

STAFF REPORT TO THE PUBLIC HEALTH COUNCIL FOR A DETERMINATION OF NEED	
Applicant Name	Partners HealthCare System, Inc.
Applicant Address	800 Boylston Street, Suite 1150 Boston, MA, 02199
Filing Date	October 2, 2019
Type of DoN Application	Substantial Capital Expenditure and Substantial Change in Service
Total Value	\$58,394,045.00
Project Number	PHS-19092711-HE
Ten Taxpayer Group (TTG)	None
Community Health Initiative (CHI)	\$2,919,702.25
Staff Recommendation	Approval with Conditions
Public Health Council	March 11, 2020
<p><u>Project Summary and Regulatory Review</u></p> <p>Partners HealthCare System, Inc. submitted an application for a Proposed Project at Newton-Wellesley Hospital consisting of five component parts: establishing a permanent observation unit, renovation and expansion of endoscopy services, expansion of special care nursery services, renovations to the psychiatric unit, acquisition of a cardiac CT, and other renovation projects. The capital expenditure for the Proposed Project is \$58,394,045. The CHI contribution is \$2,919,702.25; \$708,027.80 will be directed to the CHI Statewide Initiative, \$2,124,083.38 will be dedicated to local approaches to the DoN Health Priorities and \$87,591.07 will be designated as administrative costs.</p> <p>Review of Applications for Capital Expenditures and Substantial Changes in Service is under the DoN regulation 105 CMR 100.000. The Department must determine that need exists for a Proposed Project, on the basis of material in the record, where the Applicant makes a clear and convincing demonstration that the Proposed Project meets each Determination of Need Factor set forth within 105 CMR 100.210. This staff report addresses each of the six factors set forth in the regulation.</p> <p>The Department received no public comment on the application.</p>	

The summary, analysis and recommendation reflect the purpose and objective of DoN which is “to encourage competition and the development of innovative health delivery methods and population health strategies within the health care delivery system to ensure that resources will be made reasonably and equitably available to every person within the Commonwealth at the lowest reasonable aggregate cost advancing the Commonwealth's goals for cost containment, improved public health outcomes, and delivery system transformation” (105 CMR 100.001). All DoN factors are applicable in reviewing Substantial Capital Expenditure and Substantial Change in Service DoN Applications. This Staff Report addresses each of these factors in turn.

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APPLICATION OVERVIEW

Background: Partners and NWH

The Applicant is Partners HealthCare System, Inc. (Partners), a nonprofit integrated health care system that was formed in 1994 by an affiliation between The Brigham Medical Center, Inc. (now known as Brigham Health) and Massachusetts General Hospital.^{1,2} Partners HealthCare System had 19% of all acute care hospital discharges in Massachusetts in FY17.^a

- Partners HealthCare Accountable Care Organization (Partners ACO) is a Health Policy Commission (HPC) certified Accountable Care Organization (ACO).^b The Partners ACO manages Medicare and MassHealth ACO programs.
- Newton-Wellesley Hospital (NWH), the site of the Proposed Project, is a community hospital with 273 licensed beds at its main campus in Newton.³ NWH offers services to patients through various hospital satellite and clinical locations across the metro Boston region. As noted below, roughly 80% of the NWH patient population resides in Health Service Area (HSA) 4.

Proposed Project Component I: Establish a Permanent Observation Unit

The Applicant proposes to renovate existing shell space near the emergency department (ED) to create a new 8-bed permanent Observation Unit, replacing a temporary one opened in 2019. The Proposed Project component will establish the permanent Observation Unit near the ED to continue to address patient needs, mostly due to an aging population. Observation units can be an optimal form of care for older adults because they provide timely diagnosis and short-term treatment and can reduce unnecessary inpatient stays.

Proposed Project Component II: Renovate and Expand Endoscopy Services

NWH currently has eight endoscopy rooms and an Endoscopic Retrograde Cholangio-Pancreatography (ERCP) Room that is only licensed for ERCP procedures. Manometry services⁴ are currently provided in a bay setting in the hospital. In order to address Patient Panel need for additional/enhanced endoscopy treatment options, and reduce current wait times for elective procedures, the Applicant is proposing to:

- Convert its existing ERCP –only room to a full endoscopy room; and
- Convert a general storage room to clinical space to provide a larger space for manometry services.

¹ Partners operates two tertiary care hospitals, six community acute care hospitals, and one acute care specialty hospital in Massachusetts; one community acute care hospital in Southern New Hampshire; one facility providing inpatient and outpatient mental health services; and three facilities providing in- and outpatient services in rehabilitation medicine and long-term care. It also operates physician organizations and practices, a home health agency, nursing homes, a program for training graduate level health professionals, as well as a licensed, nonprofit managed care organization that offers health insurance products to MassHealth, Commonwealth Care, and commercial insurance populations.

² The Massachusetts General hospital is composed of MGH, MGPO, and McLean HealthCare, Inc., The MGH Institute of Health Professions, Inc., Martha's Vineyard hospital, Inc., Nantucket Cottage Hospital, Cooley Dickinson Health Care Corporation and Wentworth-Douglass hospital.

³ NWH is licensed to operate 273 beds: M/S=153, ICU=12, Pediatric Service=24, Obstetrics Services (Level IIB)=39, Psychiatric Service=45.

⁴ Esophageal manometry is a test that examines the esophagus and provides information about the motility of food.

Proposed Project Component III: Expand Special Care Nursery (SCN) Services

The SCN provides care for infants who are born prematurely or have certain conditions that require a higher level of care than what can be provided at the mother's bedside. In order to accommodate current and projected demand for SCN services and address operational inefficiencies, the Applicant is proposing to add four SCN bays, for a total of 16.

Proposed Project Component IV: Renovate Psychiatric Unit

The site's two inpatient adult psychiatric units provide psychiatric care to patients with a primary psychiatric diagnosis and those with co-occurring conditions. The Proposed Project component will implement The Joint Commission standards and CMS' Conditions of Participation for Hospital Psychiatric Units for a ligature-resistant environment to improve patient safety. The Applicant also proposes to also renovate shell space near the psychiatric units to address Patient Panel needs for exercise, meeting space and medication education classes.

Proposed Project Component V: Acquisition of a Cardiac CT Scanner

The Elfers Cardiovascular Center offers diagnostic cardiac services on both an inpatient and an outpatient basis.^c The Applicant proposes to add a dedicated cardiovascular computerized tomography scanner⁵ (Cardiac CT) which will serve as a primary diagnostic tool, allowing the Center to

- more effectively and efficiently diagnose coronary artery disease (CAD) and other cardiovascular conditions and
- reduce the number of patient transfers to other Partners facilities for more invasive procedures.

The Proposed Project component will address the need for locally convenient and minimally invasive cardiac care among a Patient Panel with an increasing incidence of cardiovascular disease (CVD).

⁵ Cardiac CT provides noninvasive technology that combines images to create a three-dimensional model of the whole heart.

OVERVIEW of PROPOSED PROJECT AND FACTOR REVIEW

Description of Proposed Project Component	What's Needed to Meet Factor 1: Demonstration of need; improved health outcomes and quality of life; assurances of health equity; continuity and coordination of care; evidence of community engagement; and competition on recognized measures of health care spending	What's Needed to Meet Factor 2: Demonstration of cost containment, improved public health outcomes, and delivery system transformation	Factors 3, 4 & 5 ⁶	What's Needed to Meet Factor 6: Demonstration of plans for fulfilling ... responsibilities ... in the DPH Community-based Health Initiatives Guideline
	<i>Staff Report finds</i>			
	MEETS w/ CONDITIONS	MEETS	OVERALL APPLICATION MEETS	OVERALL APPLICATION MEETS
Observation Unit: to create a new 8-bed permanent Observation Unit, replacing a temporary one to address Patient Panel needs for timely diagnosis and short-term treatment and to reduce unnecessary inpatient stays, especially for older adults.	<ul style="list-style-type: none"> Reporting on other standard outcome measures revised from the Applicant's proposed list 	✓	✓	✓

⁶ 3) Sufficient evidence of compliance and good standing with federal, state, and local laws and regulations.

4) Sufficient documentation of the availability of sufficient funds for capital and ongoing operating costs necessary to support the Project without negative impacts or consequences to the Applicant's existing Patient Panel.

5) The ... Project, on balance, is superior to alternative and substitute methods for meeting ... Patient Panel needs.

Description of Proposed Project Component	What's Needed to Meet Factor 1: Demonstration of need; improved health outcomes and quality of life; assurances of health equity; continuity and coordination of care; evidence of community engagement; and competition on recognized measures of health care spending	What's Needed to Meet Factor 2: Demonstration of cost containment, improved public health outcomes, and delivery system transformation	Factors 3, 4 & 5 ⁶	What's Needed to Meet Factor 6: Demonstration of plans for fulfilling ... responsibilities ... in the DPH Community-based Health Initiatives Guideline
<p>Renovate and Expand Endoscopy Services</p> <ul style="list-style-type: none"> To expand the use of an existing procedure room, so that additional endoscopic procedures may be performed; and To convert existing space to enlarge space for manometry services and offer additional manometry services. <p>Needed to address Patient Panel need for additional/enhanced endoscopy treatment options and reduce current wait times for elective procedures.</p>	<p>MEETS w/ CONDITIONS</p> <ul style="list-style-type: none"> Reporting on colorectal cancer education and outreach programs <i>among Patient Panel</i> to ensure appropriate screening rates/rescreening rates Reporting on other standard outcome measures revised from the Applicant's proposed list 	<p>MEETS w/ CONDITIONS</p> <ul style="list-style-type: none"> Reporting on colorectal cancer education and outreach programs <i>in the community</i> to reduce risk factors or increase screening rates/rescreening rates in the community 	✓	
<p>Special Care Nursery: Add four SCN bassinets/beds, for a total of 16. Needed to accommodate current and projected Patient Panel demand for SCN services and to address operational inefficiencies.</p>	<p>MEETS w/ CONDITIONS</p> <ul style="list-style-type: none"> Reporting on other standard outcome measures revised from the Applicant's proposed list 	MEETS	✓	
<p>Psychiatric Unit Renovations are needed to:</p> <ul style="list-style-type: none"> Comply with The Joint Commission standards and CMS' Conditions of Participation for Hospital Psychiatric Units for a ligature-resistant environment to improve patient safety; and renovate existing shell space to address patient needs for exercise, meeting space and medication education classes. 	<p>MEETS w/ CONDITIONS</p> <ul style="list-style-type: none"> Reporting on other standard outcome measures revised from the Applicant's proposed list 	MEETS	✓	

Description of Proposed Project Component	What's Needed to Meet Factor 1: Demonstration of need; improved health outcomes and quality of life; assurances of health equity; continuity and coordination of care; evidence of community engagement; and competition on recognized measures of health care spending	What's Needed to Meet Factor 2: Demonstration of cost containment, improved public health outcomes, and delivery system transformation	Factors 3, 4 & 5 ⁶	What's Needed to Meet Factor 6: Demonstration of plans for fulfilling ... responsibilities ... in the DPH Community-based Health Initiatives Guideline
<p>Cardiac computerized tomography scanner (Cardiac CT) is needed to:</p> <ul style="list-style-type: none"> allow more efficient diagnosis of coronary artery disease and other cardiovascular conditions meet the need for more cost-effective, local and minimally invasive cardiac care, among its Patient Panel with an increasing incidence of cardiovascular disease. 	<p>MEETS w/ CONDITIONS</p> <ul style="list-style-type: none"> Report on appropriate use of cardiac CT Report on other standard outcome measures revised from the Applicant's proposed list, including Patient Reported Outcomes and other quality measures 	<p>MEETS</p>	<p>✓</p>	

Patient Panel⁷

Partners HealthCare System, Inc. (Partners) served a large and diverse Patient Panel over the 36-month period covering Fiscal Year (FY) 16-18, the most recent period available.⁸ The number of patients utilizing Partners services has increased since FY16.⁹ Partners has seen an increase in the number of patients it serves across all age cohorts between FY16 and FY18; patients that are 65 and older also make up a significant portion of the total patient population (28.6-26.8% of the total patient population).

The Proposed Project components will address Patient Panel need for convenient, local access to high quality community-based care and allow for more complex, multispecialty care to take place in Partners' academic medical centers (AMCs). Almost half of the Patient Panel resides in HSA4 where the Proposed Project components are located.

Patient Information (FY 2018)

Tables 1 and 2 below present patient information for the Applicant, NWH, and those for each Project Component of this DoN Application. This "snapshot" provides important comparison information; staff notes the following observations about these data below:

- **Age** – Patients ages 60 and above represent the majority (50%) of patients in the Observation Unit and Endoscopy.
- **Race/Ethnicity** - The racial makeup is fairly consistent across each service. There are a higher proportion of patients identifying as Black or African American (~7%) in the Psychiatric Units compared to the NWH patient population (~3%). There are a higher proportion of patients identifying as White (90%) in the Endoscopy patient population compared to that of NWH (82%). Finally, there is much higher percentage of Asians in the Special Care Nursery (14.5%) than NWH overall (6.3%).
- **Patient Origin** - The largest proportion of patients within the NWH population (81%) and the Partners Patient Panel (43%) reside in HSA4.
- **Payer Mix** – There is a higher percentage of MassHealth and Managed Medicaid payments among Partners overall than at NWH (9% vs. 3%); commercial payments are slightly higher at NWH than within Partners Patient Panel, and Medicare payments are same for both Partners and NWH patients.
- **ACO and Managed Care Contracts** - The Applicant itself has an ACO and in CY2018, 57.9%¹⁰ of the Partners primary care lives were covered in risk contracts. The Applicant notes that this percentage is derived from the number of primary care lives within the Patient Panels of the Partner's primary care physicians (PCPs) that are covered under risk contracts where Partners bears risk.

⁷ As defined in 105 CMR 100.100, Patient Panel is the total of the individual patients regardless of payer, including those patients seen within an emergency department(s) if applicable, seen over the course of the most recent complete 36-month period by the Applicant or Holder.

⁸ The Fiscal year is October 1 - September 30. The Applicant states that while preliminary data is available for FY19, annual comparisons are calculated using data for FY16-18 as the FY19 data is only for October 1, 2018 - April 30, 2019 and is subject to change over time.

⁹ With 1,380,203 unique patients in FY16, 1,409,382 unique patients in FY17 and 1,504,478 unique patients in FY18.

¹⁰ The number of risk members is for CY2018 and includes members from the following risk contracts: Medicare ACO - NextGen, BCBS AQC and BCBS PPO, HPHC, TAHP, AllWays Commercial, and Medicaid ACO. The total number of patients within a PCP's panel are for FY 2017 adult and pediatric patients.

Table 1: Overview of Patients: Applicant, NWH, and Patients Seeking Services within each Project Component, FY18¹¹

	Partners	NWH	NWH OU	NWH Endoscopy	NWH SCN	NWH Psychiatric Units	NWH Cardiac CT ¹²
Total Unique Patients (FY18)	1,504,478	210,536	3,605	11,290	621	625	500
Gender (FY18)							
Male	41.9%	39.1%	43%	47%	60%	50%	
Female	58.1%	60.9%	57%	53%	40%	50%	
Age (FY18)¹³							
0-17	11.5%	14.2%	13%	2.2%	100%		
18-64	61.7%	62.9%	36%	46.6%		80.2%	
65+	26.8%	22.8%	51%	51.2%		15.6%	
Race (FY18)¹⁴							
White	72.6%	82.4%	85%	90%	71.7%	80%	
Black or African American	5.5%	2.9%	3.6%	1.9%	5.8%	6.7%	
Asian	4.1%	6.3%	5.5%	4.4%	14.5%	4.6%	
Hispanic/Latino	1.4%	0.2%	0.3%	0.15%	N/A	0.3%	
Native Hawaiian or Other Pacific Islander	0.1%	0.2%	0.5%	0.13%	<1%	0.3%	
American Indian or Alaska Native	0.1%	0.1%	0.1%	0.04%	<1%	0.5%	
Other/Unknown	16.1%	7.8%	5.2%	3.5%	6.9%	7.0%	
Patient Origin (FY18)¹⁵							
HSA1	6.0%	0.3%					
HSA2	3.3%	5.7%					
HSA3	6.5%	1.7%					
HSA4	43.4%	80.8%					
HSA5	13.6%	5.4%					
HSA6	16.2%	1.8%					
Outside MA	10.5%	4.2%					
Unknown	0.4%	0.1%					

¹¹ FY 2018: The table presents patient information for the Applicant (Partners), NWH, and those using the services that are the focus of the DoN Application. This “snapshot” provides important comparison information for a single year but does not include the entire Patient Panel over the required 36 month period.

¹² The Cardiac CT scanner will establish a new cardiovascular imaging program at NWH’s Cardiovascular Center, so there is no historical volume data available and no Patient Panel data available. Applicant estimated number of patient’s upon acquisition in Year 1 based on patients within NWH’s patient panel with relevant diagnoses.

¹³ Age Cohorts Provided by the Applicant

Observation: 13% of observation patients were in the 0-18 age cohort, 36% of observation patients were between the ages of 19-59, and 51% of all observation patients were in the 60+ age cohort.

Endoscopy: 2.2% of endoscopy patients were in the 0-18 age cohort, 46.6% of endoscopy patients were between the ages of 19-59, and 51.2% of endoscopy patients were in the 60+ age cohort.

SCN: All patients utilizing the SCN services are in the 0-2 age cohort.

Psychiatric Units: 80.2% of patients in the psychiatric units were in the 19-59 age cohort, and 15.6% were in the 60+ age cohort.

¹⁴ Based on self-reporting.

¹⁵ Aggregated zip code data by HSA

Table 2: Payer Mix

Payer Mix	Partners (FY17)¹⁶	NWH (FY18)¹⁷
Commercial	59.6%	
• Commercial PPO/Indemnity		31.50%
• Commercial HMO/POS		21.78%
• National		9.56%
• Other Commercial		3.73%
Managed Medicaid	5.3%	0.88%
MassHealth	3.8%	2.28%
Commercial Medicare	3.8%	4.44%
Medicare FFS	22.7%	22.07%
Other	4.8%	3.8%

Factors 1 & 2: Patient Panel Need

In this section, we assess if the Applicant has sufficiently addressed Patient Panel need, public health value, competitiveness and cost containment, and community engagement for each of the five Proposed Project components. We also assess whether the Applicant has demonstrated that the Proposed Project component will meaningfully contribute to the Commonwealth's goals for cost containment, improved public health outcomes, and delivery system transformation.

Factor 1: a) Patient Panel Need: Observation Unit

The Applicant reports 3,605 patients received observation services in 2018 at NWH. NWH is experiencing growth in demand for observation services; the Applicant projects increasing demand to continue over the next six years, as shown in Table 3 below. In February 2019, the Applicant repurposed beds in its existing postpartum unit in order to use it as a temporary Observation Unit; these beds now must return to their original use¹⁸. The Applicant now seeks to establish a permanent Observation Unit with 8 beds.

The establishment of a permanent Observation Unit will continue to address some of the capacity constraints in the ED and on inpatient floors that are currently being addressed through the temporary Observation Unit. Through the permanent Observation Unit, the Applicant states it will continue to be able to provide the patient population with access to observation services in a cost-effective, high-quality setting. The Applicant provided projections of patients placed in the observation unit versus inpatient space, shown in Table 3 below.

¹⁶ Partners HealthCare data: (1) Reflects aggregate Partners HealthCare revenue for the 2016, 2017 & 2018 Cost Hearing Submissions for P4P Contracts, Risk Contracts, FFS Arrangements and Other Revenue; (2) Data includes MGH, BWH, NSMC, NWH, BWFH, MGPO, BWPO, NSPG & NWMG. Payer specific information for other PHS providers (McLean, Spaulding Network, MVH, and NCH) is not available; and (3) Revenue based on payments minus denials, bad debt, free care surcharge, and uncompensated care assessment.

¹⁷ Note: The percentages are based on net patient service revenue, unlike CHIA data, which is based on gross patient service revenue.

¹⁸ The existing post-partum unit met the physical plant requirements for observation space. The post-partum beds were placed out of service temporarily so that they could be used for the temporary observation unit during a time of year when there are typically fewer births. The post-partum beds will be returned to their original use in order to accommodate the specific months when there are surges in the number of deliveries

Table 3: Projections for Observation Services at NWH

	FY2020	FY2021	FY2022	FY2023	FY2024
Average patients per day in the Observation Unit	7	7.5	8	8	8
Annualized patients in the Observation Unit	2,555	2,738	2,920	2,920	2,920
Annualized total observation patients receiving care on inpatient floors	1,356	1,212	1,070	1,110	1,150
Annualized total observation patients	3,911	3,950	3,990	4,030	4,070

The Applicant outlined three needs for the permanent Observation Unit:

- a) **Need for permanent observation capacity, greater throughput and care efficiencies.** Prior to February 2019, observation patients were treated on inpatient floors, which increased waiting times for those needing admission (from the NWH ED as well as those from the Community Hospital Transfer Program (CHTP))¹⁹. Beginning in February 2019, some of these constraints were addressed through a temporary Observation Unit within the Post-Partum Care Unit, outlined above. In response to staff inquiry, the Applicant outlined how the temporary unit increased care efficiencies, reduced wait times in the ED, and reduced length of stay as outlined in (c) below. These needs will continue to be addressed in the permanent Observation Unit, which will be located adjacent to NWH's (ED). The Unit's close proximity to the ED will create operational efficiencies not possible given the distance of the temporary observation unit from the ED.
- b) **Need to better address aging population needs.** The Applicant states that the permanent Observation Unit will also address the increased demand for observation services posed by the growing aging population. Those aged 60 and over comprise 51% of total Observation Unit patient population and patients age 65 and over make up almost a quarter of the NWH patients. In Massachusetts, people 65 and older will represent a quarter of the population by 2035.^d The Applicant projects demand for observation services at NWH to increase by 13% from 2018 to 2024, due to an increase in the aging population. Further, as the demand for observation increases, the number of patients transferred to the observation unit will increase, resulting in fewer patient transfers to inpatient floors. Observation units are an optimal form of care for older adults because they provide timely diagnosis and short-term treatment and can reduce unnecessary inpatient stays. Providing care in an efficient, protocol-driven observation unit reduces the duration and risks of hospitalizations in elderly patients, which have been documented in the literature and include hospital delirium, falls, medication errors and hospital acquired infections.^e
- c) **To continue positive trends found through the temporary observation unit.** In response to staff inquiry, the Applicant provided data to illustrate initial successes found through six months' usage of the temporary unit:²⁰

¹⁹ The CHTP seeks to eliminate capacity constraints in the BWH and MGH EDs through transferring patients in need of community-based care to their local community hospital. Patients are transferred from MGH and BWH to medical/surgical beds on the inpatient floors at NWH.

²⁰ The Applicant provided several charts to display the data; DoN staff summarized the data in the charts for this report. The charts are available on the Determination of Need website: <https://www.mass.gov/doc/partners-healthcare-system-newton-wellesley-responses-to-don-questions/download>

- **Reduced Volume of Observation Patients on Inpatient Floors:** Six months after the temporary Observation Unit opened, 30% of observation patients were receiving care in the temporary Observation Unit where there was additional capacity, instead of placement on other inpatient floors. This increased capacity on the inpatient floors for higher acuity patients and patient transfers through the CHTP.
- **Reduced ED Length of Stay (LOS):** The Observation Unit provided an alternative to placement in inpatient beds, resulting in shorter wait times (by about 20-30%, on average) for patients in the ED waiting for an observation bed versus an inpatient bed. The shorter wait times created more capacity to triage and care for patients in the ED and also positively impacted quality outcomes and patient experience.
- **Reduced Length of Stay (LOS) for Observation Patients:** The Observation Unit resulted in a decrease in overall length of stay (by about 20-30%) among observation patients placed in the Observation Unit for care versus in an inpatient bed.

Analysis

Observation stays can occur in the ED, in a dedicated hospital observation unit or in the inpatient setting.^f The literature suggests that placing observation patients alongside inpatients results in longer lengths of stay and points to the need to develop dedicated observation units to provide more benefits to observation patients.^{g,h,i}

Moreover, the literature supports the use of observation services to address the specific needs of older adults, who made up a significant portion of the patient population receiving observation services at NWH. Rises in the need for acute care, which are due in part to an aging population, will place greater demand on EDs.^j Observation stays are being increasingly used as an alternative to short stay hospitalizations for adults aged 65 and older;^k they reduce time that may be spent in a crowded ED and provide an alternative to hospitalization which can pose specific risks to older adults: hospital delirium is common in older adults and in the hospital, delirium is a risk factor for complications, longer length of stay, and discharge to a post-acute nursing facility.^{l,m}

Staff concurs that a permanent Observation Unit is likely to provide the Patient Panel with continued access to high quality, efficient observation care; and reduce unnecessary and lengthier inpatient admissions.ⁿ Staff finds that overall, the information provided by the Applicant demonstrates sufficient need for establishing a permanent observation unit by their Patient Panel through capacity constraints, operational inefficiencies and the unique needs of the growing 65+ age cohort.

Factor 1: a) Patient Panel Need: Endoscopy

Endoscopy Services – Capacity Constraints and Volume Growth

NWH's gastroenterology services include inpatient and outpatient consultations as well as a number of manometry services.²¹ The vast majority of these procedures are colonoscopies (73%) followed by endoscopic procedures (14%).

Through the Proposed Project, the Applicant proposes to convert a room solely devoted to ECRP²² into one that will accommodate more endoscopy procedures. The room will increase capacity and reduce wait times for these procedures. In addition, manometry services will be moved from a bay setting into a

²¹ NWH's gastroenterology services include: manometric services including esophageal, biliary/pancreatic, and rectal; ablation therapy for Barrett's esophagus; colonoscopy; Endoscopic retrograde cholangiopancreatography (ERCP), endoscopic ultrasonography; liver biopsy; and video capsule endoscopy.

²² Endoscopic retrograde cholangiopancreatography -used as both a diagnostic and treatment procedure for issues concerning the bile and pancreatic ducts.

renovated larger space within the endoscopy suite. The Applicant provided projections of Endoscopy Unit Procedure Volume, as shown in Table 4 below.

Table 4: Projected Endoscopy Unit Procedure Volume

	FY2020	FY2021	FY2022
# of Endoscopy Procedures	14,240	14,383	14,526

The Applicant cites the need for additional capacity based on the following needs:

- **Reducing wait times for endoscopy services through adding an additional room.** The Applicant states that the Endoscopy Unit is experiencing increasing demand for endoscopy services. The number of patients seeking endoscopic procedures increased 6.8% between FY16 and FY18. Currently, there is a 12-week wait time for elective procedures.²³ The eight endoscopy rooms, on average, are operating at 90% capacity; when reached, it is difficult to accommodate urgent and emergent cases without delaying or rescheduling elective cases. Moreover, the projected volume growth will continue to further impact timely access to endoscopy services for elective cases. The new room will assist in reducing wait times.
- **Improving patient experience and satisfaction with manometry services in an outpatient setting.** Esophageal manometry is the gold standard to diagnose esophageal motility abnormalities.^{o,24} The Applicant states moving manometry services (currently provided in a bay setting in the hospital) into the endoscopy suite will improve patient experience and satisfaction.
- **Addressing a growing need by an aging population at risk for particular conditions and diseases.** Patients age 65 and older make up a significant percentage of NWH (23%) patient population and about 50% of patients that receive endoscopy services.²⁵ Further, endoscopy procedures are commonly performed on older adults to diagnose and treat GI disorders.^{p,q} New developments in endoscopy technique have also improved its utility as a screening tool.^r The Applicant provided two key reasons for an aging population’s increasing demands for endoscopy services:
 - **Risk for cancer.** Advancing age is a risk factor for cancer; 60% of new cancer cases and over 70% of cancer mortalities occur in elderly people.^s The need for endoscopic procedures to identify, and in some cases, treat colorectal cancers will increase with the aging population.
 - **Risk for obesity.** Age is also a risk factor for obesity. Approximately 35% of older adults, age 65 and older were obese in 2007-2010.^t In 2018, a quarter of adults in Massachusetts were obese, which is a 13% increase from 2013.^u Demand for endoscopy services will increase to address conditions associated with obesity such as nonalcoholic fatty liver disease, which is common among the elderly.^v Aging/advanced age and obesity are also associated with an increased risk for Gastroesophageal Reflux Disease (GERD) symptoms. Twenty percent of adults in the United States have GERD, making it a common gastrointestinal disorder.^{w,x,y} Esophageal motility abnormalities are increasingly prevalent with increasing severity of reflux disease.

²³ Data obtained from a private GI physician practice which is responsible for scheduling most of the endoscopic procedures at NWH.

²⁴ Esophageal motility abnormalities are among the main factors implicated in the pathogenesis of gastroesophageal reflux disease.

²⁵ FY18

Analysis

Staff finds that the information provided by the Applicant demonstrates sufficient need by their Patient Panel through continuing growth in volume; an aging population; and wait times for procedures. Moreover, the Proposed Project Component will allow NWH to accommodate projected growth in endoscopy services through increasing capacity within the Endoscopy suite to improve access to fluoroscopy and manometry.

Factor 1: a) Patient Panel Need: Special Care Nursery (SCN)

SCNs are designed to care for infants who need a higher level of care beyond the services available in the mother’s hospital room or in the hospital’s nursery. Infants born prematurely but greater than 32 weeks will likely require care in an SCN. The care provided in the SCN is less intensive than the care provided in the Neonatal Intensive Care Unit,²⁶ where infants need closer observation and care. The NWH SCN is designed for Level II neonatal care;²⁷ newborns may also be transferred to the NWH SCN if they have specific conditions.²⁸ The SCN includes 24-hour newborn specialist care, medical and surgical pediatric subspecialist care, and flexibility to accommodate twins, triplets and other patient and family needs. The care areas are private and allow for skin-to-skin contact between parents and infants.

The current SCN consists of 11 bays (areas for bassinets) and 1 isolation room; the Applicant is proposing to add four new bays, for a total of 16. The current occupancy rate in the SCN is 82% and the projected occupancy rate with the additional bays is 87%. The average length of stay is 12.3 days. The Applicant provided projections of SCN patients, as shown in Table 5 below.

Table 5: Projected Demand for Special Care Nursery Services

	FY2020	FY2021	FY2022
Projected # of Special Care Nursery Patients	773	782	788

The Applicant asserts that these new bays are needed to meet current and projected growth in demand for SCN services, as well as address operational inefficiencies. The Applicant cites the need for additional capacity based on:

- **Increase in preterm births.** Demand for SCN nursery services has increased over time with the increase in preterm births in Massachusetts.²⁹ In 2018, 8.9% of live births were born preterm in Massachusetts.^z The preterm birth rate in Middlesex County, where NWH is located, increased from 7.8% in 2015 to 8.6% in 2017.^{aa}
- **Capacity constraints, which limit access to care.** The Applicant reports a patient population of 621 patients in FY18, which increased by 4.5% between FY16 and FY18. The Applicant projects the SCN patient population to increase to 788 patients by FY2022, as shown in Table 5 above. The SCN has an average daily census (ADC) of 10.2 patients,³⁰ which increased from 7.4 to 10.6 between FY09 and

²⁶ The neonatal intensive care unit (NICU) provides care for babies born at less than 32 weeks or those requiring the highest level of care.

²⁷ The SCN provides Level II neonatal care for infants: born at 32 or more weeks gestation and who weight at least 1,500 grams (3.3 pounds) who have physiologic immaturity or who are moderately ill; or transitioning out of the neonatal intensive care unit (NICU); or who need mechanical ventilation for less than 24 hours or continuous positive airway pressure; or born before 32 weeks gestation and weighing less than 1,500 grams (3.3 pounds) who are awaiting transfer to a NICU facility.

²⁸ including prenatal diagnosis warranting special care; significant prematurity; maternal conditions, such as drug use or diabetes; delivery complications, jaundice, respiratory distress, body temperature instability, feeding intolerance, or seizures. The top diagnoses: prematurity, respiratory distress syndrome, and transient tachypnea of the newborn (TTN).

²⁹ Preterm birth is defined as a live birth before 37 completed weeks gestation. Some other classifications of preterm births include late preterm (34-36 weeks), moderately preterm (32-36 weeks) and very preterm (<32 weeks).

³⁰ Does not represent all of the mothers and babies that required transfer to ensure appropriate care.

FY18. The Applicant notes occasional surges in volume constrain current SCN capacity and have cascading effects around patient transfers.³¹ Such transfers negatively impact the patient experience. Moreover, the increasing demand for SCN services is impacting access to care by requiring patient transfers or denials of needed transfers from other Partners Hospitals.

- In response to staff inquiry, the Applicant provided data on the SCN admissions and transfers to illustrate capacity constraints:³²
 - There were nine maternal transfers in 2017, approximately eight in 2018, and 10 maternal transfers and approximately five neonatal transfers in 2019, due to SCN capacity constraints.³³
 - Approximately 12%³⁴ of NWH neonates were transferred to another hospital. Transfers out of the facility were due to the acuity level of a patient or to a lack of SCN beds.
 - From August – November 2019, five infant transfers into the SCN were deferred.³⁵

Analysis

It is clear that preterm birth is increasing in the Commonwealth; staff also notes these rates are even higher for infants of color, a trend seen nationwide and in Massachusetts.^{bb,cc,dd} Staff finds that the information provided by the Applicant demonstrates sufficient need for the additional bays. Current space constraints contribute to transfers that may well impact lower patient satisfaction and quality of life. Staff concurs that additional capacity in the SCN will address the growing demand for SCN services among the patient population.

Factor 1: a) Patient Panel Need: Psychiatric Unit

The site has two inpatient adult psychiatric units that comprise a total of 45 beds, providing acute psychiatric care to patients with a primary psychiatric diagnosis and those with co-occurring conditions. The Applicant reports 625 patients received psychiatric services at NWH in FY18; 80% were ages 19-59, and half were male. The current and projected occupancy rate in the units is 60%.

The Applicant states that the Proposed Project component is needed to comply with national standards that aim to reduce suicidal attempts within inpatient psychiatric settings and to expand behavioral health services/treatment in the units. The Applicant noted the following needs:

- **Ensuring a safer environment for patients. The Applicant needs to comply with** The Joint Commission standards and CMS' Conditions of Participation for Hospital Psychiatric Units for a ligature-resistant³⁶ environment, in order to provide a safe setting for patient care and reduce risk of suicide in the unit. The Applicant noted that this is needed, and cited the American Psychiatric

³¹ Hospital policy requires that when the census reaches 9 patients or greater, direct transfers from other area hospitals are prohibited, in order to ensure NWH patients are accommodated. When census reaches 12 or greater, obstetrics patients that are less than 36 weeks gestation or deemed "high risk" must be transferred to another hospital before delivery to ensure the mother and baby are kept together after delivery and cared for with the appropriate equipment.

³² The Applicant provided several charts to display the data; DoN staff summarized the data in the charts for this report. The charts are available on the Determination of Need website. <https://www.mass.gov/doc/partners-healthcare-system-newton-wellesley-responses-to-don-questions/download>

³³ NWH began tracking neonatal transfers in 2019 and is exploring ways within the Hospital's electronic health record to track this information

³⁴ FY17-FY19 to date

³⁵ NWH has not routinely collected data on deferred transfers over the last three years. This data is now being collected.

³⁶ A ligature risk (point) is defined as anything which could be used to attach a cord, rope, or other material for the purpose of hanging or strangulation. Ligature risks are of particular concern in psychiatric units as they present a threat to patient safety, especially for patients with suicidal ideation.

<https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/SurveyCertificationGenInfo/Downloads/Survey-and-Cert-Letter-18-06.pdf>

Association's estimate that 1,500 suicides take place on inpatient hospital units in the United States each year.^{ee,37,38}

- **Improved access to exercise and to patient education.** The Applicant will provide additional therapy to patients in the psychiatric units in order to enhance their treatment and improve health outcomes. The Applicant states that renovating space near the psychiatric units will also allow patients new space to participate in daily exercise and weekly medication education classes. Daily exercise programs and medication education classes will be incorporated into current psychiatric programming units by March 2020, for clinically appropriate psychiatric patients. The Applicant estimates that over the course of a week, 50% of psychiatric patients will have access to and utilize these services in addition to existing programming in the psychiatric units. NWH tracks measures associated with patient experience and through implementing medication education classes, it plans to improve patient satisfaction with medication education. The Applicant also anticipates that the addition of exercise space will increase patient satisfaction scores related to positive group experience. The Applicant cites research demonstrating the positive benefits of exercise on some psychiatric disorders to demonstrate the potential for exercise to be used as a form of therapy in the units.^{ff} In addition, weekly medication education classes will support continued medication use post-discharge. The additional conference room space that will be created through the proposed renovation will increase patient privacy during interactions with clinicians, and patients also will have access to sensory tools and space to assist in symptom management.

Analysis

Staff finds that the Patient Panel information provided by Applicant demonstrates sufficient need for compliance with standards, as well as improving access to additional behavioral health treatments, each having been shown to improve patient health outcomes. Increased access to exercise and education around medication adherence are likely to address patient need, improving health outcomes and quality of life.^{gg,hh}

Factor 1: a) Patient Panel Need: Cardiac CT Scanner

The Elfers Cardiovascular Center currently offers diagnostic cardiac procedures³⁹ for both inpatients and outpatients.ⁱⁱ The Applicant is proposing to add a dedicated Cardiac CT⁴⁰ to the Center to perform coronary computed tomography angiogram (CCTA), allowing for more effective and efficient diagnosis of coronary artery disease and other cardiovascular conditions.

The Applicant provided estimates of patients that will receive Cardiac CT services upon acquisition, as shown in Table 6 below. The Applicant estimates utilization of the CT to be 25% inpatient, 25% outpatient, and 50% ED.

Table 6: Estimation of Patients Receiving Cardiac CT Services

	Year 1	Year 2	Year 3
Patients	500	1,000	1,000

³⁷ Staff notes a recent report estimated less than 65 hospital inpatient suicides per year in the United States (2018).

[https://www.jointcommissionjournal.com/article/S1553-7250\(18\)30253-8/pdf](https://www.jointcommissionjournal.com/article/S1553-7250(18)30253-8/pdf)

³⁸ The Joint Commission collects reports of inpatient suicides and suicides within 72 hours of discharge for all types of accredited health care organizations in its Sentinel Event (SE). Reporting is mostly voluntary.

³⁹ Its existing diagnostic and interventional capabilities include exercise stress tests, exercise echocardiogram stress tests, nuclear exercise stress tests, pharmacologic nuclear stress tests and dobutamine echo tests.

⁴⁰ Cardiac CT provides noninvasive technology that combines images to create a three-dimensional model of the whole heart.

The Applicant states use of the Cardiac CT will reduce the need for some patients to receive more invasive procedures such as cardiac catheterization/cardiac angiography⁴¹, and will allow for qualifying patients to be treated at NWH for services instead of being transferred to alternative facilities for diagnosis and treatment of coronary artery disease and other cardiovascular conditions. The Applicant states that while NWH has 3 CT scanners, a dedicated Cardiac CT is needed because the existing scanners are not capable of performing the procedures in question and are not dedicated to NWH's Cardiovascular Center.

The Applicant outlined the following needs among its Patient Panel:

- **Need to diagnose and treat more patients due to increasing incidence of cardiovascular disease.**⁴² Cardiovascular disease is the second leading cause of death in Massachusetts. From 2013-2015, adults diagnosed with myocardial infarction annually ranged from 5.2-5.7%, and those diagnosed with angina/coronary heart disease from 4.7-5.8%.⁴³ In 2018, 10.2% of the 65+ age cohort in Massachusetts had coronary artery disease; nearly double the rate of the overall population.⁴⁴ As the number of patients that fall into the 65+ age cohort for NWH continues to grow, the demand for Cardiac CT services, including angiography, will continue to increase.
- **Need to enhance access and local capacity for procedures.** NWH does not perform CCTA or invasive coronary catheterization/coronary angiography procedures, both of which help to diagnose coronary artery disease.⁴⁵ Patients are currently transferred to BWH and MGH for these procedures. The Applicant states that the addition of a Cardiac CT unit will reduce the number of patient transfers to BWH and MGH.

In response to staff inquiry, the Applicant states that over the last three years NWH clinicians referred 1,000 cardiovascular procedures (both inpatient and outpatient) to MGH and BWH. The Applicant also provided a breakdown of these patients by the reason for the referral: ~500 were referred for diagnostic catheterization, ~360 were referred for Percutaneous Coronary Intervention (PCI) procedures, and ~50-75 were referred for CCTA procedures. Moreover, the Applicant provided projections showing a 12-48% increase⁴⁴ in volume for certain cardiac conditions between 2017 and 2027 for adults living in NWH's primary and secondary service areas, which will necessitate an increase in use of Cardiac CT.⁴⁵

Analysis

Staff finds that overall, the Patient Panel information provided by Applicant demonstrates sufficient need for the addition of a Cardiac CT. Staff concurs that enhancing the diagnostic capacity of the Center will allow for more patients to receive care locally and avoid transfers to BWH and MGH, as well as meet increasing demand. Further, the addition of Cardiac CT is likely to reduce the need for invasive angiography and presents a safe and effective alternative.^{46,47}

⁴¹ Cardiac catheterization is an invasive imaging procedure that provides information on how well the heart works, identifies problems and allows for procedures to open blocked arteries. It uses catheters that pass from an artery in the leg up to the heart and inject imaging contrast directly into the coronary arteries.

⁴² Cardiovascular disease is the term for all types of diseases that affect the heart or blood vessels.

⁴³ Coronary computed tomography angiography (CCTA) is a heart imaging test that helps determine if plaque buildup has narrowed the coronary arteries. CCTA uses computed tomography (CT) and an intravenous contrast material to create three-dimensional images of the coronary arteries to determine the exact location and extent of plaque buildup. CCTA is a purely diagnostic intervention and does not provide the option for immediate intervention.

⁴⁴ Generated by Sg2, a for-profit forecasting company. Sg2's "Impact of Change" Forecast spans across both the inpatient and outpatient settings, and is modeled at the disease level.

⁴⁵ Cardiac Anomaly (30%), Carditis and Cardiomyopathy (31%), Chest Pain – Noncardiac (12%), Complication of Device, Implant or Graft – Cardiovascular (27%), Congestive Heart Failure (48%), Coronary Heart Disease (26%), Dysrhythmia and Cardiac Arrest (37%), Heart Valve Disease (31%), Myocardial Infarction (30%), Peripheral Atherosclerosis and Aneurysm and Other Circulatory Disease (43%), Pulmonary and Other Heart Disease (31%).

Factor 1: b) Measurable public health value, improved health outcomes and quality of life; assurances of health equity: Overall application

Improved Health Outcomes through Population Health Management (PHM)

As a system, the Applicant, in collaboration with its member hospitals, continues to develop PHM programs that utilize combined resources and capacity. Care models that are rooted in collaboration, including patient-centered medical homes, care integration and other care initiatives that are specifically used throughout Partners hospitals.

The Applicant described three PHM initiatives designed to improve quality, efficiency and the patient experience: Integrated Care Management program (iCMP), for its high risk and most complex patients; Cross –Continuum Group, comprised of a multidisciplinary care team formed to reduce readmissions and other access issues; and Extended Care Roundtable, focused on transitions of care across the continuum and supporting the geriatric patient population. The Applicant states that patients from all project components can be enrolled in PHM programs. In response to staff inquiry, the Applicant detailed the criteria used to identify patients for enrollment/inclusion in iCMP.⁴⁶

Health Equity, Access to Care, and Social Determinants of Health (SDoH)

Health Equity

The Applicant states that Partners HealthCare, and specifically NWH, has adopted the Culturally and Linguistically Appropriate Service (CLAS) standards^{mm} for all practice sites. The Applicant listed the following strategies to demonstrate compliance with the standards:

- NWH maintains an Interpreter Services program for its limited English proficiency (LEP) and deaf and hard of hearing (DHH) patients. NWH patients speak almost 40 languages and the hospital assists patients in accessing health services 24 hours a day seven days a week through contracted services, telephonic systems, video systems and per diem interpreters. Interpretation encounters are documented in an internal centralized Interpreter Services Tracking System and the Applicant states that NWH staff review the annual statistics and seek ways to improve interpretation services. The Applicant described the Hospital's Interpreter Services Policy and the methods for identifying patient need for language assistance, accessing interpreter services, staff training and the promotion of language access services.
- Diversity initiatives to address healthcare disparities, increase the percentage of employees from underrepresented groups^{47,oo}, build trust among people of diverse backgrounds and evaluate the hospital's progress;
- Ongoing staff training on linguistically and culturally appropriate care.
- Participation in the American Hospital Association's #123Equity Pledge Campaign, which seeks to eliminate health and health care disparities that exist for racially, ethnically and culturally diverse

⁴⁶ Criteria for enrollment include: 1) complex medical illness, identified by a provider or predictive modeling; 2) PHS patients in risk contracts and/or patients whose PCP has requested that they participate in the program; 3) the patient and his/her family are willing to engage with the care management team and are agreeable to engaging in longitudinal care management.

⁴⁷ Concordance has been identified as an important dimension for the patient-physician relationship that may be linked to health disparities

individuals.⁴⁸ In response to a follow up question, Applicant discussed overall progress over a long time frame.

Access to care

In providing additional information regarding health equity and access to care, the Applicant cited an HPC report describing the valuable contribution community hospitals make in their role serving government payer patients.^{PP} In response to staff inquiry concerning NWH's low public payer mix (when compared to other non-specialty acute care community hospitals and to Partners overall), the Applicant stated that patient choice and NWH's service areas, which are characterized by higher median household incomes when compared to the service area of other community hospitals, have a major impact on NWH's public payer percentage.

Social Determinants of Health (SDoH)

The Applicant described efforts and provided assurances around health equity and SDoH both as a system and at NWH.

Each of the acute care hospitals within the Partners HealthCare System has a screening and referral program for Social Determinants of Health (SDoH). While variation exists among the hospitals as to the populations that are screened and the logistics for screening, at a minimum, the 133 Partners primary care practices that participate in the MassHealth ACO Program are screening patients for SDoH needs.

The Applicant noted the following features and outcomes of SDoH screening at NWH:

- Every patient at NWH is screened for SDoH utilizing a screening tool in EPIC.⁴⁹
- All SDoH screens are tracked in the patient's EHR in the EPIC system. Tracking includes whether an SDoH screen was conducted, if there were responses indicating the patient needs assistance, and if the patient was provided with written support materials or referred to a support person. Case managers and other staff assisting patients with SDoH needs may provide notes in the EPIC system on the status of a patient's receipt of services.
- Case workers and social workers work to ensure that identified needs are met through establishing linkages to community-based organizations for services.

Analysis: Health Equity and Social Determinants of Health (SDoH)

Staff finds that through their Interpreter Services Policy, and SDoH screening, the Applicant has sufficiently outlined a case for improved health outcomes and has provided reasonable assurances of health equity within the Partners system. The Applicant has described how NWH patients are screened for SDoH and how linkages to social services organizations are created.

The Applicant's discussion of SDoH screening and tracking at NWH also support continuity and coordination of care for patients across all project components with a positive SDoH screening. The Applicant provided additional information on how patients within each of the Proposed Project components are screened for SDoH. Moreover, staff notes documented beneficial outcomes of the types of PHM programs described by the Applicant,^{qq,rr,ss} and that each of the five Proposed Project components take part or will take part in these programs.

⁴⁸ The campaign requires hospital leaders to accelerate progress in key areas.

⁴⁹ NWH performs screens on a payer blind basis.

Factor 1: b) Improved health outcomes and quality of life: Observation Unit

The Applicant asserts that having a permanent Observation Unit will allow it to continue to offer increased care efficiencies, reduced wait times in the ED, and reduced overall length of stay as outlined above. Moreover, the permanent unit's close proximity to the ED will create operational efficiencies not possible given the distance of the temporary observation unit from the ED.

Analysis

Staff finds that convincing data was presented to demonstrate the ongoing value to establishing the permanent unit; timely access to observation services has the potential to improve patient outcomes and the patient experience. Observation units result in more efficient care that reduces unnecessary hospitalizations and length of stay.^{tt} The literature shows that care in observation units is equal or better quality and lower cost than inpatient care for specific conditions.^{uu,vv} With increased used of observation services, patients may be safer, feel more satisfied and experience equivalent outcomes than inpatient stays.^{ww} The permanent Observation Unit will become increasingly important as the number of older patients in the patient population increases over time.

Factor 1: b) Improved health outcomes and quality of life: Endoscopy

The Applicant asserts that the Proposed Project component will increase access to endoscopy treatment and services as well as increase capacity to make the provision of endoscopy services more efficient. By increasing capacity to perform endoscopy procedures and co-locating esophageal manometry within the unit, the Applicant has outlined four health-related outcomes:

- **Reduction in delays in treatment.** Enhancing access to endoscopy services will provide for earlier diagnosis and treatment for numerous GI conditions, which may in turn, improve health outcomes.
- **Improved health outcomes.** Endoscopy has evolved from a purely diagnostic tool to a therapeutic one and advances in endoscopy techniques have led to its use an alternative to open surgery. The literature shows that some endoscopy techniques, when compared to surgical alternatives, are as therapeutic as surgery with similar or fewer side effects and complications.^{xx}
 - As mentioned above, colonoscopies--mostly used to screen for colon cancer-- comprise 73% of endoscopy procedures. Screening and rescreening at recommended intervals can provide both diagnoses at an early, curable stage or prevention, through removal of precancerous polyps. Increasing timely access to colonoscopy is likely to improve health outcomes and quality of life for patients. The Applicant noted that PCPs within the Newton-Wellesley Physician Hospital Organization (NWPHO) track a CRC quality metric to ensure that patients receive their necessary screening; 80% of the 51,944 patients that fall within that measure have met the measure either clinically or with a modifier.⁵⁰ Further, PCPs notify patients of the need for rescreening or further follow-up. NWH's website page on colonoscopy and health fairs are used to educate patients on CRC screening.
- **Improved patient experience.** Increasing access to endoscopy services allows more patients to receive the appropriate care in a timely manner, which will improve patient care experience as well as patient satisfaction.
- **Improved efficiency.** By co-locating manometry within the suite, patients need not travel within the building for different tests.

⁵⁰ A modifier is applied if the patient is terminally ill, has advanced dementia, is not a candidate for colon cancer screening, etc.

Analysis

Staff finds that convincing data was presented to demonstrate the value for the Proposed Project component. A review of the literature shows that GI conditions and diseases contribute to significant healthcare utilization and spending.^{yy,zz} It is well established that endoscopy is an effective screening, diagnostic, and therapeutic tool for gastrointestinal conditions and colorectal cancers (CRCs). Since the majority of endoscopy procedures at NWH are used to screen for CRCs, it is important to ensure screening and rescreening at recommended intervals, and that patients are reminded about the importance of these tests. Moreover, age limits on screening is important; while about 90% of new colon cancer cases occur in individuals age 50 and over,^{aaa,bbb} the U.S. Preventive Task Force Services (USPSTF) states that screening for people aged 76 to 86 should be selectively offered.^{ccc} While staff notes the Applicant provided some information indicating appropriate screening rates among patients, staff has suggested additional quality measures among the revised quality measures proposed by the Applicant, detailed in Attachment 1. Staff also suggests a Condition reporting on colorectal cancer education and outreach programs among the patient panel to ensure appropriate screening rates/rescreening rates.

Factor 1: b) Improved health outcomes and quality of life: Special Care Nursery

The Applicant asserts that increasing capacity will enable NWH to meet growing need for SCN services, thereby increasing access for the projected increase in patients. By increasing SCN bays, the Applicant aims to achieve:

- **Improved patient experience.** Increasing capacity in the SCN will enable more patients to receive SCN services in the community setting, and avoid transfers that negatively impact the patient care experience.
- **Improving access through increasing capacity.** Increased capacity in the SCN will enable NWH to receive more direct transfers from other Partners' hospitals for those patients living in the NWH catchment area. In addition, increasing capacity in the SCN will reduce patient transfers to other facilities. Fewer transfers to other facilities will allow birth parent(s) and newborns to remain together in the unit.

Analysis

Staff finds that the Proposed Project Component is likely to improve health outcomes and quality of life of the patient population through enhancing the provision of care. The features provided in the SCN are associated with improved health outcomes for the infant and parents.^{ddd} Staff concurs that the addition of capacity in the SCN has the potential to increase access to SCN services, reduce patient transfers to other facilities for care, and improve the patient experience.

Factor 1: b) Improved health outcomes and quality of life: Psychiatric Unit

The Applicant asserts that the Proposed Project Component will improve patient safety and experience in two ways:

- **Improving patient safety.** Addressing the physical plan requirements for the psychiatric units will create a safer environment in the units for patients experiencing suicidal ideation.
- **Improving patient experience.** All patients will have access to the new exercise space and meeting space and medication education classes; these additions will expand care options provided to patients.

Analysis

Staff finds that health outcomes for patients in the psychiatric units are likely to improve as a result of the Proposed Project Component. The Applicant will be able to comply with The Joint Commission standards and CMS' Conditions of Participation for Hospital Psychiatric Units for a ligature-resistant environment to improve patient safety. The environmental risk mitigation being addressed in the Proposed Project is part of new and revised elements of performance around suicide prevention, applicable to all Joint Commission-accredited hospitals.

Exercise has been shown to be effective in reducing symptoms linked to mental health through targeting anxiety, depression, anger, psychomotor agitation and muscle tension and addressing stressors and triggers.^{ccc} In addition, exercise in conjunction with individual psychotherapy was found to be effective among older adults in inpatient psychiatric units.^{fff} The literature also shows that poor medication adherence is a common and serious problem in psychiatric treatment that can lead to relapse, hospitalization, and disability.^{ggg,hhh,iii} Medication education such as those received through classes may improve skills and behavioral intent to take prescribed medication as directed when discharged.^{jjj,kkk} In addition, management of psychiatric symptoms can improve management of [other] medical illnesses.^{lll,51}

Factor 1: b) Improved health outcomes and quality of life: Cardiac CT

The Applicant asserts that increasing capacity will enable NWH to meet growing need to diagnose coronary artery disease among its patients. The Applicant states that outcomes will be improved through:

- **Increasing access through adding diagnostic capabilities.** The Applicant asserts that the Proposed Project component, will reduce the number of patient referrals to BWH and MGH for inpatient and outpatient elective cardiac catheterization procedures while at the same time increase local capacity for less invasive testing to diagnose coronary artery disease and other conditions.
- **Improved patient experience.** The addition of Cardiac CT will provide a minimally invasive option for qualifying patients to determine their level of coronary artery disease or cardiovascular condition/disease locally, which will improve the patient experience.

Analysis

Staff concurs that the addition of a Cardiac CT will reduce the need for patient transfers to other hospitals to diagnose coronary artery disease and other cardiac conditions. CCTA is an effective diagnostic tool for many patients with low risk of coronary artery disease; its addition at the Center is likely to improve the patient experience. However, staff notes that appropriate use criteria guidelines suggest limits on the use of CCTA.^{mmm} To fully meet Factor 1, Staff recommends a Condition to report on appropriate use of cardiac CTs. This is fully described under Conditions at the end of this Report.

⁵¹ Persons diagnosed with schizophrenia (PWS) have reported that stable psychiatric symptoms are an essential precursor to effective management of medical illnesses.

Factor 1: c) Efficiency, Continuity of Care, Coordination of Care

Observation Unit

The Applicant states that the Proposed Project component will make care more efficient by placing observation patients in one centralized permanent location near the ED. The establishment of a permanent observation unit will allow NWH to return PPU beds to their original function⁵². The Applicant states that the permanent placement of a set of observation patients in one area will also expedite discharge processes for these patients. Discharge planning for observation patients begins at the time of admission and is coordinated by a multidisciplinary care team, and includes responding to patient questions and assisting patients with discharge needs including education around the diagnosis and post-discharge care planning. Communication with PCPs and specialists occurs through EPIC or verbally for select high-risk groups to support coordination of care and continuity of services.

Endoscopy

The Applicant has suggested that renovating the clinical space will allow NWH to redesign patient throughput which will lead to the greater throughput and efficiencies in care processes and a reduction in wait times for elective procedures. In an effort to demonstrate continuity and coordination of care, the Applicant states that post-procedure and prior to discharge, patients are rounded upon and provided discharge paperwork which includes a reminder to schedule follow-up appointments with primary care physicians, and educational materials that alert the patient to issues and information to assist patients with post-operative concerns or needs. The Applicant asserts that patients are appropriately linked to care integration resources to support coordination and continuity of services. Further, the patient's discharge plan, which includes linkages to community resources that will be facilitated by NWH staff, is sent to the patient's referring physician. NWH PHM strategies also assist a subset of patients in accessing these services.

Special Care Nursery

The Applicant states that increasing capacity in the SCN will create efficiencies by ensuring patients have access to more timely care, and more timely care will lead to improved health outcomes. The discharge in the SCN begins upon admission to the SCN unit and continues throughout hospitalization to ensure that parents are capable of caring for their baby at home; processes include patient education, coordination, and review of follow-up appointments. Pediatricians can see the after-visit summary in EPIC. Pediatricians that cannot access the summary in EPIC are faxed a copy of the summary. The Applicant states that high risk infants are referred for follow up care and parents are informed of support groups. Social workers ensure post-partum depression screenings occur and implement safe care plans for mothers in need of such services. The Applicant also noted a new program under development for infants at risk for neonatal abstinence syndrome to begin preterm through hospital stay to decrease length of stage and improve outcomes post-discharge.⁵³

The Applicant also notes that when obstetric patients are allowed to access SCN services in the community hospital setting, it enhances their access to related services. The Obstetrics and Maternal-Fetal-Medicine (OB/MFM) practice at NWH is for high risk patients with complicated medical histories. The Applicant asserts that having these patients closer to their OB and to home improves health outcomes through

⁵² Creating a temporary observation unit with repurposed postpartum beds provided a temporary solution to capacity constraints in the ED and on inpatient floors. The postpartum beds were utilized during a period of downtime in the postpartum unit.

⁵³ In 2017, 15.9 infants were diagnosed with NAS per 1,000 live births in Massachusetts, which was almost double the most recently reported national rate of 8 infants per 1,000 live births (2014). <https://www.mass.gov/doc/hpc-datapoints-issue-15-printable-version/download>

supporting continued care with their primary NWH OB, increased breast feeding and early discharge, and parental participation in family centered rounds.

Psychiatric Unit

The Applicant states that patients admitted to the psychiatric units work with a multidisciplinary team to develop and appropriate treatment plan and to access consultations from other specialties. The care team rounds daily at the patient's bedside and team rounds include a discussion of discharge needs, including SDoH, and development of a post-discharge plan. The Applicant affirms that NWH "will continue existing formal processes for linking patients with their primary care physicians and specialists for follow-up care, as well as case management/social work support to ensure patients have access to resources around SDoH issues and any needs the patient may have post-discharge."⁵⁴

Cardiac CT

The Applicant states that the addition of a Cardiac CT creates efficiencies by allowing certain patients to remain at NWH for care, rather than being transferred to another Partners' facility for treatment. In addition, patients will receive cost-effective outpatient services to determine disease state, rather than more costly invasive procedures. The NWH Image Service Center's established procedures for providing images/reports to outside providers will foster continuity and coordination of care.

Analysis

Staff finds that the Applicant's processes for follow-up care across the five Proposed Project components will serve to achieve greater efficiencies, continuity of care and care coordination. The expansions will make services more efficient and enhance the patient experience, and should improve continuity and coordination of care, which will address the needs of patients with complex care needs and significant healthcare utilization. Discharge processes appear to support aspects of patient-centered care,⁵⁵ particularly as it occurs in the hospital setting, the benefits of which include improved health outcomes and patient satisfaction.ⁿⁿⁿ For example, in the SCN unlimited visiting for parents and parental participation in the care and in daily rounds prepare them for when they return home.

Successful care coordination includes good communication and effective care plan transitions between providers and clear and simple information that patients can understand.^{ooo} This coordination, as indicated by the Applicant, is particularly important for the psychiatric unit: a recent study found that patients discharged from psychiatric facilities are at increased risk of suicide.^{ppp}

Factor 1: d) Consultation: Overall Application

The Applicant has provided evidence of consultation with government agencies that have licensure, certification or other regulatory oversight, which has been done and will not be addressed further in this report.

Factor 1: e) Evidence of Sound Community Engagement through the Patient Panel: Overall Application

The Department's Guideline⁵⁶ for community engagement defines "community" as the Patient Panel, and requires that at minimum, the Applicant must "consult" with groups representative of the Applicant's

⁵⁴ Responses to DoN Questions, page 30. <https://www.mass.gov/doc/partners-healthcare-system-newton-wellesley-responses-to-don-questions/download>

⁵⁵ Institute of Medicine (IOM) definition - Health care that establishes a partnership among practitioners, patients, and their families (when appropriate) to ensure that decisions respect patients' wants, needs, and preferences and that patients have the education and support they need to make decisions and participate in their own care. <https://archive.ahrq.gov/research/findings/nhqrdr/nhdr10/Chap5.html#ref2>

⁵⁶ Community Engagement Standards for Community Health Planning Guideline. <https://www.mass.gov/doc/community-engagement-guidelines-for-community-health-planning-pdf/download>

Patient Panel. Regulations state that such consultation consists of a “community coalition statistically representative of the Patient Panel.”⁵⁷ The Applicant defines its community broadly and sought to engage patients and family members that it felt may be impacted by the Proposed Project.

- **Patient and Family Advisory Council (PFAC) Meeting.** The Proposed Project was presented at the PFAC; the Applicant provided meeting minutes. In response to follow up questions, Applicant reported that 64% of PFAC members were in attendance. Members expressed interest in the CHI component of the DoN process and expressed enthusiasm about the Proposed Project.
- **Community and Local Departments of Public Health Meeting.** The Proposed Project was also presented to a group comprised of leaders from six local Departments of Public Health and other local community agencies⁵⁸ that meet quarterly to discuss current and relevant health-related topics. In response to follow up questions, Applicant reported that 19 people attended, 10 of whom were community members.

Analysis

Staff finds that the Applicant has met the minimum required community engagement standard of *Consult* in the planning phase of the Proposed Project Component.

Factor 1: f) Competition on price, Total Medical Expenses (TME), costs and other measures of health care spending: Overall Application

The Applicant asserts that through the five Project Components, it will continue to compete based on price, TME, costs and other measures of health care spending through cost savings due to the expansion, leading to improved access in service, improvements in patient flow patterns, and enhanced diagnostic capabilities, all leading to more efficient delivery of service and care. Patients may be able to a) avoid the potential of undergoing more invasive diagnostic or treatment therapies that are more expensive, as well as b) benefit from more targeted treatment plans, both of which are likely to result in reductions in healthcare spending. These improvements can result in lower provider and payer costs and out of pocket expenses, leading to a reduction in TME. When services can be delivered to patients in a timely, high quality manner, the Applicant will be able to ensure its competitive position.

The Applicant also asserts that care that remains in the lower-cost community setting (rather than going to AMCs, decreases the overall cost of care. Increasing capacity at NWH will allow for more care to take place in the appropriate setting, meaning lower acuity patients will receive care in the community hospital setting, and higher acuity patients requiring more complex care will receive care at more appropriate locations.

Analysis

It is well known that community-appropriate inpatient care is less costly than care at teaching hospitals (THs) and academic medical centers (AMCs). Moreover, it has been well established that improving access to timely care is likely to reduce healthcare utilization and spending.^{qqq,rrr} In addition, numerous studies have detailed high costs related to particular Project Components, such as

- poorly controlled GI diseases (endoscopy);⁵⁹
- avoidable inpatient admissions;^{sss,ttt,uuu} (Observation Unit);

⁵⁷ DoN Regulation 100.210 (A)(1)(e). <https://www.mass.gov/files/documents/2018/12/31/jud-lib-105cmr100.pdf>

⁵⁸ Community agencies listed: Newton, Needham, Natick, Waltham, Weston, and Wellesley Departments of Public Health and local Councils on Aging.

⁵⁹ Costs of GI diseases totaled \$135.9 billion in 2015 and in 2014, and the 3.0 million hospital admissions for GI diseases totaled more than 31 billion. (*January CT*, 2014)

- unnecessary repeat imaging^{vvv} or additional procedures (as may be ameliorated through appropriate use of Cardiac CT); and
- costs of medication non-adherence (Psychiatric unit)^{www}

For all Proposed Project Components, reducing operational inefficiencies will lead to lower operational overhead and lower healthcare spending, which will reduce TME.

Staff finds that while difficult to measure on a service-specific level, on balance, the requirement that the Proposed Project will likely compete on the basis of price, TME provider costs, and other measures of health care spending have been met.

Description of proposed measures, suggested Conditions, FACTOR 1

The Applicant proposed specific measures to track the impact of all five Proposed Project components. In order to completely meet Factor 1, Staff recommends a Condition to report on appropriate use of cardiac CTs. This is described fully under Conditions at the end of this report. Staff reviewed the suggested measures and has provided a revised list of Annual Reporting quality reporting measures, described fully under Other Conditions and in Attachment 1. Staff recommends that in order to completely address Factor 1, these reporting measures also be required as Conditions of Approval.

Factor 2: Cost containment and Delivery System Transformation: Overall Application

The Applicant has outlined why each of the Proposed Project Components will align with the Commonwealth's goal for cost containment (to provide better quality care at a lower cost), as well as contribute to improved public health outcomes.

Cost Containment

The Applicant describes its current difficulty in controlling expenses due to inefficient delivery processes. These add to unnecessary resource use due to increased wait times and extended stays as patients wait to be treated, wait to be either admitted or transferred, and receive care in an inappropriate setting. The Proposed Project will allow for more cost-effective, high-quality care to be delivered in a timely manner at NWH. The Applicant provided data to support the assertion that the Proposed Project overall will contribute to cost containment across the five Project Components:

- **Observation units** provide a cost-effective alternative to inpatient care and can decrease avoidable inpatient admissions.^{xxx,yyy,zzz} In response to Staff inquiry, the Applicant reported that a review of NWH's payer contracts found that observation unit rates are 28% less than inpatient rates (inpatient rate multiplier at 3.6), demonstrating the addition of a permanent Observation Unit to NWH will create an alternative cost-effective model to inpatient care for clinically appropriate patients that can contribute to a reduction in provider costs.
- **CCTA is a less expensive alternative to performing cardiac catheterization for diagnosis of coronary artery disease (CAD)** and because CCTA findings can reduce the need for cardiac catheterization, it has the potential to reduce cost.^{aaaa,bbbb}
- **Morbidity among preterm births is high** and imposes emotional and financial burdens on families, society and the healthcare system.^{cccc} It is estimated that preterm birth costs society 26 billion annually.^{dddd}
- **For all inpatient care as part of this Application**, the Applicant asserts that the Proposed Project will reduce patient transfers to higher cost settings of care and this contributes to cost containment. The Applicant cites a report from the Health Policy Commission (HPC), which

states that community hospitals provide convenient and local access to high quality efficient care at a lower cost than AMCs.^{eeee} As mentioned above, NWH is a lower cost option for patients who need a lower level of care and when patients receive care in the community hospital setting, the charges are generally lower than the academic medical center (AMC) setting.

Analysis: Cost Containment

Generally, within a facility or system, cost containment can occur in two ways: a) by designing and implementing efficient processes that eliminate resource use, including staff time and supplies, thereby controlling per procedure/service operating expenses; and/or b) reducing unnecessary utilization that includes eliminating low value care while ensuring timely access to the appropriate diagnostic and testing tools. Each of these strategies can save patients and providers time and money, and much of this has already been reviewed in Analysis of Factor 1(f) above. Staff believes the Proposed Project has the potential for the Applicant to maintain or lower certain operating costs through efficiencies described above, as well as through appropriate Cardiac CT usage at NWH.

Cost containment on a statewide level is impacted through pricing, which is a function of what providers charge payers and what payers agree to pay. While payment contracts between individual providers and commercial payers are confidential, those among providers and Medicare and Medicaid are relatively transparent. As a result, Staff cannot assess how the Applicant's contracts with payers that may incentivize more or less utilization of services are structured for the other project components.

The Applicant asserts that increased capacity—across four of the project components⁶⁰—is needed in order for NWH to provide greater access to services to match patients' clinical needs to the right level of care with sufficient capacity for such care to be provided by a community hospital. As mentioned above, care is transferred into NWH from other hospitals, including BWH and MGH, to allow for patients to be cared for in the community setting. The Applicant states that due to current capacity constraints, patients needing community-based care cannot be transferred to NWH. At the same time, expanding capacity and services at NWH will allow certain patients to remain at NWH for care, rather than being transferred to other facilities for treatment, as is done in the SCN during surges and for patients in need of certain cardiovascular services. Citing HPC's Community Hospital report, the Applicant notes that charges are typically lower in the community hospital setting than in the AMC setting.

Staff considered the Applicant's assertions around cost containment and documented strategies to reduce healthcare utilization alongside its position as a lower cost provider of care in the community setting. While Staff cannot conclude that expanding services through the Proposed Project will not lead to higher prices and higher healthcare spending, Staff finds that increasing access to care in the community setting has the potential to contribute to cost containment. In its report on community hospitals, the HPC states community hospitals generally perform comparably to most AMCs and teaching hospitals on nationally accepted clinical quality measures^{ffff} and for low-acuity care that does not require the highly specialized expertise and equipment available at major medical centers, use of a community hospital rather than an AMC or teaching hospital can result in substantial cost savings.^{gggg}

⁶⁰ Does not include Psychiatric Unit.

Delivery System Transformation

Overall, the Applicant **notes that Delivery System Transformation** will be addressed through linking patients to social service programs through its PHM programming and through SDoH screening and referral, both described above. As noted above, 57.9% of Partners primary care lives are covered in risk contracts.^{61,62}

Analysis: Delivery system transformation overall

Central to the goal of **delivery system transformation** is the integration of social services and community-based expertise. The Applicant has described, at a high level, how “covered lives” patients in the panel are assessed and how linkages to social services organizations are created. However, since the Applicant has a MassHealth ACO and a Medicare ACO, as well as five commercial risk contracts, staff notes it has ongoing incentives to address population health needs and SDoH.

Factor 2: Public Health Outcomes

Observation Unit

As discussed above, the Applicant notes **observation units** provide a cost-effective alternative to inpatient care and can decrease avoidable hospitalizations.^{hhhh,iiii,jjjj} Making the Unit permanent will help NWH continue this alternative option for appropriate patients.

Staff notes that approximately one-third of hospitals have a dedicated observation unit, and studies suggest better efficiency with similar patient outcomes when patients are admitted to dedicated observation units rather than the hospital.^{kkkk} Patients in these units are more accurately diagnosed before leaving the ED and are discharged home faster, hospitals keep scarce inpatient bed capacity open for more appropriate patients and avoid audits and denials, and providers deliver care in a setting that more appropriately matches patient needs to resources.^{llll}

Endoscopy

As outlined above, the Applicant states that increasing access to additional endoscopy procedures (73% of which are colonoscopy) and reducing wait times for these procedures will improve access to screening, diagnostic and therapeutic purposes, and earlier commencement of treatment. As noted above, the Applicant noted that 80% of patients meet quality screening/rescreening measures. NWH’s website page on colonoscopy and health fairs are used to educate the Patient Panel on CRC screening.

Staff notes that increasing access to endoscopy services is likely to improve public health outcomes, as increases in endoscopy (and ensuring re-screening rates) is associated with a reduction in colorectal cancers and related sequelae; one study found that approximately 550,000 cases of colorectal cancer were prevented over recent decades in the United States.^{mmmm} Staff notes that while Massachusetts overall (as well as NWPHO) has high overall colorectal cancer screening rates^{63,nnnn}, it is also clear that there are disparities in screening rates in the community, based on SES, language, and ethnicity.^{oooo} Moreover, adherence to colorectal cancer screening guidelines among African Americans are lower than their white counterparts.^{pppp}

⁶¹ The number of risk members is for CY2018 and includes members from the following risk contracts: Medicare ACO - NextGen, BCBS AQC and BCBS PPO, HPHC, TAHP, AllWays Commercial, and Medicaid ACO. The total number of patients within a PCP’s panel are for FY 2017 adult and pediatric patients.

⁶² This percentage differs from the Partners’ Patient Panel described the DoN Application.

⁶³ In 2016, ~75% of Massachusetts age-eligible residents had a current colorectal cancer (CRC) screening test (vs. ~67% of the eligible population screened in the United States) and ~78% over age 50 in Massachusetts have ever had a Sigmoidoscopy or Colonoscopy (vs. 70% of the US population (National Cancer Institute, State Cancer Profile)

Staff notes very little discussion in the Application around community education regarding this public health concern.

In order to ensure that public health outcomes are addressed, as a Condition of approval, staff suggests reporting of colorectal cancer education and outreach programs in the community to increase overall screening rates, and in particular among minority and low-income populations. This is described fully under Conditions at the end of this report. Conditions related to education for the Patient Panel, as well as maintaining screening rates, are outlined in Factor 1.

Special Care Nursery

As outlined above, the Applicant states that increasing capacity in the SCN will address the growing need for care for low birth weight infants and those with other health conditions. The Applicant also notes that Massachusetts has a preterm birth rate of 8.9% with overall rates worsening in the past 10 years.

Staff notes that nationwide preterm birth is the leading cause of infant morbidity and mortality; in 2017, preterm birth and low birth weight accounted for about 17% of infant deaths.^{qqq} Preterm birth can compromise neurodevelopment and lead to neuromotor problems (principally cerebral palsy), visual and hearing impairments, learning difficulties, and psychological, behavioral, and social problems.^{rrr,sss} Almost half of preterm births result in a neurologic disability.^{ttt} Table 8 compares preterm birth and infant mortality rates by race/ethnicity in the United States and in Massachusetts; it is clear that these issues are a critical public health concern.

Table 7: Preterm Birth and Infant Mortality (Edition Year: 2019)^{uuu,vvv}

	Preterm Birth ⁶⁴		Infant Mortality ⁶⁵	
	US	MA	US	MA
Total Value	9.9%	8.9%	5.9	4.1
Asian or Pacific Islander	8.7%	8.2%	4.1 ⁶⁶	2.6 ⁹
Black	13.8%	11.2%	10.9	7.8
Hispanic	9.6%	10.0%	5.0	5.8
White	9.1%	8.0%	4.9	3.7

In addition, staff notes that many risk factors for preterm birth are related to Social Determinants of Health, inadequate prenatal care, and health behaviors, such as lower socioeconomic status; poor care during pregnancy, elevated stress in the second trimester; behavioral risk factors such as smoking, drug use, or alcohol consumption; and malnutrition.^{www,xxx} There are also significant racial disparities for LBW infants: in 2019, the rate of preterm birth (11.2%) and low birth weight (10.6%) among African-American women were higher than the rate of preterm birth (8.0%) and low weight birth (6.3%) among white women^{yyy,zzz}

As noted above, while preterm birth is the leading cause of infant morbidity and mortality,^{aaaa} it also contributes to racial disparities in infant mortality.^{bbbb,cccc} Interventions to prevent and reduce risk factors for LBW infants are critical to address this issue. In response to an inquiry about initiatives at NWH to

⁶⁴ Percentage of live births

⁶⁵ Deaths per 1,000 live births

⁶⁶ Asian, not API

address racial/ethnic disparities in preterm birth in Massachusetts, the Applicant pointed to an article outlining some of the common causes of preterm birth^{dddd} and stated that “NWH staff ensure that all patients have access to robust prenatal care and that MGH and BWH have community centers that provide obstetric services to vulnerable and diverse populations.”⁶⁷

Psychiatric Unit

As outlined above, the Applicant states that ensuring compliance with The Joint Commission standards and CMS Conditions of Participation to prevent suicide will contribute to patient safety. Moreover, increasing access to exercise and medication education classes may also improve health outcomes once patients are released.

Staff notes the importance of this issue in the inpatient unit, as it is also an important public health concern. Suicide is the 12th leading cause of death in Massachusetts;^{eeeee} incidence increased by 35% from 1999 through 2016.^{ffff} Data show that 55% of those lost to suicide had a documented current mental health problem, 39% were receiving treatment for a mental health and/or substance abuse problem and 43% had a history of treatment for mental illness.^{ggggg}

Cardiac CT

As discussed above, the Applicant states that the addition of a Cardiac CT will provide NWH’s patients with a local option to determine the prevalence of coronary artery disease and other conditions that can provide reliable results for appropriate patients. The Applicant reported on prevention programs in cardiovascular health at NWH including the Center’s Cardiovascular Disease Primary Prevention Program, which uses a team-based approach to help patients lower their risk of heart disease.

Staff notes that it is well established that cardiovascular diseases can be prevented through addressing modifiable risk factors; the 2019 American College of Cardiology/American Heart Association (ACC/AHA) Guideline on the Primary Prevention⁶⁸ of Cardiovascular Disease makes recommendations for preventing cardiovascular disease by addressing these same risk factors through lifestyle changes.^{hhhhh}

Description of proposed measures, suggested Conditions, FACTOR 2

As a result of information provided by the Applicant and additional analysis, staff finds that, with the conditions below, the Applicant has demonstrated that the Proposed Project has met Factor 2. In order to fully meet Factor 2, staff recommends reporting of colorectal cancer education and outreach programs in the community to increase overall screening rates, and in particular among minority and low-income populations as a Condition of Approval. This is fully described under Other Conditions at the end of this report.

⁶⁷ Responses to DoN Questions, page 28. <https://www.mass.gov/doc/partners-healthcare-system-newton-wellesley-responses-to-don-questions/download>

⁶⁸ Three critical pathways for preventing the development and progression of cardiovascular disease (CVD): 1) primordial prevention, wherein the goal is to prevent the development of cardiovascular risk factors; 2) primary prevention, wherein the goal is to prevent the onset of CVD in persons with cardiovascular risk factors and no known disease; and 3) secondary prevention, wherein the goal is to prevent the recurrence of cardiovascular events or complications of CVD in persons diagnosed with CVD.

Factor 3: Relevant Licensure/Oversight Compliance

The Applicant has provided evidence of compliance and good standing with federal, state, and local laws and regulations and will not be addressed further in this report. As a result of information provided by the Applicant, staff finds the Applicant has met the standards of Factor 3.

Factor 4: Demonstration of Sufficient Funds as Supported by an Independent CPA

Analysis: Overall Application

The CPA analysis included a review of multiple documents in order to form an opinion as to the feasibility⁶⁹ of the Proposed Project including FY 2017 and 2018 audited financial statements for Partners Healthcare System, Inc.; a five year “Financial Framework” for PHS;⁷⁰ Finance Committee Reports and “Five Year Pro-Forma⁷¹” for all five components of the Project; and historic and projected metrics. Key metrics and ratios for profitability, liquidity, and solvency were compared against historic performance to measure Partners’ overall financial health.⁷² During its review of the Pro-Forma, it examined the underlying assumptions used for the development of revenues and expenses forecasts.

The CPA reports that Net Patient Service Revenue (NPSR) is the sole category that would be impacted by the Proposed Project. Consequently, it only analyzed NPSR and reports that the project represents a very small share of projected revenue of the Partners system ranging from 0.0009% in 2020; the first-year revenue is present for the proposed project, to 0.019% in 2023.⁷³ The CPA reports that primarily based upon historic performance, the revenue growth projected by Management are a reasonable estimation.

The CPA’s analysis reports that operating expenses will represent only about 0.005% in 2020 and 0.023% in FY 2023 of Partner’s total operating expenses and relative to historic performance, determined that the Applicant’s projections are reasonable. Capital Expenditures and cash flows were analyzed by the CPA to determine whether Partners allowed for sufficient reinvestment of funds for upgrades to property, plant, equipment and technology and whether Partners’ cash flow would support necessary reinvestment. The analysis included current and projected loan financing obligations. As a result of the analysis, the CPA’s opinion is that the pro-forma capital expenditures and cash flows are reasonable.

In conclusion, the CPA reports, “Because the impact of the proposed capital projects as listed above at NWH represents a relatively insignificant portion of the operations and financial position of Partners, I determined that the Projections are not likely to result in insufficient funds available for capital and ongoing operating costs necessary to support the proposed projects.” The report continued with the following statement: “... I determined the projects and continued operating surplus are reasonable and based upon reasonable financial assumptions....The proposed capital projects ... at NWH are financially feasible and within the financial capability of Partners.”

Staff finds the CPA analysis to be acceptable, noting that NWH’s favorable operating margin of 2.9-2.7%ⁱⁱⁱⁱ is higher than the Community hospital peer cohort range of 1.3-1.8%ⁱⁱⁱⁱⁱ over the 2014-2018 timeframe based on reporting by CHIA.⁷⁴

⁶⁹ Feasibility is defined as based on the assumptions used, the plan is not likely to result in insufficient "funds available for capital and ongoing operating costs necessary to support the proposed project without negative impacts or consequences to [Partners HealthCare] existing patient panel".

⁷⁰ Prepared as of December 6, 2018

⁷¹ FY 2019-2023

⁷² Incorporated in the overall financial projections, the CPA noted a balloon payment on long-term debt maturing in 2021.

⁷³ Revenues from the first of the capital projects will begin in 2020.

⁷⁴ Staff relies on the CPA Analysis and CHIA reporting and does not perform its own financial analysis.

As a result of information provided by the Applicant, staff finds the Applicant has met the standards of Factor 4.

Factor 5: Assessment regarding Proposed Project Component's Relative Merit

Observation Unit

The Applicant compared the Proposed Project Component to two alternatives: (1) continue placing all observation patients on inpatient floors, and (2) carving out a section of inpatient beds to create an observation unit. The alternatives considered would not reduce capacity constraints on the inpatient floors, which are creating longer wait times for patients seeking admission and would not allow for the timely and effective treatment of patients. The Applicant argued that the second alternative would not create efficiencies for any patients because it would reduce capacity on inpatient floors, which are already experiencing space constraints, and operating costs would rise because of boarding and staffing. The beds in the PPU were utilized during a period of downtime and the establishment of the permanent observation unit will allow NWH to return these beds to their original use.

Endoscopy Renovation and Expansion

The Applicant compared the Proposed Project Component to the alternative of maintaining the status quo. This option would not allow for the timely and effective treatment of the rising number of endoscopy patients seeking endoscopy procedures; wait times would continue to increase and no new services will be provided which has a negative impact on quality of care.

Special Care Nursery

The Applicant compared the Proposed Project Component to the alternative of expanding the SCN by 2 bays. This alternative would lead to limited efficiencies and would not eliminate space constraints to address the current and future demand for SCN services, which would still require patients transfers and continue to impact patient health outcomes and the patient experience.

Psychiatric Unit

There are no alternatives to the Proposed Project Component because not implementing The Joint Commission standards, which CMS has turned into Conditions of Participation for hospitals, would lead to noncompliance and would not create a safe environment for patients. The Applicant did not provide an alternative to renovating shell space to create exercise and meeting space, but indicated that renovating the units to comply with The Joint Commission's standards and CMS Conditions of Participation for hospitals will be costly and disruptive to patients. The additional renovations will help to minimize these disruptions.

Cardiac CT

The Applicant compared the Proposed Project Component to two alternatives: (1) forgo acquisition of a Cardiac CT, and (2) create a cardiac lab at NWH. Not acquiring a Cardiac CT will not reduce efficiencies because patients will continue to be transferred for diagnosis and treatment of coronary artery disease, and have reduced access to minimally invasive procedures. The second alternative would result in more invasive procedures, which would impact patient experience, and result in larger capital expense and operating costs associated with establishing a cardiac catheterization lab.

Analysis

Staff finds that the Applicant has appropriately considered the quality, efficiency, and capital and operating costs of each of the above Proposed Project Components relative to potential alternatives or substitutes. Staff also notes increasing capacity at NWH will allow for more care to take place in the appropriate setting,

meaning lower acuity patients will receive care in the community hospital setting, and higher acuity patients requiring more complex care will receive care at more appropriate locations.

As a result of information provided by the Applicant, staff finds the Applicant has reasonably met the standards of Factor 5.

Factor 6: Fulfillment of DPH Community-based Health Initiatives (CHI) Guideline: Overall Application

Summary and relevant background and context for this application: The Applicant’s proposed project includes a community that is also the focus of another CHI process currently in implementation at MGH Waltham. DPH staff has worked extensively with MGH Waltham to strengthen its CHI processes,⁷⁵ based on its 2018 DoN Application, which has resulted in funding of innovative community programs focused on SDoH.

MGH Waltham made extensive changes to their processes based on DPH feedback; their refinement of the community engagement and prioritization processes are now contributing to a modified and enhanced approach for this Proposed Project. The Applicant is using many of the approaches successfully used at MGH Waltham, and is thinking critically about who is “at the table” in decision-making roles, as well as advancing community engagement practices.

The Applicant submitted the following documents for DPH review⁷⁶:

- **The Community Health Needs Assessment (CHNA)** is the hospital’s Final Report from 2018. NWH conducted a robust assessment of community health needs. The Community Benefits Committee conducted community engagement strategies including focus groups, key informant interviews, and secondary data collection methods, including review of earlier assessments and reports. The goals of the 2018 CHNA included 1) identifying and updating health needs and assets of the service area and 2) understanding how to improve effectiveness of outreach activities to engage and involve community partners. The final report presented community demographic and health indicator information across populations. The populations of special focus were identified as seniors, immigrants, and low-income residents.
- **In the Self-Assessment**, the Applicant provided a summary of socio-demographic data and highlights of health outcome information related to these topics. Using the 2018 CHNA, participating communities identified key concerns. The identified areas of need were Housing, Transportation, Mental Health, Substance Use, and Access to Care. An additional topic of interest identified in the process was cancer, particularly navigating cancer care within the health system.
- **The CHI Narrative and Community Engagement Plan** provide background information for and explanation of current CHI planning processes, advisory structure, engagement strategies, needs assessment history, and administrative information for the Applicant; information was based on the 2018 CHNA along with prior CHI processes, such as MGH Waltham. Each of these processes included the NWH Community Benefits Committee (now known as the Community Advisory Committee).

⁷⁵ Including a stronger community engagement plan, clearer Advisory Committee role regarding decision making processes, decreasing barriers to participation in a Bidders Conference, and refining RFP and further funding process based on community feedback

⁷⁶ Documents available on the Determination of Need website. <https://www.mass.gov/lists/don-partners-healthcare-system-inc-newton-wellesley-hospital>

- **The Community Engagement Plan Supplement** provided additional narrative about the CHI Engagement process and describes areas of overlap and enhanced collaboration with the CHNA. The supplement explains that in order to ensure robust CHI activities, the applicant will carry out several activities. These include the development of a Community Advisory Committee for Determination of Need projects, the development of an Allocation Committee, and various strategies for broader community involvement at different levels of engagement. Much of this strategic vision is informed by the ongoing aforementioned project undertaken by MGH Waltham. The lessons learned throughout that process have contributed to a more rigorous approach to community engagement across CHI processes.
- **Stakeholder assessments are normally required, but were, appropriately in this case, not submitted.** Based on discussions and current planning for the CHI processes, staff agreed with the Applicant that no stakeholder assessments based on the Newton Wellesley Hospital 2018 CHNA would be required. The timing of the 2018 final report processes eliminated the need for the Applicant to submit these documents because the Applicant had substantially changed its advisory committee structure and its approach to engagement. In the absence of these materials, and in response to additional questions posed by staff, the Applicant provided additional narrative describing their plans and activities for more substantial community engagement for this current project as informed by the project approved and ongoing for MGH Waltham. This additional narrative provided adequate supplementary information.
- The Applicant also outlined its plans to develop and submit its Health Priorities Strategy Form, required by the Guidelines, as a part of its planning process.

In order to help strengthen particular elements of their planned CHI processes, staff will be working with the Applicant in the following areas:

- Incorporation of lessons learned from previous CHI processes within the system (e.g., MGH Waltham) regarding addressing barriers to participation throughout planning and strategy implementation;
- Commitment to equity framing as provided by DPH: the Holder will consider framing questions (*Who benefits, who is harmed, who influences, who decides, what might be some unintended consequences*) throughout its decision making processes;
- Strengthen ongoing community engagement processes: Staff will assist the Holder on issue prioritization, how needs are prioritized and which communities are chosen as areas of focus; and
- Support the Applicant's community advisory board in choosing appropriate strategies for the Health Priority Strategy Form which will be submitted for review and approval based on the timeline provided in the Applicant's CHI Narrative; and
- Advise on planned use of Administrative Funds: Staff will continue advising the Holder on appropriate ongoing use of Administrative Funds and which will be based on the activities described in the Applicant's CHI Narrative⁷⁷.

Analysis: As a result of information provided by the Applicant and additional analysis, staff finds that with the Conditions outlined below, and with their ongoing commitment to work with staff on the above

⁷⁷ Documents available on the Determination of Need website. <https://www.mass.gov/lists/don-partners-healthcare-system-inc-newton-wellesley-hospital>

outlined issues and based on planning timelines that staff will approve, the Applicant has demonstrated that the Proposed Project has met Factor 6.

Findings and Recommendations

Based upon a review of the materials submitted, Staff finds that, with the addition of the recommended Condition described below and in Attachment 1, the Applicant has met each DoN factor for each component of the Proposed Project, and recommends that the Department approve this Determination of Need, subject to all applicable standard and Other Conditions.

In order to demonstrate improved health **and** public health outcomes for endoscopy are met, Holder shall

1. Provide a description of any programs or initiatives designed to increase CRC screening or rescreening behaviors according to appropriate intervals among the **Patient Panel**. This shall include:

- a. Program description and length (if applicable)
- b. Description of program recruitment (if applicable) and number reached out to
- c. Total number of participants
 - i. Percentage of participants from racial /ethnic minority groups
- d. Any outcomes measured

Numbers of participants shall increase each year post baseline

2. Provide a description of any programs or initiatives designed to either reduce risk factors for CRCs and/or increase CRC screening or rescreening behaviors according to appropriate intervals in the **broader community**. This shall include:

- a. Program description and length (if applicable)
- b. Description of program recruitment (if applicable) and number reached out to
- c. Total number of participants
 - ii. Percentage of participants from racial /ethnic minority groups
- d. Any outcomes measured

Numbers of participants shall increase each year post baseline

3. In order to ensure appropriate use of Cardiac CT, Holder shall a report on

- Numerator: Number of cardiac CTs performed for indication of diagnosing coronary disease where evaluation does not demonstrate any disease.
- Denominator: Number of cardiac CTs performed for indication of diagnosing coronary disease.

CHI Conditions to the DoN

4. Of the total required CHI contribution of \$2,919,702.25

- a. \$708,027.80 will be directed to the CHI Statewide Initiative
- b. \$2,124,083.38 will be dedicated to local approaches to the DoN Health Priorities of which up to 10% of these funds may be used for evaluation purposes
- c. \$87,591.07 will be designated as administrative costs to be retained by NWH and used per plans outlined in the Community Engagement Plan

5. To comply with the Holder's obligation to contribute to the Statewide CHI Initiative, the Holder must submit a check for \$708,027.80 to Health Resources in Action (the fiscal agent for the CHI Statewide Initiative).

- a. The Holder must submit the funds to HRiA within 30 days from the date of the Notice of Approval.
- b. The Holder must promptly notify DPH (CHI contact staff) when the payment has been made.

Attachment 1: Required Measures for Annual Reporting

The Holder shall provide, in its annual report to the Department, the following outcome measures. These metrics will become part of the annual reporting on the approved DoN, required pursuant to 105 CMR 100.310(A)(12).

***If rates do not improve, Holder shall report on reasons why and outline plans for improvement.**

The following measures were initially suggested by Applicant and subsequently revised by staff.

I. Observation Unit	
6.	Overall Rating of Care (Press Ganey Survey Engagement Survey) Collapsed responses (collapse responses Fair, Poor and Very Poor). Holder shall report on the following (include only patients served in this particular service area) : a) Any category receiving a “Fair” or less rating b) Overall patient response rate and a breakdown of respondent rate by race c) Policy changes ⁷⁸ instituted as a result of Holder’s evaluation of lower ratings
Holder shall Report on progress in making reductions in:	
7.	Wait Times for Observation Unit: Holder shall report on the amount of time a patient waits in the ED after he/she has been assigned outpatient status with observation services. a) Length of stay for ED patients that have been assigned to the Observation Unit. b) Policy changes ⁷⁵ instituted as a result of Holder’s evaluation
8.	Length of Stay: Holder shall report on the amount of time patients are in the Observation Unit to facilitate timely discharge. a) Length of stay for ED patients that have been assigned to the Observation Unit. b) Policy changes ⁷⁵ instituted as a result of Holder’s evaluation

⁷⁸ Holder stated that data will be reviewed quarterly

II. Endoscopy

9. Overall Rating of Care (Press Ganey Survey Engagement Survey)
Collapsed responses (collapse responses Fair, Poor and Very Poor). Holder shall report on the following (include only patients served in this particular service area):
- Any category receiving a “Fair” or less rating
 - Overall patient response rate and a breakdown of respondent rate by race
 - Policy changes⁷⁹ instituted as a result of Holder’s evaluation of lower ratings
- Holder shall Report on progress in making reductions* in
10. Wait times: Time interval from when colonoscopy was initiated for scheduling in EPIC to the date of the colonoscopy procedure
Holder shall report average annual time intervals between scheduling and performance date by procedure category
11. Rate of risk-standardized, all-cause, unplanned hospital visits within 7 days of an outpatient colonoscopy among Medicare fee-for-service (FFS) patients aged 65 years and older. (NQF 2539)
Holder shall report NQF 2539 on all patients
Rate shall not increase* for any year post baseline
12. Appropriate Follow-Up Interval for Normal Colonoscopy in Average Risk Patients (NQF measure 0658)
Holder shall report the total number of patients receiving screening colonoscopy and the percentage with the appropriate follow up interval as specified in NQF 0658, by age, race/ethnicity
Rates shall not decrease* for any year post baseline

III. Special Care Nursery

13. Overall Rating of Care (Press Ganey Survey Engagement Survey)
Collapsed responses (collapse responses Fair, Poor and Very Poor). Holder shall report on the following (include only patients served in this particular service area):
- Any category receiving a “Fair” or less rating
 - Overall patient response rate and a breakdown of respondent rate by race
 - Policy changes⁸⁰ instituted as a result of Holder’s evaluation of lower ratings

⁷⁹ Holder stated that data will be reviewed quarterly

Holder shall Report on progress in making reductions* in

14. **Transfers to Other Facilities:** The number of (non level III) maternal newborn service patients that have to be transferred to other facilities for care.
Holder shall report on retrotransfers received from hospitals with level III maternal newborn services

IV. Psychiatric Unit

15. Hours of Physical Restraint Use
Holder shall report on
- hours that patients spend in physical restraints per patient day.
 - Policy changes⁸⁰ instituted as a result of Holder's evaluation
16. **Patient Satisfaction with Medication Education through the Psychiatric Units'** Patient Satisfaction Survey: Collapsed responses for Overall Rating of Care (collapse responses Fair, Poor and Very Poor and Good and Very Good) Holder shall report on the following:
- The two categories above
 - Overall patient response rate and a breakdown of respondent rate by race
 - Policy changes⁷⁷ instituted as a result of Holder's evaluation of lower ratings

V. Cardiac CT

- 18. Patient Satisfaction:**
Overall Rating of Care (Press Ganey Survey Engagement Survey***) Collapsed responses for Overall Rating of Care (collapse responses Fair, Poor and Very Poor) Holder shall report on the following (include only patients served in this particular service area):
- Any category receiving a "Fair" or less rating
 - Overall patient response rate and a breakdown of respondent rate by race
 - Policy changes⁷⁷ instituted as a result of Holder's evaluation of lower ratings
- 19. Measure on number of elective diagnostic cardiac catheterization procedures performed at other hospitals**
Holder shall report using
- Numerator: Number of elective diagnostic cardiac catheterization procedures performed at other hospitals
 - Denominator: number of elective diagnostic cardiac catheterization procedures that are referred to other hospitals by NWH cardiologists.
- Such rate shall not increase post-baseline*.

⁸⁰ Holder stated that data will be reviewed quarterly

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