

ILLINOIS HEALTH FACILITIES AND SERVICES REVIEW BOARD
APPLICATION FOR PERMIT

SECTION I. IDENTIFICATION, GENERAL INFORMATION, AND CERTIFICATION

This Section must be completed for all projects.

Facility/Project Identification

Facility Name: NorthShore Glenbrook Hospital
Street Address: 2100 Pfingsten Rd.
City and Zip Code: Glenview 60026
County: Cook Health Service Area: 007 Health Planning Area: A-08

Applicant(s) [Provide for each applicant (refer to Part 1130.220)]

Exact Legal Name: NorthShore University HealthSystem
Street Address: 1301 Central Street
City and Zip Code: Evanston, IL 60201
Name of Registered Agent: Kristen Murtos
Registered Agent Street Address: 1301 Central Street
Registered Agent City and Zip Code: Evanston, IL 60201
Name of Primary Manager: Gerald P. Gallagher
Primary Manager Street Address: 1301 Central St.
Primary Manager City and Zip Code: Evanston, IL 60201
Primary Manager Telephone Number: 847-570-2000

Type of Ownership of Applicants

Form with checkboxes for ownership types: Non-profit Corporation (checked), For-profit Corporation, Limited Liability Company, Partnership, Governmental, Sole Proprietorship, Other. Includes instructions for corporations and partnerships.

Primary Contact [Person to receive ALL correspondence or inquiries]

Name: Shivani Bautista
Title: General Counsel
Company Name: NorthShore University HealthSystem
Address: 1301 Central Street, Evanston, Illinois 60201
Telephone Number: (847) 570-2000
E-mail Address: sbautista@northshore.org

Additional Contact [Person who is also authorized to discuss the application for permit]

Name: Kara Friedman
Title: Attorney
Company Name: Polsinelli PC
Address: 150 North Riverside Plaza, Suite 3000, Chicago, Illinois 60606
Telephone Number: (312) 873-3639
E-mail Address: kfriedman@polsinelli.com

Post Permit Contact

[Person to receive all correspondence subsequent to permit issuance-**THIS PERSON MUST BE EMPLOYED BY THE LICENSED HEALTH CARE FACILITY AS DEFINED AT 20 ILCS 3960**]

Name: Shivani Bautista
Title: General Counsel
Company Name: NorthShore University HealthSystem
Address: 1301 Central Street, Evanston, Illinois 60201
Telephone Number: (847) 570-2000
E-mail Address: sbautista@northshore.org
Fax Number:

Site Ownership

[Provide this information for each applicable site]

Exact Legal Name of Site Owner: NorthShore University HealthSystem
Address of Site Owner: 1301 Central Street Evanston, IL 60201
Street Address or Legal Description of the Site: 2100 Pfingsten Rd. Glenview, IL 60026
Proof of ownership or control of the site is to be provided as Attachment 2. Examples of proof of ownership are property tax statements, tax assessor’s documentation, deed, notarized statement of the corporation attesting to ownership, an option to lease, a letter of intent to lease, or a lease.
APPEND DOCUMENTATION AS ATTACHMENT 2, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

Operating Identity/Licensee

[Provide this information for each applicable facility and insert after this page.]

Exact Legal Name: NorthShore University HealthSystem
Address: 1301 Central Street Evanston, IL 60201
<input checked="" type="checkbox"/> Non-profit Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> For-profit Corporation <input type="checkbox"/> Governmental <input type="checkbox"/> Limited Liability Company <input type="checkbox"/> Sole Proprietorship <input type="checkbox"/> Other
<ul style="list-style-type: none"> o Corporations and limited liability companies must provide an Illinois Certificate of Good Standing. o Partnerships must provide the name of the state in which organized and the name and address of each partner specifying whether each is a general or limited partner. o Persons with 5 percent or greater interest in the licensee must be identified with the % of ownership.
APPEND DOCUMENTATION AS ATTACHMENT 3, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

Organizational Relationships

Provide (for each applicant) an organizational chart containing the name and relationship of any person or entity who is related (as defined in Part 1130.140). If the related person or entity is participating in the development or funding of the project, describe the interest and the amount and type of any financial contribution.

APPEND DOCUMENTATION AS ATTACHMENT 4, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

Flood Plain Requirements

[Refer to application instructions.]

Provide documentation that the project complies with the requirements of Illinois Executive Order #2006-5 pertaining to construction activities in special flood hazard areas. As part of the flood plain requirements, please provide a map of the proposed project location showing any identified floodplain areas. Floodplain maps can be printed at www.FEMA.gov or www.illinoisfloodmaps.org. **This map must be in a readable format.** In addition, please provide a statement attesting that the project complies with the requirements of Illinois Executive Order #2006-5 (<http://www.hfsrb.illinois.gov>).

APPEND DOCUMENTATION AS **ATTACHMENT 5**, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

Historic Resources Preservation Act Requirements

[Refer to application instructions.]

Provide documentation regarding compliance with the requirements of the Historic Resources Preservation Act.

APPEND DOCUMENTATION AS **ATTACHMENT 6**, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

DESCRIPTION OF PROJECT

1. Project Classification

[Check those applicable - refer to Part 1110.20 and Part 1120.20(b)]

Part 1110 Classification:

Substantive

Non-substantive

2. Narrative Description

In the space below, provide a brief narrative description of the project. Explain **WHAT** is to be done in **State Board defined terms, NOT WHY** it is being done. If the project site does NOT have a street address, include a legal description of the site. Include the rationale regarding the project's classification as substantive or non-substantive.

NorthShore University HealthSystem ("NorthShore" or the "Applicant") seeks authority to centralize NorthShore hospital Cardiovascular Institute procedural suites at NorthShore Glenbrook Hospital (the "Project"). Doing so will provide state-of-the-art service for what is the leading cause of death in the U.S., including in the communities served by NorthShore. The Project will include the following 15 procedural and surgical rooms and associated technology:

- 9 cath labs
 - 4 traditional cath labs
 - 1 structural heart cath lab
 - 1 larger structural heart cath lab with a cath CT
 - 3 electrophysiology (EP) labs
 - 2 traditional EP labs
 - 1 EP lab with a biplane angiography
- 3 surgical suites for cardiac surgery
- 3 surgical suites for vascular and other non-cardiac endovascular procedures

The Project will also include the following recovery rooms:

- 19 Phase 1 Recovery Rooms
- 31 Phase 2 Recovery Rooms

In addition to the above key rooms, the Project will also include the following elements:

- Basement: Mechanical and support space
- Ground Floor: Renovation of existing lobby to create waiting room for above services that will be located on the first floor
- Second Floor: Offices and other space to support the ground floor, including non-clinical offices for providers and medical personnel, locker room and lounge.
- Elevator tower extending to fifth floor and creating connectivity between the existing building and the new cardiovascular procedural and recovery space.
 - The newly added footprint allows for the future addition of up to three additional floors.

Prior to the relocation of services associated with the Project, NorthShore will submit Certificate of Exemption applications to discontinue the following cardiovascular services that will be relocated to NorthShore Glenbrook Hospital:

- Open Heart Surgery at NorthShore Evanston Hospital
- Cardiac Catheterization at NorthShore Skokie Hospital

After the Project is completed, only emergent and urgent cardiac catheterization services will be provided at NorthShore Evanston Hospital and NorthShore Highland Park Hospital.

The Project will consist of 36,372 gross square feet of clinical space and 130,887 gross square feet of non-clinical space. The total cost of the Project is \$170,520,604.

This Project is classified as a substantive project because it proposes the establishment of an open heart surgery program at NorthShore Glenbrook Hospital.

Rendering



Project Costs and Sources of Funds

Complete the following table listing all costs (refer to Part 1120.110) associated with the project. When a project or any component of a project is to be accomplished by lease, donation, gift, or other means, the fair market or dollar value (refer to Part 1130.140) of the component must be included in the estimated project cost. If the project contains non-reviewable components that are not related to the provision of health care, complete the second column of the table below. Note, the use and sources of funds must be equal.

Project Costs and Sources of Funds			
USE OF FUNDS	CLINICAL	NONCLINICAL	TOTAL
Preplanning Costs	\$1,165,075	\$2,669,833	\$3,834,908
Site Survey and Soil Investigation	\$51,368	\$132,090	\$183,458
Site Preparation	\$1,101,593	\$3,409,852	\$4,511,445
Off Site Work	\$0	\$0	\$0
New Construction Contracts	\$21,320,087	\$60,621,314	\$81,941,401
Modernization Contracts	\$0	\$3,258,000	\$3,258,000
Contingencies	\$2,118,899	\$6,387,931	\$8,506,830
Architectural/Engineering Fees	\$1,449,653	\$3,770,535	\$5,220,188
Consulting and Other Fees	\$2,285,490	\$2,499,170	\$4,784,660
Movable or Other Equipment (not in construction contracts)	\$44,354,130	\$3,666,478	\$48,020,608
Bond Issuance Expense (project related)	\$0	\$0	\$0
Net Interest Expense During Construction (project related)	\$0	\$0	\$0
Fair Market Value of Leased Space or Equipment	\$0	\$0	\$0
Other Costs To Be Capitalized	\$7,201,225	\$3,057,882	\$10,259,107
Acquisition of Building or Other Property (excluding land)	\$0	\$0	\$0
TOTAL USES OF FUNDS	\$81,047,519	\$89,473,085	\$170,520,604
SOURCE OF FUNDS	CLINICAL	NONCLINICAL	TOTAL
Cash and Securities	\$76,047,519	\$89,473,085	\$165,520,604
Pledges	\$0	\$0	\$0
Gifts and Bequests	\$0	\$0	\$0
Bond Issues (project related)	\$0	\$0	\$0
Mortgages	\$0	\$0	\$0
Leases (fair market value)	\$0	\$0	\$0
Governmental Appropriations	\$0	\$0	\$0
Grants	\$0	\$0	\$0
Other Funds and Sources (Net Book Value of Equipment to be Transferred from Other Facilities)	\$5,000,000	\$0	\$5,000,000
TOTAL SOURCES OF FUNDS	\$81,047,519	\$89,473,085	\$170,520,604
NOTE: ITEMIZATION OF EACH LINE ITEM MUST BE PROVIDED AT ATTACHMENT 7, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.			

If circumstances dictate, the Applicant may elect to issue debt or other financing in the future to fund this initiative.

Related Project Costs

Provide the following information, as applicable, with respect to any land related to the project that will be or has been acquired during the last two calendar years:

<p>Land acquisition is related to project <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Purchase Price: \$ _____</p> <p>Fair Market Value: \$ _____</p>
<p>The project involves the establishment of a new facility or a new category of service <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If yes, provide the dollar amount of all non-capitalized operating start-up costs (including operating deficits) through the first full fiscal year when the project achieves or exceeds the target utilization specified in Part 1100.</p> <p>Estimated start-up costs and operating deficit cost is \$ <u> \$0 </u>.</p>

Project Status and Completion Schedules

For facilities in which prior permits have been issued please provide the permit numbers.
<p>Indicate the stage of the project’s architectural drawings:</p> <p style="text-align: center;"> <input type="checkbox"/> None or not applicable <input type="checkbox"/> Preliminary <input checked="" type="checkbox"/> Schematics <input type="checkbox"/> Final Working </p>
<p>Anticipated project completion date (refer to Part 1130.140): <u>December 31, 2024</u></p>
<p>Indicate the following with respect to project expenditures or to financial commitments (refer to Part 1130.140):</p> <p> <input type="checkbox"/> Purchase orders, leases or contracts pertaining to the project have been executed. <input type="checkbox"/> Financial commitment is contingent upon permit issuance. Provide a copy of the contingent “certification of financial commitment” document, highlighting any language related to CON Contingencies <input checked="" type="checkbox"/> Financial Commitment will occur after permit issuance. </p>
APPEND DOCUMENTATION AS <u>ATTACHMENT 8</u>, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

State Agency Submittals [Section 1130.620(c)]

<p>Are the following submittals up to date as applicable:</p> <p> <input checked="" type="checkbox"/> Cancer Registry <input checked="" type="checkbox"/> APORS <input checked="" type="checkbox"/> All formal document requests such as IDPH Questionnaires and Annual Bed Reports been submitted <input checked="" type="checkbox"/> All reports regarding outstanding permits </p> <p>Failure to be up to date with these requirements will result in the application for permit being deemed incomplete.</p>
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Cost Space Requirements

Provide in the following format, the **Departmental Gross Square Feet (DGSF)** or the **Building Gross Square Feet (BGSF)** and cost. The type of gross square footage either **DGSF** or **BGSF** must be identified. The sum of the department costs **MUST** equal the total estimated project costs. Indicate if any space is being reallocated for a different purpose. Include outside wall measurements plus the department's or area's portion of the surrounding circulation space. **Explain the use of any vacated space.**

Dept. / Area	Cost	Gross Square Feet		Amount of Proposed Total Gross Square Feet That Is:			
		Existing	Proposed	New Const.	Modernized	As Is	Vacated Space
REVIEWABLE							
Medical Surgical							
Intensive Care							
Diagnostic Radiology							
MRI							
Total Clinical							
NON REVIEWABLE							
Administrative							
Parking							
Gift Shop							
Total Non-clinical							
TOTAL							

APPEND DOCUMENTATION AS ATTACHMENT 9, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

Facility Bed Capacity and Utilization

Complete the following chart, as applicable. Complete a separate chart for each facility that is a part of the project and insert the chart after this page. Provide the existing bed capacity and utilization data for the latest **Calendar Year for which data is available**. **Include observation days in the patient day totals for each bed service**. Any bed capacity discrepancy from the Inventory will result in the application being deemed **incomplete**.

FACILITY NAME: NorthShore Glenbrook Hospital		CITY: Glenview			
REPORTING PERIOD DATES: From: 1/1/20 to: 12/31/20					
Category of Service	Authorized Beds*	Admissions	Patient Days	Bed Changes	Proposed Beds
Medical/Surgical	152	6,503	34,478	0	152
Obstetrics	0	0	0	0	0
Pediatrics	0	0	0	0	0
Intensive Care	21	822	5,788	0	21
Comprehensive Physical Rehabilitation	0	0	0	0	0
Acute/Chronic Mental Illness	0	0	0	0	0
Neonatal Intensive Care	0	0	0	0	0
General Long Term Care	0	0	0	0	0
Specialized Long Term Care	0	0	0	0	0
Long Term Acute Care	0	0	0	0	0
Other (identify)	0	0	0	0	0
TOTALS:	173	7,325	40,266	0	173

*The bed counts above do not reflect temporary beds related to the COVID-19 public health emergency.

CERTIFICATION

The Application must be signed by the authorized representatives of the applicant entity. Authorized representatives are:

- in the case of a corporation, any two of its officers or members of its Board of Directors;
- in the case of a limited liability company, any two of its managers or members (or the sole manager or member when two or more managers or members do not exist);
- in the case of a partnership, two of its general partners (or the sole general partner, when two or more general partners do not exist);
- in the case of estates and trusts, two of its beneficiaries (or the sole beneficiary when two or more beneficiaries do not exist); and
- in the case of a sole proprietor, the individual that is the proprietor.

This Application is filed on the behalf of NorthShore University HealthSystem * in accordance with the requirements and procedures of the Illinois Health Facilities Planning Act. The undersigned certifies that he or she has the authority to execute and file this Application on behalf of the applicant entity. The undersigned further certifies that the data and information provided herein, and appended hereto, are complete and correct to the best of his or her knowledge and belief. The undersigned also certifies that the fee required for this application is sent herewith or will be paid upon request.

Gerald P. Gallagher
SIGNATURE

Gerald P. Gallagher
PRINTED NAME

President and Chief Executive Officer
PRINTED TITLE

Sean T. O'Grady
SIGNATURE

Sean T. O'Grady
PRINTED NAME

Chief Operating Officer
PRINTED TITLE

Notarization:
Subscribed and sworn to before me
this 17th day of May 2021

Notarization:
Subscribed and sworn to before me
this 17th day of May 2021

Barbara M. Holland
Signature of Notary

Seal



*Insert the EXACT legal name of the applicant

Barbara M. Holland
Signature of Notary

Seal



SECTION II. DISCONTINUATION N/A

This Section is applicable to the discontinuation of a health care facility, relocation of a health care facility, or discontinuation of more than one category of service in a 6-month period. If the project is solely for a discontinuation of a health care facility the **Background of the Applicant(s) and Purpose of Project MUST** be addressed. **A copy of the Notice to the Local Media MUST be submitted with this Application for Discontinuation (20 ILCS 3960/8.7).**

Criterion 1110.290 – Discontinuation

READ THE REVIEW CRITERION and provide the following information:

GENERAL INFORMATION REQUIREMENTS

1. Identify the categories of service and the number of beds, if any that are to be discontinued.
2. Identify all of the other clinical services that are to be discontinued.
3. Provide the anticipated date of discontinuation for each identified service or for the entire facility.
4. Provide the anticipated use of the physical plant and equipment after the discontinuation occurs.
5. Provide the anticipated disposition and location of all medical records pertaining to the services being discontinued and the length of time the records will be maintained.
6. Provide copies of the notices that were provided to the local media that would routinely be notified about facility events.
7. For applications involving the discontinuation of an entire facility, provide copies of the notices that were sent to the municipality in which the facility is located, the State Representative and State Senator of the district in which the health care facility is located, the Director of Public Health, and the Director of Healthcare and Family Services. These notices shall have been made at least 30 days prior to filing of the application.
8. For applications involving the discontinuation of an entire facility, certification by an authorized representative that all questionnaires and data required by HFSRB or DPH (e.g., annual questionnaires, capital expenditures surveys, etc.) will be provided through the date of discontinuation, and that the required information will be submitted no later than 90 days following the date of discontinuation.

REASONS FOR DISCONTINUATION

The applicant shall state the reasons for the discontinuation and provide data that verifies the need for the proposed action. See criterion 1110.290(b) for examples.

IMPACT ON ACCESS

1. Document whether or not the discontinuation of each service or of the entire facility will have an adverse effect upon access to care for residents of the facility’s market area.
2. Document that a written request for an impact statement was received by all existing or approved health care facilities (that provide the same services as those being discontinued) located within the **geographic service area**.

Or
APPEND DOCUMENTATION AS ATTACHMENT 10, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

SECTION III. BACKGROUND, PURPOSE OF THE PROJECT, AND ALTERNATIVES - INFORMATION REQUIREMENTS

This Section is applicable to all projects except those that are solely for discontinuation with no project costs.

1110.110(a) – Background of the Applicant

READ THE REVIEW CRITERION and provide the following required information:

<p>BACKGROUND OF APPLICANT</p> <ol style="list-style-type: none"> 1. A listing of all health care facilities owned or operated by the applicant, including licensing, and certification if applicable. 2. A listing of all health care facilities currently owned and/or operated in Illinois, by any corporate officers or directors, LLC members, partners, or owners of at least 5% of the proposed health care facility. 3. For the following questions, please provide information for each applicant, including corporate officers or directors, LLC members, partners and owners of at least 5% of the proposed facility. A health care facility is considered owned or operated by every person or entity that owns, directly or indirectly, an ownership interest. <ol style="list-style-type: none"> a. A certified listing of any adverse action taken against any facility owned and/or operated by the applicant, directly or indirectly, during the three years prior to the filing of the application. b. A certified listing of each applicant, identifying those individuals that have been cited, arrested, taken into custody, charged with, indicted, convicted or tried for, or pled guilty to the commission of any felony or misdemeanor or violation of the law, except for minor parking violations; or the subject of any juvenile delinquency or youthful offender proceeding. Unless expunged, provide details about the conviction and submit any police or court records regarding any matters disclosed. c. A certified and detailed listing of each applicant or person charged with fraudulent conduct or any act involving moral turpitude. d. A certified listing of each applicant with one or more unsatisfied judgements against him or her. e. A certified and detailed listing of each applicant who is in default in the performance or discharge of any duty or obligation imposed by a judgment, decree, order or directive of any court or governmental agency. 4. Authorization permitting HFSRB and DPH access to any documents necessary to verify the information submitted, including, but not limited to official records of DPH or other State agencies; the licensing or certification records of other states, when applicable; and the records of nationally recognized accreditation organizations. Failure to provide such authorization shall constitute an abandonment or withdrawal of the application without any further action by HFSRB. 5. If, during a given calendar year, an applicant submits more than one application for permit, the documentation provided with the prior applications may be utilized to fulfill the information requirements of this criterion. In such instances, the applicant shall attest that the information was previously provided, cite the project number of the prior application, and certify that no changes have occurred regarding the information that has been previously provided. The applicant is able to submit amendments to previously submitted information, as needed, to update and/or clarify data.
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APPEND DOCUMENTATION AS ATTACHMENT 11, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM. EACH ITEM (1-4) MUST BE IDENTIFIED IN ATTACHMENT 11.

Criterion 1110.110(b) & (d)

PURPOSE OF PROJECT

1. Document that the project will provide health services that improve the health care or well-being of the market area population to be served.
2. Define the planning area or market area, or other relevant area, per the applicant’s definition.
3. Identify the existing problems or issues that need to be addressed as applicable and appropriate for the project.
4. Cite the sources of the documentation.
5. Detail how the project will address or improve the previously referenced issues, as well as the population’s health status and well-being.
6. Provide goals with quantified and measurable objectives, with specific timeframes that relate to achieving the stated goals **as appropriate**.

For projects involving modernization, describe the conditions being upgraded, if any. For facility projects, include statements of the age and condition of the project site, as well as regulatory citations, if any. For equipment being replaced, include repair and maintenance records.

NOTE: Information regarding the “Purpose of the Project” will be included in the State Board Staff Report.

APPEND DOCUMENTATION AS ATTACHMENT 12, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM. EACH ITEM (1-6) MUST BE IDENTIFIED IN ATTACHMENT 12.

ALTERNATIVES

- 1) Identify **ALL** of the alternatives to the proposed project:
 Alternative options **must** include:
 - A) Proposing a project of greater or lesser scope and cost;
 - B) Pursuing a joint venture or similar arrangement with one or more providers or entities to meet all or a portion of the project’s intended purposes; developing alternative settings to meet all or a portion of the project’s intended purposes;
 - C) Utilizing other health care resources that are available to serve all or a portion of the population proposed to be served by the project; and
 - D) Provide the reasons why the chosen alternative was selected.
- 2) Documentation shall consist of a comparison of the project to alternative options. The comparison shall address issues of total costs, patient access, quality and financial benefits in both the short-term (within one to three years after project completion) and long-term. This may vary by project or situation. **FOR EVERY ALTERNATIVE IDENTIFIED, THE TOTAL PROJECT COST AND THE REASONS WHY THE ALTERNATIVE WAS REJECTED MUST BE PROVIDED.**
- 3) The applicant shall provide empirical evidence, including quantified outcome data that verifies improved quality of care, as available.

APPEND DOCUMENTATION AS ATTACHMENT 13, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

SECTION IV. PROJECT SCOPE, UTILIZATION, AND UNFINISHED/SHELL SPACE

Criterion 1110.120 - Project Scope, Utilization, and Unfinished/Shell Space

READ THE REVIEW CRITERION and provide the following information:

SIZE OF PROJECT:

1. Document that the amount of physical space proposed for the proposed project is necessary and not excessive. **This must be a narrative and it shall include the basis used for determining the space and the methodology applied.**
2. If the gross square footage exceeds the BGSF/DGSF standards in Appendix B, justify the discrepancy by documenting one of the following:
 - a. Additional space is needed due to the scope of services provided, justified by clinical or operational needs, as supported by published data or studies and certified by the facility's Medical Director.
 - b. The existing facility's physical configuration has constraints or impediments and requires an architectural design that delineates the constraints or impediments.
 - c. The project involves the conversion of existing space that results in excess square footage.
 - d. Additional space is mandated by governmental or certification agency requirements that were not in existence when Appendix B standards were adopted.

Provide a narrative for any discrepancies from the State Standard. A table must be provided in the following format with Attachment 14.

SIZE OF PROJECT				
DEPARTMENT/SERVICE	PROPOSED BGSF/DGSF	STATE STANDARD	DIFFERENCE	MET STANDARD?

APPEND DOCUMENTATION AS ATTACHMENT 14, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

PROJECT SERVICES UTILIZATION:

This criterion is applicable only to projects or portions of projects that involve services, functions or equipment for which HFSRB has established utilization standards or occupancy targets in 77 Ill. Adm. Code 1100.

Document that in the second year of operation, the annual utilization of the service or equipment shall meet or exceed the utilization standards specified in 1110.Appendix B. **A narrative of the rationale that supports the projections must be provided.**

A table must be provided in the following format with Attachment 15.

UTILIZATION					
	DEPT./ SERVICE	HISTORICAL UTILIZATION (PATIENT DAYS) (TREATMENTS) ETC.	PROJECTED UTILIZATION	STATE STANDARD	MEET STANDARD?
YEAR 1					
YEAR 2					

APPEND DOCUMENTATION AS ATTACHMENT 15, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

UNFINISHED OR SHELL SPACE:

Provide the following information:

1. Total gross square footage (GSF) of the proposed shell space.
2. The anticipated use of the shell space, specifying the proposed GSF to be allocated to each department, area or function.
3. Evidence that the shell space is being constructed due to:
 - a. Requirements of governmental or certification agencies; or
 - b. Experienced increases in the historical occupancy or utilization of those areas proposed to occupy the shell space.
4. Provide:
 - a. Historical utilization for the area for the latest five-year period for which data is available; and
 - b. Based upon the average annual percentage increase for that period, projections of future utilization of the area through the anticipated date when the shell space will be placed into operation.

APPEND DOCUMENTATION AS ATTACHMENT 16, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

ASSURANCES:

Submit the following:

1. Verification that the applicant will submit to HFSRB a CON application to develop and utilize the shell space, regardless of the capital thresholds in effect at the time or the categories of service involved.
2. The estimated date by which the subsequent CON application (to develop and utilize the subject shell space) will be submitted; and
3. The anticipated date when the shell space will be completed and placed into operation.

APPEND DOCUMENTATION AS ATTACHMENT 17, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

SECTION V. SERVICE SPECIFIC REVIEW CRITERIA

Sections A-C and F-O are not applicable

D. Criterion 1110.220 - Open Heart Surgery

1. Applicants proposing to establish, expand and/or modernize the Open-Heart Surgery category of service must submit the following information.
2. Indicate bed capacity changes by Service: Indicate # of beds changed by action(s):

Category of Service	# Existing Rooms	# Proposed Rooms
<input checked="" type="checkbox"/> Open Heart Surgery	0	3

3. READ the applicable review criteria outlined below and **submit the required documentation for the criteria:**

1. **Criterion 1110.220(b)(1), Peer Review**
 Read the criterion and submit a detailed explanation of your peer review program.
2. **Criterion 1110.220(b)(2), Establishment of Open-Heart Surgery**
 Read the criterion and provide the following information:
 - a. The number of cardiac catheterizations (patients) performed in the latest 12-month period for which data is available.
 - b. The number of patients referred for open heart surgery following cardiac catheterization at your facility, for each of the last two years.
3. **Criterion 1110.220(b)(3), Unnecessary Duplication of Services**
 Read the criterion and address the following:
 - a. Contact all existing facilities within 90 minutes travel time of your facility which currently provide or are approved to provide open heart surgery to determine what the impact of the proposed project will be on their facility.
 - b. Provide a sample copy of the letter written to each of the facilities and include a list of the facilities that were sent letters.
 - c. Provide a copy of all the responses received.
4. **Criterion 1110.220(b)(4), Support Services**
 Read the criterion and indicate on a service by service basis which of the services listed in this criterion are available on a 24-hour inpatient basis and explain how any services not available on a 24-hour inpatient basis can be immediately mobilized for emergencies at all times.
5. **Criterion 1110.220(b)(5), Staffing**
 Read the criterion and for those positions described under this criterion provide the following information:
 - a. The name and qualifications of the person currently filling the job.
 - b. Application filed for a position.
 - c. Signed contracts with the required staff.
 - d. A detailed explanation of how you will fill the positions.

APPEND DOCUMENTATION AS ATTACHMENT 21, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

E. Criterion 1110.225 - Cardiac Catheterization

1. Applicants proposing to establish, expand and/or modernize the Cardiac Catheterization category of service must submit the following information.
2. Indicate bed capacity changes by Service: Indicate # of beds changed by action(s):

Category of Service	# Existing Labs	# Proposed Labs
<input checked="" type="checkbox"/> Cardiac Catheterization	1	9

3. READ the applicable review criteria outlined below and **submit the required documentation for the criteria:**

1. **Criterion 1110.225(a), Peer Review**
Read the criterion and submit a detailed explanation of your peer review program.
2. **Criterion 1110. 225(b), Establishment or Expansion of Cardiac Catheterization Service**
Read the criterion and, if applicable, submit the following information:
 - a. A map (on 8 1/2" x 11" paper) showing the location of the other hospitals providing cardiac catheterization services within the planning area.
 - b. The number of cardiac catheterizations performed for the last 12 months at each of the hospitals shown on the map.
 - c. Provide the number of patients transferred directly from the applicant's hospital to another facility for cardiac catheterization services in each of the last three years.
3. **Criterion 1110.225(c), Unnecessary Duplication of Services**
Read the criterion and, if applicable, submit the following information.
 - a. Copies of the letter sent to all facilities within the planning area that currently provide cardiac catheterization. This letter must contain a description of the proposed project and a request that the other facility quantify the impact of the proposal on its program.
 - b. Copies of the responses received from the facilities to which the letter was sent.
4. **Criterion 1110.225(d), Modernization of Existing Cardiac Catheterization Laboratories**
Read the criterion and, if applicable, submit the number of cardiac catheterization procedures performed for the latest 12 months.
5. **Criterion 1110.225(e), Support Services**
Read the criterion and indicate on a service-by-service basis which of the listed services are

available on a 24-hour basis and explain how any services not available on a 24-hour basis will be available when needed.

6. Criterion 1110.225(f), Laboratory Location

Read the criterion and, if applicable, submit line drawings showing the location of the proposed laboratories. If the laboratories are not in proximity, explain why.

7. Criterion 1110.225(g), Staffing

Read the criterion and submit a list of names and qualifications of those who will fill the positions detailed in this criterion. Also, provide staffing schedules to show the coverage required by this criterion.

8. Criterion 1110.225(h), Continuity of Care

Read the criterion and submit a copy of the fully executed written referral agreement(s).

9. Criterion 1110.225(i), Multi-institutional Variance

Read the criterion and, if applicable, submit the following information:

- a. A copy of a fully executed affiliation agreement between the two facilities involved.
- b. Names and positions of the shared staff at the two facilities.
- c. The volume of open-heart surgeries performed for the latest 12-month period at the existing operating program.
- d. A cost comparison between the proposed project and expansion at the existing operating program.
- e. The number of cardiac catheterization procedures performed in the last 12 months at the operating program.
- f. The number of catheterization laboratories at the operating program.
- g. The projected cardiac catheterization volume at the proposed facility annually for the next 2 years.
- h. The basis for the above projection.

APPEND DOCUMENTATION AS ATTACHMENT 22 IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

The following Sections **DO NOT** need to be addressed by the applicants or co-applicants responsible for funding or guaranteeing the funding of the project if the applicant has a bond rating of A- or better from Fitch's or Standard and Poor's rating agencies, or A3 or better from Moody's (the rating shall be affirmed within the latest 18-month period prior to the submittal of the application):

- Section 1120.120 Availability of Funds – Review Criteria
- Section 1120.130 Financial Viability – Review Criteria
- Section 1120.140 Economic Feasibility – Review Criteria, subsection (a)

VI. 1120.120 - AVAILABILITY OF FUNDS

The applicant shall document that financial resources shall be available and be equal to or exceed the estimated total project cost plus any related project costs by providing evidence of sufficient financial resources from the following sources, as applicable [Indicate the dollar amount to be provided from the following sources]:

<p>_____ \$165,520,604 _____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>a) Cash and Securities – statements (e.g., audited financial statements, letters from financial institutions, board resolutions) as to:</p> <ol style="list-style-type: none"> 1) the amount of cash and securities available for the project, including the identification of any security, its value and availability of such funds; and 2) interest to be earned on depreciation account funds or to be earned on any asset from the date of applicant's submission through project completion; <p>b) Pledges – for anticipated pledges, a summary of the anticipated pledges showing anticipated receipts and discounted value, estimated time table of gross receipts and related fundraising expenses, and a discussion of past fundraising experience.</p> <p>c) Gifts and Bequests – verification of the dollar amount, identification of any conditions of use, and the estimated time table of receipts;</p> <p>d) Debt – a statement of the estimated terms and conditions (including the debt time period, variable or permanent interest rates over the debt time period, and the anticipated repayment schedule) for any interim and for the permanent financing proposed to fund the project, including:</p> <ol style="list-style-type: none"> 1) For general obligation bonds, proof of passage of the required referendum or evidence that the governmental unit has the authority to issue the bonds and evidence of the dollar amount of the issue, including any discounting anticipated; 2) For revenue bonds, proof of the feasibility of securing the specified amount and interest rate; 3) For mortgages, a letter from the prospective lender attesting to the expectation of making the loan in the amount and time indicated, including the anticipated interest rate and any conditions associated with the mortgage, such as, but not limited to, adjustable interest rates, balloon payments, etc.; 4) For any lease, a copy of the lease, including all the terms and conditions, including any purchase options, any capital improvements to the property
---	--

<p>_____</p> <p>_____</p> <p>\$5,000,000 Net Book Value of Equipment to be Transferred from Other Facilities</p> <p>_____</p>	<p>and provision of capital equipment;</p> <p>5) For any option to lease, a copy of the option, including all terms and conditions.</p> <p>e) Governmental Appropriations – a copy of the appropriation Act or ordinance accompanied by a statement of funding availability from an official of the governmental unit. If funds are to be made available from subsequent fiscal years, a copy of a resolution or other action of the governmental unit attesting to this intent;</p> <p>f) Grants – a letter from the granting agency as to the availability of funds in terms of the amount and time of receipt;</p> <p>g) All Other Funds and Sources – verification of the amount and type of any other funds that will be used for the project.</p>
<p>\$170,520,604</p>	<p>TOTAL FUNDS AVAILABLE</p>
<p>APPEND DOCUMENTATION AS ATTACHMENT 33, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.</p>	

SECTION VII. 1120.130 - FINANCIAL VIABILITY

All the applicants and co-applicants shall be identified, specifying their roles in the project funding or guaranteeing the funding (sole responsibility or shared) and percentage of participation in that funding.

Financial Viability Waiver

The applicant is not required to submit financial viability ratios if:

1. "A" Bond rating or better
2. All of the projects capital expenditures are completely funded through internal sources
3. The applicant's current debt financing or projected debt financing is insured or anticipated to be insured by MBIA (Municipal Bond Insurance Association Inc.) or equivalent
4. The applicant provides a third party surety bond or performance bond letter of credit from an A rated guarantor.

See Section 1120.130 Financial Waiver for information to be provided

APPEND DOCUMENTATION AS ATTACHMENT 34, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

The applicant or co-applicant that is responsible for funding or guaranteeing funding of the project shall provide viability ratios for the latest three years for which **audited financial statements are available and for the first full fiscal year at target utilization, but no more than two years following project completion.** When the applicant's facility does not have facility specific financial statements and the facility is a member of a health care system that has combined or consolidated financial statements, the system's viability ratios shall be provided. If the health care system includes one or more hospitals, the system's viability ratios shall be evaluated for conformance with the applicable hospital standards.

	Historical 3 Years			Projected
Enter Historical and/or Projected Years:				
Current Ratio				
Net Margin Percentage				
Percent Debt to Total Capitalization				
Projected Debt Service Coverage				
Days Cash on Hand				
Cushion Ratio				

Provide the methodology and worksheets utilized in determining the ratios detailing the calculation and applicable line item amounts from the financial statements. Complete a separate table for each co-applicant and provide worksheets for each.

Variance

Applicants not in compliance with any of the viability ratios shall document that another organization, public or private, shall assume the legal responsibility to meet the debt obligations should the applicant default.

APPEND DOCUMENTATION AS ATTACHMENT 35, IN NUMERICAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

SECTION VIII.1120.140 - ECONOMIC FEASIBILITY

This section is applicable to all projects subject to Part 1120.

A. Reasonableness of Financing Arrangements

The applicant shall document the reasonableness of financing arrangements by submitting a notarized statement signed by an authorized representative that attests to one of the following:

- 1) That the total estimated project costs and related costs will be funded in total with cash and equivalents, including investment securities, unrestricted funds, received pledge receipts and funded depreciation; or
- 2) That the total estimated project costs and related costs will be funded in total or in part by borrowing because:
 - A) A portion or all of the cash and equivalents must be retained in the balance sheet asset accounts in order to maintain a current ratio of at least 2.0 times for hospitals and 1.5 times for all other facilities; or
 - B) Borrowing is less costly than the liquidation of existing investments, and the existing investments being retained may be converted to cash or used to retire debt within a 60-day period.

B. Conditions of Debt Financing

This criterion is applicable only to projects that involve debt financing. The applicant shall document that the conditions of debt financing are reasonable by submitting a notarized statement signed by an authorized representative that attests to the following, as applicable:

- 1) That the selected form of debt financing for the project will be at the lowest net cost available;
- 2) That the selected form of debt financing will not be at the lowest net cost available, but is more advantageous due to such terms as prepayment privileges, no required mortgage, access to additional indebtedness, term (years), financing costs and other factors;
- 3) That the project involves (in total or in part) the leasing of equipment or facilities and that the expenses incurred with leasing a facility or equipment are less costly than constructing a new facility or purchasing new equipment.

C. Reasonableness of Project and Related Costs

Read the criterion and provide the following:

1. Identify each department or area impacted by the proposed project and provide a cost and square footage allocation for new construction and/or modernization using the following format (insert after this page).

COST AND GROSS SQUARE FEET BY DEPARTMENT OR SERVICE									
Department (list below)	A	B	C	D	E	F	G	H	Total Cost (G + H)
	Cost/Square Foot New Mod.		Gross Sq. Ft. New Circ.*		Gross Sq. Ft. Mod. Circ.*		Const. \$ (A x C)	Mod. \$ (B x E)	
Contingency									
TOTALS									

* Include the percentage (%) of space for circulation

D. Projected Operating Costs

The applicant shall provide the projected direct annual operating costs (in current dollars per equivalent patient day or unit of service) for the first full fiscal year at target utilization but no more than two years following project completion. Direct cost means the fully allocated costs of salaries, benefits and supplies for the service.

E. Total Effect of the Project on Capital Costs

The applicant shall provide the total projected annual capital costs (in current dollars per equivalent patient day) for the first full fiscal year at target utilization but no more than two years following project completion.

APPEND DOCUMENTATION AS ATTACHMENT 36, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

SECTION IX. SAFETY NET IMPACT STATEMENT

SAFETY NET IMPACT STATEMENT that describes all the following must be submitted for ALL SUBSTANTIVE PROJECTS AND PROJECTS TO DISCONTINUE HEALTH CARE FACILITIES [20 ILCS 3960/5.4]:

1. The project's material impact, if any, on essential safety net services in the community, to the extent that it is feasible for an applicant to have such knowledge.
2. The project's impact on the ability of another provider or health care system to cross-subsidize safety net services, if reasonably known to the applicant.
3. How the discontinuation of a facility or service might impact the remaining safety net providers in a given community, if reasonably known by the applicant.

Safety Net Impact Statements shall also include all of the following:

1. For the 3 fiscal years prior to the application, a certification describing the amount of charity care provided by the applicant. The amount calculated by hospital applicants shall be in accordance with the reporting requirements for charity care reporting in the Illinois Community Benefits Act. Non-hospital applicants shall report charity care, at cost, in accordance with an appropriate methodology specified by the Board.
2. For the 3 fiscal years prior to the application, a certification of the amount of care provided to Medicaid patients. Hospital and non-hospital applicants shall provide Medicaid information in a manner consistent with the information reported each year to the Illinois Department of Public Health regarding "Inpatients and Outpatients Served by Payor Source" and "Inpatient and Outpatient Net Revenue by Payor Source" as required by the Board under Section 13 of this Act and published in the Annual Hospital Profile.
3. Any information the applicant believes is directly relevant to safety net services, including information regarding teaching, research, and any other service.

A table in the following format must be provided as part of Attachment 37.

Safety Net Information per PA 96-0031			
CHARITY CARE			
Charity (# of patients)	Year	Year	Year
Inpatient			
Outpatient			
Total			
Charity (cost in dollars)	Year	Year	Year
Inpatient			
Outpatient			
Total			
MEDICAID			
Medicaid (# of patients)	Year	Year	Year
Inpatient			
Outpatient			
Total			
Medicaid (revenue)	Year	Year	Year
Inpatient			
Outpatient			

Total				
APPEND DOCUMENTATION AS <u>ATTACHMENT 37</u> , IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.				

SECTION X. CHARITY CARE INFORMATION

Charity Care information MUST be furnished for ALL projects [1120.20(c)].

1. All applicants and co-applicants shall indicate the amount of charity care for the latest three **audited** fiscal years, the cost of charity care and the ratio of that charity care cost to net patient revenue.
2. If the applicant owns or operates one or more facilities, the reporting shall be for each individual facility located in Illinois. If charity care costs are reported on a consolidated basis, the applicant shall provide documentation as to the cost of charity care; the ratio of that charity care to the net patient revenue for the consolidated financial statement; the allocation of charity care costs; and the ratio of charity care cost to net patient revenue for the facility under review.
3. If the applicant is not an existing facility, it shall submit the facility's projected patient mix by payer source, anticipated charity care expense and projected ratio of charity care to net patient revenue by the end of its second year of operation.

Charity care" means care provided by a health care facility for which the provider does not expect to receive payment from the patient or a third-party payer (20 ILCS 3960/3). Charity Care must be provided at cost.

A table in the following format must be provided for all facilities as part of Attachment 39.

CHARITY CARE			
	Year	Year	Year
Net Patient Revenue			
Amount of Charity Care (charges)			
Cost of Charity Care			

APPEND DOCUMENTATION AS ATTACHMENT 38, IN NUMERIC SEQUENTIAL ORDER AFTER THE LAST PAGE OF THE APPLICATION FORM.

After paginating the entire completed application indicate, in the chart below, the page numbers for the included attachments:

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File Number 0567-540-5



To all to whom these Presents Shall Come, Greeting:

I, Jesse White, Secretary of State of the State of Illinois, do hereby certify that I am the keeper of the records of the Department of Business Services. I certify that

NORTHSHORE UNIVERSITY HEALTHSYSTEM, A DOMESTIC CORPORATION, INCORPORATED UNDER THE LAWS OF THIS STATE ON DECEMBER 04, 1891, APPEARS TO HAVE COMPLIED WITH ALL THE PROVISIONS OF THE GENERAL NOT FOR PROFIT CORPORATION ACT OF THIS STATE, AND AS OF THIS DATE, IS IN GOOD STANDING AS A DOMESTIC CORPORATION IN THE STATE OF ILLINOIS.



Authentication # 2025600592 verifiable until 09/12/2021
Authenticate at: <http://www.cybercivilillinois.com>

In Testimony Whereof, I hereto set
my hand and cause to be affixed the Great Seal of
the State of Illinois, this 12TH
day of SEPTEMBER A.D. 2020 .

Jesse White

SECRETARY OF STATE

Attachment 2, Site Ownership

By signing the certification page within this application, the Applicant attests that NorthShore University HealthSystem is the owner of the land and buildings located at 2100 Pfingsten Rd. Glenview, IL 60026.

File Number 0567-540-5



To all to whom these Presents Shall Come, Greeting:

I, Jesse White, Secretary of State of the State of Illinois, do hereby certify that I am the keeper of the records of the Department of Business Services. I certify that

NORTHSHORE UNIVERSITY HEALTHSYSTEM, A DOMESTIC CORPORATION, INCORPORATED UNDER THE LAWS OF THIS STATE ON DECEMBER 04, 1891, APPEARS TO HAVE COMPLIED WITH ALL THE PROVISIONS OF THE GENERAL NOT FOR PROFIT CORPORATION ACT OF THIS STATE, AND AS OF THIS DATE, IS IN GOOD STANDING AS A DOMESTIC CORPORATION IN THE STATE OF ILLINOIS.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of the State of Illinois, this 12TH day of SEPTEMBER A.D. 2020 .



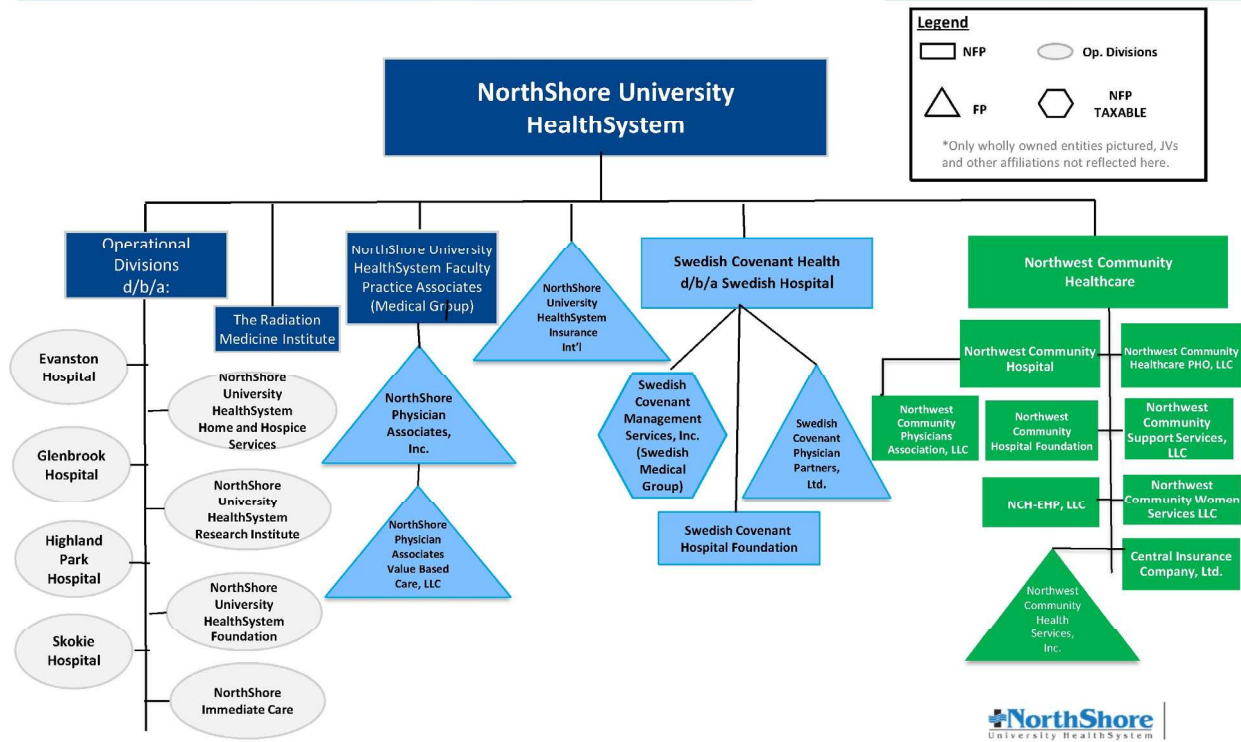
Authentication # 2025600592 verifiable until 09/12/2021
Authenticate at: <http://www.cybercivilillinois.com>

Jesse White

SECRETARY OF STATE

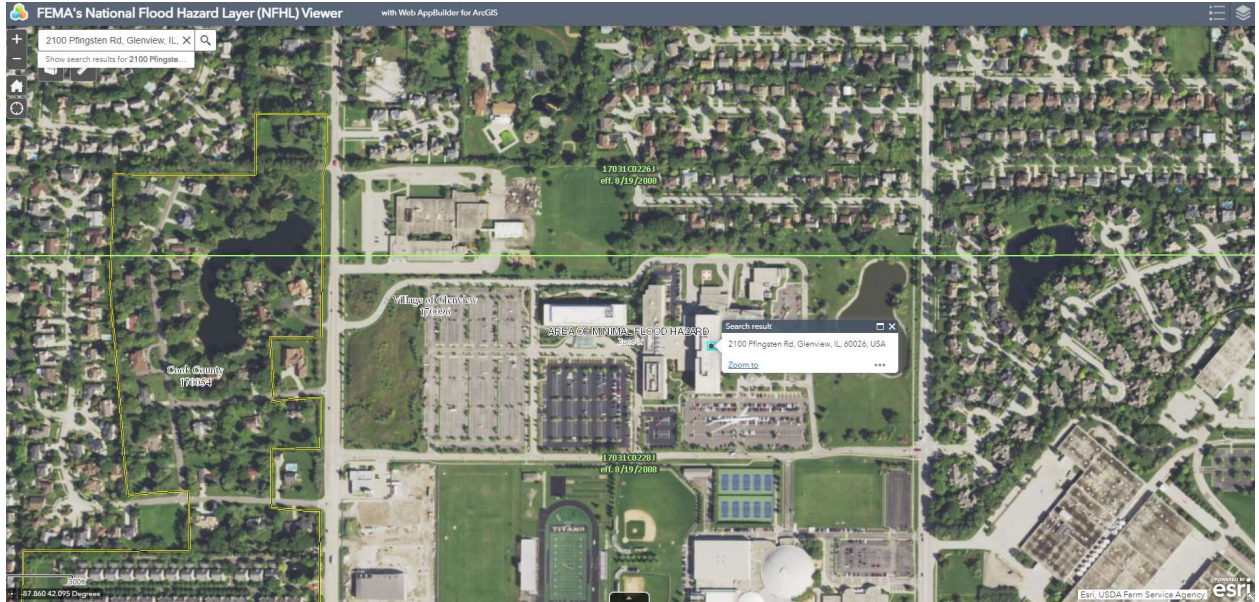
ATTACHMENT 4 Organizational Relationships

The current organizational chart for NorthShore University HealthSystem is below.



Flood Plain Requirements

The site of the proposed project complies with the requirements of Illinois Executive Order #2005-5. The proposed site is located at 2100 Pfingsten Rd. Glenview, IL 60026. Please see the attached Flood Plain Insurance Rate Map (FIRM) and FEMA Flood Map documenting that the project site is not located in a Special Flood Hazard Area.



Historic Resources Preservation Act Requirements

A letter from the Illinois Historic Preservation Agency stating that the proposed project complies with the requirements of the Historic Resources Preservation Act is included as part of this Attachment-6.



Illinois Department of Natural Resources

#21-016

One Natural Resources Way Springfield, Illinois 62702-1271

www.dnr.illinois.gov

Mailing Address: 1 Old State Capitol Plaza, Springfield, IL 62701

JB Pritzker, Governor

Colleen Callahan, Director

Cook County

Glenview

CON - Rehabilitation and Addition for Construction of a Cardiovascular Procedural Pavilion, NorthShore

Glenbrook Hospital

2100 Pfingsten Road

SHPO Log #008042821

May 13, 2021

Collin Anderson

26 Lange Avenue

Savoy, IL 61874

Dear Mr. Anderson:

This letter is to inform you that we have reviewed the information provided concerning the referenced project.

Our review of the records indicates that no historic, architectural or archaeological sites exist within the project area.

Please retain this letter in your files as evidence of compliance with Section 4 of the Illinois State Agency Historic Resources Preservation Act (20 ILCS 3420/1 et. seq.). This clearance remains in effect for two years from date of issuance. It does not pertain to any discovery during construction, nor is it a clearance for purposes of the Illinois Human Skeletal Remains Protection Act (20 ILCS 3440).

If you have any further questions, please call 217/782-4836.

Sincerely,

A handwritten signature in black ink that reads "Robert F. Appleman".

Robert F. Appleman

Deputy State Historic

Preservation Officer

Project Costs				
Use of Funds	Clinical	Non-Clinical	Total	
Preplanning Costs	\$1,165,075	\$2,669,833	\$3,834,908	
Site Survey and Soil Investigation	\$51,368	\$132,090	\$183,458	
Site Preparation	\$1,101,593	\$3,409,852	\$4,511,445	
Off Site Work	\$0	\$0	\$0	
New Construction Costs	\$21,320,087	\$60,621,314	\$81,941,401	
Modernization Contracts	\$0	\$3,258,000	\$3,258,000	
Contingencies	\$2,118,899	\$6,387,931	\$8,506,830	
Architectural/Engineering Fees	\$1,449,653	\$3,770,535	\$5,220,188	
Consulting and Other Fees	\$2,285,490	\$2,499,170	\$4,784,660	
Movable and Other Equipment (not in construction contracts)	\$44,354,130	\$3,666,478	\$48,020,608	
Equipment General	\$2,494,800	\$0	\$2,494,800	
Medical Equipment	\$39,190,000	\$0	\$39,190,000	
Furniture	\$687,876	\$1,768,824	\$2,456,700	
Security Access/Wireless	\$132,610	\$340,998	\$473,608	
IT/Telecom	\$390,544	\$1,004,256	\$1,394,800	
Signs/Wayfinding	\$72,100	\$185,400	\$257,500	
Other	\$1,386,200	\$367,000	\$1,753,200	
Bond Issuance Expense (Project related)	\$0	\$0	\$0	
Net Interest Expense During Construction (Project related)	\$0	\$0	\$0	
Fair Market Value of Leased Space or Equipment	\$0	\$0	\$0	
Other Costs to be Capitalized	\$7,201,225	\$3,057,882	\$10,259,107	
Surface Parking Lots, Temporary Roads, Lighting	\$2,201,225	\$3,057,882	\$5,259,107	
Net Book Value of Equipment to be Transferred from Other Facilities	\$5,000,000	\$0	\$5,000,000	
Acquisition of Building or Other Property (Excluding land)	\$0	\$0	\$0	
Total Uses of Funds	\$81,047,519	\$89,473,085	\$170,520,604	

Active CON Permits and Exemptions

NorthShore University HealthSystem has the following open permits and exemptions:

20-008 Skokie Hospital, Skokie

- The CON permit for project 20-008 was approved on April 7, 2020.
- Financial commitment occurred on June 17, 2020.
- The project completion date of record is December 15, 2023.

19-011 Northwest Community Hospital, Buffalo Grove

- The CON permit for project 19-011 was approved on June 4, 2019.
- Financial commitment occurred on April 8, 2020.
- The project completion date of record is March 1, 2022.

E-007-21 Swedish Hospital, Chicago

- The exemption was approved on May 12, 2021.
- The exemption will be closed when the discontinuation is approved by Illinois Department of Public Health.

Cost Space Requirements

NorthShore University HealthSystem seeks to construct cardiovascular procedural and recovery space at NorthShore Glenbrook Hospital campus.

Dept. / Area	Cost	Gross Square Feet		Amount of Proposed Total Gross Square Feet That is:			
		Existing	Proposed	New Const.	Modernized	As Is	Vacated Space
Clinical							
Operating Rooms	\$13,752,278	0	8,789	8,789	0	0	0
Recovery Rooms	\$20,889,189	0	15,748	15,748	0	0	0
Cath/EP Labs	\$46,406,052	0	11,835	11,835	0	0	0
Total Clinical	\$81,047,519	0	36,372	36,372	0	0	0
Non-Clinical							
Mechanical & Other Building Systems, Administrative, other non-clinical	\$89,473,085	5,004	130,887	125,483	5,004	0	0
Total Non-Clinical	\$89,473,085	5,004	130,887	125,483	5,004	0	0
Total	\$170,520,604	5,004	167,259	161,855	5,004	0	0

Section 1110.130 Discontinuation

The Applicant does not propose the discontinuation of a healthcare facility or a category of service. Therefore this section is not applicable.

Section III, Project Purpose, Background and Alternatives – Information Requirements

Criterion 1110.110 (a)

Background of Applicant



The NorthShore University HealthSystem Cardiovascular Institute was launched in 2015. Today, it includes 16+ programs across cardiology, cardiovascular surgery, and vascular surgery and medicine, and includes 50+ cardiologists, electrophysiologists, interventionalists and surgeons. Multidisciplinary care is offered across the health system with relevant programs, including Certified Primary Stroke Center, Pulmonary, Sleep Apnea, Bariatrics, and more. Below is a list of accolades and accomplishments earned by the NorthShore Cardiovascular Institute:

- Watson Health 50 Top Cardiovascular Hospitals recipient
- Proven quality programs designation from American College of Cardiology last two years; promoted in US News & World Report
- Among the first in metro Chicago to perform percutaneous mitral valve repair (TAVR)
- Among the first in metro Chicago to use novel, transcatheter mitral valve replacement technique (TMVR)
- Among the first in metro Chicago to use Gen4 Mitra clip
- Among the first in metro Chicago to perform heart flossing (interventional procedure)
- New Aortic Center of Excellence program
- Leaders in minimally invasive surgery
- Advanced Heart Failure advanced care, including Program in partnership with University of Chicago which offers a range of procedures to the most heart transplant
- Dedicated Heart Rhythm program, including lead extraction
- Largest clinical AFib program in metro Chicago, offering innovative treatments like hybrid and radiation-free ablation
- Infiltrative cardiomyopathy program
- Blue Cross and Blue Shield of Illinois Blue Distinction Center for Cardiac Care

- New Cardio OB program in partnership with maternal-fetal program
- Cardiology fellowship program in conjunction with the University of Chicago
- Advanced personalized medicine capabilities to determine patients' risk for cardiovascular disease; examines patients' unique genetic makeup to develop individualized treatment plans
- Innovative programs like Cardio-Oncology, Vascular Medicine and new Sports Cardiology
- Access to over 22 advanced clinical trials supporting research in Cardiology and Vascular medicine
- Comprehensive Cardio Imaging and Cardiac Rehab programs
- Physician-led weight management clinic offered through Wellness & Prevention program
- Advanced percutaneous coronary intervention (PCI) including chronic total occlusion PCI program

By signing the certification page within this application, the Applicant attests to the following information addressing the four points of the subject criterion 1110.110 (a):

1. NorthShore University HealthSystem currently owns and operates the following healthcare facilities:
 - NorthShore Evanston Hospital, located at 2650 Ridge Avenue, Evanston, IL 60201
 - License Identification Number: 0000646
 - Accreditation Identification Number: 7343
 - NorthShore Glenbrook Hospital, located at 2100 Pfingsten Road, Glenview, IL 60225
 - License Identification Number: 0003483
 - Accreditation Identification Number: 7343
 - NorthShore Highland Park Hospital, located at 777 Park Avenue West, Highland Park, IL 60035
 - License Identification Number: 0005066
 - Accreditation Identification Number: 7343
 - NorthShore Skokie Hospital, located at 9600 Gross Point Road, Skokie, IL 60076
 - License Identification Number: 0005587
 - Accreditation Identification Number: 7343
 - Swedish Covenant Health dba Swedish Hospital, located at 5145 N. California Ave. Chicago, IL 60625
 - License Identification Number: 0002717
 - Accreditation Identification Number: 7343
 - Northwest Community Hospital, located at 800 W. Central Rd. Arlington Heights, IL 6005
 - License Identification Number: 0001701
 - Accreditation Identification Number: 4656

NorthShore University HealthSystem also has a five percent (5%) or greater indirect, partial ownership interest in the following Illinois healthcare facilities:

- North Shore Surgical Center, located at 3725 West Touhy Avenue, Lincolnwood, IL 60712
 - Ravine Way Surgery Center, located at 2350 Ravine Way, #500, Glenview, IL 60025
 - River North Same Day Surgery Center, located at 1 East Street, #300, Chicago, IL 60611
 - Northwest Community Day Surgery Center II, LLC, located at 675 W. Kirchoff Rd. Arlington Heights, IL 60005
 - Northwest Endo Center, LLC, located at 1415 S. Arlington Heights, IL 60005
 - Northwest Community Foot and Ankle Center, LLC, located at 1455 E. Golf Rd. Des Plaines, IL 60016
2. Proof of current licensure and accreditation is attached.
 3. There have been no adverse actions taken against the healthcare facilities owned or operated by the Applicant during the three years prior to the filing of this application.
 4. The certification within this application serves as authorization permitting the State Board and the Illinois Department of Public Health access to information in order to verify any documentation or information submitted with this Application including, but not limited to: official records of IDPH or other State of Illinois agencies and the records of nationally recognized accreditation organizations.

#21-016

← DISPLAY THIS PART IN A CONSPICUOUS PLACE



Illinois Department of PUBLIC HEALTH

HF 121621

LICENSE, PERMIT, CERTIFICATION, REGISTRATION

The person, firm or corporation whose name appears on this certificate has complied with the provisions of the Illinois statutes and/or rules and regulations and is hereby authorized to engage in the activity as indicated below.

Ngozi O. Ezike, M.D.
Director

Issued under the authority of the Illinois Department of Public Health

EXPIRATION DATE	CATEGORY	I.D. NUMBER
12/31/2021		0000646
General Hospital		
Effective: 01/01/2021		

NorthShore University HealthSystem
dba NorthShore Univ. HealthSystem Evanston Hospital
2650 Ridge Avenue

Evanston, IL 60201

The face of this license has a colored background. Printed by Authority of the State of Illinois • P.O. #19-493-001 10M 9/18

Exp. Date 12/31/2021

Lic Number 0000646

Date Printed 10/30/2020

NorthShore University HealthSystem
dba NorthShore Univ. HealthSystem E
2650 Ridge Avenue
Evanston, IL 60201

FEE RECEIPT NO.

DISPLAY THIS PART IN A CONSPICUOUS PLACE

Illinois Department of PUBLIC HEALTH

LICENSE, PERMIT, CERTIFICATION, REGISTRATION

The person, firm or corporation whose name appears on this certificate has complied with the provisions of the Illinois statutes and/or rules and regulations and is hereby authorized to engage in the activity as indicated below.

Ngozi O. Ezike, M.D.
Director

Issued under the authority of the Illinois Department of Public Health

EXPIRATION DATE	CATEGORY	I.D. NUMBER
12/31/2021	General Hospital	0003483

Effective: 01/01/2021

NorthShore University HealthSystem
dba NorthShore Univ. HealthSystem Glenbrook Hospital
2100 Pfingsten Road
Glenview, IL 60025

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Exp. Date 12/31/2021

Lic Number 0003483

Date Printed 10/30/2020

NorthShore University HealthSystem
dba NorthShore Univ. HealthSystem G
2100 Pfingsten Road
Glenview, IL 60025

FEE RECEIPT NO.



**Illinois Department of
PUBLIC HEALTH**

HF 121624

#21-016
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CONSPICUOUS PLACE

LICENSE, PERMIT, CERTIFICATION, REGISTRATION

The person, firm or corporation whose name appears on this certificate has complied with the provisions of the Illinois statutes and/or rules and regulations and is hereby authorized to engage in the activity as indicated below.

Ngozi O. Ezike, M.D.
Director

Issued under the authority of
the Illinois Department of
Public Health

EXPIRATION DATE	CATEGORY	I.D. NUMBER
12/31/2021		0005066
General Hospital		
Effective: 01/01/2021		

Exp. Date 12/31/2021

Lic Number 0005066

Date Printed 10/30/2020

NorthShore University HealthSystem
dba NorthShore Univ. HealthSystem Highland Park Hosp
777 Park Avenue West

NorthShore University HealthSystem
dba NorthShore Univ. HealthSystem Hi
777 Park Avenue West
Highland Park, IL 60035

Highland Park, IL 60035

The face of this license has a colored background. Printed by Authority of the State of Illinois • P.O. #19-493-001 10M 9/18

FEE RECEIPT NO.

← DISPLAY THIS PART IN A CONSPICUOUS PLACE

HF 121625



Illinois Department of PUBLIC HEALTH

LICENSE, PERMIT, CERTIFICATION, REGISTRATION

The person, firm or corporation whose name appears on this certificate has complied with the provisions of the Illinois statutes and/or rules and regulations and is hereby authorized to engage in the activity as indicated below.

Issued under the authority of the Illinois Department of Public Health

Ngozi O. Ezike, M.D.

Director

EXPIRATION DATE	CATEGORY	LD NUMBER
12/31/2021	General Hospital	0005587

Effective: 01/01/2021

NorthShore University HealthSystem
dba NorthShore University HealthSystem Skokie Hospital
9600 Gross Point Rd

Skokie, IL 60076

The face of this license has a colored background. Printed by Authority of the State of Illinois • P.O. #19-493-001 10M 9/18

Exp. Date 12/31/2021


Lic Number 0005587

Date Printed 10/30/2020

NorthShore University HealthSystem
dba NorthShore University HealthSystem
9600 Gross Point Rd
Skokie, IL 60076

Attachment- 11a
FEE RECEIPT 470.

#21-016



Illinois Department of PUBLIC HEALTH HF 121586

LICENSE, PERMIT, CERTIFICATION, REGISTRATION

The person, firm or corporation whose name appears on this certificate has complied with the provisions of the Illinois statutes and/or rules and regulations and is hereby authorized to engage in the activity as indicated below.

Ngozi O. Ezike, M.D.
Director

Issued under the authority of the Illinois Department of Public Health

EXPIRATION DATE	CATEGORY	I.D. NUMBER
12/31/2021	General Hospital	0001701

Effective: 01/01/2021

Northwest Community Hospital
 800 W Central Road
 Arlington Heights, IL 60005

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← DISPLAY THIS PART IN A CONSPICUOUS PLACE

Exp. Date 12/31/2021

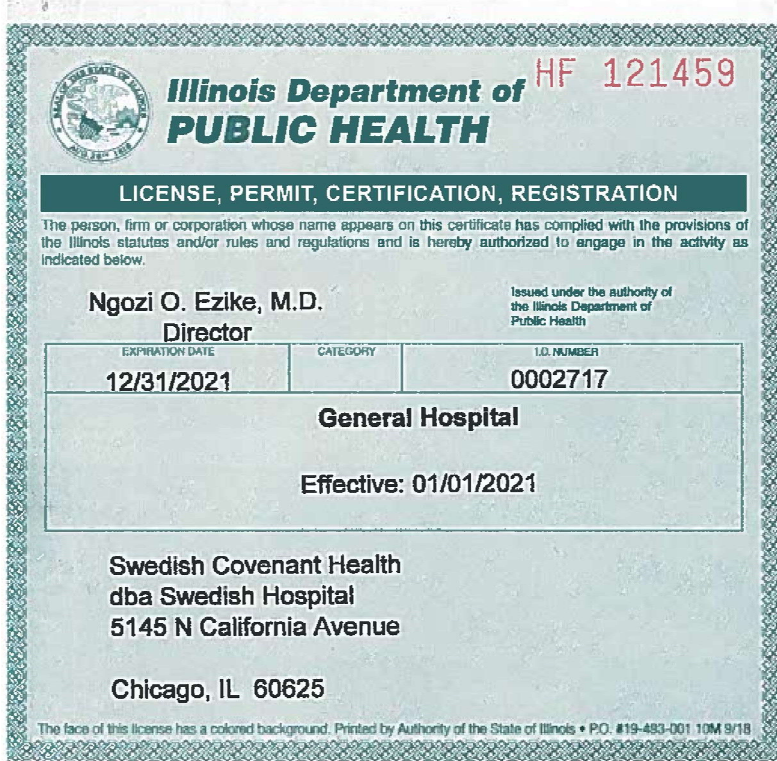
Lic Number 0001701

Date Printed 10/28/2020

Northwest Community Hospital

800 W Central Road
Arlington Heights, IL 60005

FEE RECEIPT NO.



Illinois Department of PUBLIC HEALTH HF 121459

LICENSE, PERMIT, CERTIFICATION, REGISTRATION

The person, firm or corporation whose name appears on this certificate has complied with the provisions of the Illinois statutes and/or rules and regulations and is hereby authorized to engage in the activity as indicated below.

Ngozi O. Ezike, M.D.
Director

Issued under the authority of the Illinois Department of Public Health

EXPIRATION DATE	CATEGORY	I.D. NUMBER
12/31/2021		0002717

General Hospital

Effective: 01/01/2021

Swedish Covenant Health
dba Swedish Hospital
5145 N California Avenue

Chicago, IL 60625

The face of this license has a colored background. Printed by Authority of the State of Illinois • P.O. #19-483-001 10M 9/18

← DISPLAY THIS PART IN A CONSPICUOUS PLACE

Exp. Date 12/31/2021
 Lic Number 0002717
 Date Printed 10/08/2020

Swedish Covenant Health
 dba Swedish Hospital
 5145 N California Avenue
 Chicago, IL 60625

FEE RECEIPT NO.

Joint Commission accredited organizations that have a full accreditation survey that has been postponed due to the COVID-19 pandemic will continue to be considered accredited beyond their current certificate expiration date.

The Joint Commission has resumed survey/review activity and as soon as The Joint Commission has determined it is safe to resume onsite survey activity in your county, scheduling of past due surveys will be prioritized.

Organizations that have an approaching accreditation due date that may be impacted as The Joint Commission begins to survey past due organizations will also continue to be considered accredited. Once the full survey has been conducted and a final accreditation decision of Accredited has been rendered, the accreditation will be renewed without any lapse in the existing accreditation.



February 26, 2018

Re: # 7343
CCN: #140010
Program: Hospital
Accreditation Expiration Date: October 07, 2020

J.P. Gallagher
COO
NorthShore University HealthSystem
1301 Central Street, Suite 300
Evanston, Illinois 60201

Dear Mr. Gallagher:

This letter confirms that your October 02, 2017 - October 06, 2017 unannounced full resurvey was conducted for the purposes of assessing compliance with the Medicare conditions for hospitals through The Joint Commission's deemed status survey process.

Based upon the submission of your evidence of standards compliance on January 12, 2018, January 15, 2018 and February 15, 2018 and the successful on-site unannounced Medicare Deficiency Follow-up event conducted on November 16, 2017 and December 14, 2017, the areas of deficiency listed below have been removed. The Joint Commission is granting your organization an accreditation decision of Accredited with an effective date of October 07, 2017. We congratulate you on your effective resolution of these deficiencies.

§482.23 Nursing Services
§482.41 Physical Environment
§482.42 Infection Control
§482.51 Surgical Services

The Joint Commission is also recommending your organization for continued Medicare certification effective October 07, 2017. Please note that the Centers for Medicare and Medicaid Services (CMS) Regional Office (RO) makes the final determination regarding your Medicare participation and the effective date of participation in accordance with the regulations at 42 CFR 489.13. Your organization is encouraged to share a copy of this Medicare recommendation letter with your State Survey Agency.

This recommendation applies to the following location(s):

Deerfield Medical Group Offices
49 South Waukegan Road, Deerfield, Deerfield, IL, 60015

Dermatology - Old Orchard
9933 Woods Drive, Skokie, IL, 60077

Des Plaines Internal Medicine



9301 Golf Road, Suite 302, Des Plaines, IL, 60016

Evanston Medical Office Building
1000 Central Street, Evanston, IL, 60201

Glenbrook Hospital Ambulatory Care Center
2180 Pfingsten Road, Glenview, IL, 60026

Glenbrook Medical East
1007 Church St., Suite 100, Evanston, IL, 60201

Glenbrook Medical West
211 Waukegan Road Suite 200, Northfield, IL, 60093

Glenbrook Professional Building
d/b/a NorthShore Medical Group
2050-2100 Pfingsten Rd., Glenview, IL, 60025

Gurnee Ambulatory Care Center
7900 Rollins Road, Gurnee, IL, 60031

Gurnee Pediatrics
6475 Washington St. Suite 103, Gurnee, IL, 60031

Lincolnshire Ambulatory Care Center
920 North Milwaukee Ave, Lincolnshire, IL, Lincolnshire, IL, 60069

Medical Imaging
1182 Northbrook Court, Northbrook, IL, 60062

Medical Offices Bannockburn
2151 Waukegan Road, Bannockburn, IL, 60015

Mount Prospect Primary Care
1329 Wolf Road, Mount Prospect, IL, 60056

Niles Ambulatory Care Center
6450 West Touhy Avenue, Niles, Niles, IL, 60714

North Shore Medical Group - Ravinia
1777 Green Bay Road, Suite 201, Highland Park, IL, 60035

North Suburban Medical Associates
101 Waukegan Road, Suite 1200, Lake Bluff, IL, 60044

NorthShore Medical Group - Family Practice



1162 Maple Ave, Mundelein, IL, 60060

NorthShore Orthopedics Institute
680 Lake Shore Drive, Chicago, IL, 60611

NorthShore University HealthSystem
d/b/a Evanston Hospital
2650 Ridge Avenue, Evanston, IL, 60201

NorthShore University HealthSystem
d/b/a Glenbrook Hospital
2100 Pfingsten Road, Glenview, IL, 60025

NorthShore University HealthSystem
d/b/a Highland Park Hospital
777 Park Avenue West, Highland Park, IL, 60035

NorthShore University HealthSystem
d/b/a Skokie Hospital
9600 Gross Point Road, Skokie, IL, 60076

NS - Lincolnwood Primary Care
6810 N. McCormick, Lincolnwood, IL, 60712

NS - Medical Group
767 Park Avenue West, Highland Park, IL, 60035

NS - Medical Group
9669 Kenton Avenue, Skokie, IL, 60076

NS - Vernon Hills
830 West End Court, Vernon Hills, IL, 60061

NS at Nordstrom
77 Old Orchard Shopping Center, Skokie, IL, 60077

NS Dermatology
1160 Park Ave West, Highland Park, Highland Park, IL, 60035

NS Highland Park Specialty Care Center
757 Park Avenue West, Highland Park, IL, 60035

NS Medical Group
650 Lake Cook Road, Buffalo Grove, IL, 60089

NS Medical Group - Deerpath Physician Group



731 S. IL Route 21, Suite 130, Gurnee, IL, 60031

NS Medical Group - Glenview
1435 Waukegan Road, Glenview, IL, 60025

NS Medical Group Plastics/ENT
501 Skokie Blvd, Northbrook, IL, 60062

NS Northbrook Family Medicine
1885 Shermer Road, Northbrook, IL, 60062

NS Primary Care
15 Tower Court, Gurnee, IL, 60031

NS Rehabilitation Service
1000 Central Street, Evanston, IL, 60201

NS Rehabilitation Services, Evanston Athletic Club
1729 Benson Ave, Evanston, IL, 60201

NS Rehabilitation Services, Highland Park Hospital Fitness
1501 Busch Pkwy, Buffalo Grove, IL, 60089

NS Rehabilitation Services, Old Orchard
9977 Woods Drive, Skokie, IL, 60077

NS Rehabilitation Services, Park Center
2400 Chestnut, Glenview, IL, 60026

NS Rehabilitation Services, Pediatric Therapy Clinic
9977 Woods Drive, Skokie, IL, 60077

Park Center Specialty Suite
2400 Chestnut Ave Suite A, Glenview, IL, 60026

Professional Building
d/b/a ENH Medical Group/Psychiatry
909 Davis Street, Evanston, IL, 60201

Professional Building
9977 Woods Dr., Skokie, IL, 60077

Psychiatry- Glenview
2300 Lehigh, Suite 215, Glenview, IL, 60025

Skokie Ambulatory Care Center



9650 Gross Point Road, Skokie, IL, 60076

Therapeutic Day School
3633 West Lake Ave, Suite 200, Glenview, IL, 60025

Vernon Hills Specialty Care Center
225 N Milwaukee Ave, Vernon Hills, IL, 60061

Wilmette Primary Care
1515 Sheridan Road, Suite 31A, Wilmette, IL, 60091

Please be assured that The Joint Commission will keep the report confidential, except as required by law or court order. To ensure that The Joint Commission's information about your organization is always accurate and current, our policy requires that you inform us of any changes in the name or ownership of your organization or the health care services you provide.

Sincerely,

A handwritten signature in black ink that reads 'Mark Pelletier'.

Mark G. Pelletier, RN, MS
Chief Operating Officer
Division of Accreditation and Certification Operations

cc: CMS/Central Office/Survey & Certification Group/Division of Acute Care Services
CMS/Regional Office 5 /Survey and Certification Staff



AMERICAN OSTEOPATHIC ASSOCIATION

**BUREAU OF HEALTHCARE FACILITIES ACCREDITATION
HEALTHCARE FACILITIES ACCREDITATION PROGRAM**

142 E. Ontario Street, Chicago, IL 60611-2864 ph 312 202 8258 | 800-621 -1773 X 8258

February 28, 2018

Anthony Guaccio
Chief Executive Officer
Swedish Covenant Hospital
5145 N California Ave
Chicago, IL 60625

Dear Mr. Guaccio:

The American Osteopathic Association's Bureau of Healthcare Facilities Accreditation (BHFA) reviewed the triennial Deficiency Assessment Report for your Acute Care Hospital and granted Full Accreditation with resurvey within 3 years and does recommend that the Centers for Medicare and Medicaid Services Regional Office (CMS, RO) approve continued deemed status for:

Swedish Covenant Hospital
5145 N California Ave
Chicago, IL 60625

Center for Ambulatory Surgery
Foster Medical Pavilion
5215 North California, Suite #800
Chicago, IL 60625

Outpatient Cardiac and Pulmonary Rehab
Galter LifeCenter
5157 N. Francisco, 2nd Floor
Chicago, IL 60625

Wound Care/Hyperbaric Treatment
Winona Building
2751 W. Winona, 3rd Floor
Chicago, IL 60625

CyberKnife Cancer Institute
160 E Illinois St.
Chicago, IL 60611

Outpatient Rehab Services
Galter LifeCenter, 1st and 2nd Floors
5157 N. Francisco
Chicago, IL 60625

Pain Management
Foster Medical Pavilion
5215 N. California, Suite #600
Chicago, IL 60625

Program: Acute Care Hospital
CCN # 140114
HFAP ID: 119094
Triennial Survey Dates: 12/11/2017 – 12/14/2017
Plan(s) of Correction Received: 01/12/2018
Effective Date of Accreditation: 01/29/2018 – 01/29/2021

ILLINOIS HEALTH FACILITIES AND SERVICES REVIEW BOARD
CHANGE OF OWNERSHIP APPLICATION FOR EXEMPTION- 09/2019 Edition

Foster Medical Pavilion Lab and X-ray
5215 N. California, Suite #713
Chicago, IL 60625

Condition Level Deficiencies: None
(Use crosswalk and CFR citations, if applicable):


Swedish Covenant Hospital does not have Swing Beds and was not surveyed under those standards.

Swedish Covenant Hospital has a DPU Rehab Unit and a DPU Psych Unit and was surveyed under those standards. The facility met the requirements for both units.

This accreditation decision was reached on February 21, 2018 by the BHFA's Executive Committee.

In reviewing your report, the Bureau of Healthcare Facilities Accreditation (BHFA) made the observations that are contained on the enclosed Bureau Progress Report and requires that an Interim Progress Report be received in the AOA Division of Healthcare Facilities Accreditation prior to **December 10, 2018**.

Sincerely,



Lawrence U. Haspel, D.O.
Chairman, Bureau of Healthcare Facilities Accreditation
The Healthcare Facilities Accreditation Program
LUH/CDC

c: CMS Central Office
Region V, CMS

ILLINOIS HEALTH FACILITIES AND SERVICES REVIEW BOARD
CHANGE OF OWNERSHIP APPLICATION FOR EXEMPTION- 09/2019 Edition



January 3, 2018

Stephen Scogna
Chief Executive Officer

Northwest Community Hospital
800 West Central Road
Arlington Heights, IL 60005

Joint Commission ID #: 4656
Program: Hospital Accreditation
Accreditation Activity: 60-day Evidence of
Standards Compliance
Accreditation Activity Completed: 01/03/2018

Dear Mr. Scogna:

The Joint Commission is pleased to grant your organization an accreditation decision of Accredited for all services surveyed under the applicable manual(s) noted below:

- **Comprehensive Accreditation Manual for Hospitals**

This accreditation cycle is effective beginning October 21, 2017 and is customarily valid for up to 36 months. Please note, The Joint Commission reserves the right to shorten or lengthen the duration of the cycle.

Should you wish to promote your accreditation decision, please view the information listed under the 'Publicity Kit' link located on your secure extranet site, The Joint Commission Connect.

The Joint Commission will update your accreditation decision on Quality Check®.

Congratulations on your achievement.

Sincerely,

A handwritten signature in black ink that reads 'Mark Pelletier'.

Mark G. Pelletier, RN, MS
Chief Operating Officer
Division of Accreditation and Certification Operations

Healthcare Facilities Accreditation Program



grants this

CERTIFICATE OF ACCREDITATION

to

Swedish Covenant Hospital

Chicago, IL

This Facility has met the applicable HFAP accreditation requirements and is therefore fully accredited by the Healthcare Facilities Accreditation Program

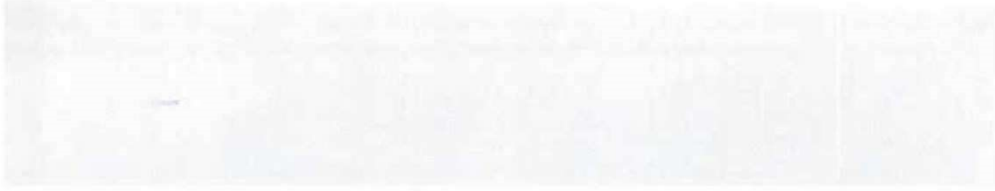
2018-2021

Adrienne White-Pais
Executive Director
American Osteopathic Association



Lawrence A. Bergel
Chairman
Bureau Healthcare Facilities Accreditation

Michael J. ...
President
American Osteopathic Association



Attachment 12

The Applicant seeks to centralize NorthShore University HealthSystem hospital Cardiovascular Institute procedural suites at NorthShore Glenbrook Hospital.

PURPOSE OF PROJECT**1. Document that the project will provide health services that improve the health care or well-being of the market area population to be served.**

This project will allow NorthShore to make a significant investment to create state-of-the-art facilities that will further enhance the quality of cardiovascular care delivered and patient access to the latest clinical techniques for the treatment of cardiovascular disease, improve the patient experience, enhance provider retention and recruitment, improve population health, and reduce per capita costs. With 22 clinical trials at various phases and a large group of employed cardiovascular physicians in the system, NorthShore University Health System is at the forefront of the development and implementation of lifesaving therapeutics and techniques in the treatment of cardiovascular disease and offers multiple programs, from wellness and prevention, to cardiac surgery to women's heart health across three legacy campuses.

Minimally invasive therapies, which are fundamental to a quick return to independent living and wellness, require significant investment in technology and are evolving rapidly. NorthShore plans to invest significant resources on the NorthShore Glenbrook campus to provide a geographically convenient access point for patients in the NorthShore service area. Access to urgent/emergent cardiovascular services will continue to exist throughout the NorthShore service area and the investment on the NorthShore Glenbrook campus will create the opportunity to create a high volume outpatient, procedural, surgical and inpatient center for cardiovascular care. The NorthShore Glenbrook campus also has the ability to expand its accessibility through its Helipad and medevac services. The consolidation of non-emergent cardiovascular care in this location, paired with historical inpatient growth represents an opportunity for the NorthShore Glenbrook campus to serve as a specialty center to support increasing community need for CV care.

Not only would further specialized CV services create a greater ability to serve the patient population in NorthShore's service area, but the program will also fuel the expansion of community-based CV programs, such as increased CV screening, prevention programs and chronic disease management programs. Studies have shown that increased physician engagement stems from interdisciplinary and specialty work, both of which the program will provide by breaking down clinical silos. Outstanding facilities and technology along with interdisciplinary collaboration will also enable the recruitment and retention of superior talent. With improved recruitment and retention and increased physician engagement, NorthShore will focus on creating more community-based CV programs to further serve its communities.

Clinical Need

Nationally. Cardiovascular diseases ("CVDs") are the leading cause of global mortality and a major contributor to disability and are increasing world-wide. Heart disease is the leading cause of death for Americans age 65 and older and represents one of the most expensive health problems in this demographic. Heart failure is a leading cause of hospitalizations and readmissions. In 2013, 42.4% of Medicare beneficiaries over 65 reported that they had at least one heart condition. One person dies every 36 seconds in the United States from cardiovascular disease. And heart disease is not limited

to an aging population; 18.2 million adults age 20 and older have coronary artery disease which is the most common form of heart disease. Further, two in 10 deaths from coronary artery disease are in adults under 65. In 2014-15, heart disease cost the United States about \$219 billion each year in the cost of health care services, medicines and \$138 billion in lost productivity.

Illinois. In the state of Illinois, ischemic heart disease, stroke and hypertensive heart disease are the first, third and tenth leading cause of death in 2019 and a major cause of disability. Between 2009 and 2019, there was a 4.4% increase in ischemic heart disease, a 11% increase in stroke and a 23.7% increase in hypertensive heart disease as causes of death. In 2017 there were 25,393 deaths in Illinois due to heart disease and 6,021 deaths due to stroke. Deaths due heart disease and stroke combined (31,414) represent almost 29 percent of all deaths in Illinois in 2017 (109,726).

Locally. Heart disease remains at the top for disease conditions affecting NorthShore's communities (Community Health Needs Assessment, 2019). By centralizing CV services at the NorthShore Glenbrook campus, increasing newer space, investing in technologies, and allowing clinicians to collaborate further, NorthShore will improve the health care delivery system and the overall well-being of the market area population to be served. Further, advanced technologies that allow for advanced, minimally invasive procedures would support differentiated CV programs. These programs can be tailored to a patient's specific need, giving them specialized and differentiated care for their disease. By also focusing on specialized expertise this will reduce readmission rates seen in the service area for CV care.

CVD has a disproportionate impact on communities of color and those vulnerable to the social determinants of health. Cardiovascular disease is the leading cause of death for Illinois black residents. In addition, the ongoing public health emergency in response to Covid-19 has again highlighted the underlying health disparities for people of color that are rooted in CVD. In 2017, the life expectancy for white women was 81 years compared with 78.1 years for black women and 76.1 to 71.5 for white men to black men.

2. Define the planning area or market area, or other relevant area, per the applicant's definition.

A map of the NorthShore University Health System's service area is attached as Attachment- 12B. NorthShore services Chicago and its suburbs extending south to north from Chicago to the Wisconsin border, as far west as Lake Zurich and east to Lake Michigan.

Attachment- 12A represents the patient origin for the Project based on 2019 data. As documented, 5,390 (or 81.7%) of the volume is from patients residing within this service area.

3. Identify the existing problems or issues that need to be addressed as applicable and appropriate for the project.

NorthShore's existing cath labs contain outdated and aging equipment, including some labs that were built over 20 years ago. Given the rapid development of innovative technologies and the growing focus on minimally invasive therapies, updated cardiac cath lab equipment and space is necessary to improve quality of care, efficiencies and patient and physician satisfaction. For example, the age of NorthShore's existing cath equipment results in significant downtime forcing procedures to be rescheduled and creating access issues.

Over the past 10 years, cardiovascular services have rapidly migrated from open heart procedures to minimally invasive cardiology interventions. Further, SG2 predicts a rise in acuity, technological advances and clinical innovation to shape utilization within the cardiovascular service line. This in turn, will drive steady growth in outpatient services and a reversal in the decade long, historic trend of declining inpatient demand. NorthShore is not immune to this reality and wishes to create a state-of-the-art clinical location for non-emergent cardiovascular patient care. Doing so will require care redesign to optimize in both inpatient and outpatient services. Investing in cardiovascular services, will allow for greater care coordination and an advanced care delivery model to redesign inpatient and outpatient care to better serve the community's needs. For example, the Project co-locates the cardiac catheterization labs that will primarily be used for outpatient procedures near the front of the newly constructed space. Doing so will allow these rooms to function much like an outpatient surgery department. Meanwhile, the procedures that will typically result in inpatient admissions will be located in the back of the new space, so patients can be more easily transported to ICU and medical-surgical units.

While current NorthShore's cardiovascular care delivery model allows clinicians to fully collaborate with each other, investments on the NorthShore Glenbrook campus will further these goals by allowing clinicians to practice alongside one another and support greater interdisciplinary care and an improved patient experience. NorthShore effectively implemented a similar model at its specialty Orthopedic and Spine institute in Skokie, IL.

Furthermore, the Project will allow the Applicant to design its cardiovascular procedural space and support and waiting areas with a focus on patient safety related to COVID-19 pandemic. The new space will include a number of design elements aimed at reducing transmission of the novel coronavirus, including improved negative/positive pressure relationship monitoring, additional isolation rooms and more hand wash stations.

Cite the sources of the documentation.

Global Burden of Cardiovascular Diseases and Risk Factors, 1990-2019 Journal of the American College of Cardiology, Vol. 76, No. 25, 2020.

Prevalence and Health Care Expenditures among Medicare Beneficiaries Aged 65 Years and Over with Heart Conditions. Christopher Ward; Erin Ewald; Kevin Koenig and Nicholas Schluterman (CMS, December 2017).

Centers for Disease Control and Prevention. Underlying Cause of Death, 1999–2018. CDC WONDER Online Database. Atlanta, GA: Centers for Disease Control and Prevention; 2018. Accessed March 12, 2020.

Fryar CD, Chen T-C, Li X. Prevalence of uncontrolled risk factors for cardiovascular disease: United States, 1999–2010 pdf icon[PDF-494K]. NCHS data brief, no. 103. Hyattsville, MD: National Center for Health Statistics; 2012.

Benjamin EJ, Muntner P, Alonso A, Bittencourt MS, Callaway CW, Carson AP, et al. Heart disease and stroke statistics—2019 update: a report from the American Heart Association external icon. Circulation. 2019;139(10):e56–528.

Fryar CD, Chen T-C, Li X. Prevalence of uncontrolled risk factors for cardiovascular disease: United States, 1999–2010 pdf icon[PDF-494K]. NCHS data brief, no. 103. Hyattsville, MD: National Center for Health Statistics; 2012. Accessed May 9, 2019.

Advancing Value-Based Models for Heart Failure: A Call to Action From the Value in Healthcare Initiative's Value-Based Models Learning Collaborative. Karen Joynt Maddox, William K. Bleser, Hannah L. Crook, Adam J. Nelson, Marianne Hamilton Lopez, Robert S. Saunders, Mark B. McClellan, Nancy Brown, and the American Heart Association Value-Based Models Learning Collaborative. Originally published 12 May 2020 <https://doi.org/10.1161/CIRCOUTCOMES.120.006483> *Circulation: Cardiovascular Quality and Outcomes.* 2020;13:e006483

<http://www.healthdata.org/united-states-illinois> Global Burden of 369 diseases and injuries in 204 countries and territories, 1990-2019: a systematic analysis for the Global Burden of Disease Study of 2019, *The Lancet*

[https://www.dph.illinois.gov/topics-services/diseases-and-conditions/heart-stroke#:~:text=In%202017%20there%20were%2025%2C393,Illinois%20in%202017%20\(109%2C726\).](https://www.dph.illinois.gov/topics-services/diseases-and-conditions/heart-stroke#:~:text=In%202017%20there%20were%2025%2C393,Illinois%20in%202017%20(109%2C726).)

African-American COVID-19 Mortality: A Sentinel Event, Keith C. Ferdinand, MD Samar A. Nasser, PhD, MPH, PA-C citing Arias E. Xu J United States life tables 2017; National Center for Health Statistics and

4. Detail how the project will address or improve the previously referenced issues, as well as the population's health status and well-being.

As discussed in greater detail above, the Project will improve operational efficiency, quality, patient safety, access, physician satisfaction, recruitment and retention by replacing outdated equipment and facilities. Further, by centralizing cardiovascular procedural and surgical suites, the Project will encourage collaboration, create efficiencies and improve quality and physician satisfaction. Importantly, by shifting services from geographically isolated facilities to centrally-located NorthShore Glenbrook Hospital, the Project will improve accessibility for physicians and medical personnel and allow patients to receive the best possible heart care close to home. In doing so, the Project will also provide a better option for the large percentage of patients that have historically gone to downtown Chicago for care. A map comparing five and 10-mile radii of NorthShore Glenbrook Hospital with those of NorthShore Evanston Hospital is attached as Attachment- 12C.

5. Provide goals with quantified and measurable objectives, with specific timeframes that relate to achieving the stated goals as appropriate.

The Applicant's prevailing objectives are to improve cardiovascular care in terms of quality and access for patients in the GSA. Specifically, the goals of the Project are:

- To reduce readmission rates associated with cardiovascular procedures.
- To improve access to cardiovascular care.
- To reduce the risk of hospital-acquired COVID-19 infection through design best practices.

These goals can be addressed at the time of project completion.

For projects involving modernization, describe the conditions being upgraded, if any.

While the majority of the Project entails new construction, it also includes a relatively small amount of modernization associated with converting an existing lobby into a waiting area for the procedural and surgical spaces.

Attachment- 12A
Projected Utilization by Zip Code

Zip Code - City	Patients
60062 - NORTHBROOK	418
60625 - CHICAGO	336
60201 - EVANSTON	312
60076 - SKOKIE	312
60077 - SKOKIE	280
60025 - GLENVIEW	275
60035 - HIGHLAND PARK	233
60091 - WILMETTE	213
60645 - CHICAGO	201
60659 - CHICAGO	184
60202 - EVANSTON	177
60618 - CHICAGO	164
60015 - DEERFIELD	154
60630 - CHICAGO	148
60090 - WHEELING	138
60053 - MORTON GROVE	133
60093 - WINNETKA	128
60640 - CHICAGO	114
60626 - CHICAGO	108
60712 - LINCOLNWOOD	107
60026 - GLENVIEW	106
60646 - CHICAGO	103
Other	100
60089 - BUFFALO GROVE	98
60714 - NILES	96
60660 - CHICAGO	89
60641 - CHICAGO	81
60016 - DES PLAINES	77
60045 - LAKE FOREST	71
60634 - CHICAGO	70
60031 - GURNEE	69
60056 - MOUNT PROSPECT	66
60069 - LINCOLNSHIRE	63
60085 - WAUKEGAN	61
60060 - MUNDELEIN	55
60030 - GRAYSLAKE	53
60004 - ARLINGTON HEIGHTS	46
60061 - VERNON HILLS	46
60639 - CHICAGO	45
60048 - LIBERTYVILLE	45

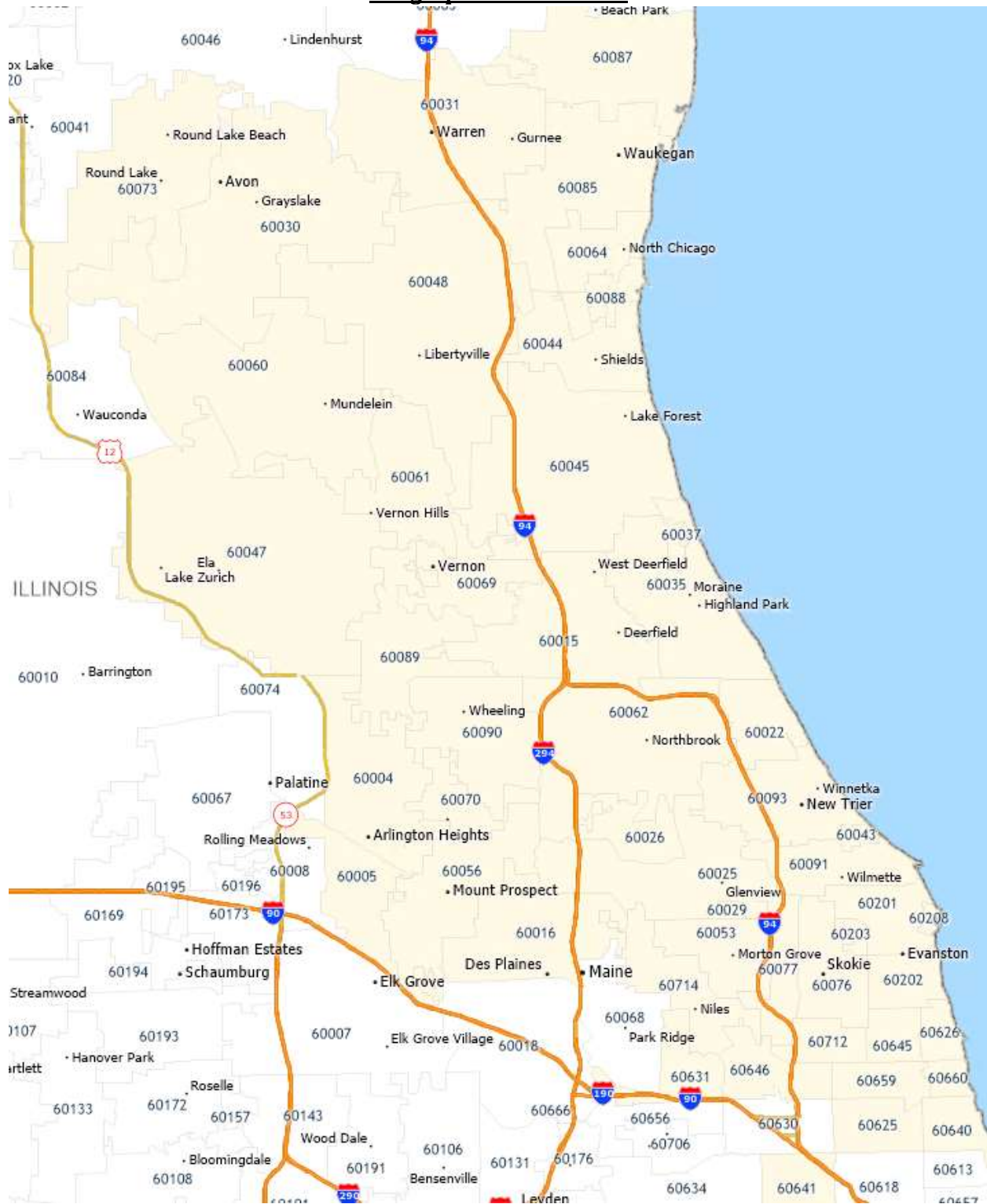
60046 - LAKE VILLA	43
60002 - ANTIOCH	40
60070 - PROSPECT HEIGHTS	40
60087 - WAUKEGAN	39
60099 - ZION	38
60203 - EVANSTON	37
60047 - LAKE ZURICH	35
60073 - ROUND LAKE	34
60613 - CHICAGO	32
60022 - GLENCOE	31
60044 - LAKE BLUFF	28
60647 - CHICAGO	27
60040 - HIGHWOOD	27
60068 - PARK RIDGE	26
60064 - NORTH CHICAGO	25
60074 - PALATINE	23
60631 - CHICAGO	21
60083 - WADSWORTH	19
60018 - DES PLAINES	19
60656 - CHICAGO	18
60707 - ELMWOOD PARK	16
60614 - CHICAGO	15
60067 - PALATINE	15
60657 - CHICAGO	13
60010 - BARRINGTON	13
60706 - HARWOOD HEIGHTS	13
60084 - WAUCONDA	13
60096 - WINTHROP HARBOR	13
60005 - ARLINGTON HEIGHTS	12
60051 - MCHENRY	9
60610 - CHICAGO	9
60611 - CHICAGO	8
60651 - CHICAGO	8
60043 - KENILWORTH	8
60616 - CHICAGO	6
60632 - CHICAGO	5
60649 - CHICAGO	5
60050 - MCHENRY	5
60020 - FOX LAKE	5
60041 - INGLESIDE	5
60176 - SCHILLER PARK	5
60605 - CHICAGO	5
60173 - SCHAUMBURG	5

60007 - ELK GROVE VILLAGE	5
60142 - HUNTLEY	4
60622 - CHICAGO	4
60402 - BERWYN	4
60617 - CHICAGO	4
60014 - CRYSTAL LAKE	4
60110 - CARPENTERSVILLE	4
60601 - CHICAGO	3
60143 - ITASCA	3
60644 - CHICAGO	3
60620 - CHICAGO	3
60169 - HOFFMAN ESTATES	3
60629 - CHICAGO	3
60609 - CHICAGO	3
60624 - CHICAGO	3
60637 - CHICAGO	3
60008 - ROLLING MEADOWS	3
60081 - SPRING GROVE	3
60102 - ALGONQUIN	3
60098 - WOODSTOCK	3
60608 - CHICAGO	2
60612 - CHICAGO	2
60204 -	2
60131 - FRANKLIN PARK	2
60160 - MELROSE PARK	2
53142 -	2
60107 - STREAMWOOD	2
53158 -	2
60013 - CARY	2
60193 - SCHAUMBURG	2
60164 - MELROSE PARK	2
60623 - CHICAGO	2
60619 - CHICAGO	2
60661 - CHICAGO	2
60901 - KANKAKEE	2
60615 - CHICAGO	2
60137 - GLEN ELLYN	2
60172 - ROSELLE	2
99999 -	2
60607 - CHICAGO	2
60642 - CHICAGO	2
60082 -	2
53140 -	2

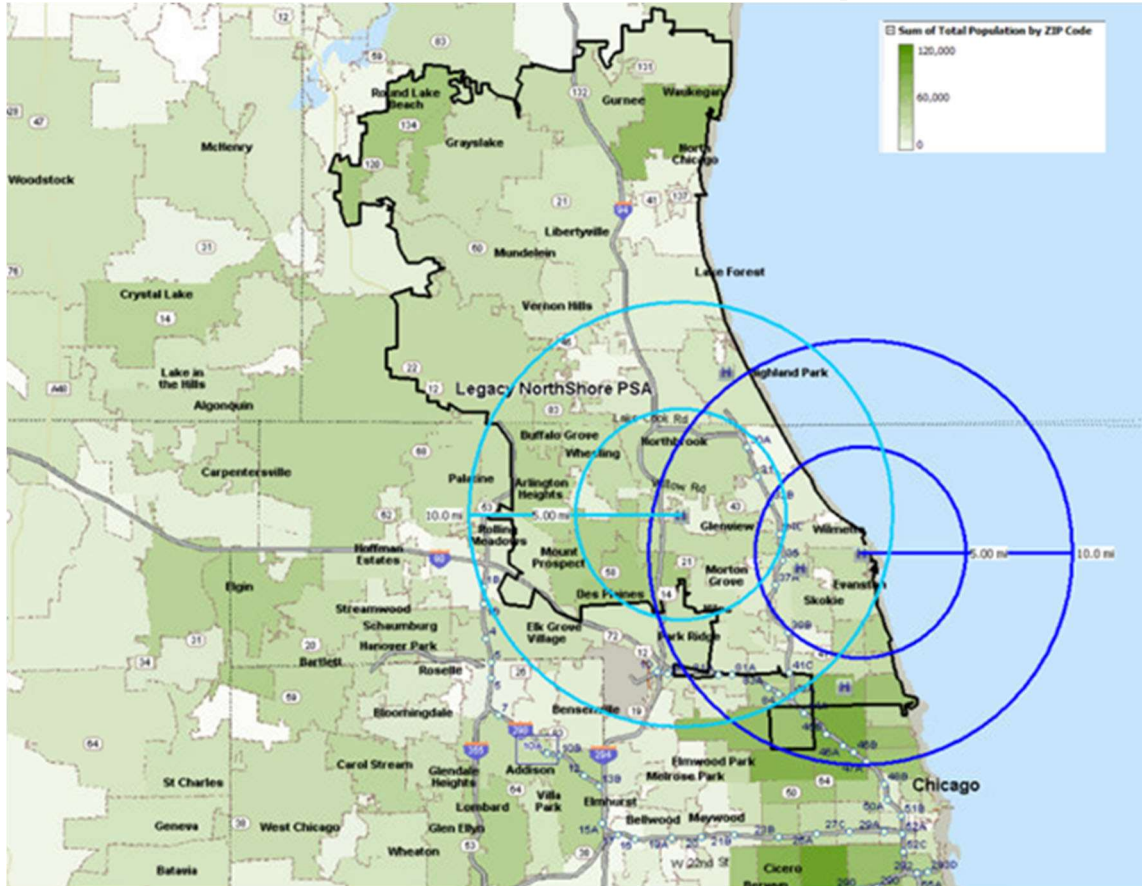
32137 -	2
46342 -	2
60033 - HARVARD	2
60118 - DUNDEE	2
46383 -	2
33433 -	2
60079 -	2
60042 - ISLAND LAKE	2
53181 -	2
60012 - CRYSTAL LAKE	2
60156 - LAKE IN THE HILLS	1
60171 - RIVER GROVE	1
60133 - HANOVER PARK	1
60517 - WOODRIDGE	1
60411 - CHICAGO HEIGHTS	1
60525 - LA GRANGE	1
61046 - LANARK	1
60561 - DARIEN	1
65109 -	1
60071 - RICHMOND	1
60029 - GOLF	1
60065 -	1
60120 - ELGIN	1
60088 - GREAT LAKES	1
53179 -	1
46323 -	1
61348 - OGLESBY	1
60154 - WESTCHESTER	1
60643 - CHICAGO	1
60462 - ORLAND PARK	1
60804 - CICERO	1
60527 - WILLOWBROOK	1
60163 - BERKELEY	1
60540 - NAPERVILLE	1
60652 - CHICAGO	1
60463 - PALOS HEIGHTS	1
60438 - LANSING	1
60565 - NAPERVILLE	1
60521 - HINSDALE	1
60181 - VILLA PARK	1
60139 - GLENDALE HEIGHTS	1
60185 - WEST CHICAGO	1
60140 - HAMPSHIRE	1

60192 - HOFFMAN ESTATES	1
60510 - BATAVIA	1
60464 - PALOS PARK	1
60653 - CHICAGO	1
60506 - AURORA	1
60664 -	1
61614 - PEORIA	1
60446 - ROMEOVILLE	1
60175 - SAINT CHARLES	1
61036 - GALENA	1
60302 - OAK PARK	1
61108 - ROCKFORD	1
60126 - ELMHURST	1
60523 - OAK BROOK	1
60633 - CHICAGO	1
60194 - SCHAUMBURG	1
60430 - HOMEWOOD	1
46385 -	1
46324 -	1
53402 -	1
46311 -	1
30066 -	1
46368 -	1
53185 -	1
53144 -	1
53125 -	1
46307 -	1
53105 -	1
60021 - FOX RIVER GROVE	1
32162 -	1
53029 -	1
60034 - HEBRON	1
49125 -	1
33418 -	1
60103 - BARTLETT	1
33160 -	1
60106 - BENSENVILLE	1
60108 - BLOOMINGDALE	1
34287 -	1
49953 -	1
53143 -	1
53168 -	1
Total	6,597

Attachment- 12b
Geographic Service Area



Attachment- 12C
NorthShore Glenbrook vs. NorthShore Evanston Campus Locations



Alternatives to the Planned Project

The Applicant seeks to centralize NorthShore University HealthSystem hospital Cardiovascular Institute procedural suites at NorthShore Glenbrook Hospital. After a long and thoughtful deliberation process, the Applicant has determined that the planned Project is, in balance, the most effective and least costly alternative to the other alternatives considered when balancing access and quality with costs. The following narrative compares the planned Project to alternative options.

Over the past several years, NorthShore considered a multitude of options to ensure NorthShore facilities meet the space planning requirements of the latest clinical techniques, while also positioning NorthShore system for growth in unique market conditions. The Applicant has considered the following alternatives:

A) Continue to perform projected cases in existing hospital operating rooms (\$0)

The Applicant considered doing nothing and maintaining the majority of its services at its NorthShore Highland Park and NorthShore Evanston campuses. This option was rejected due to the rapid development of innovative technologies and the growing focus on minimally invasive therapies. As such, NorthShore determined it is critical that it is able to upgrade the outdated and aging equipment within its cardiac surgery, vascular surgery and cardiac catheterization laboratory spaces to improve quality of care, efficiencies and patient and physician satisfaction. For example, the age of NorthShore's existing catheterization lab equipment results in significant downtime forcing procedures to be rescheduled and creating access issues. Since NorthShore's existing catheterization labs are insufficiently sized to accommodate the latest technology, it is not feasible to simply replace aging and outdated equipment within existing space. Attached as Attachment- 13A are images contrasting the cramped current cath labs with the proposed spacious, state-of-the-art NorthShore Glenbrook cath labs.

Furthermore, this alternative would not allow the Applicant to design its cardiovascular procedural space and support and waiting areas with a focus on patient safety related to COVID-19 pandemic. The planned Project includes a number of design elements aimed at reducing transmission of the novel coronavirus, including improved negative/positive pressure relationship monitoring, additional isolation rooms and more hand wash stations.

Finally, the Glenview campus location is centrally location between its six hospital locations and particularly within the four legacy NorthShore hospital locations (Highland Park, Skokie, Evanston and Glenview). This provides the best geographical access to the largest amount of its patient base to serve its community-at-large.

As such, the alternative of doing nothing was rejected.

B) Construct an addition for cardiovascular services at the NorthShore Evanston Hospital campus (\$104,000,000)

The Applicant considered creating an addition to the NorthShore Evanston Hospital campus to secure the appropriate footprint for new cardiac catheterization technology. While this plan had some benefits, it was ultimately rejected due to NorthShore Evanston Hospital's suboptimal location and space constraints. As shown in Attachment- 12C, Evanston is geographically

Alternatives to the Planned Project

isolated with Lake Michigan immediately to its east and major transportation arteries well to the west of the location. Also, it is near the southern edge of NorthShore's market area. Conversely, NorthShore Glenbrook Hospital is more centrally located within the market area and is easily accessible, as it is right off an I-294 exit and a short drive from I-94. Further, the NorthShore Evanston Hospital campus does not have sufficient space to allow for any future growth beyond this addition. The planned Project allows for future expansion by adding up to three additional floors on top of the Project site. Given the aging population and the co-morbidities associated with that shifting age cohort, it is vital that the Applicant has the ability to accommodate future growth. This would not be possible at NorthShore Evanston Hospital.

Also note that this alternative was a smaller scope than the Project and did not provide for the modernization of its open heart surgery operating rooms which are also in need of modernization.

One benefit of moving most of the CV procedures out of NorthShore Evanston Hospital is that it will provide additional space for other service line requirements at NorthShore Evanston Hospital. Space at NorthShore Evanston Hospital is at a premium due to the relatively small acreage of the site and the full utilization of the current facilities by other vital acute care services.

Based on the foregoing, this alternative was rejected, because the Applicant determined such an important investment cardiovascular services should be easily accessible to as many patients as possible and should enable future expansion to address growing demand within the geographic service area.

C) Build a brand new cardiovascular hospital. (\$200,000,000+)

Health care facilities seeking to develop a core focus at single location for a system of health care facilities may always consider a greenfield option because a greenfield site avoids many of the complexities of attaching services to an existing building. In this case, however, this would be a more expensive option and there are limited sites within the target area that would be appropriate and available to build an appropriately sized hospital. In general, the minimum requirement for a small specialty hospital would be 20 acres. In order to construct a new cardiovascular hospital, the Applicant would have to build space, buy equipment and staff for a plethora of support services that are currently in place at NorthShore Glenbrook Hospital. For example, many of the support services, facilities and personnel outlined in Attachment- 21 and Attachment- 22 would need to be duplicated at a new facility. Along with the cost of acquiring land, this alternative was prohibitively expensive and is not necessary given the ability to add an addition to the current NorthShore Glenbrook hospital campus with no disruption in patient care.

D) Construct a cardiovascular institute at Glenbrook Hospital (Proposed). (\$170,520,604)

To best serve the needs of the residents of NorthShore's market area, the Applicant ultimately decided to centralize cardiovascular procedural and surgical suites at NorthShore Glenbrook Hospital.

Alternatives to the Planned Project

Attachment- 13A

Current NorthShore Evanston Hospital Cath Lab



Rendering of Future NorthShore Glenbrook Hospital Cath Lab



Size of Project

NorthShore University HealthSystem seeks to construct cardiovascular procedural and recovery space at NorthShore Glenbrook Hospital campus. The Project includes 6 Class C operating rooms, 9 cardiac catheterization labs, 19 Phase I recovery rooms and 31 Phase I recovery rooms. Pursuant to Section 1110 of the Administrative Code, the state standard is 2,750 gsf per operating room, 1,800 dgsf per cardiac cath lab, 180 dgsf per Phase I recovery station and 400 dgsf per Phase II recovery station. The proposed department gross square footage is shown in the table below. The Project size meets the State standards.

DEPARTMENT / SERVICE	PROPOSED DGSF	ROOMS	STATE STANDARD	DIFFERENCE	MET STANDARD?
Recovery Rooms	15,748 dgsf	Phase I: 19 Phase II: 31	15,820 dgsf	n/a	Yes
Operating Rooms (Class C)	8,789 dgsf	6	16,500 dgsf	n/a	Yes
Cath Labs	11,835 dgsf	9	16,200 dgsf	n/a	Yes

Project Services Utilization

The Applicant is proposing to add the following rooms as part of this Project:

- 9 cardiac catheterization labs¹
- 3 Class C operating rooms dedicated to cardiac surgery including open heart surgery
- 3 Class C operating rooms dedicated to vascular and other non-cardiac endovascular procedures

The table below shows the historical volumes performed by NorthShore medical staff physicians at NorthShore Glenbrook Hospital, NorthShore Evanston Hospital, NorthShore Highland Park Hospital, and NorthShore Skokie Hospital within each of the delineated categories, and the associated projected volumes at the proposed NorthShore Glenbrook Hospital Cardiovascular Institute space:

	2019 Volume ²	Projected Volume at Glenbrook Hospital
Cardiac Catheterization/EP	5,887 procedures	5,387 procedures
Open Heart Surgery	284 cases	209 cases
Vascular Surgery	752 cases	1,001 cases ³

As documented in the table below, the projected volumes are sufficient to support the need for 9 cardiac catheterization labs, the establishment of an open heart program to include 3 key rooms for cardiac surgery and 3 vascular surgery operating rooms.

Table 1110.235(c)(5)(A)
Projected Utilization

Year	Dept/Service	Rooms/Program	Projected Utilization	State Standard	Met Standard?
2025	Cardiac Catheterization	9 key rooms	5,387 procedures	> 400 procedures per room	Yes

¹ One NorthShore Glenbrook Hospital cardiac catheterization room will be relocated from the general surgical area of NorthShore Glenbrook Hospital. After relocation, this existing key room will accommodate interventional radiology cases.

² Due to the COVID-19 pandemic and the associated unprecedented disruption of care, the Applicant has based its utilization projections on 2019 utilization data (and associated trends in vascular care).

³ The projected utilization case estimate for vascular surgery is based on the current utilization of 752 cases at the NorthShore hospitals (which alone justifies the number of proposed rooms) plus a 33.1% vascular surgery growth rate. This high growth rate is based on the recent addition of another vascular surgeon, Dr. Cheong Lee, who joined NorthShore Medical Group as an employed physician in 2018. Dr. Lee's practice has dramatically increased access to vascular services at NorthShore and resulted in a 44% growth rate in these cases from 2018 to 2019. Further, a new vascular surgeon, Dr. William Jhonghoon Yoon, joined NorthShore Medical Group as a physician employee this month (May 2021). With his added capacity, the Applicant expects, 1,001 cases or 4,005 hours of vascular surgery at NorthShore Glenbrook Hospital by the second full year of utilization (2025).

Project Services Utilization

2025	Open Heart Surgery	1 program	209 cases	> 200 cases ⁴	Yes
2025	Vascular Surgery	3 key rooms	4,005 hours ⁵	> 1,500 hours per room	Yes

By signing the certification page of this application, the Applicant attests that NorthShore Glenbrook Hospital will achieve the target utilization standards for the affected services as delineated above within the first two years of operation of the Cardiovascular Institute at NorthShore Glenbrook Hospital.

⁴ Three key rooms will be operated as part of the NorthShore Glenbrook Hospital Cardiovascular Institute open heart program. NOTE: Justification for establishment of the open heart program is not measured by room but rather by a threshold of 200 open heart cases. Other cardiac surgeries will also be performed in these key rooms and the rooms will be managed in such a way that urgent and emergent cases can be accommodated regardless of what other cases are being performed in the CVI surgical suite at any given time.

⁵ On average, vascular surgeries last approximately four hours per case, including clean-up and set-up time. Accordingly, 2019 vascular surgery cases amount to 3,008 hours, which is sufficient to support the need for three vascular surgery operating rooms. Anticipated growth described above will result in 1,001 vascular surgery cases or 4,005 hours of operating room time.

Unfinished or Shell Space

The proposed project does not entail unfinished or shell space, so this section is not applicable.

Section VII Service Specific Review Criteria

This project does not involve any of the following services. Therefore the associated sections are not applicable.

- Medical/Surgical, Obstetric, Pediatric and Intensive Care
- Comprehensive Physical Rehabilitation
- Acute Mental Illness and Chronic Mental Illness
- In-Center Hemodialysis
- Non-hospital based ASTC Services
- Selected Organ Transplantation
- Kidney Transplantation
- Subacute Care Hospital Model
- Community-Based Residential Rehabilitation Center
- Long Term Acute Care Hospital
- Clinical Service Areas Other than Categories of Service
- Freestanding Emergency Center Medical Services
- Birth Center

Section V, Service Specific Review Criteria**Open Heart Surgery****Criterion 1110.220(b)(1) – Peer Review**

NorthShore University HealthSystem, including NorthShore Glenbrook Hospital has a robust multi-disciplinary peer review process in place. This process includes peer review processes associated with existing open heart programs at other system hospitals. When the open heart category of services is moved to the NorthShore Glenbrook Hospital campus from NorthShore Evanston Hospital, NorthShore Glenbrook Hospital will implement a process to review cardiac surgery program performance and data and ensure that there is continual improvement in the process related to patient care, service and safety.

The Cardiology Quality Committee will be chaired by a member from the Division of Cardiology. Additional Committee membership is made of up of clinical, Interventional and Electrophysiology Cardiologist and Quality Improvement. Additional representatives on the Committee without voting privileges may also personnel from Risk Management, Quality and Nursing.

Unbiased reviewers will evaluate each case and present salient summaries to the committee for discussion and voting on the final event classification assigned. All potentially avoidable cases attributable to patient care factors are forwarded to the Cardiology Department chairman for review after which a meeting is held between the chairman and the treating physicians and/or nurses to review the case and make recommendations for future care under similar circumstances.

Individual cases for review will be identified from the following list of indicators and any other referrals received since the previous meeting date:

- Bleeding Event w/in 72 Hours
- Cardiac Perforation
- Cardiac test complications
- Cardiac Valve Injury
- Coronary Venous Dissection
- CVA/Stroke
- Hemothorax
- Intracoronary Significant Dissection
- Lead Dislodgement
- Patient grievance regarding medical care
- Pneumothorax
- Procedural Mortality
- Tamponade
- Vascular Complications Requiring Treatment
- Referred from other Departments

The NorthShore University HealthSystem Quality Department and Professional Staff Office will maintain provider-specific peer review and other quality information concerning practitioners in a secure file. Physician performance profiles will be utilized by the Division Chair at time of reappointment. Peer review data, performance data, and physician correspondence regarding cases reviewed or evaluations of the committee will be available only to authorized individuals.

Section V, Service Specific Review Criteria

Open Heart Surgery

Criterion 1110.220(b)(2) – Establishment of Open Heart Surgery

This project is justified because it involves the closure of the NorthShore Evanston Hospital open heart program and the transition of those NorthShore Evanston Hospital cases and a portion of those currently performed at NorthShore Highland Park Hospital to NorthShore Glenbrook Hospital (in excess of 750 cardiac catheterizations and 200 open heart cases).

It is anticipated that NorthShore Evanston Hospital and NorthShore Highland Park Hospital will maintain emergency cardiovascular care capabilities, specifically as it relates to patients presenting with an acute ST elevation myocardial infarction or need for emergent pacemaker implantation. It is estimated that for cardiac surgery cases, this will likely be in the order of approximately 1 to 1.5 cases per week or 50 to 75 per year. Both NorthShore Evanston Hospital and NorthShore Highland Park Hospital will retain full clinical and diagnostic capabilities to provide cardiac care to the admitted populations at their respective sites of service. It is anticipated that patients with complex heart failure will be transferred to NorthShore Glenbrook Hospital. Similarly, critically ill patients with either primary or major secondary cardiovascular diagnoses will be transferred from their respective NorthShore Evanston Hospital or NorthShore Highland Park ICUs to NorthShore Glenbrook Hospital for advanced care.

Section V, Service Specific Review Criteria

Open Heart Surgery

Criterion 1110.220(b)(3) – Unnecessary Duplication of Services

Under this criterion, the “applicant must document that the volume of any existing services within 20 miles travel time from the applicant will not be reduced below 350 procedures annually for adults and 75 procedures annually for pediatrics.” The Applicant notes that most of the providers in the relevant service area operate below the 350 adult case figure. This lower number of cases is consistent with current industry expectations, including the Cardiovascular Institute program as currently operated by NorthShore which performed 625 cardiac surgery cases in 2019, 284 of those cases consisting of open heart cases. The change in case management toward more minimally invasive cases which has far fewer complications and much shorter recovery times is a trend that has persisted for the last 30 years and is discussed further in Attachment- 21B. Ultimately, the much lower level of open heart cases is a major success story in cardiovascular care which has no downsides in

the Chicago metropolitan area where cases counts are still more than adequate to ensure surgeon and surgical team competency.

As at least 200 cases will be performed at NorthShore Glenbrook Hospital after the Project is complete based on the transfer of cases from other NorthShore campuses, the Applicant meets the requirement for the relocation (establishment) of the service to NorthShore Glenbrook Hospital.

The purpose of the Project is to centralize cardiac procedures for NorthShore patients which are currently being performed by three cardiac surgeons employed by NorthShore Medical Group. As such, no change in referral patterns for cardiac surgery relative to non-NorthShore hospitals is anticipated. Those three surgeons do not perform cases at any non-NorthShore facilities.

Section V, Service Specific Review Criteria

Open Heart Surgery

Criterion 1110.220(b)(4) – Support Services

In connection with the cardiac cath program that it already operates, NorthShore Glenbrook Hospital provides most of the following support services and facilities. As NorthShore Evanston Hospital's open heart program will close at the time of the opening of the new Cardiovascular Institute building at NorthShore Glenbrook Hospital, any services that are not currently available at NorthShore Glenbrook Hospital will transition from NorthShore Evanston Hospital in a seamless manner in connection with the transition and be immediately available on a 24-hour basis:

- Surgical and cardiological team appropriate for age group served.
- Cardiac surgical intensive care unit.
- Emergency room with full-time director, staffed 24 hours for cardiac emergencies with acute coronary suspect surveillance area and voice communication linkage to the ambulance service and the coronary care unit.
- Catheterization-angiographics laboratory services.
- Nuclear medicine laboratory.
- Cardiographics laboratory, electrocardiography, including exercisestress testing, continuous electrocardiograph (ECG) monitoring and phonocardiography.
- Echocardiography service. This may or may not be a part of the cardiographics laboratory.
- Hematology laboratory.
- Microbiology laboratory.
- Blood gas and electrolyte laboratory with microtechniques for pediatric patients.
- Electrocardiographic laboratory.
- Blood bank and coagulation laboratory.
- Pulmonary function unit.

- Installation of pacemakers.
- Organized cardiopulmonary resuscitation team or capability.
- Preventive maintenance program for all biomedical devices, electrical installations, and environmental controls.
- Renal dialysis.

By signing the certification page within this application, the Applicant attests to the above.

Section V, Service Specific Review Criteria

Open Heart Surgery

Criterion 1110.220(b)(5) – Staffing

In connection with the cardiac cath program that it already operates, NorthShore Glenbrook Hospital provides most of the following staff. As NorthShore Evanston Hospital's open heart program will close at the time of the opening of the new Cardiovascular Institute building at NorthShore Glenbrook Hospital, any staff that are not currently available at NorthShore Glenbrook Hospital will transition from NorthShore Evanston Hospital in a seamless manner in connection with the transition:

- Two cardiac surgeons (at a minimum, one of which must be certified and the other qualified by the American Board of Thoracic Surgery) with special competence in cardiology, including cardiopulmonary anatomy, physiology, pathology and pharmacology; extracorporeal perfusion technique; and interpretation of catheterization angiographic data.
- Operating room nurse personnel (registered nurse (RN), surgical technician).
 - The nurse-to-patient ratio for the ICU module of open heart surgery patient care should be no less than one nurse per one patient in the immediate recovery phase and one nurse per 2 patients thereafter.
- Anesthesiologists (board certified by the American Board of Anesthesiology).
- Adult cardiologists (board certified by the American Board of Internal Medicine with subspecialty certification in cardiology).
- Physician who is board certified in anatomic and clinical pathology, with special expertise in microbiology, bloodbanking, lab aspects of blood coagulation, blood gases and electrolytes.
- Pump technician, or operator of the extracorporeal pump oxygenator, who should have in-depth experience on the active cardiac surgical service that includes perfusion physiology, mechanics of pump operation, sterile technique, and use of monitoring equipment, whether he/she be a physician, nurse or technician.
- Radiologic technologist experienced in angiographic principles and catheterization procedure techniques who is experienced in the usage, operation and care of all catheterization equipment.

By signing the certification page within this application, the Applicant attests to the above.

The Applicant anticipates that the following NorthShore University HealthSystem physician leaders will continue to function in their current roles. Their CVs can be found in Attachment- 21C.

- Dr. Gregory Mishkel: Chief of Cardiology
- Dr. Cheong Jun Lee: Division Chief of Vascular Surgery
- Dr. Hyde Russell: Division Chief of Cardiac Surgery

NorthShore University HealthSystem employs the following cardiovascular surgeons who will transition open heart surgery cases to NorthShore Glenbrook Hospital at the time of the opening of the new Cardiovascular Institute building:

- Eugene Fernandes, MD
- Hyde Russell, MD
- Jonathan Somers, MD

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

2100 Pfingsten Road
Glenview, IL 60026
www.northshore.org

(847) 657-5600
(847) 657-5990 Fax

jhall@northshore.org

Mr. Stephen Scogna
Chief Executive Officer and President
Northwest Community Hospital
800 West Central Road
Arlington Heights, IL 60005

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Mr. Scogna,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

The approximate date when we expect the new program at NorthShore Glenbrook Hospital to open is the 1st quarter of 2024. The cardiac catheterization services at NorthShore Skokie Hospital will be formally moved to NorthShore Evanston Hospital in the interim on or around July 1st or as soon thereafter as the HFSRB approves the application. For your information, the NorthShore hospitals are annualizing to perform 585 cardiovascular procedures during the current fiscal year. The cardiac catheterization procedure numbers originating from the NorthShore Skokie Hospital geographic service area have historically been annualizing around 895 procedures. All of these cases are expected to be accommodated at other NorthShore hospitals going forward. Please send your response to me at jhall@northshore.org within 15 days of receipt of this letter. If we do not receive a response from you during that time, it will be assumed that you agree that these plans will not have an adverse impact on your program.

If you have any questions about NorthShore's plans, please feel free to contact me.

Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

Ms. Terika Richardson
President
Advocate Lutheran General Hospital
1775 Dempster Street
Park Ridge, IL 60068

2100 Pfingsten Road
Glenview, IL 60026
www.northshore.org

(847) 657-5600
(847) 657-5990 Fax

jhall@northshore.org

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Ms. Richardson,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

The approximate date when we expect the new program at NorthShore Glenbrook Hospital to open is the 1st quarter of 2024. The cardiac catheterization services at NorthShore Skokie Hospital will be formally moved to NorthShore Evanston Hospital in the interim on or around July 1st or as soon thereafter as the HFSRB approves the application. For your information, the NorthShore hospitals are annualizing to perform 585 cardiovascular procedures during the current fiscal year. The cardiac catheterization procedure numbers originating from the NorthShore Skokie Hospital geographic service area have historically been annualizing around 895 procedures. All of these cases are expected to be accommodated at other NorthShore hospitals going forward. Please send your response to me at jhall@northshore.org within 15 days of receipt of this letter. If we do not receive a response from you during that time, it will be assumed that you agree that these plans will not have an adverse impact on your program.

If you have any questions about NorthShore's plans, please feel free to contact me.

Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

Mr. Scott Teffeteller
President and Chief Executive Officer
Amita Health Resurrection Medical Center
7435 West Talcott Avenue
Chicago, IL 60631

2100 Pfingsten Road
Glenview, IL 60026
www.northshore.org

(847) 657-5600
(847) 657-5990 Fax

jhall@northshore.org

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Mr. Teffeteller,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

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If you have any questions about NorthShore's plans, please feel free to contact me.

Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

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Glenview, IL 60026
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Ms. Gabrielle Cummings
President
NorthShore University HealthSystem
Highland Park Hospital
777 Park Avenue West
Highland Park, IL 60035

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Ms. Cummings,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

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If you have any questions about NorthShore's plans, please feel free to contact me.

Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

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Glenview, IL 60026
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Mr. Douglas Silverstein
President
NorthShore University HealthSystem
Evanston Hospital
2650 Ridge Avenue
Evanston, IL 60201**Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program**

Dear Mr. Silverstein,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

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If you have any questions about NorthShore's plans, please feel free to contact me.

Sincerely,

Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

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Mr. Anthony Guaccio
President and Chief Executive Officer
Swedish Hospital
5145 North California Avenue
Chicago, IL 60625

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Mr. Guaccio,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

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If you have any questions about NorthShore's plans, please feel free to contact me.

Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

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Mr. Dia Nichols
President and Chief Executive Officer
Amita Health Alexian Brothers Medical Center
800 Biesterfield Road
Elk Grove Village, IL 60007

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Mr. Nichols,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

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If you have any questions about NorthShore's plans, please feel free to contact me.

Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

Ms. Elizabeth Early
Interim President
Gottlieb Memorial Hospital
701 West North Avenue
Melrose Park, IL 60160

2100 Pfingsten Road
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(847) 657-5990 Fax

jhall@northshore.org

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Ms. Early,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

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If you have any questions about NorthShore's plans, please feel free to contact me.

Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

Mr. Jesse Peterson Hall
President
NorthShore University HealthSystem
Glenbrook Hospital
2100 Pfingsten Road
Glenview, IL 60026

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jhall@northshore.org

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Mr. Peterson Hall,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

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If you have any questions about NorthShore's plans, please feel free to contact me.

Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

Mr. Matt Primack
President
Advocate Condell Medical Center
801 South Milwaukee Avenue
Libertyville, IL 60048

2100 Pfingsten Road
Glenview, IL 60026
www.northshore.org

(847) 657-5600
(847) 657-5990 Fax

jhall@northshore.org

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Mr. Primack,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

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Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

Mrs. Susan Nordstrom Lopez
President
Advocate Illinois Masonic Medical Center
836 West Wellington Avenue
Chicago, IL 60657

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Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Mrs. Nordstrom Lopez,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

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Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

Mr. Tad Gomez
President
Loyola University Medical Center
Foster G. McGaw Hospital
2160 South First Steet
Maywood , IL 60153

2100 Pfingsten Road
Glenview, IL 60026
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jhall@northshore.org

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Mr. Gomez,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

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Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

Ms. Pamela Dunley
President and Chief Executive Officer
Elmhurst Hospital
155 East Brush Hill Road
Elmhurst, IL 60126

2100 Pfingsten Road
Glenview, IL 60026
www.northshore.org

(847) 657-5600
(847) 657-5990 Fax

jhall@northshore.org

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Ms. Dunley,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

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Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

Ms Karen A. Lambert
President
Advocate Good Shepherd Hospital
450 West Highway 22
Barrington, IL 60010

2100 Pflingsten Road
Glenview, IL 60026
www.northshore.org

(847) 657-5600
(847) 657-5990 Fax

jhall@northshore.org

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Ms Lambert,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

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Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

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jhall@northshore.org

Mr. Israel Rocha
Chief Executive Officer
John H. Stroger, Jr. Hospital of Cook County
1901 West Harrison Street
Chicago, IL 60612

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Mr. Rocha,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

The approximate date when we expect the new program at NorthShore Glenbrook Hospital to open is the 1st quarter of 2024. The cardiac catheterization services at NorthShore Skokie Hospital will be formally moved to NorthShore Evanston Hospital in the interim on or around July 1st or as soon thereafter as the HFSRB approves the application. For your information, the NorthShore hospitals are annualizing to perform 585 cardiovascular procedures during the current fiscal year. The cardiac catheterization procedure numbers originating from the NorthShore Skokie Hospital geographic service area have historically been annualizing around 895 procedures. All of these cases are expected to be accommodated at other NorthShore hospitals going forward. Please send your response to me at jhall@northshore.org within 15 days of receipt of this letter. If we do not receive a response from you during that time, it will be assumed that you agree that these plans will not have an adverse impact on your program.

If you have any questions about NorthShore's plans, please feel free to contact me.

Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

Mr. Omar Lateef
Chief Executive Officer
Rush University Medical Center
1653 West Congress Parkway
Chicago, IL 60612

2100 Pfingsten Road
Glenview, IL 60026
www.northshore.org

(847) 657-5600
(847) 657-5990 Fax

jhall@northshore.org

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Mr. Lateef,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

The approximate date when we expect the new program at NorthShore Glenbrook Hospital to open is the 1st quarter of 2024. The cardiac catheterization services at NorthShore Skokie Hospital will be formally moved to NorthShore Evanston Hospital in the interim on or around July 1st or as soon thereafter as the HFSRB approves the application. For your information, the NorthShore hospitals are annualizing to perform 585 cardiovascular procedures during the current fiscal year. The cardiac catheterization procedure numbers originating from the NorthShore Skokie Hospital geographic service area have historically been annualizing around 895 procedures. All of these cases are expected to be accommodated at other NorthShore hospitals going forward. Please send your response to me at jhall@northshore.org within 15 days of receipt of this letter. If we do not receive a response from you during that time, it will be assumed that you agree that these plans will not have an adverse impact on your program.

If you have any questions about NorthShore's plans, please feel free to contact me.

Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

Ms. Michele Mazurek
Chief Administrator, SHS, CNO
Mount Sinai Hospital
California Avenue at 15th Street
Chicago, IL 60608

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Ms. Mazurek,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

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If you have any questions about NorthShore's plans, please feel free to contact me.

Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

#21-016

Jesse Peterson Hall, FACHE
President

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Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

Mr. Michael Zenn
Chief Executive Officer
University of Illinois Hospital & Health Sciences System
1740 West Taylor Street
Suite 1400 M/C 693
Chicago, IL 60612

2100 Pfingsten Road
Glenview, IL 60026
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(847) 657-5600
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jhall@northshore.org

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Mr. Zenn,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

The approximate date when we expect the new program at NorthShore Glenbrook Hospital to open is the 1st quarter of 2024. The cardiac catheterization services at NorthShore Skokie Hospital will be formally moved to NorthShore Evanston Hospital in the interim on or around July 1st or as soon thereafter as the HFSRB approves the application. For your information, the NorthShore hospitals are annualizing to perform 585 cardiovascular procedures during the current fiscal year. The cardiac catheterization procedure numbers originating from the NorthShore Skokie Hospital geographic service area have historically been annualizing around 895 procedures. All of these cases are expected to be accommodated at other NorthShore hospitals going forward. Please send your response to me at jhall@northshore.org within 15 days of receipt of this letter. If we do not receive a response from you during that time, it will be assumed that you agree that these plans will not have an adverse impact on your program.

If you have any questions about NorthShore's plans, please feel free to contact me.

Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

Ms. Julie L. Creamer
President
Northwestern Memorial Hospital
251 East Huron Street
Chicago, IL 60611

2100 Pfingsten Road
Glenview, IL 60026
www.northshore.org

(847) 657-5600
(847) 657-5990 Fax

jhall@northshore.org

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Ms. Creamer,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

The approximate date when we expect the new program at NorthShore Glenbrook Hospital to open is the 1st quarter of 2024. The cardiac catheterization services at NorthShore Skokie Hospital will be formally moved to NorthShore Evanston Hospital in the interim on or around July 1st or as soon thereafter as the HFSRB approves the application. For your information, the NorthShore hospitals are annualizing to perform 585 cardiovascular procedures during the current fiscal year. The cardiac catheterization procedure numbers originating from the NorthShore Skokie Hospital geographic service area have historically been annualizing around 895 procedures. All of these cases are expected to be accommodated at other NorthShore hospitals going forward. Please send your response to me at jhall@northshore.org within 15 days of receipt of this letter. If we do not receive a response from you during that time, it will be assumed that you agree that these plans will not have an adverse impact on your program.

If you have any questions about NorthShore's plans, please feel free to contact me.

Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

VIA FEDERAL EXPRESS

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Mr. Norman Stephens
Chief Executive Officer
Vista Medical Center
1324 North Sheridan Road
Waukegan, IL 60085

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Mr. Stephens,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

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If you have any questions about NorthShore's plans, please feel free to contact me.

Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Glenbrook Hospital

May 26, 2021

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2100 Pfingsten Road
Glenview, IL 60026
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(847) 657-5600
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jhall@northshore.org

Mr. Kenneth Preston Jones
President and Chief Executive Officer
Amita St. Francis Hospital
355 Ridge Avenue
Evanston, IL 60202

Re: Notice of Planned CON/COE Applications for Relocation of Open Heart Surgery Program and Closure of Cardiac Catheterization Program

Dear Mr. Jones,

NorthShore University HealthSystem is in the process of preparing a certificate of need application for submission to the Illinois Health Facilities and Services Review Board ("HFSRB") for the relocation of its Evanston Hospital open heart surgery category of service to NorthShore Glenbrook Hospital. In connection with this plan, the NorthShore Evanston Hospital open heart surgery category of service will be closed and a related application will be filed. Relatedly, NorthShore Skokie Hospital will close its cardiac catheterization program and will file a Certificate of Exemption application with the HFSRB. In accordance with application HFSRB rules, we are notifying hospitals with similar programs in the area to advise each program of these plans so each provider may assess whether it believes these plans will impact its program. As these plans are internal re-organizations of NorthShore's service lines, we do not believe they will impact your program, however, you are receiving this letter based on HFSRB requirements because your hospital is located within a certain proximity of NorthShore Glenbrook Hospital and NorthShore Skokie Hospital.

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If you have any questions about NorthShore's plans, please feel free to contact me.

Sincerely,



Jesse Peterson Hall, FACHE
President
Glenbrook Hospital

Evolution of Coronary Artery Disease Care

As part of its multi-hospital specialization plan, the Cardiovascular Institute procedural building at NorthShore Glenbrook Hospital is coming to fruition many years after technological developments in percutaneous interventions (PCI), particularly those related to drug eluting stents and associated technologies, revolutionized the treatment of coronary artery disease (CAD) resulting in more patients having less invasive and non-surgical approaches to the treatment of their CAD. These advancements include a greater understanding of who should be treated preferentially with medical therapy rather than intervention (be it percutaneous or surgical). When it is needed, percutaneous interventions have become safe enough that it is no longer the standard of practice to have surgical standby or even a surgical program to safely perform the PCI. Innovations have also transformed other aspects of cardiovascular care, which were previously the singular domain of surgeons, including treatment of atrial fibrillation, closure of left atrial appendages, patent foramen ovale, atrial septal defects, patent ductus arteriosus, some ventricular septal defects and replacement or repairs of all 4 heart valves.

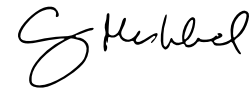
Among many innovations, coronary angioplasty with stenting has had the greatest impact on the treatment of coronary artery disease (CAD). Central to the pathogenesis of CAD is the development of atherosclerotic lesions in coronary arteries. These lesions, if unstable or clinically significant, are frequently treated with percutaneous coronary intervention (PCI), which usually involves balloon angioplasty and stent implantation. PCI is one of the most common procedures performed in a contemporary cardiovascular clinical practice. Coronary artery stenting is the treatment of choice for patients requiring coronary angioplasty. Stents, and particularly drug-eluting stents, reduce the risk of restenosis.

The angioplasty procedures performed many years ago (and corresponding with the development of HFSRB standards for the development of cardiology programs which are still on the books today) were without stent deployment, a technique that is now referred as plain old balloon angioplasty (POBA). POBA undoubtedly revolutionized the treatment of CAD. However, the outcomes were compromised by re-narrowing of coronary arteries due to acute vessel closure due to dissection or elastic recoil, late vascular remodeling and neointimal proliferation. Elastic recoil usually occurred in 5–10% patients immediately (minutes-hours) after the procedure leading to a rebound occlusion of the artery, which often led to severe complications, including acute myocardial infarction (AMI) and the need for emergency coronary artery bypass grafting (CABG). Angioplasty-induced endothelial cells denudation and medial tearing also exposed circulating blood cells to the sub-endothelial matrix leading to platelet aggregation and thrombosis, and hence contributing to acute closure of the artery. Balloon injury also initially induced medial smooth muscle cell necrosis followed by a phase of coordinated proliferation of medial smooth muscle cells and subsequent migration of these cells into the intima in response to the release of chemo-attractants such as the platelet-derived growth factor. Though more minimally invasive, POBA was not nearly as effective a life-saving treatment as CABG. As such CABG programs proliferated in the 1980s and had a significant and positive impact on the treatment of CAD.

As mentioned above, it was during those early years of angioplasty and cardiac surgery that the HFSRB rules were developed. Coronary stents were soon after developed to overcome the co-morbidities associated with POBA, by scaffolding the balloon-dilated artery, sealing the dissection flaps and preventing late recoil. The vast majority of PCI procedures performed currently involve balloon angioplasty and stent deployment. Because the risks and adverse outcomes of angioplasty has been so substantially reduced by these medical advancements in cardiology, the reliance on CABG as a basis for treating CAD has reduced substantially. This is a positive outcome in the development of effective and minimally invasive treatments for CAD.

Also reducing the demand for open procedures in cardiac surgery has been the medical advancements in valve replacement which is necessary to treat aortic stenosis. Aortic stenosis occurs when the heart's aortic valve thickens and calcifies, preventing the valve from opening fully, which limits blood flow from your heart to the rest of your body. Aortic stenosis can cause chest pain, fainting, fatigue, leg swelling and shortness of breath. It may also lead to heart failure and sudden cardiac death. Valve replacement surgery for aortic stenosis has had a major role in extending longevity. Major open heart procedures have begun to be replaced, in part, by minimally trans-catheter aortic valve replacement (TAVR) procedures. With TAVR, patients avoid open-heart surgery to repair severe heart valve problems and the TAVR procedure allows patients to go home sooner, and it allows patients to be treated when they may not have had other treatment options in the past.

Despite these transformative changes, open heart procedures will continue to be a vital component of any well-developed cardiovascular services program, as many of the treatments discussed above are performed in conjunction with a surgeon as part of a "Heart Team" approach. Further, there will always be some patients who are not going to receive effective intervention without a more invasive procedure performed by a cardiac surgeon rather than by a cardiologist.



**CURRICULUM VITAE
GREGORY JON MISHKEL**

Date of Birth: April 15, 1957
Place of Birth: Sydney, Australia
Citizenship: American, Canadian, Australian

OFFICE ADDRESS:

Evanston Hospital, NorthShore University Health
2650 Ridge Avenue
Division of Cardiology, Walgreen Building
Suite 3507, Room 3545
E-mail: g mishkel@northshore.org, g mishkel@gmail.com

EDUCATION:

BSc: 1975-1978 University of Toronto
MD: 1978-1982 University of Toronto

Internal Medicine

1982-1985 University of Toronto

Cardiology

1985-1987 McMaster University
1987-1988 Clinical Research Fellow in Echocardiography with
Dr. Harry Rakowski, Toronto General Hospital,
University of Toronto
1988-1989 Interventional Cardiology Training Fellowship,
Ottawa Heart Institute, University of Ottawa
1989-1990 Research fellowship with Dr. Jack Hirsh,
McMaster University Staff Cardiologist,
Hamilton General Hospital

MBA: 2015-2017 Indiana University Kelley School of Business

SCHOLARSHIPS, AWARDS, HONORS:

2018 University of Illinois (Springfield), Innovator of the Year for Health Care Applications
2018 Communicator Award winner for Excellence for Cardia
2017 Regional Emmy winner for Cardia
2015 Business of Medicine Fellowship, Kelley School of Business
2013 Medical Innovator – Sangamon County Medical Society for treatment of aortic stenosis
2008 Emmy nomination for host of PBS television show “CARDIA”
2007 Silver “Telly” Award for host of PBS television show “CARDIA”
2006 Sangamon County Medical Society recipient of “Medical Miracles” provider

1989 Canadian Heart Foundation Fellowship

1989 Honorary Flight Surgeon Award, Air Canada

1980 Walter F. Watkins Scholarship for Academic Excellence, Faculty of Medicine, University of Toronto

1975 Ontario Scholarship & Gibson Scholarship, University College, University of Toronto

PROFESSIONAL QUALIFICATIONS

Vascular Medicine

American Board of Vascular Medicine: Diplomate in Vascular Medicine and Diplomate in Endovascular Medicine, 2006-2015

Cardiology

Specialty Certification, Royal College of Physicians of Canada (1987)

Specialty Certification, American Board of Internal Medicine (1987, #102472)

Added Qualification in Interventional Cardiology, American Board of Internal Medicine (2000-2010, #102472)

Fellow, Royal College of Physicians of Canada (1986)

Fellow American College of Cardiology (1990)

Fellow Society Cardiac Angiography & Interventions (1996)

Fellow American College of Chest Physicians (1997)

Internal Medicine

Certification, Royal College of Physicians of Canada (1986)

Certification, American Board of Internal Medicine (1985, #102472, Exp.2020)

General Practice

Licentiate 55950, Medical Council of Canada (1983)

F.L.E.X. 00557, New York State (1982)

Active Licenses

State of California A43975 (1987)

College of Physicians and Surgeons of Ontario 51211 (1984)

State of Illinois 036083781 (1991)

COMMITTEE, PROFESSIONAL, AND EDUCATIONAL ACTIVITIES:

2019-present Allstate Foundation/Judson B Branch Chair of Cardiology and Clinical Professor of Medicine, Pritzker School of Medicine, University of Chicago. VP of Cardiac Operations, Northshore University Health and Co-Director NorthShore University Health Cardiovascular Institute

2019-present CEC member “The INSIGHT Trial” Protocol # P0942 -Evaluation of the Pantheris OCT- ImaGing AtHerectomy SysTem For Treatment of In-Stent Restenosis (ISR) Lesions In Lower Extremity Arteries

2015-present Physician Consultant. HealthGroup Trust

2014–2018 Executive Medical Director, Prairie Heart Institute

2014–2018 Clinical Events Committee, VISION Trial Protocol Number P0555, Evaluation of the Pantheris Optical Coherence Tomography Imaging Atherectomy System. Avinger, Inc.

2013–2018 Clinical Professor of Medicine, Southern Illinois University School of Medicine

2013–present Physician Advisor, medical compliance. The Greeley Company

2012–2014 Chairman, Clinical Events Committee, The CVI Trial: A Prospective, Controlled, Multi-Center, Open, Single Arm Study for the Treatment of Subjects Presenting De Novo Occluded/Stenotic or Re-occluded/Restenotic Lesions of the Superficial Femoral or Popliteal Arteries using a Paclitaxel-Coated Percutaneous Angioplasty Catheter. Protocol Number TP 1027-D CV Ingenuity Corporation

2008–present Medical legal work: Spiros Law (plaintiff); Quinn, Johnston, Henderson, Pretorius & Cerulo (defense); Meyers Kenrick Giuffre & Evans (plaintiff); Londrigan, Potter & Randle (plaintiff); Livingston Barger (defense); Davis Law (plaintiff); Arnold, Todaro & Welch (defense); Cunningham, Meyer & Vedrine (defense, 2 separate cases), Law Offices of Maria Rubio (plaintiff), Cassidy Schade (defense), Hickey, Melia & Assoc (defense)

2006 “Prairie Real World Drug-Eluting Stent Database.” FDA Circulatory System Devices Advisory Panel, Washington D.C.

2005 State of Illinois Department of Public Health’s Stroke Task Force

2005–present Financial consulting: Expert Connect, Coleman Research; Gerson Lehrman, Guidepoint Global; Senzar Asset Management; Frontpoint Healthcare; Easton Associates

2004–2013 Associate Clinical Professor of Medicine, Southern Illinois University School of Medicine, Springfield, IL

2004–2007 National executive member for Guidant Carotid Stent training programs, St. Paul, MN

2002–present Host of PBS Television show, “CARDIA”, Springfield, IL

2002–2004 Medical Executive Committee, St. John’s Hospital, Springfield, IL

1998–2004 Interventional Committee, Society of Cardiac Angiography and Intervention

1998–2004 Laboratory Studies Committee, Society of Cardiac Angiography and Intervention

1996–1999 Executive Committee, Secretary, Prairie Cardiovascular Consultants, Ltd., Springfield, IL

1994–2002 Credentials Committee, St. John’s Hospital, Springfield, IL

1994 U.S. House of Representatives, Education and Labor Committee Forum on Health Care Reform

1993 Intensive Care Committee, St. John’s Hospital, Springfield, IL

1991–1992 Assistant Professor of Medicine, University of Toronto, Toronto, Canada

1990 Clinical Skills Tutor, Undergraduate Medical Program, McMaster University Medical School, Hamilton, Canada

1989 Steering Committee, Multicentre Trial on the Prevention of Restenosis after PTCA using Omega-3 Fatty Acids and/or Low Molecular Weight Heparin

1986 Clinical Skills Tutor, Undergraduate Medical Program, McMaster University Medical School, Hamilton, Canada

1979–1980 Chairman, University of Toronto Medical School’s “Boat People Refugee Fund”, Toronto, Canada

SOCIETY MEMBERSHIPS:

Fellow, Society of Cardiac Angiography and Interventions

Fellow, Royal College of Physicians of Canada

Fellow, American College of Cardiology

Ontario Medical Association

Canadian Medical Association

Canadian Cardiovascular Society

Illinois State Medical Society

Sangamon County Medical Society

PEER REVIEWED PAPERS:

1. Christopher U. Meduri, MD, MPH; Dean J. Kereiakes, MD; Vivek Rajagopal, MD; Raj R. Makkar, MD; Daniel O'Hair, MD; Axel Linke, MD; Ron Waksman, MD; Vasilis Babliaros, MD; Robert C. Stoler, MD; Gregory J. Mishkel, MD; David G. Rizik, MD; Vijay S. Iyer, MD, PhD; John Schindler, MD; Dominic J. Allocco, MD Ian T. Meredith, AM, MD, PhD; Ted E. Feldman, MD; Michael J. Reardon, MD. Pacemaker Implantation and Dependency after Transcatheter Aortic Valve Replacement in the REPRISE III Trial. *J Am Heart Assoc.* 2019;8:e012954. DOI: 10.1161/JAHA.119.012954.
2. Michael J. Reardon, MD¹; Ted E. Feldman, MD²; Christopher U. Meduri, MD, MPH³; Raj R. Makkar, MD⁴; Daniel O'Hair, MD⁵; Axel Linke, MD⁶; Dean J. Kereiakes, MD⁷; Ron Waksman, MD⁸; Vasilis Babliaros, MD⁹; Robert C. Stoler, MD¹⁰; Gregory J. Mishkel, MD¹¹; David G. Rizik, MD¹²; Vijay S. Iyer, MD¹³; Thomas G. Gleason, MD¹⁴; Didier Tchétché, MD¹⁵; Joshua D. Rovin, MD¹⁶; Thibault Lhermusier, MD, PhD¹⁷; Didier Carrié, MD, PhD¹⁷; Robert W. Hodson, MD¹⁸; Dominic J. Allocco, MD¹⁹; Ian T. Meredith, AM, MBBS, PhD¹⁹; for the Reprise III Investigators Two-Year Outcomes After Transcatheter Aortic Valve Replacement With Mechanical vs Self-expanding Valves: The REPRISE III Randomized Clinical Trial. *JAMA Cardiol.* Published online February 27, 2019. doi:10.1001/jamacardio.2019.0091
3. Guerrero M, Urena M, Himbert D, Wang DD, Eleid M, Kodali S, George I, Chakravarty T, Mathur M, Holzhey D, Pershad A, Fang HK, O'Hair D, Jones N, Mahadevan VS, Dumonteil N, Rodés-Cabau J, Piazza N, Ferrari E, Ciaburri D, Nejjari M, DeLago A, Sorajja P, Zahr F, Rajagopal V, Whisenant B, Shah PB, Sinning JM, Witkowski A, Eltchaninoff H, Dvir D, Martin B, Attizzani GF, Gaia D, Nunes NSV, Fassa AA, Kerendi F, Pavlides G, Iyer V, Kaddissi G, Witzke C, Wudel J, **Mishkel G**, Raybuck B, Wang C, Waksman R, Palacios I, Cribier A, Webb J, Bapat V, Reisman M, Makkar R, Leon M, Rihal C, Vahanian A, O'Neill W, Feldman T. 1-Year Outcomes of Transcatheter Mitral Valve Replacement in Patients With Severe Mitral Annular Calcification. *J Am Coll Cardiol.* **2018** May 1;71(17):1841-1853. doi: 10.1016/j.jacc.2018.02.054
4. Feldman TE, Reardon MJ, Rajagopal V, Makkar RR, Bajwa TK, Kleiman NS, Linke A, Kereiakes DJ, Waksman R, Thourani VH, Stoler RC, Mishkel GJ, Rizik DG, Iyer VS, Gleason TG, Tchétché D, Rovin JD, Buchbinder M, Meredith IT, Götzberg M, Bjursten H, Meduri C,

- Salinger MH, Allocco DJ, Dawkins KD. Effect of Mechanically Expanded vs Self-Expanding Transcatheter Aortic Valve Replacement on Mortality and Major Adverse Clinical Events in High-Risk Patients With Aortic Stenosis: The REPRISE III Randomized Clinical Trial. *JAMA*. 2018;319:27–37.
5. Goswami NJ, Mishkel G. Don't try this at home versus What would you do? (editorial) *JACC Cardiovasc Interv*. 2017 Apr 10;10(7):742-743. doi: 10.1016/j.jcin.2017.01.030.
 6. Omran J, Mahmud E, White CJ, Aronow HD, Drachman DE, Gray W, Abdullah O, Abu-Fadel M, Firwana B, Mishkel G, Al-Dadah AS. Proximal balloon occlusion versus distal filter protection in carotid artery stenting: A meta-analysis and review of the literature. *Catheter Cardiovasc Interv*. 2017 Apr;89(5):923-931. doi: 10.1002/ccd.26842. Epub 2016 Nov 12
 7. Gaglia MA Jr, Goodroe R, Mishkel G, Gharib W, Tabrizchi A, Nazif T, Wang J, Scott T, Lopez M, Steinberg D, Gai J, Torguson R, Waksman R. Promus Premier versus Xience V and Taxus Liberte in contemporary US practice (REWARDS Premier Registry). *Cardiovasc Revasc Med*. 2017 Jan - Feb;18(1):16-21. doi: 10.1016/j.carrev.2016.09.010. Epub 2016 Sep 30.
 8. Aggarwal V, Mishkel G, Goswami N. Percutaneous exclusion of a rapidly enlarging left main coronary artery aneurysm using coils and an Amplatzer™ septal occluder. *Catheter Cardiovasc Interv*. 2016 Aug;88(2):209-14. Doi: 10.1002/ccd.26487. pmid: 26945542
 9. Goel SS, Dilip Gajulapalli R, Athappan G, Philip F, Gupta S, Murat Tuzcu E, Ellis SG, Mishkel G, Kapadia SR. Management of drug eluting stent in-stent restenosis: A systematic review and meta-analysis. *Catheter Cardiovasc Interv*. 2016 May;87(6):1080-91. Doi: 10.1002/ccd.26151. PMID: 26613637.
 10. Escaned J, Echavarría-Pinto M, García-García HM, van de Hoef TP, de Vries T, Kaul P, Raveendran G, Altman JD, Kurz HI, Brechtken J, Jeremias A, Baucum J, Moreno R, Meuwissen M, Mishkel GJ, van Geuns RJ, Levite H. Prospective Assessment of the Diagnostic Accuracy of Instantaneous Wave-Free Ratio to Assess Coronary Stenosis Relevance: Results of ADVISE II International, Multicenter Study (Adenosine Vasodilator Independent Stenosis Evaluation II) *JACC: Cardiovascular Interventions*, Volume 8, Issue 6, May 2016, Pages 824-833.
 11. Papireddy MR, Nandish S, Mishkel GJ. Recurrent Spontaneous Coronary Artery Dissection: First Case Report in Men with Three Episodes of Spontaneous Coronary Dissection in Separate Vascular Territories. 2015 Aug 7. doi: 10.1002/ccd.26112 [Epub ahead of print].
 12. Darki A, Goswami NJ, Mishkel GJ. Endovascular Management of Splenic Artery Aneurysms: Case Series Using Telescoping Guide and Cage/Coil Technique. *Catheterization Cardiovascular Interventions* 2014 Dec 1;84(7):E65-70. doi: 10.1002/ccd.25268. Epub 2014 Aug 30.
 13. Patel Y, Vassileva C, Mishkel GJ. (2013), Rare complication of ventricular septal defect in three patients following transcatheter aortic valve replacement. *Catheterization Cardiovascular Intervention* doi: 10.1002/ccd.25207.
 14. Mehta M, Valdés F, Nolte T, Mishkel GJ, Jordan W, Gray B, Eskandari M, Botti C. One-year outcomes from an international study of the Ovation Abdominal Stent Graft System for endovascular aneurysm repair. *Journal of Vascular Surgery : official publication, the Society for Vascular Surgery [and] International Society for Cardiovascular Surgery, North American Chapter* 26 August 2013 (Article in Press doi: 10.1016/j.jvs.2013.06.065).
 15. Vassileva C, McNeely C, Mishkel GJ, Boley T, Markwell S, Hazelrigg S. Gender Differences in Long-Term Survival of Medicare Beneficiaries Undergoing Mitral Valve Operations. *The Annals of Thoracic Surgery*. 2 August 2013 (Article in Press doi:10.1016/j.athoracsur.2013.04.055).
 16. Vassileva C, Mishkel GJ, McNeely C, Boley T, Markwell S, Scaife S, Hazelrigg S. Long Term Survival of Patients Undergoing Mitral Valve Repair and Replacement: A Longitudinal Analysis of Medicare Fee-for-Service Beneficiaries. *Circulation*. published online April 8, 2013; *Circulation* is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75223; Copyright © 2013 American Heart Association, Inc. All rights reserved. Print ISSN: 0009-7322. Online ISSN: 1524-4539.

17. Ormiston JA, Charles O, Mann T, Hall JJ, McGarry T, Cannon LA, Webster MW, Mishkel GJ, Underwood PL, Dawkins KD. Final 5-year results of the TAXUS ATLAS, TAXUS ATLAS Small Vessel, and TAXUS ATLAS Long Lesion clinical trials of the TAXUS Liberté paclitaxel-eluting stent in de-novo coronary artery lesions. *Coronary Artery Dis*. 2013 Jan;24(1):61-8. doi: 10.1097/MCA.0b013e32835b3982. PMID:23232250[PubMed-in process]
18. Kereiakes DJ, Cannon LA, Ormiston JA, Turco MA, Mann T, Mishkel GJ, McGarry T, Wang H, Underwood P, Dawkins KD. Propensity-matched patient-level comparison of the TAXUS Liberté and TAXUS element (ION) paclitaxel-eluting stents. *Am J Cardiol*. 2011 Sept 15; 108(6):823-37. doi: 10.1016/j.amjcard.2011.05.011. Epub 2011 Jul30. PMID:21803319[PubMed-indexed for MEDLINE].
19. Cannon LA, Kereiakes DJ, Mann T, Popma JJ, Mooney MR, Mishkel GJ, Lee TC, Wilson BH, Stuckey TD, Orlow S, McGarry T, Ring ME, Kellett MA, Underwood P, Dawkins KD. A prospective evaluation of the safety and efficacy of TAXUS Element paclitaxel-eluting coronary stent implantation for the treatment of de novo coronary artery lesions in small vessels: the PERSEUS Small Vessel trial.*EuroIntervention*. 2011Mar;6(8):920-7, 1-2. doi: 10.4244/EIJV618A161. PMID.21330238[PubMed-indexed for MEDLINE] Free Article.
20. Goldstein JA, Mishkel GJ. Choosing the correct therapeutic option for acute limb ischemia. *Interventional Cardiology*, 3(3), 381–389 (2011).
21. Douglas PS, Garcia MJ, Haines, DE, Lai, WW, Manning WJ, Patel AR, Picard MH, Polk DM, Ragosta M, Ward RP, Weiner RB, Bailey SR, Alagona P, Anderson JL, DeCara JM, Dolor RJ, Fazel R, Gillespie JA, Heidenreich PA, Leykum LK, Marine JE, Mishkel GJ, Pellikka PA, Raff GL, Vijayaraghavan K, Weissman NJ, Wu KC, Wolk MJ, Hendel RC, Kramer CM, Min JK, Patel MR, Shaw L, Stainback RF, Allen JM.
ACCF/ASE/AHA/ASNC/HFSA/HRS/SCAI/SCCM/SCCT/SCMR 2011 appropriate use criteria for echocardiography: A report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, American Society of Echocardiography, American Heart Association, American Society of Nuclear Cardiology, Heart Failure Society of America, Heart Rhythm Society, Society for Cardiovascular Angiography and Interventions, Society of Critical Care Medicine, Society of Cardiovascular Computed Tomography, and Society for Cardiovascular Magnetic Resonance Endorsed by the American College of Chest Physicians. *J Am Coll Cardiol*; 57: 1126-1166.
22. Weissman NJ, Turco MA, Ormiston JA, Mann T, Cannon LA, McGarry TF, Webster MWI, Hall JJ, Lucca MJ, Mishkel GJ, Wu C-J, Mandinov L, Dawkins KD. Improved strut coverage and less late incomplete apposition with TAXUS Liberté versus TAXUS Express: A volumetric intravascular ultrasound analysis from the TAXUS ATLAS and TAXUS ATLAS long lesion studies. *Cardio Revasc Med* 12; 2011; 247-257.
23. Weissman NJ, Turco MA, Ormiston JA, Mann T, Cannon LA, McGarry TF, Webser MW, Hall JJ, Lucca MJ, Mishkel GJ, Wu CJ, Mandinov L, Dawkins KD. Improved strut coverage and less late incomplete apposition with thin-strut TAXUS Liberté vs. TAXUS Express: the importance of stent platform design for drug-eluting stents. *Cardiovasc Revasc Med*. 2011 Jul-Aug;12(4):247-57. doi: 10.1016/j.carrev.2010.09.008. Epub 2010 Dec 3.PMID:21130708[PubMed-indexed for MEDLINE].
24. Aronow HD, Gray W, Ramee S, Mishkel GJ, Schreiber T, Wang H. Predictors of Neurological Events Associated With Carotid Artery Stenting in High-Surgical-Risk Patients: Insights From the Cordis Carotid Stent Collaborative. *Circ Cardiovasc Interv* 2010;3;577-584; originally published online November 23, 2010
<http://circinterventions.ahajournals.org/content/3/6/577.full>).
25. Schreiber TL, Strickman N, Davis T, Kumar V, Mishkel GJ, Foster M, Donohoe D, Britto S, Ansel G, on behalf of the CASES-PMS Investigators. Carotid artery stenting with emboli protection surveillance study : Outcomes. *J Am Coll Cardiol* 2010; 56:49-57.

26. Goswami N, Gaffigan M, Berrio G, Plessa A, Pfeiffer A, Markwell S, Mishkel GJ. Long-term outcomes of drug-eluting stents versus bare-metal stents in saphenous vein graft disease: Results from the Prairie “Real World” Stent Registry. *Catheter Cardiovasc Interv* 2010; 75: 93-100.
27. Kolluri R, Holloway R, Mishkel GJ. Internal mammary artery and inferior epigastric artery collateralization in a patient with aortoiliac occlusive disease. *Vasc Med* 2009;14:93-94.
28. Turco MA, Ormiston JA, Popma JJ, Hall JJ, Mann T, Cannon LA, Webster MW, Mishkel GJ, O’Shaughnessy CD, McGarry TF, Mandinov L, Dawkins KD, Baim DS. Reduced risk of restenosis in small vessels and reduced risk of myocardial infarction in long lesions with the new thin-strut TAXUS Liberté stent: 1-year results from the TAXUS ATLAS program. *J Am Coll Cardiol Intv* 2008;1:699-709.
29. Mishkel GJ, Moore AL, Markwell SJ, Shelton ME. Correlates of late and very late thrombosis of drug eluting stents. *Am Heart J* 2008;156:141-7.
30. Gurm HS, Yadav JS, Fayad P, Katzen BT, Mishkel GJ, Bajwa TK, Ansel G, Strickman NE, Wang H, Cohen SA, Massaro JM, Cutlip DE for the SAPPHERE Investigators. Long term results of carotid stenting versus endarterectomy in high-risk patients. *N Engl J Med* 2008; 358:1572-9.
31. Kelley M, Mishkel GJ. Successful Complex Bifurcation stenting of a Native SFA after failed FemoroPopliteal Bypass. *Catheter Cardiovasc Interv* 2007;70:602-609.
32. Moses JW, Weisz G, Mishkel GJ, et al. The SIRIUS-DIRECT trial: A multi-center study of direct stenting using the sirolimus-eluting stent in patients with de novo native coronary artery lesions *Catheter Cardiovasc Interv* 2007;70:505–512.
33. Mishkel GJ, Varghese JJ, Moore AL, Aguirre FV, Markwell SJ, Shelton ME. Short- and long-term clinical outcomes of coronary drug-eluting stent recipients presenting with chronic renal disease. *J Invasiv Cardiol* 2007;19:331-337.
34. Weisz G, Moses JW, Teirstein PS, Holmes Jr DR, Raizner AE, Satler LF, Mishkel GJ, Wilensky RL, Wang P, Kuntz RE, Popma JJ, Leon MB. Safety of sirolimus-eluting stenting and its effects on restenosis in patients with unstable angina pectoris (a SIRIUS Substudy). *Am J Cardiol* 2007;99: 1044-50.
35. Turco MA, Ormiston JA, Popma JJ, Mandinov L, O’Shaughnessy CD, Mann T, McGarry TF, Wu CJ, Chan C, Webster MWI, Jall JJ, Mishkel GJ, Cannon LA, Baim DS, Koglin J. Polymer-based, paclitaxel-eluting TAXUS Liberté stent in de novo lesions: The pivotal TAXUS ATLAS trial. *J Am Coll Cardiol* 2007;49:1676-1683.
36. Sick PB, Schuler G, Hauptmann KE, Grube E, Yakubov S, Turi ZG, Mishkel GJ, Almany S, Holmes DR. Initial worldwide experience with the WATCHMAN left atrial appendage system for stroke prevention in atrial fibrillation. *J Am Coll Cardiol* 2007;49:1490-1495.
37. Mishkel GJ, Moore AL, Markwell SJ, Ligon RW. Bivalirudin versus Heparin Plus Glycoprotein IIb/IIIa Inhibitors in Drug-Eluting Stent Implantations in Absence of Acute Myocardial Infarction: Clinical and Economic Results. *J Invasiv Cardiol* 2007;19:63-68.
38. Mishkel GJ, Moore AL, Markwell SJ, Shelton CM, Shelton ME. Long term outcomes after management of restenosis or thrombosis of drug-eluting stents. *J Am Coll Cardiol* 2007;49;181-184.
39. Ouriel K, Wholey MH, Fayad P, Katzen BT, Whitlow P, Frentzko M, Kuntz RE, Wechsler L, Hopkins N, Satler L, Mishkel GJ, Yadav JS. Feasibility trial of carotid stenting with and without an embolus protection device. *J Endovasc Ther* 2005;12: 525-37.
40. Nikolsky E, Kosinski E, Mishkel GJ, et al. Impact of obesity on revascularization and restenosis rates after bare-metal and drug-eluting stent implantation (from the TAXUS-IV trial). *Am J Cardiol* 2005;95:709-715.
41. Mishkel GJ, Goswami NJ. A Practical Approach to Endovascular Therapy for Infrapopliteal Disease and the Treatment of Critical Leg Ischemia: Savage or Salvage Angioplasty? *J Invas Cardiol* 2005;17(1).
42. Yadav, Wholey, Kuntz, Fayad, Katzen, Mishkel GJ, et al. Protected Carotid-Artery Stenting versus Endarterectomy in High-Risk Patients. *N Engl J Med* 2004;351:1493-1501.

43. Stone GW, Teirstein PS, Rubenstein R, Schmidt D, Whitlow PL, Kosinski EJ, Mishkel GJ, Power JA. A Prospective, Multicenter, Randomized Trial of Percutaneous Transmyocardial Laser Revascularization in Patients With Non-recanalizable Chronic Total Occlusions. *J Am Coll Cardiol* 2002;39(10):1581-1587.
44. Lucore CL, Trask R, Mishkel GJ, Rocha-Singh KJ, Shelton ME, Mikell F, Ligon RW. Impact of abciximab and coronary stenting on outcomes and costs of percutaneous coronary interventions in a community hospital. *Catheter Cardiovasc Interv* 2001;12:135-142.
45. Blankenship JC, Mishkel GJ, Chambers CE, et al. Ad hoc coronary intervention. *Catheter Cardiovasc Interv* 2000;49(2):130-34.
46. Wilentz JR, Mishkel GJ, McDermott D, et al. Outpatient coronary stenting using the femoral approach with vascular sealing. *J Invas Cardiol* 1999;11:709-717.
47. Wilentz JR, Mishkel GJ, McDermott D, Ravi K, Fox JT, Reimers CD, Maydick S. Outpatient coronary stenting: femoral approach with vascular sealing. *Herz* 1999;24: 624-33.
48. Mishkel GJ, Lucore CL, Ligon RW, et al. Clopidogrel for the prevention of stent thrombosis. *J Am Coll Cardiol* 1999;34:1884-90.
49. Rocha-Singh KJ, Mishkel GJ, Katholi RE, et al. Clinic predictors of improved long-term blood pressure control after successful stenting of hypertensive patients with obstructive renal artery atherosclerosis. *Catheter Cardiovasc Interv* 1999;47:167.
50. Katholi RE, Taylor GJ, McCann WP, et al. Nephrotoxicity from contrast media: Attenuation with theophylline. *Radiology* 1995;195:17-22.
51. Fallen EL, Kamath MV, Mishkel GJ, Massel D. Neurocardiac responses to acute coronary balloon occlusions in humans. *J Interven Cardiol* 1994;7:251-259.
52. Mishkel GJ, Willinsky R. Combined PTCA and micro-coil embolization of left internal mammary artery graft. *Catheter Cardiovasc Diag* 1992;27:141-146.
53. Mishkel GJ, Biagioni E, Stolberg E. Total occlusion of the circumflex artery with collateral supply from the conus artery: A Case Report. *Catheter Cardiovasc Diag* 1991;23:194-197.
54. Mishkel GJ, Marquis JF. A case of restenosis and accelerated left main coronary artery disease presenting six months after successful PTCA. *Can J Cardiol* 1989;5:187-190.
55. Mickleborough L, Ovil Y, Wilson G, et al. A simplified concept for a bileaflet atrioventricular valve which maintains annular-papillary muscle continuity. *J Cardiac Surg* 1989;4:58-68.
56. Turpie AG, Robinson JG, Doyle DJ, et al. Prevention of left ventricular mural thrombosis in acute transmural anterior myocardial infarction: A double blind trial comparing high dose with low dose subcutaneous calcium heparin. *New Engl J Med* 1989;320:352-357.

INVITED PAPERS:

1. Rocha-Singh KJ, Mishkel GJ, Goswami NJ, Kelley MP. Adult clinical cardiology self assessment: Peripheral Vascular Disease: Renal and Mesenteric Arterial Disease [monograph on the Internet]. American College of Cardiology; 2009 [cited 2009 May 18]. Available from: <http://www.cardiosource.com/sapsInfo/index.asp>.
2. Mishkel GJ. Carotid Stenting: Where Are We Today? *Springfield Clinic Medical Bulletin* 2001;28(1)6.
3. Mishkel GJ. Focus on Cardiology: PTCA. *Ontario Medicine* 1991;10 (17):18-19.
4. Mishkel GJ, Higginson L. Percutaneous transluminal coronary angioplasty. A Review. *Cardiology in Practice*, 1989;1(3):3-5.

BOOK CHAPTERS:

1. Shelton ME, Mishkel GJ, Moore AL, Pfeiffer AM. Late stent thrombosis: incidence, significance, outcomes, management. *Recent Advances in Cardiology*, D. Rowland, B. Clarke, eds. 2008;15:131-144.
2. Mishkel GJ, Cairns JA. Cardiovascular effects of omega-3 polyunsaturated fatty acids (fish oils) in antithrombotic therapy. *Balliere's Clinical Haematology J. Hirsh, ed.* 1990;3 (3):625-650.

REVIEWER:

Japanese Circulation Journal

External reviewer for Appropriate Use Criteria for the combined TTE/TEE and Stress Echocardiography ACC/AHA guidelines

Vascular Medicine

Journal of the American College of Cardiology

Journal of the American College of Cardiology Interventions

Nature Clinical Practice Cardiovascular Medicine

Catheterization and Cardiovascular Interventions

American Journal of Cardiology

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 Fellow, Cardiothoracic Surgery

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 Post-Doctoral Research Fellow

BOARD CERTIFICATION AND MEDICAL LICENSURE

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 American Board of Thoracic Surgery, June 11, 2010, Certificate #7696
 American Board of Thoracic Surgery Congenital Subspecialty, Certificate #122
 Illinois Medical License: #036-108346, expiration 7/31/2021
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ACADEMIC APPOINTMENTS

August 2018- present Clinical Assistant Professor
 University of Chicago, Pritzker School of Medicine
 July 2010-Oct 2015 Assistant Professor, Northwestern University
 Feinberg School of Medicine, Department of Surgery

HOSPITAL APPOINTMENTS

March 2017 – present Chief, Division of Cardiac Surgery, NorthShore University
 Nov 2015-present Attending Surgeon, NorthShore University HealthSystem
 July 2010-Oct 2015 Attending Surgeon, Ann & Robert H. Lurie Children's
 Hospital of Chicago
 (formerly Children's Memorial Hospital, Chicago)
 July 2010-Oct 2015 Attending Surgeon, Northwestern Memorial Hospital, Chicago
 April 2011-Oct 2015 Attending Surgeon, Northwest Community Hosp., Arlington Hts
 Feb. 2012-Oct 2015 Attending Surgeon, Central DuPage Hospital, Winfield, IL
 April 2012-Oct 2015 Clinical Associate, University of Chicago Medical Center, Chicago
 May 2012-Oct 2015 Attending Surgeon, Rush University Medical Center, Chicago

AWARDS, HONORS

AOA Honor Society, elected 1998

PROFESSIONAL SOCIETY MEMBERSHIPS

Member, Society of Thoracic Surgeons
 Member, International Society for Heart & Lung Transplantation

TEACHING

June 14, 2010 Trauma Grand Rounds, Children's Memorial Hospital
 Traumatic Injury of the Chest
 Feb. 16, 2011 Grand Rounds, West Suburban Hospital, Oak Park, IL
 Adult Congenital Heart Disease
 Oct. 14, 2011 4th Annual Congenital Heart Disease in the Adult Symposium
 Cleveland Clinic Foundation, Cleveland, OH

	Common Arterial Trunk: Anatomical Nomenclature and Its Surgical Significance
Nov. 24, 2011	Echo Northwestern, Chicago, IL
	Atrioventricular Septal Defects and the "Mitral" Valve
Dec. 2, 2011	Holiday Heart Failure, Northwestern University FSM, Chicago
	Heart Failure in the Adult with Congenital Heart Disease
Jan. 9, 2012	Founders Board, CMRC, Chicago, IL
	Surgery for Adult Congenital Heart Disease

PROFESSIONAL AND SCIENTIFIC ACTIVITYGuest Reviewer

Annals of Thoracic Surgery
 Journal of Cardiac Surgery
 World Journal of Pediatric and Congenital Heart Surgery

RESEARCH GRANTS/CONTRACTS

Markl M, Bonow R, Carr J, Collins J, Malaisrie C, McCarthy P, Russell H[M].
 Comprehensive evaluation of the thoracic aorta in aortic valve disease
 4/1/2012 - 6/1/2014
 Sponsor: Bracco Diagnostics, Inc

Rigsby, Cynthia K (PI)
 Functional cardiovascular 4D MRI in congenital heart disease
 9/1/2012 – 6/30/2017
 Sponsor: Northwestern University/NIH Subcontract

Pahl, Elfriede (PI)
 Interagency Registry for Mechanically Assisted Circulatory Support (INTERMACS)
 Sponsor: National Heart, Lung, and Blood Institute

SCHOLARLY BIBLIOGRAPHY**Original, Peer-Reviewed Research Articles**

1. Ardehali A, Laks H, Russell H[M], Levine M, Shpiner R, Lackey S, Ross D. Modified reperfusion ad ischemia-reperfusion injury in human lung transplantation. *J Thorac Cardiovasc Surg* 2003;126(6):1929-34.
2. Jeevanandam V, Russell H[M], Mather P, Furukawa S, Anderson A, Grzywacz F, Raman J. J. Maxwell Chamberlain Memorial Paper: A one-year comparison of prophylactic donor tricuspid annuloplasty in heart transplantation. *Ann Thorac Surg* 2004;78:759-66.
3. Pillai JB, Russell HM, Raman J, Jeevanandam V, Gupta MA. Increased expression of poly(ADP-ribose) polymerase-1 contributes to caspase-independent myocyte cell death during heart failure. *Am J Physiol Heart Circ Physiol* 2005;288(2):H486-96.
4. Martin RS, Kincaid EH, Russell HM, Meredith JW, Chang MC. Selective management of cardiovascular dysfunction in posttraumatic SIRS and sepsis. *Shock* 2005;23(3):202-8.
5. Jeevanandam V, Russell H[M], Mather P, Furukawa S, Anderson A, Raman J. Donor tricuspid annuloplasty during orthotopic heart transplantation: long-term results of a prospective controlled study.” *Ann Thorac Surg* 2006; 82(6):2089-95.
6. Russell HM, de Hoyos AI, et al. Successful management of recurrent Actinomyces esophagobronchial fistula with self-expanding covered esophageal stent. *J Thorac Cardiovasc Surg* 2007;134:1086-1087.
7. Russell HM, Jacobs ML, Anderson RH, Mavroudis C, Spicer D, Corcraïn E, Backer CL. A simplified categorization for common arterial trunk. *J Thorac Cardiovasc Surg* 2011;141(3):645-53.
8. Russell HM, Forsberg K, Backer CL, Wurlitzer KC, Kaushal S, Mavroudis C. Outcomes of radial incision of the tricuspid valve for ventricular septal defect closure. *Ann Thorac Surg* 2011;92:685-690.
9. Bhalla T, Sawardekar A, Russell H[M], Tobias JD. The role of methylene blue in the pediatric patient with vasoplegic syndrome. *World J Pediatr Congenit Heart Surg* 2011; 2:652-5.
10. Backer CL, Deal BJ, Kaushal S, Russell HM, Tsao S, Mavroudis C. Extracardiac versus intra-atrial lateral tunnel Fontan: extracardiac is better. *Semin Thorac Cardiovasc Surg Pediatr Card Surg Annu* 2011;14:4-10
11. Russell HM, Forsberg K, Backer CL, Wurlitzer K, Kaushal S, Mavroudis C. Outcomes of radial incision of the tricuspid valve for ventricular septal defect closure. *Ann Thorac Surg* 2011;92:685-690.

12. Weiss SL, Russell HM, Lay A, Backer CL. Calcified right atrial myxoma in an adolescent. *World J Pediatr Congenit Heart Surg* 2011;2:523-525.
13. Kaushal S, Backer CL, Popescu AR, Walker BL, Russell HM, Koenig PR, Rigsby CK, Mavroudis C. Intramural coronary length correlates with symptoms in patients with anomalous aortic origin of the coronary artery. *Ann Thorac Surg* 2011;92:986-92.
14. Rudra H, Mavroudis C, Backer CL, Kaushal S, Russell H[M], Stewart RD, Webb C, Sullivan C. The arterial switch operation: a 25-year experience with 258 patients. *Ann Thorac Surg* 2011;92:1742-6.
15. Russell HM, Kulat B, Zingle N, Backer CL. Successful bridge to transplant using the TandemHeart® left ventricular assist device in a pediatric patient. *World J Pediatr Congenit Heart Surg* 2012;3:249-250.
16. Cheng JW, Russell HM, Stewart RD, Thomas J, Backer CL, Mavroudis C. The role of tricuspid valve surgery in the late management of tetralogy of Fallot: collective review. *World J Pediatr Congenit Heart Surg* 2012;3:492-498.
17. Backer CL, Russell HM. Truncus and transposition: the Chicago approach. *Cardiol Young* 2012(Suppl):22:732-738.
18. Russell HM, Mavroudis CD, Backer CL, Mavroudis C. Long-term follow-up after truncal valve repair. *Cardiol Young* 2012;22:718-723.
19. Russell HM, Pasquali SK, Jacobs JP, Jacobs ML, O'Brien SM, Mavroudis C, Backer CL. Outcomes of repair of common arterial trunk with truncal valve surgery: a review of the Society of Thoracic Surgeons Congenital Heart Surgery Database. *Ann Thorac Surg* 2012;93:164-9.
20. Backer CL, Russell HM, Kaushal S, Rastatter JC, Rigsby CK, Holinger LD. Pulmonary artery sling: current results with cardiopulmonary bypass. *J Thorac Cardiovasc Surg* 2012;143:144-51.
21. Backer CL, Russell HM, Deal BJ. Optimal initial palliation for patients with functionally univentricular hearts. *World J Pediatr Congenit Heart Surg* 2012;3:165-70.
22. Backer CL, Russell HM, Wurlitzer KC, Kaushal S, Rastatter JC, Rigsby CK. Primary resection of Kommerell diverticulum and left subclavian artery transfer. *Ann Thorac Surg* 2012;94:1612-8.
23. Russell HM, Johnson SL, Wurlitzer KC, Backer CL. Outcomes of surgical therapy for infective endocarditis in a pediatric population – a 21-year review. *Ann Thorac Surg* 2013; 96:171-5.
24. Backer CL, Russell HM, Pahl E, Gambetta K, Kindel SJ, Gossett JG, Hardy C, Deal BJ. Heart transplantation for the failing Fontan. *Ann Thorac Surg* 2013;96:1413-9.

25. Freud LR, Koenig PR, Russell HM, Patel A. Left Ventricular thrombus formation after repair of anomalous left coronary artery from the pulmonary artery. *World J Pediatr Congenit Heart Surg*. 2014;5:342-4.
26. Devlin PJ, Russell HM, Mongé, Patel A, Costello JM, Spicer DE, Anderson RH, Backer CL. Doubly committed and juxta-arterial ventricular septal defect: outcomes of the aortic and pulmonary valves. *Ann Thorac Surg* 2014;97:2134-40.
27. Backer CL, Monge MC, Russell HM, Popescu AR, Rastatter JC, Costello JM. Reoperation after vascular ring repair. *Semin Thorac Cardiovasc Surg Pediatr Card Surg Annu*. 2014;17:48-55.
28. Malaisrie SC, McDonald E, Kruse J, Li Z, McGee EC Jr, Abicht TO, Russell H, McCarthy PM, Andrei AC. Mortality while waiting for aortic valve replacement. *Ann Thorac Surg* 2014; 98:1564-70.
29. T Kulat B, Russell HM, Sarwark AE, R Zingle N, Moss ST, Mongé MC, Backer CL. Modified TandemHeart ventricular assist device for infant and pediatric circulatory support. *Ann Thorac Surg*. 2014; 98:1437-41.
30. Chowdhary V, Rose M, Murtagh G, Schnell S, Barker A, Russell H, Markl M, Carr J. Impact of ascending to descending aortic bypass for aortic coarctation on 3-dimensional hemodynamics. *Circulation*. 2015; 131: 1036-8.
31. Duncan BF, McCarthy PM, Kruse J, Andrei AC, Li Z, Russell HM, Abicht TO, Rigolin VH, Thomas JD, Davidson CJ, Bonow RO, Malaisrie SC. Paravalvular regurgitation after conventional aortic and mitral valve replacement: A benchmark for alternative approaches. *J Thorac Cardiovasc Surg*. 2015; 150(4):860-8.
32. Guerrero M, Salinger M, Pursnani A, Pearson P, Lampert M, Levisay J, Russell H, Feldman T. Transseptal transcatheter mitral valve-in-valve: A step by step guide from preprocedural planning to postprocedural care. *Catheter Cardiovasc Interv*. 2017 May 30. doi: 10.1002/ccd.27128. [Epub ahead of print]
33. Praz F, Khalique OK, Lee R, Veeragandham R, Russell H, Guerrero M, Islam AM, Deaton DW, Kaneko T, Kodali SK, Leon MB, Bapat V, Takayama H, Borger MA, George I. Transatrial Implantation of a transcatheter heart valve for severe mitral annular calcification. *J Thorac Cardiovasc Surg*. 2018; 12. pii: S0022-5223(18)30727-X. doi: 10.1016/j.jtcvs.2018.03.016. [Epub ahead of print]
34. Russell HM, Guerrero ME, Salinger MH, Manzuk MA, Pursnani AK, Wang D, Nemeh H, Sakhuja R, Melnitchouk S, Pershad A, Fang HK, Said SM, Kauten J, Tang GH, Aldea G, Feldman TE, Bapat VN, George IM. Open Atrial Transcatheter Mitral Valve Replacement in Patients with Mitral Annular Calcification. *J Am Coll Cardiol* 2018; 72(13):1437-1448.
35. Mansukhani NA, Miller KR, Havelka GE, Russell HM, Eskandari MK. Aorta-Innominate bypass through Ministernotomy. *J Vasc Surg*. 2018; 68(2):607-610.

Editorials, Reviews, Chapters, Books, Commentaries

1. Russell HM, Ferguson MK. Management of unexpected N2 disease discovered at thoracotomy. In Ferguson MK (ed.): *Difficult Decisions in Thoracic Surgery: An Evidence Based Approach*. London: Springer, 2007; pp 75-81.
2. Russell HM, Backer CL. Pediatric thoracic problems: patent ductus arteriosus, vascular rings, congenital tracheal stenosis, and pectus deformities. *Surg Clin North Am* 2010;90:1091-1113.
3. Backer CL, Deal BJ, Kaushal S, Russell HM, Tsao S, Mavroudis C. Extracardiac versus intra-atrial lateral tunnel Fontan: extracardiac is better. *Semin Thorac Cardiovasc Surg Pediatr Card Surg Annu* 2011;14:4-10.
4. Russell HM, Backer CL. Congenital mitral valve disease. In: Franco KL, Thourani VH (eds) *Cardiothoracic Surgery Review*, 2012. Lippincott Williams & Wilkins, Philadelphia, PA, pp. 1565-1567.
5. Backer CL, Russell HM. Vascular rings and slings. In: Yang SC, Cameron DE (eds), *Current Therapy in Thoracic and Cardiovascular Surgery*, 2nd ed, 2012.
6. Cheng JW, Russell HM, Stewart RD, Thomas J, Backer CL, Mavroudis C. The role of tricuspid valve surgery in the late management of tetralogy of Fallot: collective review. *World J Pediatr Congenit Heart Surg* 2012;3:492-8.
7. Backer CL, Popescu AR, Rastatter JC, Russell HM. Vascular rings and slings. In: daCruz, E, Ivy DD, Jagers J (eds): *Pediatric and Congenital Cardiology, Cardiac Surgery and Intensive Care*, London, Springer-Verlag, 2014, vol. 4, pp. 2219-38.
8. Russell HM, Backer CL. Palliative operations for congenital heart disease. In *Mastery of Cardiothoracic Surgery*, 3rd ed. 2014. Lippincott Williams & Wilkins, Philadelphia, PA, pp. 764-769.

Case Reports, Technical Notes, Letters

1. Lin FC, Russell H[M], Ferguson M. Strangulation of the reconstructive gastric tube by the azygos arch. *Ann Thorac Surg* 2006;82:e8-10.
2. Russell HM, de Hoyos AL, Blum MG. Brief Communication: Successful management of recurrent Actinomyces esophagobronchial fistula with self-expanding covered esophageal stent. *J Thorac Cardiovasc Surg* 2007;134(4):1086-7.
3. Ferns SJ, Nguyen NV, Russell HM, Backer CL. Left ventricular mass in Wegener's granulomatosis-a brief report. *Cardiol Young* 2010;20(6):701-3.
4. Weiss SL, Russell HM, Lay A, Backer CL. Calcified right atrial myxoma in an adolescent. *World J Pediatr Congenit Heart Surg* 2011;2:523-525.
5. Russell HM, Backer CL, Anderson RH. Reply to the editor [A simplified categorization for common arterial trunk]. *Ann Thorac Surg* 2011;142:1287-8.
6. Patel A, Gossett J[G], Benton T, Rowell E, Russell H[M], Cham E, Pahl E. Fulminant *Clostridium difficile* toxic megacolon in a pediatric heart transplant recipient. *Pediatr Transplant* 2012;16:E30-4.
7. Russell HM, Kulat B, Zingle N, Backer CL. Successful bridge to transplant using the TandemHeart® left ventricular assist device in a pediatric patient. *World J Pediatr Congenit Heart Surg* 2012;3:249-50.
8. Thakrar D, Popescu A, Gupta S, de Freitas A, Russell H, Carr J, Markl M. Complex 3D blood flow pathways in two cases of aorta to right heart fistulae: a 4D flow MRI study. *Magn Reson Imaging*. 2013; 31:1453-5.
9. Mongé MC, Russell HM, Popescu AR, Robinson JD, Right pulmonary artery to left atrial fistula in a neonate: case report and review of the literature. *World J Pediatr Congenit Heart Surg* 2014;5:306-10.

Proceedings and Non-Refereed Papers

1. Russell HM, Mavroudis CD, Backer CL, Mavroudis C. Long-term follow-up after truncal valve repair. *Cardiol Young* 2012;22:718-723.
2. Backer CL, Russell HM. Truncus and transposition: the Chicago approach. *Cardiol Young* 2012;22:732-738.
3. Russell HM, Rastatter JC, Backer CL. The aortic uncrossing procedure for circumflex aorta. *Oper Tech Thorac Cardiovasc Surg* 2012;18:15-31.

Software, World Wide Web-Based Publications, Exhibits, Audiovisual or Other Teaching Material

1. Russell HM, McCarthy PM, Lee R, et al. Tricuspid valve replacement with a bioprosthetic valve. Multimedia Manual Cardiothorac Surg 2008: 1-4 /doi:10.1510/mmcts.2007.002774
2. Russell HM, Backer CL. Aortic uncrossing procedure for circumflex aorta. Motion picture, Society of Thoracic Surgeons 48th Annual Meeting, Fort Lauderdale, FL, January 28-February 1, 2012.

PRESENTATIONS (Past 5 Years)

1. Russell HM. Common arterial trunk: is valvular insufficiency really an indicator of adverse outcome? 33rd Annual Meeting, Midwest Pediatric Cardiology Society, Pittsburgh, PA, October 7, 2009.
2. Russell HM, Kaushal S, Backer CL, Vicari F. Vacuum assisted closure of pediatric sternal wounds. Congenital Heart Surgeons' Society Annual Meeting, Chicago, IL, November 1-2, 2009.
3. Backer CL, Rudra H, Webb CL, Kaushal S, Russell H[M], Michelson K, Sullivan C, Mavroudis C. The arterial switch operation: A 25-year experience with 258 patients. Congenital Heart Surgeon's Society Annual Meeting, Chicago, IL, November 1-2, 2009.
4. Russell HM, Jacobs ML, Anderson RH, Mavroudis C, Spicer D, Corcraïn E, Backer CL. A simplified categorization for common arterial trunk. Congenital Heart Surgeons' Society Annual Meeting, Chicago, IL, October 25, 2010.
5. Russell HM, Forsberg K, Backer CL, Kaushal S, Mavroudis C. Outcomes of radial incision of the tricuspid valve for VSD closure. 57th Annual Meeting, Southern Thoracic Surgical Association, Orlando, FL, November 3-6, 2010.
6. Russell H[M], Pasquali S, Jacobs J, Jacobs M, Shook G, O'Brien S, Mavroudis C, Backer C[L]. Outcomes of common arterial trunk with truncal valve insufficiency: a review of the STS Congenital Heart Surgery database. 47th Annual Meeting, Society of Thoracic Surgeons, San Diego, CA, January 31-February 2, 2011.
7. Kaushal S, Backer CL, Popescu A, Walker BL, Russell H[M], Koenig P, Rigsby C, Mavroudis C. Intramural coronary length correlates with symptoms in patients with anomalous aortic origin of the coronary artery. 47th Annual Meeting, Society of Thoracic Surgeons, San Diego, CA, January 31-February 2, 2011.
8. Russell HM, Wurlitzer KC, Rastatter JC, Rigsby CK, Backer CL. Primary resection of Kommerell's diverticulum and left subclavian artery transfer. 35th Annual Meeting, Midwest Pediatric Cardiology Society, Omaha, NE, September 16, 2011.
9. Johnson S, Wurlitzer KC, Russell HM, Backer CL. Outcomes of surgical therapy for infective endocarditis in a pediatric population – A twenty-one year review. 35th Annual Meeting, Midwest Pediatric Cardiology Society, Omaha, NE, September 16, 2011.
10. Russell HM, Wurlitzer KC, Kaushal S, Rastatter JC, Rigsby CK, Backer CL. Primary resection of Kommerell's diverticulum and left subclavian artery transfer. Poster presentation, 48th Annual Meeting, Society of Thoracic Surgeons, Fort Lauderdale, FL, January 28-February 1, 2012.

11. Backer CL, Russell HM, Wurlitzer KC, Boles LH, Robinson D. Modified single patch: are we still worried about subaortic stenosis? 3rd Joint Meeting, Congenital Heart Surgeons' Society and the European Congenital Heart Surgeons Association, Chicago, IL, September 13-15, 2012.
12. Deal BJ, Backer CL, Russell HM, Mavroudis C. Long-term and mid-term follow-up after Fontan conversion. 3rd Joint Meeting, Congenital Heart Surgeons' Society and the European Congenital Heart Surgeons Association, Chicago, IL, September 13-15, 2012.
13. Devlin PJ, Russell HM, Mongé MC, Patel A, Backer CL. Surgical management of the doubly committed juxta-arterial ventricular septal defect and long-term outcomes of the aortic and pulmonary valves. 36th Annual Meeting, Midwest Pediatric Cardiology Society, Milwaukee, WI, September 28, 2012.
14. Russell HM, Devlin PJ, Mongé MC, deFreitas A, Backer CL. A 20 year experience with the standard and reinforced Ross operation. 36th Annual Meeting, Midwest Pediatric Cardiology Society, Milwaukee, WI, September 28, 2012.
15. Russell HM, Mongé MC, Kulat B, Zingle N, Moss S, Backer CL. Use of the TandemHeart® centrifugal axial flow ventricular assist device in children. Poster presentation, 36th Annual Meeting, Midwest Pediatric Cardiology Society, Milwaukee, WI, September 28, 2012.
16. Wurlitzer KC, Boles LH, Sarwark AE, Russell HM, Robinson J, Backer CL. Modified single patch: are we still worried about subaortic stenosis? Poster presentation, 36th Annual Meeting, Midwest Pediatric Cardiology Society, Milwaukee, WI, September 28, 2012.
17. Costello JM, Romano JW, Russell HM, Janoski JM, Backer CL. Association between age at repair of complete atrioventricular septal defects and resource utilization and outcomes. 36th Annual Meeting, Midwest Pediatric Cardiology Society, Milwaukee, WI, September 28th 2012.
18. Johnson S, Russell HM, Wurlitzer KC, Backer CL. Outcome of surgical therapy for endocarditis in a pediatric population: a twenty-one year review. 59th Annual Meeting, Southern Thoracic Surgical Association, Naples, Florida, November 7-10, 2012.
19. Backer CL, Russell HM, Pahl E, Kindel SJ, Gambetta KE, Gossett JG, Deal BJ. Heart transplantation for the failing Fontan. Poster presentation, 49th Annual Meeting, Society of Thoracic Surgeons, Los Angeles, CA, January 26-30, 2013.
20. Pahl E, Thrush P, Kindel S, Gambetta K, Gossett J[G], Costello JM, Russell H[M], Backer CL. Early and intermediate-term outcomes after transplantation for restrictive cardiomyopathy in children. 6th World Congress Paediatric Cardiology & Cardiac Surgery, Cape Town, South Africa, February 17-22, 2013.

Hyde McKinney Russell, MD

21. Russell HM. Modified TandemHeart® ventricular assist device for pediatric circulatory support. Presented, ASAIO 59th Annual Conference, Chicago, IL, June 12-15, 2013.
22. Kulat B, Russell HM, Zingle N, Moss S, Sarwark AE, Backer C. Modified TandemHeart® ventricular assist device for pediatric circulatory support. ASAIO Abstracts 2013(59 Suppl ASAIO J):56 [Abstract].
23. Thrush PT, Pahl E, Kindel SJ, Gambetta KE, Gossett JG, Cosello JM, Russell HM, Backer CL. Importance of genetic evaluation in pediatric restrictive cardiomyopathy. Poster presentation, 37th Annual Midwest Pediatric Cardiology Society Scientific Session, Chicago, IL, September 20, 2013.
24. Gambetta KE, Backer CL, Russell HM, Deal BJ, Pahl E. Insights into protein-losing enteropathy: a single center's 24-year experience. Poster presentation, 37th Annual Midwest Pediatric Cardiology Society Scientific Session, Chicago, IL, September 20, 2013.
25. Boles LH, Tsao S, Webster G, Russell HM, Mongé MC, Deal BJ, Backer CL. Pediatric pacemakers: results of a collaborative electrophysiology-surgery program. Poster presentation, 37th Annual Midwest Pediatric Cardiology Society Scientific Session, Chicago, IL, September 20, 2013.
26. Devlin PJ, Russell HM, Mongé, Patel A, Costello JM, Spicer D, Anderson RH, Backer CL. Surgical management of the doubly committed and juxta-arterial ventricular septal defect: long-term outcomes of the aortic and pulmonary valves, Southern Thoracic Surgical Association 60th Annual Meeting, Scottsdale, AZ, November 1, 2013.
27. Hyde M. Russell. Transcatheter Aortic Valve Insertion in the Elderly. Grand Rounds Saint Joseph's Hospital, Chicago, IL. May 6, 2015.
28. "Del Nido Cardioplegia" Grand Rounds, Loyola Medical Center. Chicago, IL June 10, 2015.
29. TAVR: TAVR Experience and Economics. What will TAVR look like in 5 years? Will you be replaced by an interventional Cardiologist?" Midwest Valve Symposium. Chicago, IL., June 18, 2015
30. Mitral Valve Repair in Marfan Syndrome. 2015 Marfan Conference, Northwestern University School of Medicine. Chicago, IL., August 2015

CURRICULUM VITAE

Cheong Jun Lee, MD
Division Chief of Vascular Surgery,
NorthShore University Health System
Clinical Associate Professor of Surgery,
University of Chicago Pritzker School of Medicine

OFFICE ADDRESS: 9650 Gross Point Road Suite 4900
Skokie, IL 60076

PLACE OF BIRTH: Seoul, South Korea

CITIZENSHIP: U.S.A.

EDUCATION:

1995 – 1999 B.S., University of Michigan, Ann Arbor, MI
1999 – 2003 M.D., University of Michigan, Ann Arbor, MI

POSTGRADUATE TRAINING AND FELLOWSHIP APPOINTMENTS:

07/01/2003 - 06/30/2004 Surgical Internship, Surgery, General Surgery, University of Michigan Health Systems, Ann Arbor, MI 48109
07/01/2004 - 06/30/2010 Resident in Surgery, Surgery, General Surgery, University of Michigan Health Systems, General Surgery, Ann Arbor, MI 48109
07/01/2006 - 06/30/2008 Research Fellow, Organogenesis, Biomedical Sciences, University of Michigan Medical School, General Surgery, Ann Arbor, MI 48109
07/01/2010 - 06/30/2012 Fellow in Vascular Surgery, Surgery, Vascular Surgery, Northwestern University, Chicago, IL 60660

FACULTY APPOINTMENTS:

07/01/2010 - 06/30/2012 Clinical Instructor in Surgery, Surgery, Vascular Surgery, Northwestern University, Vascular Surgery, Chicago, IL 60660
07/24/2012 – 8/31/2017 Assistant Professor in Surgery, Surgery, Vascular Surgery, Medical College of Wisconsin, Vascular Surgery, Milwaukee, WI 53226
09/01/2017 – 10/1/2018 Associate Professor in Surgery, Vascular Surgery, Medical College of Wisconsin, Milwaukee, WI 53226

10/01/2018 – present Clinical Associate Professor of Surgery, University of Chicago Pritzker School of Medicine, Chicago IL

ADMINISTRATIVE APPOINTMENTS:

- 2015- 2018 Medical Director of the Vascular Quality Froedtert Hospital
Cardiovascular Service Line
- 2018 - present Division Chief of Vascular Surgery, NorthShore University Health System,
Evanston, IL 60201

EDUCATIONAL ADMINSTRATIVE APPOINTMENTS:

- 2009-2010 Lecturer to medical students – “Cancer stem cells and emerging
therapeutics.”
- 2012-2018 Faculty Lecturer – “Vascular Anatomy”, “Peripheral Vascular Disease”,
“Aortic Aneurysms”
- 2016-2018 Faculty Mentor – Medical Student Summer Research Program
- 2017-2018 Faculty Mentor - Medical Student Clinical Apprenticeship Program

HOSPITAL, RESEARCH, AND CLINICAL ADMINISTRATIVE APPOINTMENTS:

- 2012- 2018 Surgical Faculty Representative, Infection Control Committee,
Froedtert
Memorial Lutheran Hospital
- 2015- 2018 Medical Director of the Vascular Quality Initiative, Froedtert
Memorial
Lutheran Hospital
- 2016- 2018 Member, Cardiovascular Center Research Internal Scientific
Advisory Board, Medical College of Wisconsin
- 2019 Member, Invasive Procedures Committee, NorthShore University
Health System
- 2020 Surgical Director of Hospital Quality, Evanston Pavillion,
NorthShore University Health System

HOSPITAL STAFF PRIVILEGES:

- 07/2012-2018 Medical College of Wisconsin, 8701 Watertown Plank Road,
Milwaukee. WI, 53226
- 07/2012-2018 Children’s Hospital of Wisconsin, 9000 West Wisconsin Ave,
Milwaukee WI, 53226
- 07/2012-2018 Zablocki Veterans Administrative Medical Center, 5000 West National
Avenue Milwaukee WI, 53295
- 07/2012-2018 Froedtert Memorial Hospital, 9200 West Wisconsin Ave, Milwaukee
WI, 53226
- 08/2014-2018 St. Agnesian 430 East Division St., Fond du Lac Wisconsin, 53226
- 08/2014-2018 Community Memorial Hospital W180N8085 Town Hall Road,
Menomonee Falls WI, 53051

10/2018 – present Northshore University Health Systems, Evanston, Skokie, Highland Park, Swedish Hospital

SPECIALTY BOARDS AND CERTIFICATIONS:

<u>Board Certified</u>	<u>Issue Date</u>	<u>Expiration</u>
American Board of Surgery	05/2011	07/2021

General Surgery

American Board of Surgery	05/2013	07/2023
Vascular Surgery		

<u>Licensure</u>	<u>Number</u>	<u>Issue Date</u>	<u>Expiration</u>
Michigan License	4301081437	07/21/2016	01/31/2022
Illinois License	036125851	05/25/2010	07/31/2023
Wisconsin License	57479-20	07/18/2012	10/31/2023

AWARDS AND HONORS:

2003	Alpha Omega Alpha Honor Society, University of Michigan Medical School
2003	C. Gardner Child III Award for Excellence in Surgical Clerkships and Research, University of Michigan Medical School
2006	Organogenesis Fellowship Training Grant Award
2007	First Prize, Seventh International Symposium on Organogenesis
2008	Young Investigator Award, Department of Surgery University of Michigan
2009	First Prize, Society of University Surgeons Resident Research, Academic Surgical Congress
2009	Administrative Chief Resident, Department of Surgery University of Michigan
2010	James W. Crudup Award, Department of Surgery University of Michigan
2010	Robert H. Bartlett Teaching Award, Department of Surgery University of Michigan
2011	Fellow as Teacher Award, Northwestern University Department of Surgery
2012	Fellow as Teacher Award, Northwestern University Department of Surgery
2012	Edelstone-Bendix Research Forum Open Competition Winner, Northwestern University Department of Surgery
2013	Outstanding Medical Student Teaching Pin, Medical College of Wisconsin
2014	Outstanding Medical Student Teaching Pin, Medical College of Wisconsin

2016	Outstanding Medical Student Teaching Pin, Medical College of Wisconsin
2017	Outstanding Medical Student Teaching Pin, Medical College of Wisconsin
2018	Outstanding Medical Student Teaching Pin, Medical College of Wisconsin

INDUSTRY SPONSORED TRAINING:

2010	Medtronic TALENT Thoracic and AAA Stent Graft Training
2010	Endovascular Training for GORE TAG Thoracic Endoprosthesis
2011	Endovascular Training for Medtronic Endurant AAA stent graft
2011	Endovascular Training for GORE Conformable-TAG Thoracic Endoprosthesis
2012	Endovascular Training for Medtronic Valiant Captiva Thoracic stent graft
2013	Endovascular Training for Cook Zenith Fenestrated (Z-Fen) Aortic Endograft
2014	Endologix Nellix Endovascular Aortic Sealing System
2017	Bolton Relay Pro Thoracic Stent Graft Systems

MEMBERSHIPS IN HONORARY AND PROFESSIONAL SOCIETIES:

2001-present	Member, American Medical Association
2003-present	Fellow, American College of Surgeons
2003-present	Member, Alpha Omega Alpha Medical Honors Society
2004-present	Member, Association of Academic Surgeons
2009-present	Member, Society for Vascular Surgery
2011-present	Member, International Society of Endovascular Specialists
2012-present	Member, Midwestern Vascular Surgical Society
2014-present	Member, Vascular and Endovascular Surgical Society
2014-present	Member, Milwaukee Academy of Surgery
2017-present	Member, Milwaukee Surgical Society
2017-present	Member, Society for Clinical Vascular Surgery
2016-present	Member, Society for Asian Academic Surgeons

LOCAL/REGIONAL/NATIONAL APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

2017- present	Member, Quality and Performance Measures Committee, Society for Vascular Surgery (National) Vascular Quality Initiative (National)
2015-2016	Vice-Chair New Horizons Program Planning Committee, Midwest Vascular Surgery Society (Regional)
2016-2017	Chair, New Horizons Program Planning Committee, Midwest Vascular Surgery Society (Regional)
2017-present	Member, Program Planning Committee, Vascular Endovascular Surgical Society (National)
2018	Publications Committee, Association for Academic Surgery (National)
2016-2018	Arterial Quality Committee, Vascular Quality Initiative (National)
2018	Executive Board Member, Milwaukee Surgical Society (Local)

2018

Executive Committee, Society for Asian Academic Surgeons
(National)**RESEARCH GRANTS/AWARDS/CONTRACTS/PROJECTS:****The Medical College of Wisconsin**

Title: ATTRACT Trail

Role: **Sub-Investigator**

Date: 2009

National prospective randomized trial comparing standard medical therapy to catheter directed thrombolysis in patients with acute vein thrombosis

Title: Cook Zenith Spiral A

Role: **Principal Investigator**

Date: 7/23/2013

AAA Iliac Leg Graft Post-market Registry

Title: GREAT Registry

Source: W.L. Gore

Role: **Sub-Investigator**

Date: 12/6/2013

Prospective registry to evaluate long-term effectiveness of Gore Excluder and C3 endografts for treatment of abdominal aortic aneurysms

Title: Iliac Branched Endoprosthesis (IBE) Trial

Source: W.L. Gore

Role: **Sub-Investigator**

Date: 2014

Evaluation of a novel branched endograft for treatment of common iliac artery aneurysm to allow preservation of internal iliac artery blood flow

Title: EVAS study

Source: Endologix-Nellix

Role: **Principal Investigator**

Date: 04/21/2014

Prospective, Multicenter, Single Arm Safety and Effectiveness of Endovascular AAA Repair using the Nellix System

Title: BEST CLI-Trial

Role: **Co-Principal Investigator**

Date: 11/2014

Randomized, prospective trial of best endovascular versus best surgical management of patient with critical limb ischemia

Title: RESCUE trial

Role: **Sub-Investigator**

Date: 2014

Evaluation of the Clinical Performance of the Valiant Thoracic Stent Graft with the Captivia Delivery of System for the Endovascular Treatment of Blunt Thoracic Aortic Injuries

Title: ENDOMAX trial

Role: **Sub-Investigator**

Date: 2014

Endovascular Interventions with Angiomax

Title: LEOPARD Trial

Source: Endologix

Role: **Principal Investigator**

Date: 4/28/2015

Multicenter, Observational, Post-Market, Real World Study to Assess Outcomes of Patients Treated with the AFX-System compared to other EVAR devices for Endovascular Abdominal Aortic Aneurysm Repair

Title: Bolton Aortic Transection Trial

Source: Bolton Medical

Role: **Sub-Investigator**

Date: 2017

A Prospective, Multicenter, Non-Blinded, Non-Randomized Study of the RelayPro Thoracic Stent-Graft in Subjects with Traumatic Injury of the Descending Thoracic Aorta

INVITED LECTURES/WORKSHOPS/PRESENTATIONS:

International

1. Lee CJ, Dosch J, Wang L, Xu L, Ljungman M, and Simeone DM. Expression of ATDC in Pancreatic Cancer Stem Cells Confers Resistance to DNA Damage. Invited Speaker at the SARS meeting (Society of Academic and Research Surgery) London, England. 01/2010.
2. Lee CJ. Endovascular Treatment of Complex Aortic Aneurysms. Seoul National University Bi Vascular Symposium. Seoul, South Korea. 2/2015.
3. Lee CJ. Chronic Cerebrospinal Venous Insufficiency, Still a Working Concept? Seoul National University Bi Vascular Symposium. Seoul, South Korea. 02/2015.
4. Lee CJ. Endovascular Treatment of Thoracoabdominal Aortic Aneurysms. Seoul, 3rd Gangnam Severance Hybrid Aortic Surgery. Seoul 10/2015.

5. Lee CJ. Snorkel, Chimneys, and Periscopes for the Treatment of Juxtarenal Aortic Aneurysms. Seoul National University Bi Vascular Symposium. Seoul, South Korea. 02/2016.
6. Lee CJ. Supera Woven Nitinol Stent: A Game Changer for SFA Occlusive Disease? Seoul National University Bi Vascular Symposium. Seoul, South Korea. 02/2016
7. Lee CJ. Complex EVAR planning: parallel stent graft sizing, configuration, and approach. Seoul National University Bi Vascular Symposium. Seoul, South Korea. 2/2017
8. Lee CJ. EVAR Neck Failures; Vast majority can be managed by endovascular techniques. Seoul National University Bi Vascular Symposium. Seoul, South Korea. 2/2017
9. Yoon W, Lee CJ. Chronic DVT; A Catheter Treatable Disease? 2/2017
10. Lee CJ. Treatment of Aortic Aneurysms: Past, Present, and Future. General Surgery Grand Rounds. Seoul National University. 10/2017
11. Lee CJ. Persistent Type II Endoleaks following EVAR. Seoul Regional Vascular Meeting. 10/2017
12. Lee CJ. Surgical Treatment of Neurogenic Thoracic Outlet Syndrome. Seoul National University Bi Vascular Symposium. Seoul, South Korea 2/2018
13. Lee CJ. Channeling the Inner Houdini; Innovative Solutions to Challenging Situations During Aortic Endografting. Seoul National University Bi Vascular Symposium. Seoul, S. Korea 2/2018
14. Lee CJ. Physician Modified Endografts for Treatment of Thoracoabdominal Aortic Aneurysms: The Kelley Manifold. Seoul, South Korea 2/2018.
15. Lee CJ. Endovascular Treatment of Acute Limb Ischemia. Seoul National University Bi Vascular Symposium. Seoul S. Korea 2/2019
16. Lee CJ. Research Using the Vascular Quality Initiative Registry. Seoul National University Bi Vascular Symposium. Seoul, S. Korea 2/2019
17. Lee CJ. Perioperative thromboprophylaxis in COVID-19 patients. Seoul National University Bi Vascular Symposium. Seoul, S. Korea 8/2020
18. Lee CJ. CB/DES use in claudicants vs critical limb ischemia patients: should they differ? Seoul National University Bi Vascular Symposium. Seoul, S. Korea 8/2020
19. Lee CJ. Explantation of aortic endografts, tips and tricks. Asian Society for Vascular Surgery, Seoul S. Korea 10/2020
20. Lee CJ. Vascular reconstruction during pancreaticoduodenectomy. Asian Society for Vascular Surgery. Seoul, S. Korea 10/2020.
21. Lee CJ. Radial access for peripheral vascular interventions. Asian Society for Vascular Surgery. Seoul, S. Korea 10/2020

National

1. Lee CJ, L. Zhang, M. D. Uhler, D.M. Simeone. A TGFB-induced Smad complex directly activates PKA in pancreatic acinar cells and regulates pancreatic acinar cell growth. Annual Meeting of the Society of University Surgeons, San Diego, CA., 02/2006.

2. Lee CJ, Scheiman J, Simeone DM. Risk of Malignancy in Resected Cystic Tumors of the Pancreas < 3 Cm in Size: Is it Safe to Observe Asymptomatic Patients? Annual Meeting of the Society of University Surgeons, Phoenix, AZ., 02/2007.
3. Heidt DG, Li, C, Lee CJ, Simeone DM. BMI-1 is upregulated in pancreatic adenocarcinoma and pancreatic cancer stem cells and confers a malignant phenotype. Annual Meeting of the Society of University Surgeons, Phoenix, AZ., 02/2007.
4. Lee CJ, Anderson MA, Hines OJ, Reber HA, Kochman ML, Foley PJ, Drebin J, Oh D, Ginsberg G, Ahmad N, Merchant NB, Isbell J, Parikh AA, Scheiman J, Simeone DM. Risk of Malignancy in Resected Cystic Tumors of the Pancreas \leq 3 Cm in Size: Is it Safe to Observe Asymptomatic Patients? A Multi-Institutional Report. Annual Meeting of the American Gastroenterological Association Plenary Session, Washington DC., 05/2007.
5. Lee CJ, Li C, Ljungman ME, Simeone DM. Pancreatic cancer stem cells are resistant to ionizing radiation and the chemotherapeutic agent gemcitabine. Annual meeting of the Society of University Surgeons, Huntington Beach CA., 02/2008.
6. Haab BB, Porter A, Schmidt C, Lee CJ, Barnes D, Simeone, DM. Glycosylation variants on mucins as candidate markers for the diagnosis of pancreatic cystic neoplasms. Annual Meeting of the American Pancreatic Association, National Harbor MD.,11/2008.
7. Lee CJ, Dosch J, Wang L, Xu L, Ljungman M, and Simeone DM. Expression of ATDC in Pancreatic Cancer Stem Cells Confers Resistance to DNA Damage. SUS Plenary talk, Academic Surgical Congress, Fort Myers, FL., 02/2009
8. SreyRam Kuy, Peter J. Rossi, William S. Rilling, Gregory Martin, Bhavin Patel, Anahita Dua, Cheong J. Lee. Endovascular Management of a Traumatic Renal-Caval Arteriovenous Fistula in a Pediatric Patient. Presented at the International Symposium on Endovascular Therapy, Miami, 01/2013.
9. SreyRam Kuy, MD, MHS; Anahita Dua, MD; Bhavin Patel; Nader Tondravi; Gary R. Seabrook MD; Kellie R Brown, MD; Brian D Lewis, MD; Cheong J Lee, MD; Peter J Rossi, MD. Surgical Site Infections and Complications Following Vascular Groin Procedures. Presented at the Peripheral Vascular Surgical Society Meeting, Park City UT., 02/2013.
10. Mohamed F. Algahim, Nicholas M. Southard, Peter J. Rossi, Cheong J. Lee. Endovascular Aortic Repair for Sarcoma Invasion to the Aorta. Poster presentation at the Houston Aortic Symposium, Houston, 03/2013.
11. Courtney M. Daly, Cheong J. Lee, Melina Kibbe, Jason Chin, Mark Morasch, Heron Rodriguez, Mark K. Eskandari, Irene B. Helenowski. High Risk Anatomic Variables and Plaque Characteristics in Carotid Artery Stenting. Presented at the Vascular Annual Meeting, San Francisco, 06/2013.
12. SreyRam Kuy, Anahita Dua, Cheong J. Lee, Bhavin Patel, Sapan Desai, Arshish Dua, Aniko Szabo, Parag J. Patel. National Trends in Utilization of IVC Filters Over a Decade in the United States, 2000-2009. Presented at the Vascular Annual Meeting, San Francisco, 06/2013.
13. SreyRam Kuy, Peter Rossi, Gary Seabrook, Brian Lewis, Anahita Dua, Bhavin Patel, Cheong Lee, Kellie Brown. Do Women Experience Delays in Carotid Endarterectomy? Presented at the Vascular Annual Meeting, San Francisco, 06/2013.

14. Dua A, Kuy S, Desai SS, Heller J, Lee CJ. Diagnosis and Management of a Ruptured Popliteal Mycotic Pseudoaneurysm. Presented at the Eastern Vascular Society Meeting, White Sulphur Springs VA., 09/2013
15. Dua A, Kuy S, Chappidi R, Desai SS, Patel B, Seabrook GR, Brown KR, Rossi PJ, Lee CJ. The Increasing Incidence of Thromboembolic Events Among Patients with Inflammatory Bowel Disease. Presented at the American College of Surgeons Clinical Congress, Washington DC., 10/2013
16. Dua A, Kuy S, Desai SS, Kumar N, Heller J, Lee CJ. Diagnosis and management of a ruptured popliteal mycotic pseudoaneurysm. Presented at the Eastern Vascular Surgical Society, White Sulphur Springs VA., 09/2013
17. Dua A, Desai SS, Seabrook GR, Brown KR, Lewis BD, Rossi PJ, Edmiston CE, Lee CJ. The effect of Surgical Care Improvement Project measures on national trends on surgical site infections in open vascular procedures. Presented at the Vascular Annual Meeting, Boston, 06/2014.
18. Dua A, Desai SS, Yang K, Lee CJ. Amputation Rates Associated with Revascularization Procedure Choice and Injury Type in Popliteal Artery, Popliteal Vein and Concomitant Popliteal Artery and Vein Trauma. Presented at the American College of Surgeons Meeting, San Francisco, 10/2015
19. Wang DT, Brown KR, Hieb RA, Lewis BD, Rossi PJ, Patel PJ, Lee CJ. Aortic Remodeling After Thoracic Endovascular Aortic Repair for Blunt Traumatic Aortic Injury. Presented at the Society for Interventional Radiology Meeting. Miami, FL, 02/2015.
20. Dua A, Desai S, Koch S, Lee CJ, Pan J, Hood D, Hodgson K. Association between EMS Transfer Times and Mortality in Patients with Ruptured AAA. Midwestern Vascular Surgical Society (MVSS). Chicago, IL, September 2015
21. Davila, D, Lee CJ. Disseminated Mycotic Aneurysms Following Intravesical Bacillus Calmette-Guerin Therapy for Bladder Cancer: A case discussion and Proposal for a Systemic Treatment Algorithm. Society for Clinical Vascular Surgery – Conference, Las Vegas, NV. March 2016
22. Truong C, Lee CJ. Gender differences in outcomes after Endovascular Aortic Repair. Society for Clinical Vascular Surgery – Las Vegas, NV. March 2016
23. Truong C, Lee CJ. Sex differences in outcomes after EVAR – Society for Asian Academic Surgeons. Pao Alto, CA Sept 2016.
24. Thurston J, Camara A, Dybul S, White S, Patel P, Hieb R, Lee CJ. Cost Comparison of Percutaneous Endovascular Aortic Repair (PEVAR) versus Endovascular Aortic Repair with Open Femoral Exposure. Society of Interventional Radiology. Washington DC. March 2017.
25. Zuo M, Lee CJ, Rossi P, White S, Hieb R, Patel P. Comparative Therapeutic Effectiveness of Endovascular vs. Open Surgical Repair for Popliteal Artery Aneurysms. Society of Interventional Radiology. Washington DC. March 2017.
26. Smith P, Hieb R, Lee CJ, Patel P. Arterial Access Site Changes on CT Angiography following open vs. Percutaneous Endovascular Aortic Repair. Society of Interventional Radiology. Washington DC. March 2017.
27. Camara A, Lee CJ. Persistent type II Endoleaks following EVAR: Graft type matters. Vascular Endovascular Surgical Society. Steamboat, CO. February 2017.

28. Camara A, Lee CJ. Outcomes of type II Endoleaks following EVAR. Society for Asian Academic Surgeons. Birmingham, AL. September 2017
29. Cain MT, Lee CJ. Factors for Revision Following Lower Extremity Amputation. Academic Surgical Congress. Jacksonville, FL. January 2018.
30. Lee CJ, Cuff R. Explanting the Nellix Endoprosthesis: What We've Observed. Vascular Endovascular Surgical Society, Winter Meeting. Vail, CO. February, 2018.
31. Dua A, Lee CJ. Factors Influencing Early Readmissions Following Endovascular Aortic Repair. Society for Vascular Surgery Vascular Annual Meeting. June 2018.
32. Lee S, Lee CJ. Outcomes of Drug Coated Devices in the Treatment of Critical Limb Ischemia. Midwestern Vascular Surgery Society Meeting. St. Louis, MO. September 2018.
33. Kugler N, Lee CJ. Outcomes Following TEVAR for Acute Aortic Syndromes. Midwestern Vascular Surgery Society Meeting. St. Louis, MO. September 2018.
34. Lee CJ. To Drug or Not to Drug: Disruption in the use of Paclitaxel Drug Eluting Devices. Association of Vascular and Interventional Radiographers; Milwaukee, WI. April 2019.

Regional

1. Lee CJ, Spalding A, Li C, Wang L, Simeone DM. In-vivo Imaging of Radiated Orthotopic Pancreatic Xenografts in NOD-SCID Mice: a Novel Method for Assaying Clinical Efficacy of Ionizing Radiation. Annual Meeting of the American Pancreatic Association, Chicago IL., 11/2007.
2. Wang L, Lee CJ, Heidt DG, Ljungman ME, Simeone DM. ATDC, a Highly Expressed Protein in Pancreatic Cancer, Contributes to Tumorigenicity by Upregulating Wnt/B-Catenin Signaling. Annual Meeting of the American Pancreatic Association, Chicago IL., 11/2007.
3. Lee CJ, Phade S, Eskandari MK. Thoracic Aortic Dissection Presenting With Aortic Pseudo-Occlusion Treated With Stent Grafting Of Primary Entry Tear. Poster presentation. Lewis Landsberg Research Competition. Northwestern, Chicago, 2011.
4. Lee CJ, Chin J, Kibbe MR. Gene and Cell Based Therapy for Critical Limb Ischemia. 36th Annual Northwestern Vascular Symposium. InterContinental, Chicago 12/2011.
5. Lee CJ, Kibbe MR. Emerging Therapies for Critical Limb Ischemia. Invited Speaker at The 25th Nursing Conference on Selected Topics in Vascular Disease. Chicago, Illinois. 10/2011.
6. Lee CJ, Rodriguez HE, Kibbe MR, Malaisrie CS, Eskandari MK. Secondary Interventions Following Elective Thoracic Endovascular Aortic Repair (TEVAR) for Degenerative Aneurysms: Incidence and Outcomes. Plenary session of the Midwestern Vascular Surgical Society Meeting, Milwaukee, 09/2012.
7. Lee CJ, Rodriguez HE, Kibbe MR, Malaisrie CS, Eskandari MK. Endograft Landing Zones < 3cm May Not Be Adequate for Durable Outcomes Following Thoracic Endovascular Aortic Repair (TEVAR). Edelstone-Bendix Surgical Research Forum. Northwestern University, Chicago, 06/2012

8. Kuy S, Dua A, Baraniewski H, Lee CJ. Ruptured Mycobacterial Aneurysm of the Carotid Artery. Presented at the 2013 Midwestern Vascular Surgical Society Meeting Chicago, 09/2013.
9. Dua A, Desai SS, Seabrook GR, Brown KR, Lewis BD, Rossi PJ, Malinowski MJ, Lee CJ. Preventable Complications May be Driving the Rising Costs in the Management of Patients with Critical Limb Ischemia. Presented at the Midwest Vascular Surgical Society Meeting, Iowa City , 09/2014.
10. Desai SS, Dua A, Wei S, Abby BS, Safarik J, Satani R, Eskandari MK, Lee CJ. Epidemiology of Thoracoabdominal Aortic Aneurysm Repairs in the United States from 1998 to 2011. Presented at the Midwest Vascular Surgical Society Meeting, Iowa City, 09/2014.
11. Kugler NW, Subbaryan R, Rossi, PJ, Patel PJ, Hieb RA, Brown KR, Lewis BD, Malinowski MJ, Seabrook GR, Lee CJ. Early Experience Using Parallel Grafting Techniques for Visceral Artery Preservation in the Treatment of Complex Aortic Aneurysms. Presented at the Midwest Vascular Surgical Society Meeting, Iowa City, 09/2014.
12. Dua A, Desai S, Koch S, Lee CJ, Pan J, Hood D, Hodgson K. Association between EMS Transfer Times and Mortality in Patients with Ruptured AAA. Midwestern Vascular Surgical Society (MVSS). Chicago, IL, 09/2015
13. Desai S, Dua A, Upchurch G, Lee CJ, Hodgson K. Open AAA, EVAR, REVAR, BrEVAR: Vascular Surgery in 2020. Midwestern Vascular Surgical Society (MVSS) Chicago, IL. 09/2015.
14. Alizadegan S, Rossi P, Brown K, Lewis B, Lee CJ. Endovascular Treatment of Superior Mesenteric Artery Stenosis in a rare survivor of generalized arterial calcification of infancy. MVSS Chicago, IL September 2015.
15. Alizadegan S, Rossi P, Brown K, Lewis B, Lee CJ. Delayed Presentation of Spinal Cord Ischemia after Endovascular Thoracoabdominal Aneurysm Repair. MVSS Chicago, IL September 2015.
16. Kim AS, Lee CJ. Outcomes of Supera Stents in Patients with Critical Limb Ischemia. Midwestern Vascular Surgeical Society (MVSS). September 2016.
17. Lee CJ. Arch Aneurysms: Open versus Hybrid, Versus Endo. Midwest Vascular Surgical Society. Columbus, OH Sept 2016
18. Morris R, Lee CJ. Development of Angiosarcoma in a previous femoral to BK-Pop insitu vein bypass graft. Midwest Vascular Surgical Society. Columbus, OH Sept 2016
19. Keyashian B, Lee CJ. A hybrid approach in the treatment of persistent sciatic artery aneurysms. Midwest Vascular Surgical Society. Columbus, OH Sept 2016
20. Man, J, Lee CJ. Type B aortic dissection in a patient with fibromuscular dysplasia. Midwest Vascular Surgical Society. Chicago, IL September 2017
21. Dua A, Srivastava G, Puneet R, Brown K, Lewis B, Rossi P, Seabrook G, Malinowski M, Wohlauer M, Lee CJ. Evolving Trends in Insurance coverage of vascular surgery patients in academic practice. Chicago, IL September 2017.
22. Sagan N, Lee CJ. Aortic Remodeling following TEVAR for complicated acute aortic syndromes. Minnesota Vascular Surgery Meeting April, 2018.

Local

1. Lee CJ. Percutaneous Endovascular Aortic Repair, Tips and Tricks. Vascular Grand Rounds. Medical College of Wisconsin. 11/2011.
2. Lee CJ. Branched, Fenestrated and Off the Shelf Solutions for Complex Aortic Aneurysms. Guest Speaker at the Milwaukee Surgical Society. 03/2013.
3. Lee CJ. Evolving Therapies for the Treatment of Complex Aortic Disease at the Medical College of Wisconsin. Surgery Grand Rounds. 02/2014.
4. Lee CJ. State of the Art Therapies for the Treatment of Abdominal Aortic Aneurysm. WeCare Program Committee Meeting. Milwaukee, Wisconsin.03/2014.
5. Lee CJ. Current Therapies in the Management of Abdominal Aortic Aneurysms. Heart and Vascular Nursing Conference. Milwaukee, Wisconsin. 08/2014.
6. Lee CJ. Emerging Therapies for Complex Aortic Aneurysms. Guest Speaker at the Milwaukee Surgical Society. 11/2016.
7. Lee CJ. Treatment of Complex Aortic Aneurysms. Cardiovascular Center Conference, Medical College of Wisconsin. March 2016
8. Lee CJ. Evolving Therapies for the Treatment of Critical Limb Ischemia at the Medical College of Wisconsin. Surgery Grand Rounds. 04/2016.
9. Lee CJ. Treatment of Aortic Aneurysms: Past, present, and future. Alumni Society of Medical College of Wisconsin. 05/2017

BIBLIOGRAPHY**Peer-Reviewed Publications**

1. **Lee CJ**, Anderson MA, Hines OJ, Reber HA, Kochman ML, Foley PJ, Drebin J, Oh D, Ginsberg G, Ahmad N, Merchant NB, Isbell J, Parikh AA, Stokes JB, Bauer T, Adams RB, Scheiman J, Simeone DM. Risk of malignancy in resected cystic tumors of the pancreas < 3 cm in size: it is safe to observe asymptomatic patients? A multi-institutional report *J Gastrointest Surg* 2008; 12: 234-242.
2. **Lee CJ**, Dosch J, Simeone DM. Pancreatic cancer stem cells. *J Clin Oncol* 2008; 26 (17): 2806-12.
3. **Lee CJ**, Li C, Simeone DM. Human pancreatic cancer stem cells: implications for how we treat pancreatic cancer. *Translational Oncology* 2008; 1: 14-18.

4. Yang H, **Lee CJ**, Zhang L, Simeone DM. Regulation of transforming growth factor beta-induced responses by protein kinase A in primary pancreatic acinar cells. *Am J Physiol:GI* 2008; 5 (1):G170-8
5. Wang L, Heidt DG, **Lee CJ**, Logsdon CD, Zhang L, Fearon ER, Ljungman ME, Simeone DM. Oncogenic function of ATDC (TRIM 29) in pancreatic cancer through Wnt pathway activation and beta-catenin stabilization. *Cancer Cell* 2009; 15: 207-219.
6. Li C, **Lee CJ**, Simeone DM. Identification of human pancreatic cancer stem cells. *Methods Mol Biol* 2009; 568: 161-173.
7. **Lee CJ**, Spalding A, Ben-Josef E, Wang L, Simeone DM. In vivo bioluminescent imaging of radiated orthotopic pancreatic xenografts in NOD/SCID mice: a novel method for assaying clinical efficacy of ionizing radiation. *Translational Oncology* 2010 Jun 1;3(3):153-9.
8. Dai L, Li C, Shedden KA, **Lee CJ**, Li C, Quoc H, Simeone DM, Lubman DM. Quantitative proteomic profiling studies of pancreatic cancer stem cells. *J Proteome Res.* 2010 Jul 2;9(7):3394-402.
9. **Lee CJ**, Eskandari MK. When Is Carotid Stenting Acceptable as a Means of Stroke Prevention? *Expert Reviews of Cardiovascular Therapy.* 2011 May;9(5):537-40. PMID: 21615312
10. **Lee CJ**, Morasch MD. Endovascular Management of Vertebral Artery Disease. *Expert Reviews of Cardiovascular Therapy.* 2011 May;9(5):575-8. PMID: 21718929
11. **Lee CJ**, Morasch MD. Treatment of Vertebral Disease: Appropriate Use of Open and Endovascular Techniques. *Seminars in Vascular Surgery.* 2011 March;Vol. 24(1): 24-30. PMID: 21718929
12. **Lee CJ**, Eskandari MK. Imaging for Carotid Stenting. *Journal of Cardiovascular Surgery (Torino).* 2011 Dec;52(6):795-801. PMID: 22051988
13. Raval M, **Lee CJ**, Phade S, Riaz A, Eskandari M, Rodriguez H. Covered Stent Use after Subclavian Artery and Vein Injuries in the setting of Vascular Ehlers-Danlos. *Journal of Vascular Surgery.* 2011 September; PMID: 21958565
14. **Lee CJ**, Rodriguez HE, Kibbe MR, Malaisrie CS, Eskandari MK. Secondary Interventions After Elective Thoracic Endovascular Aortic Repair for Degenerative Aneurysms. *Journal of Vascular Surgery.* 2013 January. PMID: 23352360
15. Proctor E, Waghray M, **Lee CJ**, Heidt DG, Yalamanchili M, Li C, Bednar F, Simeone DM. Bmi1 Enhances Tumorigenicity and Cancer Stem Cell Function in Pancreatic Adenocarcinoma. *PLoS One.* 2013 February. PMID: 23437065

16. Kuy S, Dua A, **Lee CJ**, Patel B, Desai S, Szabo A, Dua Arshish, Patel PJ. National Trends in Utilization of IVC Filters over a Decade in the United States, 2000-2009. *Journal of Vascular Surgery*. ISSN: 0741-5214 DOI:10.1016/j.jvs.2013.02.129
17. Kuy S, Dua A, Baraniewski H, **Lee CJ**. Ruptured Mycobacterial Aneurysm of the Carotid Artery. *Perspect Vasc Surg Endovasc Ther*. 2013 Dec; 25(3-4):53-6. doi:10.1177/1531003513512870. PMID: 24345739
18. Kuy S, Rossi PJ, Seabrook GR, Brown KR, Lewis BD, Rilling WS, Martin G, Patel B, Dua A, McMaster J, Desai S, **Lee CJ**. Endovascular Management of a Traumatic Renal-Caval Arteriovenous Fistula in a Pediatric Patient. *Ann Vasc Surg* 2014 May; 28(4):1031.e1-5 PMID 24360940
19. Kuy S, Dua A, Desai SS, Rossi PJ, Seabrook GR, Lewis BD, Patel B, Kuy S, **Lee CJ**, Subbarayan R, Brown KR Carotid endarterectomy national trends over a decade: does sex matter? *Ann Vasc Surg* 2014 May; 28(4):887-92 PMID 24321266
20. Kuy S, Dua A, Desai S, Dua A, Patel B, Tondravi N, Seabrook GR, Brown KR, Lewis BD, **Lee CJ**, Kuy S, Subbarayan R, Rossi PJ. Surgical site infections after lower extremity revascularization procedures involving groin incisions. *Ann Vasc Surg*. 2014 Jan; 28(1):53-8. doi: 10.1016/j.avsg.2013.08.002. Epub 2013 Nov 1.
21. Edmiston CE Jr, Krepel CJ, Leaper D, Ledebouer NA, Mackey TL, Graham MB, **Lee C**, Rossi PJ, Brown KR, Lewis BD, Seabrook GR Antimicrobial Activity of Ceftaroline and Other Anti-Infective Agents against Microbial Pathogens Recovered from the Surgical Intensive Care Patient Population: A Prevalence Analysis. *Surg Infect (Larchmt)* 2014 Jun 4: PMID 24896013
22. Kuy S, Dua A, Chappidi R, Seabrook G, Brown KR, Lewis B, Rossi PJ, **Lee CJ** The increasing incidence of thromboembolic events among hospitalized patients with inflammatory bowel disease. *Vascular* 2014 Jul 1: PMID 24986868
23. Edmiston CE Jr, Krepel CJ, Edmiston SE, Spencer M, **Lee CJ**, Brown KR, Lewis BD, Rossi PJ, Malinowski M, Seabrook G, Empowering the surgical patient: a randomized, prospective analysis of an innovative strategy for improving patient compliance with preadmission showering protocol. *J Am Coll Surg* 2014 Aug; 219(2):256-64 PMID 24880956
24. **Lee CJ**, Kibbe MR, Eskandari MK, Morasch MD, Pearce WH, Rodriguez HE. Surgical Management of Aortitis with Early Aneurysmal Dilation. *Annals of Vascular Surgery*. 2014 Apr; 28(3):568-74. doi: 10.1016/j.avsg.2013.06.009. Epub 2013 Nov 5. PMID: 24200141

25. Morgan CE, **Lee CJ**, Chin JA, Eskandari MK, Morasch MD, Rodriguez HE, Helenowski IB, Kibbe MR. High Risk Anatomic Variables and Plaque Characteristics in Carotid Artery Stenting. *Vasc Endovascular Surg*. 2014 Sep 23. PMID: 25252921
26. Dua A, Kuy S, **Lee CJ**, Upchurch GR Jr, Desai SS. Epidemiology of aortic aneurysm repair in the United States from 2000 to 2010. *J Vasc Surg*. 2014 Jun;59(6):1512-7. doi: 10.1016/j.jvs.2014.01.007. Epub 2014 Feb 20. PMID: 24560865
27. Dua A, Desai SS, Seabrook GR, Brown KR, Lewis BD, Rossi PJ, Edmiston CE, **Lee CJ**. The effect of Surgical Care Improvement Project measures on national trends on surgical site infections in open vascular procedures. *J Vasc Surg*. 2014 Dec;60(6):1635-9. doi: 10.1016/j.jvs.2014.08.072. Epub 2014 Nov 21. PMID: 25454105 [PubMed - in process]
28. Dua A, Kuy S, Desai SS, Kumar N, Heller J, **Lee CJ**. Diagnosis and management of a ruptured popliteal mycotic pseudoaneurysm. *Vascular*. 2014 Sep 22. pii: 1708538114551193 PMID: 25245048
29. Dua A, Desai S, Woehlck H, **Lee CJ**. The Impact of Warfarin on Patients with End Stage Renal Disease. *Advances in Vascular Medicine*. Volume 2014 (2014), Article ID 542034, 4 pages <http://dx.doi.org/10.1155/2014/542034>
30. Kugler N, Patel PJ, **Lee CJ**. Chronic Cerebrospinal Venous Insufficiency in Multiple Sclerosis: A Failed Concept.
- 31.
32. Lewis BD, Spencer M, Rossi PJ, **Lee CJ**, Brown KR, Malinowski M, Seabrook GR, Edmiston CE Jr. Assessment of an innovative antimicrobial surface disinfectant in the operating room environment using adenosine triphosphate bioluminescence assay. *Am J Infect Control*. 2015 Mar 1;43(3):283-5. doi: 10.1016/j.ajic.2014.11.023. PMID: 25728155
33. Dua A, Desai SS, Ali F, Yang K, **Lee CJ**. Popliteal vein repair may not impact amputation rates in combined popliteal artery and vein injury. *Vascular*. May 2015. DOI: 10.1177/1708538115589251. PMID: 26006048
34. Wang DT, Brown K, Hieb RA, Lewis B, Rossi P, Patel PJ, **Lee CJ**. Aortic remodeling after thoracic endovascular aortic repair for blunt traumatic aortic injury. *Journal of Vascular and Interventional Radiology*. 02/2015; 26(2):S54-S55. DOI:10.1016/j.jvir.2014.12.150
35. Edmiston CE Jr, **Lee CJ**, Krepel CJ, Spencer M, Leaper D, Brown KR, Lewis BD, Rossi PJ, Malinowski MJ, Seabrook GR Evidence for a Standardized Preadmission Showering Regimen to Achieve Maximal Antiseptic Skin Surface Concentrations of Chlorhexidine Gluconate, 4%, in Surgical Patients. *JAMA Surg*. 2015 Aug 26. doi: 10.1001/jamasurg.2015.2210

36. Patel PJ, Kelly Q, Hieb RA, **Lee CJ**. Current Status of Percutaneous Endografting. *Semin Intervent Radiol*. 2015 Sep;32(3):278-88. doi: 10.1055/s-0035-1556826. Review. PMID: 26327747
37. **Lee CJ**. Chronic Cerebrospinal Venous Insufficiency in Multiple Sclerosis: A Failed Concept.
38. Wang A, Dybul SL, Patel PJ, Tutton SM, **Lee CJ**, White SB. A Cross-Sectional Survey of Interventional Radiologists and Vascular Surgeons Regarding the Cost and Reimbursement of Common Devices and Procedures. *J Vasc Interv Radiol*. 2016 Feb;27(2):210-8. doi: 10.1016/j.jvir.2015.10.024. Epub 2015 Dec 17. PMID: 26706189
39. Carpenter JP, Cuff R, Buckley C, Healey C, Hussain S, Reijnen MM, Trani J, Böckler D; Nellix Investigators. Results of the Nellix system investigational device exemption pivotal trial for endovascular aneurysm sealing. *J Vasc Surg*. 2016 Jan;63(1):23-31.e1. doi: 10.1016/j.jvs.2015.07.096. Epub 2015 Oct 21. PMID: 26482997
40. Dua A, Desai SS, Seabrook GR, Brown KR, Lewis BD, Rossi PJ, Malinowski MJ, **Lee CJ**. Preventable Complications May be Driving the Rising Costs in the Management of Patients with Critical Limb Ischemia. *Ann Vasc Surg*. 2016 Feb 23. pii: S0890-5096(16)30060-7. doi: 10.1016/j.avsg.2015.11.026
41. Kugler N, Subbaryan R, Rossi P, Patel P, Hieb R, Brown K, Lewis B, Seabrook G, **Lee CJ**. Early experience using parallel grafting techniques for visceral artery preservation in the treatment of complex aortic aneurysms. *Global Surgery*. November 2015. DOI: 10.15761/GOS.1000121
42. **Lee CJ**, Davila D, Dua A, Keyashian B, Dux J, Seabrook GR, Brown K, Malinowski M, Hieb RA, Lewis B. Disseminated Mycotic Aneurysms Following Intravesical bacillus Calmette-Guerin Therapy for Bladder Cancer: Case Discussion and Systematic Treatment Algorithm. *Ann Vasc Surg*. 2016 Aug 12. pii: S0890-5096(16)30646-X. doi: 10.1016/j.avsg.2016.05.120. [Epub ahead of print] PMID: 27531091
43. Dua A, Desai SS, **Lee CJ**, Heller J. National Trends in Deep Vein Thrombosis Following Total Knee and Total Hip Replacement in the USA. *Ann Vasc Surg*. 2016 Aug 12. pii: S0890-5096(16)30635-5. doi: 10.1016/j.avsg.2016.05.110.
44. Dua A, **Lee CJ**. Epidemiology of Peripheral Arterial Disease and Critical Limb Ischemia. *Tech Vasc Interv Radiol*. 2016 Jun;19(2):91-5. doi: 10.1053/j.tvir.2016.04.001. Epub 2016 Apr 22. Review. PMID: 27423989
45. Dua A, Koprowski S, Upchurch G, **Lee CJ**, Desai SS. Progressive shortfall in open aneurysm experience for vascular surgery trainees with the impact of fenestrated and branched

endovascular technology. *J Vasc Surg.* 2017 Jan;65(1):257-261. doi: 10.1016/j.jvs.2016.08.075. PMID: 27743805

46. Graf A, Keyashian B, Brown A, Tutton SM, **Lee CJ**. A hybrid approach for the treatment of persistent sciatic artery aneurysms. *Journal of Vascular Surgery Cases and Innovative Techniques* Volume 2, Issue 4, December 2016, Pages 174–177
47. Dua A, Heller J, **Lee CJ**. Management of Post-Traumatic Phlegmasia Cerulea Dolens via Right to Left Femoral Vein to Femoral Vein Bypass (Palma Procedure). *Vascular Endovascular Surgery.* 2017 Jan 1:1538574417729274. doi: 10.1177/1538574417729274. PMID 28905682
48. Morris R, **Lee CJ**. Development of Angiosarcoma in a Saphenous Vein Graft Following Femoral to Above-knee Popliteal Artery Bypass. *Ann Vasc Surg.* 2018 Mar 5. PMID: 29518506
49. Blank JJ, Rothstein AE, **Lee CJ**, et al. Aortic Graft Infection Secondary to Iatrogenic Transcolonic Graft Malposition. *Vasc Endovascular Surg.* 2018 Jan. PMID: 29554857
50. Carpenter JP, Lane JS 3rd, Trani J, Hussain S, Healey C, Buckley CJ, Hashemi H, Cuff R; Nellix Investigators. Refinement of anatomic indications for the Nellix System for endovascular aneurysm sealing based on 2-year outcomes from the EVAS FORWARD IDE trial. *J Vasc Surg.* 2018 Mar 30. pii: S0741-5214(18)30283-0. doi: 10.1016/j.jvs.2018.01.031.
51. Man J, Rothstein A, Patel PJ, **Lee CJ**. Endovascular management of an acute type B aortic dissection in a patient with fibromuscular dysplasia. *Journal of Vascular Surgery Cases and Innovative Techniques* Volume 4, Issue 2, June 2018, Pages 76-79.
52. Truong C, Kugler NW, Rossi PJ, Patel PJ, Hieb RA, Brown KR, Lewis BD, Seabrook G, **Lee CJ**. Sex-dependent Outcomes Following Elective Endovascular Aortic Repair. *J Surg Res. Sep;*229:177-185. doi: 10.1016/j.jss.2018.03.015. Epub 2018 Apr 30. PMID: 29936987
53. **Lee CJ**, Cuff R. Explanting the Nellix Endovascular Aortic Sealing Endoprosthesis for Proximal Aortic Neck Failure. *Ann Vasc Surg.* 2018 May 18. pii: S0890-5096(18)30370-4. doi: 10.1016/j.avsg.2018.02.054. PMID: 29778615
54. Ulualp K, Masnyj SV, **Lee CJ**, Gould JC. Median Arcuate Ligament Syndrome Related to Bodybuilding. *Surg Laparosc Endosc Percutan Tech.* 2018 Nov 1. doi: 10.1097/SLE.0000000000000592. PMID: 30395046
55. **Lee CJ**, Loo R, Wohlauer MV, Patel PJ. Diagnostic workup and endovascular treatment of popliteal artery trauma. *Vasa.* 2019 Jan;48(1):65-71. doi: 10.1024/0301-1526/a000756. Epub 2018 Oct 17. Review. PMID: 30326793

56. Dua A, Rothenberg K, Srivastava G, Brown K, Lewis B, Rossi P, Seabrook G, Malinowski M, Wohlaer M, **Lee CJ**. Evolving Trends in Insurance Coverage of Vascular Surgery Patients in Academic Practice. *Ann Vasc Surg.* 2019 May;57:170-173. doi: 10.1016/j.avsg.2018.09.011. Epub 2018 Nov 27. PMID:30500649
57. Faizer R, Weinhandl E, El Hag S, Le Jeune S, Apostolidou I, Shafii SM, **Lee CJ**, Rosenberg MS, Reed A, Fanola CL. Decreased mortality with local versus general anesthesia in endovascular aneurysm repair for ruptured abdominal aortic aneurysm in the Vascular Quality Initiative database. *J Vasc Surg.* 2019 Jul;70(1):92-101.e1. doi: 10.1016/j.jvs.2018.10.090. Epub 2019 Jan 2. PMID: 30611580
58. Thurston JS, Camara A, Alcasid N, White SB, Patel PJ, Rossi PJ, Hieb RE, **Lee CJ**. Outcomes and Cost Comparison of Percutaneous Endovascular Aortic Repair versus Endovascular Aortic Repair With Open Femoral Exposure. *J Surg Res.* 2019 Aug;240:124-129. doi: 10.1016/j.jss.2019.02.011. Epub 2019 Mar 28. PMID: 30928769
59. Lind B, Morcos O, Ferral H, Chen A, Aquisto T, Lee S, **Lee CJ**. Endovascular Strategies in the Management of Acute Limb Ischemia. *Vasc Specialist Int.* 2019 Mar;35(1):4-9. doi: 10.5758/vsi.2019.35.1.4. Review. PMID: 30993101
60. Dua A, Rothenberg KA, Wohlaer M, Rossi PJ, Lewis BD, Brown KR, Seabrook GR, **Lee CJ**. Unplanned 30-day readmissions after endovascular aneurysm repair: An analysis using the Nationwide Readmissions Database. *J Vasc Surg.* 2019 May 27. pii: S0741-5214(19)30372-6. doi: 10.1016/j.jvs.2019.02.034. [Epub ahead of print] PMID: 31147138
61. Majmudar K, Quintero LD, Fuentes HE, Stocker S, Tafur AJ, **Lee CJ**, Talamonti M. Postoperative venous thromboembolism and mortality in patients with pancreatic surgery. *J Surg Oncol.* 2019 Jun 20. doi: 10.1002/jso.25589. [Epub ahead of print] PMID: 31222842
62. Lindsay T, Jazaeri O, Sherman SM, Saunders AT, Forbes TL; Spiral-Z Registry Investigators. Final results from a postmarket registry of an iliac leg graft with a continuous, spiral nitinol stent. *J Vasc Surg.* 2020 Jan 18. pii: S0741-5214(19)32628-X. doi: 10.1016/j.jvs.2019.10.078. [Epub ahead of print]
63. Bourque SL, **Lee CJ**, Jones MD Jr, Sullivan GM. Letters of Recommendation. *J Grad Med Educ.* 2019 Aug;11(4):479-480. doi: 10.4300/JGME-D-19-00344.1. No abstract available. PMID: 31440346

64. Dua A, Kibrik P, Pocivavsek L, Morcos O, Lind B, Sumpio B, Latz C, **Lee CJ**. Trends and Determinants of Readmissions to Another Facility Following Endovascular Aortic Repair. *AnnVasc Surg*. 2020 Jan 7. pii: S0890-5096(20)30023-6. doi: 10.1016/j.avsg.2020.01.004. [Epub ahead of print] PMID: 31923593
65. Dhara SS, Hermsen M, Khabaz K, Abbott E, Babrowski TA, Milner R, **Lee CJ**, Pocivavsek L. Gaussian Surface Curvature Mapping Indicating High Risk Type B Thoracic Aortic Dissections. *Ann Vasc Surg*. 2020 Aug 28:S0890-5096(20)30776-7. doi: 10.1016/j.avsg.2020.08.096. Epub ahead of print. PMID: 32866573.
66. Chun TT, Judelson DR, Rigberg D, Lawrence PF, Cuff R, Shalhub S, Wohlaer M, Abularrage CJ, Anastasios P, Arya S, Aulivola B, Baldwin M, Baril D, Bechara CF, Beckerman WE, Behrendt CA, Benedetto F, Bennett LF, Charlton-Ouw KM, Chawla A, Chia MC, Cho S, Choong AMTL, Chou EL, Christiana A, Coscas R, De Caridi G, Ellozy S, Etkin Y, Faries P, Fung AT, Gonzalez A, Griffin CL, Guidry L, Gunawansa N, Gwertzman G, Han DK, Hicks CW, Hinojosa CA, Hsiang Y, Ilonzo N, Jayakumar L, Joh JH, Johnson AP, Kabbani LS, Keller MR, Khashram M, Koleilat I, Krueger B, Kumar A, **Lee CJ**, Lee A, Levy MM, Lewis CT, Lind B, Lopez-Pena G, Mohebbali J, Molnar RG, Morrissey NJ, Motaganahalli RL, Mouawad NJ, Newton DH, Ng JJ, O'Banion LA, Phair J, Rancic Z, Rao A, Ray HM, Rivera AG, Rodriguez L, Sales CM, Salzman G, Sarfati M, Savlania A, Schanzer A, Sharafuddin MJ, Sheahan M, Siada S, Siracuse JJ, Smith BK, Smith M, Soh I, Sorber R, Sundaram V, Sundick S, Tomita TM, Trinidad B, Tsai S, Vouyouka AG, Westin GG, Williams MS Jr, Wren SM, Yang JK, Yi J, Zhou W, Zia S, Woo K. Managing central venous access during a health care crisis. *J Vasc Surg*. 2020 Oct;72(4):1184-1195.e3. doi: 10.1016/j.jvs.2020.06.112. Epub 2020 Jul 15. PMID: 32682063; PMCID: PMC7362805.
67. Bero EH, Nguyen-Ho CT, Patel PJ, Foley WD, **Lee CJ**. Aortic Remodeling and Clinical Outcomes Following Thoracic Endovascular Aortic Repair for Blunt Thoracic Aortic Injury. *J Surg Res*. 2020 Jun 16;255:124-129. doi: 10.1016/j.jss.2020.04.019. Epub ahead of print. PMID: 32543377.
68. Carpenter JP, Lane JS 3rd, Trani J, Hussain S, Healey C, Hashemi H, Cuff R; Nellix Investigators. Proper technical procedures improved outcomes in a retrospective analysis of EVAS FORWARD IDE trial 3-year results. *J Vasc Surg*. 2020 Sep;72(3):918-930.e2. doi: 10.1016/j.jvs.2019.11.039. Epub 2020 Feb 5. PMID: 32035772.
69. Vascular and Endovascular Research Network (VERN) COVER study collaborative. Global impact of the first coronavirus disease 2019 (COVID-19) pandemic wave on vascular services. *Br J Surg*. 2020 Oct;107(11):1396-1400. doi: 10.1002/bjs.11961. PMID: 33405234; PMCID: PMC7929316.

70. Dhara SS, Hermsen M, Khabaz K, Abbott E, Babrowski TA, Milner R, **Lee CJ**, Pociavsek L. Gaussian Surface Curvature Mapping Indicating High Risk Type B Thoracic Aortic Dissections. *Ann Vasc Surg.* 2021 Jan;70:171-180. doi: 10.1016/j.avsg.2020.08.096. Epub 2020 Aug 29. PMID: 32866573.
71. Latz CA, Wang LJ, Boitano L, DeCarlo C, Sumpio B, Schwartz S, **Lee CJ**, Dua A. Contemporary Endovascular Outcomes for Critical Limb Ischemia Are Still Failing to Meet Society for Vascular Surgery Objective Performance Goals. *Vasc Endovascular Surg.* 2021 Jan;55(1):33-38. doi: 10.1177/1538574420964623. Epub 2020 Oct 8. PMID: 33030116.
72. Latz CA, Boitano LT, Wang LJ, DeCarlo C, Pendleton AA, Waller HD, **Lee CJ**, Dua A. Perioperative outcomes for carotid revascularization on asymptomatic dialysis-dependent patients meet Society for Vascular Society guidelines. *J Vasc Surg.* 2020 Dec 17:S0741-5214(20)32591-X. doi: 10.1016/j.jvs.2020.11.044. Epub ahead of print. PMID: 33340696.

BOOKS, CHAPTERS & REVIEWS

BOOKS/CHAPTERS

1. **Lee CJ**, Li C, Simeone DM. "Pancreatic Cancer Stem Cells." In Yu J, et al. (eds). *Methods in Molecular Biology: Cancer Stem Cells*. Humana Press 2009.
2. **Lee CJ**, Heidt DG, Simeone DM. "Pancreatic Cancer Stem Cells." In Schwab M (ed). *Encyclopedia of Cancer* (2nd edition). Springer Press 2009.
3. Dosch J, **Lee CJ**, and Simeone DM. "Cancer Stem Cells- Pancreatic Cancer." In *Stem Cells and Cancer*. (1st Edition), Humana Press 2009.
4. **Lee CJ**, Simeone DM. "Gastric Ulcer." In Chapter 51, *General Surgery: Principles and International Practice*. 2nd Edition. Springer, London. 2009, pgs. 539-548.
5. **Lee CJ**, Finks JF. "Surgery of the Hiatus." In Chapter 7, *Current Procedures: Surgery*. McGraw Hill Education. 2010. ISBN 978-0-07-145316-5
6. **Lee CJ**, Morasch MD. "Axillofemoral Bypass" In "Clinical Procedures: Medscape Reference." <http://emedicine.medscape.com/article/1895225-overview>
7. **Lee CJ**, Morasch MD. "Femoral-Femoral Bypass" In "Clinical Procedures: Medscape Reference." <http://emedicine.medscape.com/article/1830260-overview>
8. **Lee CJ**, Morasch MD. "Infra-popliteal Bypass" In "Clinical Procedures: Medscape Reference." <http://emedicine.medscape.com/article/1895511-overview>

9. **Lee CJ**, Keldahl ML, Eskdandari MK. "TEVAR for Thoracic Aortic Emergencies." In "Contemporary Vascular Surgery" Chapter 28, pgs. 291-299. ISBN-13: 978-1-60795-166-7
10. **Lee CJ**, Chin J, Kibbe MR. "Gene and Cell Therapy for Critical Limb Ischemia." In "Contemporary Vascular Surgery" Chapter 17, pgs. 157-167. ISBN-13: 978-1-60795-166-7
11. **Lee CJ**, Gonzalez A, Morasch MD. "Endovascular Repair of Ruptured Abdominal Aortic Aneurysms." In Aortic Aneurysm / Book 4", INTECH. ISBN 978-953-307-578-5
12. **Lee CJ**, Pearce WH. "Upper Extremity Revascularization." In Current Therapy in Vascular Surgery. Mosby (In press)
13. **Lee CJ**, Morash MD. "Direct Carotid Reconstruction." In Clinical Procedures: Medscape Reference. <http://emedicine.medscape.com/article/1895313-overview>
14. **Lee CJ**, Eskandari MK. "Vascular Access Problems in Endovascular Aortic Repair." In Aorta: Contemporary Endovascular Management.
15. Pearce WH, **Lee CJ**, Rodriguez, HE. "Visceral Artery Dissection." Chapter 41, pgs 463-467. ISBN-13: 978-1-60795-166-7
16. **Lee CJ**. Distal Carotid Exposure and Control Techniques. Operative Techniques in Surgery (Mulholland et al).
17. Malinowski MJ, **Lee CJ**. Subclavian Artery Stenosis with Steal. Clinical Scenarios in Vascular Surgery (2nd. Ed.)
18. Kugler N, **Lee CJ**. Extra-anatomic Bypass Grafting. Vascular Surgery: Atlas of Operative Techniques (Peter Nelson et al).
19. **Lee CJ**. Mycotic Aneurysms: Fischer's Mastery of Surgery 7th edition. 2018
20. Rossi P, **Lee CJ**. Portable and wearable dialysis devices for the treatment of patients with end-stage renal disease: Hemodialysis Access: Fundamentals and Advanced Management 2016.
21. Morcos M, **Lee CJ**. The Benefits of routine ultrasound use in peripheral vascular interventions. Current Vascular Surgery. 2019

Editorial/Reviewer Positions:

2010	Book Review	Rutherford's Vascular Surgery Edition 7, Cronenwett, Johnston
2010	Ad hoc reviewer	Future Medicine/Expert-Reviews: Manuscript "Endovascular Abdominal Aortic Aneurysm Repair: An Overview of Advancements in Interventional Techniques and Associated Outcomes
2010	Book Review	Complex Cases in peripheral Vascular Interventions, Schillinger, Minar ISBN 9781841847313
2011	Ad hoc reviewer	European Journal of Endovascular Surgery: EVAR suitability is not a predictor for early and midterm mortality after open ruptured AAA repair. - manuscript number EJVES6846
2011	Ad hoc reviewer	Journal of Vascular Surgery: Manuscript: Early Experience with the Snorkel Technique for Juxtarenal Aneurysms (JVS-D-11-01224)
2011	Ad hoc reviewer	International Journal of Vascular Medicine: Manuscript: Urgent Carotid Surgery, Is Still Out of Debate? #536392
2013-present	Reviewer	<p><i>Journal Vascular</i></p> <p>Manuscripts: Late spontaneous recanalization of symptomatic atheromatous internal carotid artery occlusion VASCULAR-07-13-CM-0016</p> <p>Rupture after Endovascular Abdominal Aortic Aneurysm Repair. A multicenter study VASCULAR-02-14-OA-0615</p> <p>The in vivo characterization of electrospun heparin-bonded polycaprolactone in small-diameter vascular reconstruction VASCULAR-11-13-OA-0588.R1</p> <p>Radiofrequency catheter ablation increases mean platelet volume VASCULAR-05-14-OA-0645</p>
2016-present	editorial board	<i>Korean Journal of Radiology</i> pISSN 1229-6929 · eISSN 2005-8330
2018	Reviewer	Annals of Vascular Surgery

2018 Reviewer

Journal of Surgical Research

2018 Reviewer

Journal of International Medical Research

2018 Editorial Board

Vascular Specialist pISSN 2288-7970 eISSN: 2288-7989

Section V, Service Specific Review Criteria
Cardiac Catheterization
Criterion 1110.225(a) – Peer Review

The Applicant is seeking to modernize and expand the existing cardiac catheterization service at NorthShore Glenbrook Hospital. Since there is already a robust multi-disciplinary peer review process in place, NorthShore Glenbrook Hospital would continue this established program that evaluates whether cardiac catheterization patient outcomes are consistent with quality standards established by professional organizations for cardiovascular services. If outcomes do not meet or exceed those standards, a quality improvement plan will be initiated.

The Cardiology Quality Committee will be chaired by a member from the Division of Cardiology. Additional Committee membership is made of up of clinical, Interventional and Electrophysiology Cardiologist and Quality Improvement. Additional representatives on the Committee without voting privileges may also personnel from Risk Management, Quality and Nursing.

Unbiased reviewers will evaluate each case and present salient summaries to the committee for discussion and voting on the final event classification assigned. All potentially avoidable cases attributable to patient care factors are forwarded to the Cardiology Department chairman for review after which a meeting is held between the chairman and the treating physicians and/or nurses to review the case and make recommendations for future care under similar circumstances.

Individual cases for review will be identified from the following list of indicators and any other referrals received since the previous meeting date:

- Bleeding Event w/in 72 Hours
- Cardiac Perforation
- Cardiac test complications
- Cardiac Valve Injury
- Coronary Venous Dissection
- CVA/Stroke
- Hemothorax
- Intracoronary Significant Dissection
- Lead Dislodgement
- Patient grievance regarding medical care
- Pneumothorax
- Procedural Mortality
- Tamponade
- Vascular Complications Requiring Treatment
- Referred from other Departments

The NorthShore University HealthSystem Quality Department and Professional Staff Office will maintain provider-specific peer review and other quality information concerning practitioners in a secure file. Physician performance profiles will be utilized by the Division Chair at time of reappointment. Peer review data, performance data, and physician correspondence regarding cases reviewed or evaluations of the committee will be available only to authorized individuals.

Section V, Service Specific Review Criteria

Cardiac Catheterization

Criterion 1110.225(b)- Establishment or Expansion of Cardiac Catheterization Service

Attached at Attachment- 24A is a map showing the location of the other hospitals that provide cardiac cath services within Health Service Area 7. Below is a table summarizing the number of cardiac catheterizations that were performed at each of these facilities according to 2019 hospital profiles, the most recent year for which utilization data for HSA 7 is available.

Table 1110.225 (b)	
Cardiac Catheterization Provider	CY19 Cardiac Cath Procedures
Advocate Christ Medcial Center	6,602
Foster G. McGaw Hospital - Loyola Univ Med Ctr	5,428
Edward Hospital	5,186
Elmhurst Memorial Hospital	3,747
NorthShore Evanston Hospital	3,404
Advocate Lutheran General Hospital	3,175
Palos Community Hospital	2,438
AMITA Health Alexian Brothers Med Ctr Elk Grove	2,423
NorthShore Northwest Community Hospital	2,373
Northwestern Central DuPage Hospital	2,293
Advocate Good Samaritan Hospital	1,903
Advocate South Suburban Hospital	1,448
AMITA Health Adventist Medical Center Hinsdale	1,390
MacNeal Hospital	1,321
Little Company of Mary Hospital	1,251
Franciscan Health - Olympia Fields	1,241
Ingalls Memorial Hospital	1,017
AMITA Health Adventist Medical Center La Grange	634
AMITA Health Saint Francis Hospital Evanston	593
Pipeline West Suburban	562
Gottlieb Memorial Hospital - Loyola Medicine	428
AMITA Health Adventist Medical Center GlenOaks	403
NorthShore Glenbrook Hospital	331

Rush Oak Park Hospital, Inc.	272
NorthShore Skokie Hospital	196

Since October 2018, NorthShore Glenbrook Hospital has had 723 inpatient transfers for cardiac catheterizations to either NorthShore Evanston Hospital or NorthShore Highland Park Hospital, not including transfers from the emergency department.

Section V, Service Specific Review Criteria

Cardiac Catheterization

Criterion 1110.220(c) – Unnecessary Duplication of Services

Not applicable. NorthShore Glenbrook Hospital is not proposing the establishment of cardiac catheterization services, as it has an existing cardiac cath program it is seeking to modernize and expand.

Section V, Service Specific Review Criteria

Cardiac Catheterization

Criterion 1110.220(d) – Modernization of Existing Cardiac Catheterization Laboratories

As detailed in Attachment- 15, NorthShore Glenbrook Hospital’s utilization is expected to far exceed 200 cardiac catheterization procedures performed annually within two years after initiation. NorthShore Glenbrook Hospital’s cardiac catheterization lab performed 331 procedures in 2019, and the Project proposes shifting additional catheterization cases from other NorthShore hospitals to NorthShore Glenbrook Hospital.

Section V, Service Specific Review Criteria

Cardiac Catheterization

Criterion 1110.220(e) – Support Services

In connection with the existing cardiac cath program that it already operates, NorthShore Glenbrook Hospital provides the following support services and facilities. These services and facilities will continue to be available when needed if the cardiac cath program is modernized and expanded.

- Nuclear medicine laboratory.
- Echocardiography service.
- Electrocardiography laboratory and services, including stress testing and continuous cardiogram monitoring.
- Pulmonary Function unit.
- Blood bank.
- Hematology laboratory-coagulation laboratory.
- Microbiology laboratory.
- Blood Gas laboratory.
- Clinical pathology laboratory with facilities for blood chemistry

By signing the certification page within this application, the Applicant attests to the above.

Section V, Service Specific Review Criteria**Cardiac Catheterization****Criterion 1110.220(f) – Laboratory Location**

As shown in Attachment- 22B, all of the proposed cath labs will be located immediately adjacent to one another.

Section V, Service Specific Review Criteria**Cardiac Catheterization****Criterion 1110.220(g) – Staffing**

In connection with the existing cardiac cath program that it already operates, NorthShore Glenbrook Hospital already has the following personnel available. These positions will continue to be available when needed if the cardiac cath program is modernized and expanded.

- Lab director board-certified in internal medicine, pediatrics or radiology with subspecialty training in cardiology or cardiovascular radiology.
- A physician with training in cardiology and/or radiology present during examination with extra physician backup personnel available.
- Nurse specially trained in critical care of cardiac patients, knowledge of cardiovascular medication, and understanding of catheterization equipment.
- Radiologic technologist highly skilled in conventional radiographic techniques and angiographic principles, knowledgeable in every aspect of catheterization instrumentation, and with thorough knowledge of the anatomy and physiology of the cardiovascular system.
- Cardiopulmonary technician for patient observation, handling blood samples and performing blood gas evaluation calculations.
- Monitoring and recording technician for monitoring physiologic data and alerting physician to any changes.
- Electronic radiologic repair technician to perform systematic tests and routine maintenance; must be immediately available in the event of equipment failure during a procedure.

By signing the certification page within this application, the Applicant attests to the above.

The Applicant anticipates that the following NorthShore University HealthSystem physician leaders will continue to function in their current roles. Their CVs can be found in Attachment- 22C.

- Dr. Mark Ricciardi: Director, Interventional Cardiology and Structural Heart Disease
- Dr. Mark Metzl: Section Chief, Cardiac Electrophysiology

Section V, Service Specific Review Criteria**Cardiac Catheterization****Criterion 1110.220(h) – Continuity of Care**

The Project would result in an open heart surgery program at NorthShore Glenbrook Hospital. Accordingly, NorthShore Glenbrook Hospital would not transfer seriously ill

patients for continuity of care. Instead, NorthShore Glenbrook would receive heart surgery referrals from other facilities.

Section V, Service Specific Review Criteria

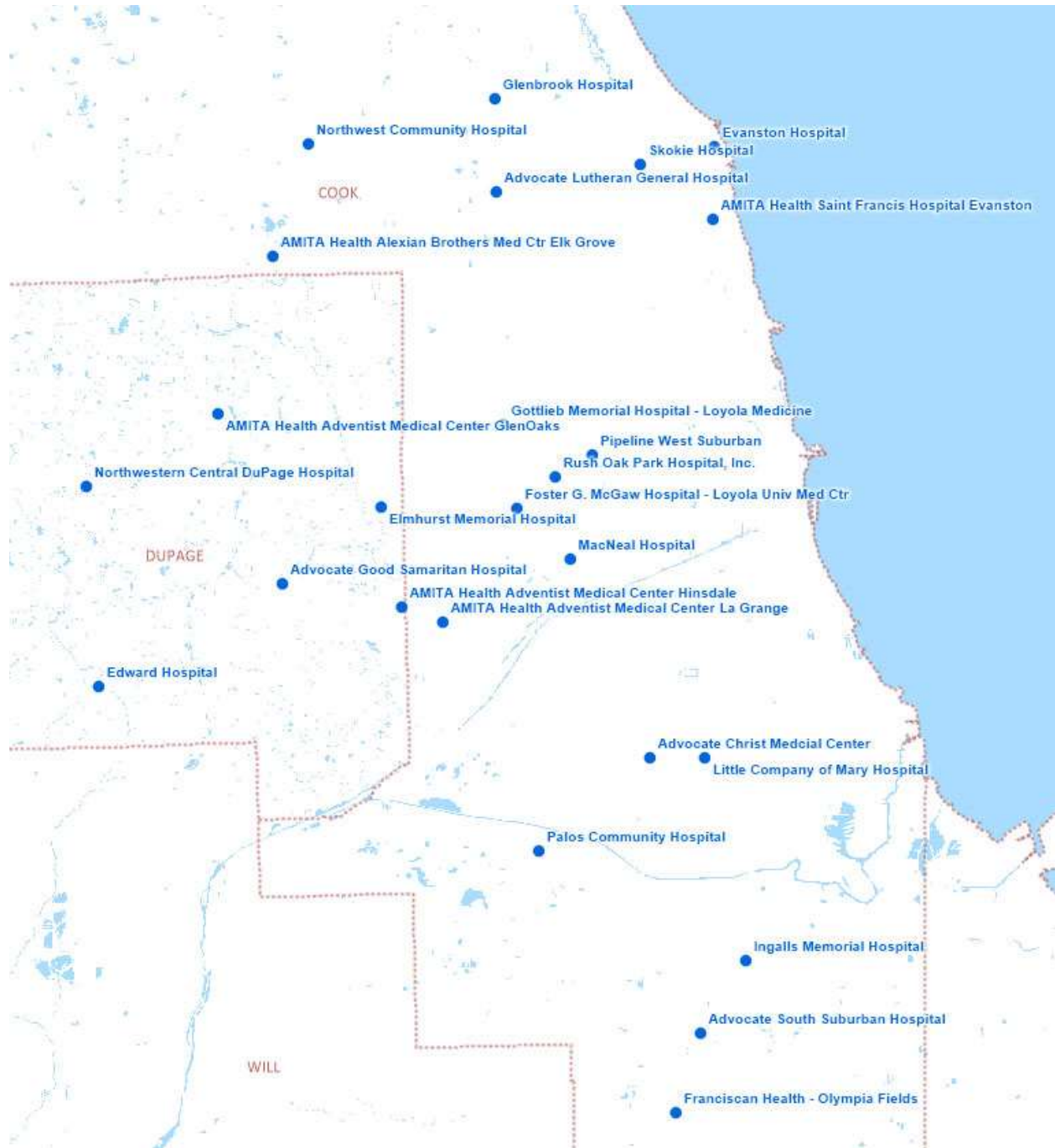
Cardiac Catheterization

Criterion 1110.220(i) – Multi-institutional variance

Not applicable. The Applicant is not proposing a multi-institutional variance.

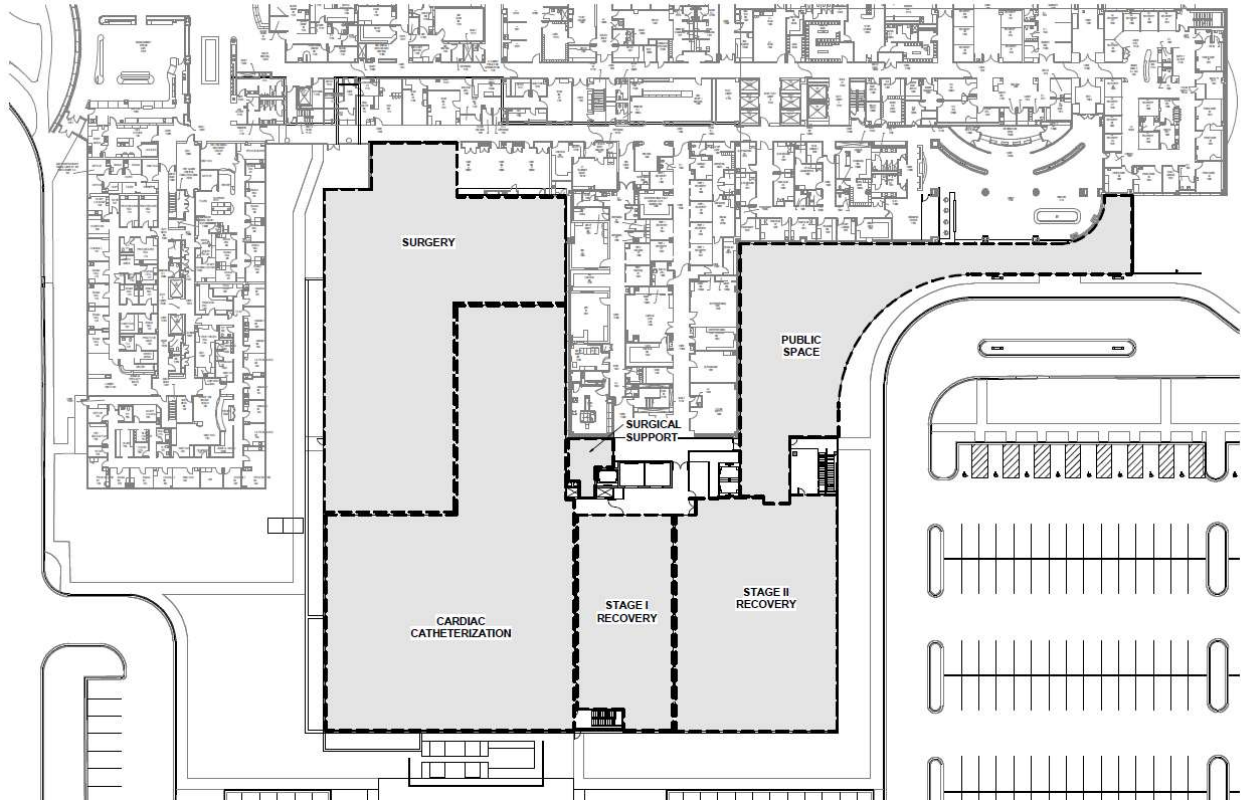
Attachment- 22A

Below is a map showing the location of the other hospitals that provide cardiac cath services within HSA 7.



Attachment- 22B

Below is drawing showing that the proposed cardiac catheterization laboratories will all be located immediately adjacent to one another.



Curriculum Vitae**Mark J. Ricciardi, MD, FAHA, FACC, FSCAI**

Director, Interventional Cardiology and Structural Heart Disease
 NorthShore University Health System
 NorthShore Cardiovascular Institute
 Walgreen Building 3rd Floor
 2650 Ridge Ave
 Evanston, IL 60201
 847.570.2450
 mricciardi@northshore.org

Personal

Born: New York City
 Citizenship: USA

Education

Sept 1985 - June 1989	MD	New York University School of Medicine New York, NY
Sept 1981 - May 1985	BA	University of Rochester Rochester, NY

Postgraduate Training

July 1997 - June 1998	Fellowship Interventional Cardiology	University of Michigan Medical Center Ann Arbor, MI
July 1994 - June 1997	Fellowship Cardiovascular Disease	University of Michigan Medical Center Ann Arbor, MI
July 1989 - June 1992	Internship and Residency Internal Medicine	Yale University/Yale-New Haven Hospital New Haven, CT

Hospital / Academic Appointments

Dec 2019 - present	Clinical Director	Interventional Cardiology and Structural Heart Disease NorthShore University Health System Evanston, IL
	Director of Research	Interventional Cardiology and Structural Heart Disease NorthShore Cardiovascular Institute Evanston, IL
Nov 2012 - Nov 2019	Associate Professor of Medicine	Department of Medicine/Cardiology Northwestern University Feinberg School of Medicine Chicago, IL
	Section Chief	Interventional Cardiology Northwestern Medicine Chicago, IL
	Medical Director	Cardiac Catheterization Laboratories Northwestern Memorial Hospital Chicago, IL
	Director	Center for Coronary Disease

		Northwestern Bluhm Cardiovascular Institute Chicago, IL
Dec 2011 - Oct 2012	Associate Clinical Division Chief	Department of Medicine/Cardiology University of New Mexico Health Sciences Center Albuquerque, NM
Jan 2011 - July 2011	Acting Chief	Department of Medicine/Cardiology University of New Mexico Health Sciences Center Albuquerque, NM
July 2006 - Oct 2012	Associate Professor of Medicine	Department of Medicine/Cardiology University of New Mexico School of Medicine Albuquerque, NM
	Medical Director	Cardiac Catheterization Center and Interventional Cardiology University of New Mexico Health Sciences Center Albuquerque, NM
	Attending Physician	Cardiac Catheterization Laboratory New Mexico VA Health Care System Albuquerque, NM
July 1998 - July 2006	Assistant Professor of Medicine	Northwestern University Feinberg School of Medicine Chicago, IL
	Attending Physician	Cardiac Catheterization Laboratories Northwestern Memorial Hospital Chicago, IL
	Attending Physician	Cardiac Catheterization Laboratory Lakeside and Jesse Brown VA Medical Center Chicago, IL
Aug 1992 - June 1994	Staff Physician, General Medicine Director, Respiratory Therapy Co-director, Emergency Room	Chinle Indian Health Service Hospital U.S. Public Health Service Chinle, AZ

Certification / Licensure

Diplomat, American Board Internal Medicine	Interventional Cardiology 1999, re-cert 2009, 2019
Diplomat, American Board Internal Medicine	Cardiovascular Disease 1998, re-cert 2008, 2018
Diplomat, American Board Internal Medicine	Internal Medicine 1992-2002
National Board of Medical Examiners	1990
New Mexico State Medical License	2006-present
Illinois State Medical License	1998-2008, 2012-present

Professional Organizations / Committees

American Heart Association Fellow (FAHA)
 American College of Cardiology Fellow (FACC)
 Society for Cardiovascular Angiography and Interventions Fellow (FSCAI)
 American Heart Association Diagnostic and Interventional Cardiac Catheterization, Committee Member, 2004
 NIH National Heart, Lung, and Blood Institute Dynamic Registry, Committee Member 2009-11
 Northwestern University Institutional Review Board Member, 1999-2006

University of New Mexico School of Medicine Cardiac Surgery Search Committee Member, 2011
University of New Mexico, Department of Internal Medicine Promotion and Tenure Committee, 2011

Military Service

None

Honors, Awards, Grants

Innovations Pilot Grant: The use of 3D-printing technology for the advancement of mitral regurgitation research. Northwestern University Dept of Medical Education, 2015
Baum Clinical Simulation Grant: 3D-printing for mitral regurgitation research. Northwestern University, 2015
Co-investigator, Gilead Sciences, Inc, Impact of Ranolazine on Coronary Microcirculatory Resistance, 2012
Co-investigator, NIH RO1, Magnetic Resonance Imaging of Coronary Arteries at 3.0T, 2003
Co-investigator, NIH/NHLBI, Minority K-12 Initiative for Teachers and Students (MKITS), 2003
Principal investigator, American Heart Association - Michigan Affiliate Fellowship Grant, 1997
Honors Program Research Grant, NYU School of Medicine, 1986-88
Magna cum laude, University of Rochester, 1981-85
Honors Society Scholar, University of Rochester, 1981-85

Publications

Book chapters

MJ Ricciardi, LH Paz Rios, J Rosenberg, J Levisay
Large Bore Arterial Post-Closure Hemostasis
Society for Cardiovascular Angiography and Intervention (SCAI) eBook, Vascular Access,
Management, and Closure: Best Practices. In press.

SC Malaisrie, MJ Ricciardi, CJ Davidson
Transfemoral/Transseptal Mitral Valve-in-Valve using Sapien 3
In: A Iribarne, A Stefanescu, TC Nguyen Eds. American College of Cardiology: Transcatheter Heart
Valve Handbook. Chapter 27. 2017

MJ Ricciardi
Contributor
In: Emmanouil Brilakis, Ed. Manual of Chronic Total Occlusion Interventions 2nd Edition. Academic
Press 2017.

A Jivan and MJ Ricciardi
Cardiogenic Shock
In: Mukherjee, Bates, Roffi, Lange and Moliterno Eds. Cardiovascular Catheterization and
Intervention: A Textbook of Coronary, Peripheral, and Structural Heart Disease. Chapter 34. CRC
Press. 2017.

N Beohar, MJ Ricciardi, CJ Davidson
Cardiac Catheterization and Coronary Angiography.
In: C. Rosendorff, ed. Essential Cardiology; Principles and Practice. 3rd Edition. Springer NY. 2013.

JJ Nawarskas, MJ Ricciardi
Drug-Eluting Stents
In: WH Fishman and DA Sica, Eds. Cardiovascular Pharmacotherapeutics, 3rd Ed. Chapter 29.
Cardiotext Publishing. 2010.

MJ Ricciardi
Cardiogenic Shock

In: D Mukherjee, ER Bates, M Roffi, and DJ Moliterno Eds. Cardiovascular Catheterization and Intervention: A Textbook of Coronary, Peripheral, and Structural Heart Disease. Chapter 34. InformaHealthcare Books. 2009.

MJ Ricciardi, JD Robbins, JD Flaherty, CJ Davidson
Renal Disease and Diabetes

In: MJ Kern, ed. Society of Cardiovascular Angiography Intervention, Interventional Cardiology Board Review Book. Lippincott Williams and Wilkins. 2006.

MJ Ricciardi, N Beohar, CJ Davidson

Cardiac Catheterization and Coronary Angiography.

In: C. Rosendorff, ed. Essential Cardiology Second Edition. Philadelphia, PA: WB Saunders, Inc., 2005:197-219.

MJ Ricciardi, CJ Davidson

Complex Angioplasty.

In: CJ Pepine and SE Nissan, eds. CathSAP II, American College of Cardiology and Society for Cardiac Angiography and Intervention Cardiac Catheterization and Interventional Cardiology Self-Assessment Program. 2001.

MJ Ricciardi, N Beohar, CJ Davidson

Cardiac Catheterization and Coronary Angiography.

In: C. Rosendorff, ed. Essential Cardiology. Philadelphia, PA: WB Saunders, Inc., 2001:204-226.

MJ Ricciardi and DDW Muller

Molecular and Cellular Biology of Saphenous Vein Bypass Graft Disease.

In: E. Bates and D. Holmes, Jr. eds. Management of Saphenous Vein Bypass Graft Disease. New York, New York: Marcel Dekker, Inc, 1998:91-112.

Manuscripts

Management of STEMI during the COVID-19 pandemic: Lessons learned in 2020

Vardhmaan Jain, Kartik Gupta, Kirtipal Bhatia, Agam Bansal, Sameer Arora, Akshay K. Khandelwal, Jonathan R. Rosenberg, Justin P. Levisay, Carl L. Tommaso, Mark J. Ricciardi, Arman Qamar

Trends in Cardiovascular Med 2020 Dec 15;S1050-1738(20)30156-0

2020 ACC Expert Consensus Decision Pathway on Management of Conduction Disturbances in Patients Undergoing Transcatheter Aortic Valve Replacement. A Report of the American College of Cardiology Solution Set Oversight Committee

Scott M. Lilly, Abhishek J. Deshmukh, Andrew E. Epstein, Mark J. Ricciardi, Satya Shreenivas, Poonam Velagapudi and Janet F. Wyman.

J Am Coll Cardiol 2020 Nov 17;76(20):2391-2411.

Early Multinational Experience of Transcatheter Tricuspid Valve Replacement for Treating Severe Tricuspid Regurgitation

Rebecca T. Hahn, Susheel Kodali, Neil Fam, Vinayak Bapat, Krzysztof Bartus, Josep Rodés-Cabau, Francois Dagenais, Rodrigo Estevez-Loureiro, Alberto Forteza, Samir Kapadia, Azeem Latib, Francesco Maisano, Patrick McCarthy, Jose Navia, Geraldine Ong, Mark Peterson, George Petrossian, Alberto Pozzoli, Markus Reinartz, Mark J. Ricciardi, Newell Robinson, Horst Sievert, Maurizio Taramasso, Vratika Agarwal, Elisabeth Bédard, Giuseppe Tarantini, Andrea Colli

J Am Coll Cardiol Intv 2020;13:2482-93

Hybrid approach to postmyocardial infarction ventricular septal defect repair.

Alsaad AA, Russell HM, Tokarczyk AJ, Ricciardi MJ.

Catheter Cardiovasc Interv. 2020 May 30. doi: 10.1002/ccd.29000.

Graham Peigh, Arif Jivan, Ethan Kosova, Aubrey Opyt, Daniel Schimmel, Mark J. Ricciardi
High Risk Coronary Atherectomy, Perforation and Successful Percutaneous Treatment: When Impella
Support Prevents Catastrophe

J Am Coll Cardiol Case Rep. 2020 Mar, 2 (4) 664–667

Howard TM, Cantey EP, Abutaleb AA, Ricciardi MJ, Sweis RN, Pham DT, Churyla A, Malaisrie SC,
Davidson CJ, Flaherty JD.

Transcatheter aortic valve replacement outcomes based on the presence of chronic total occlusion.
Cardiovasc Revasc Med. 2020 Mar 7:S1553-8389(20)30146-9. doi: 10.1016/j.carrev.2020.03.014.

Peters AC, Unger E, Fei Gong F, El Hangouche N, Puthumana JJ, Thomas JD, Fusari M, Davidson CJ,
Ricciardi MJ, Pham D, Flaherty JD, Narang A.

Multimodality imaging to guide transcatheter treatment of severe degenerative tricuspid regurgitation
with tricuspid valve-in-ring implantation and paravalvular leak closure. *Echocardiography*. 2020 May
29. doi: 10.1111/echo.14743.

Kislitsina ON, Smith D, Sherwani SS, Pham DT, Churyla A, Ricciardi MJ, Davidson CJ, Flaherty JD,
Sweis RN, Kruse J, Andrei AC, McCarthy PM, Chris Malaisrie S.

Comparison of Monitored Anesthesia Care and General Anesthesia for Transcatheter Aortic Valve
Replacement.

Innovations (Phila). 2019 Oct;14(5):436-444.

Ajay Yadlapati, David Wax, Stuart Rich, Mark J. Ricciardi

Novel shunt modification with an adjustable stent-embedded “fenestrated” septal occluder in a patient
with pulmonary hypertension

Catheter Cardiovasc Interv. 2019

Szlapka M, Michel E, Ricciardi MJ, Malaisrie SC

Valve-in-valve-prosthesis embolization and aortic dissection: single procedure, double complication.

Eur J Cardiothorac Surg. 2018 [Epub ahead of print]

Kaplan RM, Yadlapati A, Cantey EP, Passman RS, Gajjar M, Knight BP, Sweis R, Ricciardi MJ, Pham
DT, Churyla A, Malaisrie SC, Davidson CJ, Flaherty JD. Conduction Recovery Following Pacemaker
Implantation After Transcatheter Aortic Valve Replacement

Pacing and Clinical Electrophysiology (PACE) 2019;42:146-152

Shah SJ, Feldman T, Ricciardi MJ, Kahwash R, Lilly S, Litwin S, Nielsen CD, van der Harst P,
Hoendermis E, Penicka M, Bartunek J, Fail PS, Kaye DM, Walton A, Petrie MC, Walker N, Basuray A,
Yakubov S, Hummel SL, Chetcuti S, Forde-McLean R, Herrmann HC, Burkhoff D, Massaro JM,
Cleland JGF, Mauri L. One-Year Safety and Clinical Outcomes of a Transcatheter Interatrial Shunt
Device for the Treatment of Heart Failure With Preserved Ejection Fraction in the Reduce Elevated
Left Atrial Pressure in Patients With Heart Failure (REDUCE LAP-HF I) Trial. A Randomized Clinical
Trial.

JAMA Cardiology 2018;3:968-977

Van Assche LMR, Ricciardi MJ

Functional Mitral Regurgitation: An Interventional Cardiologist's Perspective

Cardiol Rev. 2018;26(5):230-238

Brilakis ES, Edson R, Bhatt DL, ... Ricciardi M, et al, DIVA Trial Investigators.

Drug-eluting stents versus bare-metal stents in saphenous vein grafts: a double-blind, randomised trial.
Lancet. 2018;391:1997-2007

Ahmad FS, Sauer AJ, Ricciardi MJ.

Endovascular repair of ventricular assist device outflow cannula stenosis.

Catheter Cardiovasc Interv. 2018;91(7):E81-E85.

FA Ahmad, MJ Ricciardi, LJ Davidson, AS Anderson, K Ghafourian, I Okwuosa, E Vorovich, JE Wilcox, DD Holloway, DT Pham, and JD Rich
Reversal of fixed pulmonary hypertension with transcatheter valve replacement for aortic insufficiency on ventricular assist device support.
The VAD Journal 2018;vol 4, article 5

LJ Davidson, MJ Ricciardi
Coronary Artery Perforation Complicated by Pericardial Abscess Formation: A Clinical Dilemma
Circulation Cardiovasc Interv. 2018 Feb;11(2)

Feldman T, Mauri L, Kahwash R, Litwin S, Ricciardi MJ, van der Harst P, Penicka M, Fail PS, Kaye DM, Petrie MC, Basuray A, Hummel SL, Forde-McLean R, Nielsen CD, Lilly S, Massaro JM, Burkhoff D, Shah SJ; for the REDUCE LAP-HF I Investigators.
Transcatheter InterAtrial Shunt Device for the Treatment of Heart Failure with Preserved Ejection Fraction (REDUCE LAP-HF I): A Phase 2, Randomized, Sham-Controlled Trial.
Circulation 2017;137:364-375.

Gajjar M, Yadlapati A, Van Assche LMR, Puthumana J, Malaisrie SC, Davidson CJ, Thomas J, Ricciardi MJ
Real-Time Continuous Left Atrial Pressure Monitoring During Mitral Valve Repair Using the MitraClip NT System: A Feasibility Study.
JACC Cardiovasc Interv. 2017 Jul 24;10(14):1466-1467.

E Kosova, M Ricciardi
Cardiac Catheterization. JAMA Patient Page
JAMA 2017;317:2344

CP Huded, LR Benck, NJ Stone, RN Sweis, MJ Ricciardi, SC Malaisrie, CJ Davidson, JD Flaherty
Relation of Intensity of Statin Therapy and Outcomes After Transcatheter Aortic Valve Replacement
American Journal of Cardiology 2017;119:1832-1838.

RT Hahn, CU Meduri, CJ Davidson, S Lim, TM Nazif, MJ Ricciardi, V Rajagopal, G Ailawadi, MA Vannan, JD Thomas, D Fowler, S Rich, R Martin, G Ong, A Groothuis, S Kodali.
Early Feasibility Study of a Transcatheter Tricuspid Valve Annuloplasty. SCOUT Trial 30-Day Results
J Am Coll Cardiol 2017;69:1795-806.

Yadlapati A, Gajjar M, Schimmel DR, Ricciardi MJ, Flaherty JD.
Contemporary management of ST-segment elevation myocardial infarction.
Intern Emerg Med. 2016 Oct 6. Review.

Huded CP, Huded JM, Sweis RN, Ricciardi MJ, Malaisrie SC, Davidson CJ, Flaherty JD.
The Impact of Delirium on Healthcare Utilization and Survival After Trans-Catheter Aortic Valve Replacement
Catheter Cardiovasc Interv. 2016 Aug 27

C Huded, Q Youmans, R Sweis, M Ricciardi, J Flaherty
The Impact of Operator Experience During Institutional Adoption of Trans-radial Cardiac Catheterization
Catheter Cardiovasc Interv. 2016 Jul 29

Huded CP, Youmans QR, Puthumana JJ, Sweis RN, Ricciardi MJ, Malaisrie SC, Davidson CJ, Flaherty JD.

Lack of Association Between Extracranial Carotid and Vertebral Artery Disease and Stroke After Transcatheter Aortic Valve Replacement.
Can J Cardiol. 2016 Mar 29

Huded CP, Huded JM, Friedman JL, Benck LR, Lindquist LA, Holly TA, Sweis RN, Ricciardi MJ, Malaisrie SC, Davidson CJ, Flaherty JD.
Frailty Status and Outcomes After Transcatheter Aortic Valve Implantation.
Am J Cardiol. 2016 Jun 15;117(12):1966-71.

A Doerr, L Buccellato, M Ricciardi
MitraClip: Treating Mitral Valve Regurgitation at Northwestern
Cath Lab Digest. Volume 24 - Issue 3 - March 2016

Blair JEA, Brummel K, Friedman JL, Atri P, Sweis RN., Russell H, Ricciardi MJ, Malaisrie SC, Davidson CJ, Flaherty JD.
In-hospital and Post-discharge Changes in Renal Function after Transcatheter Aortic Valve Replacement
American Journal of Cardiology. 2016 Feb 15;117

Laskey WK, Ricciardi MJ.
Perspectives on the FDA Advisory Board in the Context of Invasive/Interventional Cardiology: Process, Progress, and Improvement at Center for Devices and Radiological Health (CDRH).
<http://www.acc.org/latest-in-cardiology/articles/2015/05/26/09/25/perspectives-on-the-fda-advisory-board-in-the-context-of-invasive-interventional-cardiology> May 26, 2015.

JE Blair, MJ Ricciardi
Assessment of coronary blood flow in the cardiac catheterization laboratory.
Curr Probl Cardiol. 2014;39:159-84.

Laskey WK, Ricciardi MJ
30-day readmission rate following percutaneous coronary intervention: much more than a binary variable.
JACC Cardiovasc Interv 2013;6:245-6.

Alomari I, Akhtar N, Ricciardi MJ
Isolated Single Coronary Artery in a Patient Presenting with an Abnormal ECG
Cath Lab Digest: 2013;21:9

Ahmed B, Martinez JD, Schevchuck A, Ahmed S, Schrader R, Peralta MA, Sheldon MW, Ricciardi MJ
Appropriate Timing of Nitroglycerin Prior to Intravascular Ultrasound
J Invasive Cardiol 2012;24:422-6.

Ricciardi MJ, Selzer F, Marroquin OC, Holper EM, Venkitachalam L, Williams DO, Kelsey SF, Laskey WK
Incidence and Predictors of 30-Day Hospital Re-Admission Rate Following Percutaneous Coronary Intervention (From the National Heart, Lung, and Blood Institute Dynamic Registry)
Am J Cardiol 2012;110:1389-96

Ricciardi M, Roldan C, Sibbitt R, Sibbitt, Jr W, Michael A, Palmer D
Highly Controlled Vascular Syringes for Pericardiocentesis
J Invasive Cardiol. 2010;22:580-4.

Hamirani YS and Ricciardi MJ

Coronary Spasm Associated with Nitroglycerin Administration – A Case Report and Review of the Literature
Journal of Clinic Experiment Cardiol 2010; 1:103

Martinez JD, Laskey WK, Wells C, Foghi A, Rohde S, Ricciardi M, Mobarak C
Proteomic Analysis of the Systemic Response to Radiographic Contrast Media
Clin Proteom 2010; 6:65–73

Laskey WK, Yoon S, Calzada N, Ricciardi MJ.
Concordant improvements in coronary flow reserve and ST-segment resolution during percutaneous coronary intervention for acute myocardial infarction: A benefit of postconditioning.
Catheter Cardiovasc Interv 2008;72:212-20.

Choi JW, Mehrotra P, Mac Donald LA, Klein LW, Linsky NM, Smith AM, Ricciardi MJ
Sex Proportion of Offspring and Exposure to Radiation in Male Invasive Cardiologists.
Proc (Bayl Univ Med Cent) 2007; 20:231-34.

Beohar N, Davidson CJ, Kip KE, Goodreau L, Vlachos HA, Meyers SN, Benzuly KH, Flaherty JD, Ricciardi MJ, Bennett CL, Williams DO
Outcomes and Complications Associated With Off-Label and Untested Use of Drug-Eluting Stents
JAMA. 2007;297:1992-2000.

Choi JW, Gibson CM, Murphy SA, Davidson CJ, Kim RJ, Ricciardi MJ
Myonecrosis following stent placement: Association between impaired TIMI myocardial perfusion grade (TMPG) and MRI visualization of microinfarction.
Catheter Cardiovasc Interv 2004;61:472-6

Cutlip DE, Ricciardi MJ, Ling FS, Carrozza Jr. JP, Dua V, Garringer J, Giri S, Caputo RP
Effect of tirofiban before primary angioplasty on initial coronary flow and early ST-segment resolution in patients with acute myocardial infarction
Am J Cardiol. 2003;92:977-80

Ricciardi MJ, Meyers S, Choi K, Pang JL, Goodreau L, Davidson CJ
Angiographically silent left main disease detected by intravascular ultrasound: a marker for future adverse cardiac events.
Am Heart J. 2003;146:507-12

Ricciardi MJ, Davidson CJ, Gubernikoff G, Beohar N, Eckman LJ, Parker MA, Bonow RO
Troponin I elevation and cardiac events after percutaneous coronary intervention.
Am Heart J. 2003;145:522-8.

MacDonald LA, Beohar N, Wang NC, Nee L, Chandwaney R, Ricciardi MJ, Benzuly KH, Meyers SN, Gheorghiana M, Davidson CJ
A comparison of arterial closure devices to manual compression in liver transplantation candidates undergoing coronary angiography.
J Invasive Cardiol. 2003;15:68-70.

Ricciardi MJ, Wu E, Davidson CJ, Choi KM, Klocke FJ, Bonow RO, Judd RM, Kim RJ
Visualization of discrete microinfarction after percutaneous coronary intervention associated with mild creatine kinase-MB elevation.
Circulation 2001;103:2780-3.

Moscucci M, Punamiya K, Ricciardi MJ

Guiding catheter thrombectomy during percutaneous coronary interventions for acute coronary syndromes.
Catheter Cardiovasc Interv 2000;49:192-196.

Ricciardi MJ, Moscucci M, Knight BP, Zivin A, Bartlett RH, Bates ER
Emergency extracorporeal membrane oxygenation (ECMO) supported coronary interventions in the fibrillating heart.
Cathet Cardiovasc Interv 1999;48:402-5.

Ricciardi MJ, Bossone E, Bach DS, Armstrong WF, Rubenfire M
Echocardiographic predictors of adverse response to a nifedipine trial in primary pulmonary hypertension: Diminished left ventricular size and leftward ventricular septal bowing.
Chest 1999;116:1218-23.

Bossone E, Rubenfire M, Bach DS, Ricciardi M, Armstrong WF
Range of tricuspid regurgitation velocity at rest and during exercise in normal adult men: implications for the diagnosis of pulmonary hypertension.
J Am Coll Card 1999;33:1662-6.

Bossone E, Duong-Wagner TH, Paciocco G, Oral H, Ricciardi MJ, Bach DS, Rubenfire M, Armstrong WF
Echocardiographic features of primary pulmonary hypertension.
J Am Soc Echo 1999;12:655-62.

MJ Ricciardi and M Rubenfire
How to manage primary pulmonary hypertension. Giving hope to patients with a life-threatening illness.
Postgraduate Medicine 1999;105:45-56.

MJ Ricciardi and M Rubenfire
How to manage secondary pulmonary hypertension: Recognizing and treating cor pulmonale and chronic thromboembolism.
Postgraduate Medicine 1999;105:183-190.

Ricciardi MJ, Knight BP, Martinez FJ, Rubenfire M
Inhaled nitric oxide in primary pulmonary hypertension: a safe and effective agent for predicting response to nifedipine.
J Am Coll Card 1998;32:1068-73.

Moscucci M, Ricciardi M, Eagle KA, Kline E, Bates ER, Werns S, Karavite D, Muller DDW
Frequency, predictors, and appropriateness for blood transfusion after percutaneous coronary interventions.
Am J Cardiol 1998;81:702-7.

Abstracts

G Peigh, MJ Ricciardi
Impella Assisted High Risk Percutaneous Coronary Intervention-An Analysis Of Risk Factors Associated With 30-Day Mortality
ACC 69th Annual Scientific Session, March 28-30, 2020, Chicago, IL.

V Kagan, MJ Ricciardi, et al
Approaches to Repairing Outflow Graft Stenosis in Left Ventricular Assist Devices
ISHLT 2019 Meeting

L VanAssche, MJ Ricciardi

Impella CP supported high risk left main bifurcation stenting in patient with severe aortic stenosis as bridge to transcatheter aortic valve replacement
TCT 2018

SCOUT 1 Trial: Impact of Center Experience on Intraprocedural and 30 Day Outcomes
TCT 2018

L VanAssche, MJ Ricciardi
Mitral Valve Gradient, Heart Failure Admissions and One Year Mortality Following MitraClip Repair in 5,378 Patients: Results from the ACC/STS TVT Registry
TCT 2018

D Schleifer, MJ Ricciardi, CJ Davidson
SCOUT Study: Trialalign results at 30 days from combined US and EU cohort for the treatment of functional TR
TCT 2018

A Abutaleb, MJ Ricciardi, J Flaherty
Left ventricular end diastolic pressure (LVEDP) and TAVR outcomes.
TCT 2018

LJ Davidson, MJ Ricciardi
Transcatheter Aortic Valve Replacement for Aortic Insufficiency in an LVAD Patient
TVT 2018, Chicago

L VanAssche, MJ Ricciardi
Structural Heart Intervention Trifecta: Contemporaneous Transseptal Valve in Mitral Ring, Paravalvular Leak and Amplatzer Septal Defect Closure for the Treatment of Severe Symptomatic Mitral Regurgitation
TVT 2018, Chicago

CJ Davidson, D Schleifer, M Ricciardi
Transcatheter Tricuspid Repair Annuloplasty for treatment of Severe Tricuspid Regurgitation
TVT 2018, Chicago

TM Howard, MJ Ricciardi, J Flaherty
TAVR Outcomes in Patients with Chronic Total Occlusion
TVT 2018, Chicago

A Abutaleb, MJ Ricciardi, J Flaherty
Improvement in Right Ventricular Strain Post-Transcatheter Aortic Valve Replacement
TVT 2018, Chicago

A Abutaleb, A Bavishi L Van Assche, C Davidson, M Ricciardi
Anatomic Mitral Valve Predictors of Single Versus Multiple MitraClip Repair: Insights from Mitral Valve Modeling
SCAI 2018, San Diego. Catheterization Cardiovascular Interventions 2018;vol 91, issue S2

Aakash Bavishi, AbdulRahman Abutaleb, Lowie Van Assche, Mark Ricciardi
Safety of Mattress Suture in Closure of Femoral Vein Access in MitraClip Patients
SCAI 2018, San Diego. Catheterization Cardiovascular Interventions 2018;vol 91, issue S2

EP Cantey, AR Abutaleb, Menhel Kinno, Ranya N. Sweis, Duc T. Pham, Andrei Churyla, MJ Ricciardi, S. Chris Malaisrie, Charles J. Davidson, James D. Flaherty, Vera H. Rigolin,

Intra-Transcatheter Aortic Valve Replacement Transesophageal Echocardiography is Associated with Increased Hospital Length of Stay and Risk of Delirium
American Society of Echocardiography Meeting June 2018

Kislitsina, ON, Smith D, Pham DT, Churyla A, Sherwani S, Ricciardi M, Sweis R, Davidson C, Flaherty J, Kruse J, McCarthy PM, Malaisrie SC
Comparison of Monitored Anesthesia Care and General Anesthesia for Transcatheter Aortic Valve Replacement (TAVR). ACC.18 67th Annual Scientific Session

A Yadlapati, D Wax, S Rich, M Ricciardi
Novel Shunt Modification With an Adjustable 'Fenestrated' Septal Occluder in a Patient with Pulmonary Hypertension
Top 50 Challenging Case Certification
TCT 2017 Denver, CO

Post-Balloon Dilation Following TAVR Implantation Increases Pacemaker Dependency
R Kaplan, A Yadlapati, R Passman, B Knight, R Sweis, M Ricciardi, D Pham, S. Malaisrie, C Davidson, J Flaherty.
TCT 2017. JACC 2017;70:no.18, supplement B.

Davidson L, Ricciardi MJ, et al.
Transcatheter Therapies for Dual Valve Pathologies.
SCAI 2017 New Orleans, LA.

Davidson L, Ricciardi MJ, Davidson CJ.
Transcatheter Tricuspid Valve Annuloplasty for Functional Tricuspid Regurgitation.
Transcatheter Valve Therapies 2016 Chicago, IL

Van Assche LMR, Puthumana JJ, Ricciardi MJ
Acute Severe Mitral Stenosis and Hypotension with Second MitraClip Deployment
Transcatheter Valve Therapies 2016, Chicago, IL

Van Assche LMR, Puthumana JJ, Ricciardi MJ
Mitral Valve Gradient Following Successful Single vs Multiple MitraClip Device Repair
American Society for Echocardiography 2016, Seattle, WA

Sumeet S. Mitter, Scott Manifold, Kevin H. Rosenthal, Nicholas Furiasse, Jyothy J. Puthumana, Mark J. Ricciardi, Gregory J. Wagner, James D. Thomas
Computational Fluid Dynamics Characterization of Flow Through Double Orifice Mitral Regurgitant Jets
American Society for Echocardiography 2016, Seattle, WA

CP, Huded JM, Lindquist LA, Holly TA, Sweis RN, Ricciardi MJ, Malaisrie SC, Davidson CJ, Flaherty JD.
Frailty Status and Outcomes Following Trans-catheter Aortic Valve Replacement. Huded
Accepted AHA '15 Orlando.

Chetan Huded, Quentin Youmans, Ranya Sweis, Mark Ricciardi, James Flaherty
The Impact Of Operator Experience During Institutional Adoption Of Trans-radial Cardiac Catheterization
Journal of the American College of Cardiology, Volume 66, Issue 15, Supplement, 13 October 2015, Pages B173-B174 (TCT)

Huded CP, Huded JM, Lindquist LA, Sweis RN, Ricciardi MJ, Russell HM, Malaisrie SC, Davidson CJ, Flaherty JD.

The Impact of Delirium After Trans-catheter Aortic Valve Replacement.
Accepted AHA '15 Orlando.

Huded CP, Huded JM, Sweis RN, Ricciardi MJ, Russell HM, Malaisrie SC, Davidson CJ, Flaherty JD.
Extracranial Carotid and Vertebral Artery Disease and the Risk of Stroke Following Trans-catheter
Aortic Valve Replacement.
Accepted TCT '15 San Francisco.

Ajay Yadlapati, Mark Ricciardi, Issam Mikati, Chris Malaisrie, Colleen Clennon, Alexander Taylor,
Zhi Li, Adin-Cristian Andrei, Patrick McCarthy, Jyothy Puthumana.
Differences in Presentation and Impact of Cusp Fusion Pattern of Septuagenarians Versus Younger
Patients With Bicuspid Aortic Valve Disease
Heart Valve Society, 2015 Annual Scientific Meeting, May 2015

Bina Ahmed; Mark W Sheldon; Mark J Ricciardi
Prevalence of Abnormal Coronary Microcirculatory Resistance Among Patient With Ischemia and Non-
Obstructive CAD
Circulation 2013;128:A13134

Martinez JD, Schevchuck A, Ahmed S, Peralta M, Schrader RM, Sheldon MW, Ricciardi MJ.
Nitroglycerine Administration Prior to Intravascular Ultrasound? If So, When?
Society Cardiovascular Angiography and Intervention 2010 Scientific Sessions, March 2010

Martinez JD, Laskey W, Foghi A, Ricciardi M, Candelaria L, Candelaria-Lyons M, Woods M,
Mobarak C. Ceramide: A Novel Biomarker for the Detection of Apoptosis During Ischemia-
Reperfusion in Man. Catheterization and Cardiovascular Interventions. 2010;75(S2):S54-S56.

MJ Ricciardi, WK Laskey, F Selzer, O Marroquin, E Holper, L Venkitachalam, S Kelsey
Assessing PCI Outcomes at 30 Days: Are We Moving Too Fast? A NHLBI Dynamic Registry Report
American College of Cardiology 59th Scientific Session and i2 Summit, March 14-16, 2010

N Beohar, L Goodreau, KE Kip, MJ Ricciardi, K Benzuly, S Meyers, A Orlick, DO Williams, C
Bennett, CJ Davidson
Off-label and Untested Use of Drug Eluting Stents: Six Month Outcomes from the DEScover Registry.
AHA Scientific Sessions 2006

MJ Ricciardi, CX Kim, E Wu, DC Lee, CJ Davidson, RO Bonow
Cardiac MRI Within One Week of Coronary Stent Implantation is Safe
Am J Cardiol 2004;94(6A):54E

JW Choi, LA Mac Donald, AM Smith, LW Klein, N Linsky, MJ Ricciardi
Sex proportion of offspring and exposure to radiation in male invasive/interventional cardiologists
(SPERMI)
Catheter Cardiovasc Interv 2004;62:101-2.

MJ Ricciardi, S Bahu, DC Lee, SN Meyers, R Passman, FJ Klocke, CJ Davidson, RO Bonow
Detection Of Mitral Regurgitation By Cardiac MRI: Comparison With Angiography
International Academy of Cardiology, 3rd World Congress On Heart Disease, 2003

MJ Ricciardi, JW Choi, SA Murphy, CJ Davidson, RJ Kim, CM Gibson
Myonecrosis Following Stent Placement: Association Between Impaired TIMI Myocardial Perfusion
Grade (TMPG) and MRI Visualization of Microinfarction.
J Am Coll Card 2002;39:34A.

M Regenfus, H Mahrholdt, A Wagner, MJ Ricciardi, KM Choi, MA Parker, FJ Klocke, RM Judd, RJ Kim
Visualization of myocardial damage following successful coronary artery bypass surgery.
Circulation 2001;104:II 637.

MJ Ricciardi, CJ Davidson, K Knox, CL Bennett
Active pharmacovigilance efforts compared to the FDA's Medwatch drug surveillance program for the detection of ticlopidine- and clopidogrel-Associated thrombotic thrombocytopenic purpura.
J Am Coll Card 2001;37:506A.

MJ Ricciardi, E Wu, R Judd, CJ Davidson, F Klocke, B Bonow, R Kim
Contrast-enhanced cardiac MRI following procedure-related CK elevation: Visualization of discrete microinfarction.
Circulation 2000;102:II-3942.

G Weigold, MJ Ricciardi, L Eckman, CJ Davidson
Cardiac events after elective coronary stenting complicated by procedural troponin-I release.
Cathet Cardiovasc Interv 2000; Scientific sessions (PO-77).

MJ Ricciardi, G Gubernikoff, N Beohar, L Eckman, MA Parker, CJ Davidson
Troponin elevation and adverse cardiac events after percutaneous intervention.
Circulation 1999;100:I-214.

M Moscucci, F Swaniker, C Duvernoy, M Ricciardi, B Dyke, J.Younger, RJ Shriner, ER Bates, R Bartlett.
Extracorporeal membrane oxygenator supported rotational atherectomy of unprotected left main coronary artery stenosis.
Cathet Cardiovasc Interv 1999; 47:131(P05).

E Bossone, DS Bach, MJ Ricciardi, M Rubenfire, WF Armstrong
Pulmonary artery systolic pressure response to exercise: Defining physiologic and pathologic limits.
J Am Coll Card 1998;31:41A.

E Bossone. TD Wagner, MJ Ricciardi, G Paciocco, DS Bach, M Rubenfire, WF Armstrong
Echocardiographic features of primary pulmonary hypertension.
Chest 1998;114:376S

G Paciocco, E Kazerooni, E Bossone, MJ Ricciardi, E Cascade, M Rubenfire
Radiologic features in primary pulmonary hypertension.
Chest 1998;114:375S

G Paciocco, E Bossone, MJ Ricciardi, E Catena, M Rubenfire
Prognostic value of the six minute walk test in primary pulmonary hypertension.
Eur Resp Society 1998

MJ Ricciardi, BP Knight, M Rubenfire
Safety and efficacy of nitric oxide and adenosine in predicting nifedipine response in primary pulmonary hypertension.
J Am Coll Cardiol 1997;29:58A.

MJ Ricciardi, DS Bach, WF Armstrong, M Rubenfire
Echocardiographic predictors of adverse nifedipine response in primary pulmonary hypertension:
Diminished left ventricular size and leftward ventricular septal bowing.
Chest 1997;112:40S.

E Bossone, MJ Ricciardi, DS Bach, M Rubenfire, WF Armstrong
Resting tricuspid regurgitation peak velocity to pulmonary acceleration time ratio: A Doppler index to predict exercise induced pulmonary hypertension.
Chest 1997;112:72S.

E Bossone, DS Bach, MJ Ricciardi, M Rubenfire, WF Armstrong
Diagnostic value of right ventricular ejection flow dynamics in exercise induced pulmonary hypertension.
Circ 1997;98:I-713.

MJ Ricciardi, E Bates, DDW Muller, M Moscucci
Frequency, appropriateness, and risk factors for blood transfusion after percutaneous coronary interventions.
J Invest Med 1995;43:425A

Research Trials

Multicenter trials

Site Principal Investigator: Triluminate Pivotal Trial. Clinical Trial to Evaluate Cardiovascular Outcomes In Patients Treated With the Tricuspid Valve Repair System. 2020-present

Site Principal Investigator: Mitraclip G4. A Post-Market Study Assessment of the Safety and Performance of the MitraClip G4 System. 2020-present

Site Principal Co-Investigator: RESTORE EF Study. 2019-present

Co-investigator: PARTNER 3 Trial - Mitral Valve in Valve. 2018-present

Site Principal Investigator: Edwards PASCAL Transcatheter Valve Repair System Pivotal Clinical Trial (CLASP IID / IIF). ClinicalTrials.gov Identifier: NCT03706833. 2019

Site Principal Investigator: Supporting Patients Undergoing High-Risk PCI Using a High-Flow Percutaneous Left Ventricular Support Device (SHIELD II). 2017-2018

Co-investigator: Edwards Cardioband Tricuspid Valve Reconstruction System Early Feasibility Study. 2018-2019

Site Principal Investigator: The MitraClip® EXPAND Study. 2018-2019

Co-investigator: Edwards PASCAL TrAnScatheter Valve RePair System in Tricuspid Regurgitation (CLASP TR) Early Feasibility Study. 2019

Co-investigator: Edwards Cardioband System ACTIVE Pivotal Clinical Trial (ACTIVE). 2018-2019

Site Principal Investigator: Prospective Global Registry for the Study of Chronic Total Occlusion Intervention (PROGRESS-CTO). ClinicalTrials.gov Identifier: NCT02061436. 2017-present

Site Principal Investigator: A Study to Evaluate the Corvia Medical, Inc. IASD® System II to REDUCE Elevated Left Atrial Pressure in Patients With Heart Failure With Preserved Ejection Fraction (REDUCE LAP-HF). ClinicalTrials.gov Identifier: NCT03088033. June 2017-2019

Co-investigator: Evaluation of Safety and Performance of the Twelve Transcatheter Mitral Valve Replacement System in Patients With Severe, Symptomatic Mitral Regurgitation. 2017-2019

Co-investigator: Early Feasibility Study of the CardiAQ™ Transcatheter Mitral Valve Implantation (TMVI) System (Transfemoral and Transapical Delivery Systems) For the Treatment of Moderate to Severe Mitral Regurgitation. 2017-2019

Co-investigator: Evaluation of Transcatheter Aortic Valve Replacement Compared to Surveillance for Patients With Asymptomatic Severe Aortic Stenosis (EARLY TAVR). 2017-present

Co-investigator: Transcatheter Aortic Valve Replacement to UNload the Left Ventricle in Patients With ADvanced Heart Failure (TAVR UNLOAD). 2017-present

Co-investigator: PARTNER 3; A Prospective, Randomized, Controlled, Multi-Center Study to Establish the Safety and Effectiveness of the SAPIEN 3 Transcatheter Heart Valve in Low Risk Patients Requiring Aortic Valve Replacement who have Severe, Calcific, Symptomatic Aortic Stenosis. 2016-2019

Site Principal Investigator: REDUCE LAP-HF TRIAL: A Study to Evaluate the DC Devices, Inc. IASD™ System II to REDUCE Elevated Left Atrial Pressure in Patients With Heart Failure. 2016-2019.

Site Principal Investigator: EVOLVE Short DAPT Study. ClinicalTrials.gov Identifier: NCT02605447. 2016-2018

Co-investigator: Early Feasibility Study of the Neovasc Tiara™ Mitral Valve System (TIARA-I). 2015-2018.

Co-investigator: Early Feasibility of the Mitralign Percutaneous Tricuspid Valve Annuloplasty System (PTVAS) (SCOUT). 2015-2017

Co-investigator: The PARTNER II Trial: Placement of AoRTic TraNscathetER Valves: Continued Access Program for SAPIEN 3 Intermediate Risk (S3iCAP). Sponsor: Edwards Lifesciences. 2015-2018.

Site Principal Investigator: A Clinical Evaluation of Absorb™ BVS, the Everolimus Eluting Bioresorbable Vascular Scaffold in the Treatment of Subjects With de Novo Native Coronary Artery Lesions (ABSORB IV Trial). Sponsor: Abbott Vascular. 2014.

Site Principal Investigator: Cardiovascular Outcomes Assessment of the MitraClip Percutaneous Therapy for Heart Failure Patients with Functional Mitral Regurgitation (COAPT trial). Sponsor: Abbott Vascular. 2013-2018.

Co-investigator: The PARTNER II Trial: Placement of AoRTic TraNscathetER Valves. Sponsor: Edwards Lifesciences. 2013.

Site Principal Investigator: Prospective, randomized (2:1), active control, single blinded, parallel two-arm, multi-center clinical investigation using Abbott Vascular ABSORB Everolimus Eluting Bioresorbable Vascular Scaffold System (ABSORB BVS); compared to Abbott Vascular XIENCE Everolimus Eluting Coronary Stent System (XIENCE) – ABSORB III Trial. Sponsor: Abbott Vascular. 2013-2014.

Co-investigator: Evaluation of XIENCE PRIME™ Everolimus Eluting Stent System (EECSS) or XIENCE V® EECSS Versus Coronary Artery Bypass Surgery for Effectiveness of Left Main Revascularization (EXCEL trial). Sponsor: Abbott Vascular. 2013.

Co-investigator: Evaluation of RenalGuard® System to Reduce the Incidence of Contrast Induced Nephropathy in At-Risk Patients (CIN-RG). Sponsor: PLC Medical Systems, Inc. 2013.

Site Principal Investigator: Efficacy and Safety of Targeted Intramyocardial Delivery of Auto CD34+ Stem Cells for Improving Exercise Capacity in Subjects With Refractory Angina (RENEW). Sponsor: Baxter Healthcare Corporation. 2012-13.

Site Principal Investigator: TOTAL, a randomized trial of routine aspiration Thrombectomy with PCI versus PCI Alone in patients with STEMI undergoing primary PCI. CANNeCTIN/CIHR - The Canadian Network and Centre for Trials Internationally, a special initiative of the Canadian Institute of Health Research (CIHR) & Medtronic of Canada Ltd. Budget \$36,741.00. 2011 – 2012.

Site Principal Investigator: The Stabilization Of pLaques using Darapladib-Thrombolysis In Myocardial Infarction 52 [SOLID-TIMI 52] Trial. GlaxoSmithKline. Budget \$36,741.00. 2011-2012.

Site Principal Investigator: A 104 week, randomized, double-blind, placebo-controlled, parallel-group, multicenter study to evaluate the efficacy of aliskiren on the progression of atherosclerosis in patients with coronary artery disease when added to optimal background therapy (AQUARIUS). Novartis. Budget \$145,108.00. 2009-2012

Site Principal Investigator: Evaluation of XIENCE V Drug Eluting Coronary Stent Registry Study (EXCEED). Abbott Vascular. Budget \$181,250.00. 2008-2009

Site Principal Investigator: Fondaparinux Trial With Unfractionated Heparin (UFH) During Revascularization in Acute Coronary Syndromes (ACS) (FUTURA/OASIS 8). GlaxoSmithKline. Budget \$55,089.00. 2008-09.

Co-investigator. IMMEDIATE (Immediate Myocardial Metabolic Enhancement During Initial Assessment and Treatment in Emergency care) Trial. National Institutes of Health (NIH). 2008-2011

Site Principal Investigator: “A Randomised, Double-blind, Parallel Group, Phase 3, Efficacy and Safety Study of AZD6140 Compared with Clopidogrel for Prevention of Vascular Events in Patients with Non-ST or ST elevation Acute Coronary Syndromes (ACS) (PLATO- A Study of PLATElet inhibition and Patient Outcomes.)” AstraZeneca. Budget \$114,000.00. 2007-09.

Co-investigator. Providing Regional Observations to Study Predictors of Events in the Coronary Tree (PROSPECT). Guidant, Co. 2005-6

Co-investigator. DEScover Registry Protocol. Cordis Corporation. 2005-06.

Co-investigator. A multicentre, randomised, double-blind, parallel group, phase IV study to compare the renal effects of a non-ionic iso-osmolar contrast medium iodixanol 320 mgI/ml (Visipaque™) with a non-ionic low osmolar contrast medium iopamidol 370 mgI/ml in subjects with impaired renal function and diabetes mellitus undergoing coronary angiography with or without percutaneous coronary intervention (PCI). Sponsor: GE Healthcare. 2005-06.

Co-investigator. COMBAT Complex Bifurcation Atherectomy Trial. Foxhollow Technologies Inc. 2003-05.

Co-investigator. Proximal Protection during Saphenous Vein Graft Intervention using The Proxis* Embolic Protection System: A Prospective Multicenter, Clinical Trial. Velocimed Inc. 2003-04.

Co-investigator. VALOR (Visipaque Angiography/Interventions with Laboratory Outcomes for Renal Insufficiency). GE Healthcare 2002-04

Co-investigator. TIFFANY Targeted Intra-renal Fenoldopam For Avoidance of Nephropathy. 2005-06.

Co-investigator. BARI 2D - Bypass Angioplasty Revascularization Investigation in Patients with Type 2 Diabetes Study. National Institutes of Health. 2002.

Co-investigator. TAXUS IV - Treatment of De Novo Coronary Disease Using a Single Paclitaxel-Eluting Stent. Boston Scientific. 2002.

Co-investigator. SIRIUS - A Multicenter, Randomized, Double Blind Study of the SIROLIMUS coated BX Velocity Balloon Expandable Stent in the Treatment of Patients with De Novo Native Coronary Artery Lesions. Cordis. 2001.

Site Principal Investigator. Pre-CHILL - CryoPlasty Hyperplasia Inhibition Prevents Late Loss Feasibility Study. CryoVascular Systems, Inc. 2001.

Site Principal Investigator. Drug and Light Dose-Escalation Clinical Trial of Antrin (motexzafin lutetium) Injection and Far-Red Light Activation (Photoangioplasty) in Subjects with Coronary Artery Disease Undergoing Percutaneous Coronary Intervention with Stent Placement (Phase I). Pharmaclics, Inc. 2001.

Co-investigator. PYRAMID PCI - Platelet Inhibition with YM337 for the Reduction of Aggregation and Management of Ischemic Complications and Death in Patients Undergoing Percutaneous Coronary Interventions. Yamanouchi USA. 2001.

Co-investigator. A Double-Blind Randomized Comparator Study Evaluating the Renal Effects of Visipaque*320 (iodixanol) vs. Optiray*320 (ioversol) in Renally Impaired Subjects Undergoing Coronary Angiography. Amersham Health. 2001.

Site Principal Investigator. RAPIER - Reperfusion After Platelet Inhibition in the Emergency Room. Merck, Inc. 2000.

Co-investigator. COMMA - A Randomized, Double-Blind, Placebo-Controlled Study of Two Intravenous Dosing Regimens of h5G1.1FV in Patients with Acute Myocardial Infarction Undergoing Percutaneous Transluminal Coronary Angioplasty Reperfusion Therapy. Proctor and Gamble. 2000.

Co-investigator. SWING - Sound Wave Inhibition of Neointimal Growth. Pharmasonics. 2000.

Co-Principal Investigator. NOGA. A Comparison of Methods to Assess Myocardial Viability. Biosense. 1999

Co-investigator. ESPRIT - Enhanced Suppression of the Platelet IIb/IIIa Receptor with INTEGRILIN Therapy. COR Therapeutics. 1999.

Co-investigator. SAFER - Saphenous Vein Graft Angioplasty Free of Emboli Randomized Study. Percusurge. 1999

Co-investigator. A randomized Study of the Safety and Effectiveness of Percutaneous Transluminal Myocardial Revascularization (PTMR) Performed with the Eclipse holmium Laser as an Adjunct to Percutaneous Coronary Intervention in Patients Selected to Receive Percutaneous Coronary Intervention. Eclipse Surgical Technologies. 1998.

Co-investigator. A Double-Blind, Placebo-Controlled Multicenter Pilot Study to Assess the Safety and ex vivo Platelet Aggregation Response of Intravenous AR-C69931MX in Patients Undergoing Percutaneous Transluminal Coronary Angioplasty, With or Without Intracoronary Stent Placement. ASTRA Pharmaceuticals, L.P. 1998.

Co-investigator. HALT MI - A Phase 2 Double Blind, Placebo Controlled, Safety and Efficacy Study of Hu23F2G in Patients With Acute Myocardial Infarction Treated with Direct Angioplasty. ICOS Corporation. 1998.

Miscellaneous

Manuscript Reviewer

Circulation: Cardiovascular Interventions
Journal of the American College of Cardiology (JACC)
Journal American Medical Association (JAMA)
Catheterization and Cardiovascular Interventions (CCI)
American Journal of Cardiology (AJC)
Journal of Interventional Cardiology (JOIC)
Texas Heart Institute Journal
Cardiovascular Engineering and Technology

Abstract Reviewer

ACC.20 / World Congress of Cardiology, 2020, Valvular Heart Disease: Clinical Reviewer

ACC.19, ACC 2019, Reviewer

American Heart Association Scientific Sessions 2006, Catheter-Based Coronary Interventions: Stents - Clinical Use

American Heart Association Scientific Sessions 2005, Catheter-Based Coronary Interventions: Stents

Interventional Board Examination Reviewer

American Board Internal Medicine (ABIM) 2006

American College of Cardiology Solution Set Oversight Committee

Steering Committee

PROTECT IV Randomized Controlled Trial. 2020

Data Safety Monitoring Boards

Core 320 Trial, A Multi Center study Combined Non-invasive Coronary Angiography and Myocardial Perfusion Imaging using 320-Detector Computed Tomography. 2009

Core 64 Trial, Toshiba-sponsored trial comparing multi-detector computed tomography with coronary angiography. 2006-2007.

Biopure Corporation's O.U.S. Program, Enhancement of Tissue Preservation during Cardiopulmonary Bypass with HBOC-201. 2006.

Scientific Advisory Boards

Corvia Medical
Abiomed RESTORE EF study

Grant Reviewer

Women's Health Investigator Program at Yale University, 2006

CME Course Directorships

Course Co-Director, Heart Team Summit 2019

Speaker and Moderator, Heart Team Summit 2019

Left Main Stenosis and CTO's should never be the Deciding Factors for CABG vs. PCI

Course Co-Director, Case-Based Coronary & Structural Heart Intervention (CSI) Chicago, 2014- 2018

Invited Speaker / CME Lectures

Speaker: Digital Cardiovascular Innovations 2020
A Case of Transcatheter Direct RV Puncture VSD Repair (TRVSR)

Speaker and Moderator, Heart Team Summit 2019
Left Main Stenosis and CTO's should never be the Deciding Factors for CABG vs. PCI
Percutaneous Transaxillary Access for TAVR and High-Risk PCI

Speaker and Moderator: Echo Northwestern 2019
Percutaneous Options for Mitral and Tricuspid Valve Disease

Speaker and Moderator: CICT 2019
Antegrade approach first: Here is how to succeed
How can you convince the critic that recanalizing CTOs reduces mortality?
The MitraClip: Expanding indications & technical tips for success (Case Studies)

Speaker: Northwestern University Cardiology Grand Rounds
Transcatheter Aortic and Mitral Valve Therapies

Speaker and Moderator: American College of Cardiology Scientific Sessions 2019
Transcatheter Mitral Valve Program Building: Different Valve-Different Resources-Different Challenges

Speaker: Northwestern Medicine Cardiothoracic Nursing Symposium 2019
What's New in the Cath Lab

Speaker: Options for Mitral Valve Disease
Community First Medical Center Grand Rounds / CME Conference. Harwood Heights, IL Jan 2017

Speaker and Panelist: Percutaneous Options for Mitral Valve Disease
38th Annual Echo Northwestern Conference. Chicago, IL September 2016

Speaker: "Functional MR: To Treat or Not to Treat?"
Chicago Cardiovascular Symposium. Chicago, IL. July 8, 2016

Moderator, Chicago Cardiovascular Interventional Forum
Chicago, IL. June, 2016

Speaker and Panelist: "Transcatheter Technologies for Valvular Heart Disease in Women"
9th Annual Women's Cardiovascular Health Symposium. Chicago. May 6, 2016

Speaker and Faculty: "Complex PCI: Who & Why?"
Foundations of CTO: Master the Complex.
Boston Scientific sponsored symposium. Oakbrook, IL. April 25, 2016.

Faculty Panelist: "Atherectomy and Calcium"
The Interventional Toolbox for Complex Higher-Risk (and Indicated) Patients (CHIP)
CRF (Cardiovascular Research Foundation) sponsored ACC Symposium. Chicago, IL April 1, 2016

Speaker: "Complex coronary revascularization options beyond simple CAD"
Lake Forest Hospital Cardiology Grand Rounds. Lake Forest, IL, Dec 2015

Speaker: “Functional and Degenerative MR-To Clip or Not to Clip”
Moderator: Interventional Therapies for Heart Failure
11th Annual Heart Failure Holiday Symposium. Chicago, IL. December 2015

Moderator “Complex Coronary Intervention Symposium”
Speaker, Percutaneous Mitral Valve Repair – The Evolution of the Technique
2nd Annual Case-Based Coronary & Structural Heart Intervention (CSI). Chicago, IL. November 2015

Moderator, Chicago Cardiovascular Interventional Forum
Chicago, IL. November 2015

Speaker, “MitraClip”
Panelist, Structural Heart Disease – The Role of Echo
Echo Northwestern 2014 37th Annual Program
Chicago, IL, September 2015

Speaker & Panelist: Acute Coronary Syndrome: Contemporary N-STEMI Care - State of the Art
4th Annual Chicago Cardiovascular Update
Chicago, IL, July 9-11, 2015.

Speaker, “The COAPT Trial”
10th Annual Heart Failure Holiday Symposium,
Chicago, IL. December 2014

Moderator “Complex Coronary Intervention Symposium”
Speaker, “Treating Bifurcations: Efficient and Effective Techniques”
Speaker, “PCI for CTOs: Antegrade and Retrograde Approaches”
Speaker, “Percutaneous Mitral Valve Repair - Imaging and Techniques”
Case-Based Coronary & Structural Heart Intervention (CSI)
Chicago, IL. November 2014

Speaker, “Transcatheter Mitral Valve Repair: Are We There Yet?”
11th Annual Cardiovascular Interventions and Practice Guidelines
Genesis Heart Institute, Davenport, IA. September 2014

Speaker, “Percutaneous Approaches for Treatment of Mitral Regurgitation”
Echo Northwestern 2014 36th Annual Program, Chicago, IL, September 2014

Session Chair and Discussant, “Acute Coronary Syndromes”
Panelist and Discussant, “Mitral Valve Disease”
3rd Annual Chicago Cardiovascular Update. Chicago, IL. July 2014

Session Chair and Discussant, “Acute Coronary Syndromes”
2nd Annual Chicago Cardiovascular Update. Chicago, IL. July 2013

Speaker, “Radial Coronary Angiography & Intervention”
Medicine Grand Rounds, Saints Mary and Elizabeth Medical Center. Chicago, IL February 2013

Speaker, “Acute Coronary Syndromes”
15th Annual Update and Review of Internal Medicine. Santa Fe, NM. October 2011.

Speaker, “Acute Coronary Syndromes”
14th Annual Update and Review of Internal Medicine. Santa Fe, NM. October 2010.

Speaker, "Acute Coronary Syndromes"

13th Annual Update and Review of Internal Medicine. Santa Fe, NM. October 2009.

Speaker, "Contemporary Management of Acute Myocardial Infarction"

25th Annual Santa Fe Colloquium on Cardiovascular Therapy. Santa Fe, NM. October 2008.

Speaker, "Acute Coronary Syndromes"

12th Annual Update and Review of Internal Medicine. Santa Fe, NM. October 2008.

Speaker, "Interventional Cardiology Update"

American College of Physicians 2008 New Mexico Chapter Scientific Meeting. Albuquerque, NM. October 2008.

Speaker, "Caring for the Post MI Patient in the Primary Care Setting"

30th Annual Advances in Primary Care. Albuquerque, NM. September 2008.

Speaker, "Interventional Cardiology in the 21st Century."

University of New Mexico School of Medicine Internal Medicine Grand Rounds. Albuquerque, NM. April 2008.

Speaker, "UNM Hospitals presents on D2B-Door to Balloon Strategies for Acute Myocardial Infarction"

University HealthSystems Consortium Webex Presentation. Albuquerque, NM. February 2008.

Speaker, "Cardiac Catheterization Laboratory Primary PCI Performance Improvement"

University HealthSystems Consortium Webex Presentation. Albuquerque, NM. May 2007.

Speaker, "Indications for Angioplasty and Bypass Surgery"

Chicago Medical Society, 60th Annual Midwest Clinical Conference. Chicago, IL. March 2004.

Speaker, "Contrast-enhanced MRI following percutaneous coronary interventions"

Chicago Cardiology Group Scientific Session. Chicago, IL. Jan 2001.

Speaker, "GP IIb/IIIa inhibitor use during percutaneous coronary interventions"

Chicago Interventional Symposium. Chicago, IL. Sept 2000.

Acknowledgements

Bennett CL, Connors JM, Carwile JM, Moake JL, Bell WR, Tarantolo SR, McCarthy LJ, Sarode R, Hatfield AJ, Feldman MD, Davidson CJ, Tsai HM.

Thrombotic thrombocytopenic purpura associated with clopidogrel.

N Engl J Med 2000;342:1773-7.

Letters to the editor

A Virus and the Navajo.

New York Times, April 30,2001

MJ Ricciardi and CJ Davidson. Aggressive lipid-lowering therapy compared with angioplasty in stable coronary artery disease.

N Engl J Med 1999; 341:1854.

Faculty Research Mentor / Other Research

Lowie Van Assche, CV Fellow. The use of 3D-printing technology for the advancement of mitral regurgitation research. 2015

Mazen Albaghdadi, CV Fellow, Northwestern Feinberg School of Medicine. 2014.

NCDR Research Network Proposal. Incidence and Outcomes of No-Reflow Phenomenon During Percutaneous Coronary Intervention Among Patients with Cardiac Allograft Vasculopathy.

Amisha Patel, CV fellow, Northwestern Feinberg School of Medicine. 2013-4
NCDR Research Network Proposal. Bleeding Risk Associated with Use of Prasugrel in Patients with End Stage Renal Disease

Bina Ahmed MBBS, Assistant Professor, Division of Cardiovascular Medicine, University of New Mexico. 2012-2013
Impact of Ranolazine on Coronary Microcirculatory Resistance (MICRO Study) – supported by Gilead Sciences, Inc. Budget \$136,826.00.
Bina Ahmed MD, Yasmin Hamirani MD, Allon Rafael MD, Wyatt Voyles MD, Mark Sheldon MD, Mark J. Ricciardi MD, Noel Bairey Merz MD

Jerrod Frizzell, MD, Critical Care Fellow, University of New Mexico School of Medicine, 2011-2012.
Using Visual Aids to Improve Informed Consent for Cardiac Catheterization
Jerrod Frizzell, MD and Mark J. Ricciardi, MD

Alex Schevchuk, MD, CV Fellow, University of New Mexico School of Medicine, 2011-2012.
Appropriate Timing of Nitroglycerin Prior to Intravascular Ultrasound

Munif Alkouz, MD, CV Fellow, University of New Mexico School of Medicine, 2012.

Juan Diego Martinez, MD. CV Fellow, University of New Mexico School of Medicine, 2010-11.
Over-the-Counter Energy Drink Consumption and Acute Myocardial Infarction - A Case Report.
American Federation for Medical Research; Western Region. Journal of Investigative Medicine, Vol. 58 (1), 222, January 2011.
Appropriate Timing of Nitroglycerin Prior to Intravascular Ultrasound

Ihab Alomari, MD, CV Fellow, University of New Mexico School of Medicine, 2011-2012.
Adult Congenital Pulmonic Stenosis – A Case Report.
American Federation for Medical Research; Western Region. Journal of Investigative Medicine, Vol. 58 (1), 223, January 2011.

Abinash Achrekar MD MPH, CV Fellow, University of New Mexico School of Medicine, 2007-10.
Prevalence and Impact of Patent Foramen Ovale in Patients with Obstructive Sleep Apnea

James Choi, MD, CV, Northwestern University Feinberg School of Medicine, 2000-04.

Local recognition

Top Docs Award, Albuquerque The Magazine, 2007-2013

Stellar Consultant Award, University of New Mexico Health Science Center, 2011

Journey to Excellence Award, Cardiac Catheterization Lab, Committee on Excellence, University of New Mexico Hospitals, 2010

Mark David Metzl, MD FACC FHRS

mmetzl@northshore.org
847-507-2507

Current Position:

May 2016-present

Northshore University Health Systems, Evanston, Illinois

Section Chief, Cardiac Electrophysiology

Director, NorthShore AFib Center

Director, Complex Cardiac Ablation

Co-director, Cardiac Device Lead Management Program

Director, Cardiac EP Laboratory at Evanston Hospital

Servicing offices in Skokie and Bannockburn, as well as providing care at Northshore Evanston, Highland Park, Glenbrook, and Skokie Hospitals.

July 2012-April 2016

Chicago Cardiology Institute, Schaumburg and Oak Park, Illinois

Director, Electrophysiology

Provide comprehensive cardiac arrhythmia services with offices in Schaumburg and Oak Park, IL as well as at Amita Alexian Brothers Medical Center, St. Alexius Hospital, and Glen Oaks Hospital, and West Suburban Medical Center

Honored with the Pillar Award by Amita Glen Oaks Hospital 2014 (Stewardship)

Post-Graduate Training:

July 2010-June 2012

University of Chicago, Chicago, Illinois

Fellow, Clinical Cardiac Electrophysiology

July 2007-June 2010

Albert Einstein College of Medicine, Bronx, New York

Fellow, Cardiovascular Medicine

Chief Fellow 2008-2010

July 2004-June 2007

Albert Einstein College of Medicine, Montefiore Medical Center, Bronx, New York

Resident, Internal Medicine

Inducted into Leo M. Davidoff Society for significant contributions to medical student education

Education:

September 2000-June 2004

University of Illinois College of Medicine, Chicago, Illinois

Doctorate of Medicine

September 1996-May 2000

University of Pennsylvania, Philadelphia, Pennsylvania

Bachelor of Arts

Cum Laude

Graduated with distinction in Biochemistry and Environmental Studies

Dean's List 1999-2000

Board Certifications:

2012

Clinical Cardiac Electrophysiology, American Board of Internal Medicine

2010

Cardiovascular Disease, American Board of Internal Medicine

2009

National Board of Echocardiography

2009

Certification Board of Nuclear Cardiology

Licensure:
2010

Doctor of Medicine, State Medical Board of Illinois

Publications:

- 1) Paz Rios LH, Alsaad AA, Guerrero M, **Metzl MD**. Tricuspid valve-in-valve jailing right ventricular lead is not free of risk. *Catheter Cardiovasc Interv*. 2019 Nov 25.
- 2) Ovalle OG, Liebelt J, Garza Ovalle A, Kaufman A, Alexander J, **Metzl M**. Utility of a Leadless Pacemaker as a Backup to Left Ventricle-only Pacing in a Patient with Prior Device-related Severe Tricuspid Regurgitation. *J Innov Card Rhythm Manag*. 2019 Jul 15;10(7):3733-3736.
- 3) Zagrodzky J, Gallagher MM, Leung LWM, Sharkoski T, Santangeli P, Tschabrunn C, Guerra JM, Campos B, MacGregor J, Hayat J, Clark B, Mazur A, Feher M, Arnold M, **Metzl M**, Nazari J, Kulstad E. Cooling or Warming the Esophagus to Reduce Esophageal Injury During Left Atrial Ablation in the Treatment of Atrial Fibrillation. *J Vis Exp*. 2020 Mar 15;(157).
- 4) Edelman RR, Silvers RI, Thakrar KH, **Metzl MD**, Nazari J, Giri S, Koktzoglou I. Non-enhanced MR angiography of the pulmonary arteries using single-shot radial quiescent-interval slice-selective (QISS): a technical feasibility study. *J Cardiovasc Magn Reson*. 2017 Jun 30;19(1):48.
- 5) Cain MA, **Metzl MD**, Patel AR, Addetia K, Spencer KT, Sweiss NJ, Beshai JF. Cardiac sarcoidosis detected by late gadolinium enhancement and prevalence of atrial arrhythmias. *Am J Cardiol*. 2014 May 1; 113(9):1556-60.
- 2) **Metzl MD**, Gross JN, Fisher JD, Krumerman AK. Wide complex tachycardia with cycle length alternans: what is the mechanism? *Heart Rhythm* 2011; 8 (2):326-7
- 3) Peng CF, **Metzl MD**, Taub CC. Penetrating cardiac wounds identified by three-dimensional transesophageal echocardiography. *J Trauma*. 2011; 71(1):260.
- 3) Foo RSY, Nam YJ, Ostreicher MJ, **Metzl MD**, Whelan RS, Peng C, Ashton AW, Fu W, Mani K, Chin S, Provenzano E, Ellis I, Figg N, Pinder S, Bennett MR, Caldas C, Kitsis RN. Regulation of p53 tetramerization and nuclear export by ARC. *Proc Natl Acad Sci USA* 2007; 104: 20826-31.
- 4) **Metzl MD**, Altman EJ, Spevack DM, Doddamani S, Travin MI, Ostfeld RJ. A case of Takotsubo cardiomyopathy mimicking an acute coronary syndrome. *Nat Clin Pract Cardiovasc Med*. 2006; 3, 53-56.
- 5) Xiao Y, **Metzl M**, and Mueller D. Partial Uncoupling of the Mitochondrial Membrane by a Heterozygous Null Mutation in the Gene Encoding the (- or (- subunit of the Yeast Mitochondrial ATPase. *J Biol Chem*. 2000; 275, 6963-6968.

Abstracts:

- 1) **Metzl MD**, Reshi R, Lazar S, Shin JH, McAuley A, Kordeck C, Tsai WK, Hansen JC, Beshai JF, Moss JD, Nayak HM, Frank JI, and Burke MC. Cerebral Microembolic Signals Are Observed More Frequently During Left Atrial Ablation with increased Radiofrequency Lesion Duration in a Porcine Model. Heart Rhythm Society (HRS) 2012. *Heart Rhythm* 2012; 6 (5), S208
- 2) **Metzl MD**, Hansen J, Lazar S, Beshai JF, Moss JD, Burke MC, Nayak HM. Non-apical LV lead position is associated with reverse LV remodeling in patients undergoing CRT for standard indications. Heart Rhythm Society (HRS) 2011. *Heart Rhythm* 2011; 8 (5), S434.

- 2) Fisher JD, **Metzl MD**, Raiszadeh F, Ostreicher MJ, Nelipovich I. Sedation effects on electrophysiologic intervals. European Cardiac Arrhythmia Society (ECAS) 2010. *JICE* 2010; 27:246-247.
- 3) Foo RSY, Nam YJ, Ostreicher MJ, **Metzl MD**, Whelan RS, Peng C, Ashton AW, Fu W, Caldas C, Kitsis RN. Regulation of p53 tetramerization and nuclear export by ARC. American Heart Association (AHA) 2006. *Circulation*. 2006; 114: II 35.
- 4) Robin MA, **Metzl M**, Anandatheerthavarada HK, Biswas G, Avadhani NG. Mechanisms of Dual Targeting of P4502E1 and 3A1/2 to ER and Mitochondria. American Society for Biochemistry and Molecular Biology (ASBMB) 2000. *FASEB J*. 2000; 14: 1032-1040.

Research:**NorthShore University HealthSystem**, North Suburban Chicago, IL

2016-present Principal Investigator

- Investigating the efficacy of the Visitag module in atrial fibrillation ablation outcomes (Study Sponsor: Biosense Webster)
- Participating in post-approval registry for a fluoro-less ablation of paroxysmal atrial fibrillation (Study Sponsor: Biosense Webster)
- Investigating in a multicenter IDE study the utility of body surface mapping to guide CS lead placement and programming for cardiac resynchronization therapy in populations less likely to respond to therapy (Study Sponsor: Medtronic)
- Researching the benefit of multiple sensors to predict heart failure events in an ICD platform (Study Sponsor: Boston Scientific)
- Survey comparing primary care and cardiologists opinions regarding care of patients with atrial fibrillation (Study Sponsor: Pfizer)

Chicago Cardiology Institute, Schaumburg, Bloomingdale, and Oak Park, IL

2014-2016 Principal Investigator

- Investigating the safety of same-day discharges for implantable cardioverter defibrillators (Study Sponsor: St. Jude Medical)
- Participating in post-approval registry for a novel implantable cardioverter defibrillator lead (Study Sponsor: Biotronik)
- Researching the benefit of multiple vectors for biventricular pacing via a quadrapolar lead (Study Sponsor: Boston Scientific)

University of Chicago Hospitals, Chicago, IL

2010-2012

Principal Investigator: Dr. Martin Burke, Department of Electrophysiology

- The time-dose effect of radiofrequency ablation in the left atrium on risk for subclinical cerebral ischemia and infarction

2010-2012

Principal Investigator: Dr. Hemal Nayak, Department of Electrophysiology

- The effect of coronary sinus lead location on clinical and echocardiographic determinants of response to biventricular pacing in congestive heart failure

2010-2012

Principal Investigator: Dr. John Beshai, Department of Electrophysiology

- The risk of sudden cardiac death in patients with cardiac sarcoid with preserved left ventricular ejection fraction

Albert Einstein College of Medicine, Montefiore Medical Center, Bronx, NY

2008-2010

Principal Investigator: Dr. John Fisher, Department of Electrophysiology

- The utility of defibrillation threshold testing at the time of implantable cardioverter-defibrillator implantation
- The effect of intravenous sedation with morphine and midazolam on the duration of electrophysiologic intervals

2008-2010

Principal Investigator: Dr. Mark Travin, Department of Nuclear Medicine

- The clinical utility of cardiac fusion PET/MDCT imaging in assessing ischemia in patients with prior coronary revascularization

2005-2006 Principal Investigator: Dr. Richard Kitsis, Department of Cardiology

- The mechanism by which ARC, a protein found primarily in myocytes, regulates p53-mediated apoptosis
- Awarded first prize in house staff research symposium, May 2006

1998-2000 **University of Pennsylvania School of Veterinary Medicine**, Philadelphia, PA
Principal Investigator: Dr. Narayan Avadhani, Department of Biochemistry

- Mechanisms of targeting P450 3A1 and 3A2 to both ER and Mitochondria

1999-2000 **Hospital of the University of Pennsylvania**, Philadelphia, PA
Principal Investigator: Dr. Peter Joseph, Department of Radiology

- The Possible Environmental Causes of the Urban Asthma Epidemic
- Awarded Nassau Fund Grant for Undergraduate Research

1998 **Finch University of Health Sciences/Chicago Medical School**, North Chicago, IL
Principal Investigator: Dr. David Mueller, Department of Biochemistry

- Gene encoding of the Yeast Mitochondrial F1-ATPase

Personal Information:

Date of Birth: May 14, 1978
Place of Birth: Chicago, IL
Married to Debbie Rifkin Metzl
Father to Nathan (9), Blake (6), and Oren (4)

Section 1120.120 Availability of Funds

The Applicant has the following bond rating:

- AA- from Standard & Poor's Rating Services (April 21, 2021), included as part of Attachment-33

The Applicant, therefore, is not required to address Section 1120.120 Availability of Funds.

Various Rating Actions Taken On NorthShore University Health System, IL And Northwest Community Health On Affiliation

April 21, 2021

NEW YORK (S&P Global Ratings) April 21, 2021--S&P Global Ratings affirmed its 'AA-' rating on debt outstanding issued for NorthShore University Health System (NorthShore), Ill. The outlook is stable.

At the same time, S&P Global Ratings raised its long-term rating on Northwest Community Hospital (Northwest), Ill.'s 2016A bonds to 'AA-' from 'A'. In addition, S&P Global raised its issuer credit rating (ICR) on Northwest to 'AA-' from 'A'. The outlook is stable.

We raised our ratings on Northwest after completion of the affiliation with NorthShore and based on our view that Northwest is core to NorthShore under our "Group Rating Methodology". We expect Northwest will enter into a supplemental bond indenture that provides for the substitution of notes under the NorthShore master trust indenture, whereby Northwest will become a restricted affiliate of the NorthShore Obligated Group. NorthShore will be the sole obligated group member, and Swedish Hospital, Northwest, and NorthShore University Health System Faculty Practice Associates will be the only restricted affiliates. Upon the completion of the substitution of notes, S&P Global Ratings will withdraw its issuer credit rating on Northwest.

We also affirmed our 'AA-/A-1' rating on the series 2020B and 2020C bonds issued for NorthShore. The short-term component of the rating reflects standby bond purchase agreements with JPMorgan Chase Bank N.A.

On Jan. 1, 2021, NorthShore became the direct corporate member of Northwest. Through this affiliation, NorthShore further expands its service area into the northwest suburbs of Chicago and increases access to high-acuity services for legacy Northwest patients.

"The rating reflects NorthShore's very strong balance sheet and our assessment of the system's integrated business model, with six hospitals, a large employed physician group, and a significant outpatient presence in a demographically favorable service area," said S&P Global Ratings credit analyst Anne Cosgrove.

NorthShore's environmental and governance risks are in line with those of industry peers.

We view social risk as in line with the sector. The core mission of health care facilities is protecting the health and safety of communities, which is further evidenced by responsibilities to serve the potential COVID-19-related surge in patient demand. We believe the pandemic exposes the entire sector to additional health and safety social risks that, though improving given the widespread vaccine distribution, remains a point of uncertainty. That said, for Northshore, we deem these health and safety risks to be in line with other hospitals. NorthShore's environmental and

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governance risks are in line with those of industry peers.

The stable outlook reflects our view that NorthShore will maintain very strong balance sheet metrics and low leverage given its manageable capital plans. In addition, we expect NorthShore will maintain its market share position and management will continue to proactively focus on cost-reduction strategies to mitigate revenue pressures. The outlook also assumes that the Swedish and Northwest transactions will be slightly dilutive to NorthShore over the outlook period but will be absorbed given NorthShore's healthy liquidity and solid operating performance. The outlook also assumes that the integration efforts with both entities will be successful and synergies will be realized.

We could revise the outlook to negative or lower the rating over the outlook period if the system does not maintain financial operations at or near a 2% operating margin, or if we see a significant decrease in liquidity. In addition, a significant increase in debt could result in a negative rating action, given that light debt metrics support the current rating.

We are unlikely to raise the rating over the outlook period. However, we could raise the rating or revise the outlook to positive over time if NorthShore demonstrates growth in the overall financial profile while there is also an improvement in the system's enterprise profile or diversification in several markets.

Certain terms used in this report, particularly certain adjectives used to express our view on rating relevant factors, have specific meanings ascribed to them in our criteria, and should therefore be read in conjunction with such criteria. Please see Ratings Criteria at www.standardandpoors.com for further information. Complete ratings information is available to subscribers of RatingsDirect at www.capitaliq.com. All ratings affected by this rating action can be found on S&P Global Ratings' public website at www.standardandpoors.com. Use the Ratings search box located in the left column.

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Section 1120.130 Financial Viability

The Applicant has the following bond rating:

- AA- from Standard & Poor's Rating Services (April 21, 2021), included as part of Attachment-33

The Applicant, therefore, is not required to address Section 1120.130 Financial Viability.

Section 1120.140 Economic Feasibility
A. Reasonableness of Financing Arrangements

The Applicant has the following bond rating:

- AA- from Standard & Poor's Rating Services (April 21, 2021), included as part of Attachment-33

The Applicant, therefore, is not required to address Section 1120.140 (a) Reasonableness of Financing Arrangements.

Section VIII, Economic Feasibility Review Criteria
Criterion 1120.140(B), Conditions of Debt Financing

The Project will be funded in total with cash and existing equipment. Accordingly, this criterion is not applicable.

1120.140 Economic Feasibility
C. Reasonableness of Project and Related Costs

NorthShore University HealthSystem seeks to construct cardiovascular procedural and recovery space at NorthShore Glenbrook Hospital campus.

The table below shows the cost and gross square foot allocation for all clinical departments impacted by the proposed project.

Cost and Gross Square Feet by Department of Service									
Department (list below)	A	B	C	D	E	F	G	H	Total Cost (G + H)
	Cost / sf		Gross sf		Gross sf		Const \$ (A x C)	Mod \$ (B x E)	
	New	Mod	New	Circ	Mod	Circ			
Operating Rooms	\$586.17		8,789				\$5,151,827		\$5,151,827
Recovery Rooms	\$586.17		15,748				\$9,230,967		\$9,230,967
Cath/EP Labs	\$586.17		11,835				\$6,937,293		\$6,937,293
Clinical Contingency	\$58.26		36,372				\$2,118,889		\$2,118,889
Total Clinical	\$644.43		36,372				\$23,438,985		\$23,438,985
Mechanical & Other Building Systems, Administrative, other non-clinical	\$483.10	\$651.08	125,483		5,004		\$60,621,314	\$3,258,000	\$63,879,314
Non-Clinical Contingency	\$48.95	\$48.95	125,483		5,004		\$6,142,962	\$244,968	\$6,387,931
Total Non-Clinical	\$532.05	\$700.03	125,483		5,004		\$66,764,276	\$3,502,968	\$70,267,245

The values in column C reflect the total gross square footage

Circulation is 22.1% of gross square footage.

The following is documentation regarding whether the estimated project costs are reasonable and in compliance with the state standards, as defined in Section 1120.140 (C) of the Administrative Code:

1. Preplanning costs are 1.72% of the sum of new construction, modernization, contingency, and equipment costs, which is under the state standard of 1.8%. Therefore, this item is compliant with the state standard.
2. Site survey, soil investigation, or site preparation costs are 4.9% of construction and contingency costs, which is under the state standard of 5.0%. Therefore, this item is compliant with the state standard.
3. Off-site work costs total \$0. There is no state standard for off-site work.
4. New construction and contingency costs are \$644.43 per gsf, compared with the state standard of \$646.58/gsf. Therefore, this item is compliant with the state standard.

1120.140 Economic Feasibility**C. Reasonableness of Project and Related Costs**

5. There are no clinical modernization costs associated with this project. Therefore, this item is not applicable.
6. The new construction contingency is 9.9% of new construction contracts, compared with the state standard of 10% for projects in the schematics stage. Therefore, this item is compliant with the state standard.
7. Architectural and Engineering Fees for new construction are 6.2% of the sum of new construction contracts and the new construction contingency budget. This is within the state standard of a range of 5.52%-8.28% for a new construction budget under \$25,000,000. Therefore, this item is compliant with the state standard.
8. Consulting and Other Fees total \$2,285,490. There is no state standard for Consulting and Other Fees.
9. Movable or Other Equipment (Not in Construction Contracts) costs total \$44,354,130. There is no state standard for Movable or Other Equipment costs.
10. Bond issuance expense totals \$0. There is no applicable state standard for bond issuance expense.
11. Net Interest Expense during Construction totals \$0. There is no applicable state standard for Net Interest Expense.
12. The Fair Market Value of Leased Space or Equipment is \$0. There is no applicable state standard for Fair Market Value of Leased Space or Equipment.
13. Other Costs to Be Capitalized are \$7,201,225. There is no state standard for Other Costs to Be Capitalized.
14. There is no Acquisition of Building or Other Property cost associated with the proposed project. Therefore, this item is not applicable.

Section 1120.140 Economic Feasibility
D. Projected Operating Costs
E. Total Effect of the Project on Capital Costs

NorthShore University HealthSystem seeks to centralize cardiovascular procedural and surgical suites to a centralized location at the NorthShore Glenbrook Hospital campus.

The table below provides information regarding costs as they relate to 6,597 units of service.

Line 5 of the table addresses criterion 1120.140(d), Projected Operating Costs.

Line 4 of the table addresses criterion 1120.140(e), Total Effect of the Project on Capital Costs.

Review Criteria Relating to Economic Feasibility		
1	Units of Service	6,597
2	Total Capital Cost	\$7,864,561
3	Total Operating Cost	\$112,714,002
4	Capital Cost per Unit of Service	\$1,192.14
5	Operating Cost per Unit of Service	\$17,085.65

Safety Net Impact Statement

NorthShore University HealthSystem seeks to centralize cardiovascular procedural and surgical suites to a centralized location at the NorthShore Glenbrook Hospital campus. This will allow for the integration of the majority of the services offered as part of the system's Cardiovascular Institute which was created in 2015. The Project will not have any adverse impact on safety net services in the community or on the ability of any other healthcare provider to deliver services but will enhance the delivery of care to all patients including those with barriers to access and will provide for more efficient care with improved continuity of care.

This Safety Net Impact Statement addresses the following requirements:

1. The project's material impact, if any, on essential safety net services in the community, to the extent that it is feasible for an applicant to have such knowledge.

NorthShore is a primary provider of safety net services for the communities it serves and the Project will not have any negative impact on essential safety net services in the community. As documented in Attachment- 15, the procedures to be performed at the proposed NorthShore Glenbrook Hospital Cardiovascular Institute space are all currently performed at NorthShore University HealthSystem ("NorthShore") hospitals and by physicians who are employed by NorthShore. Further, the proposed Cardiovascular Institute space will be covered under the same NorthShore financial assistance policies as are currently in place for the NorthShore entity hospitals.

2. The project's impact on the ability of another provider or health care system to cross-subsidize safety net services, if reasonably known to the applicant.

The Project will not impact the ability of other providers or other healthcare facilities to cross-subsidize safety net services. As noted above, no procedures will be transferred from hospitals not currently owned and operated by the Applicant.

3. How the discontinuation of a facility or service might impact the remaining safety net providers in a given community, if reasonably known by the applicant.

The Applicant is proposing to construct cardiovascular procedural space and to establish an open heart surgery program. Any patients no longer treated on other campuses will be treated at the Cardiovascular Institute at NorthShore Glenbrook Hospital. As part of its commitment to serving the city of the Chicago, the open heart program at Swedish will be maintained at this time.

Safety Net Impact Statement

Safety Net Impact Statements shall also include:

1. For the three fiscal years prior to the application, the applicant must also provide certification describing the amount of charity care provided by the applicant;
2. For the three fiscal years prior to the application, a certification of the amount of charity care provided to Medicaid patients;
3. Any information the applicant believes is directly relevant to safety net services.

1. NorthShore University HealthSystem- Charity Care Information

Charity Care (# of patients)	FY 18	FY 19	FY 20
Inpatient	1,892	1,742	2,061
Outpatient	16,185	15,512	19,103
Charity Care (cost in dollars)	FY 18	FY 19	FY 20
Inpatient	\$4,059,519	\$4,569,977	\$11,081,389
Outpatient	\$13,130,575	\$13,700,129	\$18,504,494

2. NorthShore University HealthSystem- Medicaid Information

Medicaid (# of patients)	FY 18	FY 19	FY 20
Inpatient	4,020	3,812	8,136
Outpatient	82,418	81,292	123,719
Medicaid (Revenue)	FY 18	FY 19	FY 20
Inpatient	\$36,791,351	\$37,079,307	\$73,479,093
Outpatient	\$21,990,843	\$28,264,517	\$44,690,503

3. Additional Information Relevant to Safety Net Services

The following documents included in this application are relevant to safety net services in the applicant's planning area.

- 2019-2020 Community Benefits Report (Attachment-37a)

Community Benefits Report 2019–2020



Dedicated to
Ensuring the Health
of Our Communities



Who We Are

At NorthShore, we believe in serving and investing in the health and well-being of people who live in our communities.

Whether it's care for the medically underserved, medication assistance, perinatal services or specialized programs—like diabetes care for at-risk populations—NorthShore's commitment to the community is demonstrated every day in many ways.

We value the vital relationships with many community partners and our shared mission to improve the health and well-being of our communities.

NorthShore University HealthSystem (NorthShore) is an integrated healthcare delivery system consistently ranked as a Top 15 Major Teaching Hospital in the United States by IBM Watson Health. The NorthShore system, headquartered in Evanston, Illinois, includes five hospitals—Evanston, Glenbrook, Highland Park, Skokie and Swedish. NorthShore also includes a 900-physician multispecialty group practice, NorthShore Medical Group, with more than 140 locations in the Chicagoland area. Currently, NorthShore has annual revenues of \$2.1 billion and employs 10,500 people.

NorthShore is a **Magnet-recognized organization**, the first in Illinois to receive this prestigious honor as an entire system that demonstrates excellence in nursing and high standards in patient care.

NorthShore also is a **national leader in the implementation of innovative technologies**, including an Electronic Medical Record (EMR) system. In 2003, NorthShore was among the first in the country to successfully implement a systemwide EMR with demonstrable benefits in quality, safety, efficiency and service to patients.

Our Hospitals



NorthShore Evanston Hospital

Evanston Hospital, the nucleus of NorthShore University HealthSystem, is a comprehensive acute-care facility.

Key Specialties

- Center for Breast Health
- Infant Special Care Unit (ISCU)
- Level I Trauma Center
- NorthShore Cardiovascular Institute
- NorthShore Kellogg Cancer Center
- Primary Stroke Center
- Regional Center for High-Risk Obstetrics
- Women's Hospital



NorthShore Glenbrook Hospital

As a full-service Level II Trauma Center hospital, Glenbrook Hospital was temporarily converted and transformed and converted into the system's designated COVID-19 hospital for care during the pandemic.

Key Specialties

- Center for Breast Health
- Eye and Vision Center
- Gastroenterology Lab
- John and Carol Walter Center for Urological Health
- Level II Trauma Center
- NorthShore Cardiovascular Institute
- NorthShore Kellogg Cancer Center
- NorthShore Neurological Institute
- NorthShore Orthopaedic & Spine Institute
- Primary Stroke Center

NorthShore has been recognized by multiple national organizations for this notable achievement.

As the principal **teaching affiliate for the University of Chicago Pritzker School of Medicine**, NorthShore is dedicated to excellence in medical education and research. Combined with NorthShore's established reputation for advanced information technology and its strong clinical environment, this affiliation represents an exciting advancement in patient care for the Chicagoland area.

NorthShore's health system includes **significant capabilities in a wide spectrum of leading clinical programs**, including Kellogg Cancer Center, NorthShore Neurological Institute, NorthShore Orthopaedic & Spine Institute, NorthShore Cardiovascular Institute, Mark R. Neaman Center for Personalized Medicine and High-Risk Maternity.

NorthShore Research Institute focuses on **clinical and translational research**, including leadership in clinical trials and medical informatics.

NorthShore Vision Statement

NorthShore will be the most trusted and indispensable health partner throughout the communities we serve.



NorthShore Highland Park Hospital

Highland Park Hospital is a full-service hospital serving Lake County. It's Emergency Department serves as the region's primary point of contact for communication and coordination of disaster response activities for participating hospital(s) and EMS provider(s) across Lake County.

Key Specialties

- Adolescent Behavioral Health
- Bariatric Center of Excellence
- Center for Breast Health
- Center for Pelvic Health
- Gastroenterology Lab
- Level II Trauma Center
- NorthShore Cardiovascular Institute
- NorthShore Kellogg Cancer Center
- Primary Stroke Center
- Women's Hospital



NorthShore Skokie Hospital

Skokie Hospital is the state's only destination hospital dedicated to orthopaedic and spine care.

Key Specialties

- Eye and Vision Center
- Gastroenterology Lab
- NorthShore Cardiovascular Institute
- NorthShore Neurological Institute
- NorthShore Orthopaedic & Spine Institute
- Primary Care
- Radiology Services
- Spine and Pain Center
- Women's Health Center



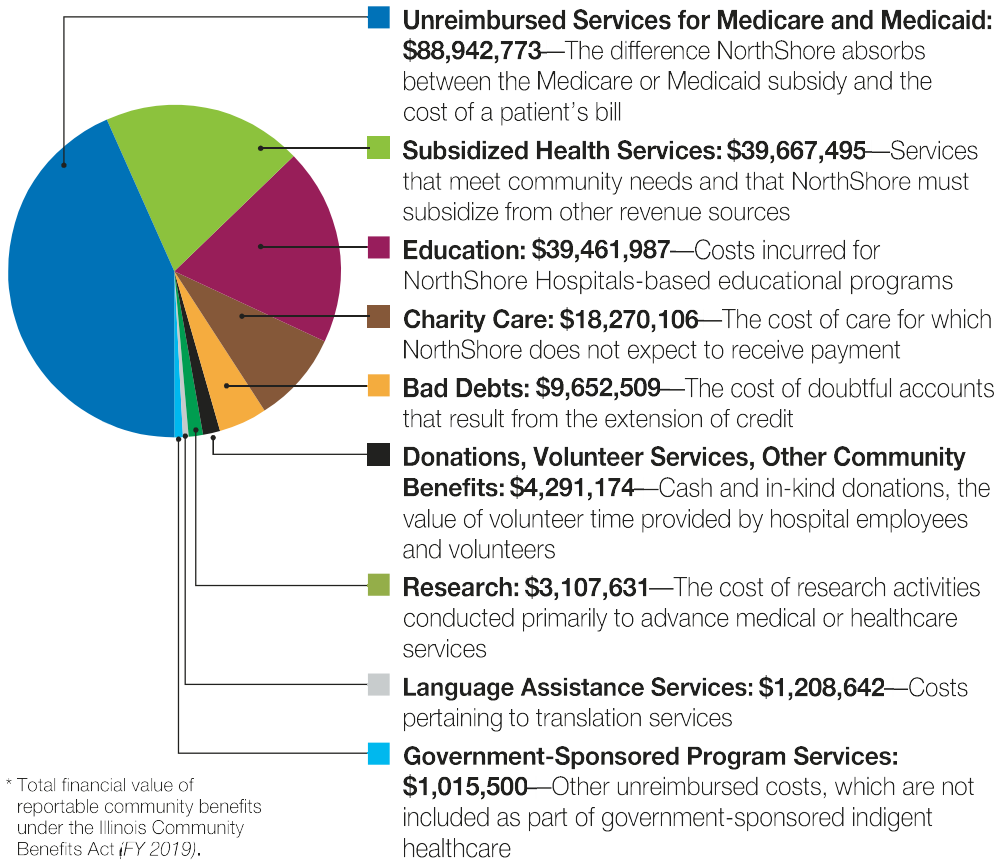
Swedish Hospital

The newest member of the NorthShore family, Swedish Hospital offers a wide range of health and wellness services to Chicago's north and northwest sides.

Key Specialties

- Center for Advanced Therapy
- Chicago Brain & Spine Institute
- Heart and Lung Center
- Midwifery/Family Birthing Center
- Obstetrics and Gynecology
- Orthopaedic Services
- Primary Care
- Primary Stroke Center
- Swedish Skin Institute
- Women's Health Center

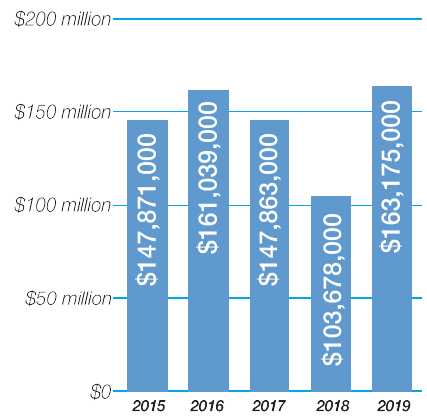
NorthShore Value of Reported Benefits: \$205,617,817*



Capital Expenditures

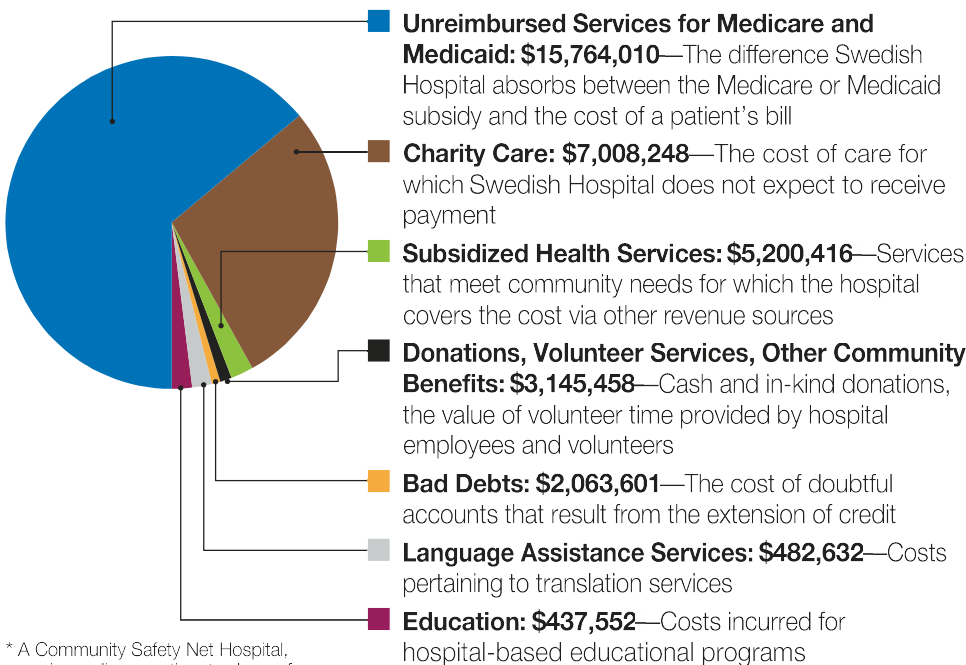
NorthShore remains committed to reinvesting in our communities. Over the last five years, we've committed more than **\$723 million** in capital investments to new clinical programs, information technology, clinical equipment and facilities to reach beyond the current "best practices" to define the "next practices" that will become the standard of healthcare in the future.

Capital Expenditures



More than \$723 Million
Total 5-Year Capital Expenditures

Swedish Hospital Value of Reported Benefits: \$34,101,917*



Community Impact by the Numbers

Swedish Hospital's Community Breast Health Program (CBHP) serves women who face challenges accessing breast cancer detection and treatment. In FY 2019, **2,000+** women received free or reduced-cost breast cancer screenings and diagnostics through the CBHP.

Galter LifeCenter, Swedish Hospital's state-of-the-art certified medical fitness facility, provided more than **\$130,000** in support of more than **220** annual needs-based scholarships.

Swedish Hospital's Violence Prevention Program (VPP) served over **303** patients impacted by sexual assault, domestic violence or human trafficking and trained **895** providers and staff members.

Community Impact by the Numbers

NorthShore's Medication Assistance Program (MAP) offers aid to patients who need help paying for prescription drugs.



MAP assisted **2,318** patients, filling **23,906** prescriptions valued at a cost of **\$177,853**.

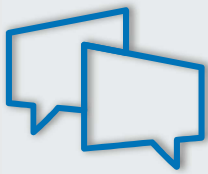
The NorthShore Evanston Hospital Community Health Center provides medical care for economically disadvantaged adults. In FY 2019, the clinic treated **3,871** adult patients, with **13,326** visits.



NorthShore provided **240** health screenings to **2,855** individuals.



The Language Assistance Services staff at NorthShore provided verbal interpretive services to patients and family members, valued at **\$1,208,642**.



The Perinatal Depression Program offers free screenings and a 24/7 crisis hotline. NorthShore physicians conducted **8,660** screenings, and free psychological support and referrals were provided to **477** women identified as "at risk."

The crisis hotline received **1,072** calls.



NorthShore gave **\$2,299,870** in direct contributions to **84** community organizations.

The Dental Center at Evanston Hospital provided free and discounted care for adult patients, making **4,748** visits valued at a cost of **\$182,195**.



NorthShore provided **362** health education classes for **7,014** participants.

14,236 mobile meals were provided.



NorthShore Honors and Accolades

The following are among the many honors bestowed on NorthShore during the past year that demonstrate our commitment to excellence:

- NorthShore was ranked a top 10 hospital system in both the Chicago metropolitan area and the state of Illinois in *U.S. News & World Report's* annual "Best Hospitals" survey for 2018–19. NorthShore also was nationally recognized as "high performing" in three clinical specialties: orthopaedics, gastroenterology and GI surgery, and urology.
- NorthShore was recognized as one of the nation's 100 Top Hospitals® and a Top 15 Major Teaching Hospital for 2019 and 2020 by IBM Watson Health. NorthShore is the only hospital in the United States to achieve this honor 19 times during the award's 25-year history.
- NorthShore has once again achieved Magnet® recognition, the highest honor in nursing. Magnet recognition is determined by the American Nurses Credentialing Center's (ANCC) Magnet Recognition Program®, which recognizes health care organizations that demonstrate excellence in nursing and the highest standards in patient care.
- NorthShore Hospitals were recognized for being among the top 5% of hospitals nationwide for clinical excellence, according to Healthgrades' annual list.
- All four NorthShore Hospitals received the top Greenhealth Emerald and System for Change awards from Practice Greenhealth, the nation's leading organization dedicated to environmental sustainability in healthcare.
- NorthShore Hospitals were named to *Becker's Hospital Review* list titled "68 of the Greenest Hospitals in America." NorthShore was recognized for efforts to create a healthy work environment and reduce environmental footprints.
- NorthShore earned five stars—the highest possible quality rating from the Centers for Medicare & Medicaid Services (CMS). More than 4,000 hospitals are assessed with the national average being three stars.

Leading Care During the Pandemic

Among the highlights of NorthShore's COVID-19 systemwide initiatives and accomplishments:

- NorthShore was the first health system in the state to develop and launch in-house testing in early March, and was recognized by the Illinois Department of Public Health (IDPH) for this critical capability. Testing capacity grew quickly and reached 1,200 patients a day by early April, with results delivered in 24 hours, significantly faster than many other facilities.
- Four Immediate Care COVID-19 "Super Sites" with drive-through testing offered unparalleled access to the community, seven days a week.
- A dedicated HEALTH9 hotline was established and close to 68,000 calls through August 2020 were answered through June, providing critical answers to questions and initial clinical evaluations.



Drive-through screening was a critical and efficient component of employee health during the height of the pandemic.



Essential personal protective equipment (PPE) plays a lifesaving role for NorthShore clinicians, like the nurse pictured above at Highland Park Hospital.

Community members were also able to take advantage of increased telehealth offerings with close to 47,000 electronic e-visits.

- Glenbrook Hospital was transformed and converted into a dedicated COVID-19 hospital, complete with negative pressure environments and extensive precautions designed to keep patients and staff safe.
- Intensive community outreach, including mailings, focused on lifesaving infection-control messaging to houses of worship, community partners, first responders and more.
- Antibody testing and advanced research continue our efforts to improve treatment



Masks are the new normal, shown here at the Evanston Hospital Emergency Department.

options and ensure the health and safety of our communities, patients and staff.

- Kellogg Cancer Center Medical Director Bruce Brockstein, MD, initiated and led an important collaboration "Chicago Cancer Centers COVID-19 Coalition," or C5, bringing together Chicago-area leaders in cancer care to help educate one another and share best practices for oncology care in the unprecedented situation.
- Donors to the NorthShore Foundation supported COVID-19 Care Kits, which contained vital supplies including a pulse oximeter, hand sanitizer, masks and comprehensive information and were mailed to patients recovering at home. NorthShore is prepared to send up to 10,000 kits.

Swedish Hospital

Swedish Hospital also provided ongoing support for the diverse community it serves, with a dedicated help line to provide information in dozens of languages and multilingual resources to promote symptom screening and encourage safe behaviors.

Swedish Medical Group has provided nearly 25,000 telehealth visits to date.

Swedish Hospital worked with local and federal officials to set up drive-through testing and developed isolation units to protect patients and staff. The hospital also worked with existing partners to provide safe options for survivors of sexual and domestic violence during the pandemic through its Violence Prevention Program (VPP).



Clinicians work collaboratively to provide safe and compassionate care to hospitalized patients.



Glenbrook Hospital was temporarily transformed and converted into a designated COVID-19 hospital with negative pressure environments and extensive precautions to ensure staff and patient safety.



Immediate Care Centers, like this one in Lake Bluff, offer comprehensive access for patients concerned about the coronavirus.



NorthShore team members remain grateful for the tremendous outpouring of gratitude and support from the community during the pandemic.



Lakshmi Halasyamani, MD



Sean O'Grady

A dedicated team of clinical and operational leaders headed by Chief Quality and Transformation Officer Lakshmi Halasyamani, MD, and Chief Clinical Operations Officer Sean O'Grady stayed on top of the evolving and up-to-date evidence and care innovations to keep NorthShore ahead of the curve in fighting COVID-19.

NorthShore's proactive approach in planning for COVID-19 ensured the highest level of care for patients and an ongoing commitment to keeping our communities safe and healthy during the pandemic.

Commitment to Address Racial Injustice

NorthShore University HealthSystem (NorthShore) is committed to providing high-quality healthcare to the diverse communities we serve. As a healthcare organization dedicated to improving the health and well-being of families and communities, we believe every voice has the right to be heard, and every person deserves dignity and respect.

The twin pandemics of COVID-19 and systemic racism have brought to the forefront long standing structural inequalities in the healthcare system, impacting the health and well-being of communities of color as well as vulnerable populations. As an institution, we are committed to creating a more inclusive and responsive culture that reflects our community as a whole, and to breaking down these inequalities and the barriers that created them.

Providing high-quality healthcare that is respectful and responsive to the diverse needs, backgrounds and beliefs of our communities is critical to our mission and to the entire NorthShore family. Being embedded within the community has provided us with insights on forming effective partnerships with stakeholders, and it has deepened our understanding of and reinforced trust within our communities. We are committed to building on these partnerships.

Our culture of excellence and team of clinicians and administrative staff recognize and value the similarities and differences of all people and embrace the role of race, ethnicity, age, gender, sexual orientation and socioeconomic status in shaping the unique preferences, needs and priorities of our patients, our employees and our communities.

Building on our long-standing efforts to improve access to high-quality testing, treatment and research opportunities, we are listening and learning how we can do more for our employees and within the communities we serve. We will continue to learn and deepen our commitment to reducing the inequalities that exist within our system, and we support actions at all levels to provide access and opportunity for all.



NorthShore employees joined other healthcare workers across America on Friday, June 5, to kneel in silent reflection and offer their support for racial equity in the wake of the murder of George Floyd and related Black Lives Matter events.

NorthShore Evanston Hospital



Caring for the Underserved

NorthShore champions good health for people in our communities who are un- or underinsured. In addition to the medical safety net offered through charity care, NorthShore provided more than \$39 million in additional subsidized health services last year through a variety of programs, including the Perinatal Family Support Center and a comprehensive dental program.

The Evanston Hospital Community Health Center provides a range of free and discounted care, including internal medicine, obstetrics/gynecology, general surgery, orthopaedics and diabetes education for those who are economically disadvantaged and are unable to obtain healthcare services through private providers. Resident physicians and registered nurses provide care under the supervision of NorthShore senior attending physicians.

Pioneering Perinatal Family Support

The innovative Perinatal Family Support Center offers a range of free services to women and families at Evanston and Highland Park Hospitals who are undergoing challenges related to pregnancy, birth, prematurity or perinatal loss. Inpatient and outpatient setting services include a Teen Parent Education (The ABCs of Pregnancy and Parenting) program.

Ensuring the Health of High School Students

Since its inception in 1996, the school-based health center at Evanston Township High School (ETHS) has provided free care to all students whose parents register them. A collaborative partnership between Evanston Hospital, ETHS and the Evanston Department of Health, the center is staffed and funded by NorthShore.

The center offers preventive care, including physical exams and immunizations, ongoing care for students with chronic medical problems, health and wellness education, and diagnosis and treatment of acute illness and injury. The center had more than 3,600 student visits last year.

Medication Assistance Program

The Medication Assistance Program offers aid to patients who need help paying for prescription drugs. Providing these patients financial support for prescription drugs can make a significant difference in their well-being and quality of life. Prescription drugs are often the mainstay of therapy for patients with chronic diseases such as hypertension, heart failure, diabetes and asthma. When faced with the costs related to filling and taking prescriptions, some patients simply stop taking their medication, take partial doses or try to stretch their medications in other ways.

EVANSTON HOSPITAL: PROGRAMS AND PARTNERSHIPS

- Chessmen Club of the North Shore
- Childcare Network of Evanston
- City of Evanston Rethink Your Drink
- City of Evanston We're Out Walking
- Connections for the Homeless
- Erie Evanston/Skokie Health Center
- Evanston Cradle to Career
- Evanston Hospital Community Health Center
- Evanston Hospital Dental Center
- Evanston Township High School Health Center
- Evanston WE Program
- Evanston Women's Hospital
- Friends of Evanston Farmers Markets
- Grainger Center for Simulation and Innovation
- Greater Chicago Food Depository/ Evanston-Based Partner Agencies
- Infant Welfare Society of Evanston
- McGaw YMCA
- Medication Assistance Program
- NAMI Cook County North Suburban
- New Trier High School
- Perinatal Family Support Center
- Youth Job Center
- Youth & Opportunity United (Y.O.U.)
- YWCA Evanston/North Shore Ricky Byrdsong Memorial Race Against Hate

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NorthShore Glenbrook Hospital

Feeding Those in Need

NorthShore’s partnership with the Catholic Charities Evening Supper Program helps serve the growing need in the community. Glenbrook employees volunteer to help serve meals quarterly, and the hospital also helps fund the program.

“Partnerships in the community are vital to our ability to meet the needs of the underserved,” said Adriana Kelly, Regional Director, North Suburban Regional Catholic Charities. “NorthShore works with us to address food insecurity, which is unfortunately on the rise.”

While the communities around Glenbrook Hospital are not always associated with underserved populations, the demand for the food pantry and Evening Supper Program has risen dramatically during the pandemic, explained Kelly.

“NorthShore has also been part of collaborative discussions about the needs of the community,” said Kelly. “They’ve been good about including the voice of the poor and underserved, and letting us bring that voice to the table in important conversations.”

Vital Mental Health Services

A collaborative effort between NorthShore, Youth Services of Glenview/Northbrook and Glenbrook High School District 225 provides critical mental health services to underserved teens in our community. The program offers psychiatric services and risk assessments for underserved and uninsured teens at Glenbrook North and Glenbrook South High School. NorthShore’s financial support of the program also helps provide consultation to student services staff.

Pop-Up Produce Markets Support Food Needs and Job Training

NorthShore partnered with Chicago Botanic Garden and Windy City Harvest to host pop-up produce markets in NorthShore Hospital parking lots. Windy City Harvest, an education and job training program, helps bring food, health and jobs to underserved communities in Chicago. Remaining produce from the pop-up markets at Glenbrook Hospital were purchased by NorthShore and donated to Northfield Township Food Pantry. Pictured below are Windy City Harvest team members.



GLENBROOK HOSPITAL: PROGRAMS AND PARTNERSHIPS

- Catholic Charities—Des Plaines
- Family Services of Wilmette
- Frisbie Senior Center
- GiGi’s Playhouse
- Glenbrook High School District 225
- Helping Hands of Glenview
- Meals at Home
- North Suburban YMCA
- Northbrook Civic Foundation
- Northfield Township
- North Shore Senior Center
- Rotary Club of Glenview
- Wesley Child Care Center
- West Northfield School District 31
- Windy City Harvest
- Youth Services of Glenview/Northbrook

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NorthShore Highland Park Hospital

Supporting Community Health

Thanks to the successful philanthropic efforts of the Myra Rubenstein Weis Leadership Board, funds were raised to provide 203 free mammogram screenings for underserved women in Lake County. The program is a partnership with Lake County Health Department and supports NorthShore's mission "to preserve and improve human life."



Lasting Partnership Helps Feed Needy

An enduring partnership with the Northern Illinois Food Bank continues to thrive as Highland Park Hospital provides both financial support and manpower through employee volunteers. A member of Feeding America, Northern Illinois Food Bank provides nutritious food and innovative programs serving more than half a million people each year.

Highland Park Hospital staff volunteer three times a year, helping to pack 20-pound boxes of food that get distributed to food pantries in the Food Bank's 13-county service area. Our volunteers pack an average of 9,000 pounds of food in a session, which provides more than 7,000 meals, supporting our shared goal of ending hunger in our communities.

Providing Holiday Joy for Underserved Families

The Moraine Township's annual holiday gift drive is a longstanding, cherished tradition supported by Highland Park Hospital and Medical Group staff. In 2019, the gift drive provided holiday presents for 550 children, according to Moraine Township Clerk Gail Brown, who added that 24% of children in Highland Park schools meet the federal poverty guideline for free meals at school.

"We couldn't do this without Highland Park Hospital's help," said Brown. "It really is a community effort that we facilitate, but the hospital is our biggest partner."

Local schools work with parents and social workers to provide personalized wish lists for each child, and individual children are "adopted" by various donors. Highland Park Hospital staff and physicians adopt 50 to 75 children each year and provide wrapped gifts for the parents to give to the children. The gift drive also provides families with gift cards to Sunset Foods and Jewel, and gives them an opportunity for photos with Santa.

"Highland Park Hospital values and supports the township through holiday gift drives, food or diaper donations, and contributions for emergency assistance funding," said Community Relations Manager Hania Fuschetto. "The township is a valuable lifeline for vulnerable community members."

HIGHLAND PARK HOSPITAL: PROGRAMS AND PARTNERSHIPS

- Catholic Charities of Lake County
- City of Highland Park
- Deerfield Parent Network
- Family Services of Glencoe
- Family Services of Lake County
- Grainger Center for Simulation and Innovation
- Myra Rubenstein Weis LIFE Cancer Survivorship Program
- Northern Illinois Food Bank
- Park District of Highland Park
- Region 10 RHCC Hospital for Northeastern Illinois
- School District 112 Education Foundation
- United Way of Lake County
- Village of Deerfield

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NorthShore Skokie Hospital

Supporting “Education to Careers” Experience

NorthShore is an active participant in Niles Township High School District 219’s Education to Careers program, inviting medical professionals at all levels to give presentations at the school, and bringing students to the hospital to shadow employees.

Engaged clinical professionals volunteer their time to give students an inside look at future career possibilities in the medical world. The chance to ask questions and see real-life situations helps students make more informed decisions about college and careers including laboratory technicians, physicians and more.



Encouraging Healthy Eating

NorthShore offers financial support to the Village of Skokie Farmers’ Market to help connect low-income adults and families (LINK card holders) with fresh, local produce. NorthShore made dollar-for-dollar matches for LINK card purchases, enabling members of the community to more easily afford healthy produce.



A Safe Haven for Recovery

Skokie Hospital supports Turning Point Behavioral Health Care Center’s pioneering “The Living Room Project,” which offers psychiatric respite care for patients experiencing mental health challenges. The innovative program involves trained peer counselors (adults in recovery from mental health issues) and maintains a very high track record of keeping people in crisis out of local emergency rooms.

The Living Room offers a comfortable, calm, nonclinical setting for patients experiencing a psychiatric emergency and a safe, supportive environment to resolve issues and avoid a hospital emergency room visit.

Improving Community Health

Skokie Park District’s “Park Salad” program—which provided health screenings, a health fair, and community and senior events—was sponsored by NorthShore. In addition to the sponsorship, NorthShore staff provided health screenings at the free events, which served more than 700 people. The partnership reflects our ongoing commitment to the health and wellness of the community.

SKOKIE HOSPITAL: PROGRAMS AND PARTNERSHIPS

- CJE SeniorLife
- Erie Evanston/Skokie Health Center
- Heartland Community Health Center
- Niles Township Food Pantry
- Niles Township High School District 219 Education to Careers Program
- Oakton Community College Health Careers Scholarship
- Skokie Community Foundation
- Skokie Farmers’ Market
- Skokie Festival of Cultures
- Skokie Health Department
- Skokie Park District
- Skokie Public Library
- Turning Point Behavioral Health Care Center

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Swedish Hospital

Housing Connections

Chicago ranks third among cities in the United States for the most homeless residents, with a large encampment living under the viaducts less than two miles from Swedish Hospital. The average life expectancy of a chronically homeless individual is much lower than the life expectancy for the general population. When Swedish Hospital's Emergency Department noticed the patterns of recurring visits by the same chronically homeless patients, they developed a more permanent solution. The hospital partners with Lutheran Social Services of Illinois (LSSI) to reduce hospital visits of the homeless by providing permanent housing and services, including intensive case management and managed healthcare services. Swedish Hospital's commitment to the community is unique, and patient care extends far beyond the walls of the hospital.



Promoting Healthy Lifestyle Habits

Swedish Hospital's 2019 Summer Social featured Fitness, Nutrition, Mind/Body and Preventive Care "wellness zones." Attended by more than 1,500 community members, the event highlighted interactive wellness stations, family fun and entertainment, along with a robust presence of various community partners who provided resources and support.

Violence Prevention Program

Launched in 2015, Swedish Hospital's Violence Prevention Program (VPP) strengthens the hospital's capacity to recognize and respond to patients and staff impacted by domestic violence, human trafficking and sexual assault. The program features a 24-hour HOPE-line for internal referrals, extensive staff training, on-site safety planning and services by domestic violence and sexual assault partner agencies, safe transportation, streamlined referrals to community partners, and a robust team of Sexual Assault Nurse Examiners. Since the program's inception, more than 2,500 medical providers and staff have been trained and over 1,500 survivors have been served. With seed funding provided by donations to the Swedish Hospital Foundation to initiate the program, the VPP has continued to develop and grow with the support of outside funding, including being one of eight U.S. Department of Justice grants awarded in the country for hospital-based victims services.

Breastfeeding Clinic

In 2015, Swedish Hospital responded to a need in our community by opening Chicago's first hospital-based outpatient breastfeeding clinic. At the time, options for lactation support required costly up-front payment, rendering such support inaccessible to lower income families. Thanks to generous donations to Swedish Hospital Foundation, now all mothers—regardless of where they give birth or their ability to pay—can access professional breastfeeding support when they most need it. To date, the clinic has served thousands of new moms and babies, many of whom return as their breastfeeding needs evolve.

SWEDISH HOSPITAL: PROGRAMS AND PARTNERSHIPS

- Albany Park Community Center
- Alliance for Health Equity
- Apna Ghar
- Between Friends
- Centering Healthcare Institute
- Centro Romero
- Chicago Department of Public Health
- Chicago Park District
- Chicago Police Department
- Chicago Public Library
- Chicago Public Schools
- Communities United
- Erie Family Health Center
- Family Tree Resale
- The Friendship Center
- Greater Chicago Food Depository
- HANA Center
- Heartland Health Centers
- KAN-WIN
- The Kedzie Center
- Susan G. Komen
- Look Good Feel Better
- Lutheran Social Services of Illinois
- National Breast Cancer Foundation
- Neighborhood Boys and Girls Club
- The Network
- Purple Asparagus
- Resilience Program
- Salvation Army STOP-IT Program
- Seasons Hospice & Palliative Care
- A Silver Lining Foundation

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NorthShore Medical Education

Fostering an academic culture of inquiry, clinical investigation and excellent patient care, NorthShore serves as the primary teaching affiliate for the University of Chicago Pritzker School of Medicine. Our physicians are devoted clinicians and teachers, dedicated to training the next generation of physician leaders.



Increased Care for the Medically Underserved

NorthShore's University of Chicago Family Medicine Residency Program helps staff the clinic of our partner Erie Evanston/Skokie Health Center. The health center serves a low-income population, including many who are insured by Medicaid and others who have no insurance. NorthShore's support for the clinic is an investment in the health and well-being of our communities.

NorthShore Medical Education by the Numbers

NorthShore has **40** fellows pursuing specialties and subspecialties in **27** clinical areas.

In 2019, NorthShore incurred **\$39,461,987** in costs for its hospital-based education programs.

818 NorthShore physicians hold academic titles.

101 residents and **20** pharmacy residents trained at NorthShore.

There are **78** full-time equivalent NorthShore residents in **20** clinical areas.

Environmentally Responsible Stewardship

NorthShore remains actively committed to environmental stewardship by implementing sustainable practices that preserve and protect our natural environment and improve the health of communities we serve.

Waste Avoidance: Through food donations and recycling efforts, NorthShore prevented 1,846,371 pounds of waste from entering local landfills, the equivalent of 120 filled garbage trucks.

Sustainable Sourcing: Purchasing sustainable foods reduces many harmful effects related to food growth and distribution that contribute to public and environmental health challenges. In 2019, NorthShore's patient and retail menu transitioned to include only antibiotic-free meat in an effort to keep our community healthy by minimizing antibiotic resistance. In addition, more than 92,000 pounds of meat served were sustainably produced.

NorthShore also strives for local food procurement and has partnered with local farms to bring pop-up farmers' markets to our hospitals.

Energy: NorthShore's renewable energy program has prevented 13,185 metric tons of carbon dioxide (CO²) equivalents from entering the atmosphere and contributing to air pollution and climate change. This is equivalent to removing the dangerous emissions from 2,866 cars off the road in one year.

Swedish Hospital's Galter LifeCenter installed 412 solar panels on the roof, providing 12% of the building's energy needs.



Waste Avoidance

NorthShore donated more than 7,500 pounds of food to local food pantries in 2019. Our continued partnership with local food pantries allows NorthShore to provide nutritious food for families that are food-insecure while reducing food waste.

Community Health: Powered by Giving

Philanthropy is woven into the history of NorthShore University HealthSystem and its enduring commitment to those most vulnerable and at risk in our community. We were established in 1891 in response to a typhoid fever outbreak, contagion fears and the Evanston Benevolent Society's concern for community health.

Generous donors continue to play a vital role in NorthShore's mission "to preserve and improve human life." NorthShore Foundation is proud to partner with supporters to provide services for healthy lives—access to excellence for better outcomes.

To learn more or to make a tax-deductible donation, please visit foundation.northshore.org/neighbor.

Offering Direct Assistance to Patients Struggling Financially

Funding for Kellogg Cancer Center support services provides financial counseling, nutrition assistance and support groups at no cost to patients.

One-time grants help patients with direct assistance. In 2019, \$237,500 was provided to help 86 cancer patients.

These patients included José, a 44-year-old married father of two, who has Stage 4 multiple myeloma. Thanks to the generosity of donors, the grants covered the cost of rent and car payments for his family for two months.

Piloting Innovative Mental Health Programs

The Auxiliary of NorthShore University HealthSystem is a fundraising organization of volunteers providing service and raising community awareness.

The Auxiliary annually hosts the American Craft Exposition (ACE). Recently, ACE supported the creation of a Psychiatric Urgent Care Program and the implementation of a Collaborative Care Model for providing families more immediate access to mental health services. Net proceeds raised over two years for these initiatives totaled more than \$1.13 million.



Since 2003, The Associate Board of NorthShore University HealthSystem has raised more than \$1 million to benefit neonatal projects at Evanston Hospital's Henrietta Johnson Louis Infant Special Care Unit, including the Emergency Family Fund.

Providing Basics for Expecting Families

The Associate Board of NorthShore University HealthSystem is a fundraising organization of young professionals, annually funding The Associate Board Emergency Family Fund for the Perinatal Family Support Center.

This crucial resource provides assistance to approximately 400 underserved families each year experiencing issues related to pregnancy, birth, early infancy or perinatal loss. Help includes transportation, groceries and gift cards for essential needs.

Philanthropy in the Time of a Pandemic

COVID-19 Care Kits were just one of the responses to the pandemic funded by donors. Monitoring newly diagnosed COVID-19 patients for oxygen levels was identified as being key to patients recovering safely at home. Dollars raised were earmarked to provide 10,000 kits that included lifesaving supplies, such as a pulse oximeter, free of charge to patients. The kits are crucial, especially for those who can't afford, or don't have easy access to, these supplies.



Attachment- 37a
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Community Advisory Committees

To ensure accountability to the communities we serve, NorthShore established Community Advisory Committees (CACs) at each of our hospitals. These committees advise NorthShore administration on various services and initiatives from a community perspective. The CACs also identify community resources that work to strengthen NorthShore and improve the overall health of families across the region.

NorthShore University HealthSystem Community Liaisons

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NorthShore Evanston Hospital

Bob Bielinski
President, Village of Wilmette

Demitrous Cook
Chief of Police, City of Evanston

Nathaniel Ekman
Executive Director
NAMI Cook County North Suburban

Susan Fowler
AVP of Senior Living Initiatives and
Privacy Officer, Mather LifeWays

Cynthia Hoffman
Chief Financial Officer, McGaw YMCA

Carla Jones
Director, Operations
Erie Evanston/Skokie Health Center

Mary Larson
Coordinator of Health Services
Evanston/Skokie School District 65

Maureen McDonnell
Executive Director, PEER Services

Tracy McGuire
Officer, District Manager, Byline Bank

Maricar Ramos
Executive Director, Cradle to Career

Ike Ogbo
Director, Department of
Health & Human Services
City of Evanston

Eleanor Revelle
Alderman, City of Evanston

Brian Scott
Fire Chief, Evanston Fire Department

Colleen Sheridan
Health Services Coordinator
New Trier High School

Keith Terry
Managing Partner
Terry Performance Group

Carol Teske
Executive Director
Childcare Network of Evanston

Katie Dold White
Kenilworth Resident

NorthShore Glenbrook Hospital

Jill Brickman
Township Supervisor
Northfield Township

Lara Cummings
Assistant Principal
Glenbrook South High School

Julie Fleckenstein
Social Worker
Glenview Police Department

Julie Haenisch
School Nurse
Glenbrook South High School

Kim Hand
Senior Services Coordinator
Village of Glenview

Jonathan Kaspar
Health Services Administrator
Presbyterian Homes

Jessica Matthiesen
School Nurse
Glenbrook North High School

Nancy Milota
Senior Vice President
Northbrook Bank & Trust

Steve Samuelson
President & CEO
Frisbie Senior Center

Michael Scholl
Director of Clinical Services
The Josselyn Center

Gary Schumacher
Medical Officer
Glenview Fire Department

Reverend Kyle Severson
Pastor
St. Philip Lutheran Church

Craig Solomon
Executive Director
Wesley Child Care Center

Dana Turban
Northfield Resident

Nancy Vaccaro
Social Worker and Director of
Counseling Services
Northbrook Police Department

NorthShore Highland Park Hospital

Pablo Alvarez
Counselor
Highland Park High School
District 113

Anne Flanigan Bassi
Township Supervisor
Moraine Township

Robbie Boudreau
Executive Director
Faith in Action

Gayle Byck
Board Member
Deerfield Parent Network

Scott Coren
City Manager
City of Highlandwood

Pam Feinberg
Executive Director
Tri-Con Child Care Center

William Hansen, MSW
Executive Director
Family Services of Glencoe

Megan Hoffman
Assistant to the Village Manager
Village of Glencoe

Cindy Housner
Executive Director
Great Lakes Adaptive Sports
Association

Lisa Kritz
Director of Prevention
Lake County Health Department

David Kylo
Chief Religious Officer
Zion Lutheran Church

Andrew Lichterman
Assistant Village Manager
Village of Deerfield

Alesia Margetis
Counselor
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District 113

Ghida Neukirch
City Manager
City of Highland Park

Terri Olian
Executive Director
Highland Park Community
Foundation

Nancy R. Rotering
Mayor
City of Highland Park

NorthShore Skokie Hospital

Carolyn Anthony
Retired Director, Skokie Public Library

Barry Bass
Village President
Village of Lincolnwood

Katrina Belogorsky
Community Engagement Librarian
Skokie Public Library

Molly Bougearel
Senior Vice President,
Strategy & Development
Heartland Health Centers

Mark Collins
Trustee, Niles Township

Catherine Counard, MD
Director of Health, Village of Skokie

Jeffrey Hoeflich
Fire Chief, Skokie Fire Department

Mary Laura Jones
Development Director
Skokie Community Foundation

Diana Juarez
Director, ELL Parent Center

Julie Kim
Social Worker
Skokie Police Department

Beth Lindley
Director, Human Services
Village of Skokie

Michele Mangrum
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CJE SeniorLife

Christine McCall
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JoiAnne Smith
President, Oakton Community College

Jim Szczepaniak
Community Relations Director
Niles Township High School
District 219

Robin Varnado
Senior Director, Operations
Erie Evanston/Skokie Health Center

Tim Youkhana, PharmD
President
Assyrian Family Health Alliance

Swedish Hospital

Swedish Hospital's Community Leader Team is composed of more than 100 local leaders driving positive change. Several times each year, they gather to discuss issues impacting the local community. Attendees represent schools, faith communities, cultural organizations, social service agencies, neighborhood associations and elected officials, as well as internal hospital leaders.

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Serving and investing in the health and well-being of people who live in our communities.

NorthShore University HealthSystem, headquartered in Evanston, Illinois, includes five hospitals—Evanston, Glenbrook, Highland Park, Skokie and Swedish. NorthShore also includes a 900-physician multispecialty group practice, NorthShore Medical Group, with more than 140 locations in the Chicagoland area.

To learn more, visit:

northshore.org/community-events/community or watch our video at northshore.org/communitybenefitvideo



northshore.org

Charity Care Information

Below is charity care information for NorthShore University HealthSystem:

Charity Care Information- NorthShore University HealthSystem

	FY 2018	FY 2019	FY 2020
Net Patient Revenue	\$1,295,160,316	\$1,407,899,750	\$1,513,478,270
Amount of Charity Care (charges)	\$70,231,298	\$73,166,467	\$107,018,415
Cost of Charity Care	\$17,190,094	\$18,270,106	\$29,585,883