactant treatment of premature lambs. *Pediatr. Res.* 17:319A, 1983 (presented).
29. Ikegami, M., Jobe, A.H., Jacobs, H.C.: A protein from immature lambs that inhibits surfactant function. *Pediatr. Res.* 17:379A, 1983.
30. Jacobs, H., Jobe, A. and Ikegami, M.: Specificity of reutilization of surfactant phosphatidylcholine (PC) in rabbits (R). *Am. Rev. Respir. Dis.* 127:276, 1983 (presented).
31. Ikegami, M., Jobe, A., and Jacobs, H.: Some properties of a purified inhibitor of surfactant function. *Am. Rev. Respir. Dis.* 127:212, 1983 (presented).
32. Padbury, J.F., Jacobs, H., Lam, R.W., Jobe, A.H., Fisher, D.A.: Endogenous epinephrine secretion regulates surfactant release. Abstract, 5th Internat'l Catecholamine Symposium, Goteborg, June 12-16, 1983 (presented).
33. Oguchi, K., Ikegami, M., Jacobs, H.C. and Jobe, A.H.: Clearance of large amounts of natural surfactant and dipalmitoylphosphatidyl-choline from the lungs of 3-day-old rabbits following tracheal injection. *Clin. Res.* 32:126A, 1984 (presented).
34. Ikegami, M., Jobe, A.H. and Jacobs, H.C.: A protein from the alveolar wash of RDS infants and human amniotic fluid that inhibits surfactant function. *Clin. Res.* 32:124A, 1984 (presented).
35. Jobe, A., Ikegami, M., Jacobs, H.: Increased lung protein permeability of prematurely delivered and ventilated lambs. *Clin. Res.* 32:132A, 1984 (presented).
36. Berry, D., Jobe, A.H., Jacobs, H.C., Ikegami, M.: Distribution of pulmonary blood flow and protein leak in premature lambs. *Pediatr. Res.* 18:312A, 1984.
37. Padbury, J.F., Jacobs, H.C., Lam, R.W., Jobe, A.H., Fisher, D.A.: Endogenous epinephrine (E) secretion regulates surfactant release. *Pediatr. Res.* 18:144A, 1984 (presented).
38. Oguchi, K., Ikegami, M., Jacobs, H.C., Jobe, A.H.: Clearance of large amounts of natural surfactant and dipalmitoylphosphatidyl-choline from the lungs of 3-day-old rabbits following tracheal injection. *Pediatr. Res.* 18:337A, 1984 (presented).
39. Jobe, A.H., Ikegami, M., Jacobs, H.C., Berry, D.: Increased lung protein permeability of prematurely delivered and ventilated lambs. *Pediatr. Res.* 18:394A, 1984 (presented).
40. Jacobs, H.C., Ikegami, M., Jobe, A.H., Berry, D.: Reutilization (RU) of surfactant (NS) phosphatidylcholine (PC) in adult rabbits (R). *Pediatr. Res.* 18:394A, 1984 (presented).
41. Oguchi, K., Baylen, B.G., Ikegami, M., Jacobs, H., Berry, D., Jobe, A., Emmanouilides, G.C.: Hemodynamic effects of high frequency oscillatory ventilation (HFOV) in preterm lambs. *Pediatr. Res.* 18:311A, 1984 (presented).

42. Solimano, A.J., Bryan, A.C., Jobe, A.H., Ikegami, M., Jacobs, H.: High frequency oscillation (HFO) vs conventional mechanical ventilation (CMV): Barotrauma, surfactant pools and surface tensions in premature lambs. *Pediatr. Res.* 18:348A, 1984 (presented).
43. Jacobs, H.C., Jobe, A.H., Ikegami, M.: Different phospholipids of surfactant are reutilized at different rates. *Am. Rev. Respir. Dis.* 129:A294, 1984 (presented).
44. Jacobs, H.C., Berry, D.D., Duane, G., Ikegami, M., Jobe, A.H.: Pulmonary surfactant (PS): What properties are important? *Pediatr. Res.* 19:347A, 1985 (presented).
45. Jacobs, H.C., Berry, D.D., Duane, G., Ikegami, M., Jobe, A.H.: Pulmonary mechanics after treatment of surfactant deficient lungs with Tween 20. *Am. Rev. Resp. Dis.* 131:A251, 1985 (presented).
46. Mercurio, M.R., Jacobs, H.C., Fiascone, J.M., Lima, D.M.: Effects of constant surface tension (ST) agents on the dynamic compliance (DC) of premature rabbits (R). *Pediatr. Res.* 20:474A, 1986 (presented).
47. Fiascone, J.M., Jacobs, H.C., Moya, F.R., Mercurio, M.R.: Differential effect of betamethasone (B) on alveolar surfactant (AS) and lung tissue of fetal rabbits (R). *Pediatr. Res.* 20:428A, 1986.
48. Jacobs, H.C., Lima, D.M., Mercurio, M.R., Fiascone, J.M.: Steroid effects on lung collagen (C) and elastin (E) are dependent on gestational age. *Pediatr. Res.* 21:216A, 1987 (presented).
49. Fiascone, J.M., Jacobs, H.C., Mercurio, M.R., Lima, D.M.: Antenatal corticosteroids (ACS) and intratracheal surfactant (NS): Effects on surfactant metabolism. *Pediatr. Res.* 21:451A, 1987 (presented).
50. Fiascone, J.M., Jacobs, H.C., Moya, F.R., Lima, D.M., Mercurio, M.R.: Antenatal betamethasone exposure increases the saline compliance of fetal rabbit lungs. *Pediatr. Res.* 21:501A, 1987 (presented).
51. Mercurio, M.R., Jacobs, H.C., Fiascone, J.M., Lima, D.M.: Are minimum surface tension (ST) and hysteresis of surfactant important for lung compliance? *Pediatr. Res.* 21:503A, 1987 (presented).
52. Gladstone, I.M., Mercurio, M.R., Jacobs, H.C.: Estimation of PaCO₂ by minute ventilation in neonates with RDS. *Ped. Res.* 23:507A, 1988 (presented).
53. Gladstone, I.M., Jacobs, H.C., Mercurio, M.R., DeVenny, S.G.: Compliance and resistance in term rabbits given various surface active agents. *Ped. Res.* 23:563A, 1988.
54. Gladstone, I.M., Jacobs, H.C., Mercurio, M.R., DeVenny, S.G.: Betamethasone (B) decreases the expiratory resistances (RES) and time constants (Ct) of premature rabbits. *Ped. Res.* 23:564A, 1988 (presented).

55. Gladstone, I.M., Jacobs, H.C., Ehrenkranz, R.A.: Pulmonary function tests (PFT) and fluid balance (FB) in neonates with chronic lung disease (CLD) during dexamethasone (DEX) treatment (Rx). Ped. Res. 25:216A, 1989 (presented).
56. Gladstone, I.M., Jacobs, H.C., Ray, A.O., Fontan, J.P., Mercurio, M.R.: Rescue of preterm lambs (L) in respiratory failure by agents lacking major properties of natural surfactant (NS). Ped. Res. 25:310A, 1989 (presented).
57. Pollaci, M. Jacobs, H.C.: Placement of umbilical arterial catheters (UAC) under ultrasound (UTZ) guidance. Ped. Res. 25:227A, 1989.
58. Gladstone, I.M., Jacobs, H.C., Ray, A.O., Fontan, J.P., Mercurio, M.R.: Agents lacking major properties of natural surfactant (NS) do not reduce lung function of term lambs (L). Ped. Res. 25:366A, 1989 (presented).
59. Strand, C.E., Grannum, P.A., Jacobs, H.C.: Effects of in utero transfusion for Rh isoimmunization on postnatal jaundice and anemia. Ped. Res. 27:227A, 1990.
60. Strand, C.E., Warshaw, J.B., Jacobs, H.C.: A brief exposure of pulmonary fibroblasts to 75% oxygen induces tolerance to 95% oxygen. Ped. Res. 29:332A, 1991. (presented)
61. Bogue, C.W., Pinter, E., Vasavada, H., Jacobs, H.C.: HOX gene expression in the developing lung. Ped. Res. 33:44A, 1993 (presented).
62. Rios, A., Llanos, A. J., Moya, F. R., Navarrete, D., Gaete, C., Sanjueza, E., Riquelme, R., Jacobs, H. C.: Repeated doses of a perfluorocarbon improve arterial blood gases (ABG) and lung compliance (C) in preterm lambs (L). Ped. Res. 33:233A, 1993 (presented).
63. Jacobs, H.C., Schwartz, D.A., Ehrenkranz, R.A.: What is the risk of portal venous thrombosis(PVT) from an umbilical venous catheter(UVC)? Ped. Res. 35:232A, 1994.
64. Bogue, C.W., Jacobs, H.C., Dynia, D.W. Wilson, C.M., Gross, I.: Retinoic acid (RA) modulates surfactant gene expression and lung development. Ped. Res. 35:63A, 1994 (presented).
65. Pinter, E., Bogue, C.W., Flores, J., Jacobs, H.C., Snow, K., Warshaw, J.B.: Dexamethasone decreases *Hox* gene expression in lungs of fetuses of diabetic rats. Ped. Res. 35:74A, 1994 (presented).
66. Bogue, C.W., Jacobs, H.C.: Expression of the homeobox gene Hex in the developing rodent lung. Clin. Res. 42:447A, 1994 (presented).
67. Bogue, C.W., Jacobs, H.C.: Expression of the homeobox gene Hex in developing lung. Am. J. Resp. Crit. Care Med. 151:303A, 1995 (presented).
68. Bogue, C.W., Jacobs, H.C.: Expression of the homeobox gene Hex during fetal development. Ped. Res. 37:58A, 1995 (presented).

69. Bogue, C.W., Lou, L.J., Jacobs, H.C.: Expression of Hoxb genes in the embryonic foregut and lung suggests an important role in lung development. *Ped.Res.* 37:59A, 1995 (presented).
70. Bogue, C.W., Jacobs, H.C., Dynia, D.W., Wilson, C.M., Gross, I.: Retinoic acid enhances surfactant protein gene expression. *Ped. Res.* 39:57A, 1996 (presented).
71. Gross, I., Bogue C.W., Dynia, D.W., Wilson, C.M., Jacobs, H.C.: Butyrate decreases homeobox gene expression in fetal rat lung culture. *Ped. Res.* 41:45A, 1997 (presented).
72. Bogue, C.W., Ganea, G., Sturm, E., Zhao, F., Jacobs, H.C.: Expression of the divergent homeobox gene *Hex* suggests an important role in organogenesis. *Am. J. Resp. Crit. Care Med.* 157: A23, 1998 (presented).
73. Bogue, C.W., Ganea, G., Sturm, E., Zhao, F., Jacobs, H.C.: *Hex* expression during development suggests an important role in both gastrulation and organogenesis. *Pediatr Res* 43: 45A, 1998 (presented).
74. Jacobs, H.C., Denson, T., Karpen, S., Bogue, C.: The Na⁺-dependent bile acid cotransporter (NTCP) is a putative target gene for the liver-enriched orphan homeobox protein *Hex*. *Pediatr Res* 43: 102A, 1998 (presented).
75. Denson, L.A., Jacobs, H.C., McClure, M.H., Bogue, C.W., Karpen, S.K.: A liver-enriched homeobox protein, *Hex*, trans-activates the rat liver Na⁺/taurocholate cotransporter (NTCP) gene promoter and is downregulated by endotoxin and associated cytokines. *Hepatology* (presented).
76. Denson, L.A., Ghosh, B., McClure, M.H., Bogue, C.W., Jacobs, H.C.: Multiple factors regulate the promoter region of the liver-enriched orphan homeobox protein, *Hex*. *Pediatr Res* (presented).
77. Fuleihan, R.L., Zhang, P., McGrath, J, Jacobs, H.C., Bogue, C.W.: Impaired B cell development and functional mice with a targeted disruption of the homeobox gene *Hex*. *Pediatr Res* 51: 11A, 2002 (presented).
78. Jacobs, H.C., DeMichiel, L.: Simple and reliable regulation of bubble cpap using 100% humidified gas at body temperature (vapotherm) as the gas source. *Resp Care J* 50: 2005 (presented).

APPENDIX V

Non-Profit Status Documentation

OGDEN UT 84201-0038

In reply refer to: 0441981549
Nov. 01, 2010 LTR 4168C E0
06-0646652 000000 00
00029143
BODC: TE

YALE NEW HAVEN HOSPITAL
% LAURIE CAHILL
20 YORK ST
NEW HAVEN CT 06510-3220



025077

Employer Identification Number: 06-0646652
Person to Contact: Mr. Ludlow
Toll Free Telephone Number: 1-877-829-5500

Dear Taxpayer:

This is in response to your Oct. 21, 2010, request for information regarding your tax-exempt status.

Our records indicate that you were recognized as exempt under section 501(c)(3) of the Internal Revenue Code in a determination letter issued in November 1966.

Our records also indicate that you are not a private foundation within the meaning of section 509(a) of the Code because you are described in section(s) 509(a)(1) and 170(b)(1)(A)(iii).

Donors may deduct contributions to you as provided in section 170 of the Code. Bequests, legacies, devises, transfers, or gifts to you or for your use are deductible for Federal estate and gift tax purposes if they meet the applicable provisions of sections 2055, 2106, and 2522 of the Code.

Please refer to our website www.irs.gov/eo for information regarding filing requirements. Specifically, section 6033(j) of the Code provides that failure to file an annual information return for three consecutive years results in revocation of tax-exempt status as of the filing due date of the third return for organizations required to file.

If you have any questions, please call us at the telephone number shown in the heading of this letter.

Sincerely yours,



Rita A. Leete
Accounts Management II

Internal Revenue Service

Department of the Treasury

District
Director

10 MetroTech Center
625 Fulton St., Brooklyn, NY 11201

Date: NOV 28 1995

▷
Bridgeport Hospital
c/o Shawmut Bank
267 Grant Street
Bridgeport, CT
06610-2870

Person to Contact:
Patricia Holub
Contact Telephone Number:
(718) 488-2333
EIN: 06-0646554

Dear Sir or Madam:

Reference is made to your request for verification of the tax exempt status of Bridgeport Hospital.

A determination or ruling letter issued to an organization granting exemption under the Internal Revenue Code remains in effect until the tax exempt status has been terminated, revoked or modified.

Our records indicate that exemption was granted as shown below.

Sincerely yours,

(Patricia Holub)

Patricia Holub
Manager, Customer
Service Unit

Name of Organization: Bridgeport Hospital

Date of Exemption Letter: February 1934

Exemption granted pursuant to section 501(c)(3) of the Internal Revenue Code.

Foundation Classification (if applicable): Not a private foundation as you are an organization described in sections 509(a)(1) and 170(b)(1)(A)(iii) of the Internal Revenue Code.

APPENDIX VI

State of Connecticut Department of Health Licenses The Joint Commission Accreditation Certificate



STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

FACILITY LICENSING & INVESTIGATIONS SECTION

TO: Marna Borgstrom, Administrator
 Yale-New Haven Hospital
 20 York St
 New Haven, CT 06504

FROM: Sandra C. Bauer, Licensing Examination Assistant

DATE: July 20, 2010

Enclosed please find a corrected license indicating a change for your facility:

- Person-in-Charge or Administrator
- Increase of bed capacity from 852 to 874 EFF: 7/14/10
- Decrease of bed capacity from _____ to _____ EFF: _____
- Other change, describe: _____

Please note that this license is in effect only for the operation of the facility as it is now organized. This division should be notified immediately if you:

1. Change your Person-in-Charge/Administrator
2. Change the "doing business as" name
3. Plan to relocate
4. Plan to sell your facility
5. Plan to discontinue operation.
6. Plan to change the ownership structure.

Any of these changes or proposed changes, also require written notification to this Division.

If I can be of any assistance, please do not hesitate to call me.
Enclosure



Phone: (860) 509-8023 Fax: (860) 509-7538
 Telephone Device for the Deaf (860) 509-7191
 410 Capitol Avenue - MS # 12FLIS
 P.O. Box 340308 Hartford, CT 06134
 An Equal Opportunity Employer

STATE OF CONNECTICUT

Department of Public Health

License No. 0044

General Hospital

In accordance with the provisions of the General Statutes of Connecticut Section 19a-493:

Yale-New Haven Hospital, Inc. of New Haven, CT, d/b/a Yale-New Haven Hospital, Inc. is hereby licensed to maintain and operate a General Hospital.

Yale-New Haven Hospital, Inc. is located at 20 York Street, New Haven, CT 06504

The maximum number of beds shall not exceed at any time:

92 Bassinets

874 General Hospital beds

This license expires September 30, 2011 and may be revoked for cause at any time.

Dated at Hartford, Connecticut, October 1, 2009.

License revised to reflect:

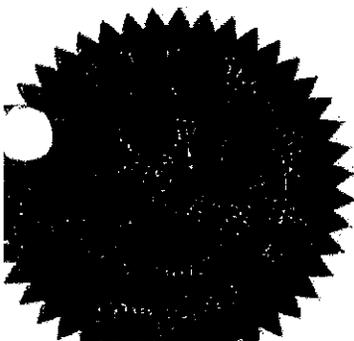
INCREASE IN BED CAPACITY EFF: 7/14/10

Satellites

- Hill Regional Career High School, 140 Legion Avenue, New Haven, CT
- Branford High School Based Health Center, 185 East Main Street, Branford, CT
- Walsh Middle School, 185 Damascus Road, Branford, CT
- James Hillhouse High School Based Health Center, 480 Sherman Parkway, New Haven, CT
- Weller Building, 425 George Street, New Haven, CT
- Yale-New Haven Psychiatric Hospital, 184 Liberty Street, New Haven, CT
- Yale-New Haven Shoreline Medical Center, 111 Goose Lane, Guilford, CT
- Pediatric Dentistry Center, 860 Howard Avenue, New Haven, CT
- Ynhasc Temple Surgical Center, 60 Temple Street, New Haven, CT
- Ynhasc Women'S Surgical Center, 40 Temple Street, New Haven, CT
- Mauro-Sheridan School Based Health Center, 191 Fountain Street, New Haven, CT
- Yale-New Haven Hospital Dental Center, 2560 Dixwell Avenue, Hamden, CT

J Robert Galvin MD, MPH, MBA

J. Robert Galvin, MD, MPH, MBA,
Commissioner



Department of Public Health

LICENSE

License No. 0040

General Hospital

In accordance with the provisions of the General Statutes of Connecticut Section 19a-493:

Bridgeport Hospital of Bridgeport, CT, d/b/a Bridgeport Hospital is hereby licensed to maintain and operate a General Hospital.

Bridgeport Hospital is located at 267 Grant Street, Bridgeport, CT 06610

The maximum number of beds shall not exceed at any time:

30 Bassinets

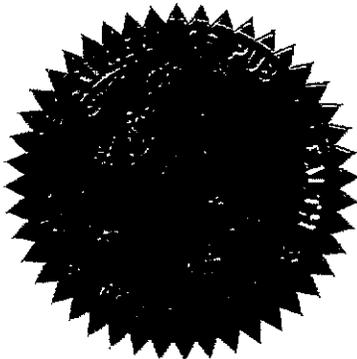
395 General Hospital beds

This license expires **March 31, 2012** and may be revoked for cause at any time.

Dated at Hartford, Connecticut, April 1, 2010. RENEWAL.

Satellites

Geriatric Partial Hospital, 305 Boston Avenue, Stratford, CT
Child Partial Hospital, 305 Boston Avenue, Stratford, CT
Bridgeport Hospital Primary Care Center, 226 Mill Hill Avenue, Bridgeport, CT
Psychiatric Adult Partial Hospital Program, 305 Boston Avenue, Stratford, CT
Fairfield Urgent Care Center, 309 Stillson Road, Fairfield, CT



J. Robert Galvin MD, MPH, MBA

J. Robert Galvin, MD, MPH, MBA,
Commissioner

Yale - New Haven Hospital

New Haven, CT

has been Accredited by



The Joint Commission

Which has surveyed this organization and found it to meet the requirements for the

Hospital Accreditation Program

January 15, 2011

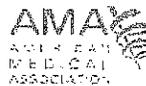
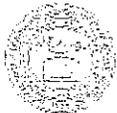
Accreditation is customarily valid for up to 36 months.

Isabel V. Hoverman, MD, MACP
Chair, Board of Commissioners

Organization ID #: 5677
Print/Reprint Date: 05/18/11

Mark R. Chassin, MD, FACP, MPP, MPH
President

The Joint Commission is an independent, not-for-profit, national body that oversees the safety and quality of health care and other services provided in accredited organizations. Information about accredited organizations may be provided directly to The Joint Commission at 1-800-994-6610. Information regarding accreditation and the accreditation performance of individual organizations can be obtained through The Joint Commission's web site at www.jointcommission.org.



This reproduction of the original accreditation certificate has been issued for use in regulatory/payer agency verification of accreditation by The Joint Commission. Please consult Quality Check on The Joint Commission's website to confirm the organization's current accreditation status and for a listing of the organization's locations of care.

Bridgeport Hospital Bridgeport, CT

has been Accredited by



The Joint Commission

Which has surveyed this organization and found it to meet the requirements for the
Hospital Accreditation Program

March 5, 2011

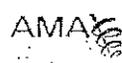
Accreditation is customarily valid for up to 36 months.

Isabel V. Howerman, MD, MACP
Chair, Board of Commissioners

Organization ID #5659
Print/Reprint Date: 5/18/11

Mark R. Chassin, MD, FACP, MPP, MPH
President

The Joint Commission is an independent, not-for-profit, national body that oversees the safety and quality of health care and other services provided in accredited organizations. Information about accredited organizations may be provided directly to The Joint Commission at 1-800-994-6610. Information regarding accreditation and the accreditation performance of individual organizations can be obtained through The Joint Commission's web site at www.jointcommission.org.



APPENDIX VII

Financial Attachment I

Yale-New Haven Hospital

(All dollars are in thousands)

Total Facility:	FY 2010		FY 2011 Projected			FY 2012 Projected			FY 2013 Projected	
	Actual Results		W/O CON	Incremental	With CON	W/O CON	Incremental (Jan - Sept)	With CON	W/out CON	Incremental
NET PATIENT REVENUE										
Non- Government	\$ 670,460		\$ 806,984	\$ -	\$ 806,984	\$ 898,809	\$ 9,395	\$ 908,203	\$ 998,647	\$ 13,514
Medicare	450,379		411,238	-	411,238	449,060	-	449,060	500,516	-
Medicaid and Other Medical Assistance	192,707		195,364	-	195,364	203,075	4,478	207,553	209,935	6,011
Other Government	6,325		6,915	-	6,915	6,922	26	6,947	6,929	34
Total Net Patient Revenue	\$ 1,319,870		\$ 1,420,500	\$ -	\$ 1,420,500	\$ 1,557,866	\$ 13,898	\$ 1,571,765	\$ 1,716,027	\$ 19,559
Other Operating Revenue	\$ 47,133		\$ 45,000	\$ -	\$ 45,000	\$ 37,000	\$ (957)	\$ 36,043	\$ 35,000	\$ (1,224)
Revenue from Operations	\$ 1,367,003		\$ 1,465,500	\$ -	\$ 1,465,500	\$ 1,594,866	\$ 12,941	\$ 1,607,808	\$ 1,751,027	\$ 18,335
OPERATING EXPENSES										
Salaries and Fringe Benefits	\$ 628,088		\$ 681,086	\$ -	\$ 681,086	\$ 676,833	\$ 3,788	\$ 680,621	\$ 721,990	\$ 5,304
Professional / Contracted Services	274,687		306,597	-	306,597	329,135	1,787	330,921	356,700	2,740
Supplies and Drugs	273,604		289,658	-	289,658	372,342	668	373,009	443,331	957
Bad Debts	28,809		26,177	-	26,177	26,962	-	26,962	27,771	-
Other Operating Expense	18,935		16,962	-	16,962	18,149	6,065	24,215	19,422	8,379
Subtotal	\$ 1,224,103		\$ 1,320,480	\$ -	\$ 1,320,480	\$ 1,423,421	\$ 12,308	\$ 1,435,729	\$ 1,569,214	\$ 17,380
Depreciation/Amortization	49,943		70,255	-	70,255	74,169	5	74,174	80,043	10
Interest Expense	11,407		18,500	-	18,500	35,202	-	35,202	34,478	-
Lease Expense	12,482		12,263	-	12,263	12,631	1	12,632	13,010	1
Total Operating Expense	\$ 1,297,935		\$ 1,421,498	\$ -	\$ 1,421,498	\$ 1,545,423	\$ 12,313	\$ 1,557,737	\$ 1,696,745	\$ 17,391
Gain/(Loss) from Operations Before extraordinary Gain / (Loss)	\$ 69,068		\$ 44,002	\$ -	\$ 44,002	\$ 49,443	\$ 628	\$ 50,071	\$ 54,282	\$ 944
Number of FTE's										
Inpatient Cases	7,136		7,584	-	7,584	7,653	36	7,688	7,727	48
Patient Days	56,599		57,503	-	57,503	59,242	1,336	60,578	60,930	1,800
Outpatient volumes	284,701		297,365	-	297,365	302,134	5,448	307,582	307,781	7,264
	591,321		631,907	-	631,907	657,649	-	657,649	689,217	-

APPENDIX VIII

Financial Attachment II

Yale-New Haven Hospital

Note: Gain/Loss from operations doesn't include Other Operating Revenue

Type of Service Description Type of Unit Description: # of Months in Operation	Inpatient Pediatrics Inpatient Discharges 9	(2) Rate	(3) Units	(4) Gross Revenue Col. 2 * Col. 3	(5) Allowances/ Deductions	(6) Charity Care	(7) Bad Debt	(8) Net Revenue Col. 4 - Col. 5 -Col. 6 - Col. 7 Col. 4 / Col. 4 Total	(9) Operating Expenses Col. 1 Total * Col. 4 / Col. 4 Total	(10) Gain/(Loss) from Operations Col. 8 - Col. 9
Year 1 - 2012										
FY Projected Incremental Total Incremental Expenses:	\$12,313,250									
Total Facility by Payer Category:										
Medicare		\$27,016	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Medicaid		\$27,016	747	\$20,180,952	\$15,792,935	\$0	\$0	\$4,478,018	\$6,884,729	(\$2,406,711)
CHAMPUS/Tricare		\$27,016	3	\$81,048	\$5,525	\$0	\$0	\$25,523	\$27,550	(\$2,129)
Total Governmental:			750	\$20,262,000	\$15,798,460	\$0	\$0	\$4,503,541	\$6,912,279	(\$2,408,839)
Commercial Insurers		\$27,016	570	\$15,399,120	\$6,063,907	\$0	\$0	\$9,335,213	\$5,253,408	\$4,081,805
Uninsured		\$27,016	18	\$432,256	\$0	\$0	\$0	\$59,579	\$147,484	(\$87,905)
Total NonGovernmental:			588	\$15,831,376	\$6,063,907	\$0	\$0	\$9,394,792	\$5,400,872	\$3,993,920
Total All Payers			1,336	\$36,093,376	\$21,822,367	\$359,709	\$12,968	\$13,898,333	\$12,313,250	\$1,585,083
Year 2 - 2013										
FY Projected Incremental Total Incremental Expenses:	\$17,391,000									
Total Facility by Payer Category:										
Medicare		\$28,367	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Medicaid		\$28,367	1,003	\$28,451,900	\$22,440,694	\$0	\$0	\$6,011,206	\$9,690,652	(\$3,679,446)
CHAMPUS/Tricare		\$28,367	4	\$113,457	\$79,436	\$0	\$0	\$34,021	\$38,647	(\$4,619)
Total Governmental:			1,007	\$28,565,357	\$22,520,131	\$0	\$0	\$6,045,227	\$9,729,298	(\$3,684,061)
Commercial Insurers		\$28,367	772	\$21,899,170	\$8,444,797	\$518,148	\$17,871	\$13,454,373	\$7,458,907	\$5,995,566
Uninsured		\$28,367	21	\$595,703	\$0	\$0	\$0	\$59,684	\$202,895	(\$143,211)
Total NonGovernmental:			793	\$22,494,872	\$8,444,797	\$518,148	\$17,871	\$13,514,057	\$7,661,702	\$5,852,355
Total IP All Payers			1,800	\$51,060,240	\$30,964,927	\$518,148	\$17,871	\$19,559,294	\$17,391,000	\$2,168,294
Year 3 - 2014										
FY Projected Incremental Total Incremental Expenses:	\$18,258,000									
Total Facility by Payer Category:										
Medicare		\$29,785	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Medicaid		\$29,785	1,004	\$29,904,281	\$23,848,738	\$0	\$0	\$6,055,545	\$10,166,962	(\$4,111,417)
CHAMPUS/Tricare		\$29,785	4	\$119,141	\$85,110	\$0	\$0	\$34,031	\$40,506	(\$6,475)
Total Governmental:			1,008	\$30,023,421	\$23,933,848	\$0	\$0	\$6,089,576	\$10,207,468	(\$4,117,992)
Commercial Insurers		\$29,785	774	\$23,063,698	\$8,799,826	\$548,928	\$18,765	\$14,253,872	\$7,837,877	\$6,415,995
Uninsured		\$29,785	21	\$625,483	\$0	\$0	\$0	\$59,797	\$212,656	(\$152,859)
Total NonGovernmental:			795	\$23,679,181	\$8,799,826	\$548,928	\$18,765	\$14,313,669	\$8,050,532	\$6,263,137
Total All Payers			1,803	\$53,702,607	\$32,733,671	\$548,928	\$18,765	\$20,403,245	\$18,258,000	\$2,145,245

Bridgeport Hospital

Type of Service Description: Inpatient Pediatrics
 Type of Unit Description: Inpatient Discharges
 # of Months in Operation: 9

FY 2012	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
FY Projected Incremental Total Incremental Expenses:	Rate	Total Units	Payer Mix	Gross Revenue	Allowances/ Deductions	Charity Care	Bad Debt	Net Revenue	Net Rev Per Case	Operating Expenses	Gain/(Loss) from Operations
Total Facility by Payer Category:	Prof & Tech			Col. 2 * Col. 3				Col. 4 - Col. 5	Prof & Tech	Col. 4 / Col. 4 Total	Col. 8 - Col. 9
Medicare	\$27,255	0	0.0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Medical	\$27,255	744	56.0%	\$20,277,631	\$25,380,149	\$671,144	\$0	\$6,174,175	\$6,137	\$6,790,833	(\$2,616,659)
CHAMPUS/Tricare	\$27,255	4	0.3%	\$102,207	\$153,394	\$671,144	\$0	\$32,803	\$5,467	\$52,430	(\$19,627)
Total Governmental		748	56.3%	\$20,380,038	\$25,533,542	\$671,144	\$0	\$6,206,978	\$6,133	\$6,843,263	(\$2,636,285)
Commercial Insurers	\$27,255	664	42.5%	\$15,371,904	\$12,004,998	\$671,144	\$0	\$12,115,554	\$16,755	\$6,719,832	\$5,395,722
Uninsured	\$27,255	18	1.2%	\$429,289	\$0	\$671,144	\$0	\$18,911	\$860	\$192,245	(\$173,334)
Total NonGovernmental		580	43.7%	\$15,801,173	\$12,004,998	\$671,144	\$0	\$12,134,464	\$15,341	\$6,912,076	\$5,222,388
Total All Payers	\$27,265	1,328	100.0%	\$36,181,211	\$37,538,538	\$671,144	\$0	\$18,341,442	\$10,173	\$16,755,340	\$2,555,102

Type of Service Description: Inpatient Pediatrics
 Type of Unit Description: Discharges
 # of Months in Operation: 12

FY 2013	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
FY Projected Incremental Total Incremental Expenses:	Rate	Total Units	Payer Mix	Gross Revenue	Allowances/ Deductions	Charity Care	Bad Debt	Net Revenue	Net Rev Per Case	Operating Expenses	Gain/(Loss) from Operations
Total Facility by Payer Category:	Prof & Tech			Col. 2 * Col. 3				Col. 4 - Col. 5	Prof & Tech	Col. 4 / Col. 4 Total	Col. 8 - Col. 9
Medicare	\$29,297	0	0.0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Medical	\$29,297	1,005	55.8%	\$29,443,138	\$23,275,101	\$625,616	\$0	\$6,168,038	\$6,137	\$9,456,342	(\$2,288,304)
CHAMPUS/Tricare	\$29,297	5	0.3%	\$175,780	\$143,932	\$625,616	\$0	\$31,848	\$5,308	\$50,486	(\$18,638)
Total Governmental		1,010	56.2%	\$29,618,919	\$23,419,033	\$625,616	\$0	\$6,199,986	\$6,132	\$9,506,828	(\$2,306,942)
Commercial Insurers	\$29,297	767	42.6%	\$22,470,535	\$11,229,564	\$625,616	\$0	\$11,240,971	\$14,656	\$6,453,746	\$4,797,225
Uninsured	\$29,297	22	1.2%	\$644,526	\$0	\$625,616	\$0	\$18,011	\$850	\$185,114	(\$166,293)
Total NonGovernmental		789	43.8%	\$23,115,061	\$11,229,564	\$625,616	\$0	\$11,258,982	\$14,271	\$6,638,860	\$4,631,022
Total All Payers	\$29,297	1,800	100.0%	\$52,733,980	\$34,648,598	\$625,616	\$0	\$17,458,967	\$9,700	\$15,145,687	\$2,313,400

FY 2014	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
FY Projected Incremental Total Incremental Expenses:	Rate	Total Units	Payer Mix	Gross Revenue	Allowances/ Deductions	Charity Care	Bad Debt	Net Revenue	Net Rev Per Case	Operating Expenses	Gain/(Loss) from Operations
Total Facility by Payer Category:	Prof & Tech			Col. 2 * Col. 3				Col. 4 - Col. 5	Prof & Tech	Col. 4 / Col. 4 Total	Col. 8 - Col. 9
Medicare	\$31,366	0	0.0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Medical	\$31,366	1,008	55.8%	\$31,564,323	\$25,380,149	\$671,144	\$0	\$6,174,175	\$6,137	\$6,790,833	(\$2,616,659)
CHAMPUS/Tricare	\$31,366	6	0.3%	\$188,197	\$153,394	\$671,144	\$0	\$32,803	\$5,467	\$52,430	(\$19,627)
Total Governmental		1,014	56.1%	\$31,742,520	\$25,533,542	\$671,144	\$0	\$6,206,978	\$6,133	\$6,843,263	(\$2,636,285)
Commercial Insurers	\$31,366	769	42.7%	\$24,120,551	\$12,004,998	\$671,144	\$0	\$12,115,554	\$16,755	\$6,719,832	\$5,395,722
Uninsured	\$31,366	22	1.2%	\$690,055	\$0	\$671,144	\$0	\$18,911	\$860	\$192,245	(\$173,334)
Total NonGovernmental		791	43.9%	\$24,810,606	\$12,004,998	\$671,144	\$0	\$12,134,464	\$15,341	\$6,912,076	\$5,222,388
Total All Payers	\$31,366	1,803	100.0%	\$56,553,126	\$37,540,540	\$671,144	\$0	\$18,341,442	\$10,173	\$16,755,340	\$2,555,102

BRIDGEPORT HOSPITAL

Proposal for the Transfer of beds from BH to YNHCH

Assumptions

<u>Net Revenue Rate Increases</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
1) Government	0.0 - 3.0%	0.0 - 3.0%	0.0 - 3.0%	0.0 - 3.0%
2) Non-Government	5.0 - 7.5%	5.0 - 7.5%	5.0 - 7.5%	5.0 - 7.5%

<u>EXPENSES</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
A. Salaries and Fringe Benefits	5.0%	5.0%	5.0%	5.0%
B. Non-Salary				
1) Medical and Surgical Supplies	3.5%	3.5%	3.5%	3.5%
2) Pharmacy and Solutions	3.5%	3.5%	3.5%	3.5%
3) Malpractice Insurance	7.0%	7.0%	7.0%	7.0%
4) Professional and Contracted Services	3.8%	3.8%	3.8%	3.8%
5) All Other Expenses	3 - 7%	3 - 7%	3 - 7%	3 - 7%

	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
<u>FTEs</u>				
1) Total estimated FTEs	<u>2,074.9</u>	<u>2,076.5</u>	<u>2,078.1</u>	<u>2,079.7</u>

Note - The above increase projections reflect all changes relating to Medicare and Medicaid reimbursement regulations.

YALE-NEW HAVEN HOSPITAL

Proposal for the Transfer of beds from BH to YNHCH

Assumptions

<u>Net Revenue Rate Increases</u>	FY 2012	FY 2013	FY 2014	FY 2015
1) Government	0.0 - 2.8%	0.0 - 2.8%	0.0 - 2.8%	0.0 - 2.8%
2) Non-Government	5.0 - 6.0%	5.0 - 6.0%	5.0 - 6.0%	5.0 - 6.0%
	FY 2012	FY 2013	FY 2014	FY 2015
<u>EXPENSES</u>				
A. Salaries and Fringe Benefits	5.0%	5.0%	5.0%	5.0%
B. Non-Salary				
1) Medical and Surgical Supplies	3.5%	3.5%	3.5%	3.5%
2) Pharmacy and Solutions	15.0%	15.0%	15.0%	15.0%
3) Malpractice Insurance	7.0%	7.0%	7.0%	7.0%
4) Professional and Contracted Services	2.5%	2.5%	2.5%	2.5%
5) All Other Expenses	3 - 7%	3 - 7%	3 - 7%	3 - 7%
	FY 2012	FY 2013	FY 2014	FY 2015
<u>FTEs</u>				
1) Total estimated FTEs	<u>7,652.5</u>	<u>7,727.1</u>	<u>7,803.9</u>	<u>7,883.2</u>

Note - The above increase projections reflect all changes relating to Medicare and Medicaid reimbursement regulations.