



STATE OF ILLINOIS

## HEALTH FACILITIES AND SERVICES REVIEW BOARD

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<b>DOCKET NO:</b> H-04	<b>BOARD MEETING:</b> September 14, 2021	<b>PROJECT NO:</b> 21-016	<b>PROJECT COST:</b>  Original: \$170,520,604
<b>FACILITY NAME:</b> NorthShore Glenbrook Hospital		<b>CITY:</b> Glenview	
<b>TYPE OF PROJECT:</b> Substantive			<b>HSA: VII</b>

**PROJECT DESCRIPTION:** The Applicant [NorthShore University HealthSystem] is asking the State Board approve establishment of an open-heart surgery category of service, the addition of 8 cardiac cath labs, and the addition of 6 surgery rooms at Glenbrook Hospital in Glenview, Illinois. The cost of the project is \$170,520,604. The expected completion date is December 31, 2024.

The **purpose** of the Illinois Health Facilities Planning Act is to establish a procedure (1) which requires a person establishing, constructing or modifying a health care facility, as herein defined, to have the qualifications, background, character and financial resources to adequately provide a proper service for the community; (2) that promotes the orderly and economic development of health care facilities in the State of Illinois that avoids unnecessary duplication of such facilities; and (3) that promotes planning for and development of health care facilities needed for comprehensive health care especially in areas where the health planning process has identified unmet needs. **Cost containment and support for safety net services** must continue to be central tenets of the Certificate of Need process. (20 ILCS 3960/2)

The Certificate of Need **process required under this Act is designed to restrain rising health care costs by preventing unnecessary construction or modification of health care facilities.** The Board must assure that the establishment, construction, or modification of a health care facility or the acquisition of major medical equipment is consistent with the public interest and that the proposed project is consistent with the orderly and economic development or acquisition of those facilities and equipment and is in accord with the standards, criteria, or plans of need adopted and approved by the Board. Board decisions regarding the construction of health care facilities must consider capacity, quality, value, and equity

Information regarding this Application for Permit can be found at <https://www2.illinois.gov/sites/hfsrb/Projects/Pages/NorthShore-Glenbrook-Hospital,-Glenview--21-016.aspx>

## **EXECUTIVE SUMMARY**

### **PROJECT DESCRIPTION:**

- The Applicant [NorthShore University HealthSystem] is asking the State Board to approve the establishment of an open-heart category of service, the addition of 8 cardiac cath labs, 6 surgery rooms, 19 Phase I and 31 Phase II PACU rooms at Glenbrook Hospital in Glenview, Illinois. The cost of the project is \$170,520,604. The expected completion date is December 31, 2024.
- The Applicant is consolidating most of the open heart and vascular surgical services and cardiac catheterization services at Glenbrook Hospital at the Cardiovascular Institute on the Glenbrook Hospital campus. The Applicant states this project encompasses cardiac services at four hospitals: Evanston Hospital, Highland Park Hospital, Skokie Hospital as well as Glenbrook Hospital.<sup>1</sup> The Table below outlines the Hospitals involved in this project and their 2019 utilization.

<b>TABLE ONE</b> Executive Summary 2019 Information							
Hospital	City	Time	Miles	# of Surgery Rooms Dedicated to Cardiovascular	# Open Heart Surgeries	# Cardiac Cath. Labs	# Cardiac Cath Procedures
Glenbrook Hospital	Glenview	0	0	0	0	1	331
Skokie Hospital	Skokie	21	8.1	0	0	2	196
Evanston Hospital	Evanston	27	10.5	2	178	3	3,404
Highland Park Hospital	Highland Park	23	11.7	1	117	2	1,956
<b>Total</b>				<b>3</b>	<b>295</b>	<b>8</b>	<b>5,887</b>

- At the conclusion of this project cardiac catheterization services will remain at Evanston Hospital and Highland Park Hospital. In addition, open heart surgery will remain at Highland Park Hospital- even though the projected number of open-heart surgeries at Highland Park is estimated by the Applicant to be less than the State Board Standard of 200 surgeries per year. In conjunction with this project Skokie Hospital discontinued their cardiac catheterization category of service [#E-014-21] and Evanston Hospital will discontinue their open-heart surgery category of service at the conclusion of this project.<sup>2</sup>

<sup>1</sup> NorthShore University HealthSystem's Northwest Community Hospital and Swedish Hospital will not discontinue their open-heart programs. According to the Applicant some advanced cardiovascular procedures may be referred from these two Hospitals to Glenbrook Hospital. The Applicant states 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.

<sup>2</sup> Evanston Hospital will maintain one cardiac cath lab for emergent cath and EP cases. Its other two labs will be repurposed for interventional radiology procedures. Highland Park Hospital will maintain one cardiac cath lab for emergent cath and EP cases. Its other lab will be repurposed for interventional radiology procedures. Skokie Hospital closed its two cath labs, effective August 1, 2021.

### **WHY THE PROJECT IS BEFORE THE STATE BOARD:**

- This project is before the State Board because the project proposes to establish a category of service and the project is more than the capital expenditure minimum \$14,557,713.

### **PUBLIC HEARING/COMMENT:**

- No public hearing was requested. Letters of support were received by the State Board. No letters of opposition were received by the State Board.

### **SUMMARY:**

- For an Applicant **to establish** an open heart surgery program an Applicant must document that a minimum of 200 open heart surgical procedures will be performed during the second year of operation or that 750 cardiac catheterizations were performed in the latest 12-month period for which data is available. To add **cardiac catheterization labs** the Applicant must demonstrate 400 cardiac catheterization procedures will be performed per lab and all cardiac catheterization programs in the Cardiac Catheterization Planning Area are operating at 400+ procedures per year. To add **operating rooms to an existing hospital** the hospital must demonstrate historical utilization [hours] will justify the proposed number of operating rooms being requested.
- **Open Heart:** The Applicant is estimating **260 open-heart surgeries** will be performed within two years after project completion. As seen in the Table above there were 295 open-heart surgeries performed in 2019 at Evanston and Highland Park Hospitals. The two Hospitals have experienced a 3% decline in the number of open-heart surgeries for the period 2015-2019. The estimate of 260 open-heart surgeries by 2026 is reasonable and takes into consideration the decline in open heart surgeries. Given the number of open-heart surgeries performed at Evanston and Highland Park Hospitals in 2019 of 295 surgeries meets the State Board Standard of 200 open-heart surgeries to establish the service. No hospital within a 20-mile radius with an open-heart surgery program has submitted an impact letter contesting the establishment of the open-heart surgery program at Glenbrook Hospital. **Average case time** for open heart surgeries was estimated by the Applicant as 8-10 hours per procedure.
- **Vascular Surgery:** The Applicant has stated **752 vascular surgeries** were performed in 2019 and are estimating a 33.1% increase in these cases by the second year after project completion [2026]. Total vascular cases estimated by 2026 is 1,001 cases with an **average case time** of 4 hours. The Applicant is proposing 3 operating rooms for these surgeries.
- **Cardiac Catherization:** The Applicant is estimating 5,387 cardiac catheterizations to be performed at the Glenbrook Hospital by 2026. For the period 2015-2019 there has been a growth of 6.2% annually in the number of cardiac catheterization procedures performed at Evanston, Glenbrook, Highland Park, and Skokie Hospitals. The **5,387 cardiac cath procedures will justify the nine cardiac cath labs** being requested at the Board's standard of 400 cardiac catheterizations per lab.
- **Surgery Rooms:** The Applicant is requesting to add 6 operating rooms for a total of 14 operating rooms: 3 operating rooms dedicated to open-heart surgery and 3 operating rooms dedicated for vascular surgery. Average case time for the period 2015-2019 at Evanston and Highland Park Hospitals for the dedicated cardiovascular operating rooms was 4.07 hours per case. Based upon that case time the Applicant cannot justify the six operating rooms being requested.
- The Applicant addressed a total of 25 criteria and have not met the following:

State Board Standards Not Met	
Criteria	Reasons for Non-Compliance
77 ILAC 1110.120 (b) – Projected Utilization 77 ILAC 1110.270 (c) – Service Modernization - Surgery	<ul style="list-style-type: none"> <li>• <b>Projected Utilization:</b> This finding relates to the Applicant stating the 3 operating rooms for open heart surgery are justified based upon the average case time of 8-10 hours per procedure. Board Staff was unable to accept a case time of that amount without an explanation. The Applicant stated a physician or physicians would provide an explanation at the Board Meeting. Average cardio surgery case time at Highland Park and Evanston Hospitals was 4.07 hours for cardio surgeries performed at these two hospitals for the period 2015-2019. Using that case time of 4.07 hours and applying that number to the number of open heart and vascular surgeries estimated to be performed by the Applicant justifies 4 operating rooms and not the 6 operating rooms being requested.</li> <li>• <b>Service Modernization:</b> The average surgery hours at Glenbrook Hospital for 2018-2019 support the need for 11 operating rooms and not the 14 rooms being requested.</li> </ul>

## Rendering



## STATE BOARD STAFF REPORT

Project #21-016

NorthShore Glenbrook Hospital

APPLICATION/CHRONOLOGY/SUMMARY	
Applicant	NorthShore University HealthSystem
Facility Name	NorthShore Glenbrook Hospital
Location	2100 Pfingsten Rd, Glenview, Illinois
Permit Holder	NorthShore University HealthSystem
Operating Entity/Licensee	NorthShore University HealthSystem
Owner of Site	NorthShore University HealthSystem
Total GSF	167,259
Application Received	June 1, 2021
Application Deemed Complete	June 2, 2021
Review Period Ends	September 30, 2021
Project Completion Date	December 31, 2021
Review Period Extended by the State Board Staff?	No
Can the Applicant request a deferral?	Yes

### I. Project Description

The Applicant [NorthShore University HealthSystem] is asking the State Board to approve the establishment of an open-heart category of service, the addition of 8 cardiac cath labs and 6 surgery rooms at Glenbrook Hospital in Glenview, Illinois. The cost of the project is \$170,520,604. The expected completion date is December 31, 2024.

### II. Summary of Findings

- A. State Board Staff finds the proposed project is **not** in conformance with the provisions of 77 ILAC 1110 (Part 1110).
- B. State Board Staff finds the proposed project in conformance with the provisions of 77 ILAC 1120 (Part 1120).

### III. General Information

The Applicant is NorthShore University HealthSystem. NorthShore University HealthSystem is a health care system providing health care services, including inpatient acute and non-acute care, primary and specialty physician services, and various outpatient services. NorthShore operates six acute care Hospitals: Evanston Hospital, Highland Park Hospital, Glenbrook Hospital, Skokie Hospital, Swedish Hospital and Northwest Community Hospital. North Shore University HealthSystem also has a 5% or greater interest in the following:

- North Shore Surgical Center, Lincolnwood, IL
- Ravine Way Surgery Center, Glenview, IL
- River North Same Day Surgery Center, Chicago, IL
- Northwest Community Day Surgery Center IL
- Northwest Endo Center, LLC. Arlington Heights, IL

- Northwest Community Foot and Ankle Center, LLC. Des Plaines, IL

#### IV. Project Details

The proposed project will add 8 cardiac catheterization labs for a total of 9 cardiac cath labs and add 6 surgery rooms; 3 operating rooms to perform open heart surgery and 3 operating rooms to perform vascular surgery. At the conclusion of the project there will be a total of 14 operating rooms at the Hospital. The Project will also include adding 19 Phase I and 31 Phase II recovery stations. The Project proposes a 3-story building with a basement and will include the following:

- Basement: Mechanical and support space
- First Floor: Renovation of existing lobby to create a waiting area for the 9 cardiac catheterizations<sup>3</sup> labs, 6 surgery rooms<sup>4</sup>, and 19 Phase I and 31 Phase II recovery stations.
- Second Floor: Offices and other space to support the first 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.
- According to the Applicant there is no shell space being proposed as part of this project.

According to the Applicant the newly added footprint allows for the future addition of up to three additional floors. The Project will consist of 36,372 gross square feet of reviewable space and 130,887 gross square feet of non-reviewable space.

#### V. Health Service Area

The proposed project is in Health Service Area VII and the A-08 Hospital Planning Area. In the HSA VII Health Service Area there are 17 Hospitals that provide **open heart surgery**. Of those 17 Hospitals 9 were at the State Board's target occupancy of 200 surgeries per year in 2019.

There are 25 Hospitals that provided **cardiac cath services** in the HSA VII Health Service Area in 2019. Of those 25 hospitals 20 hospitals are at the State Board's target occupancy of 400 procedures per lab. Northshore Skokie Hospital discontinued their cardiac

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<sup>3</sup> "Cardiac Catheterization Category of Service" means, for the purposes of this Part, the performance of catheterization procedures that, due to safety and quality considerations, are preferably performed within a cardiac catheterization laboratory or special procedure room. Procedures that do not require the use of such specialized settings, such as pericardiocentesis, myocardial biopsy, cardiac pacemaker insertion or replacement, right heart catheterization with a flow-directed catheter (e.g., Swan-Ganz catheter), intra-aortic balloon pump assistance with intra-aortic balloon catheter placement, certain types of electrophysiology, arterial pressure or blood gas monitoring, fluoroscopy, and cardiac ultrasound, are not recognized as procedures that, under this Subchapter, would in and of themselves qualify a facility as having a cardiac catheterization category of service. [77 ILAC 1100.220]

<sup>4</sup> "Open Heart Surgery" means a category of service that utilizes any form of cardiac surgery that requires the use of extracorporeal circulation and oxygenation. The use of a pump during the procedure distinguishes "open heart" from "closed heart" surgery.

catheterization category of service in 2021 [#E-014-21]. [See Exhibit II at the end of this report for the list of these hospitals].

## VI. Project Uses and Sources of Funds

The Applicant state the project will be funded with cash in the amount of \$170,520,604. When asked to provide the operating start-up cost and operating deficit for the establishment of a new service [open heart surgery] at Glenbrook Hospital the Applicant provided the following response: *As this is the expansion of an existing service line (cardiac catheterization) and relocation of another (open-heart surgery), the services proposed for this project are not a new service line for NorthShore. The revenues associated with these service lines will be available to fund operating expenses. Further, as an existing hospital, NorthShore Glenbrook Hospital will not see payment lags experienced by new providers, as it is fully credentialled by government and commercial payors. You asked us to consider the operating deficit if this were a new service for NorthShore. If there was no cash flowing for the program (which as discussed in the foregoing paragraph is not the case), NorthShore would anticipate a 4-month ramp-up until the incremental increase in receipts covered ongoing operating costs in an amount up to \$25 million.*

<b>TABLE ONE</b>				
Project Costs and Sources of Funds				
	<b>Reviewable</b>	<b>Non-Reviewable</b>	<b>Total</b>	<b>% of Total</b>
<b>Use of Funds</b>				
Preplanning Costs	\$1,165,075	\$2,669,833	\$3,834,908	2.25%
Site Survey and Soil Investigation	\$51,368	\$132,090	\$183,458	0.11%
Site Preparation	\$1,101,593	\$3,409,852	\$4,511,445	2.65%
New Construction Contracts	\$21,320,087	\$60,621,314	\$81,941,401	48.05%
Modernization Contracts	\$0	\$3,258,000	\$3,258,000	1.91%
Contingencies	\$2,118,899	\$6,387,931	\$8,506,830	4.99%
Architectural/Engineering Fees	\$1,449,653	\$3,770,535	\$5,220,188	3.06%
Consulting and Other Fees	\$2,285,490	\$2,499,170	\$4,784,660	2.81%
Movable or Other Equipment	\$44,354,130	\$3,666,478	\$48,020,608	28.16%
Other Costs to Be Capitalized	\$7,201,225	\$3,057,882	\$10,259,107	6.02%
<b>Total Uses of Funds</b>	<b>\$81,047,519</b>	<b>\$89,473,085</b>	<b>\$170,520,604</b>	<b>100.00%</b>
<b>Source of Funds</b>				
Cash and Securities	\$76,047,519	\$89,473,085	\$165,520,604	
Other Funds		\$5,000,000	\$5,000,000	
<b>Total Sources of Funds</b>	<b>\$76,047,519</b>	<b>\$94,473,085</b>	<b>\$170,520,604</b>	

## **VII. Background of the Applicant, Purpose of the Project, Safety Net Impact Statement, Alternatives to the Propose Project**

### **A) Criterion 1110.110 (a) - Background of the Applicant**

The Applicant has attested that 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. The Applicant has authorized the State Board and the Illinois Department of Public Health access to any 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. [See Application for Permit pages 41-59]

### **B) Criterion 1110.110 (b) - Purpose of the Project**

The Applicant has stated the purpose of this project is to centralize NorthShore University HealthSystem Cardiovascular Institute procedural suites at NorthShore Glenbrook Hospital. The Applicant believes by centralizing cardiovascular services at the 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. The Applicant identified **NorthShore's Market area** as extending from 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.

The market area based on the information submitted by the Applicant is estimated at a radius of 30+-miles from Glenbrook Hospital with approximately 285 zip codes and a population of approximately 6.8 million residents [see page 65-69 of the Application for Permit].

The Applicant states NorthShore's existing cath labs at Glenbrook, Evanston, Skokie, and Highland Park Hospitals contain outdated and aging equipment, including some labs that were built over 20 years ago. According to the Applicant updated cardiac cath lab equipment and space is necessary to improve quality of care, efficiencies and patient and physician satisfaction. [See Application for Permit pages 60-71]

### C) Criterion 1110.110 (c)- Safety Net Impact Statement

The Applicant's statement can be found as Exhibit One at the end of this report.

### D) Criterion 1110.110 (d) - Alternatives to the Proposed Project

The Applicant considered the following alternatives to the proposed project.

The Applicant stated **the do nothing alternative** was rejected because it was determined that it is critical that NorthShore 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. According to the Applicant 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.

The Applicant considered **the modernization of the Evanston Hospital by constructing an addition to Evanston Hospital**. This alternative was rejected due to Evanston Hospital's location and space constraints. According to the Applicant the Evanston Hospital campus does not have sufficient space to allow for any future growth beyond this addition. Additionally, this alternative did not provide for the modernization of its open-heart surgery operating rooms which are also in need of modernization. The location of Evanston Hospital is on the southern edge of NorthShore's market area and according to the Applicant is not centrally located. Cost of this alternative is estimated at \$104 million.

The Applicant considered constructing a **new specialty hospital**. This alternative was rejected because the cost was too expensive. According to the Applicant there are limited sites within the target area to build the hospital. A new hospital would require space, equipment, and staff for a number of support services that are currently in place at Glenbrook Hospital. Cost of this alternative is estimated at \$200 million.

## VIII. Size of the Project and Projected Utilization

### A) Criterion 1110.120 (a) – Size of the Project

The Applicant is proposing a total of 36,372 GSF of reviewable space for the proposed project. As seen in the Table below the Applicant **have met the requirements of this criterion**.

TABLE TWO Size of the Project						
		Proposed		State Board Standard		Met Standard
	Rooms	Room	Total	Room	Total	
Operating Rooms <sup>5</sup>	6	1,465	8,789	2,750	16,500	Yes
Recovery Rooms <sup>6</sup>			15,748			
Phase I	19		15,820	180	3,420	Yes
Phase II	31			400	12,400	Yes
Cath/EP Labs	9	1,315	11,835	1,800	16,200	Yes

<sup>5</sup> **"Operating Room (Class C)"** means a setting designed and equipped for major surgical procedures that require general or regional block anesthesia and support of vital bodily functions. (Source: Guidelines for Optimal Ambulatory Surgical Care and Office-based Surgery, third edition, American College of Surgeons, 633 N. Saint Clair Street, Chicago IL 60611-3211, 312/202-5000; 2000, no later amendments or editions included) **"Cardiac Surgery Room"** means a physically identifiable room adequately staffed and equipped for the performance of open and closed heart surgery and extracorporeal bypass. [77 ILAC 1100.220]

<sup>6</sup> **"Post-Anesthesia Recovery Phase I"** means the phase in surgical recovery that focuses on providing a transition from a totally anesthetized state to one requiring less acute interventions. Recovery occurs in the post-anesthesia care unit (PACU). The purpose of this phase is for patients to regain physiological homeostasis and receive appropriate nursing intervention as needed. **"Post-Anesthesia Recovery Phase II"** means the phase in surgical recovery that focuses on preparing the patient for self-care, care by family members, or care in an extended care environment. The patient is discharged to phase II recovery when intensive nursing care no longer is needed. In the phase II area, sometimes referred to as the step-down or discharge area, the patient becomes more alert and functional. [77 ILAC 1100.220]

## **B) Criterion 1110.120 (b) – Projected Utilization**

The applicant shall document that, by the end of the second year of operation, the annual utilization of the clinical service areas or equipment shall meet or exceed the utilization standards specified in Appendix B. The number of years projected shall not exceed the number of historical years documented. If the applicant does not meet the utilization standards in Appendix B, or if service areas do not have utilization standards in 77 Ill. Adm. Code 1100, the applicant shall justify its own utilization standard by providing published data or studies, as applicable and available from a recognized source, that minimally include the following:

- 1) Clinical encounter times for anticipated procedures in key rooms (for example, procedure room, examination room, imaging room).
- 2) Preparation and clean-up times, as appropriate.
- 3) Operational availability (days/year and hours/day, for example 250 days/year and 8 hours/day); and
- 4) Other operational factors.

The Applicant are proposing 6 operating rooms to be added to the 8 operating rooms currently in place at Glenbrook Hospital. There will be a total of 14 operating rooms at the conclusion of this project. The State Board Standard is **1,500 hours per operating room**.

### **1. Open Heart Operating Rooms**

The Applicant have stated the **3 operating rooms** will be dedicated to open heart surgery and will average between 8-10 hours from wheel to wheel. When asked what procedures would take 8-10 hours the Applicant provided the following response:

- *Coronary artery bypass graft surgery*
- *Heart valve repair or replacement surgery*
- *Left ventricle-assist device (LVAD) placement*
- *Thoracic aortic aneurysm repair*

*To discuss the high complexity of the procedures and the components of what transpires during those procedures resulting in such a long surgery time, **one or more of the surgeons will be on hand at the Health Facilities and Services Review Board meeting** to answer any clinical questions the Board members may have regarding cardiovascular procedures performed at NorthShore hospitals.*

### **2. Vascular Operating Rooms**

The Applicant stated **3 of the proposed six additional operating rooms** will be used for vascular surgery and when asked what the average time for vascular surgery procedures the Applicant provided the following:

*Vascular procedures performed at Northshore*

- *Abdominal aortic aneurysm repair*
- *Carotid endarterectomy*
- *Peripheral artery disease angioplasty and stenting*
- *Peripheral aneurysm repair*
- *Surgical thrombectomy*

*As noted in the certificate of need application, projected utilization for vascular surgery is based on current utilization of **752 cases** at NorthShore hospitals, which will transition to NorthShore Glenbrook Hospital, plus a **33.1% vascular surgery growth** rate due to the recent addition of two vascular surgeons to NorthShore Medical Group. Wait times for non-emergent vascular surgery has averaged around 8 weeks, but with the addition of a vascular surgeon who joined NorthShore Medical Group in May 2021, wait times are improving and these surgeries are able to be done on a more timely basis. With the additional capacity, NorthShore **anticipates 1,001 cases** will be performed by the second year after project completion. Vascular surgeons undertake surgeries of varying degrees of complexity. Some, such as abdominal aortic aneurysm repairs can have vastly different surgical time depending on whether the procedure is an open case versus an endovascular case and depending on the extent/size of the aneurysm. Similar, carotid blockage surgeries will have a varying length of time depending on the degree of calcification of the vessel and the success that the surgeon has with the optimal method. An intervention for peripheral artery disease angioplasty and stenting will vary depending on the number of vessels that require treatment. The CVI surgical team was consulted to provide the average case time and their input based on current scheduling practices and experience is that the average case time **is approximately four hours including set up and clean up.***

Evanston and Highland Park Hospitals have dedicated cardio surgery rooms. For the period 2015 to 2019 these two hospitals averaged 1,116 cases and 4,517 hours per year in their cardio surgery rooms. These cases include both open heart and vascular surgery cases. Average case time was 4.07 hours. **Based upon the average historical case time the Applicant can justify 4 operating rooms and not the six rooms being requested.**

<b>TABLE THREE</b>						
Evanston and Highland Park Hospital Total Cardio Surgery Cases and Hours						
Year	2015	2016	2017	2018	2019	Ave
Cases	892	1,025	1,054	1,166	1,445	1,116
Hours	3,711	4,306	4,048	5,111	5,411	4,517
Hours Per Case	4.16	4.20	3.84	4.38	3.74	4.07
Room Justified	3	3	3	4	4	4

## **IX. Open Heart Surgery**

### **A. Criterion 1110.220 (a) - Peer Review**

The applicant shall document the mechanism for peer review of an open-heart surgery program.

According to the Applicant should the State Board approve the establishment of the open-heart category of service at Glenbrook Hospital the 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. Based upon the Applicant's assurance a peer review program will be established for open-heart surgery. [See Application for Permit page 80-81]

### **B. Criterion 1110.220 (b) - Establishment of Open-Heart Surgery**

The applicant shall document that a minimum of 200 open heart surgical procedures will be performed during the second year of operation or that 750 cardiac catheterizations were performed in the latest

**12-month period for which data is available.** Anticipated open heart surgical volume shall be documented by historical referral volume of at least 200 patients directly referred following catheterization at the applicant facility to other institutions for open heart surgery for each of the last 2 years.

Glenbrook Hospital is proposing to establish an open-heart surgery category of service. Glenbrook Hospital has one cardiac cath lab and has averaged 450 cardiac catheterizations per year over the past five years and has seen an annual decrease in the number of cardiac catheterizations of 6.45% annually. Glenbrook Hospital did not perform 750 cardiac catheterization procedures in the prior 12-months as required by this criterion.

<b>TABLE FOUR</b> Glenbrook Hospital Cardiac Cath	
Year	Cardiac Cath
2015	446
2016	553
2017	493
2018	426
2019	331
Ave	450
Annual Growth	-6.45%

The Applicant states that this **project is justified** because it involves the closure of the Evanston Hospital open heart program and the transition of those Evanston Hospital cases and a portion of those currently performed at Highland Park Hospital to Glenbrook Hospital. Over a five-year period, Evanston Hospital has averaged 194 open heart surgery cases and Highland Park has averaged 141 cases. The Applicant stated Highland Park Hospital will maintain open heart surgery capability for those patients presenting with an acute ST elevation myocardial infarction or need for emergent pacemaker implantation.<sup>7</sup> The Applicant is projecting between 50-75 of these cases to be performed at Highland Park Hospital<sup>8</sup>. In total the Applicant are projecting 194 open heart surgeries from Evanston Hospital and between 66 and 91 cases from Highland Park Hospital for a total **between 260 and 285 cases per year** to be performed at Glenbrook Hospital. As noted in the Table below there has been an annual decrease in the number of open-heart surgeries at Evanston and Highland Park Hospitals of 3% for the years 2015-2019. With the Applicant's commitment to transfer the two hospitals' open-heart surgery cases it appears that 200 surgeries will be performed two years after project completion as required by State Board rule.

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<sup>7</sup> ST elevation myocardial infarction is the most serious type of heart attack where there is a long interruption to the blood supply. This is caused by a total blockage of the coronary artery, which can cause extensive damage to a large area of the heart. A STEMI is what most people think of when they hear the term "heart attack".

<sup>8</sup> Highland Park Hospital open heart program has been operating below the State Board Standard of 200 open heart surgeries per year for the years 2015-2019.

<b>TABLE FIVE</b> Historical Open-Heart Evanston and Highland Park Hospital			
Year	Evanston Hospital	Highland Park Hospital	Total
	Open Heart Surgery	Open Heart Surgery	Open Heart Surgery
2015	159	176	335
2016	236	141	377
2017	195	130	325
2018	203	143	346
2019	178	117	295
Ave	194	141	335

The Applicant when asked why Highland Park Hospital would not be discontinuing the open-heart surgery category of service the Applicant provided the following response:

*As a baseline, recall that NorthShore is relocating its main Cardiovascular Institute interventional program by changing its location from the NorthShore Evanston Hospital to the NorthShore Glenbrook Hospital. Relative to treatment of heart attack patients who arrive at a hospital without current open heart surgery back up (e.g., Glenbrook Hospital), immediate treatment to save heart tissue and otherwise save patient lives is performed at the receiving hospital (e.g., Glenbrook Hospital). Currently if a higher level of care is required than the receiving hospital provides (e.g., currently Glenbrook Hospital), there is a protocol for transporting patients to Evanston Hospital. Once the main Cardiovascular Institute interventional program moves, the protocol for transporting patients for open-heart procedures will merely change directions with Evanston Hospital sending patients to Glenbrook Hospital rather than Glenbrook Hospital sending patients to Evanston Hospital.*

*Importantly as the Applicant assessed the best format for providing CVH care and moved forward with the planned project, it accounts for the paradigm shift in the treatment of coronary artery disease over the last 25+ years. That is open heart CABG procedures for treating CAD are much less frequently employed to provide artery patency and have been largely replaced by interventional cardiac catheterization procedures. As such, most heart attack interventions do not require an open-heart procedure and rather will be completed in a cardiac catheterization lab with an interventional cardiologist rather than a cardiac surgeon as the attending surgeon. Separately, pacemaker implantation is a cardiac surgical procedure but is not open-heart surgery. It involves the insertion of wires into a major vein under or near the collarbone and guided to the heart using X-ray images. One end of each wire is secured to the appropriate position in the heart, while the other end is attached to the pulse generator, which is usually implanted under the skin beneath the collarbone.*

*Unlike Evanston Hospital which is closing its open-heart program and moving it to Glenbrook Hospital, Highland Park Hospital will retain its open-heart program to serve more northerly populations of the broader NorthShore service area (e.g., Lake County). In connection with the relocation of the main program, however, it will reduce the number*

*of open-heart procedures it completes. Open-heart procedures that will continue at Highland Park Hospital are those identified in the previous answer (e.g., aorta repairs, valve repair and replacement and CABG) and they are undertaken when a patient has been stabilized but for whom medicine therapies and/or cardiac catheterization is inadequate.*

**C. Criterion 1110. 220 (c) - Unnecessary Duplication of Services.**

The applicant shall document that the volume of any existing service within the relevant travel radius from the applicant will not be reduced below 350 procedures annually for adults and 75 procedures annually for pediatrics. Documentation shall consist of proof of contact of all facilities within the travel radius currently providing open heart surgery to determine the projected impact the project will have on existing open-heart surgery volume. For purposes of subsection (b)(3), the following travel radii apply:

- A) Category 1: For applicant facilities located in the counties of Cook, DuPage, Lake, Will and Kane, the radius shall be 20 miles.

There are 20 Hospitals within 20 miles of Glenbrook Hospital. Three Hospitals performed 350 or more open heart procedures [Advocate Christ Hospital, Loyola University Medical Center and Rush University] and one Hospital – Lurie’s Children Hospital performed 75 or more pediatric procedures in 2019. Letters were sent to the Hospitals listed below asking for the impact the proposed project will have on the Hospital’s open-heart program. As of the date of this report no impact letters have been received by the State Board. Based upon the lack of impact letters received by the State Board the State Board Staff concludes there will be **no impact on existing open-heart surgery services in the 20-mile GSA.**

<b>TABLE SIX</b>					
Hospital w/20-miles of Glenbrook Hospital with Open Heart Surgery					
<b>Hospital</b>	<b>City</b>	<b>Health Service Area</b>	<b>Hospital Planning Area</b>	<b>County</b>	<b>Total Cardiac Surgeries</b>
Advocate Christ Medical Center	Oak Lawn	7	A-01	Cook	878
Foster G. McGaw Hospital - Loyola Univ Med Ctr	Maywood	7	A-03	Cook	810
Rush University Medical Center	Chicago	6	A-02	Cook	682
Elmhurst Memorial Hospital	Elmhurst	7	A-05	DuPage	311
Advocate Lutheran General Hospital	Park Ridge	7	A-04	Cook	231
Ann & Robert H. Lurie Children's Hospital	Chicago	6	A-07	Cook	231
Northwest Community Hospital	Arlington Heights	7	A-07	Cook	201
AMITA Health Alexian Brothers Med Ctr	Elk Grove Village	7	A-07	Cook	181
Evanston Hospital	Evanston	7	A-08	Cook	178
Advocate Good Shepherd Hospital	Barrington	8	A-09	Lake	168
John H Stroger Hospital	Chicago	6	A-13	Will	153
Swedish Covenant Hospital	Chicago	6	A-01	Cook	120
Highland Park Hospital	Highland Park	8	A-01	Cook	117
Advocate Illinois Masonic Medical Center	Chicago	6	A-11	Kane	112
Mount Sinai Hospital	Chicago	6	A-02	Cook	62
MacNeal Hospital	Berwyn	7	A-06	Cook	62
University of Illinois Hospital and Health Science	Chicago	6	A-09	Lake	59
Vista Medical Center East	Waukegan	8	A-04	Cook	59

TABLE SIX Hospital w/20-miles of Glenbrook Hospital with Open Heart Surgery					
Hospital	City	Health Service Area	Hospital Planning Area	County	Total Cardiac Surgeries
Gottlieb Memorial Hospital - Loyola Medicine	Melrose Park	7	A-08	Cook	7
Louis A. Weiss Memorial Hospital	Chicago	6	A-01	Cook	0

#### D. Criterion 1110.220 (d) - Support Services.

The applicant shall document that the following support services and facilities are **immediately** available on a 24-hour basis and document how those services will be mobilized in the case of emergencies.

- A) Surgical and cardiological team appropriate for age group served.
- B) Cardiac surgical intensive care unit.
- C) 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.
- D) Catheterization-angiographics laboratory services.
- E) Nuclear medicine laboratory.
- F) Cardiographics laboratory, electrocardiography, including exercise stress testing, continuous electrocardiograph (ECG) monitoring and phonocardiography.
- G) Echocardiography service. This may or may not be a part of the cardiographics laboratory.
- H) Hematology laboratory.
- I) Microbiology laboratory.
- J) Blood gas and electrolyte laboratory with microtechniques for pediatric patients.
- K) Electrocardiographic laboratory.
- L) Blood bank and coagulation laboratory.
- M) Pulmonary function unit.
- N) Pacemaker installation.
- O) Organized cardiopulmonary resuscitation team or capability.
- P) Preventive maintenance program for all biomedical devices, electrical installations, and environmental controls.
- Q) Renal dialysis.

The Applicant states Glenbrook Hospital provides most of the support services listed above. According to the Applicant Evanston Hospital open heart program will close at the time of the opening of the new Cardiovascular Institute at Glenbrook Hospital, any services that are not currently available at Glenbrook Hospital will transition from Evanston Hospital.

When asked how these services will be mobilized in case of emergency the Applicant stated: *Relative to activating physicians and other members of the surgical team, NorthShore University HealthSystem has a unified medical staff for all four of its hospitals and currently employs three cardiac surgeons with associated mid-level practitioner support performing open-heart surgery during normal clinical hours. Further, NorthShore has a robust call system, requiring the clinical care team to be on site to start a case within minutes for emergent procedures that occur outside of normal clinical hours. Practitioners share call such that they are currently available and will continue to be available for emergencies on a 24-hour/seven day a week basis. Other operating and recovery room clinical personnel are also in a staffing pool that is on call for emergencies at the current NorthShore CVI interventional program locations and such staffing plan provides for*

*ongoing ample staff for emergency CVI care along with other surges creating staffing requirements. Based upon the Applicant's assurance support services will be available at the Cardiovascular Institute.*

**E. Criterion 1110.220 (e) - Staffing**

A) The applicant shall document that a cardiac surgical team will be established. The team shall be composed of at least the following:

i) Two cardiac surgeons (at a minimum, one of which shall 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.

ii) Operating room nurse personnel (registered nurse (RN), licensed practical nurse (LPN), surgical technician). The nurse to patient ratio for the ICU module of open-heart surgery patient care shall be no less than one nurse per one patient in the immediate recovery phase and one nurse per 2 patients thereafter.

iii) Anesthesiologists (board certified by the American Board of Anesthesiology).

iv) Adult cardiologists (board certified by the American Board of Internal Medicine with subspecialty certification in cardiology).

v) Physician who is board certified in anatomic and clinical pathology, with special expertise in microbiology, blood banking lab aspects of blood coagulation, blood gases and electrolytes.

vi) Pump technician, or operator of the extracorporeal pump oxygenator, who shall 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 or she be a physician, nurse or technician.

vii) Radiologic technologist experienced in angiographic principles and catheterization procedure techniques who is experienced in the use, operation, and care of all catheterization equipment.

B) Documentation shall include a narrative explanation of how positions will be filled.

The Applicant stated in connection with the cardiac cath program that it already operates, Glenbrook Hospital provides most of the staff listed in the criterion. As Evanston Hospital's open-heart program will close at the time of the opening of the new Cardiovascular Institute building at Glenbrook Hospital, any staff that are not currently available at Glenbrook Hospital will transition from Evanston Hospital. [Application for Permit pages 83-84]. **Based upon the Applicant's assurance staffing will be available at the Cardiovascular Institute.**

## **X. Cardiac Catheterization**

### **A) Criterion 1110.225 (a) - Peer Review**

Any applicant proposing the establishment or modernization of a cardiac catheterization unit shall detail in its application for permit the mechanism for adequate peer review of the program. Peer review teams will evaluate the quality of studies and related morbidity and mortality of patients and the technical aspects of providing the services such as film processing, equipment maintenance, etc.

The Applicant stated the intent of this project is to modernize and expand the existing cardiac catheterization service at Glenbrook Hospital. There is already a multi-disciplinary peer review process in place and the 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 [Application for Permit pages 154-155].

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

There shall be no additional adult or pediatric catheterization categories of service started in a health planning area unless:

- 1) the standards as outlined in 77 Ill. Adm. Code 1100.620<sup>9</sup> are met; unless
- 2) in the circumstances where area programs have failed to meet those targets, the applicant can document historical referral volume in each of the prior 3 years for cardiac catheterization in excess of 400 annual procedures (e.g., certification of the number of patients transferred to other service providers in each of the last 3 years).

This project does not propose to establish a cardiac catheterization category of service.

### **C) Criterion 1110.225 (c) - Unnecessary Duplication of Services**

- 1) Any application proposing to **establish** cardiac catheterization services must indicate if it will reduce the volume of existing facilities below 200 catheterizations.
- 2) Any applicant proposing the **establishment** of cardiac catheterization services must contact all facilities currently providing the service within the planning area in which the applicant facility is located, to determine the impact the project will have on the patient volume at existing services.

This project does not propose to establish a cardiac catheterization category of service.

### **D) Criterion 1110.225 (d) - Modernization of Existing Cardiac Catheterization Equipment**

An applicant with a proposed project for the modernization of existing equipment that provides cardiac catheterization services shall document that the minimum utilization standards (as outlined in 77 Ill. Adm. Code 1100.620) are met.

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<sup>9</sup> Section 1100.620 - Cardiac Catheterization Services

a) Planning Areas: Health Service Areas is defined by the Department of Health and Human Services pursuant to P.L. 93-641.

b) Utilization Standards:

There should be a minimum of 200 cardiac catheterization procedures performed annually within two years after initiation.

c) Need Determination – Cardiac Catheterization Programs:

No additional cardiac catheterization service shall be started unless each facility in the planning area offering cardiac catheterization services operates at a level of 400 procedures annually.

Glenbrook Hospital currently has 1 cardiac cath lab and is asking the State Board to increase the number of labs to 9 labs. For the past five years Glenbrook Hospital has averaged 450 cardiac cath procedures per year which would justify 2 labs at 400 procedures per lab.

<b>TABLE SEVEN</b>	
<b>Glenbrook Hospital</b>	
Cardiac Catheterizations	
Year	# of Catheterizations
2015	446
2016	553
2017	493
2018	426
2019	331
Ave	450

The Applicant justifies the 9 cath labs based upon the historical volume of cardiac catheterization procedures performed at Evanston (3 labs), Highland Park (2 labs), Skokie (2 labs), and Glenbrook Hospitals (1 lab)<sup>10</sup>. These four hospitals have seen an increase in the cardiac catheterization's over this five-year period of 6.2% annually. At the conclusion of this project the Applicant states that Highland Park and Evanston Hospital will maintain one cardiac cath lab for emergency cath and EP cases. The Applicant estimates that 500 cardiac catheterization procedures will remain at Highland Park and Evanston Hospital. The other labs at these two hospitals will be repurposed for interventional radiology procedures.<sup>11</sup>.

<b>TABLE EIGHT</b>						
	<b>Cardiac Cath Procedures</b>					
Hospitals	2019	2018	2017	2016	2015	Ave
Evanston Hospital	3,404	2,745	2,507	2,296	2,161	2,623
Skokie Hospital	196	786	895	972	969	764
Highland Park Hospital	1,956	1,494	1,410	1,280	1,141	1,456
Glenbrook Hospital	331	426	483	553	446	448
<b>Total</b>	<b>5,887</b>	<b>5,451</b>	<b>5,295</b>	<b>5,101</b>	<b>4,717</b>	5,290

<sup>10</sup> **Evanston Hospital** will maintain **one** cardiac cath lab for emergent cath and EP cases. The other two labs will be repurposed for interventional radiology procedures. **Highland Park Hospital** will maintain one cardiac cath lab for emergent cath and EP cases. The other lab will be repurposed for interventional radiology procedures. Skokie Hospital closed its two cath labs, effective August 1, 2021.

<sup>11</sup> Interventional radiology is image-guided surgery. Interventional radiologists use diagnostic imaging tools (CT, ultrasound, MRI, and fluoroscopy) to guide their procedures. Most interventional procedures avoid open and laparoscopic (keyhole) surgery and favor minimally invasive options.

The Applicant is estimating 5,387 cardiac catheterizations to be performed at the Glenbrook Hospital by 2025.

**E) Criterion 1110.225 (e) -Support Services**

- 1) Any applicant proposing the establishment of a dedicated cardiac catheterization laboratory must document the availability of the following support services.
  - A) Nuclear medicine laboratory.
  - B) Echocardiography service.
  - C) Electrocardiography laboratory and services, including stress testing and continuous cardiogram monitoring.
  - D) Pulmonary Function unit.
  - E) Blood bank.
  - F) Hematology laboratory-coagulation laboratory.
  - G) Microbiology laboratory.
  - H) Blood Gas laboratory.
  - I) Clinical pathology laboratory with facilities for blood chemistry.
- 2) These support services need not be in operation on a 24-hour basis but must be available when needed.

The Applicant states Glenbrook Hospital currently provides the support services listed above. [Application for Permit page 156]

**F) Criterion 1110.225 (f) - Laboratory Location**

Due to safety considerations in the event of technical breakdown it is preferable to group laboratory facilities. Thus, in projects proposing to establish additional catheterization laboratories such units must be near existing laboratories unless such location is architecturally infeasible.

The Applicant states the all nine cardiac catheterization labs will be adjacent to one another as required. [Application for Permit page 157 and 160]

**G) Criterion 1110.225 (g) - Staffing**

It is the policy of the State Board that if cardiac catheterization services are to be offered that a cardiac catheterization laboratory team be established. Any applicant proposing to establish such a laboratory must document that the following personnel will be available:

- 1) Lab director board-certified in internal medicine, pediatrics, or radiology with subspecialty training in cardiology or cardiovascular radiology.
- 2) A physician with training in cardiology and/or radiology present during examination with extra physician backup personnel available.
- 3) Nurse specially trained in critical care of cardiac patients, knowledge of cardiovascular medication, and understanding of catheterization equipment.
- 4) 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.
- 5) Cardiopulmonary technician for patient observation, handling blood samples and performing blood gas evaluation calculations.
- 6) Monitoring and recording technician for monitoring physiologic data and alerting physician to any changes.
- 7) Electronic radiologic repair technician to perform systematic tests and routine maintenance; must be immediately available in the event of equipment failure during a procedure.
- 8) Darkroom technician well trained in photographic processing and in the operation of automatic processors used for both sheet and cine film.

Glenbrook Hospital currently has a cardiac catheterization program in place and the personnel listed above is currently available. [Application for Permit page 157]

**H) Criterion 1110.225 (h) - Continuity of Care**

Any applicant proposing the establishment, expansion or modernization of a cardiac catheterization service must document that written transfer agreements have been established with facilities with open-heart surgery capabilities for the transfer of seriously ill patients for continuity of care.

The proposed project proposes to establish an open-heart surgery program at the Glenbrook Hospital.

**I) Criterion 1110.225 (i) - Multi-Institutional Variance**

- 1) A variance to the establishment requirements of subsection (b), Establishment or Expansion of Cardiac Catheterization Service shall be granted if the applicant can demonstrate that the proposed new program is necessary to alleviate excessively high demands on an existing operating program's capacity.
- 2) Each of the following must be documented:
  - A) That the proposed unit will be affiliated with the existing operating program. This must be documented by written referral agreements between the facilities, and documentation of shared medical staff.
  - B) That the existing operating program provides open heart surgery.
  - C) That initiation of a new program at the proposed site is more cost effective, based upon a comparison of charges, than expansion of the existing operating program.
  - D) That the existing operating program currently operates at a level of more than 750 procedures annually per laboratory. and
  - E) That the proposed unit will operate at the minimum utilization target occupancy and that such unit will not reduce utilization in existing programs below target occupancy (e.g., certification of the number of patients transferred to other service providers in each of the last 3 years and market studies developed by the applicant indicating the number of potential catheterization patients in the area served by the applicant).
- 3) The existing operating program cannot utilize its volume of patient procedures to justify a second affiliation agreement until such time as the operating program is again operating at 750 procedures annually per laboratory and the affiliate is operating at 400 procedures per laboratory.

The Applicant is not requesting a Multi-Institutional Variance.

## XI. Clinical Services Other than Categories of Service

### A) Criterion 1110.270 (c) - Service Modernization<sup>12</sup>

The applicant shall document that the proposed project meets one of the following:

2) Necessary Expansion

The proposed project is necessary to provide expansion for diagnostic treatment, ancillary training, or other support services to meet the requirements of patient service demand. Documentation shall consist of, but is not limited to historical utilization data, evidence of changes in industry standards, changes in the scope of services offered, and licensure or fire code deficiency citations involving the proposed project.

3) Utilization

B) Service or Facility

Projects involving the modernization of a service or facility shall meet or exceed the utilization standards for the service, as specified in Appendix B. **The number of key rooms being modernized shall not exceed the number justified by historical utilization rates for each of the latest 2 years, unless additional key rooms can be justified per subsection (c)(2) (Necessary Expansion).**

#### 1. Necessary Expansion

The Applicant believes with the closure of Evanston Hospital open-heart surgery program and those cases transitioned to Glenbrook Hospital as well as vascular surgery the Applicant is expecting a 33% increases in vascular surgery, as the result of the addition of two vascular surgeons to NorthShore Medical Group. Based on the historical growth coupled with the addition of open-heart surgery and vascular surgery, NorthShore Glenbrook Hospital decided to establish six operating rooms for the cardiovascular procedural area.

Glenbrook Hospital experienced a 4.68% compound annual growth in surgical hours from 2015 to 2019 based upon the information furnished to the State Board. Based on its historical growth, NorthShore Glenbrook Hospital projects 20,798 surgical hours in 2026 (the second year after project completion), which justifies the 6 additional operating rooms proposed for this project.

#### 2. Utilization – Service or Facility

The Applicant states by the second year of operation, annual utilization at NorthShore Glenbrook Hospital shall exceed State Board's utilization standard of 1,500 hours per operating room. According to the Applicant existing surgical volumes are expected to increase 35% between 2019 and 2026 (the second year after project completion), justifying another 3 operating rooms. Further, NorthShore recruited two vascular surgeons and anticipates a 33% increase in vascular surgery by the time the cardiovascular surgery suites open. The addition of open-heart surgery (1,986 surgical hours) coupled with increase in

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<sup>12</sup> "Modernization" means modification of an existing health care facility by means of building, alteration, reconstruction, remodeling, replacement and/or expansion, the erection of new buildings, or the acquisition, alteration, or replacement of equipment.

vascular surgery cases performed at NorthShore Glenbrook Hospital (4,005 surgical hours) justifies an additional 4 operating room. Accordingly, the 14 operating rooms proposed for this project will be fully justified by the second year after project completion.

<b>TABLE NINE</b> Operating Room Glenbrook Hospital Historical Utilization 2015-2019 Annual Growth of 4.68% for the years 2020-2026						
Year	2015	2016	2017	<b>2018</b>	<b>2019</b>	2020
Cases	9,066	9,499	9,610	<b>9,594</b>	<b>9,525</b>	9,646
Hours	12,720	13,103	13,352	<b>17,409</b>	<b>15,100</b>	15,807
Room Justified	9	9	9	<b>12</b>	<b>11</b>	11
Year	2021	2022	2023	2024	2025	2026
Cases	9,768	9,893	10,018	10,145	10,274	10,405
Hours	16,546	17,321	18,131	18,980	19,868	20,798
Room Justified	12	12	13	13	14	14

Two years of historical utilization will justify 11 operating rooms at the Hospital and not the 6 operating rooms being proposed  $[17,409+15,100]/2 = 16,255 \text{ hours}/1,500 \text{ hours} = 11 \text{ operating rooms}$ .

## **XII. FINANCIAL VIABILITY AND ECONOMIC FEASIBILITY**

- A) Criterion 1120.110 - Availability of Funds
- B) Criterion 1120.120 - Financial Viability
- C) Criterion 1120.140 (a) - Reasonableness of Financial Arrangements
- D) Criterion 1120.140 (b) - Terms of Debt Financing

NorthShore University HealthSystem is funding this project with cash in the amount of \$170 million and has an “A” or better bond rating.

<b>TABLE TEN</b> NorthShore University HealthSystem Audited Financial Information (in thousands)		
	2020	2019
Cash	\$281,778	\$74,229
Current Assets	\$742,735	\$500,758
Total Assets	\$5,344,237	\$3,982,049
Current Liabilities	\$723,871	\$486,221
LTD	\$534,895	\$670,790
Total Liabilities	\$2,048,358	\$1,157,011
Net Patient Revenue	\$2,043,543	\$2,029,711
Total Revenue	\$2,442,046	\$2,234,142
Total Expenses	\$2,460,324	\$2,151,969
Total Operating Income	-\$18,278	-\$34,215
Non-Operating Income	\$295,855	\$48,899
Revenue in Excess of Expenses	\$277,577	\$14,684

### **E) Criterion 1120.140 (c)- Reasonableness of Project Costs**

Only Clinical Costs are reviewable by the State Board

Preplanning costs total \$1,165,075 and are 1.72% of new construction, contingencies, and moveable equipment of \$67,793,116. These costs appear reasonable when compared to the State Board Standard of 1.8% or \$1,220,276.

<b>Preplanning Costs</b>	
Feasibility Studies & Planning	\$318,998
Preliminary Budgeting	\$45,571
Preliminary & Schematic Designs & Plans	\$660,155
Solar Studies & Planning	\$50,028
Preliminary Site Infrastructure Design & Planning	\$90,322
<b>Total</b>	<b>\$1,165,074</b>

Site Survey Soil Investigation and Site Preparation total \$1,152,961 is 4.90% of new construction and contingency costs of \$23,438,986. These costs appear reasonable when compared to the State Board Standard of 5% or \$1,171,949.

<b>Site Survey Soil Investigation, Site Preparation</b>	
Soil Investigation	\$9,800
Site Survey	\$41,568
Demolition	\$233,287
Site Infrastructure & Electrical Distribution	\$755,252
Temporary Entrances, Roadways & ILSM	\$113,054
<b>Total</b>	<b>\$1,152,961</b>

New Construction and Contingency Costs total \$23,438,986 and are \$644.42 per GSF. These costs appear reasonable when compared to the State Board Standard of \$646.58 per GSF.

Contingency Costs total \$2,118,899 and are 9.94% of new construction costs. These costs appear reasonable when compared to the State Board Standard of 10% or \$2,132,009.

Architectural and Engineering Fees total \$1,449,653 and are 6.18% of new construction and contingency costs of \$23,438,986. This appears reasonable when compared to the State Board Standard of 8.82% or \$2,067,319.

<b>Architectural/Engineering Fees</b>	
Architectural & Structural Design	\$735,584
MEP Design	\$581,475
Civil & Landscaping Design	\$132,594
<b>Total</b>	<b>\$1,449,653</b>

Consulting and Other Fees total \$2,285,490. The State Board does not have a standard for this cost.

<b>Consulting and Other Fees</b>	
Project Management	\$1,333,592
Municipal Permits	\$657,242
IDPH & Other Regulatory Permits	\$71,651
CON Permit and Legal Fees	\$78,816
Cleaning & Occupancy Costs	\$56,557
Commissioning	\$87,632
<b>Total</b>	<b>\$2,285,490</b>

Movable or Other Equipment total \$44,354,130. The State Board does not have a standard for this cost.

<b>Moveable or Other Equipment</b>	
Anesthesia Boom	\$480,000
Open Heart Perfusion Boom	\$240,000
Open Heart Equipment Boom	\$240,000
Surgical Lights	\$240,000
Surgical Tables	\$220,000
Case Carts	\$50,000
Scrub Sinks	\$500,000
Headwalls	\$448,000
Over Bed Table	\$76,800
Cath Procedure Room Equipment	\$7,200,000
Cath Supplemental Equipment	\$2,200,000
Structural Heart Procedure Room Equipment	\$1,800,000
Structural Heart Supplemental Equipment	\$1,200,000
Structural Heart Cath/CT Procedure Room Equipment	\$2,800,000
EP Procedure Room Equipment	\$3,600,000
EP Supplemental Equipment	\$2,000,000
EP Bi-Plane Procedure Room Equipment	\$2,800,000
Bi-Plane Supplemental Equipment	\$1,000,000
Vascular Procedure Room Equipment	\$3,600,000
Vascular Supplemental Equipment	\$1,200,000
In Room Equipment	\$2,000,000
C-Arm	\$500,000
Anesthesia OR Monitors	\$1,440,000
Anesthesia OR Machine	\$450,000
SDS Monitors	\$1,920,000
Central Station	\$180,000
All Other Equipment	\$900,000
UPS	\$1,800,000
Installation	\$600,000
Furniture	\$687,876
Security Access/Wireless	\$132,610
IT/Telecom	\$390,544
Signs/Wayfinding	\$72,100
Other	\$1,386,200
<b>Total</b>	<b>\$44,354,130</b>

Other Costs to be Capitalized total \$7,201,225. The State Board does not have a standard for these costs.

<b>Other Costs to Capitalized</b>	
Surface Parking Lots, Temporary Roads, Lighting	\$2,201,225
Net Book Value of Equipment to be Transferred from Facilities	
Cardiac Catheterization	\$3,100,000
Surgery	\$1,200,000
Other Furniture, Fixtures & Equipment	\$700,000
<b>Total</b>	<b>\$7,201,225</b>

**F) Criterion 1120.140 (d) - Direct Operating Costs**

The Direct Operating costs per cardiac catheterization procedure is \$17,086 per unit of service. The State Board does not have a standard for this cost.

**G) Criterion 1120.140 (e) – Total Effect of the Project on Capital Costs**

The Capital Cost per cardiac catheterization procedure is \$1,093 per unit of service. The State Board does not have a standard for this cost.

## **Exhibit I**

### **Safety Net Impact Statement**

**NorthShore Community Benefit Report 2019-2020 is included in the Application for Permit pages 199-215.**

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 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 each 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.

**Exhibit I**  
**Safety Net Impact Statement**

NorthShore University HealthSystem Net Patient Revenue, Charity Care and Medicaid Revenue			
	2018	2019	2020
Patient Service Revenue	\$1,295,160,316	\$1,407,899,750	\$1,513,478,270
Charity Care (# of Patients)			
Inpatient	1,892	1,742	2,061
Outpatient	16,185	15,512	19,103
Total	18,077	17,254	21,164
Charity Care (Cost)			
Inpatient	\$4,059,519	\$4,569,977	\$11,081,389
Outpatient	\$13,130,575	\$13,700,129	\$18,504,494
Total	\$17,190,094	\$18,270,106	\$29,585,883
	1.33%	1.30%	1.95%
Medicaid (# of patients)			
Inpatient	4,020	3,812	8,136
Outpatient	82,418	81,292	123,719
Total	86,438	85,104	131,855
Medicaid (Revenue)			
Inpatient	\$36,791,351	\$37,079,307	\$73,479,093
Outpatient	\$21,990,843	\$28,264,517	\$44,690,503
Total	\$58,782,194	\$65,343,824	\$118,169,596
	4.54%	4.64%	7.81%

## Exhibit II

### Hospitals with Cardiac Catheterization Service in the HSA VII Hospital Planning Area

Hospital	City	Health Service Area	Hospital Planning Area	County	Cardiac Catheterization Labs		
					Total Cardiac Surgeries	Total Labs	Total Procedures
Foster G. McGaw Hospital - Loyola Univ Med Ctr	Maywood	7	A-06	Cook	838	9	5,428
Advocate Christ Medical Center	Oak Lawn	7	A-04	Cook	1,685	6	6,602
Edward Hospital	Naperville	7	A-05	DuPage	854	6	5,186
AMITA Health Alexian Brothers Med Ctr Elk Grove	Elk Grove Village	7	A-07	Cook	181	5	2,423
Northwest Community Hospital	Arlington Heights	7	A-07	Cook	201	4	2,373
Advocate Good Samaritan Hospital	Downers Grove	7	A-05	DuPage	208	4	1,903
Advocate Lutheran General Hospital	Park Ridge	7	A-07	Cook	231	4	3,175
Northwestern Central DuPage Hospital	Winfield	7	A-05	DuPage	311	4	2,293
Elmhurst Memorial Hospital	Elmhurst	7	A-05	DuPage	347	4	3,747
Evanston Hospital	Evanston	7	A-08	Cook	178	3	3,404
AMITA Health Adventist Medical Center Hinsdale	Hinsdale	7	A-05	DuPage	102	3	1,390
Franciscan Health - Olympia Fields	Olympia Fields	7	A-04	Cook	71	3	1,241
MacNeal Hospital	Berwyn	7	A-06	Cook	62	3	1,321
Ingalls Memorial Hospital	Harvey	7	A-04	Cook	0	2	1,017
Little Company of Mary Hospital	Evergreen Park	7	A-04	Cook	0	2	1,251
Palos Community Hospital	Palos Heights	7	A-04	Cook	218	2	2,438
Advocate South Suburban Hospital	Hazel Crest	7	A-04	Cook	0	2	1,448
Skokie Hospital	Skokie	7	A-08	Cook	0	2	196
Gottlieb Memorial Hospital - Loyola Medicine	Melrose Park	7	A-06	Cook	12	2	428
AMITA Health Saint Francis Hospital Evanston	Evanston	7	A-08	Cook	7	2	593
Rush Oak Park Hospital, Inc.	Oak Park	7	A-06	Cook	0	1	272
Glenbrook Hospital	Glenview	7	A-08	Cook	0	1	331
AMITA Health Adventist Medical Center GlenOaks	Glendale Heights	7	A-05	DuPage	0	1	403
AMITA Health Adventist Medical Center La Grange	La Grange	7	A-04	Cook	59	1	634
Pipeline West Suburban	Oak Park	7	A-06	Cook	0	1	562

## #21-016 Glenbrook Hospital

