

APPENDIX 2

NARRATIVE

2. Project Description

Baystate Health, Inc. ("Baystate Health" or the "Applicant"), with a principal place of business at 759 Chestnut Street, Springfield, MA 01199, is filing a Notice of Determination of Need ("Application") with the Massachusetts Department of Public Health ("Department") to acquire a computed tomography ("CT") unit for operation at Baystate Noble Hospital ("BNH" or the "Hospital"), located at 115 West Silver Street, Westfield, MA 01085. The Hospital currently has one CT unit. With the addition of the proposed unit, BNH will have two CT units to meet the need of its Patient Panel.

BNH is an 85-bed acute care community hospital that serves the Greater Westfield area. In addition to general medical and surgical inpatient care, the Hospital provides 24-hour emergency services and a complete complement of outpatient services that include diagnostic imaging, oncology, neurology, and inpatient rehabilitation services. The Hospital is a DPH-designated Primary Stroke Service, providing 24 hours a day, 7 days a week care to patients experiencing stroke and stroke symptoms.

The Proposed Project seeks to meet the needs of the Hospital's Patient Panel by expanding CT capacity to ensure timely access to CT imaging. In recent years, BNH has experienced an increase in CT demand due to its clinical utility in diagnosing a number of conditions quickly. With one CT unit currently at BNH, downtime from maintenance or repair limits access to CT imaging as the Hospital has no back-up to provide continuous access on site. Timely access to CT imaging allows patients to begin treatment before health status worsens without adversely impacting outcomes and cost of care. Therefore, the Proposed Project will increase access to care, improve health outcomes and thereby enhance patient satisfaction.

Additionally, the Proposed Project is consistent with Massachusetts' goals for cost containment. With a second CT unit, patients will have timely access to CT. Timely access to diagnosis allows for treatment to begin sooner before the patient requires more costly care due to advanced disease. In addition, with a second CT unit, the Hospital will always be able to provide access to CT, eliminating ambulance transport costs and the need for imaging in a higher cost setting. The new CT unit will be reimbursed at the same rate as the existing scanner and will not impact costs for payers or patients. Accordingly, the Proposed Project will contribute to the Commonwealth's goal of containing the rate of growth of total medical expenses ("TME") and total healthcare expenditures ("THCE").

In summary, the Proposed Project will meet an identified need for the Hospital's Patient Panel. Approval of the Applicant's request for a second CT unit will increase CT capacity, improve access to CT imaging, and as a result, improve health outcomes, patient experience, and further containment goals. Accordingly, the Proposed Project meets the Determination of Need factors of review.

Factor 1: Applicant Patient Panel Need, Public Health Values and Operational Objectives

F1.a.i Patient Panel:

Describe your existing Patient Panel, including incidence or prevalence of disease or behavioral risk factors, acuity mix, noted health disparities, geographic breakdown expressed in zip codes or other appropriate measure, demographics including age, gender and sexual identity, race, ethnicity, socioeconomic status and other priority populations relevant to the Applicant's existing patient panel and payer mix.

A. Baystate Health

The Applicant is a non-profit, integrated health care delivery system serving over 800,000 patients through a network of hospitals, physician practices, and community clinics in Western Massachusetts. Its member hospitals include Baystate Medical Center ("BMC"), Baystate Franklin Medical Center, Baystate Wing Hospital and Baystate Noble Hospital (collectively known as "BH Hospitals"). Baystate Health also includes

a network of more than 80 medical practices; Health New England, a health insurance provider; home care and hospice services; and, comprehensive regional and laboratory diagnostic services.

Patient Panel

In 2021, Baystate Health served approximately 317,791 patients, an increase of 13.65%¹ from 2020. The following table details the characteristics of the Hospital's Patient Panel.

¹ Unique patients decreased from FY19 to FY20 likely due to patient avoidance of hospitals during the COVID-19 Pandemic.

Table 1: Baystate Health Patient Panel²

	FY19 (Apr. 1-Sept. 30) ³		FY20		FY21		FY22 (Oct 1-Mar 31)	
Demographic Measure	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Age								
0 to 18	35,235	17.23%	47,670	17.05%	51,931	16.34%	35,136	17.15%
19 to 45	56,787	27.77%	80,041	28.62%	91,661	28.84%	56,956	27.80%
46 to 64	59,466	29.08%	80,102	28.65%	89,712	28.23%	57,910	28.26%
65+	53,003	25.92%	71,821	25.68%	84,487	26.59%	54,911	26.80%
Total	204,491	100.00%	279,634	100.00%	317,791	100.00%	204,913	100.00%
Gender								
Female	119,918	58.54%	160,837	57.52%	183,313	57.68%	121,242	59.17%
Male	84,573	41.36%	118,797	42.48%	134,478	42.32%	83,671	40.83%
Total	204,491	100.00%	279,634	100.00%	317,791	100.00%	204,913	100.00%
Race								
American Indian or Alaska Native	217	0.11%	259	0.09%	289	0.09%	188	0.09%
Asian	2,566	1.25%	3,537	1.26%	4,136	1.30%	2,845	1.39%
Black or African American	14,608	7.14%	19,416	6.94%	21,527	6.77%	15,104	7.37%
Hispanic	43,453	21.25%	56,963	20.37%	61,853	19.46%	45,758	22.33%
Native Hawaiian or Other Pacific Islander	77	0.04%	121	0.04%	215	0.07%	125	0.06%
Other	259	0.13%	289	0.10%	33	0.01%	<11 ³	0.00%
Refuse to Answer	264	0.13%	423	0.15%	1,021	0.32%	456	0.22%
Unknown	7,237	3.54%	10,258	3.67%	15,049	4.74%	6,098	2.98%
White	135,810	66.41%	188,368	67.36%	213,668	67.24%	134,339	65.56%
Total	204,491	100.00%	279,634	100.00%	317,791	100.00%	204,913	100.00%
Payer								

² For purposes of the Applicant and the Hospital's Patient Panel, the fiscal year is defined as October 1 through September 30.

³ To ensure patient privacy, we have used the notation "<11" in any instance where the patient count for a demographic category included less than 11 individuals. The actual patient count has been included elsewhere so the total patient count remains accurate but patient privacy is maintained.

Baystate Noble Hospital CT DoN

	FY19 (Apr. 1-Sept. 30)3		FY20		FY21		FY22 (Oct 1-Mar 31)	
Demographic Measure	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Commercial PPO/Indemnity	587,071,957.16	20.55%	591,595,292.64	20.96%	579,842,398.21	20.10%	310,309,186.25	19.00%
Commercial HMO/POS	301,673,166.05	10.56%	281,598,436.19	9.98%	299,251,521.28	10.37%	174,855,796.68	10.71%
MassHealth	262,363,411.85	9.19%	256,746,843.37	9.10%	276,968,829.89	9.60%	164,017,176.04	10.04%
Managed Medicaid	93,929,442.56	3.29%	85,678,613.25	3.04%	88,323,331.68	3.06%	48,620,068.32	2.98%
Commercial Medicare	438,235,617.55	15.34%	451,760,104.79	16.01%	514,153,906.81	17.82%	300,975,776.65	18.43%
Medicare FFS	1,044,916,219.86	36.58%	987,496,797.24	34.99%	949,775,869.17	32.92%	530,602,711.35	32.49%
All Other	128,105,825.76	4.49%	167,196,062.94	5.92%	177,042,290.06	6.14%	103,902,387.88	6.36%
Total	2,856,295,641	100.00%	2,822,072,150	100.00%	2,885,358,147	100.00%	1,633,283,103	100.00%

Age: The age breakdown of Baystate Health's Patient Panel remained relatively consistent between 2019 and 2021, with relatively equal percentages of patients in the 19 to 65, 46-54 and 65+ age cohorts.

Gender: Baystate Health's Patient Panel is approximately 42.05% male, 57.91% female, and .001% unknown. These percentages are largely unchanged between 2019 and 2021.

Race and Ethnicity: Data reported between FY19 through FY21 indicate the majority of Baystate Health's patients self-identified as White (67.00%). Patients also self-identified as Hispanic (20.36%), Black or African American (6.95%), Unknown (3.98%) and Asian (1.27%). Less than 1% self-identified as American Indian or Alaska Native, Multiracial, Native Hawaiian or Other Pacific Islander, Other, or refused to answer. These percentages were largely unchanged between 2019 and 2021, with the exception of a slight decrease of approximately 2% between 2019 and 2021 in patients who self-identified as Hispanic.

Payer Mix: Between FY19-FY21, on average 34.83% of all Baystate Health patients were covered by Medicare Fee for Service ("FFS"); followed by approximately 30% of patients who had commercial insurance. From FY19 to FY21, there was a slight decrease of 3.66% in patients who were covered by Medicare FFS, and a slight increase of approximately 2% in patients who had Commercial Medicare.

B. Baystate Noble Hospital

An estimated 400,000 people reside in BNH's service area.⁴ BNH is an 85-bed acute care community hospital that provides services that include obstetrics and gynecology, emergency, laboratory, gastroenterology, surgery, cardiopulmonary services, rehabilitation, cancer care, behavioral health, urology, neurology, inpatient rehabilitation, and diagnostic imaging, including 3D mammography. BNH's primary service area includes Westfield, Southwick, West Springfield, Agawam, Springfield, Chicopee, Granville, Russell, Holyoke, Huntington, Blandford, Southampton, Longmeadow, Chester, Ludlow, East Longmeadow, and Easthampton. The table below details the characteristics of the Hospital's Patient Panel. Like Baystate Health, BNH also collects race and ethnicity data through patient-self reporting.

⁴ UMass Donahue Institute, *Massachusetts Population Estimates by City and Town* (2019), May 2020, https://donahue.umass.edu/data/pep/dashboards/2019_census_subcounty.html. Data source is U.S. Census Bureau, Population Division.

Table 2: Baystate Noble Patient Panel

	FY19 (Apr. 1-Sept. 30)10		FY20		FY21		FY22 (Oct 1-Mar 31)	
Demographic Measure	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Age								
0 to 18	1,784	9.84%	2,331	8.58%	2,258	7.07%	1,546	7.17%
19 to 45	5,257	29.00%	8,069	29.72%	9,660	30.26%	6,285	29.16%
46 to 64	5,655	31.12%	8,708	32.07%	10,552	33.06%	7,033	32.63%
65+	5,433	29.97%	8,045	29.63%	9,450	29.61%	6,692	31.04%
Total	18,129	100.00%	27,153	100.00%	31,920	100.00%	21,556	100.00%
Gender								
Female	10,343	57.05%	15,242	56.13%	18,388	57.61%	12,661	58.74%
Male	7,786	42.95%	11,911	43.87%	13,532	42.39%	8,895	41.26%
Total	18,129	100.00%	27,153	100.00%	31,920	100.00%	21,556	100.00%
Race								
American Indian or Alaska Native	14	0.08%	20	0.07%	24	0.08%	19	0.09%
Asian	229	1.26%	358	1.32%	420	1.32%	287	1.33%
Black or African American	490	2.70%	747	2.75%	1,133	3.55%	744	3.45%
Hispanic	1,636	9.02%	2,509	9.24%	3,279	10.27%	2,389	11.08%
Native Hawaiian or Other Pacific Islander	0	0.04%	16	0.06%	18	0.06%	14	0.06%
Other	26	0.10%	<11	0.04%	<11	0.03%	0	0.00%
Refuse to Answer	21	0.01%	48	0.02%	88	0.28%	59	0.27%
Unknown	570	3.14%	751	2.77%	1,080	3.38%	579	2.69%
White	15,143	83.53%	22,704	83.57%	25,878	81.04%	17,465	81.02%
Total	18,129	100.00%	27,153	100.00%	31,920	100.00%	21,556	100.00%
Payer								
Commercial PPO/Indemnity	25,319,010.06	18.77%	22,768,043.05	18.59%	29,892,516.38	20.39%	18,269,789.84	20.19%
Commercial HMO/POS	13,464,094.80	9.98%	11,943,977.25	9.75%	15,766,033.47	10.75%	10,264,586.02	11.34%

Baystate Noble Hospital CT DoN

	FY19 (Apr. 1-Sept. 30)10		FY20		FY21		FY22 (Oct 1-Mar 31)	
Demographic Measure	Count	Percent	Count	Percent	Count	Percent	Count	Percent
MassHealth	9,295,824.85	6.89%	8,760,816.81	7.15%	10,612,145.26	7.24%	6,770,458.68	7.48%
Managed Medicaid	9,269,091.96	6.87%	7,043,587.02	5.75%	7,579,409.13	5.17%	5,062,758.75	5.59%
Commercial Medicare	21,687,502.64	16.08%	20,573,017.60	16.80%	26,687,546.53	18.20%	17,547,566.28	19.39%
Medicare FFS	47,462,076.15	35.19%	43,434,805.74	35.47%	46,073,601.68	31.42%	26,969,670.40	29.80%
All Other	8,378,901.50	6.21%	7,920,185.66	6.47%	10,019,407.27	6.83%	5,625,423.29	6.22%
Total	134,876,501.96	100%	122,444,433.13	100%	146,630,659.72	100%	90,510,253	100%

As illustrated in the table above, BNH's Patient Panel is fairly similar to Baystate Health's Patient Panel with some notable differences. Like the Baystate Health Patient Panel, the majority of BNH patients are female, with 56.93% of the patients identifying as female and 43.07% as male. Like Baystate Health, BNH experienced a steady decline in the 0-18 age group from FY19 to FY21. However, the Hospital had a slightly higher proportion of patients 65 and older (29.74% compared to 26.03%). The Hospital's Patient Panel also differs from Baystate Health's with respect to race and ethnicity. While the predominant self-reported race at Baystate Health and BNH patients was White, BNH had approximately 15% more patients self-reporting as White (82.71% compared to 67%). Conversely, BNH patients self-identified at significantly lower rates as other races/ethnicities: Hispanic (9.51% compared to 20.36%); and Black/African American (3% compared to 6.95%). Baystate Health and the Hospital have a similar proportion of patients who self-identified as Unknown race/ethnicity (3.10% compared to 3.98%), Asian (1.3% compared to 1.27%), and less than 1% self-identified as American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, Other, or refused to answer. Moreover, the number of patients utilizing services at BNH has also steadily grown from 27,153 patients in FY20 to 31,920 patients in FY21, an increase of 17.6%.⁵

F1.a.ii Need by Patient Panel:
Provide supporting data to demonstrate the need for the Proposed Project. Such data should demonstrate the disease burden, behavioral risk factors, acuity mix, health disparities, or other objective Patient Panel measures as noted in your response to Question F1.a.i that demonstrates the need that the Proposed Project is attempting to address. If an inequity or disparity is not identified as relating to the Proposed Project, provide information justifying the need. In your description of Need, consider the principles underlying Public Health Value (see instructions) and ensure that Need is addressed in that context as well.

The Applicant seeks to add a second CT unit at BNH to meet the needs of its Patient Panel to ensure timely access to CT imaging into the future. As reflected in the data below, in recent years BNH experienced a significant increase in CT utilization for inpatients, outpatients, and emergency patients. With one unit, urgent or emergent CT cases delay inpatient CTs and can disrupt the outpatient schedule. In addition, downtime to perform CT maintenance leaves the Hospital without CT capability and patients may be rescheduled, or if urgent, patients are transported by ambulance to Baystate Medical Center. Capacity constraints also hamper the Hospital's ability to provide low-dose CT ("LDCT") lung cancer screening for patients consistent with recommended screening guidelines. With an already high demand for CT imaging due to a Patient Panel with a large geriatric population, demand for CT imaging will only continue to grow as the Hospital's Patient Panel ages. Therefore, a second CT unit is needed to improve timely access and health outcomes for the Patient Panel.

Historic Utilization

BNH experienced a 52.81% increase in CT scan volume from FY19 through FY22 annualized (from 10,001 scans in FY19 to 15,283 scans in FY22 annualized). Most of this volume originated from the Hospital's Emergency Department which accounted for 54.13% (26,694 total scans) of all CT scans at the Hospital from FY19 through FY22 annualized. From FY19 through FY22 annualized, the Emergency Department experienced a 30.68% increase in CT utilization.

⁵ Unique patients decreased from FY19 to FY20 likely due to patient avoidance of hospitals during the COVID-19 Pandemic.

Table 3: Historical CT Volume

	FY19	Percent Change	FY20 ⁶	Percent Change	FY21	Percent Change	FY22 YTD May	Percent Change	FY22 Annual ized
Inpatient	1,429	-4.27%	1,368	71.93%	2,352	-28.66%	1,678	7.02%	2,517
Outpatient	2,476	23.83%	3,066	50.59%	4,617	-30.69%	3,200	3.96%	4,800
Emergency	6,096	-12.20%	5,352	36.02%	7,280	-34.41%	4,775	9.42%	7,966
Total	10,001	-2.15%	9,786	45.61%	14,249	-32.25%	9,653	7.26%	15,283

Limitations of One CT Unit

The historical high utilization of CT, coupled with the fact the Hospital only has one CT unit, makes it difficult for the Hospital to provide timely diagnosis and treatment for patients who require a CT scan. With an average CT scan taking approximately twenty minutes, BNH has capacity to perform three CT scans per hour. This time includes prepping the room, inserting an IV, if needed, positioning the patient, performing the scan, cleaning the room and processing the images. At times, more than five patients per hour have required CT imaging, which is beyond BNH's capacity.

BNH currently has one CT unit for inpatient, ED and outpatient needs. With only one CT unit, BNH cannot perform CT- guided procedures without impeding access to CT imaging for stroke and ED patients. As a result, patients requiring CT-guided procedures are transferred to BMC. A second CT unit is needed to provide the Hospital's Patient Panel with uninterrupted and increased local access to CT imaging and CT-guided procedures.

As illustrated below, between FY20 and FY21 there was a 61% increase in downtime hours for the Hospital's unit. When the unit experiences downtime, patients must wait, be transferred to another facility, or be rescheduled. For example, in FY21, 905 patients were transferred from BNH to Baystate Medical Center in Springfield. These transfers increase the volume to an already busy ED and impacts the ED flow. As a result, inpatients and ED patients are delayed access to CT imaging, which negatively impacts the health care and health outcomes of Baystate Medical Center's patients. Increased downtime for maintenance and repairs, and concerns that the existing scanner will increasingly require routine and unanticipated downtime as it ages are evidence of the need for a second CT. Moreover, due to the reputation of frequent downtimes, the EMS system often continues to redirect ED patients that would otherwise go to BNH, to other hospitals even after the CT comes back online. Such disruptions caused by having only one unit are increasingly impeding access to CT.

Table 4: Historical CT Scanner Downtime

	FY20	FY21	FY22 through July
Total downtime hours	77	124	81.25

As the CT unit is taxed by increased utilization, it is expected that the amount of downtime will increase each year, above and beyond the minimum of 16 hours of preventative maintenance required. Through July FY22 YTD, the CT has been down an estimated 81.25 hours, including 20 hours in June, 2022 attributed to a CT tube replacement. A second CT unit is necessary to mitigate downtime on the existing

⁶ Unique patients decreased from FY19 to FY20 likely due to patient avoidance of hospitals during the COVID-19 Pandemic.

unit by shifting scans to a second CT unit. By reducing over-utilization of the current unit, the Hospital will be able to extend its useful life, delaying the need for replacement and significant disruption for patients. In addition, the second unit will ensure redundancy if either unit requires repair or maintenance. By planning for future Patient Panel demand, the Hospital will ensure redundancy, thereby limiting disruption for patients and delays in diagnosis and treatment.

BNH is also designated by DPH as a Primary Stroke Service (“PSS”) Hospital⁷, which means the Emergency Medical Services system will send patients experiencing symptoms of a stroke to the BNH ED. Clinical guidelines for stroke recommend that patients receive CT imaging within 25 minutes of arrival at the ED.⁸ Acute stroke patients, and other patients requiring an emergent CT scan are prioritized over less urgent exams on ED patients, inpatients, and outpatients. When an emergency CT is needed, other patients are delayed. As demonstrated in Table 5 below, BNH experienced a 28.14% increase in the number of stroke patients presenting to its ED between CY20 and CY22 annualized. While there was a 41% increase in stroke patient volume between CY20 and CY21, expected growth was not seen between CY21 and CY22 due to CT downtime and unreliability of the unit resulting in the EMS system diverting stroke patients to other hospitals. For example, in May and June 2022, planned downtimes for repairs were extended due to difficulty in getting the CT scanner to operate. As a result of the extended downtime, a total of 55 outpatients had to be rescheduled. The extended downtime also impacted the ED’s workflow. In addition, BNH had EMS onsite on standby for the duration of the downtimes in the event that a patient required CT and needed transport to BMC. The ED also required additional staff in the ED to compensate for the nurses that accompanied patients to BMC. Moreover, CT downtime at BNH also negatively affects BMC. In addition to strategizing how manage its own high demand for CT, BMC had to also accommodate patients transferred from BNH for CT.

Table 5: Stroke Patient Volume

	C20	CY21	CY22 Annualized
Number of Stroke Patients	231	326	296

In addition, BNH offers low-dose CT (“LDCT”) lung cancer screening. As discussed in Section F1.b.i., early screening of high-risk patients can significantly decrease lung cancer mortality.

Table 6: Historical Lung Cancer Screening Volume

	CY19	CY20	CY21	CY22 Annualized
Annual Screening	104	252	386	428

Through the Proposed Project, BNH will have CT capacity to be able to expand its screening program, which will increase screening rates and early identification of lung cancer. Early identification can lead to treatment when disease can be more easily treated at lower costs than advanced disease, ultimately improving health outcomes. With a single CT scanner, outpatient studies must be scheduled only intermittently to create openings for the higher-priority studies. A second CT will allow improved access for

⁷ To be designed a PSS Hospital, a hospital must be equipped to readily provide timely acute stroke evaluation and treatment, and “must provide emergency diagnostic and therapeutic services 24 hours-a-day, seven days-a-week to patients presenting with symptoms of acute stroke.” *Primary Stroke Service validation*, <https://www.mass.gov/info-details/primary-stroke-service-pss-validation> (last visited Feb. 24, 2022). Also see *Designated Primary Stroke Services Hospitals*, <https://www.mass.gov/info-details/designated-primary-stroke-services-hospitals> (last visited Feb. 24, 2022).

⁸ See *Primary Stroke Services Time Target Recommendations* (6/2009), <https://www.mass.gov/doc/pss-time-target-recommendations-0/download>; *Get With the Guidelines – Stroke Fact Sheet*, https://www.heart.org/-/media/files/professional/quality-improvement/get-with-the-guidelines/get-with-the-guidelines-stroke/stroke-fact-sheet_-final_ucm_501842.pdf?la=en&hash=7FA33C71D753DF7AB1D4850451C95BBE25BEA622 (last visited Feb. 24, 2020).

LDCT in adherence with recommended guidelines. The timeline includes annual screenings each year the patient meets certain criteria.

Projected Growth and Future Demand

Based on historical volume and projections for future demand, BNH expects CT volume will continue to grow as the Hospital's primary service area experiences sustained growth over the coming years. BNH's service area is projected to increase by 4.5% from 2020 to 2040.⁹ In particular, the population in BNH's service area aged 65 and older is expected to grow by 34% from 2020 to 2040.¹⁰ As the Patient Panel ages, BNH patients will present with higher acuity and more frequently require advanced diagnostic imaging, including CT. Further, between FY18 and FY21, there was a 33% increase in percentage of patients presenting to the ED with a Class 4¹¹ acuity. Such patients often present to the ED with conditions that require utilization of CT for diagnosis, such as stroke and trauma. As a geriatric accredited ED, BNH will also continue to attract geriatric patients from the surrounding areas.

A second CT unit will also allow the Hospital to expand its lung cancer screening program. On February 10, 2022, the Centers for Medicare & Medicaid Services ("CMS") announced that it would expand eligibility coverage for low dose computed tomography ("LDCT") by lowering the starting age for screening from 55 to 50 years and reducing history of tobacco smoking from at least 30 packs per year to at least 20 pack per year. The expanded eligibility is expected to result in increased CT volume and is also factored into the Hospital's projections. The following table details the Hospital's CT volume projections following implementation of the Proposed Project.

Table 7: Projected CT Volume

	FY23	Percent Increase	FY24	Percent Increase	FY25	Percent Increase	FY26	Percent Increase	FY27	Percent Increase	FY28	Percent Increase from FY21 – FY28
Inpatient	2,580	5.00%	2,709	4.98%	2,844	5.03%	2,987	4.99%	3,136	5.01%	3,293	40.01%
Outpatient	4,920	5.00%	5,166	4.99%	5,424	5.01%	5,696	4.99%	5,980	5.00%	6,279	36.00%
Emergency	8,165	5.00%	8,573	5.00%	9,002	4.99%	9,451	5.02 %	9,925	5.00%	10,421	43.15%
Total	15,665	5.00%	16,448	5.00%	17,270	5.00%	18,134	5.00%	19,041	5.00%	19,993	40.31%

As described throughout this section, the Proposed Project will address current and future needs of the Patient Panel. Continuing with one CT unit at the Hospital will adversely impact access and outcomes as the existing unit continues to age and demand for CT increases as the population grows and ages. A second unit will provide capacity to accommodate emergent patients without disrupting timely access to CT for inpatients and outpatients and eliminate the costs associated with transferring patients to Baystate Medical Center. Acquiring a second CT unit will also decrease the amount of downtime on the existing unit, in turn prolonging the life of both units. The Proposed Project will also accommodate additional demand for outpatient CT services and allow improved access for LDCT in adherence with recommended timelines. Therefore, the Proposed Project will improve access to care, health outcomes and patient experience.

F1.a.iii

Competition:

Provide evidence that the Proposed Project will compete on the basis of price, total medical expenses, provider costs, and other recognized measures of health care spending. When responding to this question, please consider Factor 4, Financial Feasibility and Reasonableness of Costs.

⁹ UMass Donahue Institute MassDOT Vintage 2018 Population Projections, *Massachusetts Population Projections*, September 2018, <http://www.pep.donahue-institute.org/>.

¹⁰ *Id.*

¹¹ Billing Code Emergency Service Class 4 indicates a severe problem that requires urgent evaluation but does not pose a threat to physical function, but that without treatment there is a high chance of extreme impairment.

The Proposed Project will compete on the basis of price, total medical expenses, provider costs, and other recognized measures of health care spending because the Proposed Project seeks to ensure timely access to CT services. To deliver quality care, improve health outcomes, meet patient expectations, and contain overall medical costs, hospitals must have the ability to provide access to CT. As discussed in the previous section, the Hospital's existing CT operation is nearing capacity and increased instances of downtime interrupt and delay diagnosis and ultimately treatment.

To maximize the second CT unit's efficiency, the proposed unit will be centralized on the first floor of BNH, equidistant from the Hospital's main entrance and emergency department, and across the hall from the Radiology Registration Area and Waiting Room. The second CT will be adjacent to the existing CT, which will create a CT Hub. As a result, BNH will be able to leverage its radiology staff to operate both CT units. The Hospital anticipates it will need to hire one tech assistant per shift for the additional unit. This cost will have a minimal impact on operating costs.

Based on these considerations, the Proposed Project will accommodate the existing Patient Panel and its future growth. Without the addition of a second CT unit, scheduling delays and potentially delay in patient diagnosis, treatment and operational inefficiencies will continue to steadily increase overall health care expenses. Therefore, the Proposed Project is necessary to ensure access to care, and provide timely diagnosis and treatment, and contain health care costs.

**F1.b.i Public Health Value /Evidence-Based:
Provide information on the evidence-base for the Proposed Project. That is, how does the Proposed Project address the Need that Applicant has identified.**

The use of diagnostic imaging, such as CT, has significantly increased over the last several decades because of technological advancements and the expansion of clinical applications.¹² The addition of a second CT unit at BNH will advance and support the health needs of the Hospital's patient panel by providing redundancy to allow all patients timely access to CT imaging, including diagnosis and treatment for stroke patients and increasing low-dose cancer screening rates. The Applicant relies on extensive evidence-based literature, which demonstrates that routine and emergency CT imaging is an essential component of hospital care.

A. Computed Tomography

A Computed Tomography ("CT") is an imaging tool that utilizes x-ray beams to generate cross-sectional images - or "slices" - of the bones, blood vessels and soft tissue.¹³ As a result, CT scans produce more clear, detailed images than conventional x-rays, making CTs extremely useful in detecting, for example, tumors or lesions within the abdomen and lungs; detecting heart disease or abnormalities of the heart; head injuries; and blood clots and embolisms.¹⁴ CT scans can generally be performed in minutes, which means providers can quickly detect and diagnose emergent conditions such as strokes and consequently, reduce the chances of brain damage and disability.¹⁵

¹² See *Recent Advances in CT Scan Technology*, Neurologica, <https://www.neurologica.com/blog/advances-ct-scan-technology> (last visited Feb. 24, 2022).

¹³ See U.S. Department of Health & Human, <https://www.nibib.nih.gov/science-education/science-topics/computed-tomography-ct> (last visited Feb. 24, 2022); Mayo Clinic, <https://www.mayoclinic.org/tests-procedures/ct-scan/about/pac-20393675> (last visited Feb. 24, 2022).

¹⁴ See *How Does a CT or CAT scan work?*, MedicalNewsToday, <https://www.medicalnewstoday.com/articles/153201#procedure> (last modified June 23, 2017).

¹⁵ See *How CT Scans and MRIs are Used to Diagnose Strokes*, <https://www.enr.com/how-ct-scans-mris-used-to-diagnose-strokes/> (last visited Feb. 24, 2022).

B. Clinical Application

CT is an essential and invaluable tool in the diagnosis and treatment of patients and must be readily available for emergency and routine screening. In addition to its general diagnostic utility, CT is the preferred diagnostic tool for patients presenting with symptoms of stroke and patients who are at high-risk for lung cancer.

1. *Stroke*

A stroke occurs when oxygen flow to the brain is disrupted that prevents brain tissue from receiving oxygen.¹⁶ Brain cells can begin to die within minutes of a stroke, so prompt treatment is crucial to prevent brain damage, disability, and other complications.¹⁷ Timely CT scanning ensures timely treatment, when it is most likely to be successful with the best chance for positive patient outcomes.¹⁸ CT imaging is frequently used to diagnose strokes and to determine the type of stroke a patient is experiencing.¹⁹ The CT scan can also quickly and precisely identify clots and hemorrhages, ensuring the right treatment is provided.²⁰ Additionally, the detailed images produced by the CT scan can rule out other brain abnormalities.²¹ According to the Massachusetts Department of Health's Time Target Recommendations and the American Heart Association/American Stroke Association's "Get With the Guidelines – Stroke", CT imaging should be completed within 25 minutes of arrival to the hospital, and IV thrombolytic ("tPA") treatment should begin within one hour of patient arrival.²² Timely CT scanning ensures timely treatment, when it is most likely to be successful with the best chance for positive patient outcomes.²³

2. *Low-dose lung cancer screening*

In the United States, there was approximately 135,720 deaths in 2020 due to lung cancer, making it the leading cause of cancer-related deaths.²⁴ Approximately 8 million Americans qualify as high risk for lung cancer and are recommended to receive annual screening with low-dose CT ("LDCT") scans.²⁵ Screening with LDCT for those at high risk can decrease lung cancer mortality by 14% to 20%.²⁶ If half of the high risk individuals were screened, over 12,000 deaths from lung cancer could be prevented.²⁷ Preventive Services Task Force (USPSTF) recommends yearly lung cancer screening using LDCT for people who:

- Have a 20 pack-year²⁸ or more smoking history, *and*
- Smoke now or have quit within the past 15 years, *and*

¹⁶ See Mayo Clinic, <https://www.mayoclinic.org/diseases-conditions/stroke/symptoms-causes/syc-20350113> (last visited Feb. 24, 2022).

¹⁷ See *id.*

¹⁸ "In a registry representing US clinical practice, earlier thrombolytic treatment was associated with reduced mortality and symptomatic intracranial hemorrhage, and higher rates of independent ambulation at discharge and discharge to home following acute ischemic stroke." Jeffrey L. Saver, M.D., Gregg C. Fonarow, M.D., Eric E. Smith, M.D., MPH, et al., *Time to Treatment With Intravenous Tissue Plasminogen Activator and Outcome From Acute Ischemic Stroke*, JAMA (June 19 2013), <https://jamanetwork.com/journals/jama/fullarticle/1697967>.

¹⁹ Two main types of strokes are ischemic stroke (blocked artery) or hemorrhagic stroke (a blood vessel bursting or leaking). See *id.* Individuals may also experience a temporary disruption of blood flow to the brain, called a transient ischemic attack, but this does not tend to cause lasting symptoms. *Id.*

²⁰ See *supra* note 22.

²¹ *Id.*

²² See *Primary Stroke Services Time Target Recommendations*, *supra* note 17.

²³ "In a registry representing US clinical practice, earlier thrombolytic treatment was associated with reduced mortality and symptomatic intracranial hemorrhage, and higher rates of independent ambulation at discharge and discharge to home following acute ischemic stroke." See Jeffrey L. Saver, M.D., *supra* at note 28.

²⁴ See *First Population-Based Study Finds State-Level Lung Cancer Screening Rates Not Aligned with Lung Cancer Burden in the U.S.* (Nov. 12, 2020), <http://pressroom.cancer.org/LDCTScanLCS>.

²⁵ See *Lung Cancer Fact Sheet*, American Lung Association, <https://www.lung.org/lung-health-diseases/lung-disease-lookup/lung-cancer/resource-library/lung-cancer-fact-sheet> (last modified May 27, 2020).

²⁶ *Id.*

²⁷ *Id.*

²⁸ A pack-year is defined as 20 cigarettes smoked every day for one year, or 40 cigarettes smoked every day for 6-months.

- Are between the ages of 50 and 80 years old.²⁹

Patients who meet these criteria are recommended to continue annual screenings each year they meet these criteria. Screening should stop once the patient reaches the age of 81, has not smoked in 15 years, develops a health problem that makes him or her unwilling or unable to have curative lung surgery or develops a health problem that will significantly limit life expectancy.³⁰ Improving access to LDCT will reduce barriers for eligible individuals to receive screening, in turn improving screening rates and the number of lung cancer cases that are detected early and can receive treatment. In 2022, CMS expanded eligibility by lowering the starting age for lung cancer screening and reducing tobacco smoking history, which will further increase access to lung cancer screening for at-risk populations. Further, there is potential for more volume due to a large unscreened pool of patients who qualify for lung cancer screening. LDCT has been underutilized with only 12.5% of the eligible population receiving this screening exam.³¹

F.1.b.ii Public Health Value /Outcome-Oriented:

Describe the impact of the Proposed Project and how the Applicant will assess such impact. Provide projections demonstrating how the Proposed Project will improve health outcomes, quality of life, or health equity. Only measures that can be tracked and reported over time should be utilized.

A. Improving Health Outcomes and Quality of Life

The Proposed Project will improve timely access to CT for the patient population, as discussed in F1.a.ii. The addition of a second scanner will not only ensure timely access, but it will also allow the Hospital to expand capacity for outpatient services, including the Hospital's low-dose lung cancer screening program.

In addition, BNH has an appropriate use criteria program ("AUC") using the clinical decision support mechanism ("CDSM"). The CDSM is an interactive, electronic tool that evaluates AUC information to assist with making the most appropriate advanced diagnostic imaging service order based on the patient's clinical condition. The goal is to order and provide the advanced diagnostic imaging service most likely to improve the health outcome of the patient. CMS implemented this tool to ensure the most appropriate tests are ordered for Medicare patients, and to decrease the number of inappropriate and unnecessary orders for advanced diagnostic imaging.

B. Assessing the Impact of the Proposed Project

To assess the impact of the Proposed Project, the Applicant developed the following quality metrics, including projections. All measures will be reported on an annual basis following the first year of the Proposed Project's implementation. The measures are discussed below:

- 1. Access – Lung Cancer Screening:** Increased access to screening services is likely to increase the number of patients who received lung cancer screening as recommended. Baystate Noble will be able to offer additional lung cancer screening appointments upon implementation of the Proposed Project.
 - a. *Measure:* The number of low-dose CT scans provided at Baystate Noble annually.
 - i. *Baseline:* 386 scans
 - ii. *Projections:* Year 1: 398; Year 2: 410; Year 3: 422

²⁹ See *Who Should Be Screened for Lung Cancer* (Oct. 18, 2021), www.cdc.gov/cancer/lung/basic_info/screening.htm; *Lung Cancer: Screening*, U.S. Preventative Services, Task Force (March 9, 2021), <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/lung-cancer-screening>.

³⁰ *Id.*

³¹ See Thomas B. Richards, M.D., Ashwini Soman, MBBS, et al., *Screening for Lung Cancer – 10 States, 2017*, Centers for Disease Control and Prevention, MMWR Morb Mortal Wkly Rep 2020;69:201-206, <http://dx.doi.org/10.15585/mmwr.mm6908a1>.

2. Time Between Order Entry to Complete CT in the ER: The order to complete time for CT in the ER is likely to be improved.
 - a. *Measure*: The number of ED CT scans completed in 1 hour from order entry time divided by number of total ED CT scans completed. This metric will be monitored monthly on Radiology Dashboard,
 - i. *Baseline*: 53% of CT orders from the ER completed within 1 hour
 - ii. *Projections*: Year 1: 67%; Year 2: 70%

F1.b.iii Public Health Value /Health Equity-Focused:
For Proposed Projects addressing health inequities identified within the Applicant's description of the Proposed Project's needbase, please justify how the Proposed Project will reduce the health inequity, including the operational components (e.g. culturally competent staffing). For Proposed Projects not specifically addressing a health disparity or inequity, please provide information about specific actions the Applicant is and will take to ensure equal access to the health benefits created by the Proposed Project and how these actions will promote health equity.

Baystate Health's mission is to improve the health of the people in its communities every day with quality and compassion. Confronting racism and bias behaviors is critical to achieving this mission. Baystate Health recognized this years ago, launching its diversity, equity and inclusion journey in 2008. Since that time, Baystate Health has continued to learn and grow, and is committed to examining its systems and behaviors to ensure they advance equity and shared prosperity. Baystate Health's three areas of focus are reducing health disparities, growing a more diverse workforce, and improving family prosperity in marginalized communities.

Reducing Health Disparities: Many factors affect a person's health, including race, ethnicity, gender, sexual orientation, age, disability, socioeconomic status, and geographic location. When certain health outcomes become common among certain populations, there is a disparity. Baystate Health is committed to reducing health disparities by closely examining quality, safety and patient experience through an equity lens and making necessary changes in protocols and practices.

Achieving Equity: A diverse workforce provides representation and leads to innovative thinking. Baystate Health is committed to achieving equity in the hiring, promotion and retention of Black and Brown employees. In the last year, Baystate Health has made great strides, including a 14.7% increase in Underrepresented in Medicine (URiM) leaders, a 22.5% increase in in URiM providers and a 19.5% increase in URiM Direct Care Registered Nurses. Equity and Belonging is also a new core competency which has been added to Baystate Health's Core Values of Respect, Integrity, Teamwork and Lifelong Learning.

Baystate Health's Accountable Care Organization (ACO), called BeHealthy Partnership, collects and uses data to ensure its programs are equitable. This is achieved by comparing the population served for each of the programs to the general population of BeHealthy Partnership members for whom Baystate Health's internal databases contain race and ethnicity data. This health equity data is revisited regularly and will continue to be revisited to ensure Baystate Health remains on track to serve its members equitably. If disparities are discovered they are addressed.

The Applicant takes equal access and equity seriously as demonstrated by the following examples. In 2015, Baystate Health's President and CEO, Dr. Mark Keroack signed the American Hospital Association's #123forEquity pledge campaign to eliminate health disparities. It builds on the efforts of the National Call to Action to Eliminate Health Care Disparities – a joint effort of the AHA, American College of Healthcare Executives, Association of American Medical Colleges, Catholic Health Association of the United States and America's Essential Hospitals – and asks hospital and health system leaders to begin taking action to accelerate progress on the following areas:

- Increasing the collection and use of race, ethnicity, language preference and other socio-demographic data
- Increasing cultural competency training
- Increasing diversity in leadership and governance
- Improve and strengthen community partnerships

In 2019 the BeHealthy Partnership hosted two trainings for leadership, providers, and clinical staff. A two-day Healing Racism session was offered by the Healing Racism Institute of Pioneer Valley and 31 people attended. Also, Baystate Health offered two one day Cultural Humility trainings. Attendees found these sessions to be highly valuable, and Baystate Health will be identifying resources to continue training for more people and for a deeper experience for those who have already participated.

A. Ensuring Language Accessibility

Appropriate medical care largely depends on the ability to communicate. Patients need to understand both their providers and health status so they can take the appropriate next steps. BNH provides qualified interpreters available to patients and families who speak languages other than English. This is available to all patients and families at BNH 24 hours a day, 7 days per week. A full-time Russian/Ukrainian, English interpreter coordinates the program in conjunction with the Manager of Interpreter and Translation Services for Baystate Health. Over 200 languages can be accessed quickly and easily as needed by in-person, video, and telephonic interpreting, and the interpreters can assist patients and their families about procedures, medications and any other important information or circumstance that would necessitate exchange of information. BNH is committed to ensuring healthcare providers have the resources to establish a direct relationship with their non-English or limited English-speaking patients through accurate and complete interpretation services which are available at no charge.

F1.b.iv Provide additional information to demonstrate that the Proposed Project will result in improved health outcomes and quality of life of the Applicant's existing Patient Panel, while providing reasonable assurances of health equity.

The Proposed Project will improve health outcomes and quality of life for BNH's Patient Panel by ensuring all patients in need of CT imaging will have access. Timely access to CT imaging will ultimately improve health outcomes. BNH remains committed to promoting health equity, ensuring patients can access the Hospital's services and effectively communicate with their providers, and ensure patients are linked to services outside of the Hospital. As a result, the Applicant anticipates that the Proposed Project will result in improved patient care and quality outcomes while promoting health equity.

F1.c Provide evidence that the Proposed Project will operate efficiently and effectively by furthering and improving continuity and coordination of care for the Applicant's Patient Panel, including, how the Proposed Project will create or ensure appropriate linkages to patients' primary care services.

As a member of Baystate Health, BNH is affiliated with both tertiary and community hospitals, primary care offices, specialists, and urgent care centers, making integrated medical records central to effective coordination of care, improving quality of care and public health outcomes. BNH's electronic medical record ("EMR") serves as the primary linkage within the Hospital and between community primary care and other providers. With respect to the Proposed Project, the EMR affords BNH radiologists real-time access to a patient's comprehensive medical information, including medical history, lab results, and clinical notes while they are protocoling or reading a CT study. Once the radiologist's report is complete, the EMR enables imaging results and information to be available to primary care and specialty physicians across the system and integrated into the patient's EMR. The EMR also allows authorized providers outside of the Applicant to view patients' records and send progress notes back for continuity of care.

BNH also has a critical results system to provide immediate results for critical findings, which are automatically provided to referring physicians.

F1.d Provide evidence of consultation, both prior to and after the Filing Date, with all Government Agencies with relevant licensure, certification, or other regulatory oversight of the Applicant or the Proposed Project.

The Applicant consulted with numerous individuals at multiple regulatory agencies regarding the Proposed Project. The following individuals were consulted with regards to this Project:

- Lara Szent-Gyorgyi, Director, Determination of Need Program, Department of Public Health
- Dennis Renaud, Director, Determination of Need Program, Department of Public Health
- Jennica Allen, Office of Community Health Planning and Engagement, Department of Public Health
- Elizabeth Maffei, Office of Community Health Planning and Engagement, Department of Public Health
- Massachusetts Executive Office of Health and Human Services
- Health Policy Commission
- Center for Health Information and Analysis
- The Centers for Medicare & Medicaid Services

F1.e.i Process for Determining Need/Evidence of Community Engagement: For assistance in responding to this portion of the Application, Applicant is encouraged to review *Community Engagement Standards for Community Health Planning Guideline*. With respect to the existing Patient Panel, please describe the process through which Applicant determined the need for the Proposed Project.

In addition to relying on the data described throughout this application that demonstrates the need for the Proposed Project, the Applicant also sought to engage the community to elicit feedback from patients and families regarding the Proposed Project. The Proposed Project was presented to the following groups:

- The Hospital's Community Benefits Advisory Council ("CBAC");
- The Hospital's Patient Family Advisory Council ("PFAC");
- The Community Advisory Council; and
- Virtual Community Meeting.

The presentations reviewed the purpose of the Proposed Project, what it would mean for patients and the community, and provided a general overview of the Proposed Project's process.

F1.e.ii Please provide evidence of sound Community Engagement and consultation throughout the development of the Proposed Project. A successful Applicant will, at a minimum, describe the process whereby the "Public Health Value" of the Proposed Project was considered, and will describe the Community Engagement process as it occurred and is occurring currently in, at least, the following contexts: Identification of Patient Panel Need; Design/selection of DoN Project in response to "Patient Panel" need; and Linking the Proposed Project to "Public Health Value".

To ensure sound community engagement throughout the development of the Proposed Project, the Applicant took the following actions:

- Presentation to BHN's CBAC³² on October 15, 2021;
- Presentation at a Virtual Community Meeting on November 30, 2021.

For detailed information on these activities, see Appendix 3.

Factor 2: Health Priorities

Addresses the impact of the Proposed Project on health more broadly (that is, beyond the Patient Panel) requiring that the Applicant demonstrate that the Proposed Project will meaningfully contribute to the Commonwealth's goals for cost containment, improved public health outcomes, and delivery system transformation.

**F2.a. Cost Containment:
Using objective data, please describe, for each new or expanded service, how the Proposed Project will meaningfully contribute to the Commonwealth's goals for cost containment.**

The Proposed Project will meaningfully contribute to and further the Commonwealth's goals for cost containment by ensuring high-quality CT imaging services are accessible and equitably available to every person at the lowest reasonable aggregate cost. As discussed throughout the Application, the Proposed Project seeks to improve access to an essential component of hospital care. Timely access to CT imaging increases a patient's chance to receive timely treatment that can improve health outcomes and quality of life. Moreover, there will be no change in BNH's contracted rates for CT services. In conclusion, the Proposed Project will contribute to the Commonwealth's goals of cost containment by having no impact on costs while ensuring timely access to care.

**F2.b. Public Health Outcomes:
Describe, as relevant, for each new or expanded service, how the Proposed Project will improve public health outcomes.**

The Proposed Project will improve public health outcomes by providing timely access to CT scans. This will result in a decrease in delay of diagnosis and treatment, will reduce the need for ambulance transfer to Baystate Medical Center and will result in an overall decrease in costs. Further, to accommodate emergent BNH transfers, access to CT scans is delayed for inpatient and ED patients of Baystate Medical Center.

As discussed in F.1.a.ii., BNH anticipates CT volume will continue to increase. To properly serve the patient panel that is aging, tends to have higher acuity, and appropriately serve ED and stroke patients, it is necessary that BNH acquire an additional CT unit. An additional CT scan will not only improve access to care and health outcomes, but also decrease costs, contributing to overall public health. With an additional CT unit, BNH can accommodate its patient CT volume without the need to transport patients to Baystate Medical Center, further improving health outcomes and decrease in costs.

**F2.c. Delivery System Transformation:
Because the integration of social services and community-based expertise is central to goal of delivery system transformation, discuss how the needs of their patient panel have been assessed and linkages to social services organizations have been created and how the social determinants of health have been incorporated into care planning.**

³² The same presentation was given to the Hospital's PFAC on October 18, 2021 as well as it's Community Advisory Council on November 16, 2021.

Baystate Health has a robust system in place regarding social determinants of health for patients. Patients are referred to community services as identified through the Health Related Social Needs Screening tool as well as the MassHealth ACO Flexible Services program criteria. Referrals and connections to social services is now very much a part of the natural daily routine by Care Teams. Each program has unique criteria for participation and involves referrals to unique organizations.

Screening tools are also available in the Baystate Health Center's electronic medical records. The goal is for patients to be screened at least annually. When a need is identified, the patient may be referred to a community health worker (CHW) for assistance or may be given information directly from the primary care team. CHWs will usually continue to work with a patient to ensure that connections with community services are made. However, there is no formal process to track all community referrals.

Further, in 2019, the BeHealthy Partnership Social Determinants of Health Committee developed Health Equity Goals that were approved by the Joint Operating Committee as follows:

- Establish protocols and procedures for collecting, using, and monitoring demographic data in order to address health disparities and population health outcomes.
- Establish required training and development for all staff to meet a baseline standard for cultural humility.
- Seek balance of power in staffing, governance, and leadership by intentionally including people who have lived experience and reflect/represent the population being served to improve the likelihood that their voices will be included.
- Recognize and appreciate Baystate Health's productive community partnerships that it can work to deepen and expand as opportunities arise.

Factor 5: Relative Merit

F5.a.i **Describe the process of analysis and the conclusion that the Proposed Project, on balance, is superior to alternative and substitute methods for meeting the existing Patient Panel needs as those have been identified by the Applicant pursuant to 105 CMR 100.210(A)(1). When conducting this evaluation and articulating the relative merit determination, Applicant shall take into account, at a minimum, the quality, efficiency, and capital and operating costs of the Proposed Project relative to potential alternatives or substitutes, including alternative evidence-based strategies and public health interventions.**

This Proposal: The Proposed Project is for the acquisition of a second CT unit.

Quality: The Proposed Project is the superior option because of the impact it will have on patient outcomes and quality of life. With expanded access to CT, Baystate Noble will always have CT available for patients through the continuous access afforded by two CT units, ensure timely CT scans, and increase the number of patients routinely screened for lung cancer.

Efficiency: The acquisition of a second CT unit promotes redundancy which will minimize delays in access and care currently caused by unit downtime.

Capital Expense: The total capital expenditure for the CT unit and required construction is \$1,218,286 million dollars.

Operating Costs: The first-year operating expenses to operate the new CT unit are anticipated to be \$333,753.

Alternative Proposal: Do not acquire a second CT unit and continue to serve patients with a single CT unit.

Alternative Quality: This alternative does not address the need of Baystate Noble's patient population to have timely access to CT imaging, both currently and as demand increases in the future. Delays in diagnosis result in delayed treatment, which can adversely impact patient outcomes and quality of life.

Alternative Efficiency: BNH and Baystate Health resources will continue to be strained under this alternative. When Baystate Noble experiences CT downtime, emergency patients and inpatients must wait or receive lesser imaging or be transported to Baystate Medical Center. In addition, when emergent patients, such as patients with potential stroke, require CT, outpatient scans are delayed or must be rescheduled.

Alternative Capital Expenses: There are no capital expenses under this alternative.

Alternative Operating Costs: There are no additional operating costs under this option.